

Mid-East Texas Groundwater Conservation District

Resolution 2010-03-R

Be it resolved, that on this date, April 26, 2011, the Board of Directors of the Mid-East Texas Groundwater Conservation District met in a duly filed and noticed board meeting/public hearing.

An agenda item at this meeting was the revision of Desired Future Conditions (DFC) of the Yegua-Jackson aquifer located within the boundaries of the District. After duly considering the information pertaining to the DFC's the Board made its decision by unanimous vote to adopt the Desired Future Conditions listed below.


The desired future conditions for the Mid-East Texas GCD are presented below in the following table. These drawdowns are based on 1,120 acre feet per year of total annual pumping from the Yegua-Jackson Aquifer within the District.

<u>Aquifer Name</u>	<u>Avg. District Drawdowns</u>
Yegua-Jackson	5 feet*

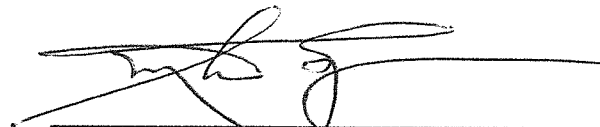
These drawdown amounts are applicable for the period of 2010 – 2060 with a margin of error of ± 5 feet. These DFC's may be revised every five (5) years through the Groundwater Management Area 12 joint planning process.

*Attached are Hydro-geologist notes on Yegua-Jackson drawdown.

Attest:


William Parten, Secretary

Approved this date April 26, 2011


Mike Speer, President
Board of Directors

Final Yegua-Jackson Aquifer Desired Future Conditions for the Mid East Texas Groundwater Conservation District

Introduction

As decided by all member districts in GMA12, the Mid East Texas Groundwater Conservation District (METGCD) Desired Future Conditions (DFCs) will be stated as average drawdowns throughout the entire district per aquifer from 2010 to 2060. Estimates of current Yegua-Jackson pumping within the district, historical groundwater level data, and model results from the Yegua-Jackson Groundwater Availability Model (YJGAM) were reviewed and used these to determine an appropriate Yegua-Jackson DFC for the district. The procedures, results, and final recommendations are presented below.

Considerations and Procedure Used

Historic Data

Estimates of current pumping from the Yegua-Jackson aquifer in METGCD, based on 2010 population estimates and assuming per-capita water usage of 100 to 140 gallons per day, range from about 460 to 650 acft/yr. The population in Madison County has experienced an almost negligible 3% growth over the previous decade, suggesting that groundwater use has not changed much over that period. A review of historical water level data from the TWDB water well database (see Figure 1) indicates that water levels in Yegua-Jackson wells in Madison County have remained steady over the past decade, suggesting that current pumping rates have resulting in negligible drawdowns throughout the district.

Model Results

The original YJGAM simulates groundwater flow and water levels in the aquifer from the years 1900 through 1997. LBG-Guyton Associates modified the well file from the original YJGAM for the purpose of calculating future drawdowns through the year 2060 for all districts within GMA12. The total pumping in METGCD built into the predictive period of the model is approximately **1,120 acft/yr**, with all but a few acft/yr in Madison County. The resulting model-calculated average district-wide drawdowns for METGCD are **1.4 feet**. Given the acceptable model uncertainty of 5 feet or 5 percent, as agreed upon by the member district of GMA12, the model results indicate that, given pumping at projected rates, the district should experience less than 5 feet of average drawdown in the Yegua-Jackson over the next fifty years.

Recommendations

Based on the model results and water level trends over the last decade, and on the model uncertainty, METGCD adopts a Yegua-Jackson aquifer DFC of **five feet of average district-wide drawdown, ± 5 feet or 5%, over the predictive period of 2010-2060.**

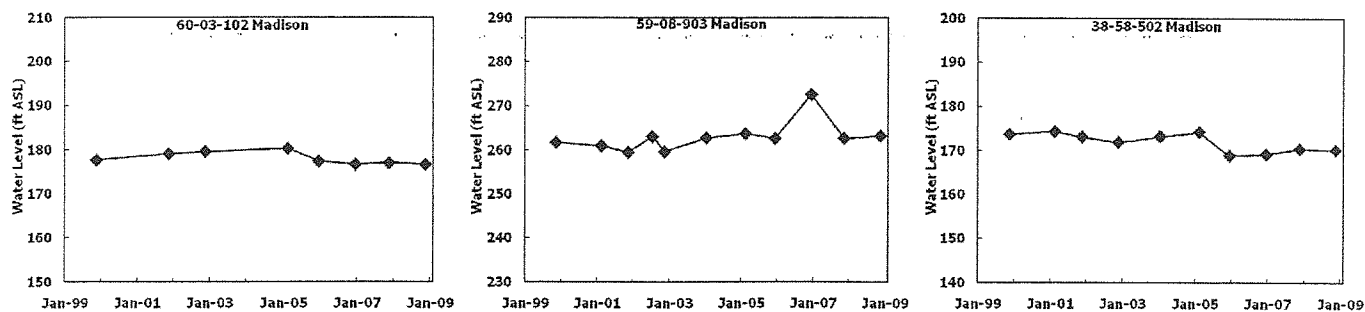


Figure 1. Water levels in Madison County wells completed in the Yegua-Jackson Aquifer