March 5, 2007

Ms. Louise Marquez
Planning and Zoning Coordinator
Torrance County
P.O. Box 48
Estancia, NM 87016

CERTIFIED MAIL
RETURN RECEIPT
REQUESTED

Re: Deer Canyon Preserve Phase III Subdivision

Dear Mr. Best:

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

Based on the information provided, this office has determined 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 **positive** opinion is issued.

A staff memorandum providing the 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

JK:jk

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

DATE: March 2, 2007
TO: John Longworth, P.E. Water Use & Conservation Bureau Chief
FROM: Jerry Keller, Senior Water Resource Specialist
SUBJECT: Deer Canyon Preserve Phase III Subdivision, Torrance County

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SUMMARY

On February 9, 2007 the Office of the State Engineer (OSE) received a request to review the Preliminary Plat for Deer Canyon Preserve Phase III, a Type-two Subdivision. The proposal is a request to subdivide a 9,278-acre parcel into 232 residential lots ranging in size from 6 acres to 30 acres and 4,969 acres of open space. The proposed water supply is shared 72-12-1 domestic wells. The property is located approximately 5 miles south of Mountainair within the following Sections:

- Sections 13 and 24, Township 1 North, Range 1 East
- Sections 7, 19, 20, 21, 23, 24, and 30, Township 1 North, Range 6 East
- Sections 8, 9, 16, 17, 18, and 19, Township 1 North, Range 7 East
- Sections 1, 12, and 13, Township 2 North, Range 6 East
- Sections 6, 18, and 19, Township 2 North, Range 7 East
- Sections 25 and 36, Township 3 North, Range 6 East
- Sections 30 and 31, Township 3 North, Range 7 East

The Torrance County Board of County Commissioners approved the Deer Canyon Preserve Master Plan in July 2002. This office issued a positive opinion for Phase I in August 2002 and for Phase II in August 2003.

The water supply documents submitted to this office consist of a Disclosure Statement, a Geohydrologic Investigation Report, Proposed Declaration of Protective Covenants, and a Plat Map.

The proposal was reviewed pursuant to the Supplemental Guidelines for the Torrance County Subdivision Regulations (Regulations), and the New Mexico Subdivision Act (Act). Based on the information provided, the water supply proposal is in substantial compliance with the requirements the Regulations and the Act. Accordingly, a positive opinion should be issued.

WATER DEMAND ANALYSIS AND WATER CONSERVATION

Under Item No. 17 of the Disclosure Statement the subdivider estimates the maximum annual water requirements for indoor and outdoor use as 0.30 acre-feet per lot and 69.9 acre-feet for the development. Item No 17 contains a detailed water demand analysis for indoor use of 0.26 acre-feet per annum based on an occupancy rate 2.7 persons per dwelling with water conserving plumbing fixtures. The annual outdoor demand of 0.04 acre-feet per lot is based on a total

irrigated area of 800 square feet and 12 gallons per day for one horse (3 horses per lot on 1/3 of the lots). Swimming pools are discouraged but if built must be covered to reduce evaporation. Conservation measures restrict the filling of pools with water from any and all water sources on the Preserve.

The Declaration of Protective Covenants (Covenants) and the Disclosure Statement conflict with regard to outdoor water use. Under Section B of the Covenants swimming pools are limited to 10,000 gallons in capacity if serviced by a well used by other Homesteads (lots) and pools with a capacity in excess of 10,000 gallons must be serviced by a separate well drilled and installed by the Homestead owner. Under Section R the total irrigated area is 900 square feet.

All lot owners are required to install a rainwater water harvesting system. The specific requirements for the system are not provided.

WATER AVAILABILITY ASSESSMENT

The proposed water supply for the development is shared 72-12-1 domestic wells. A shared well agreement is included in the proposal. The subdivider is proposing up to eight lots may be served by a shared well in lieu of five lots per well required in Section 4.4 of the Regulations.

The subdivider submitted a Geohydrologic Investigation Report (Report) in accordance with the requirements of Sections 5.4 and 5.6 of the Regulations. In general, the Report addresses the issues required by the Regulations and the Act with respect to the subdivider's ability to furnish water sufficient in quantity to fulfill the maximum annual water requirements of the subdivision, including water for indoor and outdoor domestic uses.

Four new test wells were drilled within Phase III. The depth of the wells ranged from 1,010 to 1,460 feet and depth to water ranged from 745 to 891 feet. Three of the wells were pump tested at flow rates of from 2 to 3 gpm. All wells showed very low yields and significant drawdown. The analytical model predicted the maximum drawdown within the subdivision after 70-years of pumping as 207 feet. Applying a safety factor of 20%, this results in a drawdown 248.5 feet. The water column at test well "A" was 369 feet. This represents a 67% reduction of the available water column.

The Report recommends that the wells be completed through the base of the Yeso aquifer and a minimum of 100 feet into the Abo Formation in order to provide a water column from 350 to 450 feet. The total depth of wells should be from 1,150 to 1,350 feet.

Section 4.1.b of the Regulations requires that where groundwater will be supplied from geologic formations where wells have been determined to produce at a rate of 2 gpm or less, or where available information suggest a likelihood of low yielding wells, in lieu of a community water system, individual or shared wells may be drilled by the developer, provided that it can be

demonstrated that production can be sustained at rates greater than 2 gpm and is adequate to meet the maximum annual water requirements of all parcels. The developer will drill, test, and equip all domestic wells within the subdivision. Item No 17 of the Disclosure Statement specifies that each well drilled within the subdivision will be pump tested and the results analyzed by a qualified hydrologist to determine the appropriate number of homes that can be served. Under Item No. 19 the lot owner is responsible for installing a booster pump, control mechanisms, and a 500-gallon storage tank.