

Most counties in district report average water level increases in 2004

Continued From Page One

District employees took measurements in wells in the network of more than 1,200 water wells within the district area. These wells are part of the state observation well network administered by the Texas Water Development Board (TWDB). Wells in this network located within the water district area are documented and measured by the district with the collected water-level data shared with the TWDB.

The average density of approximately one well per nine square miles within the district area is maintained by necessary replacement of wells lost to the network for various reasons. Regardless of the specific cause for well replacement, a well that has become unmeasurable or unreliable for accurate measurement has no value as an observation well.

Depth-to-water levels are normally measured during January to March of each year. Measurement during this period allows for the approach to stabilization of water levels in the aquifer following pumping during the previous period of ground water production.

The table on page one illustrates the average annual water level changes in the aquifer on a county-by-county basis during the past ten years, the past five years, and the previous year.

The district ten-year average annual change decreased from -1.28 feet for the 2004 report to -0.99 of a foot for the current report. The district five-year average annual change decreased from -1.03 feet for the 2004 report to -0.70 of a foot for the current report. The district average annual change for 2004 to 2005 decreased from -1.34 to the current value of +0.74 of a foot.

The majority of the wells in the district network are privately owned, active irrigation wells. Municipal and industrial wells represent the next most plentiful types. A mixture of stock, domestic, and non-equipped wells make up the remaining types of wells. The district portions of Castro and Lamb Counties reported average water-level declines of less than a foot. The remaining thirteen district counties reported an average increase in water levels for 2004. The average increases ranged from + 3.46 feet for Lynn County to a small increase of + 0.28 of a foot for the district area of Randall County.

Included in this issue of *The Cross Section* are individual county maps providing the approximate location of each observation well. Each map is accompanied by available 1995, 2000, 2004, and 2005 depth-to-water measurements for the observation wells in that county. Also listed are available total changes in water levels for each well for the periods 1995 to 2005, 2000 to 2005, and 2004 to 2005.

Historically, depth-to-water level measurements have presented a district average decline of 1.91 feet in 1995; an average decline of 1.49 feet in 1996; an average decline of 0.34 of a foot in 1997; an average decline of 2.15 feet in 1998; an average decline of 0.68 of a foot in 1999; an average decline of 1.14 feet in 2000; an average decline of 0.78 of a foot in 2001; an average decline of 1.06 feet in 2002; and an average decline of 1.34 feet in 2003.

TAMU researchers examine Xeriscap water requirements

UVALDE – Most Texans have heard of the using plants adapted to a specific area. But how much water do these plants really need to thrive? A pair of Uvalde scientists with the Texas Agricultural Experiment Station have the answer on a dozen of the most popular plants used in Texas xeriscapes.

Dr. Keith Owens, professor of range ecology, and Rose Cooper, research technician, both with the Texas A&M University System Agricultural Research and Extension Center in Uvalde, have studied the "top 12" perennial shrubs and trees used in xeriscap landscaping. "Here in South Texas, where summer temperatures are high and rainfall is scarce, water is a valuable commodity," said Cooper. "As with other regions of Texas, South Texas needs to conserve water. Landscaping with well-adapted plants and properly managing irrigation of those plants are two ways to greatly save money on your water bill."

The purpose of this study was to determine the water use of these 12 native and drought-tolerant plants and to find what the least amount of water these plants would need to maintain their beautiful flowers and foliage. The shrub species used were Lantana (Lantana horrida), Purple Sage (Leucophyllum frutescens), Mexican Mint Marigold (Tagetes ventralis), Autumn Sage (Salvia greggii), Dwarf Yaupon Holly (Ilex vomitoria), Mexican Bush Sage (Salvia leucantha), Woolly Butterfly Bush (Buddleia marubifolia) and Esperanza (Tecoma stans var. angustata).

The tree species were Evergreen Sumac (Rhus virens var. virens), Mountain Laurel (Sophora secundiflora), Wild Olive (Cordia boissieri) and Crape Myrtle (Lagerstroemia indica).

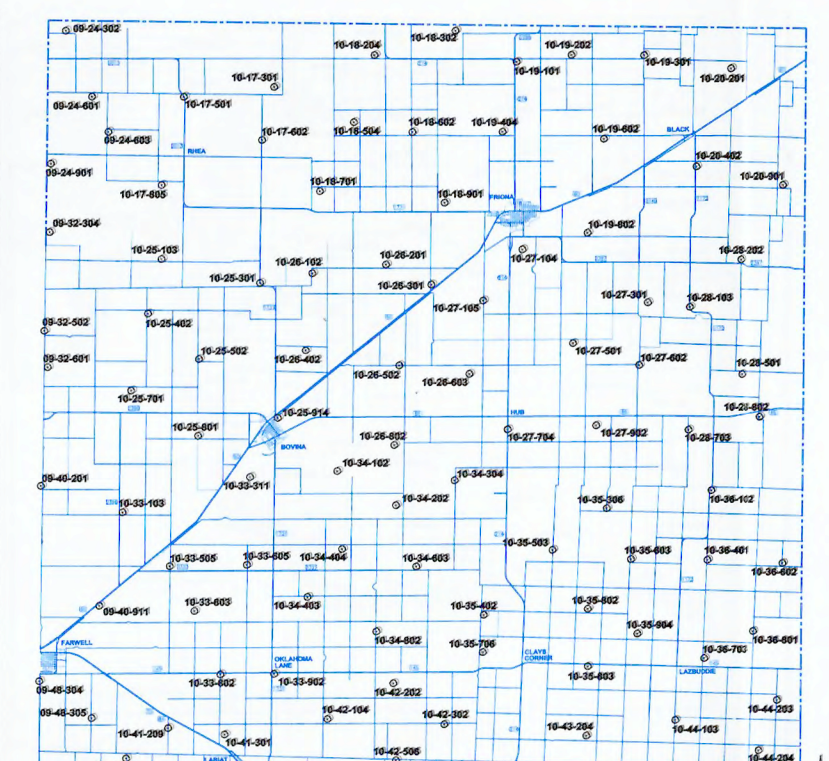
All the plants were placed outside under clear plastic to limit the natural heat and light, but no moisture. The plants were watered until the soil was completely saturated, then they were weighed. They were re-weighed once a day for 11 consecutive days.

Daily weight loss by the plants was directly attributable to transpiration and the water loss through the leaves into the atmosphere. "Of the twelve, Crape Myrtle, Esperanza, Autumn Sage and Lantana needed the most water to thrive," said Cooper. "Woolly Butterfly (Butterfly) Bush, Dwarf Yaupon Holly, Mountain Laurel and Evergreen Sumac needed the least water."

Cooper said Crape Myrtle trees used more than twice as much water as Wild Olive, Evergreen Sumac and Mountain Laurel. And Woolly Butterfly Bush, Dwarf Yaupon and Purple Sage used the least. Of the eight shrub species, Lantana required the most water, using an average of 0.17 gallons per day. Esperanza and Autumn Sage needed 0.15 and 0.14 gallons, respectively. Mexican Bush Sage and Mexican Mint Marigold used 0.09 gallons. The shrubs using the least amount of water were Centozo (0.07 gal.), Dwarf Yaupon Holly (0.06 gal.) and Woolly Butterfly Bush (0.04 gal.). To put this into perspective, Owens said 0.06 gallons is about the same as 6 ounces or the contents of a small coffee cup.

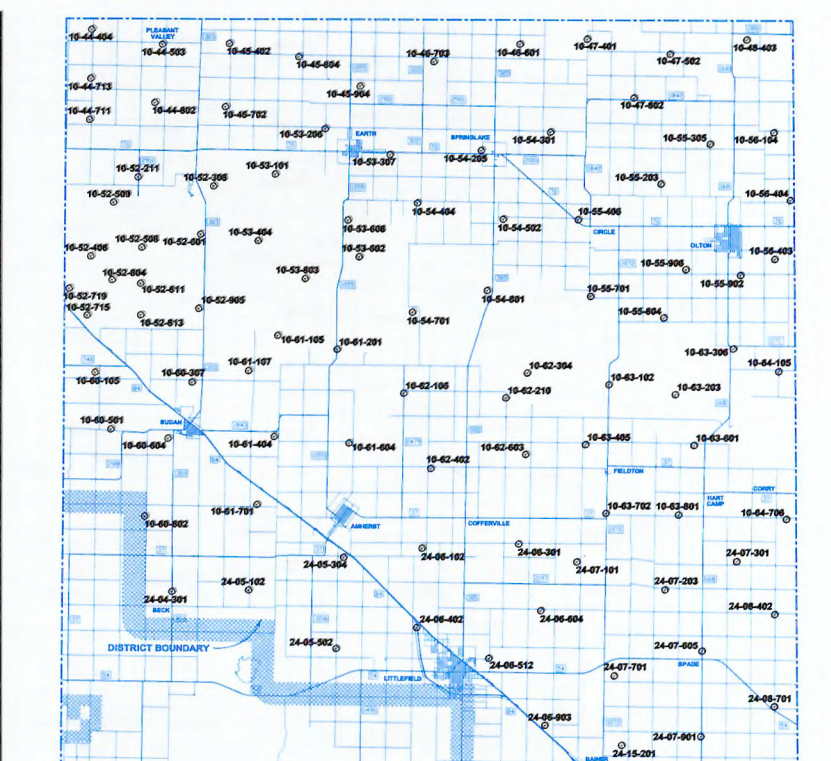
All plants used came in either three or five-gallon containers. "All of these plants are excellent xeriscap plant materials," said Cooper. "But when push comes to shove water-wise, our study showed that Woolly Butterfly Bush will be the last plant standing."

For more information, contact Cooper at (830) 278-9151.



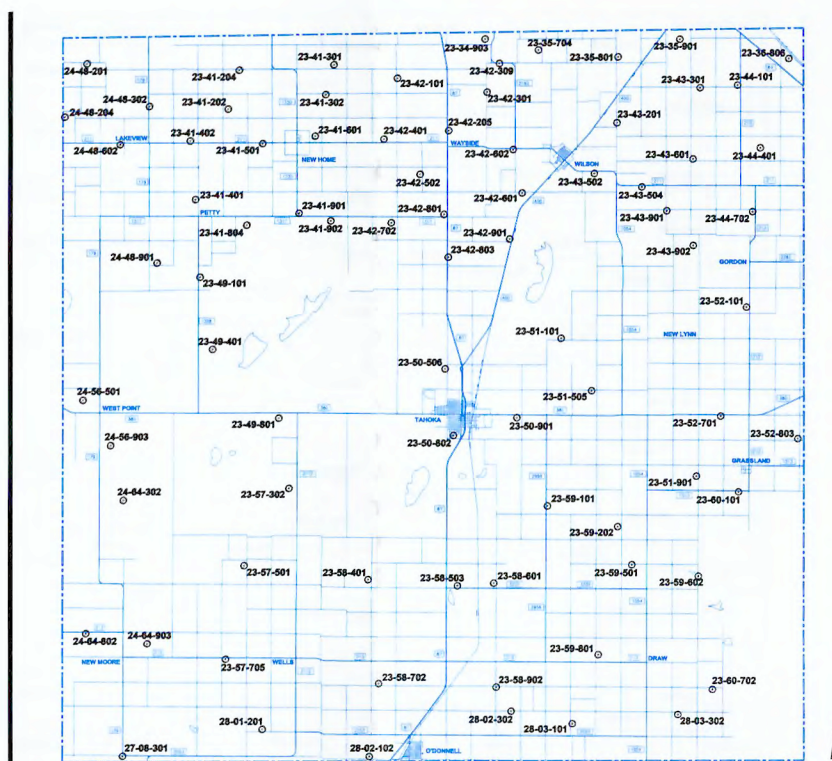
PARMER COUNTY

Table for Parmer County wells. Columns include Well Number, Depth to Water Below Land Surface In Feet (1995, 2000, 2004, 2005), Total Change In Water Levels In Feet (1995 to 2005, 2000 to 2005, 2004 to 2005).



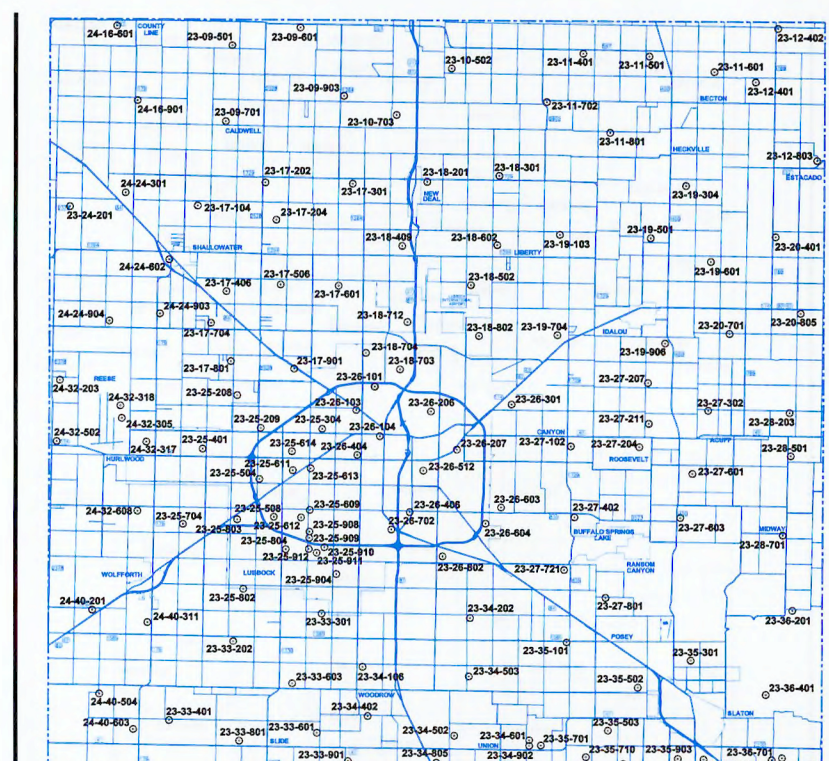
LAMB COUNTY

Table for Lamb County wells. Columns include Well Number, Depth to Water Below Land Surface In Feet (1995, 2000, 2004, 2005), Total Change In Water Levels In Feet (1995 to 2005, 2000 to 2005, 2004 to 2005).



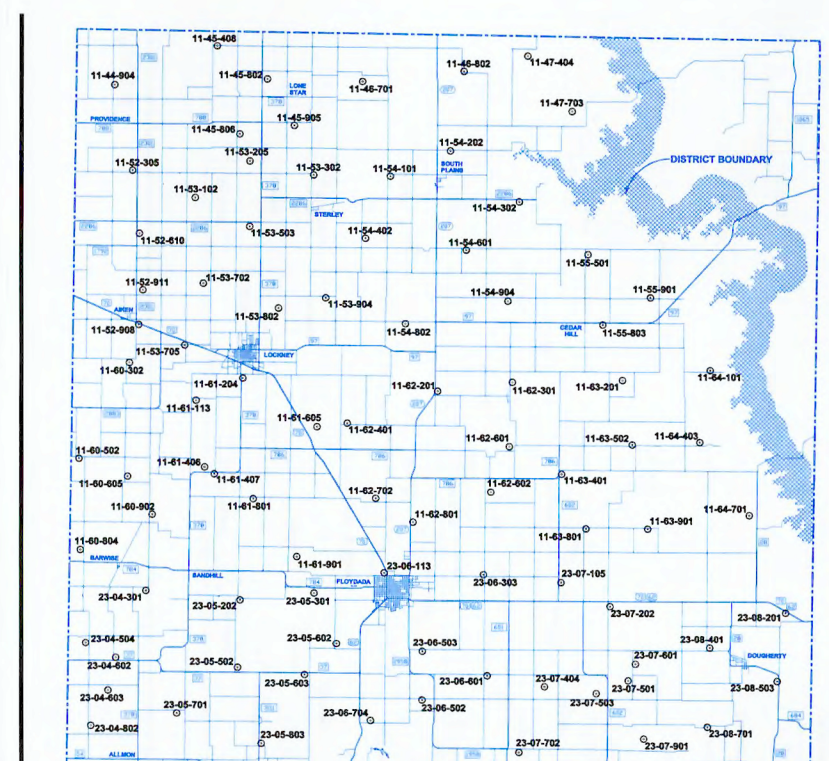
LYNN COUNTY

Table for Lynn County wells. Columns include Well Number, Depth to Water Below Land Surface In Feet (1995, 2000, 2004, 2005), Total Change In Water Levels In Feet (1995 to 2005, 2000 to 2005, 2004 to 2005).



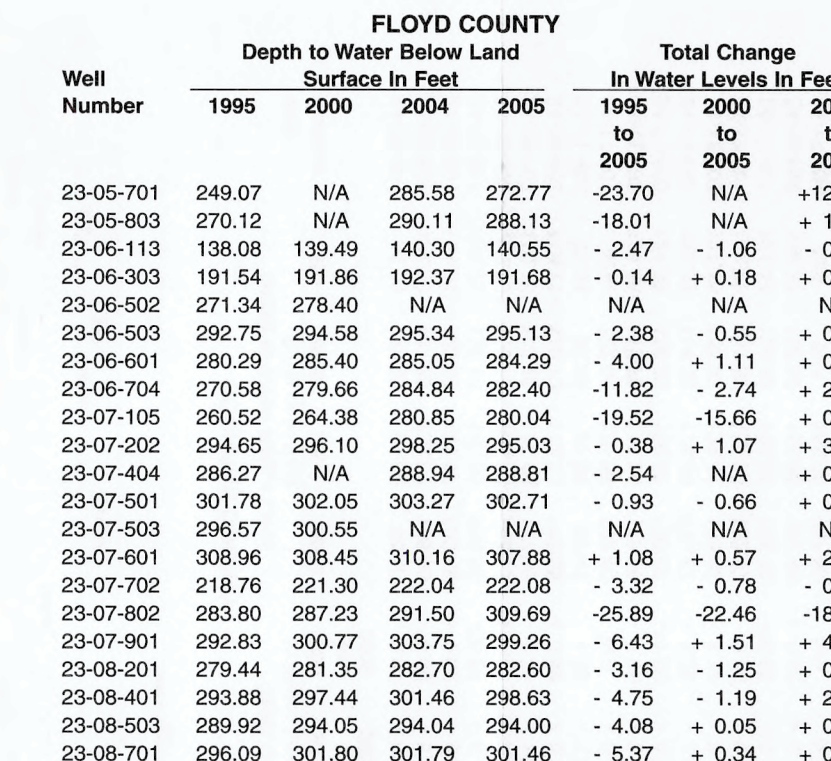
LUBBOCK COUNTY

Table for Lubbock County wells. Columns include Well Number, Depth to Water Below Land Surface In Feet (1995, 2000, 2004, 2005), Total Change In Water Levels In Feet (1995 to 2005, 2000 to 2005, 2004 to 2005).



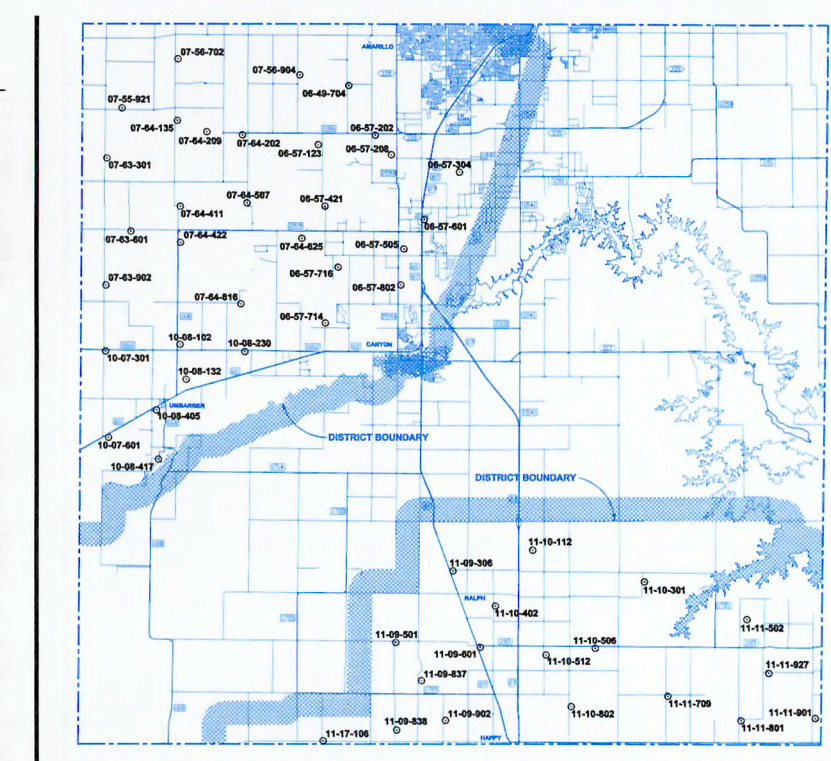
FLOYD COUNTY

Table for Floyd County wells. Columns include Well Number, Depth to Water Below Land Surface In Feet (1995, 2000, 2004, 2005), Total Change In Water Levels In Feet (1995 to 2005, 2000 to 2005, 2004 to 2005).



RANDALL COUNTY

Table for Randall County wells. Columns include Well Number, Depth to Water Below Land Surface In Feet (1995, 2000, 2004, 2005), Total Change In Water Levels In Feet (1995 to 2005, 2000 to 2005, 2004 to 2005).



DEAF SMITH COUNTY

Table for Deaf Smith County wells. Columns include Well Number, Depth to Water Below Land Surface In Feet (1995, 2000, 2004, 2005), Total Change In Water Levels In Feet (1995 to 2005, 2000 to 2005, 2004 to 2005).



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