



California Regional Water Quality Control Board
Lahontan Region



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March 1, 2010

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EAGLE LAKE RANGER DISTRICT SEWAGE POND SHALLOW HYDROGEOLOGIC INVESTIGATION DRAFT REPORT, U.S. FOREST SERVICE – LASSEN NATIONAL FOREST, EAGLE LAKE WASTEWATER FACILITY, LASSEN COUNTY, W DID NO. 6A188505700

On December 21, 2009, Water Board staff received the *Eagle Lake Ranger District Sewage Pond Shallow Hydrogeologic Investigation Draft Report* (Draft Report) prepared by Cascade Earth Sciences. The Draft Report provided the results of initial soil and groundwater investigation activities conducted at the USFS's Eagle Lake Wastewater Facility. Water Board staff has completed its review and has the following comments regarding the Draft Report.

1. Page 17 of the *Revised Soil and Groundwater Investigation Work Plan* (Revised Work Plan) dated August 20, 2009, states the following:

"For the shallow investigation, six holes will be bored in the soil to the top of bedrock."

The Scope of Investigation document submitted to Water Board staff by USFS staff on October 7, 2009 also specifies that six borings will be completed to the top of bedrock.

The Draft Report states that Cascade Earth Sciences was contracted to

"Drill six boreholes through soil to bedrock or ten foot depth."

Soil boring logs included in the Draft Report do not indicate that borings for MW-1, MW-2, MW-3, or MW-4 were completed to the top of bedrock as proposed in the August 20, 2009 Revised Work Plan or the Scope of Investigation submitted on October 7, 2009. All soil boring logs indicate that drilling was terminated, and lithology descriptions do not indicate that bedrock or refusal was encountered at any location. Soil boring logs were not included for boring numbers 5 and 6. The

California Environmental Protection Agency

Draft Report does not provide any explanation regarding the reason(s) for the differing soil bore and monitoring well depths. **The failure to bore or drill to bedrock as proposed represents a significant deviation from the August 20, 2009 Revised Work Plan and Scope of Investigation submitted on October 7, 2009.**

2. Groundwater was only encountered at MW-4, which has a screened interval of 14-19 feet below ground surface (ft-bgs). Groundwater was not encountered at MW-1, MW-2, or MW-3, all of which are screened at depths below ground surface different than MW-4. MW-1, MW-2, and MW-3 are screened at intervals of 7-10 ft-bgs, 5-8 ft-bgs, and 7-10 ft-bgs, respectively. The Draft Report does not provide any explanation for the differing screened interval depths nor is there any information regarding the actual elevation range of the screened intervals.
3. Groundwater sampling results for MW-4 show an average concentration of total coliform of 620,000 colony forming units per 100 mL, average nitrate (as N) concentration of 5.1 mg/L, and average chloride concentration of 230 mg/L. These groundwater sampling results do not rule out the possibility of groundwater contamination due to leakage from the wastewater ponds. Water Board staff are hopeful that the spring 2010 sampling event will provide more definitive results.
4. The explanation for the presence of coliform bacteria in monitoring well MW-4 (page 4 of the Draft Report) strongly indicates that water used in the well-installation process was the source of the coliform bacteria. (***“Water containing coliform bacteria from the well installation may not have had time to disperse due to the clay content of the well.”***) The Draft Report does not identify the source of water used in the well-installation process nor the basis for the statement.

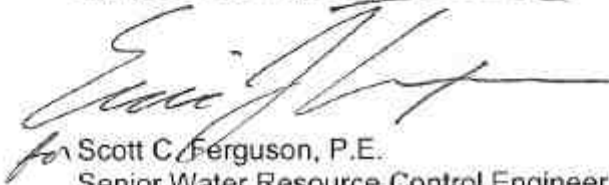
Next Steps

Water Board staff requests that USFS staff provide the following information by **March 22, 2010**:

- A. USFS staff's rationale for failing to complete the six soil borings to the top of bedrock, as proposed in the August 20, 2009 Revised Work Plan and Scope of Investigation submitted on October 7, 2009. If USFS staff fails to provide an acceptable rationale for this significant deviation, Water Board staff anticipates requiring the USFS to complete the soil borings and monitoring well installation as proposed in the August 20, 2009 Revised Work Plan. Such work would begin as soon as site conditions allowed access.
- B. USFS staff's rationale/explanation for the differing monitoring well screened interval depths and differing soil boring and monitoring well depths.

- C. The source of water used during the monitoring well installation process. The basis for the Cascade Earth Sciences' statement indicating that the water used in the well-installation process was likely the source of the coliform detected in MW-4. The rationale for allowing the use of this water source if it was known to be or should have been suspected of being contaminated with coliform bacteria, as strongly indicated by the statement in the Draft Report.

Please contact Taylor Zentner at (530) 542-5469, or me at (530) 542-5432, if you have any questions regarding these matters.



for Scott C. Ferguson, P.E.
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