Groundwater Condition

REPORT | SANTA CLARA COUNTY

March 2023

SUMMARY

This report summarizes February 2023 groundwater storage, recharge, pumping, and level conditions for the Santa Clara Subbasin (the Santa Clara Plain and Coyote Valley groundwater management areas) and the Llagas Subbasin.

Groundwater levels are increasing throughout the County due to the recent storms and seasonal recovery, Valley Water's managed recharge, and ongoing water conservation by the community. Although groundwater levels in all monitoring wells are higher than last month and all but one are higher relative to February 2022, many are lower than the five-year average. The end of 2023 groundwater storage is projected to be in Stage 1 (Normal) of the Water Shortage Contingency Plan. Valley Water continues to plan for rapidly evolving conditions.

- February managed recharge is 80% to 150% of the five-year average.
- January pumping is 70% to 109% of the five-year average.
- Groundwater levels in index wells for February 2023 range from 9 feet higher to 24 feet higher than the February levels of 2022.

Table 1. Summary of Current Groundwater Conditions

	Santa Clara Subbasin		Llagas Subbasin
	Santa Clara Plain	Coyote Valley	
February 2023 managed recharge estimate	6,500	1,300	1,700
YTD managed recharge estimate	12,300	1,800	2,700
YTD managed recharge as % of five-year average	150%	80%	102%
January 2023 pumping estimate	3,000	800	1,600
January 2023 pumping as % of five-year average	70%	109%	92%
Current index well groundwater levels compared to February of 2022	24 feet higher	9 feet higher	17 feet higher

All volumes are in acre-feet. All data is for 2023 except where noted. YTD = Year-to-date

Contact Us For questions, contact **Scott Elkins** at **(408) 630-2885**

Valley Water
Clean Water • Healthy Environment • Flood Protection

Groundwater Recharge

- Figures 1, 2, and 3 show the cumulative managed recharge for 2023 compared to the average of the previous five years (2018 – 2022).
- Compared to the average of the previous five years, managed recharge for February 2023 was higher in the Santa Clara Plain, lower in Coyote Valley, and slightly higher in the Llagas Subbasin.
- Managed recharge depends on many factors, including water demand and availability, regulatory needs, groundwater storage, and facility maintenance.

Figure 1. Estimated Cumulative Managed Recharge in the Santa Clara Plain

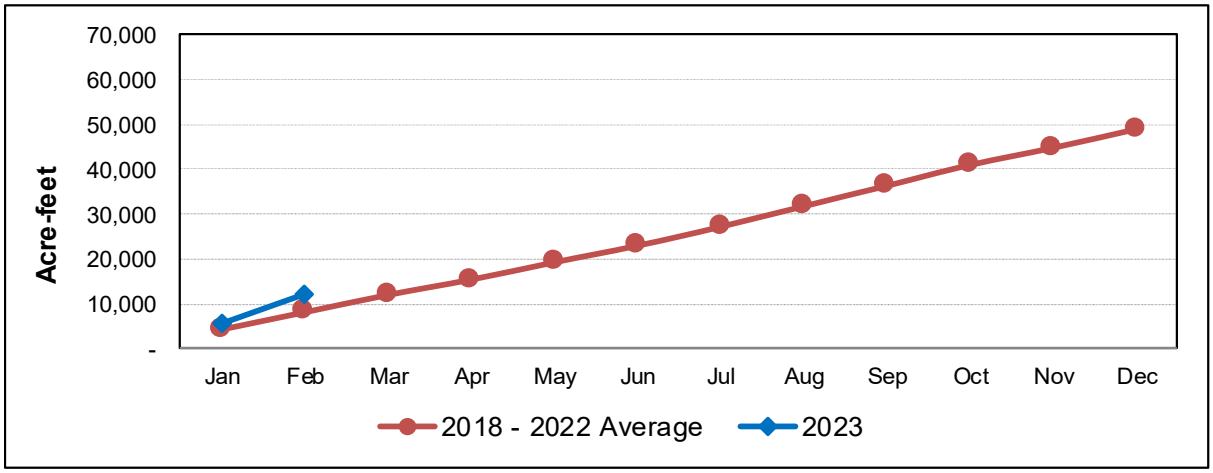


Figure 2. Estimated Cumulative Managed Recharge in the Coyote Valley

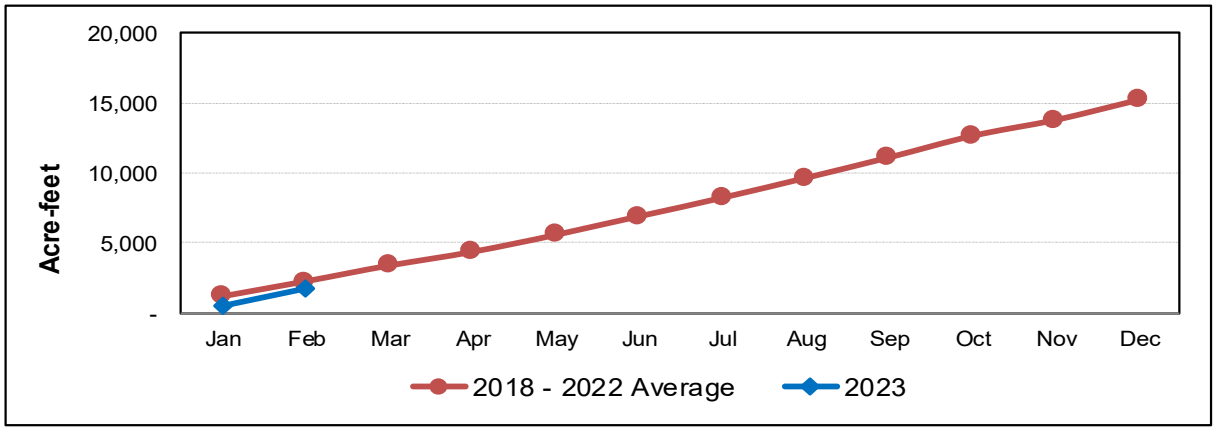
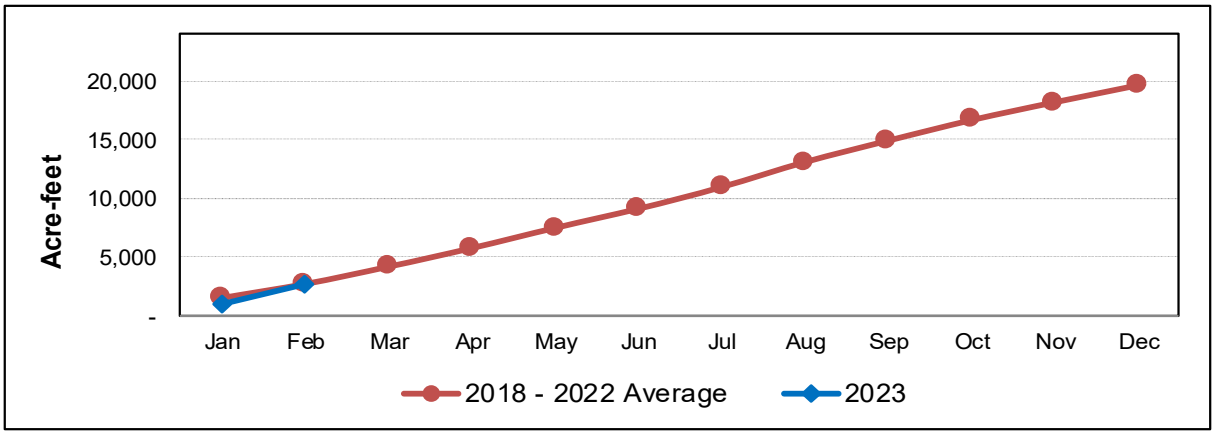


Figure 3. Estimated Cumulative Managed Recharge in the Llagas Subbasin



Groundwater Pumping

- Figures 4, 5, and 6 show the cumulative groundwater pumping for 2023 compared to the average of the previous five years (2018 – 2022).
- Pumping estimates for January 2023 include monthly pumping data reported by water retailers and non-monthly pumping, primarily from domestic and agricultural uses.
- Compared to the average of the previous five years, pumping for January 2023 was higher in Coyote Valley and lower in the Santa Clara Plain and Llagas Subbasin.

Figure 4. Estimated Cumulative Santa Clara Plain Pumping

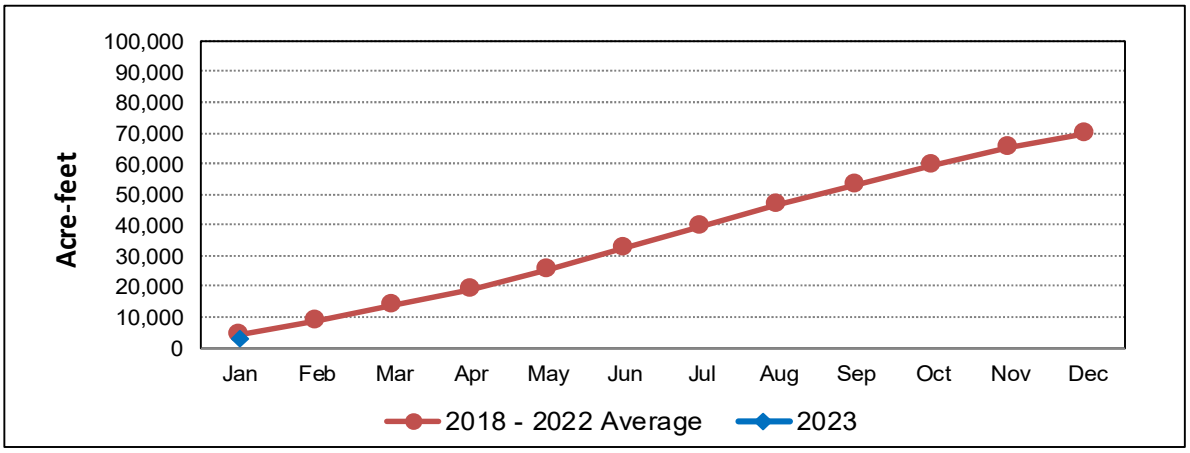


Figure 5. Estimated Cumulative Coyote Valley Pumping

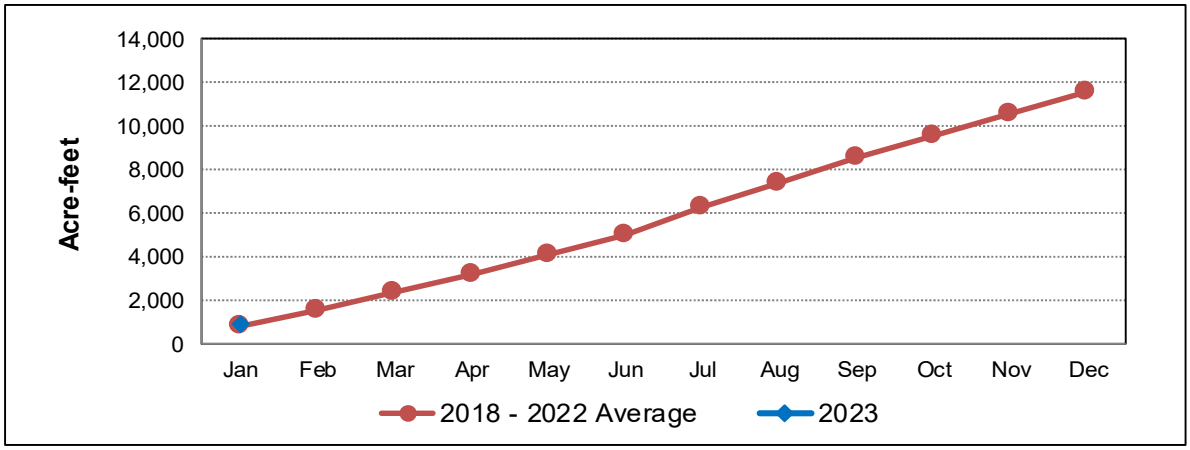
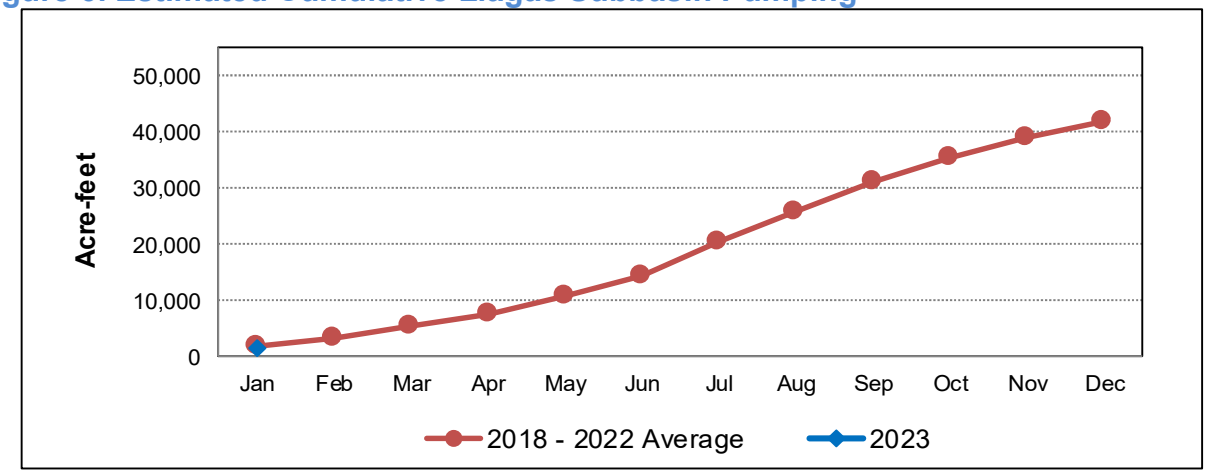


Figure 6. Estimated Cumulative Llagas Subbasin Pumping



Groundwater Levels

Groundwater levels in all regional monitoring wells have increased since last month and all but one are higher than this time last year. Many wells are higher than the February average for the previous five years. Table 2 summarizes current groundwater levels with historical comparisons for eleven regional monitoring wells that are distributed across the three management areas, as shown in Figure 7.

Figure 7. Locations of Regional Water Level Monitoring Wells

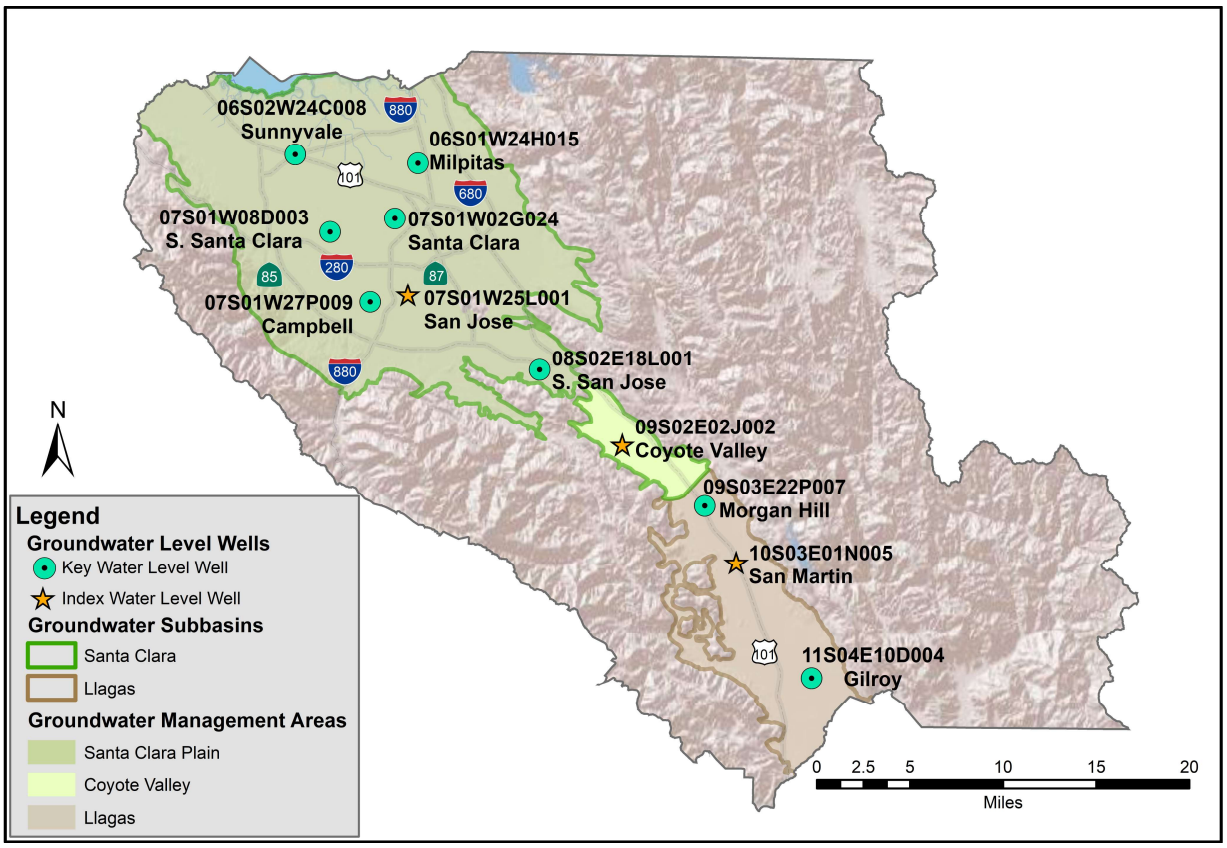


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Table 2. Comparisons to February 2023 Depth to Water (DTW) in Regional Wells

Location	State Well ID	February 2023 DTW (feet)	Difference in February 2023 DTW (feet) Compared to:			
			January 2023	February 2022	Prior 5-year Average for February	Maximum DTW during 2012–2016 drought
Milpitas	06S01W24H015	-28 (artesian)	8	17	0	49
Sunnyvale	06S02W24C008	-27 (artesian)	1	-1	-11	7
San Jose	07S01W25L001	72	8	24	11	65
Santa Clara	07S01W02G024	(artesian)*	3**	38**	9**	91**
S. Santa Clara	07S01W08D003	67	4	19	-6	78
Campbell	07S01W27P009	100	8	29	22	98
S. San Jose	08S02E18L001	30	7	1	-12	40
Coyote Valley	09S02E02J002	9	12	9	7	29
Morgan Hill	09S03E22P007	50	18	6	-2	45
San Martin	10S03E01N005	31	22	17	0	50
Gilroy	11S04E10D004	10	5	10	1	53

Notes: Depth to water is measured to the hundredth of a foot but data shown here are rounded to the nearest foot. Negative values in the last 4 columns indicate current groundwater levels are lower than the comparison time. Well 09S03E22P005 was replaced with well 09S03E22P007; water level data from well 09S03E22P005 were used for historical comparison calculations. (artesian) indicates aquifer pressure conditions that push water level elevations higher than land surface. * Exact artesian water elevation is unknown because 07S01W02G024 lacks a pressure gauge capable of measuring artesian water elevation. ** Difference calculated relative to land surface because exact artesian water elevation is not known. The maximum DTW during the 2012–2016 drought occurred between July 2014 and December 2015, depending on the well.

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Figures 8 through 18 show ten-year hydrographs for each of the eleven regional monitoring wells.

Figure 8. Milpitas Well Hydrograph

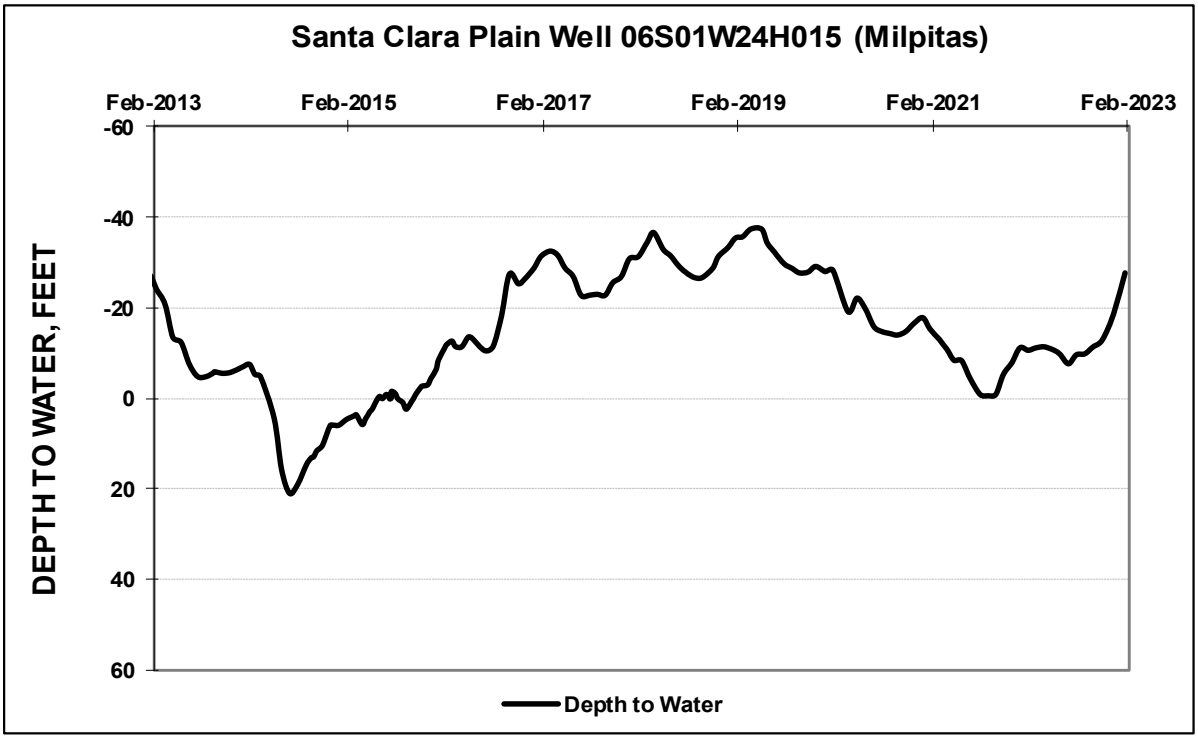


Figure 9. Sunnyvale Well Hydrograph

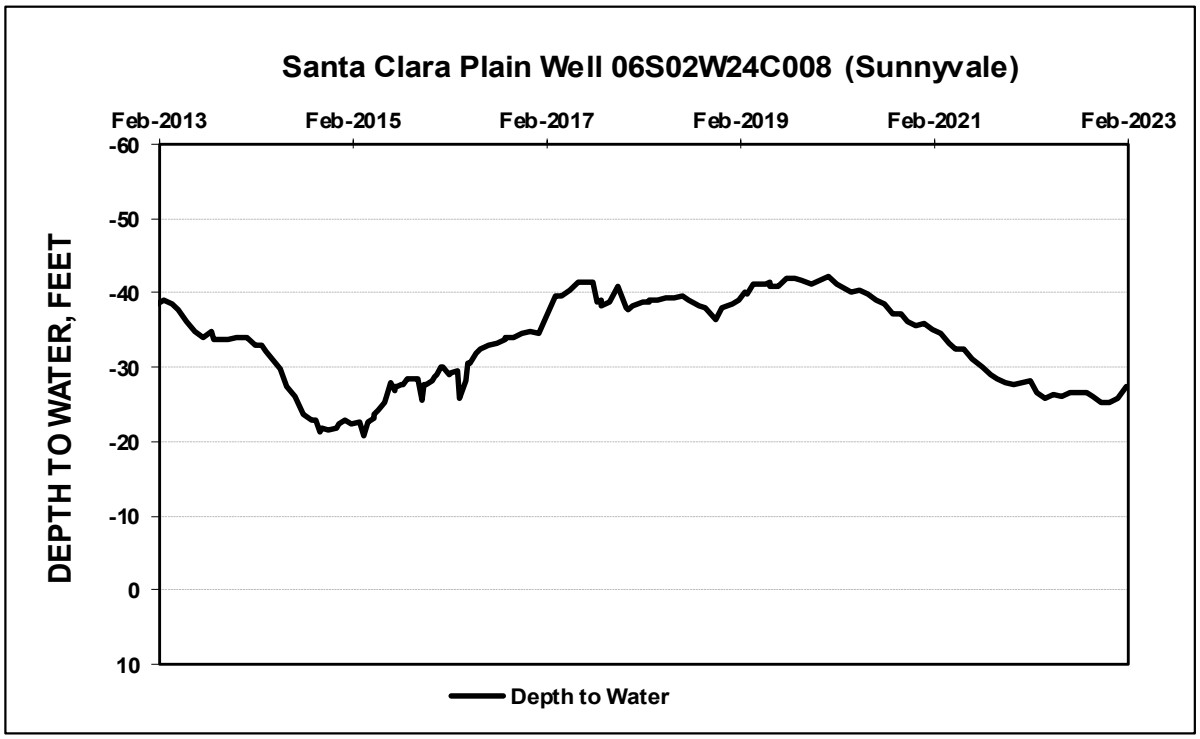


Figure 10. San Jose Well Hydrograph (Index Well for the Santa Clara Plain)

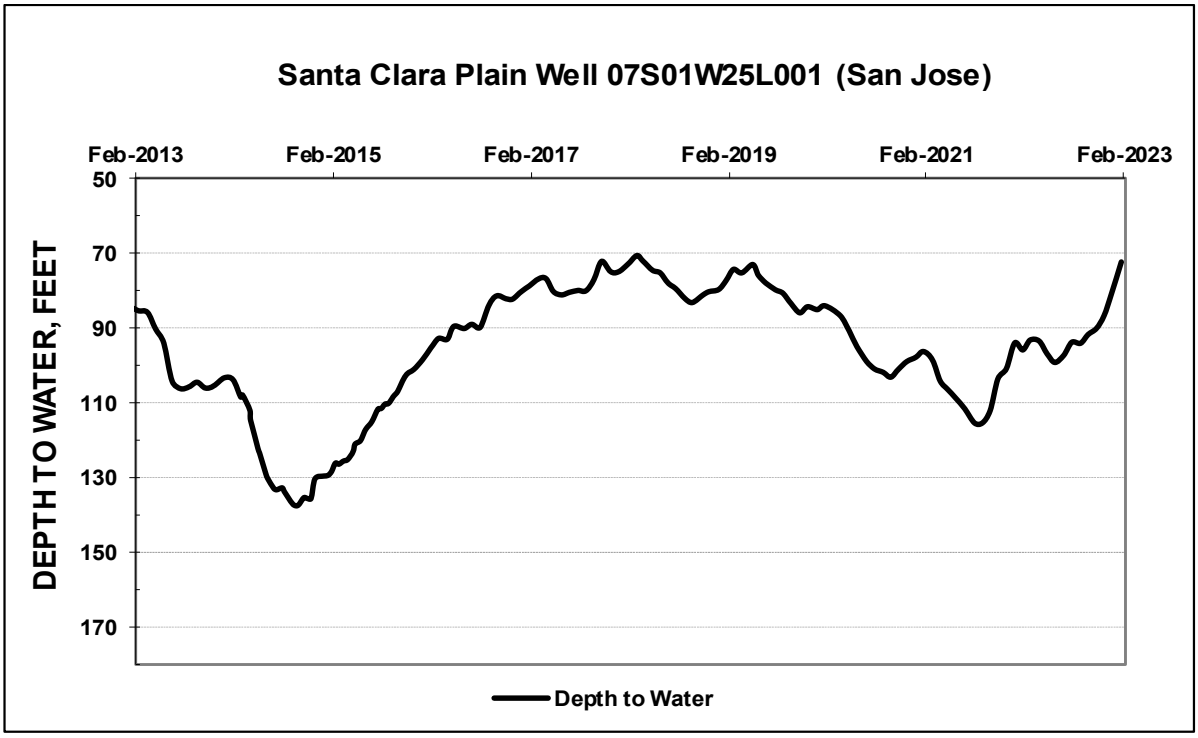


Figure 11. Santa Clara Well Hydrograph

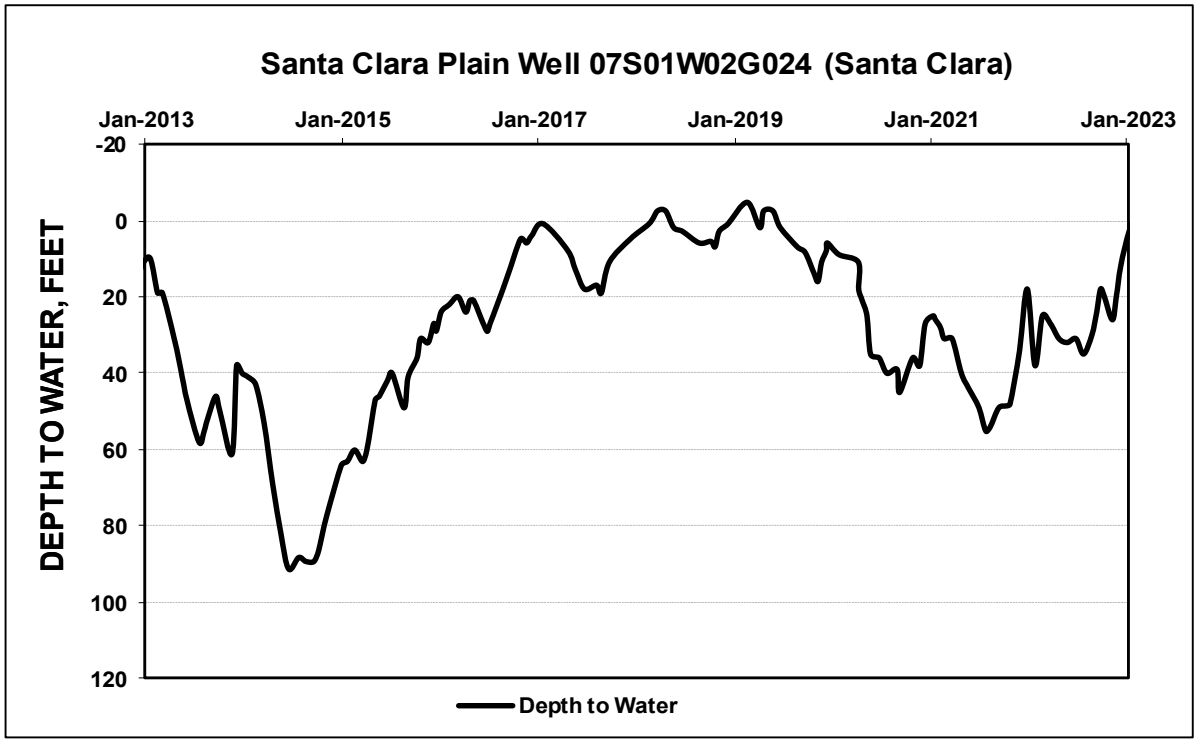


Figure 12. South Santa Clara Well Hydrograph

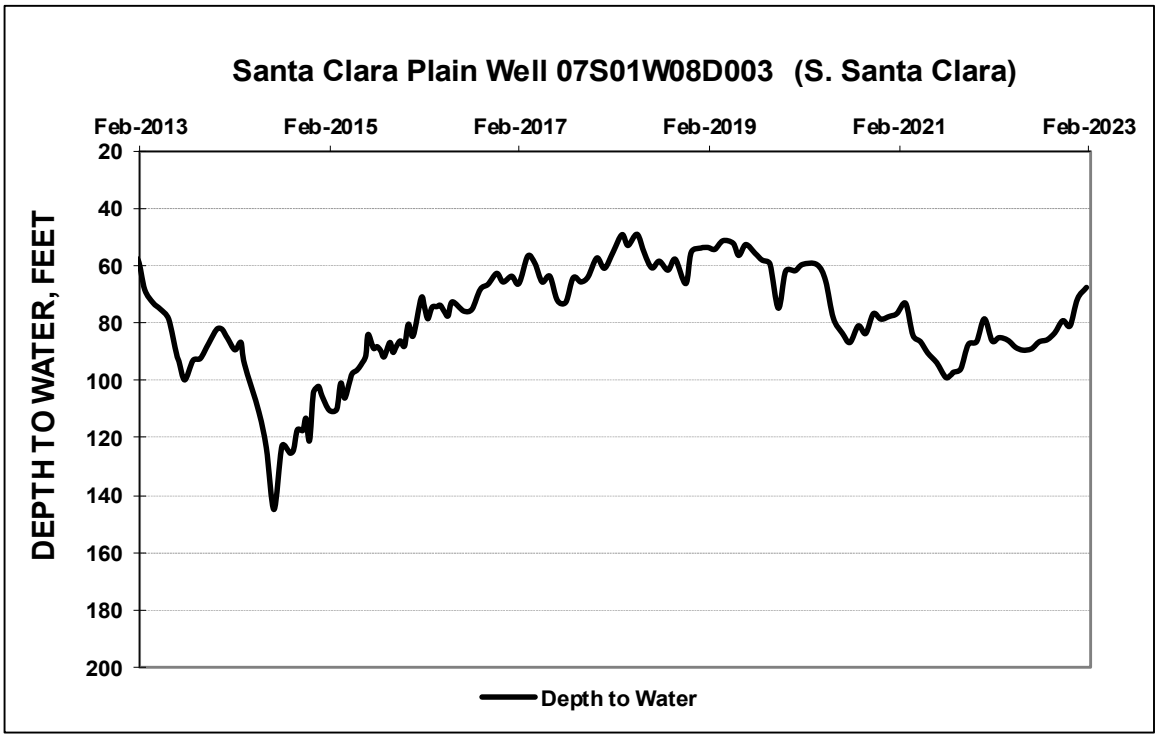
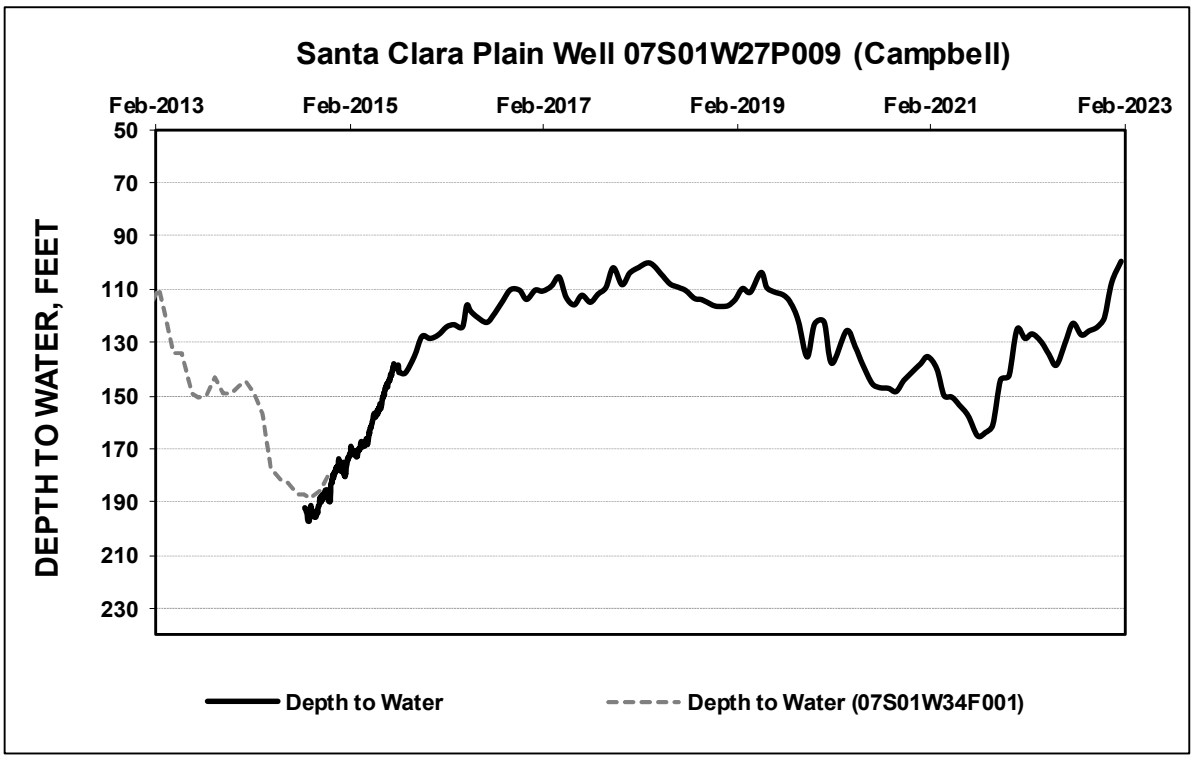


Figure 13. Campbell Well Hydrograph



The Campbell index well was replaced in August 2015 with a nearby well with similar water levels. Data in the chart prior to September 2014 is from the former index well (07S01W34F001).

Figure 14. South San Jose Well Hydrograph

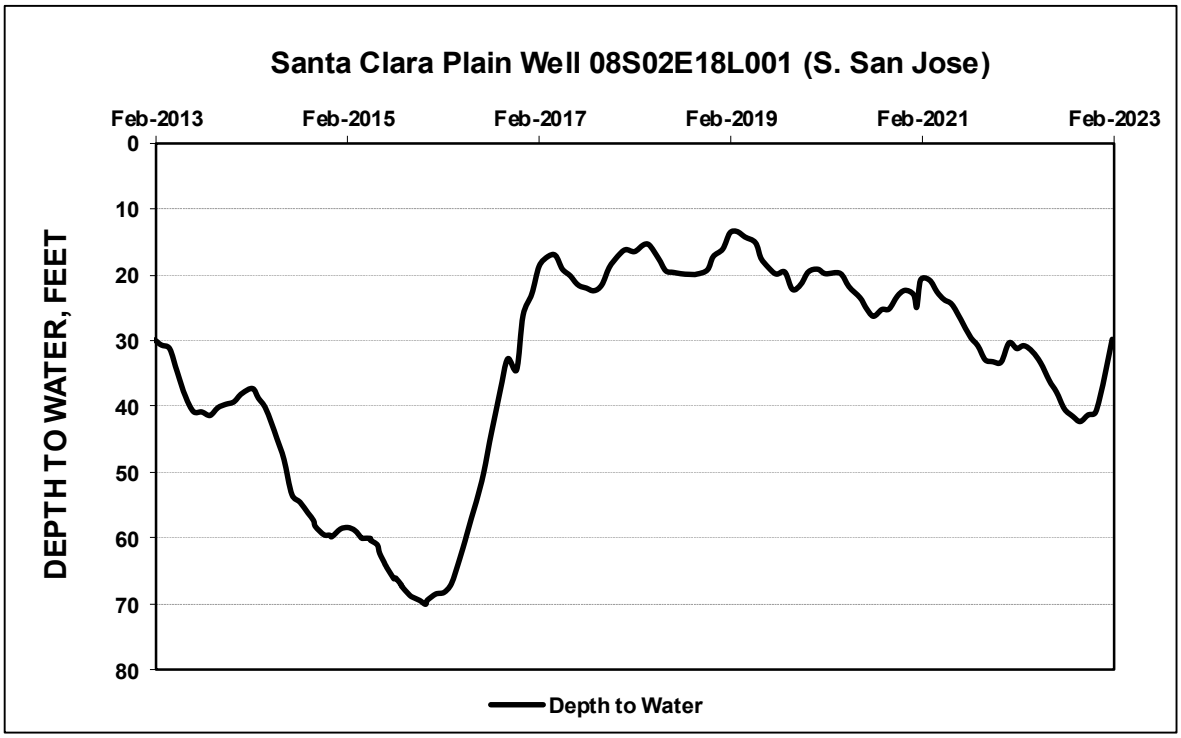


Figure 15. Coyote Valley Well Hydrograph (Index Well for the Coyote Valley)

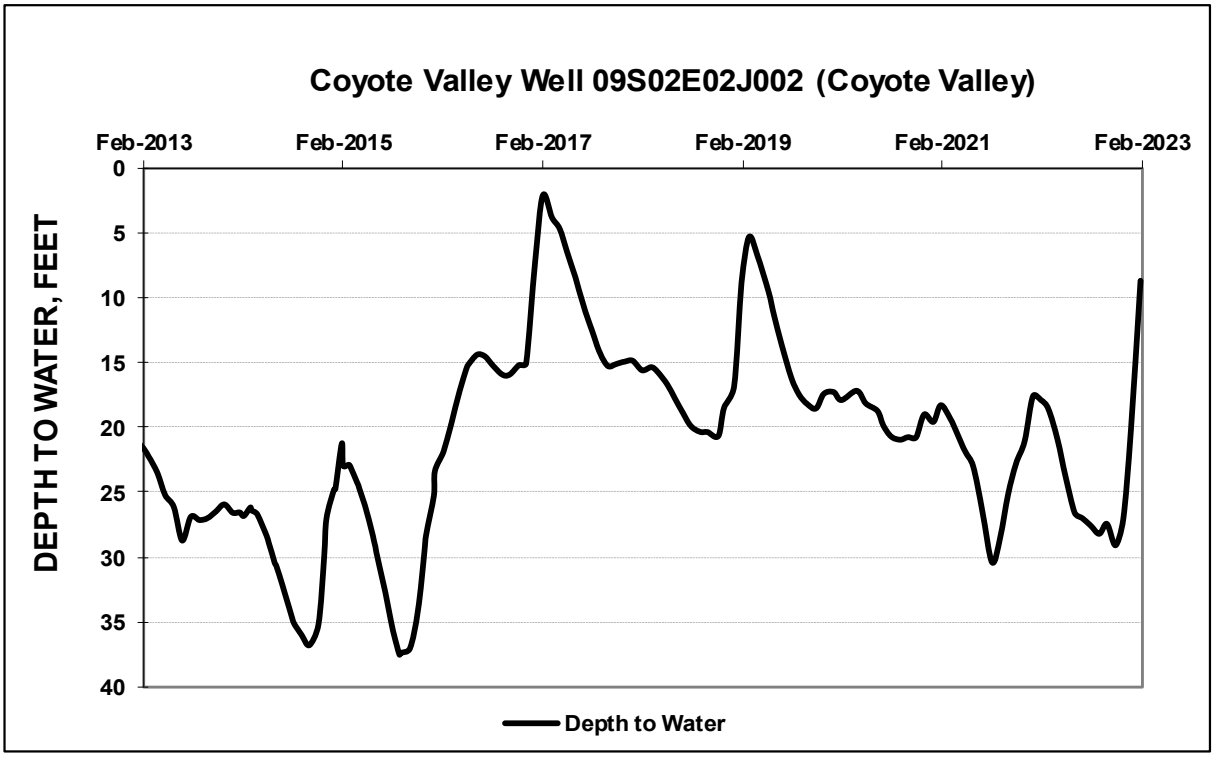
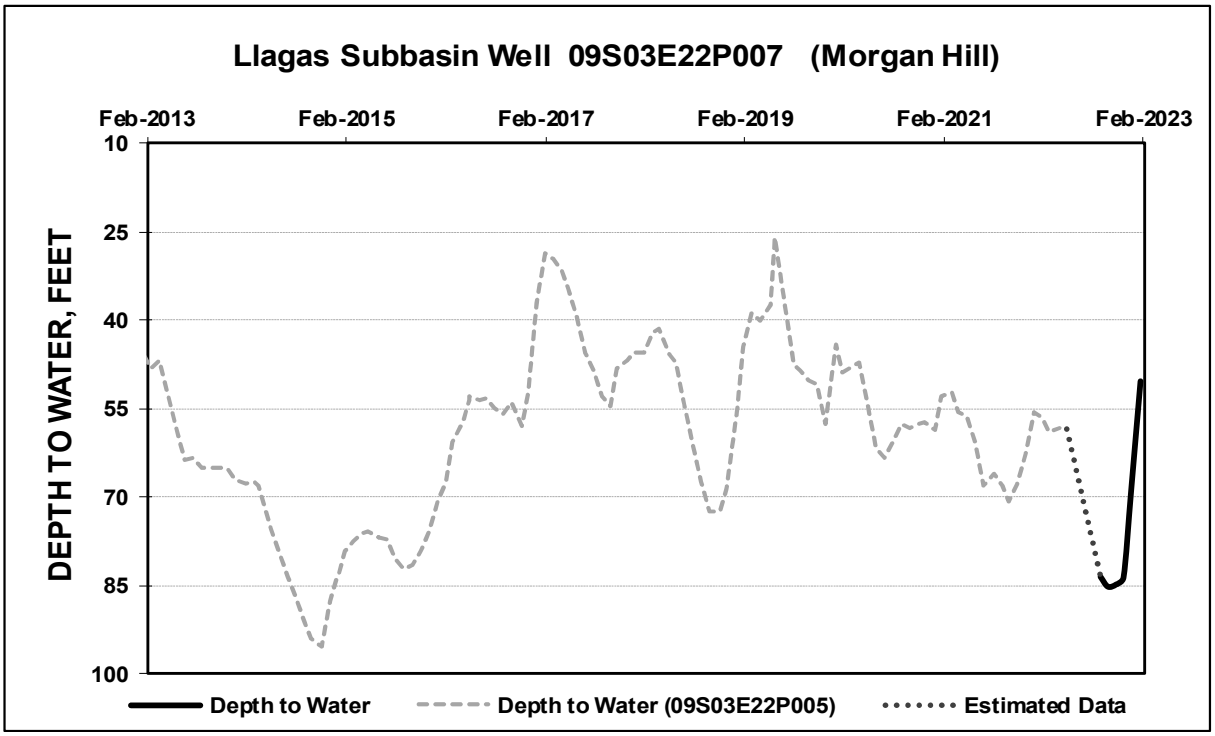


Figure 16. Morgan Hill Well Hydrograph



The Morgan Hill well 09S03E22P005 is no longer accessible and was replaced by well 09S03E22P007 in September 2022. Water levels from May 2022 to September 2022, represented by the dotted line, are estimated.

Figure 17. San Martin Well Hydrograph (Index Well for the Llagas Subbasin)

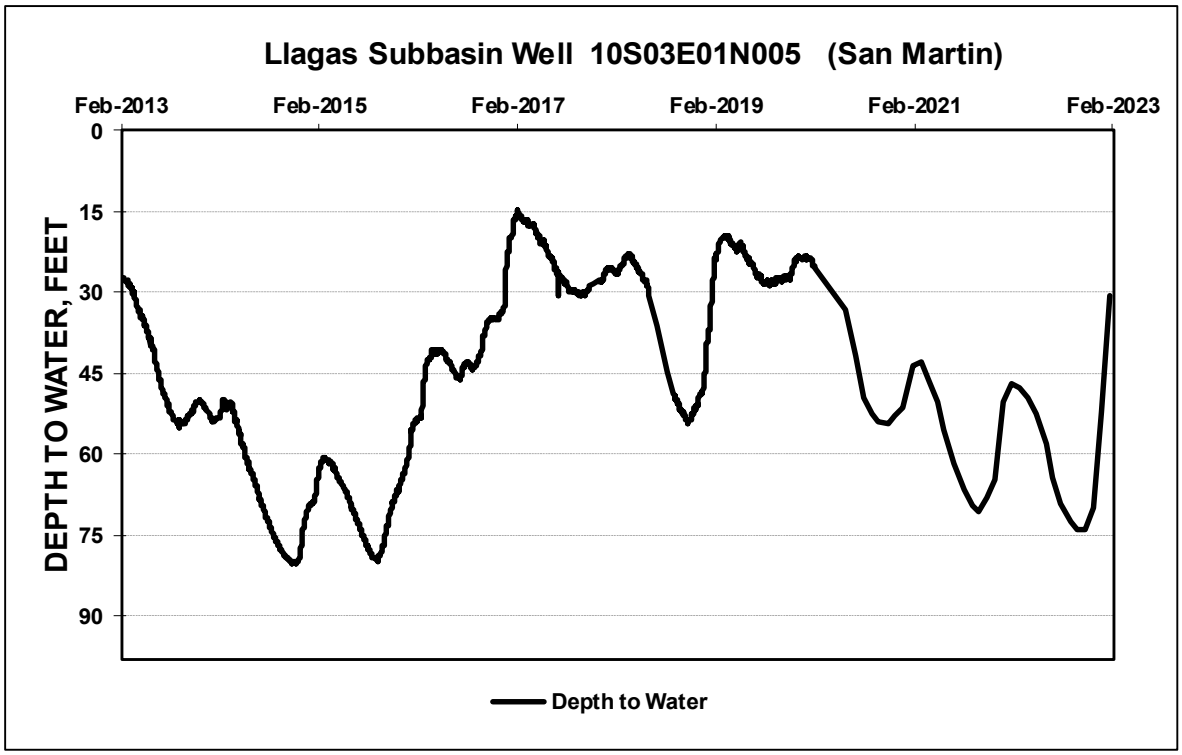
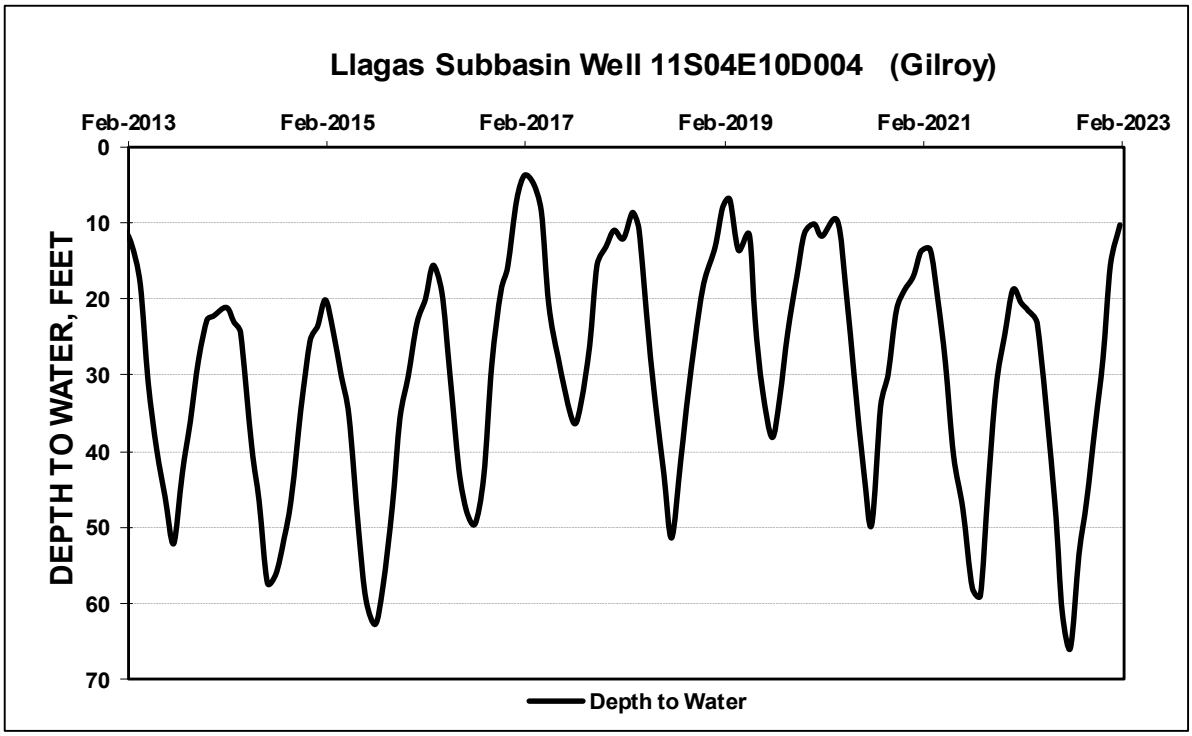


Figure 18. Gilroy Well Hydrograph



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