



Overview of GMA 12 and Hydrology of 22 Hills

Presented to:

Post Oak Savannah Groundwater
Conservation District Board of Directors

April 14, 2026

Presented by:
Steve Young

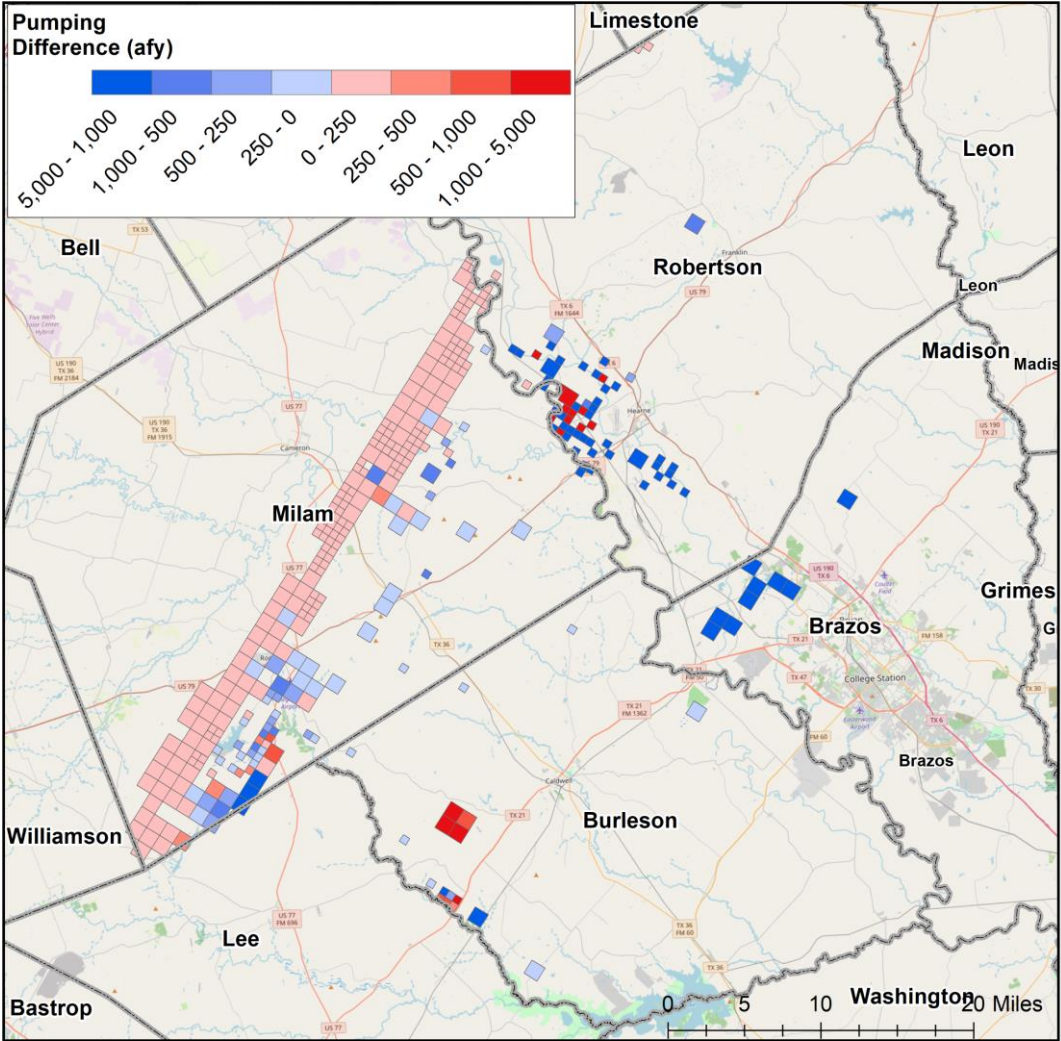


Outline

- GMA 12
 - Simboro Pumping
 - DFCs
 - Water Budgets
- Location of 22 Hills Wells
 - Well Locations
 - Observed & Simulated Drawdowns

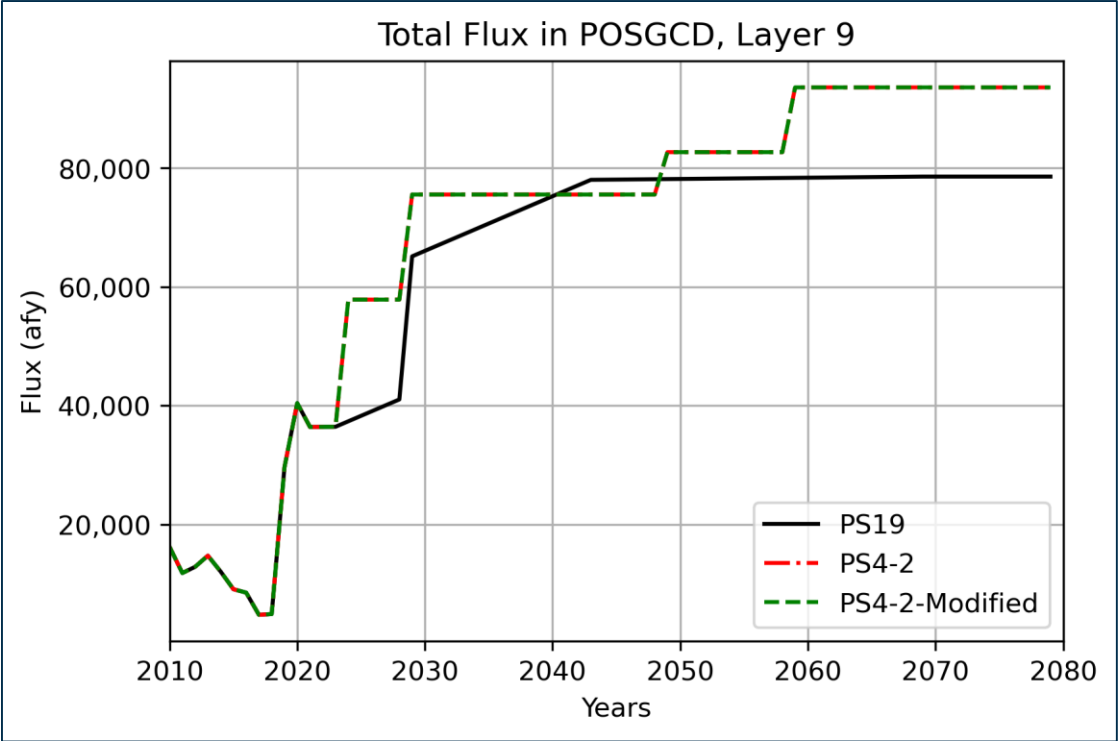
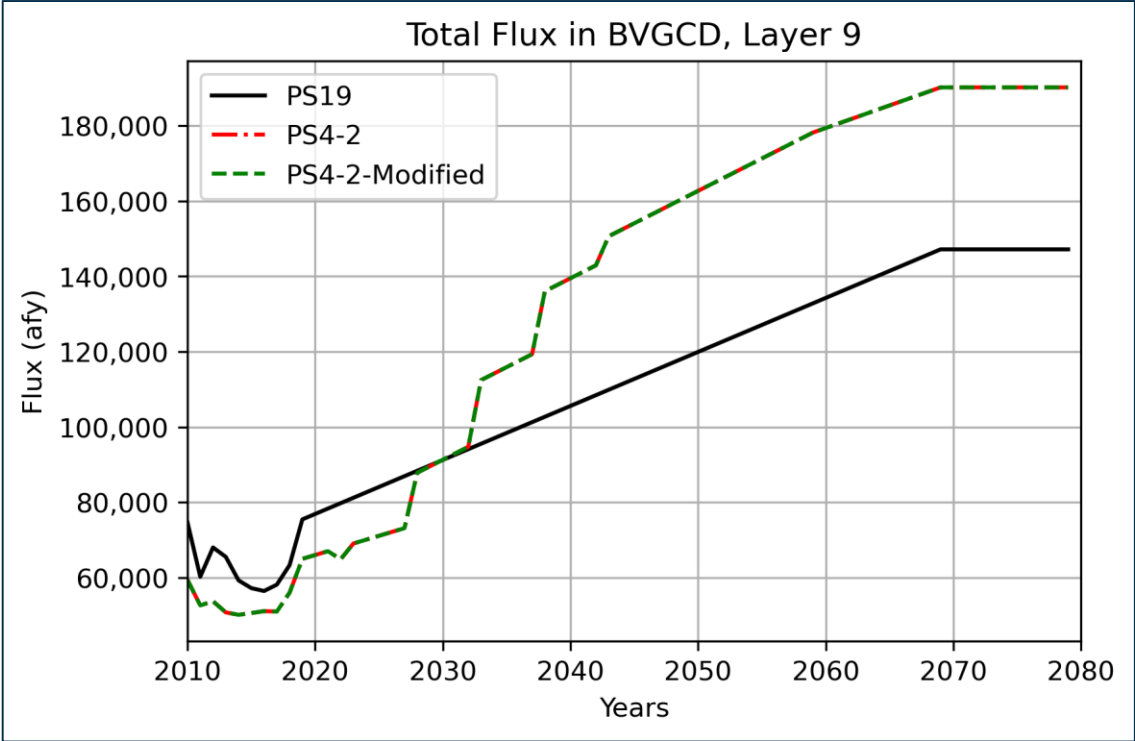
GMA 12: Difference in Simsboro Production in 2080 between PS3-19 and PS4-2mod

GCD	Run	Simsboro in 2080 (afy)
BVGCD	PS3-19	147,145
BVGCD	PS4-2-Modified	190,150
POSGCD	PS3-19	79,379
POSGCD	PS4-2-Modified	95,166



GMA 12: Comparison of Total Simsboro Production

GCD	Run	Simsboro in 2080 (afy)
BVGCD	PS3-19	147,145
BVGCD	PS4-2-Modified	190,150
POSGCD	PS3-19	79,379
POSGCD	PS4-2-Modified	95,166



DFC Comparison Among Runs (INTERA Application of Excel File)

Calculated DFCs

	PS3-19	PS3-19*
	POSGCD	POSGCD
SP	32	45
QC	30	28
CZ	162	155
CB	158	156
SB	277	284
HP	176	179

*with POSGCD pumping used for PS-4, PS-4mod, and PS4-mod2

GCD	Aquifer	PS3-19	PS4-2 Modified_V2
BVGCD	Sparta	50.5	56.9
	Queen City	42.3	46.3
	Carrizo	75.8	83.3
	Calvert Bluff	94	118.5
	Simsboro	202.2	282.6
	Hooper	145.9	190.2
FAYETTE	Sparta	47	56.5
	Queen City	76.2	95.8
	Carrizo	148.2	173.3
	Calvert Bluff	153.8	184.4
	Simsboro	219.3	275.5
	Hooper	132.6	181.6
LPGCD	Sparta	21.9	21.5
	Queen City	29.5	31.4
	Carrizo	140.5	138.7
	Calvert Bluff	139.3	141.2
	Simsboro	249.5	261.3
	Hooper	146.7	157.2
METGCD	Sparta	26.1	22.2
	Queen City	21.5	18.9
	Carrizo	49.8	45.1
	Calvert Bluff	59.6	58.2
	Simsboro	79.3	84.7
	Hooper	73.7	76.1
POSGCD	Sparta	33.5	46
	Queen City	32	30
	Carrizo	168.8	170.3
	Calvert Bluff	163.6	188.9
	Simsboro	287.8	369
	Hooper	189.5	236.4



POSGCD Water Budgets (GAM)

1929 (OPMAN)	Aquifer	Lateral Flow				Recharge	ET	Surface Water	Pumping	Storage	GHB	Vertical Flow
		LPGCD	BVGCD	METGCD	FCGCD							
	Sparta	-112	-496	0	0	8,474	0	-1,166	-901	-769	-844	-3,872
	Queen City	-938	-1,010	0	0	15,869	0	-8,264	-658	-3,071	0	3,597
	Carrizo	961	-2,195	0	0	4,744	0	-2,697	-1,091	-830	0	-169
	Calvert Bluff	270	-739	0	0	25,274	-16	-5,117	-736	-2,336	0	-14,605
	Simsboro	730	-15,275	0	0	16,953	0	-2,016	-25,105	4,754	0	19,354
	Hooper	-18	-423	0	0	13,142	-167	-4,516	-561	-3,744	0	-3,988

2000 (OPMAN)	Aquifer	Lateral Flow				Recharge	ET	Surface Water	Pumping	Storage	GHB	Vertical Flow
		LPGCD	BVGCD	METGCD	FCGCD							
	Sparta	-112	-496	0	0	8,474	0	-1,166	-901	-769	-844	-3,872
	Queen City	-938	-1,010	0	0	15,869	0	-8,264	-658	-3,071	0	3,597
	Carrizo	961	-2,195	0	0	4,744	0	-2,697	-1,091	-830	0	-169
	Calvert Bluff	270	-739	0	0	25,274	-16	-5,117	-736	-2,336	0	-14,605
	Simsboro	730	-15,275	0	0	16,953	0	-2,016	-25,105	4,754	0	19,354
	Hooper	-18	-423	0	0	13,142	-167	-4,516	-561	-3,744	0	-3,988

2030 (OPMAN)	Aquifer	Lateral Flow				Recharge	ET	Surface Water	Pumping	Storage	GHB	Vertical Flow
		LPGCD	BVGCD	METGCD	FCGCD							
	Sparta	-70	352	0	0	7,554	0	-881	-3,745	1,096	-127	-4,057
	Queen City	-875	-1,122	0	0	13,142	0	-7,478	-914	507	0	1,972
	Carrizo	6,498	147	0	0	3,553	0	-326	-14,444	2,124	0	-412
	Calvert Bluff	174	-2,211	0	0	18,992	0	5,993	-1,565	12,664	0	-34,963
	Simsboro	8,415	-24,283	0	0	12,316	0	3,418	-76,645	28,949	0	45,250
	Hooper	-421	-418	0	0	8,897	-160	-3,699	-1,285	2,701	0	-5,880

2080 (OPMAN)	Aquifer	Lateral Flow				Recharge	ET	Surface Water	Pumping	Storage	GHB	Vertical Flow
		LPGCD	BVGCD	METGCD	FCGCD							
	Sparta	5	409	0	0	7,554	0	43	-5,477	636	1,109	-4,531
	Queen City	-833	-1,495	0	0	13,142	0	-5,914	-1,242	395	0	484
	Carrizo	6,684	-219	0	0	3,553	0	3,871	-15,178	4,618	0	-7,977
	Calvert Bluff	690	-4,095	0	0	18,992	0	34,328	-2,333	15,141	0	-66,318
	Simsboro	17,849	-63,314	0	0	12,316	0	11,308	-94,799	22,045	0	89,329
	Hooper	-745	-1,271	0	0	8,897	-75	-1,423	-1,764	3,255	0	-7,669

Positive = Into Aquifer
Negative = Out of Aquifer

All Districts

2011-2080 Simsboro – GAM PS4-2-modv2

2011 Water Column (ft)	Total Wells	Outcrop	0-10%	10-20%	20-30%	30-40%	40-50%	50-60%	60-70%	70-80%	80-90%	90-100%	100%+
0-20	25	18	3			1							21
20-40	37	21	4								3	1	29
40-60	60	36	6	1		1	3	6	3	3	3		34
60-80	63	32	5		1	2	5	6	7	3	1	2	31
80-100	50	26	6	1	5	4	6	1	5	2	3	2	15
100-150	133	19	23	12	11	15	8	10	10	3	4	4	33
150-200	166	4	78	15	15	16	6	3	3	1	4	12	13
200-250	226	1	131	32	18	10	9	7	2	8	6	1	2
250-500	913	2	483	120	85	53	45	57	27	17	16	4	6
500+	337	1	80	50	93	71	23	18	2				
TOTAL	2010	160	819	231	228	173	105	108	59	37	40	26	184

Well Impact
Dry - 184
>50% - 454

2011-2080 Simsboro – OPMAN PS4-2-modv2

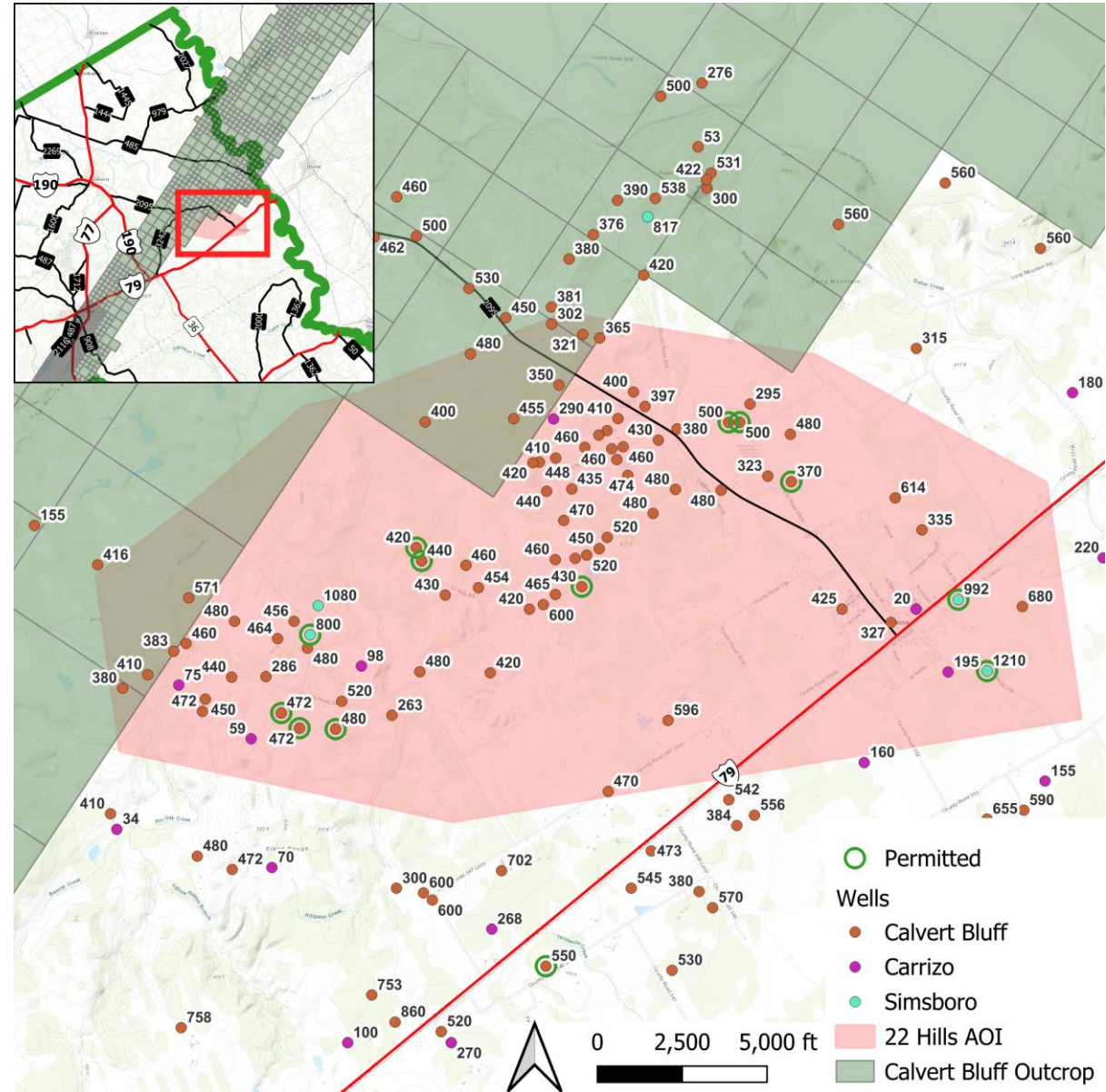
2011 Water Column (ft)	Total Wells	Outcrop	0-10%	10-20%	20-30%	30-40%	40-50%	50-60%	60-70%	70-80%	80-90%	90-100%	100%+
0-20	23	17	3				1	1	1	1	1		15
20-40	42	28	5			1		1	1				34
40-60	61	30	10		3	3	2		1			1	41
60-80	58	25	5	4	3	1		4	2	2		1	36
80-100	61	17	2	8	1		3	3		2	1	1	40
100-150	141	21	17	14	16	7	11	7	6	3	8	10	42
150-200	173	4	49	19	25	7	16	13	6	8	6	5	19
200-250	238	0	121	23	14	13	12	15	13	9	2	3	13
250-500	902	3	514	134	59	49	40	38	23	15	13	6	11
500+	318	0	161	67	45	13	16	7	4	5			
TOTAL	2017	145	887	269	166	94	101	89	57	45	31	27	251

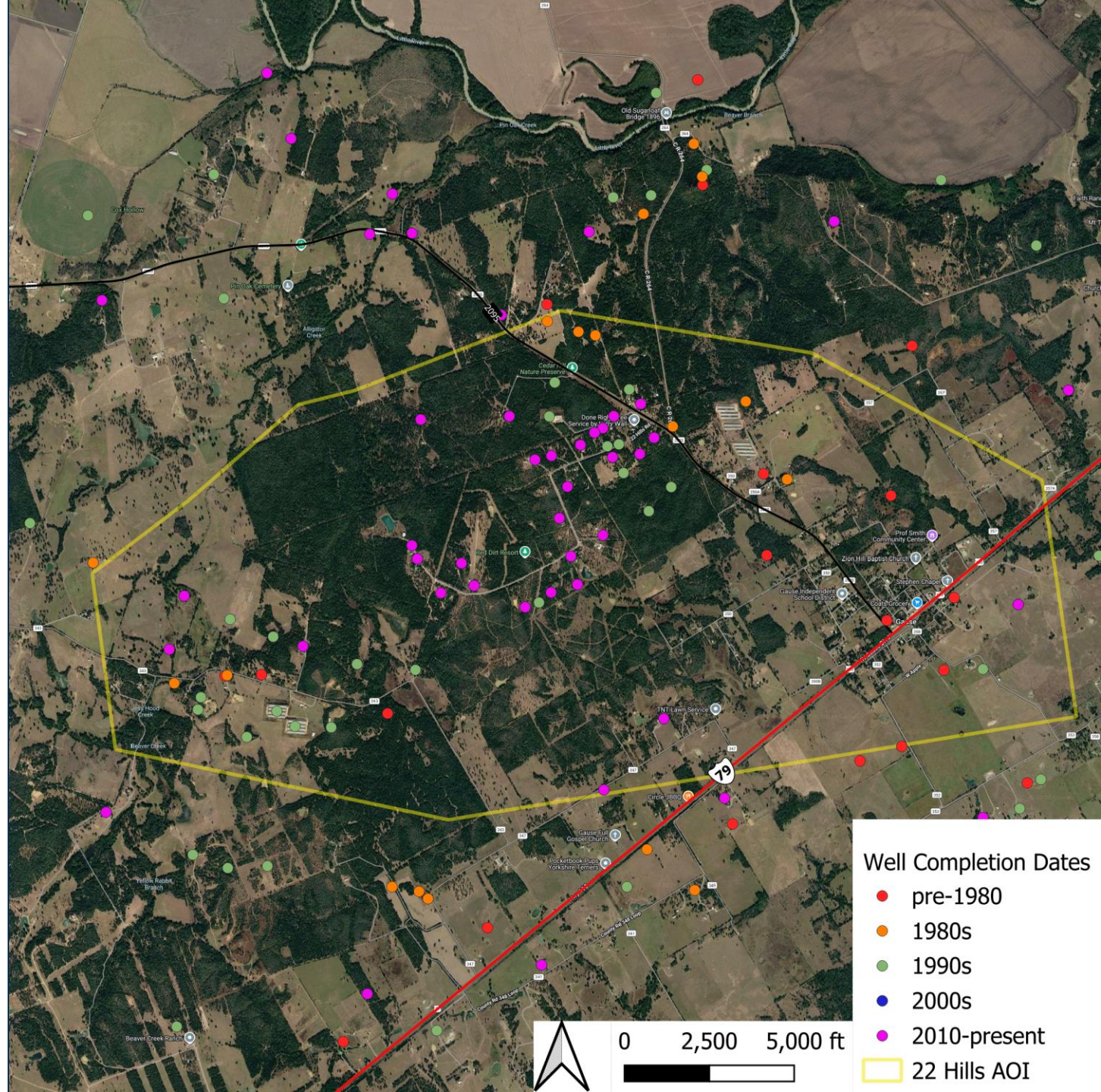
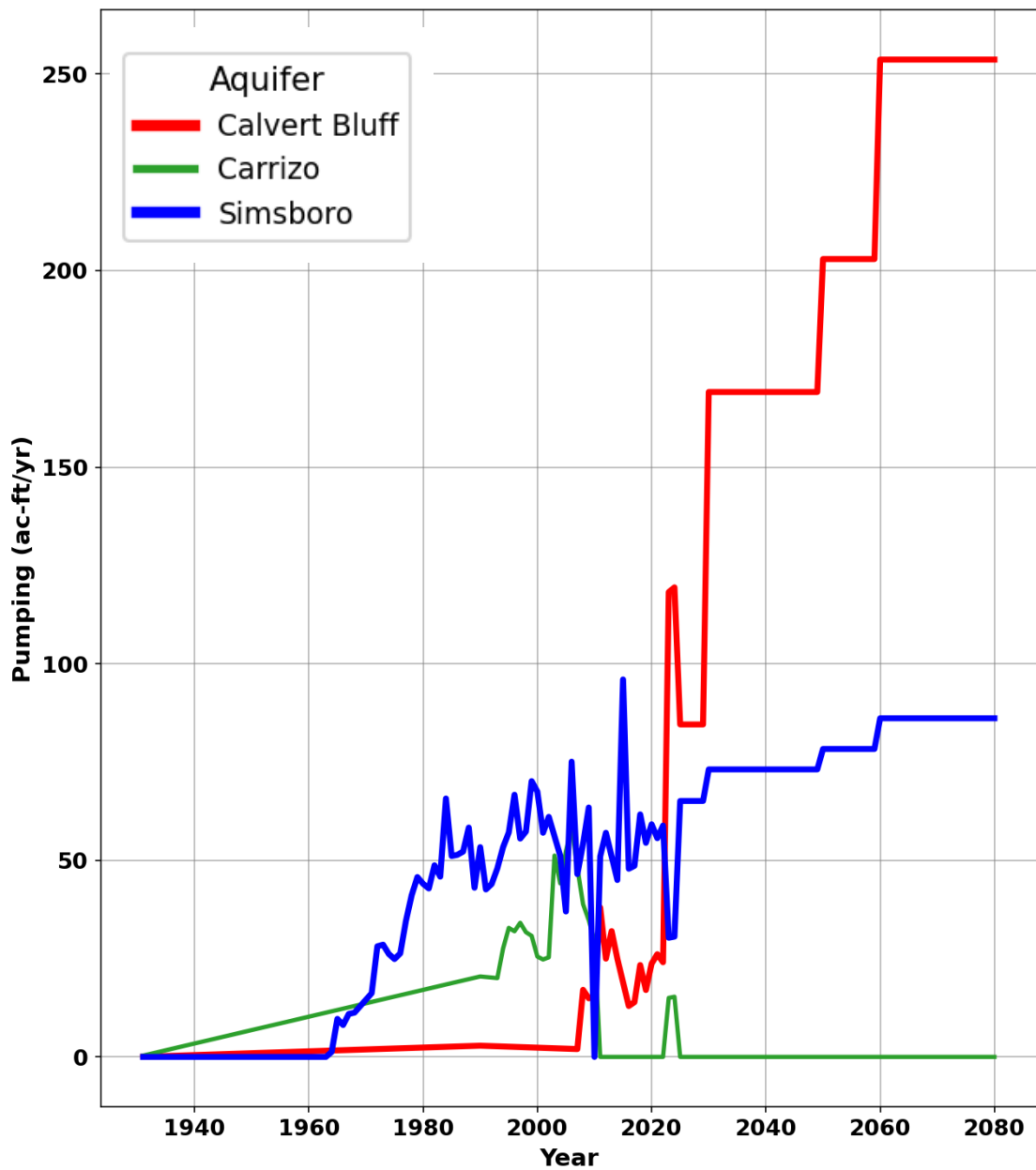
Well Impact
Dry - 251
>50% - 500



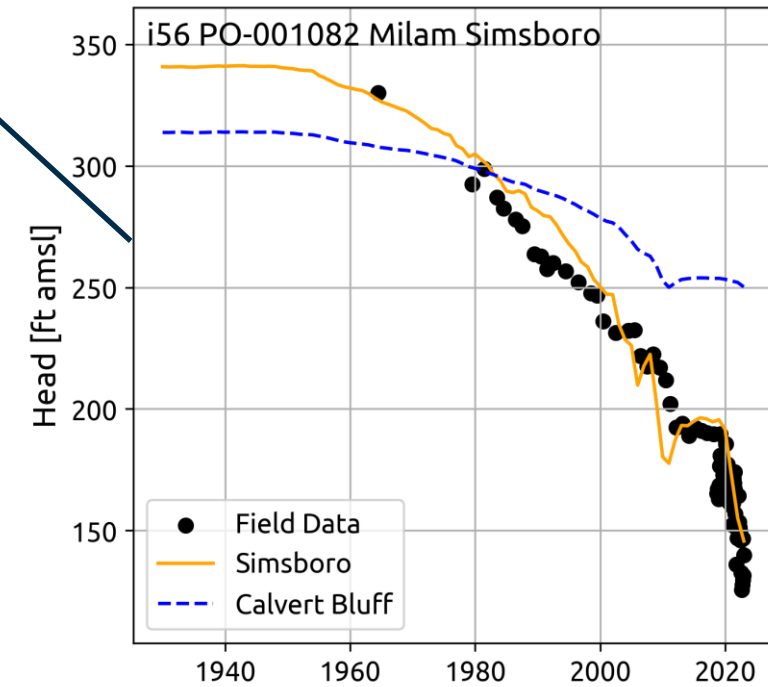
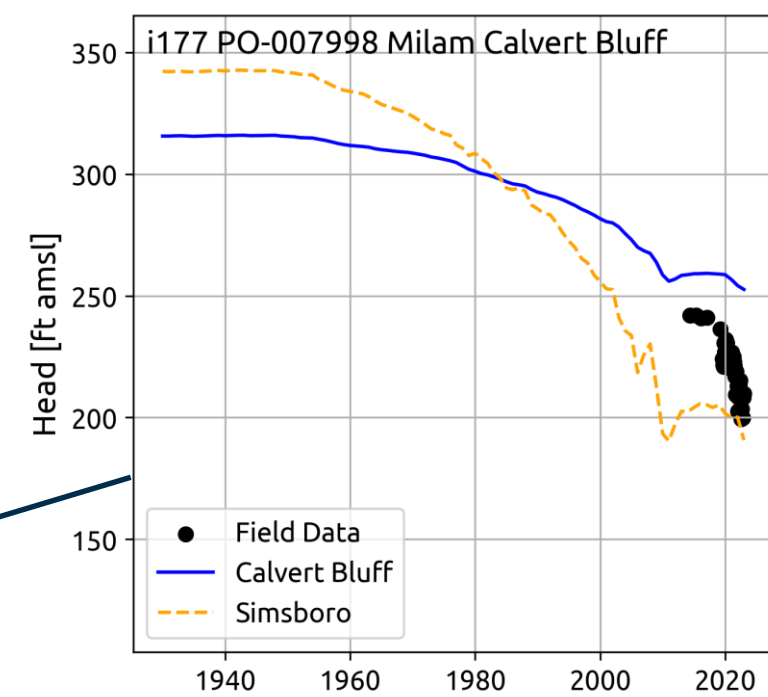
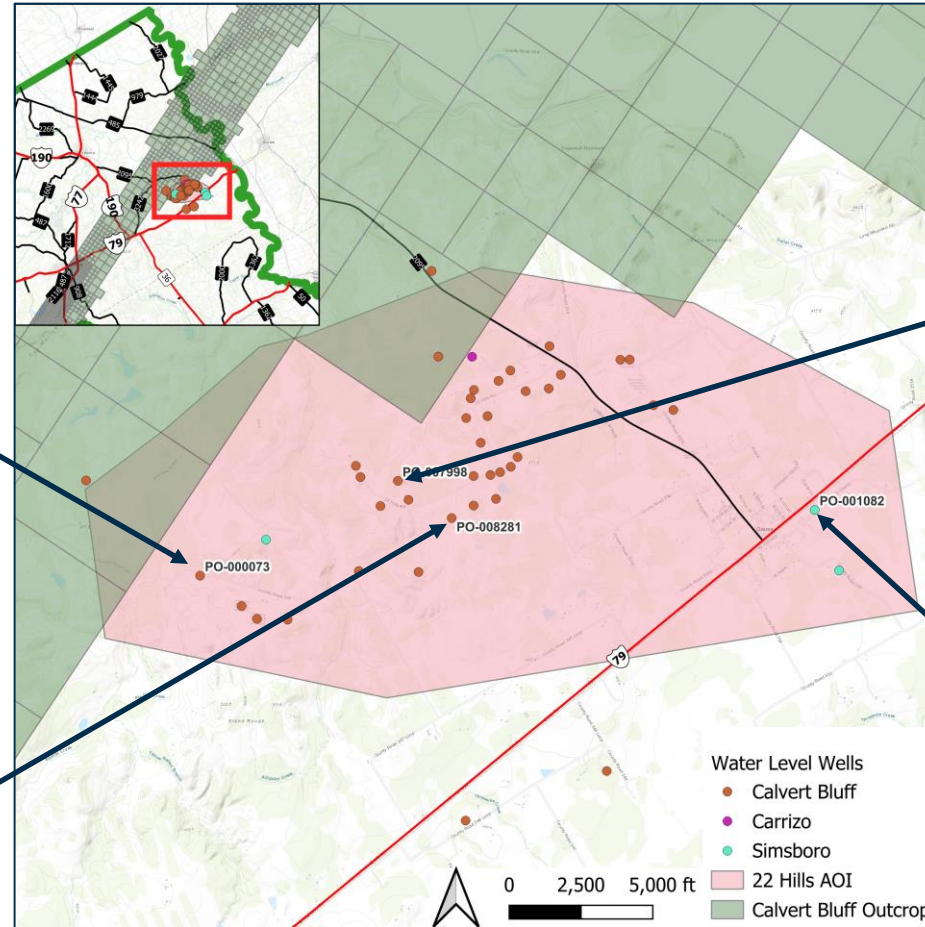
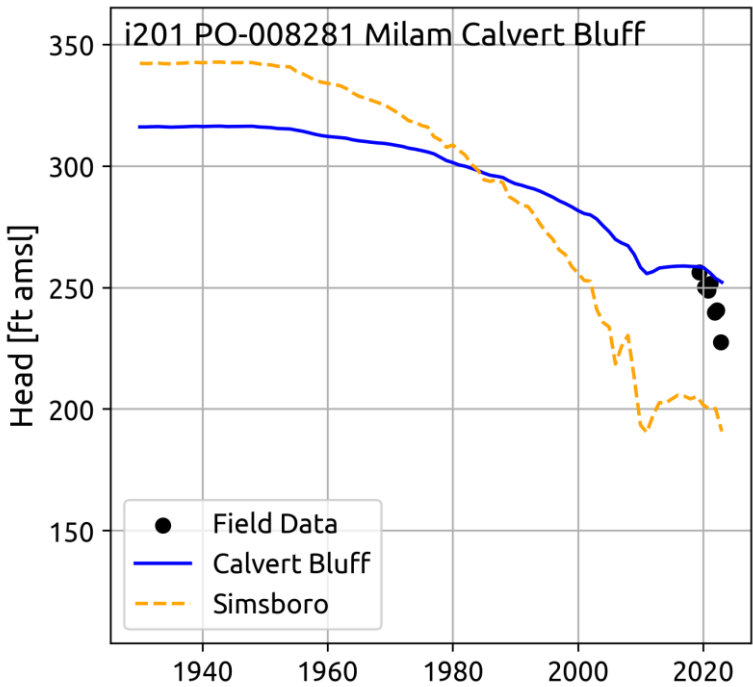
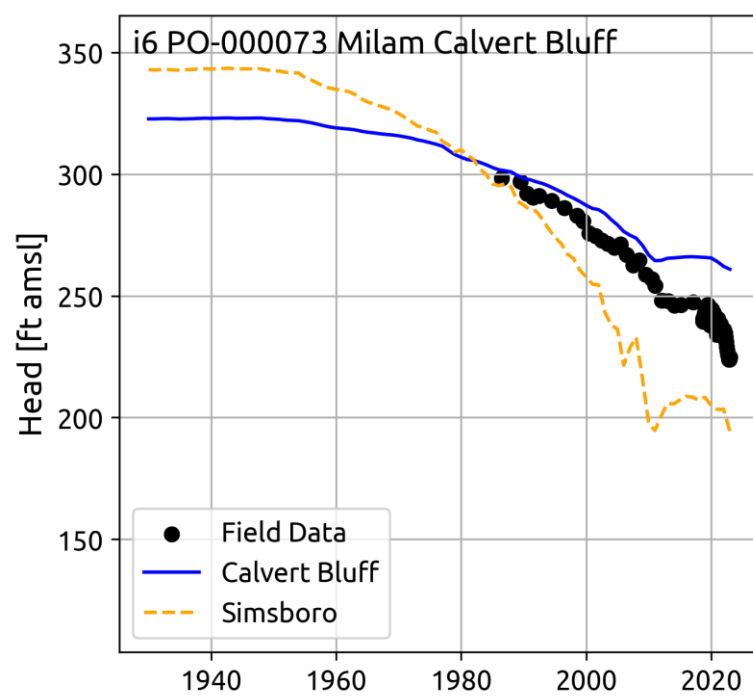
Location of 22 Hills

Aquifer	Exempt	Permitted	Total
Carrizo	6		6
Calvert Bluff	63	9	72
Simsboro	2	3	5
		Total	83



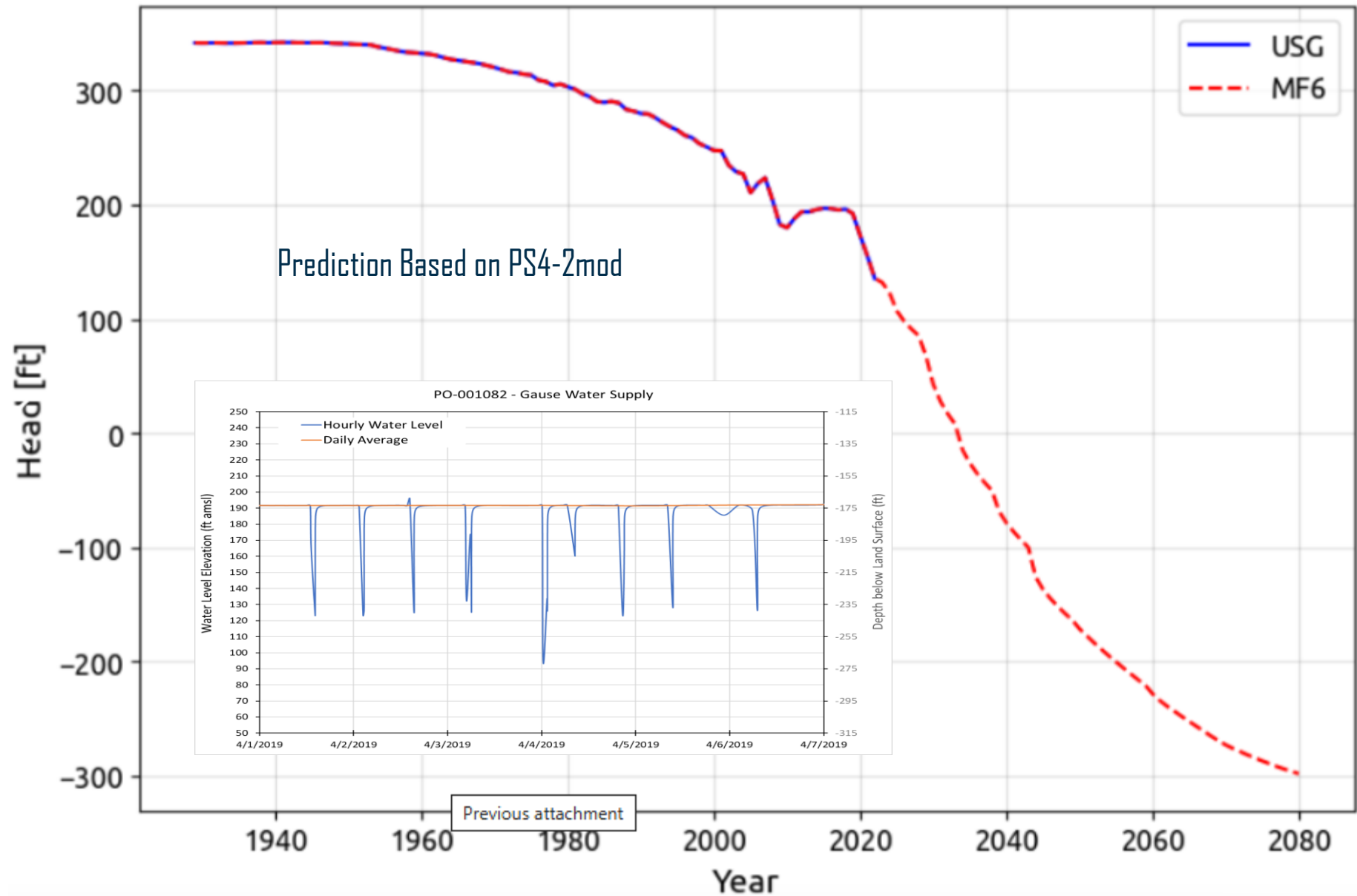
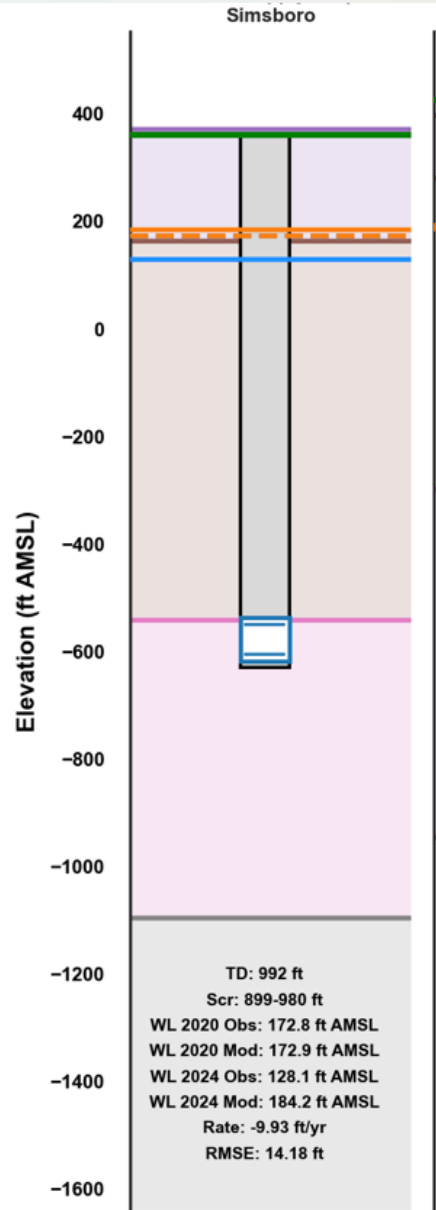


Wells With Water Levels

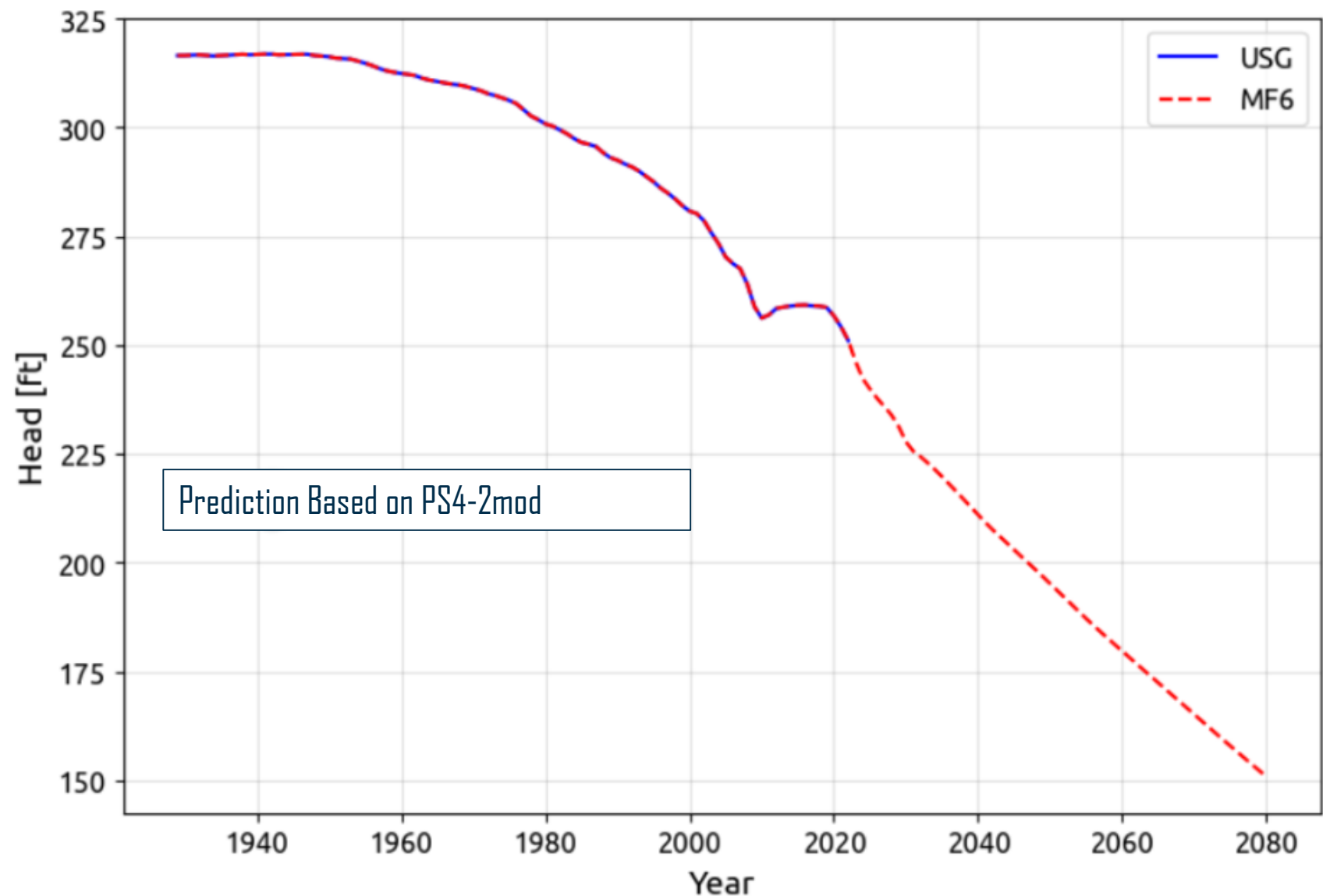
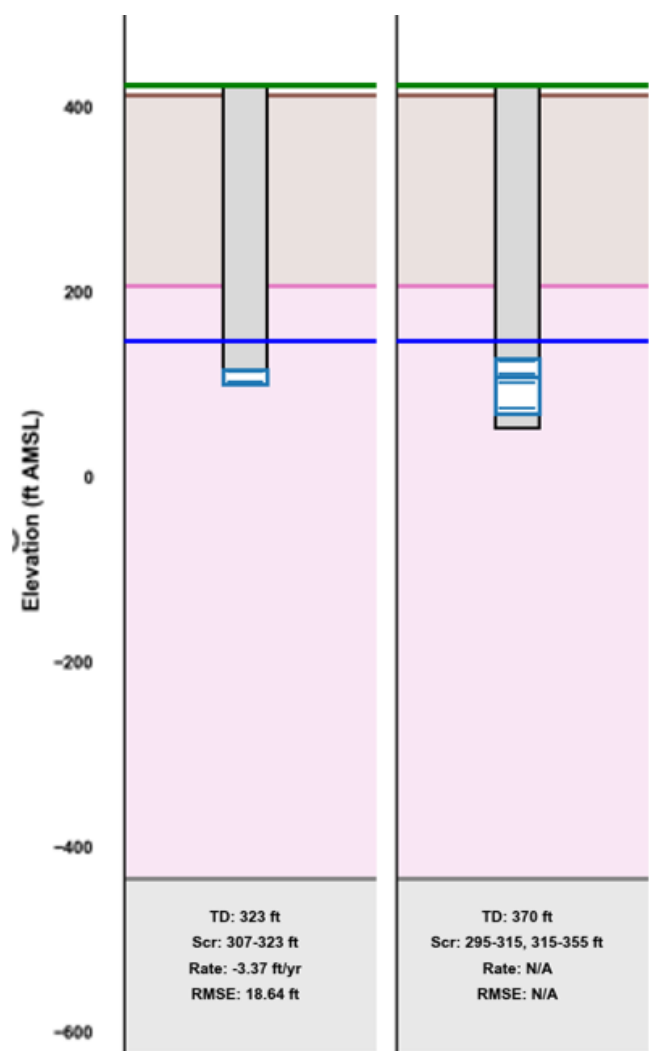


Well ID	Total Depth	Top Screen (dbgs)	Bot Screen (dbgs)	Screen Top (famsl)	Screen Bot (famsl)	Aquifer
PO-000073	440	410	430	-31.95	-51.95	Calvert Bluff
PO-008281	420	395	415	75.77	55.77	Calvert Bluff
PO-007998	460	435	455	67.4	47.4	Calvert Bluff
PO-001082	992	899	980	-527.98	-618.98	Simsboro

Projected Drawdown for Gause Well (Simsboro)



Projected Drawdown for an Example Calvert Bluff Well



Assessment of Potential Impacts

- Simboro Wells (Gause Well)
 - 1929 to 2020: drawdown ~150 ft (POSGCD 9%, VR-0%, BVGCD SB -86%)
 - 2020 to 2080: drawdown ~ 488 ft (POSGCD 12%, VR-15%,BVGCD SB-59%)
 - Top of screen: about -550 ft msl (2080 wl ~-300 ft msl)
- Calvert Bluff (Generic)
 - 1929 to 2020: drawdown ~60 ft
 - 2020 to 2080: drawdown ~ 106 ft
 - Top of screen: about 130 ft msl to -100 ft msl (2080 wl ~150 ft msl)