Mid East Texas Desired Future Conditions

24 June 2009

Introduction

As decided by all member districts in GMA12, the Mid East Texas Groundwater Conservation District (METGCD) DFCs will be stated as average drawdowns throughout the entire district per aquifer from 2000 to 2060. The Central Queen City-Sparta Groundwater Availability Model (GAM), with the GMA12_3b well file, was used to calculate potential future drawdowns within the district. Desired future conditions are based on the model results.

Considerations and Procedure Used

The GMA12_3b well file contains total METGCD pumping between 2000 and 2060 averaging about 14,650 acft/yr. A recent audit of district permits, exempt-well estimates, and oil-gas production usage indicates that current permits and usage is over 16,000 acft/yr. The district board decided to raise the total district pumping to 25,000 acft/yr, as a reasonable allowance for potential future permit applications, and re-run the model to determine DFCs based on that pumping amount.

The model pumping inputs were modified by multiplying the pumping rate in each district model cell by 25,000/14,650 = 1.71 to raise the entire district pumping to 25,000 acft/yr. This method preserves the distribution of pumping in the original model. The increased pumping in the district results in an increase in average drawdowns within the district of about 15 feet in the Carrizo Aquifer, 10 feet in the Simsboro and Calvert Bluff Aquifers, and 5 feet or less in the other formations.

Model-calculated average drawdowns in the Queen City and Sparta aquifers were basically zero due to anomalous increases in hydraulic head in the recharge zone; therefore, the maximum drawdowns for those aquifers were determined and the average drawdowns were assumed to be about 75% of the maximum drawdowns. The drawdown values calculated by the model are precise to within about ±5 feet, therefore, the average drawdown values calculated by the model are generally rounded to the nearest 5 feet for the DFCs.

District's Desired Future Conditions

The desired future conditions for the Mid East Texas Groundwater Conservation District are presented in the following table. As previously stated, these drawdowns are based on 25,000 acft/yr total annual pumping within the district.

Aquifer	Avg. District Drawdowns
Sparta Aquifer	12 feet
Queen City Aquifer	25 feet
Carrizo Aquifer	55 feet
Calvert Bluff Aquifer	70 feet
Simsboro Aquifer	115 feet
Hooper Aquifer	95 feet