

# GAM run 03-29

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## REQUESTOR:

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## DESCRIPTION OF REQUEST:

What the water level declines for the Upper Trinity and Middle Trinity aquifers by decade from the Hill Country Trinity Model?

## METHODS:

The Hill Country Trinity model was run with the drought-of-record recharge (1950-1956) and predictive pumpage from 2010 through 2050. The drought-of-record recharge was assigned for each of the seven stress periods at the end of each decadal run that was preceded by average recharge (1960-1990). For example, for run 2050, we have used the drought-of-record recharge from years 2043 to 2050 and average recharge for years 2000 to 2043. The predictive pumpage data was provided by the Regional Water Planning Groups.

Data provided to the USGS includes water level decline information (with respect to simulated water levels in 1997) for the Middle Trinity (Model Layer 3) aquifer for years 2010, 2020, 2030, 2040 and 2050. One data file was provided for each model layer and files were named according to run and layer. For example, lay3ddwndor2010 refers to water level decline in the Middle Trinity under drought of record conditions in 2010. Lay3ddwnavgrech2010 refers to water level decline under average recharge conditions in 2010. In the files, columns A and B contain X and Y coordinates in feet and column C refers to drawdown values in feet. Note that the drawdown values were obtained by subtracting the predictive simulated water levels (2010 through 2050) from simulated water levels in December 1997. Therefore, positive drawdown values are water level declines and negative values are water level rise with respect to simulated water levels in 1997.

TWDB Report 353 (Mace and others, 2000) shows the drawdown maps for the Middle Trinity aquifer and the data that we have provided for the Middle Trinity should be exactly the same. Please note that the model has 115 columns and 69 rows. The model is projected in Lambert Conic Conformal in shackelford feet. Coordinate values are:  $X_{\min} =$

3376560,  $X_{\max} = 3978480$ ,  $Y_{\min} = 2679600$ , and  $Y_{\max} = 3038640$ . Other information on projection are provided below:

**Projection** = Lambert Conic Conformal  
**Spheroid** = GRS80

Central Meridian = -100.00000  
Reference Latitude = 31.16666  
Standard Parallel 1 = 27.41666  
Standard Parallel 2 = 34.91666  
False Easting = 1000000.00000  
False Northing = 1000000.00000

### **PARAMETERS AND ASSUMPTIONS:**

None: Data request.

### **RESULTS:**

Because of the large number and large size of the data files they have not been posted with this report.

If you would like a copy of the data files please contact Shirley Wade at (512) 936-0883 or [shirley.wade@twdb.state.tx.us](mailto:shirley.wade@twdb.state.tx.us) .

### **REFERENCES:**

Mace, R. E., Chowdhury, A. H., Anaya, R., and Way, S.-C., 2000, Groundwater availability of the Middle Trinity aquifer, Hill Country area, Texas- Numerical simulations through 2050: Texas Water Development Board Report 353, 117 p.