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Niki Cutler, AICP,
Principal Planner
Rolling Hills Estates City Hall
4045 Palos Verdes Drive North
Rolling Hills Estates, CA

Subject: Comments on Draft Environmental Impact Report for the
Proposed Chandler Ranch/Rolling Hills Country Club Project

Dear Ms. Cutler:

I am writing on behalf of the Palos Verdes Peninsula Horseman's Association with comments on the April 2009 Draft Environmental Impact Report for the Proposed Chandler Ranch/Rolling Hills Country Club Project ("Draft EIR"), State Clearinghouse Number 2008011027. The Draft EIR is deficient in its analysis of potential for the proposed project to deplete groundwater supplies and in its analysis of potential dangers related to subsurface contamination at the project site.

I am an environmental geologist with over 17 years of experience evaluating contamination in soil and groundwater. I am a Vice President of Haley & Aldrich, an environmental consulting firm. I am a Professional Geologist (CA PG #7212), licensed by the California Board for Geologists and Geophysicists. I received a Ph.D. in Geological Sciences from the University of Washington in 1990. I received a Masters of Science Degree in Geological Sciences from the University of Washington in 1986. I received a Bachelor's Degree in Earth Sciences from Dartmouth College in 1981. I am a member of the Editorial Board of the journal, Environmental Forensics, a quarterly peer-reviewed scientific journal of national and international circulation. In this role, I evaluate the work of others through regular peer-review of manuscripts submitted for publication to the journal. I am the author and coauthor of scientific publications related to geology and groundwater, including the recently published forensic review articles in Environmental Science & Technology (U.K. Edition) Special Issue dedicated to Environmental Forensics.

Groundwater Depletion

There can be little debate that here in California, water is a precious, but scarce, resource. For decades, our State and local governments have been led the nation in efforts to preserve both the quality and the quantity of our water resources. The resulting regulatory framework is clear: the water resources of the State must be vigorously protected. In this era of global warming, these efforts take on even greater importance as climate models predict a diminishment of surface water resources in California due, in part, to predicted changes in both the amount and timing of the Sierra snowpack, thus in the amount of annual snowmelt that supplies so much of the water that we rely upon in California. Especially in light of the predicted decline in surface water resources due to global warming, existing *groundwater* resources are exceptionally valuable and this project will deplete groundwater supplies.

As noted in the Draft EIR, the project would have significant impact if it would “substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level...” The Draft EIR correctly identifies this issue as a significant impact. However, the proposed mitigation measure is inadequate because it does not insure that the impact will actually be mitigated. In Section 3.7.2 (Existing Conditions, page 3.7-11) the authors note that the 20-acre quarry pit has a capacity of 200 acre-feet and later in the section the report notes that filling in the quarry will reduce the amount of water that infiltrates into the groundwater (p. 3.7-33).

Importantly, the report acknowledges that the annual volume of water that percolates into the groundwater is unknown (p. 3.7-12). How can we have confidence in a proposed measure that promises to mitigate an impact of unknown magnitude. Indeed, the associated mitigation measure (MM HYD-9) provides no basis whatsoever for assessing whether the depletion of groundwater resources will be mitigated should the project be built. The mitigation measure simply calls for the applicant to investigate whether surface-applied water would infiltrate from the finished project surface into the aquifer used by the on-site well. Seemingly, the applicant will only need to show that one drop of surface water percolates into the soil and makes it to the groundwater, and that somehow proves that the unknown volume of water infiltrating from future “passive infiltration basins” (i.e. golf course water hazards) will equal the unknown volume of water currently recharging groundwater resources from the site. The illogic of this is obvious: the applicant does not know how much groundwater recharge is occurring now and the applicant will not know how much groundwater recharge would occur after the project is completed. How can any authoritative statement be made about whether or not this impact can be mitigated?

The applicant is obligated to mitigate the acknowledged impact to groundwater resources and it will require significant and careful studies of the pre-development and post-development infiltration capacity in order to satisfy this obligation.

Finally, even considering the inadequate mitigation measure (MM HYD-1) proposed in the Draft EIR, if the applicant carried out a truly careful study of “whether surface-applied water would infiltrate from the finished project surface into the aquifer used by the on-site well” I suspect that the finding would be negative, thus demonstrating that this impact will not be corrected by the proposed mitigation measure. Currently, the quarry serves as a centralized source of recharge. The proposed project would remove this source of recharge and make other changes to the topography of the site, all resulting in runoff from natural rainfall being distributed more widely across the site. This, in turn, allows significantly more water to be lost to storm water runoff and evapotranspiration. Based on my professional experience and judgment, I do not believe that the diminished and widely-distributed recharge from the proposed project would provide any measurable water to the underlying aquifer. In any case, it will require a lengthy and costly study to evaluate this question.

Subsurface Contamination

This proposed project entails developing a property that contains a waste landfill, and abandoned oil wells and oil-field sumps. It is a certainty that these activities left a legacy of

subsurface contamination. As proposed, the project does not envision removing or remediating the subsurface contamination, rather the applicant is simply content to build homes for people that may overlie the subsurface contamination. Considering the history of this site, the Draft EIR is cavalier in the manner that it addresses potential dangers posed to future occupants from this subsurface contamination. For example, the water supply for this project will include pumping groundwater from an on-site well. How much contamination of groundwater was caused by the landfill? This issue is poorly understood. Even more poorly understood is how much more impact to groundwater quality, if any, may be expected due to inherent changes in the hydrogeologic system after the project is completed and whether or not the groundwater to be used by the project may become contaminated, thus exposing occupants to hazardous chemicals in their water to be used for drinking, bathing, watering their lawns and irrigating the golf course.

Although the operator of the landfill has been required to monitor groundwater quality by the Regional Water Quality Control Board (RWQCB), this monitoring program was cursory and flawed. The monitoring program included a requirement to test groundwater from upgradient and downgradient of the landfill in hopes of detecting changes in groundwater quality due to contamination leaching from the landfill. Amazingly, a review of RWQCB files for the landfill, demonstrates that for many years the landfill operator did not even know which way the groundwater flows (Justice and Associates, February 2000, Technical Report: Monitoring for Groundwater Impacts, p. 2: northwesterly groundwater flow direction previously had been reported but now Justice says that was a mistake and the flow direction is northeast). Then, just a few months later, the landfill operator reported to the RWQCB that they were wrong again and the real groundwater flow direction is to the east (Justice and Associates, August 2000, Technical Report: Revised Groundwater Monitoring Program). Obviously, it is impossible to design an upgradient-downgradient monitoring network if one does not know which direction is upgradient and which direction is downgradient. The RWQCB acknowledged this deficiency in its Waste Discharge Requirements for Chandler's Landfill, dated 2000:

“However, because the background well is located at the side gradient of the landfill and the two detection wells are not screened in the shallowest groundwater, the monitoring system needs to be upgraded to ensure that it can detect water quality changes if pollutants are released from the landfill to groundwater.” (RWQCB Order No. 2000-29, paragraph 8)

The “upgraded” monitoring system included downgradient wells 400-ft and 1,000-ft from the waste. It would take 1 to 3 years (or more) for groundwater to migrate from the landfill to these monitoring wells: hardly sufficient for providing early warning of a release of contamination.

This issue is not considered seriously in the Draft EIR, perhaps because Chandler's Landfill is described as an “inert” landfill: accepting only construction debris and other non-hazardous wastes. Myriad experiences around the country have sadly proven that bad things can end up in “inert” landfills. The lead-contaminated soil episode at Chandler's Landfill illustrates how this can happen. In the year 1999, Chandler's Landfill accepted over 1,200 tons of soil thought to be clean but that turned out to be heavily contaminated with lead. This violation

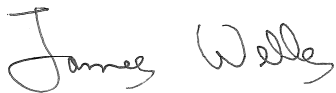
was not detected until after the soil had already been dumped into the landfill. As much of this soil as could be found was subsequently removed from Chandler's landfill and re-disposed at an appropriate Class II landfill. However, this episode illustrates that so-called "inert" landfills are not necessarily benign in terms of the presence of hazardous chemicals. The fact that lead has been detected in groundwater near the landfill at concentrations at least as high as 12 ppb (well above the California Public Health Goal of 2 ppb) may be related to this or similar episodes in the past of hazardous materials being dumped into the landfill. Even "inert" materials that are allowable in Chandler's Landfill are not necessarily inert and not necessarily environmentally benign. It is allowable to dump asphalt into Chandler's Landfill. Environmentally, asphalt is a troubling material. We obviously use asphalt on our roads and highways, but a spill from an asphalt refinery is treated as seriously as a spill of any other petroleum product. Indeed, if it were not for the petroleum exclusion, some asphalts would need to be classified as hazardous wastes due to the abundance of polynuclear aromatic hydrocarbons (PAHs). Some PAHs are known or suspected carcinogens. Thus it was entirely acceptable to dump a material into the Chandler's Landfill that contains known or suspected carcinogens. This material is still in the landfill: the applicant is proposing to leave it in place and homes and yards and backyard gardens may be built over this material.

The RWQCB established Water Quality Protection Standards (WQPS) for the landfill. If concentrations exceeded the WQPS, that was to be considered evidence of a release of contamination from the landfill. In fact, groundwater sampled as part of the landfill's monitoring program have routinely exceeded their respective WQPS values for total dissolved solids, sulfate and chloride. Thus, using the RWQCB's standards, there is ample evidence that the landfill has, in fact, contaminated groundwater at this site.

A number of residential developments at old California oil fields have experienced significant problems with soil and soil vapor contamination seeping into homes. The Draft EIR recognizes the need for re-abandoning the old oil wells at the site. In addition to properly re-abandoning the old oil wells, it would be prudent to conduct a thorough investigation of potential soil contamination at the well-heads and the former sumps. Former sumps are frequently highly contaminated with residual petroleum hydrocarbons as well as a broad suite of other contaminants such as heavy metals from drilling mud used for drilling the oil wells. This situation can probably be mitigated, but the required mitigation is not adequately addressed in the Draft EIR. Mitigation will require a more thorough subsurface investigation to identify the nature and extent of subsurface contamination, and quite possibly soil and/or groundwater remediation.

Thank you for the opportunity to provide comments on the Draft EIR for the Proposed Chandler Ranch/Rolling Hills Country Club Project.

Sincerely yours,



James T. Wells, PhD, PG