

**M E M O R A N D U M**

**DATE:** JULY 20, 2010  
**TO:** KANSAS WATER AUTHORITY  
**FROM:** SUSAN STOVER  
**SUBJECT:** BUREAU OF RECLAMATION CONTRACT: CORING OGALLALA

The Bureau of Reclamation has offered to add \$24,000 to the Ogallala Special Study Cooperative Agreement for coring the Ogallala Formation in Haskell County. The Kansas Water Office would contract with the Kansas Geological Survey (KGS) for this project. The KGS proposes to drill 400 feet and get a core recovery near the index well in Haskell County. This index well is part of a multi-year study on the aquifer conditions; it is located in an area of high water use with significant drawdowns during the irrigation season, and provides a continuous record of water level and barometric pressure. Co-locating these studies will enhance both of them.

A RotoSonic drill rig was acquired by the KGS in 2009. It is able to recover unconsolidated sediments even when saturated, and retrieves the *in situ* waters. This near complete core recovery will be a first for Kansas, and possibly for all the Ogallala aquifer. When acquired, the KGS purchased sufficient drill rod to reach 200 feet. The Bureau of Reclamation funds, plus additional funds, will allow purchase of additional rod to drill as deep as 400 feet, the limits of this drill rig.

The recovery of the sediment core will greatly improve our understanding of the subsurface 3-dimensional architecture of the deposits. The types and layering patterns of the sediments control to a large extent the quantity of water stored and potential movement of groundwater. Discrete aquifer sampling and testing will provide high resolution of the quality, age and mixing of the waters.

The Reclamation funds will be used to drill as deep as 400 feet. We have requested an additional \$26,000 from Reclamation, for a total amended award of \$50,000. Reclamation indicated there may be funds freed up from other states, which, if available, must be committed prior to the end of this federal fiscal year. Much of the scientists' research time, geochemistry work, and water analysis will be funded through a complementary National Science Foundation grant. The Bureau of Reclamation funds will be matched 50:50 by a combination of indirect and direct contributions from the KGS, GMD3 and KWO.

**The Kansas Water Office recommends the Kansas Water Authority approve the KWO to amend the Ogallala Special Study with the Bureau of Reclamation for an additional \$24,000 and potentially an additional \$26,000 for a total of \$50,000 in new federal support.**