

Narrative of Methods and References Used
by
Groundwater Management Area #2
for
Adopting Desired Future Conditions of Groundwater Resources
by
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The relevant aquifers for GMA #2 include Ogallala, Edwards-Trinity (High Plains), and the Dockum (partially). Model runs from TWDB were performed for each of these aquifers. Specifically, GAM Task 10-023 includes a simulation of conditions for the Ogallala and Edwards-Trinity (High Plains) aquifers. GAM Task 10-025 contains results from several conditions of the Dockum aquifer.

Ogallala and Edwards-Trinity (High Plains)

As stated earlier, GAM Task 10-023 contains the scenario used for adopting desired future conditions in the Ogallala and Edwards-Trinity (High Plains) aquifers. Specifically, Scenario 3 in the report contains the conditions that the group adopted. In Scenario 3, the counties within High Plains UWCD are given a condition equaling 50% of 2010 saturated thickness in the year 2060, or 50% remaining in 50 years (50/50). For the other counties (mainly south of the High Plains UWCD) a condition of meeting an average yearly drawdown is shown. Since 2006, the members of GMA #2 had discussed a method for adopting DFCs based on water level measurements and a certain amount of yearly change. Because this yearly data is well established, obtained and understood, the members felt that using it as a basis for adopting a goal was prudent. The period 1998-2007 was used for establishing an average yearly change for each county within the management area. That 10-year period was selected because it includes the most extensive number of observation wells, plus it was the most current data when the joint planning began. In August 2009, High Plains UWCD informed the other members of GMA #2 that the 50/50 concept was recently adopted by its Board of Directors. The other members were asked to consider the feasibility of this goal for the other districts of GMA #2. After reviewing the data from that simulation in a March 2010 meeting, the other members agreed that the 50/50 concept did not meet local approval and differed greatly from the average drawdown approach the group had discussed for the past 3 years. Hence, the TWDB then performed GAM Task 10-023 which, in Scenario 3, represents the 50/50 goal for High Plains UWCD and the average yearly drawdown goal for the other districts.

Dockum

The Dockum aquifer is designated a minor aquifer by the TWDB. It underlies most of GMA #2, although it is used only in a few counties of the management area at this time. High TDS prohibits the use of this aquifer in many areas of GMA #2, particularly the southern portion. GAM Task 10-025 was used for adoption of a desired future condition for GMA #2. In this GAM report, the specific scenario used for adoption of DFCs is found in Table A-8. This table shows the average drawdown by county when pumping is 160% of the base pumping scenario. The base pumping scenario is the same as the pumping for the last year of the historical calibration period in the model (1997). Using this prescribed condition, the GMA #2 average drawdown for the period 2010-2060 is 40 feet. Based on comments from members and TWDB staff, the Dockum is considered relevant only for the High Plains UWCD and Llano Estacado UWCD at this time. The other member gcds stated that the aquifer is not relevant for their areas at this time.

Conclusions and Summary

High Plains UWCD adopted a DFC for the Ogallala and Edwards-Trinity (High Plains) of 50% remaining in 50 years. The other six gcds adopted a DFC for the same aquifers based on a certain amount of yearly drawdown based on averages from the period 1998-2007. These conditions are physically possible and are represented by GAM Task 10-023, Scenario 3. High Plains UWCD and Llano Estacado UWCD adopted a DFC for the Dockum where the average drawdown for GMA #2 is 40 feet for the period 2010-2060. This condition is shown in more detail in Table A-8 from GAM Task 10-025. The other member districts stated that the Dockum is not a relevant aquifer in their respective gcds at this time.