

MEMORANDUM

New Mexico Office of the State Engineer
Water Use and Conservation Bureau

March 6, 2002

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

From: Patrick J. Romero, Water Master I

Subject: Salida del Sol Master Plan Review, Santa Fe County

The Salida del Sol proposal is a request to develop a 14-lot commercial subdivision on a vacant lot. The 10.017 acre lot parcel is located on the East side of U.S. 285, across the Avenida Eldorado entrance, within the Canada de Los Alamos Grant, in Projected Section 3 of T15N, R10E, N.M.P.M.. It was reviewed pursuant to the Santa Fe County Land Development Code via the Extraterritorial Zoning Ordinance, and the New Mexico Subdivision Act. The developer proposes that water will be supplied to this development by a 72-12-1 domestic well.

The subdivider has failed to properly calculate the maximum annual water requirements for this development, pursuant to Article VII, Section 6.6.2 of the Santa Fe County Land Development Code. On page 5 of his master plat and plan report, the developer claims that his development will require 2.5 acre-feet of water per year. He states that this requirement was calculated using a water table created by the city. No calculations were found in support of this statement. In a letter submitted from James Corbin, the developer's hydrologist, to the developer's consultant, Mr. Corbin states that this development will require 12.0 acre-feet of water per year. This inconsistency should be addressed.

Upon quantifying his subdivision's annual water requirements, the subdivider should specify water restrictions to ensure that his subdivision would not exceed the amount of water legally available from his 72-12-1 domestic well. His water requirements should be separated into indoor and outdoor uses, and restrictions on irrigated area should be specified in the disclosure statement as well as the covenants to ensure that residents will not exceed the allowed amount. It is suggested that the developer refer to State Engineer Technical Report No. 48, "Water Conservation and Quantification of Water Demands in Subdivisions" (Wilson, 1996), to calculate indoor and outdoor water requirements.

The developer has submitted a geohydrologic report, as required by Section 6.4.1.D of the Santa Fe Land Development Code. The report, by Corbin Consulting, did not provide evidence that water was available for this development.

When using the Santa Fe County (minimum lot size) guidelines to calculate the amount of water available for this development, the author made numerous errors. His most critical error was his claim that the property is entirely in the basin fringe zone. While the county land use reference map shows that the tested well (RG38352) is just inside the basin fringe zone, the fractured granite encountered by it indicates that it is in the mountain zone. The land use map is only a guide to show approximate location of different zones. Lee Wilson, who wrote the specifications for the hydrologic zones, wrote (p.17, Procedures for Determination of Water Availability) that areas in the basin, or basin fringe zone are underlain by the Santa Fe Group. This test well did not encounter this aquifer. One of the two wells on Mr. Sebesta's property encounters this group (RG-50173). It encounters only 5 feet of it.

For the well test done, a specific yield of 0.02 should have been used in the calculations, instead of the 0.15 and 0.2 used. The author also erred in estimating that the saturated thickness of the aquifer(s) drilled into was 350 feet. The well log indicates that the fractured granite aquifer is approximately 10 feet in thickness. A review of other well logs in the area support the well drillers finding that the aquifer (in this case, the fractured part of the granite unit), which was drilled into is very thin.

In determining the drawdown due to this development, the author fails to properly model the aquifer. The author does not properly graph and analyze his recovery test. If done correctly, one would find the transmissivity to be approximately 363 gpd/ft, instead of 726 gpd/ft. This error carries over to the modeling. Our Hydrology Division modeled this well (RG-38352), with the corrected transmissivity and storage coefficient. It was found that drawdown would exceed 16 feet after 100 years. This exceeds the depth of the water-bearing strata available, without having added well inefficiencies as well as historically declining water tables to this drawdown. Due to these facts, it is my opinion that this report does not prove that the subject well can provide the water requirements of this development, as they are outlined in Section 6.4.2a

It is my opinion that the developer has not provided sufficient evidence that his water requirements will be met, pursuant to the Santa Fe County Land Development Code. Therefore, a favorable opinion should be **withheld**.