

Aquifer Desired Future Conditions Update



Presented to
BVGCD Board of Directors
By
LBG-Guyton Associates

March 9, 2017



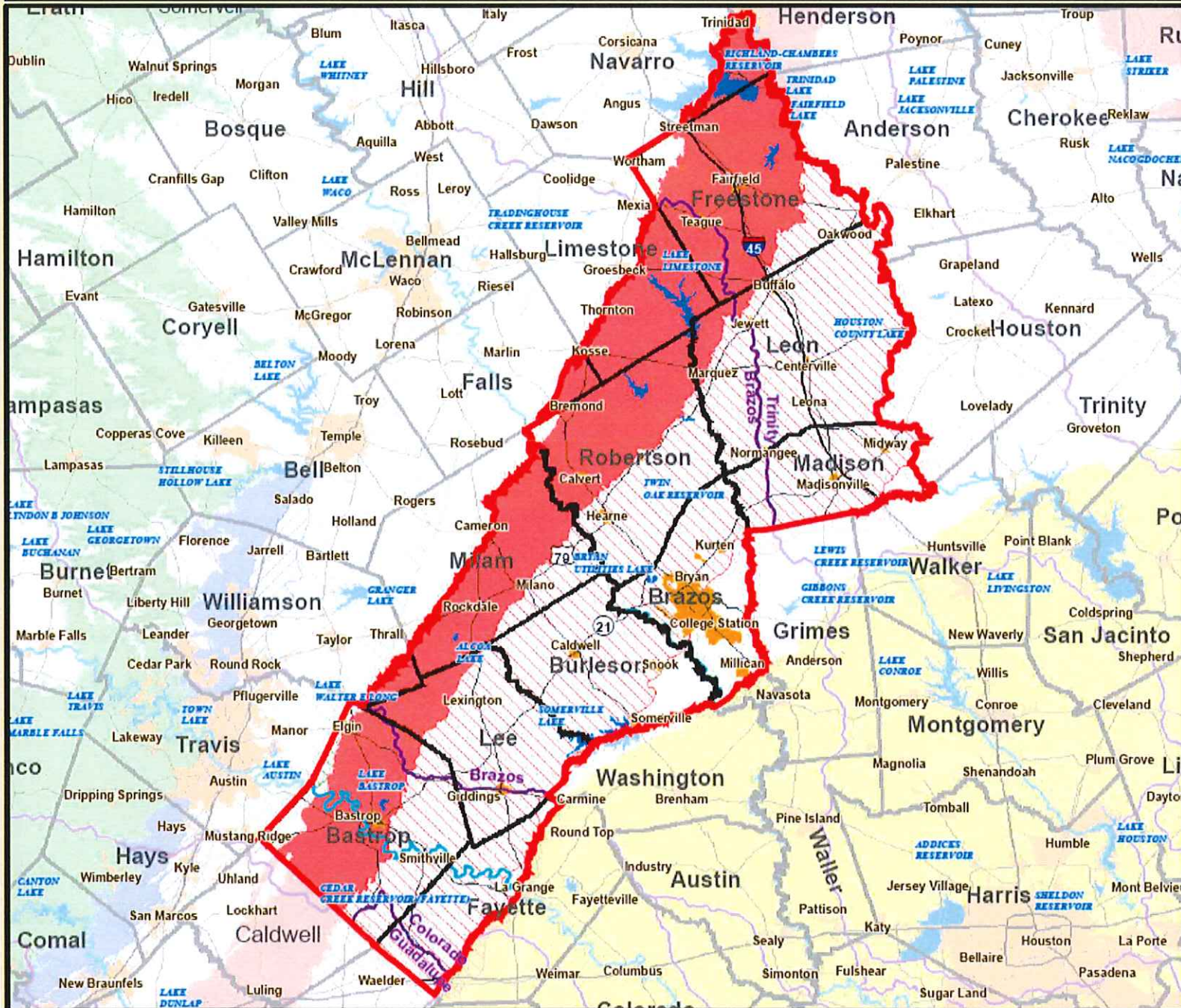
Desired Future Conditions

- ❖ Established for Sparta, Queen City, Carrizo, Calvert Bluff, Simsboro, Hooper, Yegua, Jackson and Brazos River Alluvium aquifers
- ❖ Use average artesian head decline over aquifer areas as matrix for quantifying Desired Future Conditions (DFC), except for Brazos River Alluvium where matrix is percent aquifer saturation
- ❖ Well static water-level data utilized to help monitor aquifer response to pumping

Desired Future Conditions (cont'd)

- ❖ DFCs established based on estimates of pumping in the District and the interference drawdown effects of total pumping inside GMA 12
- ❖ Current cycle of GMA 12 planning has developed DFCs for 2070

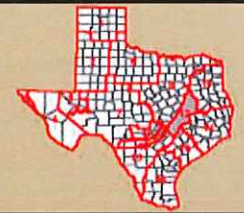
Groundwater Management Area #12



MAP LEGEND

- GMA #12
 - River
 - River Basin
 - Reservoir
 - Cities
 - Counties
- ### Major Aquifers
- Cenozoic Pecos Alluvium
 - Seymour
 - Gulf Coast
 - Carrizo - Wilcox (outcrop)
 - Carrizo - Wilcox (down dip)
 - Hueco - Mesilla Bolson
 - Ogallala
 - Edwards - Trinity Plateau (outcrop)
 - Edwards - Trinity Plateau (down dip)
 - Edwards BFZ (outcrop)
 - Edwards BFZ (down dip)
 - Trinity (outcrop)
 - Trinity (down dip)

DISCLAIMER
No claims are made to the accuracy or completeness of the data nor to its suitability for a particular use. The scale and compilation of all information shown here is approximate.
Map prepared by Mark Hoyer
Texas Water Development Board
GIS Section
12/21/2009



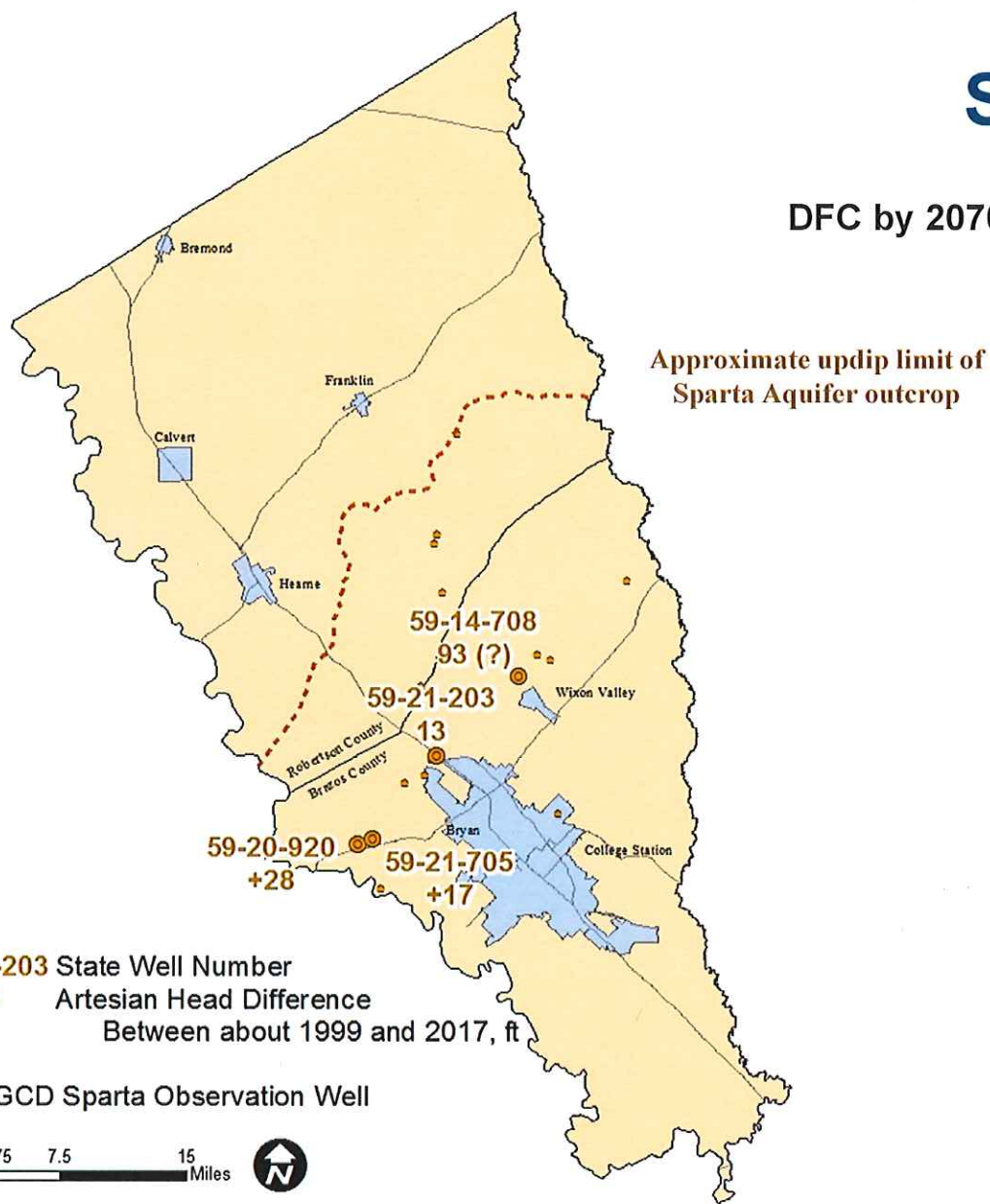
0 7 14 21 28 Miles
3/19/2017
1 inch equals 26 miles

DFC Goals

Aquifer	GMA 12 DFC, ft	BVGCD- DFC, ft	Period
Sparta	16	12	2000 - Dec. 2069
Queen City	16	12	2000 - Dec. 2069
Carrizo	75	61	2000 - Dec. 2069
Calvert Bluff	114	125	2000 - Dec. 2069
Simsboro	228	295	2000 - Dec. 2069
Hooper	168	207	2000 - Dec. 2069
Yegua	65	70	2010 - 2069
Jackson	65	110	2010 - 2069

Sparta Aquifer

DFC by 2070: Average Artesian Head Decline 12 feet



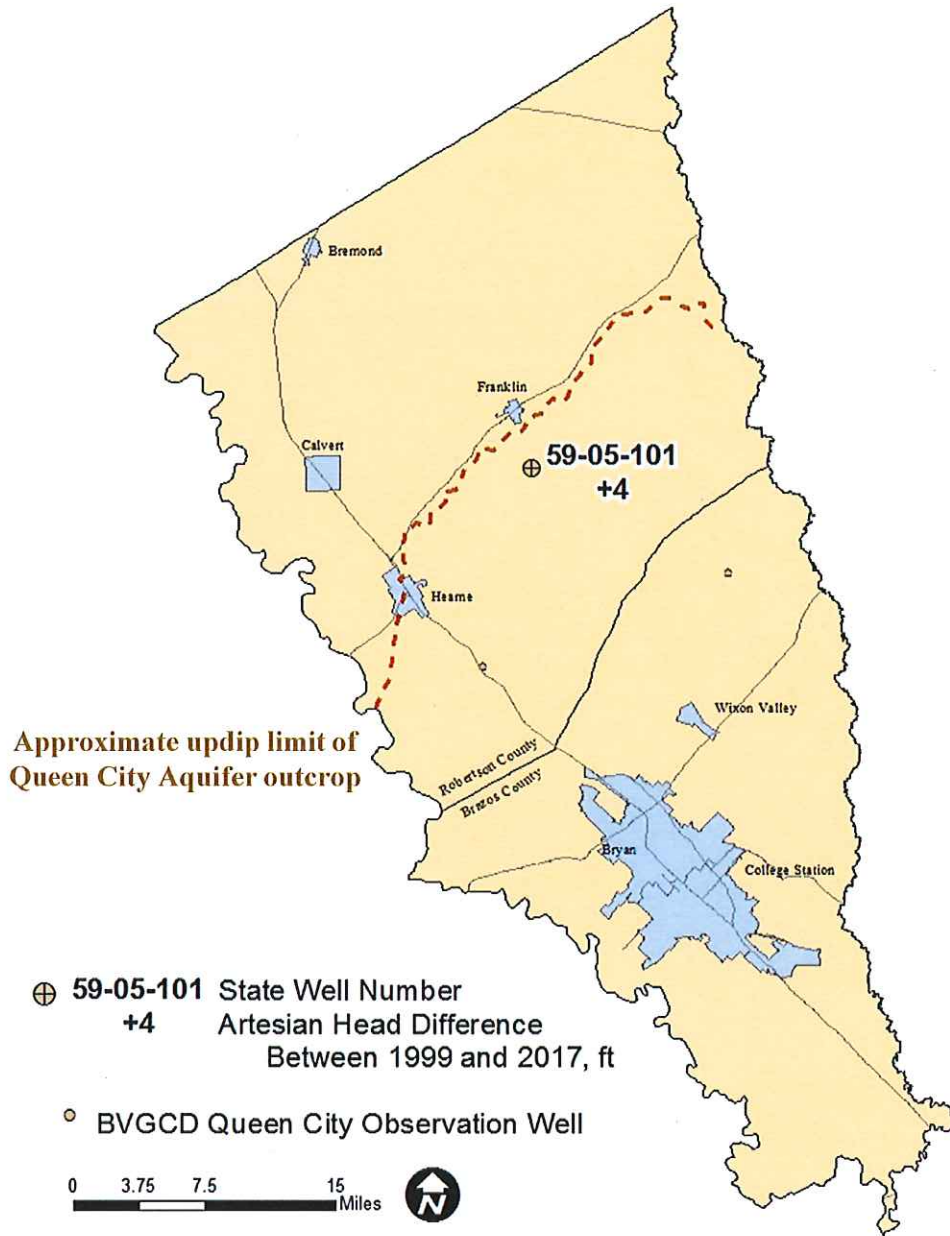
59-21-203 State Well Number
13 Artesian Head Difference
Between about 1999 and 2017, ft

• BVGCD Sparta Observation Well



Queen City Aquifer

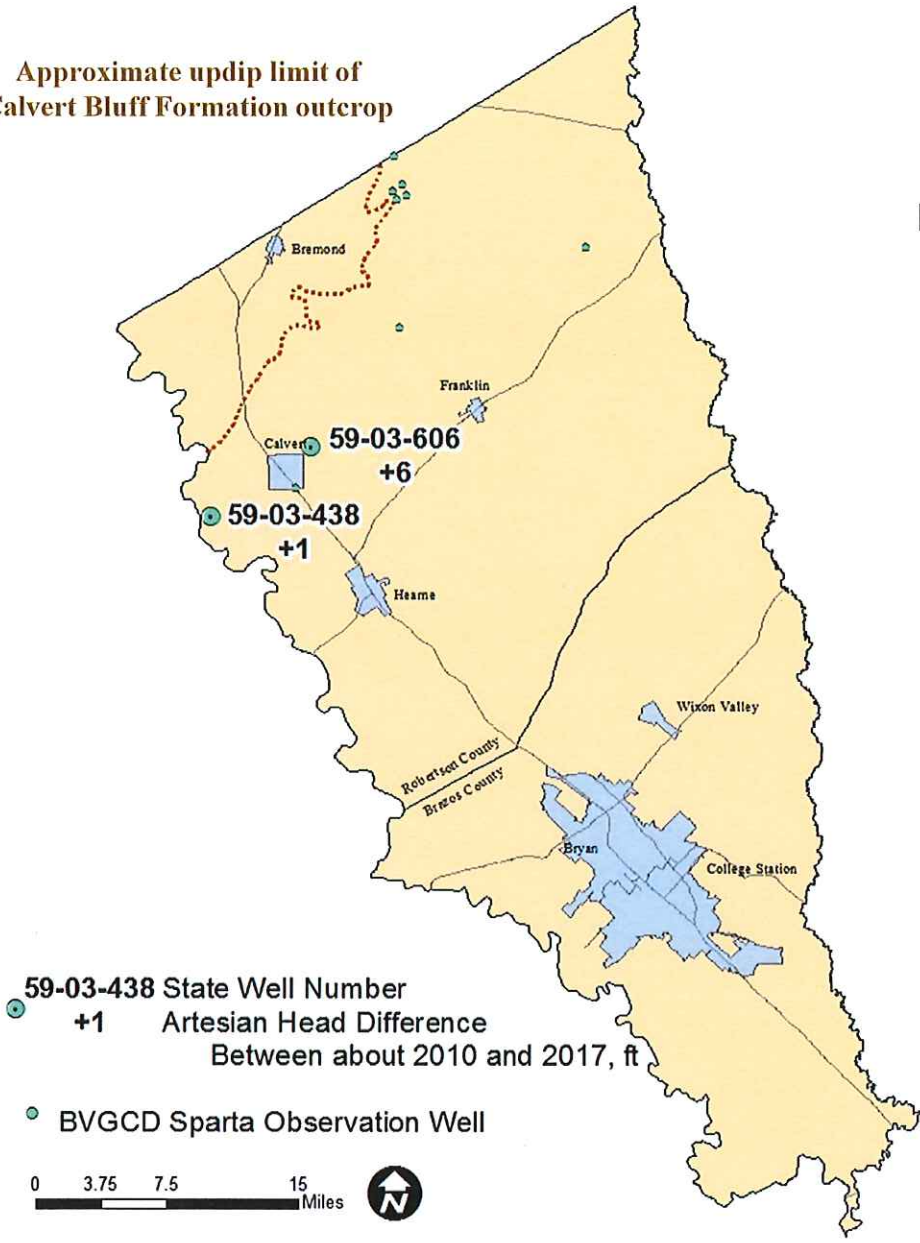
DFC by 2070: Average Artesian Head Decline 12 feet



Calvert Bluff Formation

DFC by 2070: Average Artesian Head Decline 125 feet

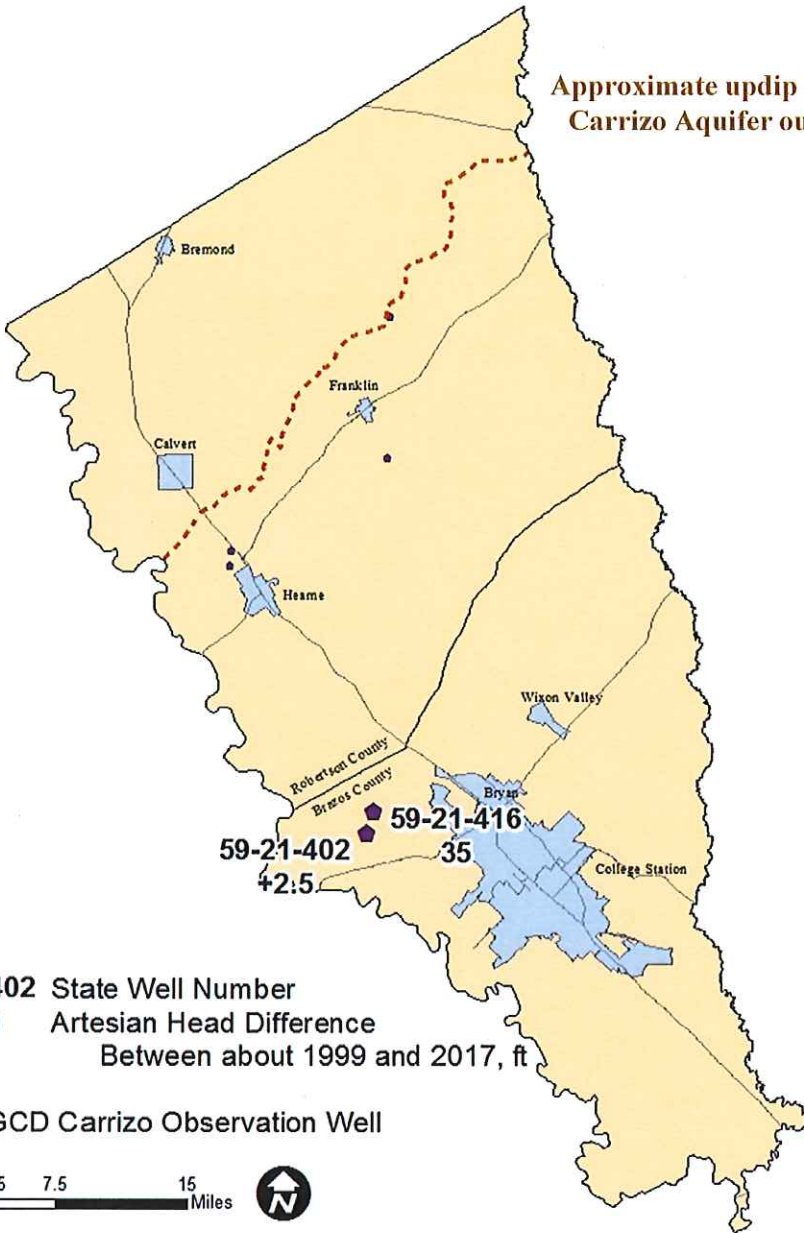
Approximate updip limit of
Calvert Bluff Formation outcrop



Carrizo Aquifer

DFC by 2070: Average Artesian Head Decline 61 feet

Approximate updip limit of Carrizo Aquifer outcrop



◆ 59-21-402 State Well Number
+2.5 Artesian Head Difference
Between about 1999 and 2017, ft

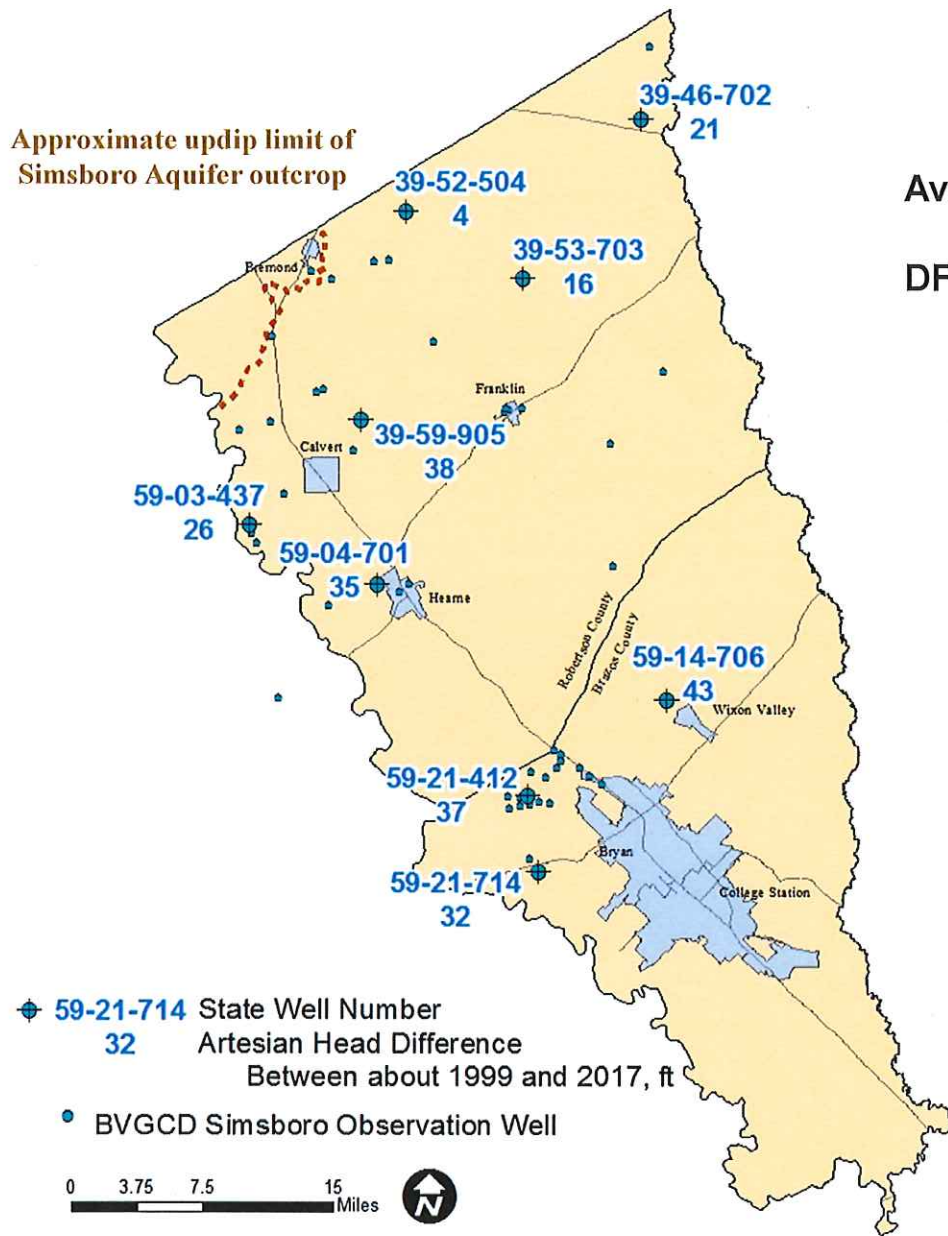
● BVGCD Carrizo Observation Well



Simsboro Aquifer

Average Artesian Head Decline = 28 feet

DFC by 2070: Average Artesian Head Decline 295 feet

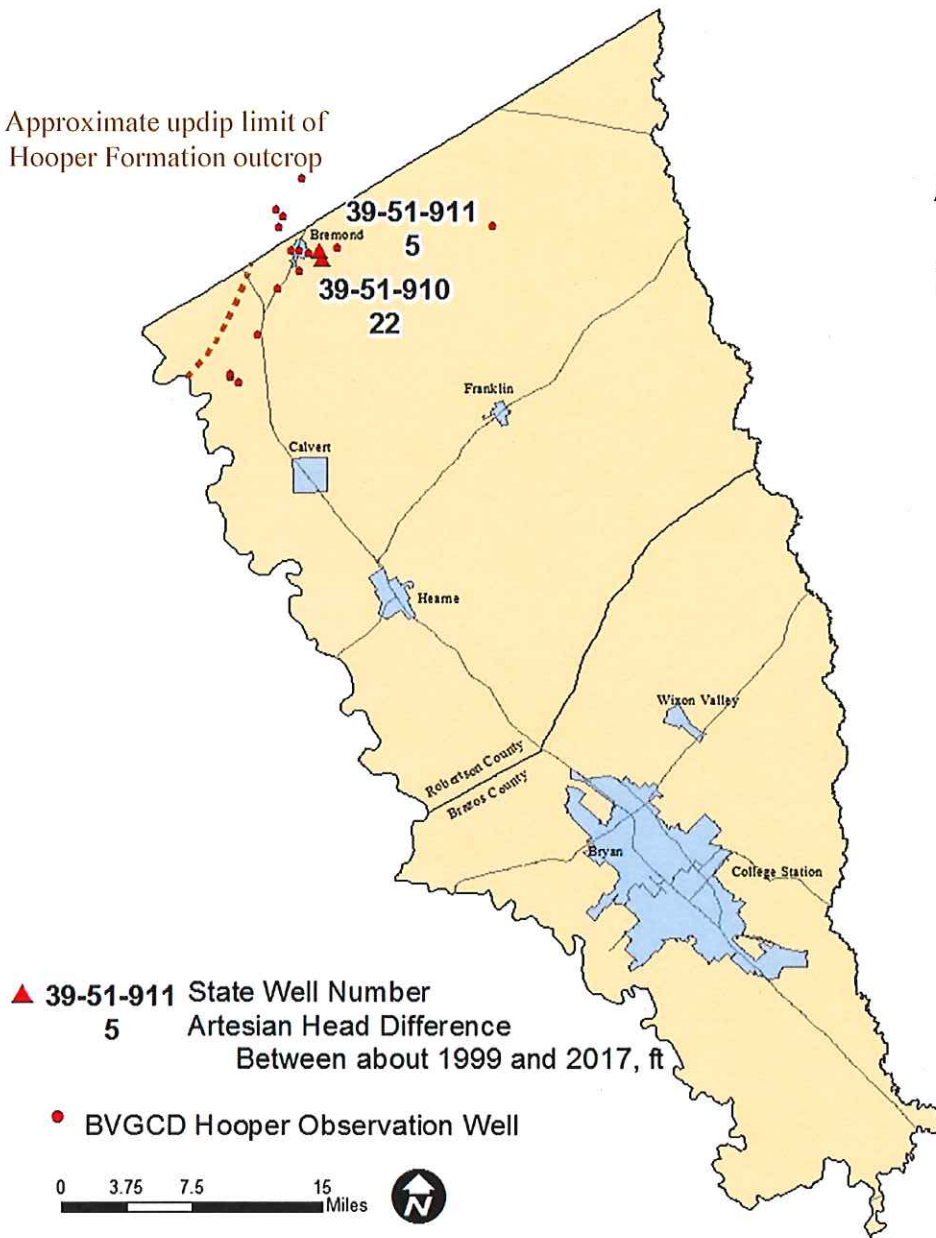


Hooper Formation

Average Artesian Head Decline = 12 feet

DFC by 2070: Average Artesian Head Decline 207 feet

Approximate updip limit of
Hooper Formation outcrop



Yegua-Jackson Aquifer

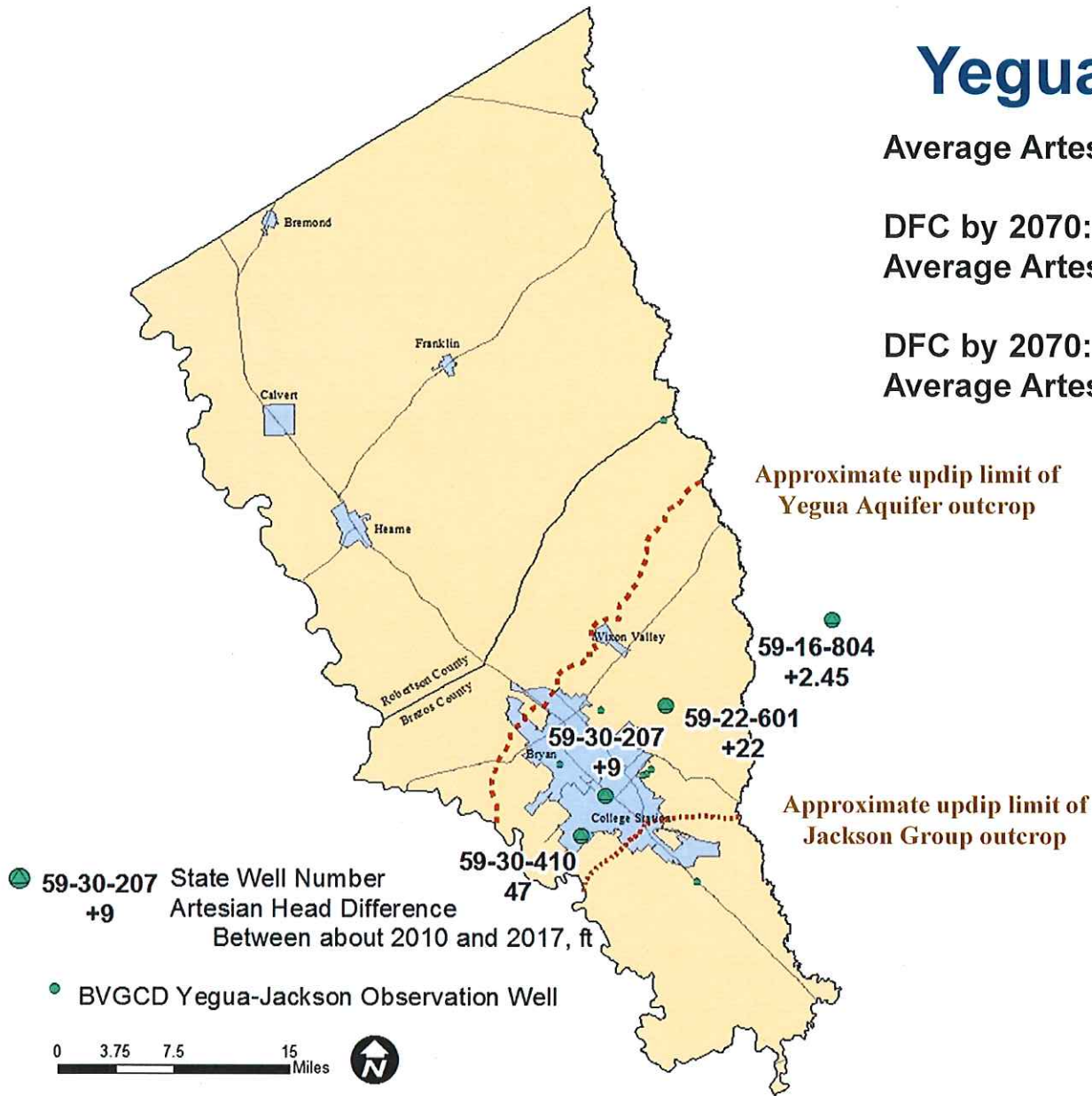
Average Artesian Head Decline = 3 feet

DFC by 2070:

Average Artesian Head Decline 70 feet (Yegua)

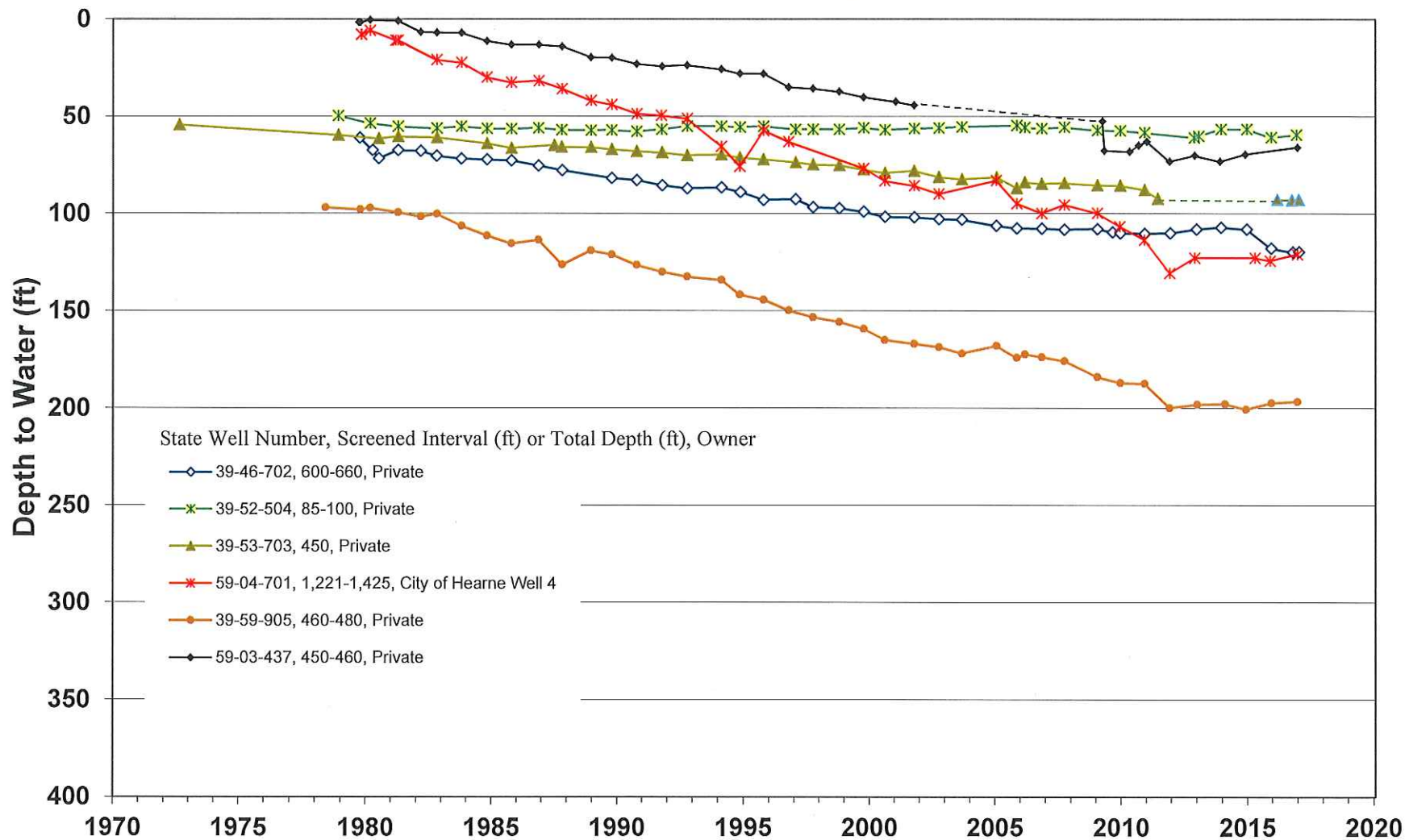
DFC by 2070:

Average Artesian Head Decline 110 feet (Jackson)



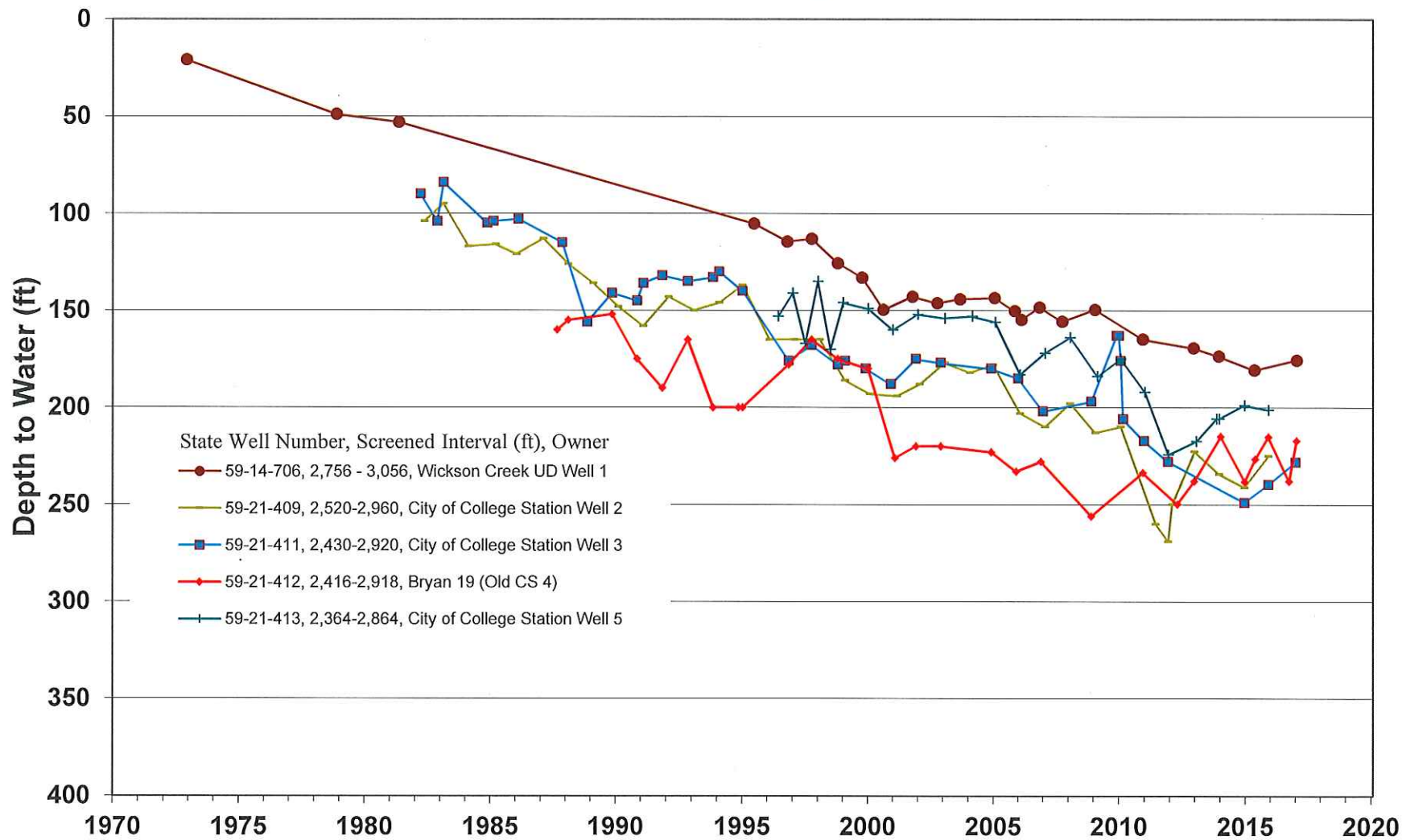
SIMSBORO AQUIFER OBSERVATION WELLS

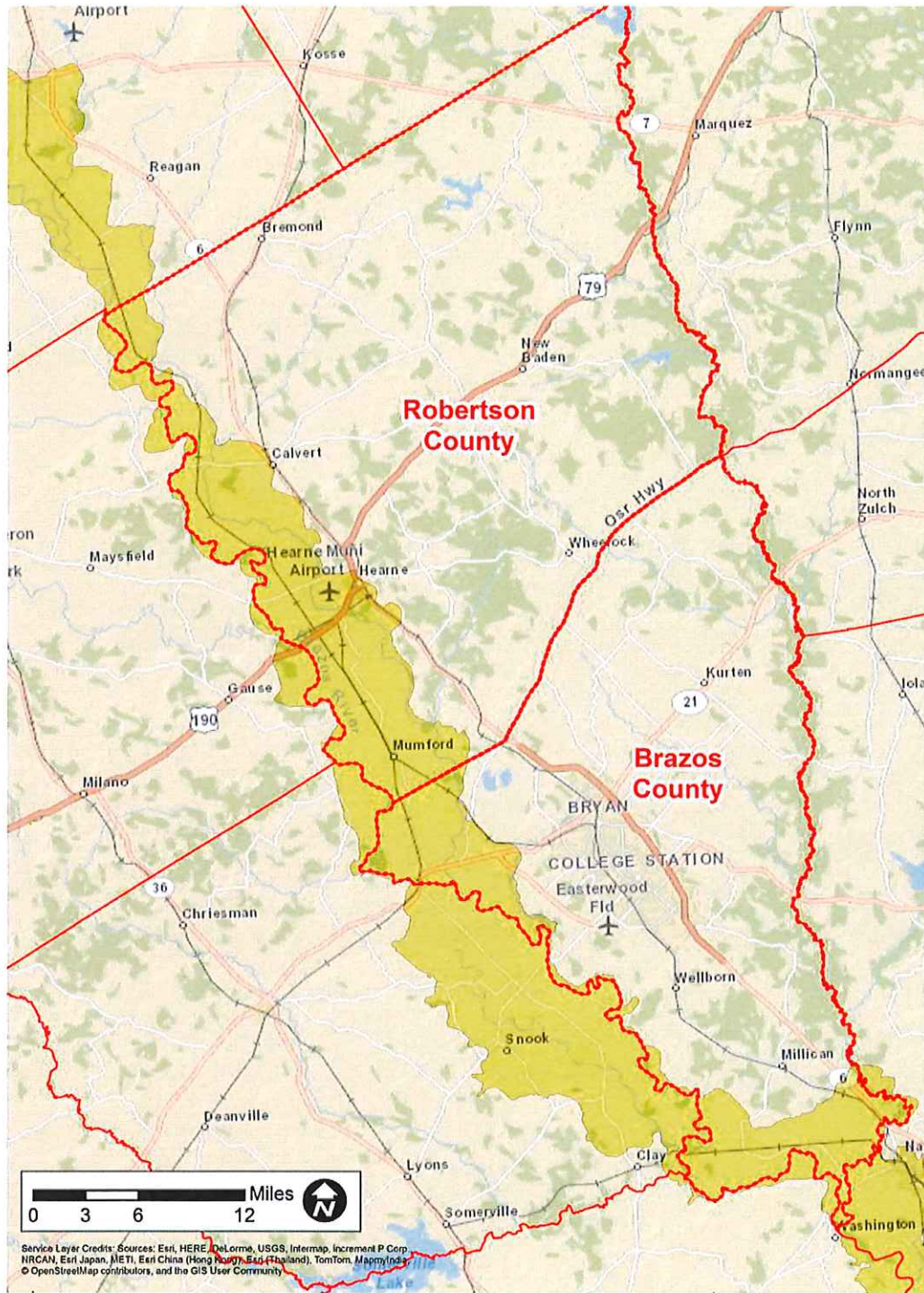
Robertson County



SIMSBORO AQUIFER OBSERVATION WELLS

Brazos County

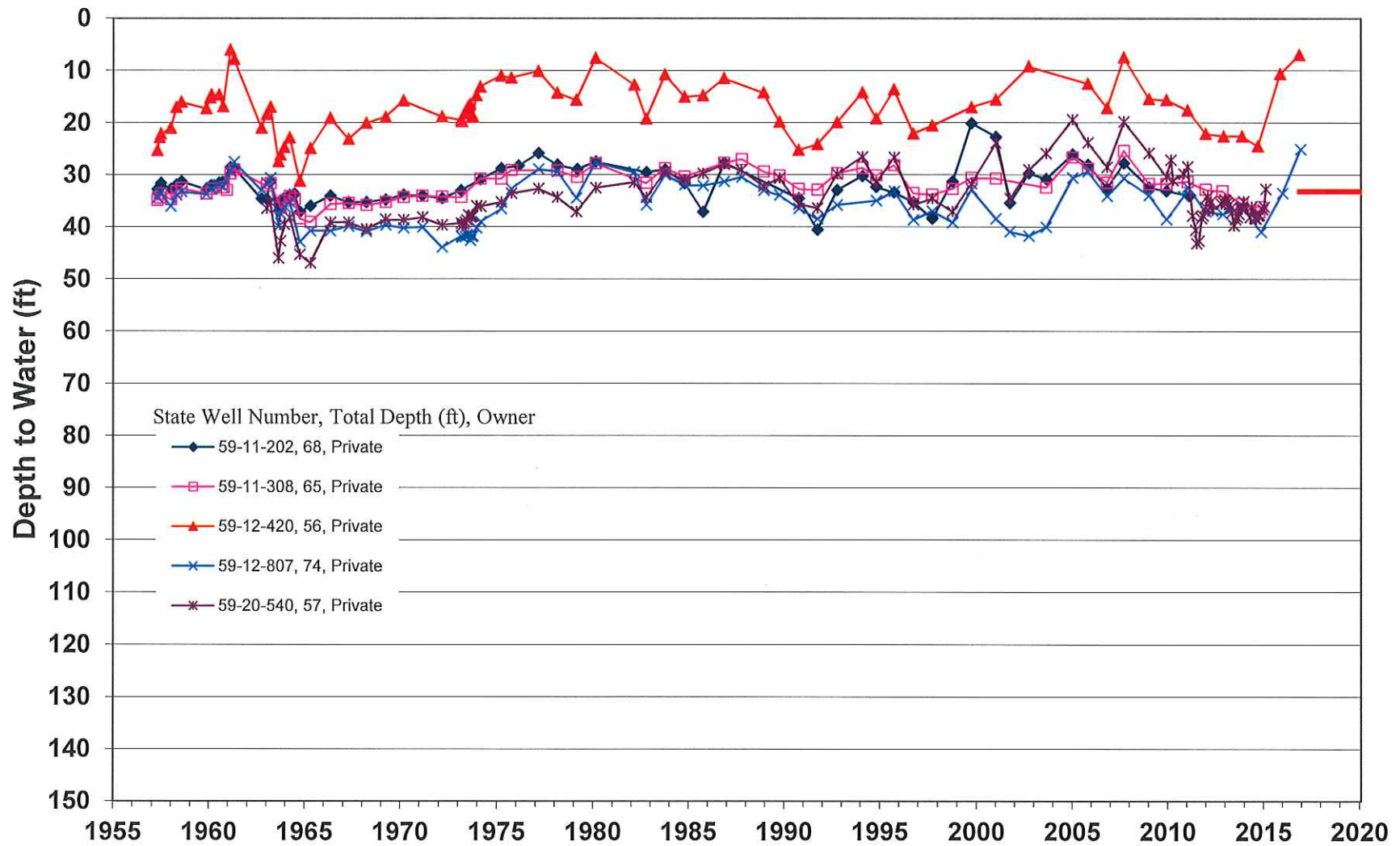




Extent of Brazos River Alluvium

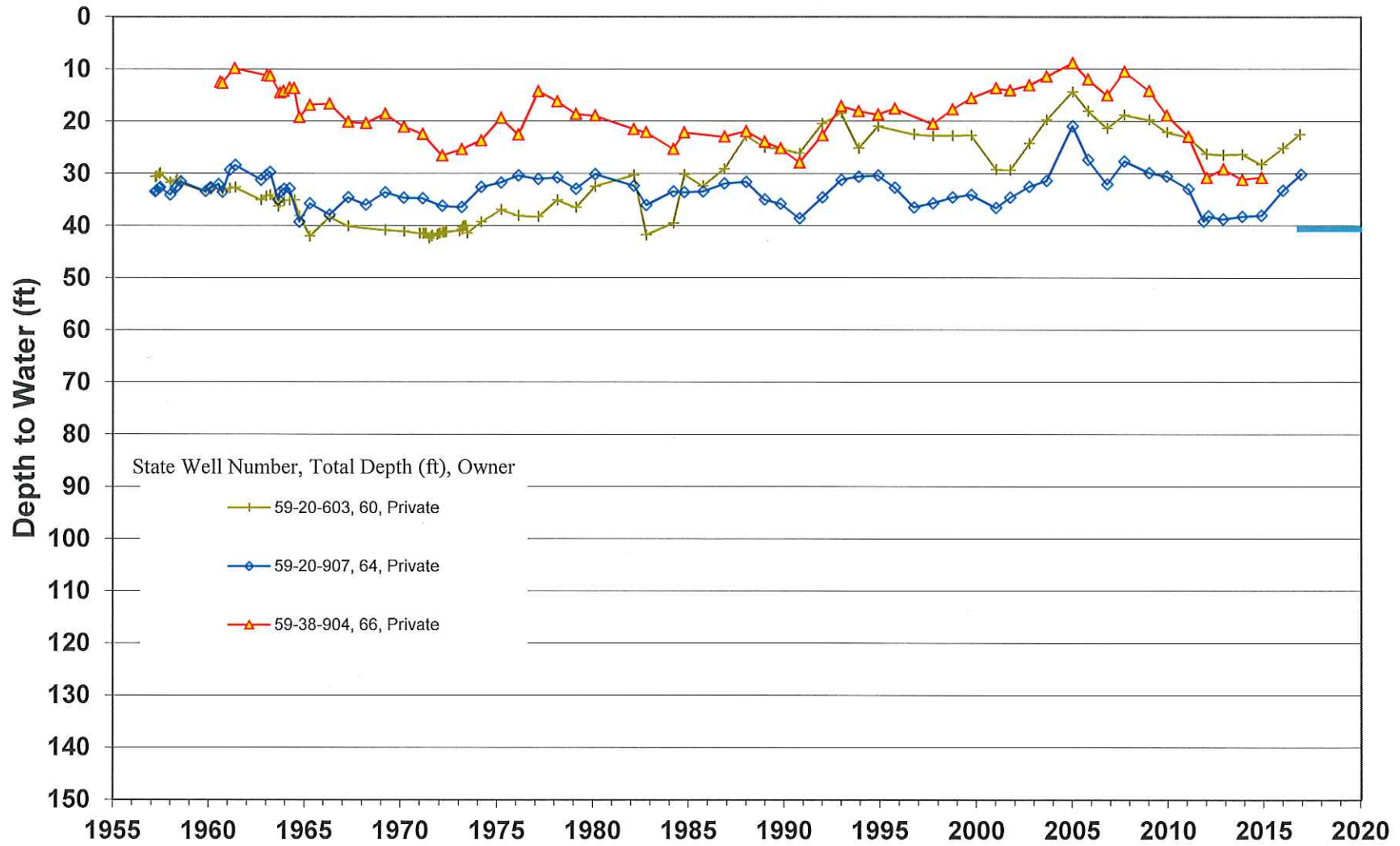
BRAZOS RIVER ALLUVIUM OBSERVATION WELLS

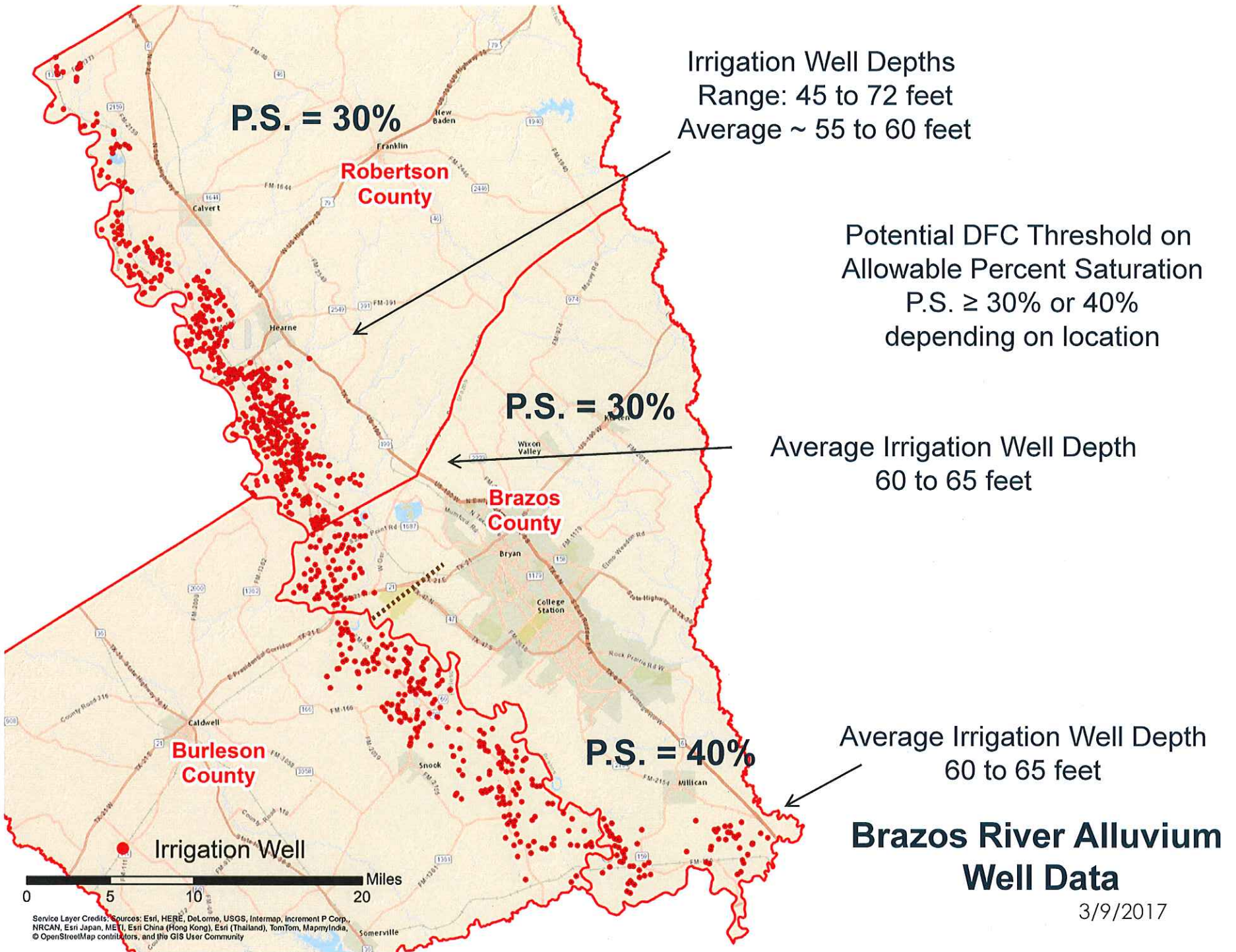
Robertson County



BRAZOS RIVER ALLUVIUM OBSERVATION WELLS

Brazos County







??Questions??

Thank you!

