

August 23, 2007

Ms. Matejka Ray
County Manager
Socorro County
P.O. Box 1
Socorro, NM 87801

CERTIFIED MAIL
RETURN RECEIPT
REQUESTED

Re: Mountain Shadows At Highland Springs Ranch

Dear Ms. Ray:

The Water Use & Conservation/Subdivision Review Bureau of the Office of the State Engineer has reviewed the referenced subdivision proposal pursuant to the Socorro County Subdivision Regulations, the New Mexico Subdivision Act and the OSE Rules and Regulations Governing the Appropriation and Use of Ground Water In New Mexico.

Based on the information provided, this office cannot determine that the subdivider can furnish water sufficient in quantity to fulfill the maximum annual water requirements of the subdivision, including water for indoor and outdoor domestic uses, and that the subdivider can fulfill the proposals in his disclosure statement concerning water, excepting water quality. Accordingly, a **negative** opinion is issued.

A staff memorandum providing specific comments is attached for your information. If you have any questions, please call Jerry Keller at 505-827-3845.

Sincerely,

John W. Longworth, P.E.
Water Use & Conservation/Subdivision Review Bureau Chief

Encl.

cc: OSE Water Rights Division, Albuquerque Office

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

DATE: August 21, 2006
TO: John Longworth, P.E., Water Use and Conservation Bureau Chief
FROM: Jerry Keller, Senior Water Resource Specialist
SUBJECT: Mountain Shadows At Highland Springs Ranch Subdivision,
Socorro County

SUMMARY

On July 24, 2007 the Office of the State Engineer (OSE) received a request to review the Preliminary Plat for Mountain Shadows Subdivision At Highland Springs Ranch, a Type four subdivision. According to the Disclosure Statement, the proposal is a request to subdivide 3,552 acres into 152 residential lots ranging in size from approximately 20 to 40 acres. The Plat Map shows 3,610 acres and 154 lots and the Geohydrologic Investigation Report indicates 3,610 acres and 153 lots. The proposed water supply is individual 72-12-1 domestic wells. The property is located south of Socorro and west of Interstate 25, within Sections 16, 17, 19, 20, 21 28, 29, 30, 31, 32, Township 5 South, Range 1 West, Sections 6 and 7, Township 6 South, Range 1 West, and Sections 1 and 2, Township 6 South, Range 2 West NMPM.

The water supply documents submitted to this office consist of a Disclosure Statement, Covenants, Conditions, and Restrictions (CCR's), and Geohydrologic Investigation Report (GIR).

The proposal was reviewed pursuant to the Socorro County Subdivision Regulations (Regulations) and the New Mexico Subdivision Act (Act). Based on the information provided, the water supply proposal is not in compliance with the requirements of Section Three, Article II, B.3.f (3) the Regulations and Section 47-6-11-F-1 of the Act. Accordingly, a **negative** opinion is recommended.

WATER DEMAND ANALYSIS AND WATER CONSERVATION

The developer has quantified the maximum annual water requirement for the proposed subdivision pursuant to Section Three, Article B.3.d (2) of the Regulations which states that if 0.30 acre-feet is not appropriate for the subdivision the subdivider may prepare a detailed water demand analysis following the procedures set forth in OSE Technical Report 48 (Wilson, 1996). The detailed water demand analysis is included in the GIR. The estimated demand per the analysis and stated under Item No. 17 of the Disclosure Statement is 0.5 acre-feet per parcel and 76.65 acre-feet for the development. The assumptions used to calculate the maximum water demand are 3 persons per dwelling, 58.9 gallons per capita day, evaporative cooling, 1,200 square feet of Bermuda grass, 1,000 square feet of garden, and five horses or cows.

A minor error was found in the calculations (20 gallons per day per parcel rather than 20 gallons per day per capita for evaporative cooling according to OSE Technical Report 48). The actual calculated demand based on the above assumptions is 0.55 acre-feet per parcel. The Disclosure Statement and GIR should be revised to reflect the actual calculated demand or adjustments made to the allowable water use in the Water Demand Analysis if the goal is to restrict water use to 0.5 acre feet per parcel per year.

Water conservation measures, which reflect the assumptions used to prepare the water demand analysis, are listed under Item No. 17 of the Disclosure Statement. Additional conservation measures include rainwater harvesting features. The conservation measures and restrictions should also be included in the CCR's.

WATER AVAILABILITY ASSESSMENT

The proposed source of water supply for this subdivision is individual domestic wells. The developer submitted a GIR for the proposed subdivision pursuant to Section Three, Article II, B.3.f (3) of the Regulations.

The GIR describes the geologic and hydrologic setting of the proposed subdivision and includes drawdown and recovery test well data, geologic cross-sections, water level contours, water availability calculations, and results of a 40-year schedule of effects model on wells within the subdivision and existing and future wells outside of the subdivision boundary.

OSE Hydrology Bureau, as well as the Water Use and Conservation Bureau, reviewed the Assessment. The Hydrology Bureau's comments are summarized in the attached memorandum.

Under Item No. 19 of the Disclosure Statement the subdivider states that "the owner should also understand that there is no guarantee that drilling upon any parcel will result in a water well that yields sufficient water for that parcel." The intent of the water availability assessment is to provide a reasonable demonstration that water is available to serve each lot within the proposed subdivision. While it is not the intent to require the subdivider to guarantee that drilling at any particular location within a parcel will produce an adequate well, it must be reasonably demonstrated that water is generally available within the entire extent of the subdivision. If the subdivider is not satisfied that water will be available, the County may wish to require additional investigation or require the subdivider to configure the lots to ensure a high probability that adequate water supply will be available to serve each lot.

The depth to water, depth of wells, and estimated yield presented in the Disclosure Statement are consistent with the information developed in the GIR.

Based on the information provided, OSE concurs with the findings in the GIR. The subdivider is in substantial compliance with the requirements of the Regulations and the Act. The subdivider

has demonstrated water sufficient in quantity to fulfill the maximum annual water requirements of the subdivision, as a whole, including water for indoor and outdoor domestic uses is available for a period of 40-years. However, the subdivision lot layout should be configured to the greatest extent practical, to ensure that each lot within the proposed subdivision will have reasonable access to an adequate underground water supply.

The lots within the areas identified as “marginal to the main aquifer” in which the GIR predicts yields of 1 to 2 gpm, should be listed by lot number and clearly identified as to the potential for very low producing wells. In these areas the estimated yields are less than generally preferred for domestic well production. Given these less than ideal physical limitations, lot purchasers should be made aware that, depending on their own well’s characteristics, it may be advisable to install water storage tanks. These tanks will provide storage to meet instantaneous water demands.