GAM run 05-33

by Richard Smith, P.G.
Texas Water Development Board
Groundwater Availability Modeling Section
(512) 936-0877
August 8, 2005

REQUESTOR:

Mr. Mike McGuire of the Rolling Plains Groundwater Conservation District

DESCRIPTION OF REQUEST:

Mr. McGuire requested that we run the Groundwater Availability Model (GAM) for the Seymour and Blaine aquifers to obtain recharge values for the Seymour in Knox, Baylor and Haskell counties.

METHODS:

We used the Groundwater Availability Model (GAM) for the Seymour aquifer (Ewing, and others, 2004). We ran the transient model and extracted the recharge from the water budget analysis.

PARAMETERS AND ASSUMPTIONS:

- See Ewing and others (2004) for assumptions and limitations of the GAM.
- Root mean squared error for this model ranges from 9.7 feet to 27.5 feet for the Seymour aquifer and is 26.4 feet for the Blaine aquifer (Ewing and others, 2004). This error will have more of an effect on model results where the aquifer is thin
- Recharge represents average conditions for the predictive and historical period.

RESULTS:

The average recharge for the Seymour in Knox County is 33,800 acre-feet per year. The average recharge for Baylor County is 11,300 acre-feet per year. The average recharge for Haskell County is 50,500 acre-feet per year. The total average recharge for the Rolling Plains Groundwater Conservation District is 95,600 acre-feet per year.

REFERENCES:

Ewing, J. E., Jones, T. L., Pickens, J. F., Chastain-Howley, A., Dean, K. E., Spear, and A. A., 2004, Groundwater availability model for the Seymour aquifer: final report prepared for the Texas Water Development Board by INTERA Inc., 432 p.