



# United States Department of the Interior

## GEOLOGICAL SURVEY

Water Resources Division  
P.O. Box 188  
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May 7, 1982

### Memorandum

To: John Mink, Project Coordinator, Northern Guam Lens Study  
From: Gregg N. Ikehara, Hydrologist, U.S. Geological Survey  
Subject: PUAG Well Y-7, Yigo

The pilot hole for Yigo well Y-7 had reportedly been drilled to a depth of 475 feet as of May 5, 1982. The driller reported that severe sloughing of the borehole wall from about 420 feet was squeezing in on the drillstem. Furthermore, there had been no circulation from 300 feet, so cuttings were accumulating on the bottom. He decided to withdraw from the hole to determine what the situation was.

On May 6, 1982, Rao, John Worlund and I visited the well to determine whether or not parabasal conditions were present. The determination hinged largely on the elevation of the water table and hence, an accurate reference marker. The elevation at Y-7 was taken from Y-3, which had been under some scrutiny from previous measurements. Dan Swavely of Tenorio and Associates confirmed the validity of the survey at Y-3.

The measuring point elevation was determined to be 411.95 feet amsl. Depth to the water by steel tape was 407.70 feet. The resultant head is 4.25 feet. The well was sounded to 427 feet. Caliper, gamma, and electric logs were taken.

Although the steel tape measurement was based on a poor cut, the water level was verified by the electric log. The USGS electric probe could not reach the water.

The low head indicates basal conditions exist at the Yigo Elementary School locality. This data would tend to shadow the feasibility of a high-capacity well at this site. It is still a possibility although not likely.

The existing condition of the well provides enough leeway to run a normal capacity pump test. If sloughing of the wall continues the well will have to be redrilled or reamed to 10 inches before the pump test. If the preliminary pump test shows positive results, the well can be reamed, deepened and developed to allow either a higher capacity-larger diameter pump for testing or a normal 200 gpm pump for production.

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If the stability of the well is a problem, grouting on top of sand or double casing are alternatives. Some screening procedures would probably be necessary to optimize the production.

*Gregg Ikehara*  
*by cw*

cc: ✓ Chuck Huxel, USGS, Honolulu, Hawaii  
John Worlund, GEPA