GAM run 04-15

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REQUESTOR:

Mr. Darren Schick on behalf of the Canadian River Municipal Water Authority (CRMWA).

DESCRIPTION OF REQUEST:

What is the most up-to-date saturated thickness value associated with each cell in the updated Groundwater Availability Model (GAM) for the northern part of the Ogallala aquifer and can it be presented in the form of contours?

METHODS:

To address the request, we:

- Extracted the hydraulic head value for each cell (5,280 x 5,280 feet) of the updated GAM for the entire area for the 1998 time step,
- Stored the resulting matrix as a text file and
- Used ArcGIS to subtract the bottom elevation file from the hydraulic head value file and contoured the resulting saturated thickness values in Surfer8.0.

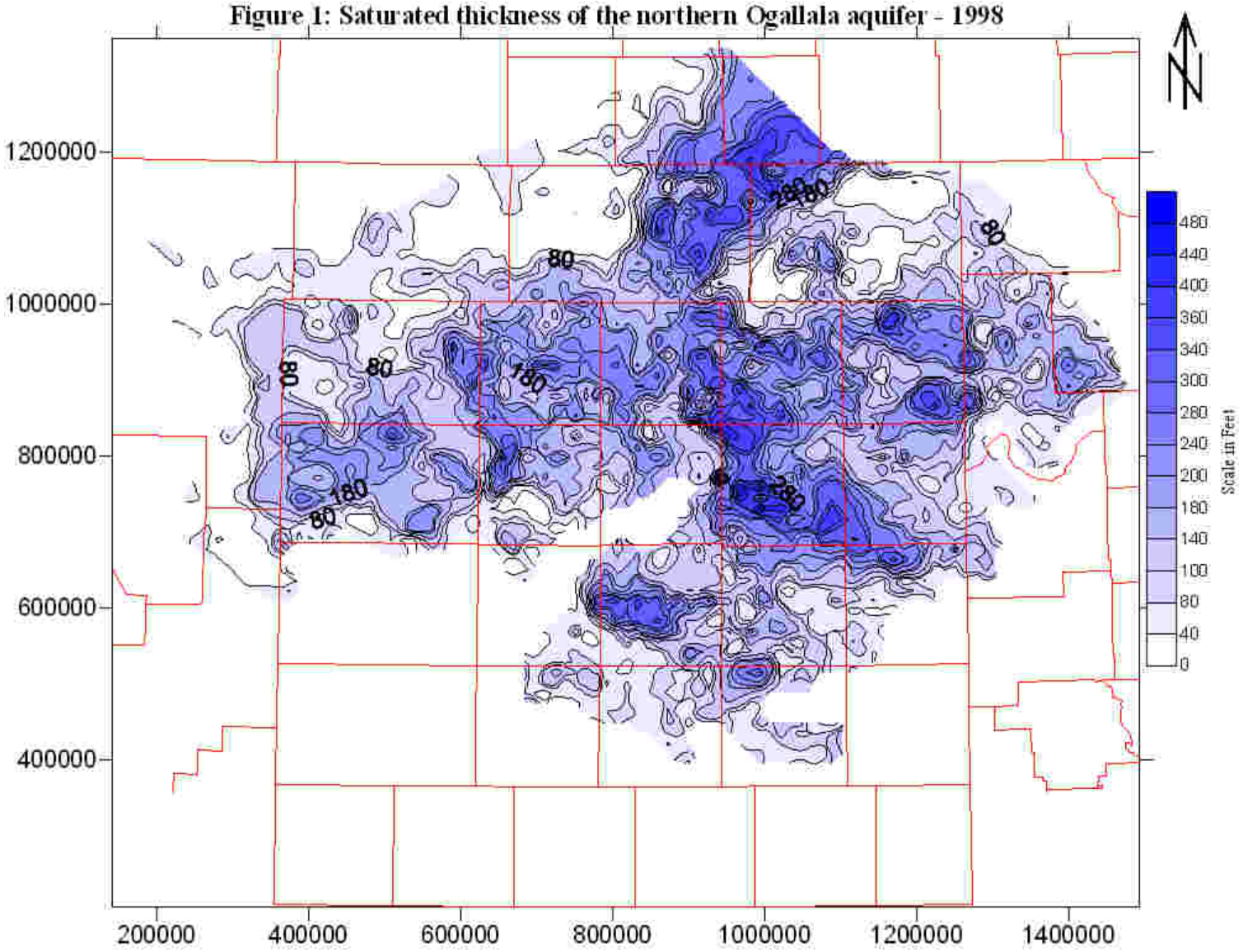
PARAMETERS AND ASSUMPTIONS:

Changes in bottom elevations were made and recharge was reappraised in the updated model. The methodology is discussed in Dutton (2004). Also, the assumption was made that water levels or hydraulic heads were within ten percent of actual measured values for the end of 1998.

RESULTS

The saturated thickness results are shown contoured in Figure 1. The data tables are large and have not been included in this report. If you would like copies, please contact Scott Hamlin at (512) 475-2132 or scott.hamlin@twdb.state.tx.us. The GIS projection of the resulting matrix is shown in the following figure 2.

Figure 1: Saturated thickness of the northern Ogallala aquifer - 1998



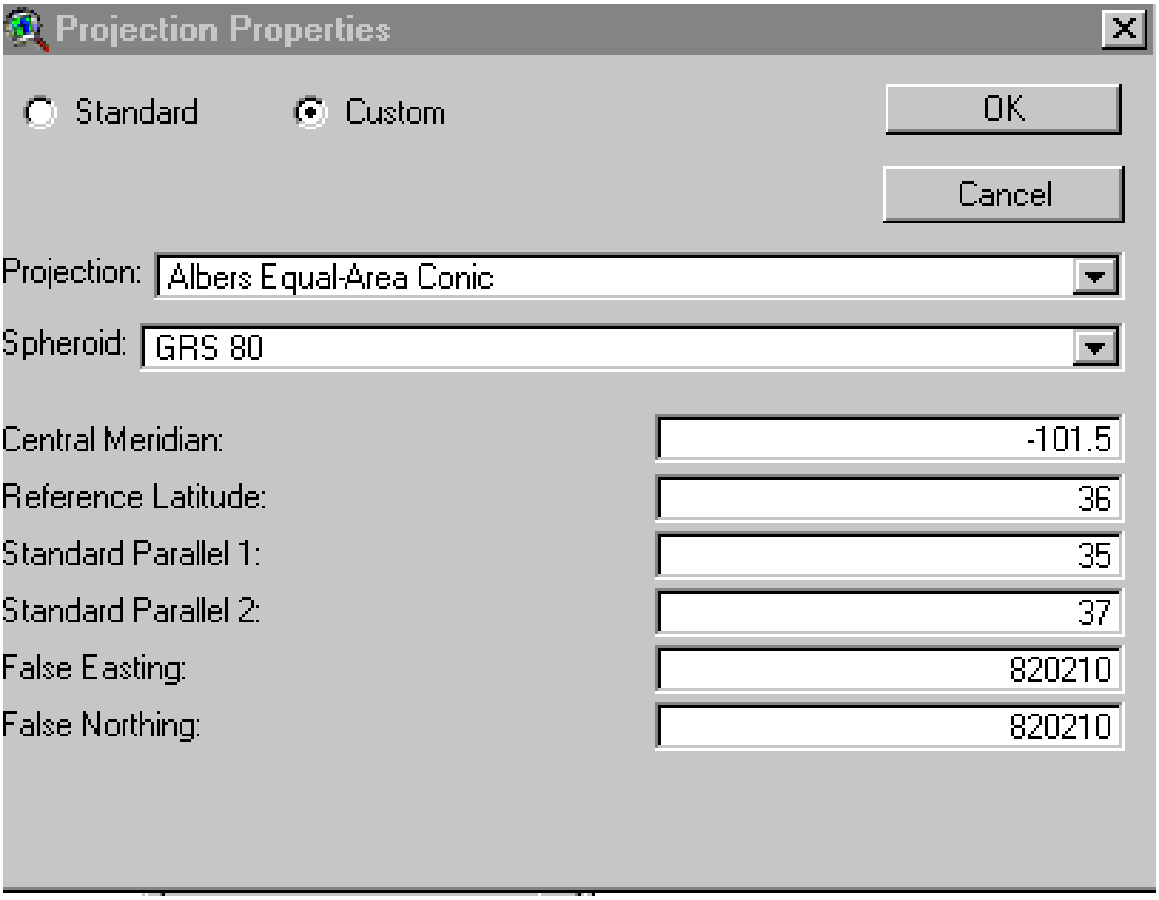


Figure 2. GIS projection

REFERENCES:

Dutton, Alan, 2004, Adjustments of parameters to improve the calibration of the Og-N model of the Ogallala aquifer, Panhandle Water Planning Area: Bureau of Economic Geology, The University of Texas at Austin, 9 p.