

**GUADALUPE COUNTY
GROUNDWATER CONSERVATION DISTRICT
WATER LEVEL REPORT
BY
WILLIAM B. KLEMT, P.G.
JUNE 2023**



**Measurement of Water Level Decline and Achievability of the
Desired Future Conditions for the Carrizo-Wilcox Aquifer within Guadalupe County**

A handwritten signature in black ink, appearing to read 'B. Klemt', with a stylized flourish at the end.

William B. Klemt, P.G.

WILLIAM B.KLEMT
CONSULTING GEOLOGIST

1200 Oak Shadow Circle
Austin, Texas 78758
(512) 837-2115

July 13, 2023

Kelley Cochran
Manager
Guadalupe County GCD
P.O. Box 1221
Seguin, Texas 78156

The District's water-level observation wells were measured in June 2023. Twelve (12) of the District's current wells are completed in the Carrizo aquifer and twelve (12) in the Wilcox aquifer. Most of the District's current observation wells were used to provide water level change or elevation information. Also used in this report were three Carrizo wells from Gonzales County.

Comparisons of water-level measurements and water-level decline calculations can be made using the tables. The attached maps show well locations, Carrizo, and Wilcox water-level information.

Carrizo Water Levels

Average GCGCD Carrizo water levels changed only -0.06 feet for the period June 2022 to June 2023 in the 12 wells. These wells are either located in the outcrop or close to the outcrop. Largest water-level change (+7.4 feet) reported and included in the above average was from Well 67-34-505.

Average water levels, from June 2022 to June 2023, changed an estimated -3.38 feet in the SSLGC Area (Well 67-34-706, and in the CRWA Area, average water levels changed about +0.83 feet (Wells 67-34-302, 67-34-505, and 67-34-612).

The Carrizo long-term (2013 - June 2023) water-level declines in the SSLGC and CRWA areas of Guadalupe County are about 26 feet (-2.5 feet/year) and 33 feet (-3.1 feet/year), respectively. Six (6) monitor wells, located near the middle of the Carrizo outcrop, averaged about - 0.32 feet/year.

Wilcox Water Levels

The June 2022 - June 2023 Wilcox water-level measurements indicate an average change of + 0.08 feet for 9 wells. Not included in the water-level change calculation were the following wells:

- 1) Ulrich Well 67-25-910, +15.7 feet;
- 2) Belz Well 68-40-401 was not included for lack of a static water level measurement; and
- 3) CRWA, 67-34-5, -38.5 feet

Carrizo Outcrop Monitor Wells

The average long-term water-level decline (2013 - June 2023) for MWCZ 7 and 8 is on the order of -11 feet (-1.04 feet/year) each which is the result of pumping in the SWN 67-34 area. The average change for the remaining 4 monitor wells is +0.4 feet (+0.038/year). The overall average change for the 6 monitor wells, -3.4 feet (0.32 feet/year).

It is anticipated Carrizo water-level declines will increase moderately within the District due to the addition of the proposed SSLGC Carrizo Well Field in the vicinity of Well 67-34-706. This will increase present-day water level declines in monitor wells MWCZ-1A, 1B, 7 and 8. However, the increased rate of decline will slowly decrease with time as water levels approach a new equilibrium.

Carrizo/Wilcox Water Chemistry

Field Parameters were taken with the District's instrument from the Vogel Wilcox Well (68-40-204) on June 28, 2023:

- 1) Temperature, 24 deg. C (75 deg. F);
- 2) pH, 6.9;
- 3) Conductivity, 2900 umhos/cm;
- 4) Estimated TDS 1450 mg/L.

Summary

In Summary: 1) The average one-year (6/2022 - 6/2023) Carrizo water levels from 12 wells declined only -0.06 feet; 2) At the present day level of pumpage, small to moderate water-level declines are continuing in the Carrizo outcrop, SSLGC, and CRWA areas; 3) However, additional proposed pumpage is expected to increase the rate of Carrizo water-level declines in the above areas to a more moderate level; 4) For the most part, Wilcox water levels remain relatively stable; and 5) It is recommended, the District continue monitoring the chemical quality and field parameters in the District's observation wells in order to detect natural changes or contamination of the groundwater.

Sincerely,

William B. Klemt, P.G.

**GCGCD CARRIZO (Cz)/WILCOX (Wx)
WATER-LEVEL PROGRAM**

Measurements shown are from the measuring point (MP)

<u>Date</u>		<u>WL below MP (ft)</u>
David Baker	67-18-8(7c) MP 1.0 ft >GL	LSD + 622
WS	Lat/Long: 29.654272/97.831397	Depth 232 ft
9/17/15		120.66
1/13/16		119.99
6/15/22		121 Estimated
9/14/22		121.35
1/17/23		120.60
6/28/23		122.65
Robert Carter(Wx)	67-19-708(7b) MP 1.9 ft >GL	LSD +416
WS	Lat/Long:29.657673/97.726433	Depth 295 ft
1/20/13, 33feet (+378) <GL	Sat/thick (2013) = 349 ft (Brac) -33 ft = 316 ft	
1/14/15		036.67
6/15/22		036.71
9/14/22		037.82
1/17/23		035.45: oil spill, 100 ft west
6/28/23		037 Estimated
Fred Blumberg (Wx)	67-25-709 MP 1.5 ft >GL	LSD +525
	Lat/Long:29.530255/97.973638	Depth 160 ft
3/20/00		053
1/21/13		053.20
6/15/22		053.96
9/14/22		053.38
1/17/23		052.13
6/28/23		053.94
Dickie Ullrich(Wx)	67-25-910(9a) MP 0.5 ft >GL	LSD +506
WS	Lat/Long:29.518904/97.887402	Depth (?)
9/02/10		094.60 <MP
1/21/13		099.98 <GL
6/15/22		138.25 ?
9/14/22		117.48
1/18/23		103.11
6/28/23		123.14
Donald Brady(Wx)	67-26-312(7a) Mp 2.0 ft >GL	LSD +568
WS	Lat/Long:29.616036/97.776164	Depth 410
12/1/99		166
1/21/13		163.33
6/15/22		165.25
9/15/22		167.69
1/17/23		166.08
6/28/23		165 Estimated (186 ft pumping)
SH 466 MWCz-7	67-26-9 (39) MP 0.4 ft <GL after 1/28/20	LSD +393
	Lat/Long:29.502032/-97.76655	Plugged back from 250 to 132 ft
		Screen 92 to 132 ft
		B/Cz 132 ft (+261)
Estimated 2002 WL Elev. +376		
1/2013 WL Elev +373 (20 ft <LSD)		Sat/thick (2013) = 132 - 20 = 112 ft
6/12/19		23
1/28/20		26.28(WS), 24.75(e-line)
06/14/22		29.02

9/13/22		30.05	
1/18/23		29.74	
6/27/23		30.51	
Chris Ayotte	67-27-110(2b) MP 2.0 ft >GL		LSD +431
WS	Lat/Long:29.58612/97.7211		Depth 360 ft
2/23/12		063	
1/21/13		059.12	
6/15/22		052.22	
9/14/22		054.45	
1/17/23		052.58	
6/28/23		051.87	
Sagebiel MWCz-3	67-27-4(2d) MP 3.3 ft >GL		LSD +452
Nash Creek WS	Lat/Long:29.546739/-97.720243		Plug back from 270 to 170 ft
			Screen 170 up to 130 ft
			B/Cz 170 ft (+288)
Estimated 2002 WL Elev. +373			
1/2013 WL 91 ft <LSD)		Sat/thick (2013) 79 ft	
2/08/19		091.5 < GL	
6/15/22		094.72	
9/14/22		093.61	
1/17/23		092.81	
6/28/23		093.76	
Pete Kallies(Wx)	67-27-706(2) MP 1.0 >GL		LSD +433
WS	Lat/Long:29.533748/-97.738436		Depth 520 ft
9/24/03		053.24	
1/21/13		055.70	
6/15/22		056.36	
9/14/22		056.00	
1/17/23		055.89	
6/28/23		053.40	
Edward Henk	67-33-602(3b) MP 1.55 ft >GL		LSD +541
WS	Lat/Long:29.424211/-97.879389		Depth 225 ft
8/17/08		108.17	
1/21/13		111.62	
6/15/22		123.21	
9/14/22		123.44	
1/17/23		124.04	
6/28/23		124.56	
Blumberg MWCZ 1-B	67-33-6 MP 3.5 ft >GL		LSD +620
	Lat/Long:29429658-97.901995		Depth 319 feet, plug back from 355 feet
			Screen 279 - 319 feet
			B/CZ 316 feet
Estimated 2002 WL Elev. +459			
1/2013		163.06 < GL, 2013 Sat Thick (316 - 163 = 153 ft)	
7/24/20		169.2 < GL after development	
6/14/22		167.704	
9/13/22		167.43	
1/18/23		167.95	
6/27/23		170.78	
Sandy Oaks Tavern	67-33-803(8) MP 1.8 ft >GL		LSD +584
(Pole Cat) WS	Lat/Long:29.381048/-97.956268		Depth (?)
8/1964		125 ft < GL	
1/21/13		152.59	
6/15/22		158.36	
9/14/22		158.30	
1/17/23		158.36	
6/28/23		159.36	

Hwy 123 MWCz-2	67-33-8(8a)	MP 3.6 ft >GL	LSD +628
Flying W	Lat/Long: 29.400309/-97.954371		Screen 180 - 220 ft
Estimated 2002 WL Elev. +494			TD 280 ft (+351)
1/20/13 WL 145 ft <GL		B/Cz @ TWCZ-1 (+406 Elev.)	
2/17/18			146.3
2/20/18			146.25 <GL Reported
1/15/19			148.87
6/14/22			147.832
9/13/22			147.93
1/18/23			147.98
6/27/23			144.98
Hwy 123 (Wx)	67-33-8	MP 1.5 ft >GL	LSD +620
Flying W	Lat/Long: 29.409830/-97.954708		Depth 535 ft
6/06/88			140
6/22/21			148.85
6/15/22			159.62
9/14/22			162.26
1/18/23			156.95
6/28/23			159.83
Blumberg MWCz-1A	67-33-9(6d)	MP 3.0 ft >GL	LSD +570
	Lat/Long: 29.413811/-97.887355		Plug back from 477 ft to 420 ft
Estimated 2002 WL Elev. +430			Screen 360 - 420 & 180 -200 ft
1/20/13 WL 144ft <GL)		Sat/thick (2013) 420 -144 = 276 ft	B/Cz 420 ft (+150)
3/12/19			147.5
4/04/19			147.5
4/23/19			147.51
6/14/22			149.298
9/13/22			149.91
1/18/23			149.19
6/27/23			145.58
Wells Ranch (Cz)	67-34-302(3a)	MP 1.5 ft >GL	LSD +491
WS	Lat/Long: 29.4706/-97.7747		Depth 250 ft
2002			106 Estimated
4/29/08			110
1/03/13			118.70
6/02/22			148.61
9/06/22			150.22
1/09/23			152.06
6/01/23			152.11
MWCz-8, FM 1117	67-34-4(4b)	MP 0.3 ft <GL	LSD +610
	Lat/Long: 29.452258/97.845193		Depth 415 ft
Estimated 2002 WL Elev. +443			Screen 325 - 365 ft
1/20/13 WL 170 ft <GL)		B/Cz 365 ft (+245)	
7/25/19		Sat/Thick (2013) = 365 - 170 = 195 ft	
8/09/19			179
6/14/22			178.2
9/13/22			179.10
1/17/23			179.08
6/27/23			180.45
Bexar Met #2 (Cz)	67-34-505(5)	MP 2.2 ft >GL	LSD +474
Deer stand	Lat/Long: 29.450425/-97.796486		Depth 460 ft
8/20/02			084.09
1/03/13			102.18

	6/10/22		141.4
	9/11/22		141.6
	1/06/23		135.6
	6/01/23		134.0
CRWA (Wx)	67-34-5	MP 2.2 ft >GL	LSD +483
Deer stand #3	Lat/Long: 29.449793/-97.797889		Depth 1602 ft
	09/07/16		092.1
	10/14/18		149.9
	01/02/19		178.2
	6/10/22		136.5
	9/15/22		172.2
	6/01/23		175.0
Blumberg #1 (Cz)	67-34-706(6)	MP 2.0 ft >GL	LSD +514
WS	Lat/Long:29.385406/-97.852584		Depth 770 ft, T/MCz 330 ft(+184)
			Screen 526 - 772 ft
	1/21/04		109.10 <GL
	1/21/13		121.28
	6/15/22		144 Estimated
	9/14/22		147.01
	1/17/23		144.45
	6/28/23		147.38
Baethge (Cz)	67-34-710(6c)	MP 2.0 ft >GL	LSD +468
(Lakey) WS	Lat/Long:29.411429/-97.836769		Depth (?)
	8/17/08		069.84
	1/21/13		074.23
	6/15/22		099.60
	9/14/22		101.50
	1/17/23		100.24
	6/28/23		099.73
Mundt (Cz)	67-34-7	MP 1.5 ft >GL	LSD +520
	Lat/Long:29.391694/-97.840694		Depth 444 ft
	1/19/22		142.68
Norvin Vogel (Wx)	68-40-204(10a)	MP 1.0 ft >GL	LSD +560
WS	Lat/Long:29.4929/-98.0703		Depth 90 ft
	10/4/85		024
	1/15/19 (2013)		025.75
	6/15/22		026.71
	9/14/22		026.92
	1/17/23		026.37
	6/28/23		026.37
Belz (Wx)	68-40-401	MP 1.0 ft >GL	LSD +537
	Lat/Long:29.447778/-98.0950556		Depth 64 ft
	1/19/22		027.00
	6/15/22		027.05
	1/17/23		026.86
	6/28/23		026.14 Pumping
Randy Schween	68-40-7	Mp 1.74 >GL	LSD +540
	Lat/Long:29.40888/-98.114721		Depth 180 ft
	2/09/02		060
	4/05/22		068.38
	6/15/22		071.57
	9/14/22		080.01 Had been pumping
	1/17/23		063.35
	6/28/23		072.38

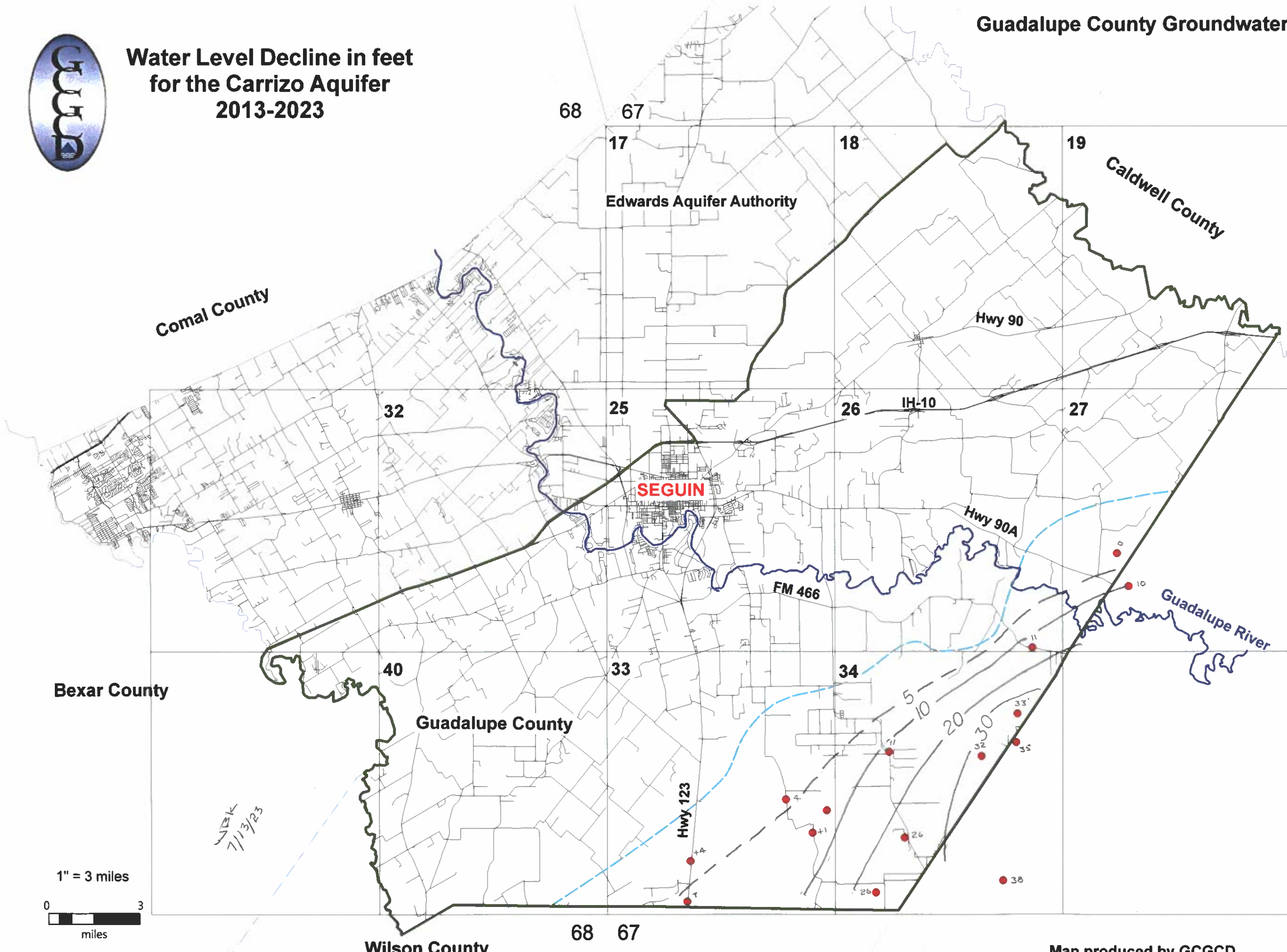
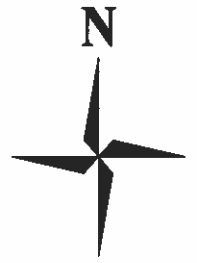
GCUWCD WATER LEVELS

James Miller (Cz)	67-27-705	MP 0.5 ft >GL	LSD +391
	Lat/Long:29.530824/-97.71026		Depth (?)
8/20/02			030.07
1/03/13			036.58
6/02/22			044.50
9/06/22			043.68
1/09/23			048.70
6/01/23			046.70
Bexar Met #3	67-34-612	MP 2.2 ft >GL	LSD +465
Harden #1 Tommy's Well	Lat/Long: 29.457182/-97.775855		Depth 680 ft
8/20/02			075.13 MP 1.5 ft >GL
1/03/13			096.8
6/10/22			130.6
9/09/22			134.8
1/06/23			134.9
6/08/23			132.0
Thyra Harvey(Cz)	67-34-904	MP 1.2 ft >GL	LSD +410
	Lat/Long:29.39102/-97.782671		Depth (?)
10/25/00			032.17 Barry Miller
01/17/12			054.57
6/02/22			095.93
9/06/22			106.10
1/09/23			098.02
6/01/23			092.53

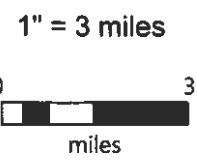


Water Level Decline in feet for the Carrizo Aquifer 2013-2023

Guadalupe County Groundwater Conservation District



NBK
7/13/23



Gonzales County

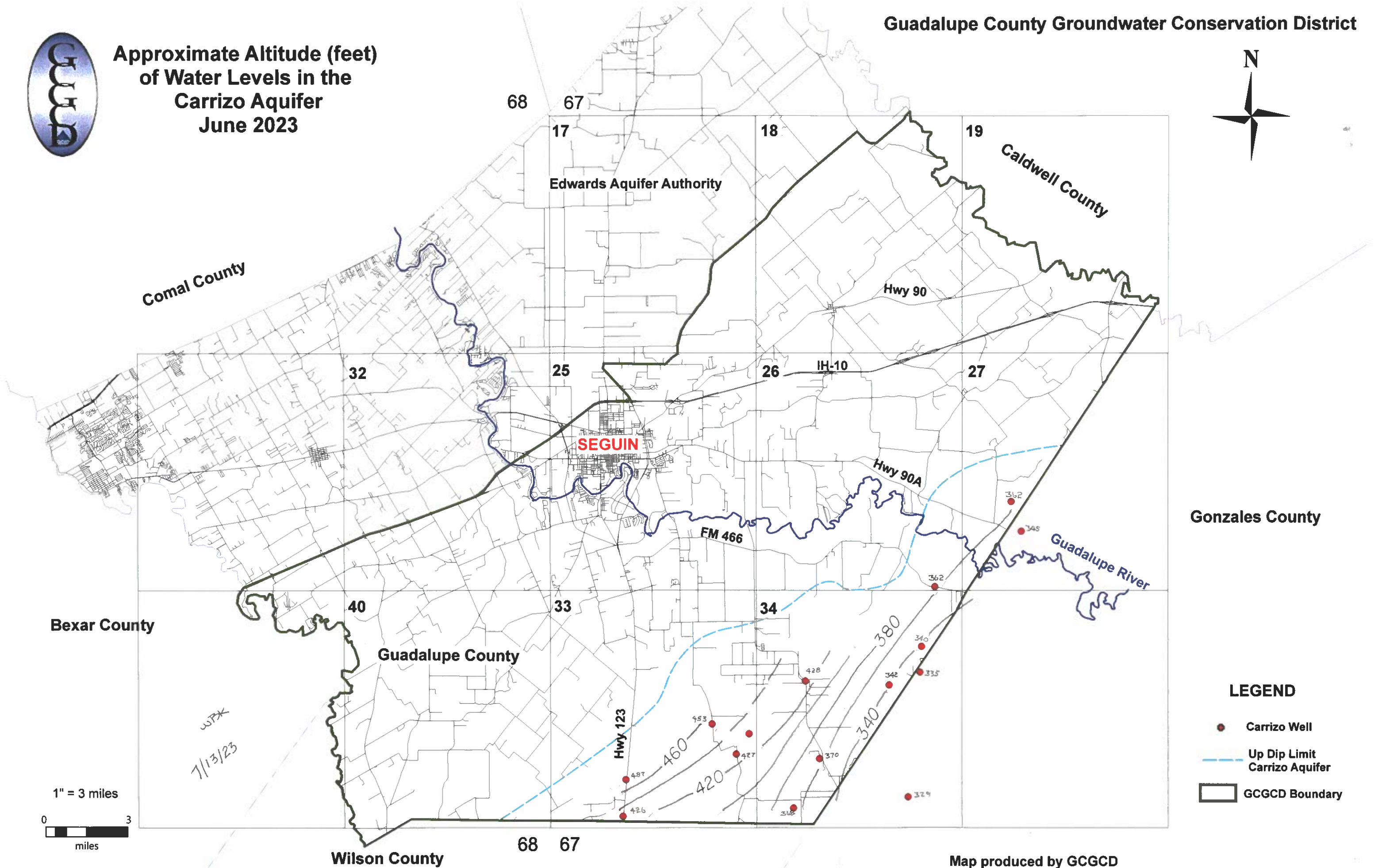
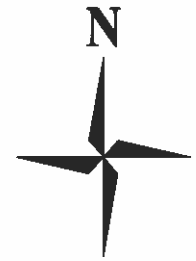
LEGEND

- Carrizo Well
- Up Dip Limit Carrizo Aquifer
- GCGCD Boundary



**Approximate Altitude (feet)
of Water Levels in the
Carrizo Aquifer
June 2023**

Guadalupe County Groundwater Conservation District



Gonzales County

LEGEND

- Carrizo Well
- Up Dip Limit Carrizo Aquifer
- GCGCD Boundary

1" = 3 miles



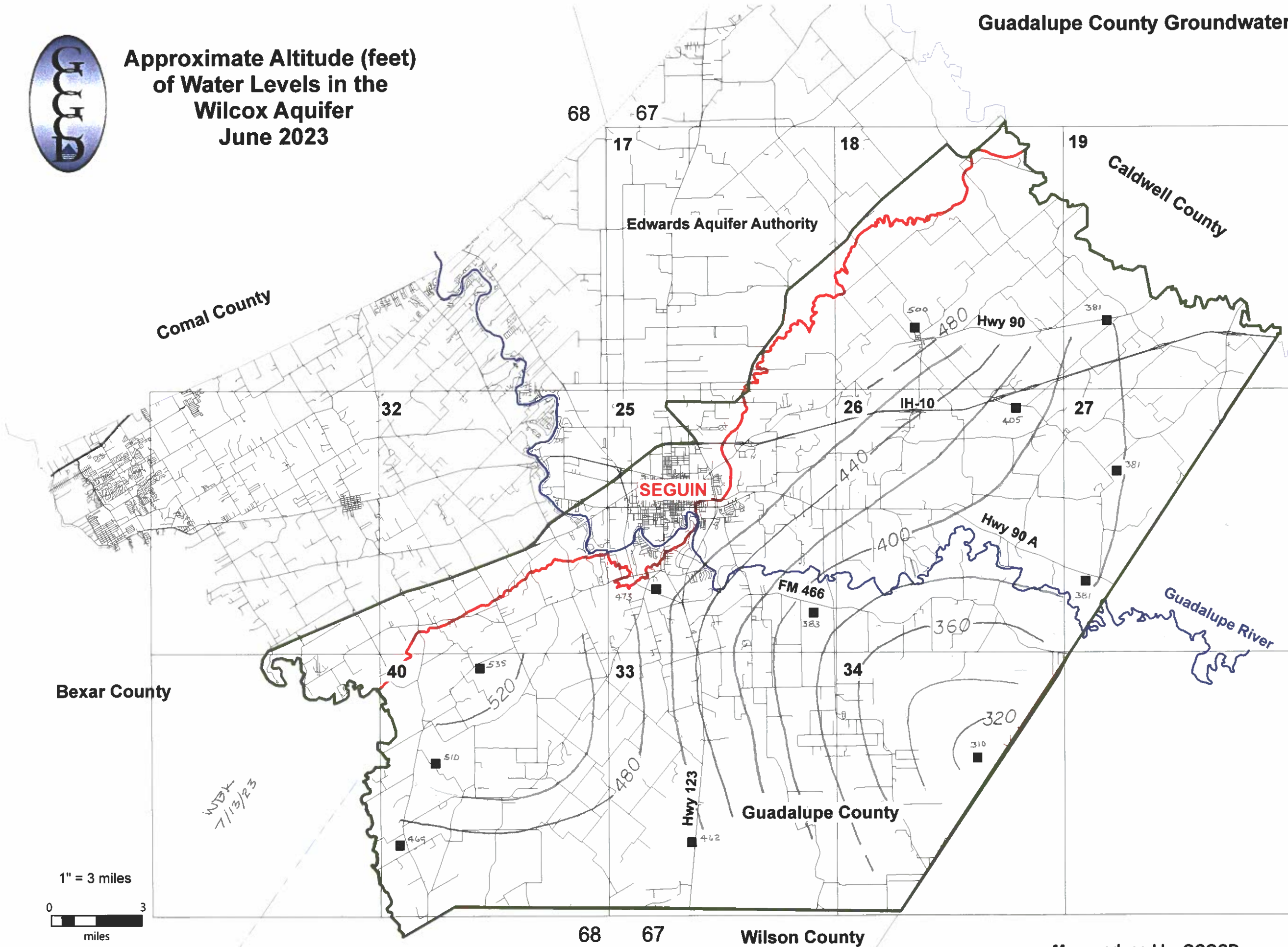
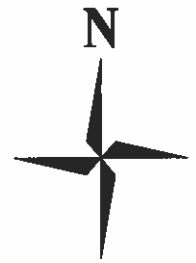
Wilson County

Map produced by GCGCD



**Approximate Altitude (feet)
of Water Levels in the
Wilcox Aquifer
June 2023**

Guadalupe County Groundwater Conservation District



Gonzales County

LEGEND

■ Wilcox Well

□ GCGCD Boundary

— Wilcox Outcrop

1" = 3 miles



*WBAK
7/13/23*

Map produced by GCGCD