

August 15, 2007

Mr. James M. Aranda
Regional Planner
Valencia County
PO Box 1119
Los Lunas, NM 87031

CERTIFIED MAIL
RETURN RECEIPT
REQUESTED

Re: Loma Codorniz Subdivision

Dear Mr. Aranda:

The Water Use & Conservation/Subdivision Review Bureau of the Office of the State Engineer has reviewed the referenced subdivision proposal pursuant to the Valencia County Subdivision Regulations and the New Mexico Subdivision Act.

It is the opinion of this office that the subdivider's water supply proposal does not satisfies the requirements of Sections 15.6.7.C.4 and 15.6.7.G.4 of the County Regulations and § 47-6-11.F (1) of the New Mexico Subdivision Act. Accordingly, a **negative** opinion is issued.

A staff memorandum providing specific comments is attached for your information. If you have any questions, please call Julie Valdez at 505-827-6790.

Sincerely,

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

Encl.

cc: OSE Water Rights Division, Albuquerque Office

JV:jv

DATE: August 15, 2007
TO: John W. Longworth
FROM: Julie Valdez
SUBJECT: Loma Codorniz subdivision

SUMMARY

On July 16, 2007 the Office of the State Engineer received a request to review additional documentation for Loma Codorniz, a Type Three subdivision.

This office reviewed the original proposal on April 20, 2007, at which time information regarding water supply and water demand was insufficient. Therefore, a negative opinion was issued. Please refer to that letter for specific details.

The proposal is a request to subdivide 21.3057 acres into 18 residential lots, with sizes ranging between 1.0 and 1.3207 acres. The property is located approximately 1.5 miles east of New Mexico State Road 47 at the northeast corner of Molina Road and La Ladera Road within Section 18, Township 7 North, Range 3 East, NMPM. The proposed water supply is 18 individual 72-12-1 domestic wells.

The water supply document submitted to this office consists of an updated Geohydrologic Report (Report).

The OSE has reviewed the Loma Codorniz subdivision proposal pursuant to the Valencia County Comprehensive Subdivision Regulations (Regulations) and the New Mexico State Subdivision Act (Act). It is the opinion of this office that the water supply proposal does not satisfy the requirements of Sections 15.6.7.C.4 and 15.6.7.G.4 of the Regulations and Section 47-6-11.F (1) of the Act. Therefore, it is suggested that a **negative** opinion be issued.

WATER DEMAND ANALYSIS & WATER CONSERVATION

The subdivider quantified the maximum annual water requirements for the subdivision in accordance with Section 15.6.2.A of the Regulations for both indoor and outdoor use following the procedures set forth in OSE Technical Report 48 (Wilson, 1996). The maximum water demand was quantified as 0.382 acre-feet per year per lot or 6.88 acre-feet per annum for the entire subdivision, assuming 3 persons per dwelling (at 80 gpcd), 600 ft² of Blue Grass, 100 ft² of Trees and 100 ft² of Horticulture. This office concurs with these calculations.

WATER AVAILABILITY ASSESSMENT

The proposed water supply for this subdivision is 18 individual 72-12-1 domestic wells. The subdivider submitted a Report, pursuant to Sections 15.6.7.C.4 and 15.6.7.G.4 of the County Regulations. The Report includes calculations to predict if there is adequate recoverable water for 50 years and the projected impact on nearby wells and springs. The Report

concludes that there is adequate water available for 50 years and that the effects of pumping within the Loma Codorniz Subdivision on nearby wells and streams will be minor. This office does not concur with these conclusions.

Since the geology within the proposed subdivision is not clearly defined in the Report, this office cannot determine if an adequate supply of water will be available for the proposed subdivision. In fact, the geology described is not site specific but regionally described and is known as the Albuquerque Basin, which is approximately 102 miles long and 25-40 miles wide. It is the opinion of this office that only the geology of the regional area is described in the Report. In order to determine the geologic conditions within the boundaries of the proposed subdivision the subdivider must provide this office with maps and cross-sections showing geology, depth to the water bearing formation, water level contours, and estimated thickness of saturation in the aquifer.

The Report also concluded that groundwater pumping within Loma Codorniz after 50 years would have no effect on the nearby Rio Grande River. This office does not concur with this conclusion. It appears that the Theis equation was erroneously used to calculate the effects of the groundwater pumping on the Rio Grande. This office generally utilizes the Glover-Balmer equation (which estimates the impact of pumping on surface flow) for these calculations. The Report states that the shallow wells are intimately connected to the Rio Grande River and therefore, it is reasonable to conclude that the water pumped from the Loma Codorniz will ultimately come from the Rio Grande. There are no requirements in the OSE's Domestic Well Regulations or in the County Regulations that applicants obtaining a domestic well permit (issued under section 72-12-1 NMSA) acquire water rights to offset effects on streams. It is recommended that the subdivider calculate the effects of pumping the wells within Loma Codorniz on the Rio Grande River using the Glover-Blamer equation and update the Report accordingly.

Also it should be noted that, the water availability for the next 50 years was determined by compact agreements between New Mexico and Texas. It was assumed that water will be flowing in the Rio Grande in order to meet compact obligations. The Report states that the shallow wells are intimately connected to the Rio Grande and there will be recharge to the aquifer. The Report then concludes that if additional water is needed, wells can be deepened to regain supply. This contradicts the Report's earlier assumption that the groundwater pumped will have no effect on the Rio Grande River. This office recommends that an analysis be completed to demonstrate water availability for the next 50 years.