Groundwater Condition

REPORT | SANTA CLARA COUNTY

September 2020

SUMMARY

This report summarizes current (August 2020) groundwater storage, recharge, pumping, and level conditions for the Santa Clara Subbasin (which includes the Santa Clara Plain and Coyote Valley groundwater management areas) and the Llagas Subbasin. Overall, countywide groundwater storage and water levels are in good condition. Table 1 summarizes current conditions.

- Estimated groundwater storage is above average and is projected to remain well within the Stage 1 (Normal) range of Valley Water's Water Shortage Contingency Plan throughout 2020.
- Year-to-date (YTD) managed recharge is 80% to 94% of the five-year average.
- YTD through July pumping is 101% to 128% of the five-year average.
- Groundwater index well water levels for August 2020 are 1 to 13 feet lower than the average of the previous five-years of August readings.

Table 1. Summary of Current Groundwater Conditions

	Santa Clara Subbasin		Llagas Subbasin
	Santa Clara Plain	Coyote Valley	
August managed recharge estimate (AF)	4,300	1,400	2,900
January to August managed recharge est. (AF)	30,700	9,200	12,500
YTD managed recharge, % of 5-year average	80%	92%	94%
July pumping estimate (AF)	7,650	1,750	4,800
January to July pumping estimate (AF)	44,050	6,800	21,550
YTD pumping, % of 5-year average	128%	108%	101%
GW index well level compared to last August 2019	21 feet lower	5 feet lower	12 feet lower*
GW index level compared to August 5-year average	13 feet lower	1 foot lower	3 feet lower*

AF = acre-feet.
YTD = Year-to-date
**The year-to-year comparison of the index groundwater level in the Llagas Subbasin is the average of the Morgan Hill and Gilroy wells in 2019 and 2020 since the replacement San Martin index well does not have a measurement for August 2019 or 2020.*

Contact Us For questions, contact
Roger Pierno at (408) 630-2738

Valley Water
Clean Water • Healthy Environment • Flood Protection

Groundwater Recharge

- Figures 1, 2, and 3 show the estimated cumulative managed recharge for 2020 YTD compared to the average of the last five years (2015 – 2019).
- The cumulative managed recharge for 2020 YTD is lower for the Santa Clara Plain, Coyote Valley, and the Llagas Subbasin compared to the averages of cumulative managed recharge of the last five years.
- The monthly 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

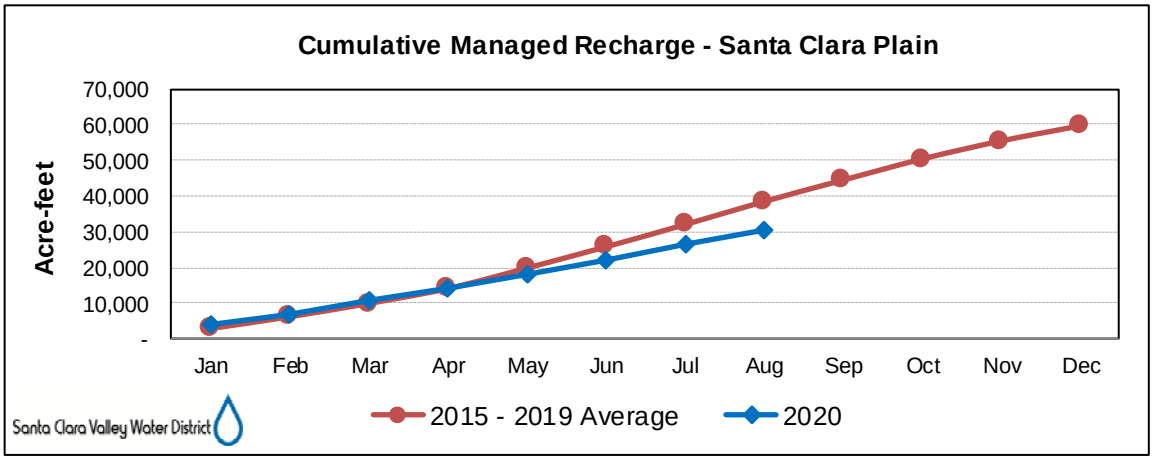


Figure 2. Estimated Cumulative Managed Recharge in the Coyote Valley

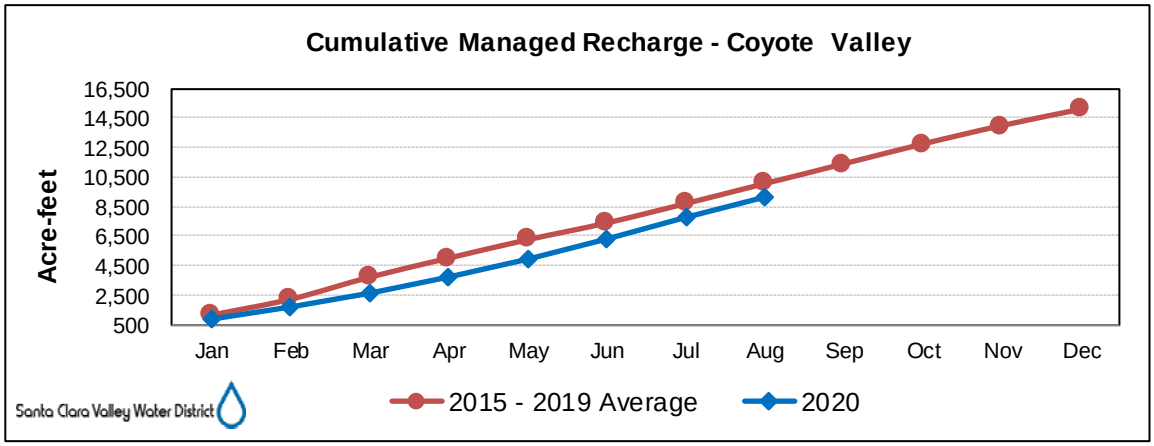
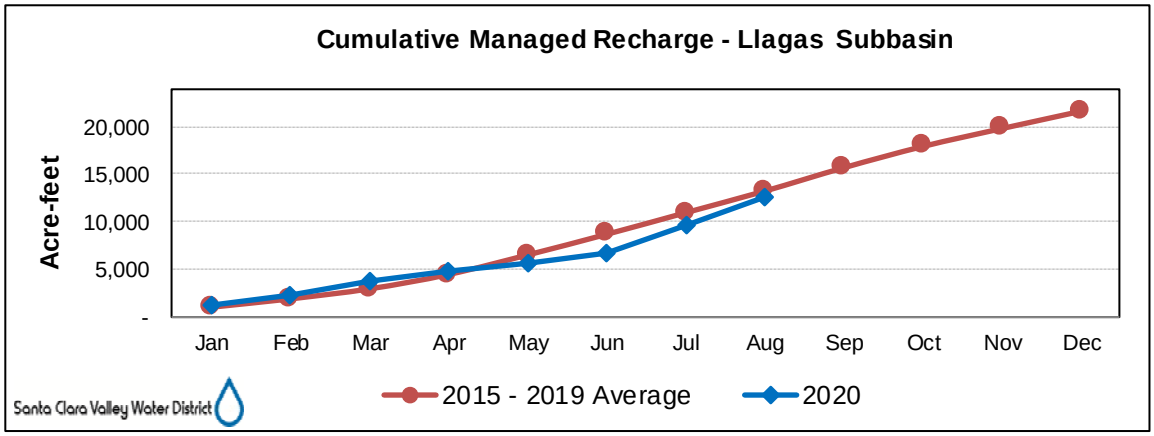


Figure 3. Estimated Cumulative Managed Recharge in the Llagas Subbasin



Groundwater Pumping

- Figures 4, 5, and 6 show the cumulative groundwater pumping for 2020 YTD compared to the average of the last five years (2015 – 2019).
- Cumulative pumping through July 2020 is the most recent retailer provided data.
- Cumulative pumping through July 2020 shows much higher than average pumping in the Santa Clara Plain and slightly higher than average pumping in the Coyote Valley and Llagas Subbasin.

Figure 4. Estimated Cumulative Santa Clara Plain Pumping

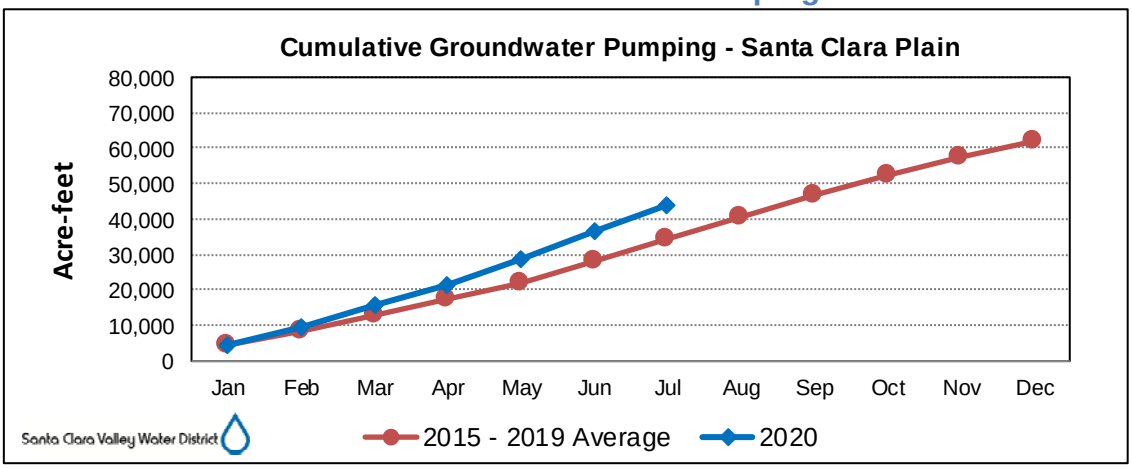


Figure 5. Estimated Cumulative Coyote Valley Pumping

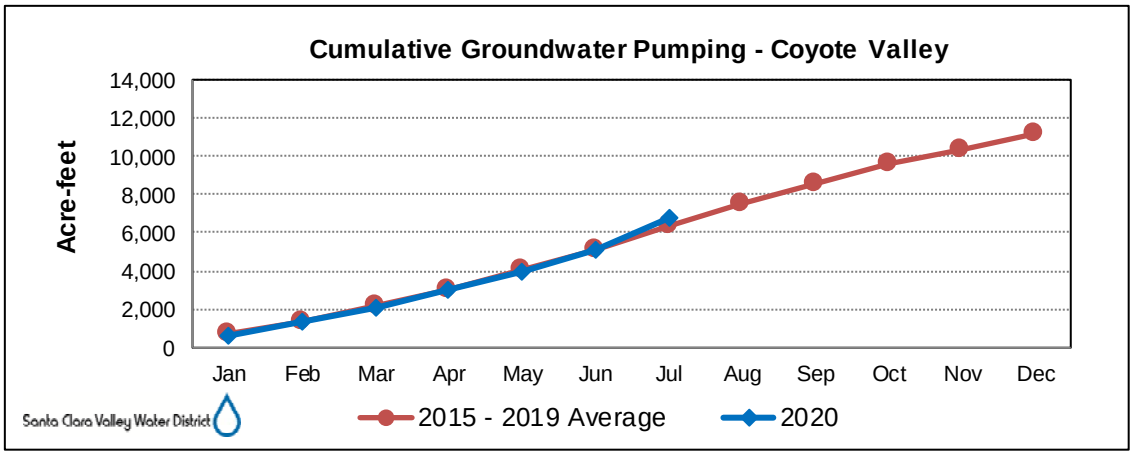
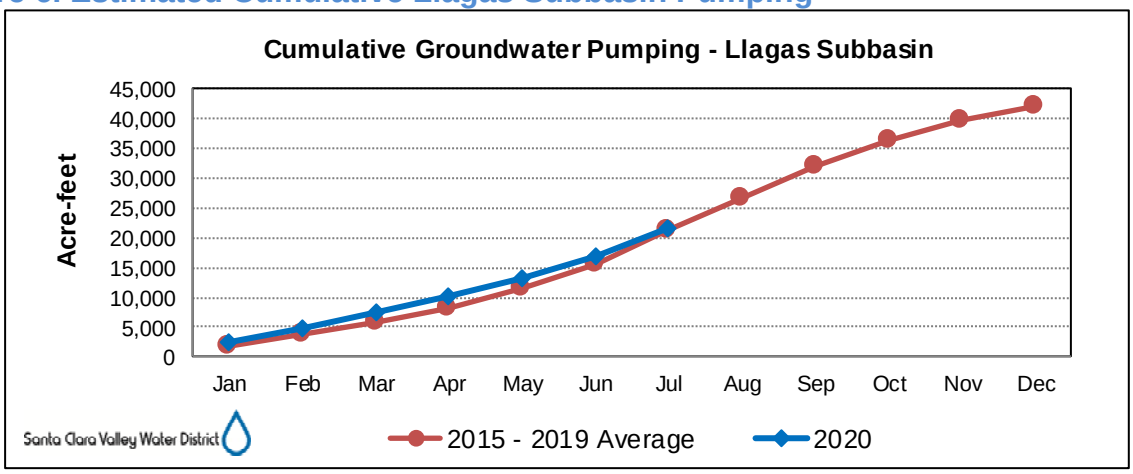


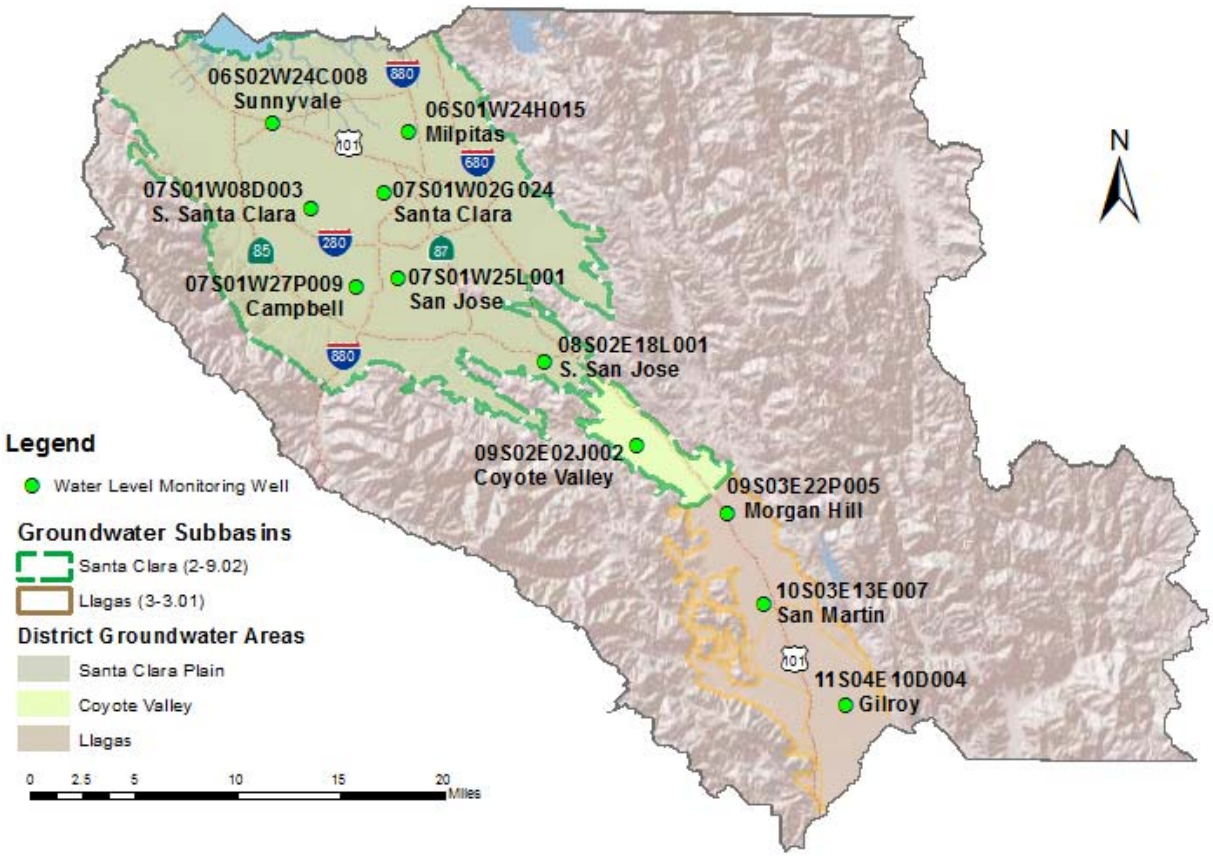
Figure 6. Estimated Cumulative Llagas Subbasin Pumping



Groundwater Levels

Current groundwater level conditions are summarized using eleven monitoring wells distributed across the sub-basins, as shown in Figure 7.

Figure 7. Location of Selected Monitoring Wells

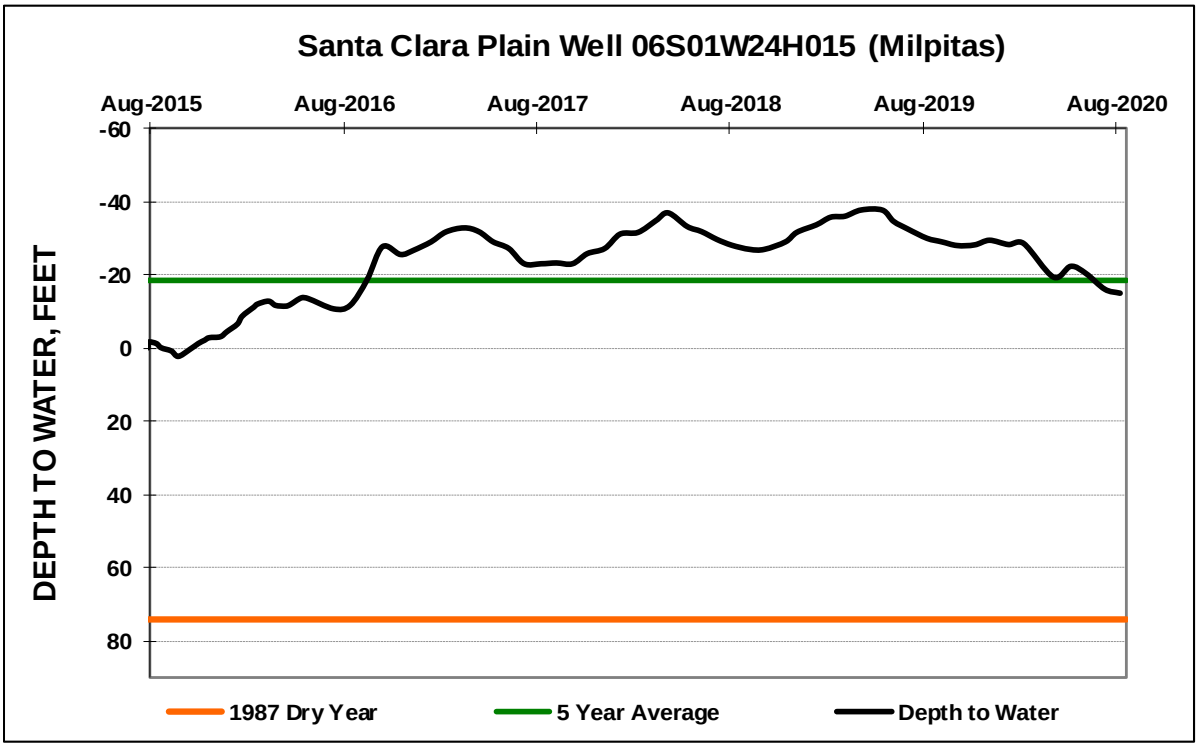


In Figures 8 through 18, hydrographs with August 2020 water levels from these eleven wells are compared to water levels from (i) July 2020, (ii) August 2019, (iii) August 2004 (a normal year), (iv) the prior five-year (2015-2019) average of August measurements, and (v) August 1987 (a dry year). *Note: One well did not have an August 2020 reading.

These hydrographs show that the August 2020 groundwater levels were:

i. lower than July 2020 levels in nine wells by 1 to 7 feet and higher by 3 feet in one well,
ii. lower than August 2019 in all ten wells with an August level by 4 to 36 feet,
iii. higher in six wells by 1 to 27 feet and lower in three wells by 1 to 24 feet as compared to August 2004 (a normal year); one well does not have a 2004 water level,
iv. higher in two wells by 2 and 8 feet and lower in eight wells by 1 to 28 feet as compared to the average of the previous five-years of August readings, and
v. higher in nine wells by 2 to 105 feet and lower in one well by 14 feet as compared to August 1987 (a dry year).

Figure 8. Milpitas Well Hydrograph



A measured value at Milpitas for 2004 is not available for comparison. Between March 1998 and October 2006, this well was flowing artesian and not measured. In October 2006, the well was modified to allow measurement of artesian pressures.

Figure 9. Sunnyvale Well Hydrograph

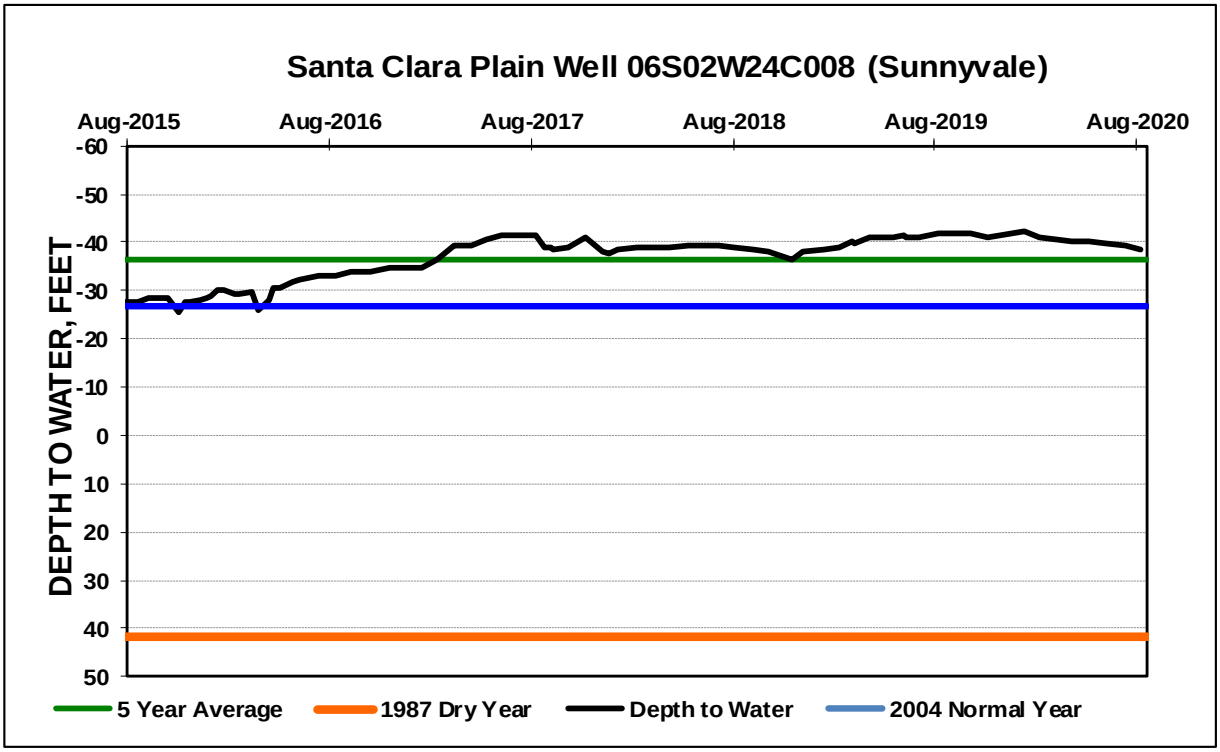


Figure 10. San Jose Well Hydrograph (Index Well for the Santa Clara Plain)

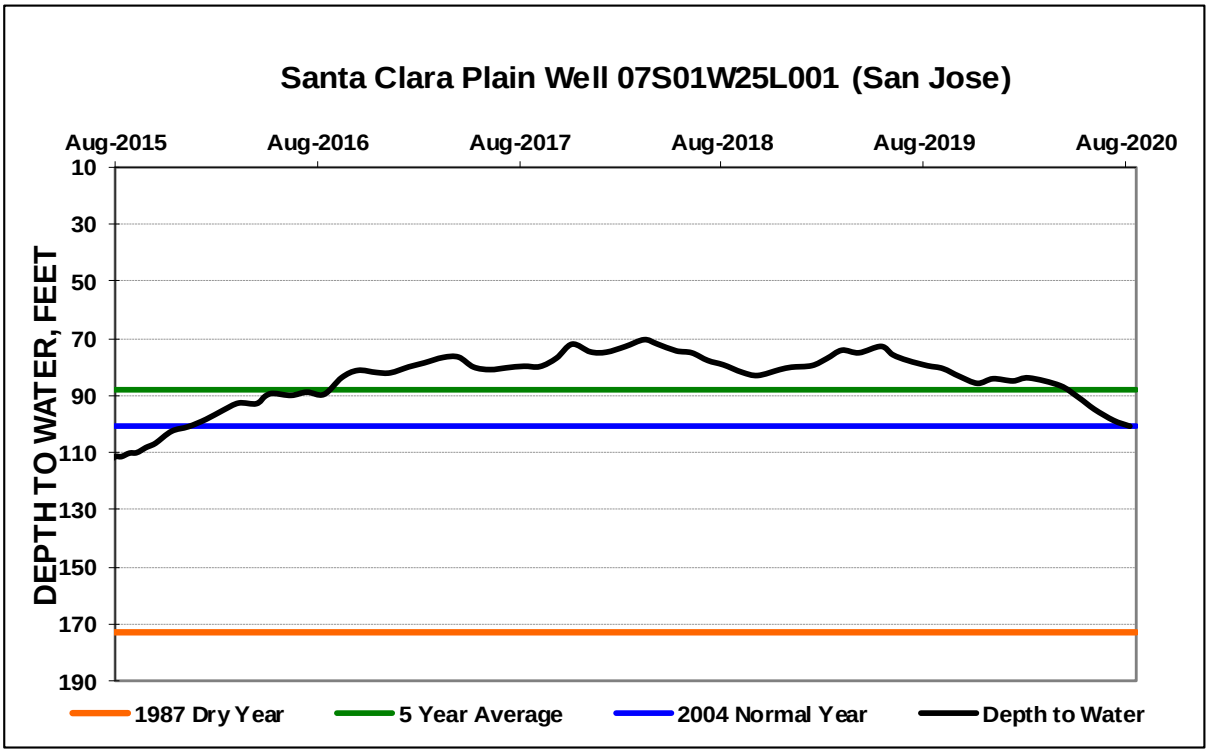


Figure 11. Santa Clara Well Hydrograph

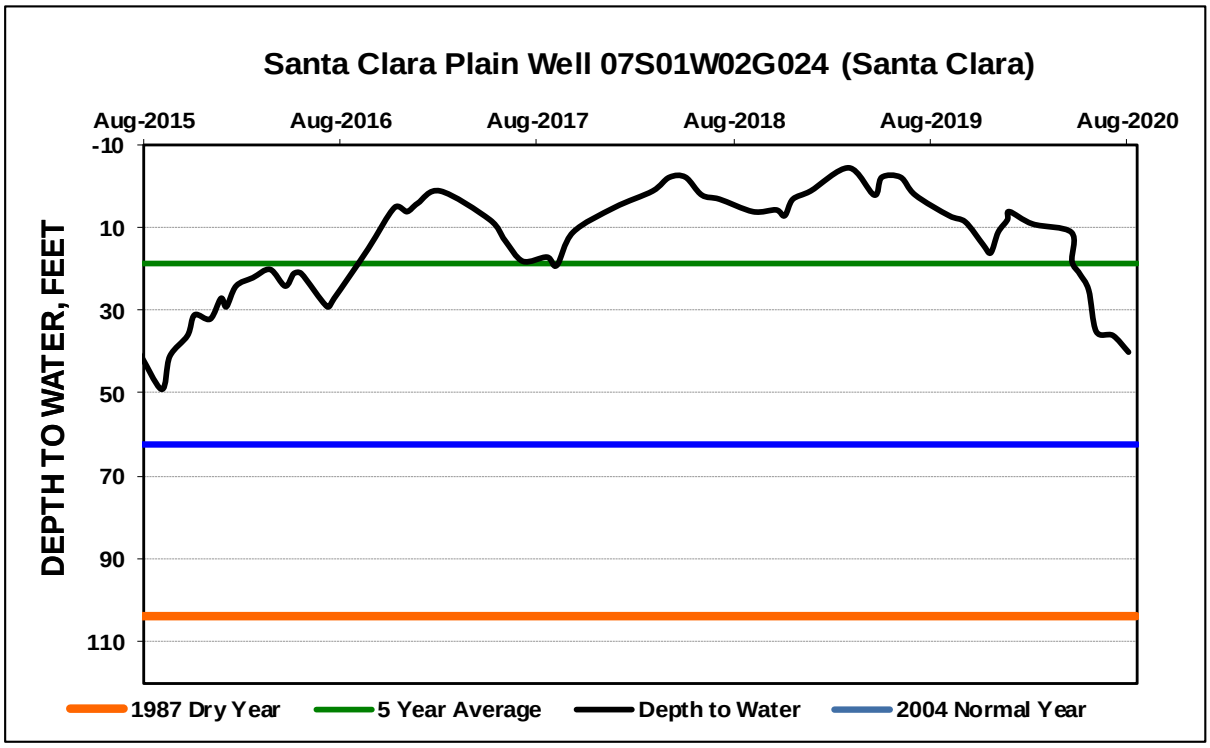


Figure 12. South Santa Clara Well Hydrograph

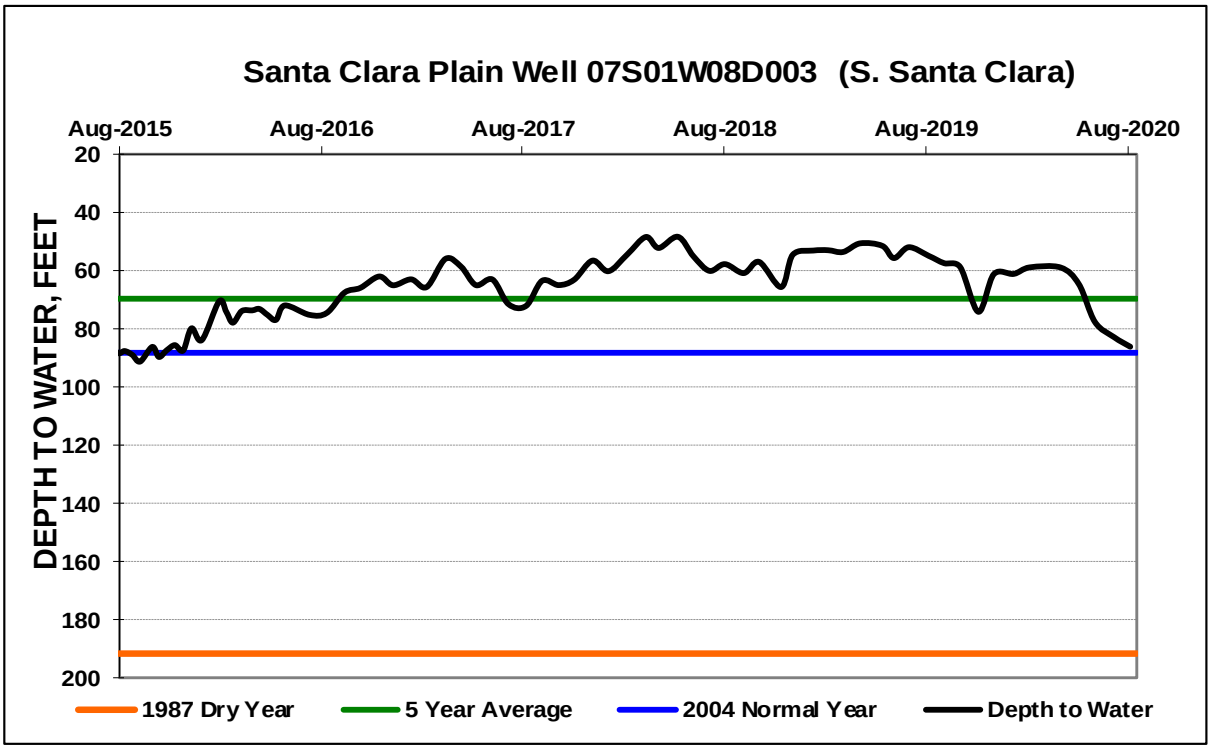
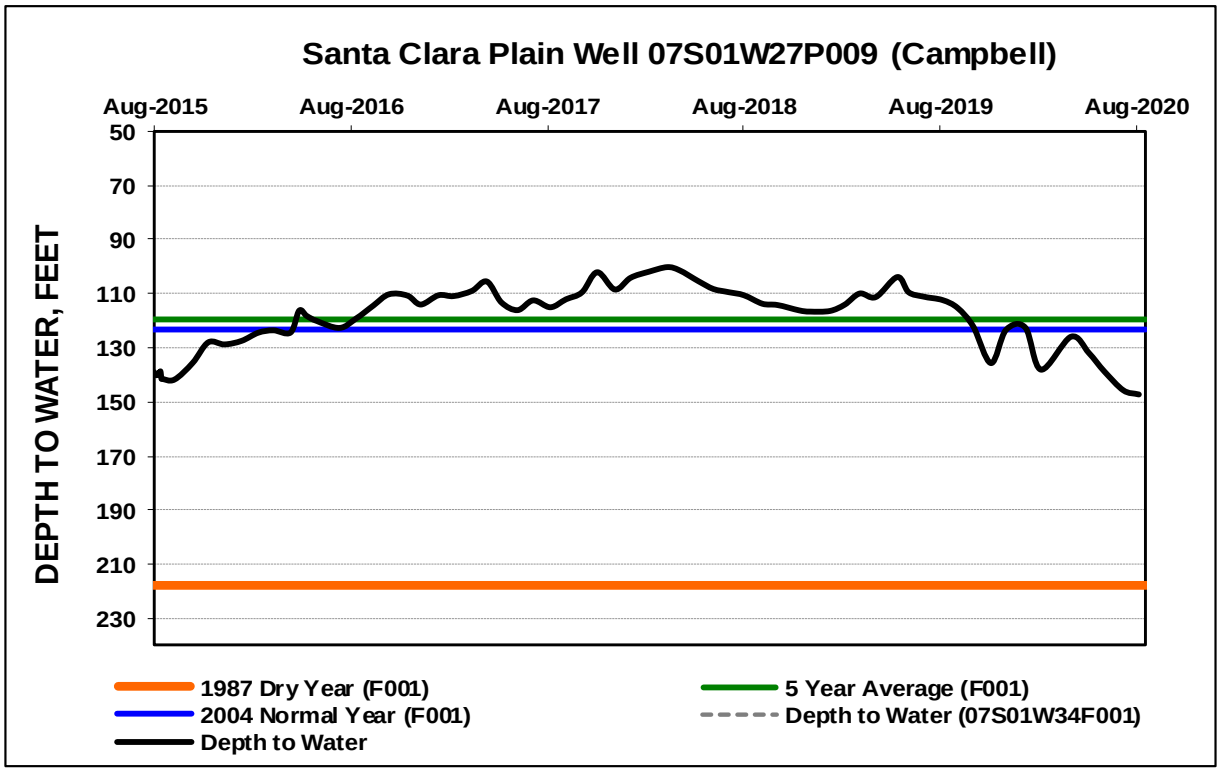


Figure 13. Campbell Well Hydrograph



The Campbell index well was replaced in August 2015 with a nearby well with similar water levels. Historic comparisons for 1987, 2004, and 5-year average use data from the former index well (07S01W34F001).

Figure 14. South San Jose Well Hydrograph

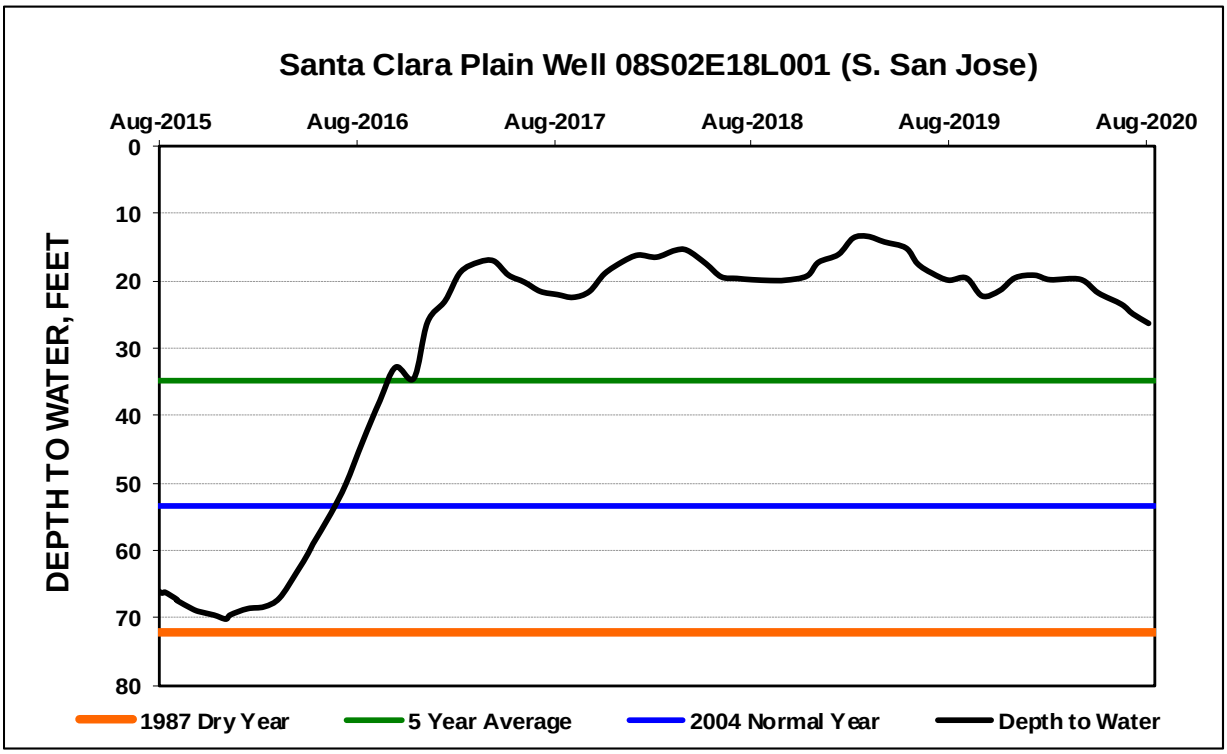


Figure 15. Coyote Valley Well Hydrograph (Index Well for the Coyote Valley)

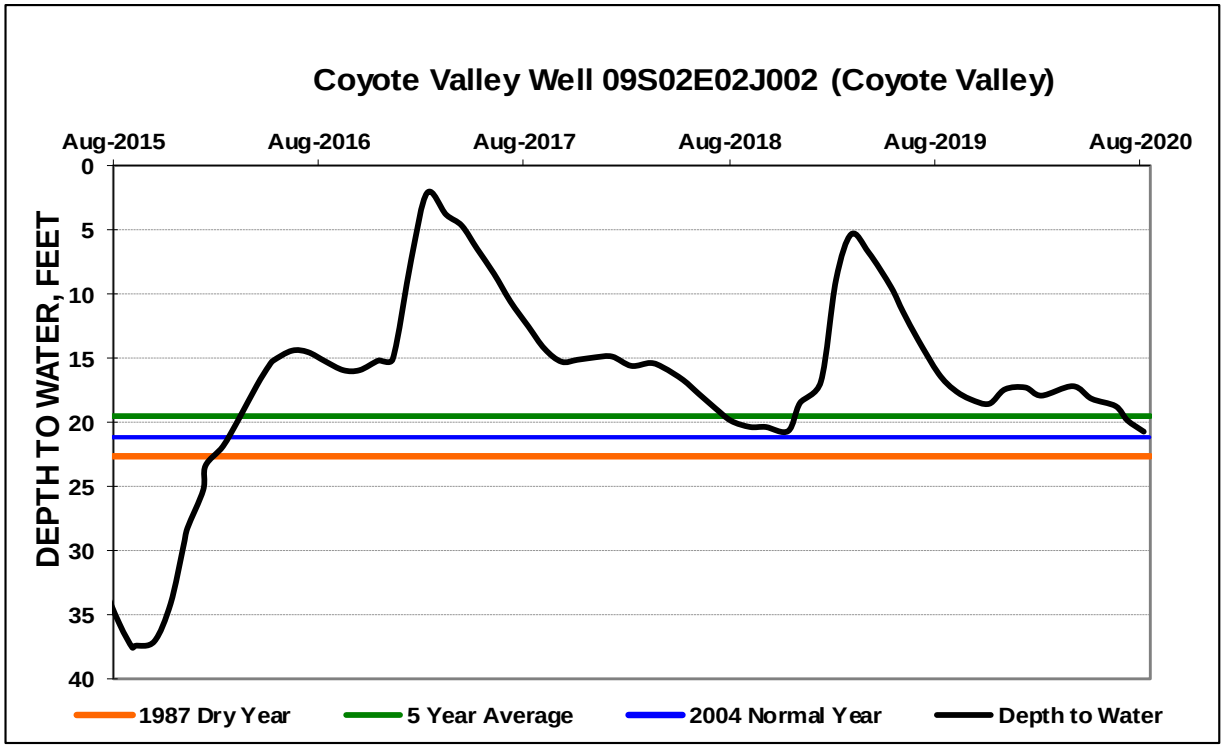


Figure 16. Morgan Hill Well Hydrograph

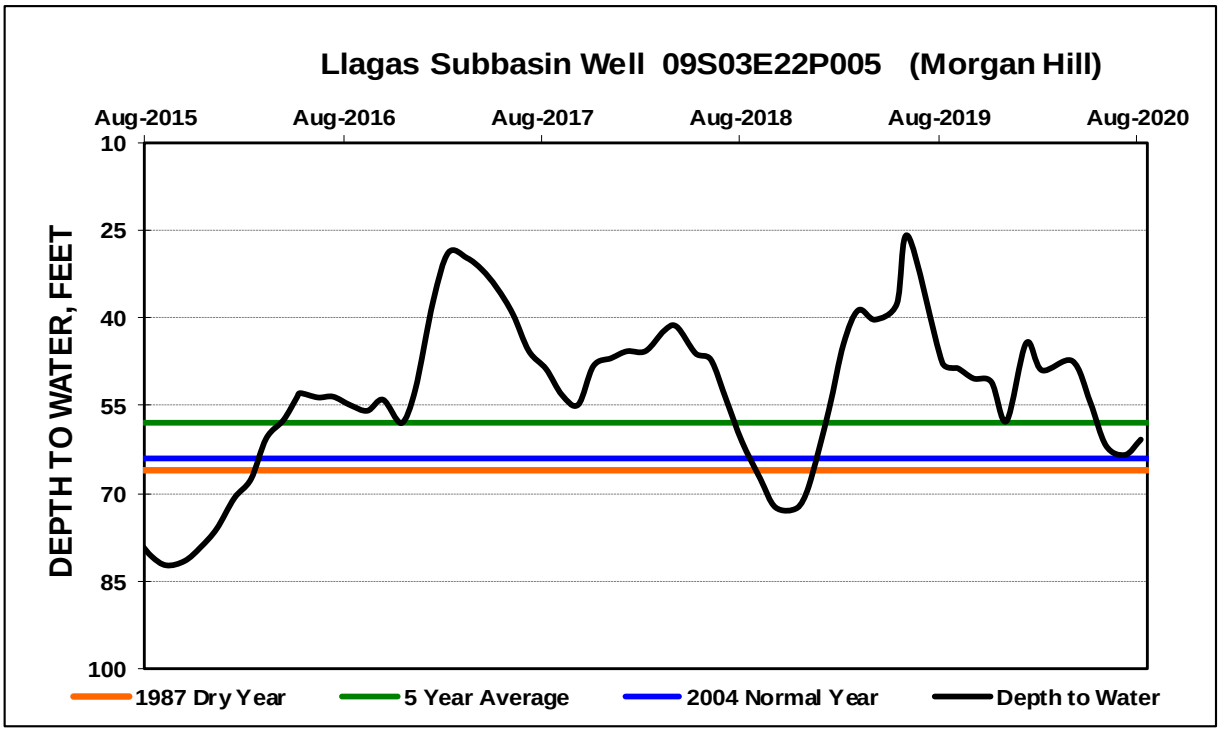
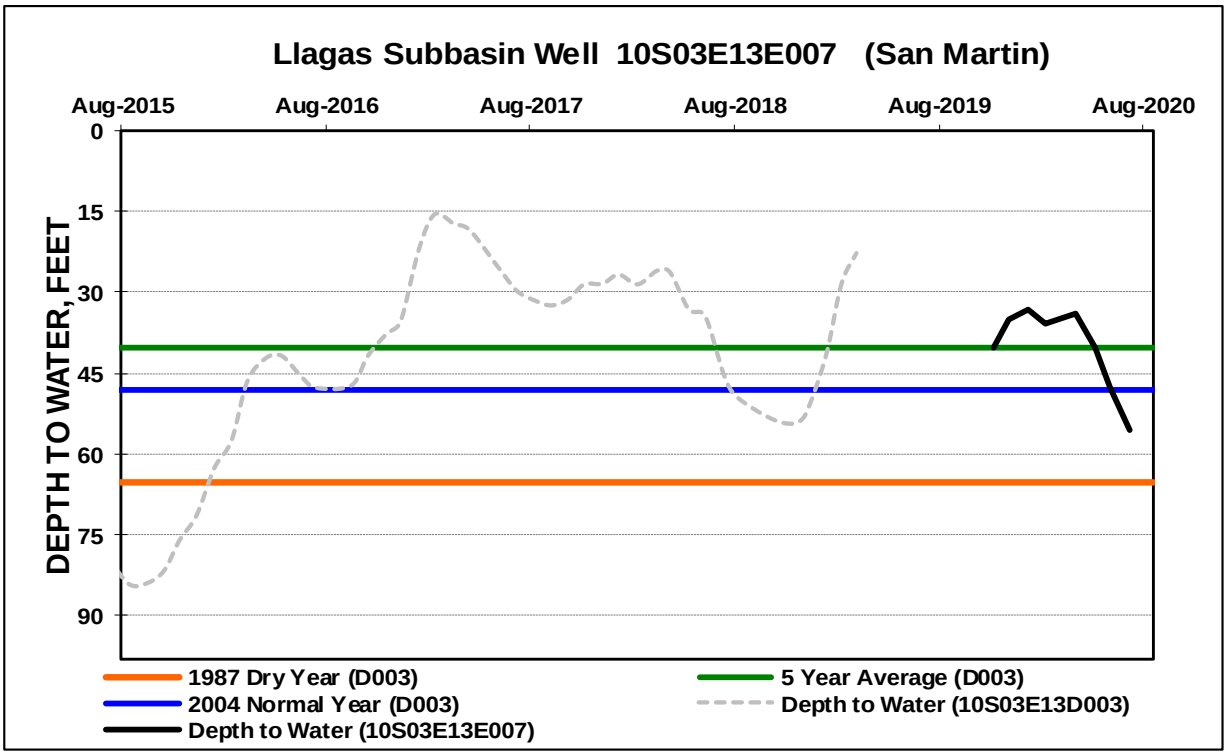


Figure 17. San Martin Well Hydrograph (Index Well for the Lllagas Subbasin)



The San Martin index well was replaced in November 2019 with a nearby well with similar water levels. Historic comparison data for 1987, 2004, and 5-year average use data from the former index well (10S03E13D003). *Note: There is no measurement for August 2020

Figure 18. Gilroy Well Hydrograph