

April 14, 2004

Mr. Doug Johnston  
Planning and Zoning Director  
Torrance County  
P.O. Box 48  
Estancia, NM 87016

**CERTIFIED MAIL**  
**RETURN RECEIPT**  
**REQUESTED**

**Re: Cattle Country Subdivision**

Dear Mr. Johnston:

On March 18, 2004, the Office of the State Engineer received additional/amended documents regarding "Cattle Country", a Type Two Subdivision. This office had issued a negative opinion, on October 21, 2003, due to the fact that the developer had failed to calculate the maximum water demand for the commercial lots in accordance with Section 2.2 of the Supplemental Guidelines to the Torrance County Subdivision Regulations, and to prove water availability in accordance with Section 5.4 of the same regulations.

The proposal is a request to subdivide 321.65 acres of land into 67 residential lots and 22 commercial lots. The proposed subdivision is located approximately six and a half miles east of Moriarty, immediately south of State Road 333, within the S ½ of Section 18, Township 9 North, Range 10 East, NMPM.

It is the opinion of this office that the proposal still does not satisfy the requirement of Section 5.4 of the Supplemental Guidelines to the County regulations. Accordingly, a positive opinion is withheld at this time.

**WATER AVAILABILITY ASSESSMENT**

The proposed water supply for this development is a new community water system designed and built for this subdivision. The State Engineer records show that the developer is permitted to divert 53.5 acre-feet of water per annum from four existing wells (E-1679 thru E-1679-S-3), for subdivision, commercial, truck terminal, indoor horse arena and two mobile homes on 372.33 acres located in Section 18, Township 9 North, Range 10 East, NMPM.

Section 5.4 of the aforementioned regulations requires a geohydrology report to demonstrate that groundwater sufficient to meet the maximum annual water requirement of the subdivision is

physically available and can be practically recovered to sustain the development for a continuous period of 70 years. The analyses must take into account the production of existing wells and demonstrate that the wells serving the subdivision, as proposed or as designed, will be capable of producing the full annual demand for at least 70 years.

Some major issues were found with the geohydrology report submitted in September 2003. For details regarding the comments, please refer to the aforementioned letter.

The additional information submitted to this office has been reviewed also by the Hydrology Bureau of the State Engineer. Although the additional documentation added to the content of the original report, the following issues are still outstanding.

Page 5 of the geohydrology report states "*Four other wells could be used as backup wells in the future, if desired for operational flexibility*". Four (4) wells are currently permitted, by the State Engineer, not five (5). The whole report focuses only on well E-1679-S (described as primary well in the amended proposal), and there is a total lack of characterization of the applicant's other wells as viable sources of water as back up to the primary well.

Page 5 of the geohydrology report continues by stating, "*However, as is demonstrated in the following sections of this report, the proposed primary supply, well E-1679-S, is more than capable of supplying 100% of the water demand for the proposed subdivisions, so no further evaluation was done of the other wells at this time*". The consultant has presented in graphic form the time-drawdown points collected during a pumping test conducted in 2002. The tabulation of time/water level/pumping rate, requested with the letter dated October 21, 2003, has not been provided. Pre-pump data that may have been collected has not been included. The consultant states that the tested well can supply 100% of the water demand. This would mean a pumping rate of 50 gpm (60% of the time). However, the well was pumped at 50 gpm only for 4.5 hours. For a test to be a viable source of information, the constant pumping rate must be of sufficient duration, at least 1,000 minutes. The pump test and the consequent calculation of transmissivity, drawdown, and sustainability for 70 years are therefore **not** acceptable.

The pumping test should be conducted again, at a constant pumping rate of at least 50 gpm, for at least 1,000 minutes. The time-drawdown data should be presented numerically in a table and should also be plotted on semi-log paper. In addition, the time-recovery data should be plotted on semi-log paper and tabulated in a table that includes the time since pumping began (t in minutes), the ratio  $t/t''$  which is the time since pumping began divided by the time since pumping stopped, and the water levels. The transmissivities calculated from the time-drawdown and time-recovery graphs should then be compared and the value that is deemed most reliable should be used in the subsequent calculations of the 70-year schedule of drawdown effects. Additional declines due to well efficiency reduction over time, seasonal fluctuations, and drought allowance should be taken into account, as required by Section 5.4.d of the Supplemental Guidelines to the Torrance County Regulations.

Finally, a characterization of the other existing wells on the property should be included. Should the pumping test demonstrate that well E-1679-S does not have the capability to supply 100% of the water supply for 70 years, then a pumping test should be conducted on the well that the developer plans to use as back up to the "primary" one.

#### **WATER DEMAND ANALYSIS AND CONSERVATION**

The developer has amended the quantification of the maximum annual water requirement for the residential lots by reducing the indoor water requirement to 76 gallons per capita per day (from the original 85), and by reducing the outdoor irrigable area to 1,500 square feet per parcel. The total requirement has been estimated at 0.40 acre-feet per year per lot, including system losses, and water for fire protection. Item # 17 of the Disclosure Statement should be amended, to reflect this amount. Also, this office still recommends that the total irrigated area be limited to a maximum of 800 square feet per parcel.

The developer stated, under Item # 17 of the Disclosure Statement, that each commercial lot will be allotted 1.06 acre-feet of water per year, but had failed to conduct a detailed water demand analysis, as required by Section 2.2 of the Supplemental Guidelines to the County regulations. The additional documentation includes the water requirements of some possible businesses, such as a gas station (0.5 acre-feet per year), a full service restaurant (5.9 acre-feet per year), and a limited service restaurant (2.5 acre-feet per year). The amounts reflect the water used annually by similar establishments in Santa Fe. The amended proposal further states that, consequently, a gas station could be built on one commercial lot, while a limited service restaurant center would have to be built on three (3) commercial lots. Item # 17 of the Disclosure Statement should be amended, to include this statement.

If you have any questions, please call me at (505) 827-4273.

Sincerely,

Mara Smith  
Water Use and Conservation Bureau

cc: John T. Romero, P.E., Water Resource Allocation Program Director  
OSE Water Right Division, Albuquerque Office