2018 SANTA PAULA BASIN ANNUAL REPORT

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Professional Paper 2020-01

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CONSERVATION DISTRICT

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PREPARED FOR:

SANTA PAULA BASIN TECHNICAL ADVISORY COMMITTEE

Cover photo: Topatopa Bluff and Hines Peak above citrus trees (photo taken by John Lindquist, February 2019).

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(UWCD PROFESSIONAL PAPER 2020-01)

FOREWORD

In March 1996, the Superior Court of the State of California for the County of Ventura entered a stipulated judgment to establish pumping allocations and establish a management plan for the Santa Paula groundwater basin (*United Water Conservation District vs. City of San Buenaventura,* original March 7, 1996, amended August 24, 2010 [hereinafter "Judgment"]). Members of the Santa Paula Basin Pumpers Association (SPBPA) and the City of San Buenaventura exercise rights to pump groundwater from the basin for reasonable and beneficial uses. United Water Conservation District (UWCD, or United) does not produce groundwater from the basin, but the basin is located within United's service area and United is authorized to engage in groundwater management and replenishment activities and to commence actions to protect the water supplies which are of common benefit to the lands within the UWCD or its inhabitants.

The Judgment provides for the creation of a Santa Paula Basin Technical Advisory Committee (TAC) with equal representation from United, the SPBPA, and the City of San Buenaventura. The TAC is charged with establishing a program to "monitor conditions in the basin, including but not necessarily limited to verification of future pumping amounts, measurements of groundwater levels, estimates of inflow to and outflow from the basin, increases and decreases in groundwater storage, and analyses of groundwater quality." The Judgment also allows for the development of a management plan for the operation of the basin and empowers the TAC to determine the safe yield of the basin.

The Judgment requires annual reports summarizing results of the monitoring program, and further specifically provides that "United Water Conservation District shall have the primary responsibility for collecting, collating, and verifying the data required under the monitoring program, and shall present the results thereof in annual reports to the Technical Advisory Committee." United submits the draft annual reports to the TAC members for review, comment, and approval. The primary groundwater management objective in the Santa Paula basin is to ensure that production from the basin does not exceed the long-term sustainable yield of suitable-quality groundwater for current and anticipated future uses (i.e., municipal, domestic, agricultural, and industrial). The TAC's specialty studies and annual monitoring reports provide data and analysis intended to support this objective.

In 2010 the Judgment was amended to join various pumpers that were not previously included as parties to the settlement, and to clarify certain provisions pertaining to shortage conditions, the responsibilities of the SPBPA and groundwater production by its members, and water-rights transfer procedures. Also in 2010, a Santa Paula Basin TAC Working Group was established consisting of

technical experts from United, the SPBPA, and the City of San Buenaventura. Since its formation, the Working Group has completed a series of specialty studies to better understand the factors that affect safe yield in the Santa Paula basin, including a revised safe-yield study in 2017. In addition, the Working Group will continue to conduct future studies to complement the 2017 Safe-Yield Study, as requested by the TAC. The Working Group is currently evaluating metrics ("triggers") that will be used to evaluate whether and to what extent the basin might be negatively affected by future pumping and considering options to enhance safe yield of the basin.

In 2014, legislation (AB 1739, SB 1168 and SB 1319) was enacted by the State of California requiring every groundwater basin in California to be managed sustainably by the year 2042. These three bills are collectively known as the Sustainable Groundwater Management Act (SGMA). Groundwater basins that have had their water rights adjudicated, such as the Santa Paula basin, are exempt from some SGMA requirements but do have new requirements to report basin conditions to the California Department of Water Resources (DWR). The data presented in this Annual Report will be submitted to DWR (using their online reporting tool) as required to meet the SGMA requirements for adjudicated basins.

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2018 SANTA PAULA BASIN ANNUAL REPORT

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INTRODUCTION

This is the twenty-second annual report presenting key climatic, hydrologic, and hydrogeologic data to support management of groundwater resources in the Santa Paula basin. Relevant geographic features in and near the Santa Paula basin are shown on Figure 1. Data for calendar-year (CY) and water-year (WY) 2018 (the reporting period) are included in this report. This annual report provides the TAC—which consists of representatives from United Water Conservation District (UWCD or United), the City of San Buenaventura (Ventura), and the Santa Paula Basin Pumpers Association (SPBPA)—with monitoring results and other data to be used for management of the basin in accordance with the 1996 Santa Paula basin stipulated judgment by the Superior Court of the State of California for the County of Ventura (*United Water Conservation District vs. City of San Buenaventura,* original March 7, 1996, amended August 24, 2010 [hereinafter "Judgment"]) and with requirements for adjudicated basins under the Sustainable Groundwater Management Act (SGMA). This report summarizes annual precipitation, streamflow, surface water quality, production well installations and destructions, groundwater extractions and pumping allocations, groundwater levels, change in groundwater storage, and groundwater quality data obtained by United for the Santa Paula basin during the reporting period. Sources of the monitoring data and methods of their collection are unchanged from those described in the 2015 Santa Paula Basin Annual Report (United, 2017a); refer to that document for details regarding the sources and methods.

DATA SUMMARY AND EVALUATION

Key hydrologic indicators for Santa Paula basin during the reporting period are summarized and compared to long-term averages in Table 1, below. More detailed information regarding conditions in Santa Paula basin during the reporting period are provided in the following subsections.

Table 1. Key Hydrologic Indicators in Santa Paula Basin

Hydrologic Indicator	2018	Average During Period of Record	Median During Period of Record	Period of Record
Water-Year[a] Precipitation at Santa Paula-UWCD[b] (inches)	8.84	17.13	14.84	1890 through 2018
Calendar-Year Precipitation at Santa Paula-UWCD[b] (inches)	12.66	16.97	15.48	1890 through 2018
Water-Year Discharge in Santa Clara River at Freeman Diversion[b] (AF/yr)	10,116	203,789	110,294	1956 through 2018
Water-Year Discharge in Santa Paula Creek at Mupu Bridge[b] (AF/yr)	4,063	17,847	8,017	1928 through 2018
Reported Calendar-Year Groundwater Extractions in Santa Paula Basin (AF/yr)	22,881	25,589	25,856	1980 through 2018
Groundwater Level Index (ft msl)	171.76	180.76	181.72	1983 through 2018
Change in Groundwater Storage from Previous Year (AF)	-30 to -300	Not applicable	Not applicable	spring 2017 to spring 2018

Notes:

[a] A water year (WY) is defined as the period from October 1 of the previous year through September 30 of the year indicated. For example, WY 2018 includes the period from 10/1/2017 through 9/30/2018.

[b] Locations and identification numbers for rain and stream gages are indicated on Figure 1.

PRECIPITATION

Annual precipitation at Saticoy and Santa Paula throughout the period of record is shown on Figures 2 and 3; monthly precipitation at these locations during CY and WY 2018 is shown on Figure 4. Appendix A (Table A-1) includes a tabulation of monthly precipitation at Santa Paula-UWCD during the period of record. It should be noted that CY (and WY) 2018 had below average precipitation. This follows 2017, which was the first year with above-average precipitation after the driest 5-year period on record in Santa Paula (WYs and CYs 2012 through 2016). As shown on Figure 4, the month with the most precipitation in CY and WY 2018 was in March, with 3.5 inches above the average rainfall for that month.

SURFACE WATER FLOWS

Annual discharge in the Santa Clara River (at Freeman Diversion) and Santa Paula Creek (near Santa Paula) throughout the period of record is shown on Figures 5 and 6; daily streamflow at these locations during CY and WY 2018 is shown on Figure 7. Appendix A (Tables A-2 and A-3) provides annual total discharge in the Santa Clara River and Santa Paula Creek during the period of record. Annual discharge during WY 2018 in the Santa Clara River at Freeman Diversion was about 5% of the long-term average volume, and discharge in Santa Paula Creek near Santa Paula was about 20% of average.

SURFACE WATER QUALITY

Minimum, maximum, and average concentrations of selected major water quality constituents (chloride, nitrate, total dissolved solids [TDS], and sulfate) detected in surface water samples from the Santa Clara River at Freeman Diversion during CY 2018 are summarized in Table 2, below. Concentrations of these constituents detected throughout the period of record are shown on Figure 8. Table 2 indicates that average concentrations of chloride, nitrate, TDS, and sulfate detected in the Santa Clara River during CY 2018 were somewhat higher than long-term average concentrations, except for nitrate (which was less than the long-term average concentration).

Table 2. Summary of Major Surface Water Quality Parameters in Santa Clara River at Freeman Diversion, CY 2018

Statistic	Concentration, milligrams per liter (mg/L)			
	Chloride	Nitrate[a]	TDS	Sulfate
CY 2018 Minimum	26	Less than 0.4	310	114
CY 2018 Maximum	186	10.2	2,140	1,180
CY 2018 Average	98	5.3	1,515	775
Long-Term Average[b]	64	6.0	1,145	533

Notes:

[a] As nitrate (NO_3)

[b] Includes reported data in United's database from the entire period of record, beginning in CY 1925 for chloride, TDS, and sulfate; beginning in CY 1936 for nitrate.

Minimum, maximum, and average concentrations of selected major water quality constituents (chloride, nitrate, TDS, and sulfate) detected in surface water samples from Santa Paula Creek near Santa Paula during CY 2018 are summarized in Table 3, below. Concentrations of these constituents

detected throughout the period of record are shown on Figure 9. Table 3 indicates that average concentrations of chloride, nitrate, TDS, and sulfate detected in Santa Paula Creek during CY 2018 were higher than long-term average concentrations, similar to trends in the Santa Clara River (with the exception of nitrate).

Table 3. Summary of Major Surface Water Quality Parameters in Santa Paula Creek near Santa Paula, CY 2018

Statistic	Concentration (mg/L)			
	Chloride	Nitrate[a]	TDS	Sulfate
CY 2018 Minimum	57	Less than 0.4	1,120	458
CY 2018 Maximum	90	38.1	1,580	744
CY 2018 Average	74	17.6	1,294	570
Long-Term Average[b]	46	10.1	852	377

Notes:

[a] As nitrate (NO_3)

[b] Includes reported data in United's database from the entire period of record: CY 1980 to present for hardness, sulfate and chloride; CY 1981 to present for nitrate.

PRODUCTION WELL INSTALLATIONS AND DESTRUCTIONS

One production well was destroyed within the Santa Paula basin during CY 2018, as listed in Table 4, below. The production well was replaced by another production well in 2019.

Table 4. Production Well Installations and Destructions During CY 2018

Production Wells Destroyed	Production Wells Drilled
03N21W11A01S, Limoneira Lewis Builders LLC	

GROUNDWATER EXTRACTIONS

Annual groundwater extractions (pumping) reported for Santa Paula basin wells throughout the period of record are summarized in Table 5, below, and illustrated on Figure 10.

Table 5. Historical Santa Paula Basin Groundwater Extractions

Calendar Year	Groundwater Extractions (AF)	Calendar Year	Groundwater Extractions (AF)	Calendar Year	Groundwater Extractions (AF)
1980	26,820	1993	26,998	2006	24,830
1981	27,545	1994	26,244	2007	28,077
1982	22,925	1995	25,042	2008	26,686
1983	16,710	1996	26,008	2009	25,820
1984	29,455	1997	28,961	2010	23,115
1985	26,533	1998	21,622	2011	24,202
1986	21,617	1999	27,700	2012	25,824
1987	24,852	2000	26,798	2013	26,485
1988	25,370	2001	22,530	2014	27,437
1989	29,362	2002	27,259	2015	25,856
1990	33,453	2003	22,280	2016	25,363
1991	27,056	2004	27,306	2017	21,889
1992	24,355	2005	24,700	2018	22,881
				Average	***25,589***
				Median	***25,856***

Note: The groundwater extractions shown on this table are based on semi-annual groundwater production statements submitted to United's Finance Department.

Reported groundwater extractions from the Santa Paula basin during CY 2018 by the City of San Buenaventura, members of the SPBPA, and other pumpers are summarized in Table 6, below. The Judgment governs groundwater production on a seven-year rolling average, which allows parties to produce more or less than their allocation in any particular year so long as their rolling seven-year average does not exceed their allocation. Appendix D summarizes groundwater extractions for the past seven years (CYs 2012 through 2018), as well as Individual Party Allocations (IPAs) for the SPBPA (with transfers, de minimis parties, non-parties) and the City of San Buenaventura.

Table 6. Summary of Groundwater Extractions During CY 2018

Pumper	Extractions (AF)
City of San Buenaventura[a]	3,278
SPBPA Pumpers with Individual Party Allocations (adjusted by SPBPA)[b]	19,558
SPBPA Pumpers with Individual Party Allocations (reported to United)[c]	19,558
Non-stipulated Parties[b]	19
De Minimis Pumpers[b]	26
Total extractions (adjusted by SPBPA[b] / reported to United[c])	22,881

Notes:

[a] Includes pumping from well 02N/22W-03E01S (Appendix D, Table D-5)

[b] From Appendix D, compiled by SPBPA

[c] From UWCD Finance Department records

Reported groundwater extractions during CY 2018, together with estimated imports and exports, are summarized by use and source in Table 7 and graphically illustrated Figure 11. The distribution of groundwater extractions across the basin during CY 2018 is shown on Figure 12.

Table 7. Summary of Groundwater Extractions, Imports, and Exports in Santa Paula Basin, CY 2018

Description	Volume (AF)
Reported groundwater extractions from wells in the Santa Paula basin stipulated area	22,881
Estimated groundwater imports from Fillmore basin (assume 60% of total pumpage from Teague #6 and 100% from FICO #12)	+4,193
Estimated groundwater imports from Oxnard Forebay basin (assume 67% of total pumpage from Alta #3 and Alta #11)	+992
Estimated water exports to Mound basin via the FICO distribution system	-844
Estimated net groundwater use in Santa Paula basin (sum of extractions plus imports, less exports)	**= 27,222***

** Does not include potential imports/exports by Ventura to/from other supply sources. Specific volumes of groundwater exported from Ventura's wells in Santa Paula basin, and imported from other sources to the Santa Paula basin, are variable and undetermined. However, the net import or export of water by Ventura to/from Santa Paula basin can be assumed to be relatively small compared to the overall water budget.*

GROUNDWATER LEVELS

Groundwater elevations were monitored during the reporting period at selected wells in and adjacent to the Santa Paula basin, shown on Figure 13. Groundwater elevation hydrographs for selected wells are provided in Appendix B. Two hydrographs are included for each well at different scales, as follows:

- The first hydrograph for each well is scaled with a consistent vertical axis range of -60 to 380 feet so that, for most wells, the relationships between static groundwater levels, top and bottom of well screens, and reference points (RPs) at different wells in the basin can be visually compared. The information provided in these hydrographs displays the relationship between the (static) water level variations and the production zones of wells in the basin.

- The second hydrograph for each well is scaled to allow easier comparison of the magnitude of the static groundwater level changes in the wells. The vertical axis range of 80 feet captures the range of water levels on an expanded scale for visual inspection of groundwater level trends and comparison between wells. These plots include annotations regarding the RP and depth of the screen (which is indicated in parentheses to the right of the well number) at each well.

Groundwater elevation contours for spring and fall of CY 2018 in Santa Paula basin are shown on Figures 14 and 15. The contours were interpolated using groundwater elevation data obtained from wells in the Santa Paula basin and in the adjacent, hydraulically-connected Fillmore, Mound, and Oxnard Forebay basins. The contours represent lines of equal groundwater elevation (total hydraulic head), and generally define the water table (in unconfined portions of the aquifer) or potentiometric surface (in confined portions of the aquifer). Most of the groundwater elevations used for contouring were measured at long-screened wells with total depths greater than 100 feet. The screened interval contoured at United's cluster monitor well sites SP-1 and SP-2 are 370-390 feet below ground surface (bgs), and 290-310 feet bgs, respectively. Groundwater elevations measured at shallow versus deep wells are not contoured independently in this annual report.

Groundwater levels in most wells throughout the basin show a seasonal variation in the range of 10 to 20 feet. Longer-term groundwater level trends have been summarized in Santa Paula basin through the use of a "groundwater level index" (GLI). The GLI is calculated as the average of spring-high groundwater elevations measured each year at nine key wells selected for their relatively long record and their geographic distribution across the basin. This data is included in Appendix B. The GLIs for CYs 1983 through 2018 are shown on Figure 16, together with the cumulative departure from average precipitation over the same period at Santa Paula-UWCD. The CY 2018 GLI is 171.76 feet above mean sea level (ft msl), which is about 3 feet lower than the previous year's GLI (175.06 ft. msl). Calculation of the GLI has been affected since one of the index wells, well 03N21W34R01S, was destroyed in 2017. Due to its location in the western part of Santa Paula basin, well 03N21W34R01S typically had lower groundwater elevations than most of the other index wells. Therefore, the average groundwater elevation for the remaining wells is higher than the average when well 03N21W34R01S was included. This artifact likely accounted for approximately 5 feet of the apparent increase in GLI between 2016 and 2017 (Figure 16). The average GLI since 1983, when it was first calculated, is 180.76 ft msl, which is 9 feet above the 2018 GLI. So it can be concluded that water levels declined in 2018.

CHANGE IN GROUNDWATER STORAGE

Geostatistical analysis of year-over-year changes in spring-high groundwater elevations within the Santa Paula basin indicates that, on average, groundwater levels declined by 2.00 ft across the basin from spring 2017 (see UWCD, 2019) to spring 2018 (Figure 17; Appendix C). This decline is slightly smaller than the calculated decline in GLI over the same period (2017-2018) of 3.3 ft. More data points are used for the geostatistical analysis than for the GLI calculation; therefore, the geostatistical analysis likely is more representative of basin wide groundwater-elevation and storage changes from year to year.

The magnitude of the geostatistically-calculated change in storage was based solely on data from wells where groundwater levels were measured both during spring 2017 and spring 2018 in and adjacent to Santa Paula basin. The Kriging method was used to interpolate the estimated groundwater elevation changes across the area of the unconsolidated alluvial deposits in and adjacent to Santa Paula basin. Areas outside of the basin were then "blanked," removing them from the calculation of average groundwater level change. The area of the unconsolidated alluvial deposits within Santa Paula basin is approximately 13,000 acres, and the average storage coefficient for the aquifer, which is mostly confined, is estimated to be in the range from 0.001 to 0.01. Based on these known data and estimated parameters, the calculated change in groundwater storage within the area of the unconsolidated alluvial deposits between spring 2017 and spring 2018 is a decrease of 30 to 300 AF, which may be within the margin of error for the method of analysis.

GROUNDWATER QUALITY

Concentrations of selected water-quality constituents (nitrate, chloride, sulfate, and TDS) detected in groundwater samples obtained during CY 2018 and reported to United are summarized in Table 8, below, together with California primary maximum contaminant levels (MCLs), secondary MCL ranges (MCLRs), and water quality objectives specified by the California Regional Water Quality Control Board, Los Angeles region (1994). Maps showing the maximum reported concentrations of these constituents during CY 2018 are provided on Figures 18 through 21. As noted in past annual reports, concentrations of chloride, TDS, and sulfate generally increase from east to west in the basin.

Table 8. Summary of Chloride, Nitrate, TDS, and Sulfate in Groundwater in Santa Paula Basin, CY 2018

Statistic	Concentration (mg/L)			
	Chloride	Nitrate[a]	TDS	Sulfate
CY 2018 Minimum	35	ND	870	343
CY 2018 Maximum	369	44	4,410	2,190
CY 2018 Average	65	9.0	1,264	554
Long-Term Average[b]	69.7	10.3	1,308	540
Primary MCL	none	45	none	none
Secondary MCLR-"Recommended"	250	none	500	250
Secondary MCLR-"Upper"	500	none	1,000	500
Water Quality Objectives East/West of Peck Rd.	100/110	45/45	1,200/2,000	600/800

Notes:

ND = not detected
MCL = Maximum Contaminant Level
MCLR = Maximum Contaminant Level Range

[a] As nitrate (NO_3)

[b] Includes reported data in United's database from the entire period of record: CY 1903 to present for chloride, TDS, and sulfate; CY 1923 to present for nitrate.

Reported concentrations of hardness, alkalinity, iron, and manganese for groundwater samples obtained during CY 2018 are summarized in Table 9, together with the secondary MCLs for iron and manganese, and the micro-irrigation plugging hazard criteria developed by Pitts and Peterson

(undated) and the University of California (2015). Iron and manganese occur naturally in groundwater, and any elevated concentrations detected in the Santa Paula basin are thought to be a result of local geochemical conditions rather than man-made sources (e.g. mining or industrial discharges). Increased iron concentrations were observed in three wells during the October 2018 sampling event, with levels recorded up to an order of magnitude higher than historically observed in these wells. Because this increase appears to have occurred simultaneously in several wells, laboratory or sampling issues may have resulted in artificially high reported concentrations. The water quality will continue to be monitored for changes in iron concentrations and will be discussed in next year's Annual Report. If iron in subsequent samples are detected at historical concentrations, then it can be reasonably assumed that the 2018 sampling result, for iron were anomalous and likely caused by sampling or laboratory issues. If elevated concentrations of iron continue to be detected (in 2019), then further investigation of groundwater conditions at those wells may be warranted.

Table 9. Summary of Hardness, Alkalinity, Iron, and Manganese in Groundwater in Santa Paula Basin, CY 2018

Statistic		Concentration (mg/L)			
		Hardness[a]	Alkalinity[a]	Iron	Manganese
CY 2018 Minimum		420	200	ND	ND
CY 2018 Maximum		1,390	390	6.50[c]	0.88
CY 2018 Average		637	256	0.26	0.29
Long-Term Average[b]		646	270	0.15	0.24
Secondary MCL		NA	NA	0.3	0.05
Pitts and Peterson Plugging Hazard Potential	Moderate	150-300	100-200	0.1 - 1.0	0.1 - 1.0
	Severe	>300	>200	>1.0	>1.0
Univ. of Calif. Clogging Potential	Moderate	NA	100	0.2 - 1.5	0.1 - 1.5
	Severe	NA	NA	>1.5	>1.5

Notes:

ND = not detected

NA = not applicable or not reported

> = greater than the value shown

[a] As calcium carbonate ($CaCO_3$).

[b] Includes reported data in United's database from the entire period of record: CY 1929 to present for hardness and alkalinity; CY 1937 to present for iron and manganese.

[c] Refer to report text above Table 9 for information concerning iron levels.

REFERENCES

California Regional Water Quality Control Board, Los Angeles Region, 1994, Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties.

Pitts, Donald J., and Peterson, Kevin, undated, Maintaining a Plug-Free Micro-Irrigation System, Cachuma Resource Conservation District.

Superior Court of the State of California for the County of Ventura, 2010, Judgment, Case No. 115611: *United Water Conservation District vs. City of San Buenaventura*, Original March 7, 1996, Amended August 24, 2010.

United Water Conservation District, 2017a, 2015 Santa Paula Basin Annual Report, United Water Conservation District Professional Paper 2017-01, March.

United Water Conservation District, 2017b, 2016 Santa Paula Basin Annual Report, United Water Conservation District Professional Paper 2017-02, November.

United Water Conservation District, 2019, 2017 Santa Paula Basin Annual Report, United Water Conservation District Professional Paper 2019-01, March.

University of California, 2015, Maintenance of Microirrigation Systems, Division of Agriculture and Natural Resources webpage edited by Lawrence J. Schwankl, Ph.D. (http://micromaintain.ucanr.edu/Prediction/Source/Groundwater/Assessing_Water_Quality_II-50a/)

FIGURES

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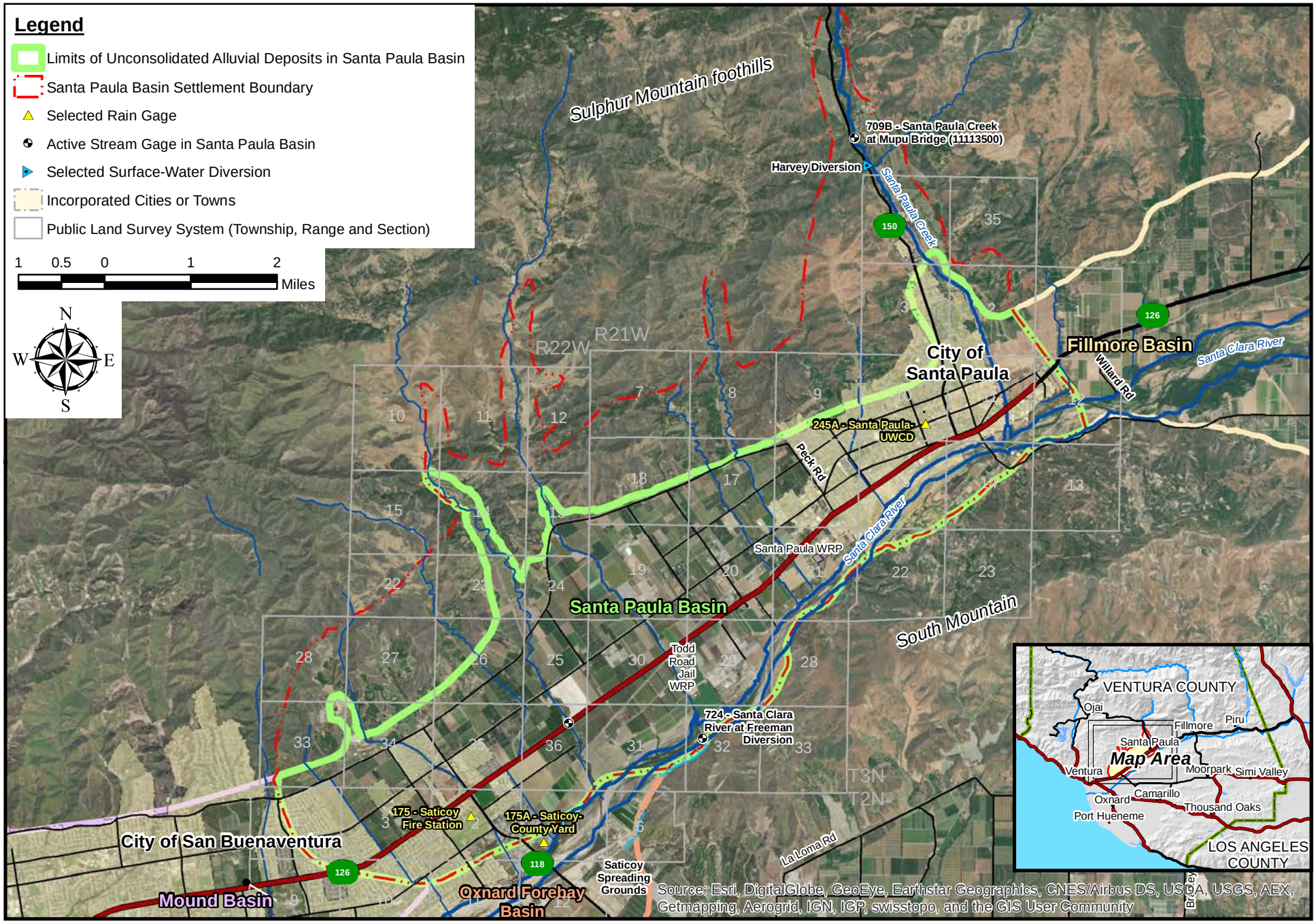

Figure 1. Santa Paula Basin Location Map

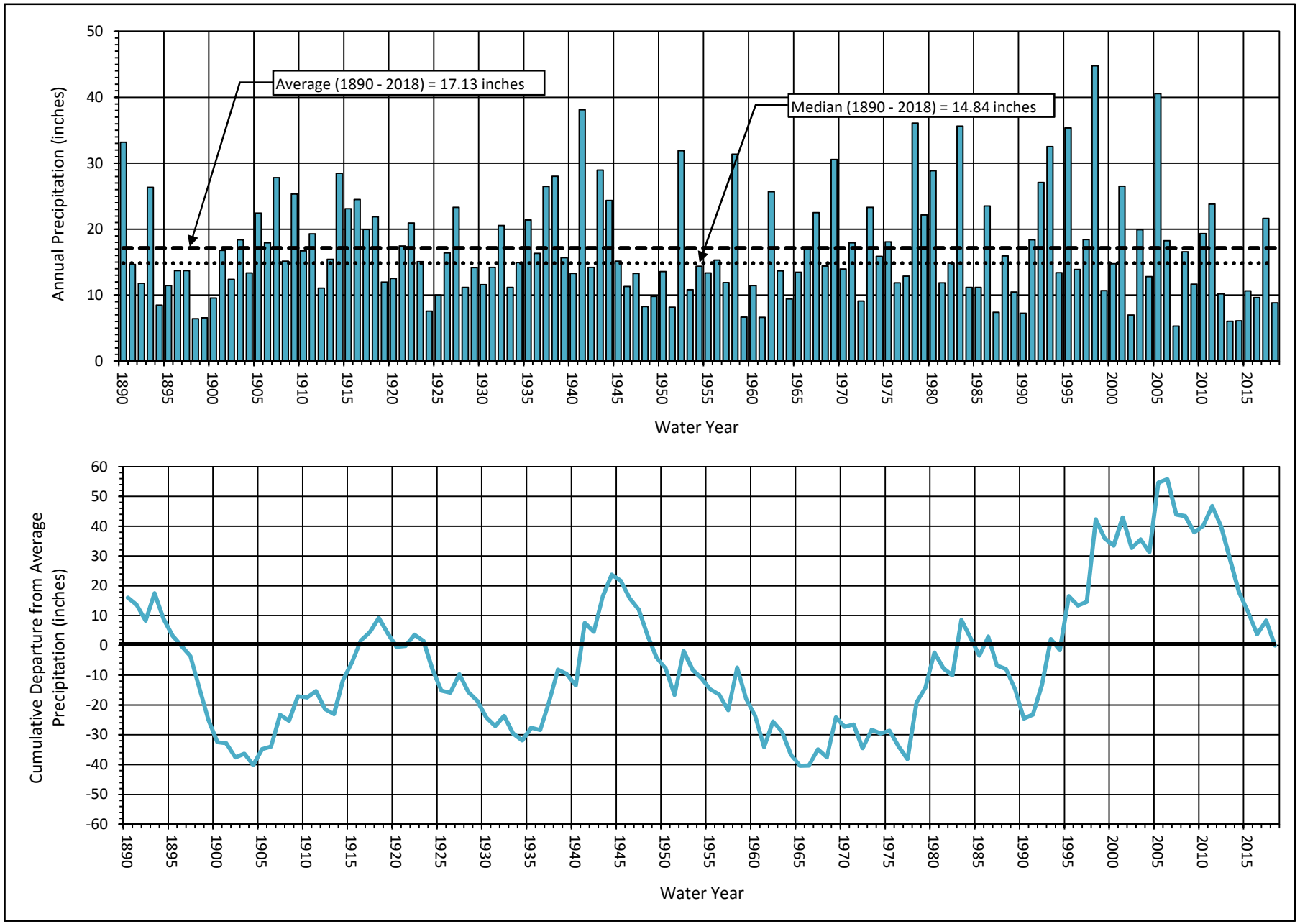

Figure 2. Annual Precipitation at Santa Paula and Cumulative Departure from Average, WYs 1890 through 2018

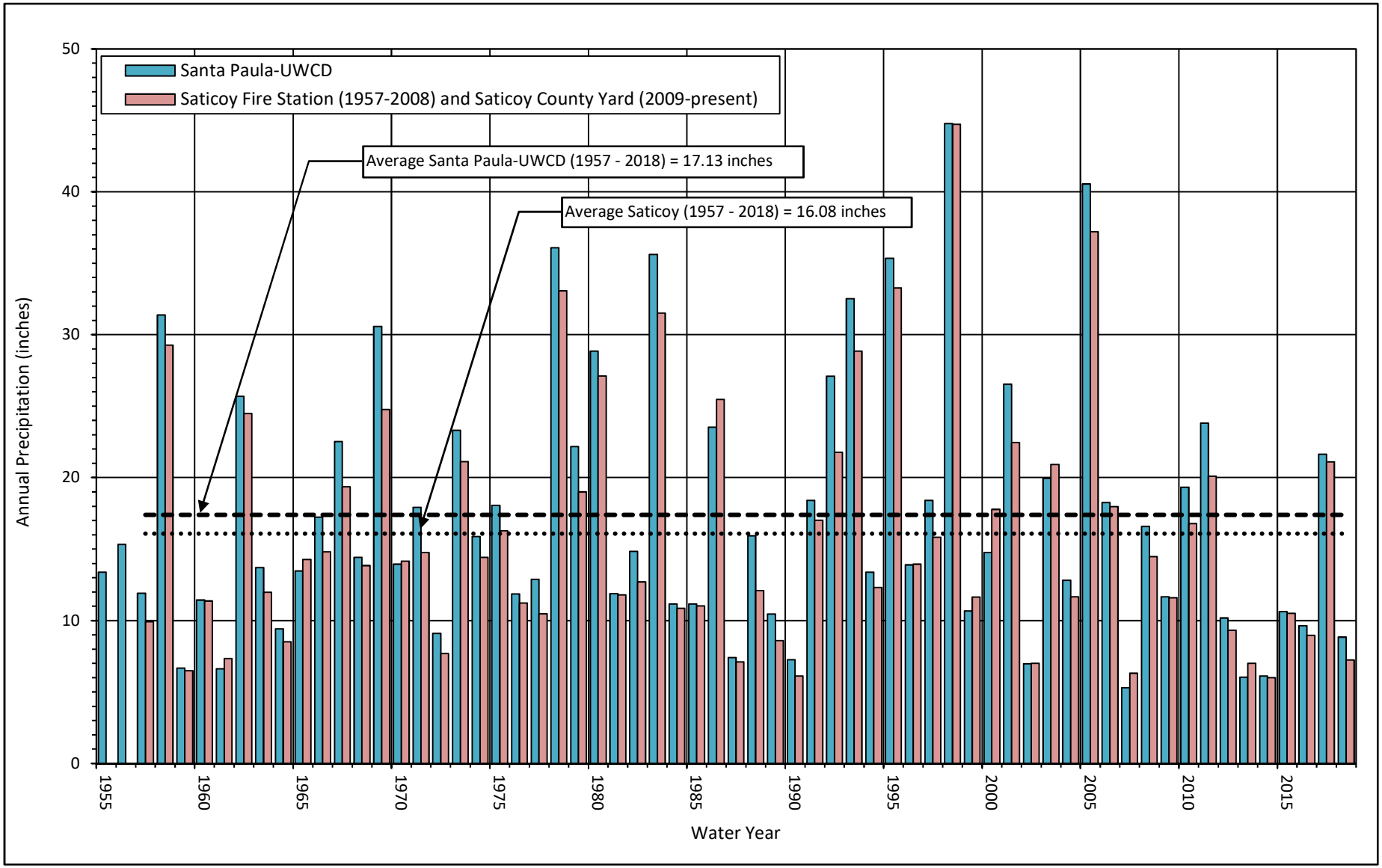

Figure 3. Annual Precipitation at Saticoy and Santa Paula, WYs 1955 through 2018

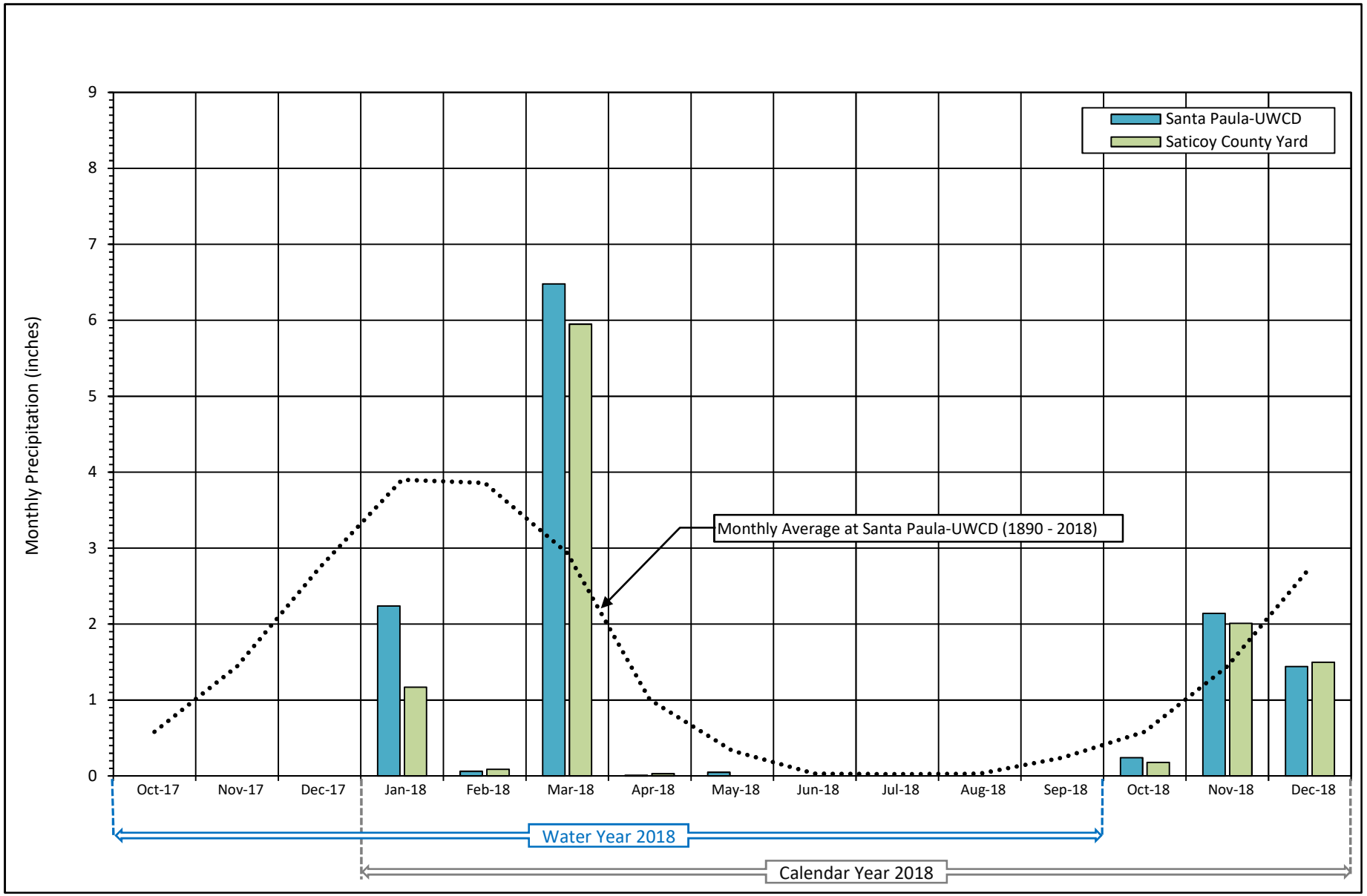

Figure 4. Monthly Precipitation in Santa Paula Basin, WY and CY 2018

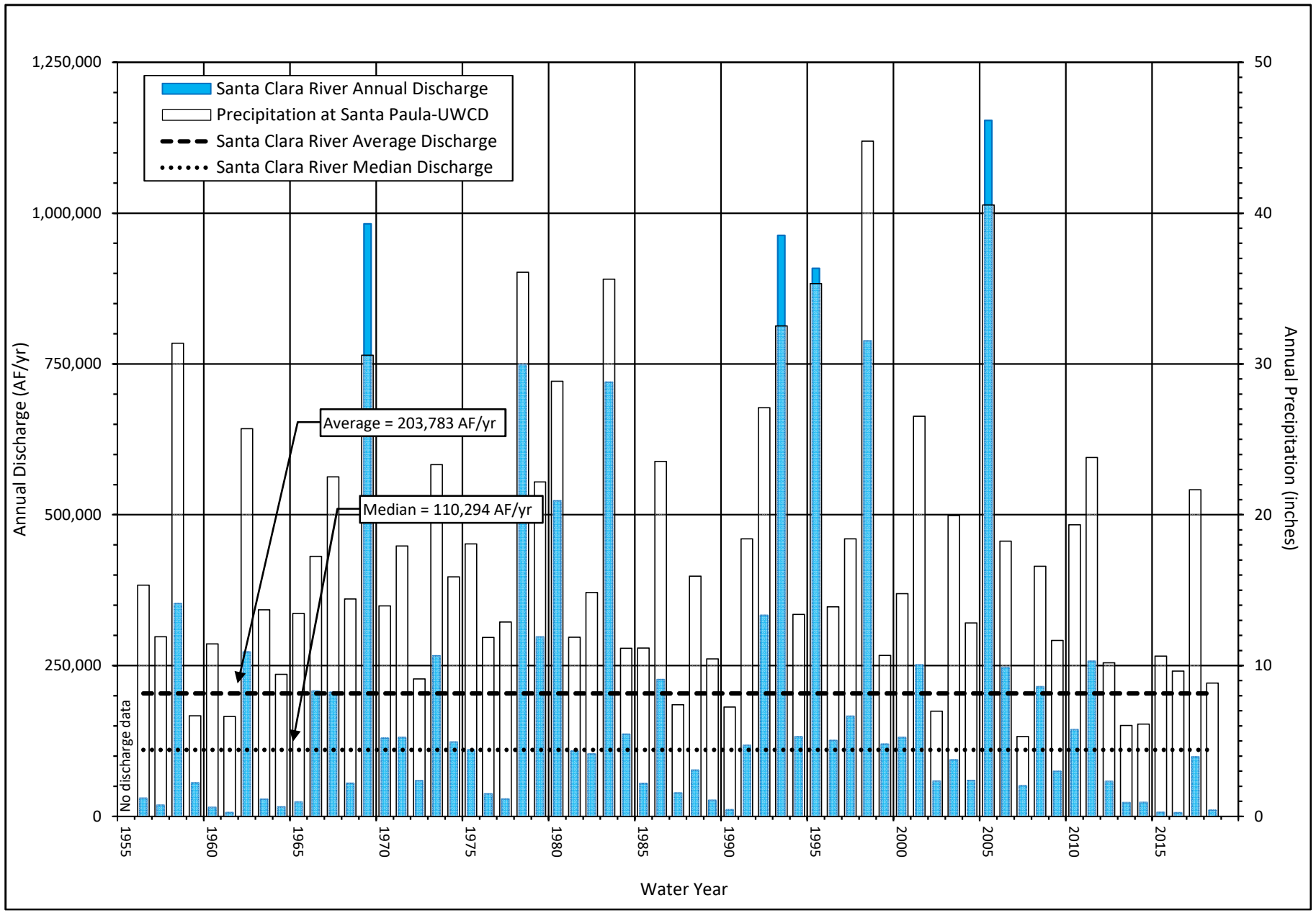

Figure 5. Annual Discharge of Santa Clara River at the Freeman Diversion, WYs 1956 through 2018

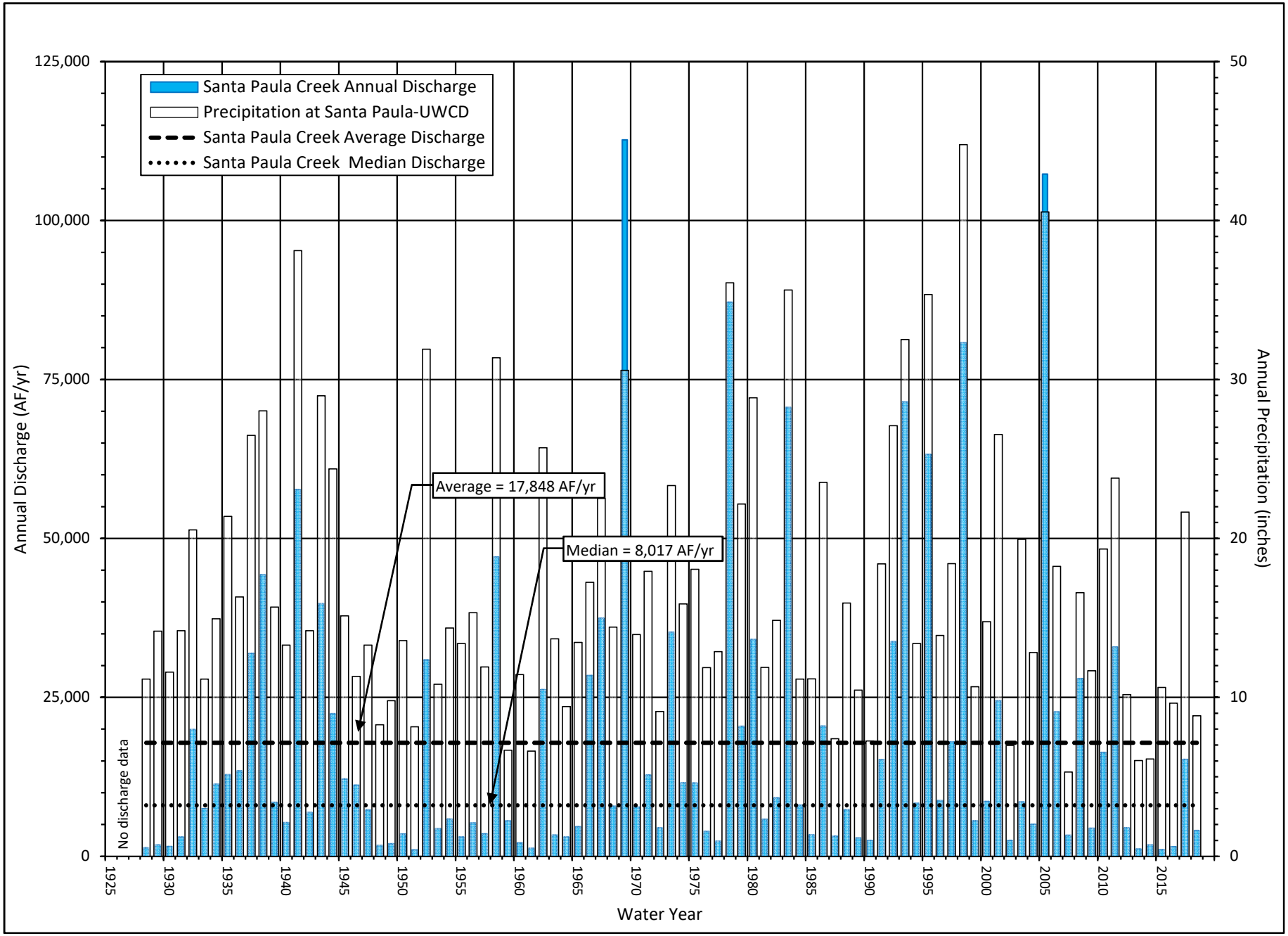

Figure 6. Annual Discharge of Santa Paula Creek Near Santa Paula, WYs 1928 through 2018

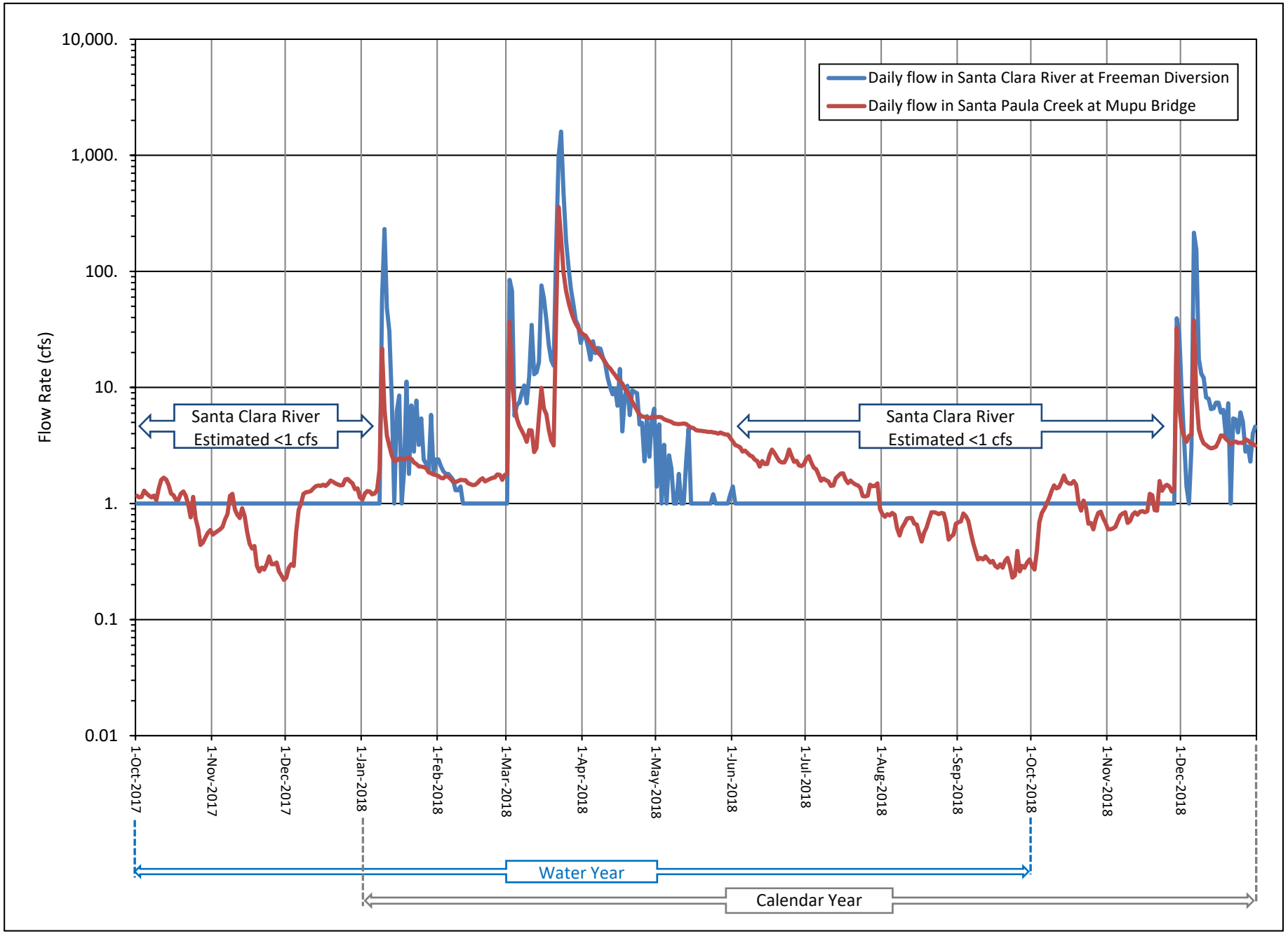

Figure 7. Daily Streamflow in Santa Paula Creek and Santa Clara River, WY and CY 2018

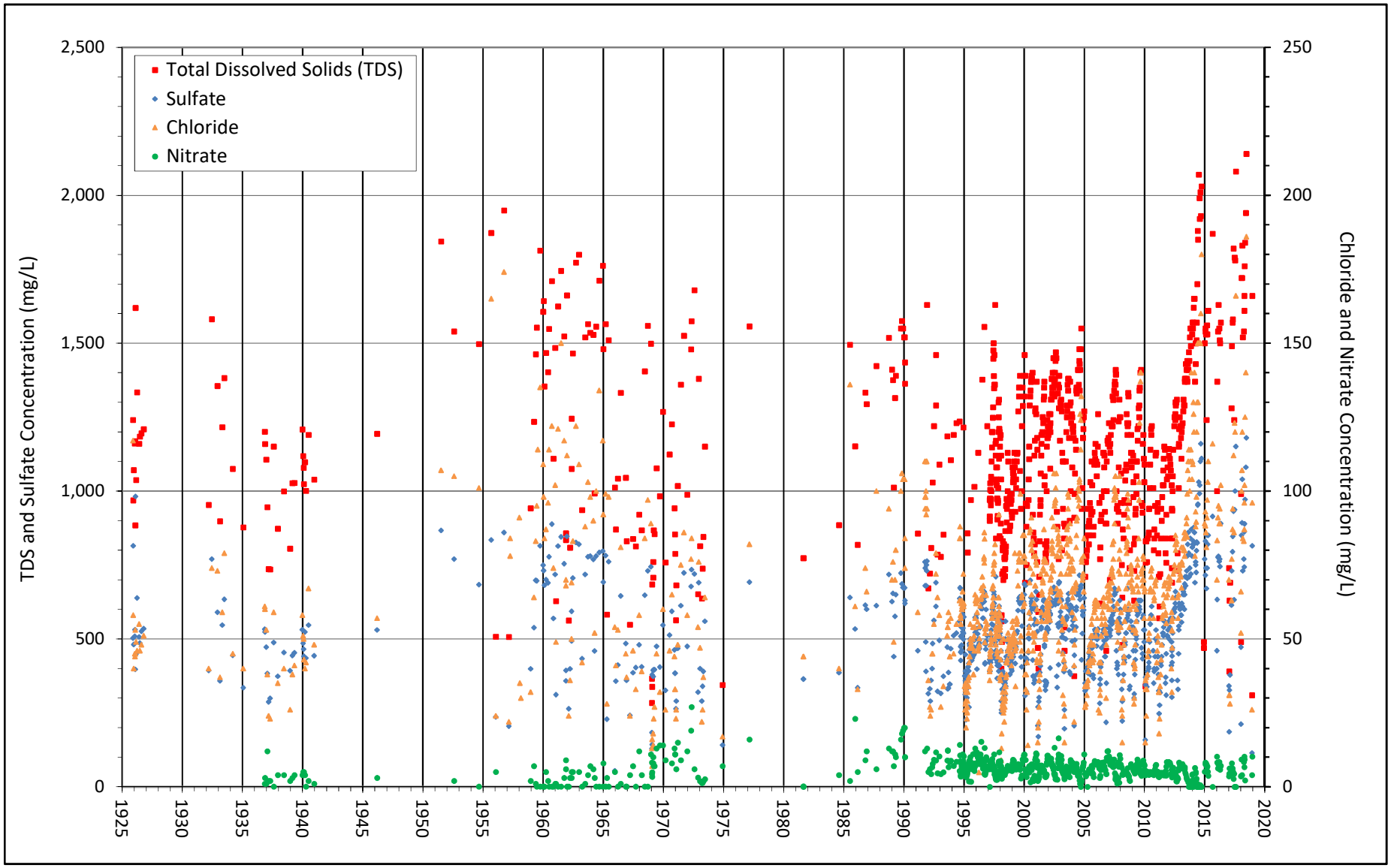

Figure 8. Concentrations of Selected Dissolved Constituents in the Santa Clara River at Freeman Diversion, CYs 1925 through 2018

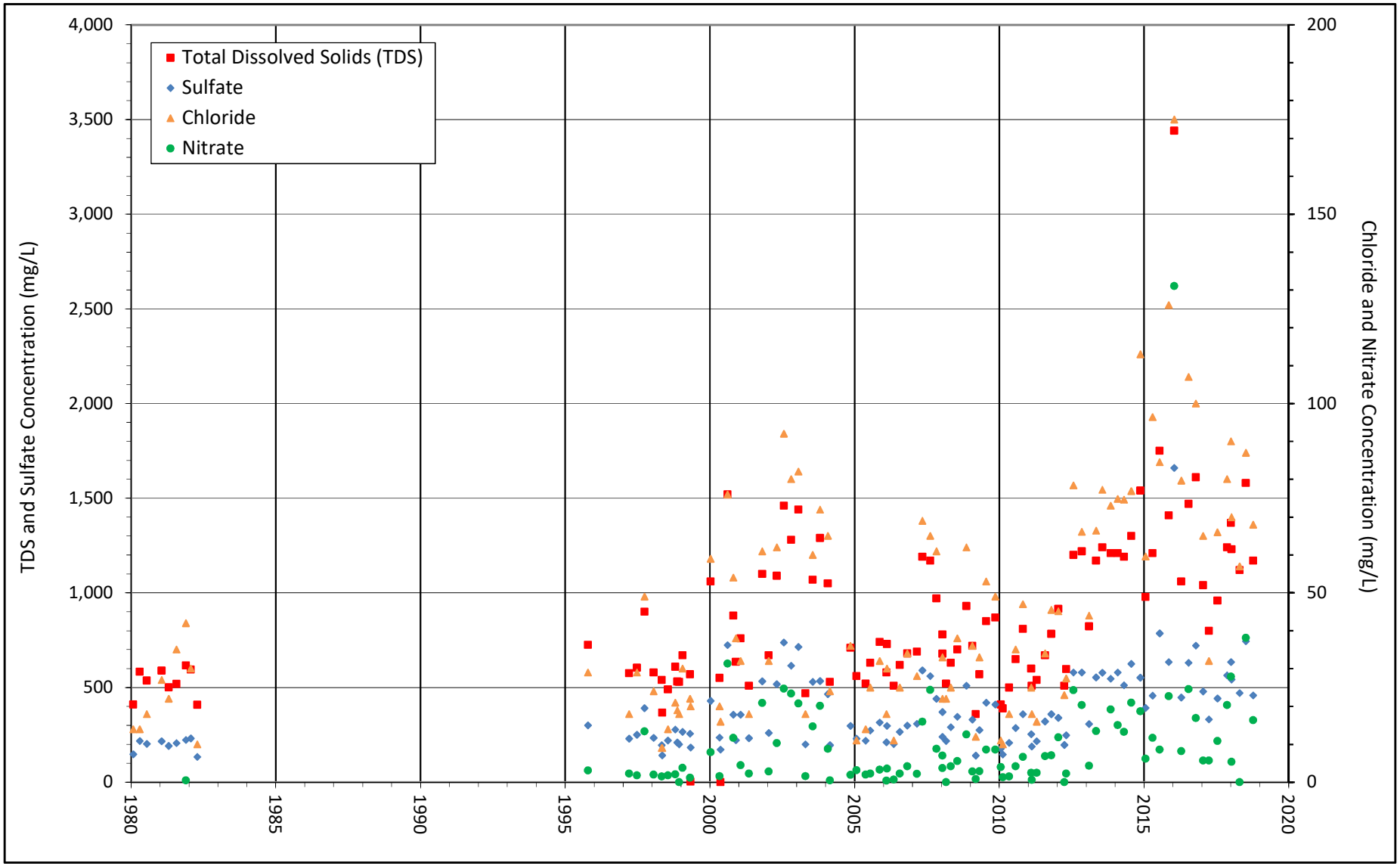

Figure 9. Concentrations of Selected Dissolved Constituents in Santa Paula Creek Near Santa Paula, CYs 1980 through 2018

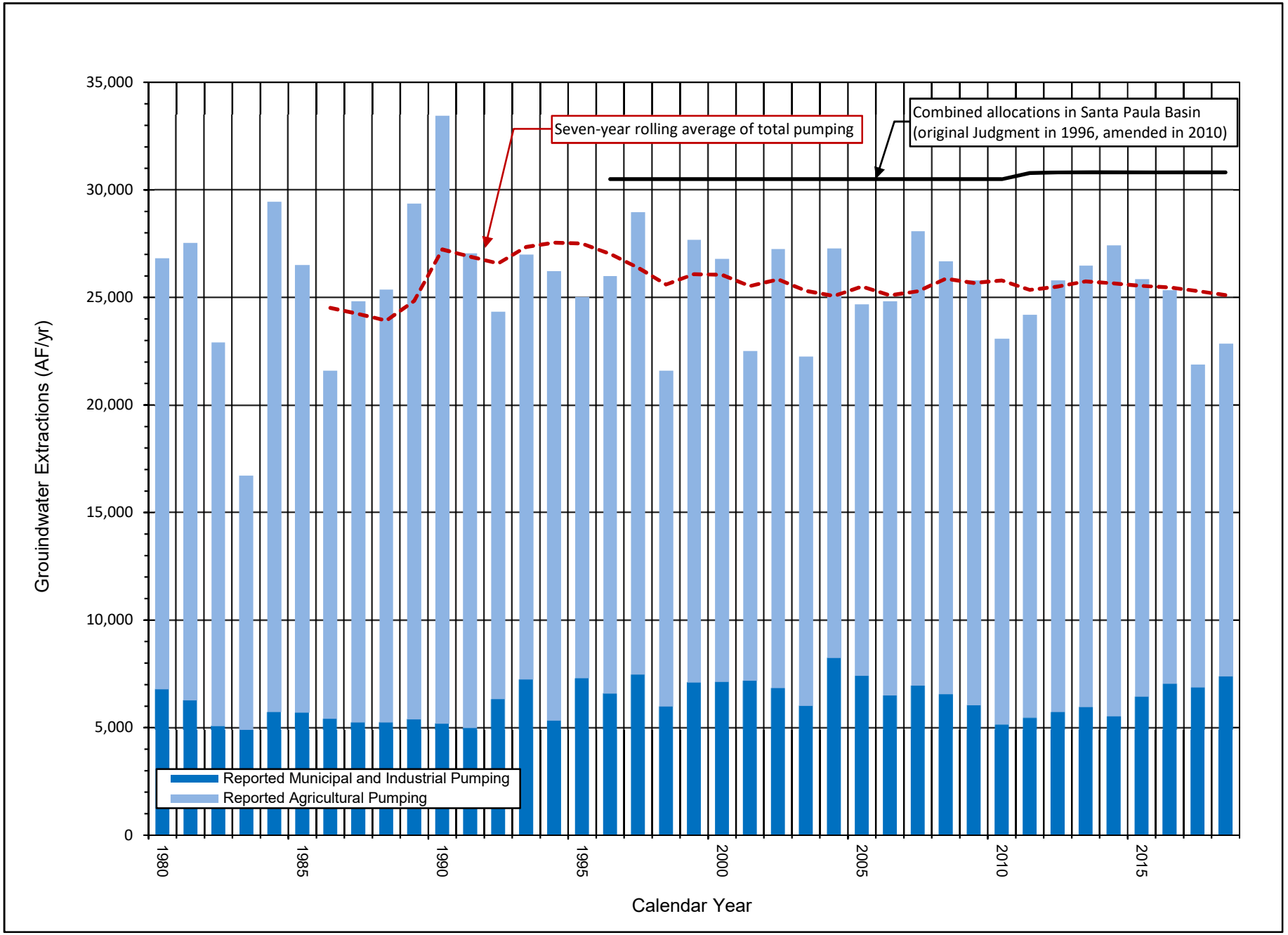

Figure 10. Historical Annual Groundwater Extractions from Santa Paula Basin, CYs 1980 through 2018

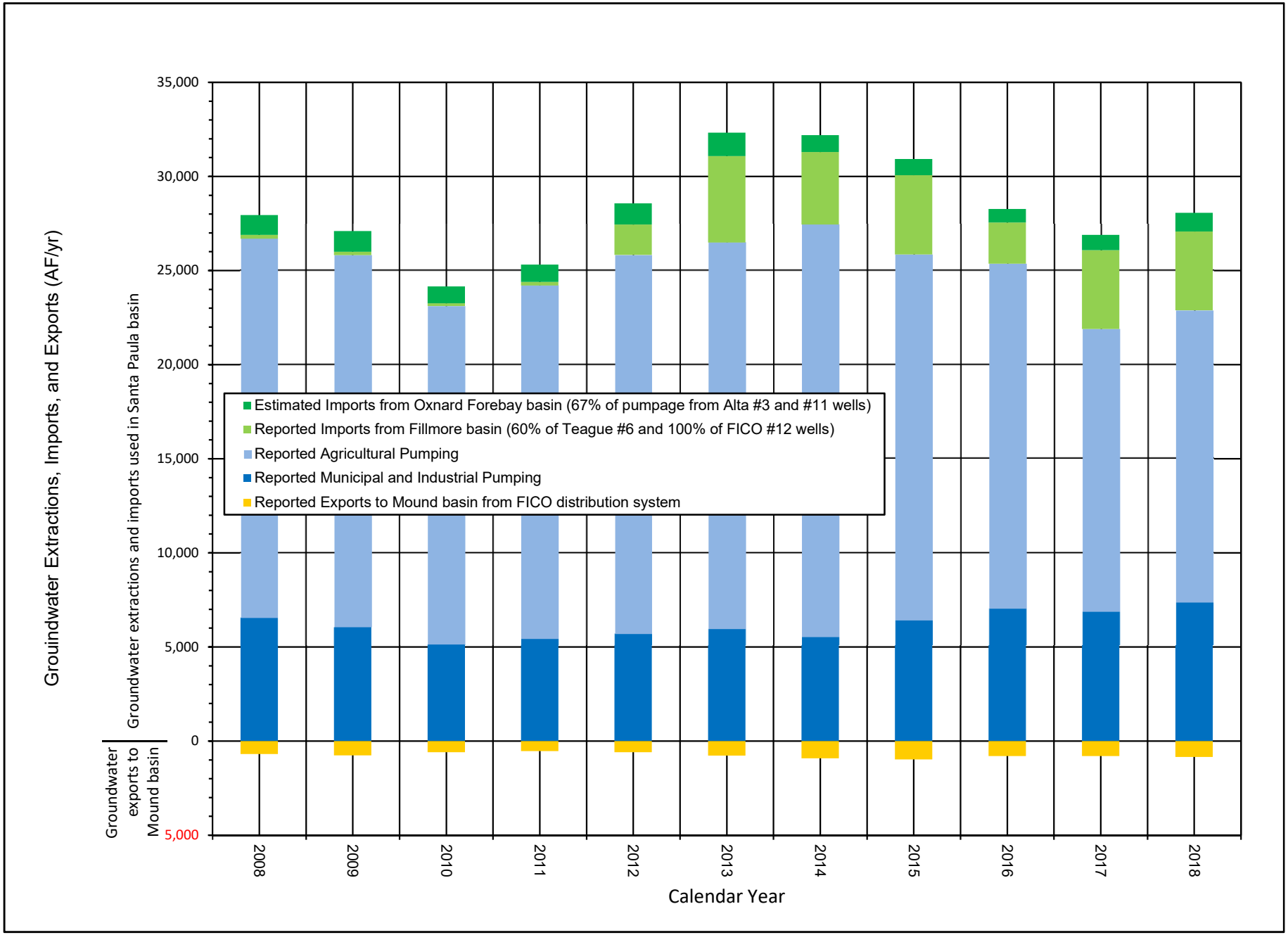

Figure 11. Annual Groundwater Extractions, Imports, and Exports from Santa Paula Basin, CYs 2008 through 2018

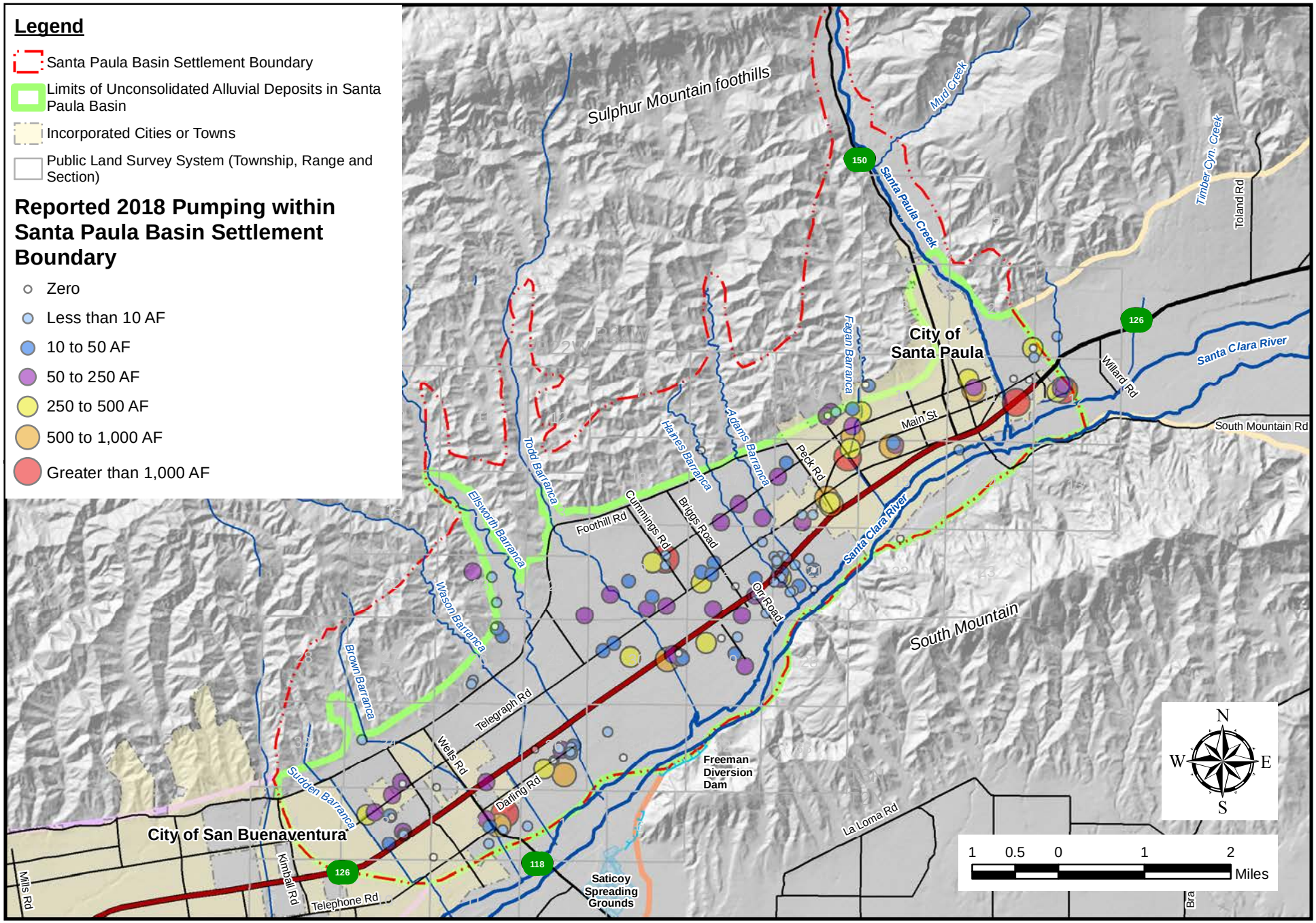

Figure 12. Santa Paula Basin Groundwater Extractions by Well, CY 2018

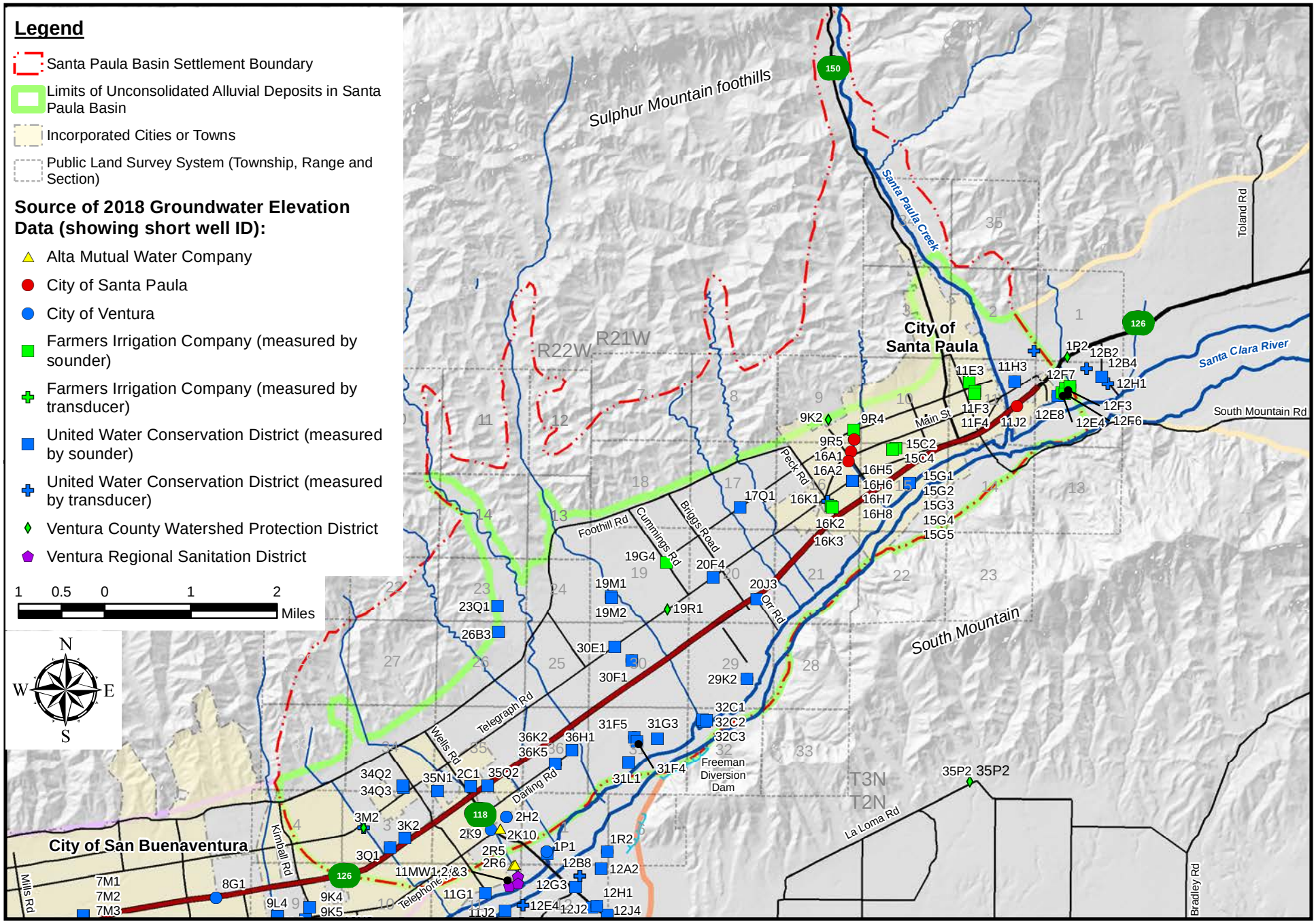

Figure 13. Locations of Wells used to Monitor Groundwater Levels in and Adjacent to Santa Paula Basin, CY 2018

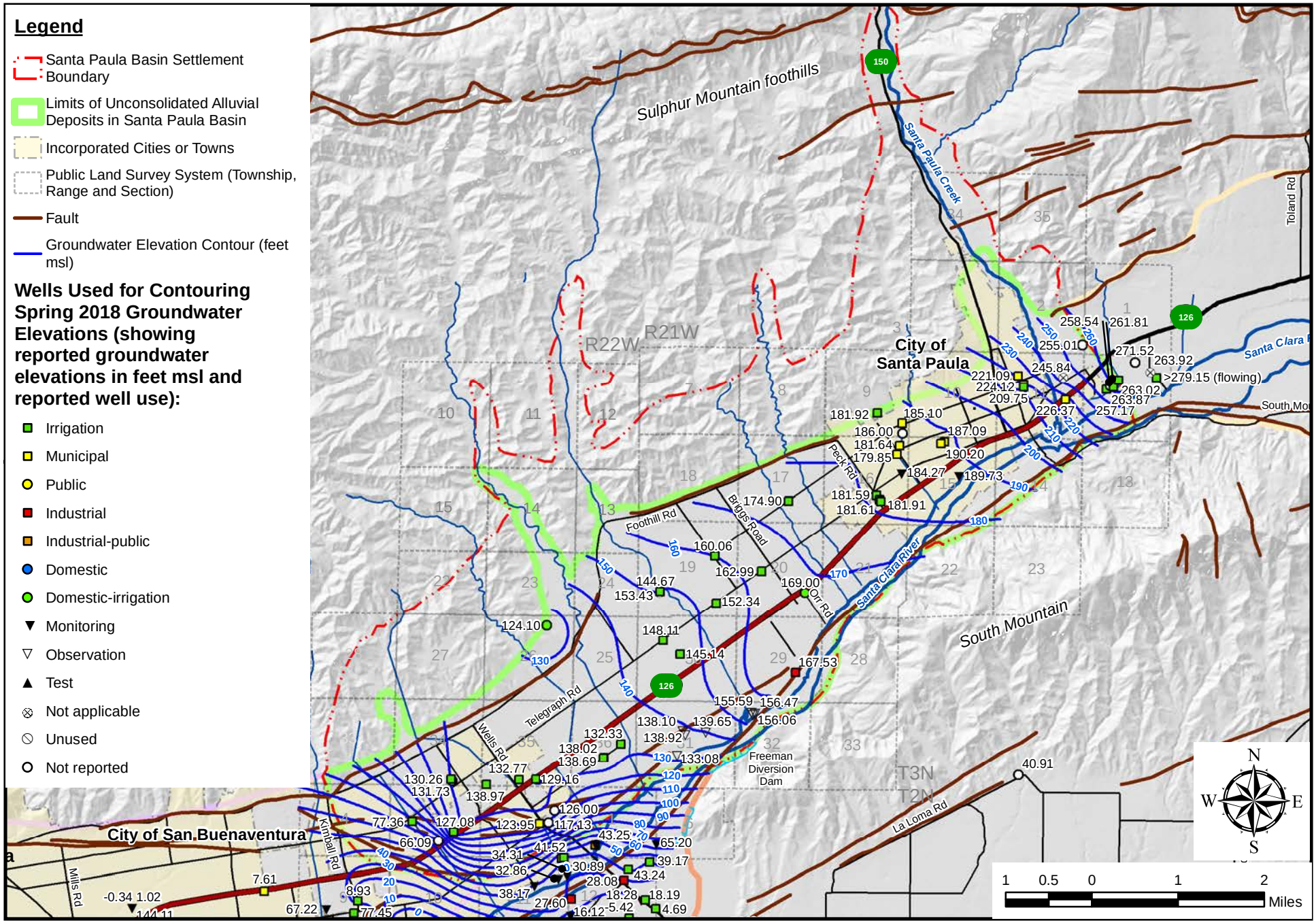

Figure 14. Santa Paula Basin Groundwater Elevation Contours, Spring 2018

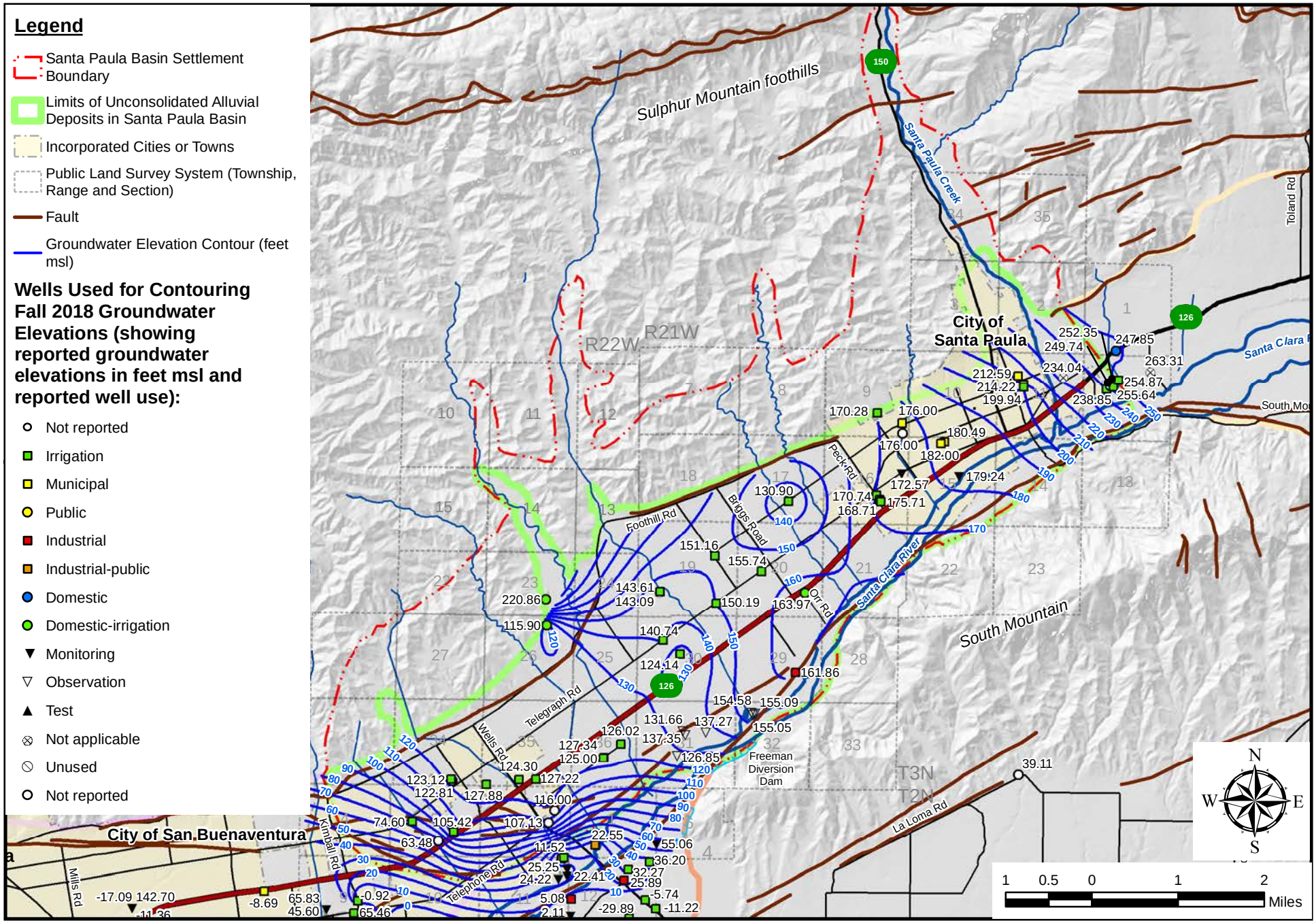

Figure 15. Santa Paula Basin Groundwater Elevation Contours, Fall 2018

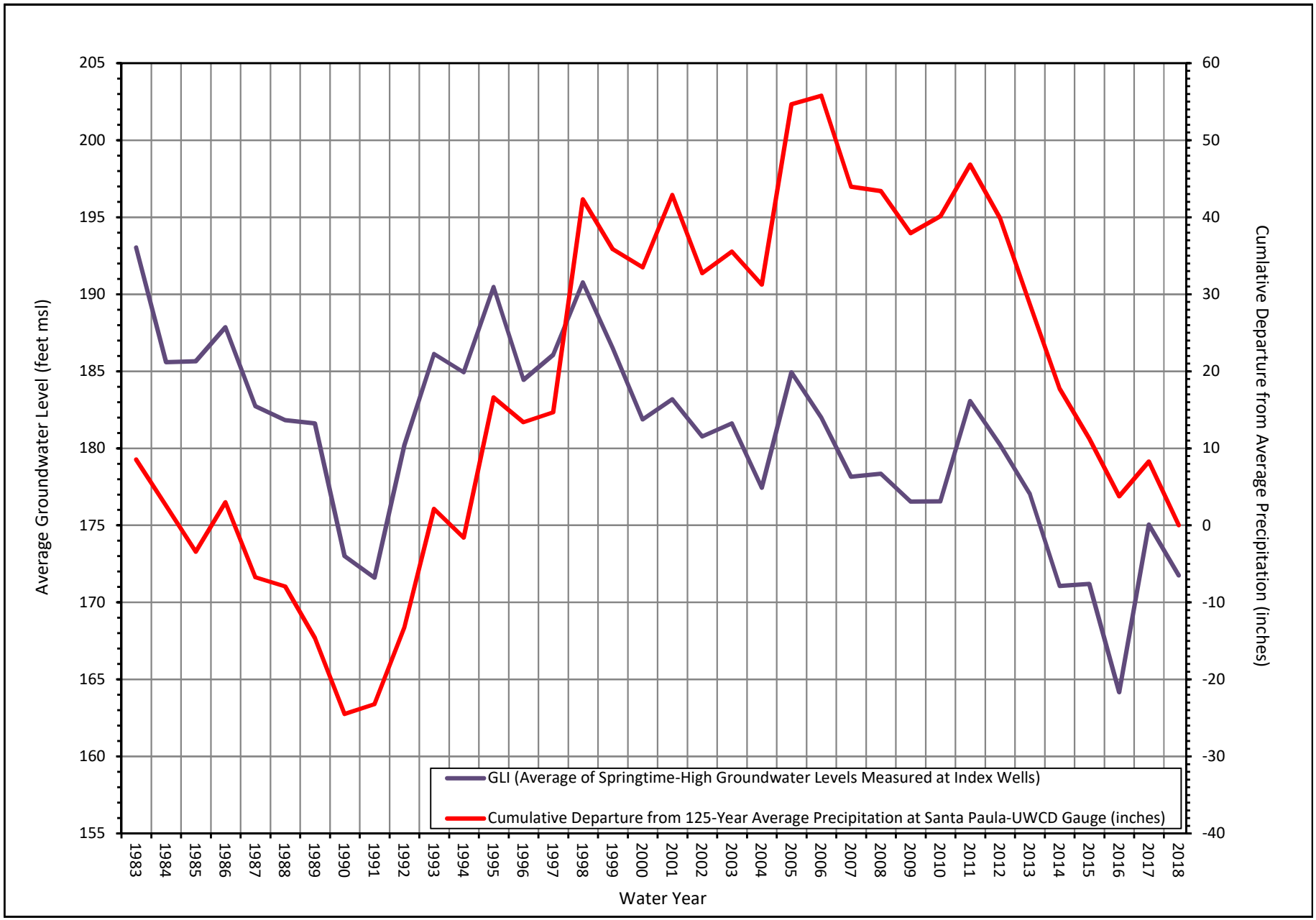

Figure 16. Groundwater Level Index and Cumulative Departure from Average Precipitation in Santa Paula Basin

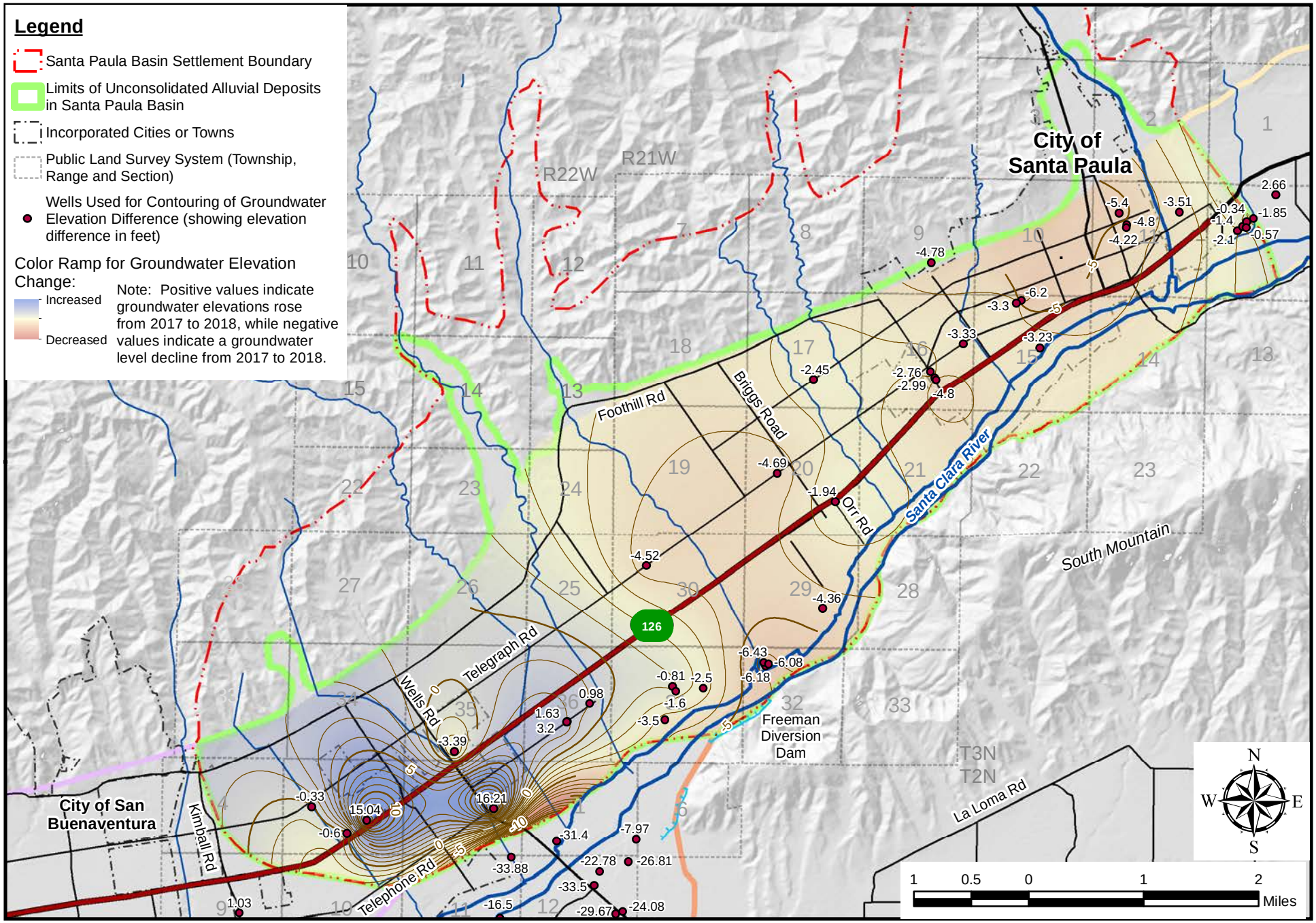

Figure 17. Change in Groundwater Elevation in Unconsolidated Alluvial Deposits of Santa Paula Basin, Spring 2017 to Spring 2018

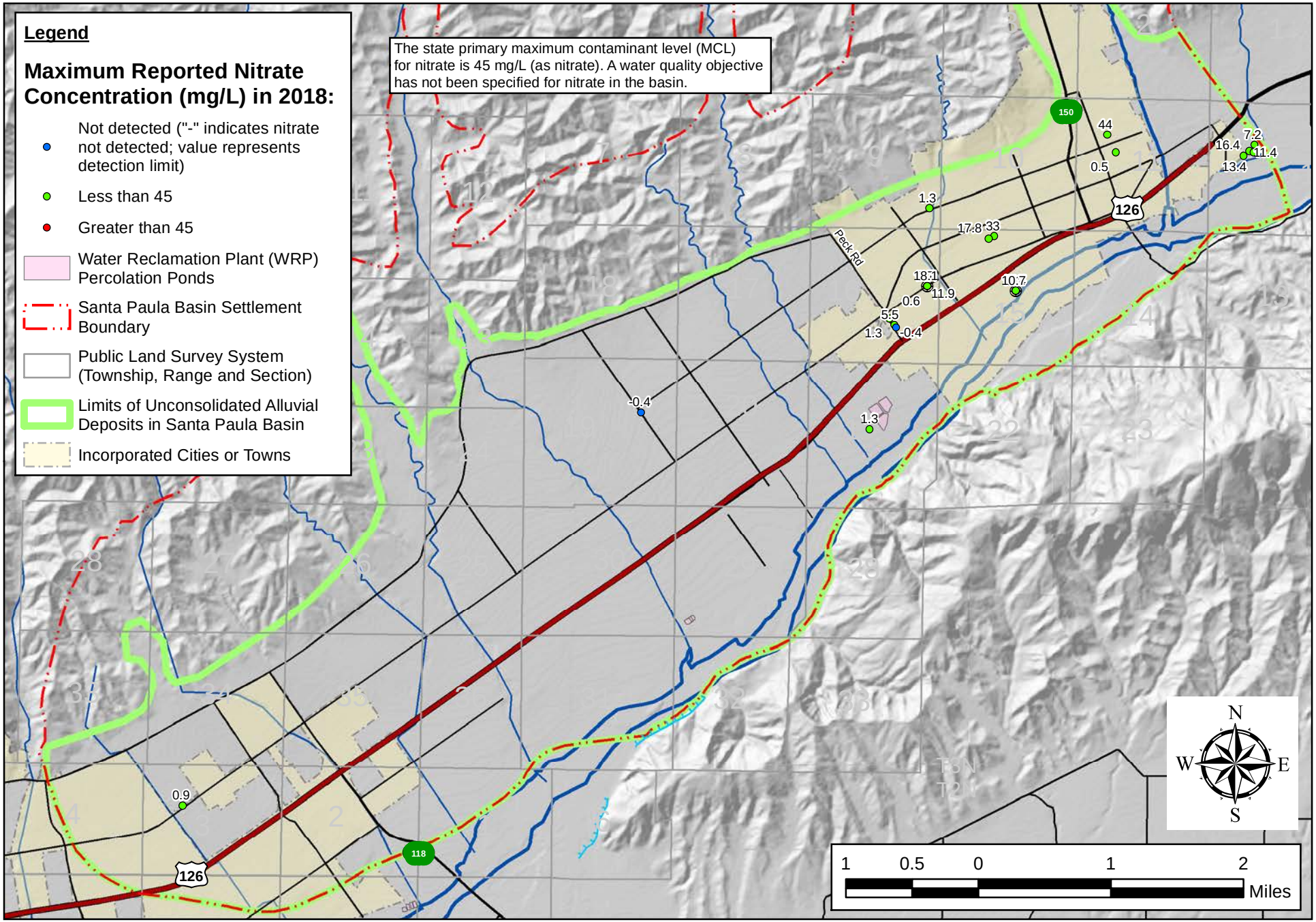

Figure 18. Maximum Reported Nitrate Concentrations in Groundwater, CY 2018

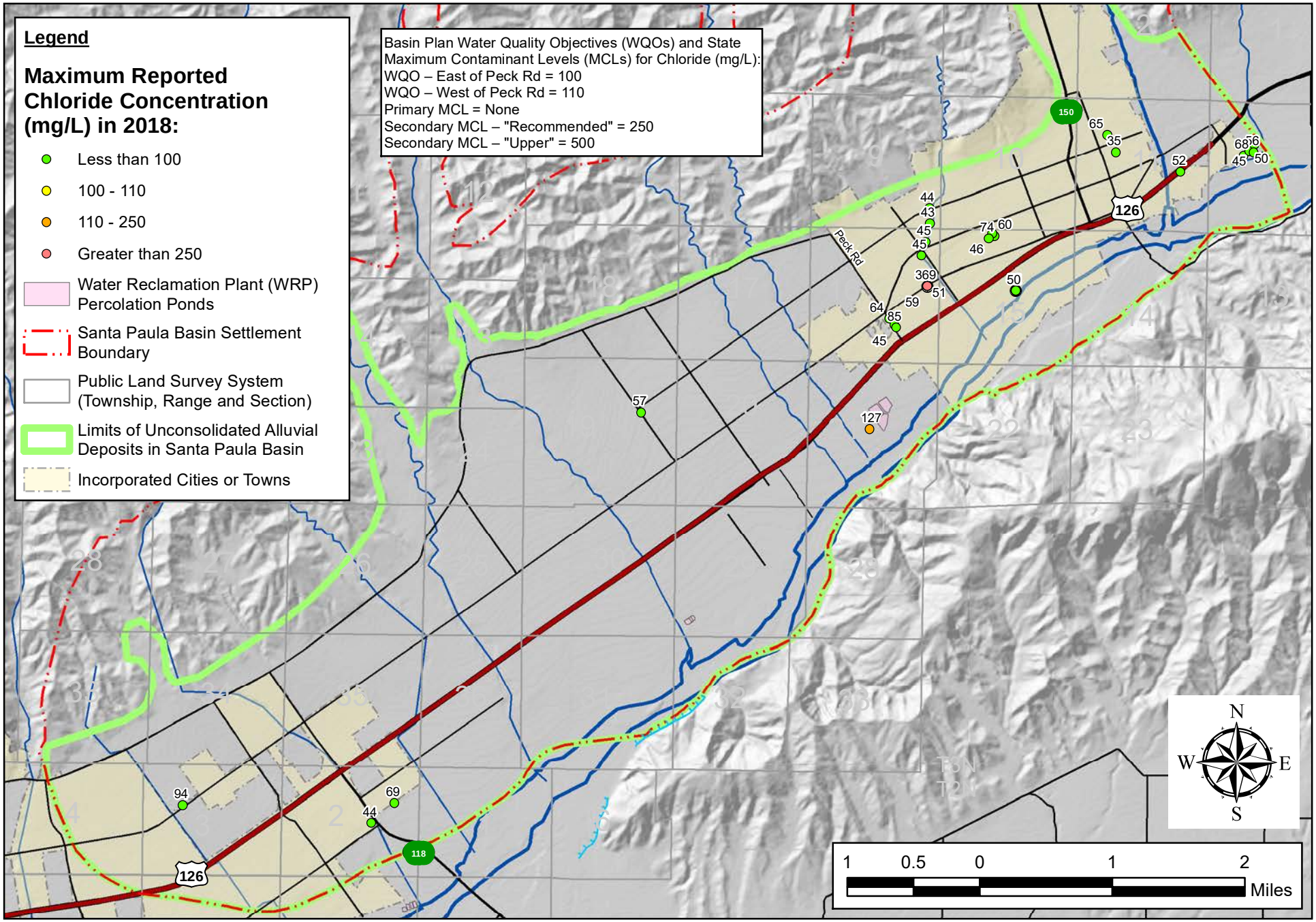

Figure 19. Maximum Reported Chloride Concentrations in Groundwater, CY 2018

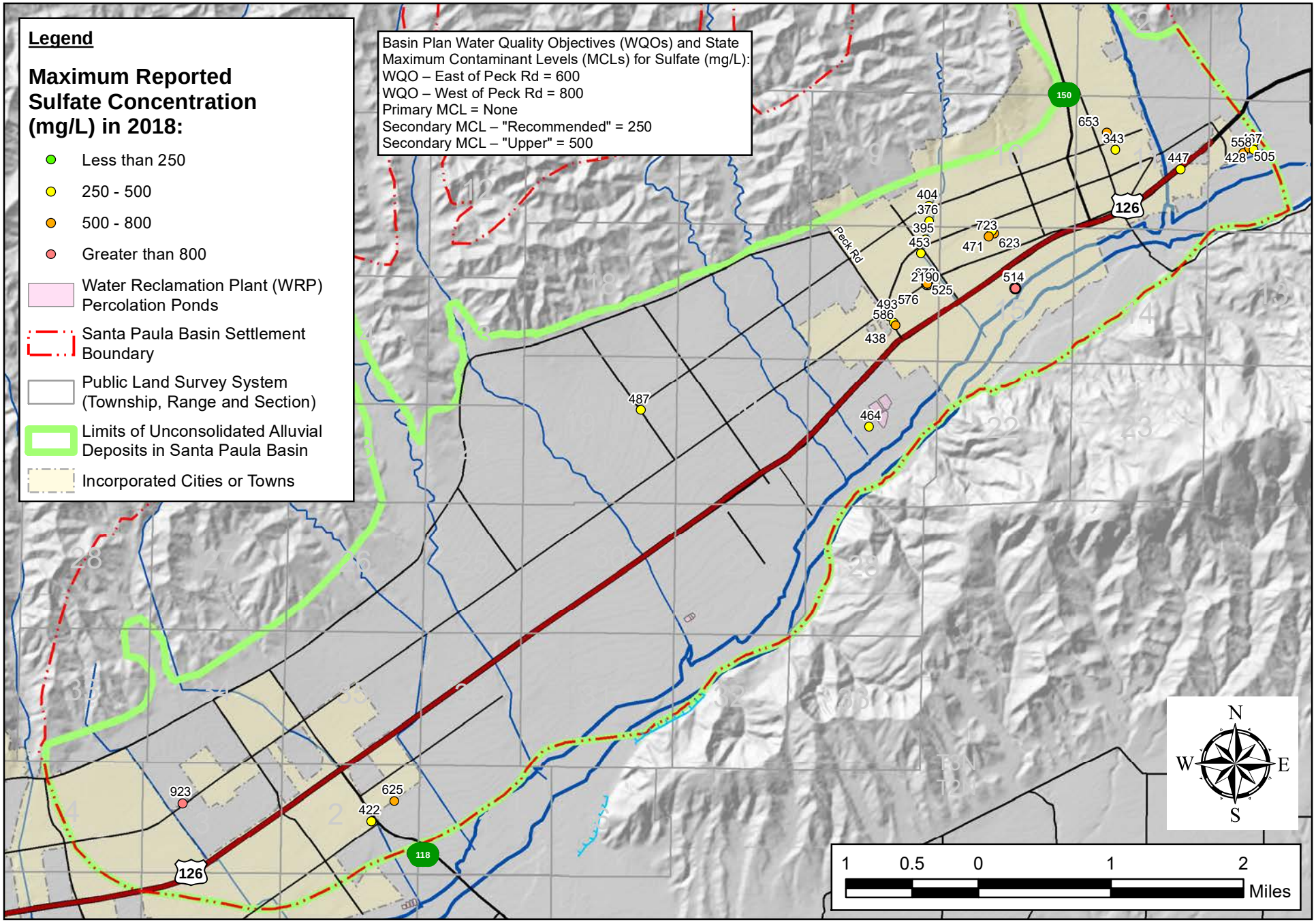

Figure 20. Maximum Reported Sulfate Concentrations in Groundwater, CY 2018

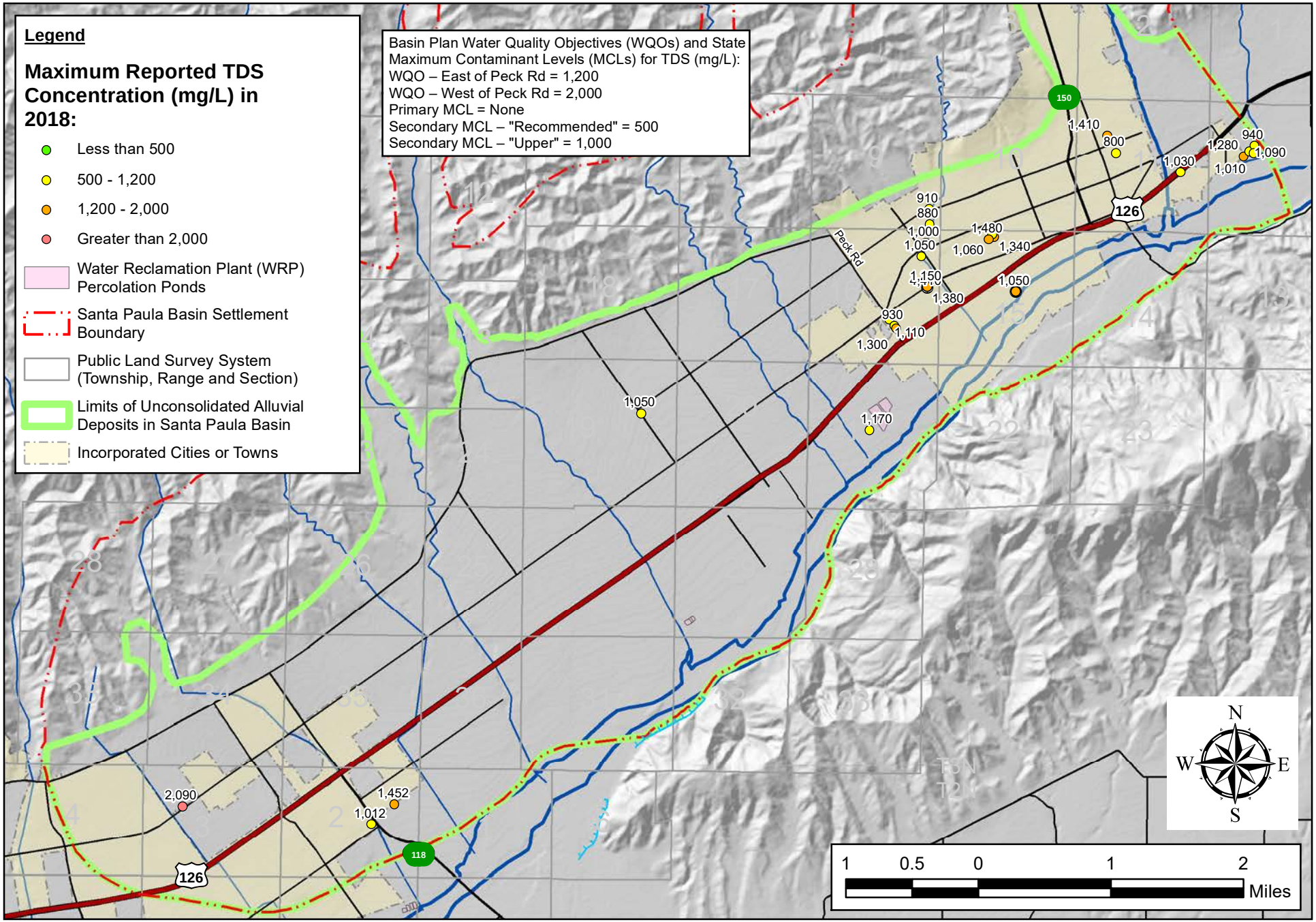

Figure 21. Maximum Reported Total Dissolved Solids (TDS) Concentrations in Groundwater, CY 2018

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APPENDIX A - Historical Precipitation and Streamflow Tables

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APPENDIX A - Table A-1. Santa Paula - UWCD Historical Precipitation

WATER YEAR (WY)	MONTHLY PRECIPITATION (inches)												WY PRECIPITATION (inches)	CUMULATIVE DEPARTURE (inches)	CALENDAR YEAR PRECIPITATION (inches)
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			
1890	6.30	1.81	16.55	5.40	2.00	0.47	0.05	0.00	0.00	0.00	0.00	0.62	33.20	16.07	11.46
1891	0.00	0.34	2.58	0.48	8.73	1.40	0.82	0.13	0.00	0.00	0.00	0.19	14.67	13.61	13.27
1892	0.00	0.00	1.52	0.70	3.99	3.24	0.54	1.80	0.00	0.00	0.00	0.00	11.79	8.28	24.31
1893	0.56	7.30	6.18	2.30	2.81	6.81	0.40	0.00	0.00	0.00	0.00	0.00	26.36	17.51	17.03
1894	0.87	0.20	3.64	1.04	0.55	0.42	0.23	0.46	0.00	0.10	0.00	0.98	8.49	8.87	5.05
1895	0.14	0.18	0.95	5.42	0.00	4.77	0.00	0.00	0.00	0.00	0.00	0.00	11.46	3.20	10.19
1896	0.00	0.00	0.00	5.03	4.98	3.24	0.00	0.00	0.00	0.00	0.00	0.45	13.70	-0.23	13.70
1897	0.00	0.00	0.00	5.03	4.98	3.24	0.00	0.00	0.00	0.00	0.00	0.45	13.70	-3.65	14.87
1898	1.17	0.00	0.00	0.92	0.70	1.55	0.00	1.22	0.00	0.00	0.00	0.86	6.42	-14.36	5.59
1899	0.08	0.00	0.26	3.44	0.00	2.41	0.35	0.00	0.00	0.00	0.00	0.00	6.54	-24.95	10.87
1900	1.84	1.17	1.66	1.67	0.00	1.36	0.38	1.49	0.00	0.00	0.00	0.00	9.57	-32.51	9.61
1901	0.00	4.71	0.00	4.57	4.34	0.42	0.91	1.14	0.00	0.00	0.00	0.71	16.80	-32.84	14.87
1902	2.24	0.54	0.00	1.30	4.49	3.31	0.50	0.00	0.00	0.00	0.00	0.00	12.38	-37.59	15.38
1903	0.00	4.75	1.03	1.66	1.98	6.23	2.65	0.10	0.00	0.00	0.00	0.00	18.40	-36.31	12.62
1904	0.00	0.00	0.00	0.31	3.83	5.94	1.46	0.00	0.00	0.00	0.00	1.82	13.36	-40.08	15.92
1905	0.38	0.00	2.18	2.54	8.02	5.50	0.67	3.15	0.00	0.00	0.00	0.00	22.44	-34.77	21.38
1906	0.00	1.50	0.00	3.35	3.60	9.03	0.40	0.05	0.00	0.00	0.00	0.00	17.93	-33.97	22.68
1907	0.00	0.00	6.25	13.23	1.95	6.22	0.18	0.00	0.00	0.00	0.00	0.00	27.83	-23.27	24.88
1908	2.72	0.00	0.58	5.73	4.56	0.05	0.94	0.00	0.00	0.00	0.00	0.55	15.13	-25.26	15.48
1909	0.15	2.40	1.10	10.88	5.94	4.88	0.00	0.00	0.00	0.00	0.00	0.00	25.35	-17.04	30.46
1910	0.13	1.36	7.27	2.82	0.00	2.36	0.00	0.00	0.00	0.00	0.00	2.78	16.72	-17.45	9.23
1911	0.62	0.33	0.32	9.54	2.88	5.53	0.00	0.00	0.00	0.00	0.00	0.07	19.29	-15.29	19.23
1912	0.00	0.00	1.21	0.18	0.00	7.17	1.67	0.84	0.00	0.00	0.00	0.00	11.07	-21.35	10.53
1913	0.56	0.11	0.00	3.79	9.51	0.00	0.47	0.00	0.47	0.00	0.50	0.00	15.41	-23.06	20.16
1914	0.00	3.09	2.33	12.73	8.40	0.66	0.76	0.51	0.00	0.00	0.00	0.00	28.48	-11.71	27.67
1915	0.15	0.13	4.33	5.38	9.30	0.98	1.16	1.69	0.00	0.00	0.00	0.00	23.12	-5.72	21.79
1916	0.00	0.68	2.60	18.17	1.07	0.53	0.00	0.00	0.00	0.00	0.00	1.44	24.49	1.64	30.00
1917	2.36	0.00	6.43	3.24	7.24	0.12	0.37	0.19	0.00	0.00	0.00	0.00	19.95	4.46	11.46
1918	0.00	0.30	0.00	0.26	13.00	6.28	0.00	0.00	0.00	0.26	0.00	1.78	21.88	9.22	25.76
1919	0.00	3.01	1.17	1.33	1.89	2.65	0.00	0.22	0.00	0.00	0.00	1.71	11.98	4.07	10.43
1920	0.33	0.12	2.18	0.41	2.93	5.74	0.82	0.00	0.00	0.00	0.00	0.00	12.53	-0.53	13.39
1921	0.30	1.86	1.33	6.60	1.02	1.99	0.23	3.95	0.00	0.00	0.00	0.17	17.45	-0.21	24.96
1922	0.34	0.00	10.66	4.55	3.43	1.49	0.00	0.46	0.00	0.00	0.00	0.00	20.93	3.59	19.00
1923	0.43	1.63	7.01	1.86	1.03	0.00	2.97	0.00	0.00	0.00	0.00	0.14	15.07	1.53	6.76
1924	0.72	0.00	0.04	1.94	0.18	3.46	1.23	0.00	0.00	0.00	0.00	0.00	7.57	-8.02	10.03
1925	1.02	1.12	1.08	0.31	1.25	2.25	2.02	0.88	0.08	0.00	0.00	0.00	10.01	-15.14	10.72
1926	0.81	0.89	2.23	2.04	4.42	0.12	5.72	0.16	0.02	0.00	0.00	0.00	16.41	-15.86	19.38
1927	0.13	5.49	1.28	1.89	10.66	2.34	1.53	0.00	0.00	0.00	0.00	0.00	23.32	-9.67	22.17
1928	1.84	1.27	2.64	0.00	2.27	2.25	0.29	0.59	0.00	0.00	0.00	0.00	11.15	-15.65	10.79
1929	0.06	2.04	3.29	2.47	2.10	1.51	1.89	0.00	0.12	0.00	0.00	0.69	14.17	-18.60	8.78
1930	0.00	0.00	0.00	6.58	0.92	3.14	0.17	0.76	0.00	0.00	0.00	0.02	11.59	-24.14	14.29
1931	0.02	2.68	0.00	3.94	4.09	0.00	2.00	1.25	0.00	0.00	0.21	0.00	14.19	-27.08	25.40
1932	0.05	3.13	10.73	5.78	0.09	0.54	0.02	0.05	0.00	0.00	0.00	0.15	20.54	-23.67	7.77
1933	0.24	0.00	0.90	8.84	0.00	0.23	0.32	0.13	0.40	0.00	0.09	0.00	11.15	-29.65	17.31
1934	0.44	0.00	6.86	3.19	3.85	0.00	0.00	0.00	0.00	0.52	0.00	0.08	14.94	-31.83	17.18
1935	1.62	3.16	4.76	3.97	0.82	3.31	3.50	0.00	0.00	0.00	0.25	0.00	21.39	-27.57	15.08
1936	0.37	1.12	1.74	0.17	10.32	1.91	0.69	0.00	0.00	0.00	0.00	0.00	16.32	-28.38	23.60
1937	4.16	0.00	6.35	3.24	7.93	4.48	0.12	0.21	0.00	0.00	0.00	0.00	26.49	-19.02	20.90
1938	0.00	0.00	4.92	0.87	9.49	11.17	1.23	0.09	0.00	0.00	0.00	0.25	28.02	-8.13	30.09
1939	0.00	0.00	6.99	2.95	1.33	2.29	0.53	0.00	0.00	0.00	0.00	1.59	15.68	-9.58	10.22
1940	0.00	0.31	1.22	3.57	5.24	0.73	2.22	0.00	0.00	0.00	0.00	0.00	13.29	-13.41	21.02
1941	1.80	0.15	7.31	5.97	10.52	8.70	3.66	0.00	0.00	0.00	0.00	0.00	38.11	7.57	36.80
1942	1.01	0.44	6.50	0.47	0.54	1.91	3.32	0.00	0.00	0.00	0.00	0.00	14.19	4.63	8.50
1943	1.07	0.19	1.00	16.53	2.96	6.42	0.81	0.00	0.00	0.00	0.00	0.00	28.98	16.48	34.96
1944	0.14	0.20	7.90	1.44	10.02	3.49	1.18	0.00	0.00	0.00	0.00	0.00	24.37	23.72	20.28
1945	0.00	3.13	1.02	0.02	5.69	5.27	0.00	0.00	0.00	0.00	0.00	0.00	15.13	21.73	16.79
1946	1.00	0.26	4.55	0.25	1.45	3.59	0.22	0.00	0.00	0.00	0.00	0.00	11.32	15.92	16.83
1947	0.45	7.21	3.66	0.46	0.29	0.62	0.08	0.06	0.03	0.00	0.43	0.00	13.29	12.08	3.30
1948	0.05	0.00	1.28	0.00	1.22	3.83	1.79	0.06	0.04	0.00	0.00	0.00	8.27	3.22	10.18

APPENDIX A - Table A-1. Santa Paula - UWCD Historical Precipitation

WATER YEAR (WY)	MONTHLY PRECIPITATION (inches)												WY PRECIPITATION (inches)	CUMULATIVE DEPARTURE (inches)	CALENDAR YEAR PRECIPITATION (inches)
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			
1949	0.00	0.00	3.24	2.39	1.43	1.54	0.07	1.06	0.06	0.00	0.00	0.00	9.79	-4.12	12.06
1950	0.00	1.18	4.33	3.17	2.59	0.93	1.11	0.00	0.00	0.02	0.00	0.24	13.57	-7.67	9.61
1951	0.45	0.94	0.16	2.53	1.32	0.86	1.89	0.00	0.00	0.00	0.00	0.00	8.15	-16.65	14.92
1952	0.88	2.47	4.97	12.29	0.10	9.52	1.68	0.00	0.00	0.00	0.00	0.00	31.91	-1.87	31.27
1953	0.00	3.38	4.30	1.33	0.00	0.55	1.26	0.00	0.00	0.00	0.00	0.00	10.82	-8.18	5.34
1954	0.00	2.13	0.07	4.85	3.38	3.56	0.38	0.00	0.00	0.00	0.00	0.00	14.37	-10.94	14.21
1955	0.00	0.93	1.11	5.25	1.56	0.33	2.24	1.94	0.00	0.00	0.02	0.00	13.38	-14.68	15.84
1956	0.00	1.38	3.12	6.98	0.72	0.00	2.18	0.95	0.00	0.00	0.00	0.00	15.33	-16.48	11.09
1957	0.01	0.00	0.25	5.75	1.88	2.07	1.17	0.62	0.16	0.00	0.00	0.00	11.91	-21.70	19.05
1958	2.48	0.53	4.39	2.82	7.27	8.14	5.48	0.00	0.00	0.00	0.00	0.26	31.37	-7.46	24.09
1959	0.05	0.07	0.00	2.07	3.91	0.00	0.55	0.00	0.00	0.00	0.00	0.02	6.67	-17.92	8.03
1960	0.09	0.00	1.39	3.95	2.80	0.50	2.70	0.00	0.00	0.00	0.00	0.00	11.43	-23.62	14.75
1961	0.00	4.27	0.53	1.24	0.00	0.49	0.02	0.00	0.00	0.00	0.03	0.04	6.62	-34.12	6.45
1962	0.00	3.57	1.06	2.46	17.26	1.27	0.00	0.07	0.01	0.00	0.00	0.00	25.70	-25.55	21.42
1963	0.31	0.00	0.04	0.69	8.04	0.00	2.47	0.11	0.49	0.00	0.17	1.37	13.69	-28.99	17.18
1964	0.46	3.30	0.08	2.68	0.00	2.00	0.76	0.02	0.11	0.00	0.01	0.00	9.42	-36.70	12.09
1965	0.66	1.30	4.55	0.54	0.07	1.08	4.94	0.00	0.01	0.02	0.11	0.18	13.46	-40.37	21.51
1966	0.00	9.60	4.96	1.52	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.09	17.24	-40.25	12.76
1967	0.20	3.62	6.26	4.58	0.24	2.24	5.02	0.04	0.00	0.00	0.00	0.32	22.52	-34.86	20.04
1968	0.00	6.39	1.21	0.99	1.24	3.47	0.90	0.03	0.00	0.00	0.19	0.00	14.42	-37.57	9.78
1969	0.80	0.68	1.48	17.95	7.75	0.85	0.96	0.01	0.00	0.09	0.00	0.01	30.58	-24.12	29.49
1970	0.00	1.79	0.08	2.34	3.70	6.04	0.00	0.00	0.00	0.00	0.00	0.00	13.95	-27.30	26.49
1971	0.02	7.09	7.30	1.01	0.71	0.69	0.59	0.51	0.00	0.00	0.00	0.01	17.93	-26.49	12.09
1972	0.11	0.43	8.03	0.12	0.26	0.00	0.08	0.04	0.04	0.00	0.00	0.00	9.11	-34.51	6.35
1973	0.31	4.57	0.93	5.89	9.00	2.61	0.00	0.01	0.00	0.00	0.00	0.00	23.32	-28.32	20.81
1974	0.24	1.95	1.11	9.52	0.06	2.93	0.07	0.00	0.00	0.00	0.00	0.00	15.88	-29.57	20.67
1975	1.03	0.10	6.96	0.00	3.86	4.59	1.46	0.00	0.00	0.00	0.00	0.06	18.06	-28.64	10.22
1976	0.18	0.00	0.07	0.00	5.33	1.39	0.72	0.02	0.10	0.01	0.00	4.05	11.87	-33.89	12.49
1977	0.00	0.22	0.65	6.74	0.21	2.04	0.00	2.03	0.00	0.00	0.99	0.00	12.88	-38.14	16.72
1978	0.03	0.15	4.53	8.11	8.54	11.57	2.25	0.00	0.00	0.00	0.00	0.90	36.08	-19.19	35.90
1979	0.18	2.03	2.32	6.37	3.97	7.17	0.00	0.02	0.02	0.00	0.00	0.09	22.17	-14.15	20.74
1980	0.46	0.83	1.81	8.32	12.95	3.82	0.41	0.23	0.00	0.00	0.00	0.02	28.85	-2.43	27.02
1981	0.00	0.00	1.27	2.26	1.58	6.07	0.68	0.02	0.00	0.00	0.00	0.00	11.88	-7.68	13.87
1982	0.50	2.20	0.56	2.55	0.58	5.66	1.93	0.00	0.00	0.00	0.00	0.86	14.84	-9.96	19.22
1983	0.53	4.53	2.58	9.52	5.35	6.76	4.27	0.10	0.00	0.00	0.97	1.02	35.63	8.54	38.31
1984	2.96	3.36	4.00	0.00	0.00	0.37	0.09	0.00	0.00	0.00	0.04	0.33	11.15	2.56	7.84
1985	0.22	2.86	3.93	1.84	1.06	1.18	0.00	0.01	0.00	0.02	0.00	0.04	11.16	-3.41	8.91
1986	0.43	3.62	0.71	3.60	8.72	4.59	1.21	0.00	0.00	0.00	0.00	0.65	23.53	2.99	20.74
1987	0.03	1.64	0.30	1.85	1.02	2.16	0.21	0.02	0.05	0.09	0.00	0.03	7.40	-6.73	12.73
1988	1.48	1.18	4.64	2.63	2.07	0.67	3.22	0.00	0.04	0.00	0.00	0.00	15.93	-7.93	13.98
1989	0	1.08	4.27	0.49	3.50	0.80	0.04	0.22	0.00	0.00	0.00	0.05	10.45	-14.61	5.90
1990	0.27	0.43	0.10	2.74	2.49	0.00	0.44	0.74	0.00	0.00	0.04	0.00	7.25	-24.49	7.03
1991	0.00	0.52	0.06	1.18	2.87	13.64	0.04	0.00	0.03	0.00	0.01	0.05	18.40	-23.22	22.49
1992	0.40	0.17	4.10	2.48	12.51	7.02	0.04	0.01	0.00	0.36	0.00	0.00	27.09	-13.25	29.10
1993	1.65	0.00	5.03	10.62	10.66	3.77	0.00	0.14	0.65	0.00	0.00	0.00	32.52	2.14	28.59
1994	0.28	0.79	1.68	0.60	6.29	2.98	0.31	0.35	0.00	0.00	0.00	0.11	13.39	-1.60	13.85
1995	0.98	1.05	1.18	19.87	1.34	9.02	0.47	1.04	0.37	0.02	0.00	0.00	35.34	16.61	34.32
1996	0.00	0.15	2.04	1.04	7.85	2.04	0.50	0.28	0.00	0.00	0.00	0.00	13.90	13.38	23.11
1997	2.47	2.57	6.36	6.67	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.12	18.41	14.67	16.10
1998	0.00	2.31	6.78	2.79	20.13	3.87	2.03	6.04	0.01	0.00	0.00	0.81	44.77	42.31	37.13
1999	0.00	0.83	0.62	2.44	1.02	2.65	2.56	0.00	0.38	0.00	0.00	0.17	10.67	35.85	9.98
2000	0.00	0.76	0	1.92	6.76	2.56	2.61	0.00	0.00	0.00	0.00	0.15	14.76	33.48	15.48
2001	1.47	0.00	0.01	7.02	9.21	7.10	1.73	0.00	0.00	0.00	0.00	0.00	26.54	42.89	30.06
2002	0.27	3.21	1.52	1.02	0.38	0.37	0.07	0.09	0.00	0.00	0.00	0.05	6.98	32.74	10.48
2003	0.00	5.22	3.28	0.00	4.75	3.53	1.77	1.30	0.09	0.00	0.00	0.00	19.94	35.55	16.02
2004	0.00	2.73	1.85	0.64	6.78	0.49	0.33	0.00	0.00	0.00	0.00	0.00	12.82	31.24	18.63
2005	4.74	0.03	5.62	15.85	10.56	2.53	0.80	0.25	0.00	0.00	0.00	0.16	40.54	54.66	32.37
2006	1.00	0.70	0.52	3.41	3.58	4.00	3.87	1.17	0.00	0.00	0.00	0.00	18.25	55.78	17.29
2007	0.27	0.10	0.89	2.04	0.79	0.07	0.84	0.00	0.00	0.00	0.00	0.30	5.30	43.95	7.90

APPENDIX A - Table A-1. Santa Paula - UWCD Historical Precipitation

WATER YEAR (WY)	MONTHLY PRECIPITATION (inches)												WY PRECIPITATION (inches)	CUMULATIVE DEPARTURE (inches)	CALENDAR YEAR PRECIPITATION (inches)
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			
2008	0.26	0.15	3.45	10.78	1.85	0.00	0.05	0.04	0.00	0.00	0.00	0.00	16.58	43.40	17.43
2009	0.10	2.34	2.27	0.81	5.45	0.57	0.12	0.00	0.01	0.00	0.00	0.00	11.67	37.94	13.07
2010	2.66	0.00	3.45	7.29	3.51	0.41	1.87	0.13	0.00	0.01	0.00	0.00	19.33	40.14	26.01
2011	2.11	1.07	9.61	0.30	3.64	6.03	0.00	0.89	0.14	0.00	0.00	0.01	23.80	46.82	14.62
2012	1.58	1.87	0.16	1.35	0.03	2.93	2.20	0.00	0.00	0.00	0.05	0.01	10.18	39.87	10.22
2013	0.00	1.60	2.05	1.25	0.09	0.90	0.02	0.11	0.00	0.01	0.00	0.00	6.03	28.77	3.28
2014	0.02	0.56	0.32	0.00	3.32	1.83	0.03	0.03	0.00	0.00	0.01	0.00	6.12	17.76	9.83
2015	0.00	0.85	3.76	1.63	0.63	0.62	0.21	0.37	0.10	1.63	0.00	0.83	10.63	11.26	6.51
2016	0.04	0.02	0.43	5.43	0.45	2.93	0.22	0.11	0.00	0.00	0.00	0.00	9.63	3.77	14.06
2017	0.73	0.62	3.57	7.69	8.40	0.37	0.13	0.11	0.00	0.00	0.00	0.03	21.65	8.29	16.73
2018	0.00	0.00	0.00	2.24	0.06	6.48	0.01	0.05	0.00	0.00	0.00	0.00	8.84	0.00	12.66
2019	0.24	2.14	1.44	8.35	6.26	2.57	0.02	1.21					---	---	---
AVERAGE:	**0.58**	**1.44**	**2.74**	**3.90**	**3.86**	**2.94**	**1.01**	**0.33**	**0.03**	**0.02**	**0.03**	**0.24**	**17.13**	**---**	**16.97**
MEDIAN:	**0.18**	**0.76**	**1.68**	**2.53**	**2.81**	**2.25**	**0.50**	**0.02**	**0.00**	**0.00**	**0.00**	**0.00**	**14.84**	**---**	**15.48**

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APPENDIX A - Table A-2. Santa Clara River at Freeman Diversion Historical Annual Streamflow

WATER YEAR	ACRE-FEET	WATER YEAR	ACRE-FEET	WATER YEAR	ACRE-FEET	WATER YEAR	ACRE-FEET
1956	30,140	**1972**	58,807	**1988**	76,426	**2004**	59,397
1957	18,668	**1973**	265,962	**1989**	26,610	**2005**	1,153,883
1958	352,671	**1974**	123,279	**1990**	10,787	**2006**	246,950
1959	55,462	**1975**	110,294	**1991**	117,639	**2007**	51,065
1960	14,557	**1976**	37,116	**1992**	333,441	**2008**	214,847
1961	6,209	**1977**	28,818	**1993**	963,059	**2009**	74,645
1962	272,542	**1978**	748,780	**1994**	131,823	**2010**	143,938
1963	28,495	**1979**	297,212	**1995**	908,663	**2011**	257,205
1964	15,345	**1980**	523,154	**1996**	125,982	**2012**	57,761
1965	23,696	**1981**	108,357	**1997**	166,052	**2013**	22,696
1966	207,602	**1982**	103,255	**1998**	788,007	**2014**	23,213
1967	205,577	**1983**	719,692	**1999**	119,559	**2015**	6,670
1968	54,656	**1984**	136,205	**2000**	130,933	**2016**	5,825
1969	982,425	**1985**	54,431	**2001**	251,235	**2017**	98,843
1970	129,540	**1986**	226,857	**2002**	58,072	**2018**	10,116
1971	130,717	**1987**	38,796	**2003**	93,844		
						AVERAGE	203,786
						MEDIAN	110,294

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APPENDIX A - Table A-3. Santa Paula Creek Historical Annual Streamflow

WATER YEAR	ACRE-FEET	WATER YEAR	ACRE-FEET	WATER YEAR	ACRE-FEET	WATER YEAR	ACRE-FEET
1928	1,332	**1951**	992	**1974**	11,552	**1997**	18,015
1929	1,801	**1952**	30,882	**1975**	11,506	**1998**	80,799
1930	1,554	**1953**	4,340	**1976**	3,906	**1999**	5,562
1931	3,014	**1954**	5,861	**1977**	2,361	**2000**	8,609
1932	19,958	**1955**	3,012	**1978**	87,150	**2001**	24,461
1933	7,485	**1956**	5,257	**1979**	20,453	**2002**	2,513
1934	11,353	**1957**	3,527	**1980**	34,108	**2003**	8,563
1935	12,830	**1958**	47,074	**1981**	5,818	**2004**	5,054
1936	13,444	**1959**	5,593	**1982**	9,177	**2005**	107,309
1937	31,909	**1960**	2,123	**1983**	70,594	**2006**	22,708
1938	44,310	**1961**	1,254	**1984**	8,017	**2007**	3,305
1939	8,465	**1962**	26,203	**1985**	3,394	**2008**	27,945
1940	5,297	**1963**	3,340	**1986**	20,486	**2009**	4,393
1941	57,682	**1964**	3,026	**1987**	3,179	**2010**	16,342
1942	6,882	**1965**	4,665	**1988**	7,361	**2011**	32,887
1943	39,739	**1966**	28,458	**1989**	2,893	**2012**	4,465
1944	22,425	**1967**	37,423	**1990**	2,485	**2013**	1,168
1945	12,172	**1968**	7,866	**1991**	15,214	**2014**	1,788
1946	11,194	**1969**	112,696	**1992**	33,768	**2015**	1,028
1947	7,295	**1970**	7,779	**1993**	71,474	**2016**	1,502
1948	1,715	**1971**	12,795	**1994**	8,351	**2017**	15,226
1949	1,965	**1972**	4,492	**1995**	63,209	**2018**	4,063
1950	3,492	**1973**	35,236	**1996**	8,752		
						AVERAGE	17,847
						MEDIAN	8,017

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APPENDIX B - Groundwater Elevation Hydrographs and Map of Index Well Locations

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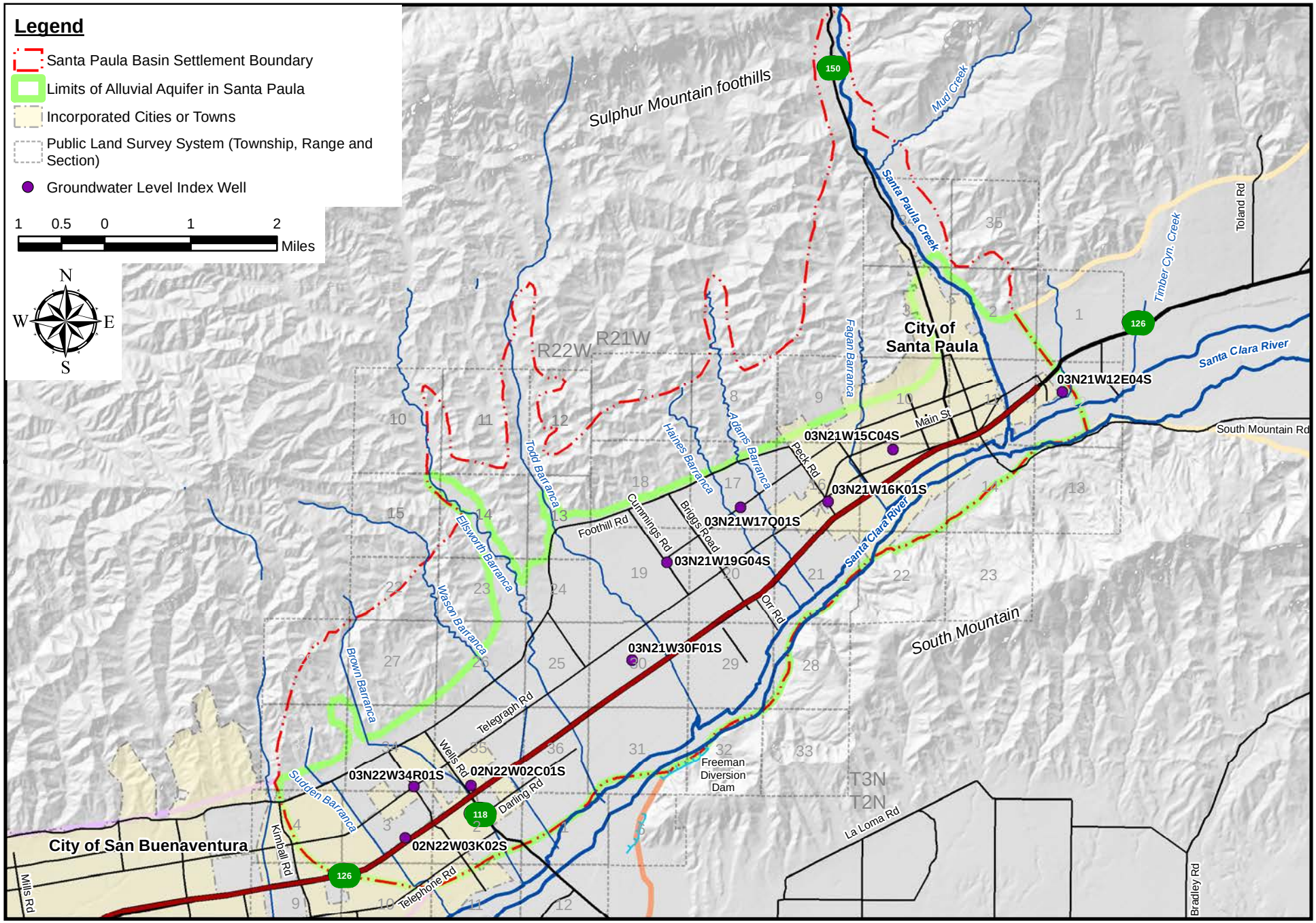

Location of Santa Paula Basin Groundwater Level Index Wells

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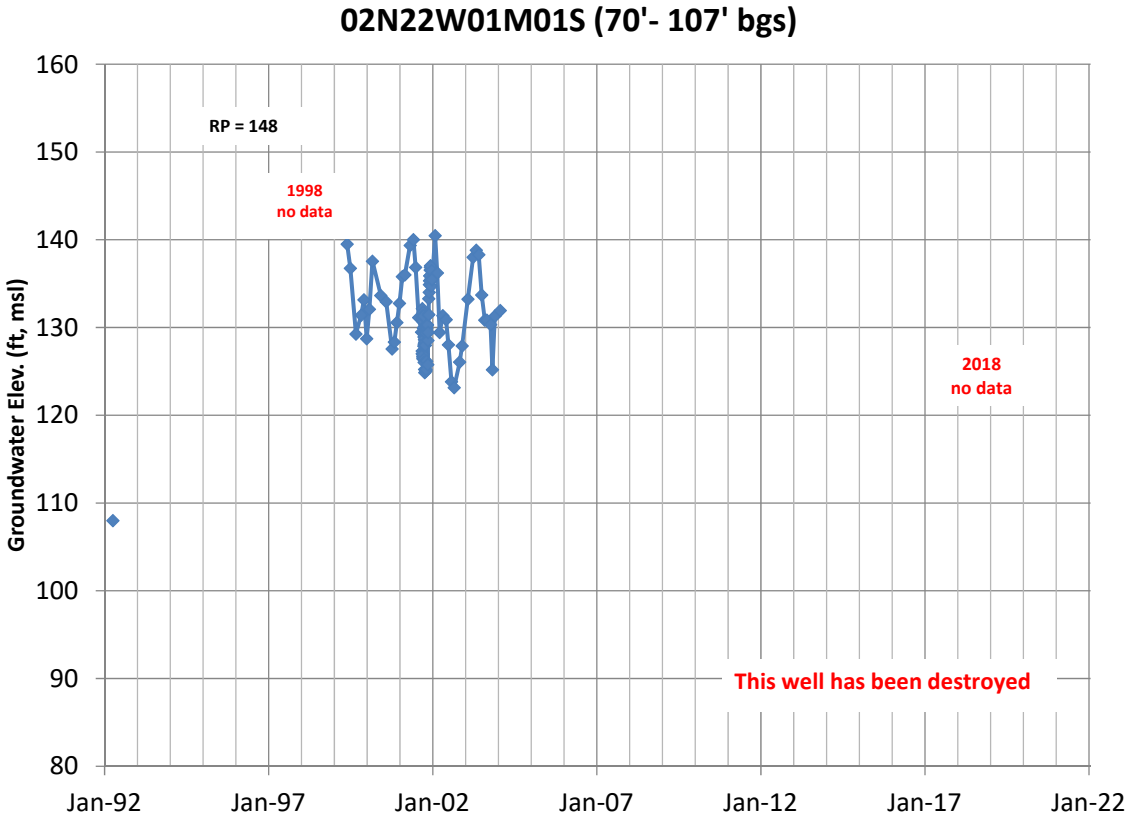
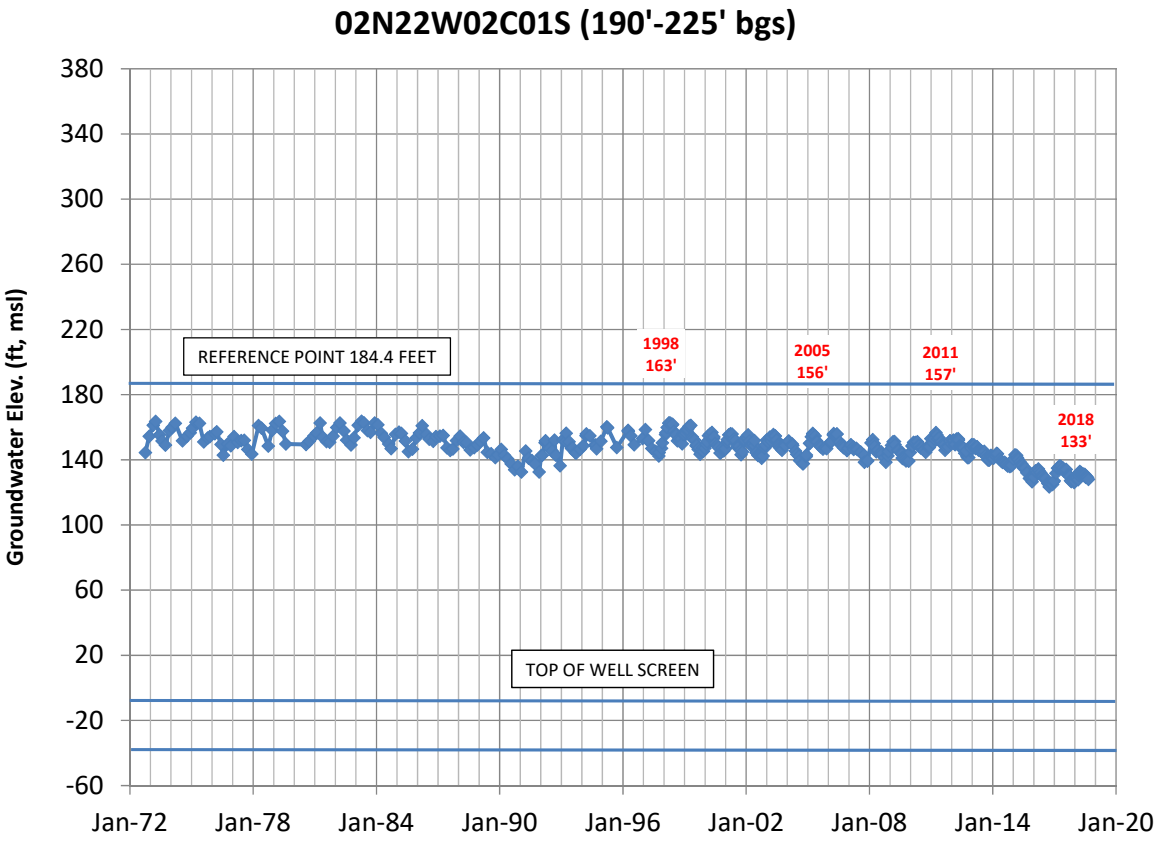
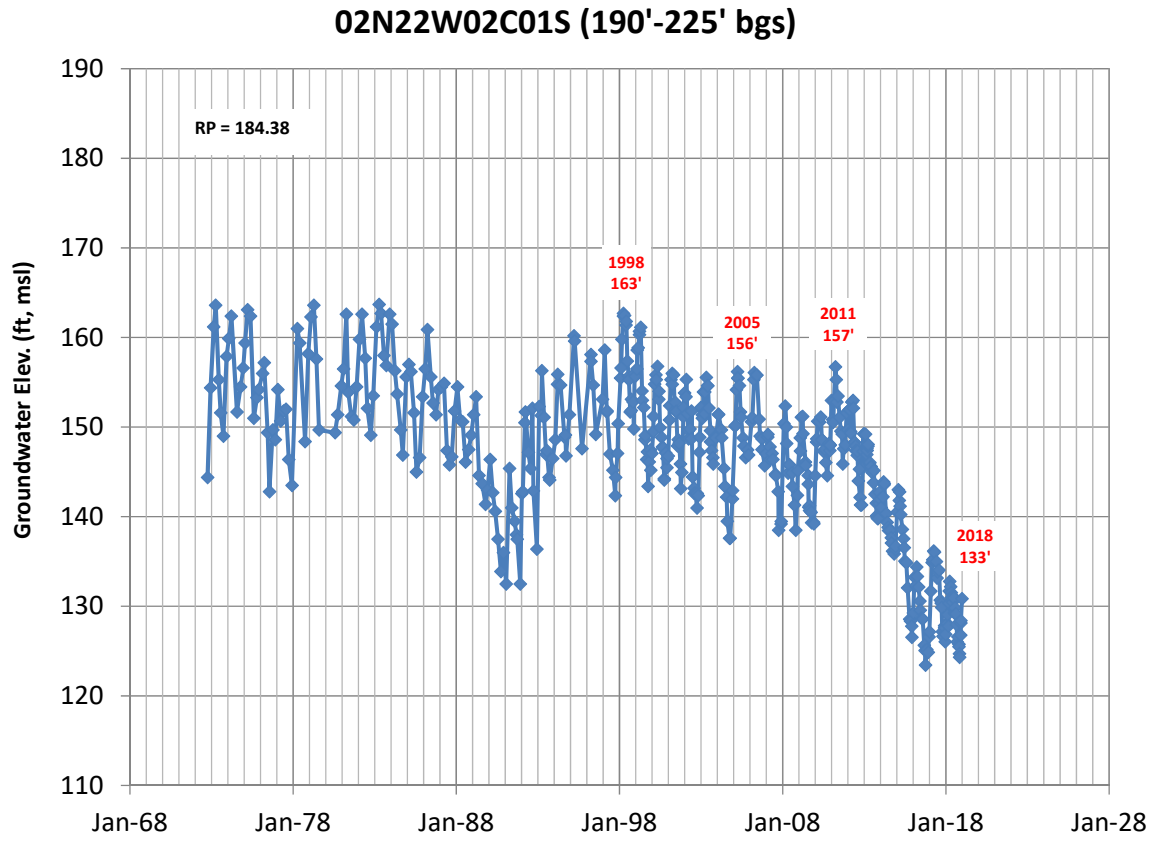
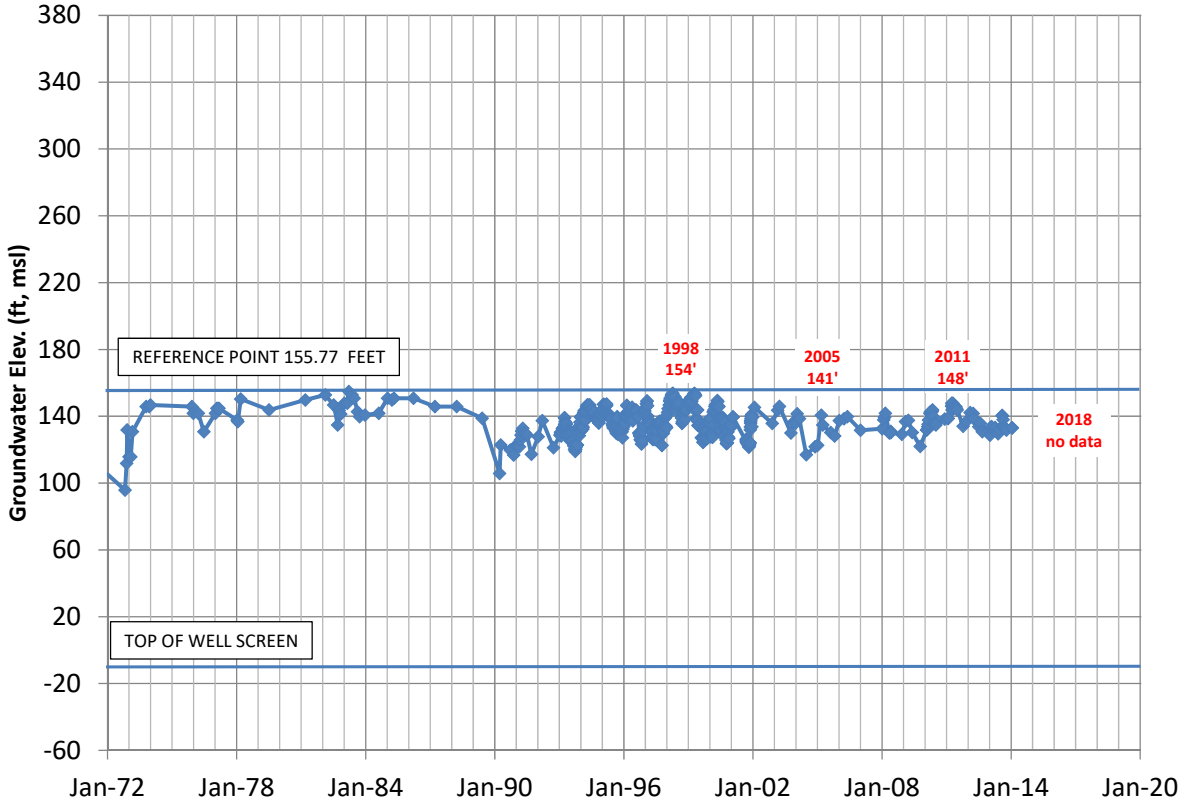



02N22W02C01S (190'-225' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 184.4 FEET
TOP OF WELL SCREEN
1998
163'
2005
156'
2011
157'
2018
133'


02N22W02C01S (190'-225' bgs)
Groundwater Elev. (ft, msl)
190
180
170
160
150
140
130
120
110
Jan-68
Jan-78
Jan-88
Jan-98
Jan-08
Jan-18
Jan-28
RP = 184.38
1998
163'
2005
156'
2011
157'
2018
133'

02N22W02K07S (168'-698' bgs)



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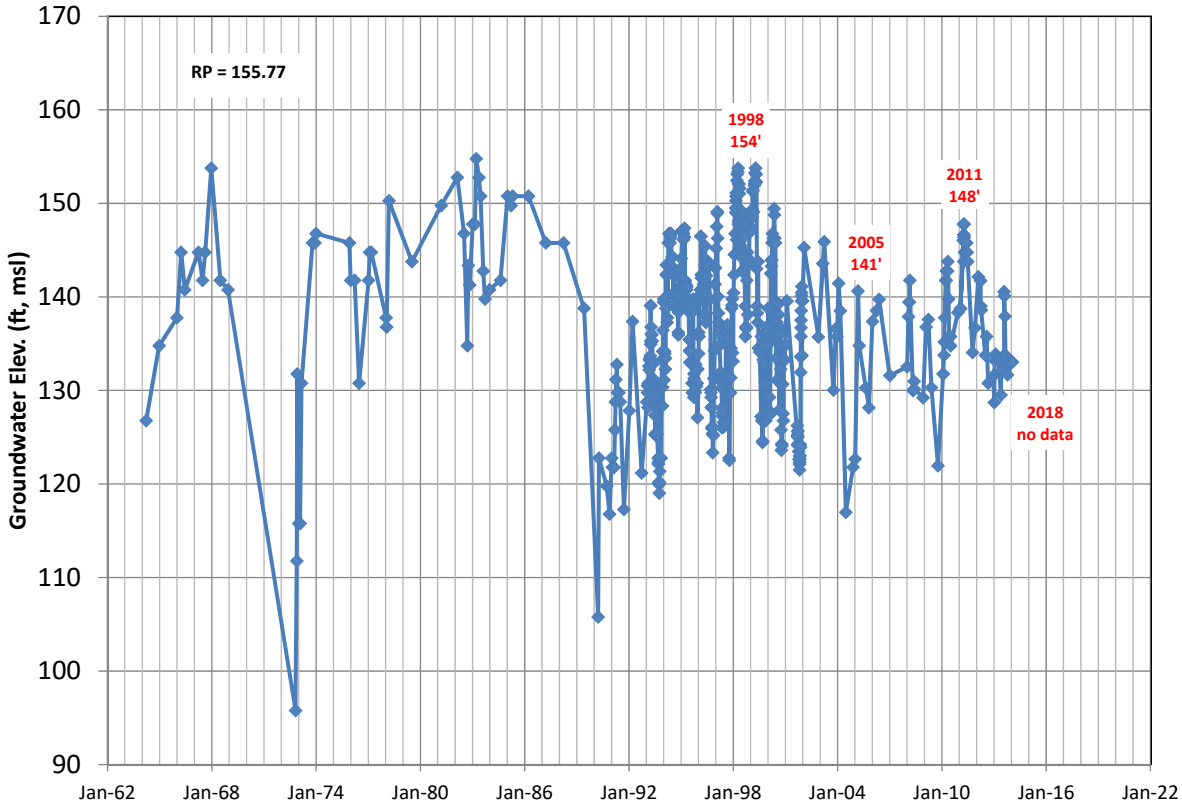
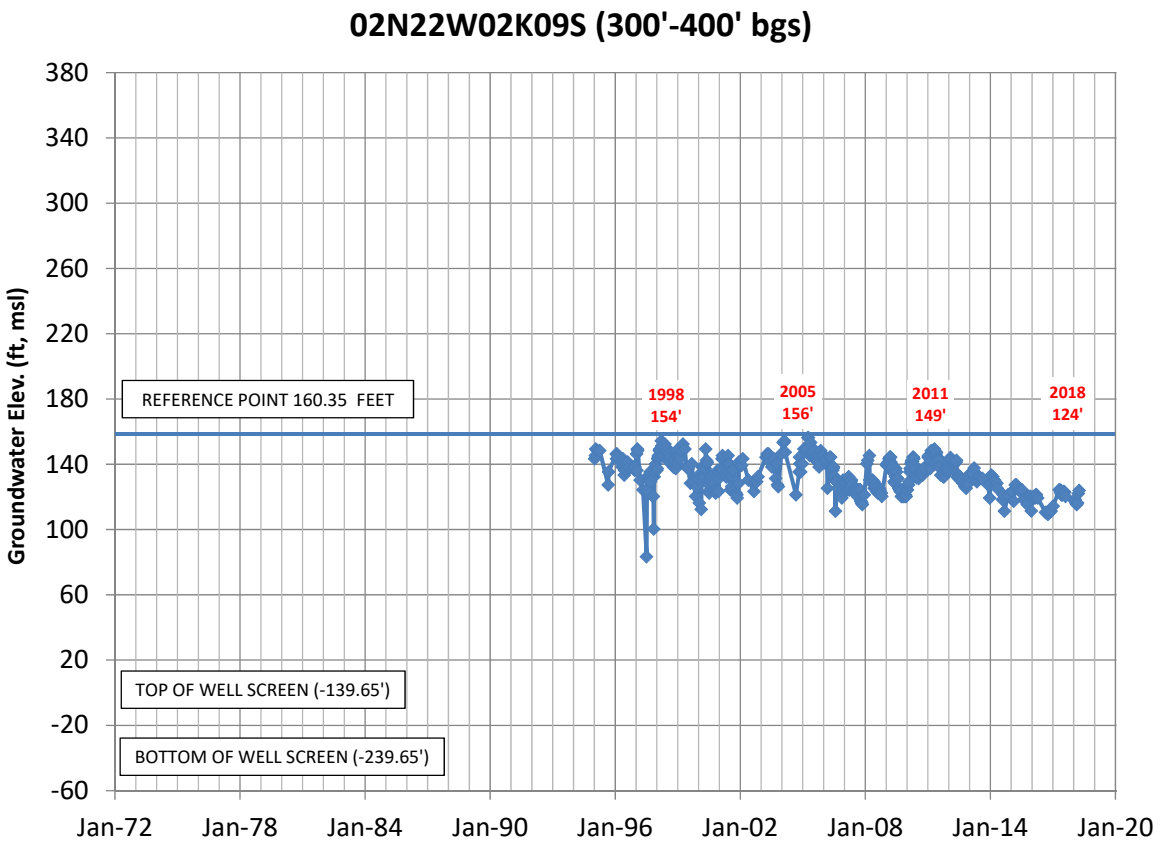
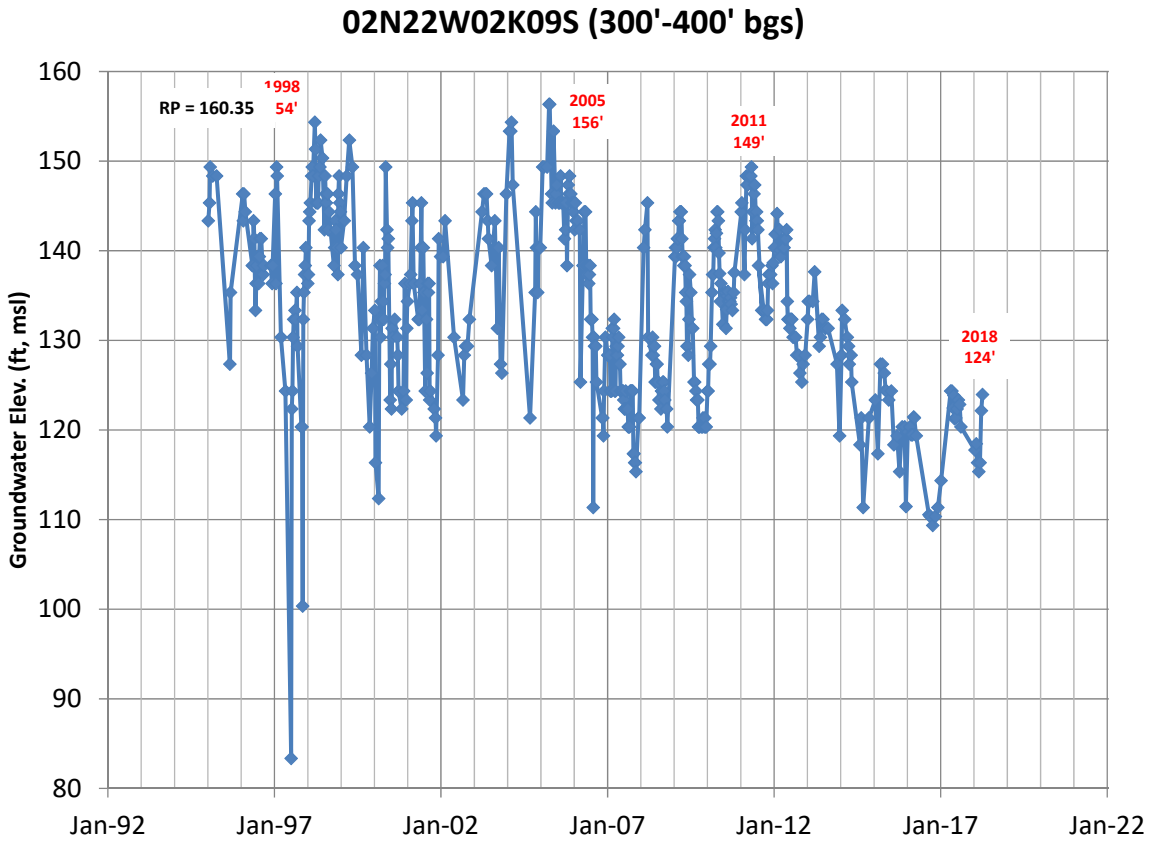
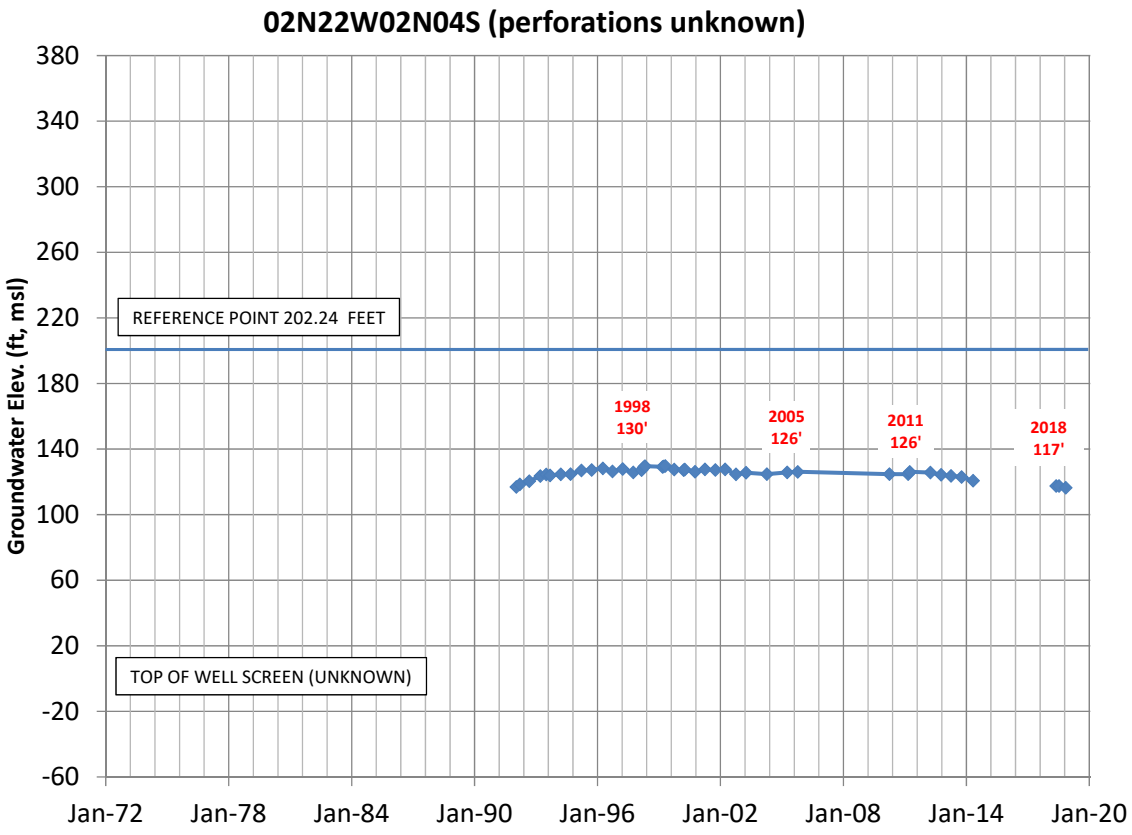



02N22W02K09S (300'-400' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 160.35 FEET
TOP OF WELL SCREEN (-139.65')
BOTTOM OF WELL SCREEN (-239.65')
1998
154'
2005
156'
2011
149'
2018
124'


02N22W02K09S (300'-400' bgs)
Groundwater Elev. (ft, msl)
160
150
140
130
120
110
100
90
80
Jan-92
Jan-97
Jan-02
Jan-07
Jan-12
Jan-17
Jan-22
RP = 160.35
1998
54'
2005
156'
2011
149'
2018
124'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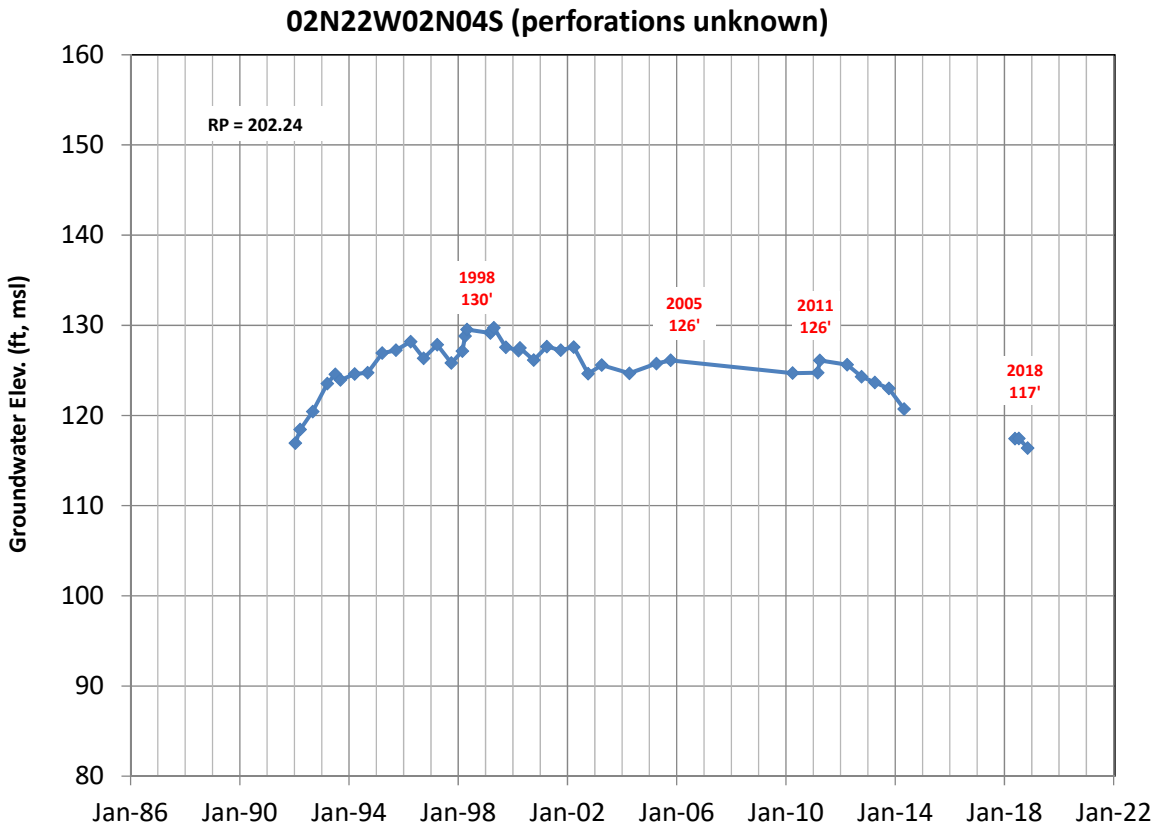
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 202.24 FEET
TOP OF WELL SCREEN (UNKNOWN)
1998
130'
2005
126'
2011
126'
2018
117'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20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Groundwater Elev. (ft, msl)
160
150
140
130
120
110
100
90
80
RP = 202.24
1998
130'
2005
126'
2011
126'
2018
117'
Jan-86
Jan-90
Jan-94
Jan-98
Jan-02
Jan-06
Jan-10
Jan-14
Jan-18
Jan-22

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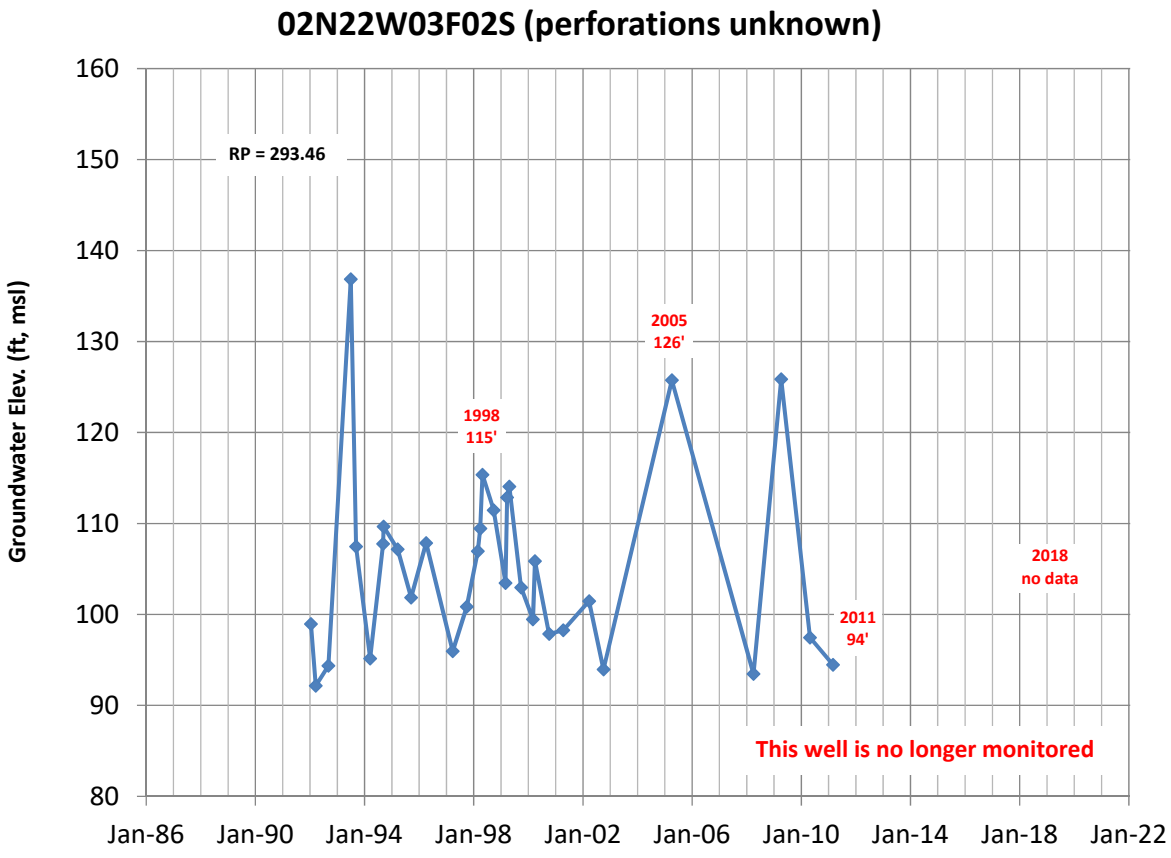
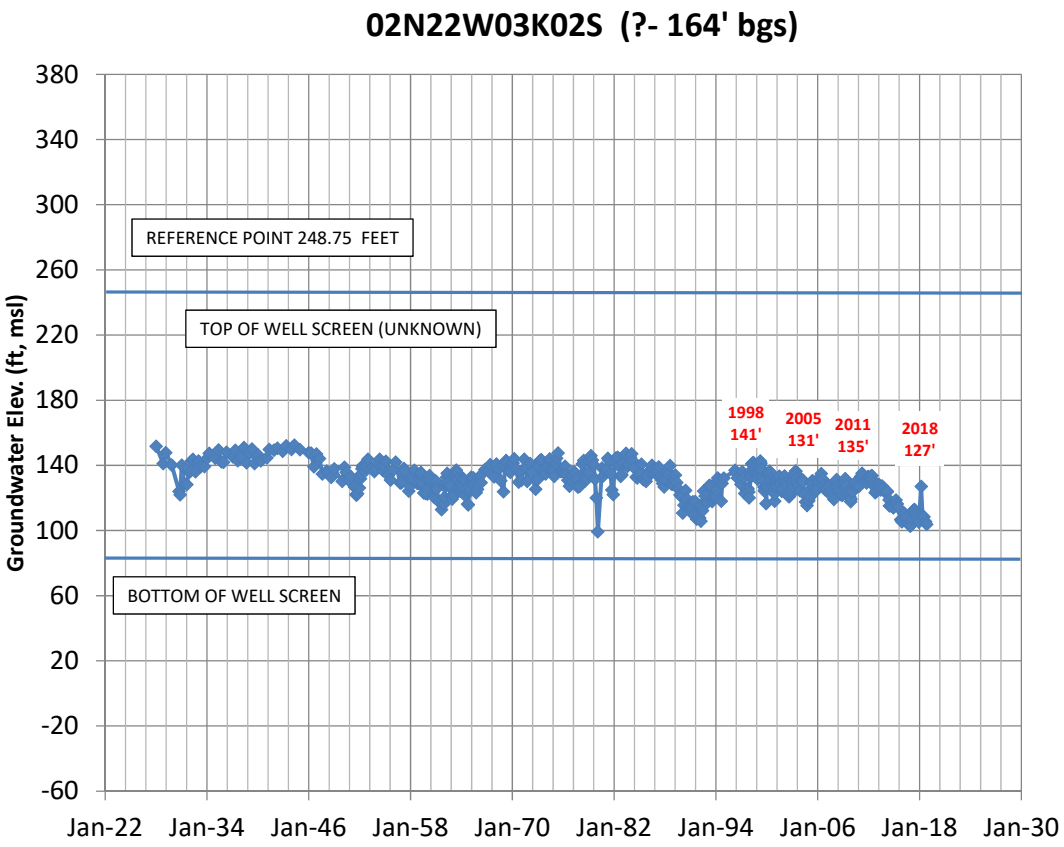
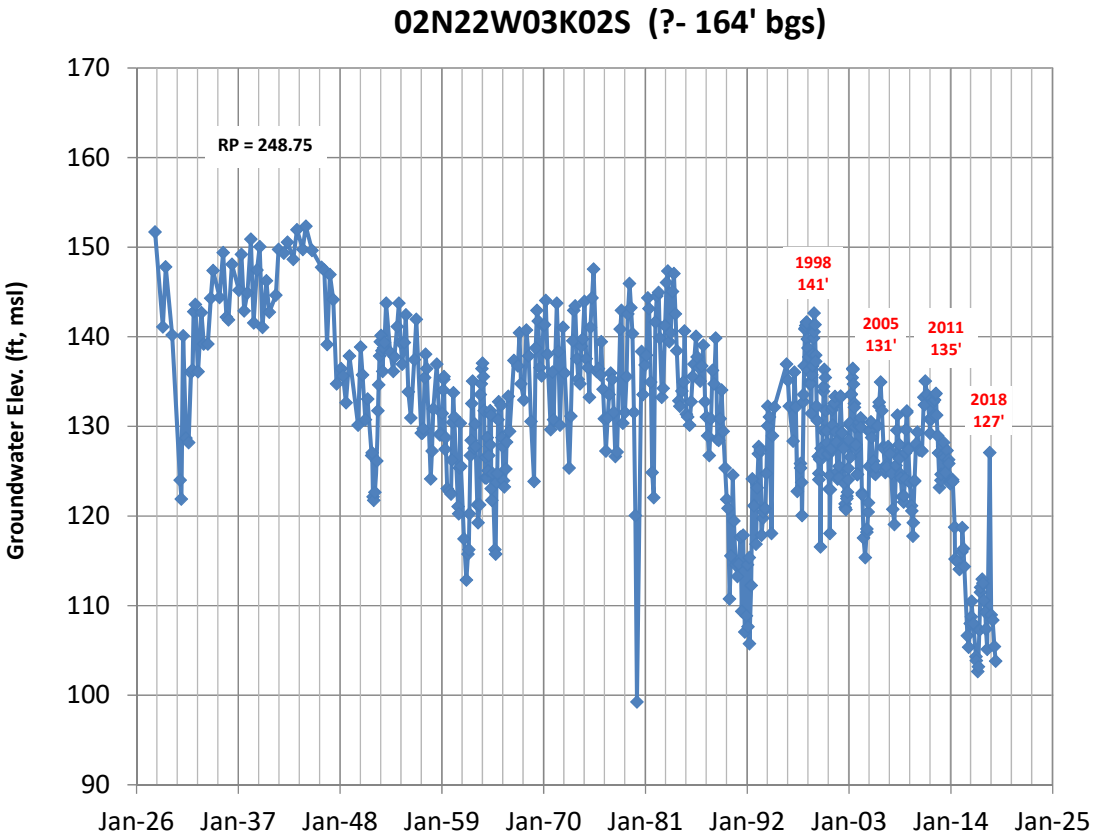
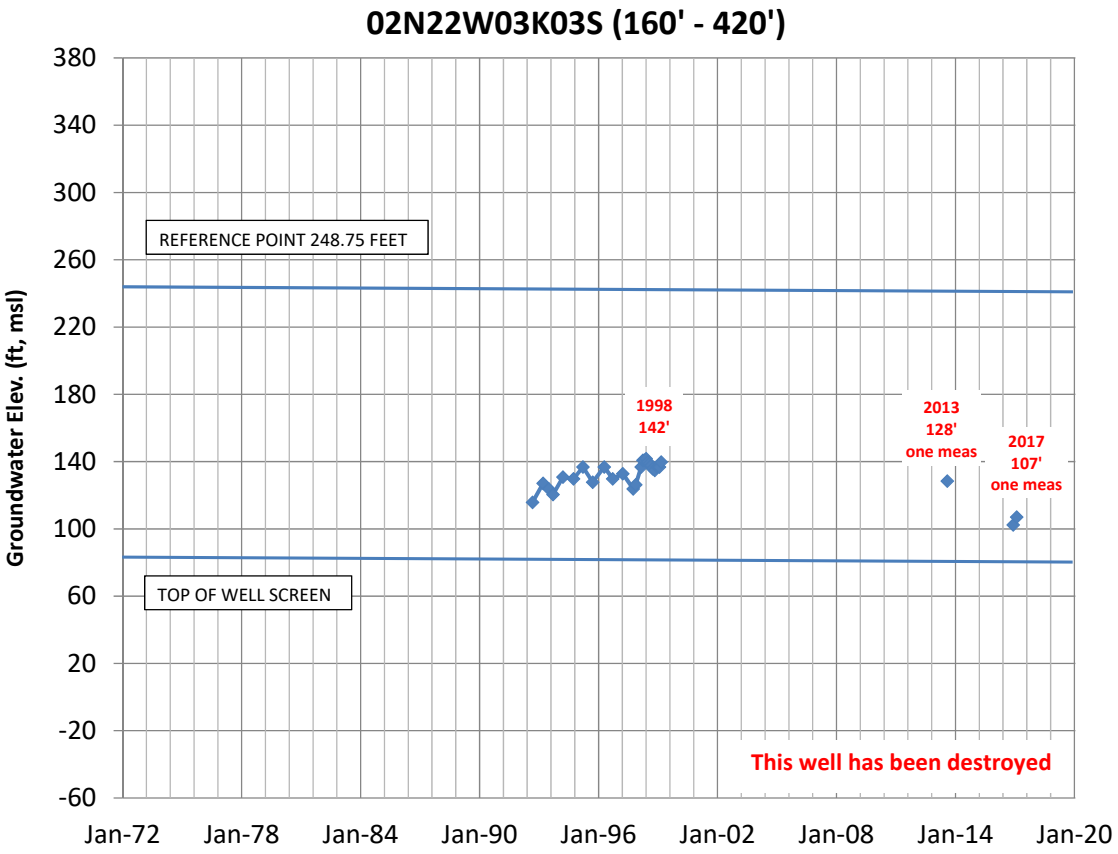
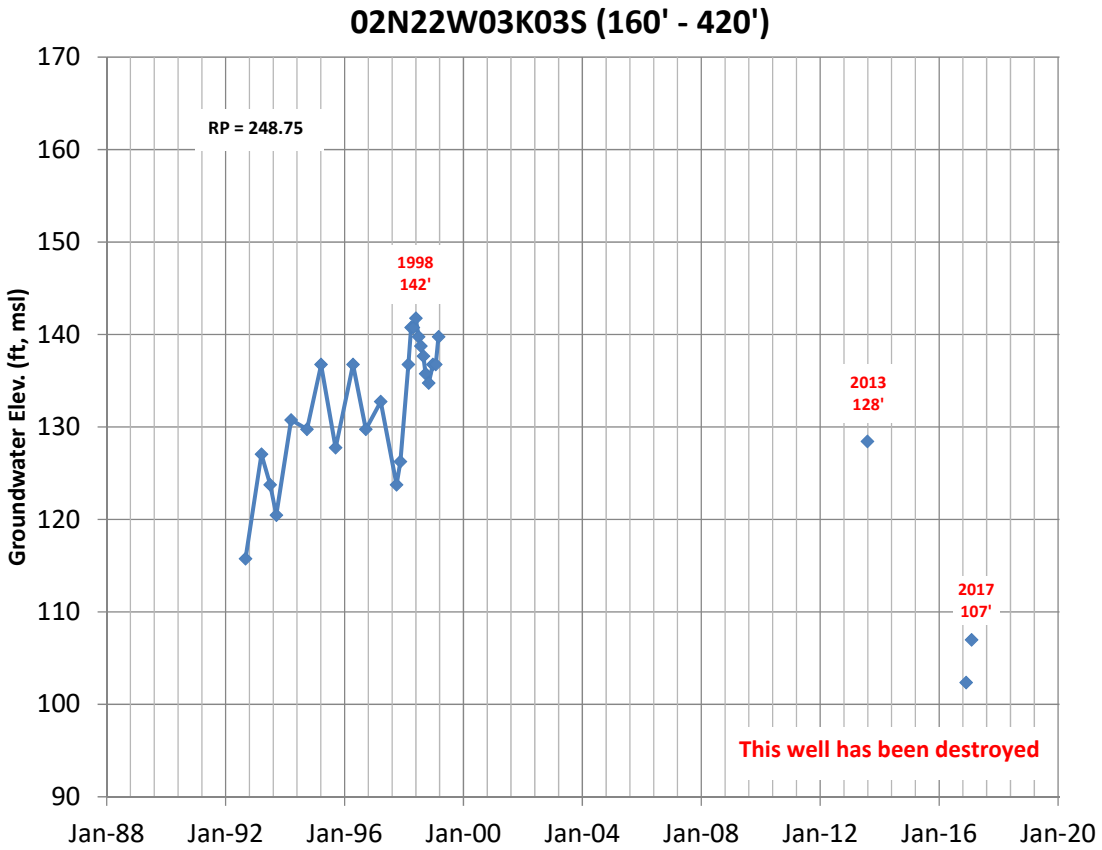


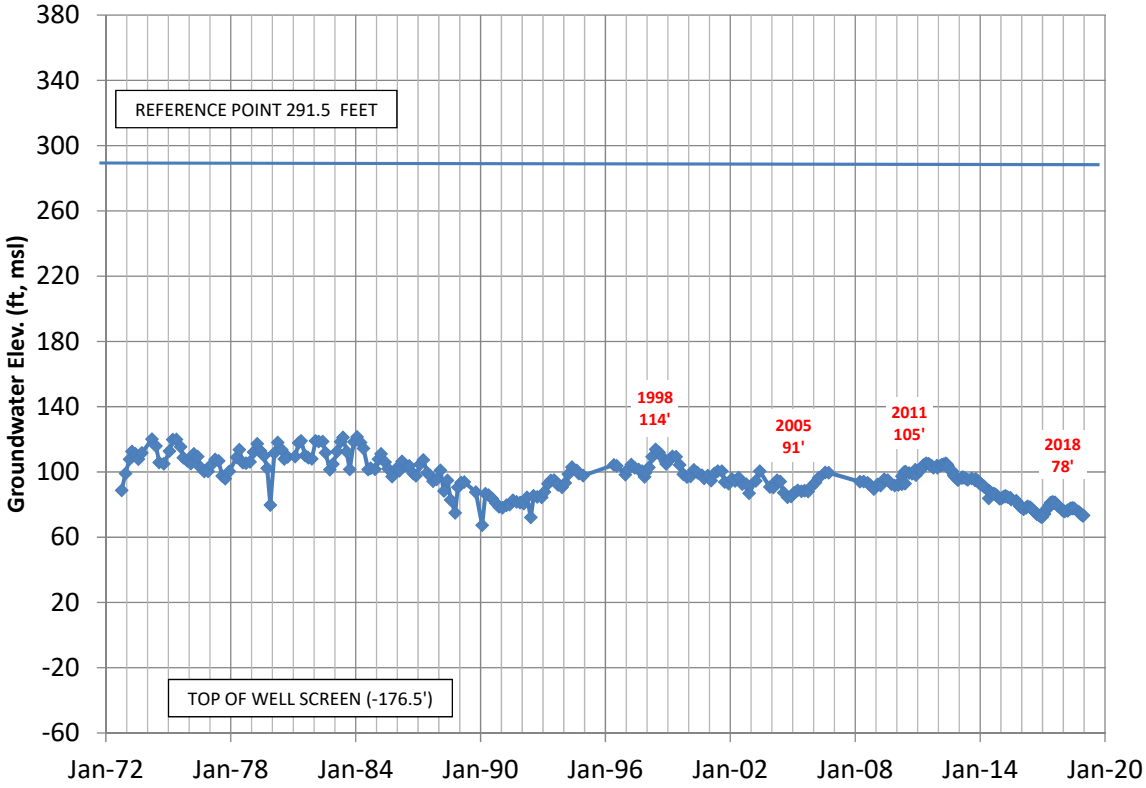

02N22W03K02S (?- 164' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 248.75 FEET
TOP OF WELL SCREEN (UNKNOWN)
BOTTOM OF WELL SCREEN
1998
141'
2005
131'
2011
135'
2018
127'
Jan-22
Jan-34
Jan-46
Jan-58
Jan-70
Jan-82
Jan-94
Jan-06
Jan-18
Jan-30


02N22W03K02S (?- 164' bgs)
Groundwater Elev. (ft, msl)
170
160
150
140
130
120
110
100
90
RP = 248.75
1998
141'
2005
131'
2011
135'
2018
127'
Jan-26
Jan-37
Jan-48
Jan-59
Jan-70
Jan-81
Jan-92
Jan-03
Jan-14
Jan-25


02N22W03K03S (160' - 420')
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 248.75 FEET
TOP OF WELL SCREEN
1998
142'
2013
128'
one meas
2017
107'
one meas
This well has been destroyed
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20


02N22W03K03S (160' - 420')
Groundwater Elev. (ft, msl)
170
160
150
140
130
120
110
100
90
RP = 248.75
1998
142'
2013
128'
2017
107'
This well has been destroyed
Jan-88
Jan-92
Jan-96
Jan-00
Jan-04
Jan-08
Jan-12
Jan-16
Jan-20

02N22W03M02S (468'-528' bgs)



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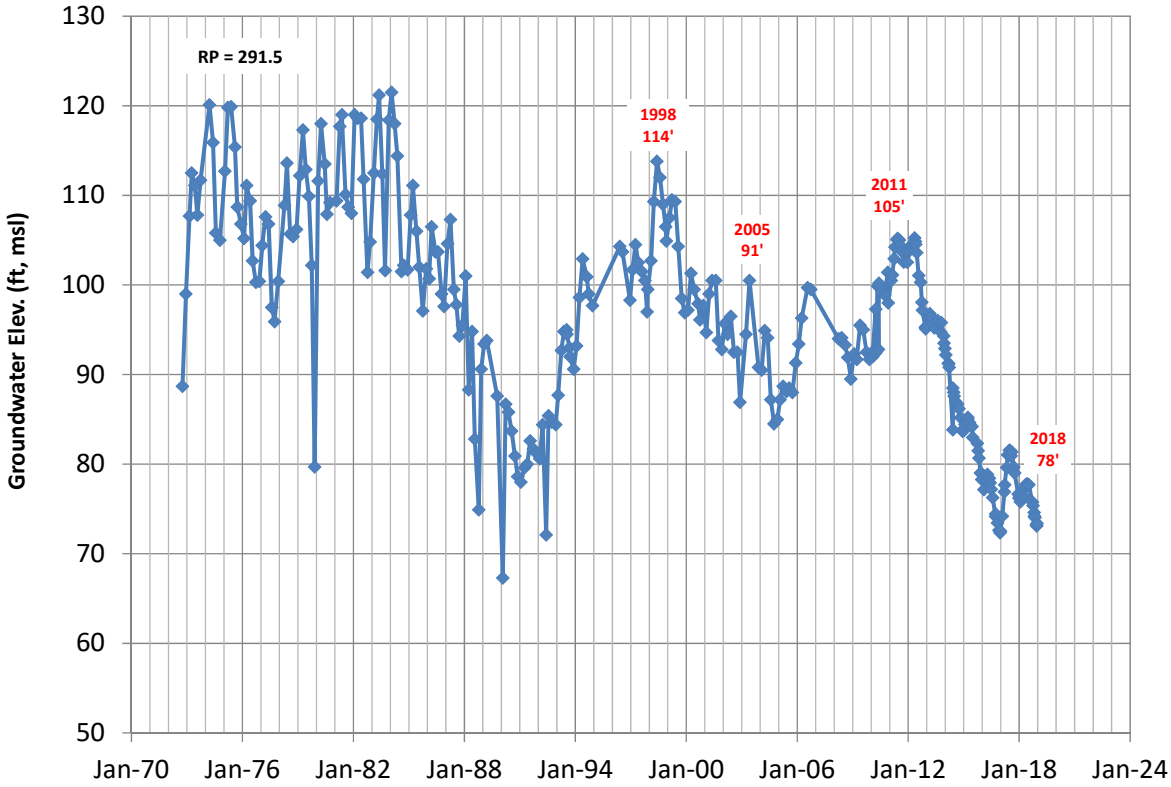

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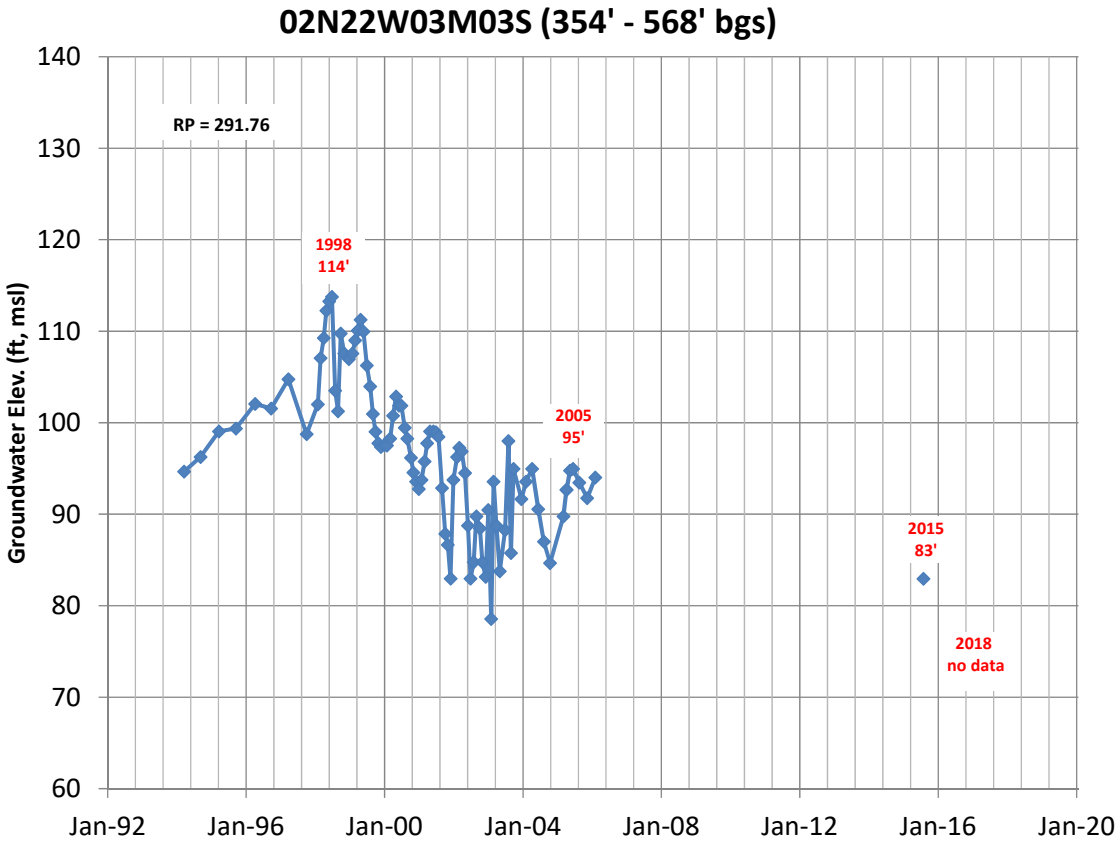
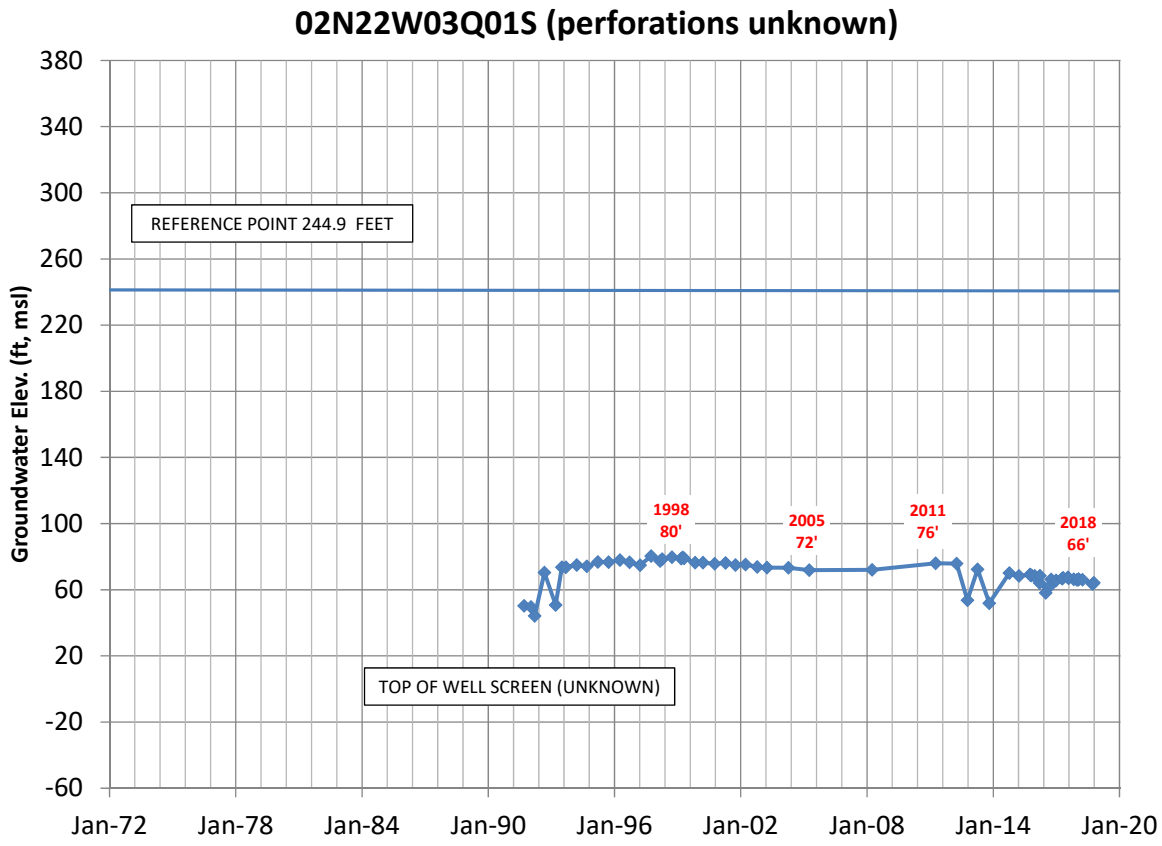
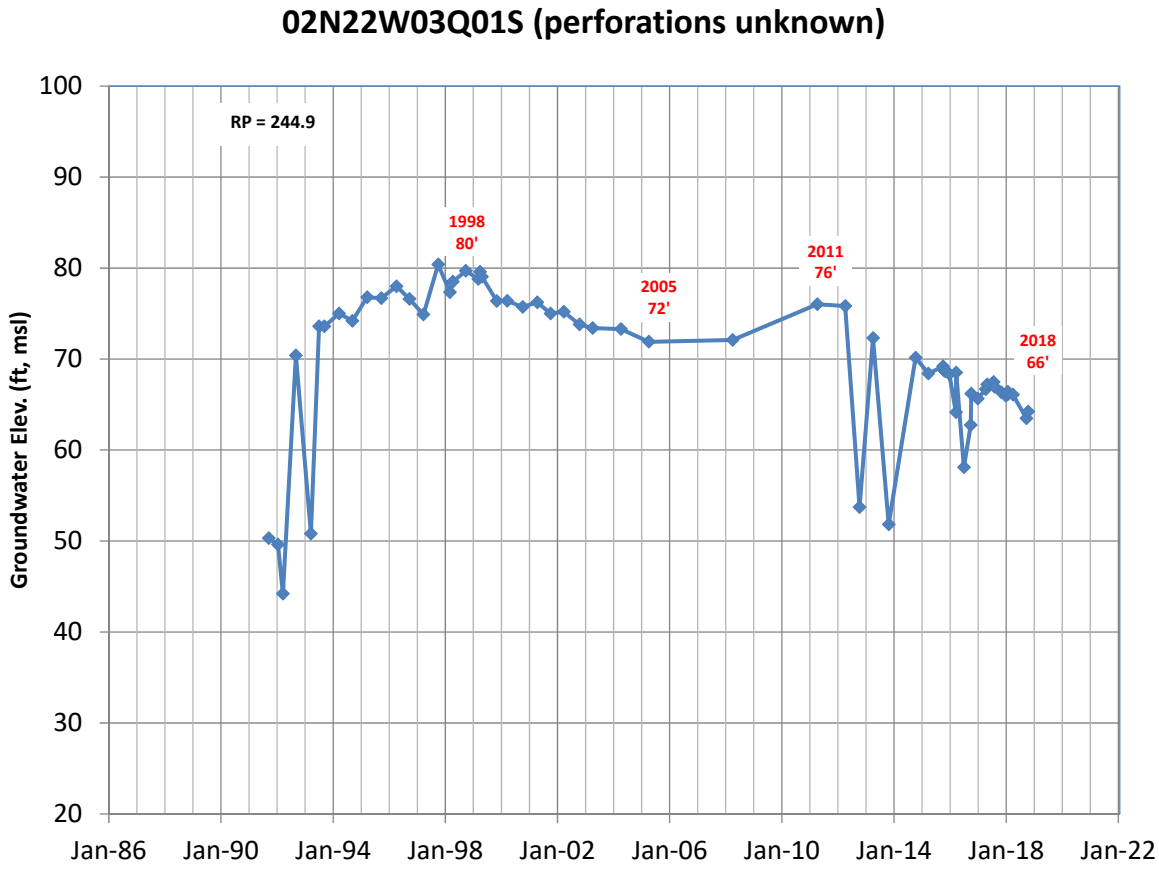
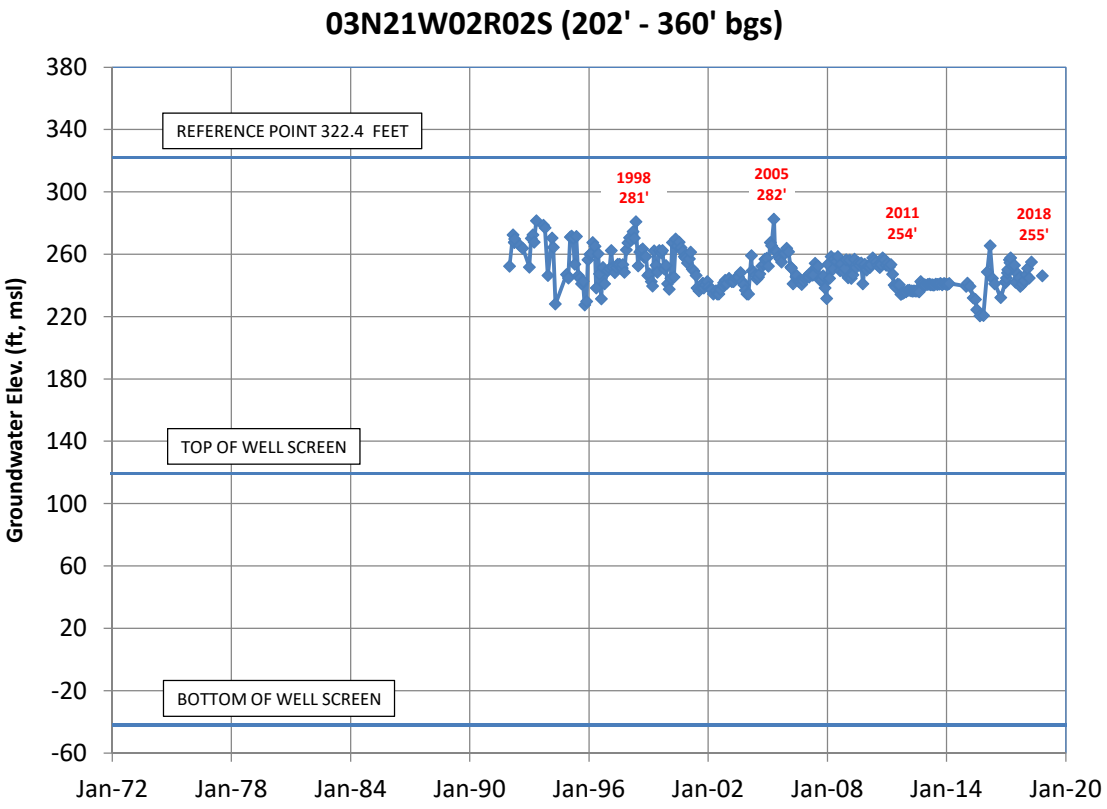
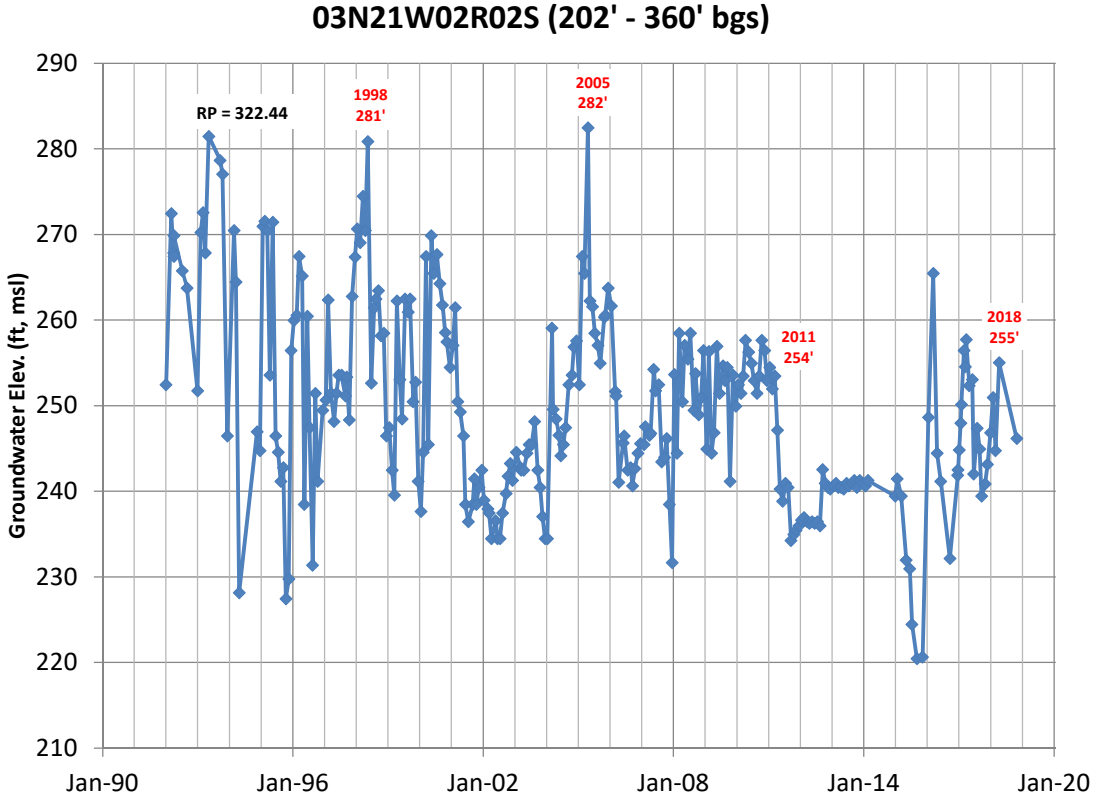
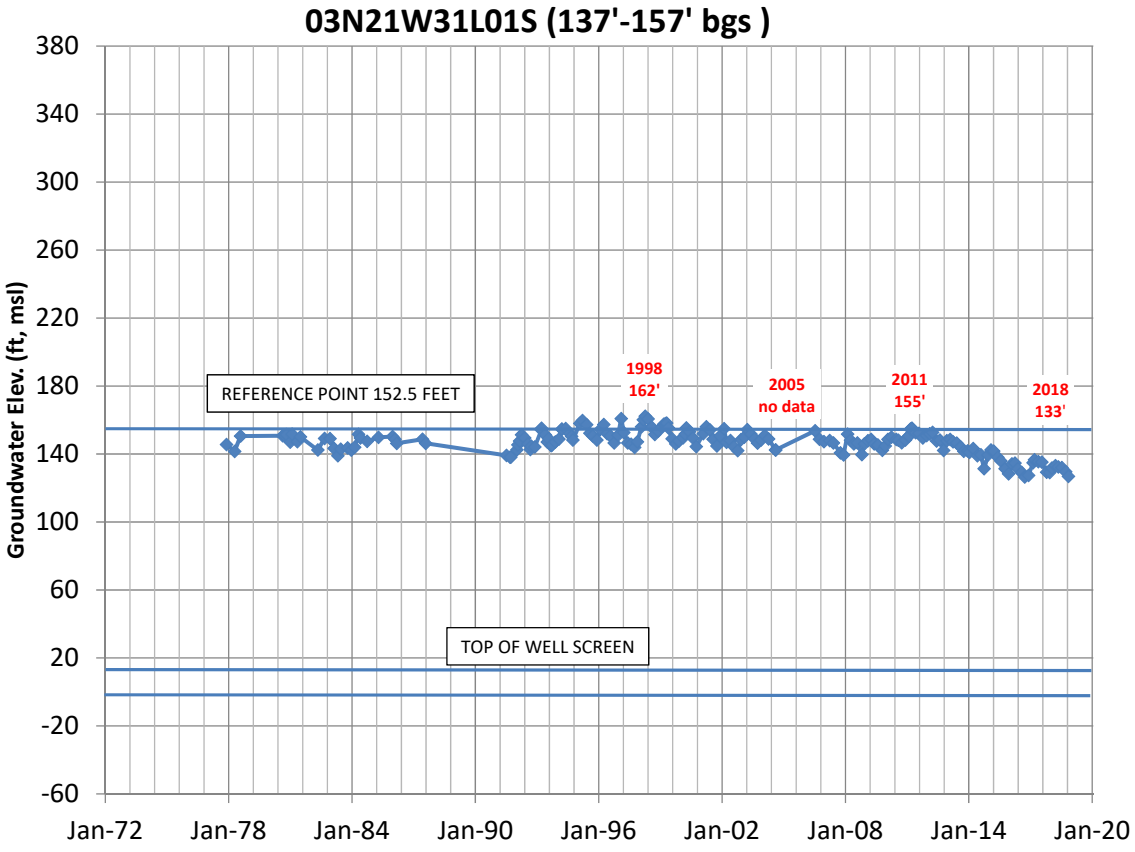


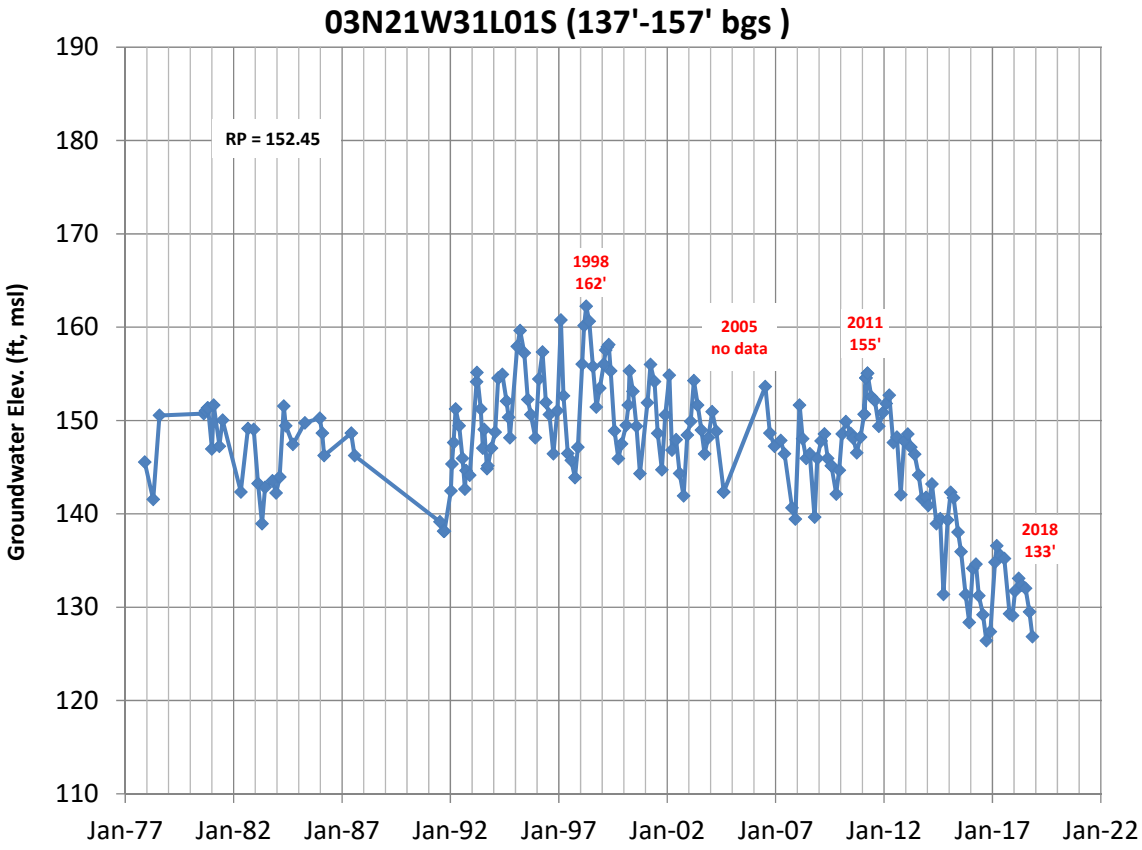

02N22W03Q01S (perforations unknown)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 244.9 FEET
TOP OF WELL SCREEN (UNKNOWN)
1998
80'
2005
72'
2011
76'
2018
66'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

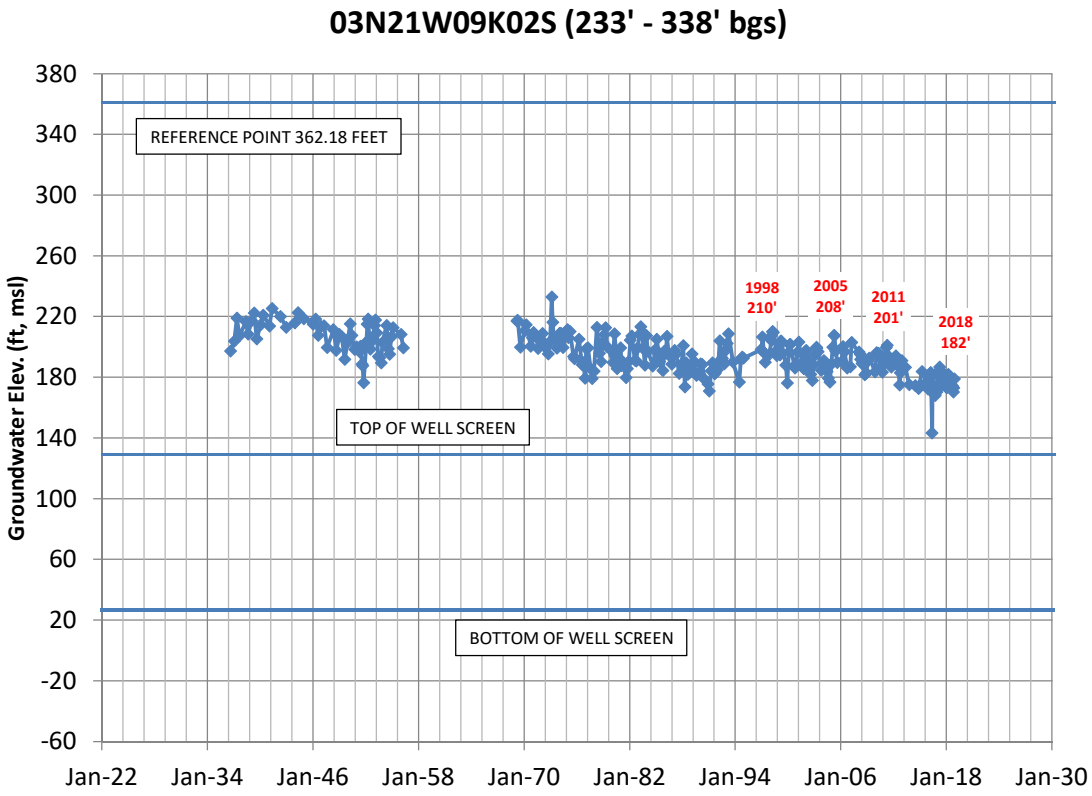

02N22W03Q01S (perforations unknown)
Groundwater Elev. (ft, msl)
100
90
80
70
60
50
40
30
20
RP = 244.9
1998
80'
2005
72'
2011
76'
2018
66'
Jan-86
Jan-90
Jan-94
Jan-98
Jan-02
Jan-06
Jan-10
Jan-14
Jan-18
Jan-22

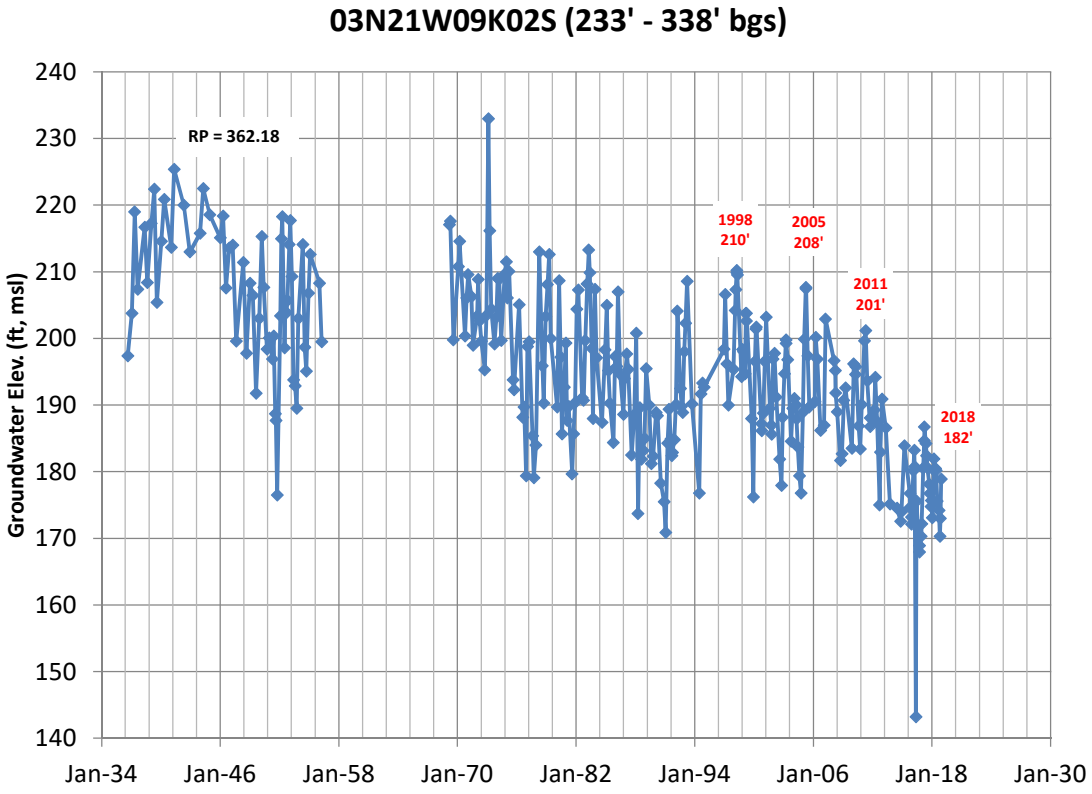

03N21W02R02S (202' - 360' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 322.4 FEET
TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
1998
281'
2005
282'
2011
254'
2018
255'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

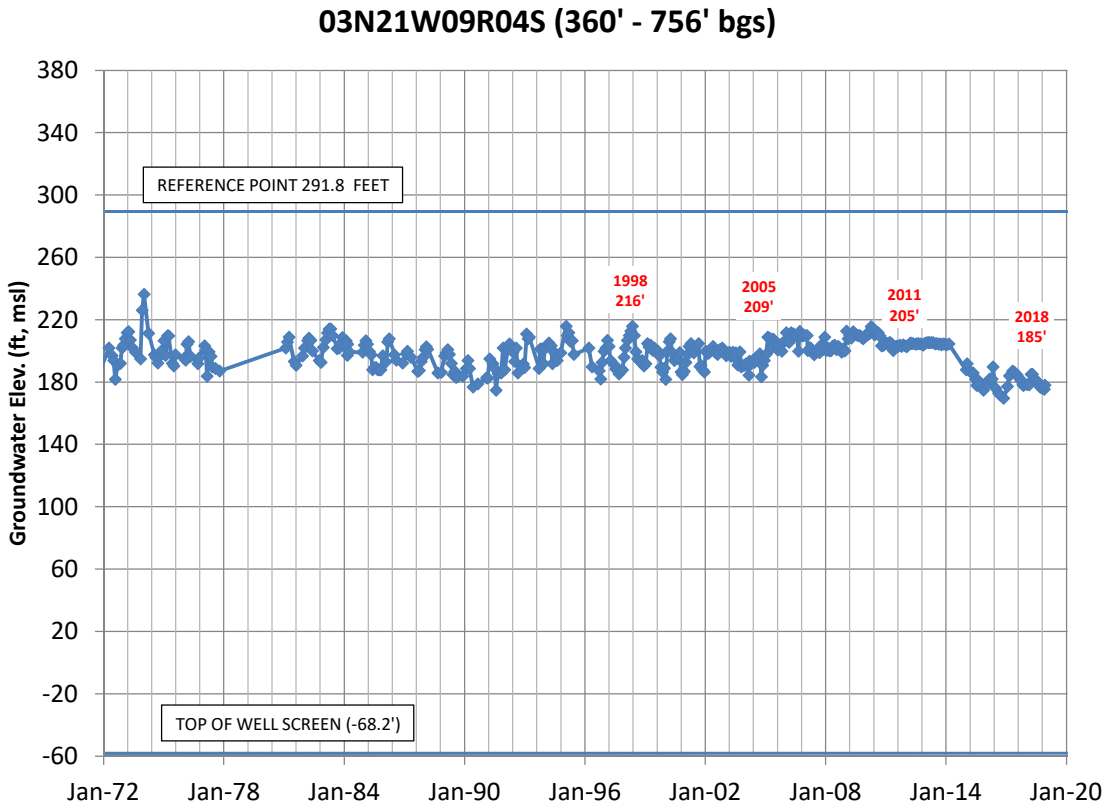

03N21W02R02S (202' - 360' bgs)
Groundwater Elev. (ft, msl)
290
280
270
260
250
240
230
220
210
RP = 322.44
1998
281'
2005
282'
2011
254'
2018
255'
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

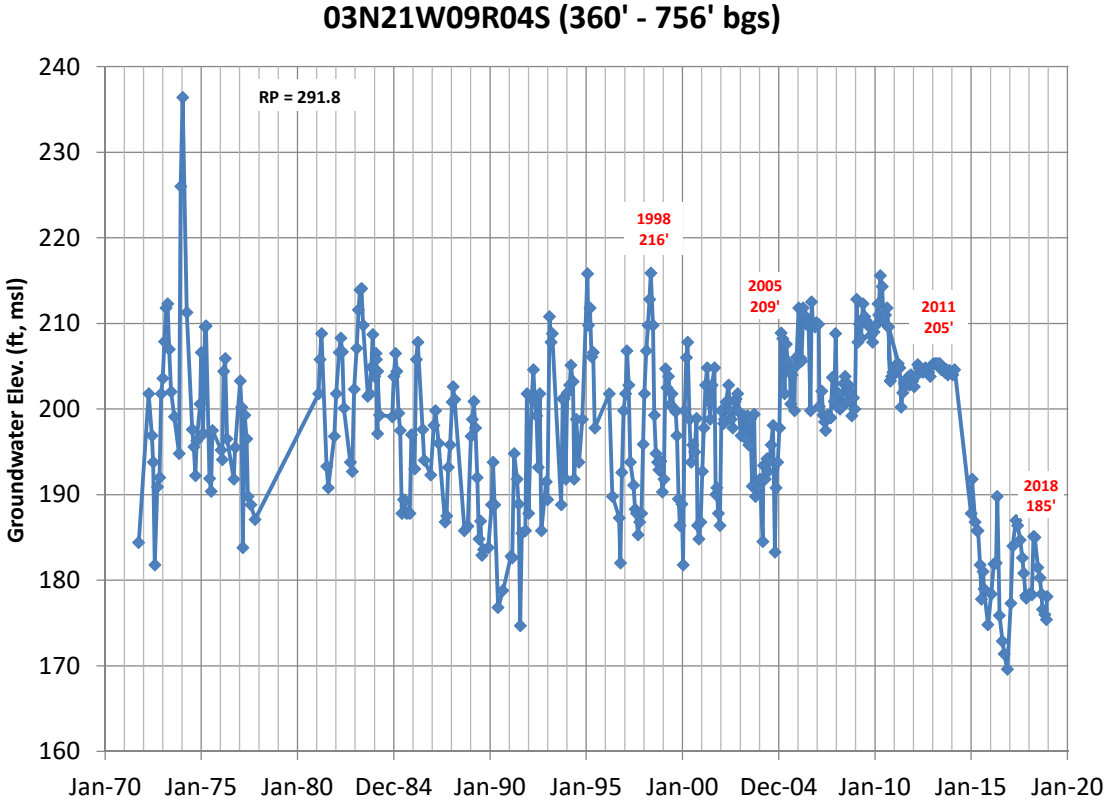

03N21W31L01S (137'-157' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 152.5 FEET
TOP OF WELL SCREEN
1998
162'
2005
no data
2011
155'
2018
133'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

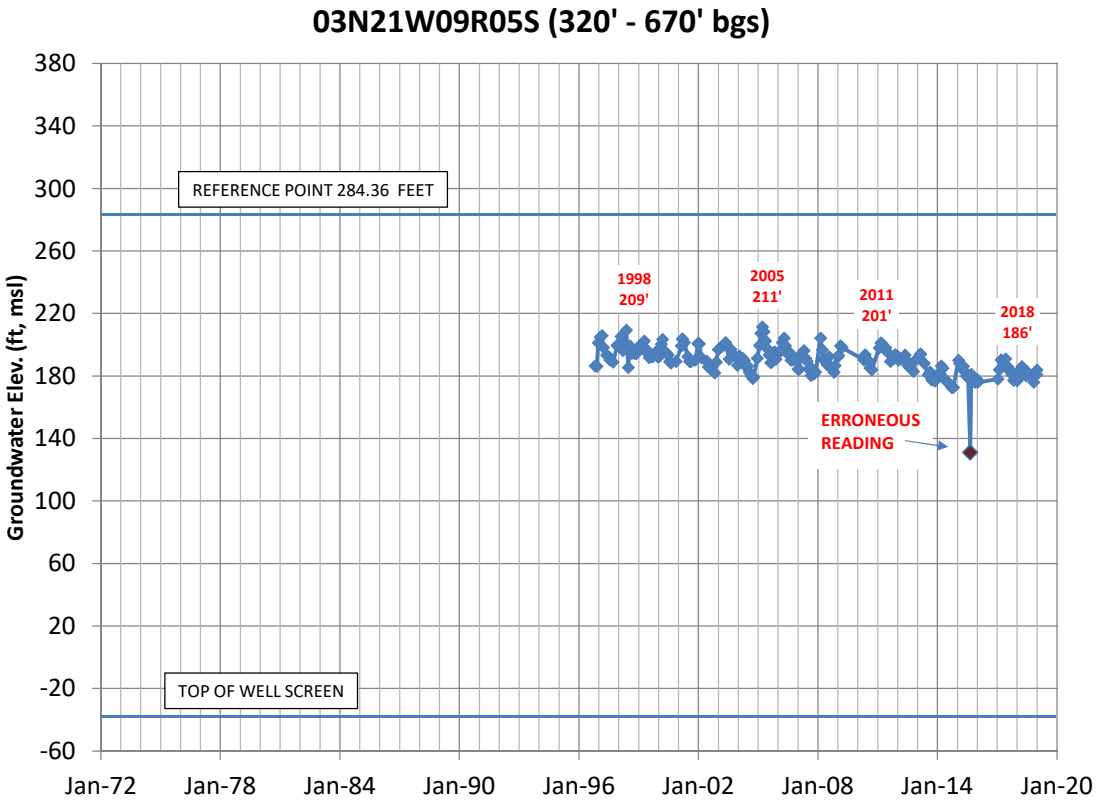

03N21W31L01S (137'-157' bgs)
Groundwater Elev. (ft, msl)
190
180
170
160
150
140
130
120
110
RP = 152.45
1998
162'
2005
no data
2011
155'
2018
133'
Jan-77
Jan-82
Jan-87
Jan-92
Jan-97
Jan-02
Jan-07
Jan-12
Jan-17
Jan-22

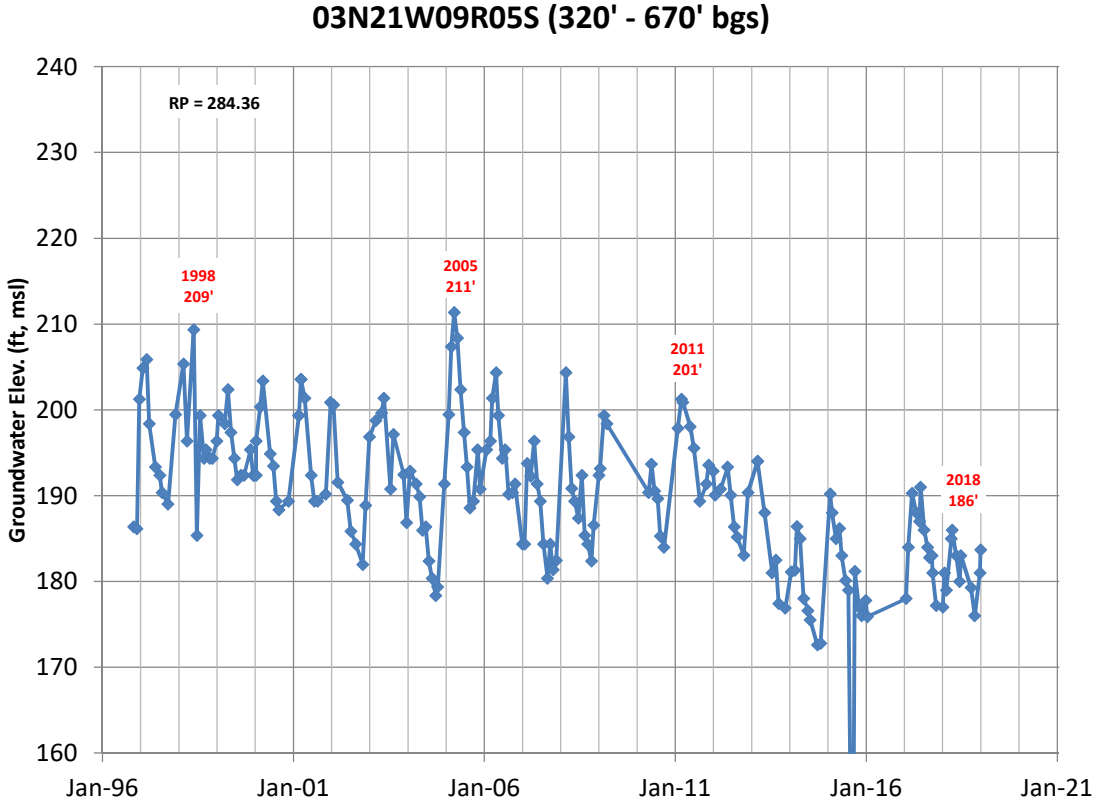

03N21W09K02S (233' - 338' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-22
Jan-34
Jan-46
Jan-58
Jan-70
Jan-82
Jan-94
Jan-06
Jan-18
Jan-30
REFERENCE POINT 362.18 FEET
TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
1998
210'
2005
208'
2011
201'
2018
182'


03N21W09K02S (233' - 338' bgs)
Groundwater Elev. (ft, msl)
240
230
220
210
200
190
180
170
160
150
140
Jan-34
Jan-46
Jan-58
Jan-70
Jan-82
Jan-94
Jan-06
Jan-18
Jan-30
RP = 362.18
1998
210'
2005
208'
2011
201'
2018
182'


03N21W09R04S (360' - 756' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 291.8 FEET
TOP OF WELL SCREEN (-68.2')
1998
216'
2005
209'
2011
205'
2018
185'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20


03N21W09R04S (360' - 756' bgs)
Groundwater Elev. (ft, msl)
240
230
220
210
200
190
180
170
160
RP = 291.8
1998
216'
2005
209'
2011
205'
2018
185'
Jan-70
Jan-75
Jan-80
Dec-84
Jan-90
Jan-95
Jan-00
Dec-04
Jan-10
Jan-15
Jan-20


03N21W09R05S (320' - 670' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 284.36 FEET
TOP OF WELL SCREEN
1998
209'
2005
211'
2011
201'
2018
186'
ERRONEOUS
READING
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20


03N21W09R05S (320' - 670' bgs)
Groundwater Elev. (ft, msl)
240
230
220
210
200
190
180
170
160
RP = 284.36
1998
209'
2005
211'
2011
201'
2018
186'
Jan-96
Jan-01
Jan-06
Jan-11
Jan-16
Jan-21

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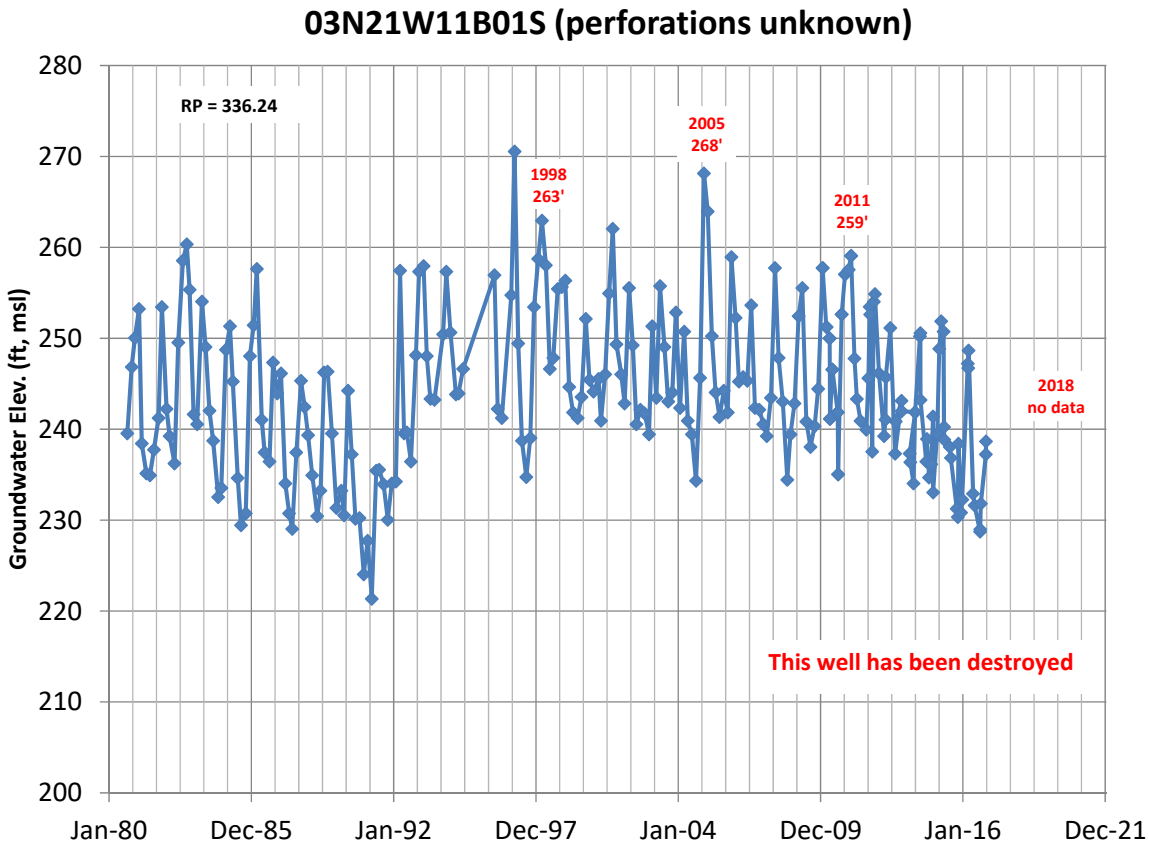
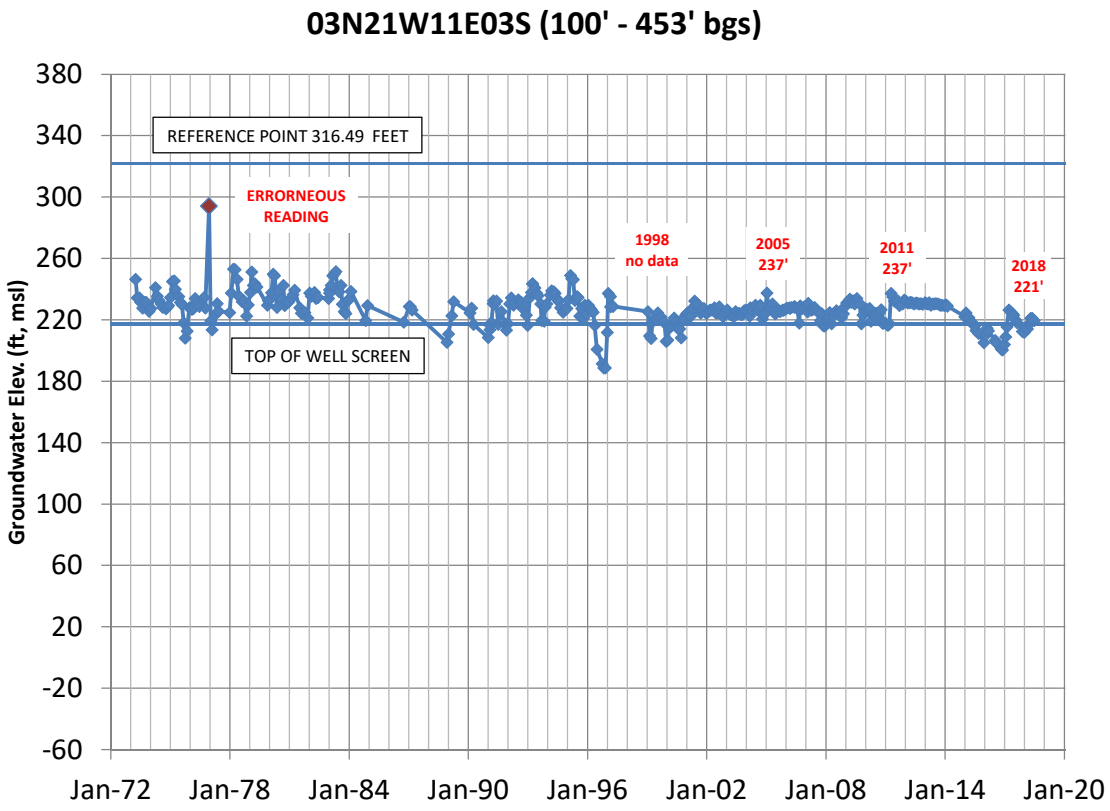
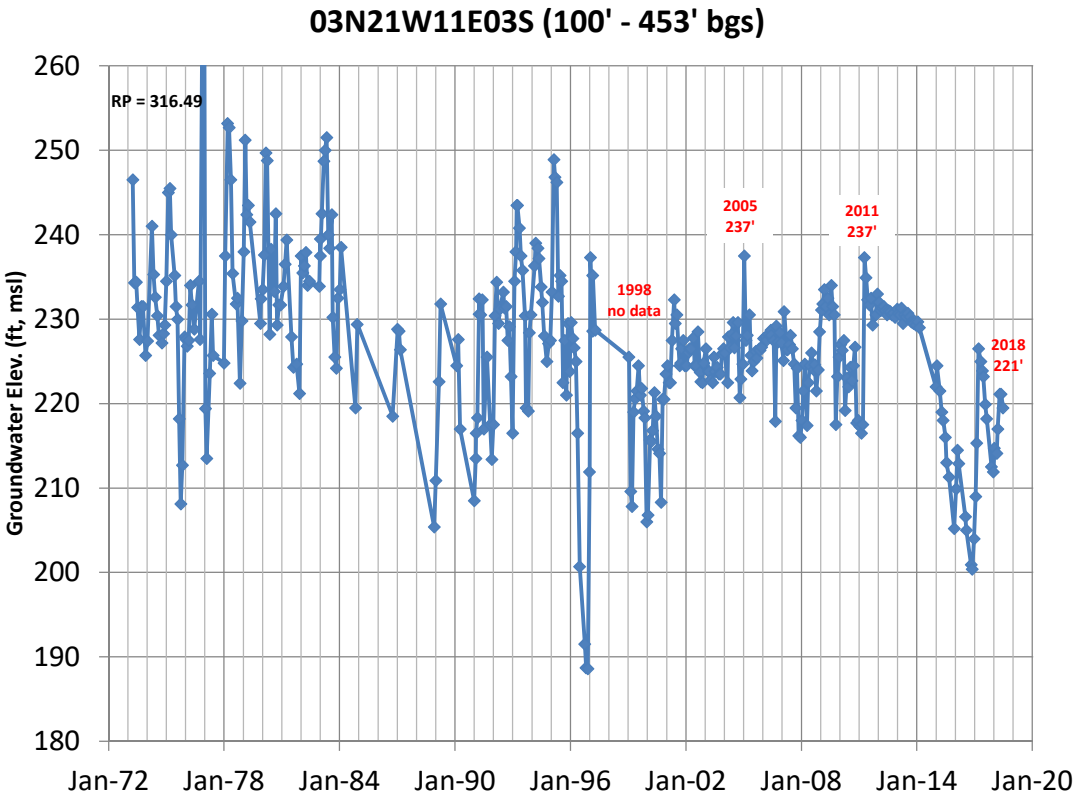
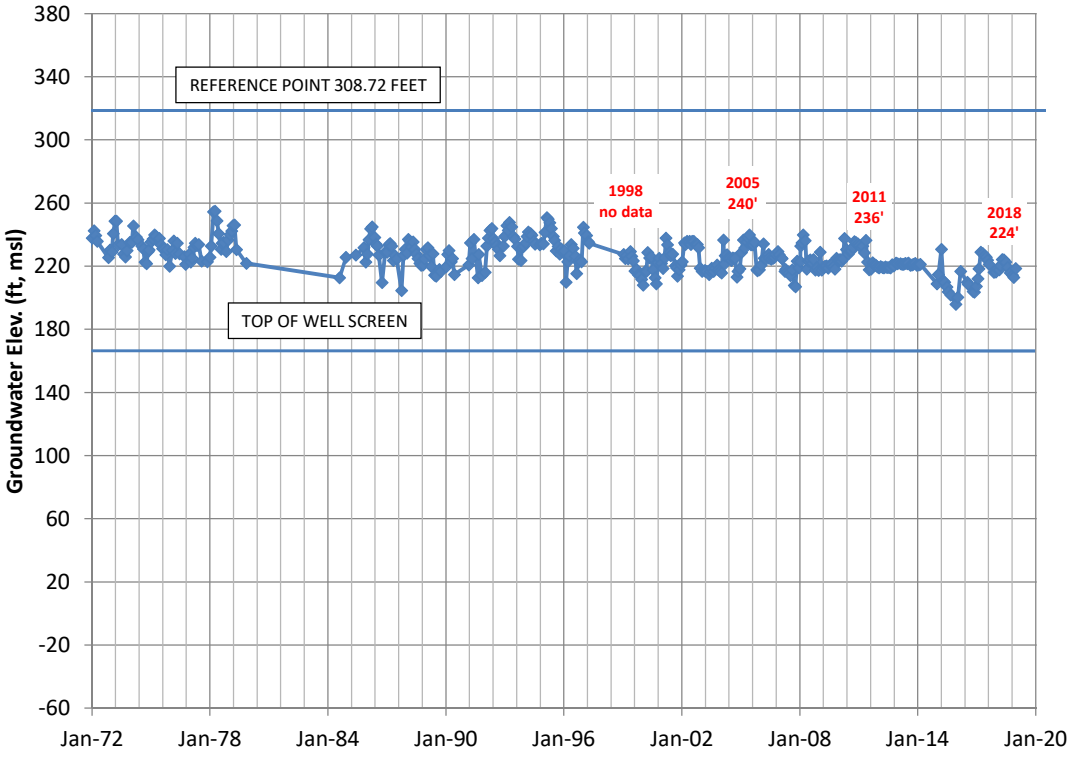


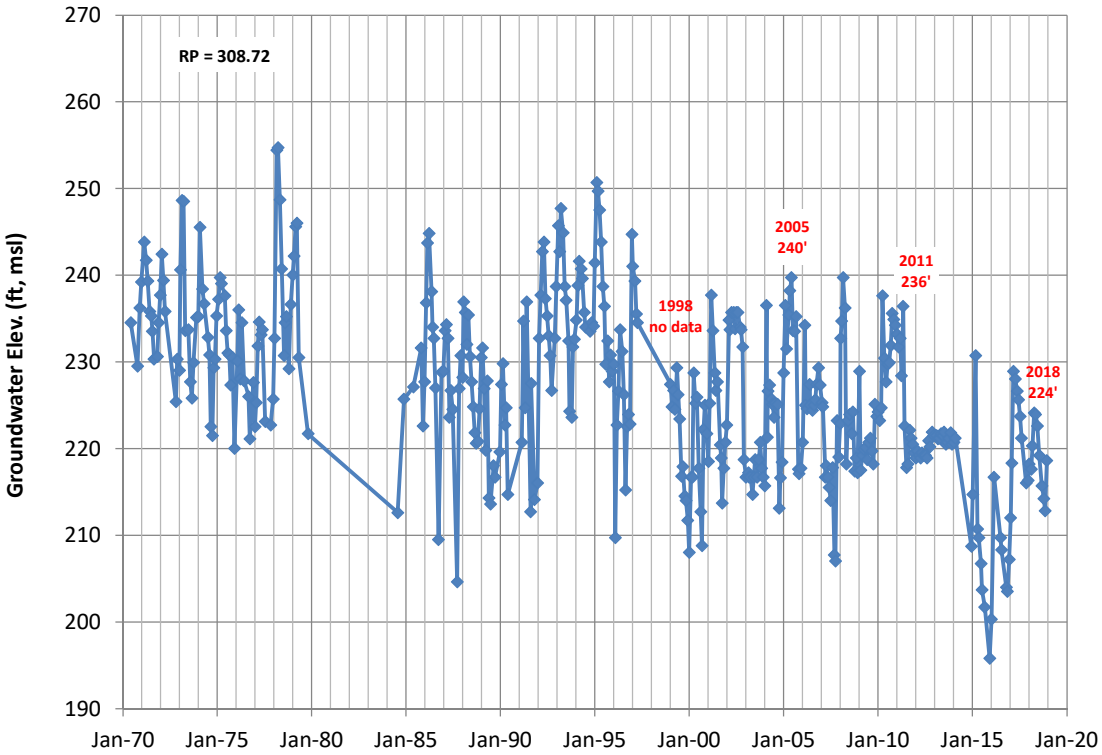

03N21W11E03S (100' - 453' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 316.49 FEET
ERRORNEOUS READING
TOP OF WELL SCREEN
1998 no data
2005 237'
2011 237'
2018 221'

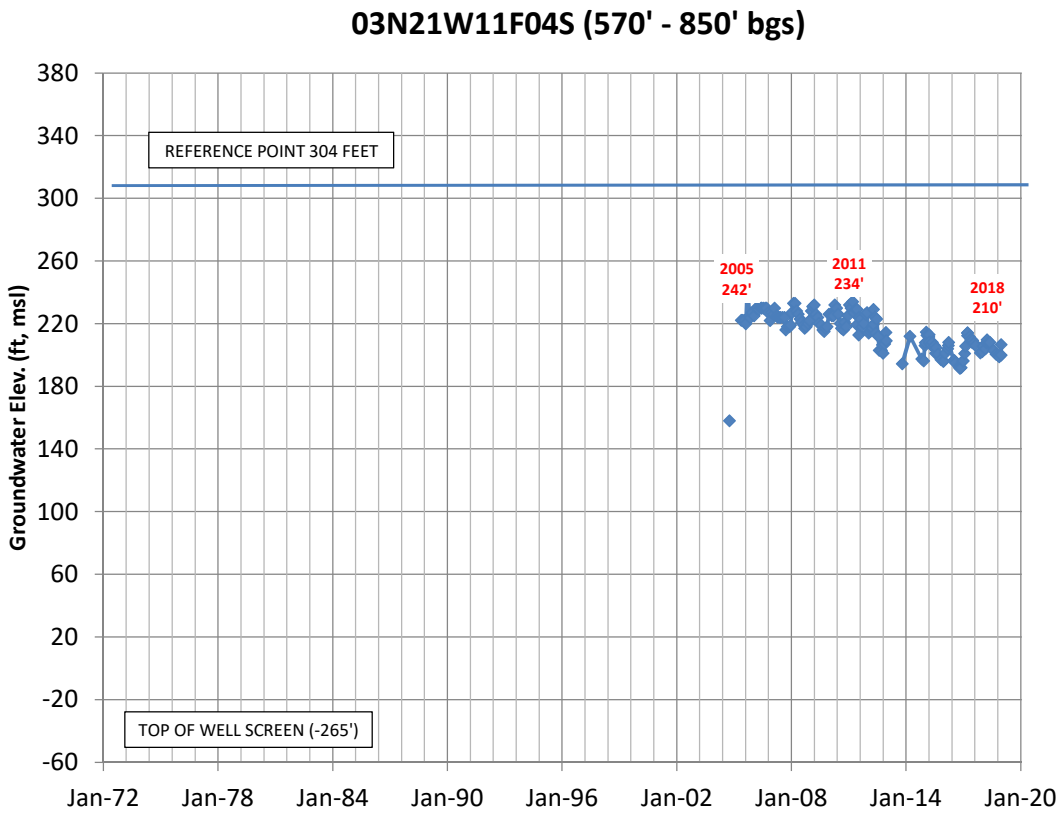

03N21W11E03S (100' - 453' bgs)
Groundwater Elev. (ft, msl)
260
250
240
230
220
210
200
190
180
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
RP = 316.49
1998 no data
2005 237'
2011 237'
2018 221'

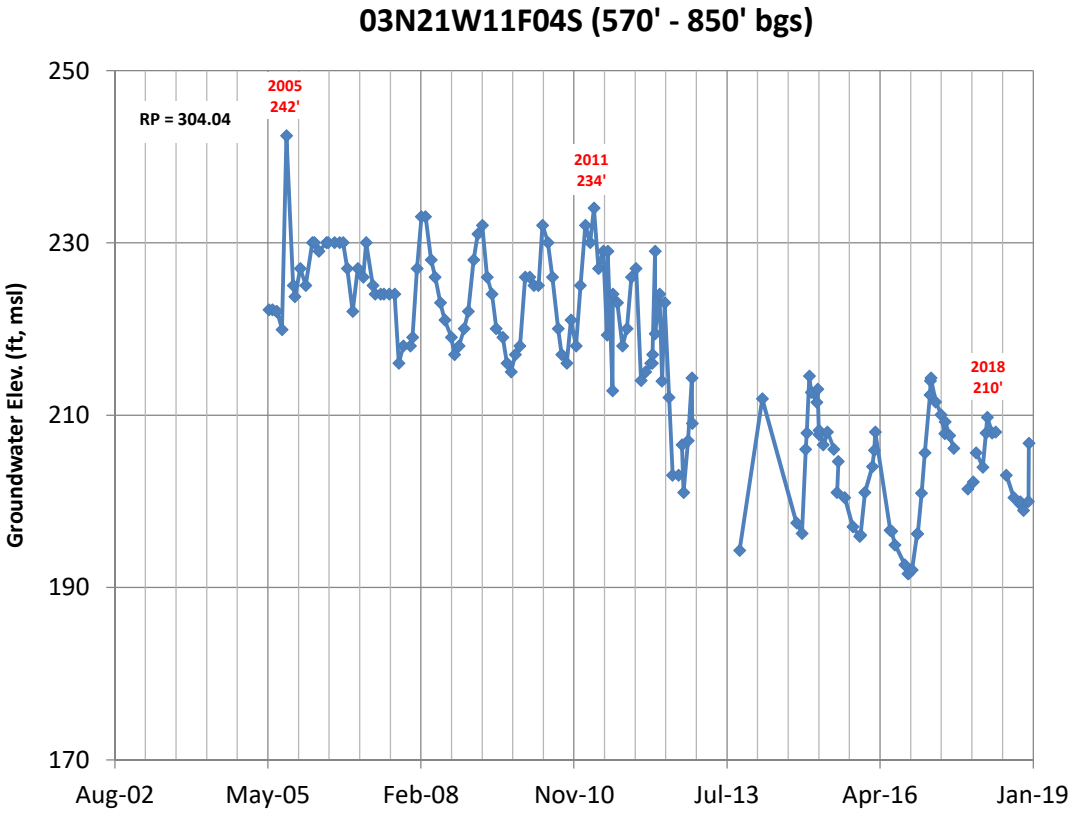
03N21W11F03S (153' -518' bgs)

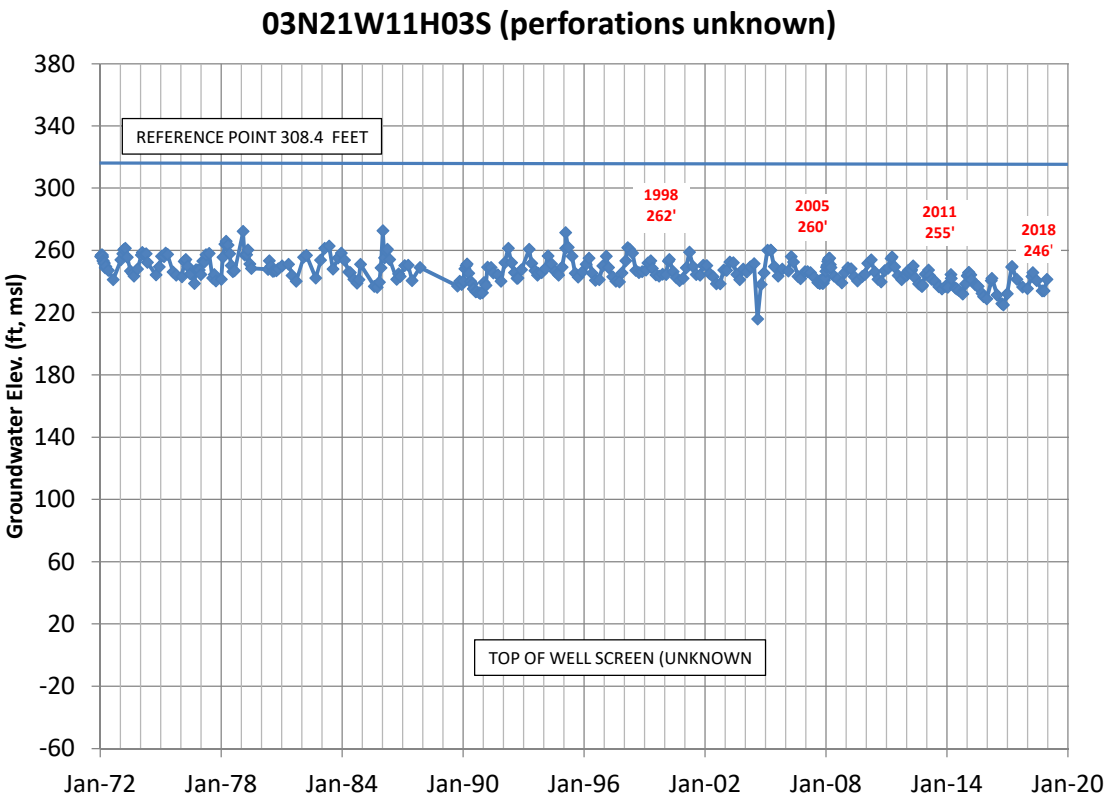


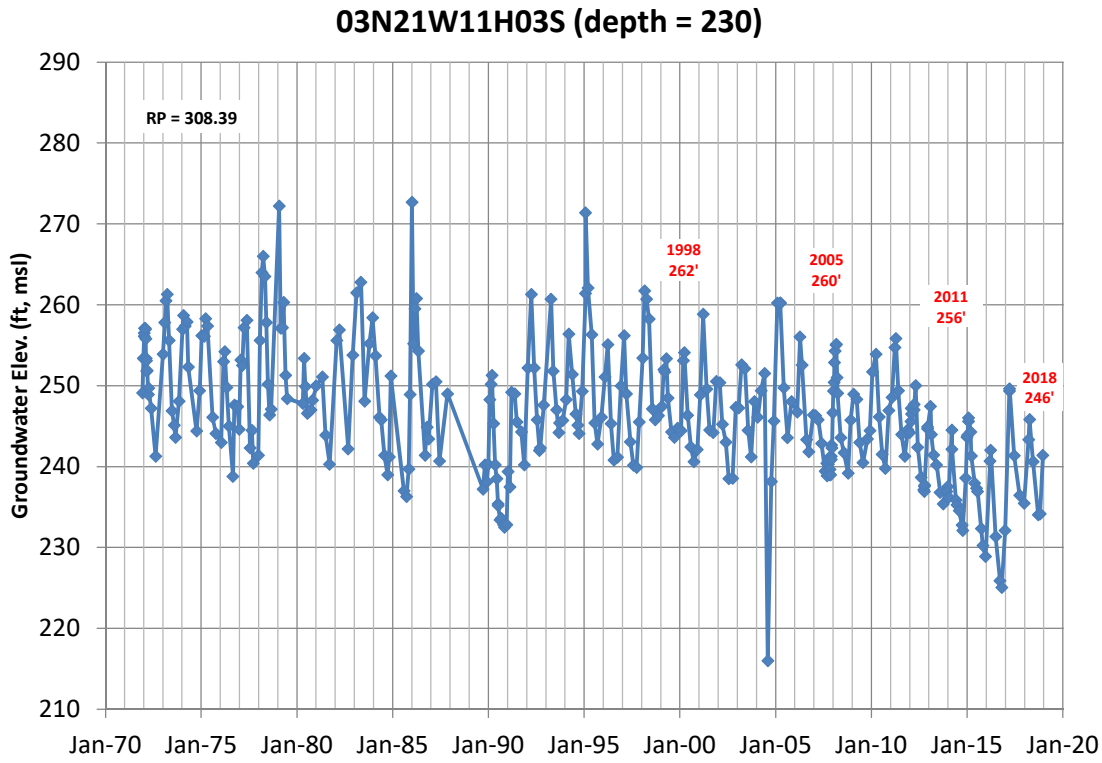
03N21W11F03S (153' -518' bgs)



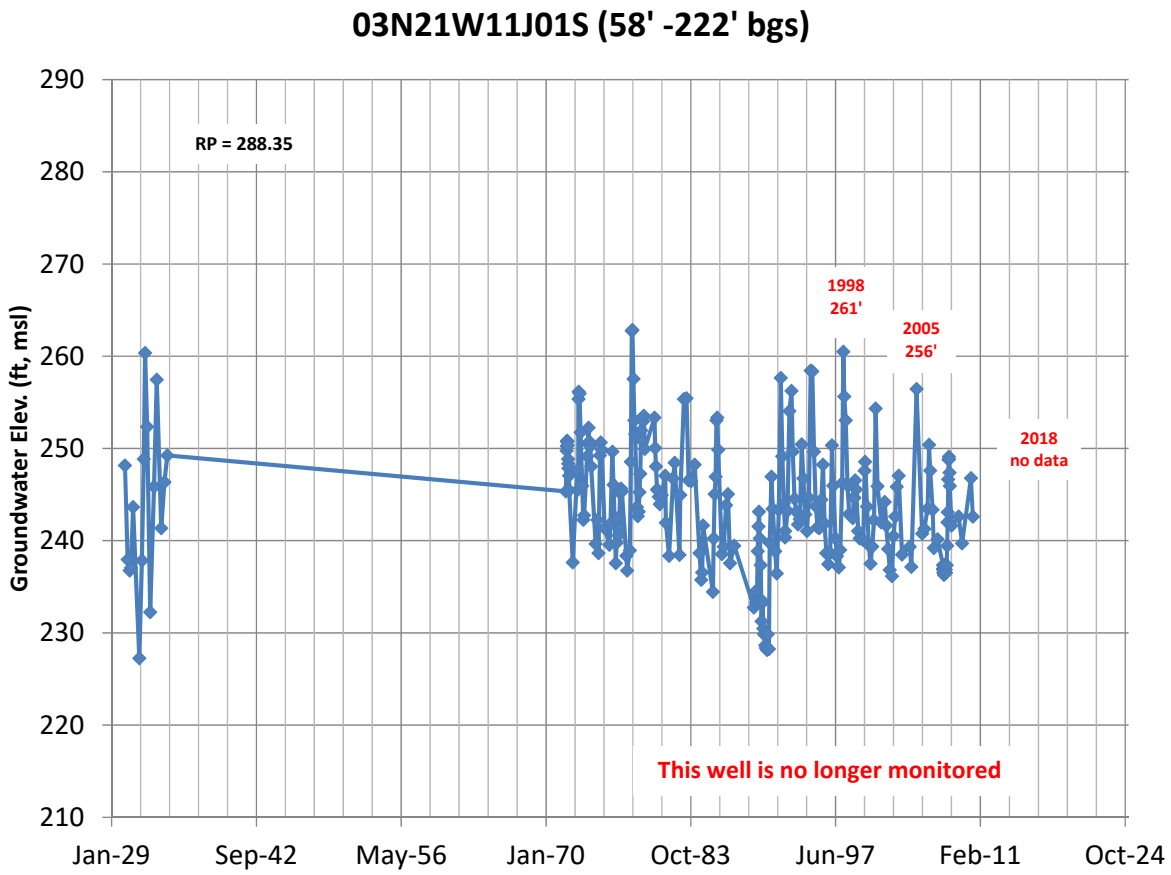

03N21W11F04S (570' - 850' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 304 FEET
TOP OF WELL SCREEN (-265')
2005
242'
2011
234'
2018
210'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

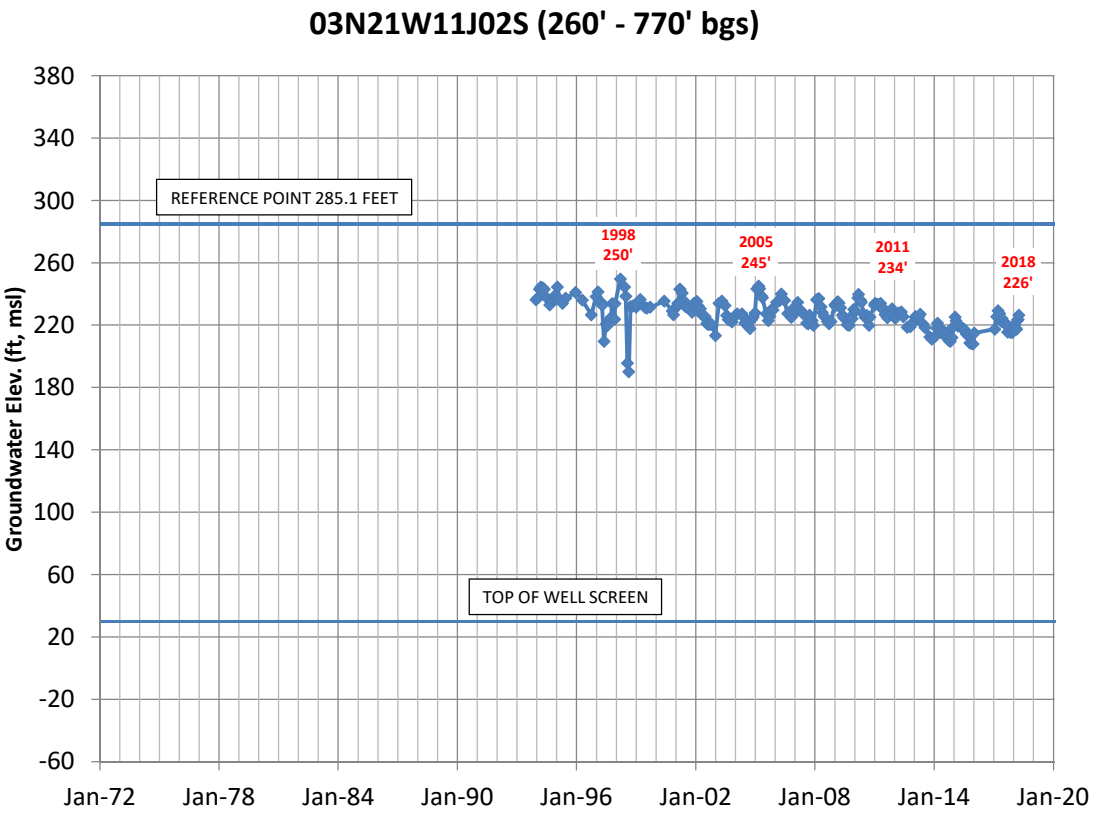

03N21W11F04S (570' - 850' bgs)
Groundwater Elev. (ft, msl)
250
230
210
190
170
RP = 304.04
2005
242'
2011
234'
2018
210'
Aug-02
May-05
Feb-08
Nov-10
Jul-13
Apr-16
Jan-19

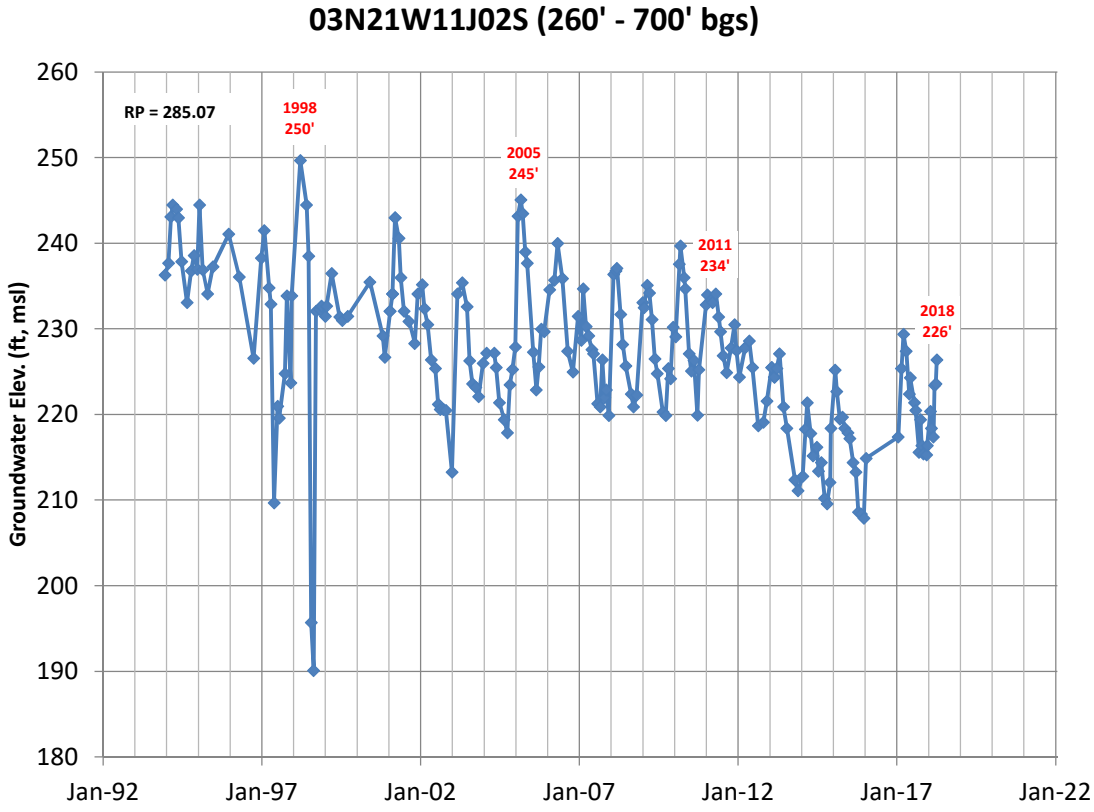

03N21W11H03S (perforations unknown)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 308.4 FEET
TOP OF WELL SCREEN (UNKNOWN
1998
262'
2005
260'
2011
255'
2018
246'

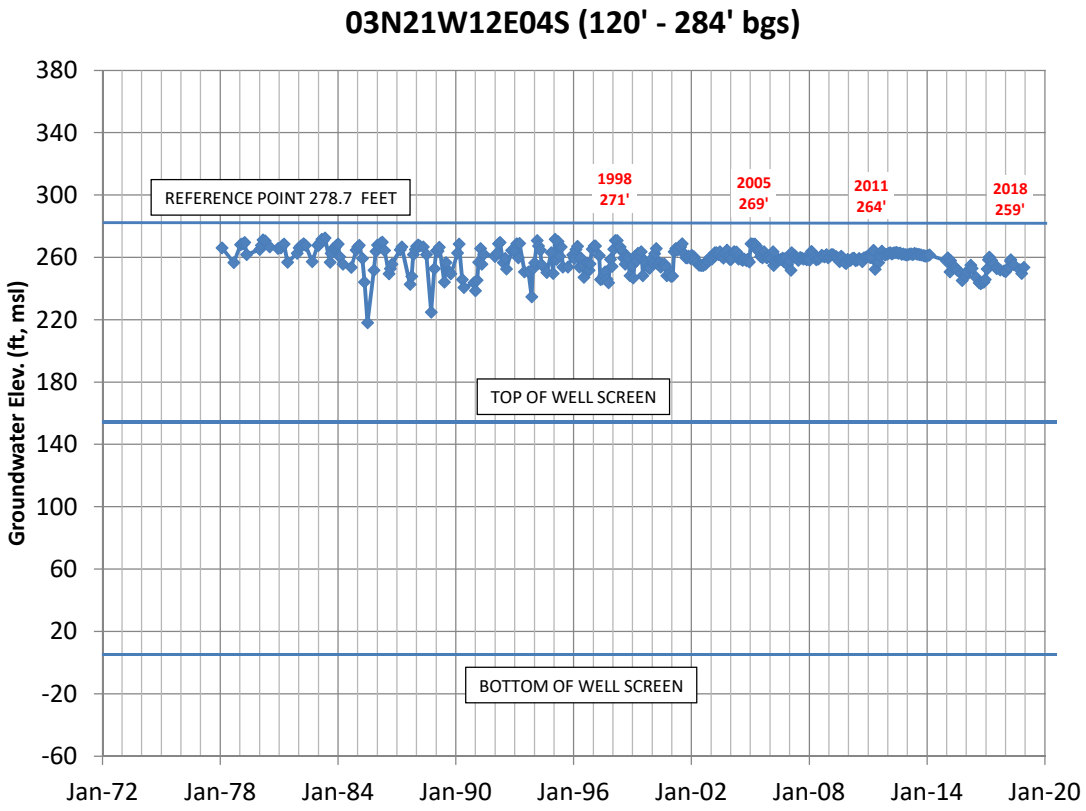

03N21W11H03S (depth = 230)
Groundwater Elev. (ft, msl)
290
280
270
260
250
240
230
220
210
Jan-70
Jan-75
Jan-80
Jan-85
Jan-90
Jan-95
Jan-00
Jan-05
Jan-10
Jan-15
Jan-20
RP = 308.39
1998
262'
2005
260'
2011
256'
2018
246'

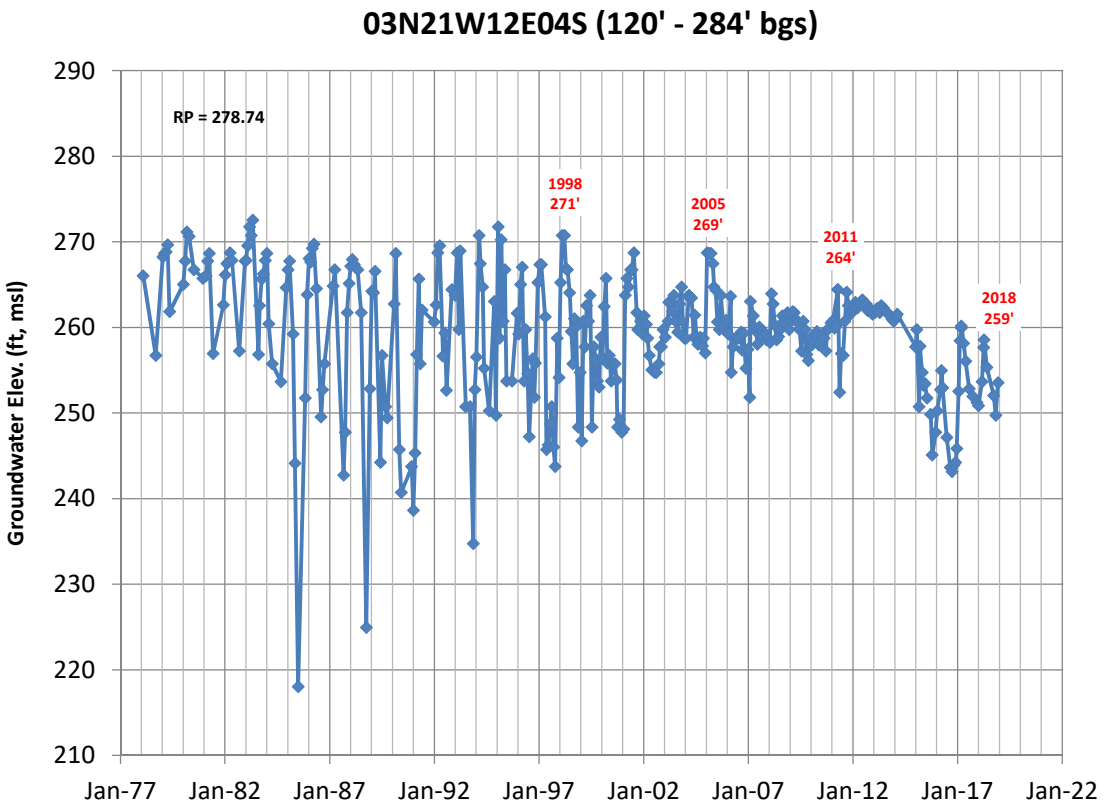
Intentionally Left Blank

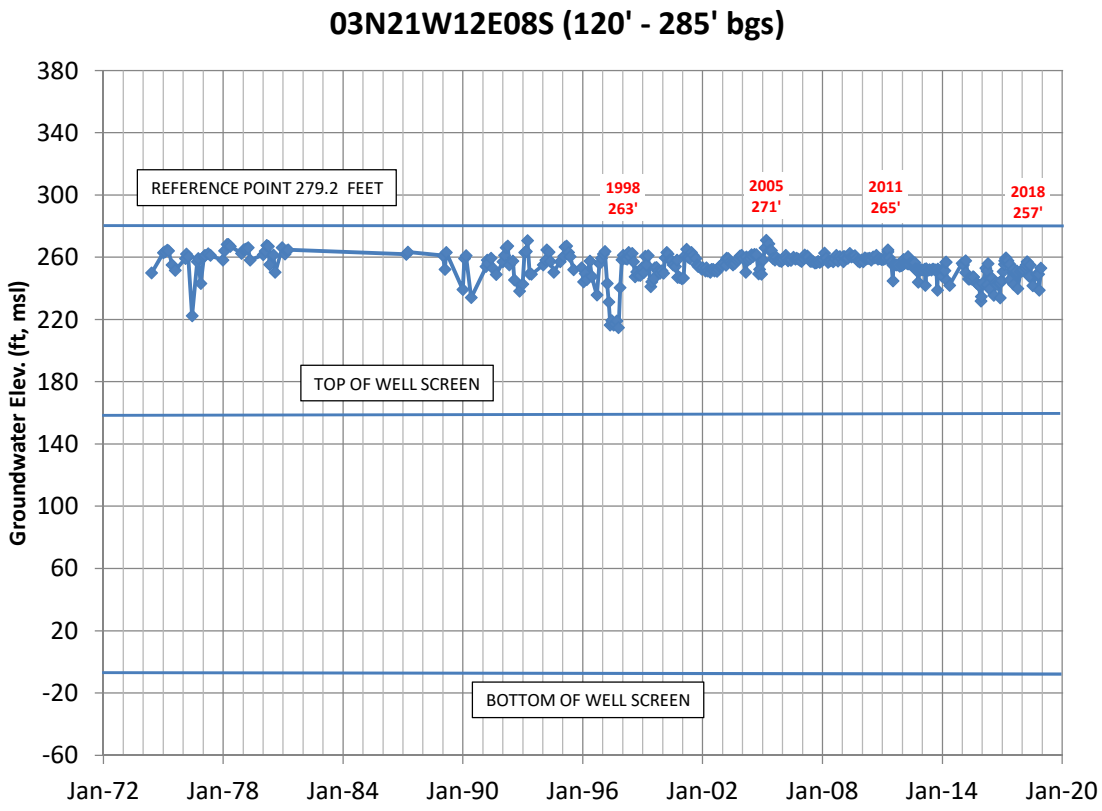


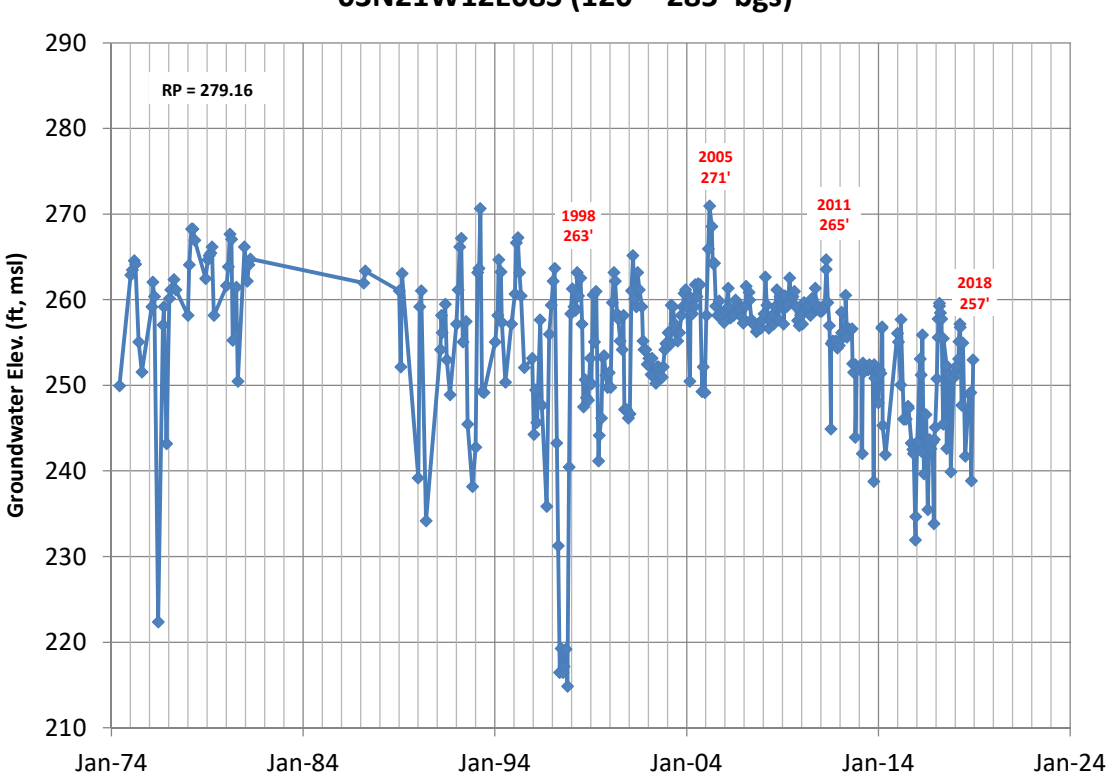

03N21W11J02S (260' - 770' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 285.1 FEET
TOP OF WELL SCREEN
1998
250'
2005
245'
2011
234'
2018
226'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

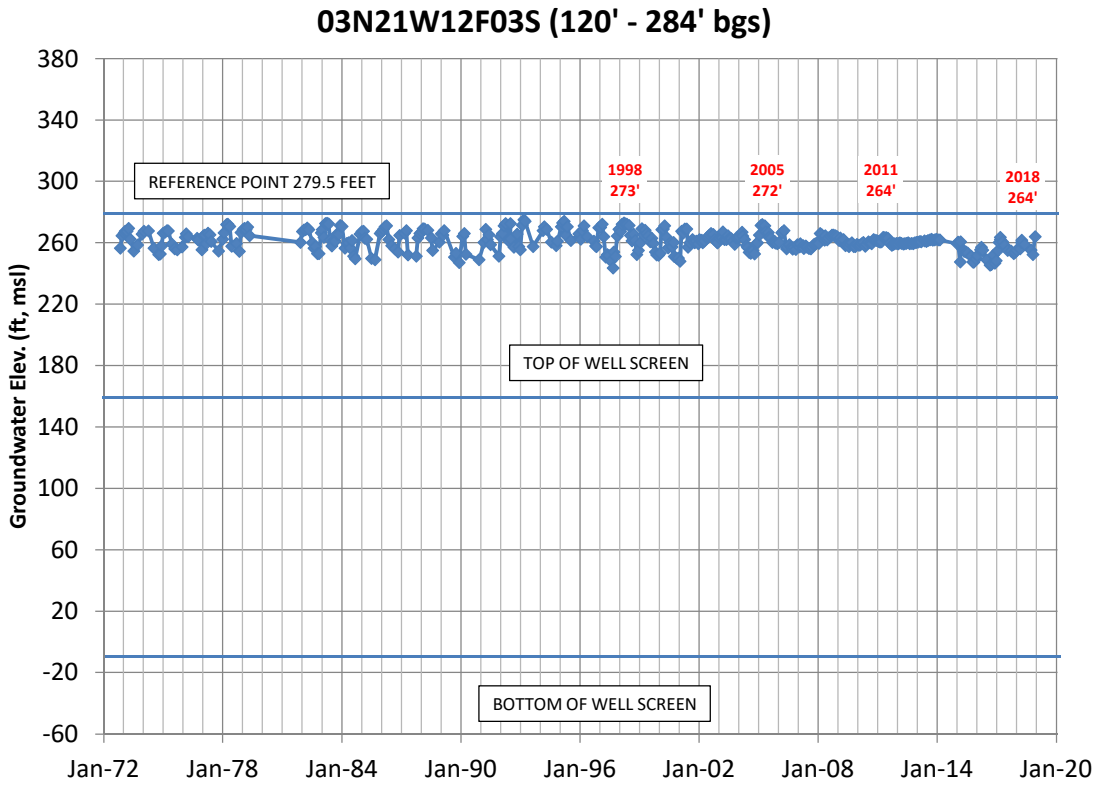

03N21W11J02S (260' - 700' bgs)
Groundwater Elev. (ft, msl)
260
250
240
230
220
210
200
190
180
RP = 285.07
1998
250'
2005
245'
2011
234'
2018
226'
Jan-92
Jan-97
Jan-02
Jan-07
Jan-12
Jan-17
Jan-22

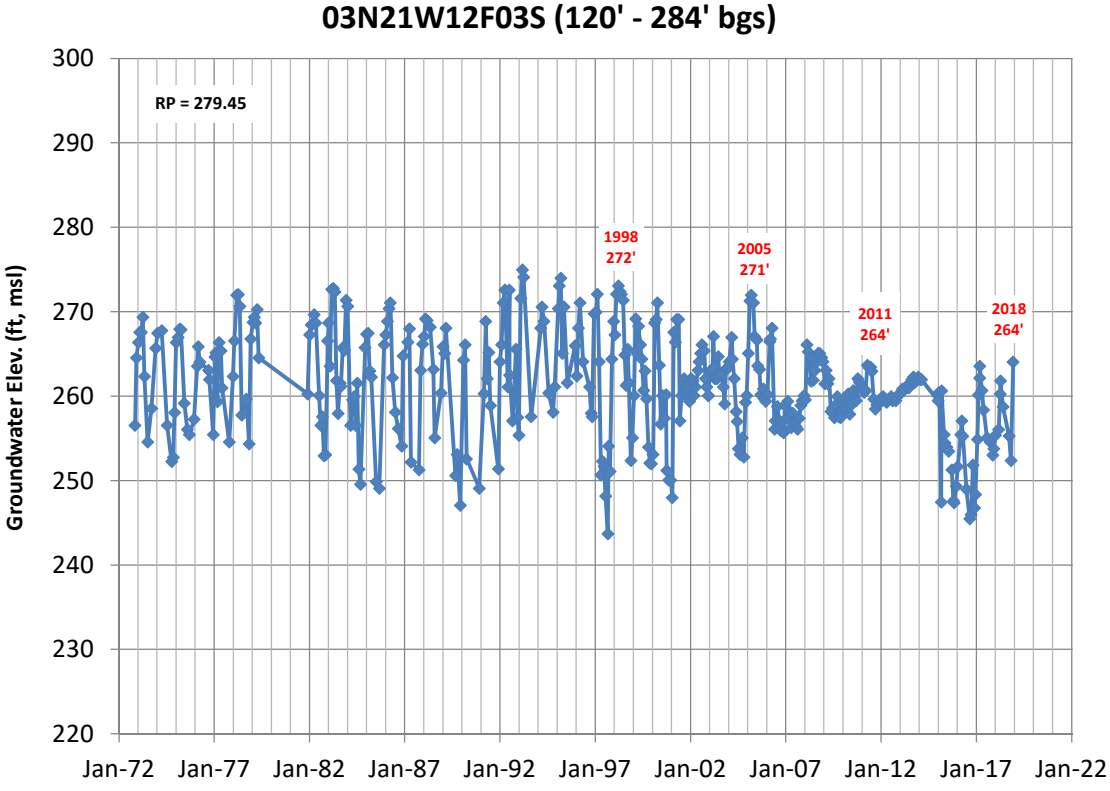

03N21W12E04S (120' - 284' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 278.7 FEET
TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
1998
271'
2005
269'
2011
264'
2018
259'

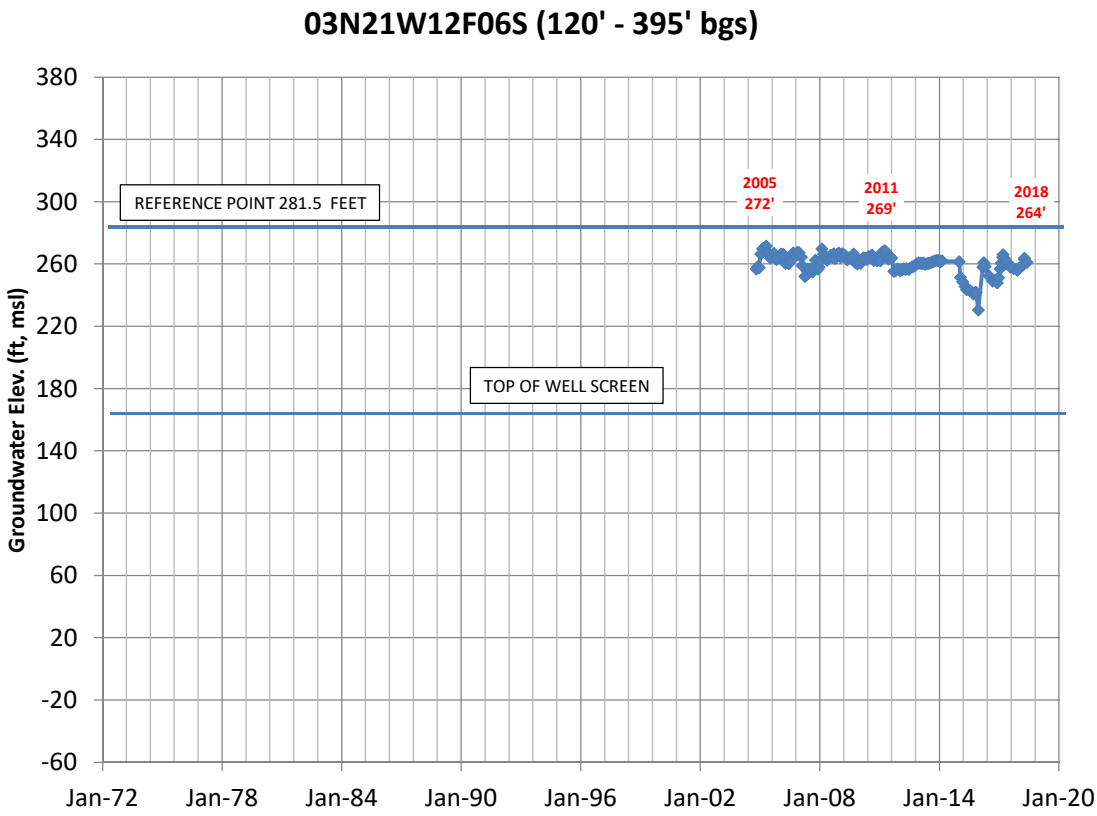

03N21W12E04S (120' - 284' bgs)
Groundwater Elev. (ft, msl)
290
280
270
260
250
240
230
220
210
Jan-77
Jan-82
Jan-87
Jan-92
Jan-97
Jan-02
Jan-07
Jan-12
Jan-17
Jan-22
RP = 278.74
1998
271'
2005
269'
2011
264'
2018
259'

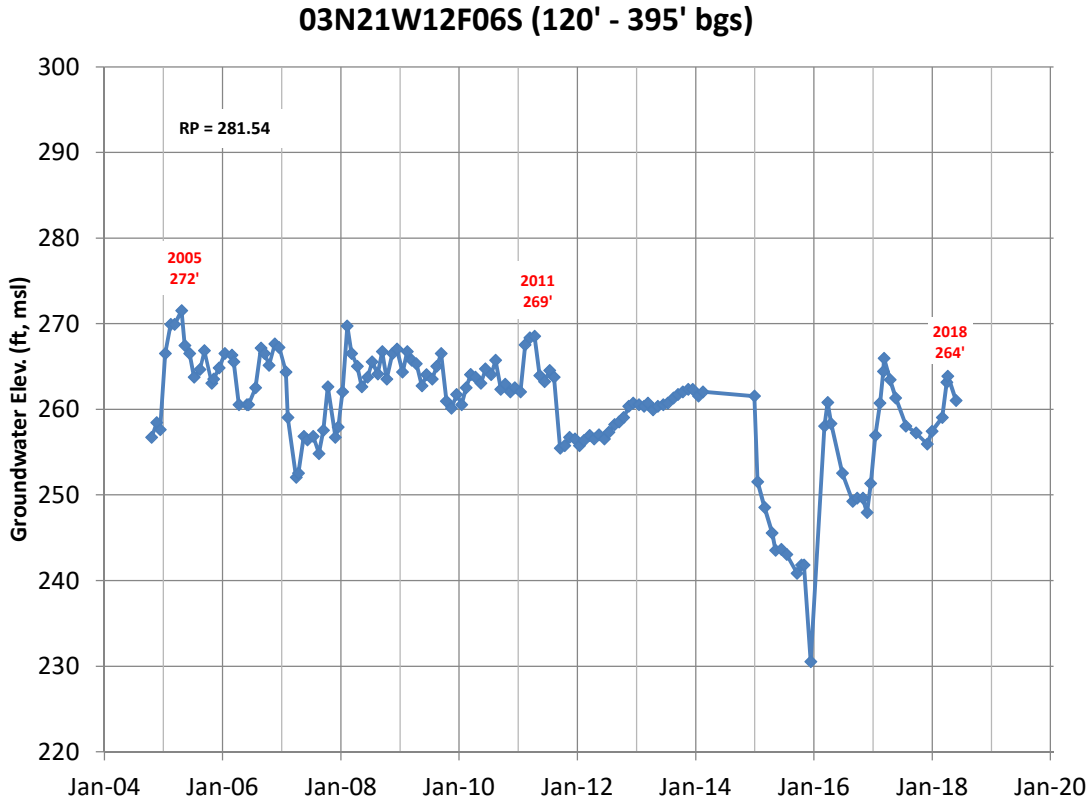

03N21W12E08S (120' - 285' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 279.2 FEET
TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
1998
263'
2005
271'
2011
265'
2018
257'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20


03N21W12E08S (120' - 285' bgs)
Groundwater Elev. (ft, msl)
290
280
270
260
250
240
230
220
210
RP = 279.16
1998
263'
2005
271'
2011
265'
2018
257'
Jan-74
Jan-84
Jan-94
Jan-04
Jan-14
Jan-24

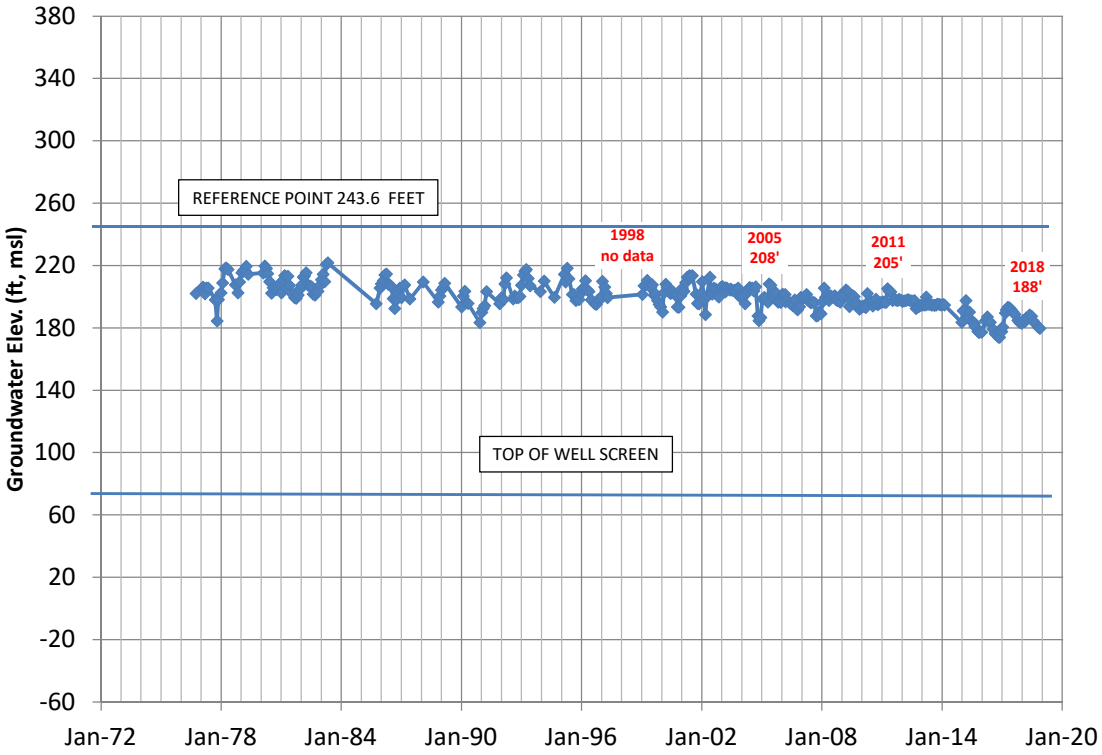

03N21W12F03S (120' - 284' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 279.5 FEET
TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
1998
273'
2005
272'
2011
264'
2018
264'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20


03N21W12F03S (120' - 284' bgs)
Groundwater Elev. (ft, msl)
300
290
280
270
260
250
240
230
220
RP = 279.45
1998
272'
2005
271'
2011
264'
2018
264'
Jan-72
Jan-77
Jan-82
Jan-87
Jan-92
Jan-97
Jan-02
Jan-07
Jan-12
Jan-17
Jan-22

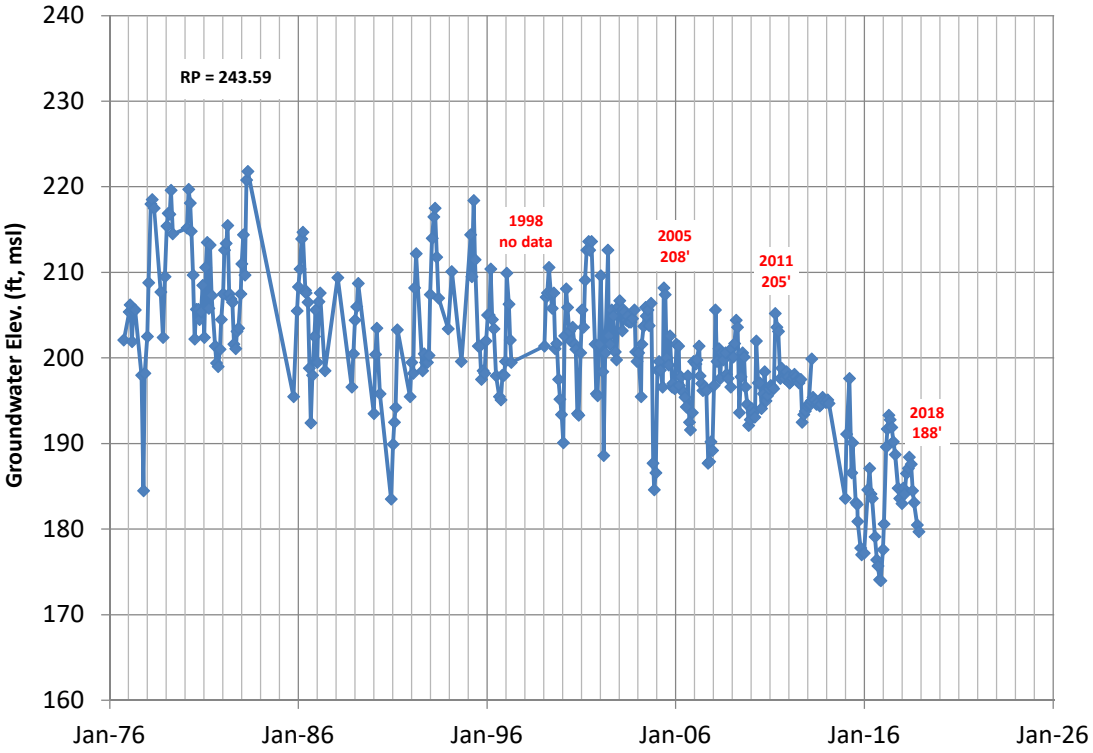

03N21W12F06S (120' - 395' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 281.5 FEET
TOP OF WELL SCREEN
2005
272'
2011
269'
2018
264'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20


03N21W12F06S (120' - 395' bgs)
Groundwater Elev. (ft, msl)
300
290
280
270
260
250
240
230
220
RP = 281.54
2005
272'
2011
269'
2018
264'
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Jan-16
Jan-18
Jan-20

03N21W15C02S (176' - 372' bgs)



03N21W15C02S (176' - 322' bgs)



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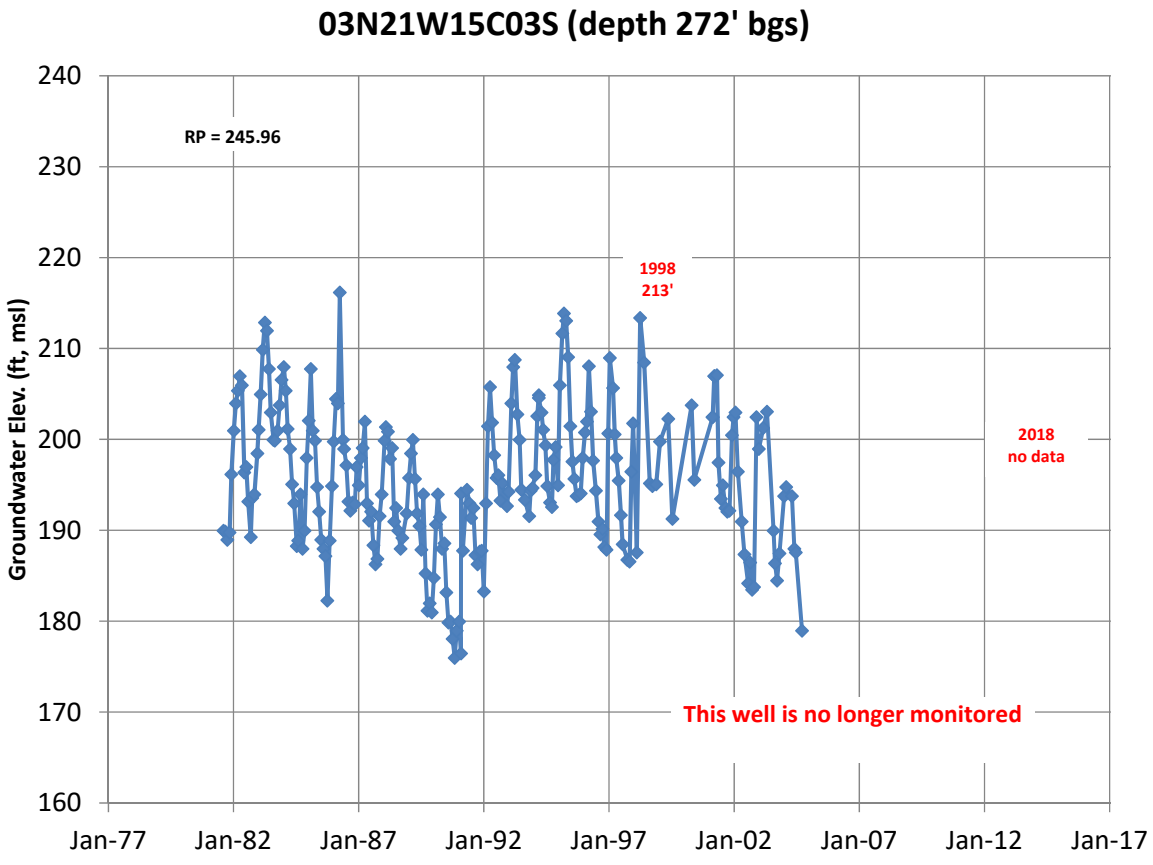
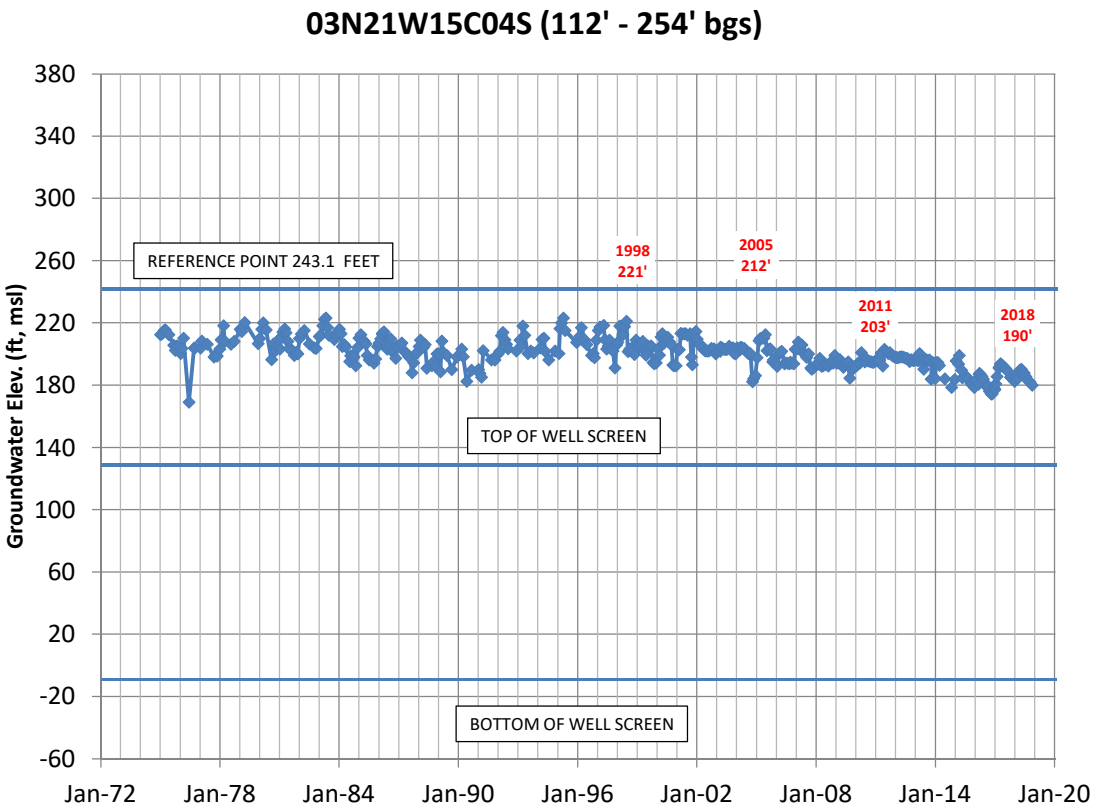
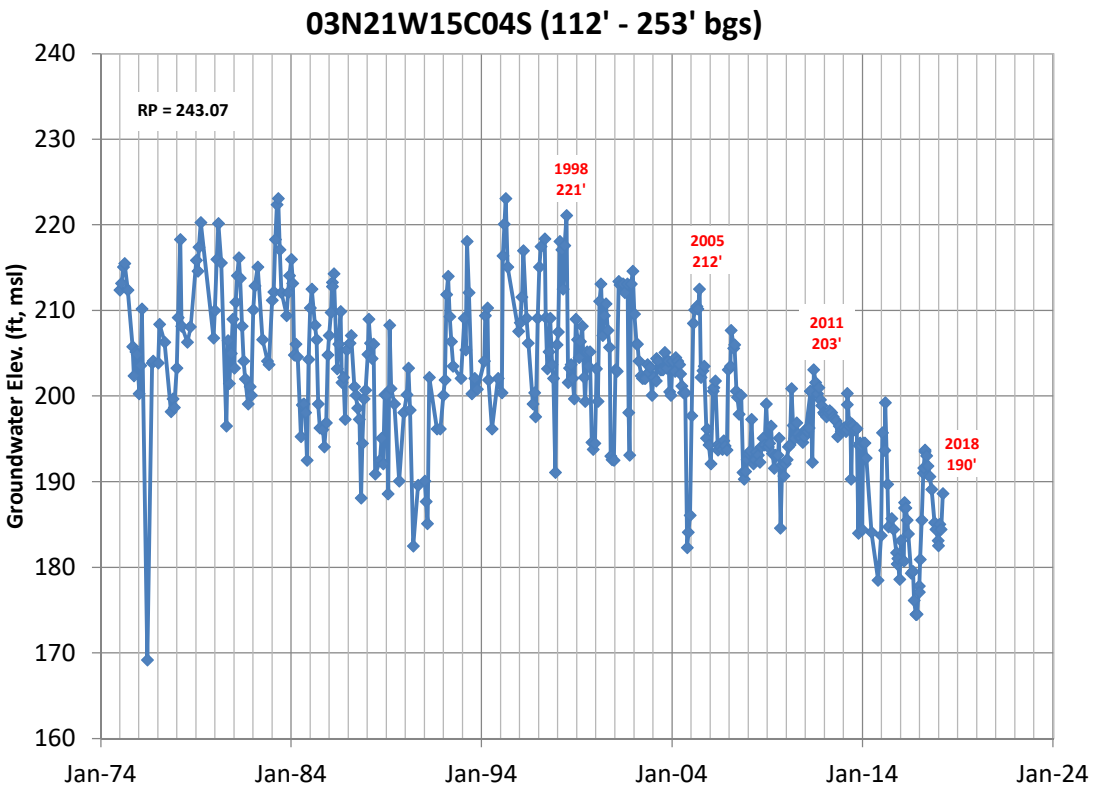
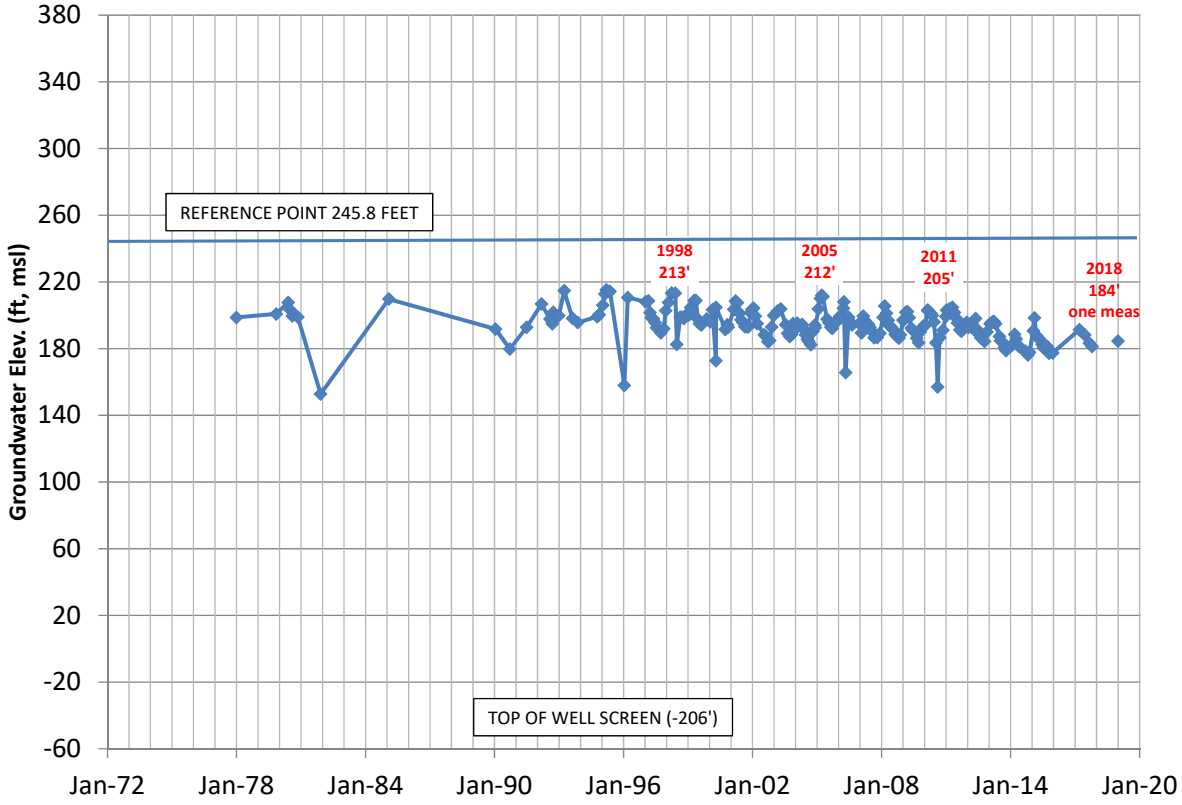


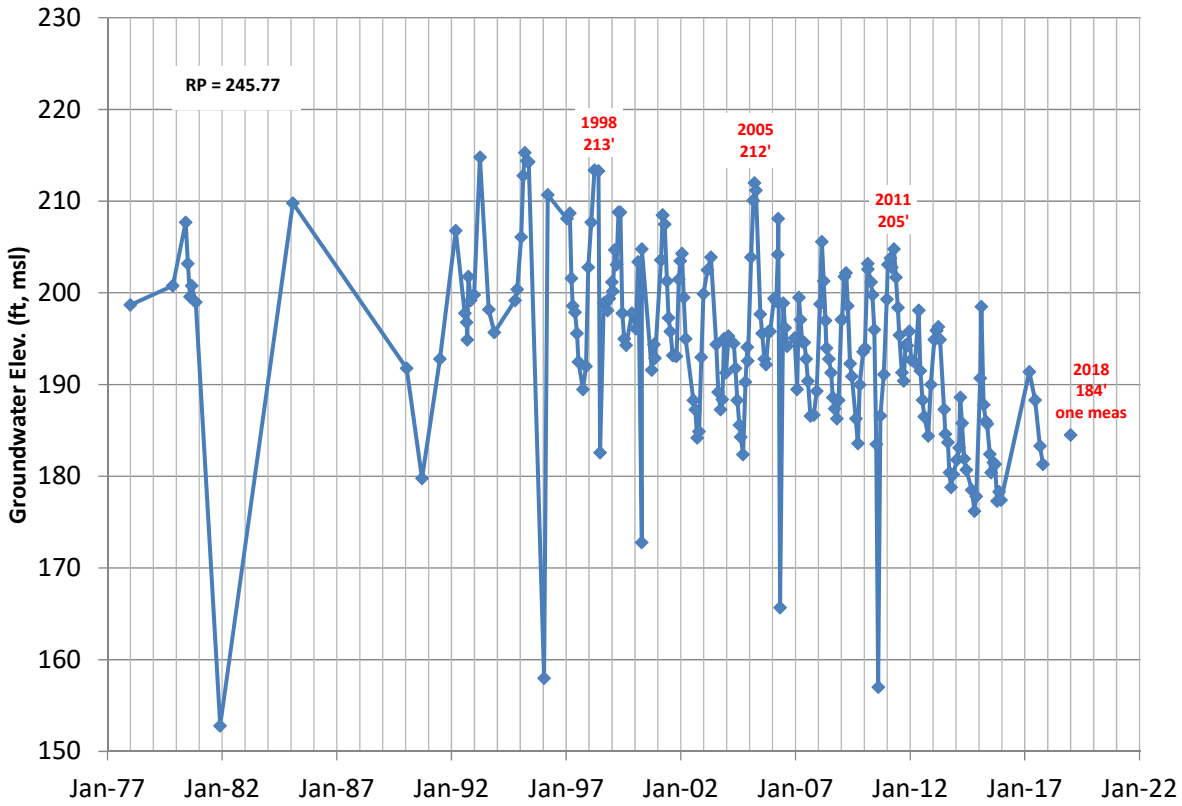

03N21W15C04S (112' - 254' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 243.1 FEET
TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
1998
221'
2005
212'
2011
203'
2018
190'

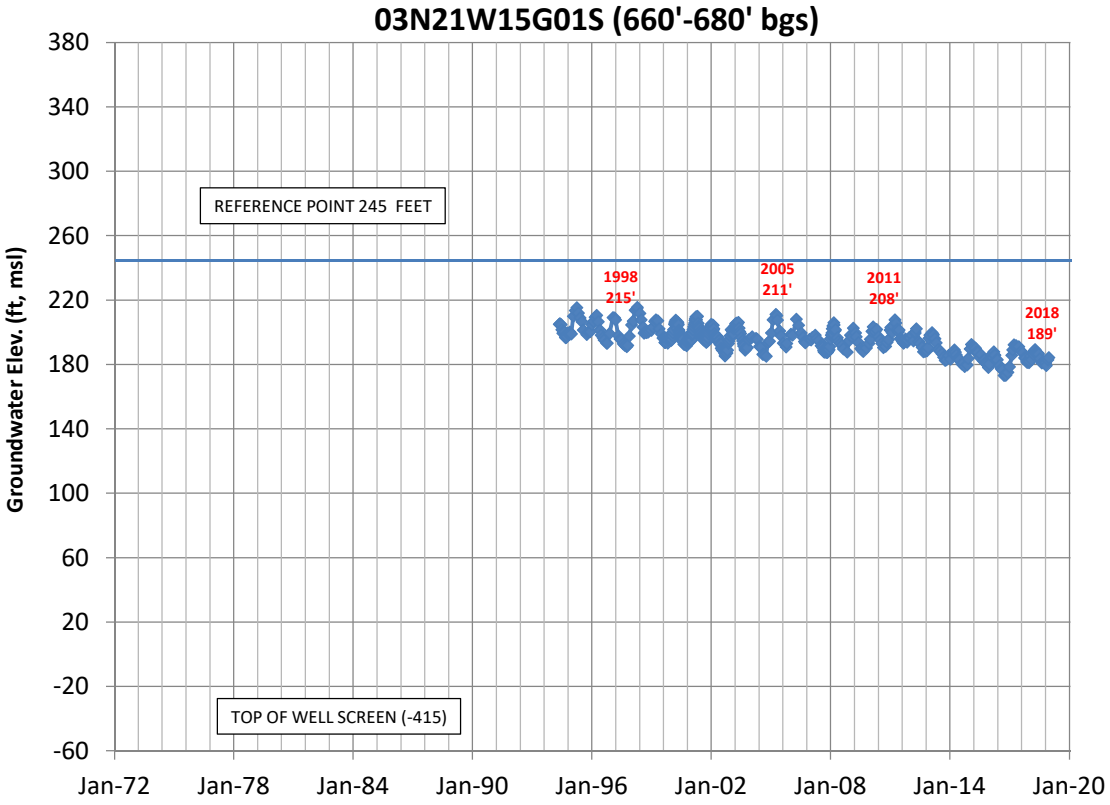

03N21W15C04S (112' - 253' bgs)
Groundwater Elev. (ft, msl)
240
230
220
210
200
190
180
170
160
Jan-74
Jan-84
Jan-94
Jan-04
Jan-14
Jan-24
RP = 243.07
1998
221'
2005
212'
2011
203'
2018
190'

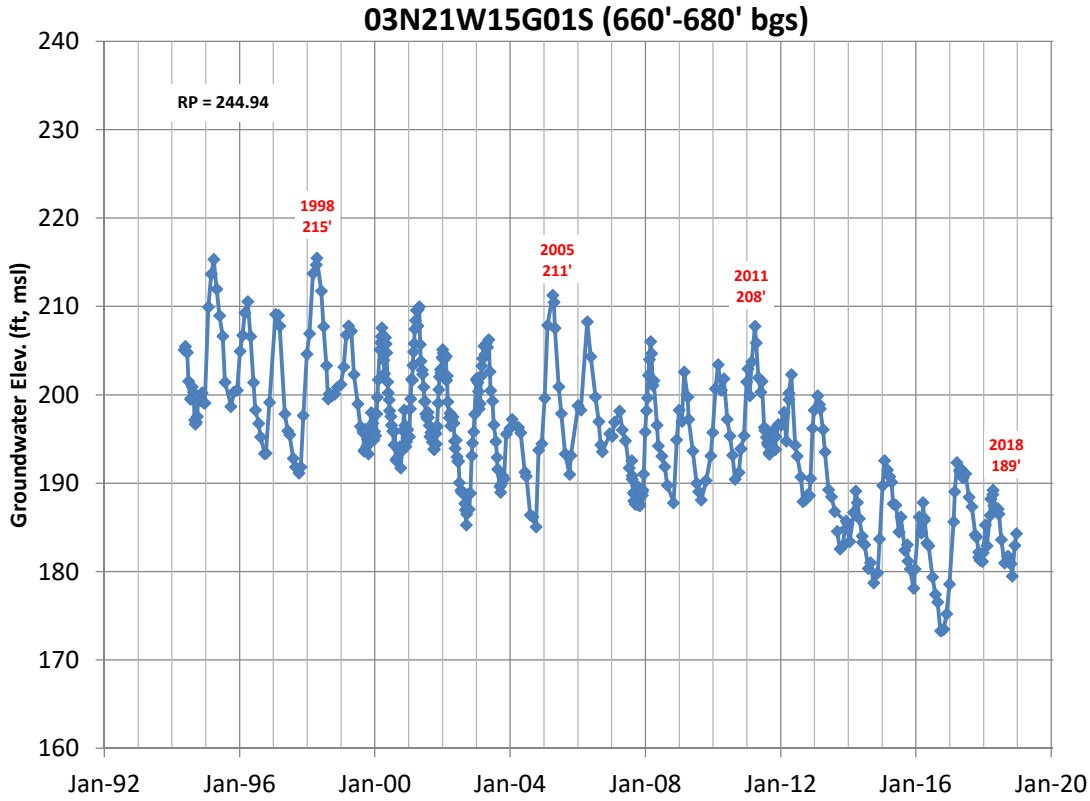
03N21W15C06S (452' - 653' bgs)

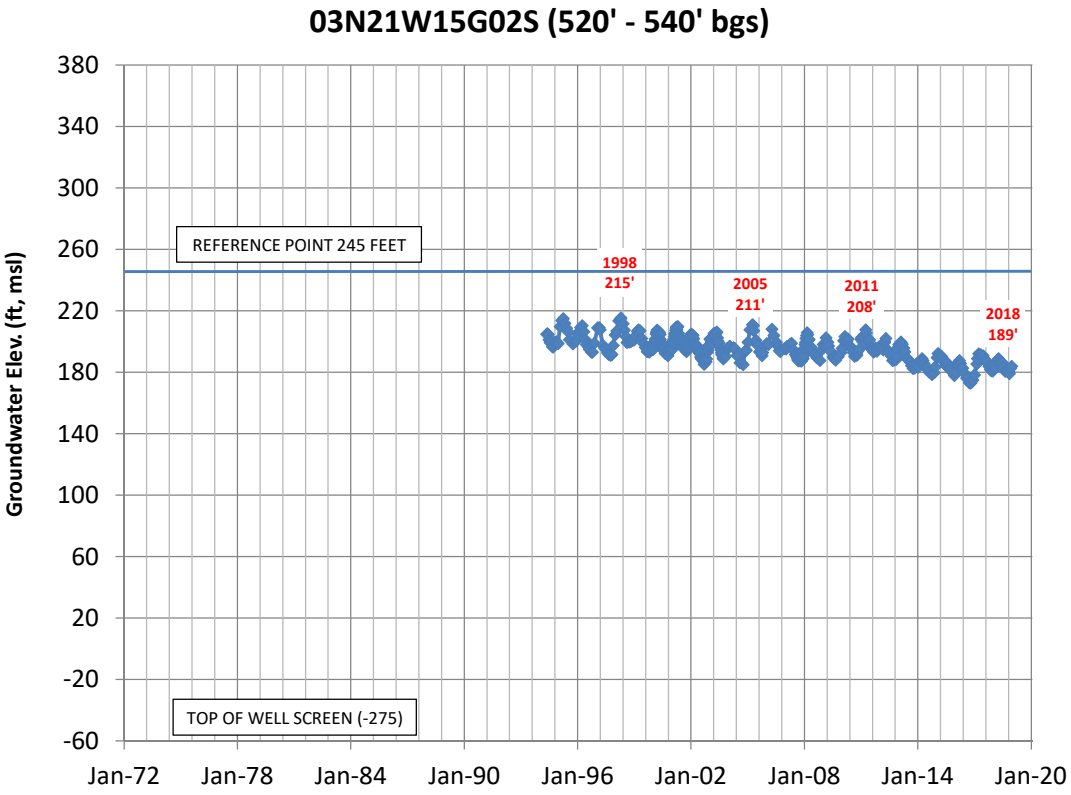


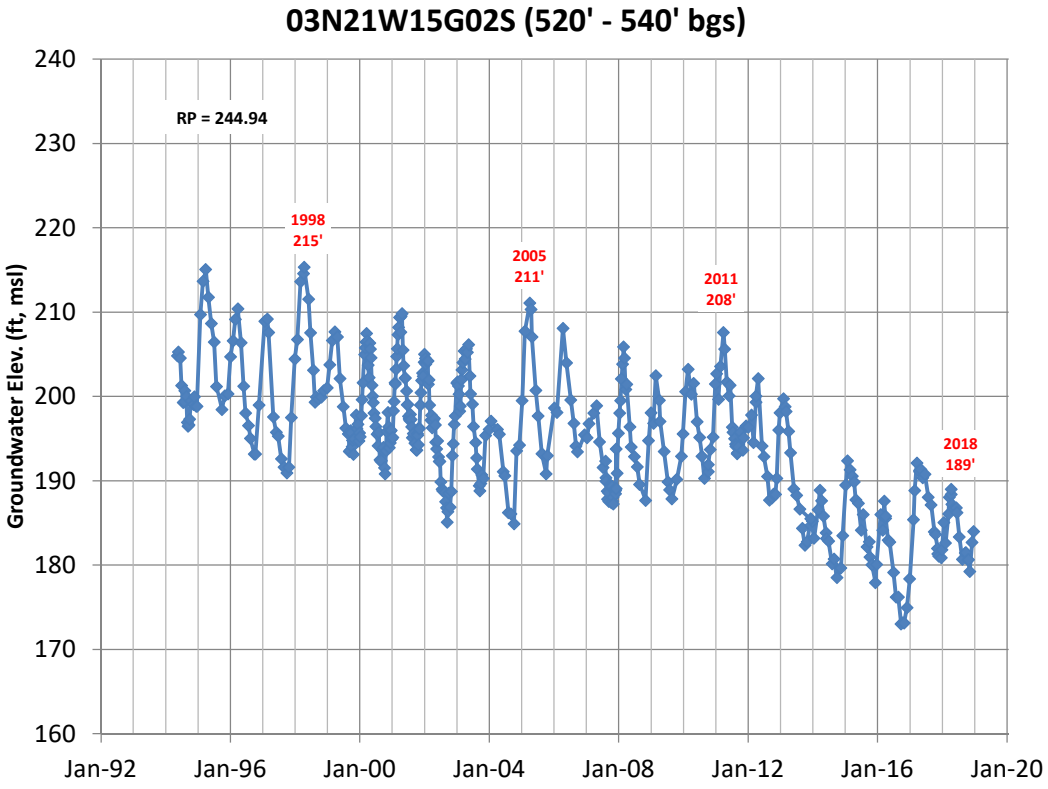
03N21W15C06S (452' - 653' bgs)

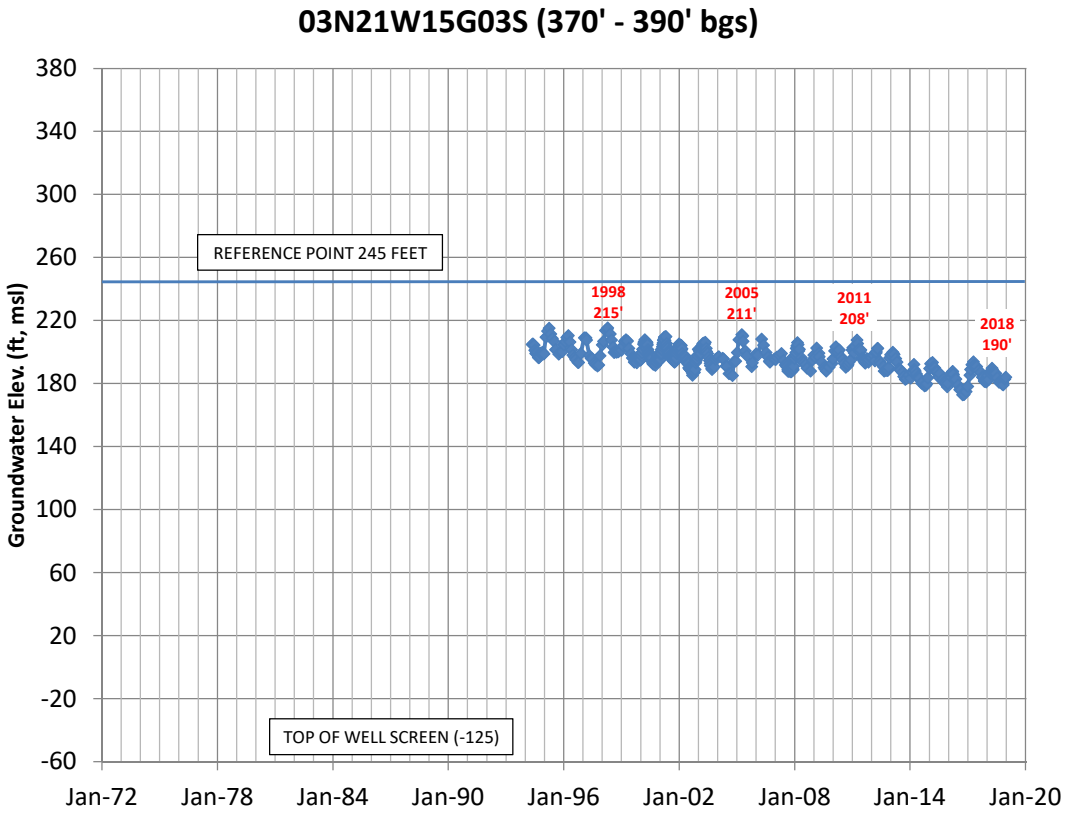


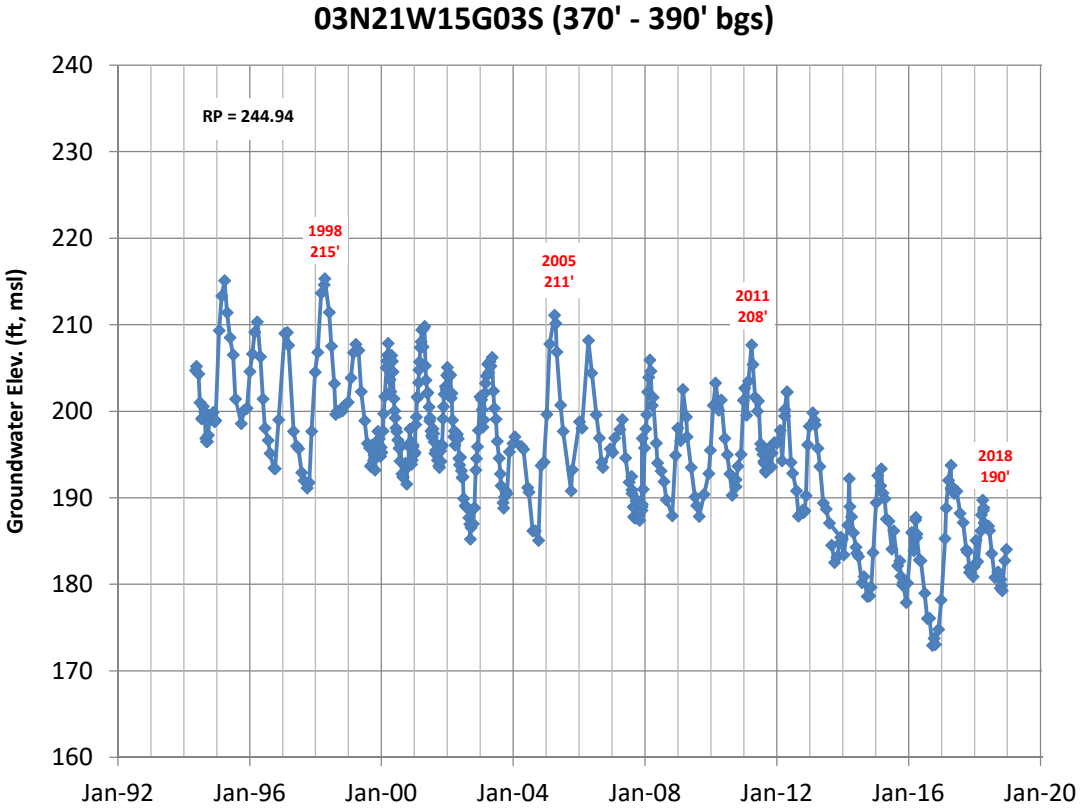

03N21W15G01S (660'-680' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 245 FEET
TOP OF WELL SCREEN (-415)
1998
215'
2005
211'
2011
208'
2018
189'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

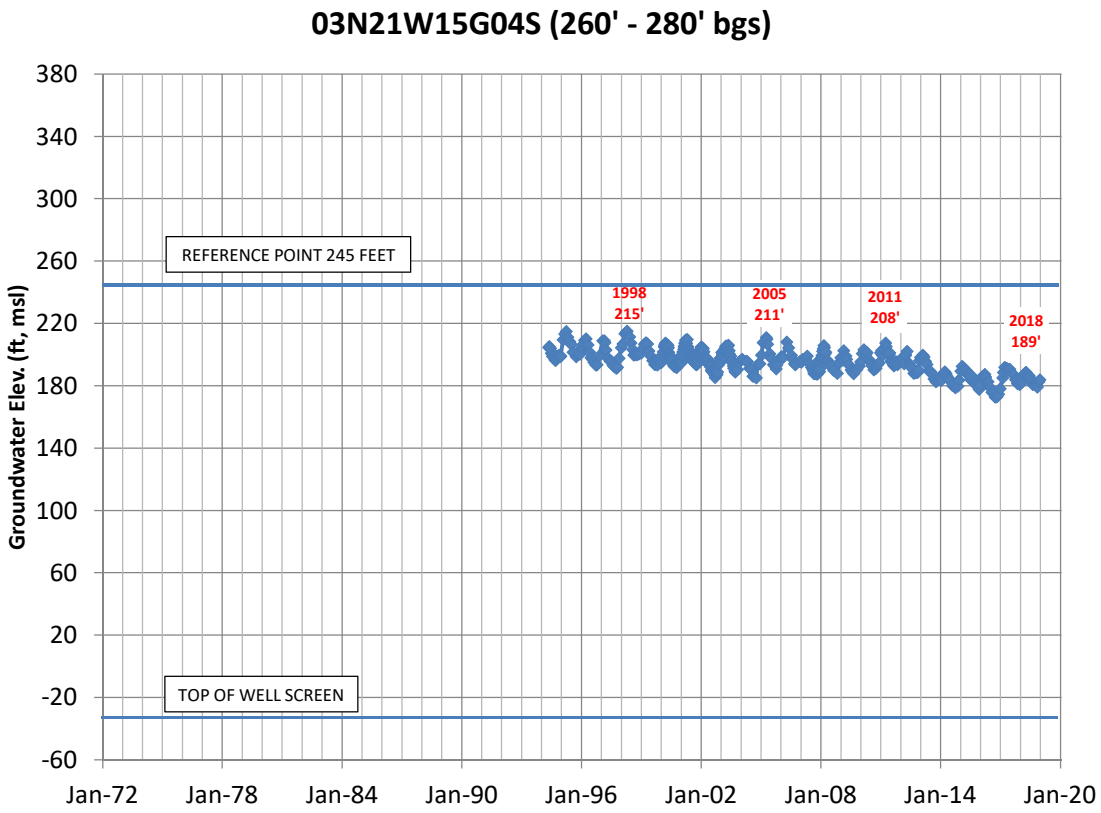

03N21W15G01S (660'-680' bgs)
Groundwater Elev. (ft, msl)
240
230
220
210
200
190
180
170
160
RP = 244.94
1998
215'
2005
211'
2011
208'
2018
189'
Jan-92
Jan-96
Jan-00
Jan-04
Jan-08
Jan-12
Jan-16
Jan-20

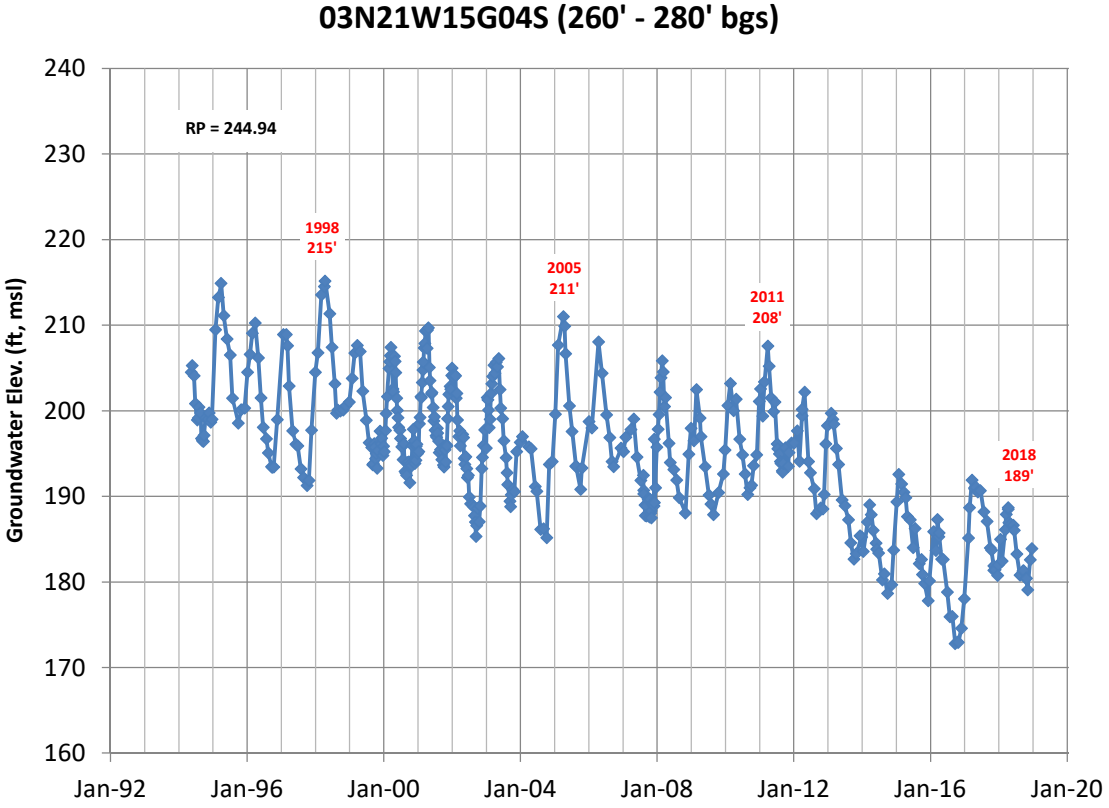

03N21W15G02S (520' - 540' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 245 FEET
TOP OF WELL SCREEN (-275)
1998
215'
2005
211'
2011
208'
2018
189'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

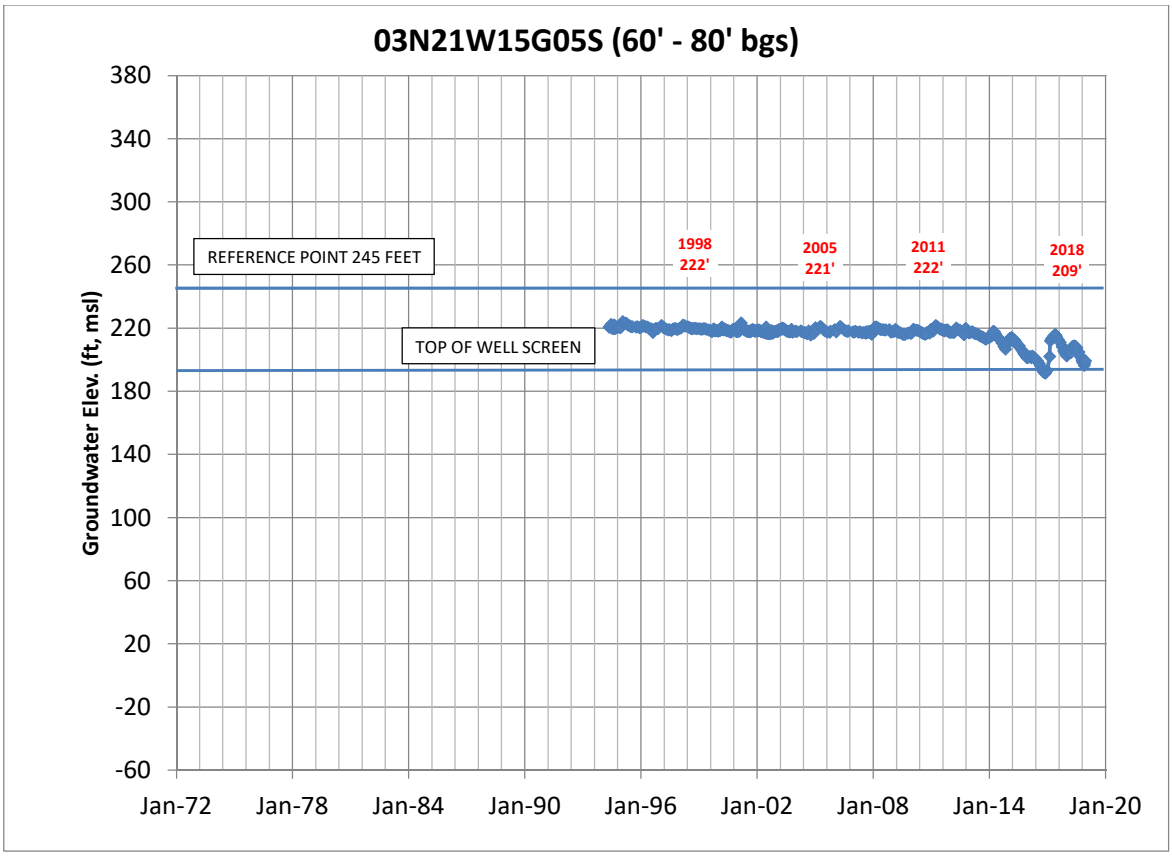

03N21W15G02S (520' - 540' bgs)
Groundwater Elev. (ft, msl)
240
230
220
210
200
190
180
170
160
RP = 244.94
1998
215'
2005
211'
2011
208'
2018
189'
Jan-92
Jan-96
Jan-00
Jan-04
Jan-08
Jan-12
Jan-16
Jan-20

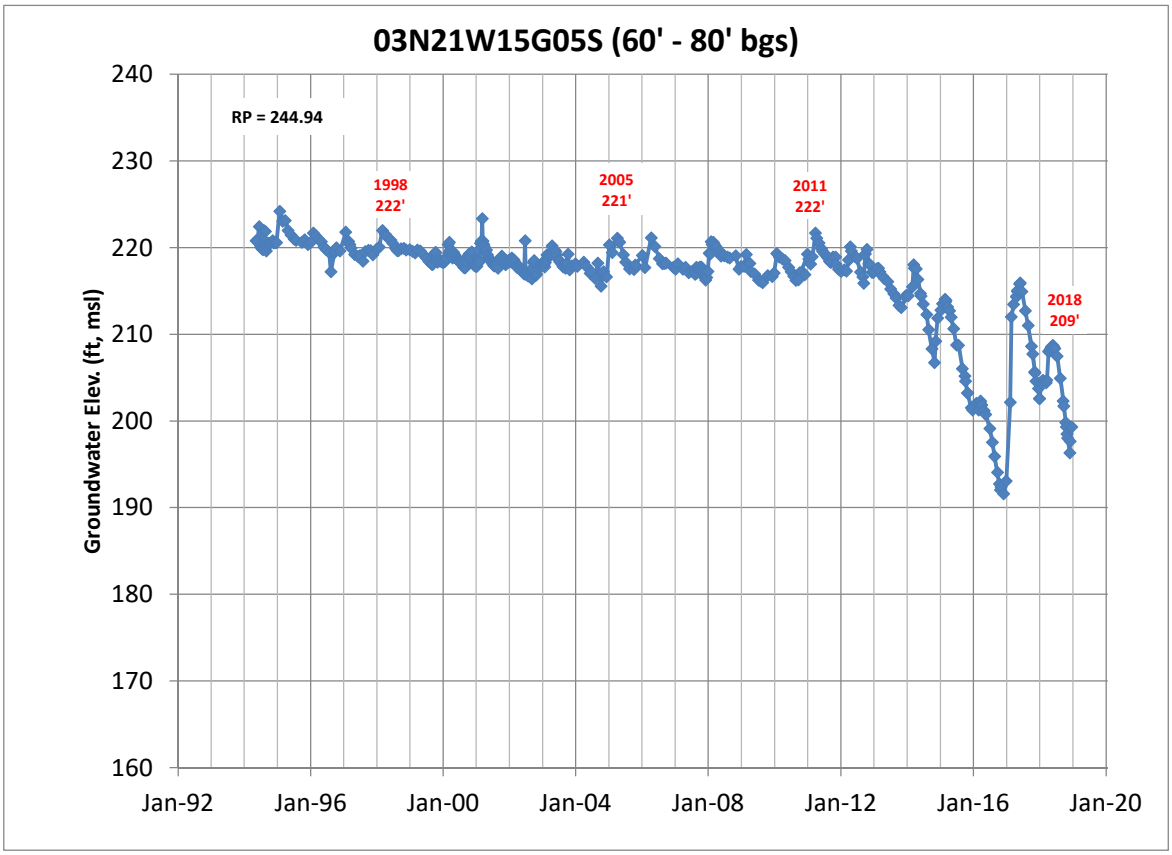

03N21W15G03S (370' - 390' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 245 FEET
TOP OF WELL SCREEN (-125)
1998
215'
2005
211'
2011
208'
2018
190'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

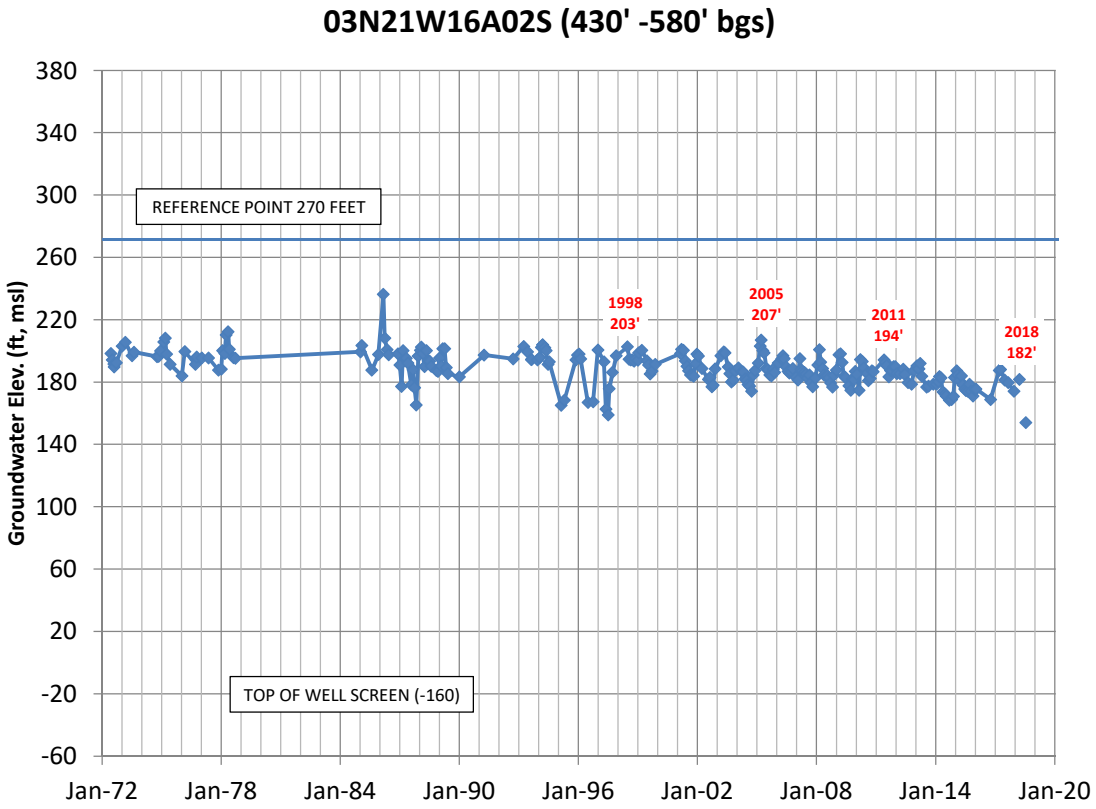

03N21W15G03S (370' - 390' bgs)
Groundwater Elev. (ft, msl)
240
230
220
210
200
190
180
170
160
RP = 244.94
1998
215'
2005
211'
2011
208'
2018
190'
Jan-92
Jan-96
Jan-00
Jan-04
Jan-08
Jan-12
Jan-16
Jan-20

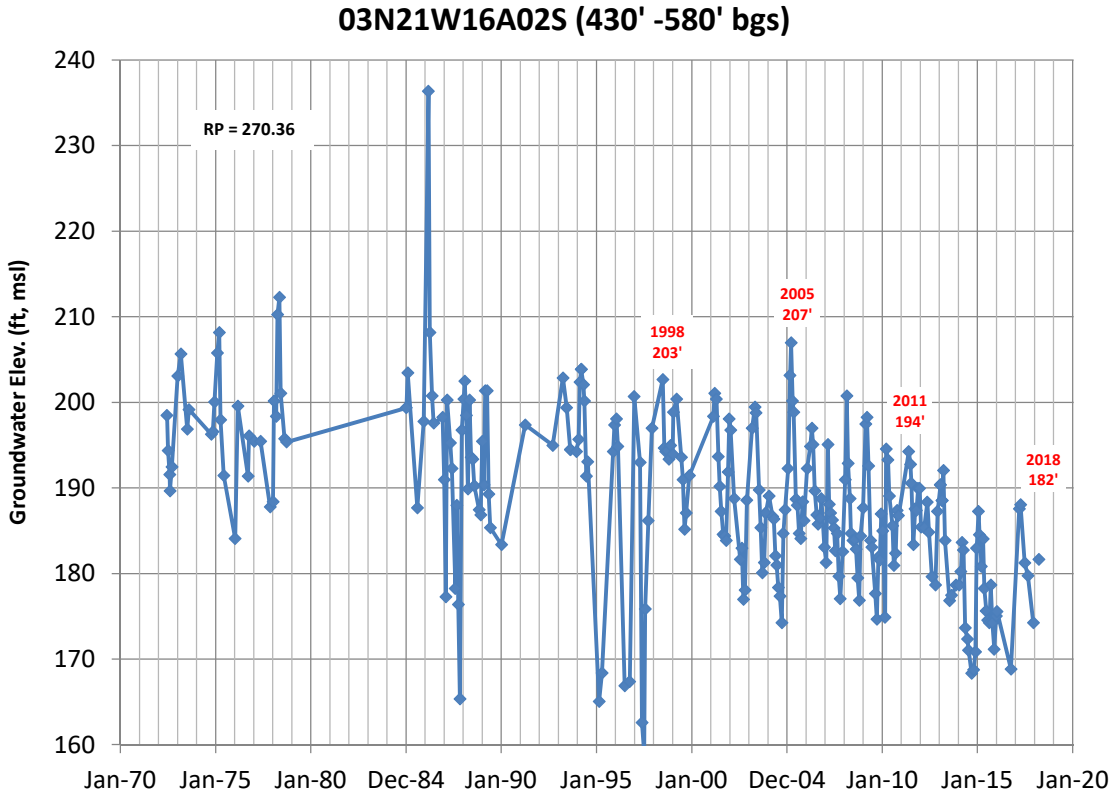

03N21W15G04S (260' - 280' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 245 FEET
TOP OF WELL SCREEN
1998
215'
2005
211'
2011
208'
2018
189'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

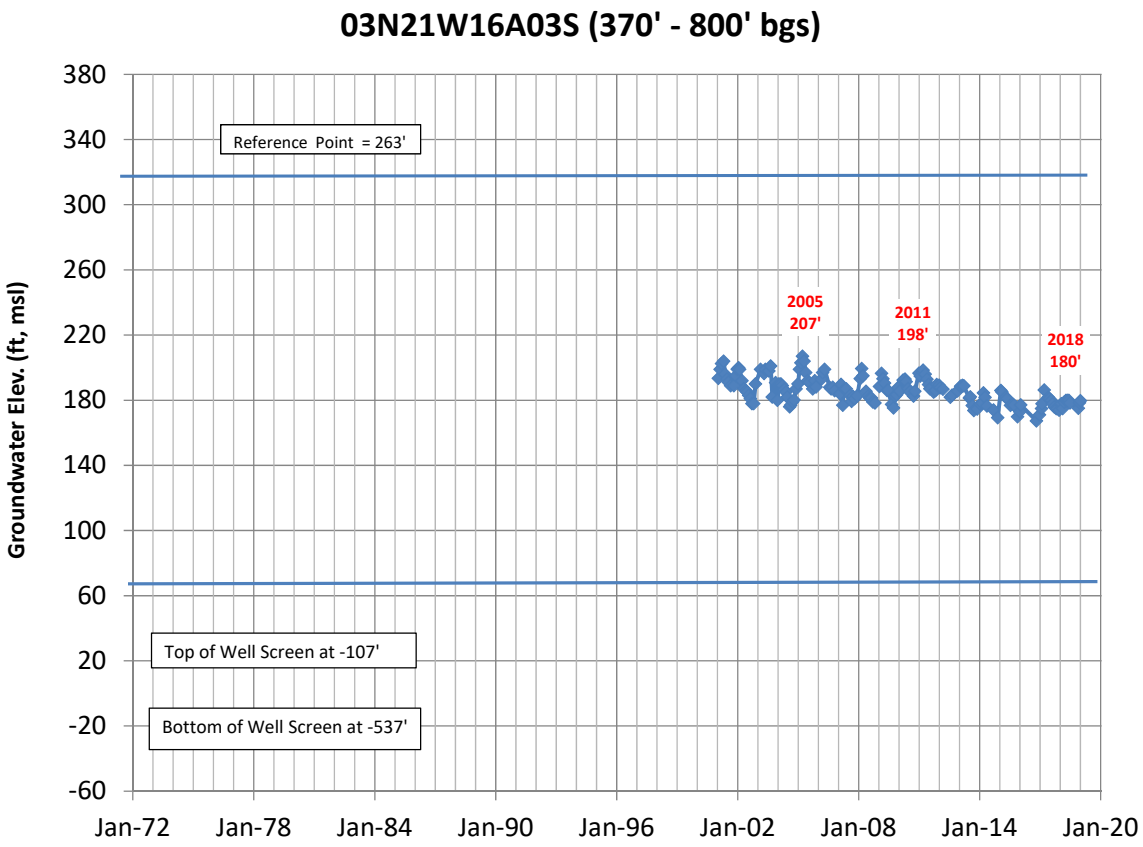

03N21W15G04S (260' - 280' bgs)
Groundwater Elev. (ft, msl)
240
230
220
210
200
190
180
170
160
RP = 244.94
1998
215'
2005
211'
2011
208'
2018
189'
Jan-92
Jan-96
Jan-00
Jan-04
Jan-08
Jan-12
Jan-16
Jan-20

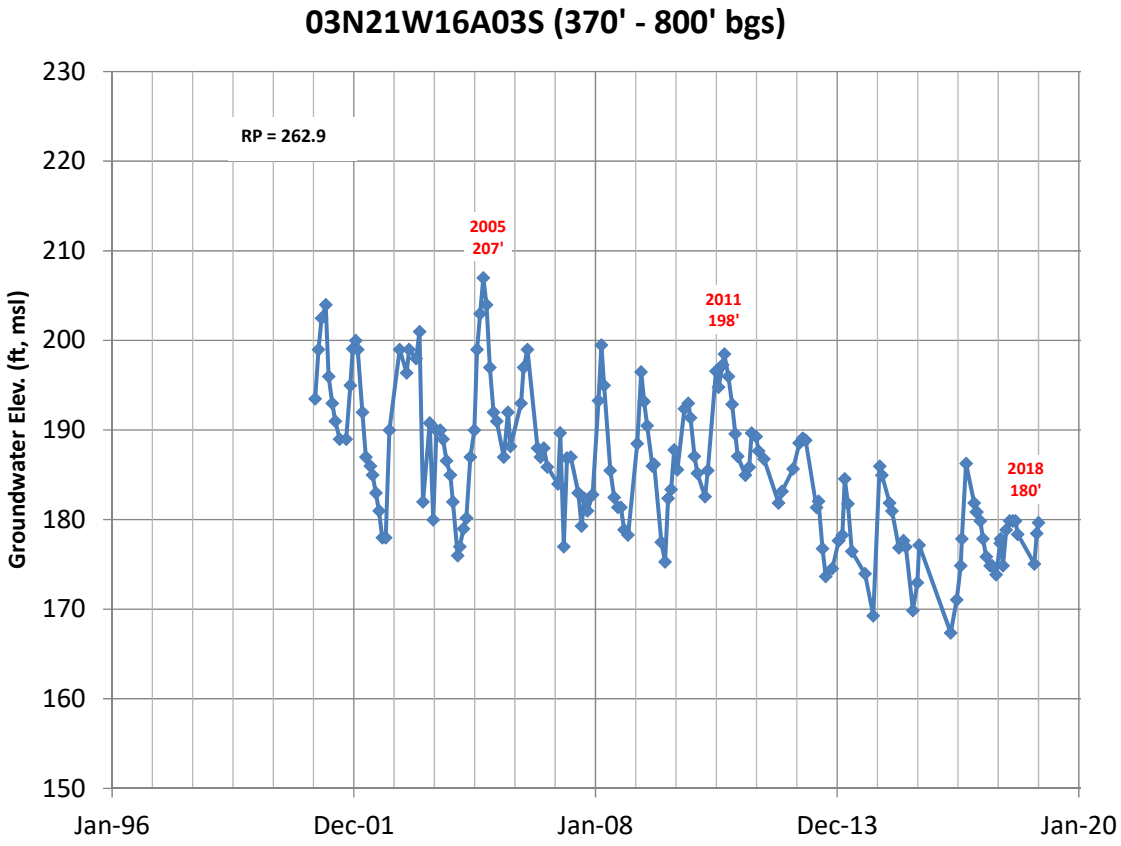

03N21W15G05S (60' - 80' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 245 FEET
TOP OF WELL SCREEN
1998
222'
2005
221'
2011
222'
2018
209'


03N21W15G05S (60' - 80' bgs)
Groundwater Elev. (ft, msl)
240
230
220
210
200
190
180
170
160
Jan-92
Jan-96
Jan-00
Jan-04
Jan-08
Jan-12
Jan-16
Jan-20
RP = 244.94
1998
222'
2005
221'
2011
222'
2018
209'

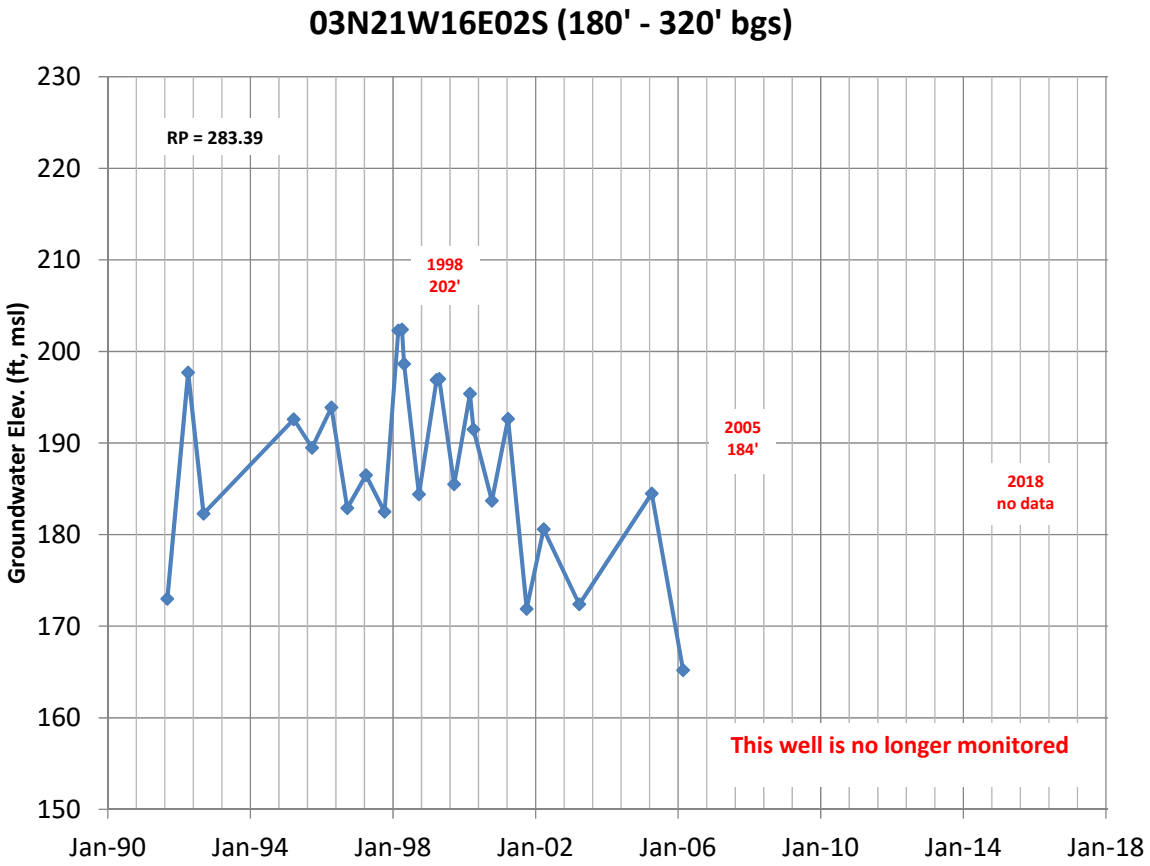

03N21W16A02S (430' -580' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 270 FEET
TOP OF WELL SCREEN (-160)
1998
203'
2005
207'
2011
194'
2018
182'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20


03N21W16A02S (430' -580' bgs)
Groundwater Elev. (ft, msl)
240
230
220
210
200
190
180
170
160
RP = 270.36
1998
203'
2005
207'
2011
194'
2018
182'
Jan-70
Jan-75
Jan-80
Dec-84
Jan-90
Jan-95
Jan-00
Dec-04
Jan-10
Jan-15
Jan-20


03N21W16A03S (370' - 800' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Reference Point = 263'
Top of Well Screen at -107'
Bottom of Well Screen at -537'
2005
207'
2011
198'
2018
180'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20


03N21W16A03S (370' - 800' bgs)
Groundwater Elev. (ft, msl)
230
220
210
200
190
180
170
160
150
RP = 262.9
2005
207'
2011
198'
2018
180'
Jan-96
Dec-01
Jan-08
Dec-13
Jan-20

Intentionally Left Blank



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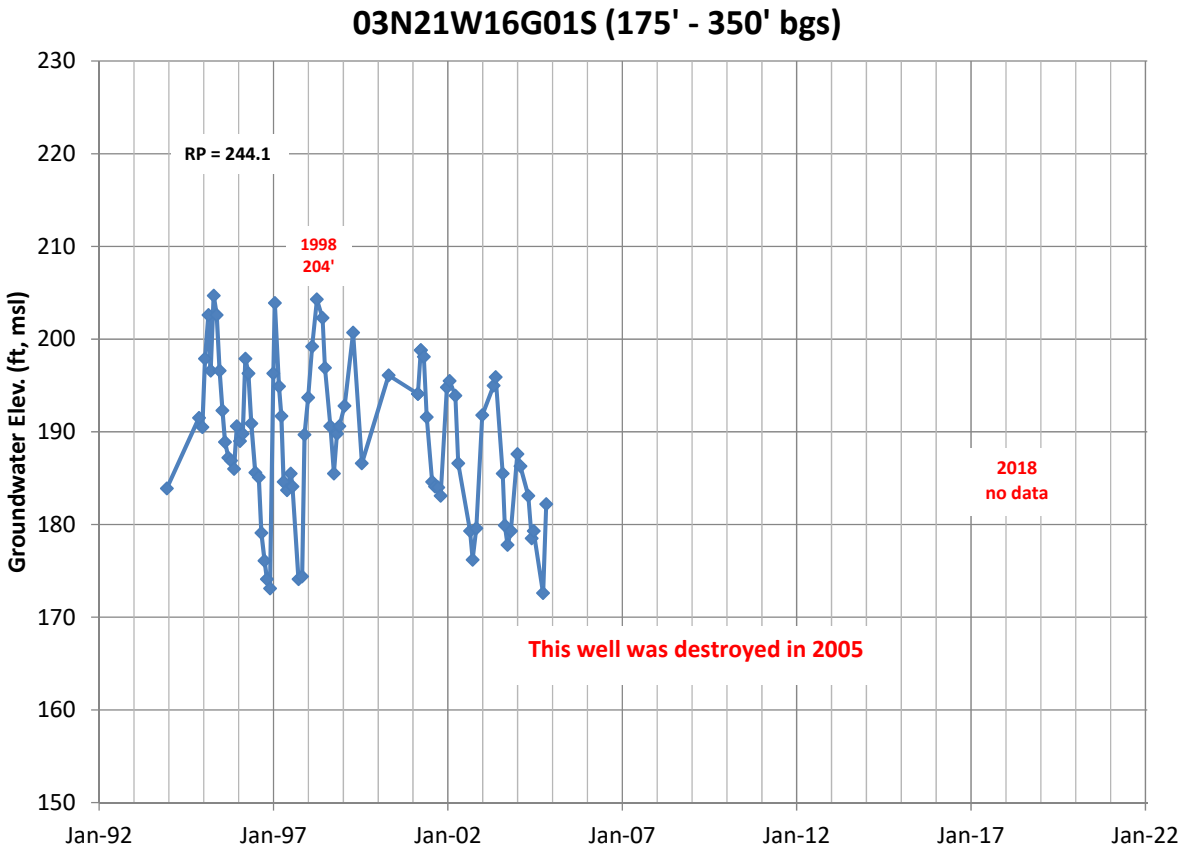
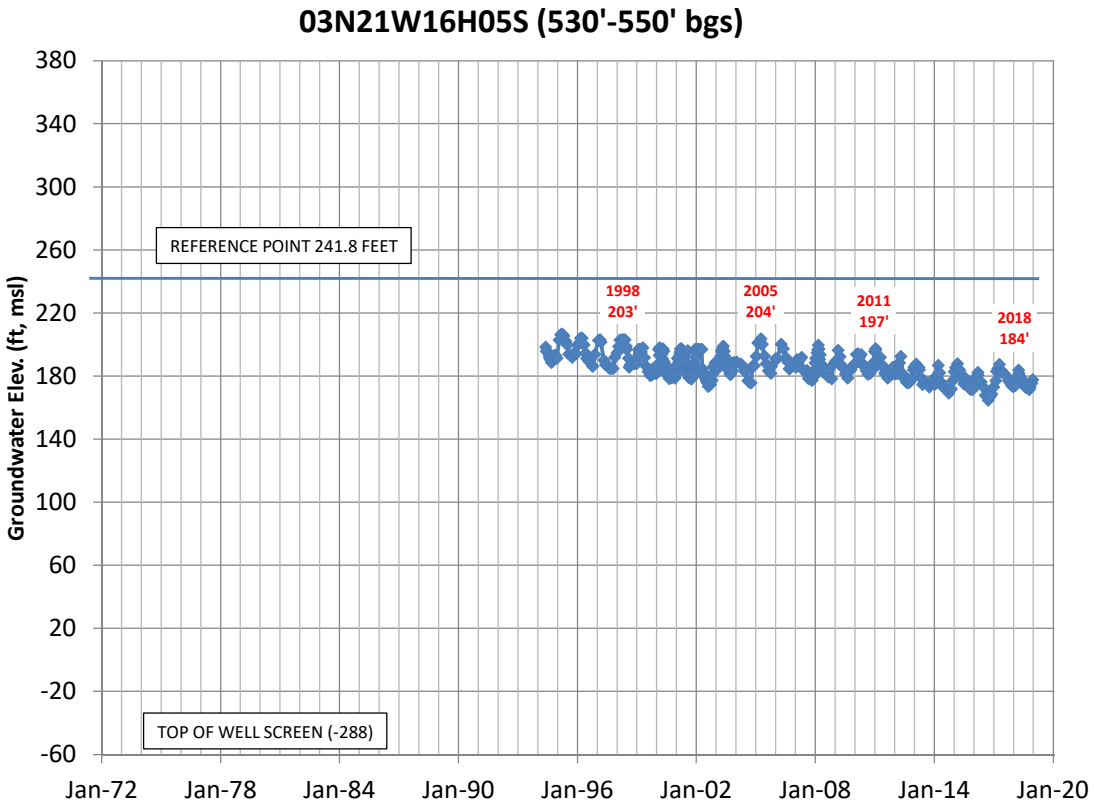
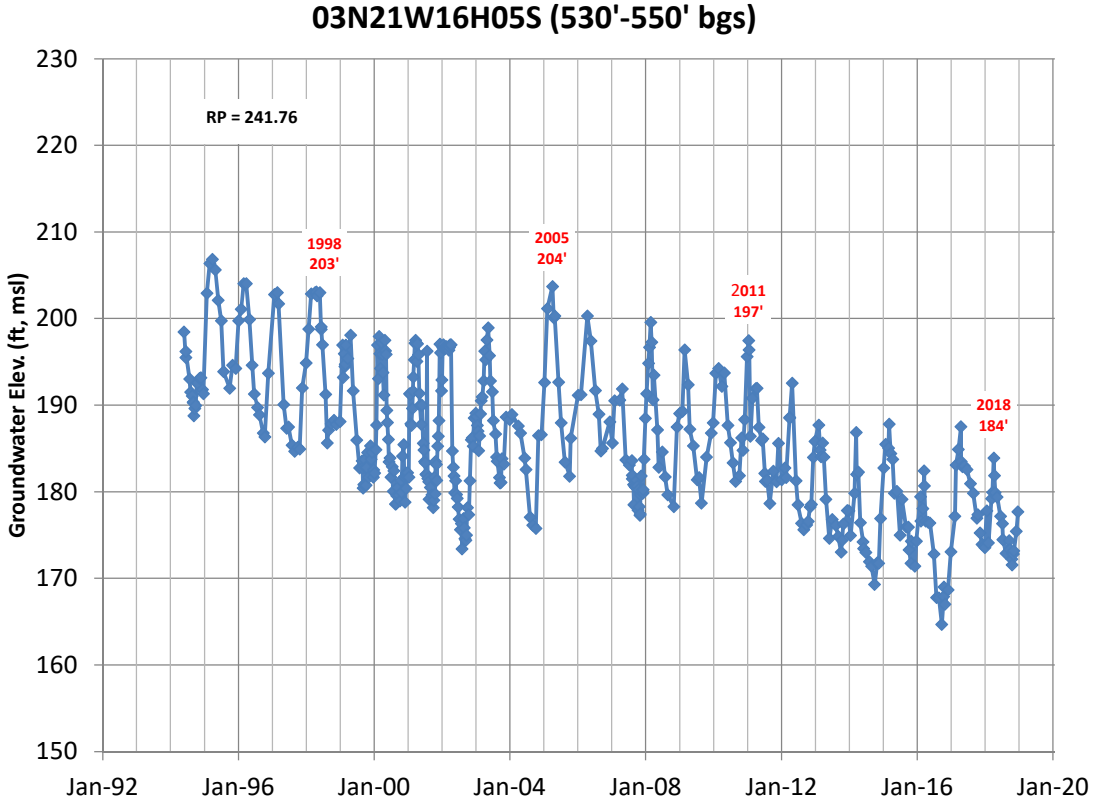
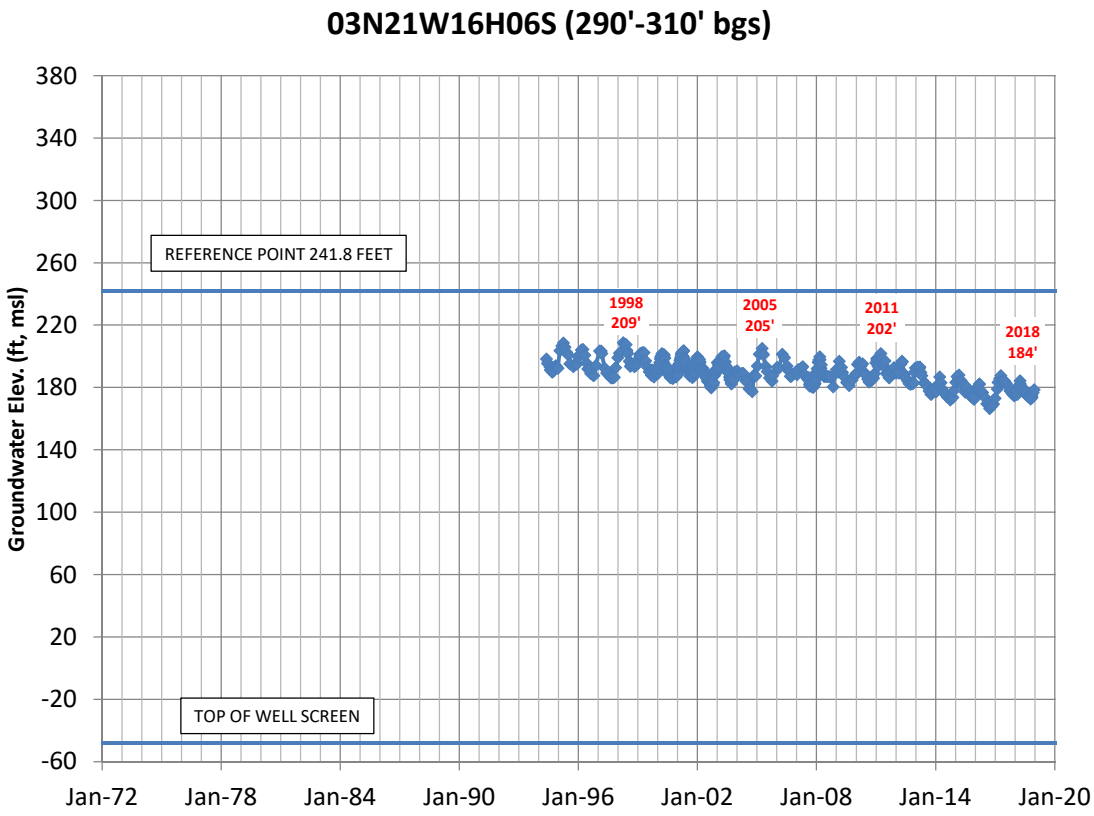
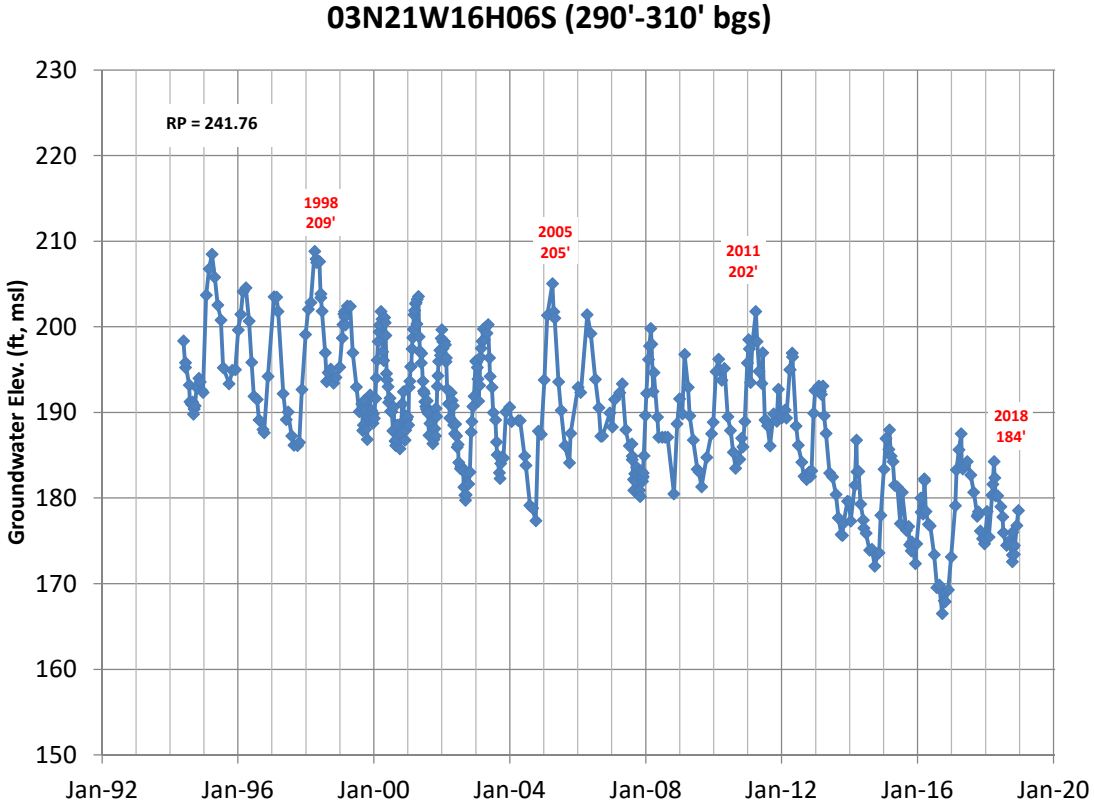
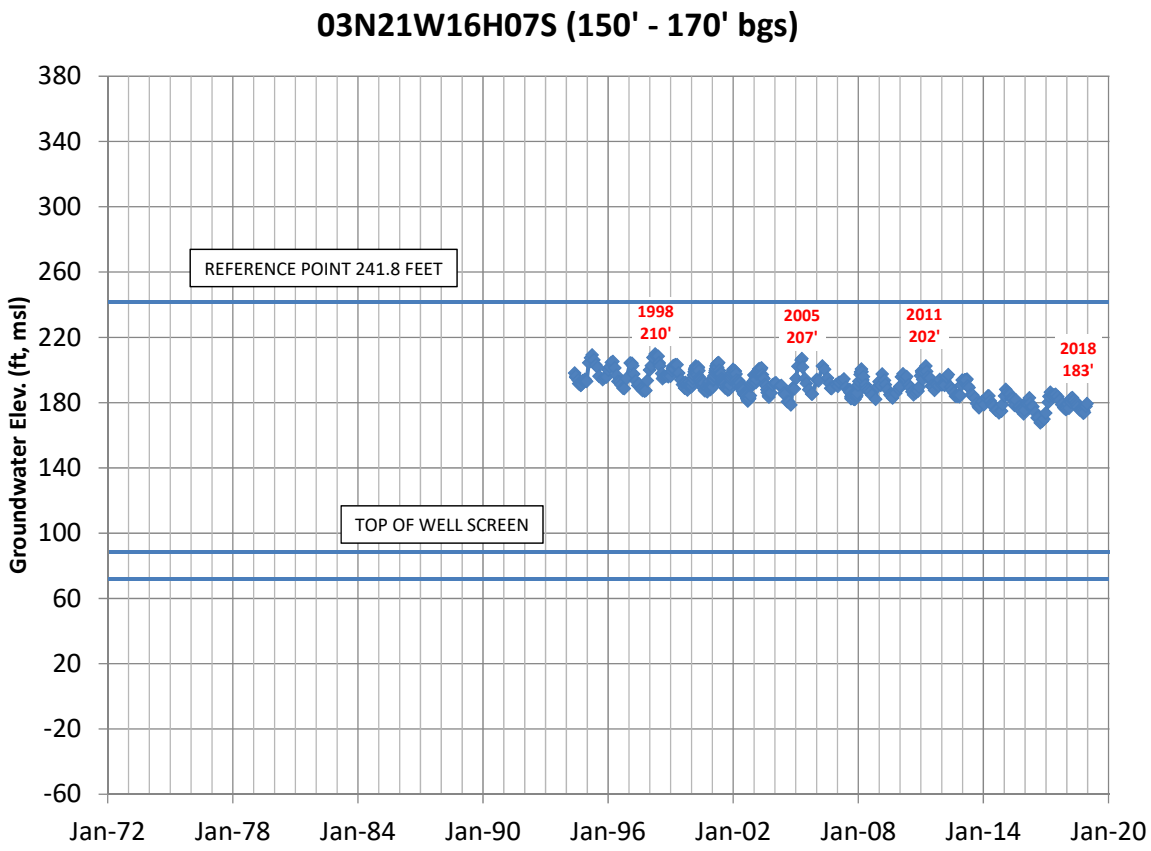


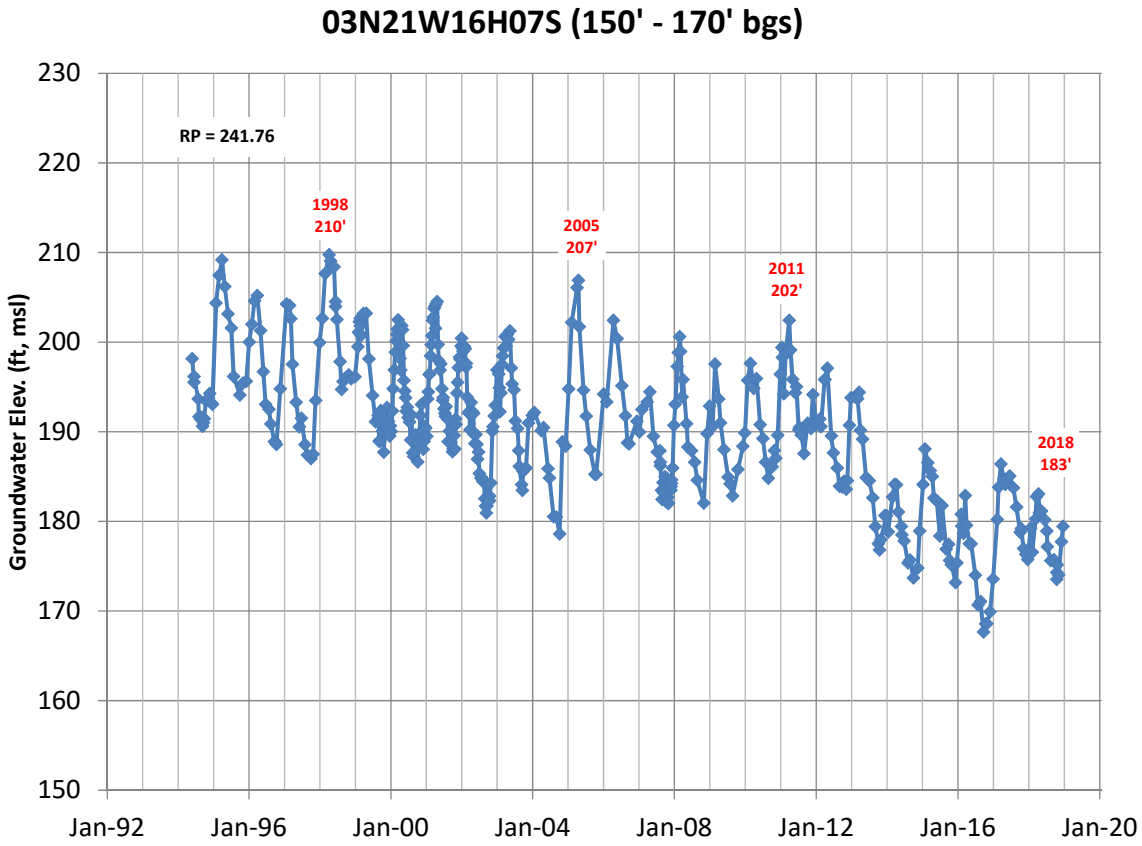

03N21W16H05S (530'-550' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 241.8 FEET
TOP OF WELL SCREEN (-288)
1998
203'
2005
204'
2011
197'
2018
184'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

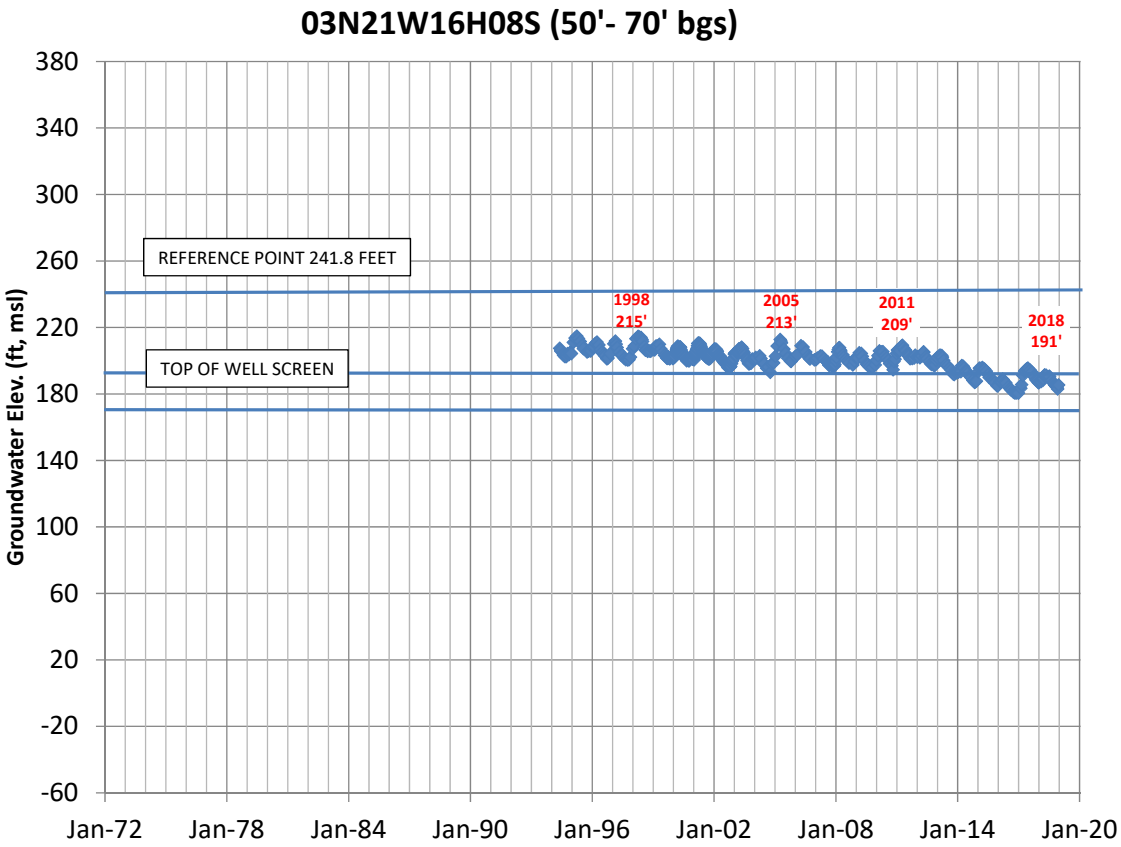

03N21W16H05S (530'-550' bgs)
Groundwater Elev. (ft, msl)
230
220
210
200
190
180
170
160
150
RP = 241.76
1998
203'
2005
204'
2011
197'
2018
184'
Jan-92
Jan-96
Jan-00
Jan-04
Jan-08
Jan-12
Jan-16
Jan-20

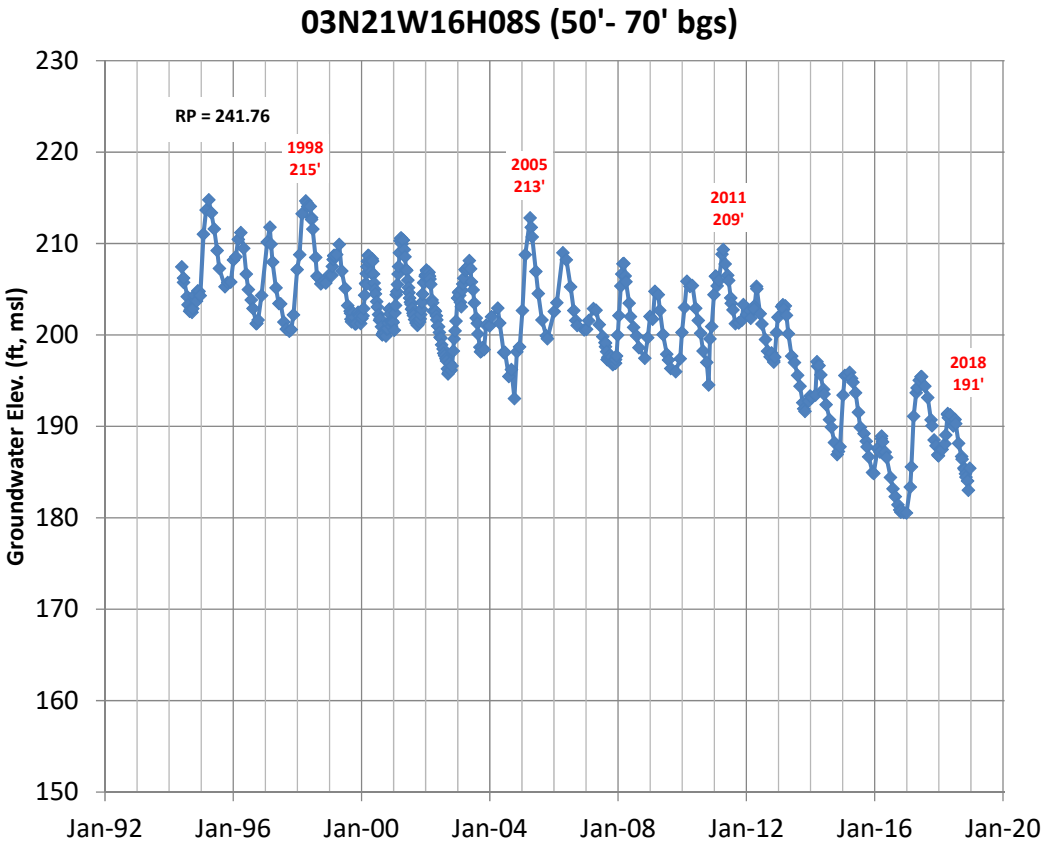

03N21W16H06S (290'-310' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 241.8 FEET
TOP OF WELL SCREEN
1998
209'
2005
205'
2011
202'
2018
184'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

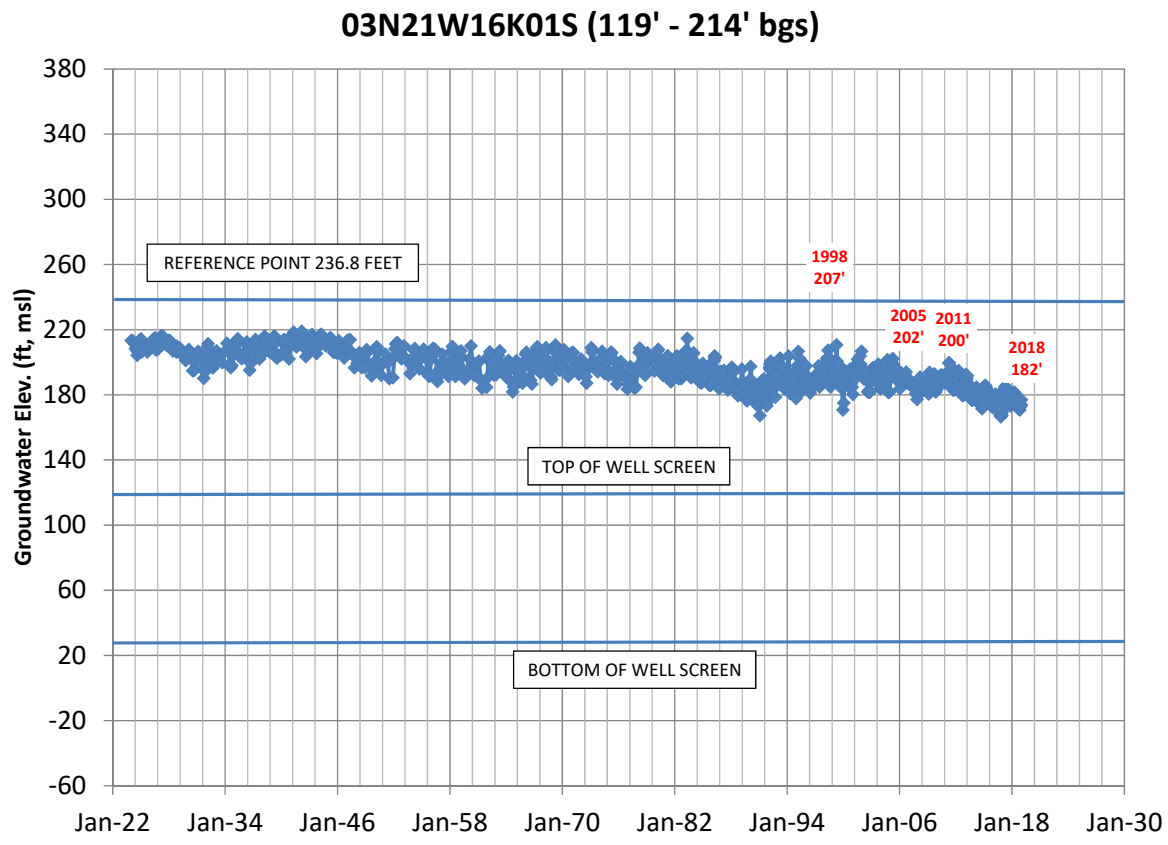

03N21W16H06S (290'-310' bgs)
Groundwater Elev. (ft, msl)
230
220
210
200
190
180
170
160
150
RP = 241.76
1998
209'
2005
205'
2011
202'
2018
184'
Jan-92
Jan-96
Jan-00
Jan-04
Jan-08
Jan-12
Jan-16
Jan-20

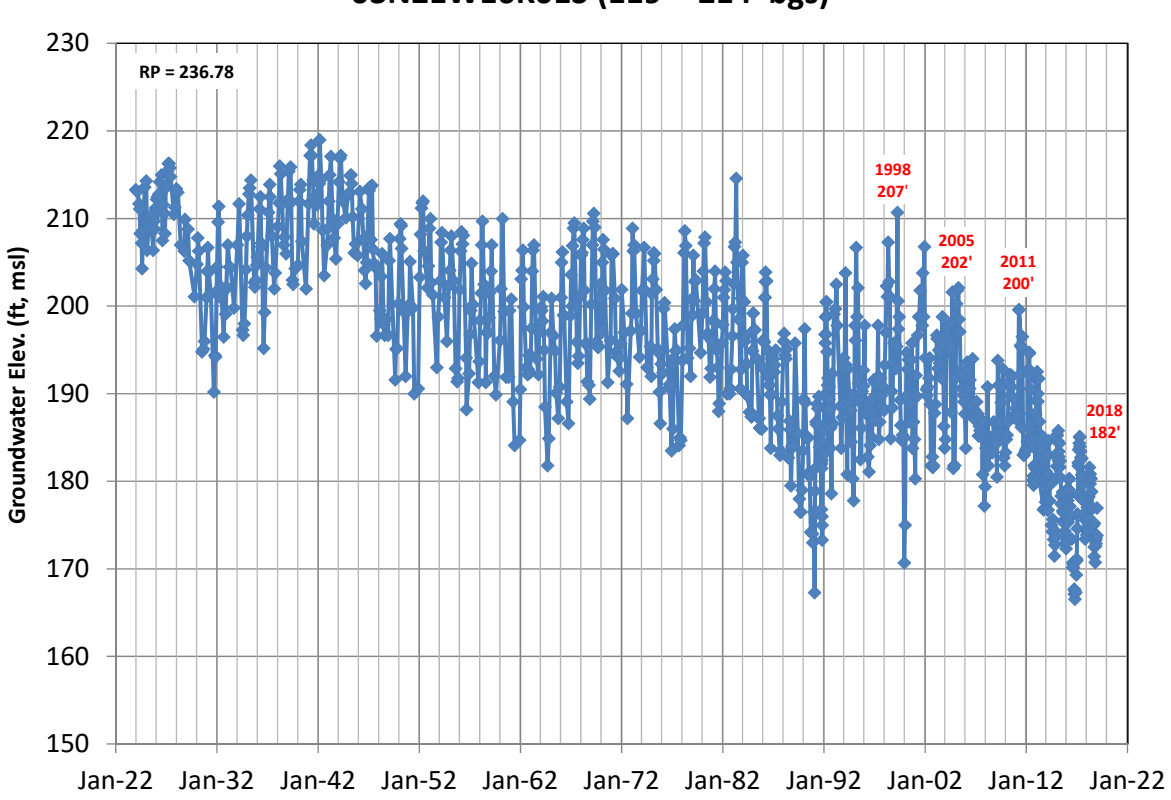

03N21W16H07S (150' - 170' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 241.8 FEET
TOP OF WELL SCREEN
1998
210'
2005
207'
2011
202'
2018
183'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20


03N21W16H07S (150' - 170' bgs)
Groundwater Elev. (ft, msl)
230
220
210
200
190
180
170
160
150
RP = 241.76
1998
210'
2005
207'
2011
202'
2018
183'
Jan-92
Jan-96
Jan-00
Jan-04
Jan-08
Jan-12
Jan-16
Jan-20

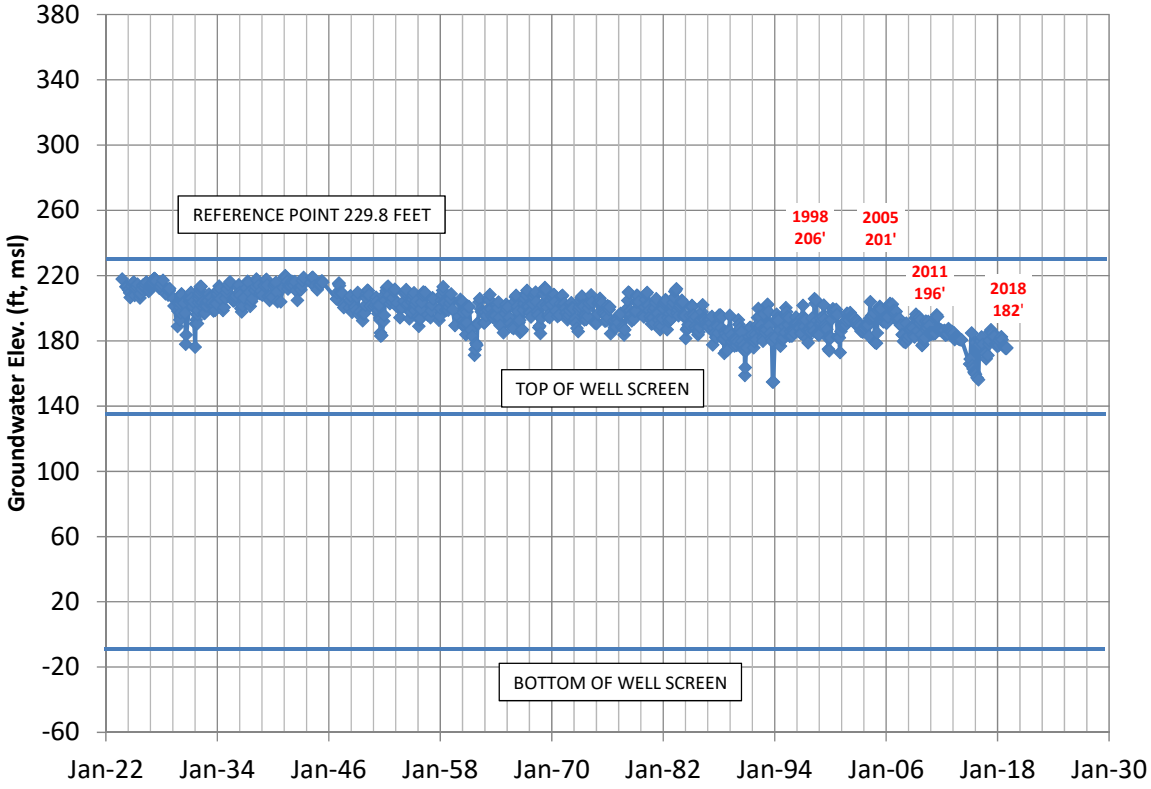

03N21W16H08S (50'- 70' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 241.8 FEET
TOP OF WELL SCREEN
1998
215'
2005
213'
2011
209'
2018
191'


03N21W16H08S (50'- 70' bgs)
Groundwater Elev. (ft, msl)
230
220
210
200
190
180
170
160
150
Jan-92
Jan-96
Jan-00
Jan-04
Jan-08
Jan-12
Jan-16
Jan-20
RP = 241.76
1998
215'
2005
213'
2011
209'
2018
191'

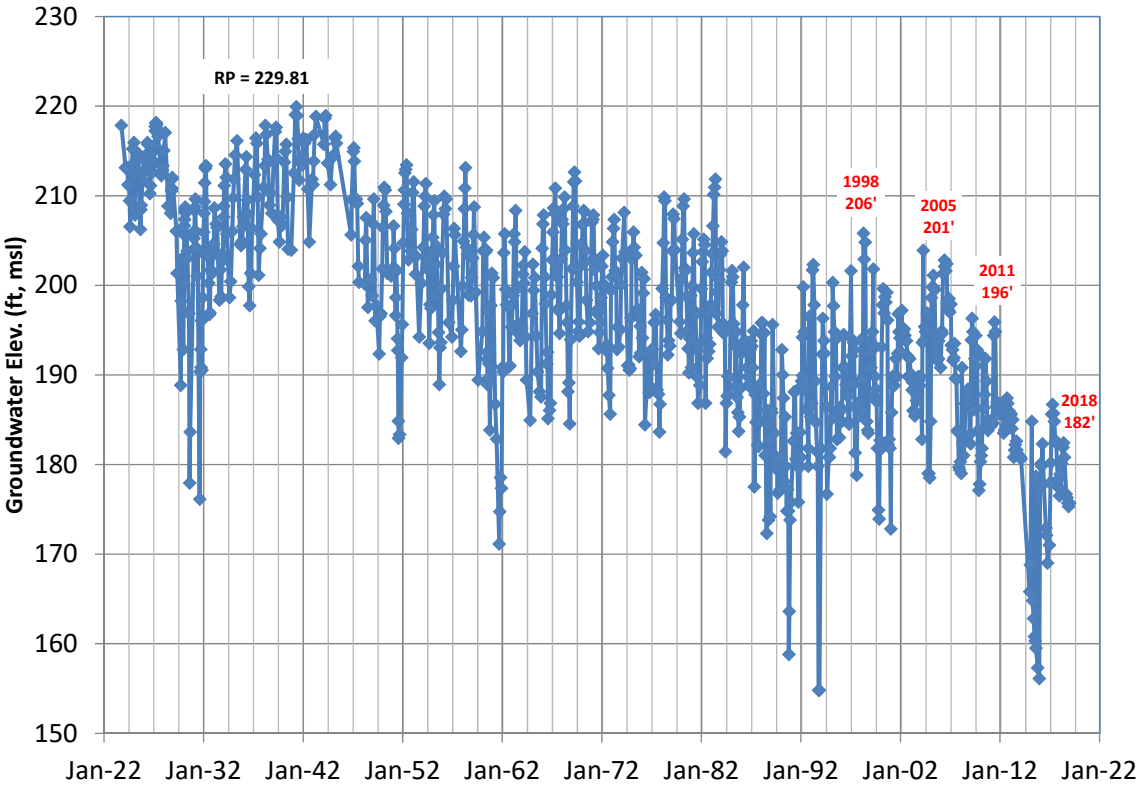

03N21W16K01S (119' - 214' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 236.8 FEET
TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
1998
207'
2005
202'
2011
200'
2018
182'
Jan-22
Jan-34
Jan-46
Jan-58
Jan-70
Jan-82
Jan-94
Jan-06
Jan-18
Jan-30


03N21W16K01S (119' - 214' bgs)
Groundwater Elev. (ft, msl)
230
220
210
200
190
180
170
160
150
RP = 236.78
1998
207'
2005
202'
2011
200'
2018
182'
Jan-22
Jan-32
Jan-42
Jan-52
Jan-62
Jan-72
Jan-82
Jan-92
Jan-02
Jan-12
Jan-22

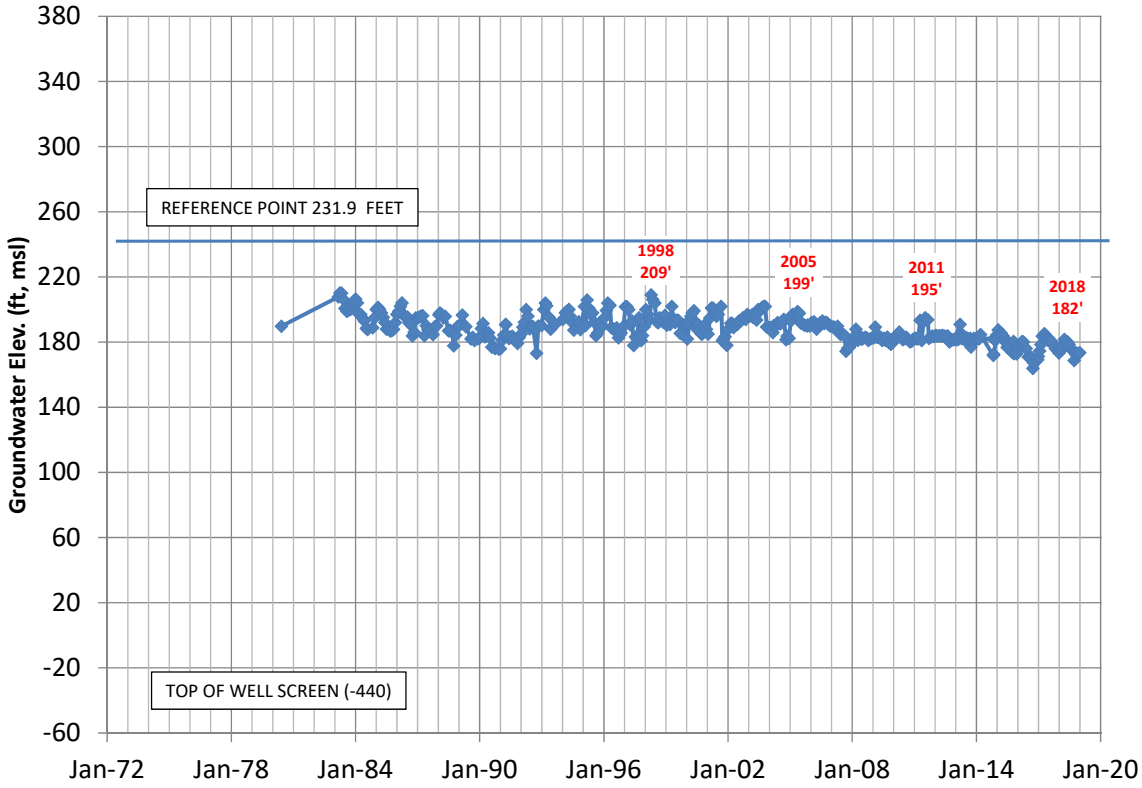
03N21W16K02S (92' - 243' bgs)



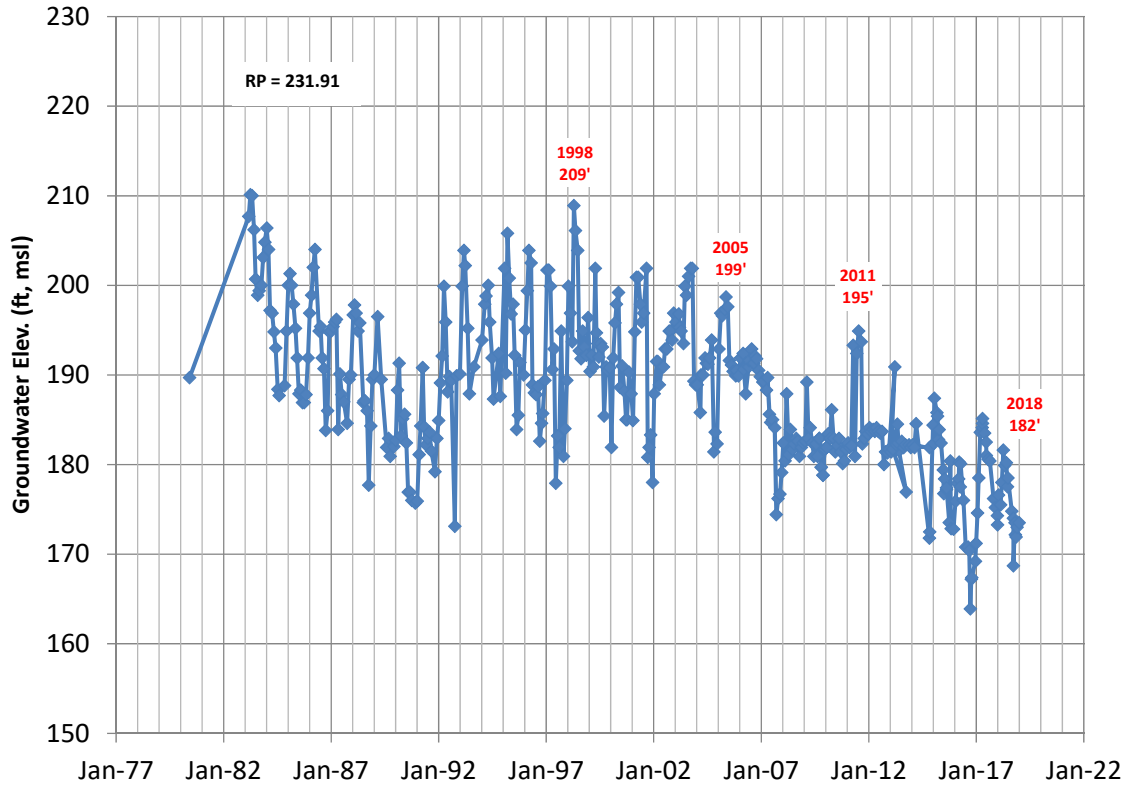
03N21W16K02S (92' - 243' bgs)

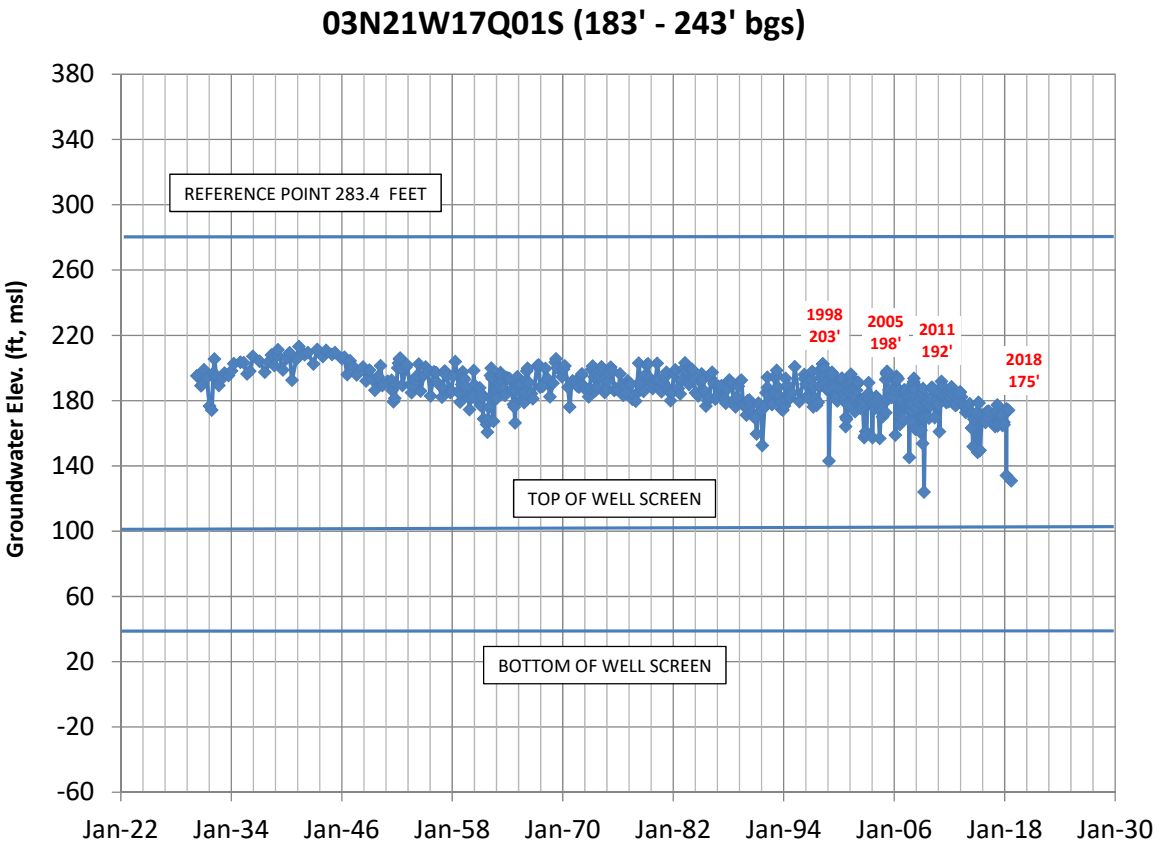


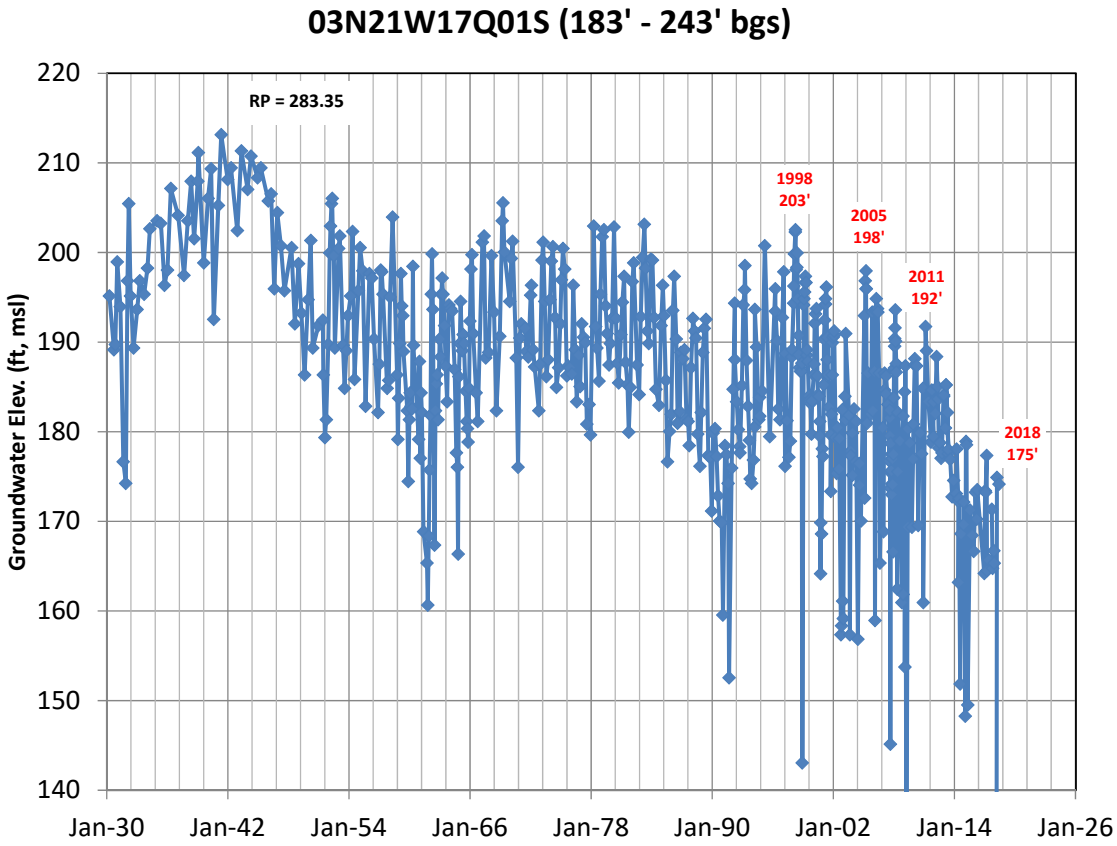
03N21W16K03S (672' - 760' bgs)



03N21W16K03S (672' - 760' bgs)




03N21W17Q01S (183' - 243' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 283.4 FEET
TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
1998
203'
2005
198'
2011
192'
2018
175'
Jan-22
Jan-34
Jan-46
Jan-58
Jan-70
Jan-82
Jan-94
Jan-06
Jan-18
Jan-30


03N21W17Q01S (183' - 243' bgs)
Groundwater Elev. (ft, msl)
220
210
200
190
180
170
160
150
140
RP = 283.35
1998
203'
2005
198'
2011
192'
2018
175'
Jan-30
Jan-42
Jan-54
Jan-66
Jan-78
Jan-90
Jan-02
Jan-14
Jan-26

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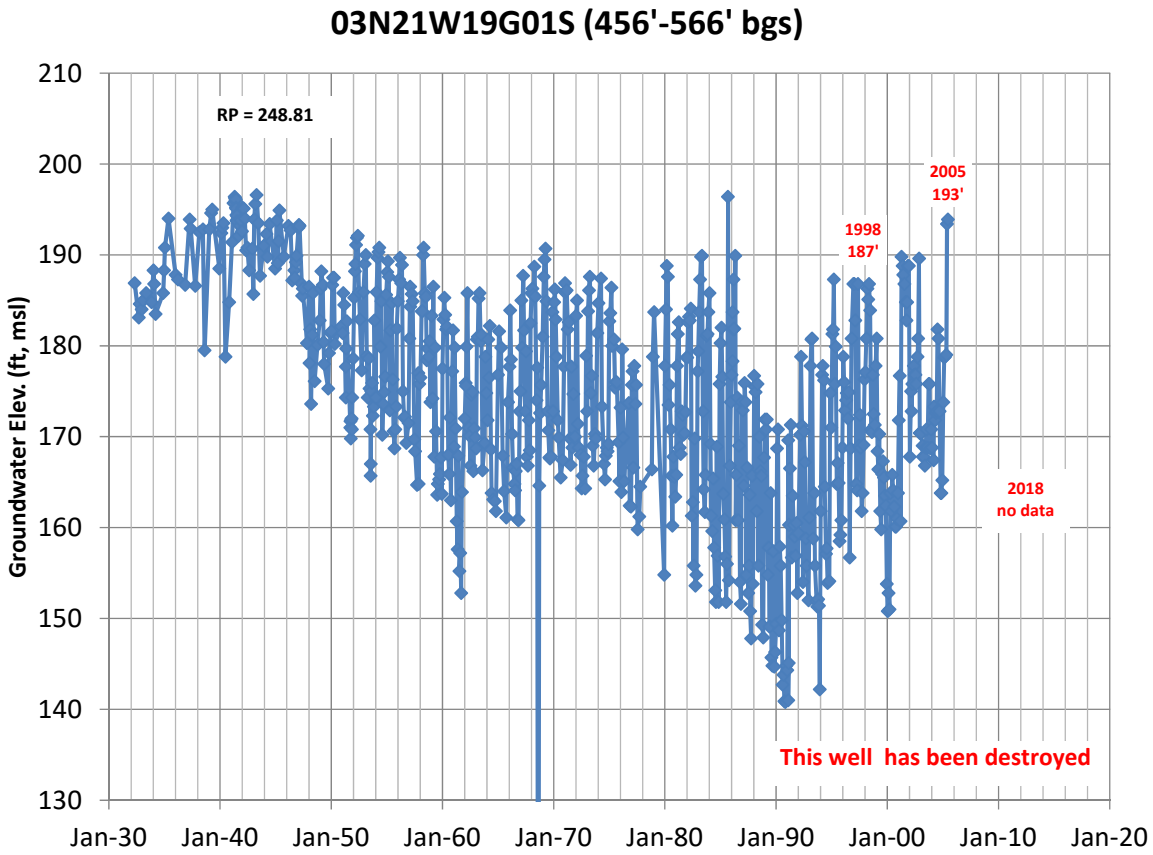
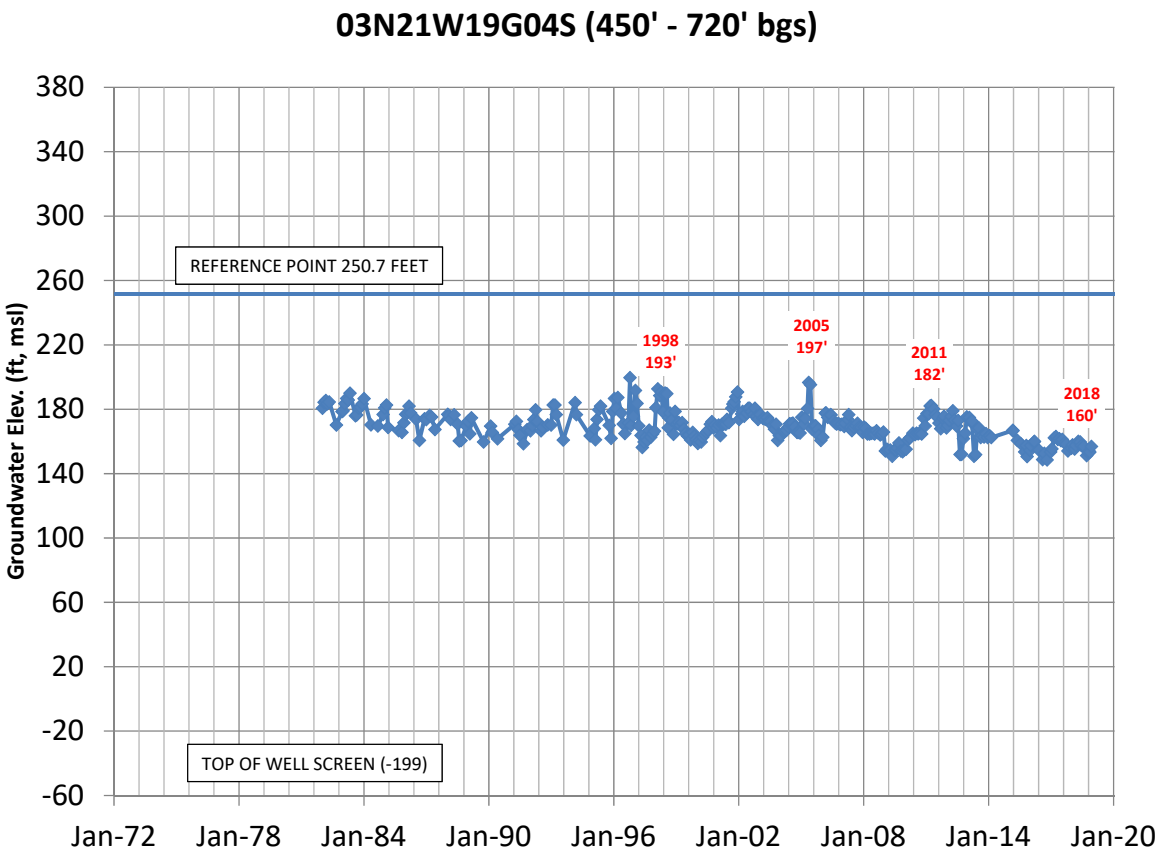
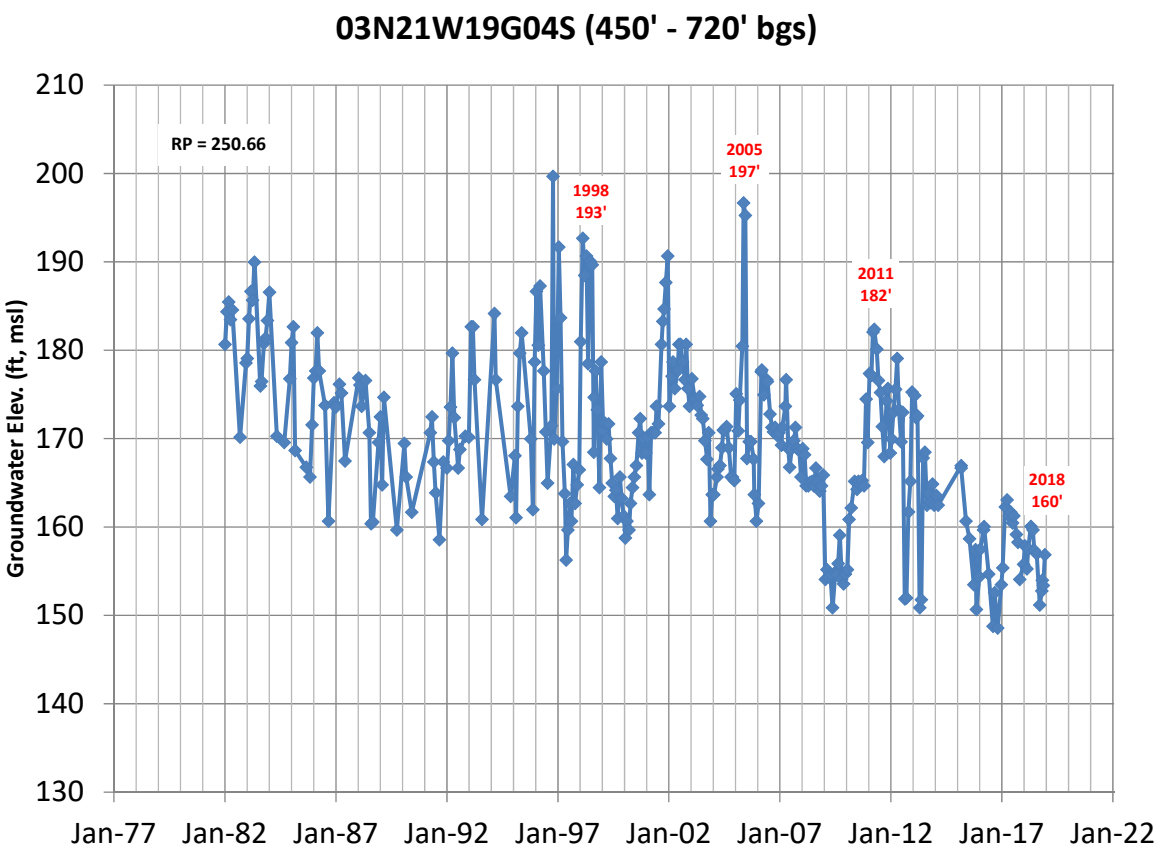



03N21W19G04S (450' - 720' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 250.7 FEET
TOP OF WELL SCREEN (-199)
1998
193'
2005
197'
2011
182'
2018
160'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20


03N21W19G04S (450' - 720' bgs)
Groundwater Elev. (ft, msl)
210
200
190
180
170
160
150
140
130
RP = 250.66
1998
193'
2005
197'
2011
182'
2018
160'
Jan-77
Jan-82
Jan-87
Jan-92
Jan-97
Jan-02
Jan-07
Jan-12
Jan-17
Jan-22

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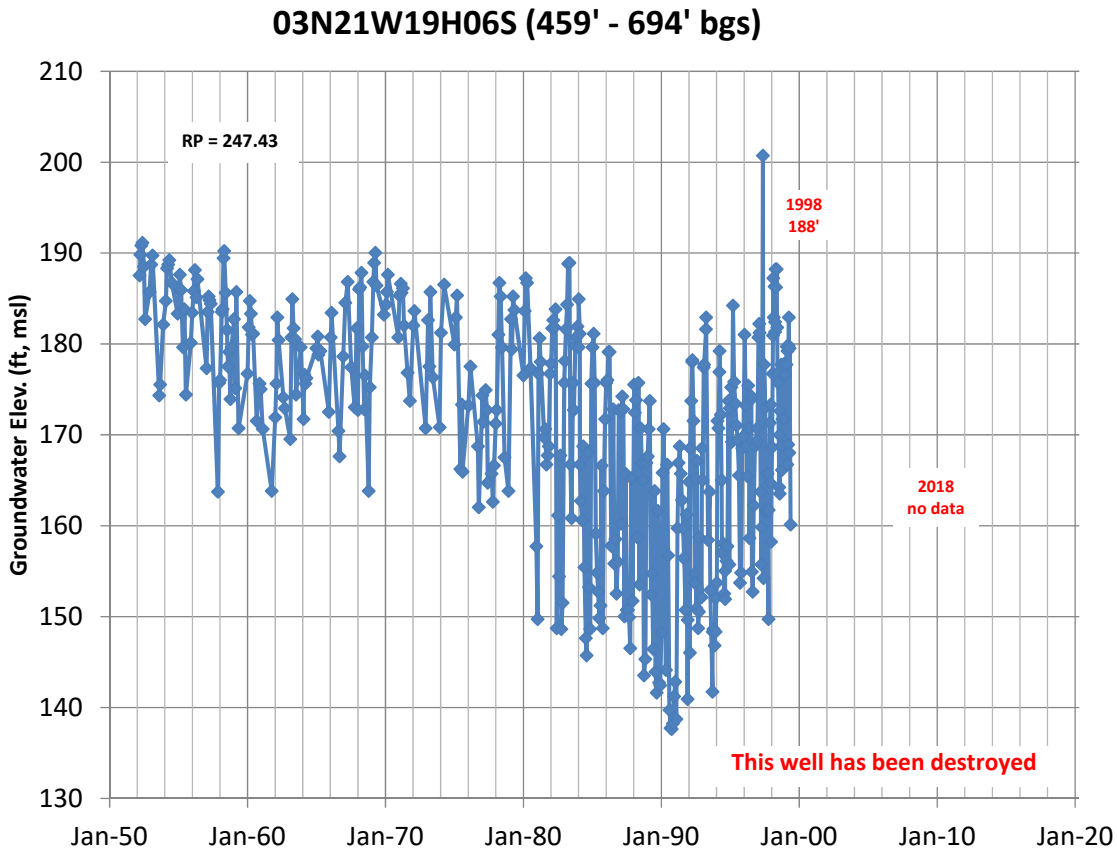
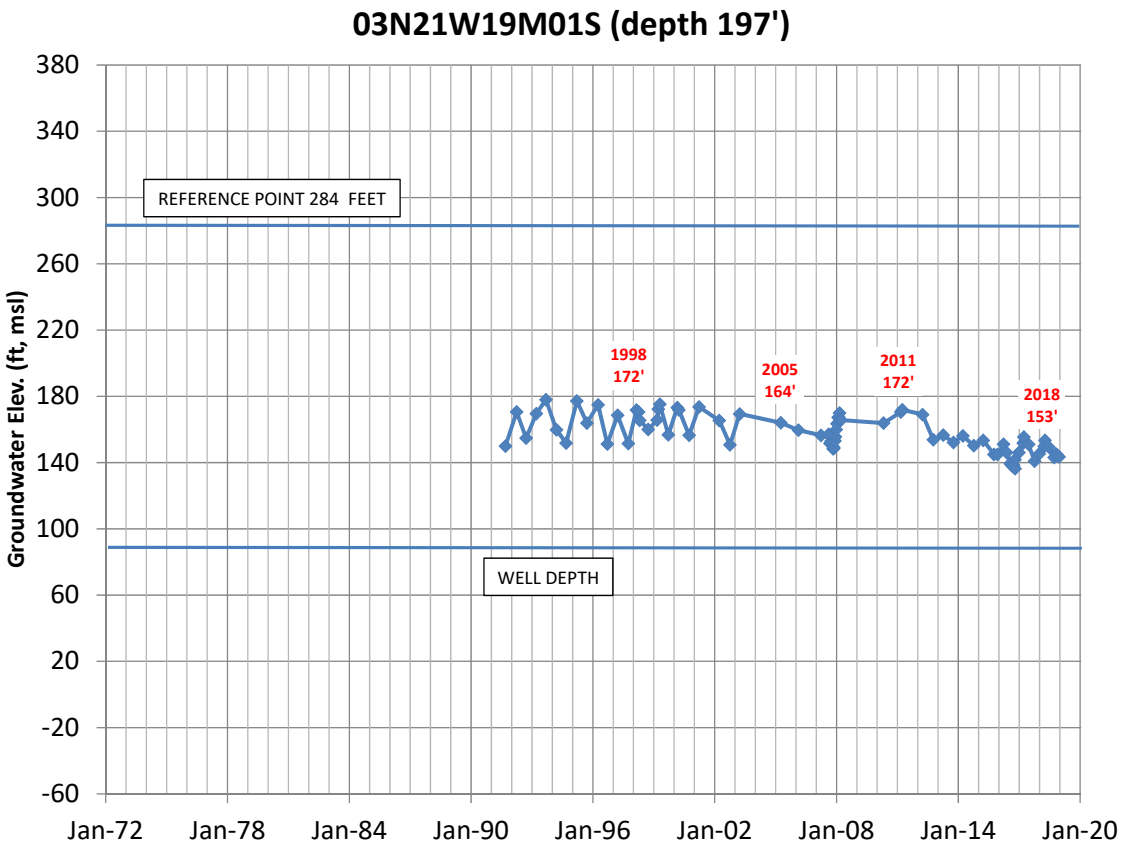
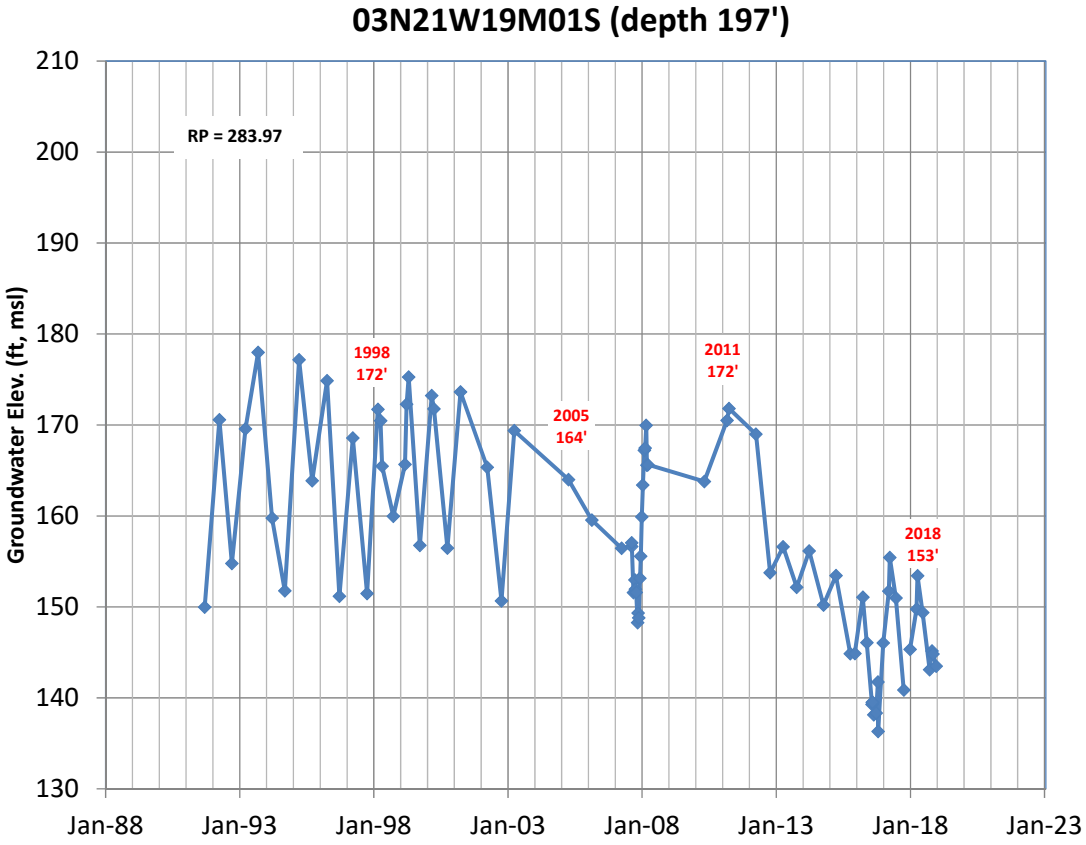
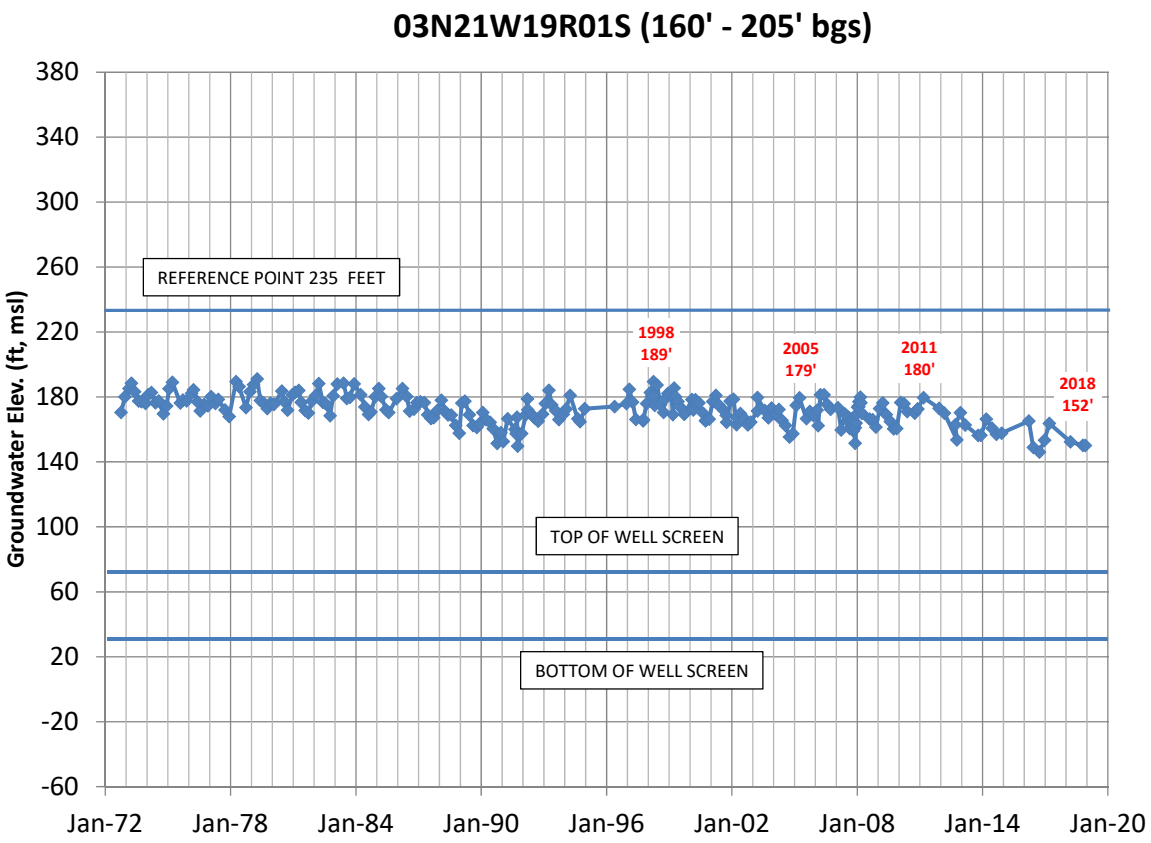
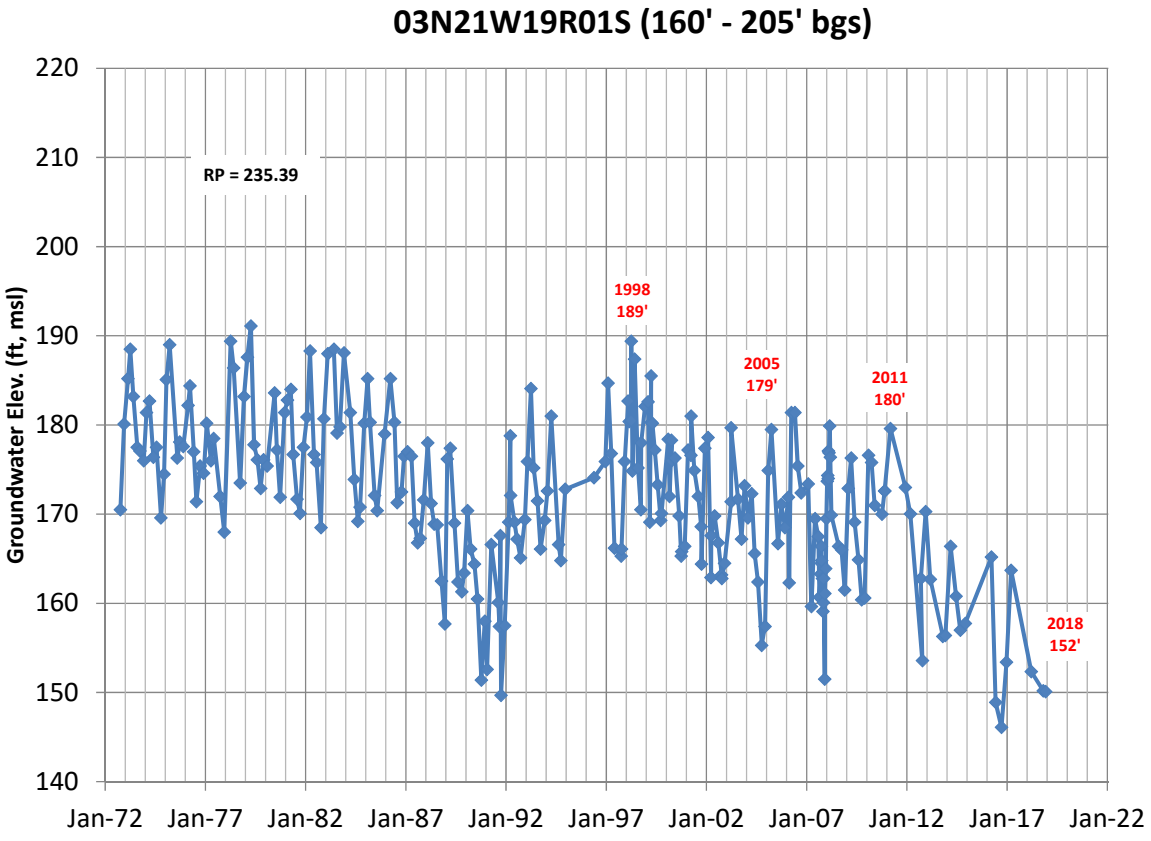
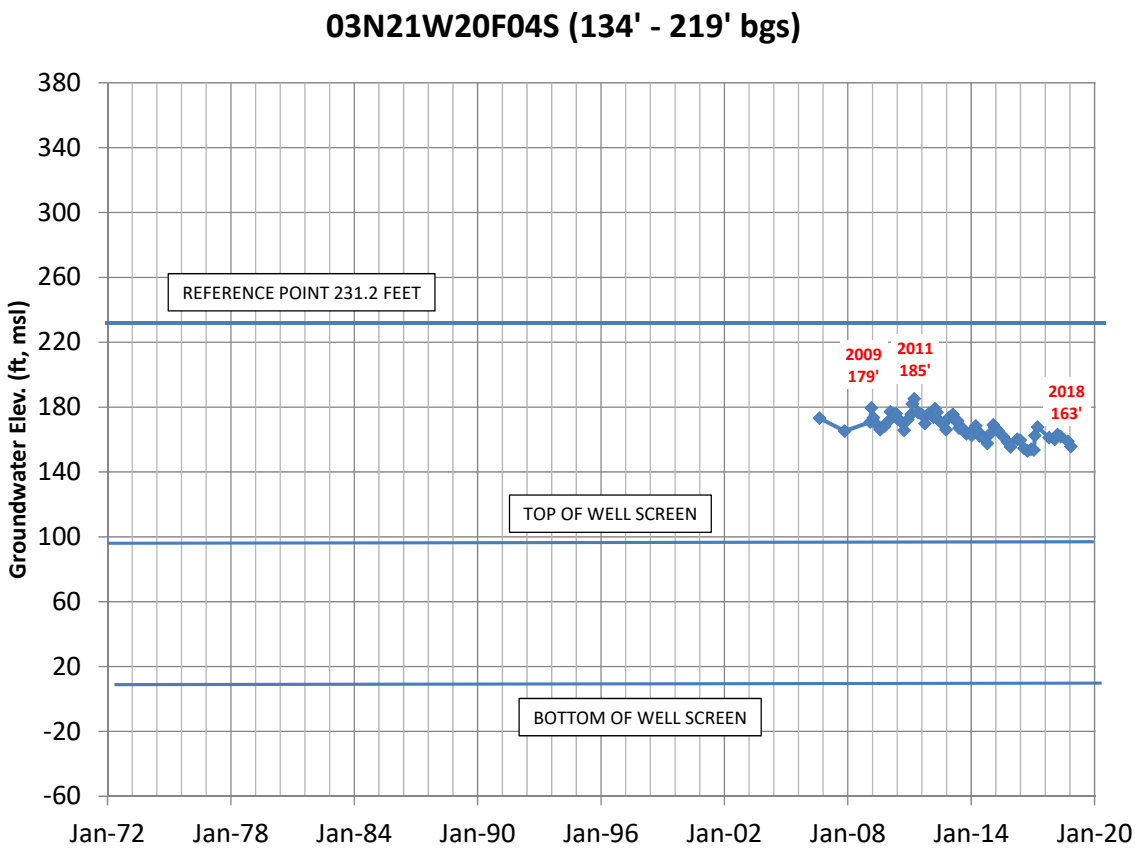


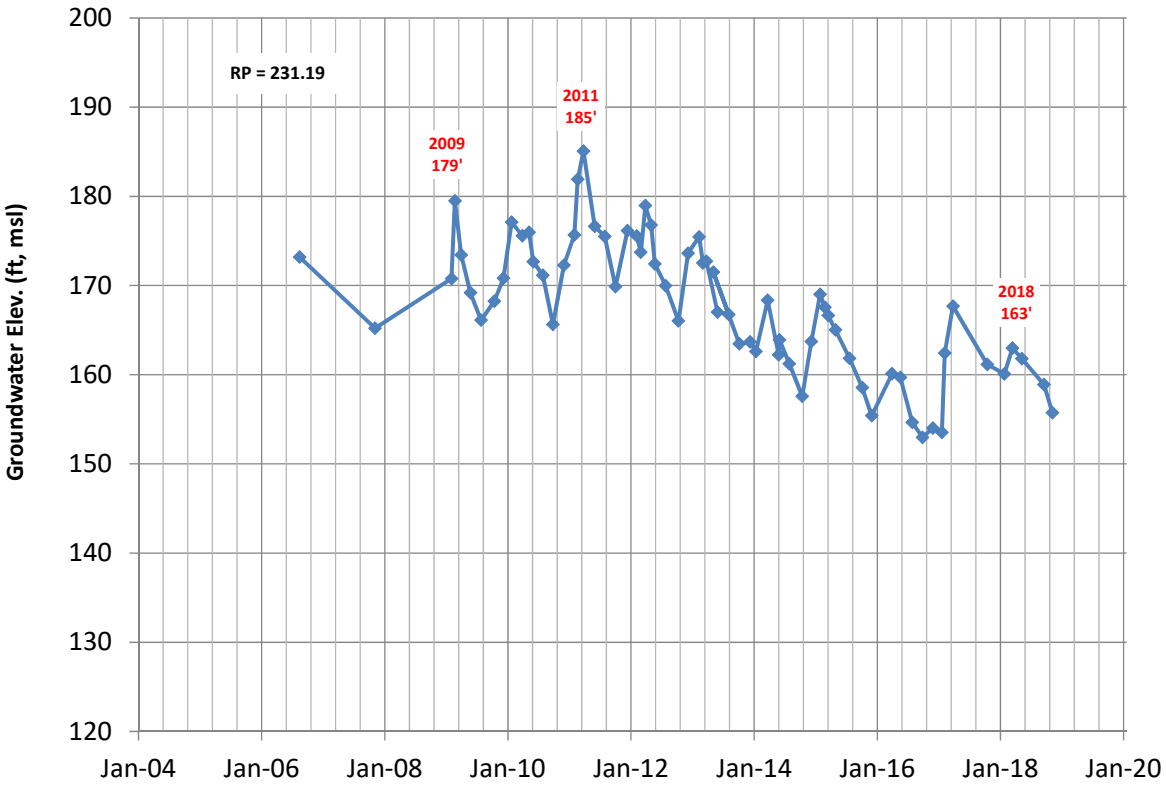

03N21W19M01S (depth 197')
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 284 FEET
WELL DEPTH
1998
172'
2005
164'
2011
172'
2018
153'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

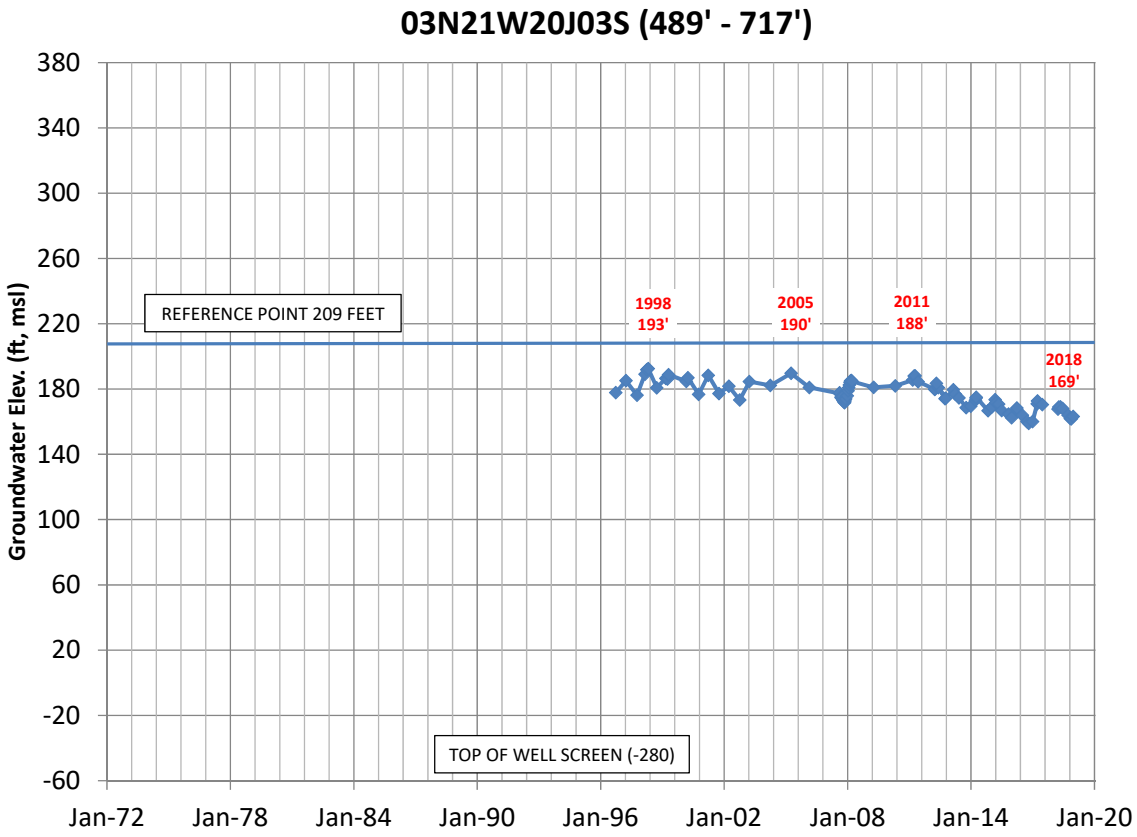

03N21W19M01S (depth 197')
Groundwater Elev. (ft, msl)
210
200
190
180
170
160
150
140
130
RP = 283.97
1998
172'
2005
164'
2011
172'
2018
153'
Jan-88
Jan-93
Jan-98
Jan-03
Jan-08
Jan-13
Jan-18
Jan-23

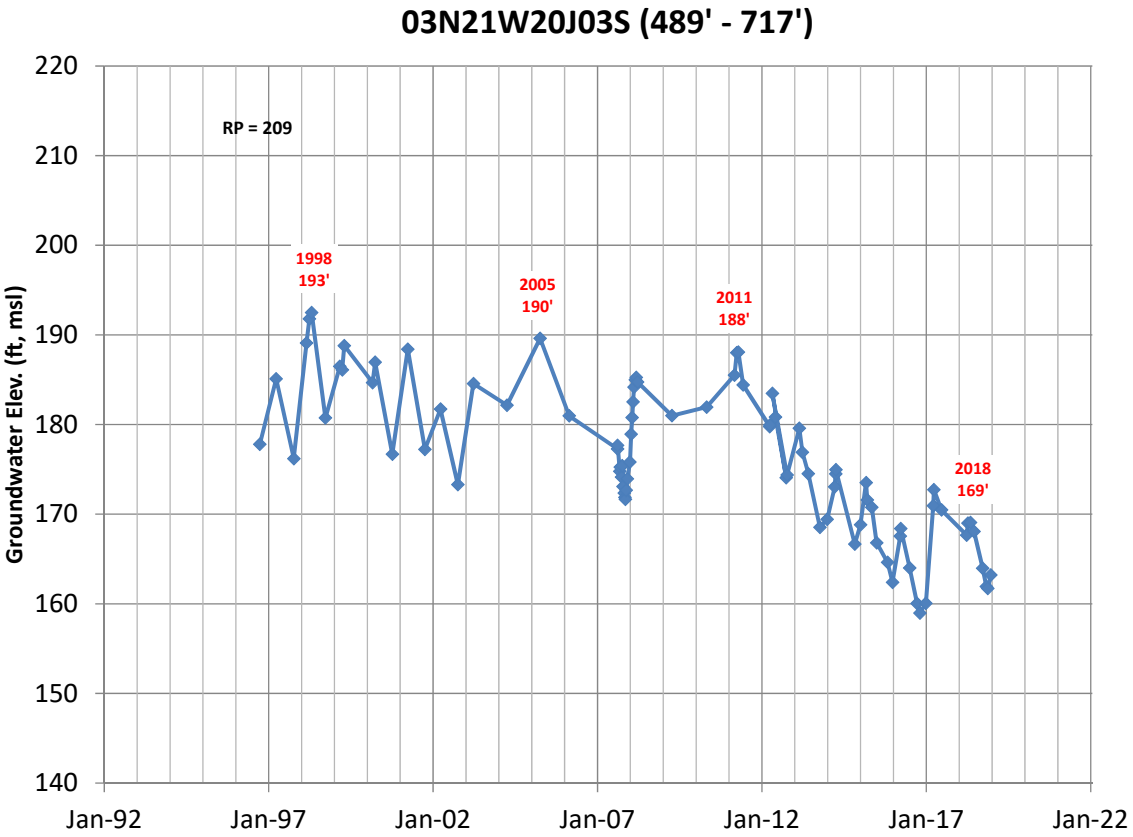

03N21W19R01S (160' - 205' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 235 FEET
TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
1998
189'
2005
179'
2011
180'
2018
152'


03N21W19R01S (160' - 205' bgs)
Groundwater Elev. (ft, msl)
220
210
200
190
180
170
160
150
140
Jan-72
Jan-77
Jan-82
Jan-87
Jan-92
Jan-97
Jan-02
Jan-07
Jan-12
Jan-17
Jan-22
RP = 235.39
1998
189'
2005
179'
2011
180'
2018
152'


03N21W20F04S (134' - 219' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 231.2 FEET
TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
2009
179'
2011
185'
2018
163'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20


03N21W20F04S (134' - 219' bgs)
Groundwater Elev. (ft, msl)
200
190
180
170
160
150
140
130
120
RP = 231.19
2009
179'
2011
185'
2018
163'
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Jan-16
Jan-18
Jan-20


03N21W20J03S (489' - 717')
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 209 FEET
TOP OF WELL SCREEN (-280)
1998
193'
2005
190'
2011
188'
2018
169'


03N21W20J03S (489' - 717')
Groundwater Elev. (ft, msl)
220
210
200
190
180
170
160
150
140
Jan-92
Jan-97
Jan-02
Jan-07
Jan-12
Jan-17
Jan-22
RP = 209
1998
193'
2005
190'
2011
188'
2018
169'

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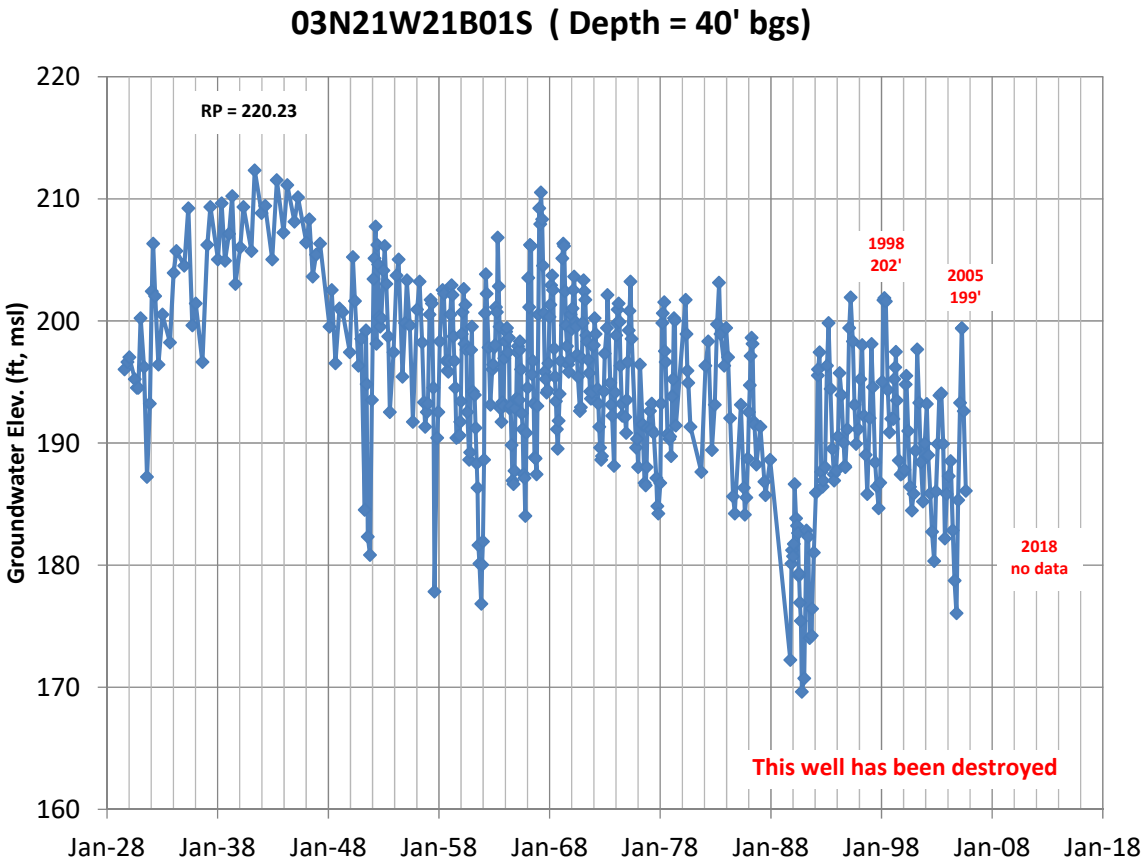
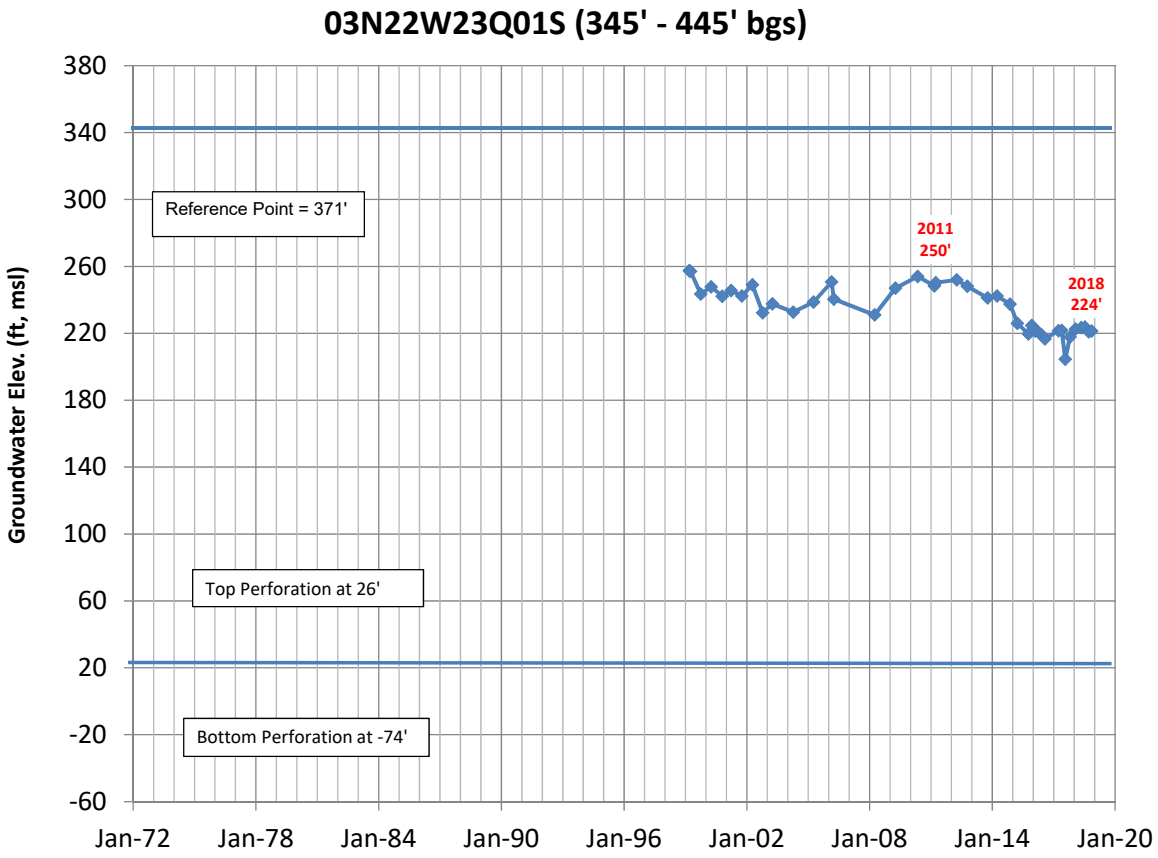
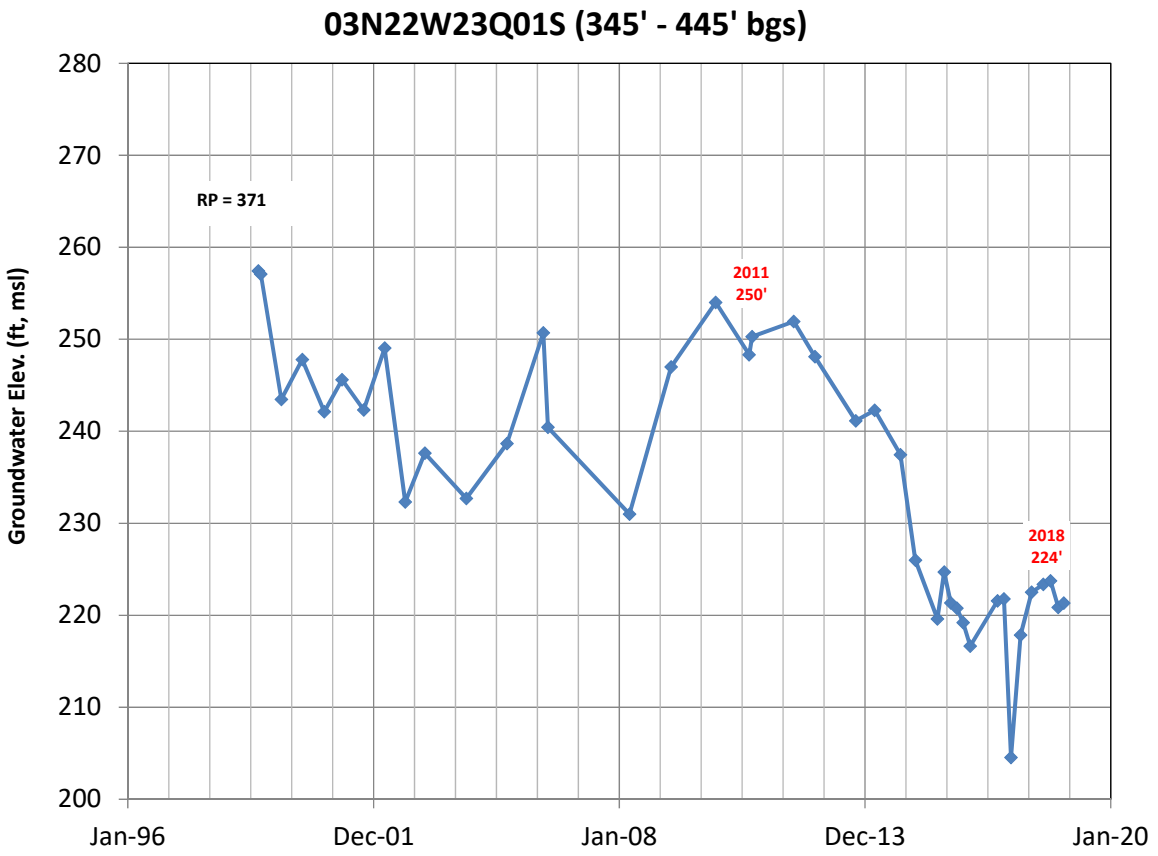
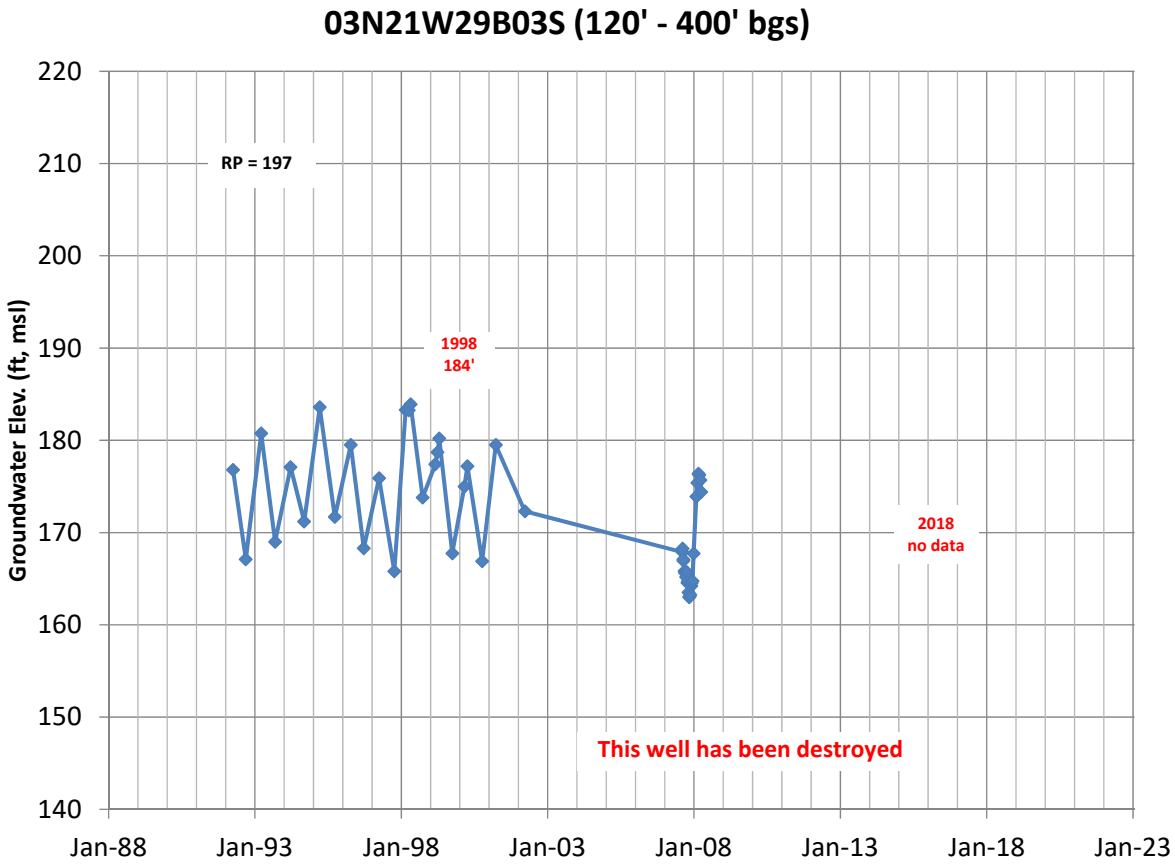
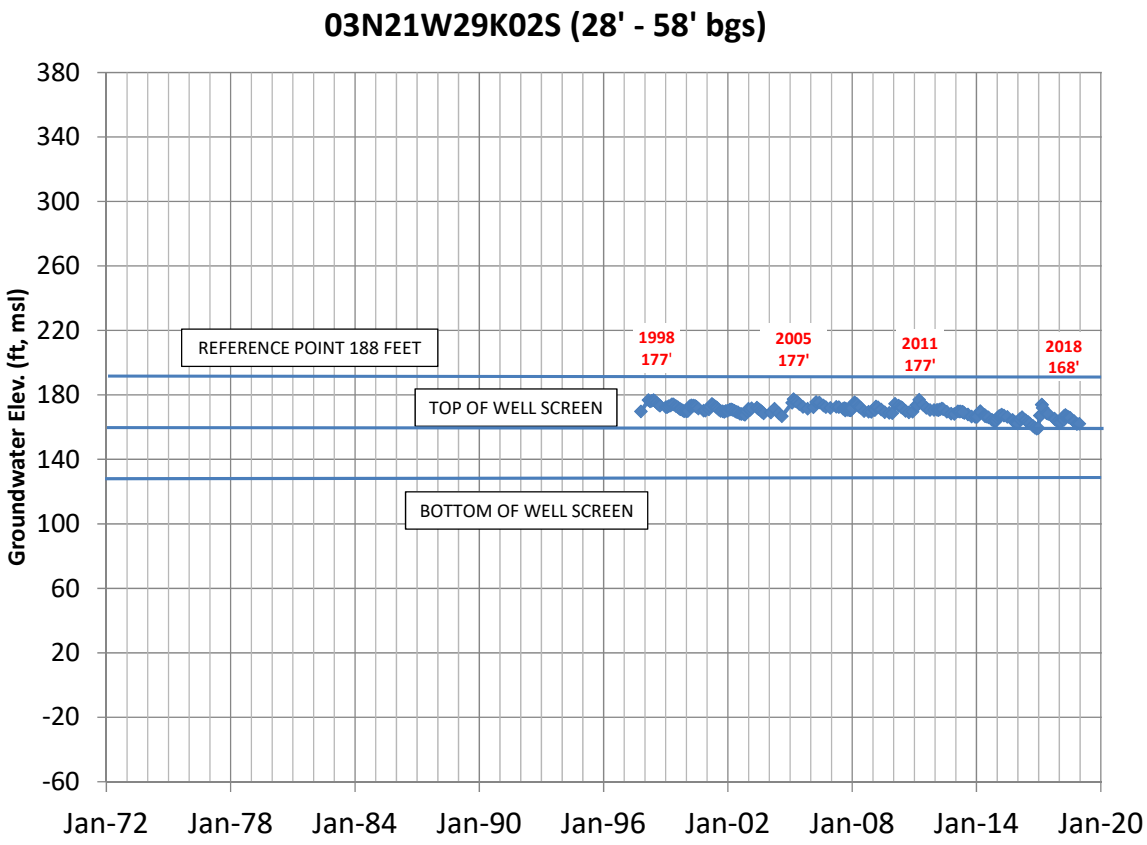


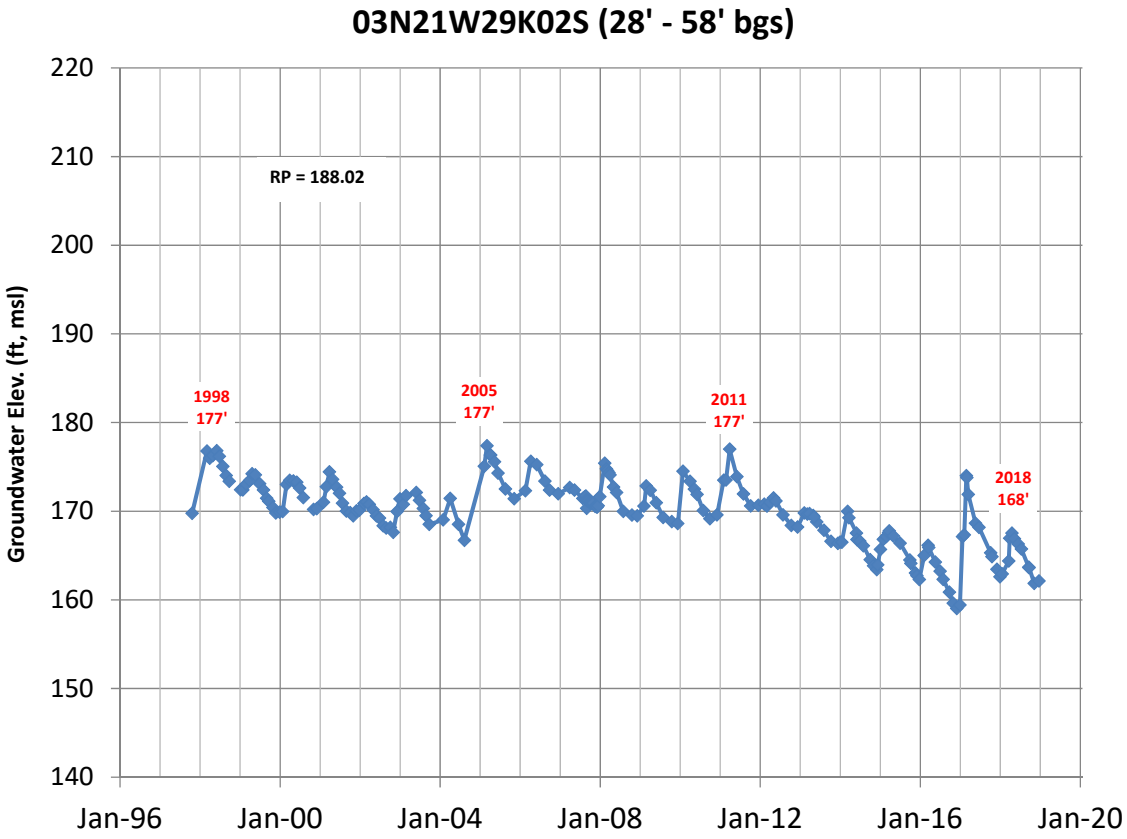

03N22W23Q01S (345' - 445' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
Reference Point = 371'
Top Perforation at 26'
Bottom Perforation at -74'
2011
250'
2018
224'


03N22W23Q01S (345' - 445' bgs)
Groundwater Elev. (ft, msl)
280
270
260
250
240
230
220
210
200
Jan-96
Dec-01
Jan-08
Dec-13
Jan-20
RP = 371
2011
250'
2018
224'

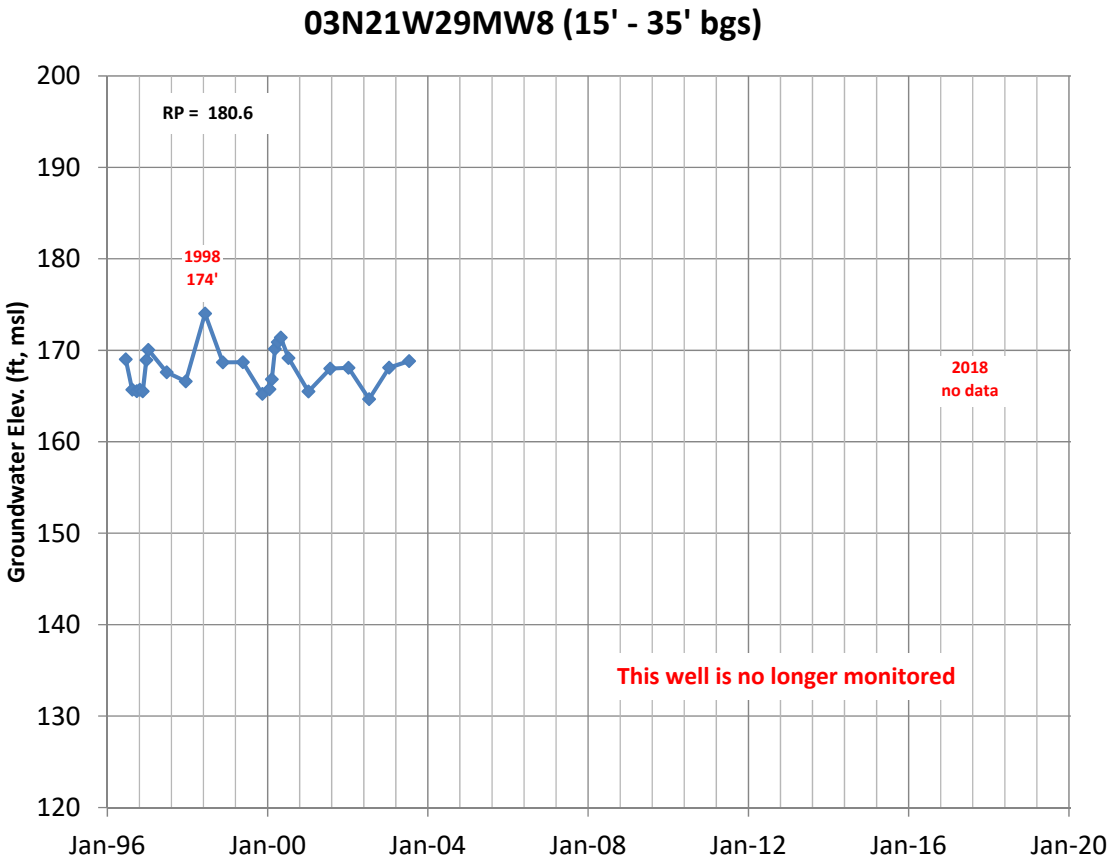
Intentionally Left Blank




03N21W29K02S (28' - 58' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 188 FEET
TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
1998
177'
2005
177'
2011
177'
2018
168'


03N21W29K02S (28' - 58' bgs)
Groundwater Elev. (ft, msl)
220
210
200
190
180
170
160
150
140
Jan-96
Jan-00
Jan-04
Jan-08
Jan-12
Jan-16
Jan-20
RP = 188.02
1998
177'
2005
177'
2011
177'
2018
168'

Intentionally Left Blank



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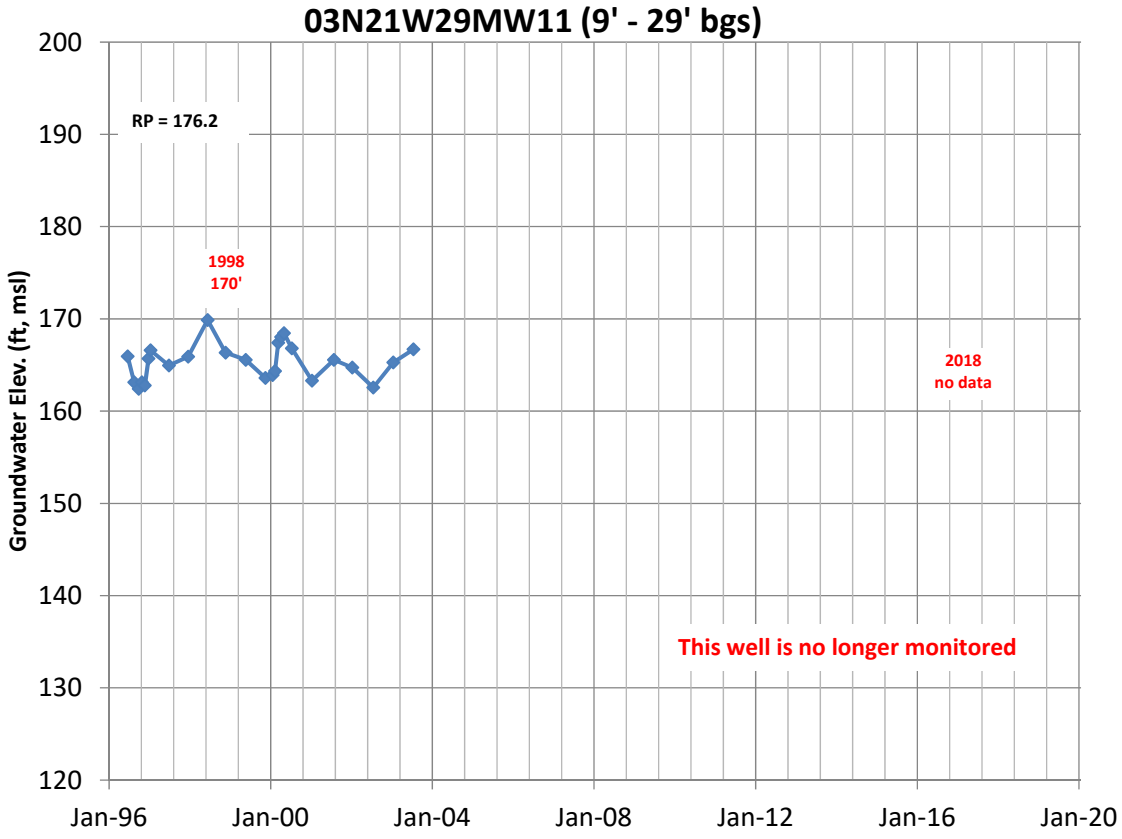

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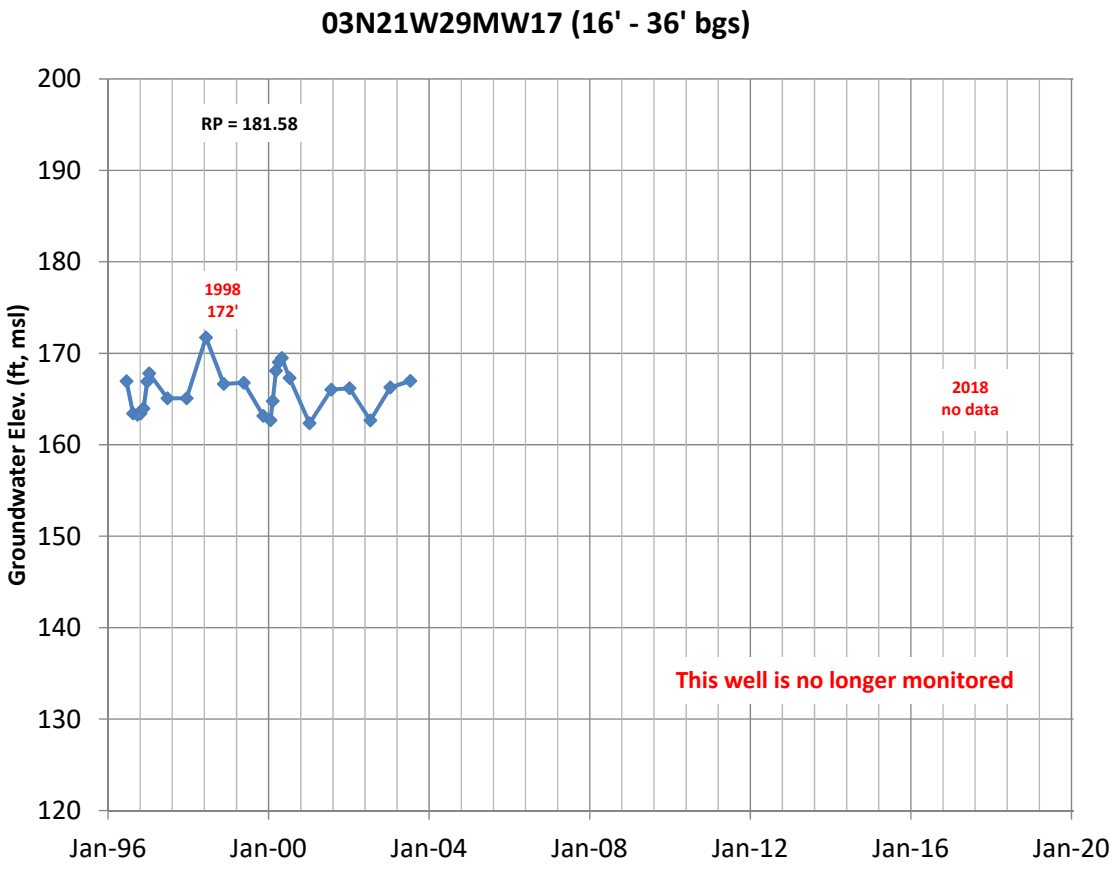
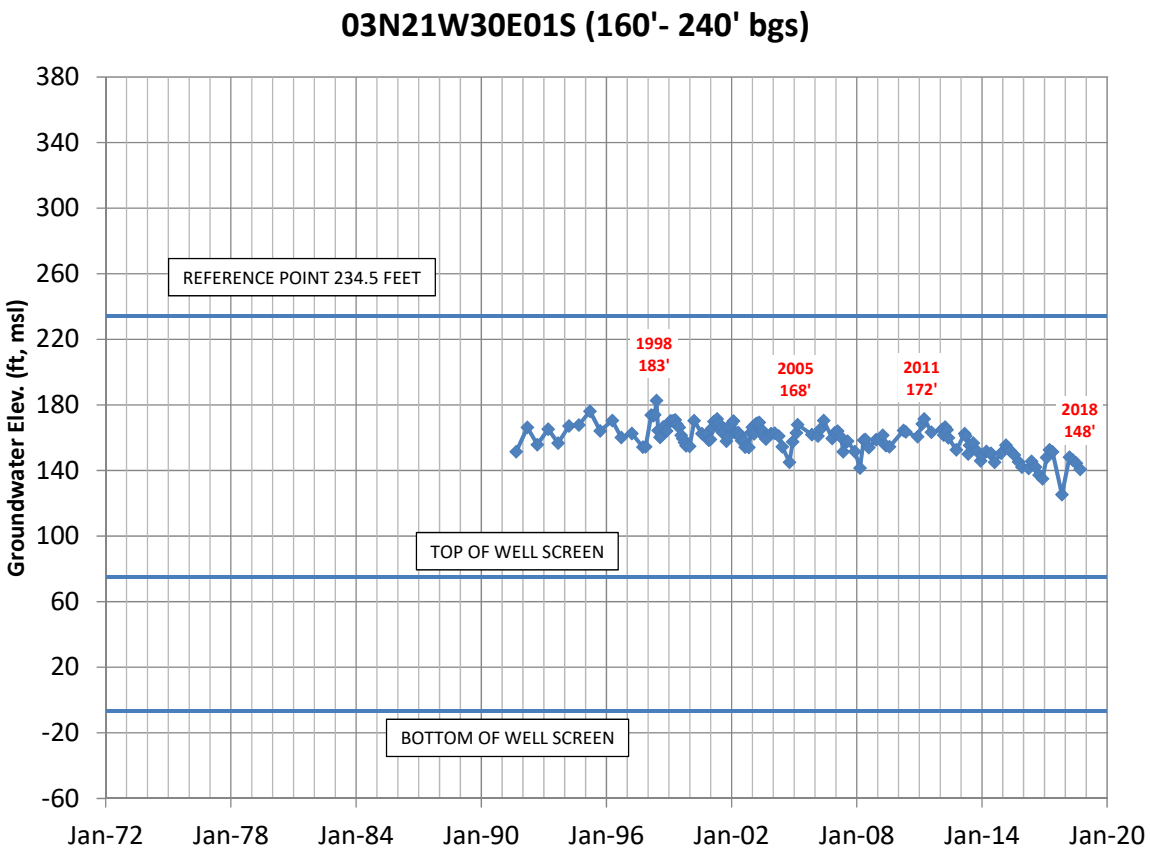
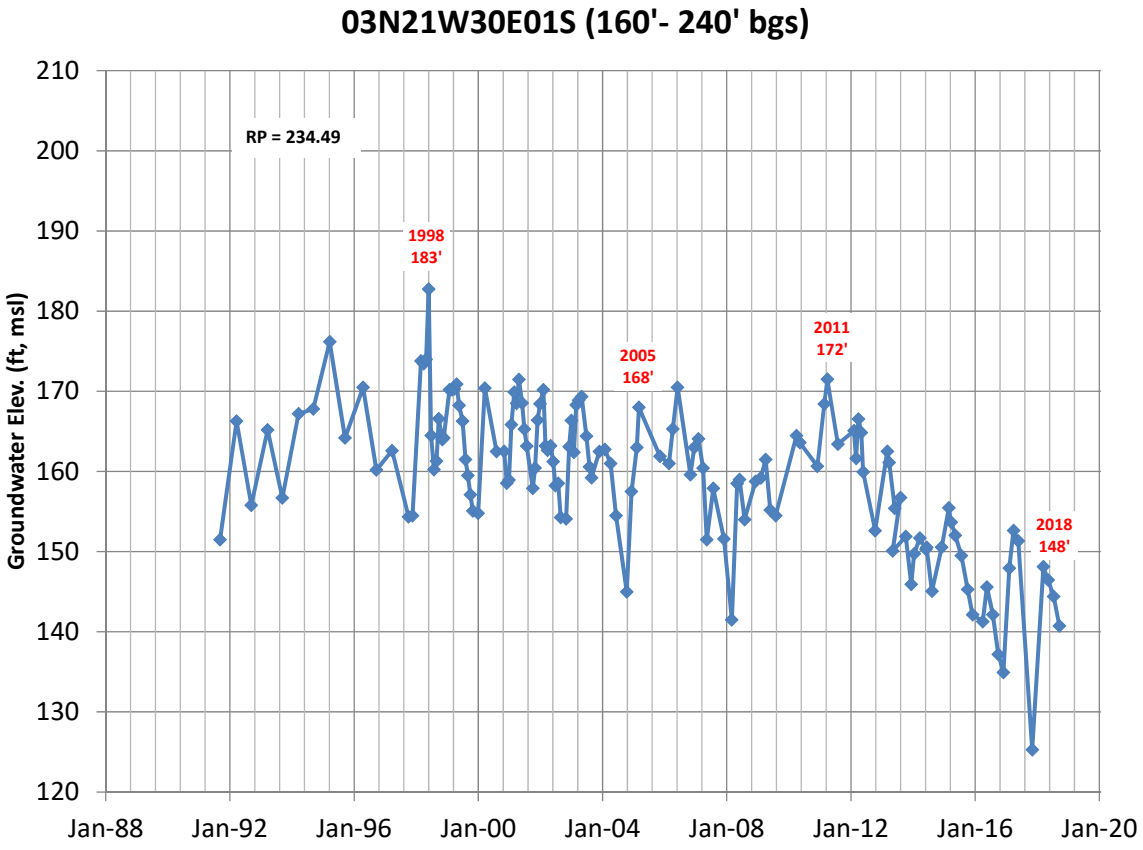
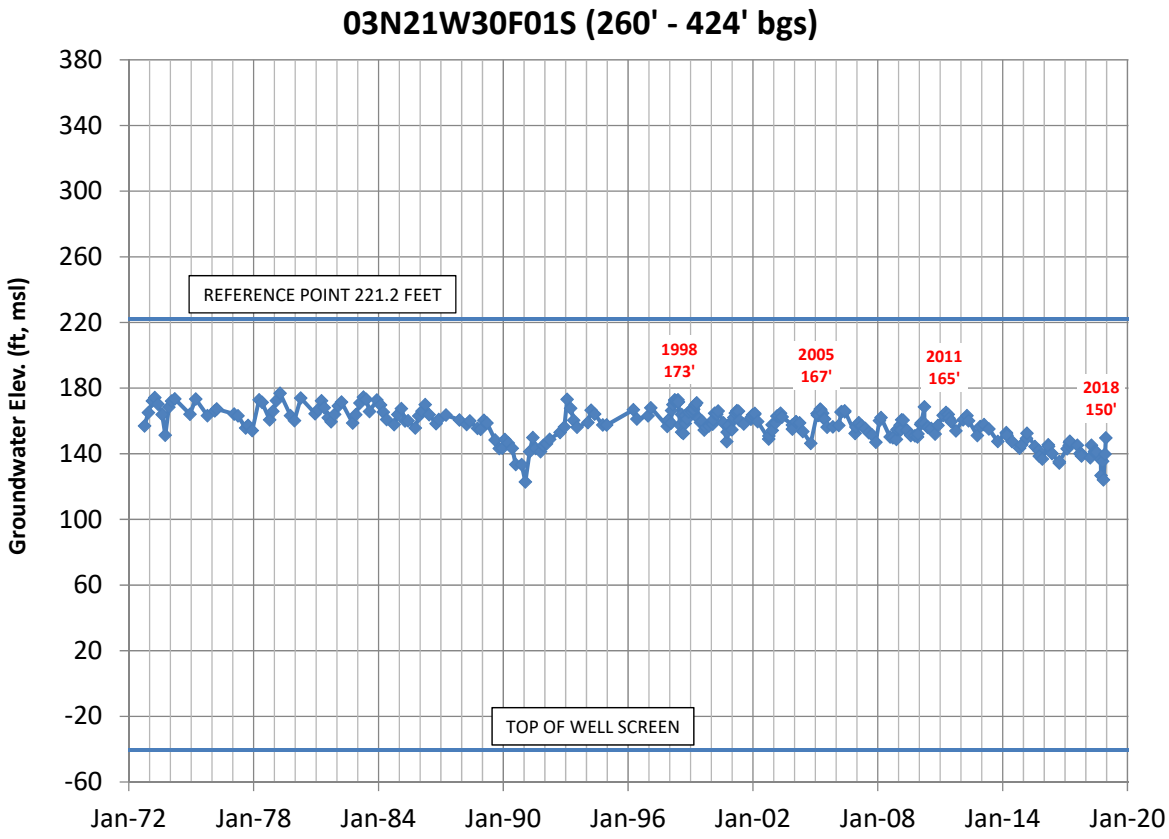
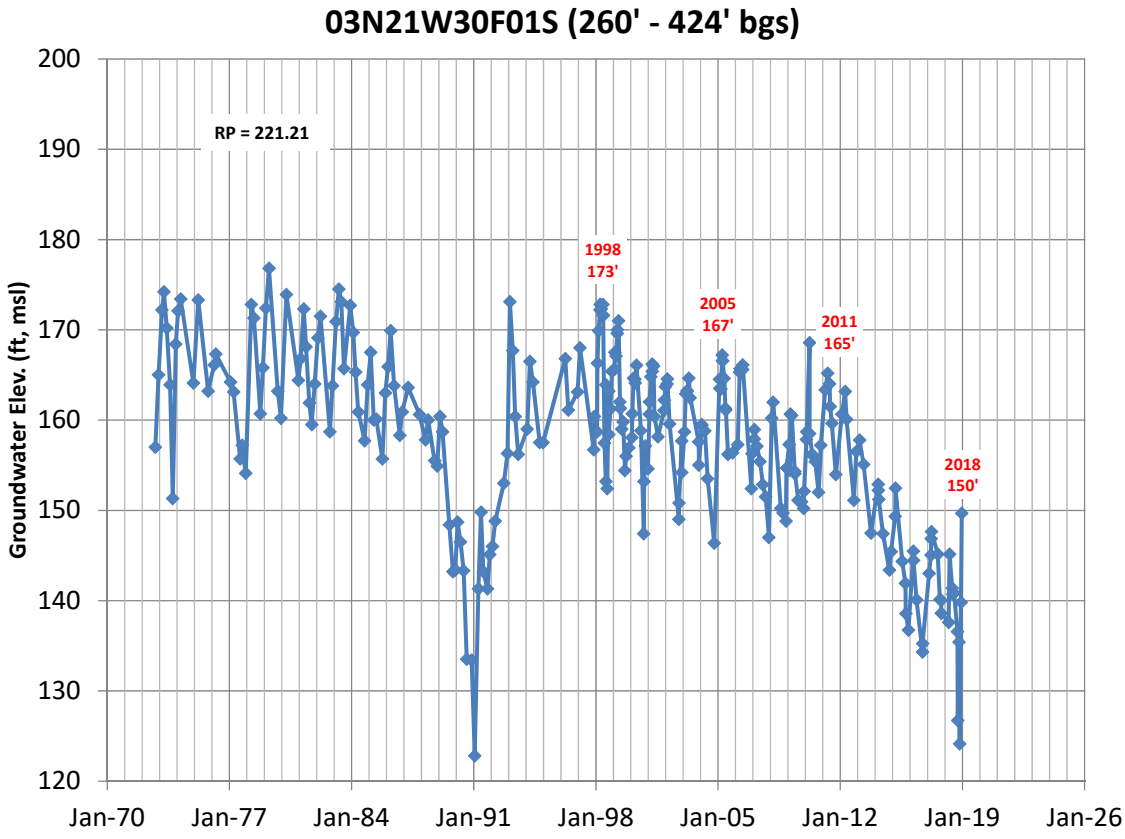
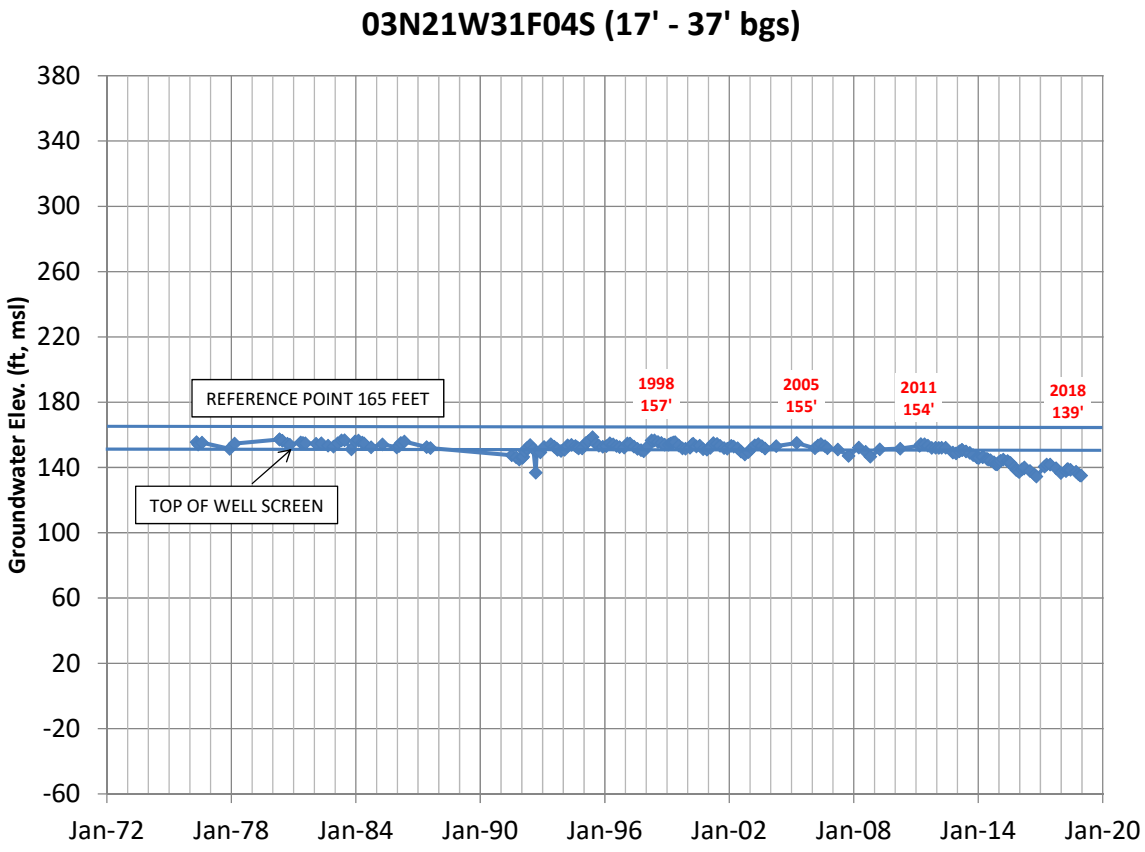


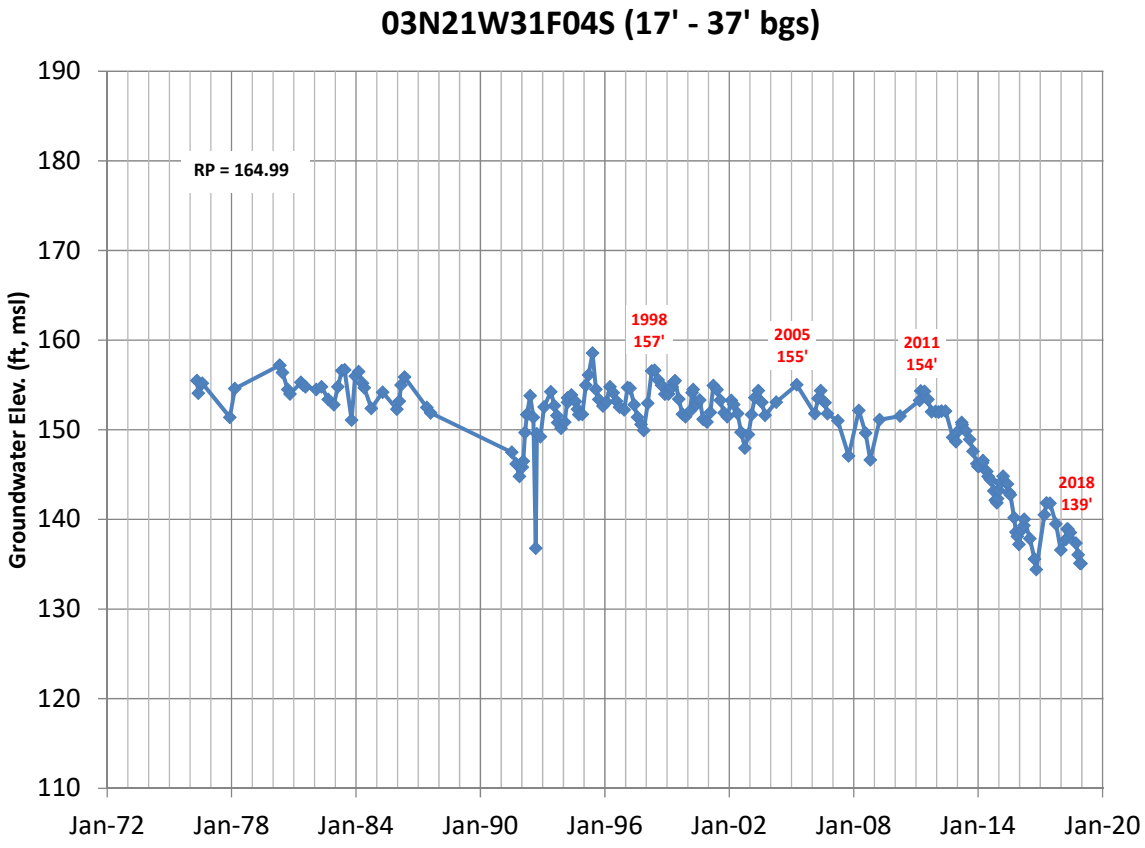

03N21W30E01S (160'- 240' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 234.5 FEET
TOP OF WELL SCREEN
BOTTOM OF WELL SCREEN
1998
183'
2005
168'
2011
172'
2018
148'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20


03N21W30E01S (160'- 240' bgs)
Groundwater Elev. (ft, msl)
210
200
190
180
170
160
150
140
130
120
RP = 234.49
1998
183'
2005
168'
2011
172'
2018
148'
Jan-88
Jan-92
Jan-96
Jan-00
Jan-04
Jan-08
Jan-12
Jan-16
Jan-20


03N21W30F01S (260' - 424' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 221.2 FEET
TOP OF WELL SCREEN
1998
173'
2005
167'
2011
165'
2018
150'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20


03N21W30F01S (260' - 424' bgs)
Groundwater Elev. (ft, msl)
200
190
180
170
160
150
140
130
120
RP = 221.21
1998
173'
2005
167'
2011
165'
2018
150'
Jan-70
Jan-77
Jan-84
Jan-91
Jan-98
Jan-05
Jan-12
Jan-19
Jan-26


03N21W31F04S (17' - 37' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 165 FEET
TOP OF WELL SCREEN
1998
157'
2005
155'
2011
154'
2018
139'


03N21W31F04S (17' - 37' bgs)
Groundwater Elev. (ft, msl)
190
180
170
160
150
140
130
120
110
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
RP = 164.99
1998
157'
2005
155'
2011
154'
2018
139'

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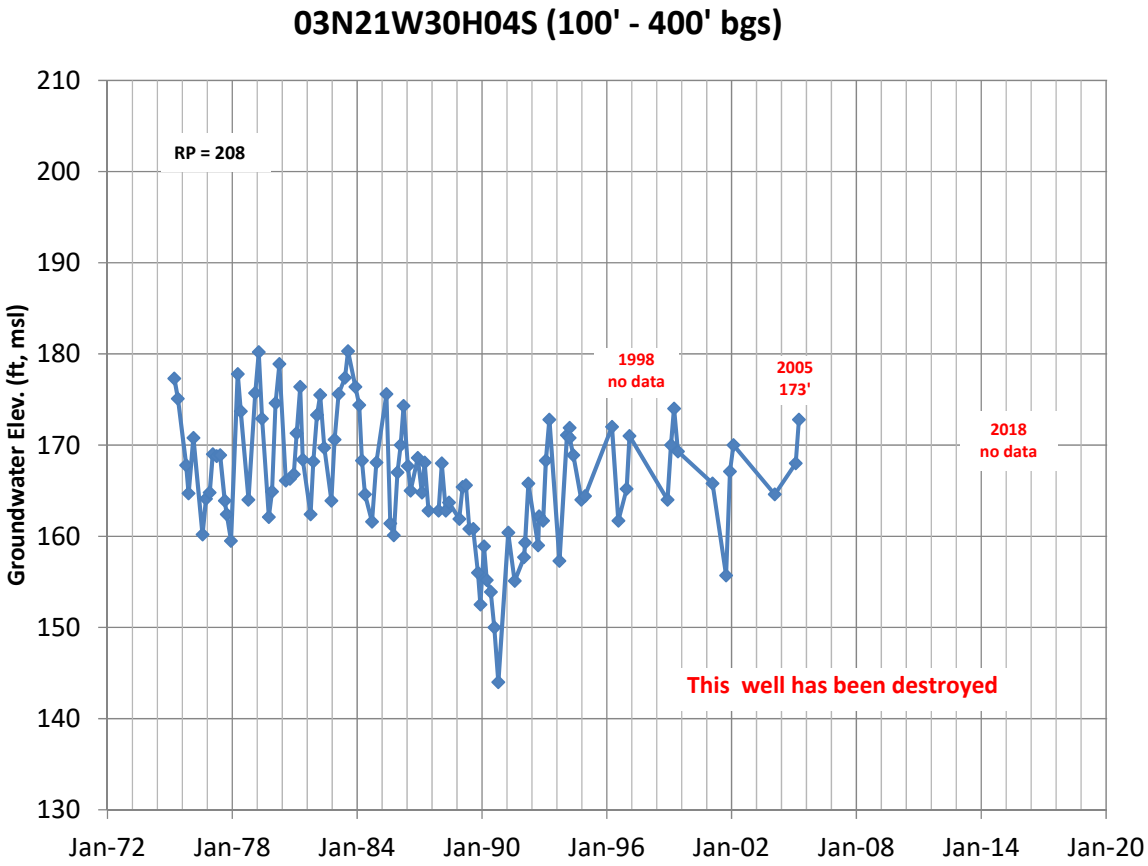

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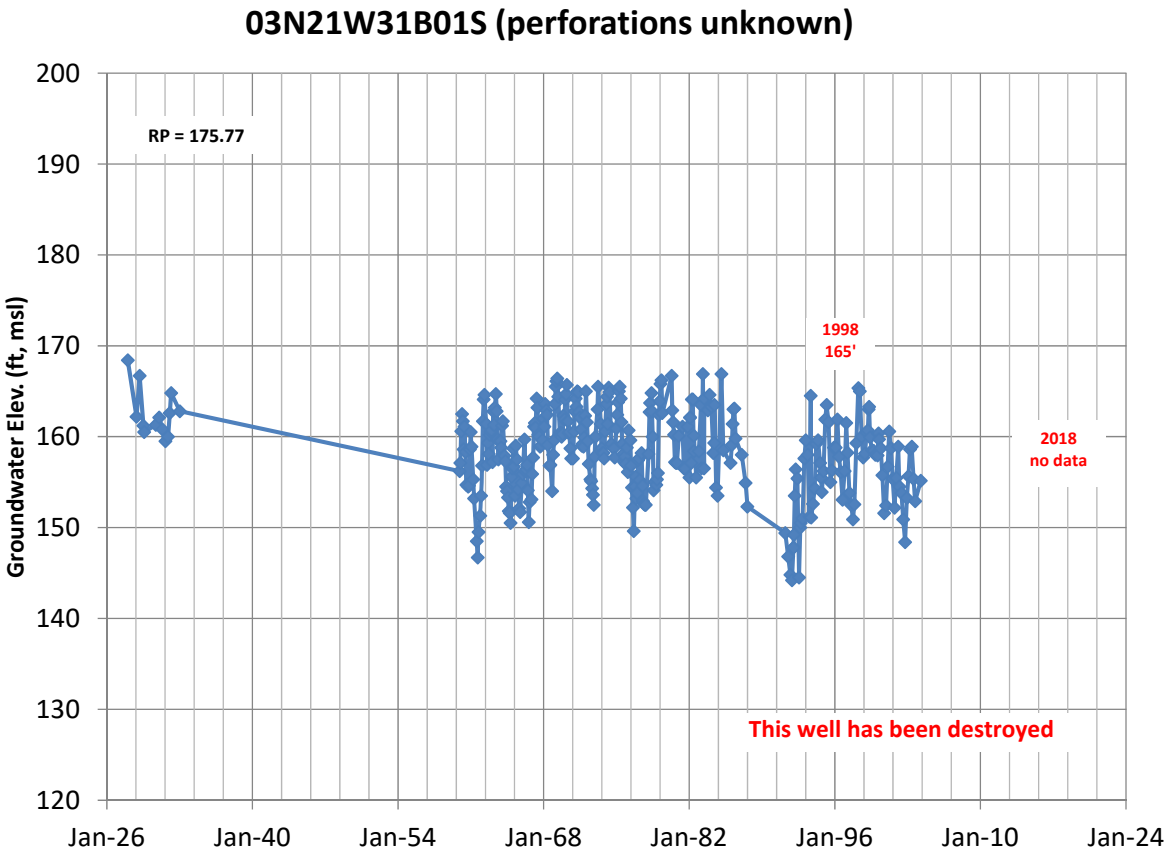
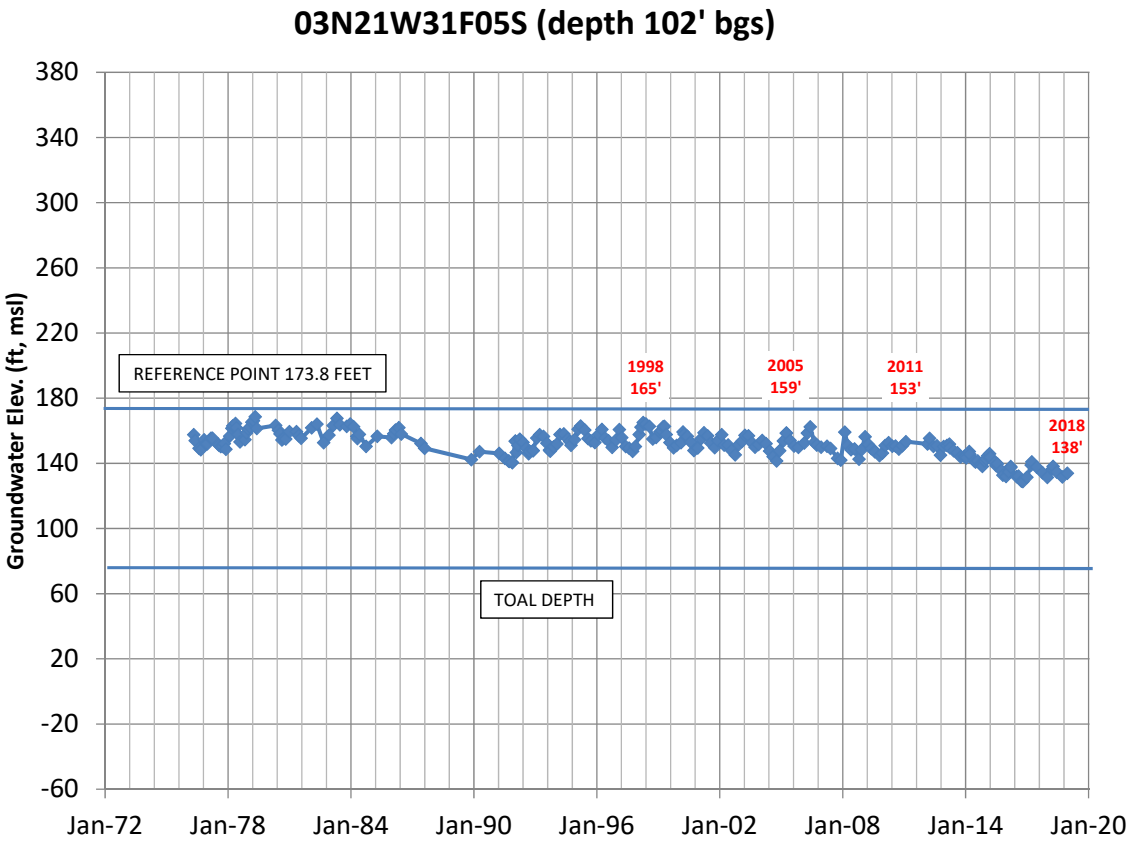
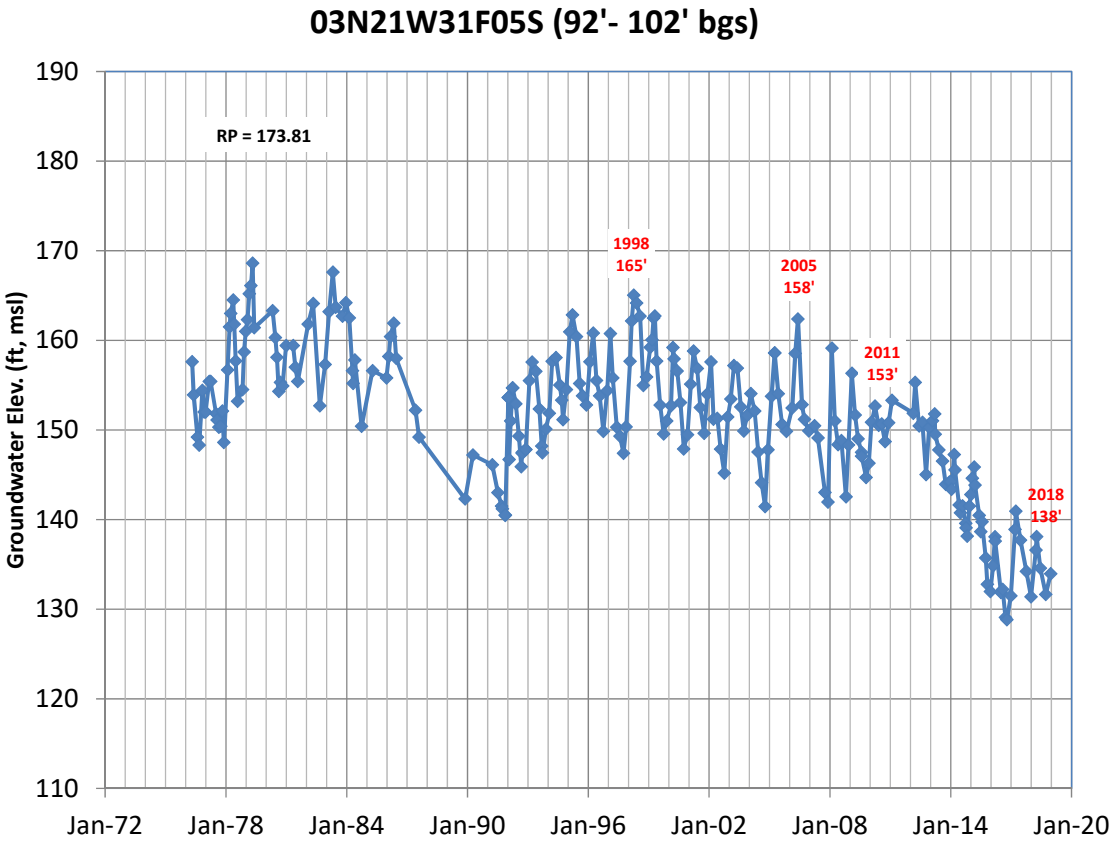
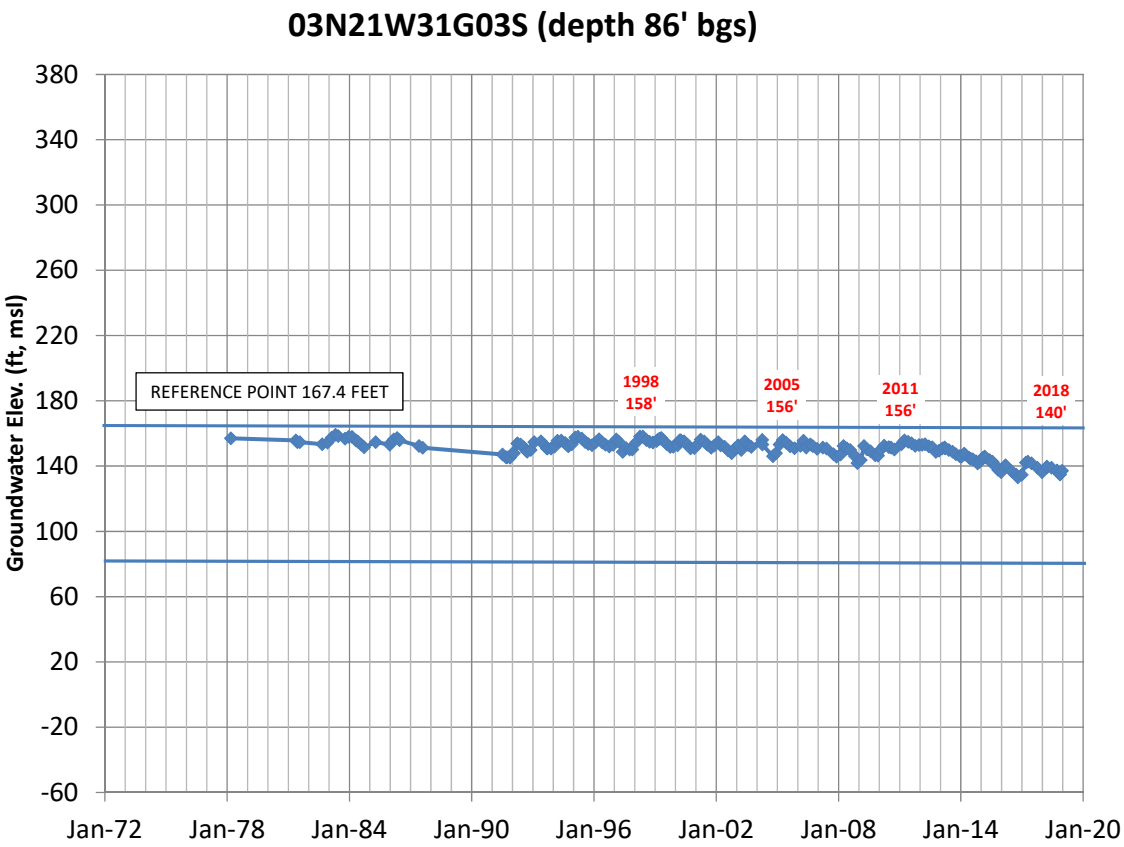
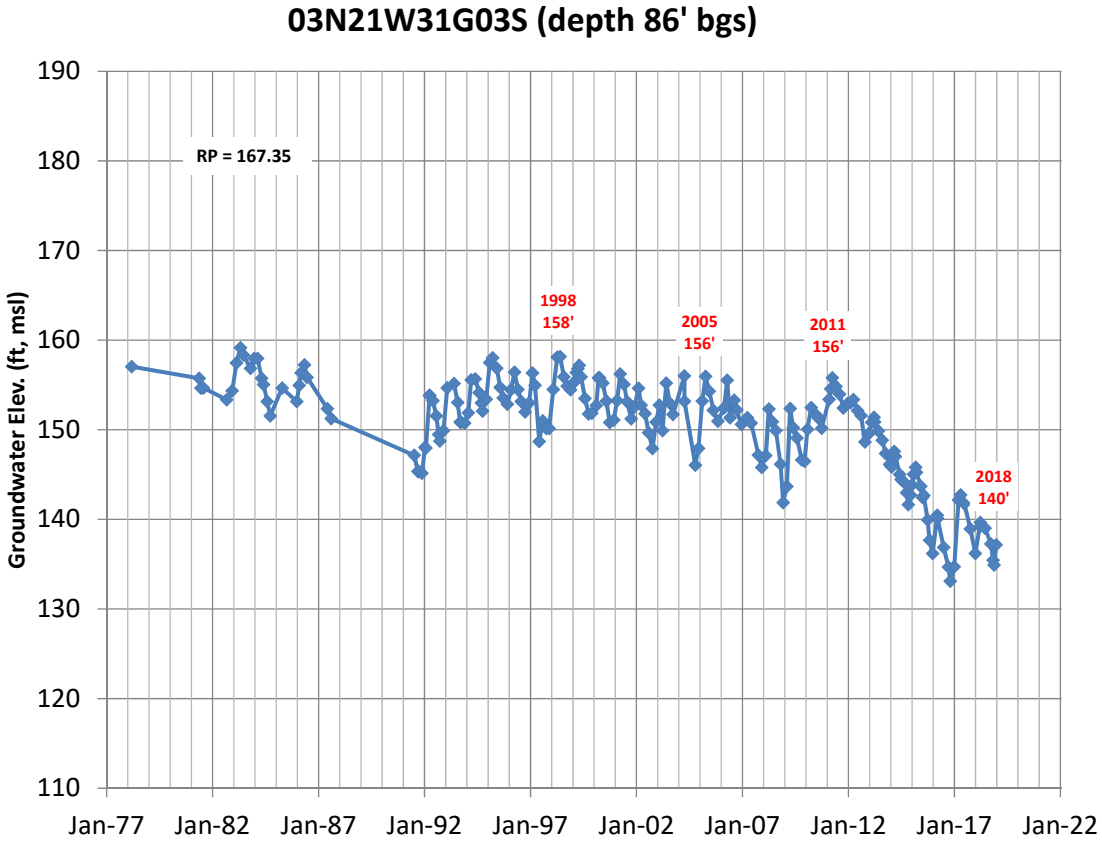


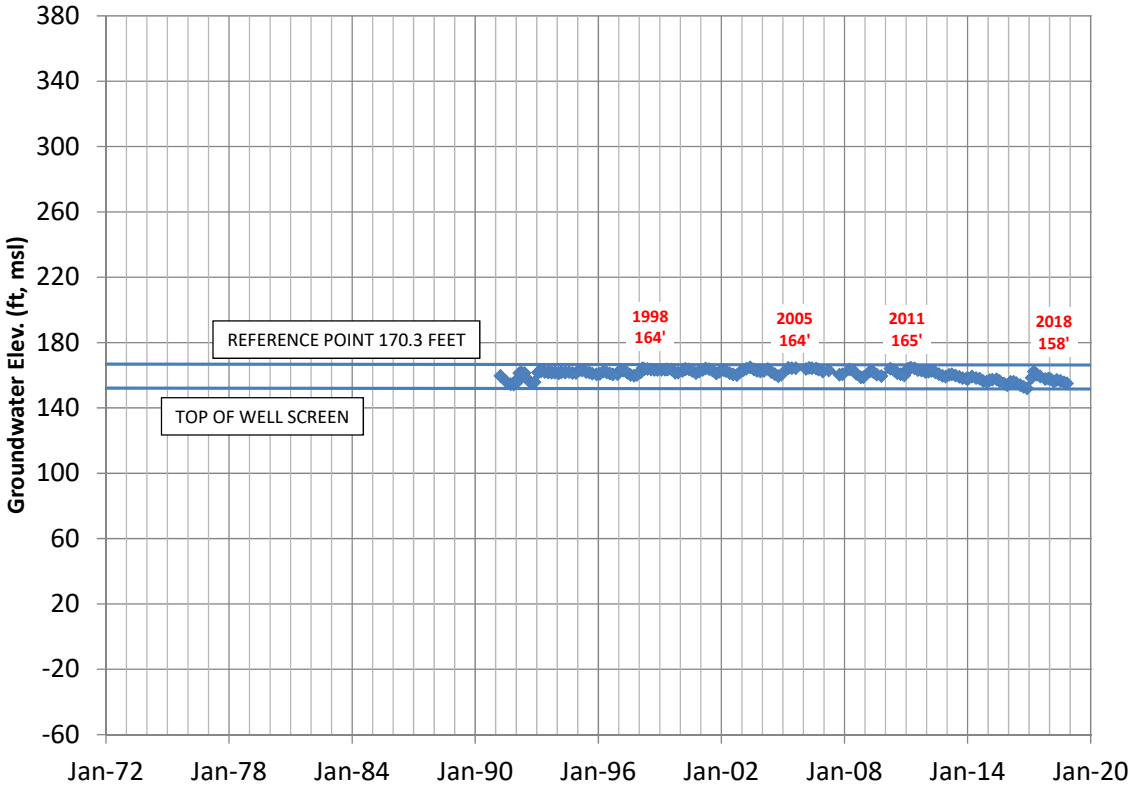

03N21W31F05S (depth 102' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 173.8 FEET
TOAL DEPTH
1998
165'
2005
159'
2011
153'
2018
138'


03N21W31F05S (92'- 102' bgs)
Groundwater Elev. (ft, msl)
190
180
170
160
150
140
130
120
110
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
RP = 173.81
1998
165'
2005
158'
2011
153'
2018
138'

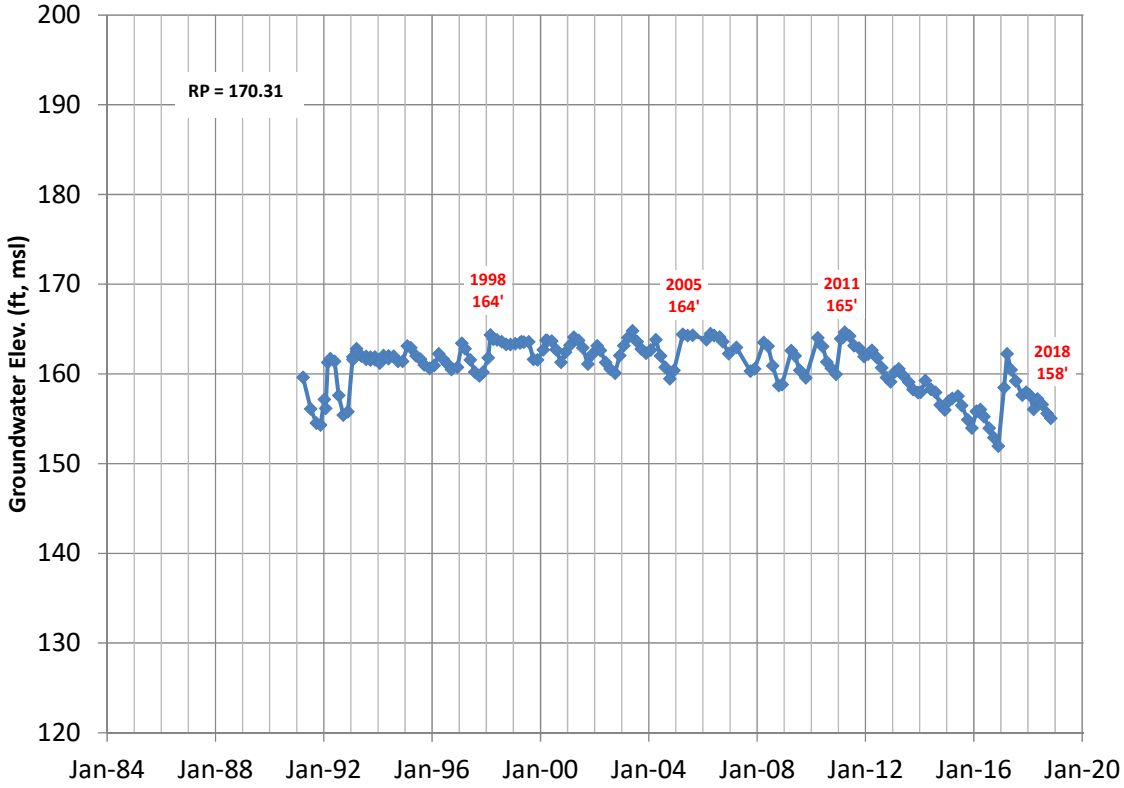

03N21W31G03S (depth 86' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 167.4 FEET
1998
158'
2005
156'
2011
156'
2018
140'


03N21W31G03S (depth 86' bgs)
Groundwater Elev. (ft, msl)
190
180
170
160
150
140
130
120
110
Jan-77
Jan-82
Jan-87
Jan-92
Jan-97
Jan-02
Jan-07
Jan-12
Jan-17
Jan-22
RP = 167.35
1998
158'
2005
156'
2011
156'
2018
140'

03N21W32C01S (12' - 32' bgs)



03N21W32C01S (12' - 32' bgs)



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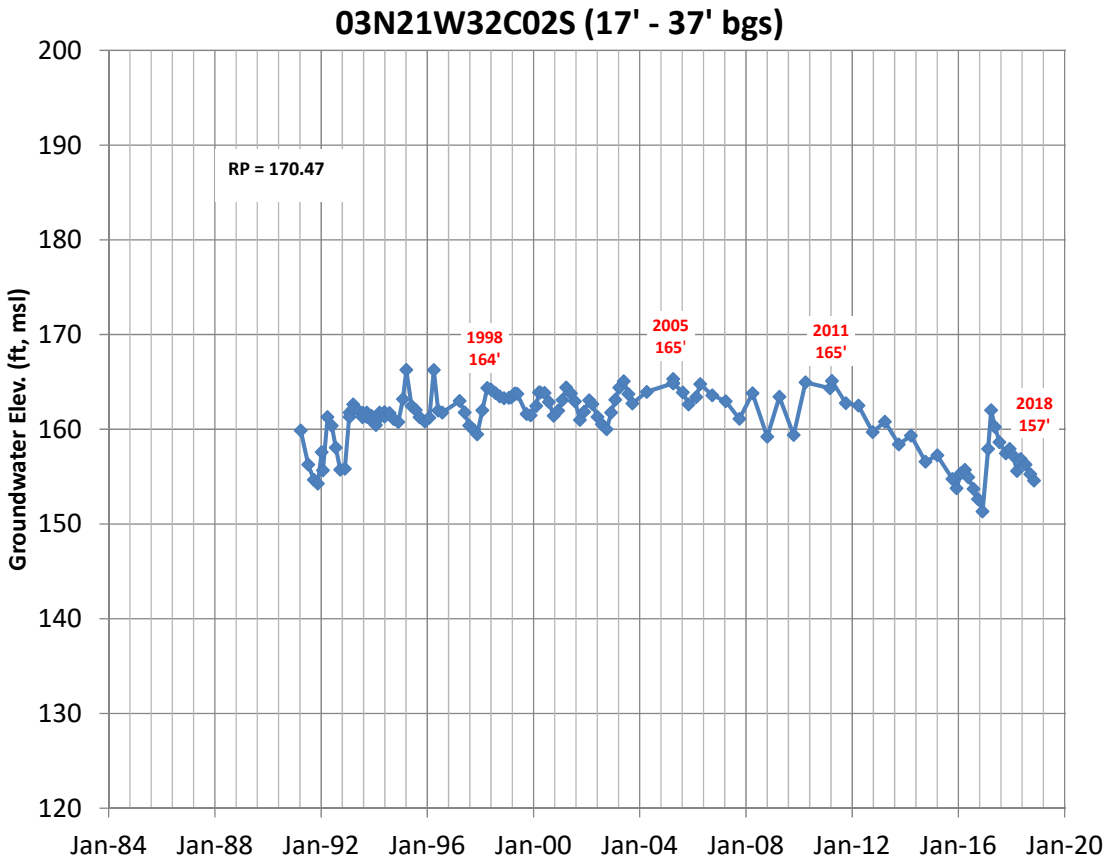

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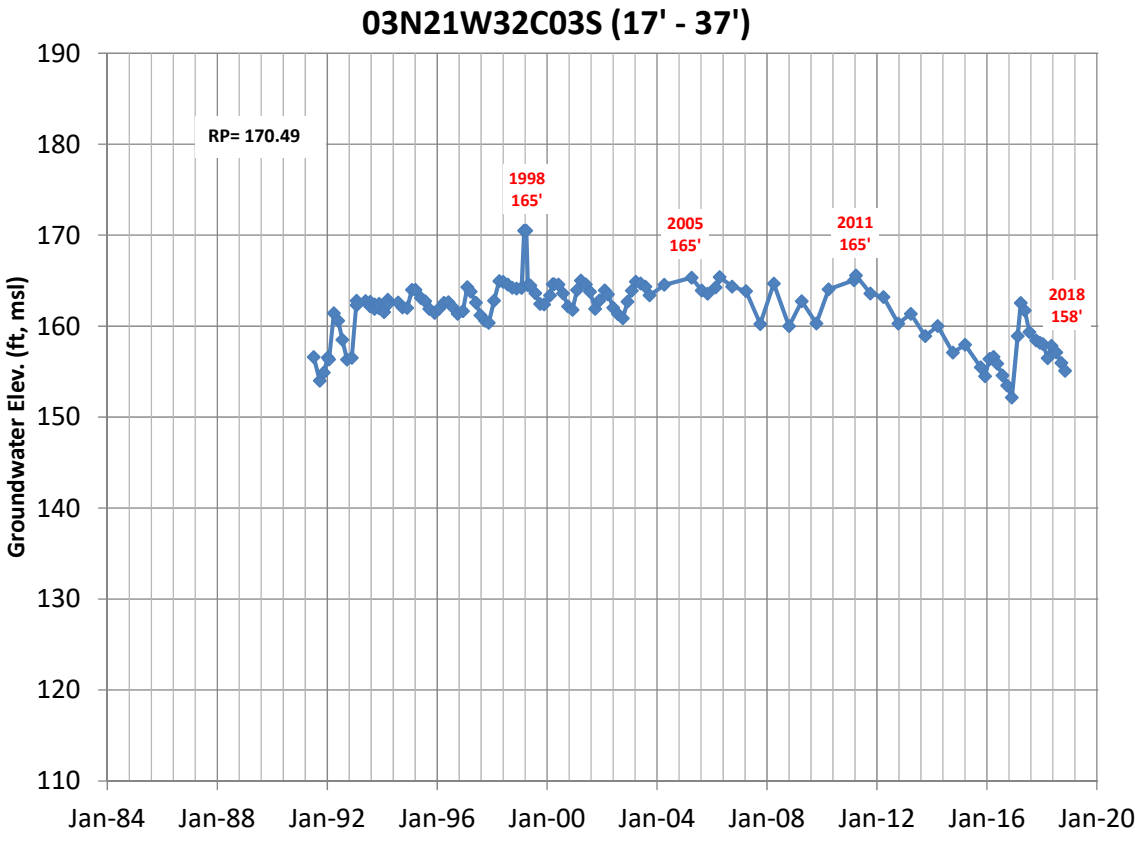

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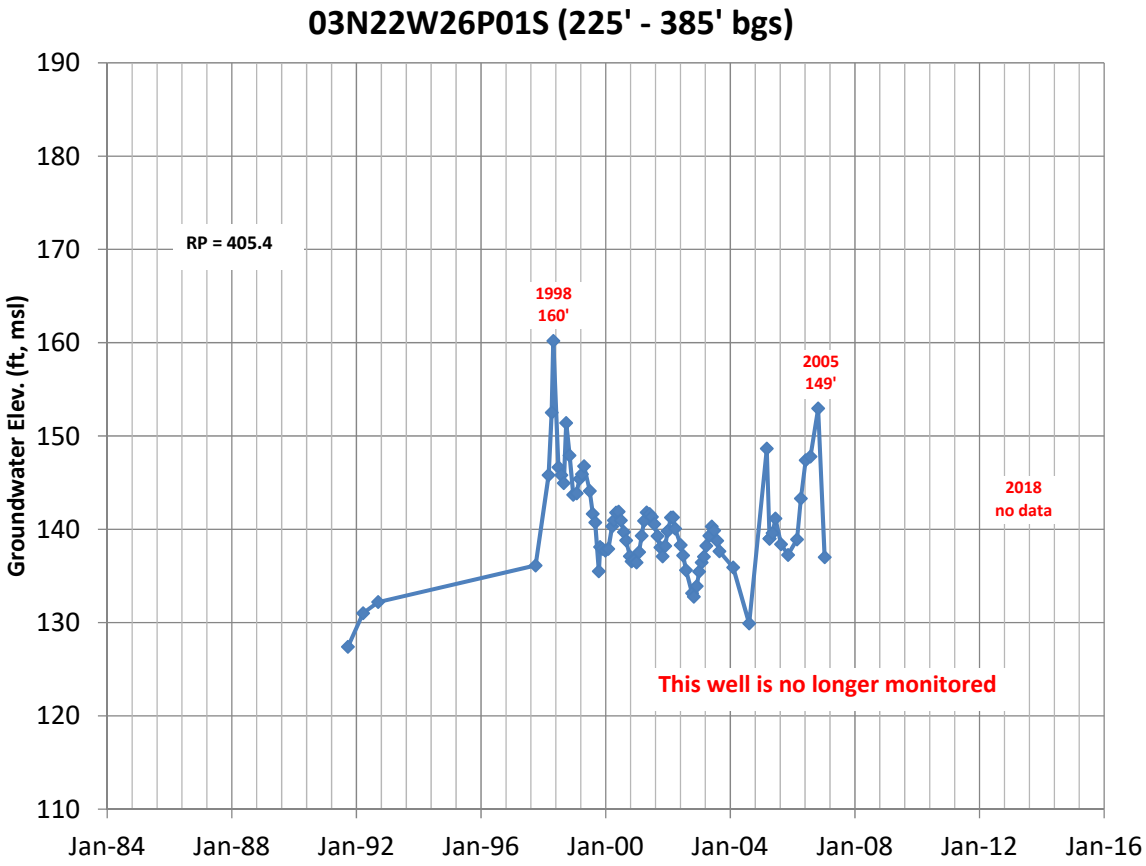

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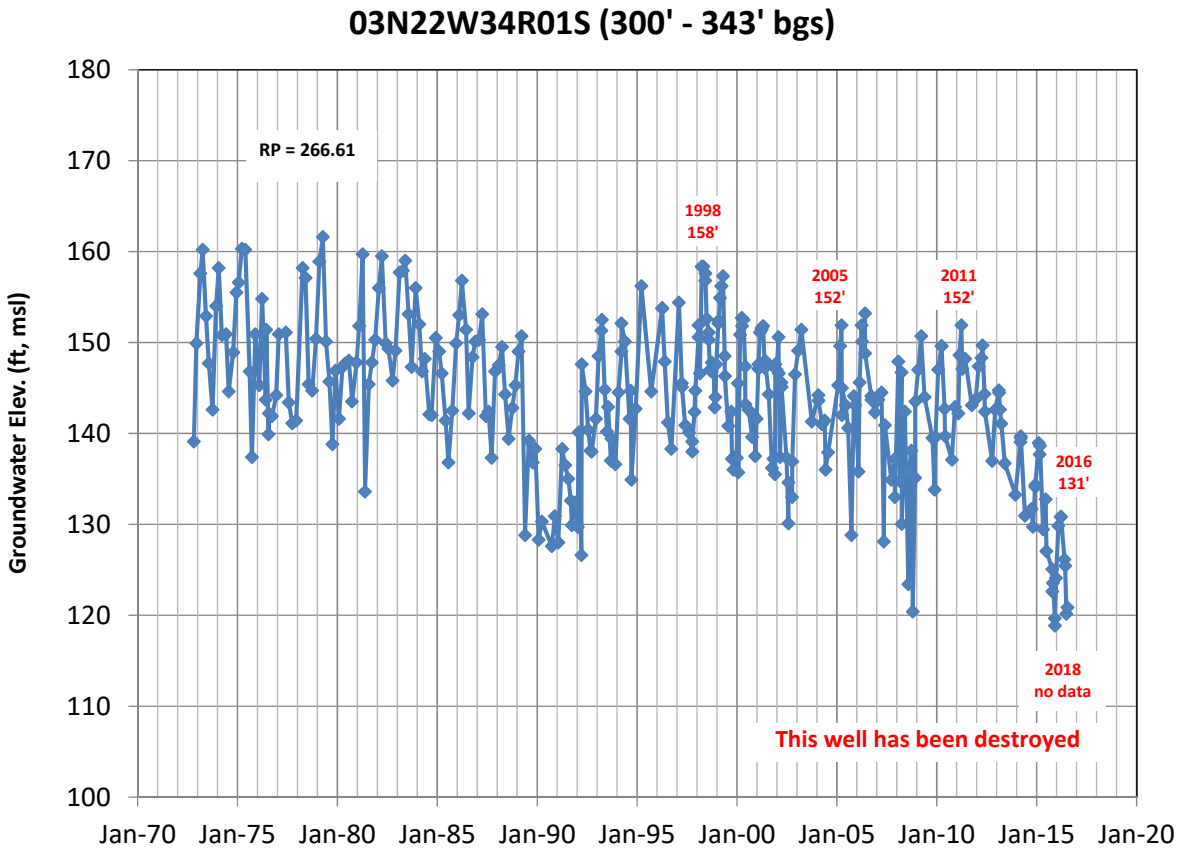
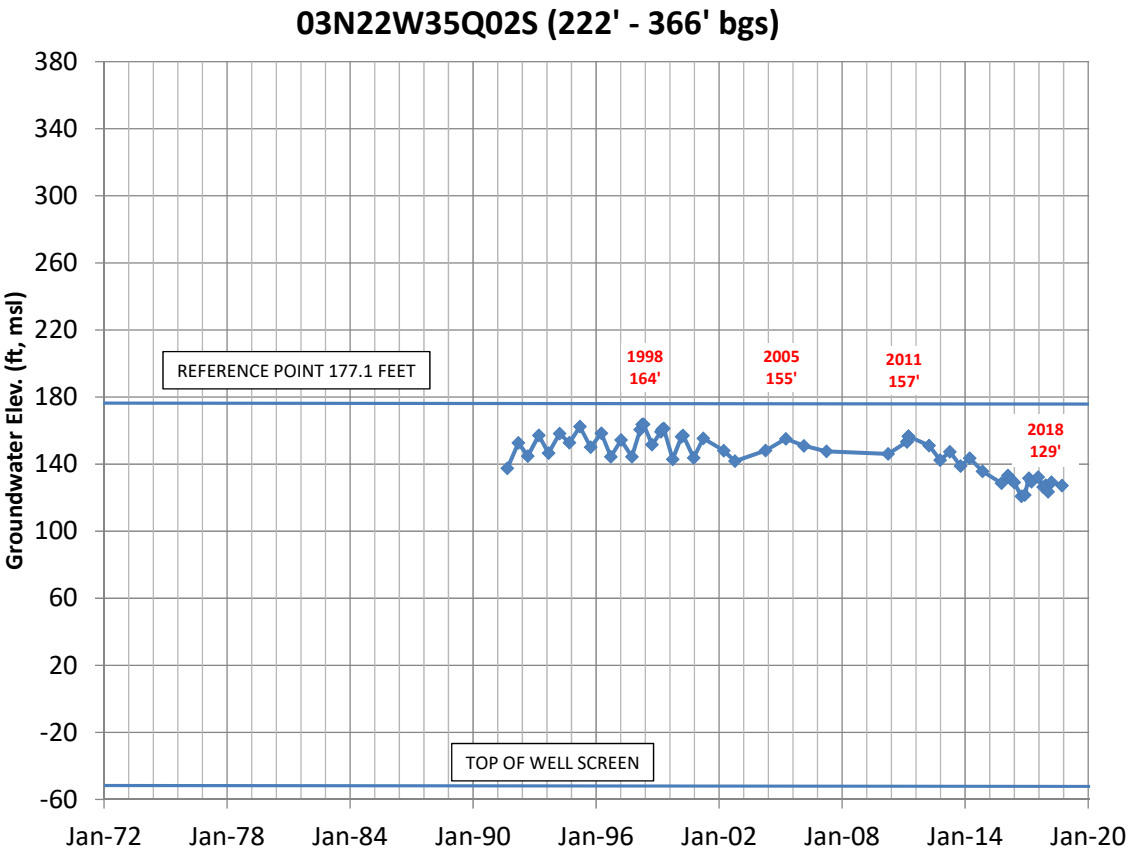
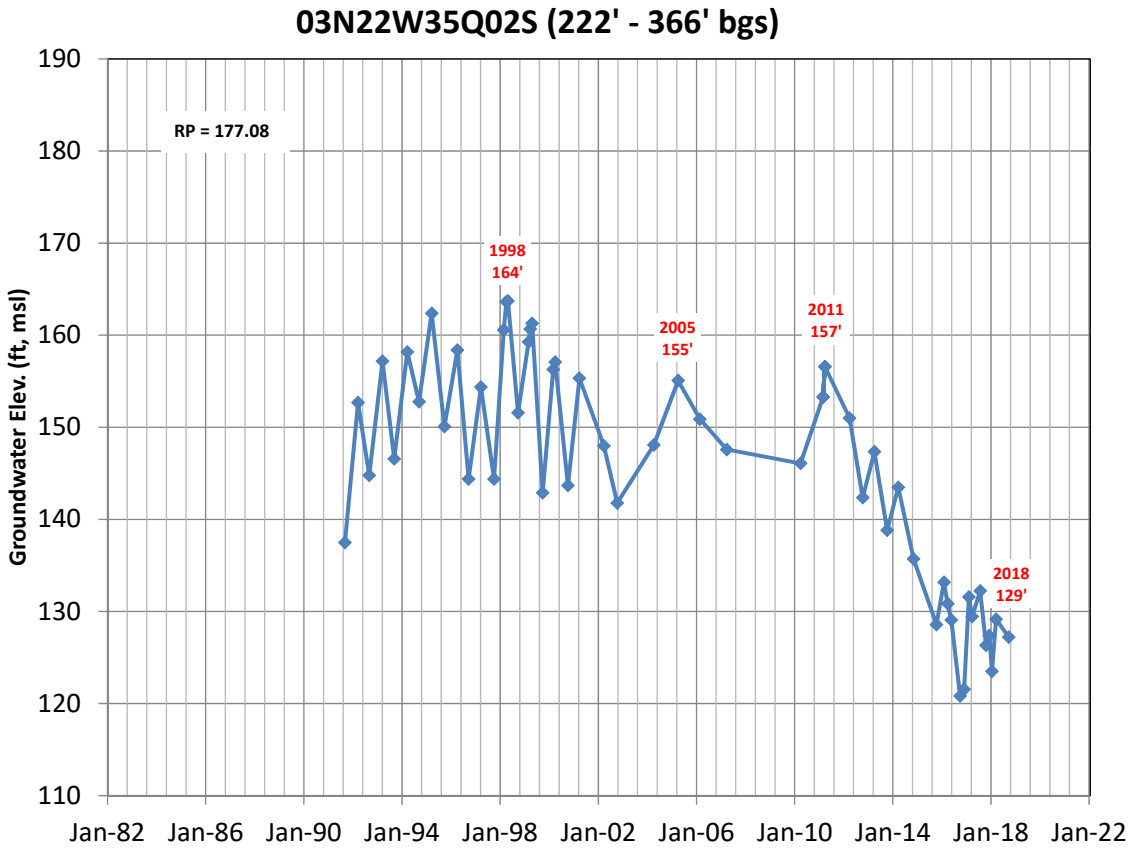
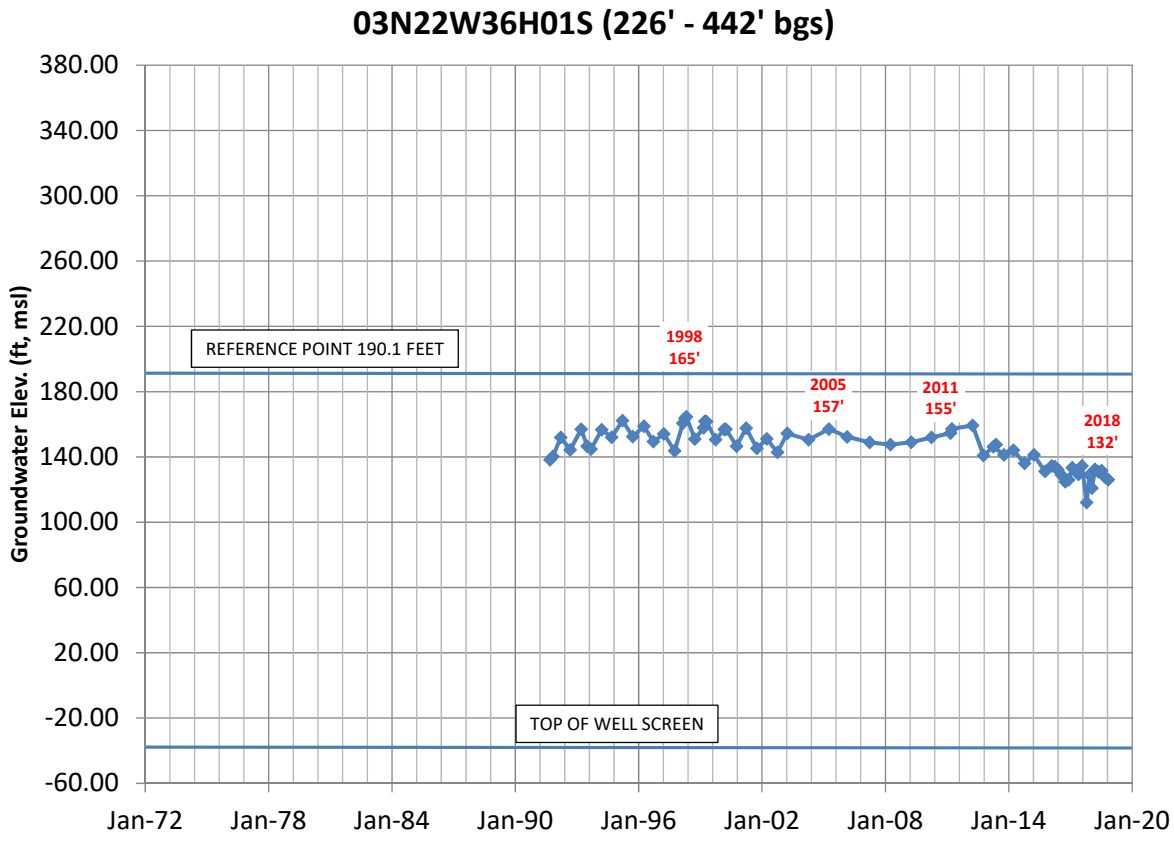
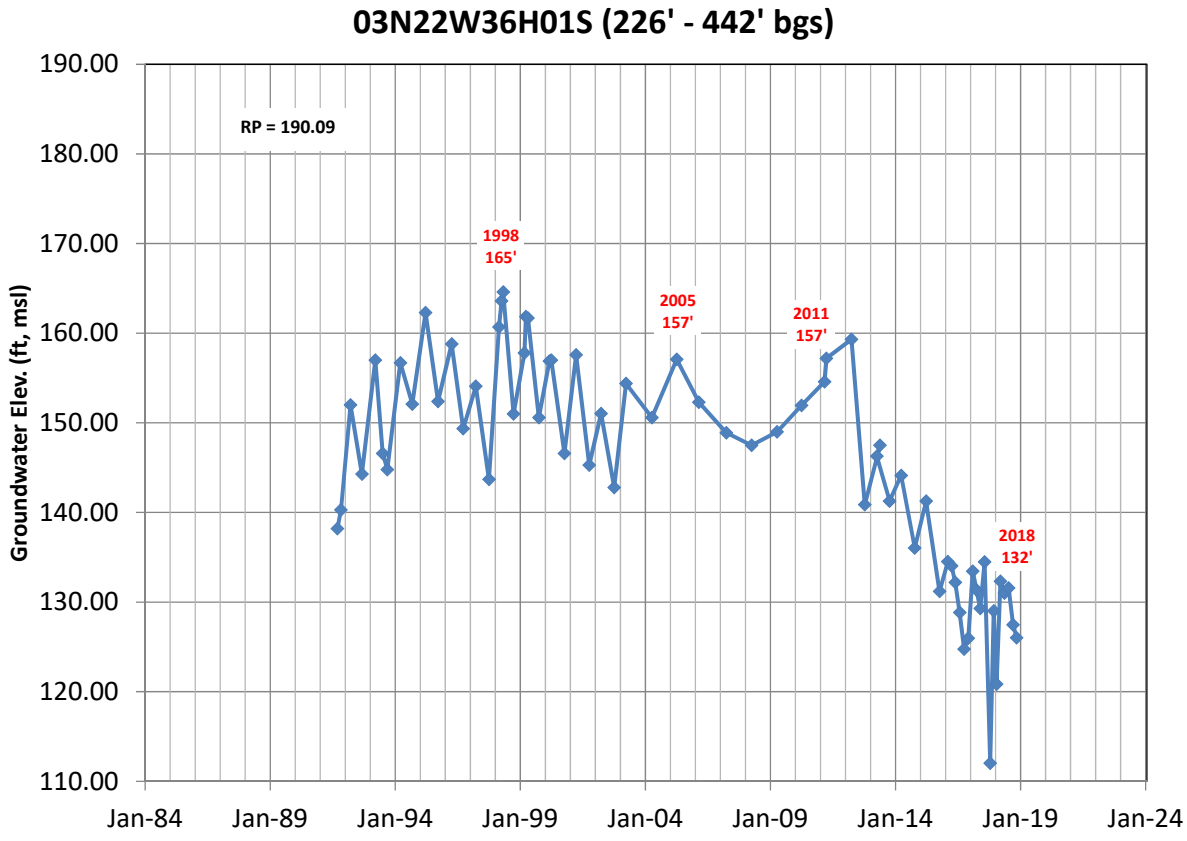
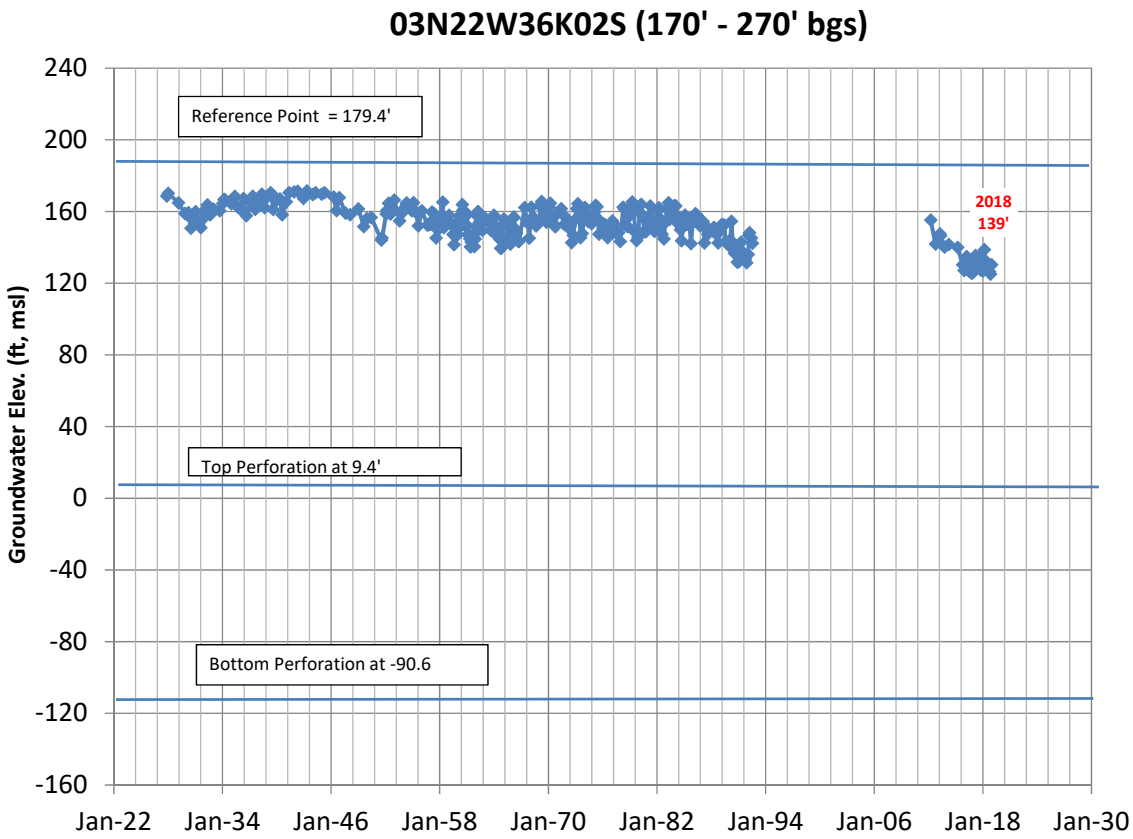


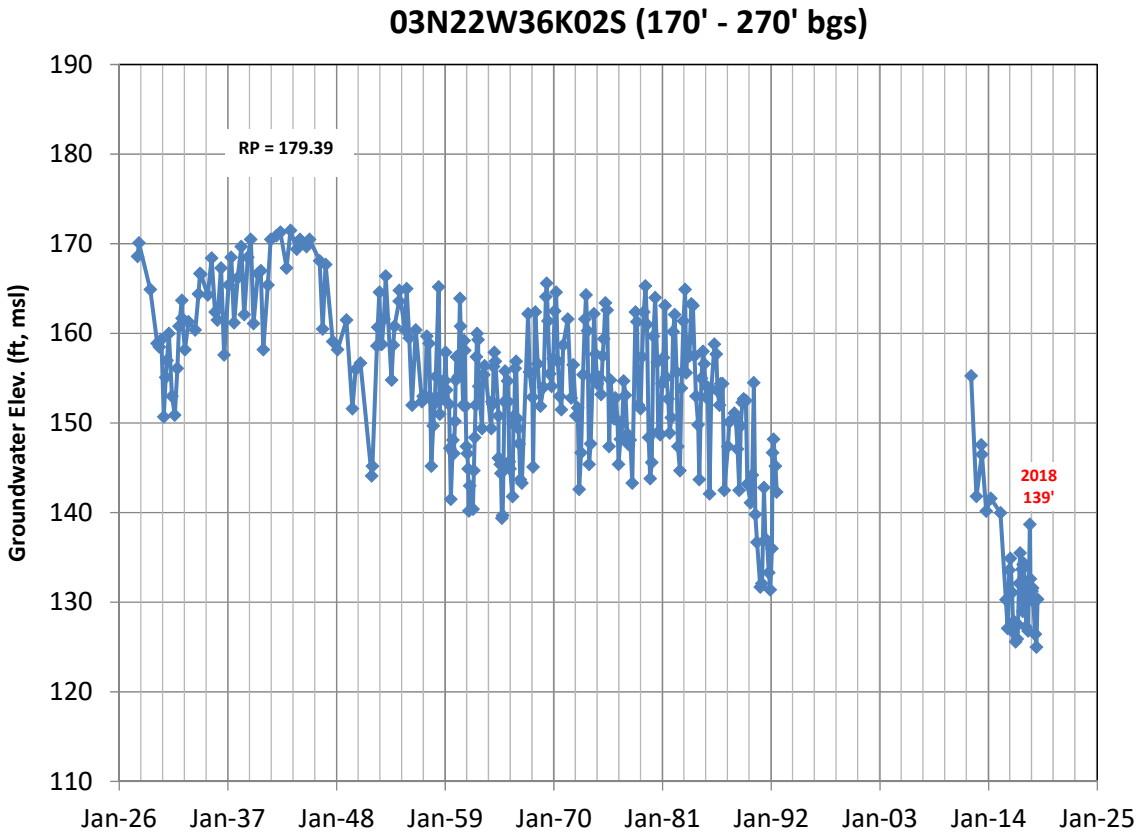

03N22W35Q02S (222' - 366' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
REFERENCE POINT 177.1 FEET
TOP OF WELL SCREEN
1998
164'
2005
155'
2011
157'
2018
129'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

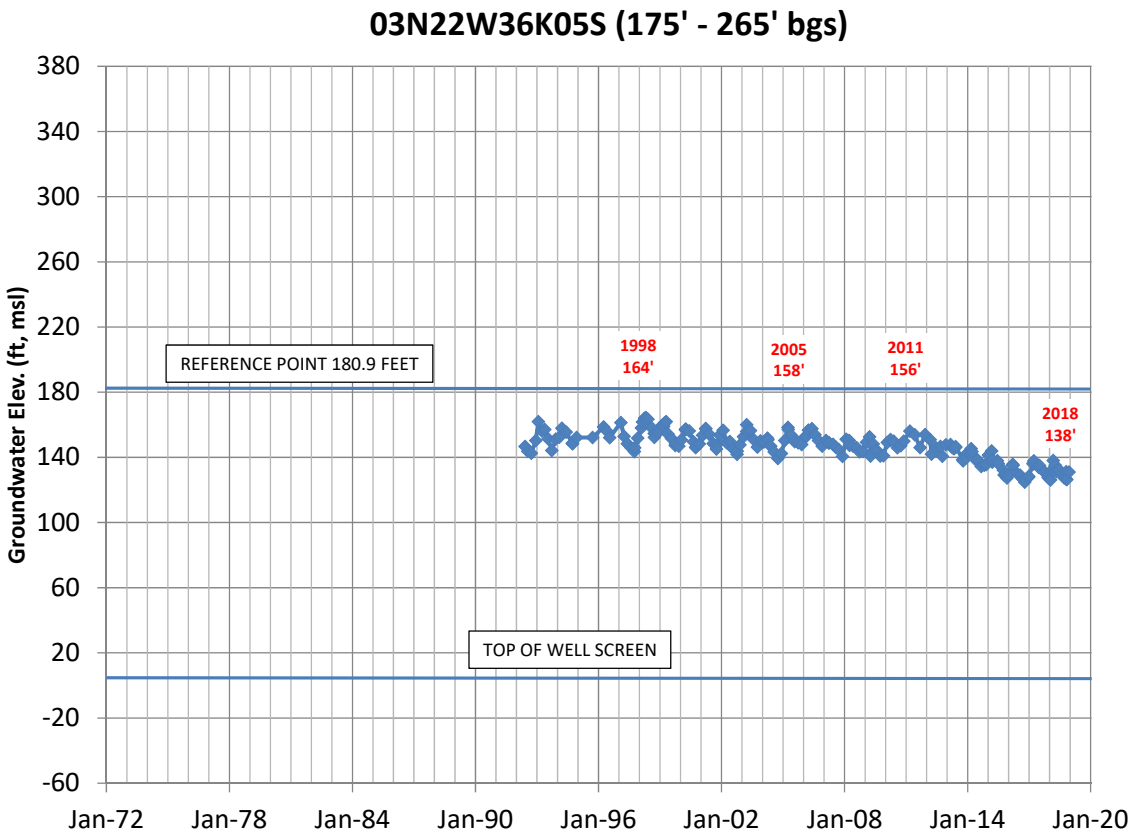

03N22W35Q02S (222' - 366' bgs)
Groundwater Elev. (ft, msl)
190
180
170
160
150
140
130
120
110
RP = 177.08
1998
164'
2005
155'
2011
157'
2018
129'
Jan-82
Jan-86
Jan-90
Jan-94
Jan-98
Jan-02
Jan-06
Jan-10
Jan-14
Jan-18
Jan-22

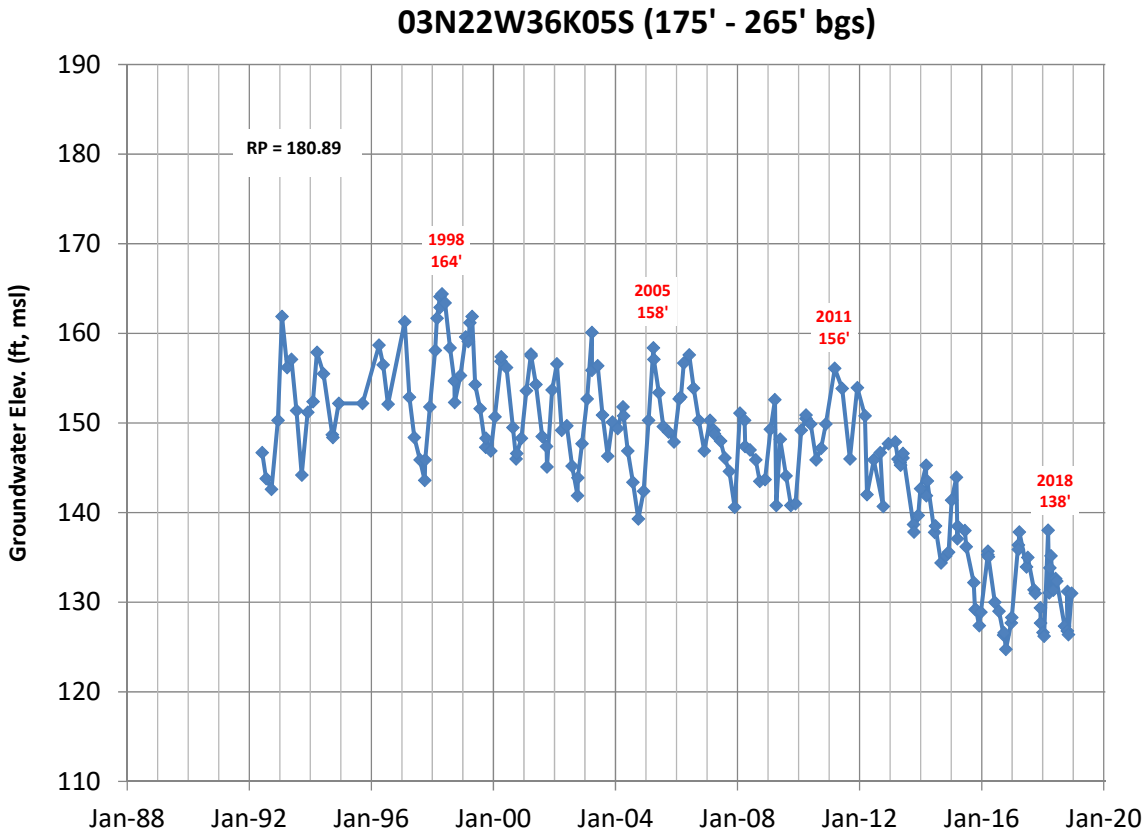

03N22W36H01S (226' - 442' bgs)
Groundwater Elev. (ft, msl)
380.00
340.00
300.00
260.00
220.00
180.00
140.00
100.00
60.00
20.00
-20.00
-60.00
REFERENCE POINT 190.1 FEET
TOP OF WELL SCREEN
1998
165'
2005
157'
2011
155'
2018
132'
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20

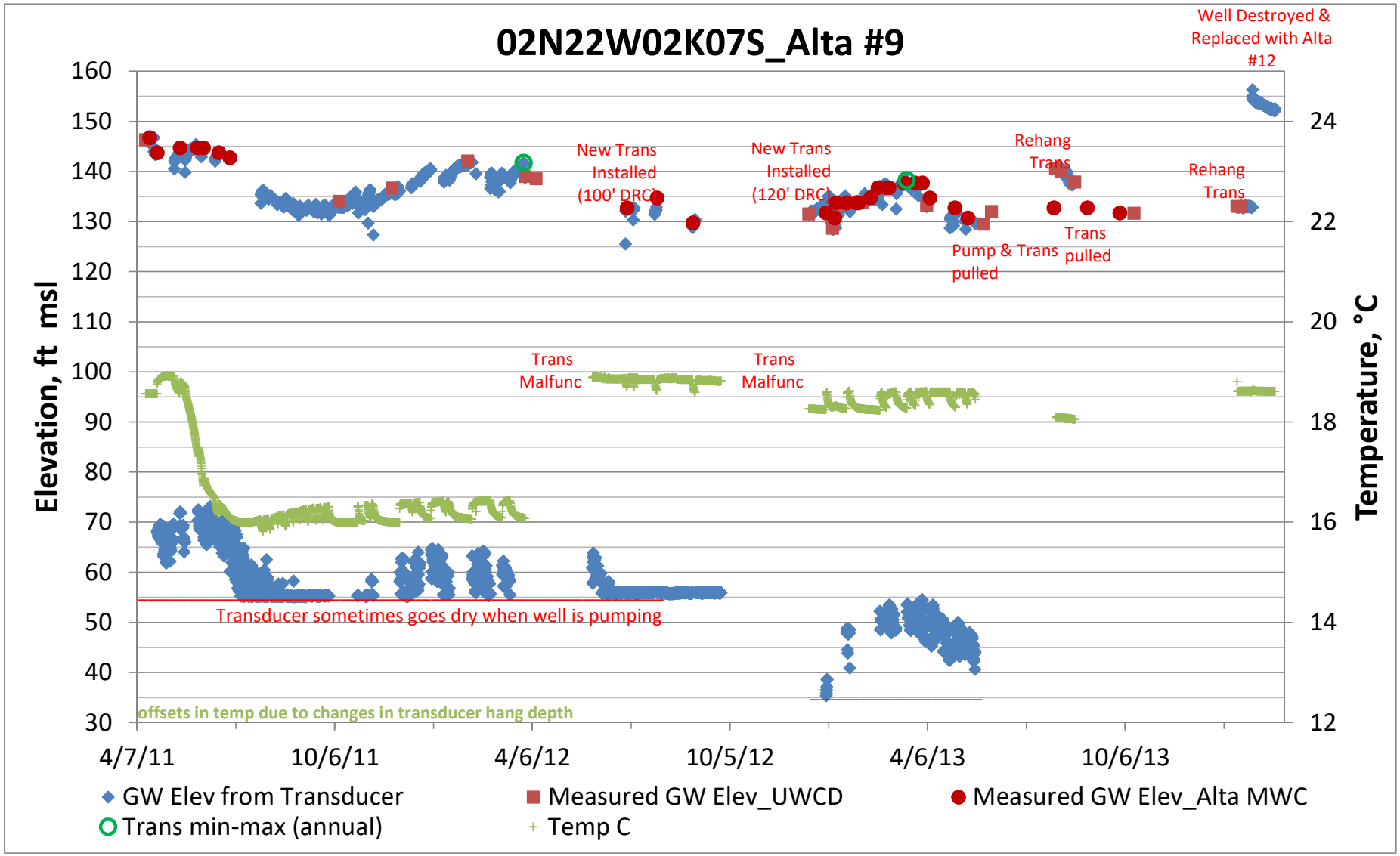

03N22W36H01S (226' - 442' bgs)
Groundwater Elev. (ft, msl)
190.00
180.00
170.00
160.00
150.00
140.00
130.00
120.00
110.00
RP = 190.09
1998
165'
2005
157'
2011
157'
2018
132'
Jan-84
Jan-89
Jan-94
Jan-99
Jan-04
Jan-09
Jan-14
Jan-19
Jan-24

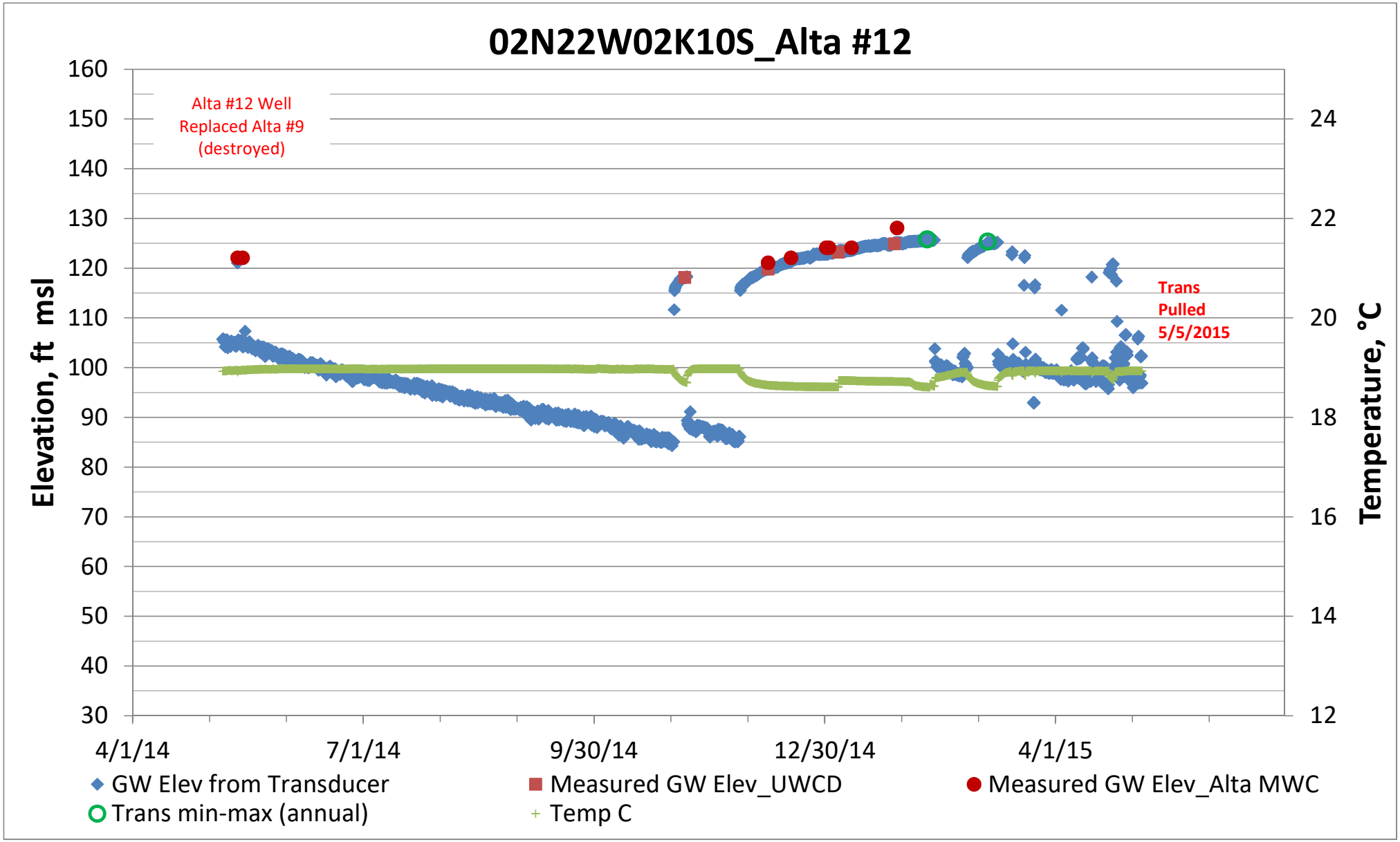

03N22W36K02S (170' - 270' bgs)
Groundwater Elev. (ft, msl)
240
200
160
120
80
40
0
-40
-80
-120
-160
Reference Point = 179.4'
Top Perforation at 9.4'
Bottom Perforation at -90.6
2018
139'
Jan-22
Jan-34
Jan-46
Jan-58
Jan-70
Jan-82
Jan-94
Jan-06
Jan-18
Jan-30

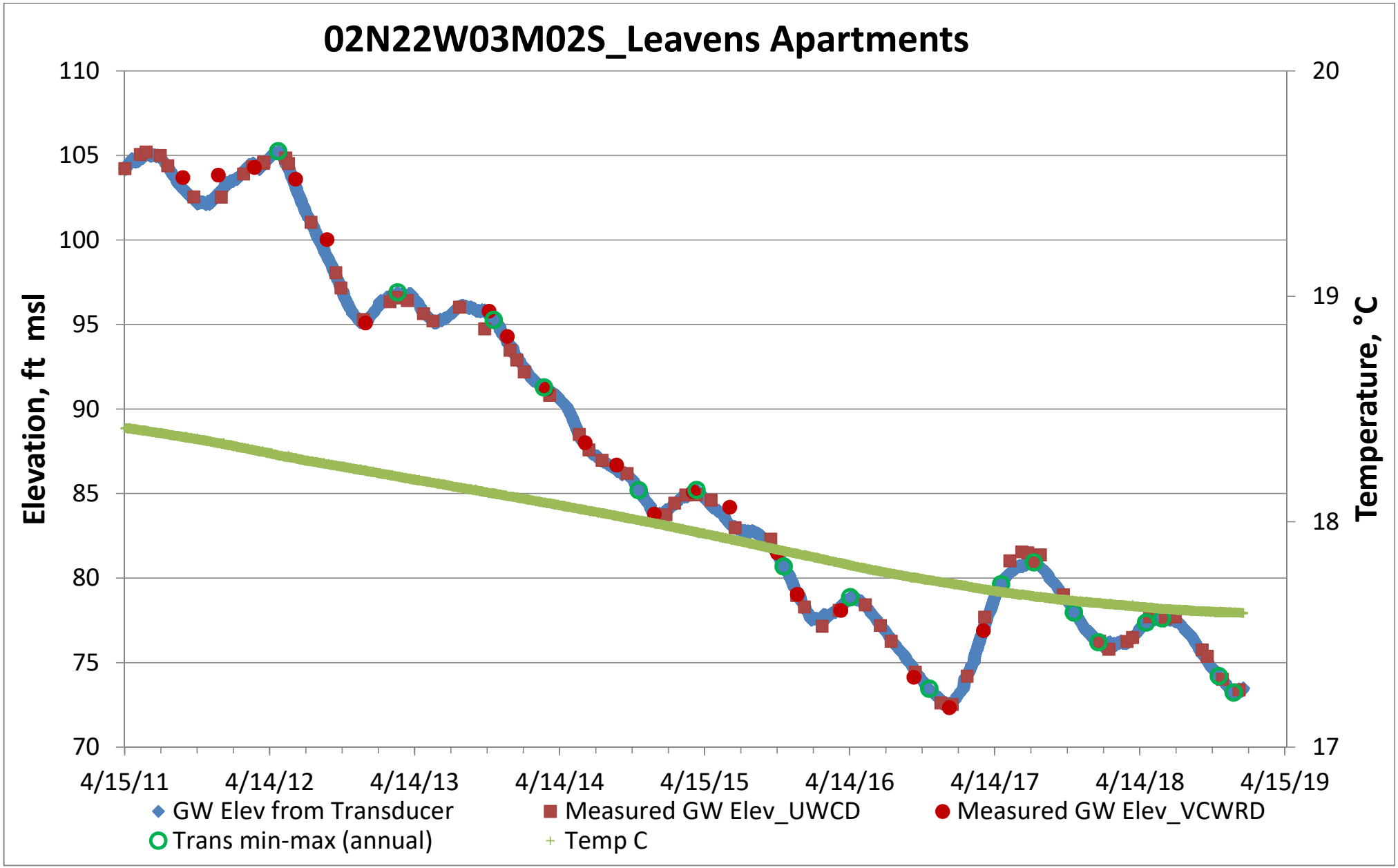

03N22W36K02S (170' - 270' bgs)
Groundwater Elev. (ft, msl)
190
180
170
160
150
140
130
120
110
RP = 179.39
2018
139'
Jan-26
Jan-37
Jan-48
Jan-59
Jan-70
Jan-81
Jan-92
Jan-03
Jan-14
Jan-25

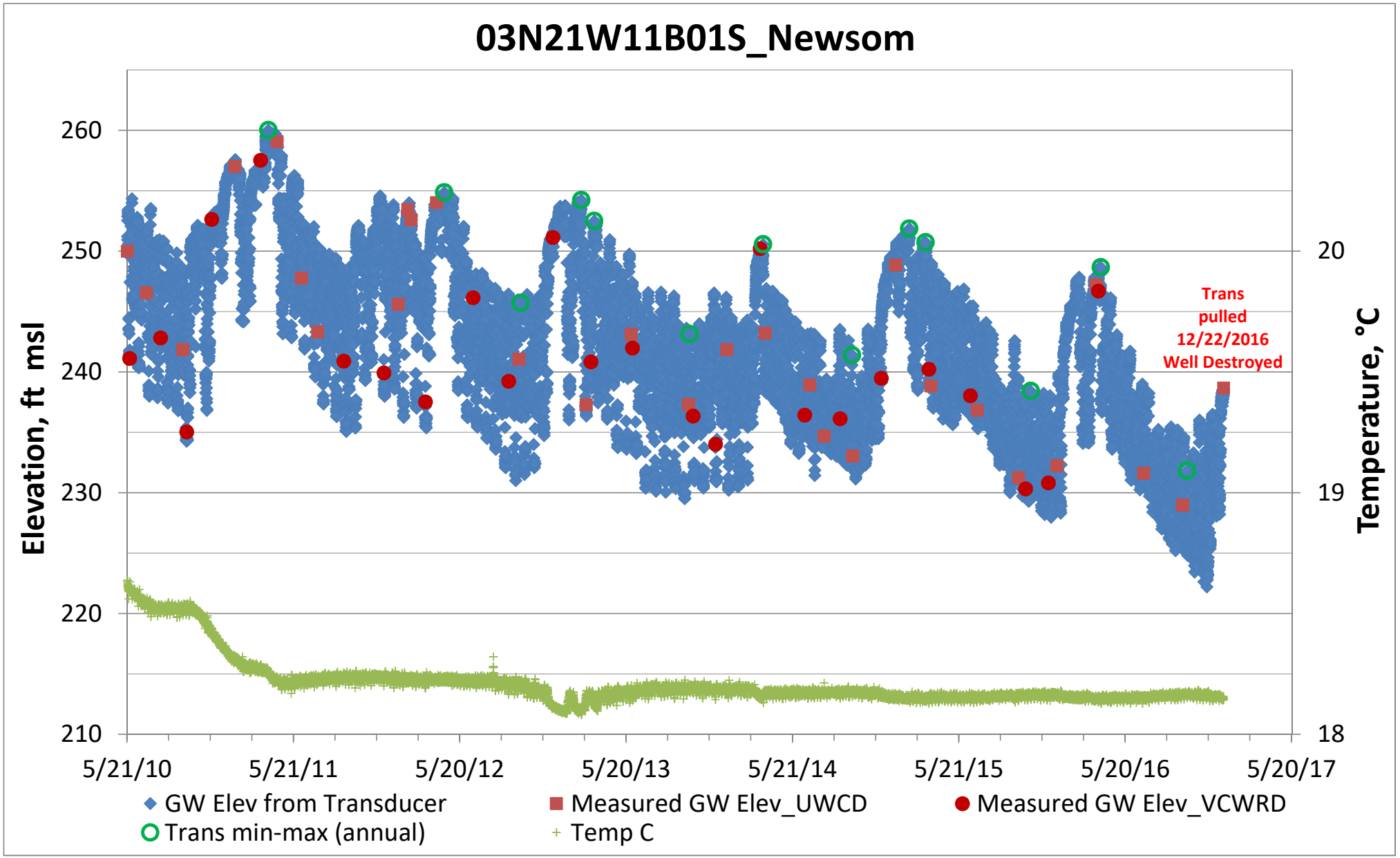

03N22W36K05S (175' - 265' bgs)
Groundwater Elev. (ft, msl)
380
340
300
260
220
180
140
100
60
20
-20
-60
Jan-72
Jan-78
Jan-84
Jan-90
Jan-96
Jan-02
Jan-08
Jan-14
Jan-20
REFERENCE POINT 180.9 FEET
TOP OF WELL SCREEN
1998
164'
2005
158'
2011
156'
2018
138'

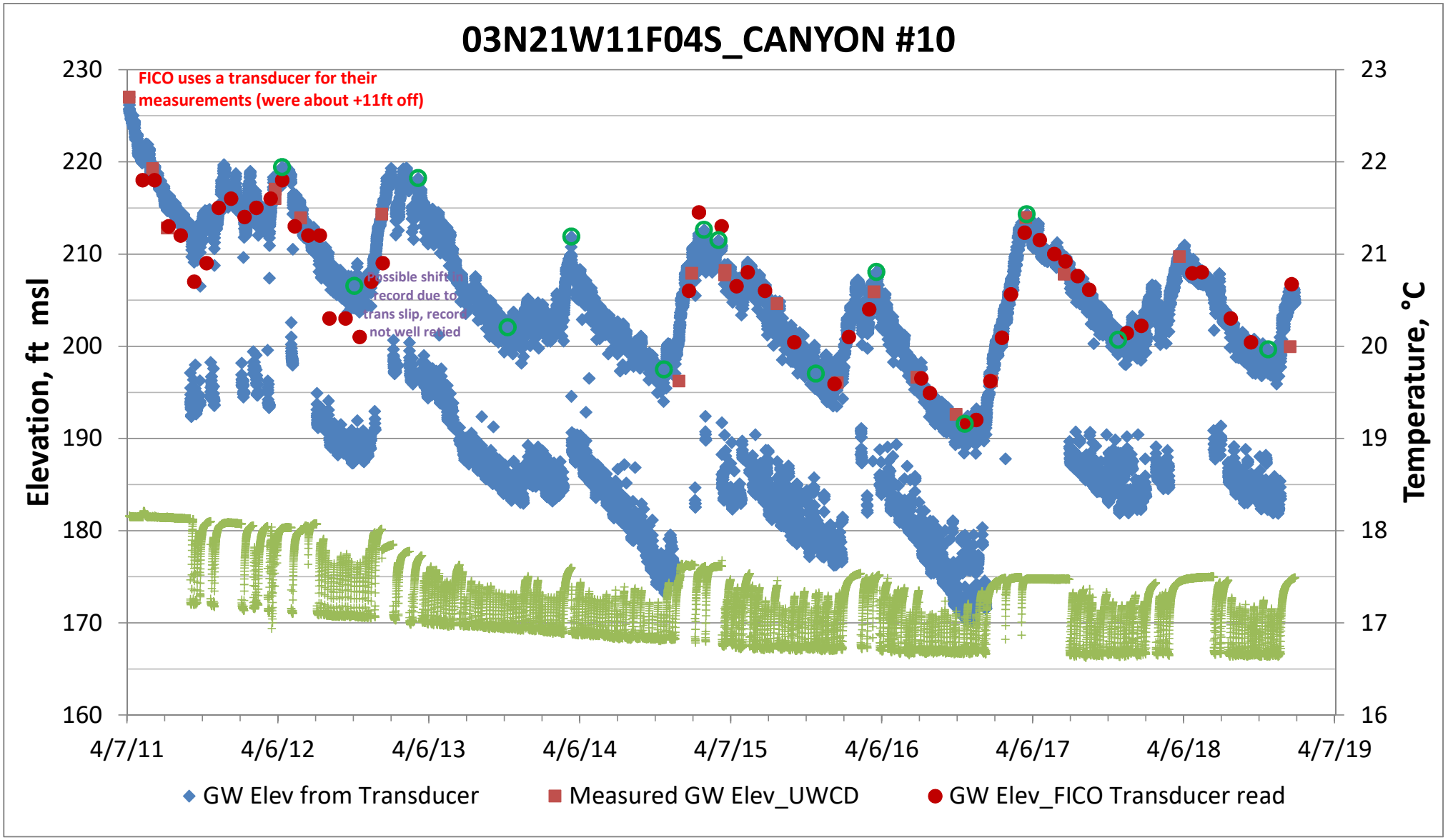

03N22W36K05S (175' - 265' bgs)
Groundwater Elev. (ft, msl)
190
180
170
160
150
140
130
120
110
Jan-88
Jan-92
Jan-96
Jan-00
Jan-04
Jan-08
Jan-12
Jan-16
Jan-20
RP = 180.89
1998
164'
2005
158'
2011
156'
2018
138'

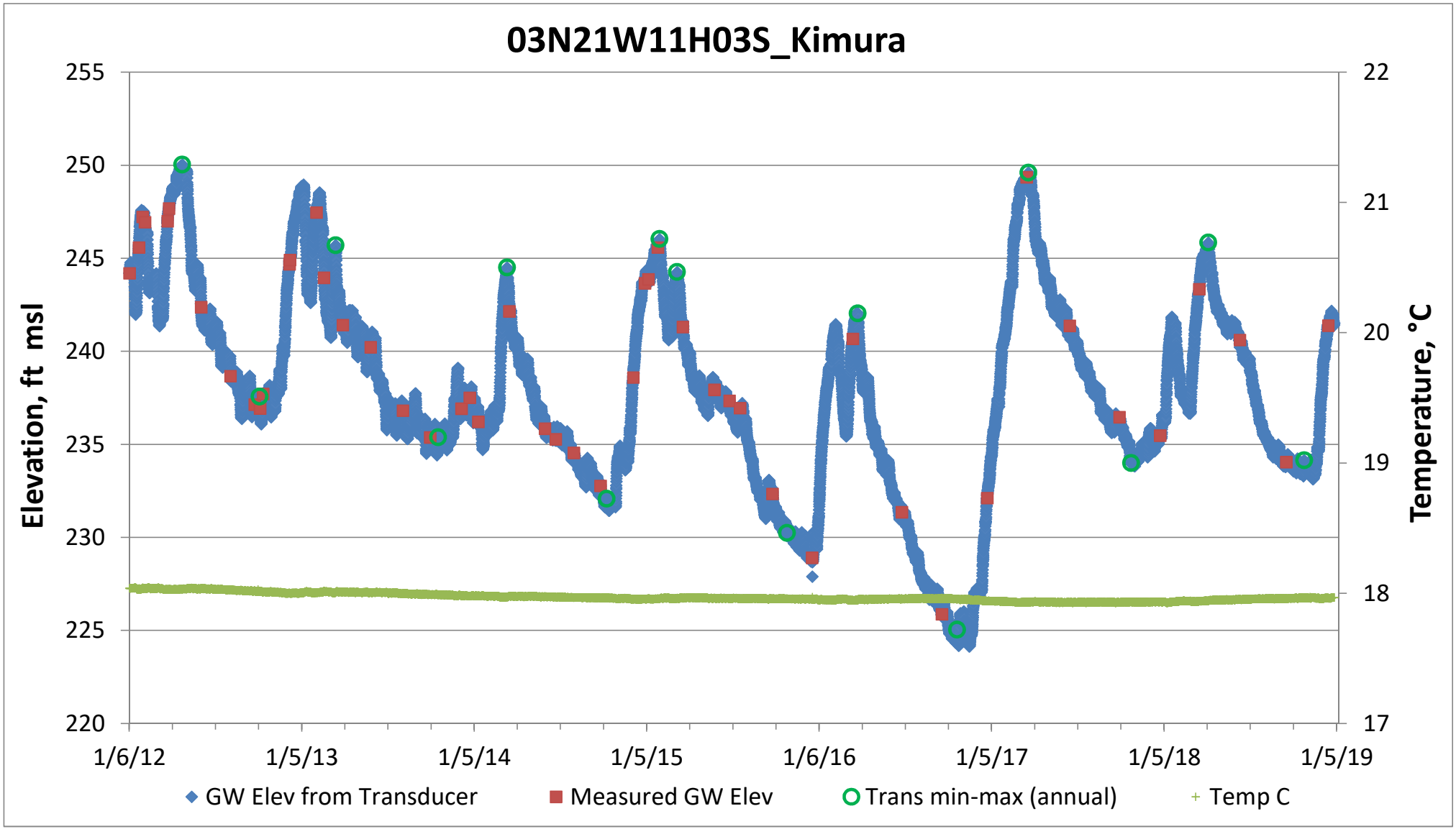

02N22W02K07S_Alta #9
Well Destroyed & Replaced with Alta #12
New Trans Installed (100' DRC)
New Trans Installed (120' DRC)
Rehang Trans
Rehang Trans
Pump & Trans pulled
Trans pulled
Trans Malfunc
Trans Malfunc
Transducer sometimes goes dry when well is pumping
offsets in temp due to changes in transducer hang depth
Elevation, ft msl
Temperature, °C
160
150
140
130
120
110
100
90
80
70
60
50
40
30
24
22
20
18
16
14
12
4/7/11
10/6/11
4/6/12
10/5/12
4/6/13
10/6/13
GW Elev from Transducer
Measured GW Elev_UWCD
Measured GW Elev_Alta MWC
Trans min-max (annual)
Temp C

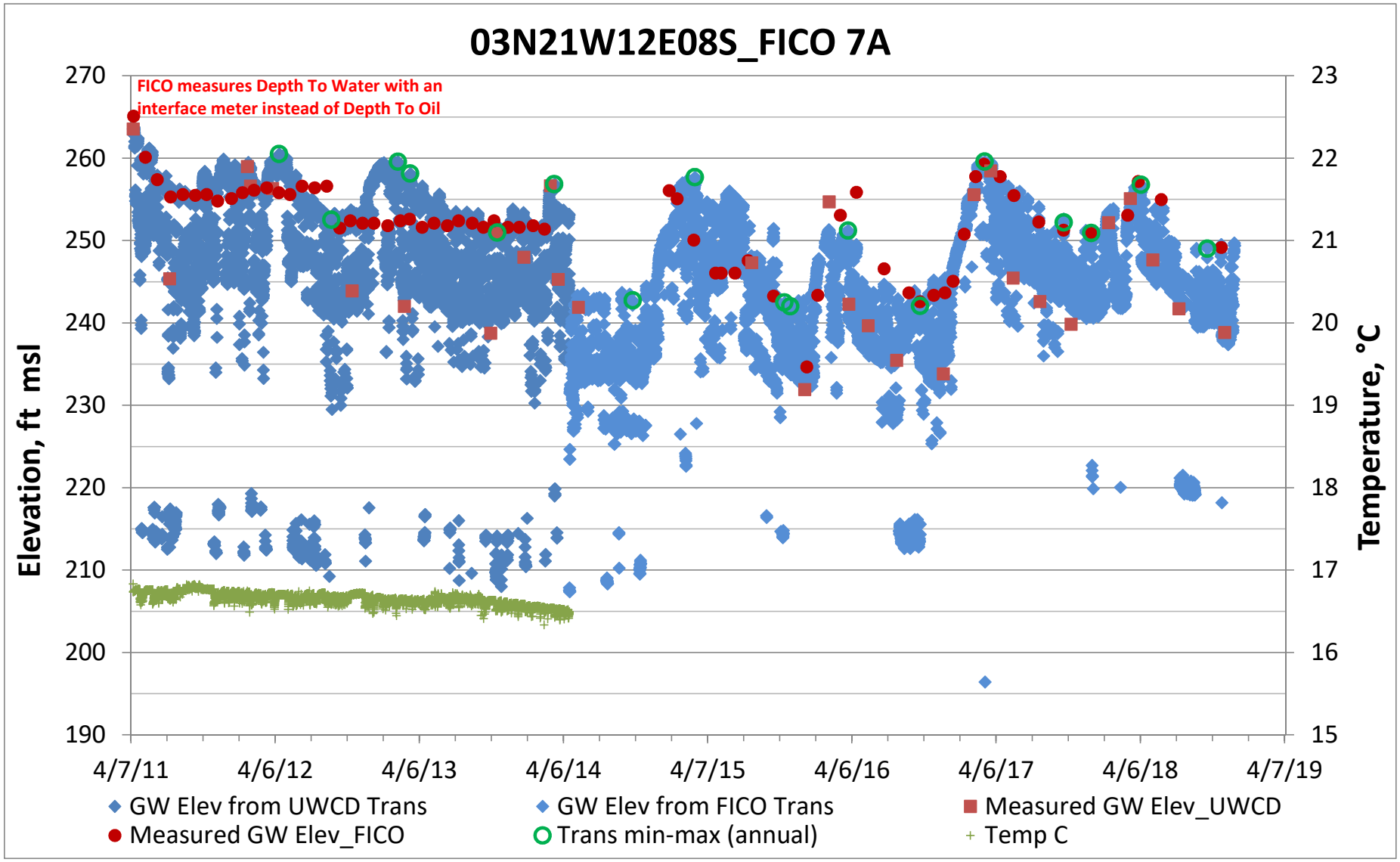

02N22W02K10S_Alta #12
Alta #12 Well
Replaced Alta #9
(destroyed)
Trans
Pulled
5/5/2015
Elevation, ft msl
Temperature, °C
160
150
140
130
120
110
100
90
80
70
60
50
40
30
24
22
20
18
16
14
12
4/1/14
7/1/14
9/30/14
12/30/14
4/1/15
GW Elev from Transducer
Measured GW Elev_UWCD
Measured GW Elev_Alta MWC
Trans min-max (annual)
Temp C

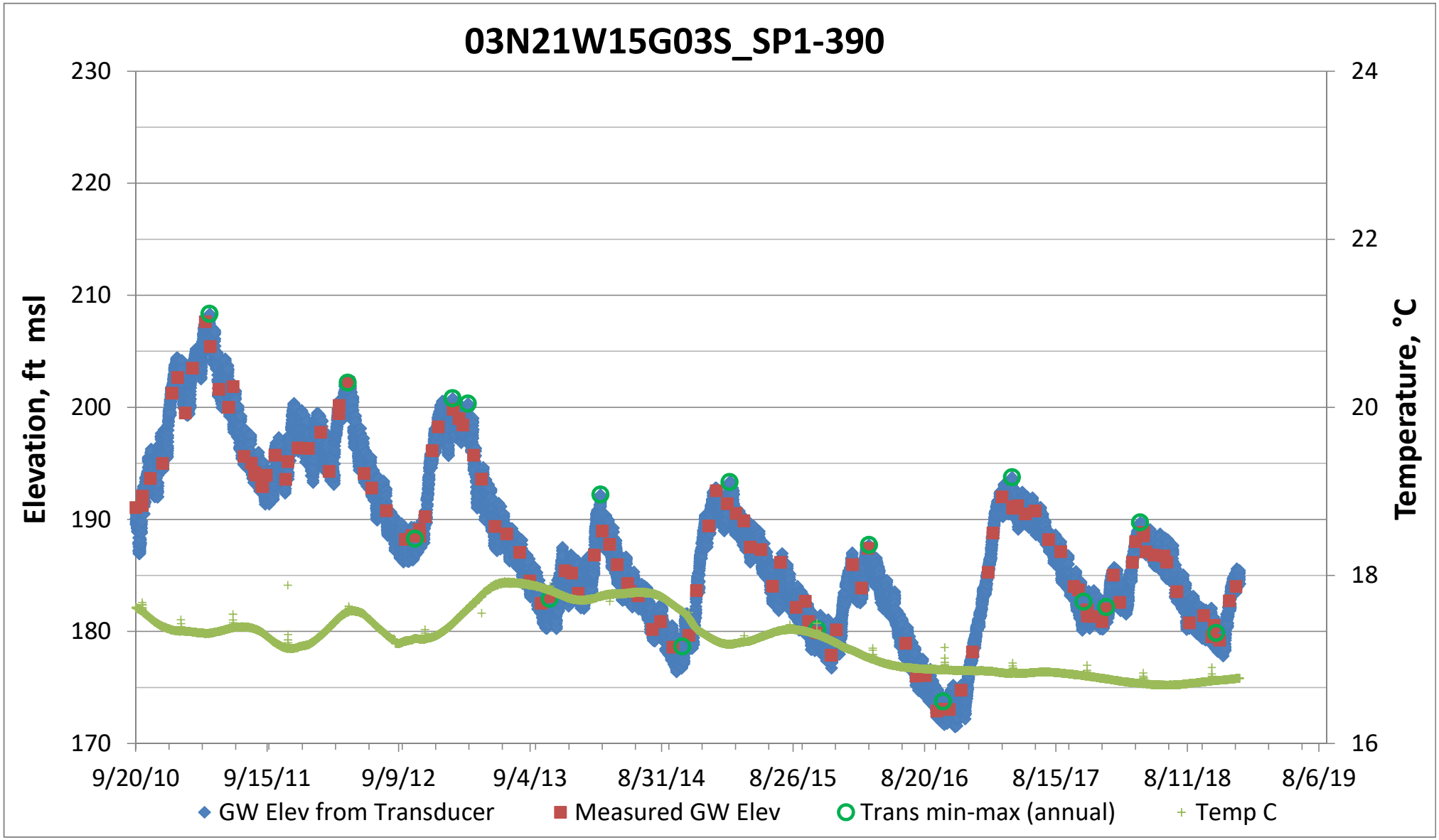

02N22W03M02S_Leavens Apartments
Elevation, ft msl
Temperature, °C
110
105
100
95
90
85
80
75
70
20
19
18
17
4/15/11
4/14/12
4/14/13
4/14/14
4/15/15
4/14/16
4/14/17
4/14/18
4/15/19
GW Elev from Transducer
Measured GW Elev_UWCD
Measured GW Elev_VCWRD
Trans min-max (annual)
Temp C

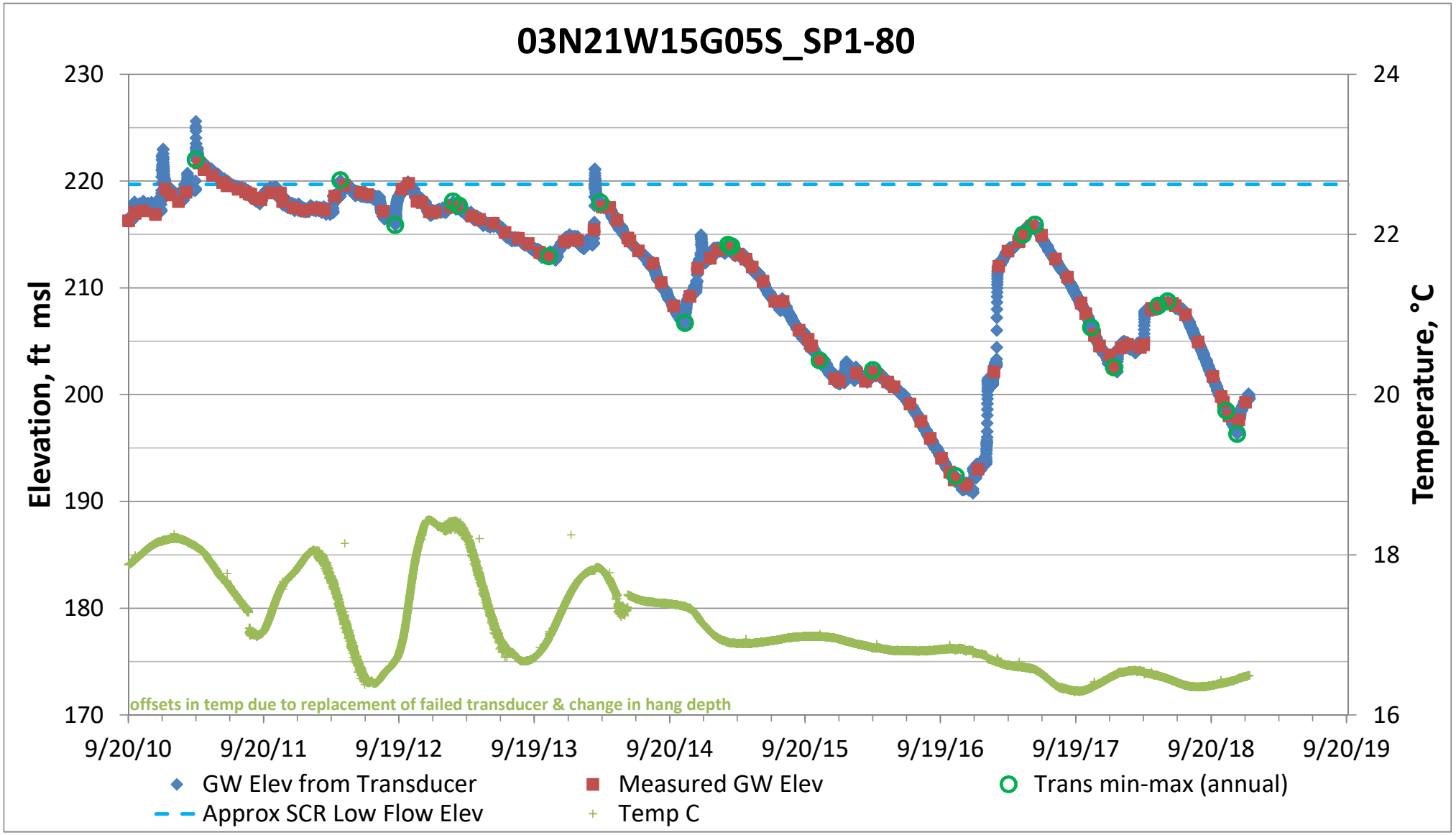

03N21W11B01S_Newsom
Elevation, ft msl
Temperature, °C
260
250
240
230
220
210
20
19
18
5/21/10
5/21/11
5/20/12
5/20/13
5/21/14
5/21/15
5/20/16
5/20/17
Trans pulled 12/22/2016 Well Destroyed
GW Elev from Transducer
Measured GW Elev_UWCD
Measured GW Elev_VCWRD
Trans min-max (annual)
Temp C

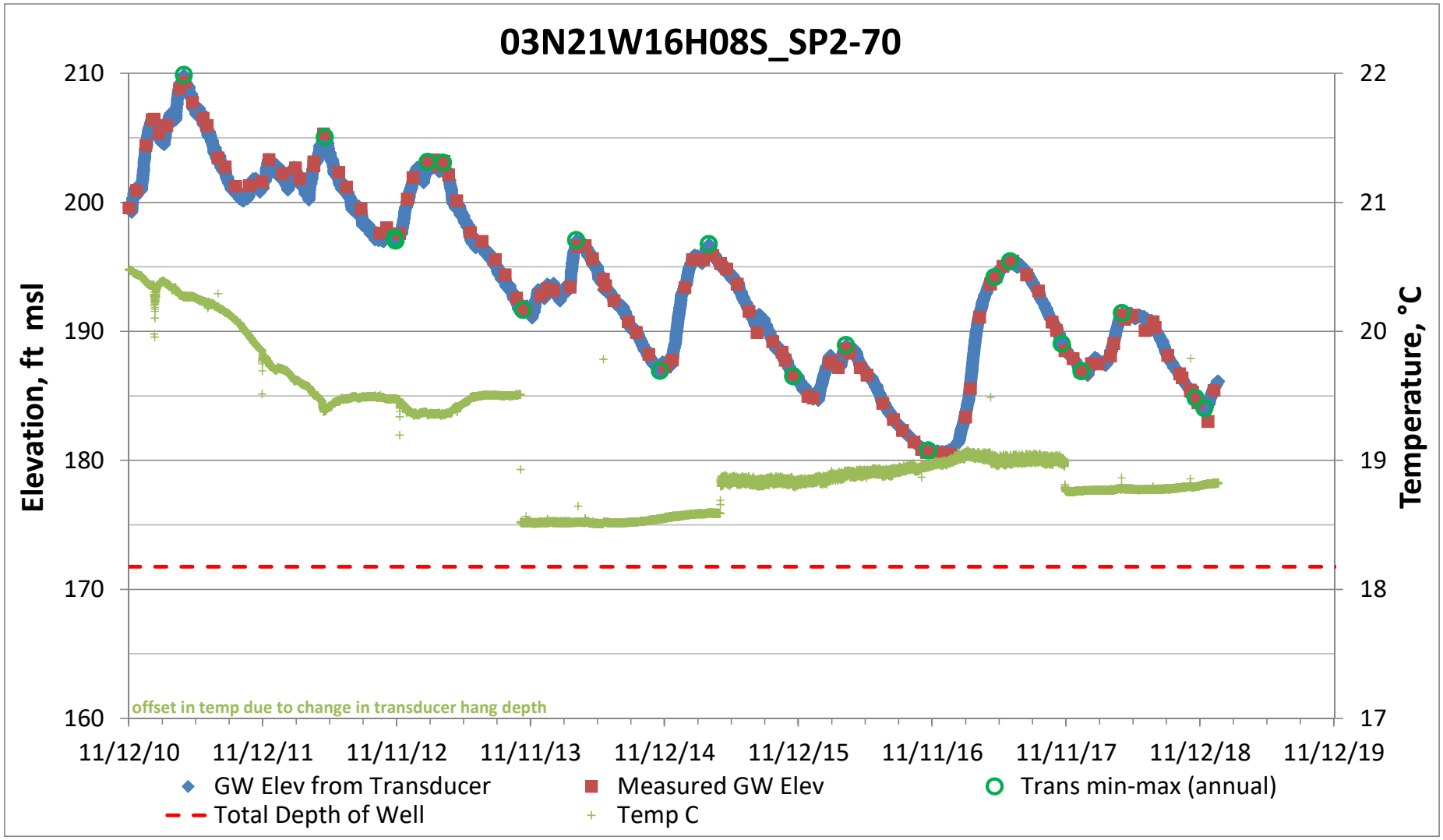

03N21W11F04S_CANYON #10
FICO uses a transducer for their measurements (were about +11ft off)
possible shift in record due to trans slip, record not well relied
Elevation, ft msl
Temperature, °C
230
220
210
200
190
180
170
160
23
22
21
20
19
18
17
16
4/7/11
4/6/12
4/6/13
4/6/14
4/7/15
4/6/16
4/6/17
4/6/18
4/7/19
GW Elev from Transducer
Measured GW Elev_UWCD
GW Elev_FICO Transducer read

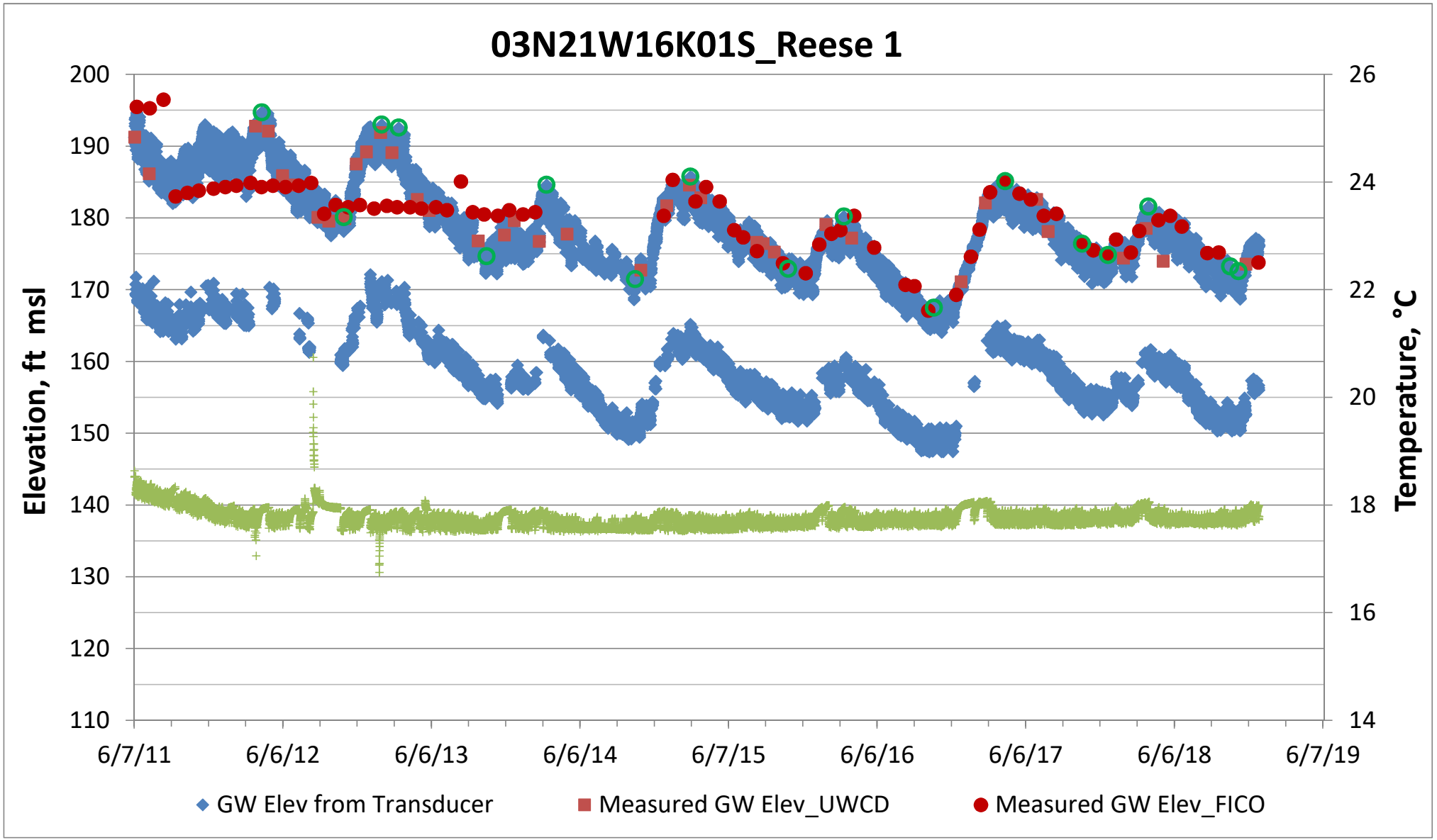

03N21W11H03S_Kimura
Elevation, ft msl
Temperature, °C
255
250
245
240
235
230
225
220
22
21
20
19
18
17
1/6/12
1/5/13
1/5/14
1/5/15
1/6/16
1/5/17
1/5/18
1/5/19
GW Elev from Transducer
Measured GW Elev
Trans min-max (annual)
Temp C

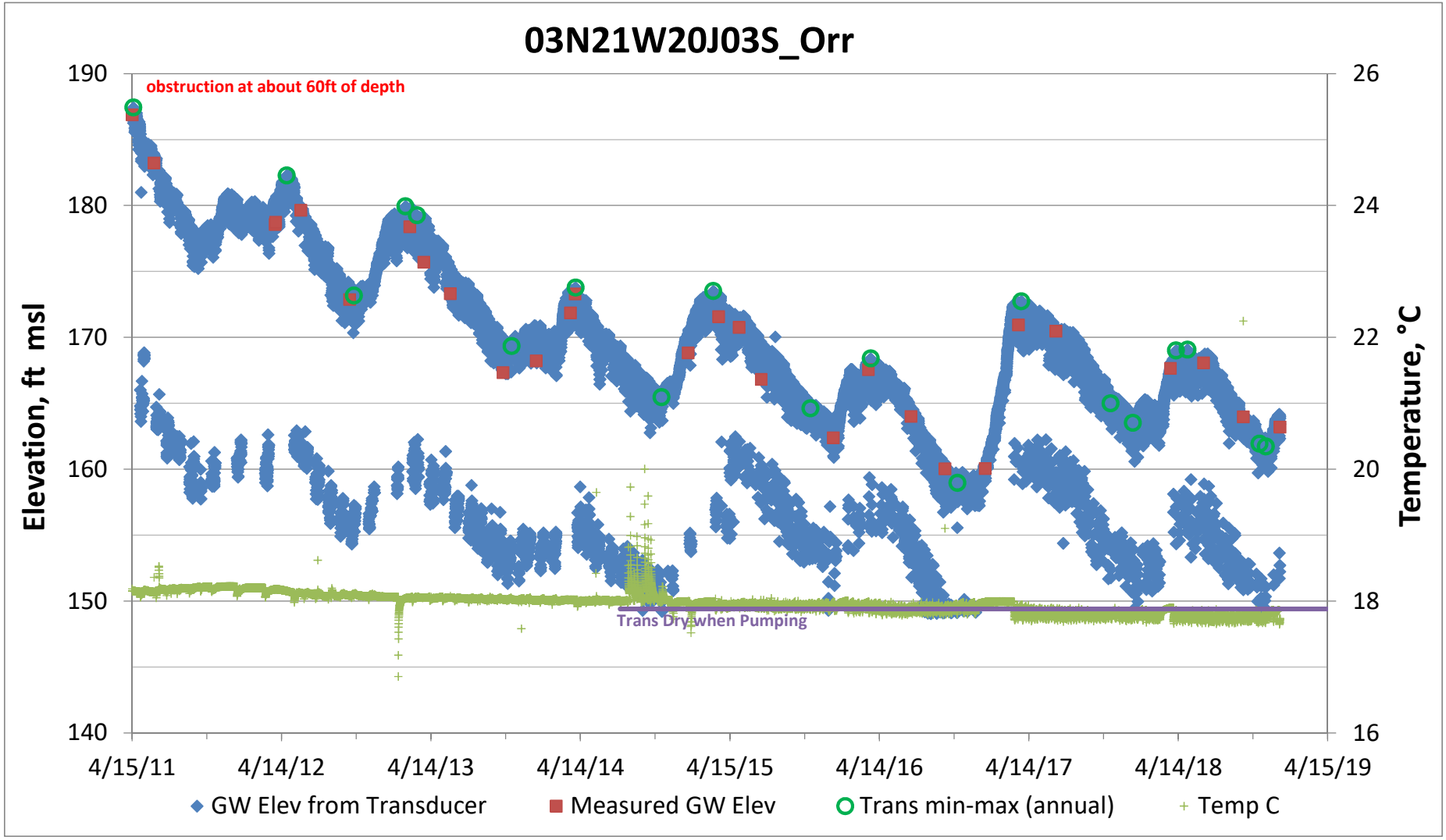

03N21W12E08S_FICO 7A
FICO measures Depth To Water with an interface meter instead of Depth To Oil
Elevation, ft msl
Temperature, °C
270
260
250
240
230
220
210
200
190
23
22
21
20
19
18
17
16
15
4/7/11
4/6/12
4/6/13
4/6/14
4/7/15
4/6/16
4/6/17
4/6/18
4/7/19
GW Elev from UWCD Trans
GW Elev from FICO Trans
Measured GW Elev_UWCD
Measured GW Elev_FICO
Trans min-max (annual)
Temp C

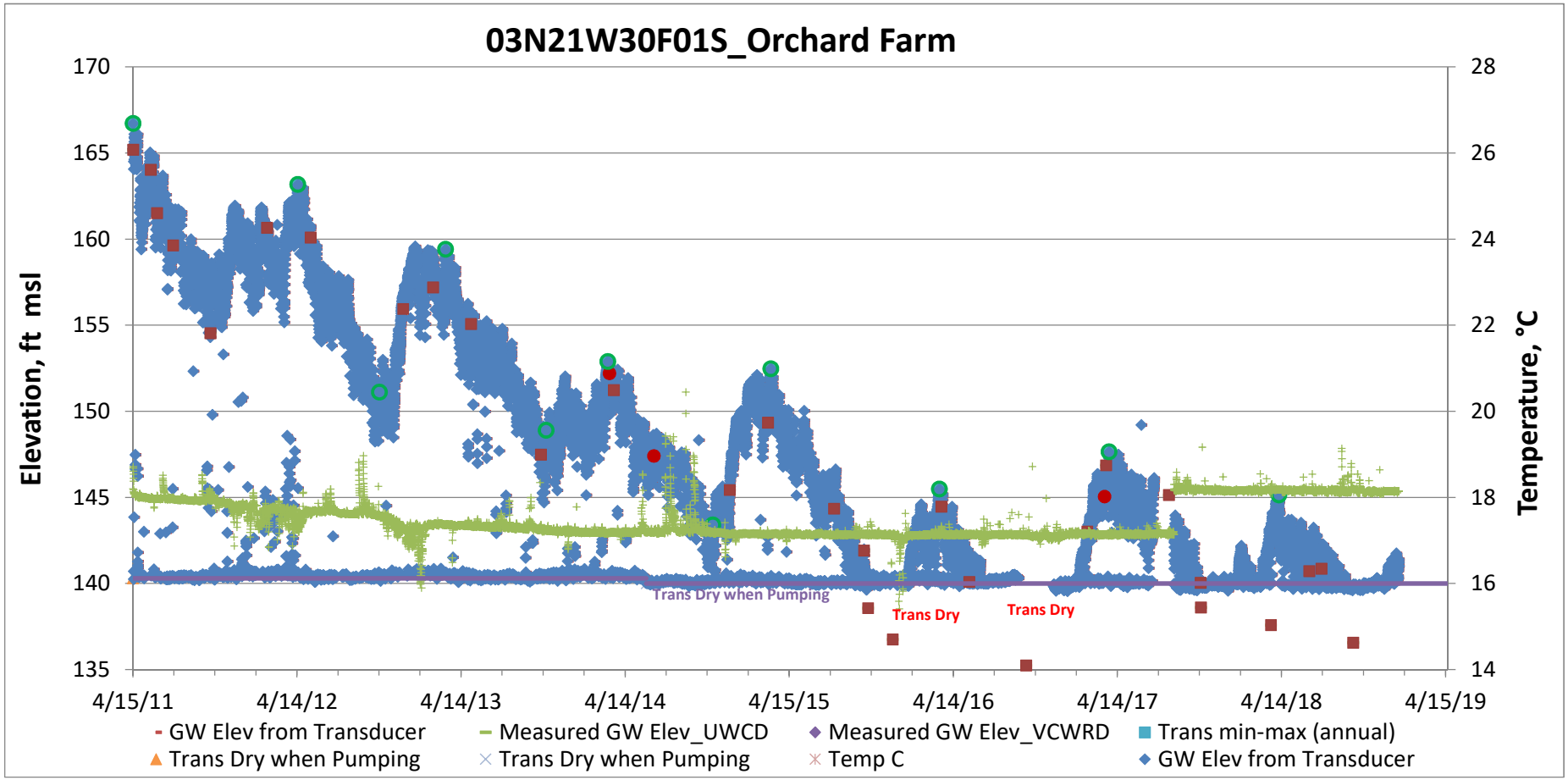

03N21W15G03S_SP1-390
Elevation, ft msl
Temperature, °C
230
220
210
200
190
180
170
24
22
20
18
16
9/20/10
9/15/11
9/9/12
9/4/13
8/31/14
8/26/15
8/20/16
8/15/17
8/11/18
8/6/19
GW Elev from Transducer
Measured GW Elev
Trans min-max (annual)
Temp C

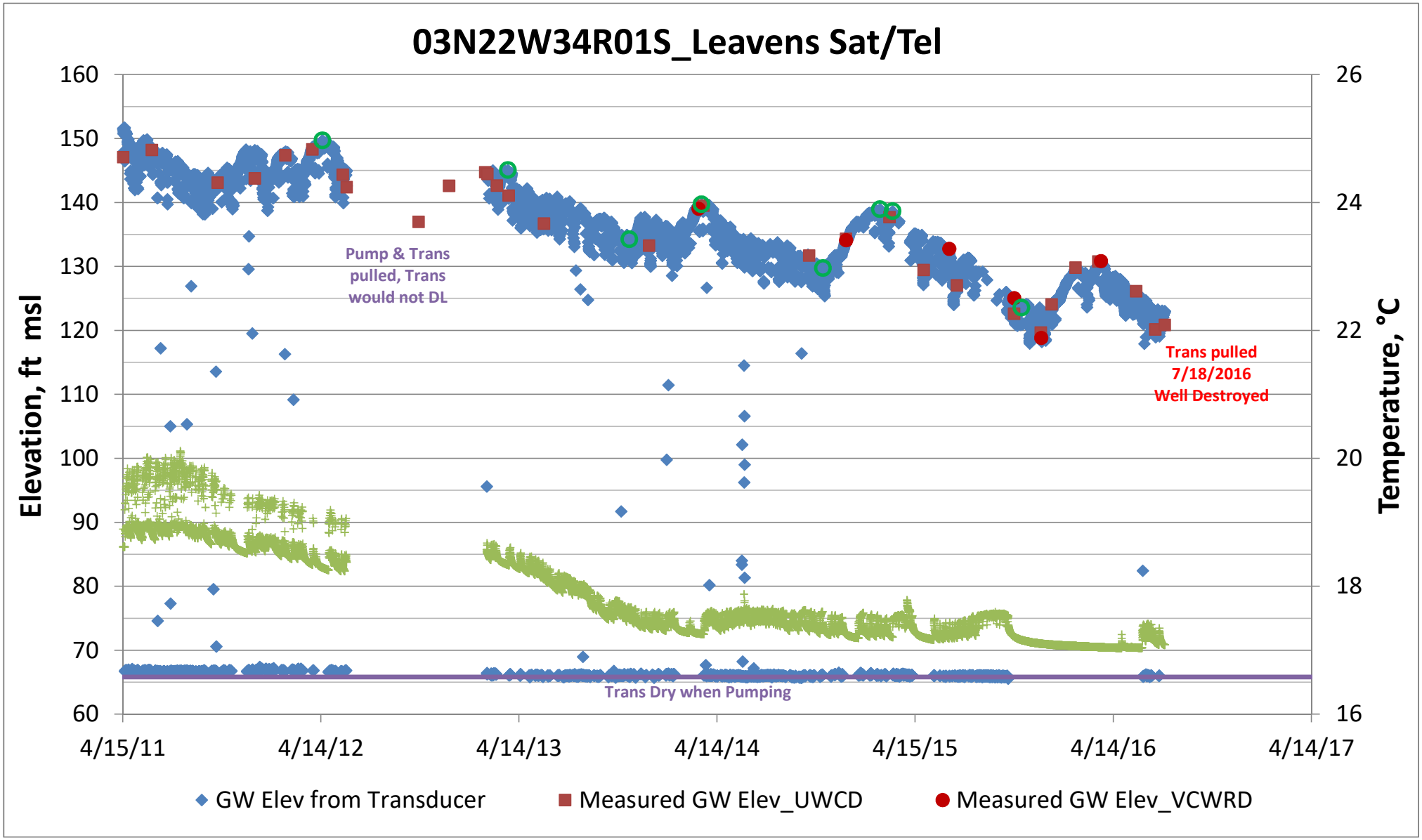

03N21W15G05S_SP1-80
Elevation, ft msl
Temperature, °C
230
220
210
200
190
180
170
24
22
20
18
16
9/20/10
9/20/11
9/19/12
9/19/13
9/20/14
9/20/15
9/19/16
9/19/17
9/20/18
9/20/19
offsets in temp due to replacement of failed transducer & change in hang depth
GW Elev from Transducer
Measured GW Elev
Trans min-max (annual)
Approx SCR Low Flow Elev
Temp C

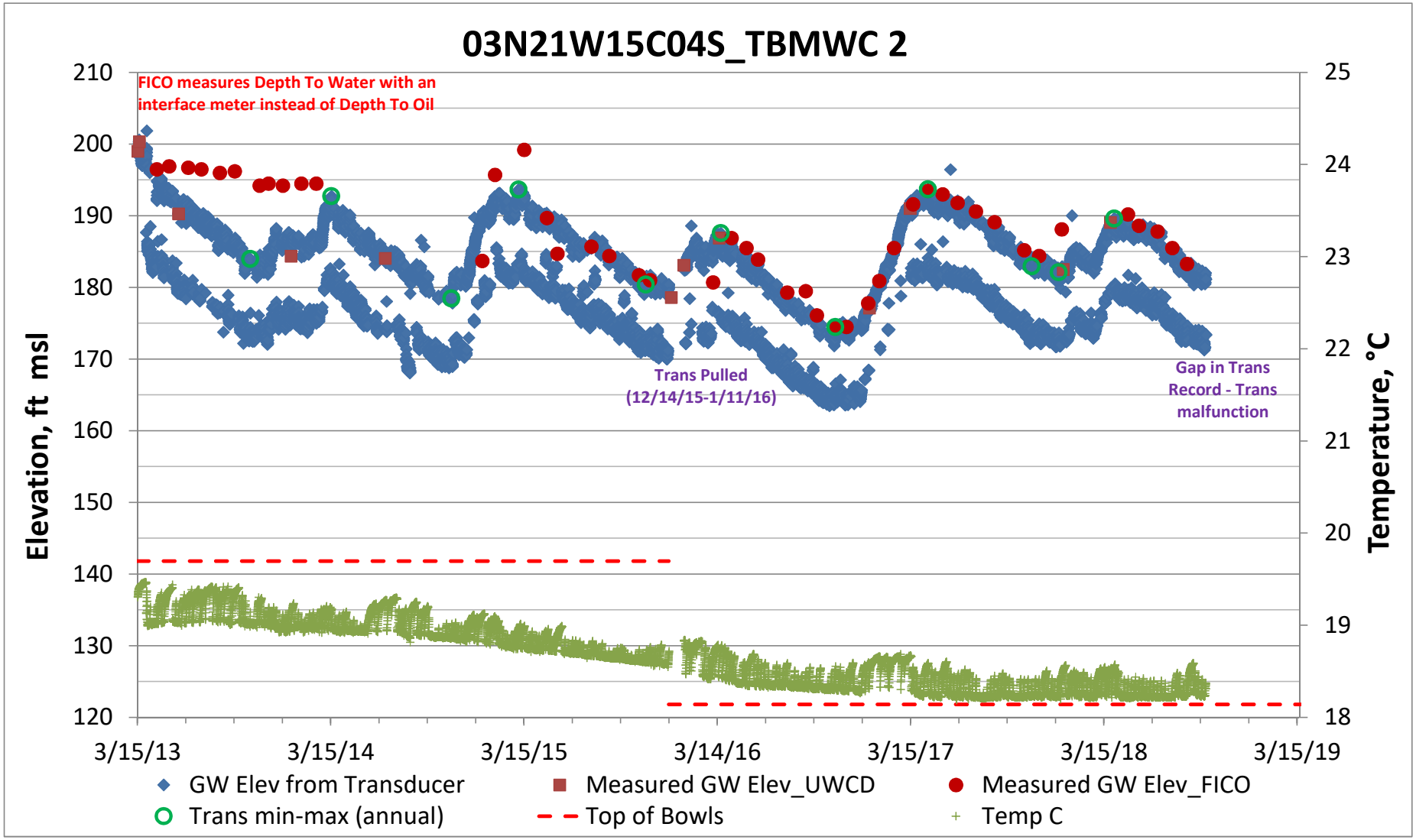

03N21W16H08S_SP2-70
Elevation, ft msl
Temperature, °C
210
200
190
180
170
160
22
21
20
19
18
17
11/12/10
11/12/11
11/11/12
11/11/13
11/12/14
11/12/15
11/11/16
11/11/17
11/12/18
11/12/19
offset in temp due to change in transducer hang depth
GW Elev from Transducer
Measured GW Elev
Trans min-max (annual)
Total Depth of Well
Temp C

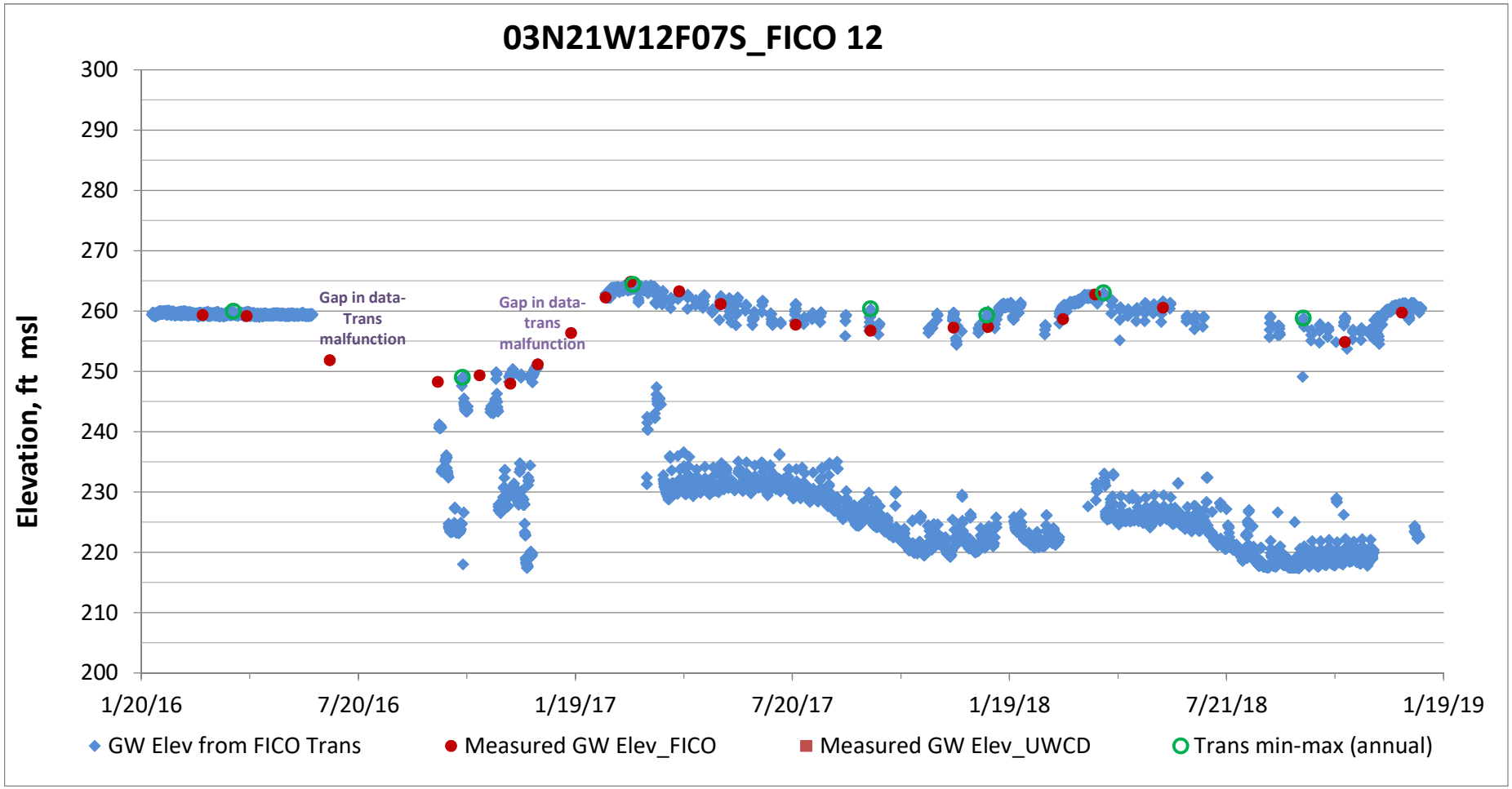

03N21W16K01S_Reese 1
Elevation, ft msl
Temperature, °C
200
190
180
170
160
150
140
130
120
110
26
24
22
20
18
16
14
6/7/11
6/6/12
6/6/13
6/6/14
6/7/15
6/6/16
6/6/17
6/6/18
6/7/19
GW Elev from Transducer
Measured GW Elev_UWCD
Measured GW Elev_FICO

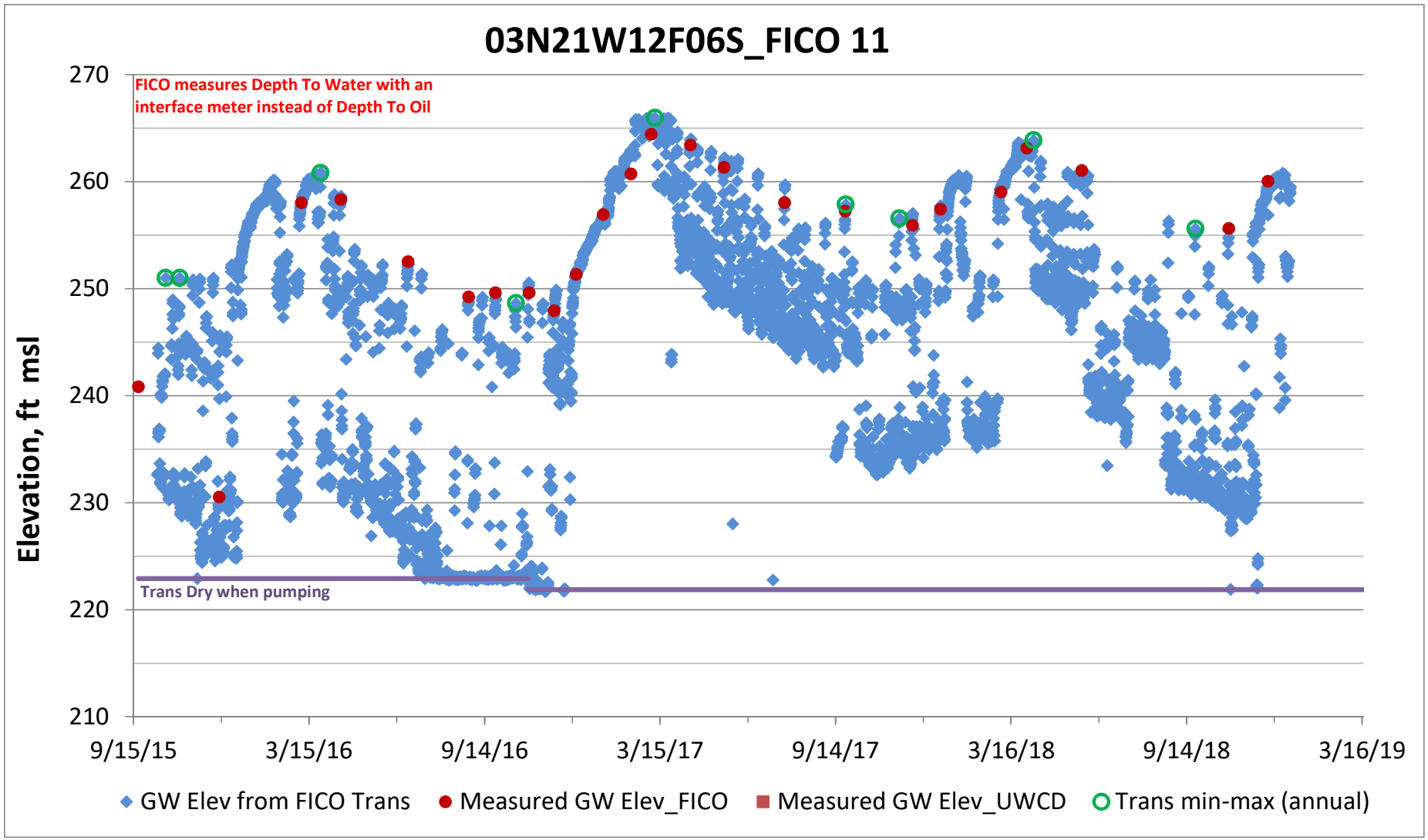

03N21W20J03S_Orr
obstruction at about 60ft of depth
Trans Dry when Pumping
Elevation, ft msl
Temperature, °C
190
180
170
160
150
140
26
24
22
20
18
16
4/15/11
4/14/12
4/14/13
4/14/14
4/15/15
4/14/16
4/14/17
4/14/18
4/15/19
GW Elev from Transducer
Measured GW Elev
Trans min-max (annual)
Temp C

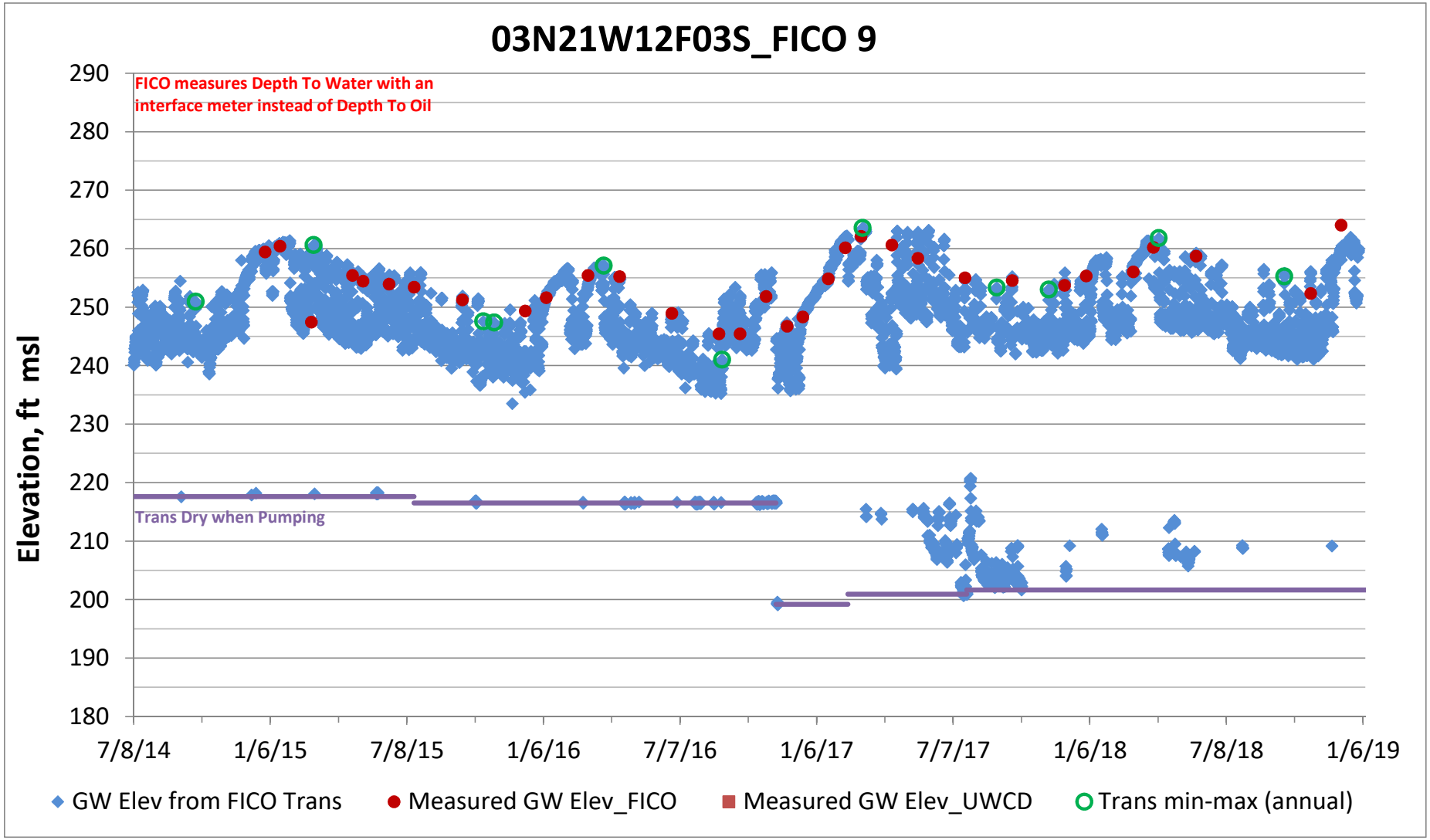

03N21W30F01S_Orchard Farm
Elevation, ft msl
Temperature, °C
170
165
160
155
150
145
140
135
28
26
24
22
20
18
16
14
4/15/11
4/14/12
4/14/13
4/14/14
4/15/15
4/14/16
4/14/17
4/14/18
4/15/19
Trans Dry when Pumping
Trans Dry
Trans Dry
GW Elev from Transducer
Measured GW Elev_UWCD
Measured GW Elev_VCWRD
Trans min-max (annual)
Trans Dry when Pumping
Trans Dry when Pumping
Temp C
GW Elev from Transducer

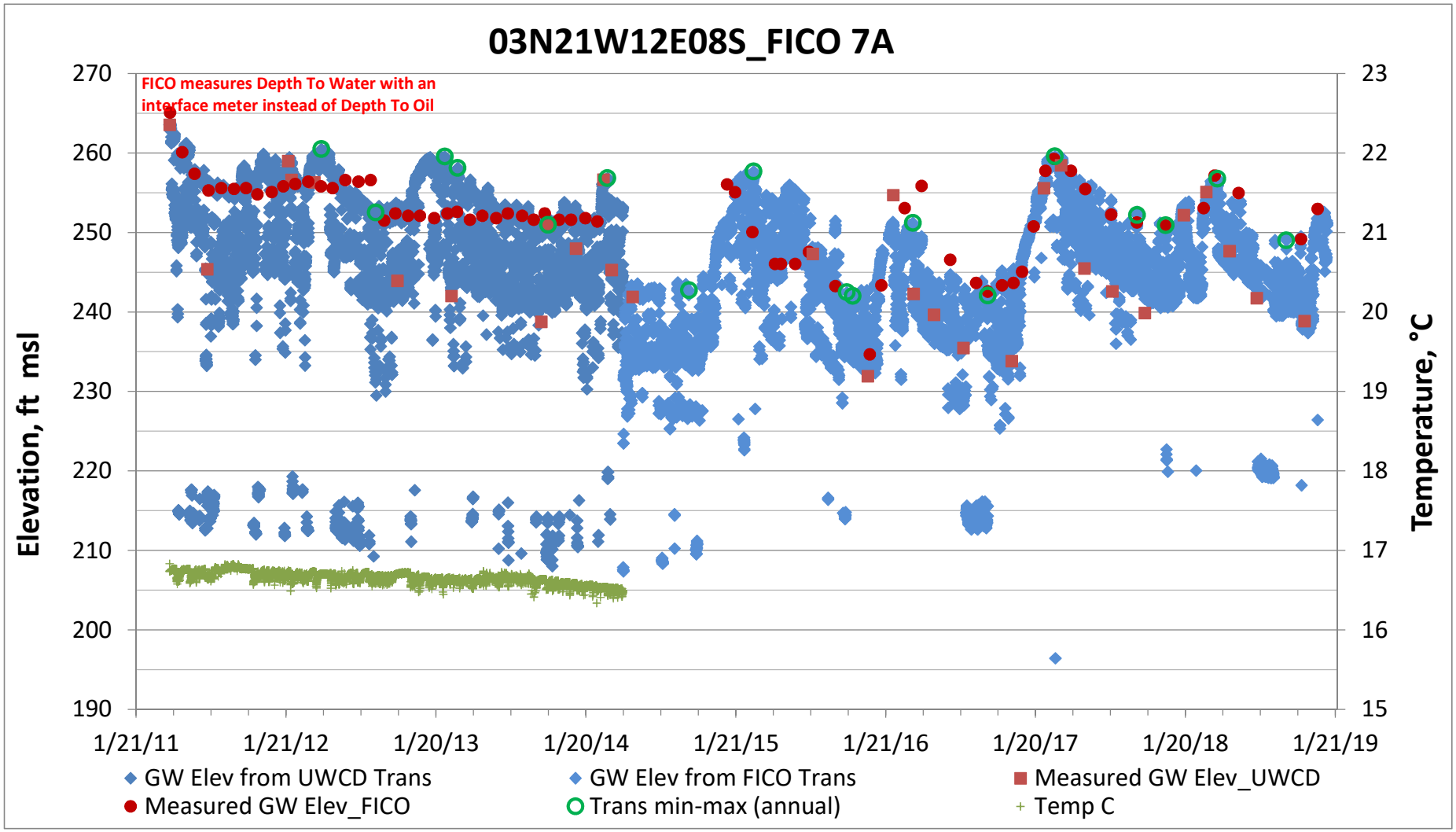

03N22W34R01S_Leavens Sat/Tel
Elevation, ft msl
Temperature, °C
160
150
140
130
120
110
100
90
80
70
60
26
24
22
20
18
16
4/15/11
4/14/12
4/14/13
4/14/14
4/15/15
4/14/16
4/14/17
Pump & Trans pulled, Trans would not DL
Trans pulled 7/18/2016 Well Destroyed
Trans Dry when Pumping
GW Elev from Transducer
Measured GW Elev_UWCD
Measured GW Elev_VCWRD

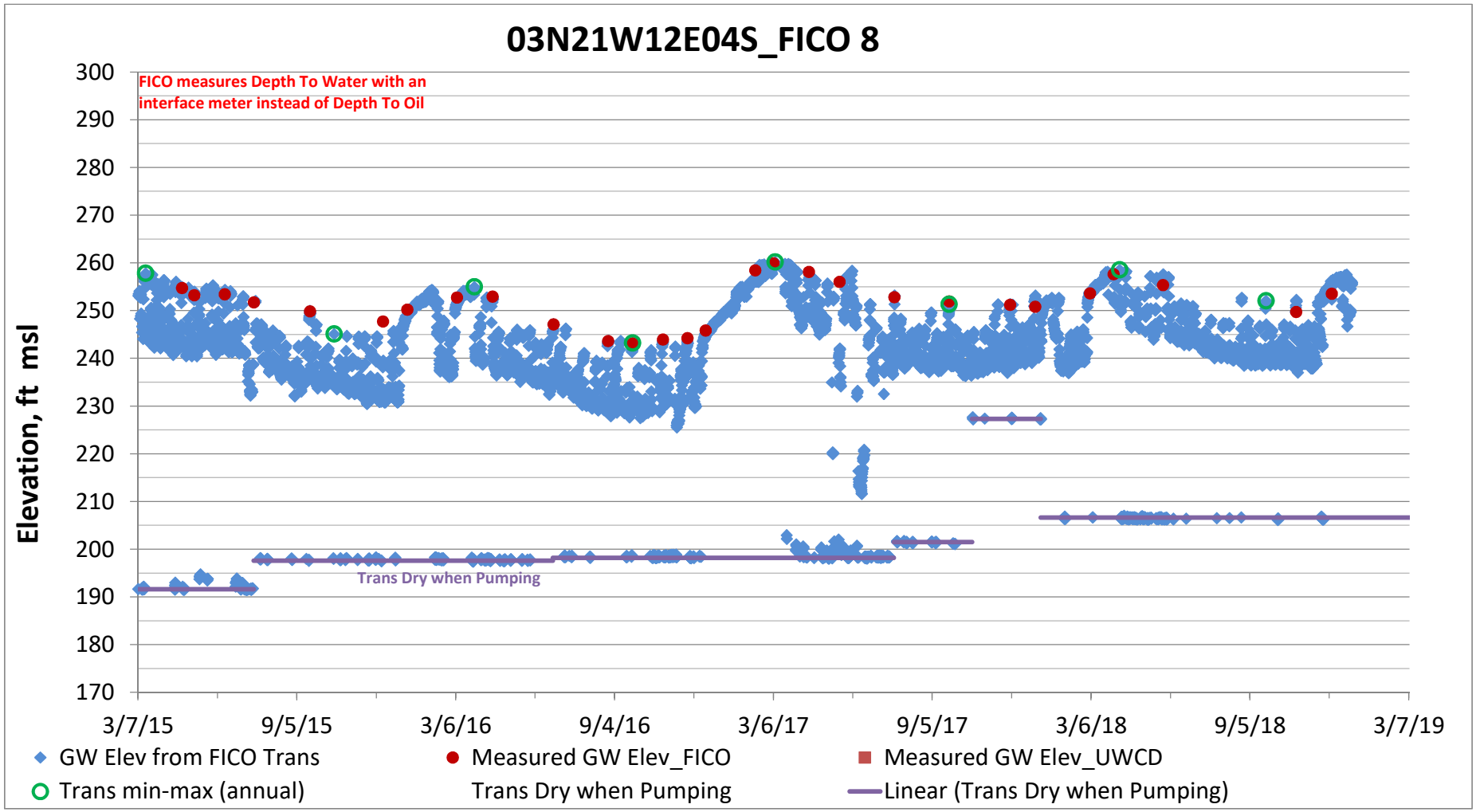

03N21W15C04S_TBMWC 2
FICO measures Depth To Water with an interface meter instead of Depth To Oil
Trans Pulled (12/14/15-1/11/16)
Gap in Trans Record - Trans malfunction
Elevation, ft msl
Temperature, °C
210
200
190
180
170
160
150
140
130
120
25
24
23
22
21
20
19
18
3/15/13
3/15/14
3/15/15
3/14/16
3/15/17
3/15/18
3/15/19
GW Elev from Transducer
Measured GW Elev_UWCD
Measured GW Elev_FICO
Trans min-max (annual)
Top of Bowls
Temp C

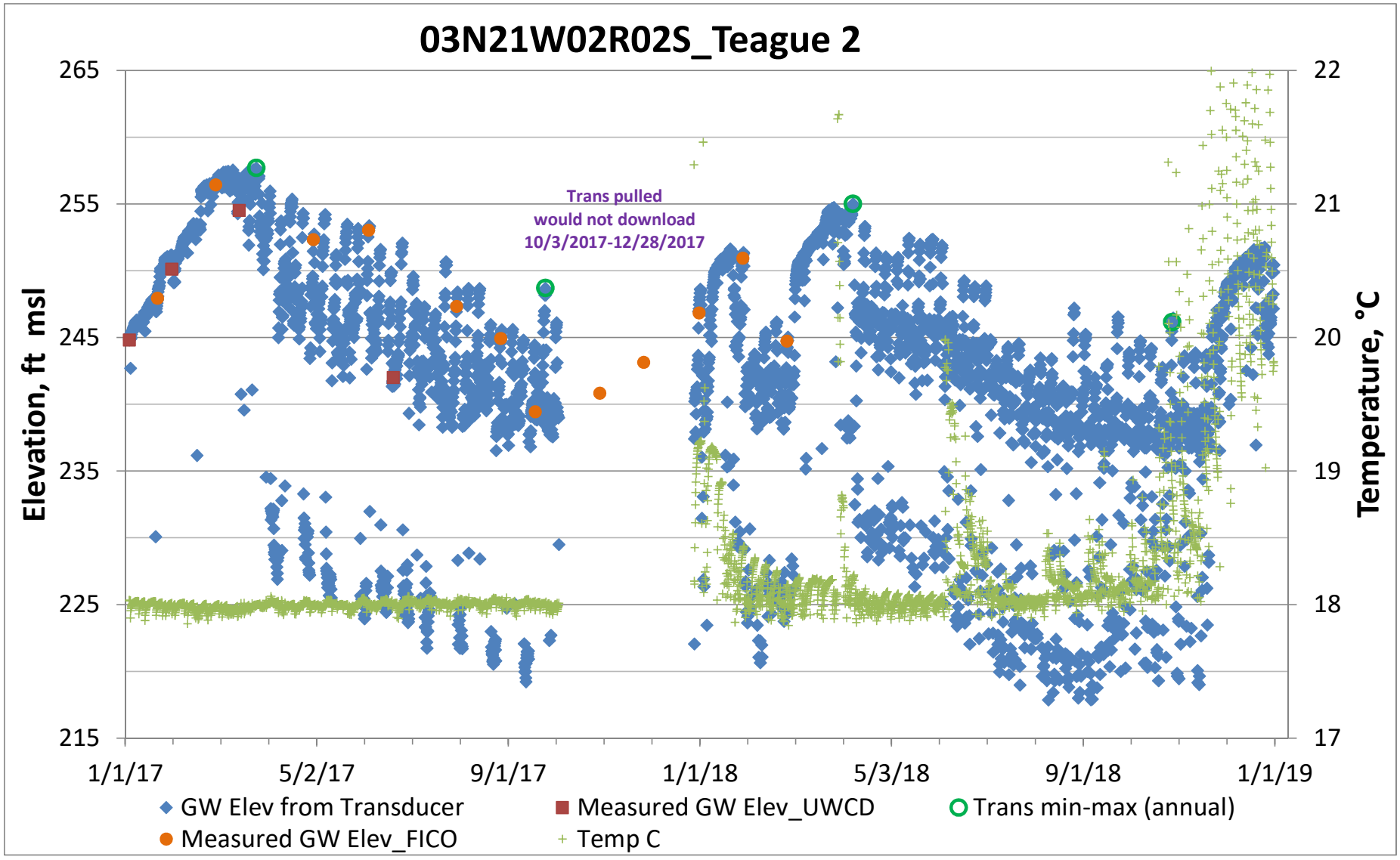

03N21W12F07S_FICO 12
Elevation, ft msl
300
290
280
270
260
250
240
230
220
210
200
1/20/16
7/20/16
1/19/17
7/20/17
1/19/18
7/21/18
1/19/19
Gap in data- Trans malfunction
Gap in data- trans malfunction
GW Elev from FICO Trans
Measured GW Elev_FICO
Measured GW Elev_UWCD
Trans min-max (annual)

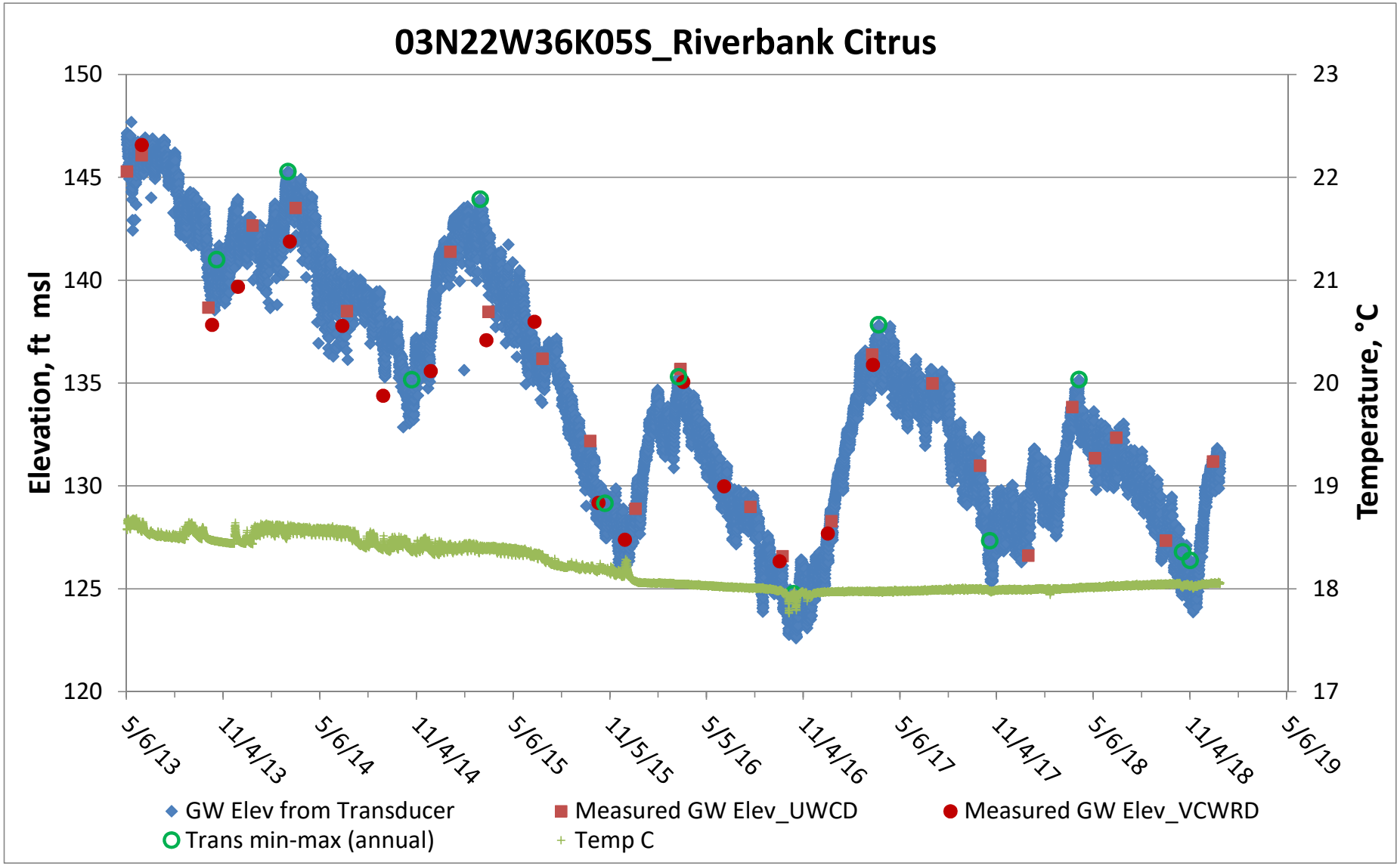

03N21W12F06S_FICO 11
FICO measures Depth To Water with an interface meter instead of Depth To Oil
Trans Dry when pumping
Elevation, ft msl
270
260
250
240
230
220
210
9/15/15
3/15/16
9/14/16
3/15/17
9/14/17
3/16/18
9/14/18
3/16/19
GW Elev from FICO Trans
Measured GW Elev_FICO
Measured GW Elev_UWCD
Trans min-max (annual)

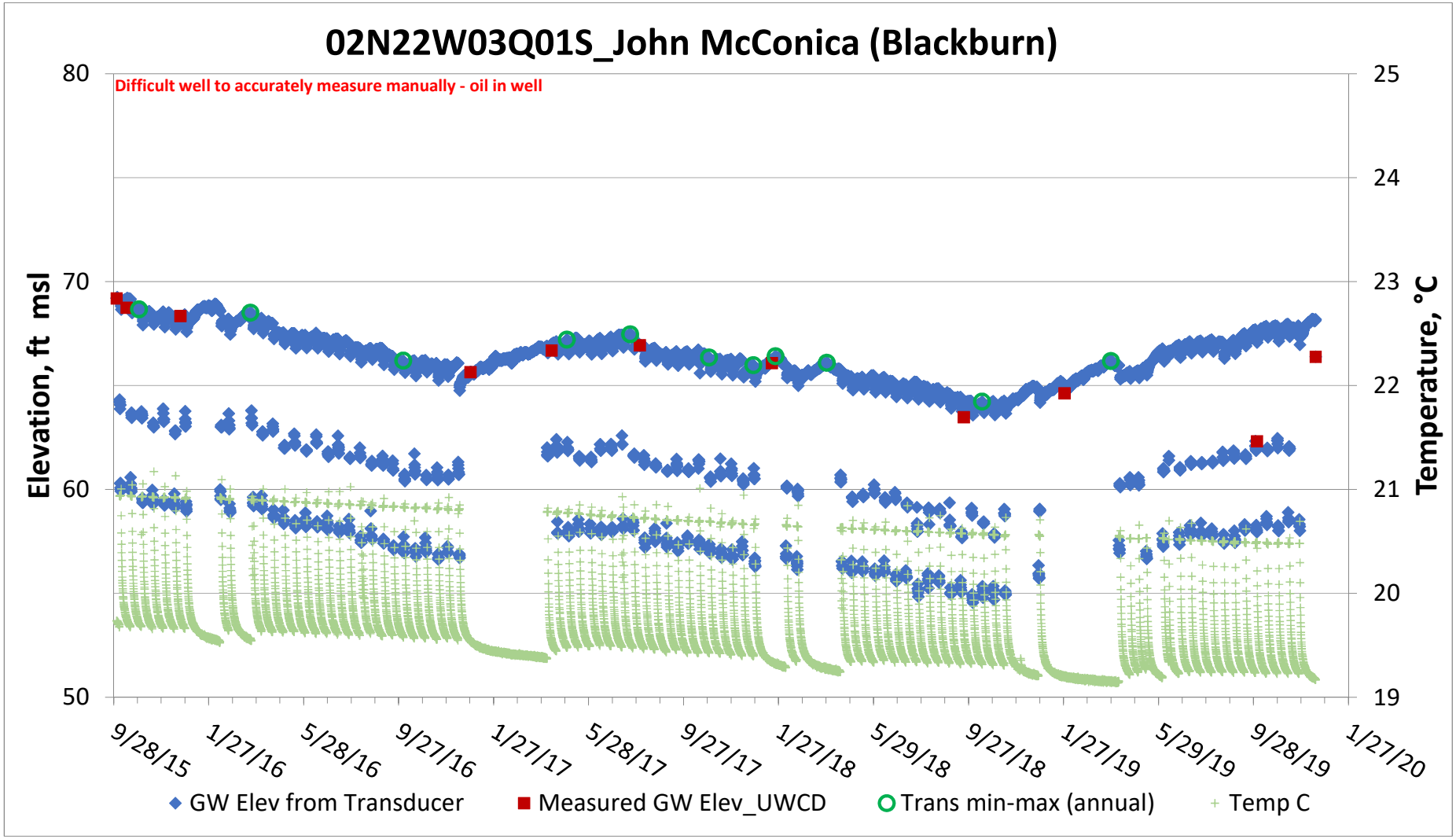

03N21W12F03S_FICO 9
FICO measures Depth To Water with an interface meter instead of Depth To Oil
Trans Dry when Pumping
Elevation, ft msl
290
280
270
260
250
240
230
220
210
200
190
180
7/8/14
1/6/15
7/8/15
1/6/16
7/7/16
1/6/17
7/7/17
1/6/18
7/8/18
1/6/19
GW Elev from FICO Trans
Measured GW Elev_FICO
Measured GW Elev_UWCD
Trans min-max (annual)

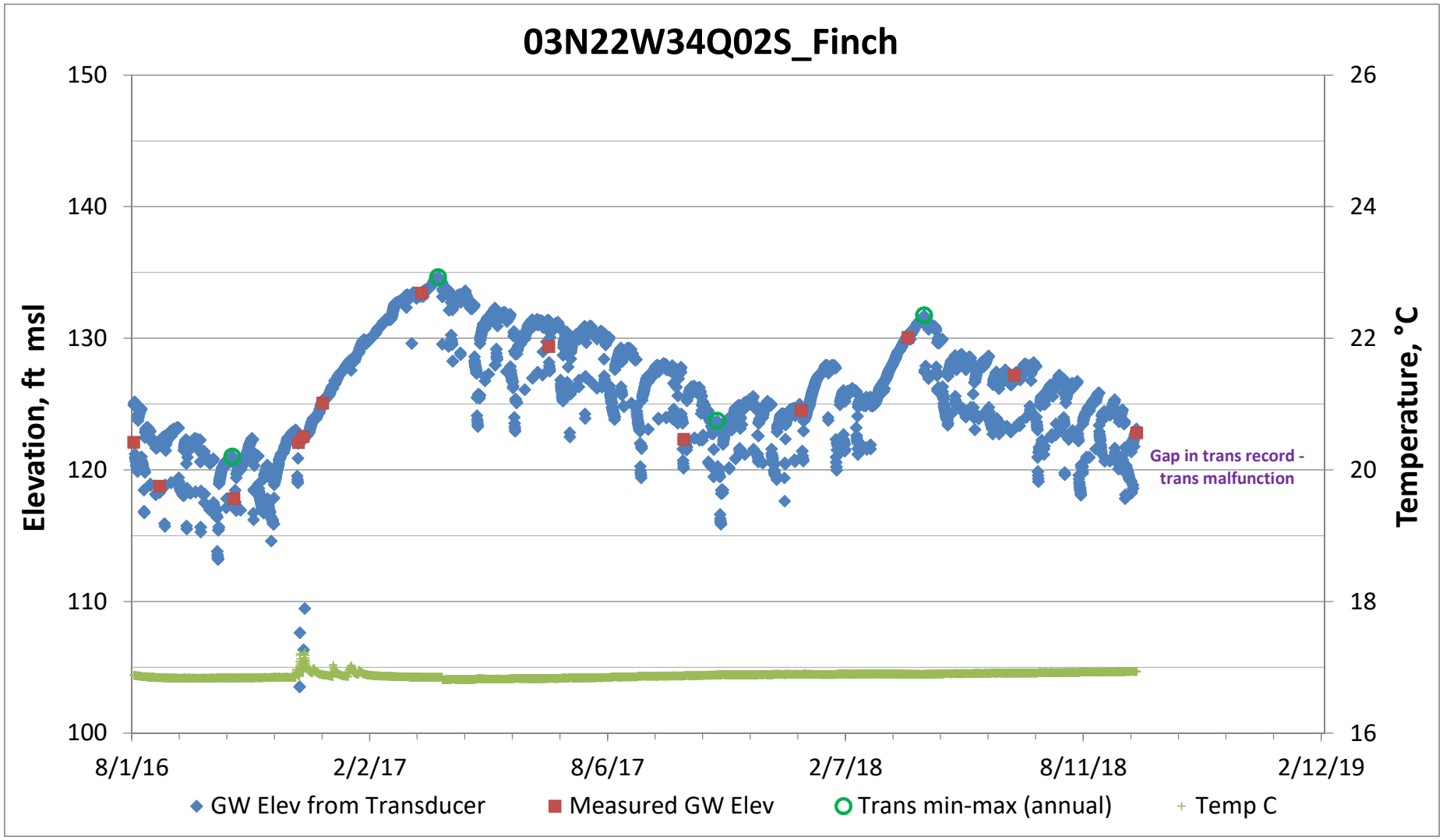

03N21W12E08S_FICO 7A
FICO measures Depth To Water with an interface meter instead of Depth To Oil
Elevation, ft msl
Temperature, °C
270
260
250
240
230
220
210
200
190
23
22
21
20
19
18
17
16
15
1/21/11
1/21/12
1/20/13
1/20/14
1/21/15
1/21/16
1/20/17
1/20/18
1/21/19
GW Elev from UWCD Trans
GW Elev from FICO Trans
Measured GW Elev_UWCD
Measured GW Elev_FICO
Trans min-max (annual)
Temp C

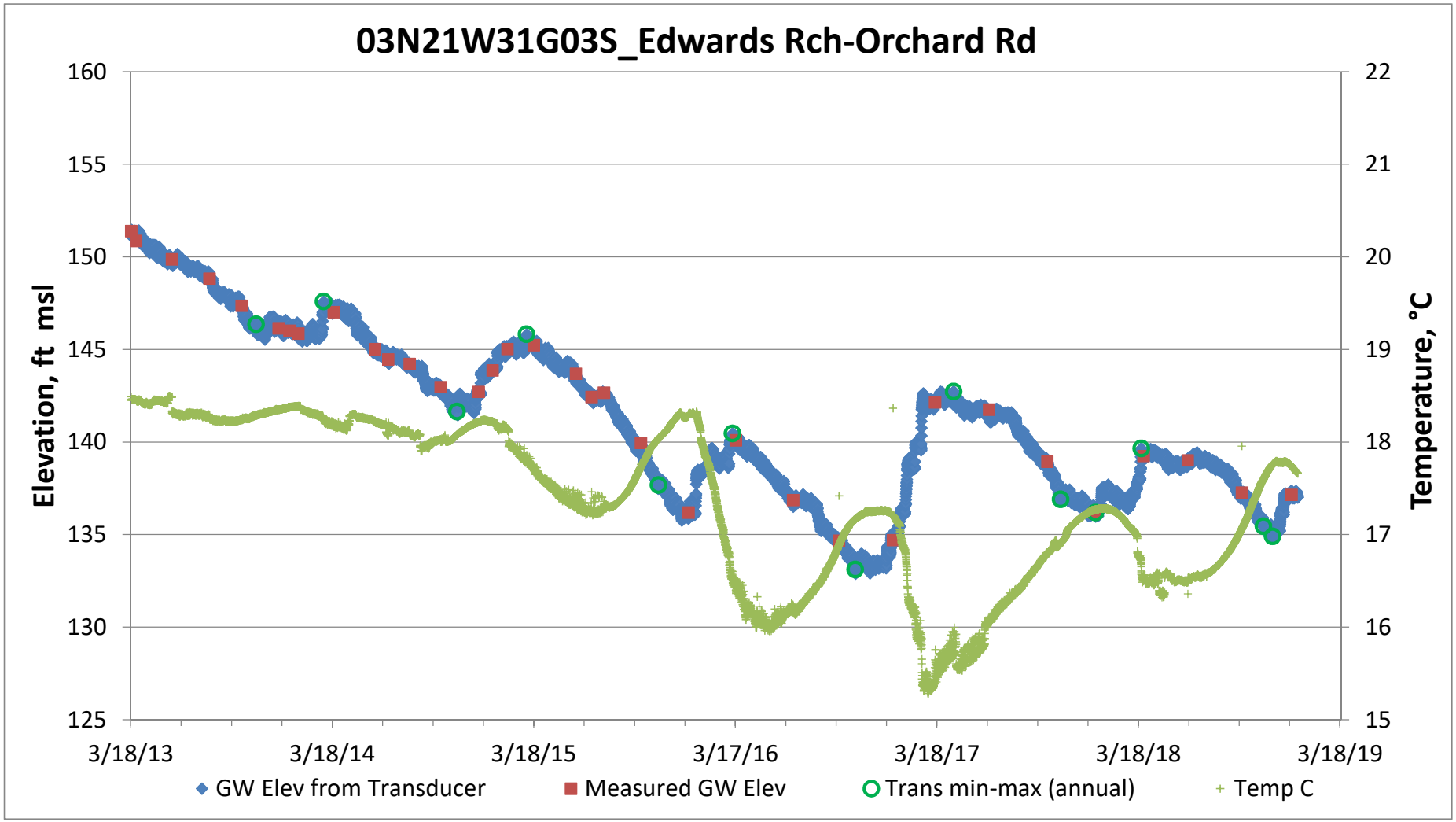

03N21W12E04S_FICO 8
FICO measures Depth To Water with an interface meter instead of Depth To Oil
Trans Dry when Pumping
Elevation, ft msl
300
290
280
270
260
250
240
230
220
210
200
190
180
170
3/7/15
9/5/15
3/6/16
9/4/16
3/6/17
9/5/17
3/6/18
9/5/18
3/7/19
GW Elev from FICO Trans
Measured GW Elev_FICO
Measured GW Elev_UWCD
Trans min-max (annual)
Trans Dry when Pumping
Linear (Trans Dry when Pumping)

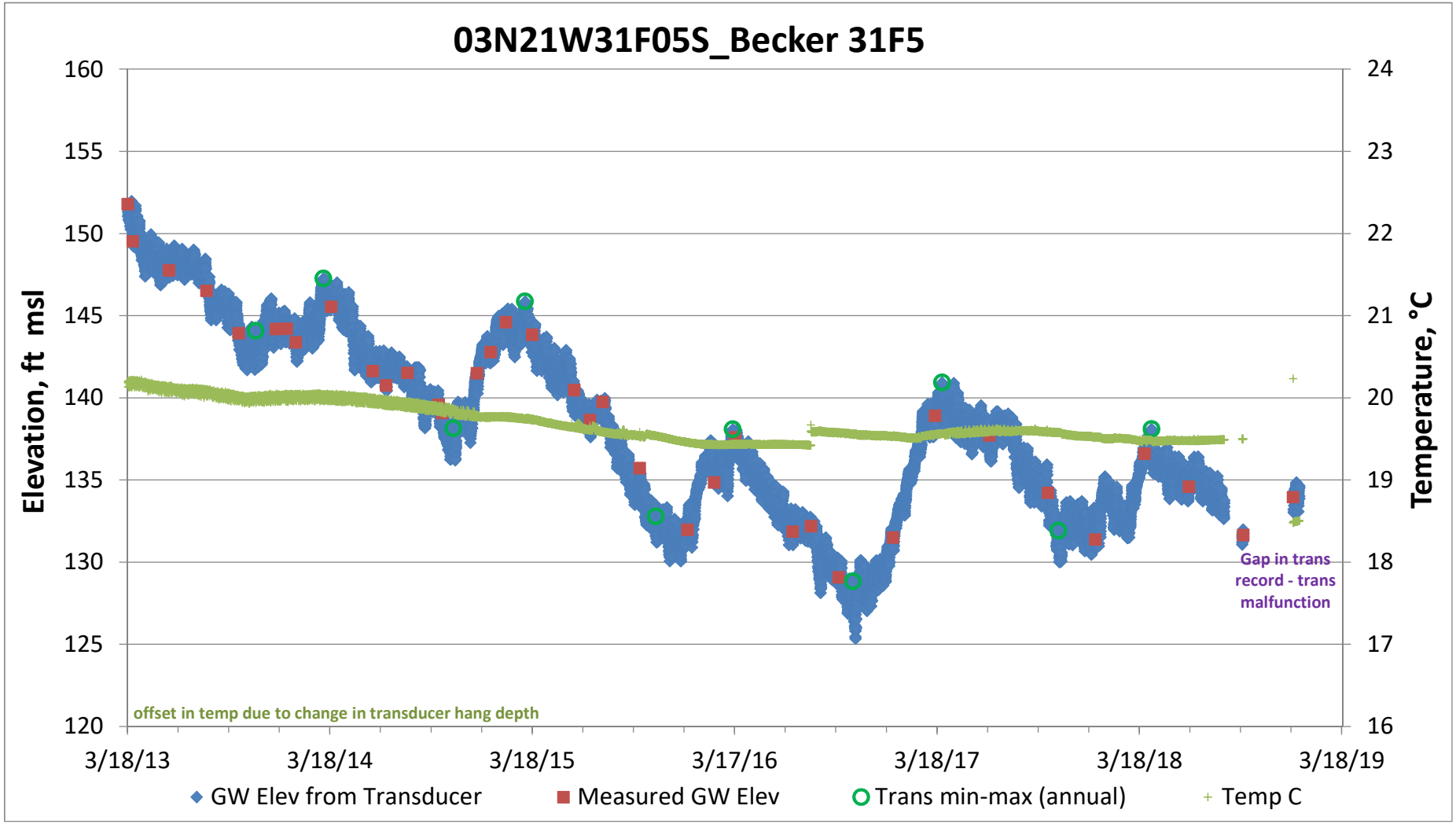

03N21W02R02S_Teague 2
Trans pulled
would not download
10/3/2017-12/28/2017
Elevation, ft msl
Temperature, °C
265
255
245
235
225
215
22
21
20
19
18
17
1/1/17
5/2/17
9/1/17
1/1/18
5/3/18
9/1/18
1/1/19
GW Elev from Transducer
Measured GW Elev_UWCD
Trans min-max (annual)
Measured GW Elev_FICO
Temp C

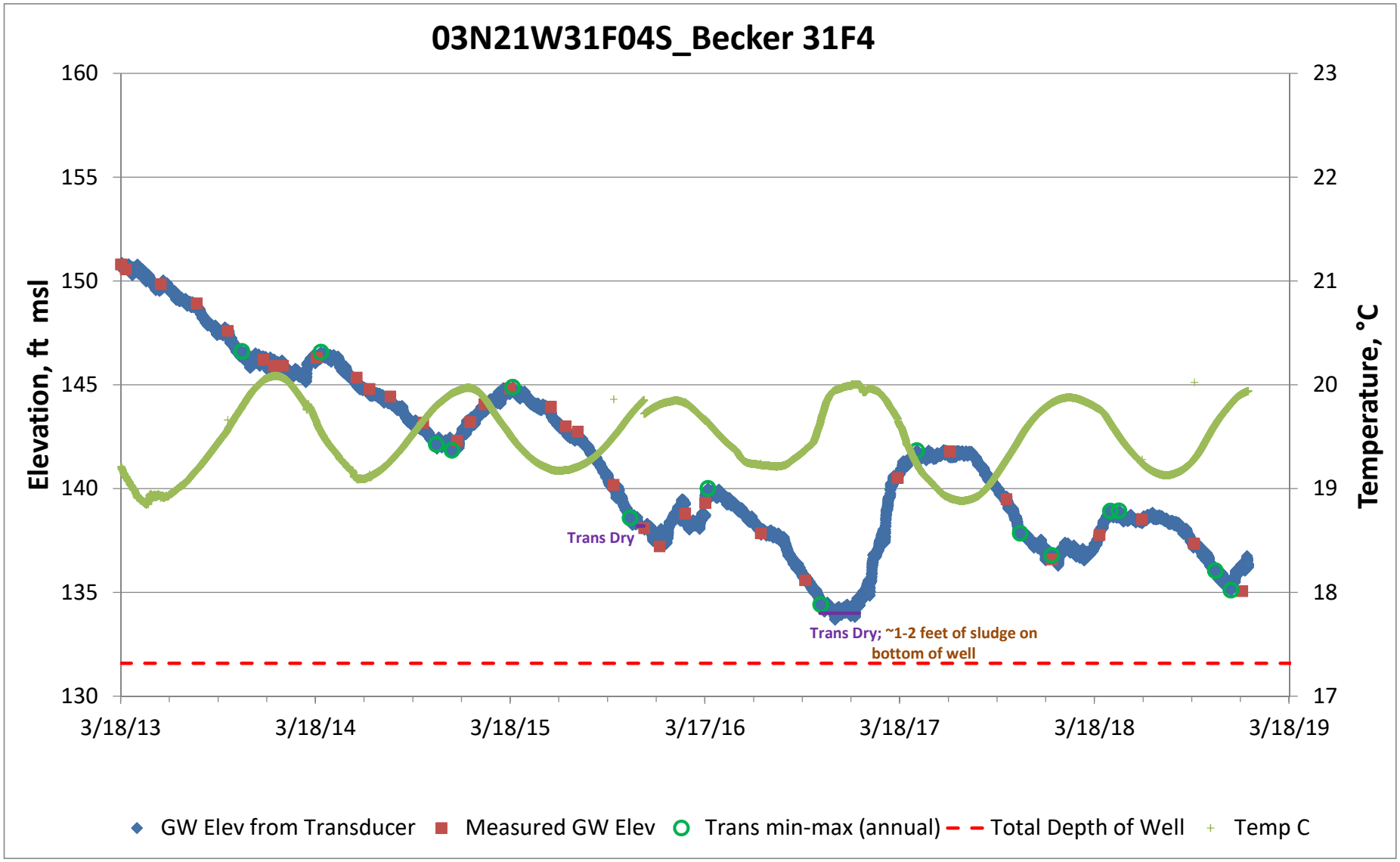

03N22W36K05S_Riverbank Citrus
Elevation, ft msl
Temperature, °C
150
145
140
135
130
125
120
23
22
21
20
19
18
17
5/6/13
11/4/13
5/6/14
11/4/14
5/6/15
11/5/15
5/5/16
11/4/16
5/6/17
11/4/17
5/6/18
11/4/18
5/6/19
GW Elev from Transducer
Measured GW Elev_UWCD
Measured GW Elev_VCWRD
Trans min-max (annual)
Temp C

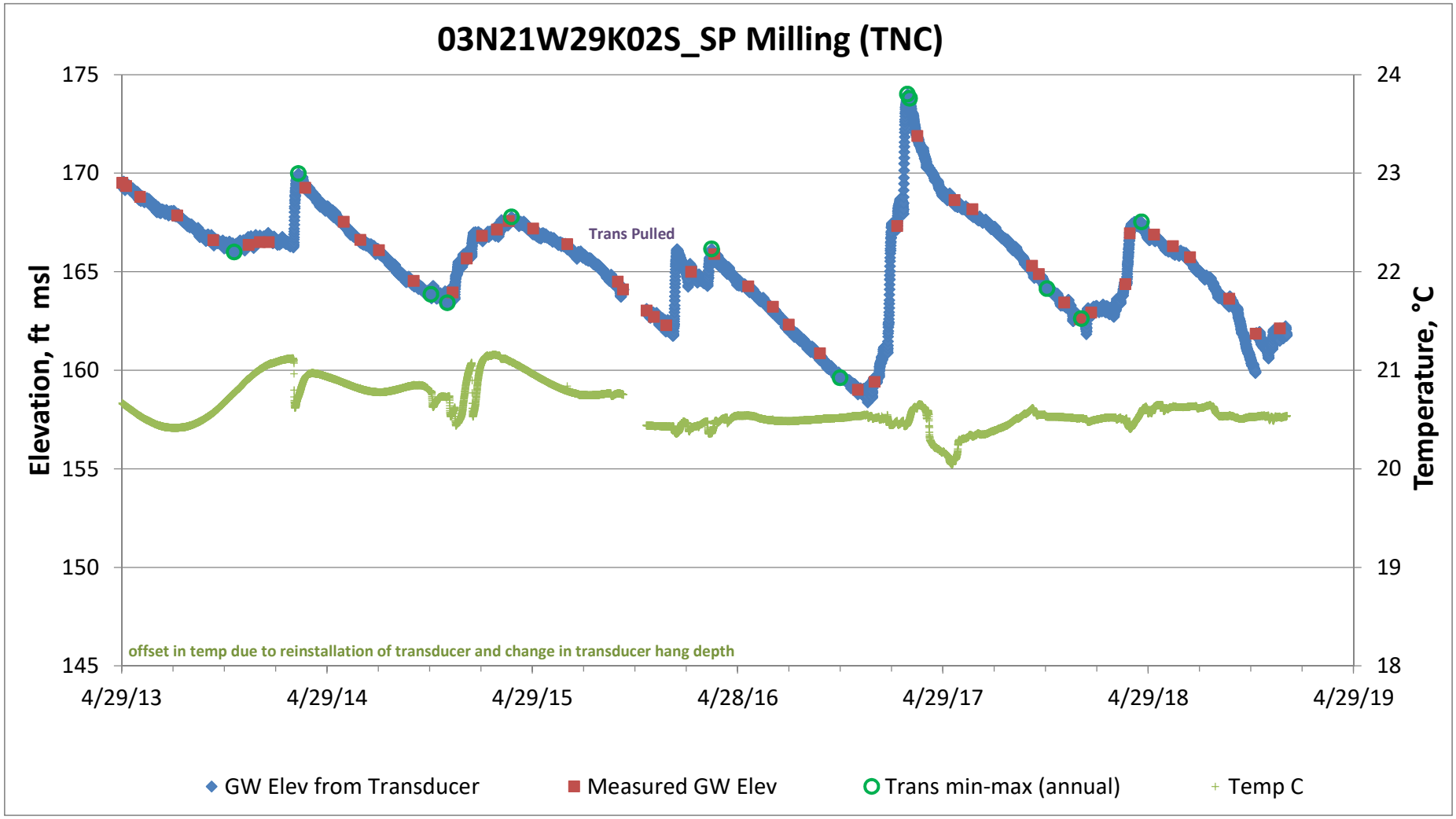

02N22W03Q01S_John McConica (Blackburn)
Difficult well to accurately measure manually - oil in well
Elevation, ft msl
Temperature, °C
80
70
60
50
25
24
23
22
21
20
19
9/28/15
1/27/16
5/28/16
9/27/16
1/27/17
5/28/17
9/27/17
1/27/18
5/29/18
9/27/18
1/27/19
5/29/19
9/28/19
1/27/20
GW Elev from Transducer
Measured GW Elev_UWCD
Trans min-max (annual)
Temp C

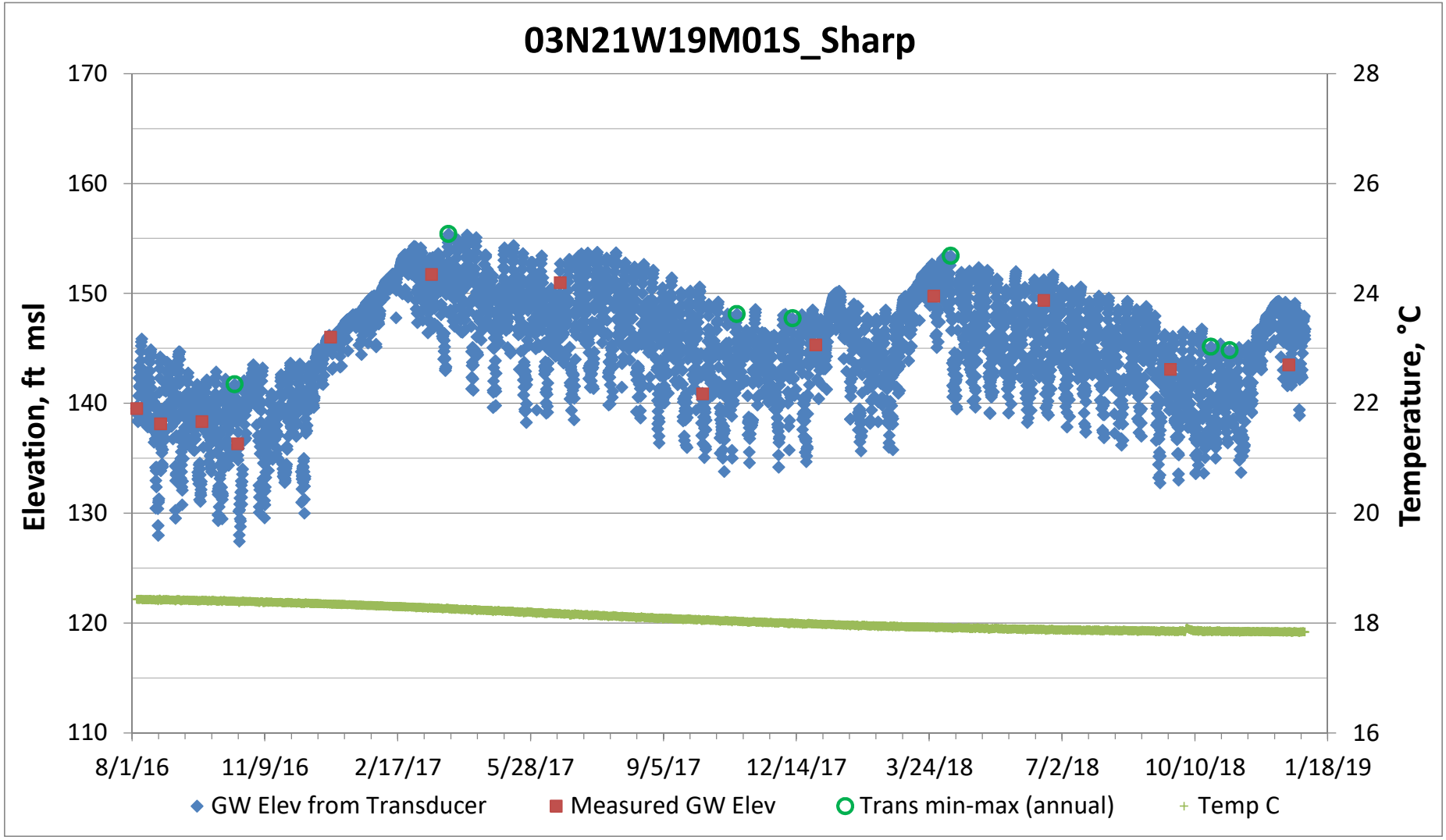

03N22W34Q02S_Finch
Elevation, ft msl
Temperature, °C
150
140
130
120
110
100
26
24
22
20
18
16
8/1/16
2/2/17
8/6/17
2/7/18
8/11/18
2/12/19
Gap in trans record - trans malfunction
GW Elev from Transducer
Measured GW Elev
Trans min-max (annual)
Temp C

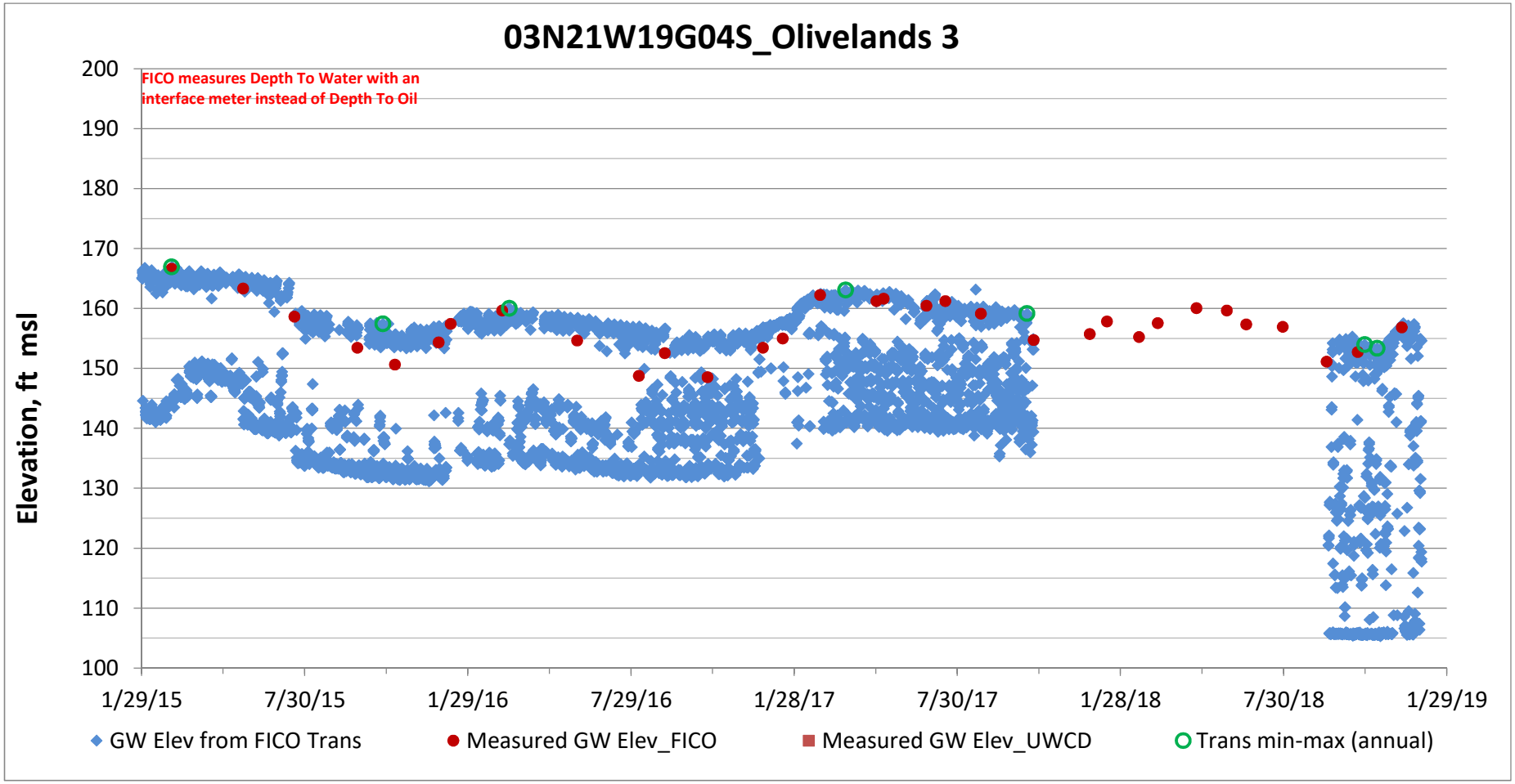

03N21W31G03S_Edwards Rch-Orchard Rd
Elevation, ft msl
Temperature, °C
160
155
150
145
140
135
130
125
22
21
20
19
18
17
16
15
3/18/13
3/18/14
3/18/15
3/17/16
3/18/17
3/18/18
3/18/19
GW Elev from Transducer
Measured GW Elev
Trans min-max (annual)
Temp C

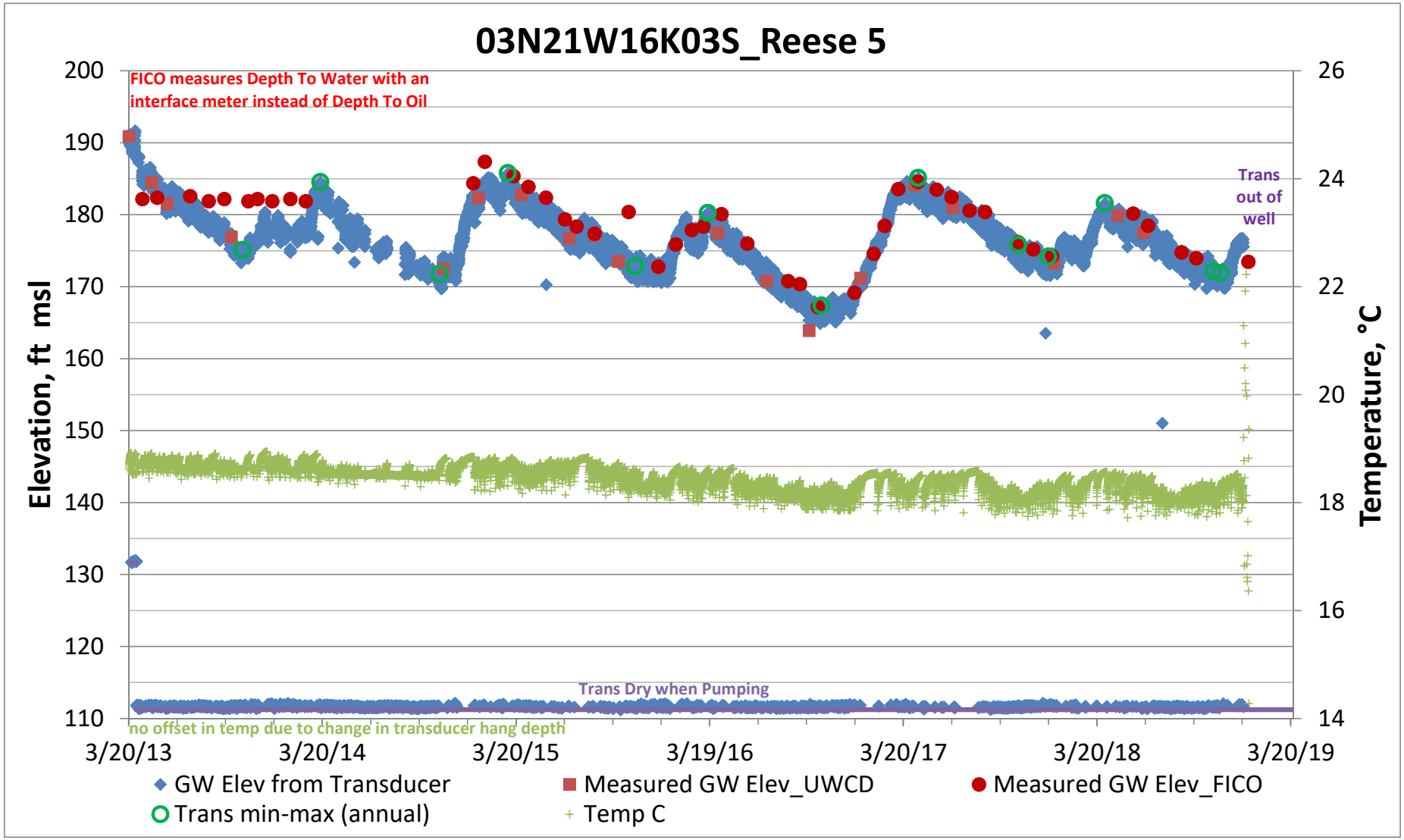

03N21W31F05S_Becker 31F5
Elevation, ft msl
Temperature, °C
160
155
150
145
140
135
130
125
120
24
23
22
21
20
19
18
17
16
3/18/13
3/18/14
3/18/15
3/17/16
3/18/17
3/18/18
3/18/19
offset in temp due to change in transducer hang depth
Gap in trans record - trans malfunction
GW Elev from Transducer
Measured GW Elev
Trans min-max (annual)
Temp C

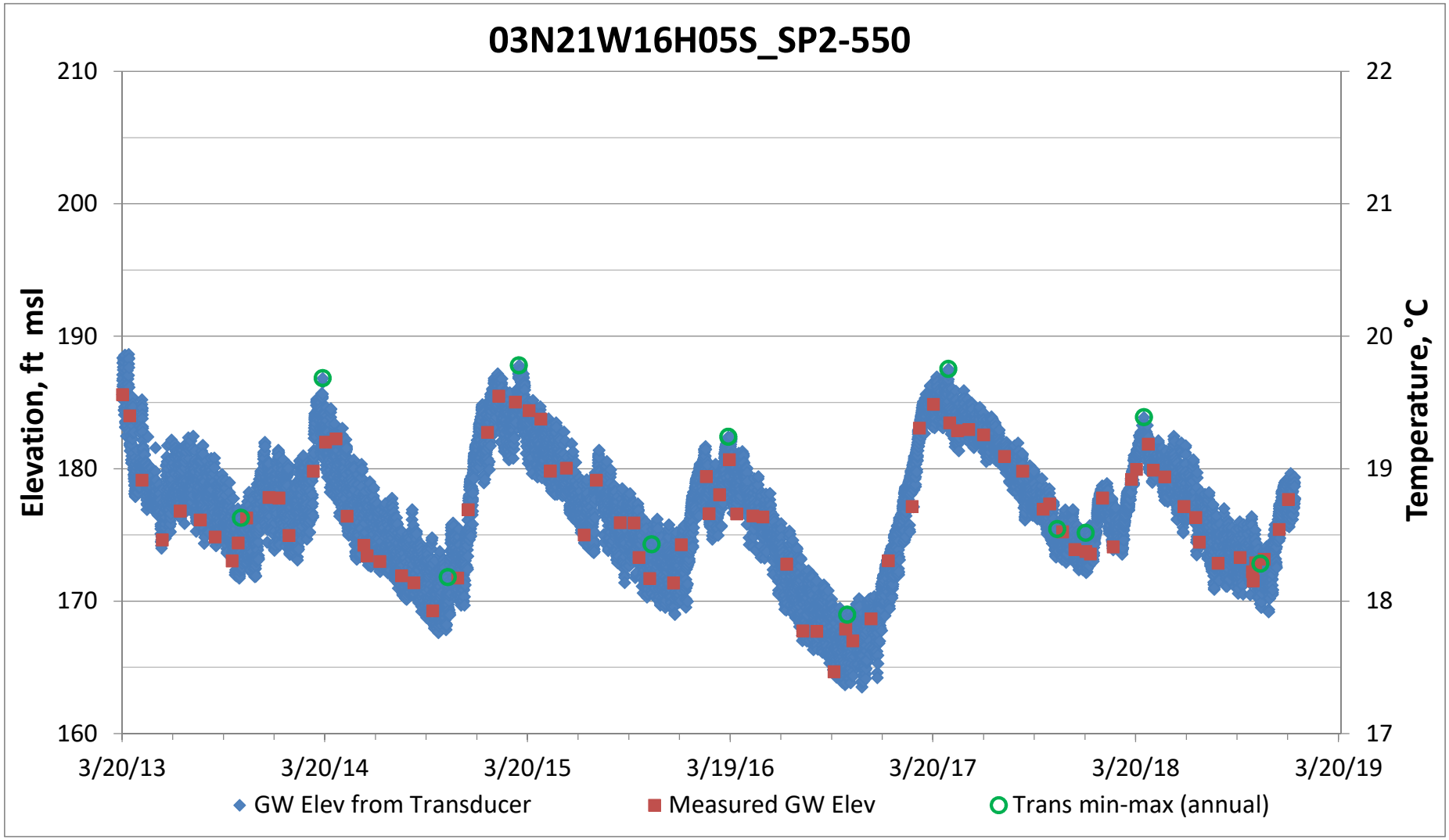

03N21W31F04S_Becker 31F4
Elevation, ft msl
Temperature, °C
160
155
150
145
140
135
130
23
22
21
20
19
18
17
3/18/13
3/18/14
3/18/15
3/17/16
3/18/17
3/18/18
3/18/19
Trans Dry
Trans Dry; ~1-2 feet of sludge on bottom of well
GW Elev from Transducer
Measured GW Elev
Trans min-max (annual)
Total Depth of Well
Temp C


03N21W29K02S_SP Milling (TNC)
Elevation, ft msl
Temperature, °C
175
170
165
160
155
150
145
24
23
22
21
20
19
18
4/29/13
4/29/14
4/29/15
4/28/16
4/29/17
4/29/18
4/29/19
Trans Pulled
offset in temp due to reinstallation of transducer and change in transducer hang depth
GW Elev from Transducer
Measured GW Elev
Trans min-max (annual)
Temp C


03N21W19M01S_Sharp
Elevation, ft msl
Temperature, °C
170
160
150
140
130
120
110
28
26
24
22
20
18
16
8/1/16
11/9/16
2/17/17
5/28/17
9/5/17
12/14/17
3/24/18
7/2/18
10/10/18
1/18/19
GW Elev from Transducer
Measured GW Elev
Trans min-max (annual)
Temp C


03N21W19G04S_Olivelands 3
FICO measures Depth To Water with an interface meter instead of Depth To Oil
Elevation, ft msl
200
190
180
170
160
150
140
130
120
110
100
1/29/15
7/30/15
1/29/16
7/29/16
1/28/17
7/30/17
1/28/18
7/30/18
1/29/19
GW Elev from FICO Trans
Measured GW Elev_FICO
Measured GW Elev_UWCD
Trans min-max (annual)


03N21W16K03S_Reese 5
FICO measures Depth To Water with an interface meter instead of Depth To Oil
Trans out of well
Trans Dry when Pumping
no offset in temp due to change in transducer hang depth
Elevation, ft msl
Temperature, °C
200
190
180
170
160
150
140
130
120
110
26
24
22
20
18
16
14
3/20/13
3/20/14
3/20/15
3/19/16
3/20/17
3/20/18
3/20/19
GW Elev from Transducer
Measured GW Elev_UWCD
Measured GW Elev_FICO
Trans min-max (annual)
Temp C


03N21W16H05S_SP2-550
Elevation, ft msl
Temperature, °C
210
200
190
180
170
160
22
21
20
19
18
17
3/20/13
3/20/14
3/20/15
3/19/16
3/20/17
3/20/18
3/20/19
GW Elev from Transducer
Measured GW Elev
Trans min-max (annual)

APPENDIX C - Spring 2017 to Spring 2018 Groundwater Elevation Change Measured in Wells

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WELLID	WELL_NO	TOPPERF	ESTTOPPERF	BTMPERF	ESTBTMPERF	YEAR	DEPTH_CODE	WELL_USE	BASIN_NAME	Spring2017WLE	Spring2018WLE	Difference
02N22W01P02S	NB1	62	0	102	0	2011	UPPR	MONITORING	FOREBAY	75.62	44.22	-31.40
02N22W01R02S	HR1	63	0	103	0	2011	UPPR	MONITORING	FOREBAY	73.17	65.20	-7.97
02N22W02C01S	Greg Well	190	0	225	0	1935	UPPR	IRRIGATION	SANTA PAULA	136.16	132.77	-3.39
02N22W02K10S	Alta #12	125	0	700	0	2014	BOTH		SANTA PAULA	100.92	117.13	16.21
02N22W02R05S	Alta #11	106	0	520	0	1984	BOTH	MUNICIPAL	FOREBAY	75.40	41.52	-33.88
02N22W03K02S		0	115	164	0	1915	UPPR	IRRIGATION	SANTA PAULA	112.04	127.08	15.04
02N22W03M02S	by apts sub pump	468	0	528	0	1946	LOWR	IRRIGATION	SANTA PAULA	77.69	77.36	-0.33
02N22W03Q01S		0	0	0	0		UPPR		SANTA PAULA	66.69	66.09	-0.60
02N22W07M03S	CP-280	210	0	280	0	1995	PRCH	MONITORING	MOUND	144.70	144.11	-0.59
02N22W09K04S		0	275	0	548	1935	BOTH	IRRIGATION	MOUND	7.90	8.93	1.03
02N22W09K05S		625	0	1455	0	1975	LOWR	IRRIGATION	MOUND	66.44	77.45	11.01
02N22W11J01S	FERRO A	35	0	145	0	1986	UPPR	MONITORING	FOREBAY	42.81	16.12	-26.69
02N22W11J02S	HR3	59	0	99	0	2011	UPPR	MONITORING	FOREBAY	52.11	35.61	-16.50
02N22W11Q01S	FERRO D	35	0	145	0	1986	UPPR	MONITORING	FOREBAY	46.96	21.06	-25.90
02N22W12A02S		40	0	121	0	1971	UPPR	IRRIGATION	FOREBAY	65.98	39.17	-26.81
02N22W12B08S	Dos Diegos- Shop	115	0	355	0	1997	UPPR	IRRIGATION	FOREBAY	66.02	43.24	-22.78
02N22W12G03S		80	0	141	0		UPPR	INDUSTRIAL	FOREBAY	61.58	28.08	-33.50
02N22W12H01S	Saticoy #1	100	0	365	0	2003	UPPR	IRRIGATION	FOREBAY	42.27	18.19	-24.08
02N22W12J02S	ROSE #1	35	0	125	0	1992	UPPR	MONITORING	FOREBAY	43.05	18.28	-24.77
02N22W12J04S	Saticoy #2	100	0	320	0	2003	UPPR	IRRIGATION	FOREBAY	34.36	4.69	-29.67
02N22W12N03S		276	0	456	0	1961	BOTH	IRRIGATION	FOREBAY	29.50	9.30	-20.20
02N22W13N02S	El Rio #12	752	0	1092	0	1983	LOWR	MUNICIPAL	FOREBAY	-72.76	-79.77	-7.01
02N22W13N05S	Central-219	199	0	219	0	2000	UPPR	MONITORING	FOREBAY	-19.72	-35.09	-15.37
02N22W13N06S	Central-175	155	0	175	0	2000	UPPR	MONITORING	FOREBAY	-20.39	-33.51	-13.12
02N22W14P03S		162	0	306	0	1981	UPPR	MUNICIPAL	FOREBAY	-24.97	-38.28	-13.31
02N22W15R02S	SP MILLING NE	50	0	140	0	1998	UPPR	MONITORING	FOREBAY	-24.51	-36.53	-12.02
02N22W16K01S		292	0	345	0	1934	UPPR	INDUSTRIAL	MOUND	-32.59	-38.28	-5.69
02N22W16R02S	TNC2	68	0	108	0	2011	UPPR	MONITORING	FOREBAY	-23.93	-28.42	-4.49
02N22W17M02S	Ivy Lawn	550	0	850	0	2001	LOWR	IRRIGATION	MOUND	10.38	13.13	2.75
02N22W17Q05S	Valentine	360	0	478	0	1965	BOTH	IRRIGATION	MOUND	-35.80	-41.70	-5.90
02N22W22R02S		124	0	224	0		UPPR	MUNICIPAL	FOREBAY	-24.88	-29.12	-4.24
02N22W23B02S	El Rio #5	163	0	277	0	1955	UPPR	MUNICIPAL	FOREBAY	-26.51	-39.61	-13.10
02N22W23B08S	SG-155	135	0	155	0	2000	UPPR	MONITORING	FOREBAY	-24.13	-20.10	4.03
02N22W23C05S	El Rio #15	140	0	310	0	2000	UPPR	MUNICIPAL	FOREBAY	-25.76	-34.10	-8.34
02N22W23C06S	El Rio #17	150	0	290	0	2014	UPPR	MUNICIPAL	FOREBAY	-25.46	-33.31	-7.85
02N22W23D06S		130	0	370	0	1991	UPPR	IRRIGATION	FOREBAY	-55.13	-50.79	4.34
02N22W23G03S	El Rio #2A	100	0	300	0	1984	UPPR	MUNICIPAL	FOREBAY	-26.92	-36.73	-9.81
02N22W23G04S	El Rio #16	115	0	340	0	2009	UPPR	MUNICIPAL	FOREBAY	-28.17	-33.33	-5.16
02N22W23H04S	El Rio #13	850	0	1390	0	1983	LOWR	MUNICIPAL	FOREBAY	-68.85	-75.26	-6.41
02N22W23H06S	Rose-165	145	0	165	0	2000	UPPR	MONITORING	FOREBAY	-23.48	-28.39	-4.91
02N22W26B03S	El Rio #14	575	0	1475	0	1983	BOTH	MUNICIPAL	FOREBAY	-78.24	-34.91	43.33
02N22W26E01S		150	0	292	0	1957	UPPR	MUNICIPAL	FOREBAY	-23.09	-28.84	-5.75
03N21W09K02S		233	0	338	0	1935	UPPR	IRRIGATION	SANTA PAULA	186.70	181.92	-4.78
03N21W11E03S	Santa Paula #8	100	0	453	0	1956	UPPR	MUNICIPAL	SANTA PAULA	226.49	221.09	-5.40
03N21W11F03S	Santa Paula #9	153	0	518	0	1958	UPPR	MUNICIPAL	SANTA PAULA	228.92	224.12	-4.80
03N21W11F04S	CIC #10	570	0	850	0	2004		IRRIGATION	SANTA PAULA	213.97	209.75	-4.22
03N21W11H03S		0	0	0	0		BOTH	N/A	SANTA PAULA	249.35	245.84	-3.51
03N21W12B04S	Van Wingerden	120	0	360	0				FILLMORE	268.86	271.52	2.66

WELLID	WELL_NO	TOPPERF	ESTTOPPERF	BTMPERF	ESTBTMPERF	YEAR	DEPTH_CODE	WELL_USE	BASIN_NAME	Spring2017WLE	Spring2018WLE	Difference
03N21W12E04S	FICO #8	120	0	284	0	1954	UPPR		SANTA PAULA	259.94	258.54	-1.40
03N21W12E08S	FICO 7A	120	0	285	0	1967	UPPR	IRRIGATION	SANTA PAULA	259.27	257.17	-2.10
03N21W12F03S	FICO #9	120	0	284	0	1954	UPPR		SANTA PAULA	262.15	261.81	-0.34
03N21W12F06S	FICO #11	120	0	395	0	2001	UPPR	IRRIGATION	SANTA PAULA	264.44	263.87	-0.57
03N21W12F07S	FICO 12	120	0	400	0	2012		IRRIGATION	FILLMORE	264.87	263.02	-1.85
03N21W15C02S	Santa Paula #2	176	0	322	0	1951	UPPR	MUNICIPAL	SANTA PAULA	193.29	187.09	-6.20
03N21W15C04S		112	0	253	0		UPPR	MUNICIPAL	SANTA PAULA	193.50	190.20	-3.30
03N21W15G04S	SP1-280	260	0	280	0	1994	UPPR	MONITORING	SANTA PAULA	191.91	188.68	-3.23
03N21W16H07S	SP2-170	150	0	170	0	1994	UPPR	MONITORING	SANTA PAULA	186.40	183.07	-3.33
03N21W16K01S	Reese 1	119	0	214	0	1923	UPPR	IRRIGATION	SANTA PAULA	184.35	181.59	-2.76
03N21W16K02S	Reese 2	92	0	243	0	1923	UPPR	IRRIGATION	SANTA PAULA	186.71	181.91	-4.80
03N21W16K03S	Reese 5	672	0	760	0	1962	LOWR	IRRIGATION	SANTA PAULA	184.60	181.61	-2.99
03N21W17Q01S		183	0	243	0		UPPR	IRRIGATION	SANTA PAULA	177.35	174.90	-2.45
03N21W20F04S	Hansen Ag Ctr	134	0	219	0	2006	UPPR	IRRIGATION	SANTA PAULA	167.68	162.99	-4.69
03N21W20J03S		489	0	717	0	1967	UPPR	DOM-IRRIGAT	SANTA PAULA	170.94	169.00	-1.94
03N21W29K02S		30	0	60	0	1971	UPPR	INDUSTRIAL	SANTA PAULA	171.89	167.53	-4.36
03N21W30E01S		160	0	240	0	1981	UPPR	IRRIGATION	SANTA PAULA	152.63	148.11	-4.52
03N21W31F04S	Becker 31F4	17	0	37	0	1976	UPPR	OBSERVATION	SANTA PAULA	140.52	138.92	-1.60
03N21W31F05S	Becker 31F5	92	0	102	0	1976	UPPR	OBSERVATION	SANTA PAULA	138.91	138.10	-0.81
03N21W31G03S	EdwardRch-Orchrd	0	0	0	0	1977	UPPR	OBSERVATION	SANTA PAULA	142.15	139.65	-2.50
03N21W31L01S	Becker 31L1	137	0	157	0	1977	UPPR	OBSERVATION	SANTA PAULA	136.58	133.08	-3.50
03N21W32C01S	Freeman Becker A	12	0	32	0		UPPR	OBSERVATION	SANTA PAULA	162.24	156.06	-6.18
03N21W32C02S	Freeman Becker B	17	0	37	0		UPPR	OBSERVATION	SANTA PAULA	162.02	155.59	-6.43
03N21W32C03S	Freeman Becker C	17	0	37	0		UPPR	OBSERVATION	SANTA PAULA	162.55	156.47	-6.08
03N22W36H01S		226	0	442	0	1961	UPPR	IRRIGATION	SANTA PAULA	131.35	132.33	0.98
03N22W36K02S		170	0	270	0	1924	UPPR	IRRIGATION	SANTA PAULA	135.49	138.69	3.20
03N22W36K05S		175	0	265	0	1947	UPPR	IRRIGATION	SANTA PAULA	136.39	138.02	1.63

Notes: "TOPPERF" and "BOTPERF" are top and bottom, respectively, of the screened interval of the well, in feet below land surface.
Values of "0" are inserted where the top or bottom of the screened interval was not reported.

"WLESpring2017" and "WLESpring2016" are springtime-high groundwater elevations measured in the well, in feet above mean sea level.

"Difference" is the change in groundwater elevations measured in the well between spring of the previous year to spring of the reporting period, in feet.

APPENDIX D - Individual Party Allocations and Groundwater Extractions (from Frank B & Associates)

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Table "D-1"

IPA's 2012 - 2018 Production & Averages

11/15/2019

2012 (2)	2013 (2)	2014 (2)	2015 (2)	2016 (2)	2017 (2)	2018 (2)	7 Year Average	Avg Over + Under (-)	Acre Feet	Party Name	Well Number
0.7	1.0	0.8	0.6	1.0	0.7	0.5	0.8	(1.0)	1.8	Aliso Vista Ranch	03N/22W-23Q01
757.6	241.0	1,018.4	1,175.1	1,386.5	709.1	745.7	861.9	98.83	763.1	Alta Mutual Water Company, Inc.	02N/22W-02K07, 02N/22W-02K10
10.3	10.3	6.2	4.4	2.9	5.1	1.3	5.8	2.9	2.9	Arambula, Pedro	03N/21W-21E02
-8.2	-3.6							0.0	0	Bender Farms (23) (29)	
306.5	391.1	273.7	247.8	188.2	221.9	246.8	268.0	(24.6)	292.56	Bender Realty LTD (29)	3N/21W16P02, 3N/21W16P03, 3N21W17R01 (4)
											03N/21W-17R01
61.6	70.6	62.1	46.5	52.4	71.3	71.7	62.3	(38.5)	100.8	Billiwhack Ranch LLC	03N/22W-23F02
2.4	2.4	2.5	2.5	2.2	2.5	1.1	2.2	(3.8)	6.0	Bratcher Family Revocable Tr 1-24-02 & Cutright Revocable Tr 8-18-03 (22)	03N/21W-16P01
379.0	363.0	561.9	237.0	266.7	242.8	383.5	347.7	71.2	276.5	Brucker Family Trust (29)	3N/21W-19Q1, 3N/21W-29E1, 3N/21W-29C3
											03N/21W-29E1, 3N/21W-29C3
76.1	128.8	137.0	165.6	91.4	174.8	140.0	130.5	(151.8)	282.3	Campbell Dan	03N/21W-19R01
0.9	0.8	0.6	0.4	0.4	0.3	3.5	1.0	(0.1)	1.1	Canine Adoption and Rescue League	03N/21W-29B02
1,442.4	2,069.1	2,013.9	1,526.5	1,342.9	772.5	819.5	1,426.7	753.7	673.0	Canyon Irrigation Company	03N/21W-11F03, 3N/21W-11E3, 3N/21W-11F4
35.6	40.1	46.5	42.3	37.0	43.2	42.3	41.0	(58.3)	99.3	Casa De Oro Ranch	03N/21W-20F01
44.7	63.8	88.0	140.0	65.6	71.1	60.4	76.2	(25.2)	101.4	Castaneda, Albert and Mary	03N/21W-19L01 (1), 3N21W19K01
											03N/21W-19L01
4,771.4	5,054.0	4,691.7	4,012.9	3,932.1	4,105.0	4,077.4	4,377.8	(1,182.4)	5,560.1	City of Santa Paula	03N/21W-21B03
											3N/21W9R5, 03N/21W11J02, 03N/21W15C06, 03N/21W16A02, 3N/21W16A3

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IPA's 2012 - 2018 Production & Averages

11/15/2019

2012 (2)	2013 (2)	2014 (2)	2015 (2)	2016 (2)	2017 (2)	2018 (2)	7 Year Average	Avg Over + Under (-)	Acre Feet	Party Name	Well Number
63.6	26.4	39.0	50.8	33.3	40.6	33.5	41.0	(52.6)	93.6	Clow, The Roger D. Clow Trust, Dated September 15, 1994	3N/21W20J04 (17) 03N/21W-20A02, 03N21WL02S
111.1	142.5	127.2	74.2	96.0	82.0	150.3	111.9	(46.8)	158.7	Cole, Lecil E. Trustee of the Lecil E. and May Jeanette Cole Revocable Trust	3N/21W-16E02
									0.0	Conklin, Patricia	03N/21W-21D02
5.94	9.87	8.85	11.76	13.2	10.4	7.3	9.6	0.0	9.6	The Judson T. Cook & Suzette H. Cook Revocable Trust dated December 5, 2007 (28)	3N/22W-26B1
70.1	175.2	168.2	142.3	121.3	238.6	204.3	160.0	(12.2)	172.2	County of Ventura, General Services Agency (26)	03N/21W-30H08, 3N/21W-30H02
67.6	142.4	134.6	115.7	110.8	81.0	95.3	106.8	(71.5)	178.3	County of Ventura, General Services Agency	02N/22W-02G01
28.5	33.7	9.3		5.9			11.0	(74.0)	85.0	Fam, J. LLC	03N/22W-35N01
9,443.5	8,294.6	9,543.8	7,431.2	7,730.0	5,459.6	6,002.2	7,700.7	(2,212.5)	9,913.2	Farmers Irrigation Company, Inc.	03N/21W09R04, 03N/21W12E04, 03N/21W12E08, 03N/21W12F03, 03N/21W16K01, 03N/21W16K02, 03N/21W16K03, 03N/21W19H07, 3N/21W19G4, 3N/21W12F6, 03N21W15C04, 3N21W15C02
27.2	44.7	33.8	43.3	30.1	14.7	11.4	29.3	29.3	0.0	Fiano, Michael (21)	3N/22W26B02 & 3
											03N/21W-15C02, 03N/21W-15C04
154.5	205.4	211.3	193.1	171.2	167.9	184.9	184.0	(29.4)	213.4	Finch, J.J. & H.H.	3N/22W-34Q02, 3N22W34Q03
212.5	212.5	295.5	286.6	222.0	246.0	268.5	249.1	(62.1)	311.2	Flying D Ranch LLC	03N/21W-10M01
									0.0	Galbreaith Brothers, Inc.	03N/21W-17Q01
13.31	13.45	13.89	6.75	6.51	20.70	19.12	13.4	3.79	9.6	Garcia, Elias & Guadalupe (15)	3N/22W-26B1
25.0	25.0	18.4	18.8	16.7	11.2	18.0	19.0	(23.8)	42.8	Gilbert, Patricia L., Trustee of the Gilbert Family Survivor's Trust	03N/21W-16E01
115.6	128.9	136.3	125.1	34.3	136.6	112.4	112.7	10.9	101.8	Gooding Ranch (John F. Gooding)	03N/21W-09K02, 03N/21W-09K05

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IPA's 2012 - 2018 Production & Averages

11/15/2019

2012 (2)	2013 (2)	2014 (2)	2015 (2)	2016 (2)	2017 (2)	2018 (2)	7 Year Average	Avg Over + Under (-)	Acre Feet	Party Name	Well Number
60.0	36.6	41.5	31.4	31.6	44.2	33.2	39.8	(13.1)	52.9	Grant Family Ranches, LLC (20) (30)	3N22W3E01, 3N21W20E01
55.7	59.4	62.2	83.2	47.6	72.7	56.0	62.4	(35.2)	97.6	Grether, Elizabeth Broome, Ann B. Priske, John S. Broome Jr. as Trustee of the John S. Broome Jr. Trust	03N/22W-35Q02
12.3	12.9	11.1	8.2	10.7	10.0	9.7	10.7	(2.3)	13.0	Guzman, Yeisi Brayen, Trustee of the Brayen And Mesa Guzman Revocable Family Trust, dated July 24, 2015	03N/21W-19G03
128.2	128.2	91.4	128.9	136.9	119.7	102.3		(129.2)	129.2	Hadley-Williams Partnership	02N/22W-03E01 (9)
										Hampton Canyon Ranch (Leslie) (32)	03N/21W-19A02
2.4	0.5	0.5	0.5	2.4	2.4	1.6	1.5	1.4	0.1	Herbert Family Trust (formerly Ray, Richard T. and Ruth L.)	03N/22W026P01
0.0	0.0	0.0	0.0				0.0	(7.9)	7.9	Held, Family Trust dtd 1-16-03	03N/22W-23F02
0.0	0.0	0.0	0.0					(33.8)	33.8	Held, Joann	03N/22W-23F02
							0.0	(45.1)	45.1	JAKRAN VI LLC	02N/22W-01M03, 02N/22W-01M04
125.0	125.0	125.0	34.0	77.14	83.80	62.93	90.4	(34.6)	125.0	JKJ Farms, LLC (29)	3N/21W-16P01 3N/21W-16P02&3
									0.0	Juanamaria Land Company	02N/22W-03E01
									2.0	JVP Citrus, Inc.	
178.5	176.5	235.5	195.0	159.1	171.3	120.0	176.5	(18.8)	195.3	Leavens Ranches	03N/22W-24R01 (13), 2N22W03F02
2,348.2	2,808.2	2,419.4	2,723.0	2,248.2	1,796.8	1,702.2	2,292.3	(1,256.7)	3,549.0	Limoneira Company	03N/21W-01N02, 03N/21W-02Q01, 03N/21W-02R02, 03N/21W-19G02, 03N/21W-30F01, 03N/21W-30H04, 03N/21W-31E03, 3N/21W-31L2
											03N/21W-11A01
											See Limoneira

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IPA's 2012 - 2018 Production & Averages

11/15/2019

2012 (2)	2013 (2)	2014 (2)	2015 (2)	2016 (2)	2017 (2)	2018 (2)	7 Year Average	Avg Over + Under (-)	Acre Feet	Party Name	Well Number
3.8	1.2	1.1	0.5	1.0	1.6	1.6	1.5	(8.5)	10.0	Little Clara Ranch LLC (30)	3N22W34E01
30.3	30.3	7.2	8.9	18.7	20.6	23.1	19.9	(16.4)	36.3	Malzacher, Fred H. & Elaine C., Trustees of the Fred H. Malzacher and Elaine C. Malzacher Revocable Trust dated January 16, 1992 U/D/T dated November 25, 2009, as amended	03N/21W-21G03
31.5	31.5	31.5	31.5	47.3	32.7	41.8	35.4	1.1	34.3	Martinez, Esther	3N21W-29G02
20.3	22.3	23.8	17.3	25.2	22.8	22.6	22.0	(2.7)	24.7	McConica, John II	2N/22W-3Q1
176.5	149.6	124.8	162.9	123.74	85.80	66.55	127.1	(54.5)	181.6	McGaelic Group	03N/21W17R01 (4), 3N/21W11H01
356.8	570.6	392.0	479.9	296.6	447.3	430.8	424.9	141.3	283.6	McGrath, John & Sons (18)	03N/21W21E05, 3N/21W21E11, 3N/21W-20J04 (17) & 3N/21W-20R3
23.3	31.8	27.4	35.8	18.5	27.3	38.1	28.9	(17.8)	46.7	Nichols Associates	03N/22W36H01, 03N/22W36H02
25.9	33.5	28.1	25.5	23.4	19.3	15.6	24.5	(101.9)	126.4	Nutwood Farms	03N/22W-36J01, 36J02 & 36J03
0.1	0.1	0.1	0.1	0.0	0.1	0.04	0.1	(7.8)	7.9	Oba Family Trust dtd 12-22-92	03N/22W23F02, 3N/21W17D03(10)
9.4	12.5	6.3	12.3	10.3	11.8	11.1	10.5	(4.6)	15.1	Ohst, Gary	03N/21W-10E01, 3N/21W-10E2
159.9	159.9	261.3	108.5	159.0	126.2	111.7	155.2	(38.7)	193.9	Orr Ranch Co. (25)	03N/21W-20J03, 3N/21W-20J2
116.32	95.01	89.82	101.97	115.8	91.0	108.8	102.7	64.1	38.6	Ortiz Trust - Joseph & Sons	03N/21W-30E01 3N/21W-30E2, 3N/21W-20H1
303.4	406.7	445.8	392.7	299.3	343.8	343.9	362.2	(48.1)	410.3	Panamerican Seed, aka Ball Horticultural	3N/21W20K01, 3N/21W20M01 03N/21W20P01 & 3N/21W20F4
73.1	85.5	86.8	63.6	42.1	62.6	57.4	67.3	(48.7)	116.0	Petty Ranch LP	03N/22W-36K04, 3N/22W-36K6
							0.0	(39.1)	39.1	Pinkerton, Arlene	3N21W17Q01 (5)
									2	Pinkerton, Jennifer Paulene	
46.5	41.1	59.2	41.5	1.6	33.8	93.2	45.3	(16.6)	61.9	Pinkerton, Murray	03N/21W-21E01
									2	Pinkerton Ranch Trust	
									0.0	Pinkerton, W. B. Limited Partnership	3N21W17Q01
							0.0	0.0	0	Pinkerton, W. J. Estate Ranch	3N/21W-16E02

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IPA's 2012 - 2018 Production & Averages

11/15/2019

2012 (2)	2013 (2)	2014 (2)	2015 (2)	2016 (2)	2017 (2)	2018 (2)	7 Year Average	Avg Over + Under (-)	Acre Feet	Party Name	Well Number
									0.0	Pinkerton, Wesley Estate	03N/21W-21E01
									0.0	Rancho Attilio	2N/22W-2Q01
130.2	157.9	160.6	172.6	143.7	159.0	125.7	150.0	30.4	119.6	Rancho Filoso, LLC	03N/21W-09K03, 3N/21W-9K4
							0.0	(10.0)	10.0	Rancho Santa Paula, LLC	
0.0	0.0	0.0					0.0	0.0	0	Regents of the University of California (31)	3N/22W-34R1
1,225.2	1,017.1	1,092.2	1,114.4	1,268.1	1,343.5	1,094.6	1,165.0	401.5	763.5	Riverbank Citrus, LLC	3N/22W36K7 & 3N/22W36Q1, 3N22W36K05
							0.0	(16.2)	16.2	Riverpark A LLC	02N/22W-01M03, 02N/22W-01M04
185.1	439.2	245.4	325.7	268.4	198.3	265.7	275.4	(88.4)	363.8	Santana, Jamie, L. Trustee of the Survivor's Trust Under the Jamime L. Santana Family Trust dated May 30, 1984 as amended	3N/22W-24R01 (13) 03N/21W-17Q01 (5) 03N/21W-17Q01 (5) 3N21W17R01 (4) 3N21W9J01 (24) 2N22W03E01
4.2	3.6	8.3	5.0	10.4	7.9	7.7	6.7	(15.2)	21.9	Santa Paula Hay & Grain and Ranches	03N/21W-19A02
119.9	101.1	75.9	63.5	64.1	63.1	73.8	80.2	(53.8)	134.0	Saticoy Foods Corp.	03N/21W-30H05 (7), 3N/21W-30H6, 3N/21W-30H9
80.0	115.2	114.4	95.5	0.0	167.5	206.0	111.2	(56.1)	167.3	Sharp, J. M. Company	03N/21W-19M01, 19M02
69.9	85.1	87.6	80.4	81.4	69.6	98.8	81.8	9.6	72.2	Shozi Ventura, LLC	02N/22W-03B01, 02N/22W-03B02
51.4	64.1	103.6	72.9	73.3	78.2	71.2	73.5	11.4	62.1	Strata Holdings LP	03N/21W-17P02
					44.9	52.3	13.9	(93.6)	107.5	The Nature Conservency	3N/21W29K1, 29K02 & 29K4
103.6	162.3	134.4	148.1	74.38	71.76	191.19	126.5	58.5	68.0	Tucker Ranch	02N/22W-03K02, 2N/22W-3K3
206.3	315.4	206.0	247.6	187.2	206.5	165.7	219.3	86.8	132.5	TVC Pinkerton Ranch LLC (27)	3N21W-29B4
							0.0	(5.8)	5.8	Utility Vault (Newbasis is Parent Co)	3N/21W-29K03 D (8)
1.1	1.2	1.2	1.2	1.0	1.0	1.0	1.1	(6.9)	8.0	Vanoni, David or Mary - Mary Vanoni	02N/22W-02Q01
11.5	46.8	23.87	28.22	44.3	8.1	2.0	23.5	13.7	9.8	We 5 Properties (35)	02N/22W-02J03
1.3	2.0	2.2	1.5	1.0	1.0	1.0	1.4	(26.2)	27.6	Williams, James W. III	03N/22W-23G01
20.4	19.8	16.5	4.6	0.5			8.8	(28.7)	37.5	Wright, Scott	03N/21W-11H03
4.8	4.8	2.4	16.7	79.1	40.4	32.4	25.8	(5.2)	31.0	Yoon Family Trust, (Soo Han Yoon)	2N/22W-3L01

Table "D-1"

IPA's 2012 - 2018 Production & Averages

11/15/2019

2012 (2)	2013 (2)	2014 (2)	2015 (2)	2016 (2)	2017 (2)	2018 (2)	7 Year Average	Avg Over + Under (-)	Acre Feet	Party Name	Well Number
13.2	11.7	15.0	15.7	14.9	23.7	13.8	15.4	(5.4)	20.8	Zimmerman, Wade N. III and Patricia B. Zimmerman Trust	3N/21W-21E08 03N/21W-21D02
24,743.0	**25,456.5**	**26,504.2**	**23,181.8**	**22,168.7**	**19,041.5**	**19,558.0**	**22,950.5**	(4,673.5)	**27,510.7**	**Total Basin IPA Stipulated Parties**	
27,551.4	**27,551.4**	**27,551.4**	**27,551.4**	**27,551.4**	**27,551.4**	**27,551.4**	**27,551.4**		**27,551.4**	**Historical Association IPA With Non-Parties (40.7 AF)**	
25,823	**26,462**	**27,426**	**25,856**	**25,363**	**21,889**	**22,881**	**25,295**			**Total IPA, Ventura, Non-Parties and De Minimus**	
25,823	**26,479**	**27,445**	**25,856**	**25,363**	**21,889**	**22,880.67**				**United Water Conservation District Totals**	
(0.00)	(16.94)	(19.14)	0.00	0.00	0.00	0.00				**Over/Under Amounts (1) (3) (19)**	

Footnotes:

Archived notes: 1, 3, 6, 11, 12, 14, 16, 18, 19, 20, 31, 32, 33

(2) Source of production data for 2012, 2013, 2014, 2015, 2016, 2017 and 2018 was the United Water Conservation District, reviewed by the Association.

(4) Shared well amoung Bender Realty LTD, Santana, Jamie L. and McGaelic Group. Production is split in accorance with each parties metered use.

(5) Shared well need to determine how to allocate production between Santana and Pinkerton, Arlene.

(7) Saticoy Foods Well number 3N/21W-30H3 should be changed to 3N/21W-30H5.

(8) Newbasis is the reporting party, Utility Vault is parent.

(9) Shared well allocated 356.0 AF/Year of production for 2007 - 2013 between City of San Buenaventura & Hadley Williams Partnership: 64/36% of allocation, production meter to be installed to allocate produced water.

(10) Well number was added Oba.

(13) Shared well (3N/22W-24R01) between Leavens Ranches and Jamie Santana Family Trust. Production is reported separately.

(15) Garcia - Spelling correction

(17) Roger Clow is a 1/3 owner of the Shores well; however, Clow used 100% of the water for 2007 and 2008. Clow's usage totals 30.5 AF for 2007 and 61 AF for 2008 were reallocated from Shores.

(21) Michael Fiano stipulated in 2012, will be leasing all water pumped annually going forward, transfers to date were estimated, any remaining balances will be made current with 2014 recorded production.

(22) Bratcher Cutright IPA From Bender Farms, 6 acre-feet

(23) Bender Reality and Bender Farms are owned by the same person, Bender Farms transferred 4.6 AF to the City of Santa Paula in 2012 and 6.0 AF to Bratcher in 2014, minus numbers reflect remaining allocation for prior years, plus Bratcher reported production for the years reported to United Water Conservation District.

(24) Basso Properties Sold to Jaime Santana Trust 43.4 acre-feet with property

(25) Roger Orr as Trustee of the Orr Family Trust so the Orr Ranch Co. to Bryce R. and Elaine V. Bannatyne Co Trustees of the Bannatyne Trust

(26) County of Ventura over reported 158.62 acre-feet in 2013, (331.2+2.67-158.62=175.2) United Water Conservation Distrcit did not recognize that production correction in their records.

(27) Pinkerton, W. J. Estate Ranch 1 & 2, Sold to Pinkerton W. J. Estate Ranch 158.7 AF of IPA and 132.5 AF of IPA to TVC Pinkerton Ranch LLC in 2014, combined over production is reflected on TVC Pinkerton

(28) The Judson T. Cook & Suzette H. Cook Revocable Trust dated December 5, 2007 Purchased the Dabney, George and Rebecca Trust Inter Vivos in January 2018

(29) Bender Reality and Bender Farms sold property to JKJ Farms LLC with 225 acre-feet of allocation and JKJ later transferred 100 acre-feet to Brucker Family Trust

(30) Wittenberg-Livingston, Inc. sold 4 acre-feet to Little Clara Ranch and 20.8 acre-feet to Grant Family Ranches

(34) Silva allocation of 108 Acre-Feet was distributed to County of Ventura 47.5, Jakraan 45.1 and Riverpark A LLC 16.2

(35) 2014 Production was reduced to 5.9 AF from 15.01 using SCE Pump Test well was pumping air do to disrepair over recording, also 2015 was reduced to 21.61 from 40.28

Table "D-2"

De Minimus 2012-2018 Production & Averages

(Production Not to Exceed 5 AFY)

2012	2013	2014	2015	2016	2017	2018	7 Year Average	**Party Name**	**Well Number**
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	Chapman, Kenneth	3N/21W21F1
3.5	3.5	3.4	2.2	2.2	2.6	2.4	2.8	Chavez, Joel and Carmen	3N/21W21E07
0.0	0.0	0.0	0.0	1.0	2.6	3.6	1.0	Loza, Jesus and Veronica	3N/22W26L01S
8.6	4.3	4.3	3.3	3.9	8.1	10.0	6.1	Rogers, Charles W., Jason C. Rogers, and Aaron W. Rogers	2N/22W-1M2
3.6	3.6	4.1	4.2	4.2	4.7	5.0	4.2	Santa Paula Airport Association	3N21W14D01
3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	Sullivan, Russell J.	3N21W21L1
20.2	**15.9**	**16.3**	**14.2**	**15.8**	**22.5**	**25.5**	**18.6**	**Total De Minimus Producers**	

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Table "D-3"

Non-Party 2012-2018 Production & Averages

2012 (7)	2013 (7)	2014 (7)	2015 (7)	2016 (7)	2017 (7)	2018 (7)	2012-18 Average AFY Production	Name	Well Number
4.0	3.2	3.2	3.2	3.0	2.4	3.0	3.1	Davis, Linda Trust	3N21W21E04, 3N/21W-21E10 (2)
								Dominguez, G.(5) (0.9 AF)	03N/21W-12E07
						Stipulated in 2012		Fiano, Michael	3N/22W26B02 & 3
0.0	0.0		0.0	0.0			0.0	Garman, William (5) (2.0 AF)	02N/22W-02N04
						Stipulated in 2012		Grant Family Ranches, LLC	3N22W3E01 (1), 3N21W20E01 (2)
1.5	1.4	2.0	1.6	2.0	1.6	1.6	1.7	Minero, Gilbert (5) (1.1 AF)	03N/21W-21M01
3.6	3.8	4.4	6.3	10.6	11.0	10.7	7.2	Sanchez, Martin	3N/21W-21E6
				3.5				Sullivan, Russell J.	3N21W21L1
								Ventura Unified School District (5) (30.8 AF)	02N/22W-03P01
2.0	1.0	2.0	1.8	2.0	1.9	1.6	1.8	Vint, Thomas H. (5) (4.9 AF)	03N/21W-21E03
5.0	5.0	5.0	1.6	1.1	2.2	2.2	3.2	Westerdale Trust (5) 1.0 AF)	03N/21W-21G01
16.1	**14.4**	**16.6**	**14.5**	**22.2**	**19.1**	**19.2**	**16.9**	**Total Average AFY Production (Average 2012-2018)**	

Footnotes to Non-Stipulating Pumpers

Achived footnotes: 3, 4, 6

40.7 Acre-Feet for Non Parties from original Judgment

(1) Incorrect well number.

(2) Added well number.

(5) Non-party individuals named in the Original Judgment, 40.7 Acre-Feet 7/28/2011

(7) Source of production data for 2011, 2012, 2013, 2014, 2015, 2016, 2017 and 2018 was the United Water Conservation District, reviewed by the Association.

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Table "D-4"
Temporary Water Transfers

11/15/2019

2012	2013	2014	2015	2016	2017	2018	7 Year Average	Avg Over + Under (-)	AF Annual Allocation	Transfering Parties
2,348	2,808	2,419	2,723	2,248	1,797	1,702	2,292.3	(1,257)	3,549	**Limoneira Company**
689.5	1,242.0	674.0	756.2	441.0	364.9	660.0				**To:** Canyon Irrigation Company
72.5	120.4	136.1	79.8			39.4				**To:** Canyon Irrigation Company for Rancho La Cuesta
413.0	160.7	231.0	250.0	526.4						**To:** Riverbank Citrus LLC
20.0	37.0	49.0								**To:** Fiano, Michael J. Trust
		135.1								**To:** Leavens Ranches
		74.5								**To:** Regents of the University of Californnia
-62.2	(62.2)	(62.2)	(62.2)	(62.2)						**To:** City of Santa Paula (2016 Permanent Transfer)
2.0										**To:** Dabney/Cook
	146.2	90.0	132.0	43.0						**To:** Tucker Ranch
	28.1	35.0	24.0		17.0					**To:** Gooding Ranch
3483.0	4,452.3	3,781.8	3,902.8	3,196.4	2,178.7	2,401.6	3,342.4	(207)	3,549	**Limoneira Company Balance**
27.2	44.7	33.8	43.3	30.1	14.7	11.4	29.3	29	-	**Fiano, Michael J. Trust**
-20.0	-37.0	-49.0								**From:** Limoneira Company
			-43.3	-30.09	-8.41					**From:** Malzacher, Fred H & Elaine Trust
7.2	7.7	-15.2	0.0	0.0	6.3	11.4	2.5	2.49	-	**Fiano, Michael J. Trust Balance**
30.3	30.3	7.2	8.9	18.7	20.6	23.1	19.9	(16)	36	**Malzacher, Fred H. & Elaine C., Trustees of the Fred H**
			43.3	30.1	8.4	0.0				**To: Fiano, Michael j. Trust**
30.3	30.3	7.2	52.2	48.8	29.0	23.1	31.5	(4.76)	36	**Malzacher, Fred H. & Elaine C. Balance**
9,443.5	8,294.6	9,543.8	7,431.2	7,730.0	5,459.6	6,002.2	7,700.7	(2,213)	9,913	**Farmers Irrigation Company**
			33.0		123.4	128.0				**To:** Canyon Irrigation Company
		185.4	5.6							**To:** Brucker Family Trust
77.7	56.4	51.2	63.4	77.2	52.4	70.2				**To:** Ortiz Trust - Joseph & Sons
	98.9									**To:** Bender Reality LTD
	32.9									**To:** Rancho Filoso, LLC
					28.3	39.1				**To:** Schozi Ventura
190.0	306.0	150.0	170.0	85.0	85.0	132.0				**To:** McGrath, John & Sons
				426.3	145.8					**To:** Alta Mutual Water Company
	3.9	3.3			3.7					**To:** Aramblua, Pedro
					295.6	220.4				**To:** Riverbank Citrus
		100.0	100.0							**To:** Strata Holdings LP
	4.5	9.4								**To:** Grant Family Ranches
	113.4			116.1						**To:** TVC Pinkerton Ranch LLC
9,711.2	8,910.6	10,043.1	7,803.1	8,434.6	6,193.9	6,591.9	8,241.2	(1,672.0)	9,913	**Farmers Irrigation Company Balance**
1442.4	2069.1	2013.9	1,526.5	1,342.9	772.5	819.5	1,426.7	754	673	**Canyon Irrigtion Company**
0.0	0.0	0.0	-33.0	0.0	-123.4	-128.0	(40.6)			**To:** City of Santa Paula
0.0	0.0	0.0								**Returned to Creek**
0.0	0.0	0.0	33.0	0.0	123.4	128.0				**From:** Farmers Irrigation Company
-72.5	-120.4	-136.1	-79.8							**From:** Limoneira Company for La Cuesta over use
-689.5	-1242.0	-674.0	-756.2	-441.0	-364.9	-699.3				**From:** Limoneira Company
680.4	706.6	1203.8	690.5	901.9	407.6	120.2	673.0	(0.00)	673	**Canyon Irrigation Company Balance**
4,771.4	5,054.0	4,691.7	4,012.9	3,932.1	4,105.0	4,077.4	4,377.8	(1,182)	5,560	**City of Santa Paula**
0.0	0.0	0.0	-33.0	0.0	-123.4	-128.0	(40.6)			**From:** Canyon Irrigation Company
62.2	62.2	62.2	62.2	62.2						**From:** Limoneira Company (62.2 Permenant Transfer '16)
4,833.6	5,116.2	4,753.9	4,042.0	3,994.3	3,981.5	3,949.3	4,381.5	(1,179)	5,560	**City of Santa Paula Balance**

Table "D-4"
Temporary Water Transfers

11/15/2019

2012	2013	2014	2015	2016	2017	2018	7 Year Average	Avg Over + Under (-)	AF Annual Allocation	Transfering Parties
212.5	212.5	295.51	286.57	221.98	245.96	268.53	249.1	(62)	311.2	**Dickenson, D&P Dickenson Family Revocable Tr.**
13.8										**To:** Gooding Ranch (John F. Gooding)
226.3	212.5	295.51	286.57	221.98	245.96		212.7	(99)	311.2	**Dickenson, D&P Dickenson Family Rev. Tr Balance**
115.6	128.9	136.29	125.06	34.3	136.57	112.38	112.7	11	101.8	**Gooding Ranch (John F. Gooding)**
-13.8										**From:** Dickeson, D&P Dickenson Family Rev. Tr.
	-28.1	-35.0	-24.0		-17.0					**From:** Limoneira Company
101.8	100.8	101.29	101.06	34.3	119.57	112.38	95.9	(5.9)	101.8	**Gooding Ranch (John F. Gooding) Balance**
176.5	149.6	124.8	162.9	123.7	85.8	66.6	127.1	(54)	181.6	**McGaelic Group**
		48.8			75.0	51.0				**To:** McGrath, John & Sons (Permanent Transfer of 55.9)
176.5	149.6	173.6	162.9	123.7	160.8	117.6	152.1	(29)	181.6	**McGaelic Group Balance**
69.9	85.1	87.6	80.4	81.4	69.6	98.8	81.8	10	72.2	**Shozi Ventura, LLC**
					-28.3	-39.1				**From: Farmers Irrigaton Company**
69.9	85.1	87.6	80.4	81.4	41.3	59.8	72.2	-	72.2	**Shozi Ventura, LLC Balance**
0	0	0					-	-	0.0	**From: Shores, John Family Partnership**
85.4	-439.7									**To:** McGrath, John & Sons (Permanent Transfer of 126.7)
85.4	-439.7	0.0					(0.0)	(0)	0.0	**Shores, John Family Partnership Balance**
356.8	570.6	392.0	479.9	296.6	447.3	430.8	424.9	141	283.6	**McGrath, John & Sons**
		-48.8			-75	-51				**From:** McGaelic Group
										From: The Nature Conservency
										From: Shores, John Family Partnership
-190	-306.0	-150.0	-170.0	-85.0	-85.0	-132.0	(116.6)			**From:** Farmers Irrigation Company
166.8	264.6	193.2	309.9	211.6	287.3	247.8	240.2	(43.4)	283.6	**McGrath, John & Sons Balance**
0.0	0.0	0.0					-	-	0.0	**Regents of the University of California**
0.0	0.0	0.0					-			**From:** Leavens Ranches
0.0	0.0	0.0					-	-	0.0	**Regents of the University of California Balance**
0.0	0.0	0.0	0.0				-	-	0.0	**WH Ventura 165 LLC (Regents)**
-60.0	-52.0	172.0					8.6			**From: Leavens Ranches**
		-74.5	0.0				(10.6)			**From: Limoneira Company**
-60.0	-52.0	97.5	0.0				(2.1)	(2)	0.0	**WH Ventura 165 LLC**
178.5	176.5	235.5	195.0	159.1	171.3	120.0	176.5	(19)	195.3	**From: Leavens Ranches**
0.0	0.0									**To:** Regents of the University of California
		-135.1								**From:** Limoneira Company
178.5	176.5	100.4	195.0	159.1	171.3	120.0	157.2	(38.1)	195.3	**Leavens Ranches Balance**
1225.2	1017.1	1092.2	1114.4	1268.1	1343.5	1094.6	1,165.0	401	763.5	**Riverbank Citrus LLC**
-413.0	-160.7	-231.0	-250.0	-526.4						**From:** Limoneira Company
					-295.6	-220.4				**From:** Farmers Irrigation Company
-48.7	-141.9	-98.3	-100.9	-105.6	-107.1	-110.9				**From:** Nutwood Farms
763.5	714.5	762.9	763.5	636.1	940.8	763.3	763.5	-	763.5	**Riverbank Citrus LLC Balance**
25.9	33.5	28.1	25.5	23.4	19.3	15.6	24.5	(102)	126.4	**Nutwood Farms**
48.7	141.9	98.3	100.9	105.6	107.1					**To:** Riverbank Citrus LLC
74.6	175.4	126.4	126.4	129.0	126.4	15.6	110.6	(16)	126.4	**Nutwood Farms Balance**
3.8	1.2	1.1	0.5	1.0	1.6	1.6	1.5	(8)	10.0	**Little Clara Ranch LLC**

Table "D-4"
Temporary Water Transfers

11/15/2019

2012	2013	2014	2015	2016	2017	2018	7 Year Average	Avg Over + Under (-)	AF Annual Allocation	Transfering Parties
										To: We 5 Properties
3.8	1.2	1.1	0.5	1.0	1.6	1.6	1.5	(8)	10.0	**Little Clara Ranch Balance**
11.5	46.8	23.9	28.2	44.3	8.1	2.0	23.5	14	9.8	**We 5 Properties**
										From: Little Clara Ranch LLC
	-30.2	0.0	-42.98	-28.77						**From:** Alta Mutual Water Company
11.5	16.6	23.9	-14.8	15.5	8.1	2.0	9.0	(0.82)	9.8	**We 5 Properties Balance**
0.0	0.0	0.0	0.0	0.0	44.9	52.3	13.9	(94)	107.5	**The Nature Conservency**
			70.0							**To: County of Ventura Gen Services Agency Jail**
				100.0						**To: Alta Mutual Water Company**
107.5	107.5	100.0								**To:** Brucker Family Trust
107.5	107.5	100.0	70.0	100.0	44.9	52.3	83.2	(24.3)	107.5	**The Nature Conservancy Balance**
379.0	363.0	561.9	237.0	266.7	242.8	383.5	347.7	71	276.5	**Brucker Family Trust**
-107.5	-107.5	-100								**From:** The Nature Conservency
		-185.4	-5.6	-51.7						**From:** Farmers Irrigation Company
271.5	255.5	276.5	231.5	215.1	242.8	383.5	268.0	(8.45)	276.5	**Brucker Family Trust Balance**
116.3	95.0	89.8	102.0	115.8	91.0	108.8	102.7	64	38.6	**Ortiz Trust - Joseph & Sons**
-77.7	-56.4	-51.2	-63.4	-77.2	-52.4	-70.2				**From:** Farmers Irrigation Company
38.6	38.6	38.6	38.6	38.6	38.6	38.5	38.6	-	38.6	**Ortiz Trust - Joseph & Sons Balance**
5.9	9.9	8.9	11.8	13.2	10.4	7.3	9.6	0	9.6	**The Judson T. Cook & Suzette H. Cook Revocable Trus**
-2.0				-11.6						From: Limoneira Company
3.9	9.9	8.9	11.8	1.6	10.4	7.3	7.7	(1.92)	9.6	**The Judson T. Cook & Suzette H. Cook Revocable Trust dat**
757.6	241.0	1,018.4	1,175.1	1,386.5	709.1	745.7	861.9	99	763.1	**Alta Mutual Water Company**
				(100.0)						**From:** The Nature Conservency
				(26.6)	(23.2)					**From:** Wallace, James III
	30.2									**To:** We 5 Properties
				-426.3	-145.8					**From: Farmers Irrigation Company**
757.6	271.2	1018.4	1175.1	833.6	540.1	745.7	763.1	0.0	763.1	**Alta Mutual Water Company Balance**
103.6	162.34	134.36	148.11	74.38	71.76	191.19	126.5	59	68.0	**Tucker Ranch**
	-146.2	-90.0	-132.0	-43.0						From: Limoneira Company
				37.5	2.1					To: Yoon Family Trust
103.6	16.1	44.4	16.1	68.9	73.8	191.2	73.4	5.4	68.0	**Tucker Ranch Balance**
10.3	10.3	6.21	4.43	2.91	5.08	1.33	5.8	3	2.9	**Arambula, Pedro**
	-3.9	-3.3			-3.7					From: Farmers Irrigation Company
	-3.5									From: Correction of Reporting to United (3)
10.3	2.9	2.9	4.4	2.9	1.4	1.3	2.1	(0.83)	2.9	**Arambula, Pedro Balance**
1.3	2	2.2	1.5	1	1	1	1.4	(26)	27.6	**Williams, James W. III**
				26.6	23.2					**To:** Alta Mutual Water Company
1.3	2	2.2	1.5	27.6	24.2	1	8.2	(19)	27.6	**Williams, James W. III**
298.3	387.5	273.7	247.8	188.2	221.9	246.8	266.3	(26)	292.6	**Bender Reality, LTD & Bender Farms**
	-98.9									From: Farmers Irrigation Company
298.28	288.6	273.7	247.8	188.2	221.9	246.8	252.2	(40)	292.6	**Bender Reality, LTD & Bender Farms**
13.3	13.5	13.9	6.8	6.5	20.7	19.1	13.4	4	9.6	**Garcia, Elias & Guadalupe**

Table "D-4"
Temporary Water Transfers

11/15/2019

2012	2013	2014	2015	2016	2017	2018	7 Year Average	Avg Over + Under (-)	AF Annual Allocation	Transfering Parties
	-3.9	-4.3			-2.4					From: Castaneda, Albert & Mary
13.31	9.6	9.6	6.8	6.5	18.3	19.1	11.9	2.28	9.6	**Garcia, Elias Balance**
44.7	63.8	88.0	140.0	65.6	71.1	60.4	76.2	(25)	101.4	**Castaneda, Albert & Mary**
	3.9	4.3			2.4					To: Garcia, Elias & Guadalupe
44.67	67.7	92.3	140.0	65.6	73.5	60.4	77.7	(24)	101.4	**Castaneda, Albert & Mary**
60.0	36.6	41.5	31.4	31.6	44.2	33.2	39.8	(13)	52.9	**Grant Family Ranches**
	-4.5	-9.4								From:Farmers Irrigation Company
60	32.1	32.1	31.4	31.6	44.2	33.2	41.6	(11)	52.9	**Grant Family Ranches Balance**
130.2	157.9	160.6	172.6	143.7	159.0	125.7	150.0	30	119.6	**Rancho Filoso, LLC**
		-11.2	-65.0	-28.7	-65.5					From: JM Sharp Company
	-32.9									From:Farmers Irrigation Company
130.22	125.0	149.4	107.6	115.0	93.5	125.7	120.9	1.3	119.6	**Ranch Filoso, LLC Balance**
79.99	115.15	114.37	95.47	0	167.48	206.02	111.2	(56.1)	167.3	**Sharp, JM Compnay**
		11.2	65.0	28.7	65.5					To: Rancho Filloso
				15.0						Cook, The Judson T. Cook & Suzette H. Cook Revocable
79.99	115.15	125.57	160.47	43.7	233.01	206.02	137.7	(29.6)	167.3	**Sharp, JM Company Balance**
5.9	9.9	8.9	11.8	13.2	10.4	7.3	9.6	0.0	9.6	**Cook, The Judson T. Cook & Suzette H. Cook**
				-15.0						From: Sharp, JM Company
5.9	9.9	8.9	11.8	(1.8)	10.4	7.3	7.5	(2.1)	9.6	**Cook, The Judson T. Balance**
206.31	315.42	206.04	247.64	187.17	206.53	165.65	219.3	86.8	132.5	**TVC Pinkerton Ranch LLC (27)**
-47.65	-16.23	-31.47								From: Pinkerton, W. J. Estate Ranch
	-113.4	-69.8	-116.1	-116.1						From: Farmers Irrigation Company
158.66	185.79	104.77	131.50	71.12	206.53	165.65	146.3	13.8	132.5	**TVC Pinkerton Ranch LLC Balance**
111.05	142.47	127.23	0	0	0		54.4	104.3	158.7	**From: Pinkerton W. J. Estate Ranch**
47.65	16.23	31.47					289.3			**To: TVC Pinkerton Ranch LLC**
158.7	158.7	158.7	0.0	0.0	0.0		68.0	(90.7)	158.7	**TVC Pinkerton Ranch LLC Balance**
51.44	64.07	103.6	72.93	73.31	78.24	71.22	73.5	0.0	62.1	**Strata Holdings LP**
		-100.0	-100.0							From: Farmers Irrigation Company
51.44	64.07	3.6	-27.07	73.31	78.24	71.22	45.0	(17.1)	62.1	**Strata Holding LP Balance**
70.05	175.15	168.18	142.3	121.33	238.58	204.3	160.0	(12.2)	172.2	**County of Ventura, General Services Agency**
			-70							**From:** The Nature Conservancy
70.05	175.15	168.18	72.3	121.33	238.58	204.3	150.0	(22.2)	172.2	**County of Ventura, General Services Agency Jail Bal**
4.8	4.8	2.4	16.66	79.09	40.41	32.43	25.8	(5.2)	31.0	**Yoon Family Trust**
				-37.54	-2.05		(5.4)			**From: Tucker Ranch**
4.8	4.8	2.4	16.66	41.55	38.36	32.43	20.1	(10.9)	31.0	**Yoon Family Trust Balance**

Table "D-5"

Original and Acquired Allocation of the City of San Buenaventura

11/15/2019

2012 (7)	2013 (7)	2014 (7)	2015 (7)	2016 (7)	2017 (7)	2018 (7)	7 Year Average	Over (+) Under (-)	Acre Feet	Party Name	Well Number
227.8	227.8	162.4	229.1	243.4	212.8	182.2	212.22	(7.8)	220.0	City of San Buenaventura	02N/22W-03E01 (1)
									5.8	City of San Buenaventura	3N/21W-21B3
61.0	74.5	97.6	97.8	15.4			49.47	26.4	23.1	City of San Buenaventura	3N/22W-34R1, 3N21W20F04
									12.0	City of San Buenaventura	03N/22W-35N01
288.8	302.3	260.0	326.9	258.8	212.8	182.2	261.69	0.8	**260.9**	**Total Aquired by City of San Buenaventura**	

754.7	672.9	629.0	2,318.3	2,897.6	2,593.3	3,095.9	1,851.67	(1,148.3)	3,000.0	City of San Buenaventura	02N/22W-02K09 (2) 2N/22W-02H02 (8)
1,043.5	975.2	889.0	2,645.2	3,156.3	2,806.1	3,278.0	2,113.36	(1,147.5)	**3,260.9**	**Total City of San Buenaventura**	

FOOTNOTES:
Archived footnotes: 4, 5, 6
(1) Shared well allocated 356.0 AF/Year of production for 2007 to 2013 between City of San Buenaventura and Hadley Williams Partnership by 64/36% of allocation a production mete
(2) Well number was added.
(3) McConica allocation transfer.
(7) Source of production data for 2012, 2013, 2014, 2015, 2016, 2017 and 2018 was the United Water Conservation District, reviewed by the Association.
(8) New well put online in 2015.
(9) Permanent water transfer from J Fam, LLC to City of Ventura in 2015 (12.0 AF)
(10) Permanent water transfer from WH Ventura 165 LLC to City of Ventura, 2016 (23.1 AF)

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