

# MOWER COUNTY

AUSTIN, MINNESOTA

55912



Minutes of the 123rd Meeting of the Mower County Board of Adjustment

Members Present: Bill Milbrath, Merrill Chesebrough, Ken Trom

Members Absent: Don Olson

Others Present: William Buckley, Mark Olson, James Bottema

The regular meeting of the Mower County Board of Adjustment was called to order by Ken Trom on Wednesday, May 27, 1992, at 4:00 p.m. in the Conference Room of the Mower County Environmental Health Department in Austin, Minnesota. Minutes of the April 1, 1992 meeting were approved as mailed on a motion by Mr. Milbrath, seconded by Mr. Chesebrough.

Variance #WC-2 To Allow the Reconstruction of an Existing Noncompliant Flowing Well into the Cedar Valley Limestone Formation - Mark H. Olson: Staff report was read by Mr. Buckley. Mr. Olson is requesting a variance to reconstruct a well that was constructed in 1990 in violation of Chapter 4725 of the Minnesota Rules. Chapter 4725.4300 prohibits a potable water well from being completed in the Cedar Valley limestone formation at this location because there is not 50 feet of insoluble cover for a mile radius. At this location, the type well required by Chapter 4725.4300 would be a well drilled into the St. Peter formation at a depth of 700 feet or more.

Mr. Buckley explained that the Olson well was drilled in 1990 prior to adoption of the Mower County Water Well Construction Ordinance but that because the well was not redrilled or reconstructed prior to this date, the County must issue a variance. This variance is from Section 6-82 of the County Code. Mr. Buckley then read the conditions and reasons for a variance stated in the letter from the Minnesota Department of Health. Mr. Olson was then asked if he had any questions regarding the conditions to be placed on the variance. He stated that he had not planned to use the 2 inch pipe as stated in condition #3 and wondered whether this was necessary. Mr. Buckley stated that after a telephone conversation with Pete Zimmerman of the Minnesota Department of Health, he understood that it was necessary to follow all conditions placed on the variance by the Minnesota Department of Health and subsequently to be included by the Board of Adjustment.

It was explained that the variance was granted with approval from the Department of Health because of the concern that additional drilling in this area may result in even higher pressure and increased flow from the well which may have an adverse affect on the property such as damage to the dwelling or flooding of the basement.

It is also felt that because of the flowing condition of the Cedar Valley aquifer at this site, this location is a discharge rather than a recharge area for the Cedar Valley limestone and that the recharge area for this flowing aquifer is most likely a substantial distance from the well. Also, the absence of nitrate-nitrogen in the water from this aquifer indicates the recharge area for the Cedar Valley limestone in this localized area is most likely protected by adequate geological cover.

Mr. Trom then read the findings and the consensus was as follows:

1. The variance is in harmony with the spirit and intent of the Ordinance;
2. The variance is consistent with the Comprehensive Plan (Mower County Water Well Construction and Sealing Ordinance);
3. There are practical difficulties with strict adherence to Mower County Code.

A motion was made by Mr. Chesebrough and seconded by Mr. Milbrath to approve Variance #WC-2 requested by Mr. Mark Olson with the approval and conditions previously granted by the Minnesota Department of Health as follows:

1. The variance is valid only with the written approval of Mower County (County). Approval must be obtained prior to construction and in accordance with the Mower County Water Well Ordinance (Article VII). All conditions from the granted State approval shall be included within the County's final variance decree.
2. The well shall be cased with a 2-inch welded steel casing and grouted with neat cement grout from a minimum depth of 160 feet to 6 feet below-grade.
3. The well must be completed with a pitless unit or pitless adaptor attached to the 2-inch casing. The existing water line must be removed from the 6-inch casing and attached to the pitless unit or adaptor on the 2-inch casing. The inner casing or pitless unit must extend a minimum of 12 inches above the surrounding grade. The pitless unit or pitless adaptor must be approved by the MDH.
4. The well must be constructed in accordance with all other provisions of Minnesota Rules, Chapter 4725.

The motion passed unanimously.

Variance #WC-3 to Allow a Case and Grouted Gelano Limestone Well at an Approximate Depth of 400 Feet - James Bottema: The staff report was read. James Bottema is requesting a variance from Section 682 of the Mower County Well Code on property located in Section 10 of Adams Township. The variance would allow a shallower aquifer with acceptable water quality used rather than drilling to the deeper sandstone aquifer as required under the County Well Code and Chapter 4725 of the Minnesota Rules.

It was explained by Mr. Buckley that the Galena variance is being requested in this case and is considered reasonable by the Department of Health because of the restrictive nature of the Code regarding wells in Mower County. It was explained that a minimum of 50 feet drift over the limestone within 1 mile of the location of the proposed well is required in order for the first limestone to be used for a water supply. In this part of Mower County, the Dubuque-Maquoketa shale is felt to be a substantial barrier between the Cedar Valley limestone and the deeper Galena limestone formation so that it provides protection for Galena aquifer. In this case it is felt that where the Cedar Valley is the first limestone formation with an existing Maquoketa-Dubuque Shale separating the two limestone formations, the Galena would be of acceptable quality to be used as a water supply rather than drilling to the St. Peter. Mr. Trom asked whether the Galena aquifer had been monitored for water quality and Mr. Buckley stated that over the past two years the Minnesota Department of Health has granted variances for the purpose of monitoring the Galena. In such monitoring the Galena has so far been found to be of acceptable water quality. It was also stated by the petitioner and by Mr. Chesebrough that problems have been found to exist in the St. Peter sandstone in terms of being able to obtain an adequate water supply and in terms of drilling.

Mr. Trom noted the letter from the Minnesota Department of Health granting the variance to the County and that the Minnesota Department of Health had issued the approval with eleven conditions placed on the variance.

Mr. Trom then read the findings and the consensus was as follows:

1. The variance is consistent with Mower County Code.
2. The Variance is consistent with the Comprehensive Plan.
3. That there would be practical difficulties adhering strictly to Mower County Water Well Construction and Sealing Ordinance.

A motion was then made by Merrill Chesebrough and seconded by Bill Milbrath to approve the variance requested by James Bottema with the eleven conditions placed on the variance by the Minnesota Department of Health and an additional condition that the nitrate nitrogen of the finished well be no greater than 5 parts per million as required in Section 6-83 of the Mower County Code.


1. The variance is valid only with the written approval of Mower County. Approval must be obtained prior to construction and in accordance with the Mower County Water Well Ordinance (Article VII). All conditions from the granted state approval shall be included within the county's final variance decree.
2. The Galena formation at the well location is overlain by the Maquoketa, Dubuque, and Cedar Valley formations.
3. The well shall not be completed in the Maquoketa, Dubuque, or Cedar Valley formations.

4. The well must be cased and grouted a minimum of 15 feet into the Galena formation and at least 10 feet below the pumping level in the well.
5. The well must be constructed in an oversized hole which is at least 3.5 inches larger than the outer diameter of the casing. If couplings are used, the borehole must be at least 3.5 inches larger than the outer diameter of the couplings. The annular space around the casing must be filled with neat cement grout.
6. The well shall be test pumped and the well water sampled prior to grouting. the water sample taken from the well must meet water quality standards for coliform bacteria (less than 1.0 organism/100 millileter (ml) MF method or less than 2.2 organisms/100 (ml) MPN method and nitrate nitrogen (less than 10.0 milligrams/liter (ml/l). If the water quality in the Galena formation is unsatisfactory, the well must be cased and grouted into an underlying safe aquifer or be sealed in accordance with Minnesota Rules, Chapter 4725.
7. Water from this well shall be tested annually for nitrate nitrogen for a period of three years. The results of this test must be forwarded to the Minnesota Department of Health, Southeastern District Office, Campus Center building, 2116 Campus Drive S.E., Rochester, Minnesota 55904-4744, and the Mower County Environmental Health Department.
8. Representative samples of drill cuttings shall be collected for each 5-foot drilled interval. These samples shall be collected in bags which will be sent to you under separate cover. The Minnesota Geological Survey (MGS) will pick up the sample bags.
9. The MGS (612/627-4788) shall be contacted after the borehole is drilled so that a gamma-log of the well may be obtained. The gamma-log and cuttings shall be analyzed before the casing is grouted in place to assure the well will be cased and grouted at least 15 feet into the Galena limestone. If it is determined that the well is completed in the Maquoketa, Dubuque, or Cedar Valley formations, the contractor will be required to extend the oversized hole and casing at lease 15 feet into the Galena formation.
10. The MDH, Southeastern District Office and County shall be notified at least 24 hours prior to the construction of the well.
11. The well must be constructed in accordance with all other provisions of Minnesota Rules, Chapter 4725.
12. The nitrate nitrogen of the finished well be no greater than 5 parts per million as required in Section 6-83 of the Mower County Code.

The motion passed unanimously.

A motion was then made by Bill Milbrath and seconded by Merrill Chesebrough to adjourn the 123rd meeting of the Mower County Board of Adjustment. The motion passed unanimously.

Respectfully Submitted,



William C. Buckley  
Environmental Health Department

WCB:jb\RBC