

April 21, 2003

Alex Tafoya
San Miguel County
500 W. National Suite 104
Las Vegas, NM 87801

CERTIFIED MAIL
RETURN RECEIPT
REQUESTED

Reference: Santa Fe Mountain Ranch Estates

Dear Mr Tafoya:

The Office of the State Engineer has re-reviewed the water supply proposal for the referenced subdivision pursuant to the San Miguel County Subdivision Regulations. It is the opinion of this office that the subdivider's proposal now complies with the county's subdivision regulations. A **positive** opinion to this effect is hereby issued.

The Santa Fe Mountain Ranch Estates proposal is a request to develop the 2311-acre Starkey Ranch into a 87-lot residential subdivision. The lot is located near Gallinas, approximately 10 miles northeast of Las Vegas. It is in the Las Vegas Land Grant in Projected Sections 8 through 11, 14 through 17, 21, and 22 of T17N, R15E, N.M.P.M.. The developer proposes that water will be supplied to this development via individual 72-12-1 domestic wells.

In my review of March 20, 2003, I noted several concerns that this office had with the wells tested and their corresponding evaluations. The hydrologist of record, Mike Darr, has submitted an addendum to his geohydrologic report in order to address these issues. The addendum included evidence of well recovery, new well analysis', and revised aquifer modeling.

Of primary concern to this office was the inability of three of the five wells tested to recover. The Far East Replacement well was the most disconcerting, failing to recover more than 11 feet. This lack of recovery implies that the aquifer drilled into was partially dewatered. Subsequently, Mr. Darr re-measured the depth to water of this well, and found that not only had it recovered, but it now had a water level some 8.4 feet higher than the original static level. This delayed recovery may be due to seasonal recharge; nevertheless, it was sufficient enough for me to believe that the well is sufficient for domestic use. Other concerns of this office include the impermeable boundaries experienced by the "High," "Upper Meadow," and "New Well at Gate" wells.

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In his addendum, Mr. Darr evaluated the recoveries of the wells using a plot of t/t' (time since pumping started divided by the time since pump ended) vs. depth to water, as per my request. This Cooper-Jacobs correlation enabled a more detailed evaluation of the data.

In his addendum, Mr. Darr also revised the model of the aquifer so as to more accurately portray the actual conditions. The wells produce from thin zones in massive rocks, and, at times, are bounded by an impermeable granite boundary. A recharge boundary (Gallinas River) exists at the bottom of the steeply sloping property. The new model indicates that drawdowns would not reach the water bearing fractures in the wells, even if well inefficiencies are added. Mr. Darr's modeling of these boundaries indicate that the depth of the water bearing fractures should overcome the increased drawdowns due to these boundaries. I corroborated this conclusion by modeling the wells with a Theis program.

If you have any questions regarding this opinion, please feel free to call me at (505) 827-6790.

Sincerely,

Patrick J. Romero
Water Resource Engineer

Cc: Brian C. Wilson, P.E., Water Use and Conservation Bureau