

GAM Run 08-56

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Texas Water Development Board
Groundwater Availability Modeling Section
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EXECUTIVE SUMMARY:

We ran the groundwater availability model for the central part of the Gulf Coast Aquifer using a specified pumpage annually for a 60-year predictive simulation along with average recharge rates, evapotranspiration rates, and initial streamflows. The results of this 60-year model run indicate that the water levels declined by up to 40 feet in the Chicot Aquifer, up to 110 feet in the Evangeline Aquifer, and up to 80 feet in the Jasper Aquifer using the specified pumping and evenly distributing the additional pumping across the aquifer. Larger water level decline areas occur: (1) in the western part of Wharton County and eastern part of Jackson County for the Chicot Aquifer; (2) in northwestern part of Kleberg County and central part of Refugio County for the Evangeline Aquifer; and (3) in southern part of Duval County, central part of DeWitt County, and also in central and northwestern part of Lavaca County for the Jasper Aquifer. Water level decline or recovery appears to be directly related to the amount of groundwater pumped in an area.

REQUESTOR:

Mr. Neil Hudgins of the Coastal Bend Groundwater Conservation District acting on behalf of Groundwater Management Area 15.

DESCRIPTION OF REQUEST:

Mr. Hudgins requested a model run using the groundwater availability model for the central part of the Gulf Coast Aquifer. This model run would be a 60-year predictive simulation using initial water levels from the end of the historical calibration period and average recharge conditions. Each year of the model run will include pumpage amounts approved by the members of Groundwater Management Area 15.

METHODS:

Recharge and evapotranspiration rates and initial streamflows were averaged for the historic calibration-verification runs, representing 1981 to 1999. These averages were then used for each year of the 60-year predictive simulation along with the adjusted baseline pumpage. Resulting water levels and drawdowns were then evaluated and are described in the “Results” section below.

PARAMETERS AND ASSUMPTIONS:

The groundwater availability model for the central part of the Gulf Coast Aquifer was used for this model run. The parameters and assumptions for this model are described below:

- We used Version 1.01 of the groundwater availability model for the central part of the Gulf Coast Aquifer. This model assumes partial penetrating wells in the Evangeline Aquifer due to a lack of data for aquifer properties in the lower portion of the aquifer.
- See Chowdhury and others (2004) and Waterstone and others (2003) for assumptions and limitations of the groundwater availability model for the central part of the Gulf Coast Aquifer.
- The mean absolute error (a measure of the difference between simulated and actual water levels during model calibration) in the entire model for 1999 is 26 feet, which is 4.6 percent of the hydraulic head drop across the model area (Chowdhury and others, 2004).
- The model includes four layers representing: the Chicot Aquifer (Layer 1), the Evangeline Aquifer (Layer 2), the Burkeville Confining Unit (Layer 3), and the Jasper Aquifer (Layer 4).
- Recharge rates, evapotranspiration rates, and initial streamflows are averages from the 1981 to 1999 calibration and verification time period.
- Pumpage amounts and the distribution used for the 60-year predictive simulation were specified by the members of Groundwater Management Areas 15. Details on this pumpage are given below.

Specified Pumpage

The pumpage amounts specified by the members of Groundwater Management Area 15 were based on the baseline pumpage constructed for GAM Run 07-12 (Donnelly, 2007a). The assumptions used to create the baseline pumpage are detailed in the GAM Run 07-12 report and will not be repeated in this report. The following modifications were made to the baseline pumpage to create the specified pumpage used in this simulation.

Baseline pumpage totals developed for GAM Run 07-12 (Donnelly, 2007a) were adjusted for the sixteen counties in Groundwater Management Area 15. The total amount of pumpage used in each county in this model simulation is shown in Table 1. Also included in Table 1 is the amount of pumpage assigned to each of the three aquifers (Chicot, Evangeline, and Jasper) within the Gulf Coast Aquifer System. The amount of pumpage assigned to each aquifer was determined based on the percentages pumped from each aquifer in the baseline pumpage data set, unless the pumpage to each aquifer was otherwise specified by the groundwater conservation districts within Groundwater Management Area 15. Pumpage in excess of the baseline pumpage for GAM Run 07-12 was distributed uniformly in equal amounts to each cell within the active model portion

of each aquifer for each county unless otherwise specified by the the groundwater conservation districts within Groundwater Management Area 15. In addition to specifying total pumpage for each county, the groundwater conservation districts within Groundwater Management Area 15 also had the option of specifying where the new pumpage would be allocated. The following specifications were made on where and how pumpage should be allocated.

- Aransas County — The GAM Run 07-14 baseline pumpage was used for Aransas County. A total of 1,827 acre-feet per year of pumpage was specified for the active model area of the Chicot Aquifer within the county. No pumpage was specified for the Evangeline, Burkeville, or Jasper aquifers. The total pumpage specified for Aransas County for this model run was 1,827 acre-feet per year.
- Bee County — A total of 9,500 acre-feet per year of pumpage was specified for the active model area of the Chicot Aquifer. A total of 12,000 acre-feet per year of pumpage was specified for the active model area of the Evangeline Aquifer. A total of 75 acre-feet per year of pumpage was specified for the active model area of the Burkeville Confining Unit. A total of 600 acre-feet per year of pumpage was specified for the active model area of the Jasper Aquifer. The total pumpage specified for Bee County for this model run was 22,175 acre-feet per year.
- Calhoun County — The GAM Run 07-14 baseline pumpage was used for Calhoun County. A total of 2,895 acre-feet per year of pumpage was specified for the active model area of the Chicot Aquifer. A total of 74 acre-feet per year of pumpage was specified for the active model area of the Evangeline Aquifer. No pumpage was specified for the Burkeville Confining Unit or Jasper Aquifer. The total pumpage specified for Calhoun County for this model run was 2,969 acre-feet per year.
- Colorado County — A total of 24,450 acre-feet per year of pumpage was specified for the active model area of the Chicot Aquifer. A total of 22,650 acre-feet per year of pumpage was specified for the active model area of the Evangeline Aquifer. No pumpage was specified for the Burkeville Confining Unit. A total of 900 acre-feet per year of pumpage was specified for the active model area of the Jasper Aquifer. The total pumpage specified for Colorado County for this model run was 48,000 acre-feet per year.
- DeWitt County — A total of 1,000 acre-feet per year of pumpage was specified for the active model area of the Chicot Aquifer. A total of 7,662 acre-feet per year of pumpage was specified for the active model area of the Evangeline Aquifer. No pumpage was specified for the Burkeville Confining Unit. A total of 6,283 acre-feet per year of pumpage was specified for the active model area of the Jasper Aquifer. The total pumpage specified for DeWitt County for this model run was 14,945 acre-feet per year.
- Fayette County — No pumpage was specified for the Chicot Aquifer. A total of 885 acre-feet per year of pumpage was specified for the active model area of the Evangeline Aquifer. A total of 154 acre-feet per year of pumpage was specified for the active model area of the Burkeville Confining Unit. A total of 7,658 acre-

feet per year of pumpage was specified for the active model area of the Jasper Aquifer. The total pumpage specified for Fayette County for this model run was 8,697 acre-feet per year.

- Goliad County — A total of 645 acre-feet per year of pumpage was specified for the active model area of the Chicot Aquifer. A total of 17,094 acre-feet per year of pumpage was specified for the active model area of the Evangeline Aquifer. No pumpage was specified for the Burkeville Confining Unit or Jasper Aquifer. The total pumpage specified for Goliad County for this model run was 17,739 acre-feet per year.
- Gonzales County — The GAM Run 07-14 baseline pumpage was used for Gonzales County. No pumpage was specified for the Chicot, Evangeline, or Burkeville aquifers. A total of 3 acre-feet per year of pumpage was specified for the active model area of the Jasper Aquifer within the county. The total pumpage specified for Gonzales County for this model run was 3 acre-feet per year.
- Jackson County — A total of 54,680 acre-feet per year of pumpage was specified for the active model area of the Chicot Aquifer. A total of 20,320 acre-feet per year of pumpage was specified for the active model area of the Evangeline Aquifer. No pumpage was specified for the Burkeville Confining Unit or Jasper Aquifer. The total pumpage specified for Jackson County for this model run was 75,000 acre-feet per year.
- Karnes County — The GAM Run 07-12 baseline pumpage was used for Karnes County. No pumpage was specified for the Chicot Aquifer. A total of 103 acre-feet per year of pumpage was specified for the active model area of the Evangeline Aquifer. A total of 281 acre-feet per year of pumpage was specified for the active model area of the Burkeville Confining Unit. A total of 2,511 acre-feet per year of pumpage was specified for the active model area of the Jasper Aquifer. The total pumpage specified for Karnes County for this model run was 2,895 acre-feet per year.
- Lavaca County — A total of 3,036 acre-feet per year of pumpage was specified for the active model area of the Chicot Aquifer. A total of 12,400 acre-feet per year of pumpage was specified for the active model area of the Evangeline Aquifer. A total of 149 acre-feet per year of pumpage was specified for the active model area of the Burkeville Confining Unit. A total of 4,600 acre-feet per year of pumpage was specified for the active model area of the Jasper Aquifer. The total pumpage specified for Lavaca County for this model run was 20,185 acre-feet per year.
- Matagorda County — A total of 35,610 acre-feet per year of pumpage was specified for the active model area of the Chicot Aquifer. A total of 9,390 acre-feet per year of pumpage was specified for the active model area of the Evangeline Aquifer. No pumpage was specified for the Burkeville or Jasper aquifers. The total pumpage specified for Matagorda County for this model run was 45,000 acre-feet per year.

- Refugio County—A total of 6,257 acre-feet per year of pumpage was specified for three selected areas of the Chicot Aquifer (Figure 1a). A total of 22,500 acre-feet per year of pumpage was specified for two selected areas of the active model area of the Evangeline Aquifer, north and south of US Highway 77 (Figure 1b). The total pumpage specified for Refugio County for this model run was 28,757 acre-feet per year.
- Victoria County — A total of 8,000 acre-feet per year of pumpage was specified for the active model area of the Chicot Aquifer. A total of 27,000 acre-feet per year of pumpage was specified for the active model area of the Evangeline Aquifer. No pumpage was specified for the Burkeville or Jasper aquifers. The total pumpage specified for Victoria County for this model run was 35,000 acre-feet per year.

Pumpage used in the previous GAM Run 07-43 (Donnelly, 2008c) for two areas, one in the City of Victoria and the second near the town of McFaddin, was specified to be removed from this groundwater availability model run.

- Wharton County — A total of 108,650 acre-feet per year of pumpage was specified for the active model area of the Chicot Aquifer. A total of 66,350 acre-feet per year of pumpage was specified for the active model area of the Evangeline Aquifer. No pumpage was specified for the Burkeville or Jasper aquifers. The total pumpage specified for Wharton County for this model run was 175,000 acre-feet per year.
- San Patricio County — Although, San Patricio County is not in Groundwater Management Area 15, Groundwater Management Area 15 requested pumpage be specified for this county since it was adjacent to Groundwater Management Area 15. A total of 9,000 acre-feet per year of pumpage was specified for the active model area of the Chicot Aquifer. A total of 9,000 acre-feet per year of pumpage was specified for the active model area of the Evangeline Aquifer. No pumpage was specified for the Burkeville or Jasper aquifers. The total pumpage specified for Wharton County for this model run was 18,000 acre-feet per year.
- All other counties — The GAM Run 07-12 baseline pumpage was used for all other counties within the groundwater availability model for the central part of the Gulf Coast Aquifer not specified above.

In all or parts of DeWitt, Refugio, San Patricio, and Wharton counties, pumpage for this model run was reduced relative to GAM Run 07-12. These pumpage reductions were uniformly reduced by scaling down the pumpage in order to honor the original spatial distribution of pumpage used in the calibrated model for the central part of the Gulf Coast Aquifer. Figures 2 through 9 show the difference in pumpage distributions between GAM Run 07-12 and the specified pumpage used for this model run.

It is important to note that the values shown in Table 1 do not always exactly match with the total pumpage requests as specified by members of Groundwater Management Area 15. This may be due to the precision of the factors used to distribute pumpage between aquifers or rounding errors inherent in the distribution of additional pumpage on a cell by

cell basis. In all cases, the pumpage that was specified by the members of the groundwater management area was adhered to as accurately as possible. Differences between the specified pumpage and the actual model pumpage are small (less than 1 percent) and therefore, will not impact the overall conclusions of this model simulation. The greatest amount of pumpage within Groundwater Management Area 15 is located in the north, primarily in western Wharton County (Figures 2 and 6).

Table 1. Total pumpage used for each county in this model simulation. Pumpage is reported in acre-feet per year.

	Actual pumpage used for this run				
	Total	Chicot Aquifer	Evangeline Aquifer	Burkeville Confining Unit	Jasper Aquifer
Aransas	1,826	1,826	0	0	0
Austin	7,076	3,118	3,931	5	22
Bee	22,175	9,500	12,000	75	600
Brazoria	9,010	8,727	283	0	0
Brooks	4,039	358	3,681	0	0
Calhoun	2,955	2,881	74	0	0
Colorado	48,000	24,450	22,650	0	900
DeWitt	14,945	1,000	7,662	0	6,283
Duval	7,747	417	4,364	75	2,891
Fayette	8,658	0	885	154	7,619
Fort Bend	8,801	5,920	2,881	0	0
Goliad	17,739	645	17,094	0	0
Gonzales	3	0	0	0	3
Jackson	75,000	54,680	20,320	0	0
Jim Hogg	979	15	371	0	593
Jim Wells	4,772	2,258	2,504	4	6
Karnes	2,895	0	103	281	2,511
Kenedy	102	40	62	0	0
Kleberg	8,629	947	7,682	0	0
Lavaca	20,185	3,036	12,400	149	4,600
Live Oak	8,676	114	1,834	1,426	5,302
Matagorda	44,985	35,595	9,390	0	0
McMullen	28	0	0	9	19
Nueces	3,092	1,862	1,230	0	0
Refugio	28,758	6,257	22,501	0	0
San Patricio	18,000	9,000	9,000	0	0
Victoria	35,000	8,000	27,000	0	0
Washington	6	0	0	0	6
Webb	142	0	135	0	7
Wharton	175,000	108,650	66,350	0	0

RESULTS:

Included in Appendix A are estimates of the water budgets after running the model for 60 years. The components of the water budget are described below.

- Wells—water produced from wells in each aquifer. This component is always shown as “Outflow” from the water budget, because all wells included in the model produce (rather than inject) water. Wells are modeled using the MODFLOW Well package.
- Springs and wetlands—water that drains from an aquifer if water levels are above the elevation of the spring or wetland. This component is always shown as “Outflow”, or discharge, from the water budget. Springs and wetlands are modeled using the MODFLOW Drain package.
- Recharge—simulates areally distributed recharge due to precipitation falling on the outcrop areas of aquifers. Recharge is always shown as “Inflow” into the water budget.
- Vertical Leakage (Upward or Downward)—describes the vertical flow, or leakage, between two aquifers. This flow is controlled by the water levels in each aquifer and aquifer properties of each aquifer that define the amount of leakage that can occur. “Inflow” to an aquifer from an overlying or underlying aquifer will always equal the “Outflow” from the other aquifer.
- Storage—water stored in the aquifer. The storage component that is included in “Inflow” is water that is removed from storage in the aquifer (that is, water levels decline). The storage component that is included in “Outflow” is water that is added back into storage in the aquifer (that is, water levels increase). This component of the budget is often seen as water both going into and out of the aquifer because this is a regional budget, and water levels will decline in some areas (water is being removed from storage) and will rise in others (water is being added to storage).
- Lateral flow—describes lateral flow within an aquifer between a county and adjacent counties.
- Evapotranspiration—water that flows out of an aquifer due to direct evaporation and plant transpiration. This component of the budget will always be shown as “Outflow”. Evapotranspiration is modeled using the MODFLOW Evapotranspiration package.
- Rivers and Streams—water that flows between streams and rivers and an aquifer. The direction and amount of flow depends on the water level in the stream or river and the aquifer. In areas where water levels in the stream or river are above the water level in the aquifer, water flows into the aquifer and is shown as “Inflow” in the budget. In areas where water levels in the aquifer are above the water level in the stream or river, water flows out of the aquifer and into the stream and is shown as “Outflow” in the budget. Rivers and streams are modeled using the MODFLOW Stream package.
- General-Head Boundary—the model uses general-head boundaries to simulate the movement of water out of the Chicot Aquifer at the coast.

Groundwater flow simulation results from this model run are described for the Chicot (layer 1 in the model), Evangeline (layer 2), and Jasper (layer 4) aquifers. Results for the Burkeville Confining System (layer 3) are not discussed because of confining characteristics of this unit.

Initial water levels (end of 1999) for the Chicot, Evangeline, and Jasper aquifers are shown in Figures 10, 11, and 12, respectively. These map figures show the starting water levels for this 60-year predictive model run. These map figures all show that water level elevations are the highest in the outcrop portions of the aquifers, located farthest from the coast, and that water level elevations decrease as groundwater flows downdip towards the coast. An area of drawdown (area of decreased water levels due to heavy pumpage relative to surrounding areas) occurs in the Chicot Aquifer in western Wharton County (Figure 10). Drawdown areas also occur in the Evangeline Aquifer in western Wharton County, as well as around the cities of Victoria and Kingsville in Victoria and Kleberg counties, respectively (Figure 11). Small areas of drawdown occur in the Jasper Aquifer in southern Duval, central Live Oak, central DeWitt, western Colorado, and central Lavaca counties (Figure 12).

Water levels at the end of the 60-year predictive simulation for the Chicot, Evangeline, and Jasper aquifers are shown in Figures 13, 14, and 15, respectively. These figures show the impact of the increased pumping in many parts of the model area. An increase in the area of drawdown is evident in the water level map for the Chicot Aquifer in western Wharton County (Figure 13). Water levels in the Evangeline Aquifer show an increased drawdown for the Kingsville area in Kleberg County, water level recovery for Victoria in Victoria County, no change for western Wharton County (Figure 14). In the Jasper Aquifer, simulated water levels after 60 years show increased drawdown in Fayette County and southern Duval County (Figure 15). Central Live Oak County shows significant water level recovery (Figure 15).

In addition to reporting simulated water level maps, maps of water level changes for each aquifer were made. A water level change map shows the difference between the initial water levels (1999) and the simulated water levels at the end of the 60-year run. These figures show the effect of pumpage on the water levels over the length of the model run. Water level changes over the 60-year predictive simulation for the Chicot, Evangeline, and Jasper aquifers are shown in Figures 16, 17, and 18, respectively. At the request of Groundwater Management Area 15 members, the water level change maps are provided with 10 foot contour intervals (Figures 16a, 17a, and 18a) and 25 foot intervals (Figures 16b, 17b, and 18b). Average water level changes for each aquifer of each county of the model are also provided in Table 2.

Simulated water levels in the Chicot Aquifer decline along the Bee and San Patricio county boundary and also in western part of Wharton County, spreading into eastern Jackson County (Figure 16). Water levels also show some recovery around central Victoria County due to significant reduction in pumping in the area. Recovery in water levels can also be observed at the southern edge of the model in Brooks, Jim Hogg, and Kenedy counties. However, water level recovery along the southern edge of the model is an artifact caused by the assignment of a no-flow boundary. Therefore, the simulation results along this model boundary should be ignored for management decisions.

In the Evangeline Aquifer, water levels decline along US highway 77 in Refugio and San Patricio County (Figure 17). Significant water level declines of about 100 feet are observed in Kingsville in Kleberg County where a large amount of pumpage from the Evangeline Aquifer occurs over a small area. About 75 feet of water level recovery occurs around the City of Victoria in Victoria County. Simulated water levels along the southern model boundary also show recovery but are suspect due to assignment of no-flow model boundary in this area.

In the Jasper Aquifer, several areas of significant water level decline occur in DeWitt, Lavaca, Karnes, and Duval counties (Figure 18). Localized areas of water level recovery are present in central Bee County and Live Oak counties. Water level recovery is again observed at the southern edge of the model and is suspect due to assignment of no-flow model boundary in this area.

Because some of the desired future conditions for the groundwater management area may be based on discharge to springs or baseflow to rivers and streams, we also reported the water budget flow terms for each county in the model area and within the official state boundary of the Gulf Coast Aquifer. These budgets are provided in Appendix A. The components of the water budget are divided up into “In” and “Out”, representing water that is coming into and leaving from the aquifer. As might be expected, water from wells is only in the “Out” column, representing water that is pulled out of the budget or aquifer system from wells. Likewise, recharge is only found in the “In” column. Streams and rivers, however, have values in both the “In” and “Out” columns. This is because some streams lose water to the aquifer, and some gain water from the aquifer depending on the water levels in the aquifer. Also included in these budgets are values for vertical leakage to overlying and underlying formations as well as lateral inflow from adjacent counties. Future model runs can be compared to these budgets to determine the impact of additional pumpage compared to this run.

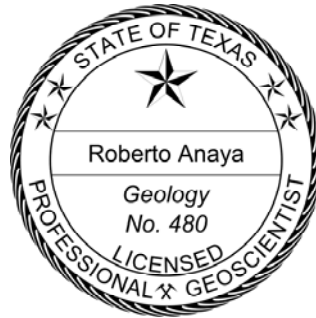
Please note that the water budget values for the wells in Appendix A may not exactly match the county pumpage values listed in Table 1 of this report due to rounding errors and /or dry cells. Dry cells occur when the water level in a model cell falls below the bottom of the cell. When this occurs, the model cell is deactivated. If high pumpage is the primary factor for a cell going dry, the model is saying that the pumping may be too great for the aquifer in this area. In the groundwater availability model for the central part of the Gulf Coast Aquifer, when the model deactivates a cell, that cell is inactive for the rest of the simulation, and it is important to identify why a cell went dry and address the causes. In reality, the aquifer will probably not go dry because pumping will become uneconomical before the aquifer is fully dewatered in any particular area. However, the model is suggesting that these areas may experience water supply problems sometime in the 60-year simulation period if pumpage is increased to the level requested by Groundwater Management Area 15. In addition, pumpage values listed in Table 1 of this report include pumpage within active cells of the model yet outside the official state aquifer boundary, but that pumpage is not included in water budget tables in Appendix A.

Table 2. Average water level changes by county and aquifer. Negative values indicate a decline in water levels between 1999 and 2060 while positive values indicate a recovery of water levels since 1999. A dashed line indicates the aquifer does not exist or was not modeled for a particular county.

County	Average water level change (feet)		
	Chicot Aquifer (Layer 1)	Evangeline Aquifer (Layer 2)	Jasper Aquifer (Layer 4)
Aransas	0.1	-25.6	--
Austin	3.5	-1.9	-10.6
Bee	-7.7	-17.0	-4.1
Brazoria	0.6	-8.8	-14.4
Brooks	28.7	22.8	6.2
Calhoun	1.0	-9.2	--
Colorado	-5.2	-8.8	-20.3
DeWitt	-0.2	-5.4	-21.7
Duval	0.7	-0.1	-15.3
Fayette	--	-13.4	-45.4
Fort Bend	2.4	-0.7	-11.4
Goliad	0.8	-6.7	-7.4
Gonzales	--	--	-14.2
Jackson	-12.5	-15.6	-19.1
Jim Hogg	55.5	24.9	13.4
Jim Wells	1.2	0.1	-2.6
Karnes	--	0.7	-11.8
Kenedy	7.9	3.5	--
Kleberg	-0.5	-19.5	-5.7
Lavaca	-4.7	-5.1	-28.6
Live Oak	-3.9	-4.1	-4.3
McMullen	--	--	-8.0
Matagorda	-3.2	-17.8	--
Nueces	-0.5	-3.8	-2.8
Refugio	-0.6	-32.3	--
San Patricio	-8.7	-21.6	-9.9
Victoria	9.4	-3.2	-7.4
Washington	--	--	-37.4
Webb	--	15.7	9.1
Wharton	-11.7	-3.8	-21.1

REFERENCES:

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- Donnelly, A.C.A., 2007a, GAM Run 07-12, Texas Water Development Board GAM Run Report, 39 p.
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- Waterstone Engineering, Inc., and Parsons, Inc., 2003, Groundwater Availability of the Central Gulf Coast Aquifer: Numerical Simulations to 2050 Central Gulf Coast, Texas- Final Report: contract report to the Texas Water Development Board, 158 p.



The seal appearing on this document was authorized by Roberto Anaya, P.G. 480, on March 17, 2009.

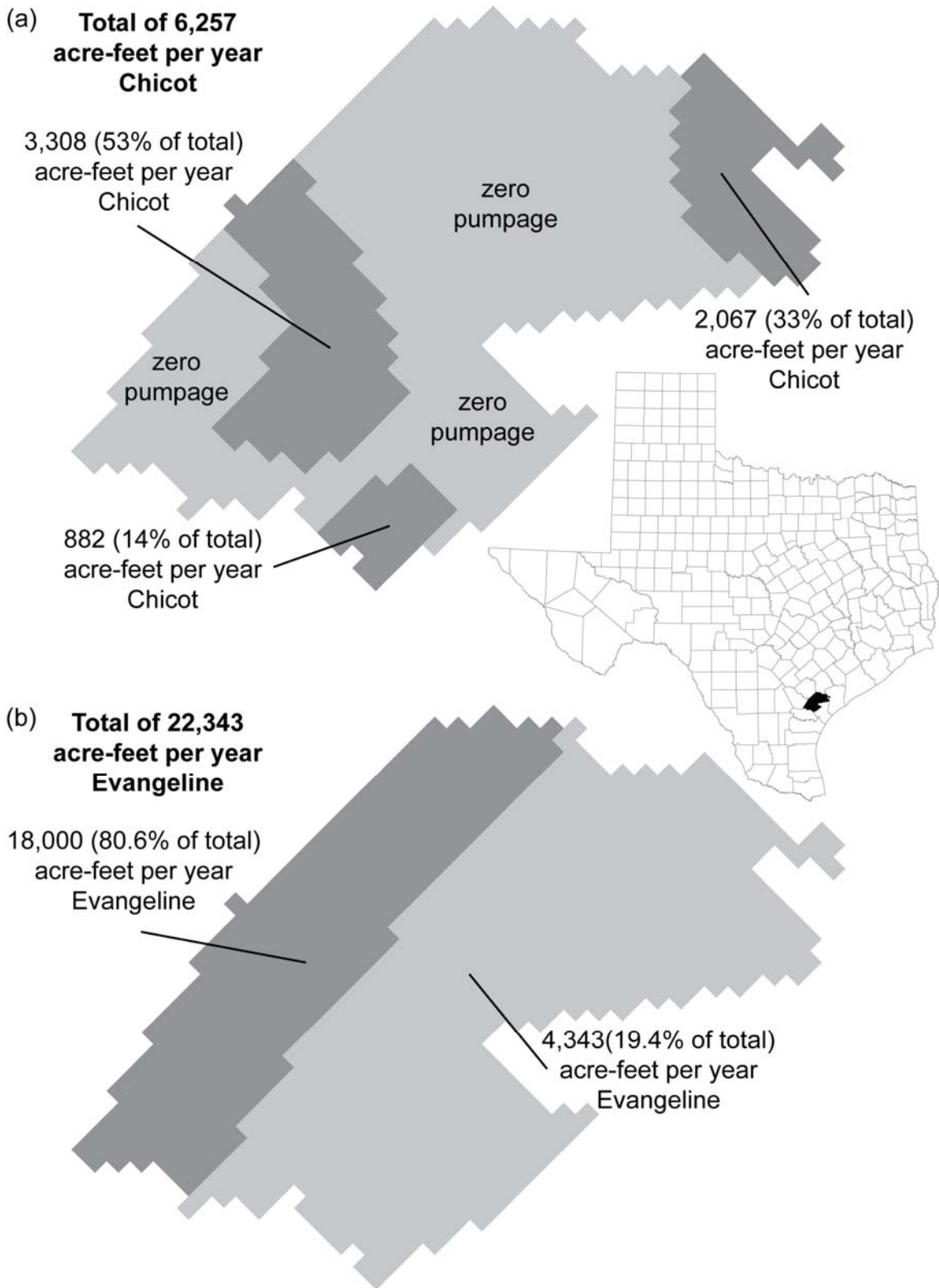


Figure 1. Map showing specified pumpage distribution over selected areas in the Chicot and Evangeline aquifers for Refugio County.

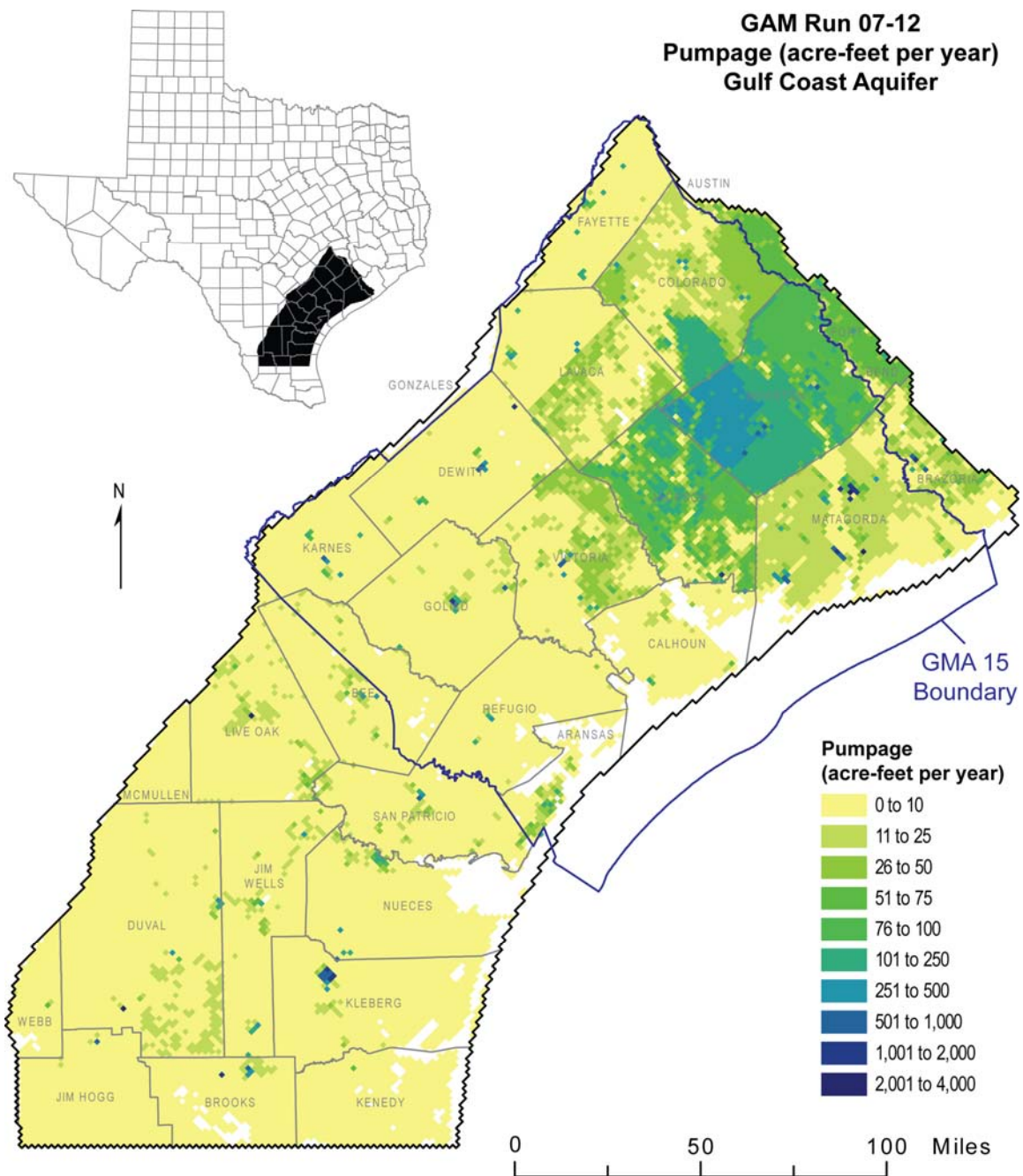


Figure 2. The total annual baseline pumpage distribution for the Chicot, Evangeline, Burkeville, and Jasper aquifers developed for GAM Run 07-12 for Groundwater Management Area (GMA) 15.

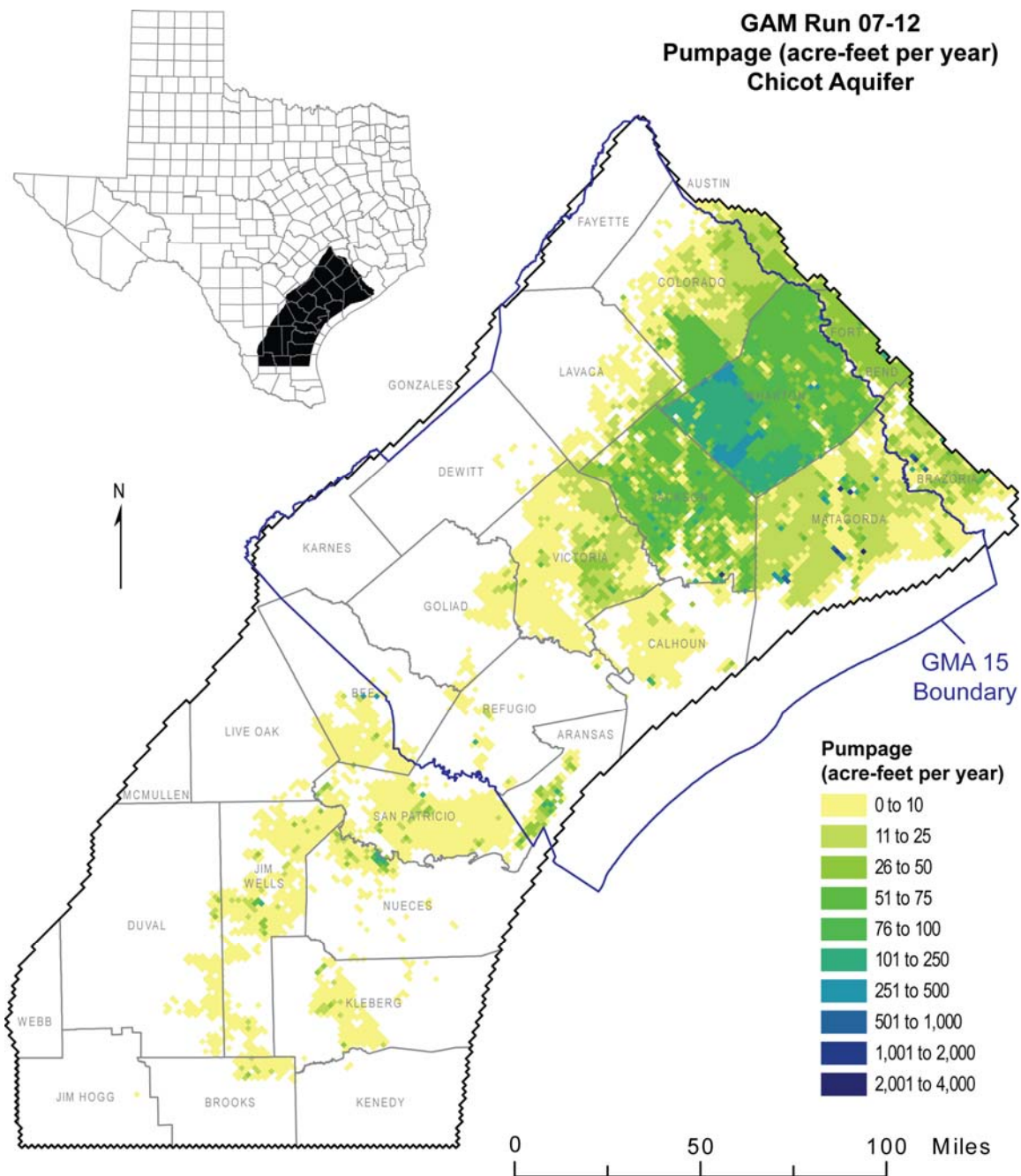


Figure 3. The total annual baseline pumpage distribution for the Chicot Aquifer developed for GAM Run 07-12 for Groundwater Management Area 15.

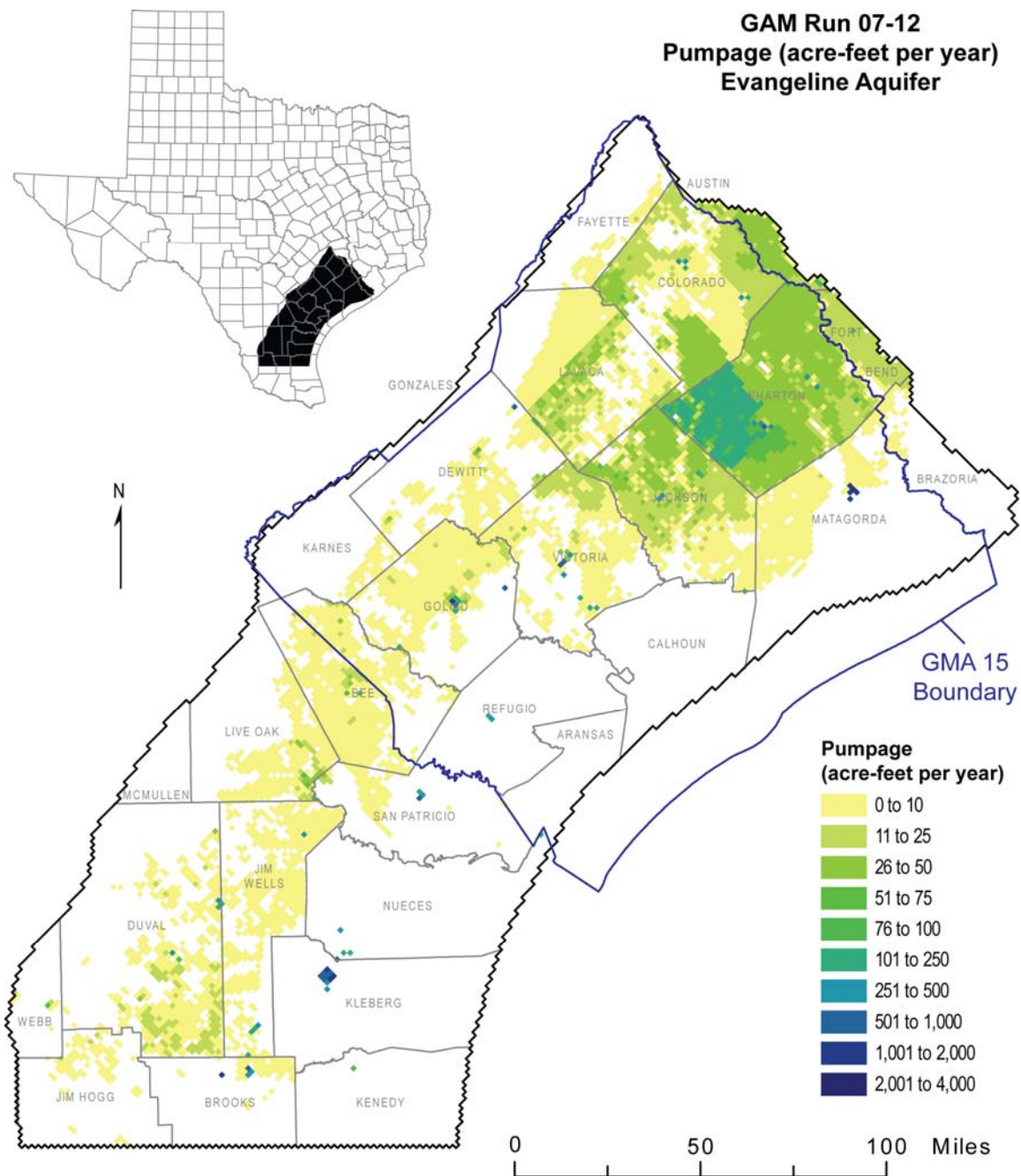


Figure 4. The total annual baseline pumpage distribution for the Evangeline Aquifer developed for GAM Run 07-12 for Groundwater Management Area 15.

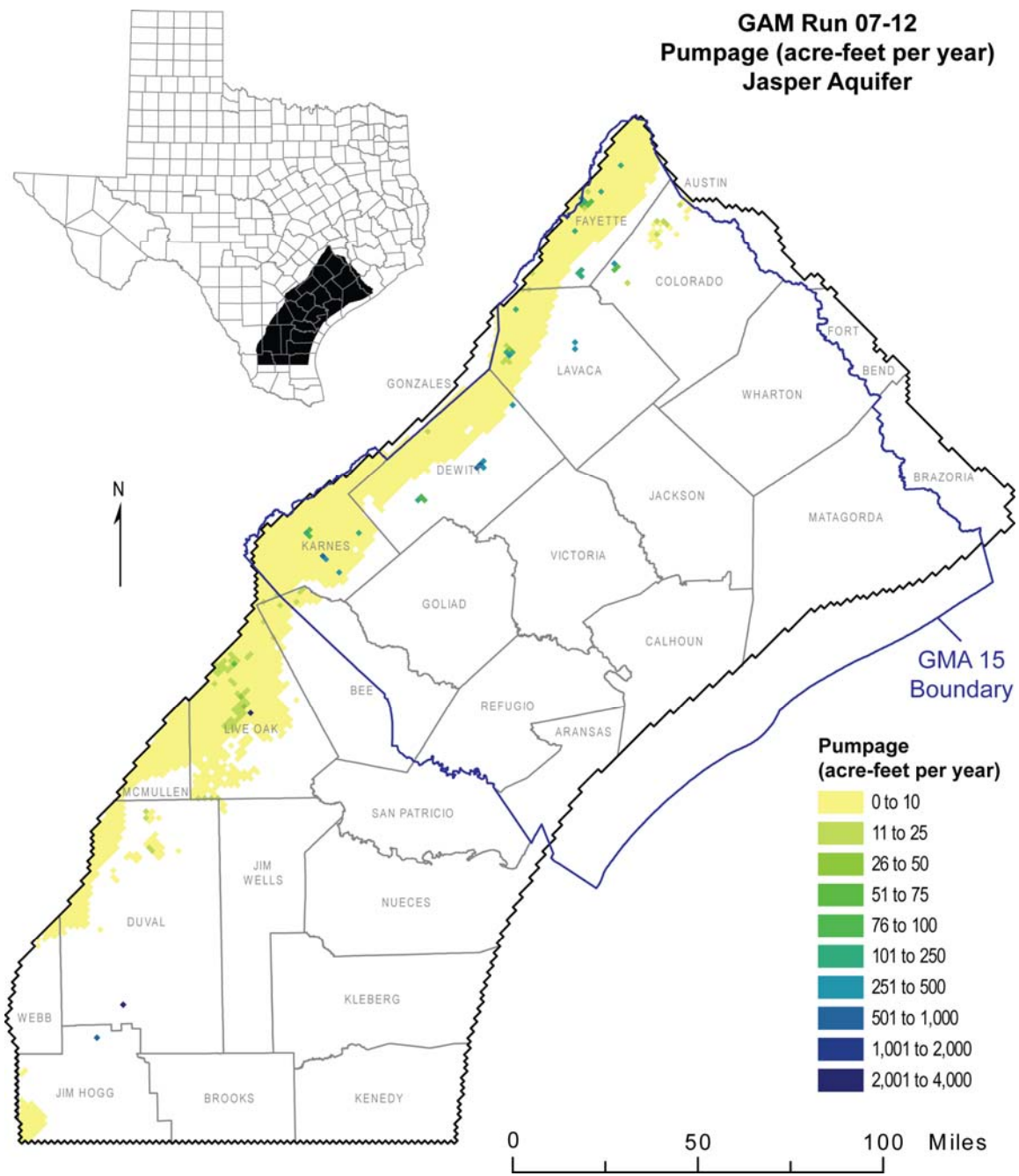


Figure 5. The total annual baseline pumpage distribution for the Jasper Aquifer developed for GAM Run 07-12 for Groundwater Management Area 15.

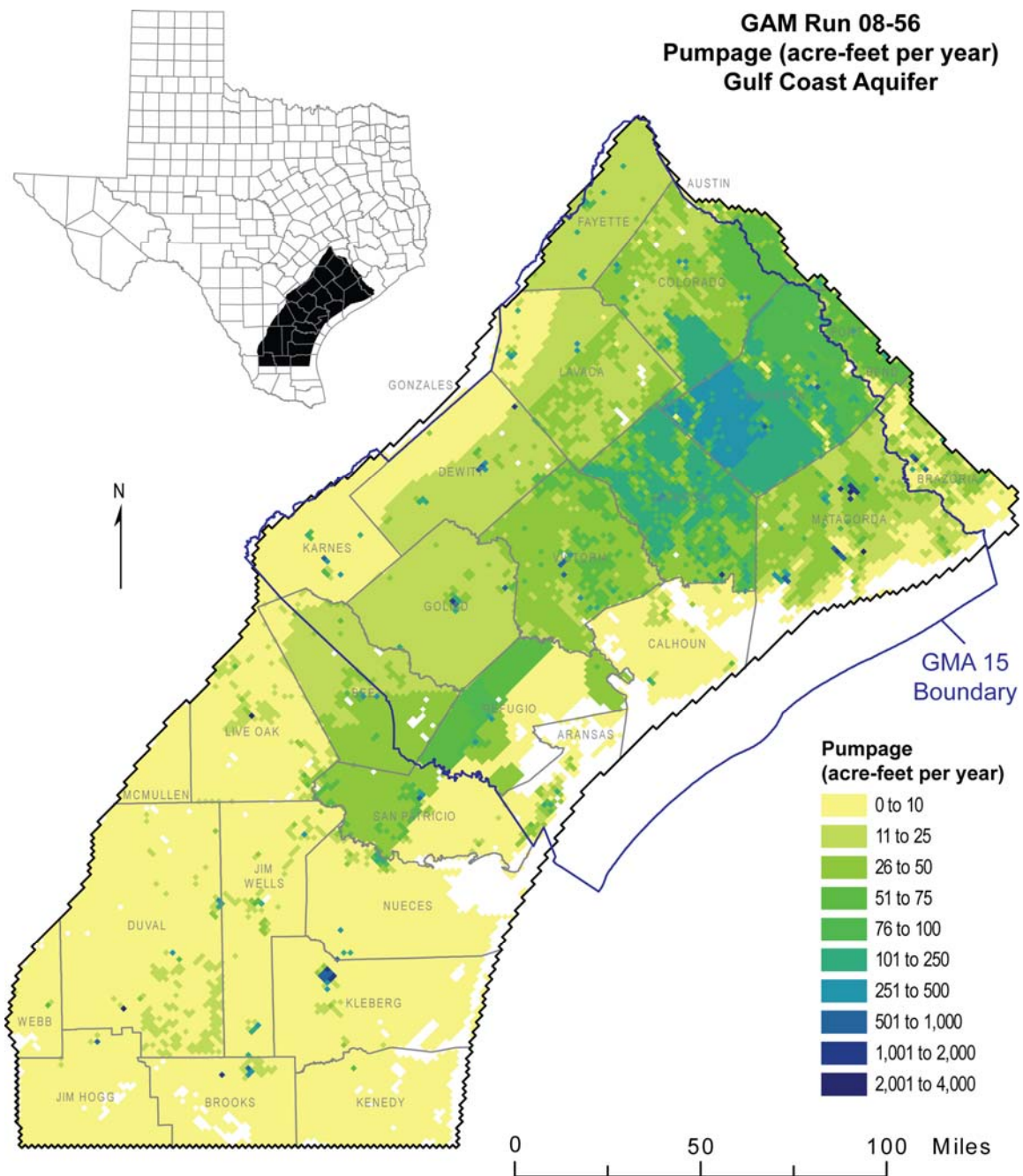


Figure 6. The total annual pumpage distribution for the Chicot, Evangeline, Burkeville, and Jasper aquifers used for this groundwater flow simulation as specified by Groundwater Management Area (GMA) 15.

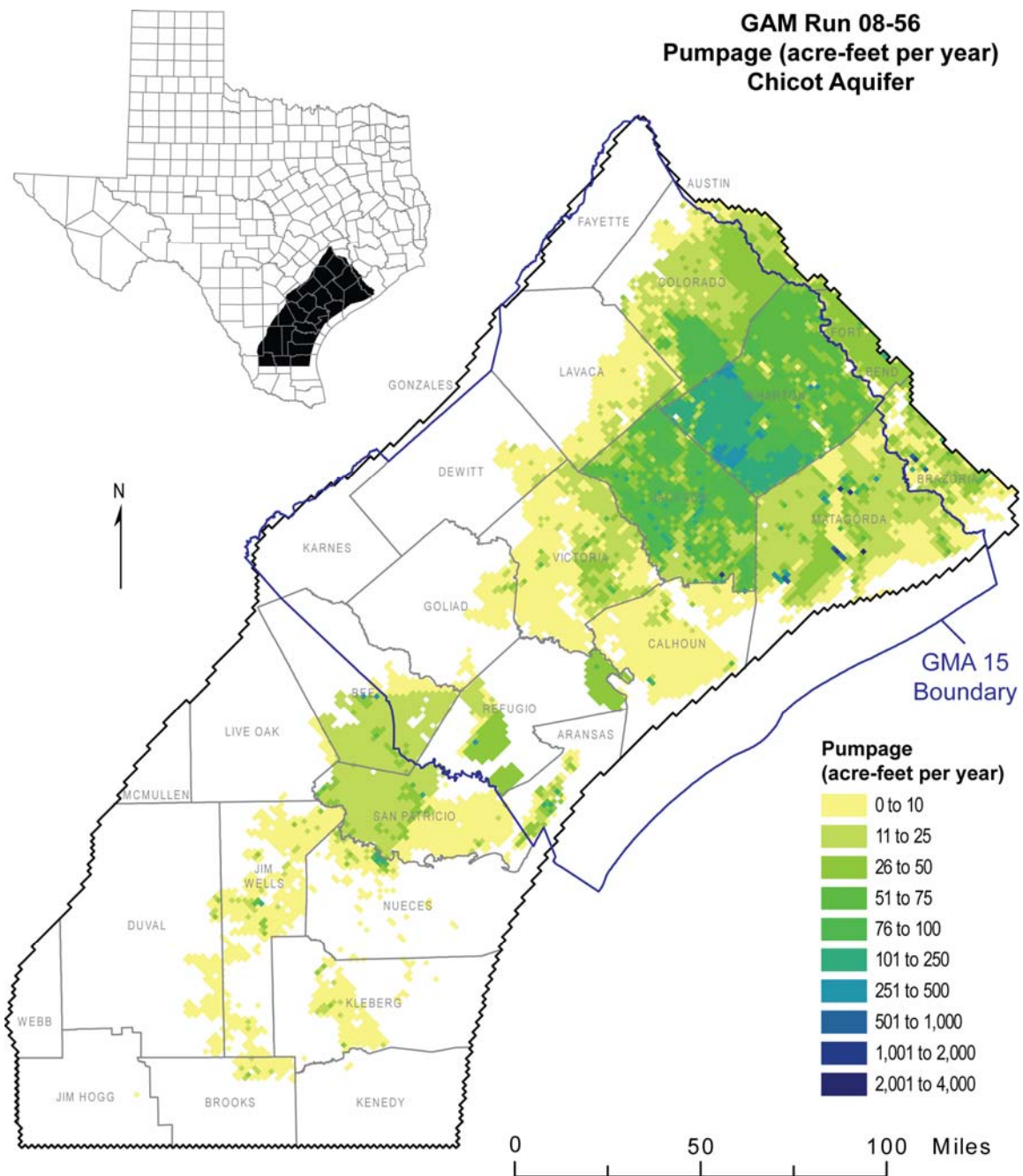


Figure 7. The total annual pumpage distribution for the Chicot Aquifer used for this groundwater flow simulation as specified by Groundwater Management Area (GMA) 15.

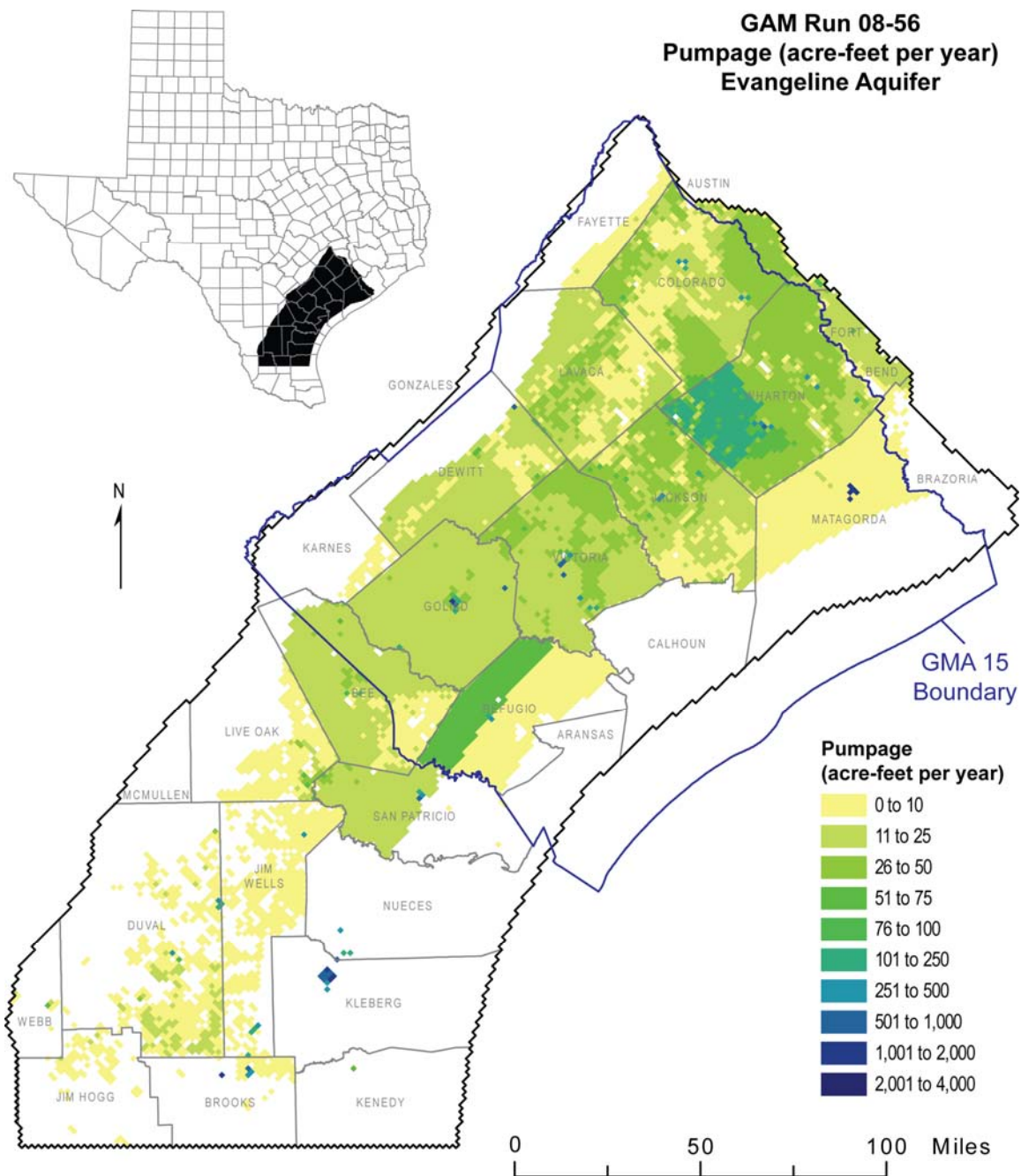


Figure 8. The total annual pumpage distribution for the Evangeline Aquifer used for this groundwater flow simulation as specified by Groundwater Management Area (GMA) 15.

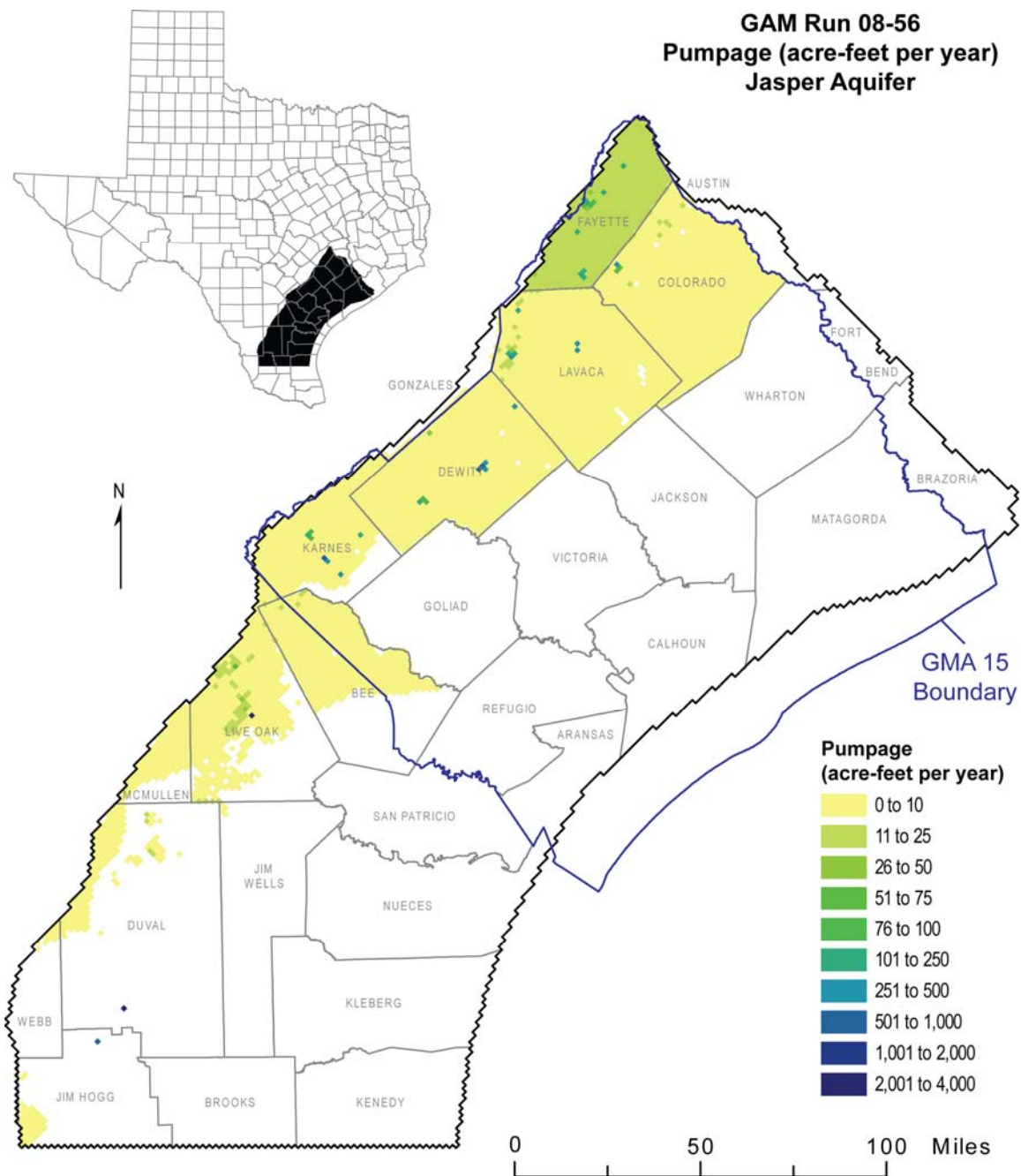


Figure 9. The total annual pumpage distribution for the Jasper Aquifer used for this groundwater flow simulation as specified by Groundwater Management Area (GMA) 15.

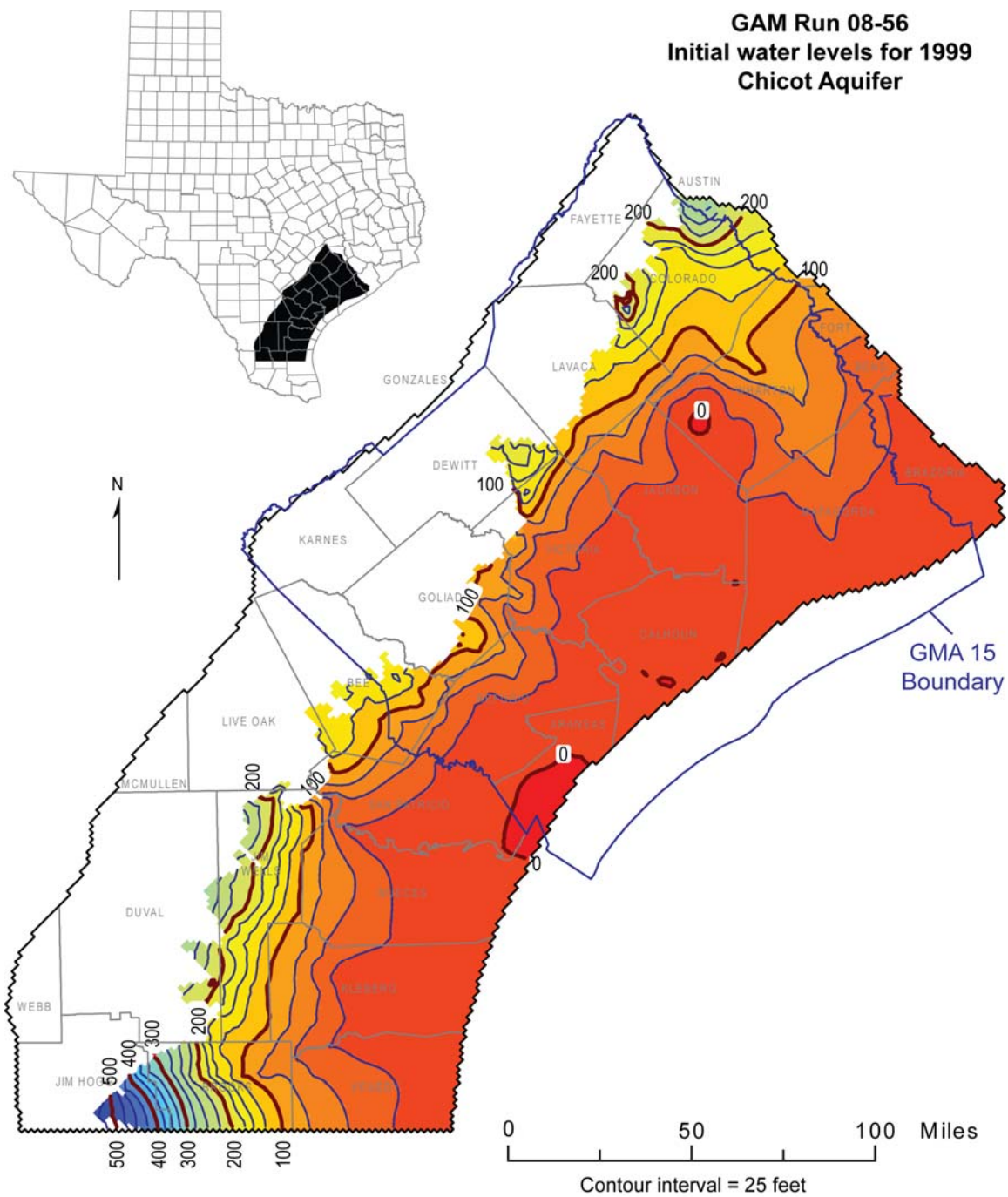


Figure 10. Initial water level elevations for the 60-year model simulation run in the Chicot Aquifer from the groundwater availability model for the central part of the Gulf Coast Aquifer. Water level elevations are in feet above mean sea level. Thick contour lines are at 100 feet intervals.

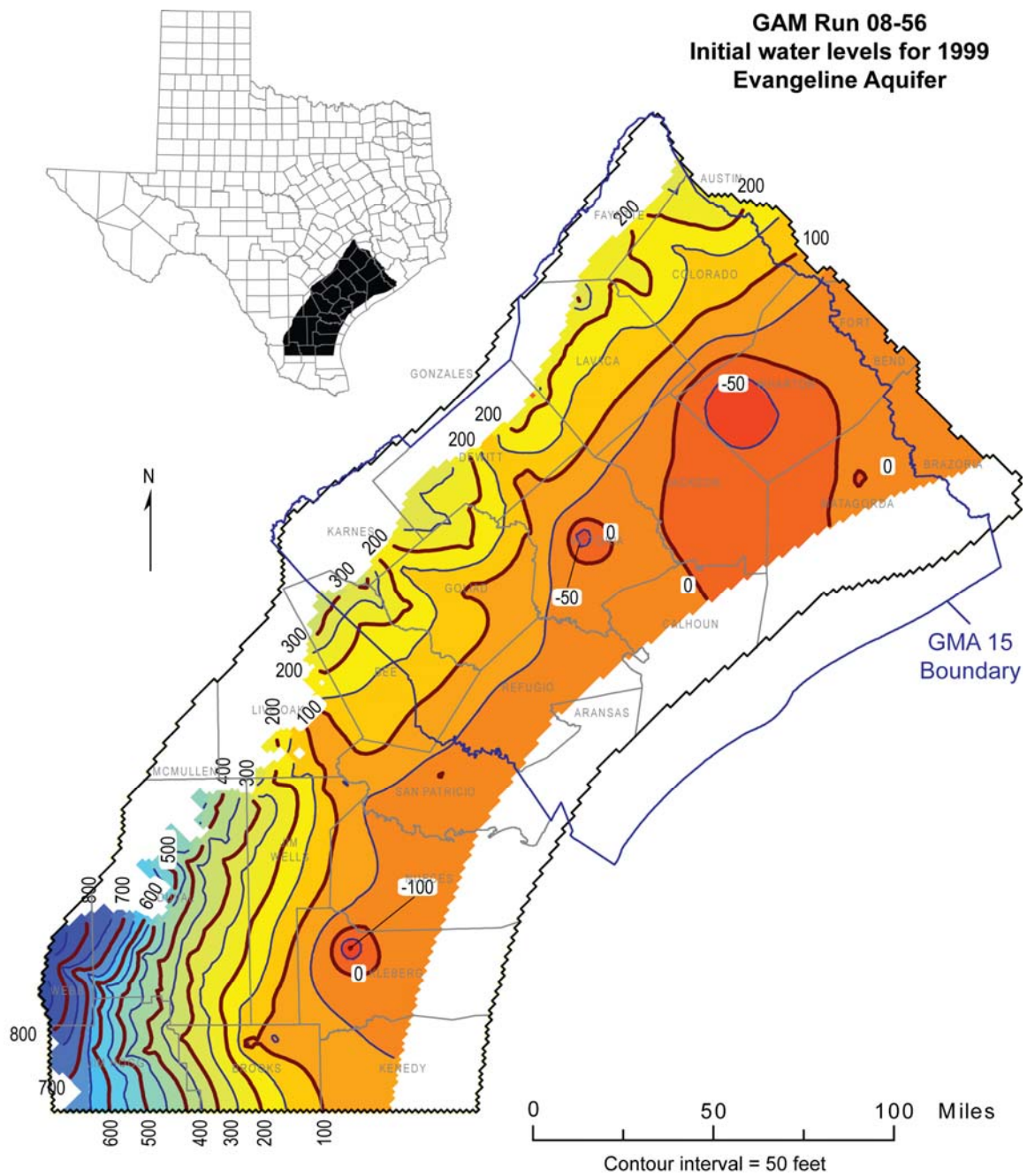


Figure 11. Initial water level elevations for the 60-year model simulation run in the Evangeline Aquifer from the groundwater availability model for the central part of the Gulf Coast Aquifer. Water level elevations are in feet above mean sea level. Thick contour lines are at 100 feet intervals.

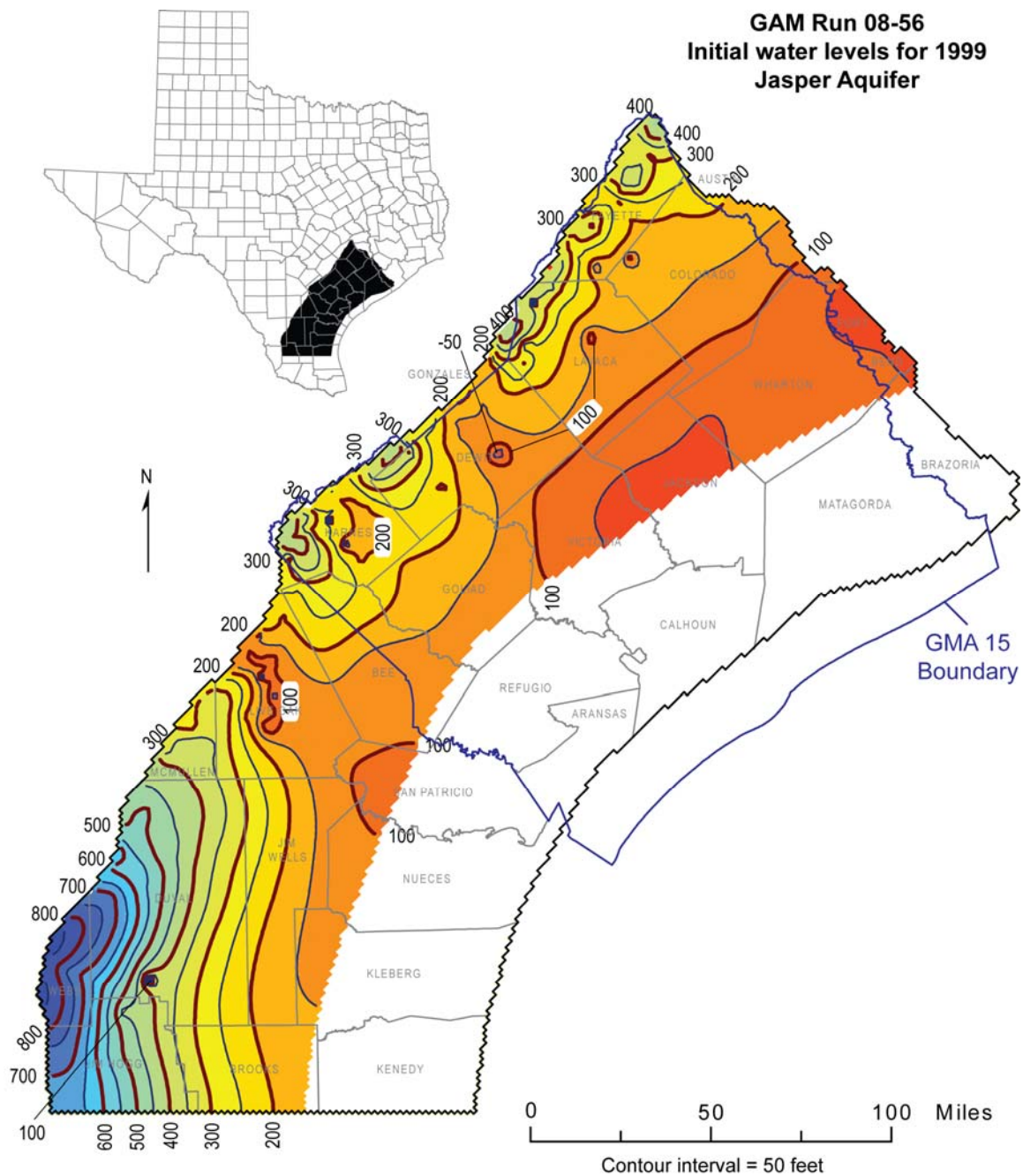


Figure 12. Initial water level elevations for the 60-year model simulation run in the Jasper Aquifer from the groundwater availability model for the central part of the Gulf Coast Aquifer. Water level elevations are in feet above mean sea level. Thick contour lines are at 100 feet intervals.

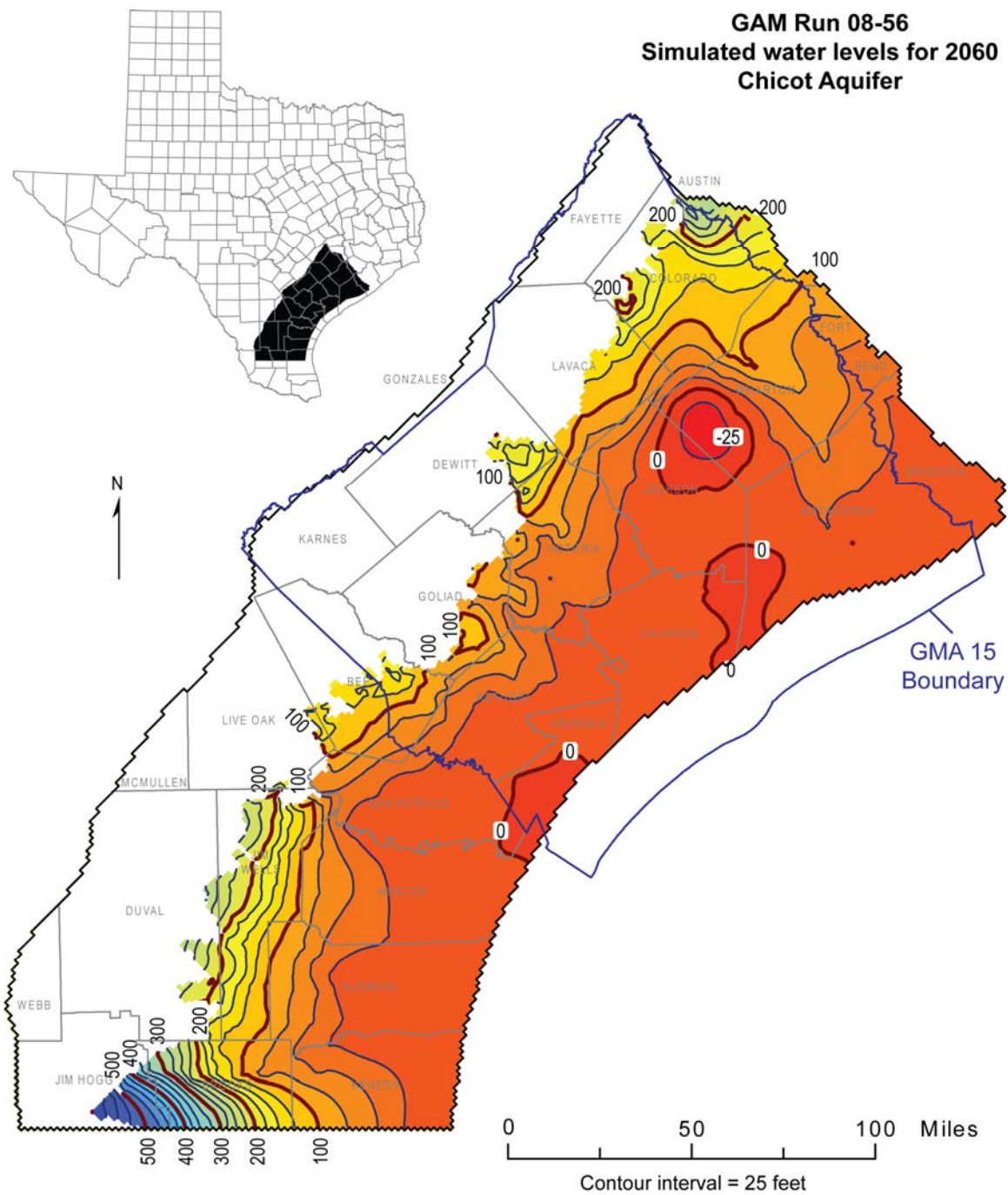


Figure 13. Water level elevations after the 60-year model simulation using the specified pumpage in the Chicot Aquifer. Water level elevations are in feet above mean sea level. Thick contour lines are at 100 feet intervals.

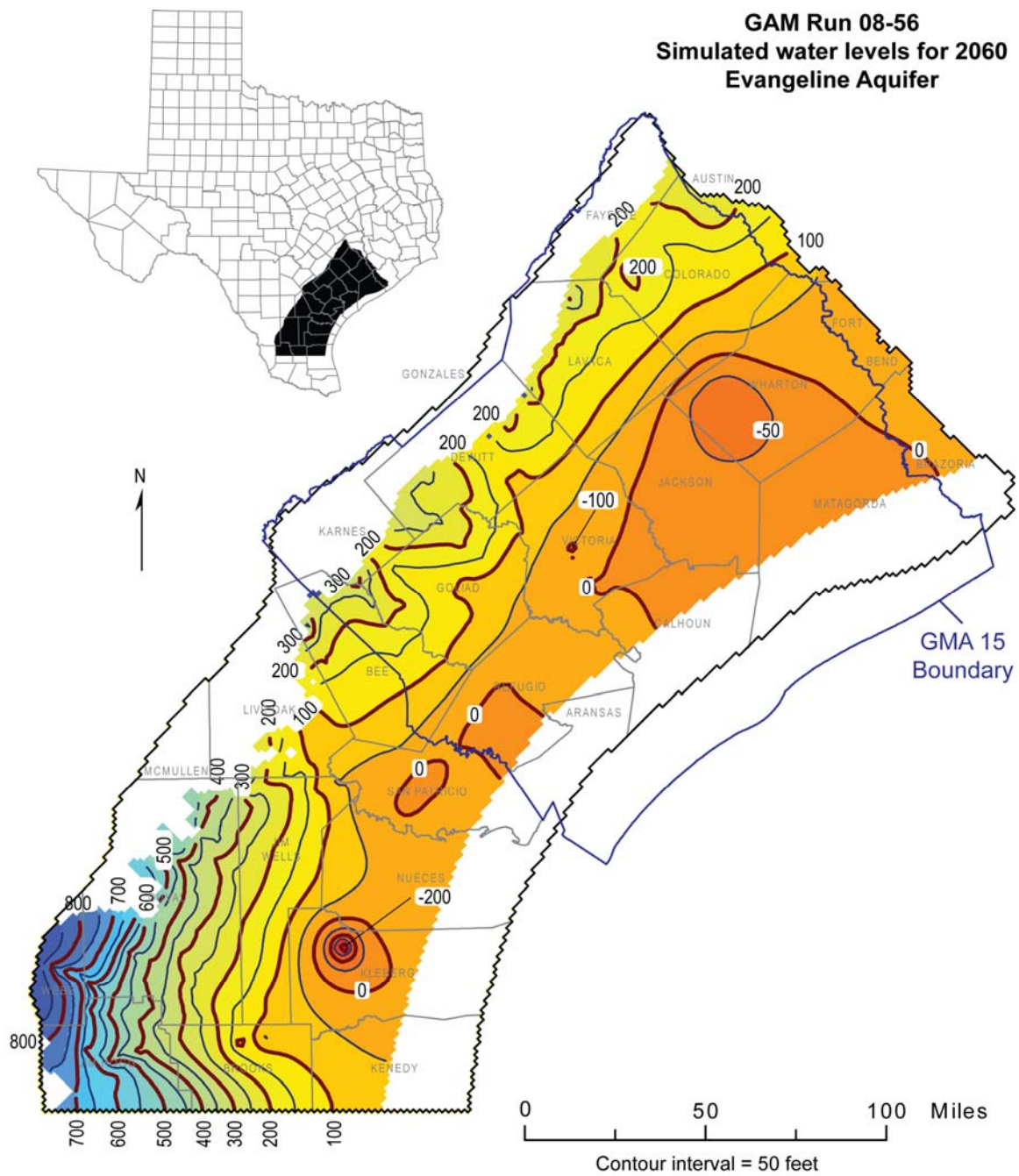


Figure 14. Water level elevations after the 60-year model simulation using the specified pumpage in the Evangeline Aquifer. Water level elevations are in feet above mean sea level. Dry cells are shown in purple. Thick contour lines are at 100 feet intervals.

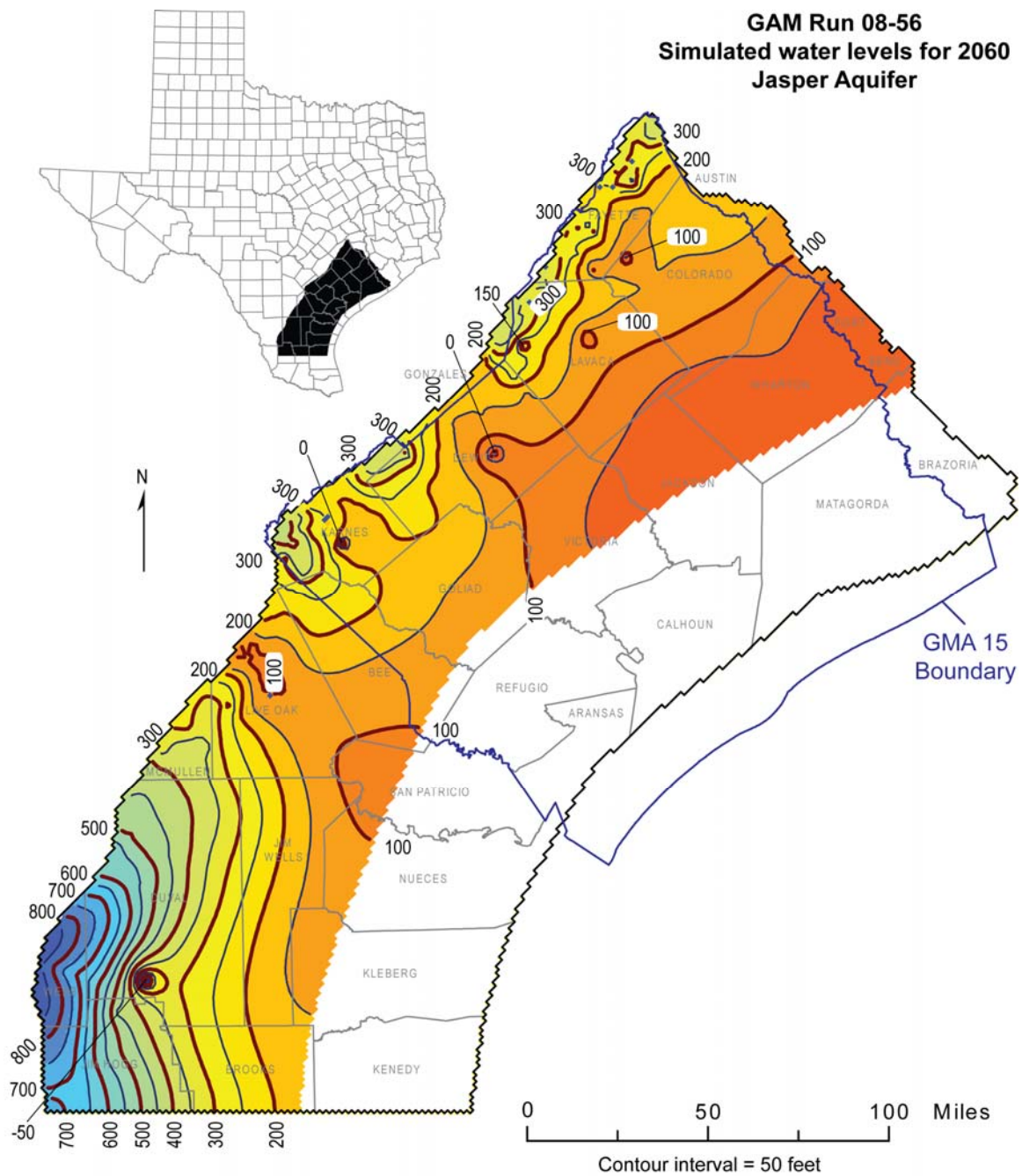


Figure 15. Water level elevations after the 60-year model simulation using the specified pumpage in the Jasper Aquifer. Water level elevations are in feet above mean sea level. Dry cells are shown in purple. Thick contour lines are at 100 feet intervals.

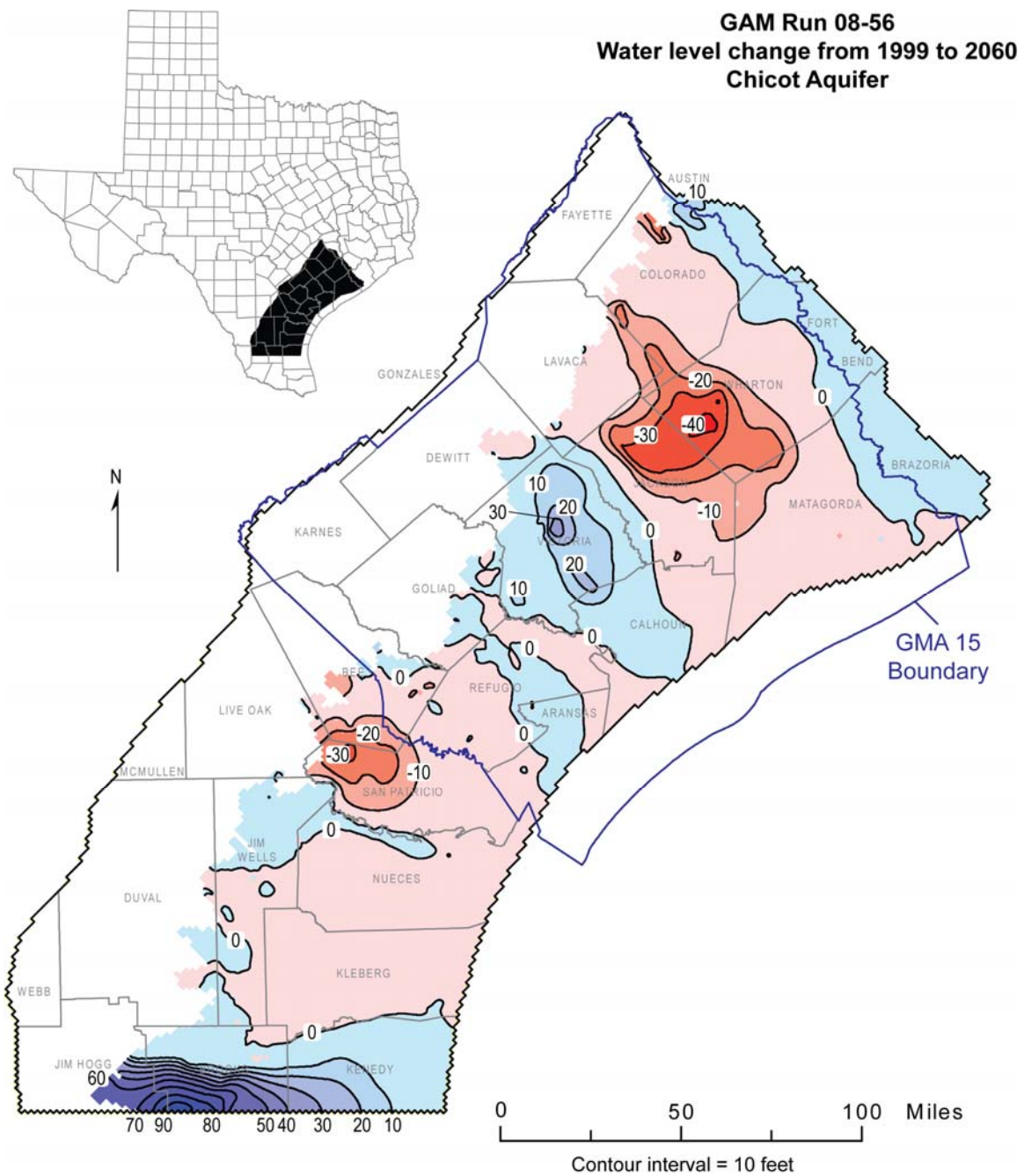


Figure 16a. Changes in water levels from 1999 to 2060 using the specified pumpage in the Chicot Aquifer. Decreases in water levels (drawdowns) are shown in red and increases in water levels are shown in blue with 10 foot contour interval.

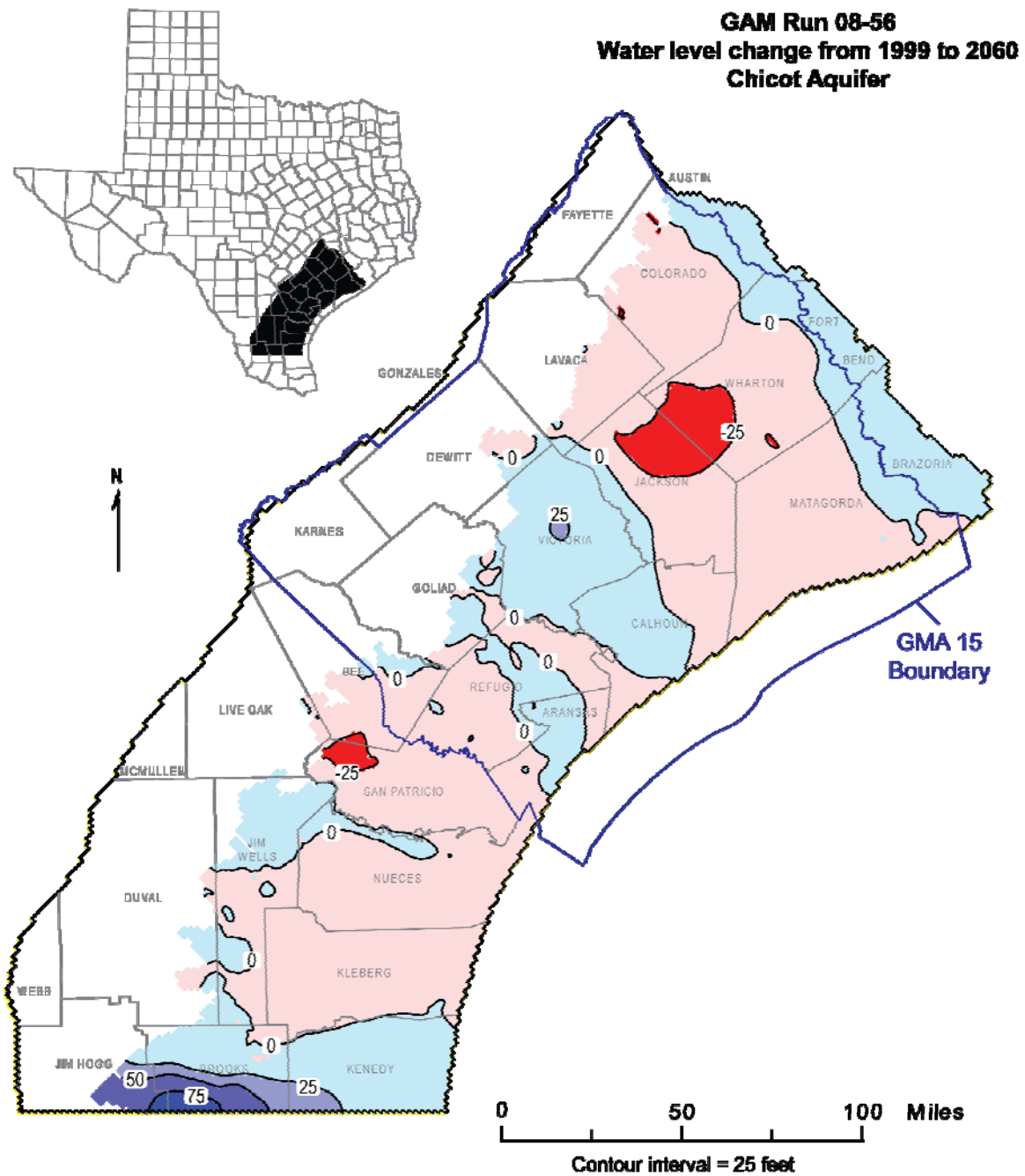


Figure 16b. Changes in water levels from 1999 to 2060 using the specified pumpage in the Chicot Aquifer. Decreases in water levels (drawdowns) are shown in red and increases in water levels are shown in blue with 25 foot contour interval.

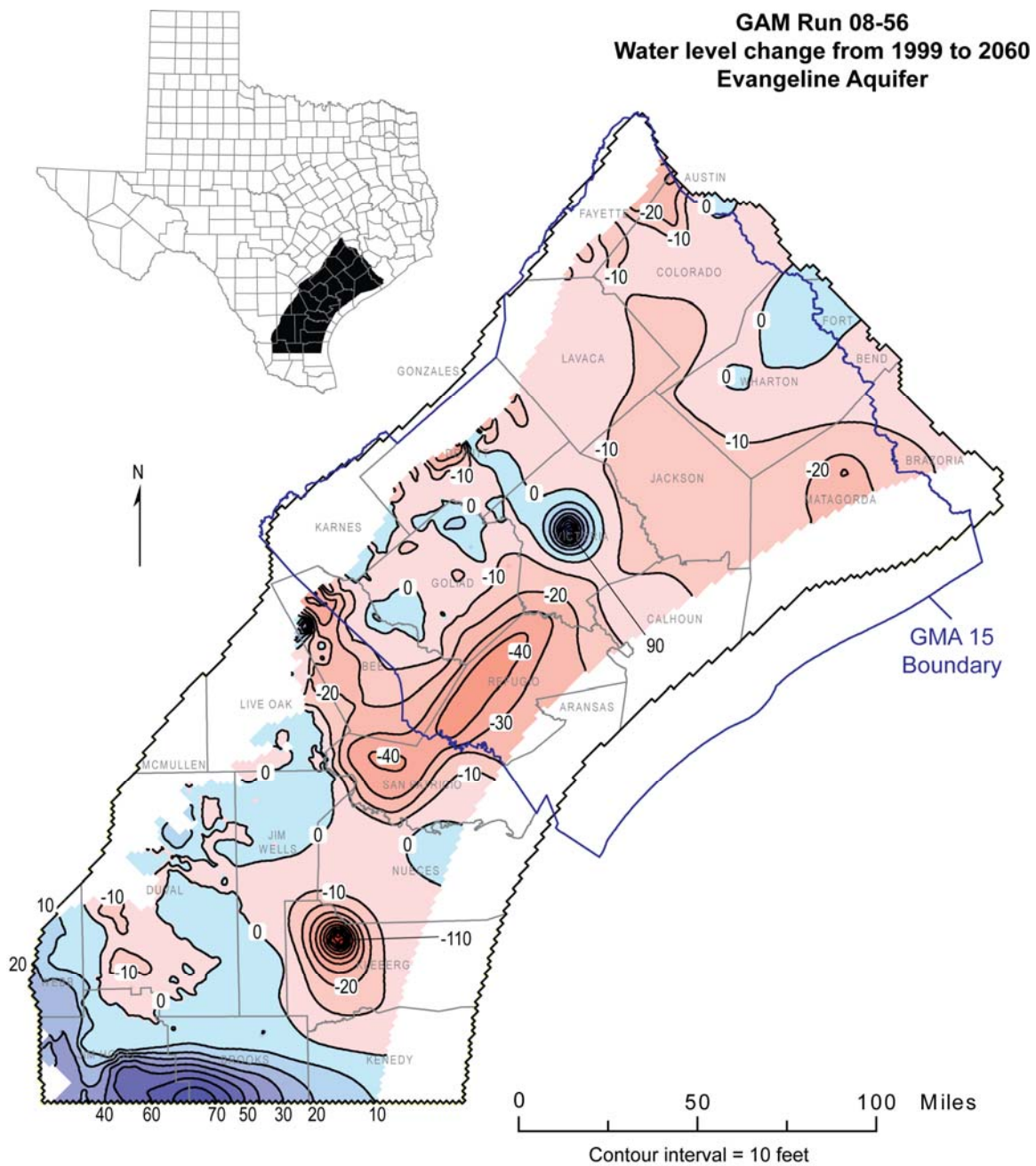


Figure 17a. Changes in water levels from 1999 to 2060 using the specified pumpage in the Evangeline Aquifer. Decreases in water levels (drawdowns) are shown in red and increases in water levels are shown in blue with 10 foot contour interval.

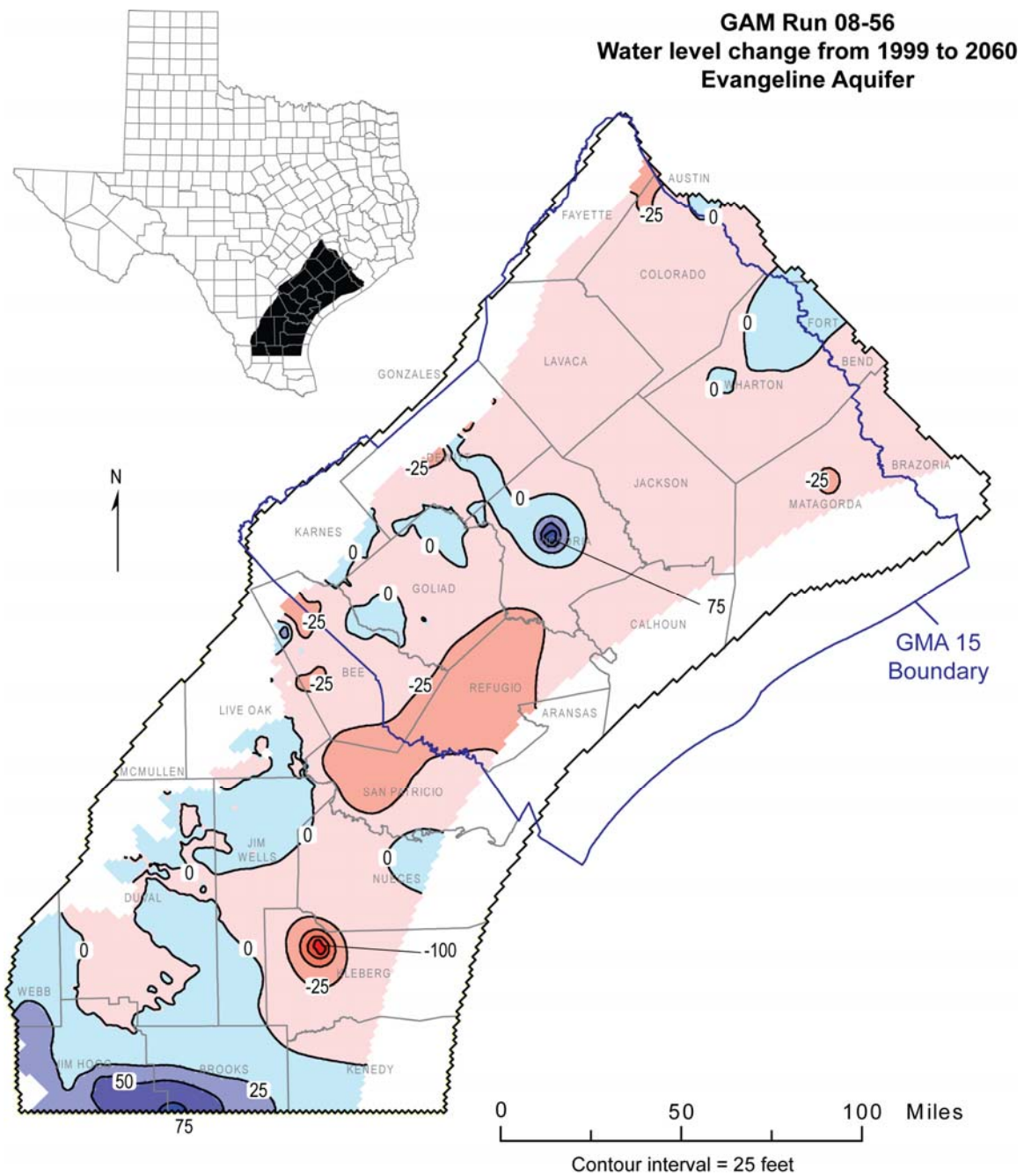


Figure 17b. Changes in water levels from 1999 to 2060 using the specified pumpage in the Evangeline Aquifer. Decreases in water levels (drawdowns) are shown in red and increases in water levels are shown in blue with 25 foot contour interval.

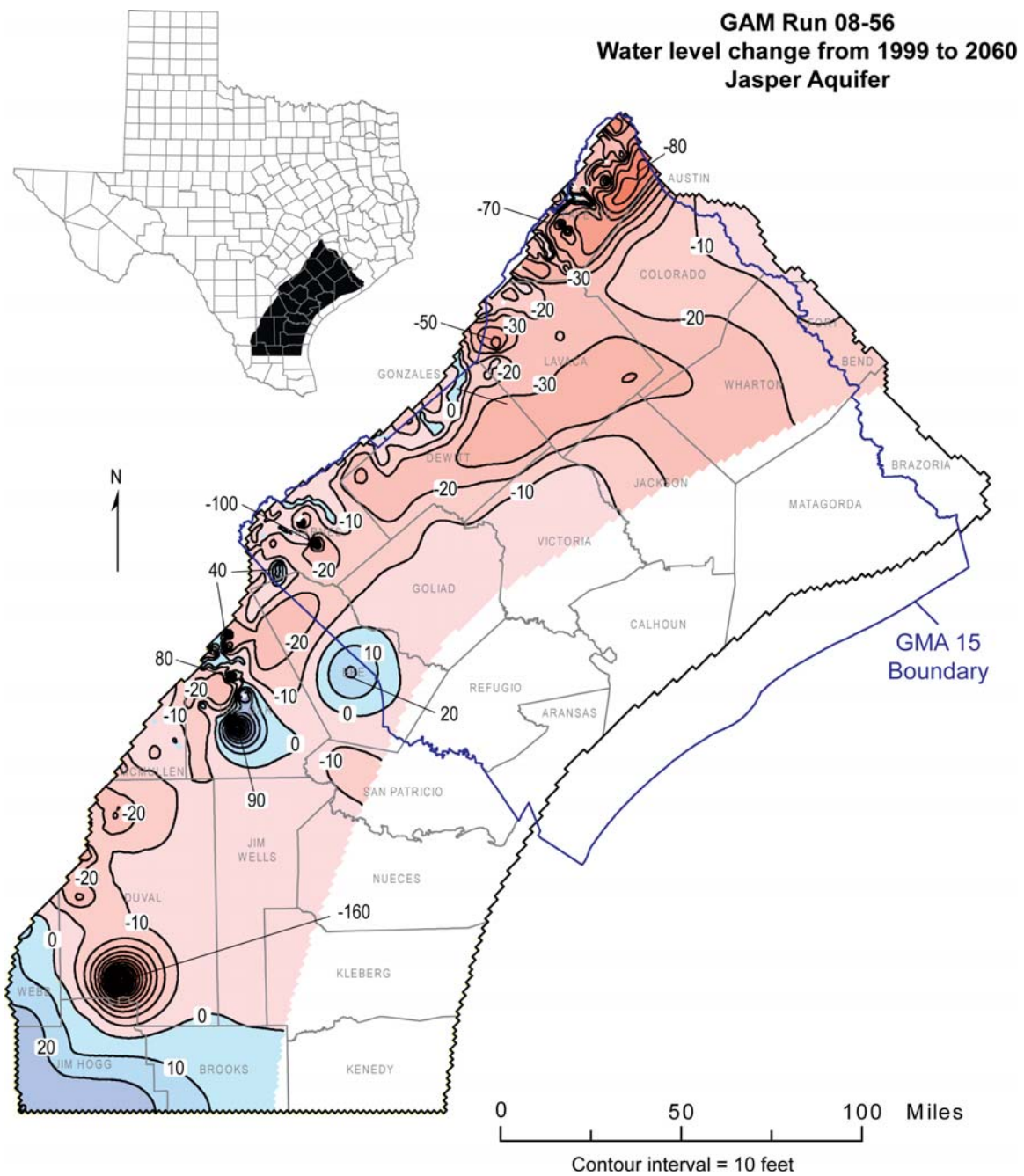


Figure 18a. Changes in water levels from 1999 to 2060 using the specified pumpage in the Jasper Aquifer. Decreases in water levels (drawdowns) are shown in red and increases in water levels are shown in blue with 10 foot contour interval.

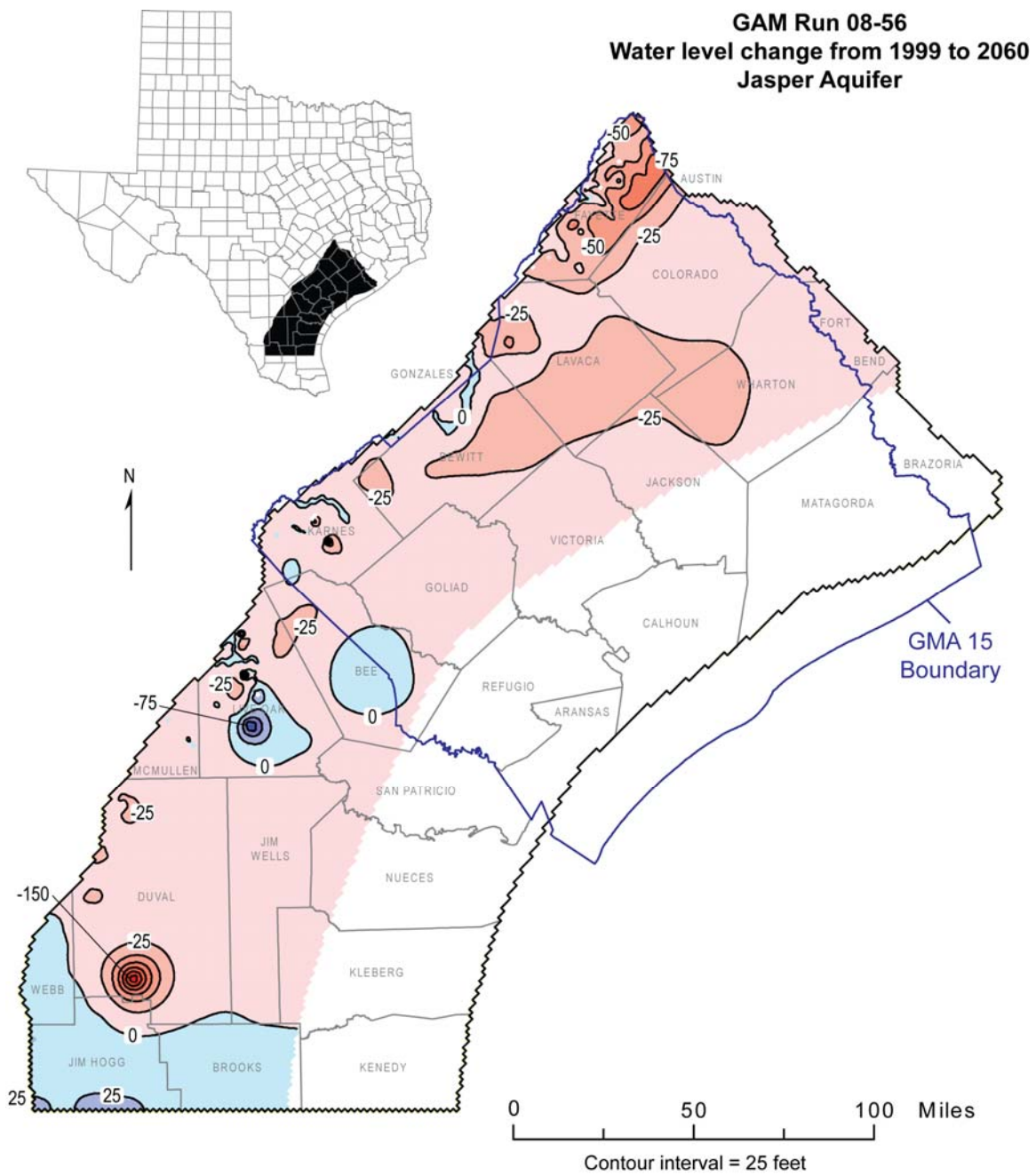


Figure 18b. Changes in water levels from 1999 to 2060 using the specified pumpage in the Jasper Aquifer. Decreases in water levels (drawdowns) are shown in red and increases in water levels are shown in blue with 25 foot contour interval.

Appendix A

Summary of Water Budgets After 60 Years

Table A-1. Annual water budgets for each county at the end of the 60-year predictive model run using the specified pumpage in the groundwater availability model for the central part of the Gulf Coast Aquifer (in acre-feet per year). Water budgets for Jim Hogg, Brooks, Kenedy, Webb, McMullen, Duval, Live Oak, Karnes, Gonzales, Fayette, Matagorda, Aransas, San Patricio, Nueces, Kleberg, Brazoria, Fort Bend, and Austin counties represent only the portions of those counties located in the active portion of the model and within the state official boundary of the aquifer. The water budget values for the wells may not exactly match the county pumpage values listed in Table 1 of the report due to rounding errors and /or dry cells. In addition, pumpage values listed in Table 1 of the report include pumpage outside the official state aquifer boundary yet within active cells of the model, but that pumpage is not included in these tables.

Aransas								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	0	0	1	0	1	0	0	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	11	0	11	0	9	0	11
General Head Boundaries	1,104	3,497	1,417	3,111	2,434	2,489	940	3,135
Wells	0	1,827	0	1,827	0	4,001	0	1,663
Streams and Rivers	2,351	669	2,456	646	2,673	582	2,468	640
Recharge	164	0	164	0	164	0	104	0
Evapotranspiration	0	741	0	729	0	709	0	704
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	4,229	1,161	3,670	1,355	3,931	1,359	4,094	1,395
Vertical Leakage Downward	58	0	0	30	0	54	0	58
Evangeline								
Storage	0	0	0	0	0	0	0	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	0	0	0	0	0	0	10
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	0	58	30	0	54	0	58	0
Lateral Inflow	105	47	136	166	33	87	45	93
Vertical Leakage Downward	--	--	--	--	--	--	--	--
Jasper								
Storage	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Austin								
	GAM07-12 Pumpage		GAM07-14 Pumpage		GAM07-43 Pumpage		GAM08-56 Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	2	0	8	0	4	0	7	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	3,118	0	3,118	0	3,118	0	3,117
Streams and Rivers	6,108	1,333	6,782	1,164	6,202	1,346	6,681	1,204
Recharge	6,758	0	6,758	0	6,758	0	6,709	0
Evapotranspiration	0	17	0	17	0	18	0	17
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	2,481	4,051	2,300	4,190	2,442	4,072	2,282	4,173
Vertical Leakage Downward	0	6,830	0	7,359	0	6,852	0	7,168
Evangeline								
Storage	2	0	9	0	7	0	8	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	3,931	0	3,931	0	3,931	0	3,928
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	90	0	90	0	90	0	90	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	6,830	0	7,359	0	6,852	0	7,168	0
Lateral Inflow	1,409	4,341	1,263	4,707	1,341	4,276	1,276	4,543
Vertical Leakage Downward	42	102	35	118	38	121	44	115
Jasper								
Storage	16	0	48	0	27	0	41	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	23	0	23	0	23	0	23
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	97	40	121	27	122	33	118	37
Lateral Inflow	103	153	83	203	90	183	90	189
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Bee								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	0	15	1,424	0	1,281	0	683	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	1,383	0	9,620	0	690	0	8,764
Streams and Rivers	4,811	10,996	7,027	975	6,589	1,801	6,486	2,627
Recharge	18,921	0	18,825	0	18,825	0	18,826	0
Evapotranspiration	0	219	0	45	0	69	0	84
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	775	8,671	972	5,568	572	7,884	638	7,711
Vertical Leakage Downward	937	4,160	0	12,041	0	16,821	0	7,448
Evangeline								
Storage	0	41	173	0	451	0	196	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	2,973	0	13,553	0	21,868	0	11,912
Streams and Rivers	4,008	3,783	6,758	2,190	6,482	2,564	7,289	1,323
Recharge	4,993	0	5,089	0	5,089	0	5,043	0
Evapotranspiration	0	2	0	0	0	0	0	0
Vertical Leakage Upward	4,160	937	12,041	0	16,821	0	7,448	0
Lateral Inflow	2,354	6,841	5,104	13,006	4,850	9,116	2,978	9,608
Vertical Leakage Downward	96	1,031	612	1,023	826	974	412	519
Jasper								
Storage	39	187	594	0	623	0	272	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	260	0	658	0	362	0	600
Streams and Rivers	94	96	159	58	126	70	125	78
Recharge	23	0	24	0	23	0	23	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	884	148	1,152	270	1,068	336	646	228
Lateral Inflow	492	844	453	1395	501	1573	565	725
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Brazoria								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	2	0	7	0	3	0	5	0
Reservoirs (River package)	338	0	341	0	338	0	297	0
Springs (Drain package)	0	72	0	63	0	73	0	66
General Head Boundaries	0	1,200	0	1,138	0	1,202	0	276
Wells	0	8,727	0	8,727	0	8,727	0	8,742
Streams and Rivers	9,469	19,328	9,872	18,989	9,500	19,236	11,431	19,155
Recharge	15,152	0	15,152	0	15,152	0	15,094	0
Evapotranspiration	0	1,338	0	1,320	0	1,340	0	1,335
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	12,042	4,985	11,885	5,069	11,998	5,093	10,152	5,736
Vertical Leakage Downward	0	1,353	0	1,950	0	1,321	0	1,668
Evangeline								
Storage	2	0	10	0	4	0	6	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	284	0	284	0	284	0	289
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	1,353	0	1,950	0	1,321	0	1,668	0
Lateral Inflow	480	1,662	543	2,347	809	1,953	613	2,117
Vertical Leakage Downward	102	0	126	0	98	0	116	0
Jasper								
Storage	31	0	44	0	27	0	33	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	0	0	0	0	0	0	0
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	0	33	0	33	0	32	0	36
Lateral Inflow	8	5	0	11	9	4	8	5
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Brooks								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	0	3	98	0	50	0	0	3
Reservoirs (River package)	3,431	0	3,431	0	3,431	0	3,431	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	359	0	359	0	359	0	359
Streams and Rivers	1,073	23,128	1,349	19,705	1,370	20,795	1,073	23,130
Recharge	23,402	0	23,402	0	23,402	0	23,453	0
Evapotranspiration	0	1,826	0	1,763	0	1,782	0	1,826
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	5,005	4,877	4,674	4,580	4,445	4,707	4,940	4,878
Vertical Leakage Downward	1,365	4,081	507	7,051	647	5,702	1,380	4,082
Evangeline								
Storage	1	3	574	0	138	0	1	4
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	3,681	0	3,681	0	3,681	0	3,681
Streams and Rivers	0	863	5	828	3	795	0	738
Recharge	340	0	340	0	340	0	328	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	4,081	1,365	7,051	507	5,702	647	4,082	1,380
Lateral Inflow	2,680	1,752	3,308	7,610	2,840	4,810	2,690	1,858
Vertical Leakage Downward	808	245	1,562	214	1,139	230	806	245
Jasper								
Storage	1	208	282	58	197	17	1	208
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	0	0	0	0	0	0	0
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	197	785	188	998	227	834	197	783
Lateral Inflow	1,448	655	1,399	813	1,127	700	1,466	673
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Calhoun								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	2	1	23	0	10	0	10	0
Reservoirs (River package)	2,993	0	3,269	0	3,612	0	3,228	0
Springs (Drain package)	0	1,151	0	1,021	0	875	0	1,050
General Head Boundaries	144	12,828	1,694	8,289	2,242	6,954	770	10,331
Wells	0	1,464	0	2,853	0	7,298	0	2,900
Streams and Rivers	6,370	3,564	3,899	2,066	2,655	940	4,130	2,267
Recharge	3,039	0	3,039	0	3,039	0	3,085	0
Evapotranspiration	0	1,282	0	1,224	0	1,183	0	1,241
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	11,465	3,826	9,871	4,707	12,256	2,908	12,315	3,833
Vertical Leakage Downward	337	234	13	1,648	0	3,657	0	1,917
Evangeline								
Storage	1	0	7	0	2	0	3	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	27	0	64	0	178	0	81
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	234	337	1,648	13	3,657	0	1,917	0
Lateral Inflow	1,033	906	190	1,773	541	4,034	2	1,846
Vertical Leakage Downward	1	0	4	0	11	0	5	0
Jasper								
Storage	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Colorado								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	183	15	1,463	0	415	0	820	0
Reservoirs (River package)	1,408	0	1,408	0	1,408	0	1,408	0
Springs (Drain package)	0	6	0	5	0	6	0	5
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	16,930	0	24,378	0	20,379	0	24,452
Streams and Rivers	28,347	12,482	33,916	8,349	28,408	10,889	32,511	8,631
Recharge	35,074	0	35,074	0	35,074	0	35,125	0
Evapotranspiration	0	57	0	54	0	57	0	55
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	8,838	21,384	8,743	20,894	8,147	18,490	9,379	20,182
Vertical Leakage Downward	703	23,677	322	27,245	505	24,136	332	26,251
Evangeline								
Storage	5	4	70	0	35	0	50	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	15,681	0	22,580	0	18,875	0	22,629
Streams and Rivers	3,928	3,103	5,238	1,978	4,585	2,381	5,115	1,995
Recharge	2,515	0	2,515	0	2,515	0	2,501	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	23,677	703	27,245	322	24,136	505	26,251	332
Lateral Inflow	8,786	19,394	8,880	18,816	7,813	16,889	8,981	17,729
Vertical Leakage Downward	473	508	565	813	405	844	541	752
Jasper								
Storage	112	1	481	0	317	0	354	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	624	0	900	0	754	0	900
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	485	226	1,029	59	956	100	856	120
Lateral Inflow	595	341	268	819	248	667	296	485
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

DeWitt								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	0	0	11	0	0	0	0	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	98	0	3,482	0	213	0	1,001
Streams and Rivers	2,094	1,229	4,183	246	2,582	925	2,945	636
Recharge	4,569	0	4,569	0	4,569	0	4,570	0
Evapotranspiration	0	25	0	0	0	16	0	11
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	0	1,467	89	1,214	0	1,516	12	1,365
Vertical Leakage Downward	0	3,845	0	3,910	0	4,481	0	4,514
Evangeline								
Storage	4	0	63	0	64	0	58	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	970	0	7,662	0	3,085	0	6,923
Streams and Rivers	8,294	8,747	12,430	5,692	10,778	6,346	11,467	5,726
Recharge	5,786	0	5,773	0	5,773	0	5,760	0
Evapotranspiration	0	60	0	56	0	56	0	56
Vertical Leakage Upward	3,845	0	3,910	0	4,481	0	4,514	0
Lateral Inflow	987	7,133	1,143	7,413	1,044	7,719	1,328	7,318
Vertical Leakage Downward	87	2,090	43	2,539	0	4,934	8	3,112
Jasper								
Storage	562	2	1,326	0	2,183	0	1,217	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	2,674	0	3,801	0	10,676	0	6,279
Streams and Rivers	780	643	1,053	454	2,223	118	1,356	293
Recharge	243	0	243	0	243	0	243	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	2,322	160	2,934	72	5,556	11	3,655	8
Lateral Inflow	663	1,090	459	1,688	1,059	458	816	707
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Duval								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	1	0	106	0	95	0	1	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	394	0	733	0	733	0	417
Streams and Rivers	1,544	3,215	3,451	1,230	2,912	1,768	1,549	3,203
Recharge	5,270	0	5,270	0	5,270	0	5,270	0
Evapotranspiration	0	34	0	17	0	18	0	34
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	671	3,467	666	3,184	634	3,377	671	3,464
Vertical Leakage Downward	339	715	40	4,368	66	3,082	341	714
Evangeline								
Storage	72	0	859	0	387	0	72	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	4,363	0	7,949	0	8,000	0	4,364
Streams and Rivers	2,962	8,272	6,070	4,955	4,594	5,203	2,963	8,271
Recharge	14,506	0	14,506	0	14,506	0	14,519	0
Evapotranspiration	0	335	0	28	0	32	0	339
Vertical Leakage Upward	715	339	4,368	40	3,082	66	714	341
Lateral Inflow	1,410	3,973	1,769	12,000	1,488	7,707	1,410	3,973
Vertical Leakage Downward	1,001	3,384	1,032	3,632	692	3,741	1,001	3,392
Jasper								
Storage	866	0	2,131	0	2,051	0	866	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	2,892	0	5,283	0	5,338	0	2,892
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	189	0	189	0	189	0	189	0
Evapotranspiration	0	412	0	371	0	370	0	412
Vertical Leakage Upward	3,597	940	4,188	431	4,340	331	3,605	940
Lateral Inflow	2,256	2,663	2,127	2,550	2,043	2,583	2,248	2,664
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Fayette								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--
Evangeline								
Storage	5	0	43	0	41	0	41	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	169	0	884	0	957	0	885
Streams and Rivers	94	773	803	59	755	67	762	77
Recharge	1,737	0	1,737	0	1,737	0	1,737	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	--	--	--	--	--	--	0	0
Lateral Inflow	108	700	51	565	65	463	77	566
Vertical Leakage Downward	56	356	0	1,126	0	1,110	0	1,090
Jasper								
Storage	1,107	0	3,693	0	3,711	0	3,568	0
Reservoirs (River package)	117	0	201	0	202	0	201	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	1,583	0	7,308	0	7,391	0	6,983
Streams and Rivers	677	452	1,241	19	1,251	18	1,015	19
Recharge	355	0	354	0	354	0	338	0
Evapotranspiration	0	11	0	5	0	5	0	1
Vertical Leakage Upward	507	314	1,769	9	1,755	10	1,726	11
Lateral Inflow	145	549	361	278	402	250	414	247
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Fort Bend								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	5	0	13	0	6	0	9	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	5,921	0	5,921	0	5,921	0	5,921
Streams and Rivers	8,234	6,299	8,309	5,980	8,134	6,794	8,246	6,279
Recharge	884	0	884	0	884	0	884	0
Evapotranspiration	0	18	0	17	0	19	0	17
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	10,575	4,483	10,552	4,473	10,792	4,433	10,619	4,456
Vertical Leakage Downward	0	2,976	0	3,368	0	2,649	0	3,085
Evangeline								
Storage	2	0	8	0	3	0	5	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	2,882	0	2,882	0	2,882	0	2,882
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	2,976	0	3,368	0	2,649	0	3,085	0
Lateral Inflow	2,298	2,654	2,281	3,015	2,335	2,331	2,268	2,740
Vertical Leakage Downward	251	0	240	0	222	0	264	0
Jasper								
Storage	135	0	206	0	115	0	144	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	0	0	0	0	0	0	0
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	0	226	0	202	0	200	0	236
Lateral Inflow	107	16	49	53	101	16	108	16
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Goliad								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	0	0	15	0	13	0	7	0
Reservoirs (River package)	1,500	0	1,547	0	1,558	0	1,548	0
Springs (Drain package)	0	12	0	5	0	3	0	7
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	650	0	1,383	0	679	0	645
Streams and Rivers	2,234	8,879	3,297	6,652	3,367	6,344	3,225	7,106
Recharge	10,556	0	10,556	0	10,556	0	10,511	0
Evapotranspiration	0	218	0	163	0	158	0	172
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	912	4,690	773	3,406	750	3,460	824	3,815
Vertical Leakage Downward	783	1,535	105	4,684	60	5,661	54	4,424
Evangeline								
Storage	2	0	59	0	38	0	29	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	5,493	0	11,457	0	8,906	0	17,091
Streams and Rivers	16,678	15,202	18,789	9,515	18,595	10,221	20,062	7,877
Recharge	7,979	0	7,979	0	7,979	0	7,981	0
Evapotranspiration	0	43	0	31	0	31	0	29
Vertical Leakage Upward	1,535	783	4,684	105	5,661	60	4,424	54
Lateral Inflow	3,800	8,457	4,612	14,976	4,123	17,168	4,702	12,330
Vertical Leakage Downward	437	454	574	613	650	660	671	487
Jasper								
Storage	19	14	355	0	281	0	190	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	0	0	0	0	0	0	4
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	387	377	663	287	645	336	460	404
Lateral Inflow	526	540	376	1,107	224	812	385	628
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Gonzales									
	GAM07-12		GAM07-14		GAM07-43		GAM08-56		
	Pumpage		Pumpage		Pumpage		Pumpage		
	In	Out	In	Out	In	Out	In	Out	
Chicot									
Storage	--	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--	--
Evangeline									
Storage	--	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--	--
Jasper									
Storage	396	0	451	0	485	0	417	0	
Reservoirs (River package)	0	0	0	0	0	0	0	0	
Springs (Drain package)	0	1	0	1	0	1	0	1	
General Head Boundaries	0	0	0	0	0	0	0	0	
Wells	0	4	0	4	0	4	0	3	
Streams and Rivers	12	164	20	160	15	154	12	160	
Recharge	139	0	139	0	139	0	137	0	
Evapotranspiration	0	70	0	68	0	68	0	69	
Vertical Leakage Upward	--	--	--	--	--	--	0	0	
Lateral Inflow	43	350	21	398	33	445	45	379	
Vertical Leakage Downward	--	--	--	--	--	--	--	--	

Table A-1. (continued)

Jackson								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	481	1	3,128	0	772	0	1,254	0
Reservoirs (River package)	4,149	0	4,213	0	4,167	0	4,179	0
Springs (Drain package)	0	100	0	36	0	84	0	75
General Head Boundaries	80	610	1,733	142	483	227	923	133
Wells	0	39,090	0	64,067	0	51,036	0	54,662
Streams and Rivers	55,771	26,417	53,223	8,086	54,088	18,738	56,986	16,683
Recharge	11,805	0	11,805	0	11,805	0	11,760	0
Evapotranspiration	0	529	0	385	0	484	0	448
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	21,348	16,126	24,456	10,085	23,316	10,828	24,131	12,417
Vertical Leakage Downward	23	10,791	0	15,760	0	13,233	0	14,815
Evangeline								
Storage	9	0	77	0	20	0	31	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	14,417	0	23,697	0	18,856	0	20,314
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	10,791	23	15,760	0	13,233	0	14,815	0
Lateral Inflow	13,015	10,172	14,774	8,214	10,932	6,228	12,660	8,282
Vertical Leakage Downward	760	0	1,296	1	875	3	1,081	0
Jasper								
Storage	174	3	461	0	346	0	314	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	0	0	0	0	0	0	0
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	0	390	51	385	41	325	4	414
Lateral Inflow	261	42	101	228	33	95	132	36
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Jim Hogg								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	0	2	0	2	1	0	0	2
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	14	0	14	0	75	0	16
Streams and Rivers	0	2,024	0	2,009	0	1,807	0	2,025
Recharge	6,440	0	6,440	0	6,440	0	6,390	0
Evapotranspiration	0	443	0	442	0	435	0	443
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	382	3,251	377	3,261	346	3,032	383	3,186
Vertical Leakage Downward	313	1,399	310	1,399	201	1,640	298	1,400
Evangeline								
Storage	4	42	30	17	149	0	4	42
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	371	0	371	0	1,848	0	371
Streams and Rivers	342	4,069	412	3,655	581	2,518	342	4,193
Recharge	7,165	0	7,165	0	7,165	0	7,178	0
Evapotranspiration	0	657	0	584	0	392	0	656
Vertical Leakage Upward	1,399	313	1,399	310	1,640	201	1,400	298
Lateral Inflow	504	1,996	321	2,037	354	1,853	609	2,007
Vertical Leakage Downward	549	2,514	408	2,761	134	3,212	551	2,516
Jasper								
Storage	11	399	51	269	629	0	11	397
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	594	0	594	0	2,955	0	594
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	155	0	155	0	155	0	155	0
Evapotranspiration	0	172	0	162	0	132	0	172
Vertical Leakage Upward	2,370	533	2,628	392	3,188	110	2,371	534
Lateral Inflow	1,355	2,194	865	2,284	1,062	1,837	1,373	2,212
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Jim Wells								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	8	0	281	0	164	0	9	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	14	0	5	0	10	0	13
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	2,257	0	13,567	0	8,223	0	2,281
Streams and Rivers	5,557	18,173	14,515	6,284	12,765	10,086	5,567	17,922
Recharge	25,328	0	25,328	0	25,328	0	25,377	0
Evapotranspiration	0	237	0	157	0	153	0	235
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	3,722	9,291	3,316	8,293	3,540	8,914	3,701	9,310
Vertical Leakage Downward	568	5,212	209	15,340	114	14,522	436	5,330
Evangeline								
Storage	5	0	4,994	0	1,657	0	7	0
Reservoirs (River package)	562	0	562	0	562	0	562	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	2,491	0	36,421	0	19,975	0	2,518
Streams and Rivers	561	4,370	1,019	3,410	973	3,328	564	4,082
Recharge	2,234	0	2,234	0	2,234	0	2,249	0
Evapotranspiration	0	8	0	5	0	4	0	8
Vertical Leakage Upward	5,212	568	15,340	209	14,522	114	5,330	436
Lateral Inflow	3,693	5,521	18,266	7,387	9,515	8,438	3,471	5,837
Vertical Leakage Downward	865	175	5,254	237	2,743	336	876	176
Jasper								
Storage	100	3	1,410	0	1,055	0	135	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	7	0	7	0	7	0	7
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	132	735	245	1,971	397	1,201	136	736
Lateral Inflow	1,765	1,251	1,625	1,302	1,476	1,720	1,786	1,314
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Karnes								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--
Evangeline								
Storage	0	0	61	3	36	0	3	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	104	0	1,147	0	1,147	0	104
Streams and Rivers	280	581	486	3	458	52	370	409
Recharge	884	0	839	0	884	0	884	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	--	--	--	--	--	--	0	0
Lateral Inflow	214	539	358	305	316	360	149	724
Vertical Leakage Downward	36	190	0	286	24	159	31	200
Jasper								
Storage	1,497	8	7,538	21	2,499	2	1,631	8
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	2,231	0	12,607	0	3,715	0	2,228
Streams and Rivers	747	551	2,239	0	817	275	757	528
Recharge	417	0	417	0	417	0	413	0
Evapotranspiration	0	78	0	1	0	49	0	72
Vertical Leakage Upward	395	97	936	0	449	10	419	74
Lateral Inflow	560	652	1,877	379	472	602	399	711
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Kenedy								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	1	0	110	0	46	0	1	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	18,999	0	17,601	0	18,236	0	18,999
Wells	0	41	0	41	0	41	0	41
Streams and Rivers	897	6,442	952	4,947	910	5,595	897	6,733
Recharge	25,221	0	25,221	0	25,221	0	25,222	0
Evapotranspiration	0	2,283	0	2,169	0	2,218	0	2,283
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	4,224	2,619	3,919	2,580	4,082	2,501	4,451	2,555
Vertical Leakage Downward	214	175	0	2,859	0	1,671	213	175
Evangeline								
Storage	3	0	158	0	74	0	4	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	62	0	62	0	62	0	63
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	175	214	2,859	0	1,671	0	175	213
Lateral Inflow	728	663	1,406	4,983	1,134	3,188	728	664
Vertical Leakage Downward	33	1	623	0	372	0	34	1
Jasper								
Storage	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Kleberg								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	6	0	431	0	203	0	6	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	1	0	0	0	0	0	1
General Head Boundaries	0	16,786	3,803	7,454	1,132	9,946	0	14,640
Wells	0	948	0	5,086	0	2,963	0	938
Streams and Rivers	19,863	12,407	26,367	7,961	23,384	8,762	19,873	12,114
Recharge	4,486	0	4,486	0	4,486	0	3,030	0
Evapotranspiration	0	1,137	0	933	0	992	0	1,059
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	12,640	4,515	12,126	5,964	11,974	6,020	12,244	5,191
Vertical Leakage Downward	55	1,256	0	19,816	0	12,493	54	1,264
Evangeline								
Storage	20	0	6,479	0	2,108	0	24	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	7,682	0	44,910	0	27,775	0	7,683
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	1,256	55	19,816	0	12,493	0	1,264	54
Lateral Inflow	5,789	427	15,229	4,062	10,582	1,989	5,783	429
Vertical Leakage Downward	1,095	0	7,448	0	4,584	0	1,096	0
Jasper								
Storage	100	0	817	0	513	0	100	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	0	0	0	0	0	0	0
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	0	431	0	1,089	0	826	0	431
Lateral Inflow	388	57	321	48	365	52	388	57
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Lavaca								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	89	0	1,349	0	282	0	372	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	1,726	0	5,784	0	4,551	0	3,037
Streams and Rivers	8,823	5,526	12,585	1,454	12,264	3,122	12,555	3,504
Recharge	18,276	0	18,276	0	18,276	0	18,277	0
Evapotranspiration	0	3	0	1	0	2	0	2
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	1,537	15,123	1,176	16,680	1,462	16,297	1,346	17,894
Vertical Leakage Downward	85	6,433	4	9,469	4	8,315	5	8,117
Evangeline								
Storage	6	0	61	9	37	0	28	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	6,907	0	23,405	0	18,604	0	12,426
Streams and Rivers	9,941	6,149	21,548	1,624	16,949	2,566	13,970	3,650
Recharge	6,093	0	6,051	0	6,093	0	6,107	0
Evapotranspiration	0	4	0	2	0	3	0	3
Vertical Leakage Upward	6,433	85	9,469	4	8,315	4	8,117	5
Lateral Inflow	4,055	13,064	3,892	13,715	4,103	12,387	3,036	14,082
Vertical Leakage Downward	189	513	73	2,331	37	1,976	104	1,195
Jasper								
Storage	1,331	1	3,021	0	2,546	0	1,963	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	2,404	0	8,533	0	6,688	0	4,410
Streams and Rivers	597	0	879	0	834	0	728	0
Recharge	170	0	169	0	169	0	171	0
Evapotranspiration	0	5	0	0	0	0	0	2
Vertical Leakage Upward	669	179	3,502	14	2,852	16	1,713	45
Lateral Inflow	478	656	1,278	302	849	544	539	658
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Live Oak								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	0	0	63	0	96	0	8	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	88	0	88	0	88	0	115
Streams and Rivers	177	0	177	0	177	0	177	0
Recharge	1,194	0	1,194	0	1,194	0	1,194	0
Evapotranspiration	0	6	0	4	0	5	0	6
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	242	190	92	301	237	196	138	321
Vertical Leakage Downward	0	1,328	0	1,133	0	1,414	0	1,075
Evangeline								
Storage	0	8	123	0	140	3	34	1
Reservoirs (River package)	2,634	0	2,890	0	3,012	0	2,825	0
Springs (Drain package)	0	5	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	1,802	0	4,140	0	5,857	0	1,844
Streams and Rivers	635	8,684	1,106	5,915	1,720	3,683	675	7,293
Recharge	4,205	0	4,205	0	3,475	0	4,191	0
Evapotranspiration	0	68	0	38	0	27	0	44
Vertical Leakage Upward	1,328	0	1,133	0	1,414	0	1,075	0
Lateral Inflow	2,561	767	1,550	693	1,450	1,249	1,475	1,123
Vertical Leakage Downward	254	284	30	251	29	419	257	227
Jasper								
Storage	1,386	65	2,949	0	4,244	0	1,467	13
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	2,744	0	7,705	0	12,386	0	2,744
Streams and Rivers	441	394	997	90	1,623	32	484	364
Recharge	527	0	528	0	529	0	527	0
Evapotranspiration	0	56	0	39	0	29	0	56
Vertical Leakage Upward	386	949	1,151	268	2,600	107	271	928
Lateral Inflow	1,955	488	2,684	207	3,728	168	1,890	533
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Matagorda								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	92	0	337	0	107	0	196	0
Reservoirs (River package)	795	0	804	0	801	0	713	0
Springs (Drain package)	0	215	0	189	0	204	0	197
General Head Boundaries	897	10,747	2,496	8,702	1,483	9,419	1,753	8,709
Wells	0	27,682	0	38,931	0	35,596	0	35,471
Streams and Rivers	58,043	30,017	65,190	25,697	60,216	28,102	62,360	26,995
Recharge	23,061	0	23,061	0	23,061	0	22,885	0
Evapotranspiration	0	3,095	0	2,981	0	3,061	0	3,018
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	12,254	14,546	11,547	15,560	12,975	13,114	11,819	15,081
Vertical Leakage Downward	0	8,845	0	11,374	0	9,146	0	10,254
Evangeline								
Storage	7	0	36	0	11	0	19	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	7,240	0	10,207	0	9,326	0	9,390
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	8,845	0	11,374	0	9,146	0	10,254	0
Lateral Inflow	2,565	4,431	3,057	4,569	2,762	2,834	2,813	3,969
Vertical Leakage Downward	229	0	303	0	225	0	266	0
Jasper								
Storage	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

McMullen									
	GAM07-12		GAM07-14		GAM07-43		GAM08-56		
	Pumpage		Pumpage		Pumpage		Pumpage		
	In	Out	In	Out	In	Out	In	Out	
Chicot									
Storage	--	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--	--
Evangeline									
Storage	--	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--	--
Jasper									
Storage	401	0	624	0	756	0	401	0	0
Reservoirs (River package)	0	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0	0
Wells	0	19	0	286	0	445	0	19	19
Streams and Rivers	368	590	465	520	532	483	368	590	590
Recharge	249	0	249	0	249	0	249	0	0
Evapotranspiration	0	116	0	105	0	99	0	116	116
Vertical Leakage Upward	258	0	333	0	353	0	258	0	0
Lateral Inflow	205	756	190	950	205	1,069	205	756	756
Vertical Leakage Downward	--	--	--	--	--	--	--	--	--

Table A-1. (continued)

Nueces								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	9	0	1,217	0	475	0	16	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	89	0	59	0	22	0	37
General Head Boundaries	91	4,039	4,137	467	4,384	354	0	637
Wells	0	1,862	0	15,935	0	16,797	0	1,350
Streams and Rivers	11,348	11,049	36,234	1,836	40,156	1,323	10,577	7,022
Recharge	4,795	0	4,795	0	4,795	0	4,318	0
Evapotranspiration	0	372	0	281	0	284	0	312
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	8,976	6,697	10,109	5,722	10,412	7,232	8,299	11,742
Vertical Leakage Downward	1,235	2,345	5	32,198	0	34,211	400	2,509
Evangeline								
Storage	2	0	88	0	41	0	4	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	1,083	0	33,913	0	39,053	0	1,204
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	2,345	1,235	32,198	5	34,211	0	2,509	400
Lateral Inflow	2,047	2,501	6,217	6,302	6,742	3,633	1,946	3,300
Vertical Leakage Downward	424	0	1,715	0	1,693	0	444	0
Jasper								
Storage	26	1	265	0	302	0	57	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	0	0	0	0	0	0	0
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	0	330	0	567	0	570	0	326
Lateral Inflow	402	98	396	93	397	129	406	137
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Refugio								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	0	1	58	0	98	0	49	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	129	0	92	0	81	0	95
General Head Boundaries	0	7,900	19	6,266	38	5,800	0	5,448
Wells	0	597	0	6,800	0	7,341	0	6,259
Streams and Rivers	27,574	39,589	36,727	21,749	40,057	19,780	34,116	25,751
Recharge	14,669	0	14,669	0	14,669	0	14,668	0
Evapotranspiration	0	1,906	0	1,725	0	1,700	0	1,759
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	14,002	10,469	10,226	8,717	10,819	10,286	11,918	10,415
Vertical Leakage Downward	4,671	325	34	16,385	0	20,693	0	11,024
Evangeline								
Storage	0	0	9	0	9	0	5	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	466	0	35,465	0	25,466	0	22,483
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	325	4,671	16,385	34	20,693	0	11,024	0
Lateral Inflow	6,615	1,818	19,299	751	16,313	12,091	11,635	516
Vertical Leakage Downward	18	2	559	0	539	0	335	0
Jasper								
Storage	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

San Patricio								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	0	63	623	0	1,923	0	938	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	376	0	250	0	45	0	155
General Head Boundaries	30	4,366	654	2,651	866	2,090	0	76
Wells	0	2,404	0	3,877	0	11,192	0	8,188
Streams and Rivers	3,004	12,018	3,593	6,015	5,352	3,175	2,293	4,738
Recharge	12,704	0	12,704	0	12,704	0	11,066	0
Evapotranspiration	0	515	0	440	0	383	0	272
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	7,138	3,500	4,558	3,439	7,739	2,270	6,973	3,171
Vertical Leakage Downward	1,601	1,234	44	5,503	11	9,438	31	4,704
Evangeline								
Storage	0	2	21	0	68	0	22	0
Reservoirs (River package)	676	0	823	0	1,085	0	941	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	1,304	0	2,110	0	10,087	0	8,625
Streams and Rivers	0	657	0	584	0	335	0	434
Recharge	148	0	148	0	148	0	148	0
Evapotranspiration	0	13	0	10	0	6	0	9
Vertical Leakage Upward	1,234	1,601	5,503	44	9,438	11	4,704	31
Lateral Inflow	2,429	1,225	1,116	5,408	2,045	3,313	3,445	965
Vertical Leakage Downward	326	11	546	1	979	11	804	0
Jasper								
Storage	0	26	157	0	340	0	97	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	0	0	0	0	0	0	0
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	5	315	5	320	16	502	0	559
Lateral Inflow	358	23	280	122	409	263	495	34
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Victoria								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	0	20	165	0	55	0	22	0
Reservoirs (River package)	1,046	0	1,056	0	1,056	0	1,056	0
Springs (Drain package)	0	1,653	0	1,383	0	1,159	0	1,478
General Head Boundaries	0	594	0	389	0	416	0	471
Wells	0	7,680	0	22,769	0	7,867	0	8,001
Streams and Rivers	40,668	38,578	50,301	24,469	55,454	16,238	46,219	29,989
Recharge	24,830	0	24,830	0	24,830	0	24,832	0
Evapotranspiration	0	1,022	0	875	0	803	0	926
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	7,789	19,437	7,198	19,289	6,903	18,590	6,999	19,822
Vertical Leakage Downward	1,250	6,601	56	14,434	0	43,226	6	18,447
Evangeline								
Storage	0	1	12	0	12	0	6	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	6,191	0	18,360	0	67,322	0	27,000
Streams and Rivers	1,611	4,238	2,021	2,465	3,789	2,005	2,376	1,922
Recharge	743	0	743	0	743	0	743	0
Evapotranspiration	0	27	0	26	0	25	0	26
Vertical Leakage Upward	6,601	1,250	14,434	56	43,226	0	18,447	6
Lateral Inflow	8,988	6,572	9,909	6,952	26,348	6,293	10,816	4,217
Vertical Leakage Downward	386	49	778	37	1,713	189	841	58
Jasper								
Storage	0	99	150	0	479	0	155	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	0	0	0	0	0	0	0
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	39	393	48	516	213	888	68	529
Lateral Inflow	637	184	556	238	395	198	453	147
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Washington								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--
Evangeline								
Storage	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--
Jasper								
Storage	11	0	21	0	22	0	21	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	6	0	6	0	6	0	6
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	1	0	1	0	1	0	1	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	--	--	--	--	--	--	0	0
Lateral Inflow	2	8	0	17	0	17	0	17
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Webb								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	--	--	--	--	--	--	--	--
Reservoirs (River package)	--	--	--	--	--	--	--	--
Springs (Drain package)	--	--	--	--	--	--	--	--
General Head Boundaries	--	--	--	--	--	--	--	--
Wells	--	--	--	--	--	--	--	--
Streams and Rivers	--	--	--	--	--	--	--	--
Recharge	--	--	--	--	--	--	--	--
Evapotranspiration	--	--	--	--	--	--	--	--
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	--	--	--	--	--	--	--	--
Vertical Leakage Downward	--	--	--	--	--	--	--	--
Evangeline								
Storage	0	0	372	0	11	0	0	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	135	0	2,786	0	1,899	0	136
Streams and Rivers	0	770	79	32	14	120	0	769
Recharge	3,008	0	2,996	0	3,008	0	2,996	0
Evapotranspiration	0	471	0	0	0	2	0	466
Vertical Leakage Upward	--	--	--	--	--	--	0	0
Lateral Inflow	43	315	72	81	33	143	43	314
Vertical Leakage Downward	331	1,692	13	632	51	953	331	1,683
Jasper								
Storage	5	5	141	0	138	0	5	5
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	7	0	148	0	99	0	7
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	46	0	46	0	46	0	45	0
Evapotranspiration	0	88	0	59	0	66	0	81
Vertical Leakage Upward	1,680	325	651	12	957	49	1,671	325
Lateral Inflow	151	1,457	190	810	109	1,036	154	1,457
Vertical Leakage Downward	--	--	--	--	--	--	--	--

Table A-1. (continued)

Wharton								
	GAM07-12		GAM07-14		GAM07-43		GAM08-56	
	Pumpage		Pumpage		Pumpage		Pumpage	
	In	Out	In	Out	In	Out	In	Out
Chicot								
Storage	740	0	2,450	0	761	0	1,342	0
Reservoirs (River package)	537	0	537	0	537	0	537	0
Springs (Drain package)	0	9	0	8	0	9	0	9
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	111,755	0	114,552	0	93,128	0	108,636
Streams and Rivers	121,457	13,331	127,760	12,631	112,345	14,564	120,727	13,315
Recharge	21,792	0	21,792	0	21,792	0	21,734	0
Evapotranspiration	0	243	0	233	0	256	0	233
Vertical Leakage Upward	--	--	--	--	--	--	--	--
Lateral Inflow	36,668	19,087	34,606	19,369	27,406	20,601	33,814	17,909
Vertical Leakage Downward	0	36,773	0	40,353	0	34,283	0	38,055
Evangeline								
Storage	18	0	81	0	24	0	41	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	68,245	0	69,980	0	56,871	0	66,345
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	36,773	0	40,353	0	34,283	0	38,055	0
Lateral Inflow	32,102	2,925	30,172	3,062	24,035	3,393	28,986	3,106
Vertical Leakage Downward	2,208	0	2,429	0	1,889	0	2,358	0
Jasper								
Storage	803	0	1,277	0	730	0	866	0
Reservoirs (River package)	0	0	0	0	0	0	0	0
Springs (Drain package)	0	0	0	0	0	0	0	0
General Head Boundaries	0	0	0	0	0	0	0	0
Wells	0	0	0	1,062	0	0	0	0
Streams and Rivers	0	0	0	0	0	0	0	0
Recharge	0	0	0	0	0	0	0	0
Evapotranspiration	0	0	0	0	0	0	0	0
Vertical Leakage Upward	0	970	45	595	0	813	0	978
Lateral Inflow	274	105	370	35	190	106	218	108
Vertical Leakage Downward	--	--	--	--	--	--	--	--