

VIRGINIA:

BEFORE THE STATE HEALTH DEPARTMENT
SEWAGE HANDLING AND DISPOSAL APPEAL REVIEW BOARD

In Re: James A. Thomas



FINAL ORDER

Mr. Thomas appeals the Department's denial of a permit¹ and the Health Commissioner's denial of a variance for an onsite sewage disposal system on a three acre lot that presently is part of approximately thirty-eight acres owned by his mother, Helen Thomas, in Shenandoah County. The Board heard this appeal on June 28, 1995, in Woodstock.

The detailed history of Mr. Thomas' application for a permit and variance is set out in the Department's proposed findings of fact. In short, after the denial of a permit, Mr. Thomas sought a variance from § 4.30.C.1 of the *Sewage Handling and Disposal Regulations* (Bd. of Health, May, 1989), which specifies the minimum installation depth of drainfield trenches as eighteen inches. The Commissioner denied the variance application as well.

¹Code § 32.1-164.B.1 authorizes the Board of Health to adopt regulations to include "[a] requirement that the owner obtain a permit from the Commissioner" Section 2.12 of the Board's *Sewage Handling and Disposal Regulations* imposes that requirement. Section 1.4 of the *Regulations* authorizes the Commissioner to delegate his authority under the *Regulations* (except for variances and orders) to the Department and appoints the Department as the primary agent of the Commissioner for the purpose of administering the regulations. Pursuant to that authority, the Commissioner has delegated the authority to issue and deny permits. Denials of permits and variances may be appealed to this Board for the final administrative decision pursuant to Code §§ 32.1-164.1 and 32.1-166.6.

I. The Permit Denial

Mr. Thomas agrees that the site, as originally proposed, is not suitable because of depth to rock. As finally proposed, the site is closer to the road, and does not raise an issue of depth to rock. Mr. Thomas suggests that the only remaining issue is the percolation rate.

Mr. Thomas relies upon a percolation test performed on June 2, 1994 by Mark Steven Byerly, P.E. For the seven holes tested, Mr. Byerly found a minimum rate of 17 minutes/inch and a maximum of 120, with the average for the seven holes of 80. The Department would dismiss those results because they were not obtained "under the supervision of the . . . health department" as required by § 3.5.C.2.a of the *Regulations*.

Indeed, Mr. Thomas performed a second percolation test on April 14, 1995. That test produced an average percolation rate of 195 minutes per inch, well in excess of the maximum 120 allowed by § 3.5.C.3 of the *Regulations*. Mr. Thomas now attacks the second test as not representing "normal conditions" because the soils had been soaked on two different days, with an intervening rain event. The Department replies that the *Regulations* (Appendix G, Presoaking, ¶ 1) provide that when the presence of shrink-swell soils is suspected, it could require an additional three-day presoaking; shrink-swell soils are present in some of the holes on Mr. Thomas' site (*see* below). Thus, the Department argues, the second, percolation test shows that the soils are unsuitable.

Section 3.5.H of the *Regulations* provides that shrink-swell soils "must be thoroughly wetted before a percolation test is performed." Plainly, the intent is that the soils to be tested shall be sufficiently wet that anomalies such as channels in shrink-swell soils will be removed.² Thus, the Board would rely upon the second percolation test. More to the point, however, the Board shares the view so lucidly stated by the Department's expert, Mr. Cobb: If the soils are unsatisfactory for other reasons, there is no reason even to perform a percolation test. As the Board said in *In re Fravel* (February 27, 1989):

The minimum soil conditions for absorption trenches, set out in §§ 4.05 and 12.06.01 [now §§ 3.5 and 4.30] of the *Regulations*, all are necessary links in the chain of successful sewage disposal. Thus, a successful disposal system must have an adequate percolation rate *and* a sufficient distance to rock or impervious strata, *and* a sufficient depth to seasonal water table, *and* an appropriate slope, *etc.*, in order to function correctly.

It is plain, indeed undisputed in terms of evidence, that the soils on this lot are not suitable for a disposal system to function correctly. Mr. Cobb's report shows that even the best soils on the lot, those adjacent to the road (holes Nos. 1, 2, and 3), show restrictive permeability features (24", 16", 22"), structure (16" and 22"), and, in hole No. 3, shrink-swell soils (22"). The three holes away from the road are even more unsatisfactory. Holes 4 and 5 show shrink-swell soils at

²As Mr. Cobb explained, shrink-swell soils develop cracks when they are dry. These cracks can rapidly convey liquids through the shrink-swell clay layer. When the soils are wet, however, the shrink-swell soils expand to close the cracks; the heavy clays then serve as a restriction to liquid flows.

depths of 12 and 15 inches; Hole 6 has fragipan-like materials over heavy clay beginning at 25", and restrictive permeability features throughout.

The minimum trench depth is 18". *Regulations*, § 4.30.C.1. Even at Mr. Byerly's percolation rate of 80 minutes per inch, the minimum depth from trench bottom to water table is 17". *Regulations*, Table 4.5. The minimum depth from the trench bottom to pans and impervious strata is 12". *Regulations*, Table 4.4. Thus, for the soils to be suitable, any seasonal water must be below 35" and impervious strata must be below 30". Moreover, horizons containing shrink-swell soils must be rejected for subsurface soil absorption systems. *Regulations* § 3.5.H.

Holes 4 and 5 show shrink-swell soils at and above the bottom of the trench. At Hole 3, the shrink-swell soils would be just 4" below the trench bottom. As Mr. Cobb testified, these and other soil restrictions create a seasonal water table considerably above the 35" minimum. There is a fragipan as shallow as 15", again above the bottom of the trench. And, indeed, the soil restrictions throughout will reduce the permeability and are consistent with the unsatisfactory percolation test of April 1995.

As Mr. Cobb testified, the soils plainly do not meet the requirements of the *Regulations*. Accordingly, the Department correctly denied Mr. Thomas' permit application, and Mr. Thomas' appeal must be **OVERRULED**.

II. The Variance

Mr. Thomas seeks a variance to allow the installation of the system in trenches shallower than the 18" required by § 4.30.C. In evaluating a variance, the *Regulations* require consideration of three factors: the effect of a variance upon the operation of the sewage disposal facility, the cost and other economic considerations, and the effect of the variance upon the public health. *Regulations* § 2.7.D.2.

At the outset, the Board is puzzled that the question of a variance would arise in this case. If the restrictions or seasonal water table were just above the minimum depths, a shallow-placed system might increase the distance to these features and allow the installation of a system. In the case of Mr. Thomas application, however, the soil restrictions are much more shallow than the minimum depths, including shrink-swell soils as shallow as 12-15". In the present case, the shallow system proposed by the variance application would not function significantly better than a system at the standard depth. Accordingly, the variance, even if granted, would not change the result: Mr. Thomas could not get a permit, even with the variance, because of the restrictions and the seasonal water table.³

³The only context in which a variance might make a difference would be under a settlement proposal made by the Department, where the Department offered to support a variance and thus a permit if a new percolation test confirmed Mr. Byerly's June, 1994 percolation test. See the Department's Proposed Findings of Fact at ¶ 21. That offer only was possible because a successful percolation test would contradict the permeability information from the soil studies and because the required depth to the water table decreases sharply as the permeability increases. See Table 4.5.

Thus, the variance denial is a moot issue. Even if the variance were granted, it would not provide Mr. Thomas any relief.

The Board nonetheless will analyze the variance application under the criteria of § 2.7 of the *Regulations*.

A. The Effect on Operation of the System

As set out above, the granting of a variance would not significantly affect the operation of the system. Whether shallow-placed or at normal depth, this system will not work.

B. Cost and other Economic Considerations.

The parties provided no evidence on the difference in cost of the two systems. Nonetheless, the difference in cost between a system at 18" and a system at 12" or 15" appears to be marginal. The Board concludes there is no significant cost difference.

Mr. Thomas does not aver any economic loss through the denial of the variance. Indeed, his complaint is nonmonetary: He wishes to have a homesite and his mother wishes that he be near by his diabetic sister.

Even so, Mr. Thomas has not shown that there is no other available site on Mrs. Thomas' 38 acre tract. Moreover, it appears to the Board that, if Mrs. Thomas is willing to limit the occupancy of the old homestead, Mr. Thomas might be able to build a smaller house and obtain a conditional permit to hook into the existing drainfield. *Regulations* § 2.13.J.3; see the Department's proposed find-

ings of fact at ¶ 5 ("[I]t might be possible to use the existing system on the property under a conditional permit . . .").

At the most, it thus appears that the denial of this variance would reduce somewhat the value of *Mrs.* Thomas' property, and it might prevent Mr. Thomas from building on that property. In fact, the effect is nil, because, as the Board points out above, Mr. Thomas could not install a system in these soils, with or without a variance as to trench depth.

C. Effect on the Public Health

As Mr. Cobb testified, the proposed system probably will fail, in the sense that it will not provide adequate treatment of sewage effluent. These soils will not provide the permeable zone where air can reach the effluent and support the natural processes that break down the wastes. Thus, whether or not the system suffers the catastrophic failure of backup into the house or breakout onto the ground, it probably will fail to properly treat the sewage effluent and, thus, it probably will produce contaminated ground water.

The Department's Exhibit 7 discusses the health threats posed by human contact with insufficiently treated sewage, whether by way of ground or surface water. Although the probability of exposure to effluent from the system Mr. Thomas proposes is slight, the effect of any such exposure could well be catastrophic.

III. Conclusion

In performing the balancing required by § 2.7.B of the *Regulations*, it appears that the hardship imposed by this denial is, at most, frustration of Mr. Thomas' plan to build on his mother's property. As the Board discusses above, however, ^{it} is not clear that the denial necessarily will frustrate Mr. Thomas' plans, and, indeed, the Board has concluded that, even with a variance, Mr. Thomas could not install this system.

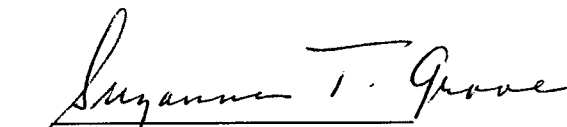
In contrast, the benefits to the public of enforcement of the *Regulations* are quite clear. There is no reasonable prospect of obtaining aerobic treatment of sewage effluent in these soils. Accordingly, the Board finds that the hardship imposed by the Regulation does not outweigh the benefits to be received by the public.

Finally, the Board concludes that installing a system that probably will convey partially treated sewage to ground waters, and perhaps to the surface, poses an unreasonable health risk. As the Board stated in *In re Hudgins* (February 9, 1989):

The nineteenth century sanitary revolution was probably the most significant step ever taken by an organized society to enhance health. The sanitary disposal of excreta and the provision of pure piped water removed deadly dangers to health of weanling and older children and others in every age who previously died in huge numbers from all forms of gastrointestinal infections.

In Mr. Thomas' appeal, as in the *Hudgins* case, the Board cannot grant the appeal "without embracing a return to the eighteenth century." Accordingly, the Health Commissioner's denial of this variance is sustained and Mr. Thomas' appeal is OVERRULED.

Mr. Thomas may initiate a judicial appeal of this decision by filing a notice of appeal with the Board's Secretary, Ms. Beth Dubis, Division of Environmental Health Services, 1500 East Main Street, Richmond, Virginia 23219 within 33 days of the date of mailing of this order to him. Other requirements for perfecting an appeal are set out in Part 2A of the Rules of the Supreme Court of Virginia and in the Administrative Process Act.


Suzanne T. Grove
Chairman

Dated: July 1, 1995

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