

APPENDIX P
*Domestic Water Well
Feasibility Analysis
(LACO 2009)*



December 23, 2009

7076.01

Humboldt County Community Development Services
Planning Division
3015 H Street
Eureka, California 95501

Attention: Michael E. Wheeler

Subject: Moss Minor Subdivision – Domestic Water Well Feasibility

Dear Mr. Wheeler:

The project site is located in an area of uplifted Pleistocene marine terrace surfaces that slope gently to the southwest. A well-defined, moderately-steep grade break delineates the upper terrace surface from the lower terrace surface within the project site boundaries. Topographically, the upper terrace surface is situated at an elevation of about 600 feet above mean sea level (MSL), and the lower terrace surface at an elevation of about 400 feet above MSL. A prominent former sea stack composed of coherent Franciscan Complex bedrock is exposed along the back (upslope) edge of the lower terrace surface. Underlying the terrace deposits throughout the project area is Franciscan Complex Central Belt mélangé composed of well metasandstone and conglomeratic bedrock.

The total thickness of the marine terrace deposits overlying Franciscan bedrock within the project area is unknown. However, based on anecdotal evidence from water wells drilled elsewhere in the Westhaven area, it is assumed that the thickness of the terrace sands underlying the upper terrace surface is much greater than the thickness of the terrace sands underlying the lower terrace surface. A water well recently drilled near the end of Fox Farm Road at an elevation of approximately 600 feet above MSL encountered in excess of 75 feet of terrace sands and gravels, and is currently producing several gallons per minute according to the owner. Domestic wells located off of Ox Road in south Westhaven at a similar elevation are known to be in excess of 100 feet deep and also produce adequate quantities of flow.

Based on the local geology and anecdotal evidence, it appears feasible that a deep domestic well, on the order of 75 feet to 100 feet deep, could be successfully drilled at the upper elevations of the project site. A well of this depth would be effectively drawing from the deep water bearing zone perched on the underlying bedrock. The potential for aquifer drawdown due

to pumping to affect the surface flows within Deadman Creek and North Fork Luffenholtz Creek, in our opinion, would likely be low. However, this may only be verified by installing multiple test wells and observation wells to monitor groundwater drawdown and surface stream flow during an extended period pumping test.

Sincerely,
LACO Associates



Giovanni A. Vadurro
PG 7437, Exp. 5/31/11



RSR:tgc