

GMA 12 Planning 2021 Cycle

S-12 and S-19 Model Results

Presented to
Brazos Valley Groundwater Conservation District
Board of Directors

by
Ground Water Consultants, LLC

November 11, 2021

Description of Simulation S-12 and S-19

- ▣ S-12 Simulation presented to GMA 12 in March 2021 and tables of results follow
- ▣ S-19 is a modification of S-12 in certain respects as described
 - LPGCD reduced pumping from the Simsboro Aquifer down to 81,864 ac-ft/yr in 2069 from 125,967 ac-ft/yr in 2069 for S-12. Their objective was to reach an average drawdown of 240 feet
 - Added pumping from the Carrizo Aquifer in east Gonzales and Caldwell Counties attributable to groundwater develop projects by GBRA and ARWA. This effected average drawdowns mostly in LPGCD and FCGCD.
 - Pumping for all other entities in GMA 12 the same for S-19 as for S-12.

Inclusion of Guadalupe Blanco River Authority/Alliance Regional Water Authority Carrizo Aquifer Pumping

- ▣ Pumping for GBRA and ARWA projects in east Gonzales and Caldwell Counties are not included in S-12 simulation
- ▣ 31,320 ac-ft/yr between these two projects
- ▣ Central GAM significantly underestimates the transmissivity of the Carrizo in the project area and therefore overestimates pumping effects; Southern GAM has similar issues (revisions to the Southern GAM in progress)
- ▣ Pumpage for GBRA and ARWA included at 50% to account for GAM aquifer properties

S-12 Input Pumping in 2069

S-12, Pumping by Aquifer in 2069, ac-ft/yr

GCD	Sparta	Queen City	Carrizo	Calvert Bluff	Simsboro	Hooper
Lost Pines	2,766	1,774	12,982	5,563	125,967	3,274
Brazos Valley	13,162	1,269	5,499	1,726	147,246	2,139
Post Oak	4,105	7,838	18,206	4,761	79,433	3,126
Mid-East	3,381	1,616	10,529	4,222	6,870	5,252
Fayette	2,853	2,813	5,155	NR	NR	NR

S-12 DFCs for Aquifers 2010-2070

S-12, Average feet of Drawdown Over Aquifer Area						
GCD	Sparta	Queen City	Carrizo	Calvert Bluff	Simsboro	Hooper
Lost Pines	22	27	137	154	310	172
Brazos Valley	53	45	88	122	274	187
Post Oak	32	31	171	178	336	214
Mid-East	25	21	49	59	81	73
Fayette	40	65	122	147	249	170

Note: BVGCD DFCs are for 2000 – 2070 and include a 5 percent variance

All other GCDs are for 2010 - 2070

S-19 Input Pumping in 2069

S-19, Pumping by Aquifer in 2069, ac-ft/yr

GCD	Sparta	Queen City	Carrizo	Calvert Bluff	Simsboro	Hooper
Lost Pines	2,766	1,774	12,982	5,563	81,864	3,273
Brazos Valley	13,162	1,269	5,499	1,726	147,246	2,139
Post Oak	4,105	7,838	18,206	4,761	79,433	3,126
Mid-East	3,381	1,616	10,529	4,222	6,870	5,252
Fayette	2,853	2,813	5,155	NR	NR	NR

S-19 DFCs for Aquifers 2010-2070

S-19, Average feet of Drawdown Over Aquifer Area						
GCD	Sparta	Queen City	Carrizo	Calvert Bluff	Simsboro	Hooper
Lost Pines	22	28	134	132	240	138
Brazos Valley	51	44	84	113	262 (8%)	171
Brazos Valley	51	44	84	113	265 (9%)	171
Post Oak	32	30	162	156	278	178
Mid-East	25	20	48	57	76	69
Fayette	43	73	140	141	207	120

Note: BVGCD DFCs are for 2000 – 2070 and include an 8 or 9 percent variance for the Simsboro and 5 percent variance for other aquifers
Average drawdowns for all other GCDs are for 2010 - 2070

??Questions??

Thank you!