18 January 2008 Job #2007023-G-MT

Pacific Crest Engineering
Attention: Michael D. Kleames
444 Airport Boulevard, Suite 106
Watsonville, California 95076

Re: Geology report deficiencies
Proposed Paraiso Hot Springs Spa Resort
34358 Paraiso Springs Road
Soledad, California

Dear Mr. Kleames:

The purpose of this letter is to evaluate whether the "Geologic and Soil Engineering Feasibility Report for Paraiso Hot Springs Resort, Monterey County, California, Project LSW-0337-01" prepared by LandSet Engineers Inc. on December 2004, adequately addresses whether the above-listed project would exposed expose people or structures to major geologic hazards or would damage geological resources. Based on CEQA criteria a project would generally be considered to have a significant adverse impact on the environment if it would:

1. be located in an active earthquake fault zone or a State of California Earthquake Fault Study Zone (previously called an Alquist-Priolo Special Studies Zone);

2. be located in areas subject to secondary seismic hazards (such as liquefaction or lateral spreading), static hazards (such as excessively steep slopes or areas subject to landslides) or subsurface geologic hazards (such as soils with high shrink/swell potentials);

3. be located in a Mineral Resources Zone or result in the loss of availability of important mineral resources; or

4. result in fundamental changes to the terrestrial environment (such as the damage or destruction of unique geologic features).

Unfortunately it appears that the project geologist of record, Brian Papurello of LandSet Engineers, Inc. [LEI], did not closely coordinate his studies with the construction of the "Vesting Tentative Map" prepared by project civil engineer of record, David Michael Von Rueden of CH2M Hill [CH] (2005). It also appears that LEI has not adequately characterized the landslide hazards and attendant risks to the proposed development, although we hasten to add that it is very

difficult to arrive at that conclusion with any reasonable precision, considering the apparent lack of coordination between the project geologist and civil engineer of record.

The documents reviewed for this project are as follows:

"Geologic and Soil Engineering Feasibility Report - Paraiso Hot Springs Resort - Paraiso Springs Road - Soledad/Greenfield area of Monterey County, California" by LandSet Engineers, Inc., dated 31 December 2004.

"Cover Sheet" and "Vesting Tentative Map" by CH2M Hill, Sheets CT1.1 through CT1.5, dated 15 July 2005. As a sidebar note, it should be noted that professional stamp expiration date of 31 March 2004 used by the project civil engineer of record, David Michael Von Rueden, predates the date of the cited sheets.

"Note 52 - Guidelines for preparing geologic reports for regional-scale environmental and resource management planning" by California Department of Conservation - Division of Mines and Geology, 2001.

"CDMG Note Number 44 - Recommended guidelines for preparing engineering geologic reports" by California Department of Conservation - Division of Mines and Geology, 1975.

We also performed a site reconnaissance of the property with Mr. Michael Kleames of Pacific Crest Engineering on 13 December 2007.

MAPPING DEFICIENCIES

The "Site Geologic Map" (Sheet 1) and "Relative Geologic Hazards Map" (Sheet 3) accompanying the LEI geology report (2004) plot geological information and interpreted hazard potential information upon base maps that do not reflect the proposed development. This makes it extremely difficult for the reviewer to assess whether the proposed development would expose people or structures to major geologic hazards. That is why CDMG Note Number 44 (1975) recommends in item number I.B. that for "sub-divisions, the base map should be the same as that to be used for the tentative map or grading plans."

We recommend that LEI plot their geological and hazards information upon the most current sub-division and grading maps and analyze the potential impacts according to the criteria referenced above. Once this information and analysis is provided, we can then adequately review whether or not the geology report and proposed sub-division fulfill the geological requirements dictated by CEQA.

GEOLOGICAL HAZARDS DEFICIENCIES

The geology investigation and report by LEI does not appear to have adequately characterized the debris flow and debris torrent hazard and the attendant risks to the proposed development. We

noted the following discrepancies during our site reconnaissance and review of the LEI geology report:

1. There appears to be internal descriptive inconsistencies on the boring logs accompanying the LEI report. The composition of the gravels encountered while drilling was described on some logs and left out on others. The importance of this deficiency is discussed below.

2. There is no discussion of the hummocky appearance of the valley floor that we observed in the vicinity of the proposed development in the LEI report. It is important for the project geologist to perform a DETAILED geomorphic analysis of the valley floor as part of the debris flow hazard and risk assessment.

3. There is no discussion or mapping of the scattered angular cobbles and boulders of schist and granitic rock "floating" in sandy alluvial matrix that we observed in the vicinity of the proposed developments. As noted above, some of the boring logs also omitted clast composition. During our site reconnaissance we noted that there were clusters of the schist and granitic boulders and cobbles too. The presence of the angular boulders and cobbles in the sandy matrix is indicative of a long transport distance from the bedrock outcrops upstream, as well as rapid deposition in a high velocity hydraulic environment (like debris flows or debris torrents).

4. The mapping of landslide deposits and scars appears to be schematic. In particular, more detailed mapping of debris flow scars, as well as the run-out areas for the debris flow deposits, may lead to a better understanding the prospective hazards and risks posed to the proposed developments with respect to landsliding.

5. The only type of sub-surface work performed by the project geologist of record was small-diameter borings. This type of sub-surface investigative method is typically inadequate for addressing the extent and depths of burial for past flooding and debris flow events. Careful logging of the cleaned sidewalls of backhoe or excavator test pits and trenches is the investigative method that is typically pursued by geologists when assessing the debris flow deposit areas and debris torrent areas. It is difficult to near impossible to identify the complete geological record of the near surface deposits in a small-diameter boring, particularly in absence of continuous sampling or soil coring.

6. The project geologist of record does cite a debris flow event in 1995 with burial depth of 0.5 to 1.0 foot (page 13 of the LEI report), but did not map the extent of that specific event on the geological map, nor did they cite the evidence upon which that interpretation was made. Additionally, there is no mention in their report of reviews by their firm of the extensive historical records that exist for the property, which may mention other past flooding and debris flow events.

Based on the above-listed information, we cannot adequately assess if the CEQA criteria for this project would generally be considered to have a significant adverse impact on the environment, because the project geologist of record has not adequately characterized if the proposed development is located in areas subject to static hazards, such as landslides. Additionally, it may

be possible that after adequately assessing the landslide hazard the project geologist of record may recommend mitigation schemes that might result in fundamental changes to the terrestrial environment such as large excavated pond areas, debris flow impact walls or earthen debris flow impact berms.

On another note, it is also important for the debris flow hazards and risks to be adequately characterized with respect to the proposed drainage improvements for the project. This will require that the project geologist and civil engineer of record work closely together to ascertain the rheology, velocity, run-out distances and depths of future prospective debris flows and debris torrents so that the proposed drainage improvements will not clog and fail during large storms in the future.

We therefore recommend that the project geologist of record pursue a more robust program of mapping and subsurface work in order to adequately address the prospective hazards and risks posed to the proposed developments by debris flows.

CONCLUSIONS

Based on the review of the combination of the geology report by LEI (2204) and the sub-division map prepared by CH (2005), we cannot arrive at a firm conclusion that the report has fully analyzed the potential project impacts as defined by CEQA with respect to the geological hazards. As such, we recommend that the project geologist of record pursue a more robust landslide investigation program as outlined above and closely coordinate the results of the that program with the project civil engineer of record.

The applicant and their project geologist of record may want to discuss their approach to any proposed supplemental work with our firm prior to the execution of said work, in order to expedite their investigation and our review, and avoid the pitfall of any further perceived deficiencies on our part.

If you have any questions or comments regarding this letter, please contact us at your earliest convenience.

Sincerely

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