

**INSTALLATION OF GROUNDWATER
MONITORING EQUIPMENT
IN DESIGNATED WELLS
IN THE PLATEAU PLANNING REGION**

Prepared for
Plateau Regional Water Planning Group

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The Texas Water Development Board provided funding, through the Regional Water Planning process, for the purchase and installation of continuous-reading water-level monitor equipment in wells in the Plateau Region. The objective was to equip six wells with water-level recorders: 2 in Bandera County, 2 in Kerr County, 1 in Kinney County, and 1 in Val Verde County. Sufficient savings were accomplished when ordering the equipment to allow for the purchase of one additional set of equipment.

Three water-level data logger manufacturers were initially contacted for pricing of the needed equipment. Stevens Water Monitoring Systems, Inc., which markets the Greenspan Technologies Ltd. water level pressure sensors, presented the lowest bid with additional service for installation of equipment from a local representative. Their model PS 310 transducer was used, which is a capacitance based submersible ceramic pressure/temperature sensor. Each unit was custom made with appropriate lengths of cable depending on the respective well's water-level depth and anticipated decline. The reported accuracy of this unit is 0.02% of range of 100 feet. Most of the data loggers were programmed to record water levels every 3 hours.

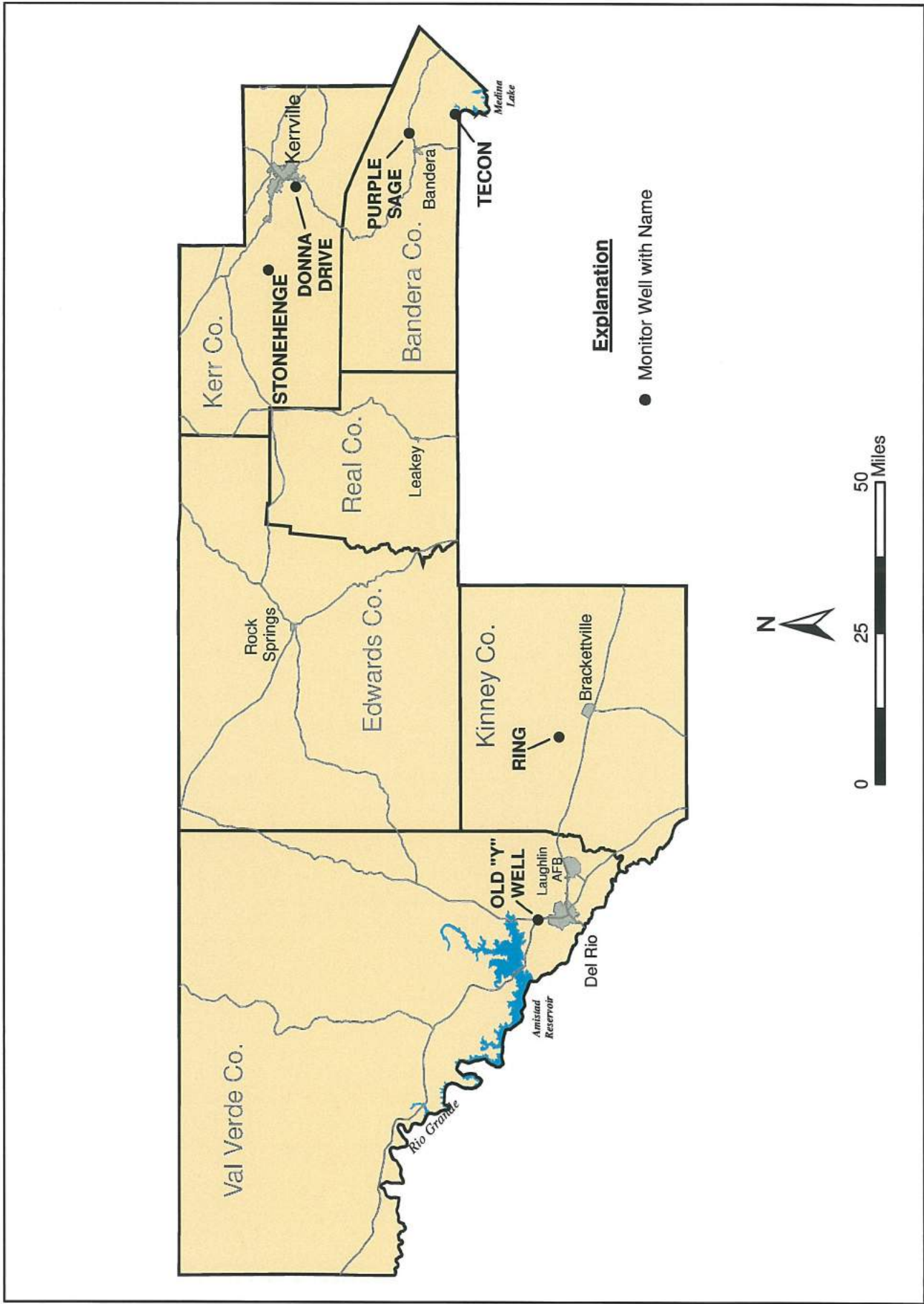
LBG-Guyton staff worked cooperatively with the Bandera County River Authority and Groundwater District, Headwaters Groundwater Conservation District in Kerr County, Kinney County Groundwater Conservation District, and the Water/Wastewater Department of the City of Del Rio in Val Verde County. Together, wells were identified, equipment was installed, and personnel were trained. Following installation of the monitoring equipment, these entities became responsible for upkeep and data downloading. The following wells were selected in each respective county and their locations are shown in Figures 1:

COUNTY	WELL NAME	STATE WELL NO.	LATITUDE	LONGITUDE	DEPTH (FEET)	AQUIFER
BANDERA	Purple Sage		29 44.651	99 01.831	400+	Middle Trinity
BANDERA	Tecon		29 38.107	98 59.137	540	Middle Trinity
KERR	Donna Drive	56-63-916	30 00.741	99 09.592	440	Middle Trinity
KERR	Stonehenge	56-62-414	30 04.600	99 21.518	560	Middle Trinity
KINNEY	Ring		29 23.243	100 28.408	678	Edwards
VAL VERDE	Old "Y"		29 26.241	100 54.578	1,000	Edwards

A seventh set of monitoring equipment was installed in a second well in Kinney County. However, this instrumentation became non-functioning and was returned to the manufacture for repair. After the unit was returned, the Kinney County Groundwater Conservation District decided not to reinstall the equipment in that well. The District did not find another replacement well for monitoring during this planning effort, therefore the equipment was returned to the Texas Water Development Board.

As of the date of this report, the instruments in both of the Kerr County wells were not working and in need of repair. The Val Verde County instrument had to be repaired and is to be reinstalled in the near future. Both of the Bandera County instruments and the Kinney County instrument are currently operational.

In general, these systems did not perform well. Some of the units appear to have significant drift with time. Three of the units quit working and were sent back to the manufacturer for repairs. Greenspan manufactures their equipment in Australia, which generally caused significant delays in receiving orders or getting repaired malfunctioning equipment returned.



Explanation

- Monitor Well with Name



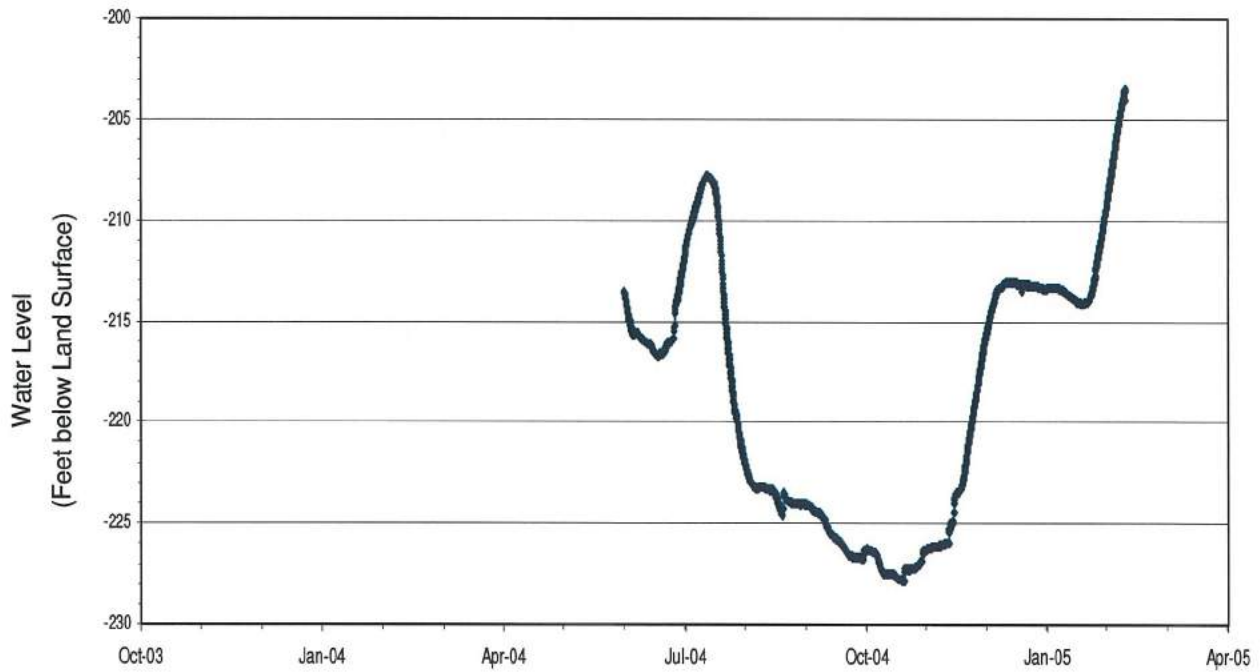
MONITOR WELL LOCATIONS IN THE PLATEAU REGION

FIGURE 1





**PURPLE SAGE WELL
(Bandera County)**

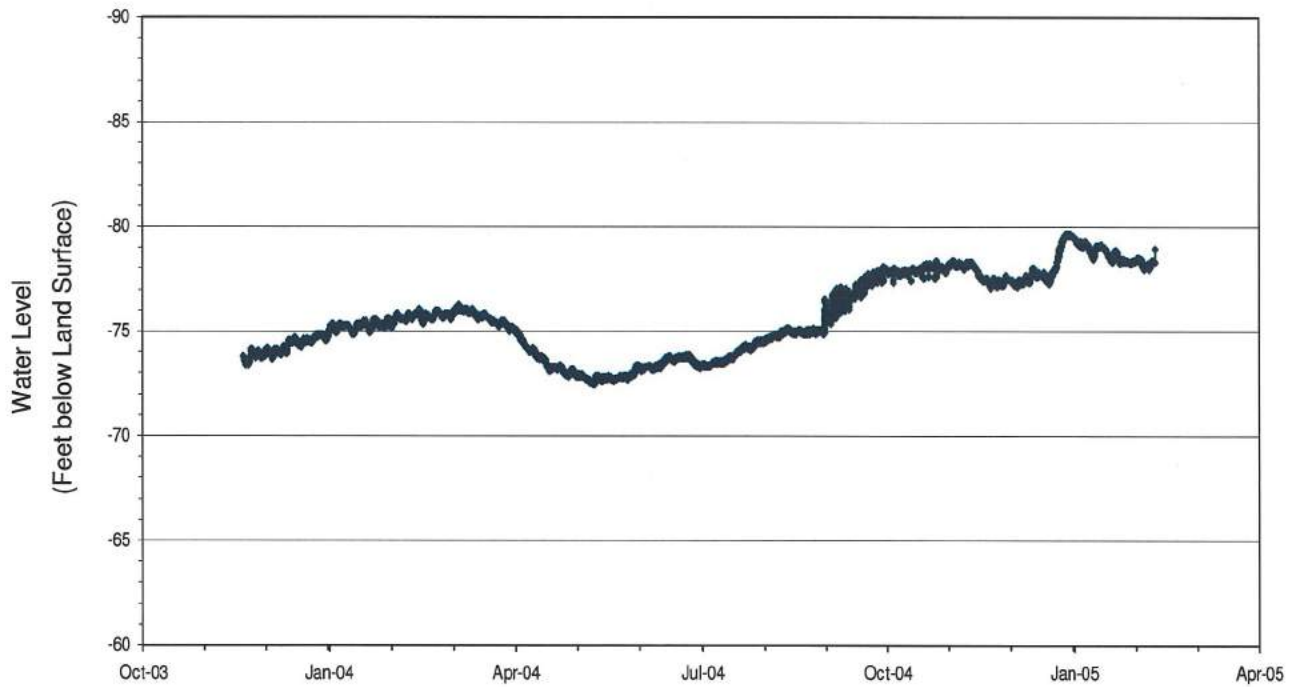


PURPLE SAGE WELL HYDROGRAPH





**TECON WELL
(Bandera County)**

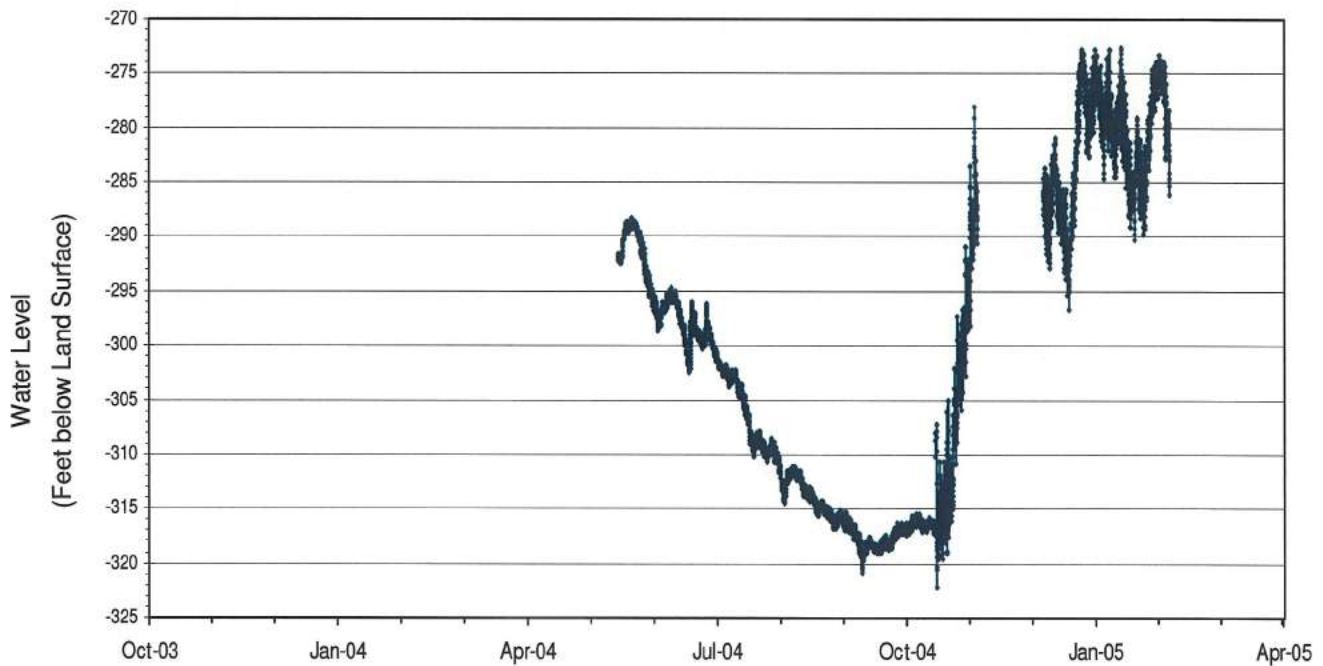


TECON WELL HYDROGRAPH





DONNA DRIVE WELL (56-63-916)
(Kerr County)

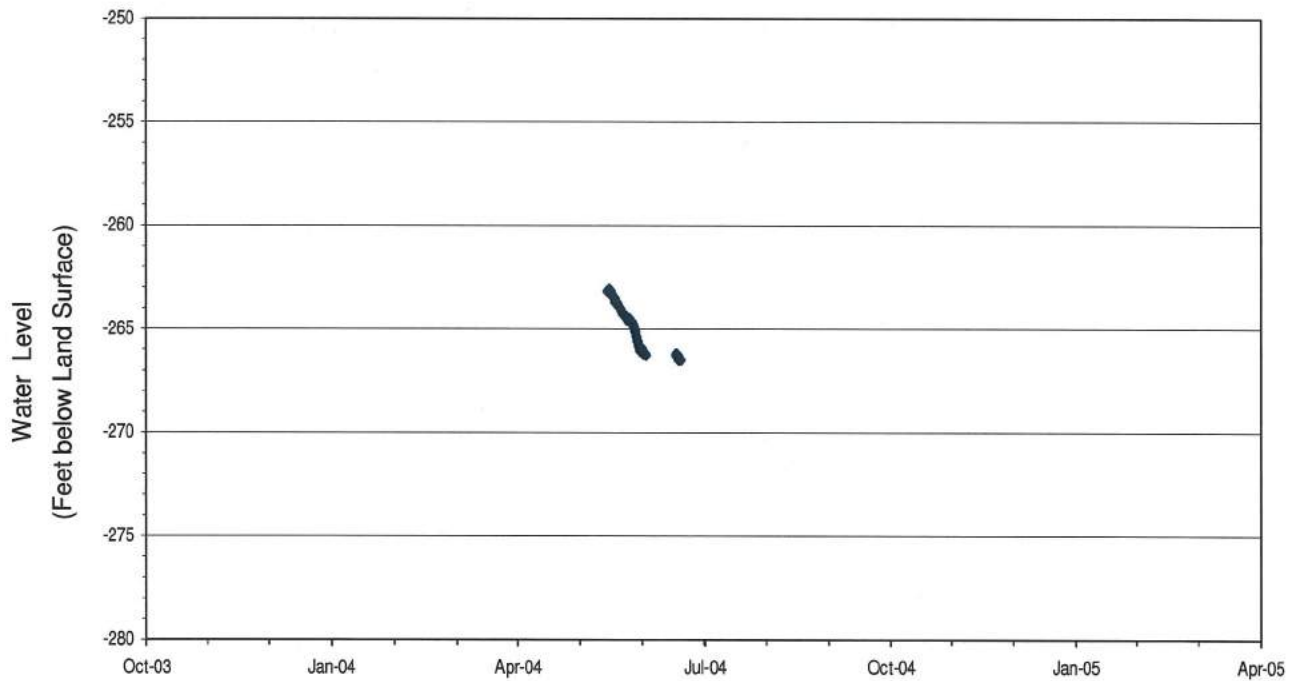


DONNA DRIVE WELL HYDROGRAPH





**STONEHENGE WELL (56-63-414)
(Kerr County)**

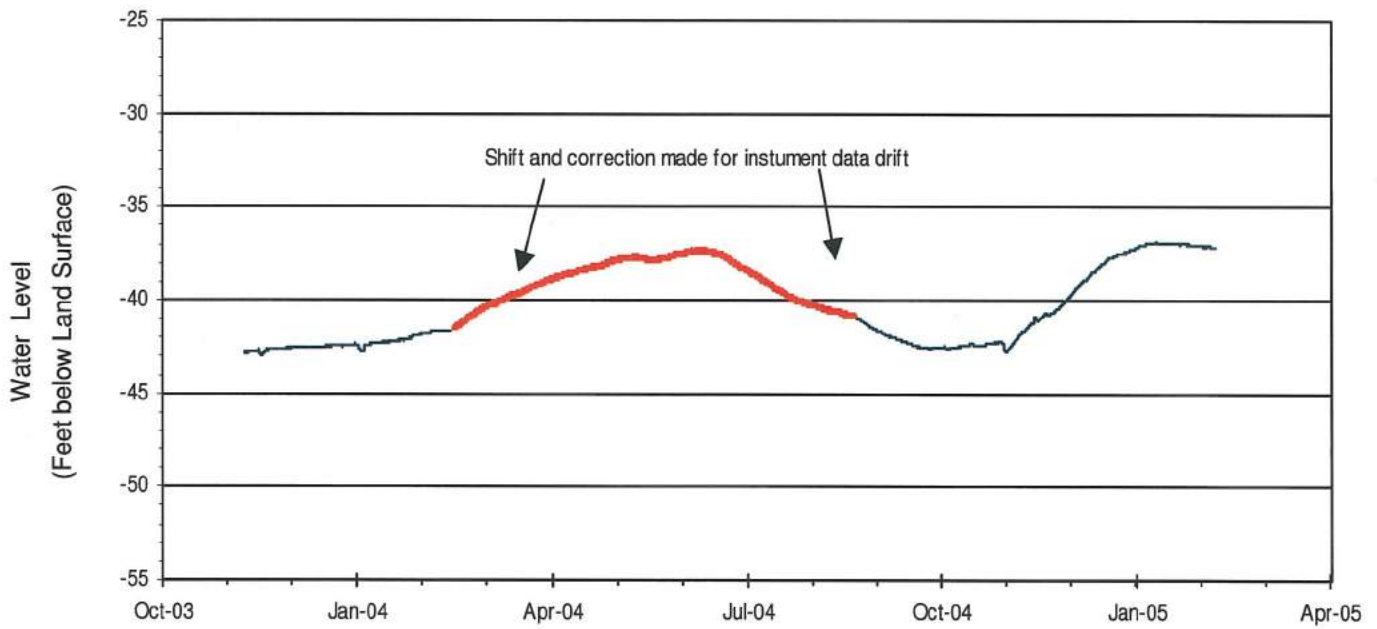


STONEHEDGE WELL HYDROGRAPH





**RING WELL
(Kinney County)**

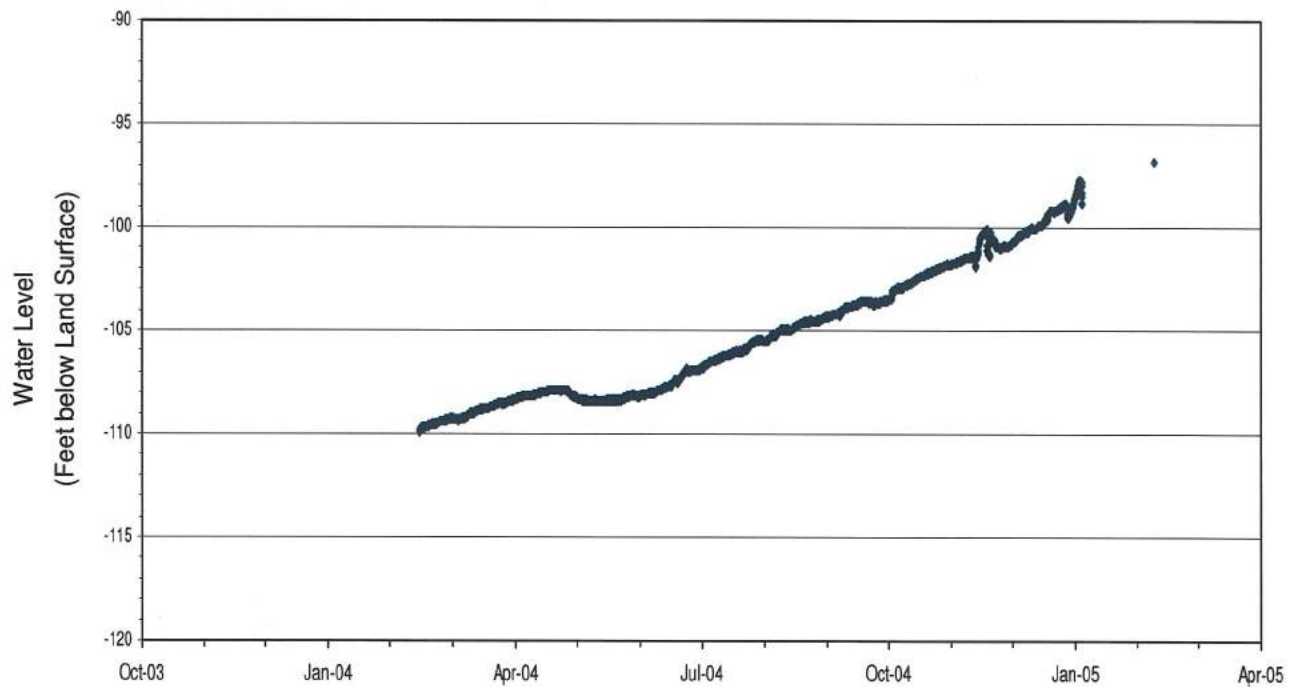


RING WELL HYDROGRAPH





**OLD "Y" WELL
(Near Del Rio, Kinney County)**



OLD "Y" WELL HYDROGRAPH

