

John Young

From: David E. Broxton [broxton@lanl.gov]
Sent: Monday, December 06, 2004 10:58 AM
To: john_young@nmenv.state.nm.us
Cc: Thomas J. Whitacre; mjohansen@doeal.gov; katzman@lanl.gov; vaniman@lanl.gov; Mark Everett; John McCann; spearson@lanl.gov; mdale@lanl.gov
Subject: R-18 Well Design

LANL
TR-9
(Groundwater, HWP)

John,

Based on our conversation with you and Michael Dale 12/4/04, I am sending you the revised R-18 well design which incorporates interpretations based on the Schlumberger borehole geophysical data.

Based on Schlumberger's interpretation of the logs, fully saturated conditions for the regional zone of saturation begin at a depth of 1340 ft at R-18. This interpretation is based on the divergence of porosity measurements calculated from the density log (total porosity) and the neutron porosity log (water-filled porosity) above 1340 ft and their convergence below. Resistivity logs and the formation microimager (FMI) suggest a possible clay-rich confining layer was penetrated from approximately 1337 to 1340 ft depth. Tighter conditions apparently extend to 1348 ft depth. Confined conditions are consistent with a piezometric surface measured between 1285 and 1288 ft depth and lack of full saturation above 1340 ft.

Schlumberger identified the zone between 1350 and 1370 ft as a favorable screen location because of higher porosities and larger pore spaces based on the CMR log. Schlumberger noted that porosity generally increases with depth to the bottom of the borehole. Based on the borehole geophysical information, we modified the well design so that the screen interval extends from 1358 to 1381 ft and the sand pack from 1348 to 1386 ft.

We appreciate you and Michael speaking with us over the weekend to finalize the well design. Well construction/backfilling began Saturday and should be completed by 12/8. Please call me or Tom Whitacre if you have any questions about this well.

Thanks,

David Broxton

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David E. Broxton

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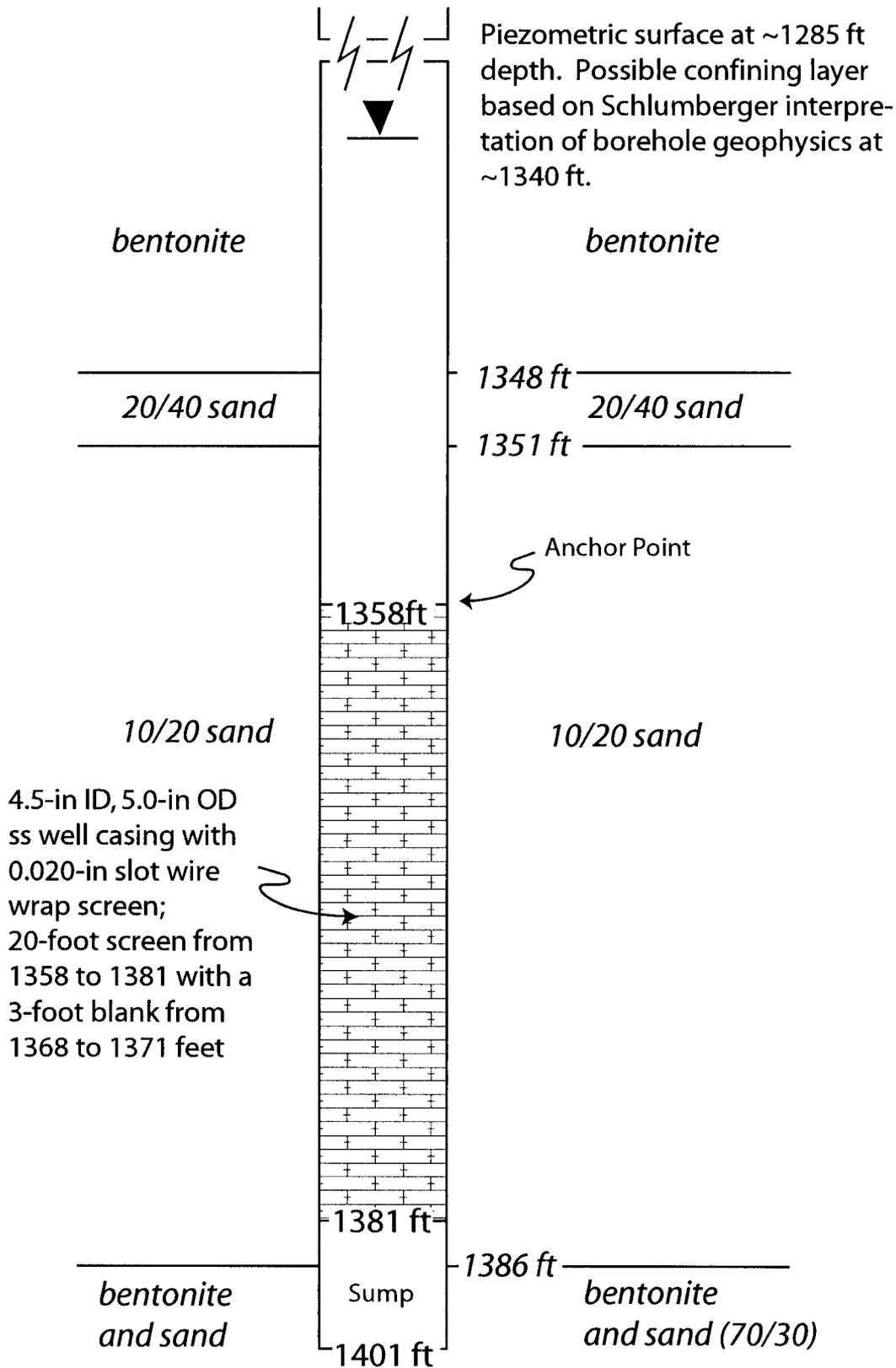
12/6/2004

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R-18 Well Design



Drawing Not To Scale

1440 ft = Borehole TD

12/4/04