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ENGINEERING GEOLOGISTS & HYDROGEOLOGISTS
RG #3740 EG #1135 HG#448

December 22, 2005

FILE:GF05:Dec:SimonReliability

Santa Barbara County
Environmental Health Services
225 Camino del Remedio
Santa Barbara, California 93110

Attn: Ms. Dana Solum

Re: *Water Well Testing Procedure*
Simon Well #1
15000 Calle Real (Highway 101)
Gaviota, California
Santa Barbara County HCS Permit #0101890
Assessor's Parcel Number 081-150-028

Dear Ms. Solum:

As a followup to our conversation yesterday regarding the above described well project, I am presenting this brief summary letter to provide you with the information you requested. My company provided hydrologic consulting services to Mr. Simon in late 2000 and early 2001 in the siting, construction supervision, design, and testing of his new water well. As outlined in my Water Well Completion Report dated February 5, 2001, the new well was pumped at a constant flow rate of 12 gallons per minute (gpm) for 24 hours.

It is my understanding that the newly revised Santa Barbara County Ordinance overseeing Well Construction and Testing Standards (Section 34B-18) requires that a Hydrogeologist (or other licensed Professional) provide a hydrologic analysis of the well if the drawdown in the well bore exceeds more than one foot in the last four hours of testing (for wells that produce in the 10 to 50 gpm range).

In summary, the Simon Well #1 penetrates the well cemented, fractured sandstone of the Vaqueros Formation. This formation is known elsewhere along the South Coast of Santa Barbara County to generally be a reliable source of groundwater for most wells that penetrate a reasonable distance (depth) into the water saturated zone of the formation. The Simon Well was completed to a depth of 640 feet which is considered quite deep for this area. This deep completion depth was used in order to provide increased reliability from the well. Theoretical projection of the time-drawdown curve as shown on Figure 2 (see HYDROLOGIC CALCULATION GRAPH within my report) shows that the water levels will stay well above the top of the perforated interval of the well (200 feet) for many weeks at a time if the well were to be pumped on a continuous (24 hours per day, seven days per week) basis. If you project this drawdown curve to the total depth of the well (640 feet), the pumping levels would not intercept the bottom of the well for a very long period of time (many years). The total annual domestic and landscape water demand for the Simon property has not as yet been calculated. Review of Santa Barbara County data (Planning and Development Department) suggests that a planning water use number of

approximately one to three acre-feet of water per year (afy) can be expected, depending on final use and application of water conservation techniques. Three afy is equivalent to a continuous long term flow rate of approximately 1.85 gpm. Theoretical projection of a long term pumping curve at this flow rate to the HYDROLOGIC CALCULATION GRAPH would show that the pumping levels would be nearly flat and most likely meet the "less than one foot of drawdown during the last four hours of pumping" requirement.

Based on review of this data, I conclude that the Simon Well #1 meets the criteria and intent of the hydrologic analysis outlined within the Source Testing for Domestic Water Systems (Section 34B-18) of the Ordinance. The well can therefore be "reasonably expected to continue for the foreseeable future with the projected water demand" for this property under current hydrologic conditions.

I trust this brief summary report provides you with the hydrologic information you requested. I would be pleased to meet with Santa Barbara County, Environmental Health Services staff in the future to provide a "seminar" on well drilling, proper placement of the required sanitary seal, and analysis of hydrologic testing data. It is difficult to prepare a set of "Source Yield Criteria" that meets the requirements of providing reasonable assurance of reliability that is not cost prohibitive or too restrictive. I think the new testing requirements are generally reasonable and meet the intent of the responsibility put upon your Department by public officials.

If you have any questions regarding this well or other hydrologic matters, please feel free to contact me.

Sincerely,

Mr. Rick Hoffman
Certified Engineering Geologist & Hydrogeologist
State of California
RG #3740 EG #1135 HG #448

cc: Mr. Dick Simon, property owner