Salinas Valley Groundwater Basin
180/400-Foot Aquifer Subbasin
Water Year 2021 Annual Report
Submitted in Support of Groundwater Sustainability Plan Implementation

Salinas Valley Basin
Groundwater Sustainability Agency

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ABBREVIATIONS AND ACRONYMS

AF ....acre-feet
AF/yr. ....acre-feet per year
CAO ....County Administrative Office
CBI ....Consensus Building Institute
CCRWQCB.......Central Coast Regional Water Quality Control Board
COC ....Constituent(s) of concern
CSIP ....Castroville Seawater Intrusion Project
DAC ....Disadvantaged Communities
DDW ....Division of Drinking Water
D-TAC ....Drought Operations Technical Advisory Committee
DWR ....California Department of Water Resources
eWRIMS ....Electronic Water Rights Information Management System
GEMS ....Groundwater Extraction Management System
GSA...................Groundwater Sustainability Agency
GSP or Plan.......Groundwater Sustainability Plan
GSP Amendment Amendment to the 180/400-Foot Aquifer Subbasin GSP
ILRP ....Irrigated Lands Regulatory Program
InSAR ....Interferometric Synthetic-Aperture Radar
ISW ....interconnected surface waters
MCGSA ....Monterey County Groundwater Sustainability Agency
MCL ....Maximum Contaminant Level
MCWRA ....Monterey County Water Resources Agency
mg/L ....milligram/Liter
MOU ....Memorandum of Understanding
SGMA ....Sustainable Groundwater Management Act
SMC ....Sustainable Management Criteria/Criterion
SMCL................Secondary Maximum Contaminant Level
SRDF.................Salinas River Diversion Facility
Subbasin............180/400-Foot Aquifer Subbasin
SVBGSA...........Salinas Valley Basin Groundwater Sustainability Agency
SVIHM.............Salinas Valley Integrated Hydrologic Model
SVRP.................Salinas Valley Reclamation Project
SWIG ....Seawater Intrusion Working Group
SWRCB.............State Water Resources Control Board
USGS ................U.S. Geological Survey
WY ....Water Year

EXECUTIVE SUMMARY

The Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) is required to submit an annual report for the 180/400-Foot Aquifer Subbasin (Subbasin) to the California Department of Water Resources (DWR) by April 1 of each year following the SVBGSA's 2020 adoption and submittal of its Groundwater Sustainability Plan (GSP or Plan), which DWR approved in June 2021. This Annual Report covers data collected for Water Year (WY) 2021, from October 1, 2020, to September 30, 2021.

As described in the GSP, DWR lists the Subbasin as a high priority subbasin in critical overdraft, which indicates that continuation of present water management practices would probably result in significant adverse impacts. The goal of the 180/400-Foot Aquifer Subbasin GSP is to balance the needs of all water users in the Subbasin while complying with SGMA.

In 2021, SVBGSA began drafting a 2-Year GSP Amendment to the 180/400-Foot Aquifer Subbasin GSP (GSP Amendment) to align the 180/400-Foot Aquifer Subbasin with the other 5 SVBGSA GSPs in approach and timing. SVBGSA will submit the GSP Amendment to DWR in 2022 as an amendment according to GSP Regulation § 355.10, replacing the original 2020 GSP. Although not formally submitted prior to the submittal of this Annual Report, this Annual Report includes additional groundwater level monitoring wells that will be part of expanded groundwater level monitoring network and shallow wells that will be part of the interconnective surface water (ISW) monitoring network in the GSP Amendment.

In WY 2021, groundwater conditions remained similar to conditions in recent years, with slight changes in conditions related to specific sustainability indicators. WY 2021 is classified as a dry year.

The groundwater data for WY 2021 are summarized below:

- Groundwater extractions for reporting year 2021 (November 1, 2020 through October 31, 2021) were approximately 127,000 acre-feet (AF). Pumping in WY 2021 was 14,800 AF more than the minimum threshold established for the change in groundwater storage Sustainable Management Criterion (SMC). This does not include the estimate for rural domestic pumping because the long-term sustainable yield in the GSP only includes urban and agricultural pumping. The minimum threshold is set to the long-term sustainable yield after sustainability has been achieved, and therefore it does not account for additional pumping reductions that may be necessary to reach sustainability.

- Groundwater elevations decreased slightly during this dry water year, with most wells showing elevations above their minimum thresholds and 2 wells above their measurable objectives.
- Seawater intrusion continued in the Subbasin, but intrusion rates continued to show minimal advancement in WY 2021, similar to the previous year.
- There were 18 groundwater quality constituents of concern (COC) that exceeded their minimum thresholds WY 2021. One new constituent—perchlorate—was added to the list of COC for the Subbasin because it had an exceedance of the regulatory drinking water standard in WY 2021.
- No subsidence was detected in the Subbasin.
- Currently, insufficient data exist to measure depletion of ISW according to the SMC in the original GSP. However, the GSP Amendment under development currently shifts the metric to ISW to shallow groundwater elevations as proxies. SVBGSA will change the metric used to assess the ISW SMC once the GSP Amendment is submitted.

Since GSP submittal in January 2020, the SVBGSA has taken numerous actions to implement the GSP. These include:

- **Coordination and engagement** – for example, SVBGSA established the 180/400-Foot Aquifer Subbasin Implementation Committee, strengthened the relationship with MCWRA, contracted the Consensus-Building Institute (CBI) to develop a work program for meaningful engagement with underrepresented communities, and continued to regularly engage stakeholders through its Advisory Committee and Board of Directors.
- **Data and monitoring** – including expanding the groundwater level monitoring network and beginning to establish the ISW monitoring network.
- **Planning activities** – during WY 2021, SVBGSA worked on the development of the 5 other Salinas Valley GSPs, ensuring they aligned with the 180/400-Foot Aquifer Subbasin GSP, particularly with regards to selecting SMC that would not prevent the 180/400-Foot Aquifer Subbasin from avoiding undesirable results. SVBGSA also began to address DWR's recommended corrective actions, such as the water quality undesirable result.
- **Project implementation activities** – SVBGSA, MCWRA, and Monterey County moved forward with actions to begin implementing the GSP, including:
    - Continuing to convene the Seawater Intrusion Working Group (SWIG).

- Creating the Deep Aquifer Study Cooperative Funding Partnership and releasing the Request for Qualifications for the study.
- Funding expansion of the Seawater Intrusion Model to cover all potentially seawater intruded areas of the Salinas Valley.
- Submitting a Sustainable Groundwater Management Act (SGMA) Implementation Grant application for the 180/400-Foot Aquifer Subbasin and USBR WaterSmart Grant.
- Continuing well destruction in the coastal area to prevent vertical migration of seawater and nitrates.
- Continuing to convene MCWRA's Drought Technical Advisory Committee (D-TAC).

1 INTRODUCTION

1.1 Purpose

The 2014 California Sustainable Groundwater Management Act (SGMA) requires that, following adoption of a Groundwater Sustainability Plan (GSP), Groundwater Sustainability Agencies (GSAs) annually report on the condition of the basin and show that the GSP is being implemented in a manner that will likely achieve the sustainability goal for the basin.

The sustainability goal of the 180/400-Foot Aquifer Subbasin is to manage the groundwater resources of the 180/400-Foot Aquifer Subbasin for long-term community, financial, and environmental benefits to the Subbasin's residents and businesses. This goal of this GSP is to ensure long-term viable water supplies while maintaining the unique cultural, community, and business aspects of the Subbasin. It is the express goal of this GSP to balance the needs of all water users in the Subbasin.

This report fulfills that requirement for the Salinas Valley – 180/400-Foot Aquifer Subbasin (Subbasin). This is the third annual report and includes monitoring data for Water Year (WY) 2021, which is from October 1, 2020, to September 30, 2021. This Annual Report includes a description of basin conditions through text, hydrographs, groundwater elevation contour maps, calculated estimates of change in groundwater in storage, and maps of the distribution of groundwater extraction across the Subbasin. It compares WY 2021 data to Sustainability Management Criteria (SMC) as a measure of the Subbasin's groundwater conditions with respect to the sustainability goal that must be reached by the end of 2040.

1.2 180/400-Foot Aquifer Subbasin Groundwater Sustainability Plan

In 2017, local GSA-eligible entities formed the Salinas Valley Basin Groundwater Sustainability Agency (SVBGSA) to develop and implement the GSPs for the Salinas Valley. The SVBGSA is a Joint Powers Authority with membership comprising the County of Monterey, Monterey County Water Resources Agency (MCWRA), City of Salinas, City of Soledad, City of Gonzales, City of King, Castroville Community Services District, and Monterey One Water.

The SVBGSA developed the GSP for the 180/400-Foot Aquifer Subbasin, identified as California Department of Water Resources (DWR) subbasin 3-004.01, in coordination with the Marina Coast Water District Groundwater Sustainability Agency and the County of Monterey Ground Water Sustainability Agency (MCGSA), each of which has exclusive jurisdiction over part of the 180/400-Foot Aquifer Subbasin. DWR has designated the 180/400-Foot Aquifer Subbasin as a critically overdrafted basin, which indicates that continuation of present water management practices would probably result in significant adverse impacts.

The SVBGSA developed the GSP for the 180/400-Foot Aquifer Subbasin in concert with the 5 other Salinas Valley Subbasin GSPs that fall partially or entirely under its jurisdiction: the Eastside Aquifer Subbasin (DWR subbasin 3-004.02), the Forebay Aquifer Subbasin (DWR subbasin 3-004.04), the Upper Valley Aquifer Subbasin (DWR subbasin 3-004.05), the Langley Area Subbasin (DWR subbasin 3-004.09), and the Monterey Subbasin (DWR subbasin 3-004.10). This Annual Report covers all the 89,700 acres of the 180/400-Foot Aquifer Subbasin, as shown on Figure 1.

In 2021, SVBGSA began drafting a 2-Year Update to the 180/400-Foot Aquifer Subbasin GSP (GSP Amendment). In 2022, the 5 other Salinas Valley subbasins under the authority of SVBGSA submitted GSPs. The GSP Amendment is developed to align all SVBGSA GSPs in approach and timing. The GSP Amendment incorporates additional data about current conditions, adds clarifications identified during development of the 2022 Salinas Valley GSPs, addresses recommended actions from DWR's review of the original GSP, and incorporates additional regulatory requirements. SVBGSA will submit the GSP Amendment to DWR in 2022 as an amendment according to GSP Regulation § 355.10, replacing the original 2020 GSP. Although not formally submitted prior to the submittal of this Annual Report, this Annual Report includes additional groundwater level monitoring wells that will be part of expanded groundwater level monitoring network and shallow wells that will be part of the ISW monitoring network in the GSP Amendment. The water quality current conditions analysis and SMC are also revised in the GSP Amendment to include all constituents monitored under Title 22 for drinking water wells and the Water Quality Control Plan for the Central Coastal Basin for irrigation wells. The revised analysis and SMC are used in this Annual Report.

1.3 Organization of This Report

This Annual Report corresponds to the requirements of GSP Regulations § 356.2. The Report first outlines the subbasin conditions, including several components of the Regulations: groundwater elevations, groundwater extractions, surface water use, total water use, and change in groundwater storage. The Report then addresses GSP implementation by reporting on actions taken to implement the Plan, and progress toward interim milestones.

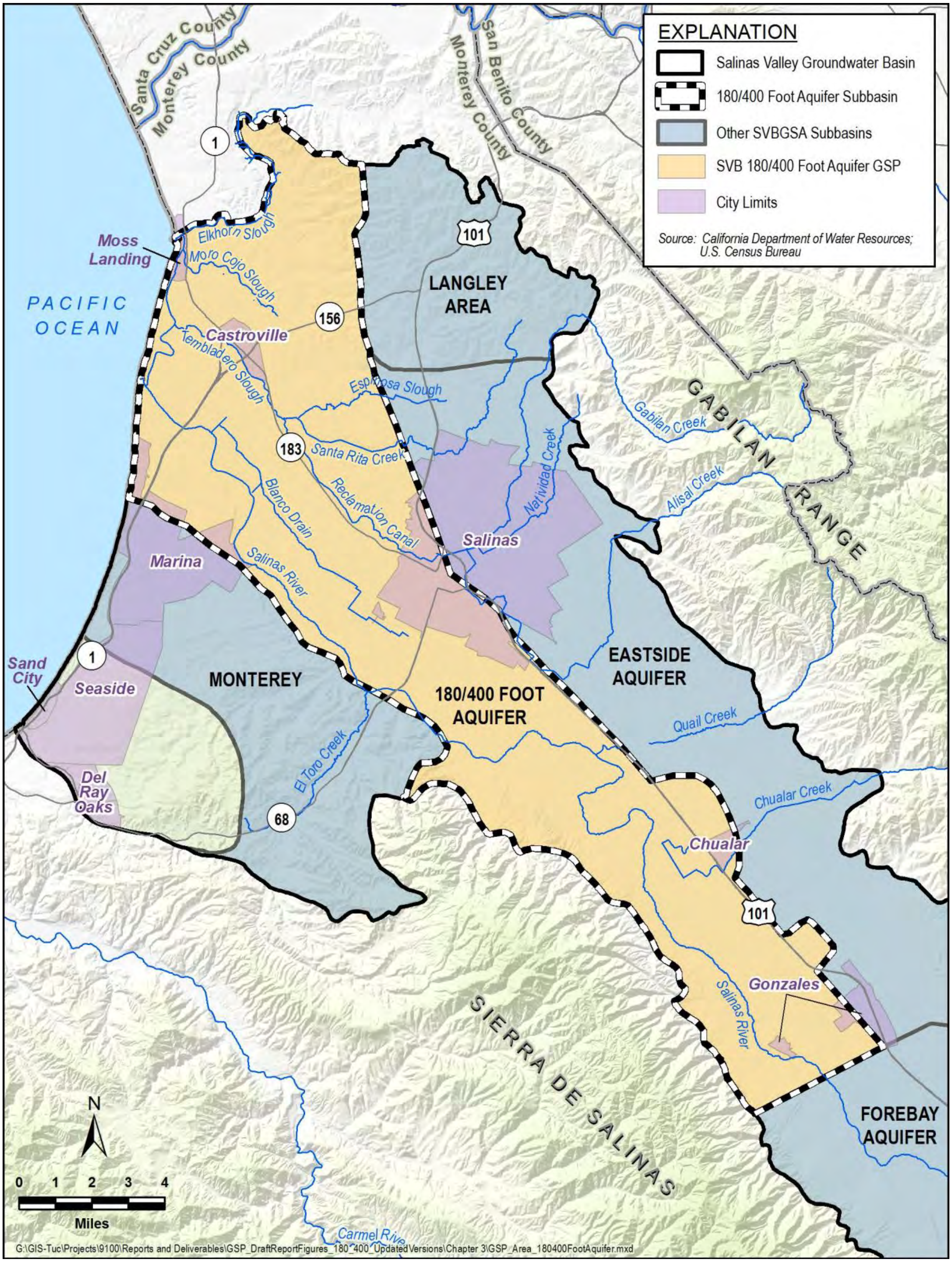

Figure 1. 180/400-Foot Aquifer Subbasin

2 SUBBASIN SETTING

The 180/400-Foot Aquifer Subbasin is a high-priority groundwater subbasin in northwestern Monterey County that includes the northern end of the Salinas River Valley. The Salinas River flows into the Subbasin from the south and discharges into Monterey Bay in the north. Subbasin boundaries are determined in part by geologic structures and depositional changes that influence groundwater flow. The northern boundary of the 180/400-Foot Aquifer Subbasin follows the current course of Elkhorn Slough and corresponds to a paleo-drainage of the Salinas River that limits groundwater flow between basins (Durbin, *et al.*, 1978). The boundary with the Langley Subbasin to the northeast is based on a topographic change from the valley floor to an elevated foothill area, but there is no hydraulic barrier to groundwater flow. To the east, hydraulic connectivity is restricted by depositional changes along the border with the Eastside Aquifer. To the southeast, there is hydraulic connectivity with the Forebay Subbasin. To the southwest, the boundary with the Monterey Subbasin is based on topographic rise that coincides with a buried trace of the Reliz fault, which may act as a groundwater flow barrier (Durbin, *et al.,* 1978). There is no sign of the fault affecting groundwater flow in the sediments that contain the 180-Foot Aquifer or the 400-Foot Aquifer based on observed groundwater elevation and seawater intrusion conditions across the Subbasin boundary (HLA, 1994; Feeney and Rosenberg, 2003). However, more data are needed to determine the extent of hydraulic connectivity in all principal aquifers. Finally, there is no hydraulic barrier between the 180/400-Foot Aquifer Subbasin and the Monterey Bay.

2.1 Principal Aquifers and Aquitards

Vertically, the shallowest water-bearing sediments are not considered a principal aquifer because they are thin, laterally discontinuous, and a minor source of water. Groundwater in these shallow sediments is hydraulically connected to the Salinas River but poorly connected to the underlying productive principal aquifers: the 180-Foot, 400-Foot, and Deep Aquifers. The base of the shallow sediments is the Salinas Valley Aquitard, which overlies and confines the 180-Foot Aquifer. The 180-Foot Aquifer consists of interconnected sand and gravel beds that are 50 to 150 feet thick. Below the 180-Foot Aquifer, the 180/400-Foot Aquitard confines the 400-Foot Aquifer. The 400-Foot Aquifer is a relatively permeable horizon that is approximately 200 feet thick near Salinas; but in other areas the aquifer is split into multiple permeable zones by clay layers (DWR, 1973). Below the 400-Foot Aquifer, the 400-Foot/Deep Aquitard confines the Deep Aquifers, also referred to as the 900-Foot and 1500-Foot Aquifers. There are limited data available for the Deep Aquifers.

2.2 Natural Groundwater Recharge and Discharge

Groundwater can discharge from the aquifer in locations where surface water and groundwater are interconnected and gaining streamflow conditions occur. There are potential locations of interconnected surface water (ISW) mainly along the Salinas River where the Salinas Valley Aquitard does not exist. In areas of interconnection, groundwater dependent ecosystems may depend on groundwater emerging from aquifers or on groundwater occurring near the ground surface, and may discharge groundwater through evapotranspiration. Natural groundwater recharge occurs through deep percolation of surface water deep percolation of excess applied irrigation water, and deep percolation of precipitation.

2.3 Precipitation and Water Year Type

Precipitation that falls within the Subbasin contributes to runoff and percolation components of the water budget. The precipitation gage at the Salinas Airport (National Oceanographic and Atmospheric Administration Station USW00023233) recorded 9.18 inches of rainfall in WY 2020 and 5.79 inches in WY 2021. For comparison, the average rainfall from WY 1980 to WY 2021 at this gage is 11.98 inches of precipitation.

The SVBGSA adopted the methodology used by MCWRA for determining the Subbasin's water year type. The MCWRA assigns a water year type of either dry, dry-normal, normal, wet-normal, or wet based on an indexing of annual mean flows at the U.S. Geological Survey (USGS) stream gage on the Arroyo Seco near Soledad (USGS Gage 11152000) (MCWRA, 2005). Using the MCWRA method, WY 2020 was a dry-normal year and WY 2021 was a dry year.

3 2021 DATA AND SUBBASIN CONDITIONS

This section details the Subbasin conditions and WY 2021 data. Where WY 2021 data are not available, it includes the most recent data available. The SVBGSA stores monitoring data in a data management system. Monitoring data are included in this Annual Report and are submitted to DWR.

3.1 Water Supply and Use

Within the Subbasin, water is used for agricultural, urban, industrial use, and wetlands and native vegetation. Most of the water in the Subbasin is used for agriculture. Only a relatively small amount of water is used by wetlands and native vegetation.

The water supply in the 180/400-Foot Aquifer Subbasin is a combination of groundwater, surface water, and recycled water. Groundwater is the main water source in the Subbasin. The Salinas River and its tributaries provide limited surface water. The Castroville Seawater Intrusion Project (CSIP) delivers a combination of groundwater, surface water, and recycled water from Monterey One Water to the coastal farmland surrounding Castroville. Recycled water is also used to irrigate horse pastures in California American Water Company's Salinas Hills Water System.

3.1.1 Groundwater Extraction

Urban and agricultural groundwater extractions are compiled using MCWRA's Groundwater Extraction Management System (GEMS), which collects data from groundwater wells with an internal discharge pipe diameter greater than 3 inches within Zones 2, 2A, and 2B.

Table 1 presents groundwater extractions by water use sector in the 180/400-Foot Aquifer Subbasin, including the method of measurement and accuracy of measurement. Urban use data from MCWRA aggregates municipal wells, small public water systems, and industrial wells. Agricultural use accounted for 90% of groundwater extraction in 2021; urban and industrial use accounted for 10%. It is important to note that the reporting year varies according to user: agricultural pumping is reported to MCWRA for the period November 1 through October 31, whereas urban pumping is reported to MCWRA on a calendar year basis. Domestic pumping, including water systems small enough to not require reporting to the State Water Resources Control Board (SWRCB), is estimated by multiplying the estimated number of domestic users by a water use factor. The initial water use factor will be 0.39 AF/yr. per dwelling unit. Rural domestic pumping is estimated on a calendar year basis. No groundwater was extracted for managed wetlands or managed recharge. Groundwater use by natural vegetation is assumed to be small and was not estimated for this report. The total reported groundwater extraction in reporting year 2021 was 127,000 acre-feet per year (AF/yr.) in the Subbasin. This total is for the 180/400-Foot Aquifer Subbasin not the MCWRA Pressure Subarea; therefore, the pumping total is not identical to what MCWRA publishes in their annual Groundwater Extraction Summary Reports. Figure 2 illustrates the general location and volume of groundwater extractions in the Subbasin.

Table 1. 2021 Groundwater Extraction by Water Use Sector (AF/yr.)

Water Use Sector	Groundwater Extraction	Method of Measurement	Accuracy of Measurement
Rural Domestic	200	Multiply estimated number of domestic users by 0.39 AF/yr.	Other estimates have ranged as high as 0.75 AF/yr.
Urban	12,300	MCWRA's Groundwater Reporting Program allows 3 different reporting methods: water flowmeter, electrical meter, or hour meter. For 2021, 84% of extractions were calculated using a flowmeter, 16% electrical meter, and <1% hour meter.	MCWRA ordinances 3717 and 3718 require annual flowmeter calibration, and that flowmeters be accurate to within +/- 5%. The same ordinance requires annual pump efficiency tests. SVBGSA assumes an electrical meter accuracy of +/- 5%.
Agricultural	114,500		
Managed Wetlands	0	N/A	N/A
Managed Recharge	0	N/A	N/A
Natural Vegetation	0	*De minimis* and not estimated.	Unknown
Total	**127,000**		

Note: Agricultural pumping is reported on a MCWRA reporting year basis whereas urban is reported in calendar-year basis. Rural domestic pumping is estimated on a calendar year basis. N/A = Not Applicable.

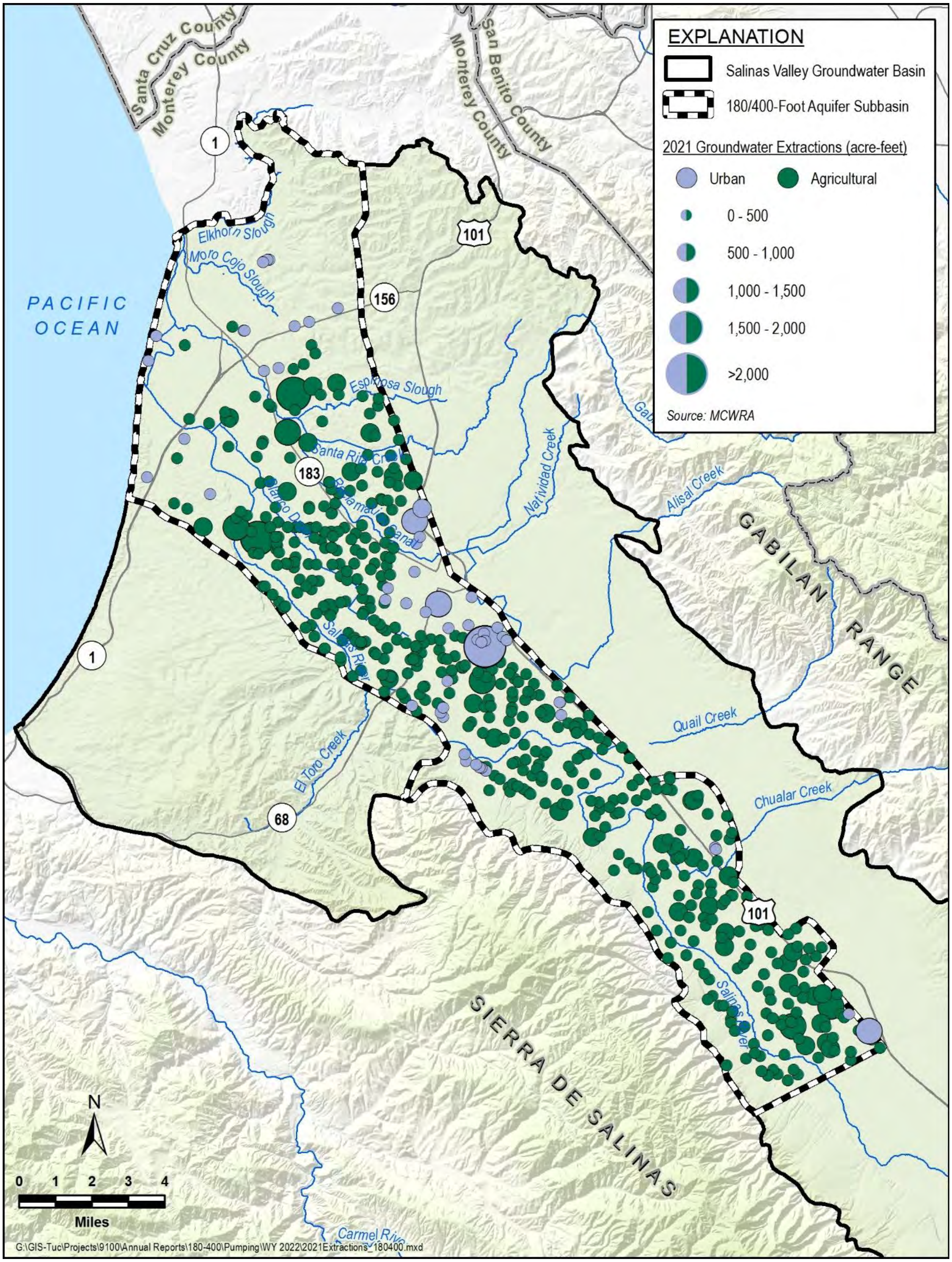

Figure 2. General Location and Volume of Groundwater Extractions

3.1.2 Surface Water Supply

Salinas River diversion data are obtained from the SWRCB's Electronic Water Rights Information Management System (eWRIMS) website. The data are reported annually and include diversions from the Salinas River and its tributaries. Surface water diversions reported to eWRIMS were approximately 7,200 AF/yr in WY 2021. Of these, 6,500 AF/yr were reported as a Statement of Diversion and Use and 700 AF/yr were reported as Appropriative for the Blanco Drain and Reclamation Ditch. These diversions do not include the diversions at the Salinas River Diversion Facility (SRDF). All diverted surface water is used for irrigation.

3.1.3 Recycled Water Supply

In addition to groundwater and surface water, a third water source type in the 180/400-Foot Aquifer Subbasin is recycled water. Monterey One Water treats and delivers this Salinas Valley Reclamation Plant recycled water to the coastal farmland surrounding Castroville through the CSIP system. CSIP deliveries are used for irrigation and are summarized based on water year in Table 2.

Additionally, recycled water from California American Water Company's Indian Springs Reclamation Facility is used to irrigate horse pastures in the Salinas Hills Water System. Approximately 30 acre-feet (AF) of recycled water were used to irrigate in WY 2021.

Table 2. CSIP Water Deliveries (AF/yr.)

	WY 2021
CSIP Wells	7,000
SRDF-River	5,100
SVRP-Recycled	12,300
Total	**24,400**

3.1.4 Total Water Use

Total water use is the sum of groundwater extractions, surface water use, and recycled water use and is summarized in Table 3.

Many growers and residents have noted that some irrigation is reported both to the SWRCB as Salinas River diversions and to the MCWRA as groundwater pumping. To avoid double counting, all surface water reported as a Statement of Diversion and Use is excluded from the total water use count for the Subbasin. Therefore, in WY 2021, the total surface water use for the Subbasin, which is inclusive of the diversions made at SRDF and diversions reported to eWRIMS, is adjusted from 12,300 AF/yr to 5,800 AF/yr. In other words, the total surface water use includes the SRDF river diversions and appropriative surface water diversions reported to eWRIMS. It is possible that not all of the surface water diversions excluded are being reported to both SWRCB and MCWRA, in which case total water use may be up to that amount greater than calculated here. This accounting is done to calculate the total water use and is not meant to imply that SVBGSA classifies any or all the reported diversions as groundwater. SVBGSA will continue to work with stakeholders to refine the method used to resolve double counting.

Total water use was 145,130 AF/yr in WY 2021, as shown in Table 3.

Table 3. Total Water Use by Water Use Sector in WY 2021 (AF/yr.)

Water Use Sector	Groundwater Extraction	Surface Water Use	Recycled Water	Method of Measurement	Accuracy of Measurement
Rural Domestic	200	0	0	Estimated	N/A
Urban	12,300	0	0	Direct	Estimated to be +/- 5%.
Agricultural	114,500	5,800	12,330	Direct	Estimated to be +/- 5%.
Managed Wetlands	0	0	0	N/A	N/A
Managed Recharge	0	0	0	N/A	N/A
Natural Vegetation	Unknown	Unknown	Unknown	N/A	N/A
SUBTOTALS	**127,000**	**5,800**	**12,330**		
TOTAL	**145,130**				

Note: Agricultural pumping is reported on the MCWRA reporting year basis whereas urban is reported in calendar-year basis. To avoid double counting with groundwater pumping reported to MCWRA, Statement of Diversion and Use surface water diversions reported in Section 3.1.2 are subtracted from the total water use. Agricultural pumping value is adjusted from reported value in Table 1, as described above in Section 3.1.3. N/A = Not Applicable.

3.2 Groundwater Elevations

The groundwater elevation monitoring network in the 180/400-Foot Aquifer Subbasin was expanded from 21 to 91 wells, which will be included in the GSP Amendment being submitted in 2022. This Annual Report includes the wells in the expanded monitoring network, which is inclusive of the monitoring network in the original GSP. All 91 wells are representative monitoring sites and monitored by MCWRA. Locations of groundwater elevation representative monitoring network wells within the Subbasin are shown on Figure 3 through Figure 5.

Figure 3. Locations of Representative Groundwater Elevation Monitoring Sites in the 180-Foot Aquifer

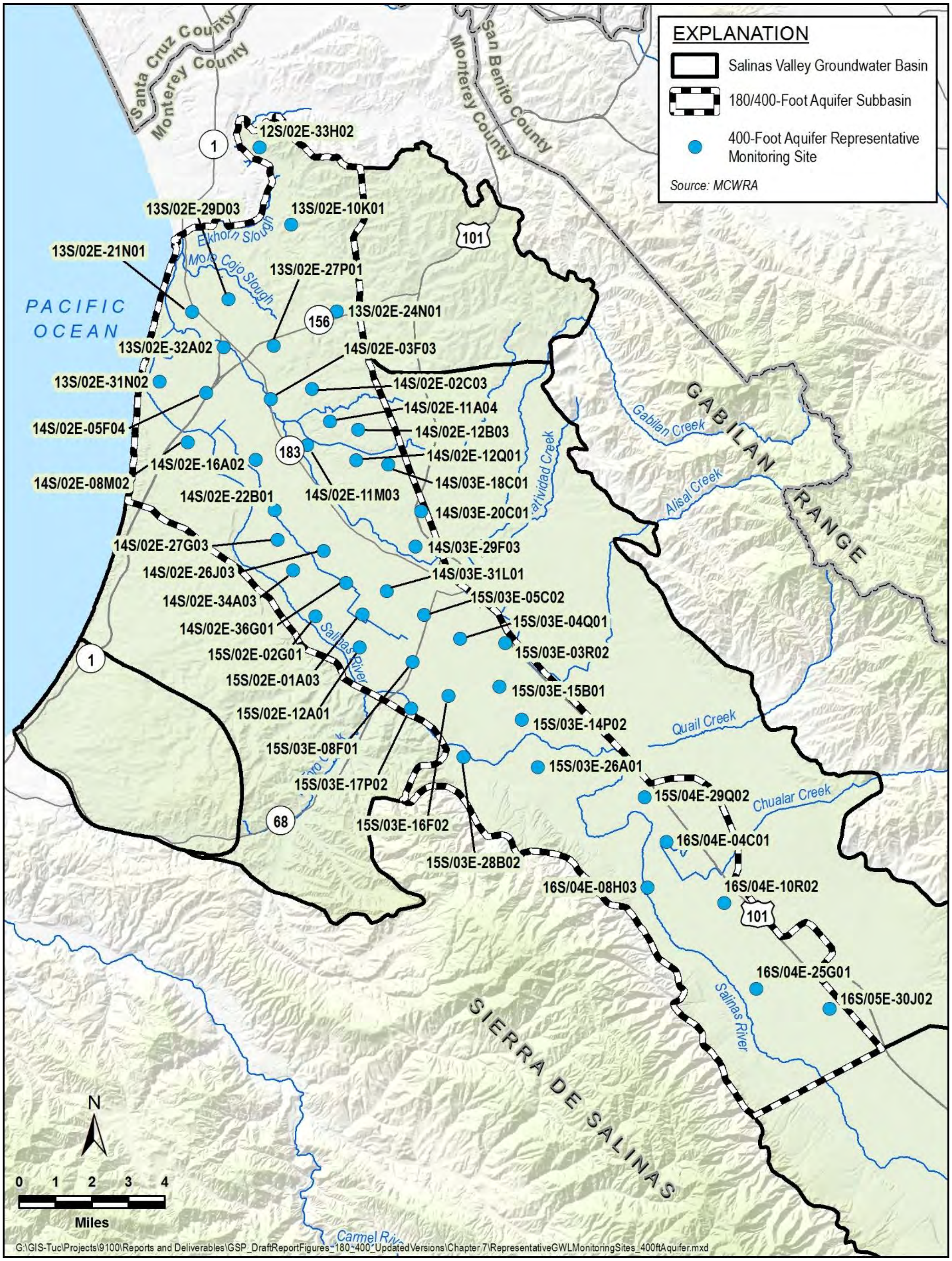

Figure 4. Locations of Representative Groundwater Elevation Monitoring Sites in the 400-Foot Aquifer

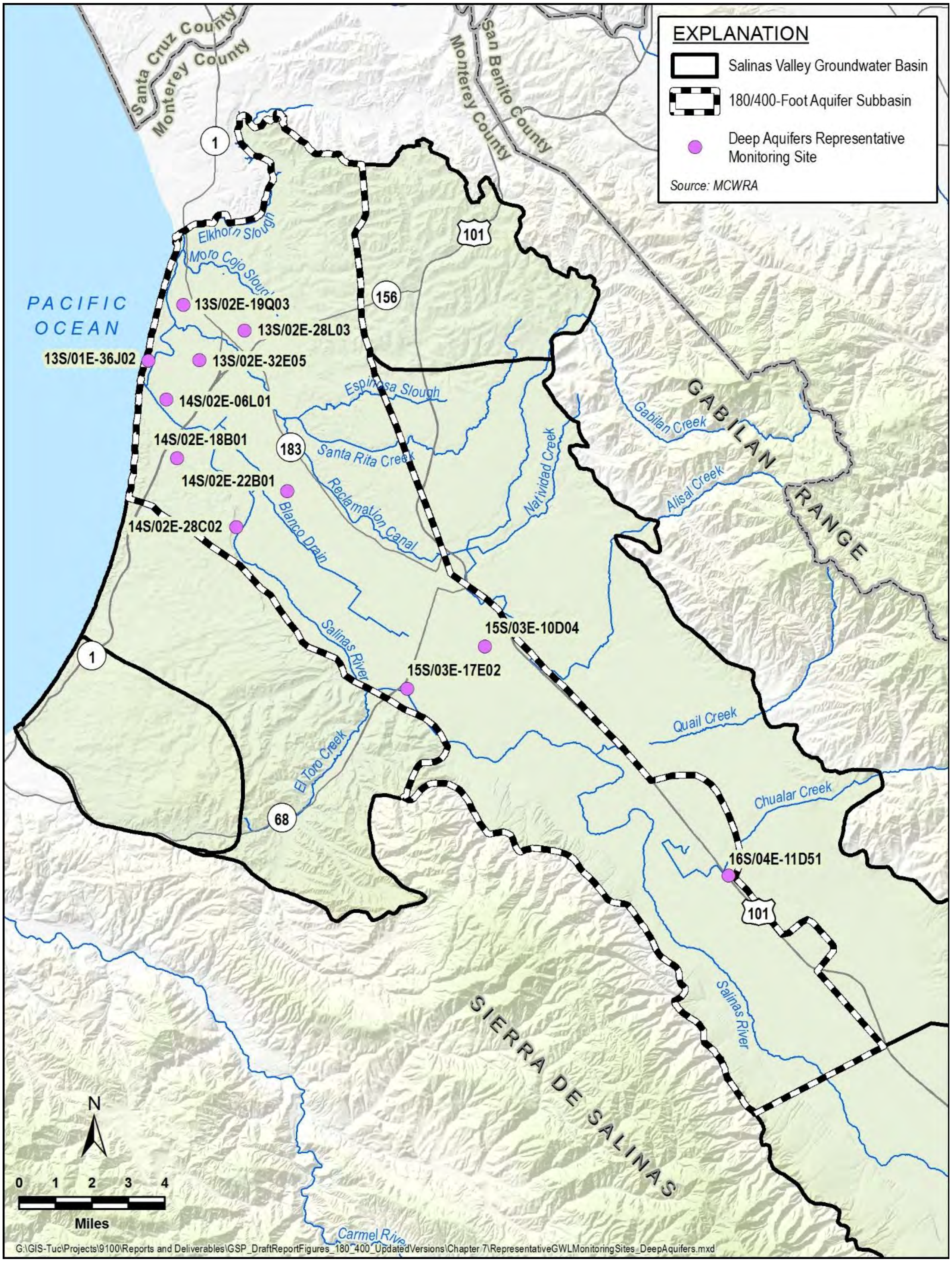

Figure 5. Locations of Representative Groundwater Elevation Monitoring Sites in the Deep Aquifers

Fall 2021 groundwater elevation data are presented in Table 4. In accordance with the GSP Amendment currently being drafted, this report uses groundwater elevations measured in the fall in order to approximate neutral groundwater conditions that are not heavily influenced by either summer irrigation pumping or winter rainfall recharge. These groundwater elevations are also used to compare to SMC, as described in Section 4.2.1. Fall groundwater elevation measurements are made from November to December and used to produce groundwater elevation contours. These fall contours are further discussed in Section 3.2.1.

Table 4. Groundwater Elevation Data

Monitoring Site	WY 2021 elevation data (ft)
180-Foot Aquifer	
13S/02E-13N01	6.6*
13S/02E-21Q01	9.6
13S/02E-26L01	-3.5
13S/02E-29D04	-3.3*
14S/02E-03F04	-5.2*
14S/02E-10P01	-14.4
14S/02E-11A02	-8.1
14S/02E-12B02	-7.6*
14S/02E-13F03	-8.6
14S/02E-17C02	9.5
14S/02E-21L01	-5.9
14S/02E-26H01	-9.5*
14S/02E-27A01	-7.3*
14S/02E-34B03	-13.6
14S/02E-36E01	-13.3
14S/03E-18C01	11.8*
14S/03E-30G08	-13.1*
14S/03E-31F01	-8.7
15S/02E-12C01	-14.1
15S/03E-09E03	-9.3
15S/03E-13N01	-7.0
15S/03E-16M01	-2.6
15S/03E-17M01	-9.1
15S/03E-25L01	2.7
15S/03E-26F01	-5.7
15S/04E-31A02	23.4
16S/04E-05M02	27.4
16S/04E-13R02	67.5
16S/04E-15D01	48.3*

Monitoring Site	WY 2021 elevation data (ft)
16S/04E-15R02	49.4
16S/04E-27B02	69.5*
16S/05E-30E01	73.8
16S/05E-31M01	82.9
17S/04E-01D01	69.7
17S/05E-06C02	71.9*
400-Foot Aquifer	
12S/02E-33H02	2.2
13S/02E-10K01	-20.3
13S/02E-21N01	-5.5
13S/02E-24N01	-1.5
13S/02E-27P01	-39.0
13S/02E-29D03	-5.5
13S/02E-31N02	-1.3
13S/02E-32A02	-1.8
14S/02E-02C03	-31.6
14S/02E-03F03	-11.8*
14S/02E-05F04	-9.8
14S/02E-08M02	-3.7
14S/02E-11A04	-25.1
14S/02E-11M03	-25.1
14S/02E-12B03	-28.2*
14S/02E-12Q01	-11.7
14S/02E-16A02	-14.8
14S/02E-22L01	-12.5
14S/02E-26J03	-15.9
14S/02E-27G03	-13.6
14S/02E-34A03	-12.0
14S/02E-36G01	-10.7
14S/03E-18C02	-18.3*
14S/03E-20C01	-41*
14S/03E-29F03	-23.0
14S/03E-31L01	-10.0
15S/02E-01A03	-13.9
15S/02E-02G01	-23.4
15S/02E-12A01	-16.5
15S/03E-03R02	-10.0
15S/03E-04Q01	-9.0
15S/03E-05C02	-15.0

Monitoring Site	WY 2021 elevation data (ft)
15S/03E-08F01	-15.4*
15S/03E-14P02	-13.0
15S/03E-15B01	-11.5
15S/03E-16F02	-9.4
15S/03E-17P02	-9.0
15S/03E-26A01	-2.3
15S/03E-28B02	7.0
15S/04E-29Q02	11.9
16S/04E-04C01	27.0
16S/04E-08H03	42.8*
16S/04E-10R02	51.9
16S/04E-25G01	63.3
16S/05E-30J02	79.7
Deep Aquifers	
13S/01E-36J02	-11.8
13S/02E-19Q03	-10.7
13S/02E-28L03	-45.0
13S/02E-32E05	-14.7*
14S/02E-06L01	-16.5
14S/02E-18B01	-36.2*
14S/02E-22A03	-49.2
14S/02E-28C02	-45.3
15S/03E-10D04	-25.7
15S/03E-17E02	-12.6
16S/04E-11D51	42.1

*Groundwater elevation was estimated.

During GSP implementation, the SVBGSA is working to fill data gaps with additional wells to include in the monitoring network.

3.2.1 Groundwater Elevation Contours

The SVBGSA received groundwater elevation contour maps from MCWRA for the 180/400 Foot Aquifer Subbasin for August and fall 2021. The August contours represent seasonal low conditions and the fall contours represent seasonal high conditions. The true seasonal high usually occurs between January and March (MCWRA, 2015); however, the GSP Amendment adopts fall groundwater elevations as the seasonal high because SMC monitoring is based on MCWRA's existing monitoring networks for which groundwater elevations are collected in the fall.

Groundwater elevation contours for seasonal high and low groundwater conditions in the 180-Foot Aquifer are shown on Figure 6 and Figure 7, respectively. Groundwater elevation contours for seasonal high and low groundwater conditions in the 400-Foot Aquifer are shown on Figure 8 and Figure 9, respectively. The contours indicate that groundwater flow directions are similar in the 180- and 400-Foot Aquifers during both seasonal low and seasonal high conditions. However, groundwater elevations in the 400-Foot Aquifer are lower than groundwater elevations in the 180-Foot Aquifer. Figure 6 through Figure 9 show a groundwater depression trending toward the city of Salinas. These depressions are related to a pumping trough northeast of Salinas in the Eastside Subbasin. In this area, groundwater flow gradients are not parallel to the Valley's long axis, but rather are cross-valley toward the pumping trough. The pumping trough is more pronounced in August than in January due to the seasonal groundwater pumping trends in the Basin. Contours are not extended across all portions of the Subbasin due to data limitations; this is a data gap that will be addressed during GSP implementation. The MCWRA does not produce groundwater elevation maps of the Deep Aquifers. Insufficient data currently exist to map flow directions and groundwater elevations representative of the Deep Aquifers. This is a data gap that SVBGSA is working to address during GSP implementation.

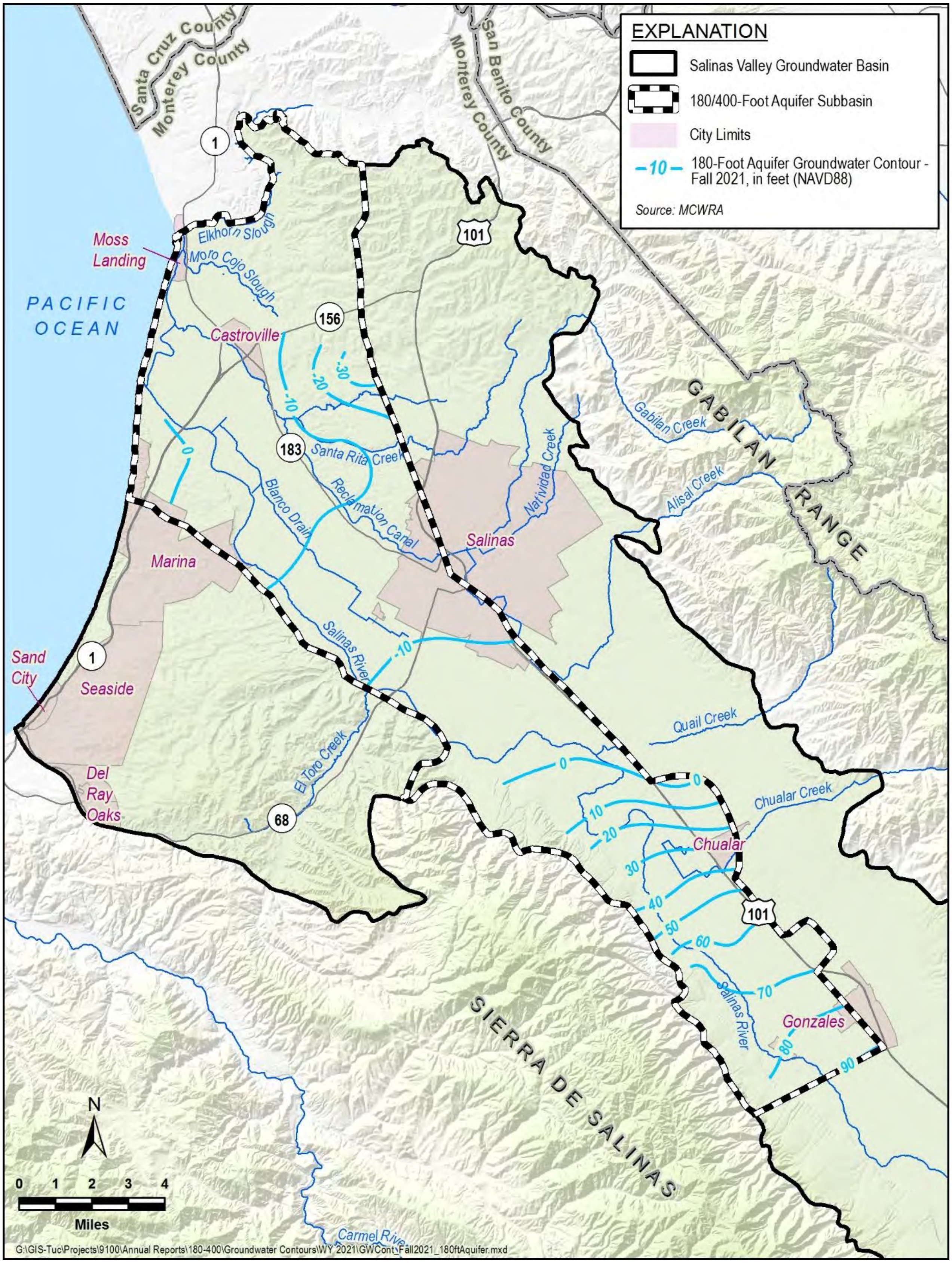

Figure 6. Seasonal High Groundwater Elevation Contour Map for 180-Foot Aquifer

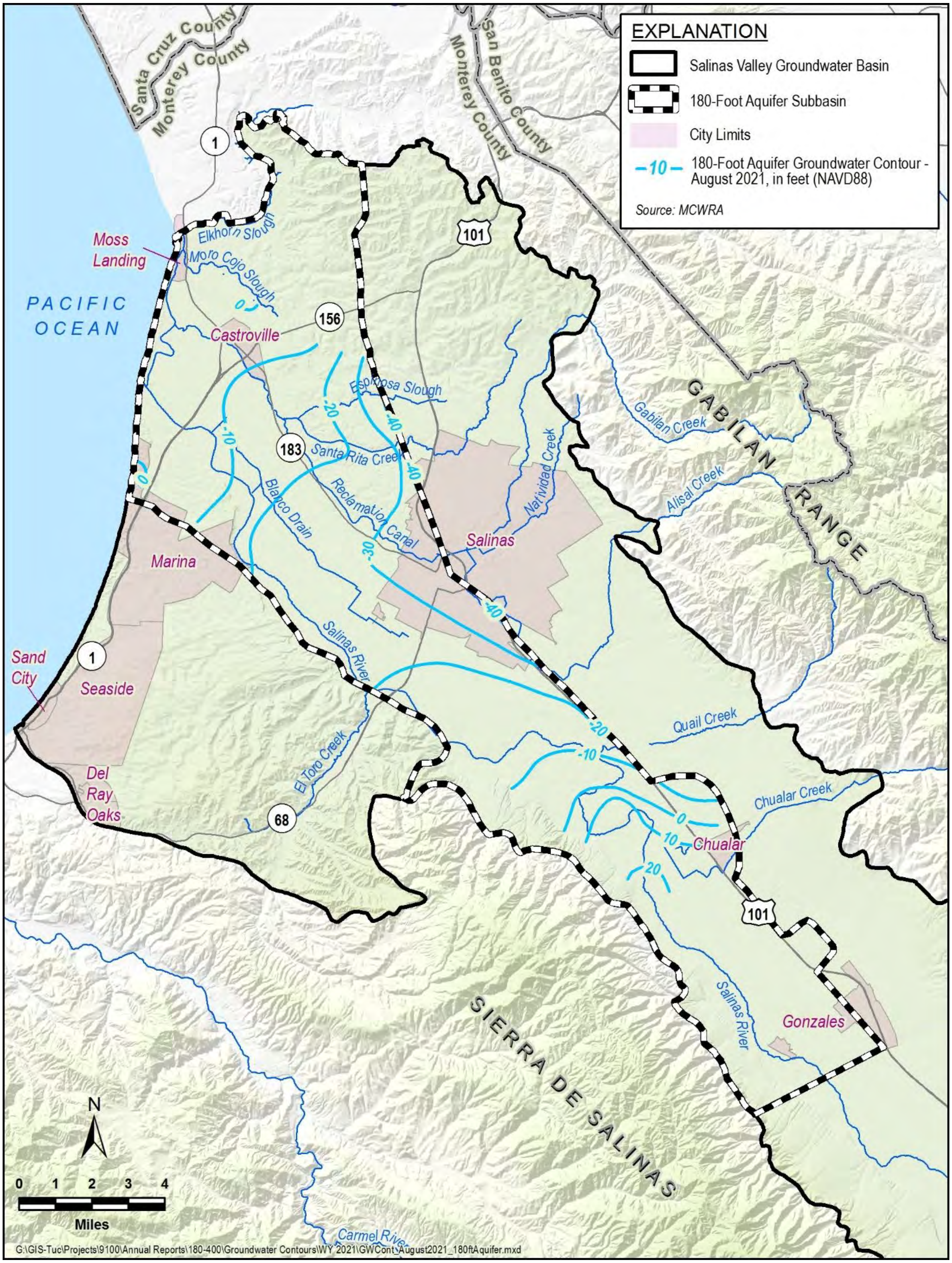

Figure 7. Seasonal Low Groundwater Elevation Contour Map for 180-Foot Aquifer

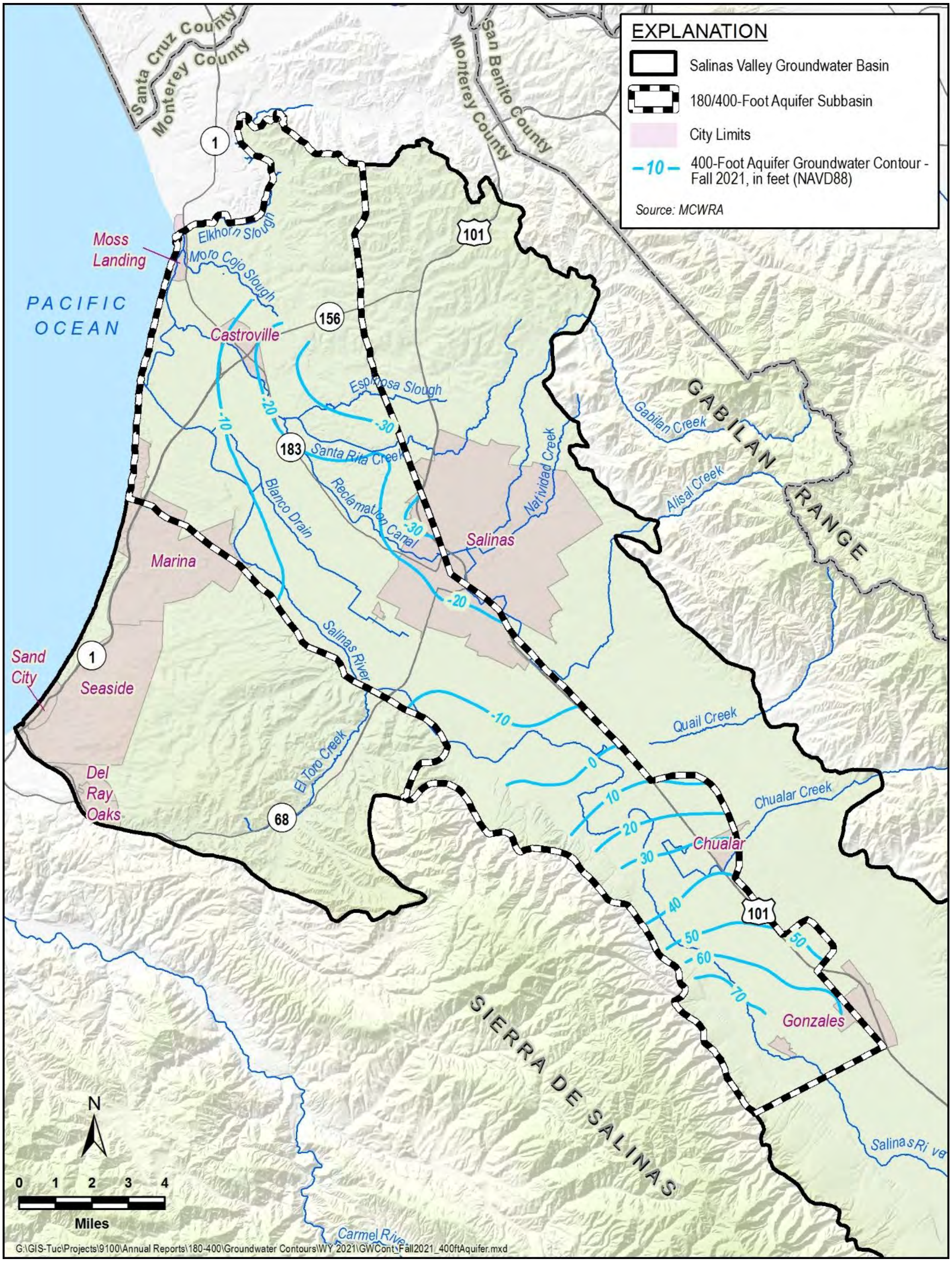

Figure 8. Seasonal High Groundwater Elevation Contour Map for 400-Foot Aquifer

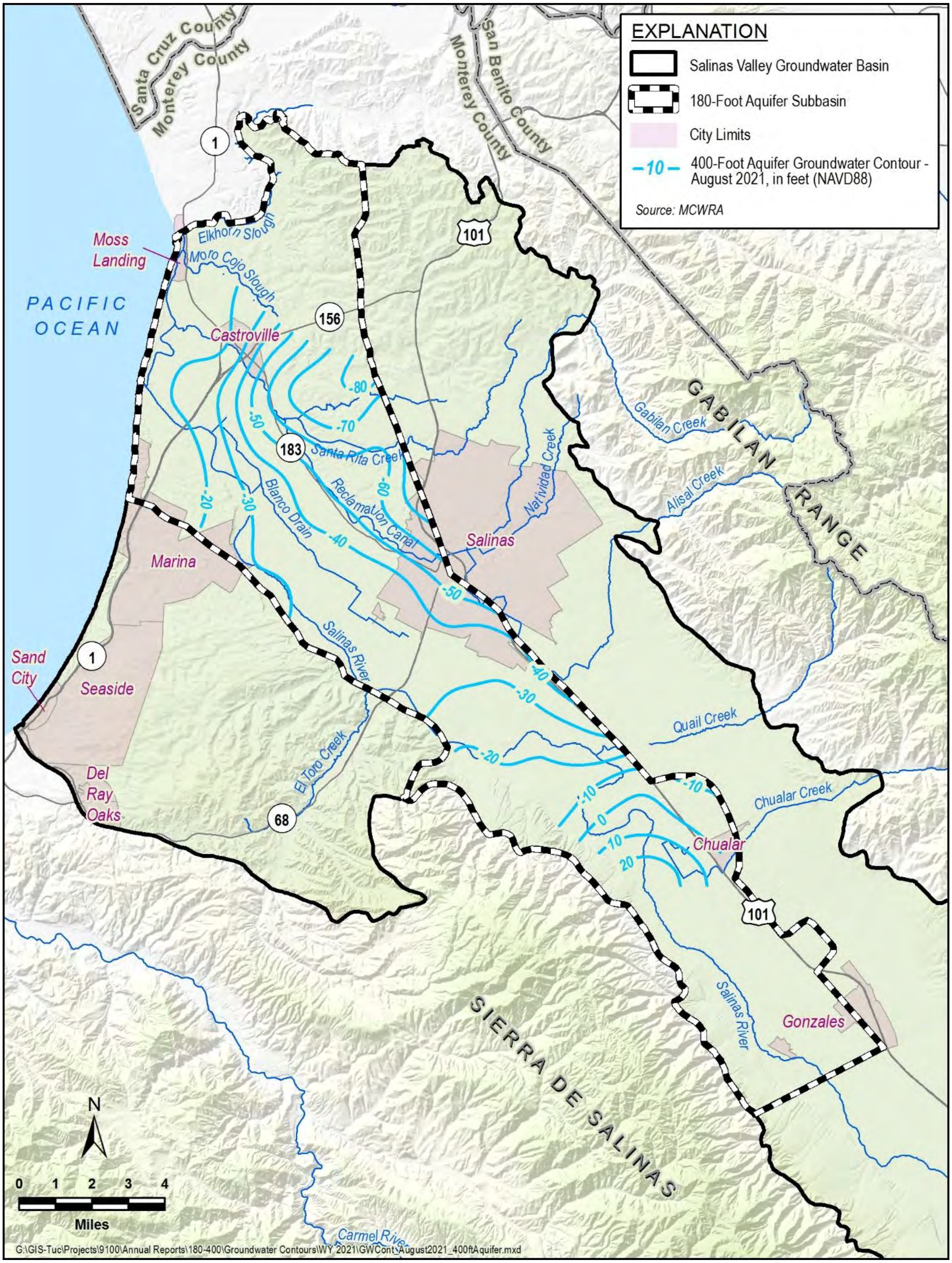

Figure 9. Seasonal Low Groundwater Elevation Contour Map for 400-Foot Aquifer

3.2.2 Groundwater Elevation Hydrographs

Temporal trends in groundwater elevations can be assessed with hydrographs that plot changes in groundwater elevations over time. Hydrographs for selected monitoring wells within the 180-Foot Aquifer, 400-Foot Aquifer, and Deep Aquifers are shown on Figure 10 through Figure 12, respectively. These hydrographs were selected to show characteristic trends in groundwater elevation in each aquifer. The hydrographs indicate that groundwater elevations in the 180-Foot and 400-Foot Aquifers have generally declined throughout the Subbasin since 2019. Meanwhile, groundwater elevations for the Deep Aquifers have continued to decrease with too little data to establish any spatial pattern. Hydrographs for all representative monitoring sites are included in Appendix A.

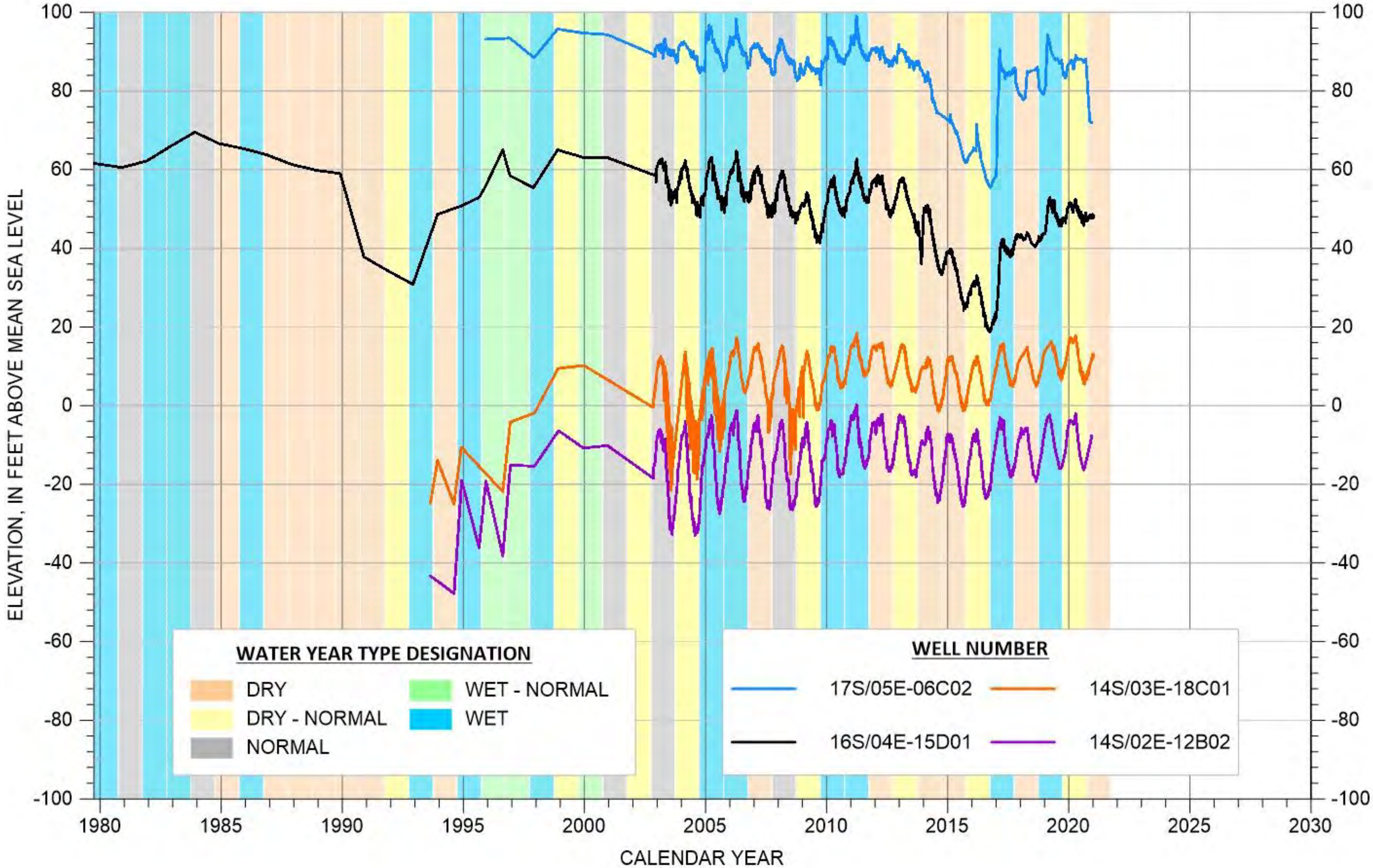

Figure 10. Groundwater Elevation Hydrographs for Selected Monitoring Wells in 180-Foot Aquifer

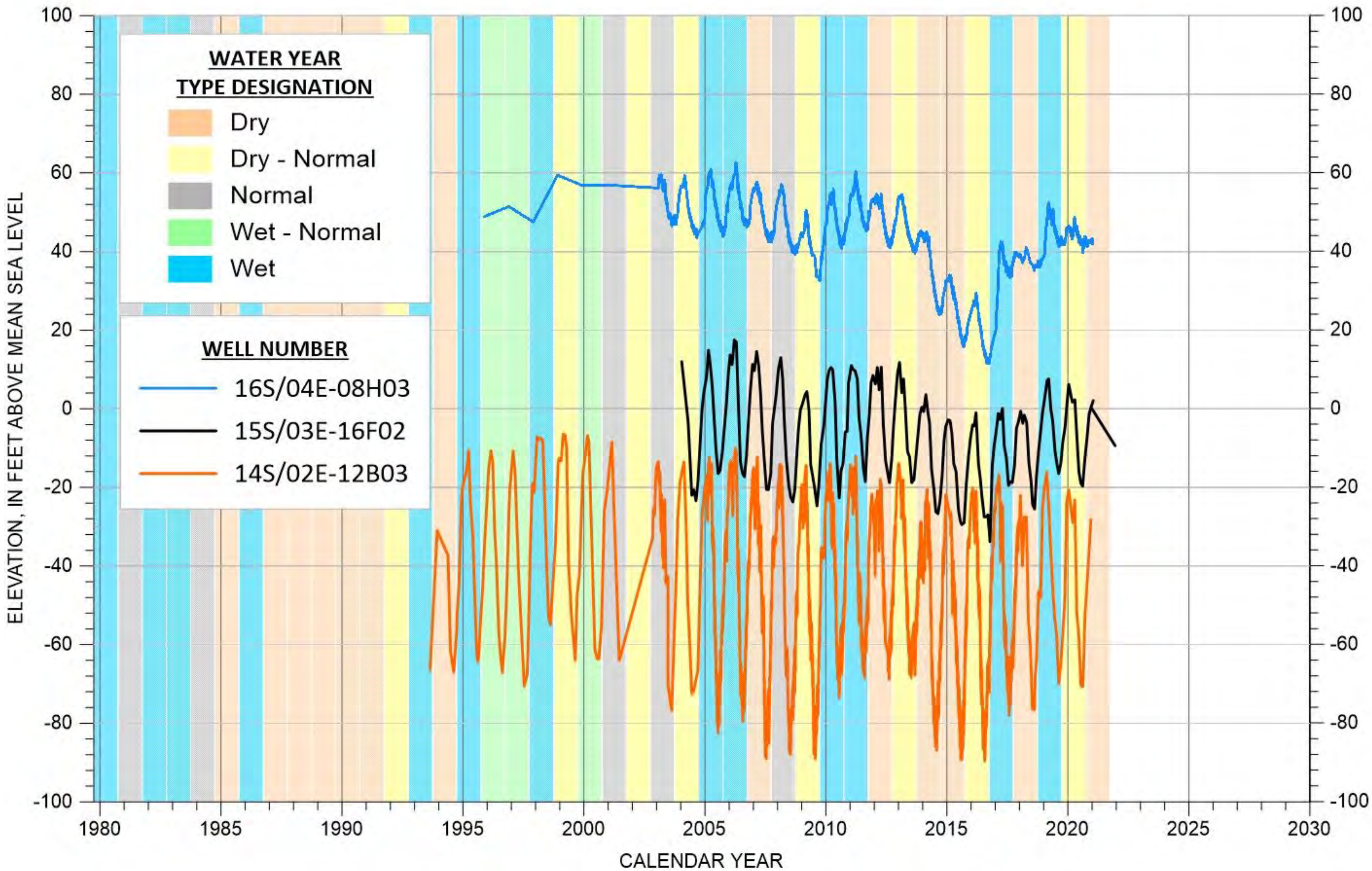

Figure 11. Groundwater Elevation Hydrographs for Selected Monitoring Wells in 400-Foot Aquifer

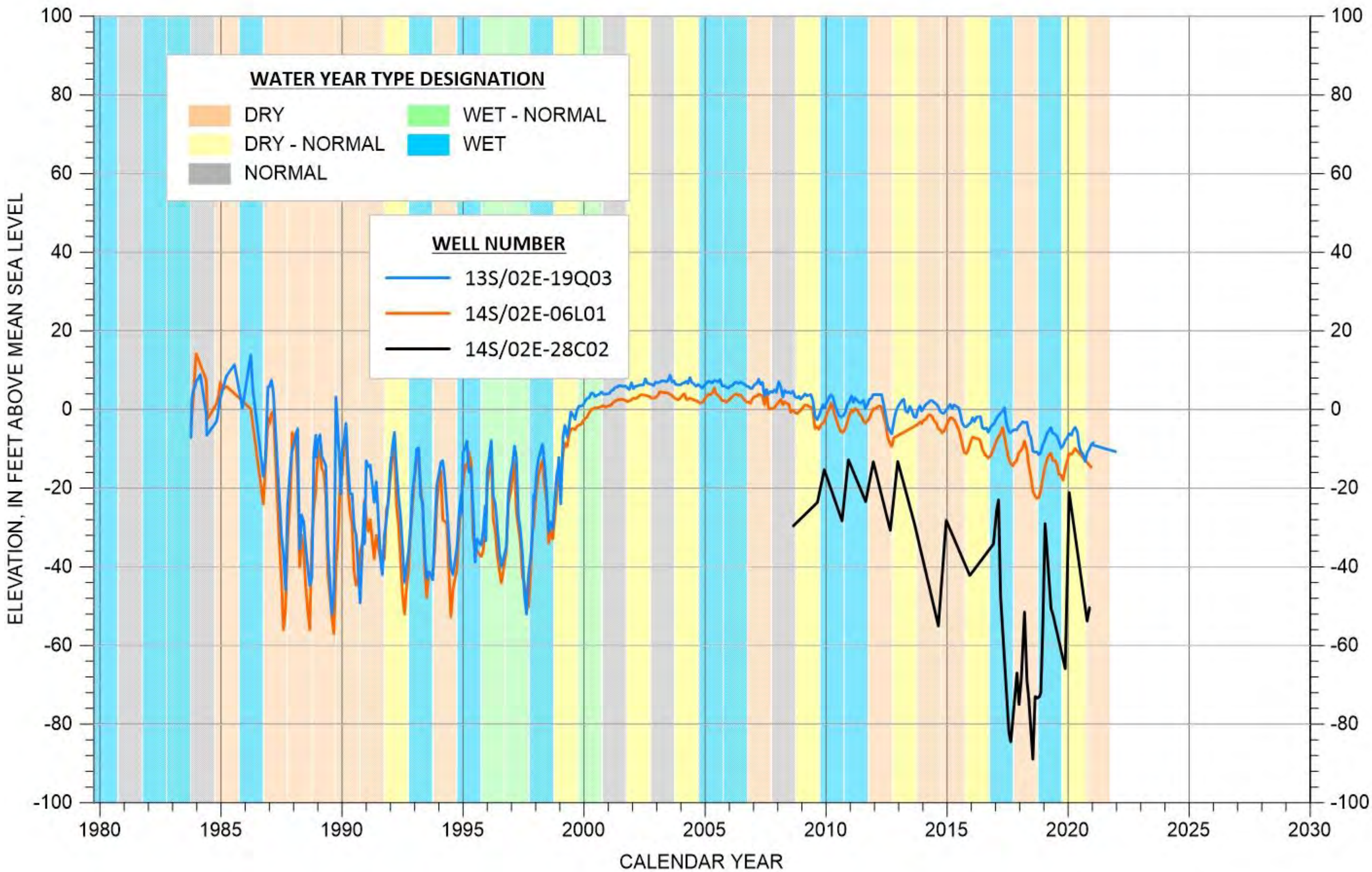

Figure 12. Groundwater Elevation Hydrograph for Selected Monitoring Well in Deep Aquifers

3.3 Seawater Intrusion

MCWRA prepared contours of seawater intrusion for 2021 for the 180/400-Foot Aquifer and the adjacent Monterey Subbasin. Figure 13 and Figure 14 show the seawater intrusion contours for the 180-Foot and 400-Foot Aquifers, respectively, that MCWRA annually prepares for the 180/400-Foot Aquifer Subbasin. The MCWRA seawater intrusion contours for the Monterey Subbasin are not included in these figures because they are likely less accurate due to lack of monitoring in the Monterey Subbasin. The extent of seawater intrusion is based on the 500 milligram per liter (mg/L) chloride isocontour. Figure 13 shows that seawater intrusion in the 180-Foot Aquifer did not increase since WY 2020. Figure 14 shows that the 2021 contours for the 400-Foot Aquifer had a slight incremental change from the 2020 contours. This indicates that seawater intrusion is still occurring, with minimal advancement compared with previous years in the 180-Foot Aquifer. In the 400-Foot Aquifer, however, the total seawater intruded acreage has doubled from a 220 acre increase in WY 2020 to a 420 acre increase in WY 2021 in the Subbasin.

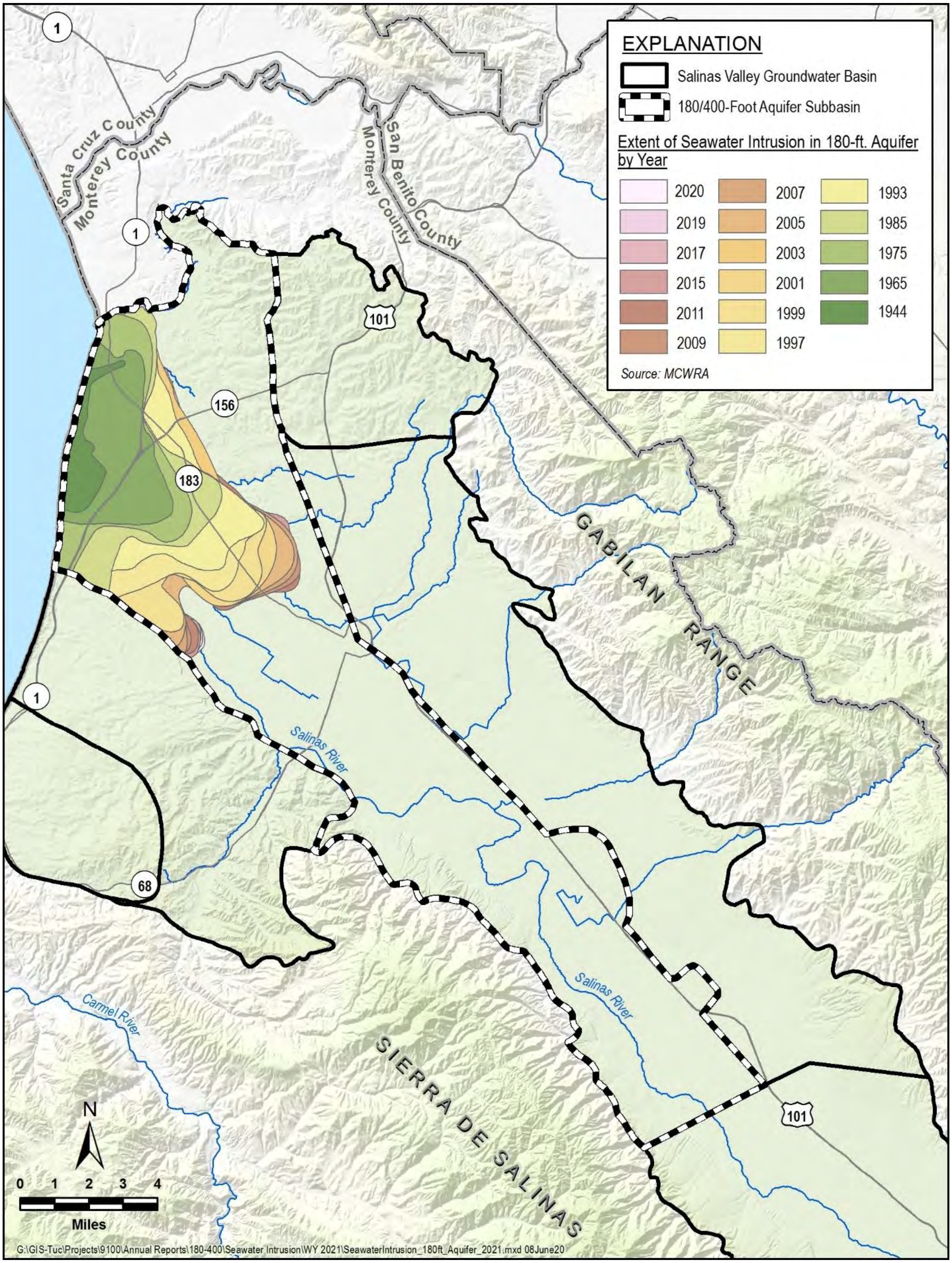

Figure 13. 2021 Seawater Intrusion Contours for the 180-Foot Aquifer

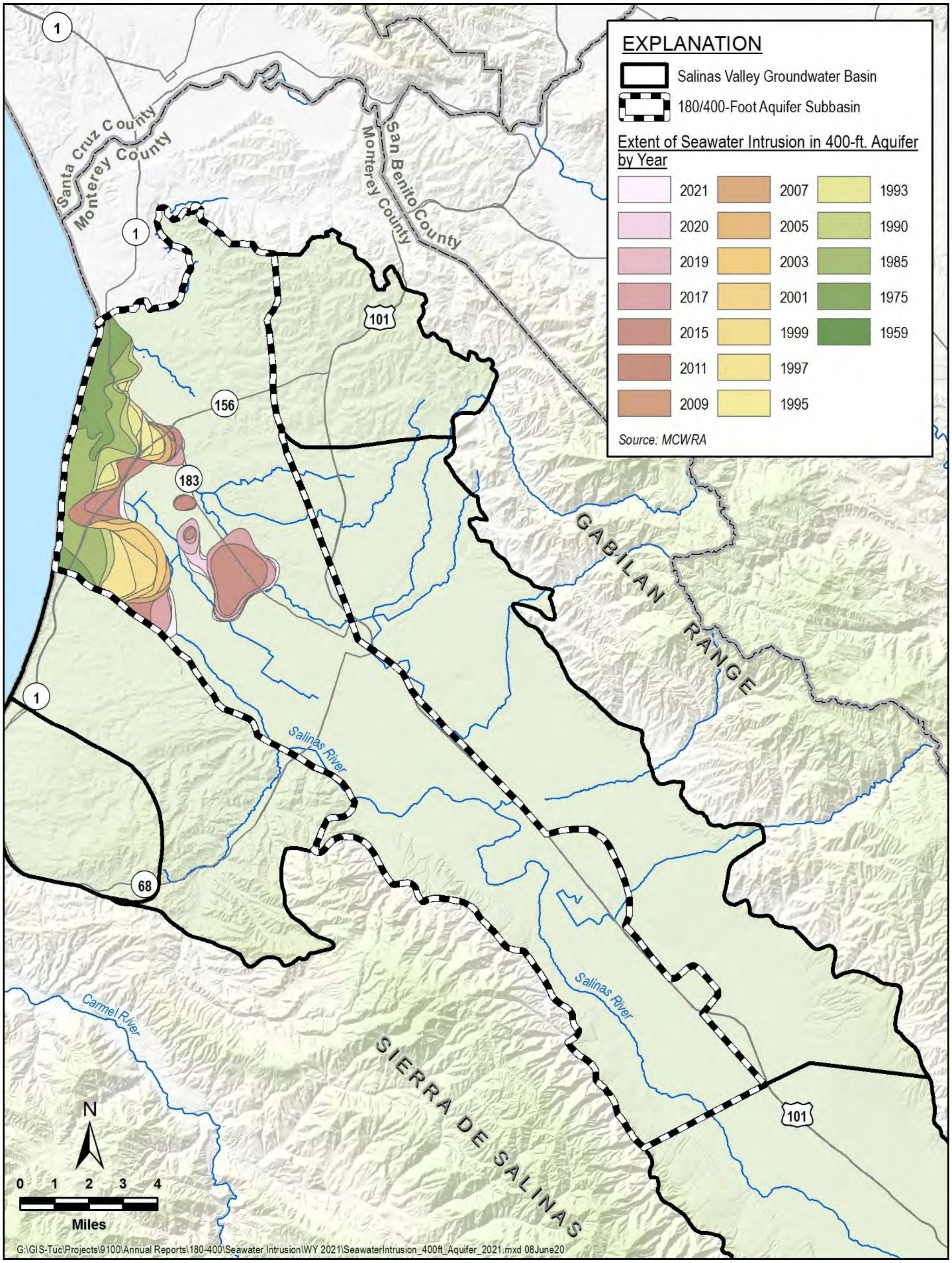

Figure 14. 2021 Seawater Intrusion Contours for the 400-Foot Aquifer

3.4 Change in Groundwater Storage

The Subbasin GSP adopted the concept of change in usable groundwater storage, defined as the annual average increase or decrease in groundwater that can be safely used for municipal, industrial, or agricultural purposes. Change in usable groundwater storage is the sum of change in storage due to groundwater elevation changes and the change in storage due to seawater intrusion. The storage coefficients used to calculate change in groundwater storage are updated from those used in previous annual reports due to a more thorough review of estimated values.

3.4.1 Change in Groundwater Storage Due to Groundwater Elevation Changes

One component of the change in groundwater storage is calculated from groundwater elevations in the Subbasin, outside the seawater intruded area. Change in groundwater elevations within the seawater intruded area are accounted for in the estimate for change in groundwater storage due to seawater intrusion described in Section 3.4.2, and thus are not included in this estimation. The observed groundwater elevation changes outside the seawater intrusion area provide a measure of the amount of useable groundwater that has moved into and out of storage during each year, not accounting for seawater intrusion. The change in storage is calculated by multiplying a change in groundwater elevation by a storage coefficient and the land area of the contoured portion of the Subbasin outside the seawater intruded area.

As described in Sections 5.2.2 and 8.6.2.1 of the GSP Amendment currently being drafted, the change in storage is calculated in 2 ways: (1) for individual aquifers and (2) for the Subbasin as a whole. GSP Regulations, require that the change in storage is reported for individual principal aquifers in annual reports. However, to appropriately compare annual change in storage to the updated reduction in storage SMC in the GSP Amendment, a single calculation for the Subbasin is necessary. To calculate the change in storage for individual aquifers, storage coefficients of 0.012 and 0.005 for the 180-Foot and 400-Foot Aquifers, respectively, are used. These storage coefficients are derived from aquifer property information specified in the Salinas Valley Integrated Hydrologic Model (SVIHM[1]), a provisional groundwater model under development by the U.S. Geological Survey, and they will likely change when the SVIHM is finalized. To calculate the total change in storage for the Subbasin as a whole, a storage coefficient of 0.078 is used, which is considered reflective of all aquifers, including the shallow sediments and the unconfined portions of the 180-Foot Aquifer. This number is an average of the storage coefficient of 0.036 for the Pressure Subarea from MCWRA's *State of the Basin Report* (Brown and Caldwell, 2015) and the initial specific yield estimate of 0.12 used in the SVIHM, and the

[1] These data (model and/or model results) are preliminary or provisional and are subject to revision. This model and model results are being provided to meet the need for timely best science. The model has not received final approval by the U.S. Geological Survey (USGS). No warranty, expressed or implied, is made by USGS or the U.S. Government as to the functionality of the model and related material nor shall the fact of release constitute any such warranty. The model is provided on the condition that neither USGS nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the model.

ongoing seawater intrusion modeling of the Subbasin. The Deep Aquifers are not included in either calculation, because the limited groundwater elevation data available for the Deep Aquifers are likely not representative of the change in storage occurring in the Deep Aquifers. The change in storage calculation for the Deep Aquifers is a data gap that will be evaluated in the future as more data and information are collected during GSP implementation.

The SVBGSA received groundwater elevation contours from MCWRA for fall 2020 and fall 2021. MCWRA uses groundwater elevations from November to December to produce their contours. Fall measurements occur at the end of the irrigation season and before groundwater levels rise due to seasonal recharge by winter rains. These measurements record annual changes in storage reflective of groundwater recharge and withdrawals in the Subbasin. Currently, MCWRA only generates contours for the 180-Foot and 400-Foot Aquifers. For evaluating changes in usable groundwater storage, the seawater intrusion area was removed from the total subbasin area for this analysis. Groundwater storage changes due to seawater intrusion are evaluated separately in Section 3.4.2.

Average annual change in groundwater elevations in the 180-Foot Aquifer from WY 2020 to WY 2021 was estimated by subtracting the fall 2020 groundwater elevations shown on Figure 15 from the fall 2021 groundwater elevations (Figure 6). This change was then multiplied by the storage coefficient of 0.012 to calculate the change in storage in the 180-Foot Aquifer. The estimated change in storage due to groundwater elevation changes, in AF per acre, in the 180-Foot Aquifer is depicted on Figure 16. Similarly, for the 400-Foot Aquifer, Figure 17 shows the fall 2020 groundwater elevation contours that are subtracted from the fall 2021 groundwater elevation contours (Figure 8) to calculate the average annual groundwater elevation change. This change in groundwater elevations was multiplied by the storage coefficient of 0.005 to calculate the change in storage in the 400-Foot Aquifer, in AF per acre, shown on Figure 18. Since the groundwater elevation contours do not extend across the entire Subbasin, the storage change was not calculated in the areas that were not contoured, as indicated by the areas without color on Figure 16 and Figure 18.

A summary of components used for estimating change in groundwater storage due to groundwater elevation changes is shown in Table 5. Calculating loss in storage due to changes in groundwater elevations in individual aquifers results in 3,000 AF/yr. in the 180-Foot Aquifer and 700 AF/yr. in the 400-Foot Aquifer. Calculating loss of storage by the whole Subbasin approach, annual groundwater storage changes due to changes in groundwater elevation from fall 2020 to fall 2021 decreased by approximately 16,600 AF/yr. in the Subbasin, outside of the seawater intruded area. The storage changes in the individual aquifers do not sum to the loss in storage in the Subbasin, the remaining loss in storage possibly occurs in the Deep Aquifers or in the shallow sediments above the 180-Foot Aquifer, which are not designated as a principal aquifer. The negative signs in Table 5 indicate decline in groundwater levels or loss in storage. These storage losses are added to storage loss due to seawater intrusion in Section 3.4.3.

Table 5. Parameters Used for Estimating Change in Groundwater Storage Due to Groundwater Elevation Changes Outside of Seawater Intruded Area

Component	*Aquifer Specific Calculation* 180-Foot Aquifer	*Aquifer Specific Calculation* 400-Foot Aquifer	Whole Subbasin Calculation
Area of contoured portion of Subbasin minus seawater intrusion area (acres)	65,600	74,800	76,000
Storage coefficient	0.012	0.005	0.078
Average change in groundwater elevation from fall 2020 to fall 2021 (feet)	-3.73	-1.86	-2.79
Change in groundwater storage from fall 2020 to fall 2021 (AF)	**-3,000**	**-700**	**-16,600**
Total annual change in groundwater storage due to changes in groundwater elevations (AF/yr.)	**-3,700**		**-16,600**

Note: Negative values indicate loss, positive values indicate gain.

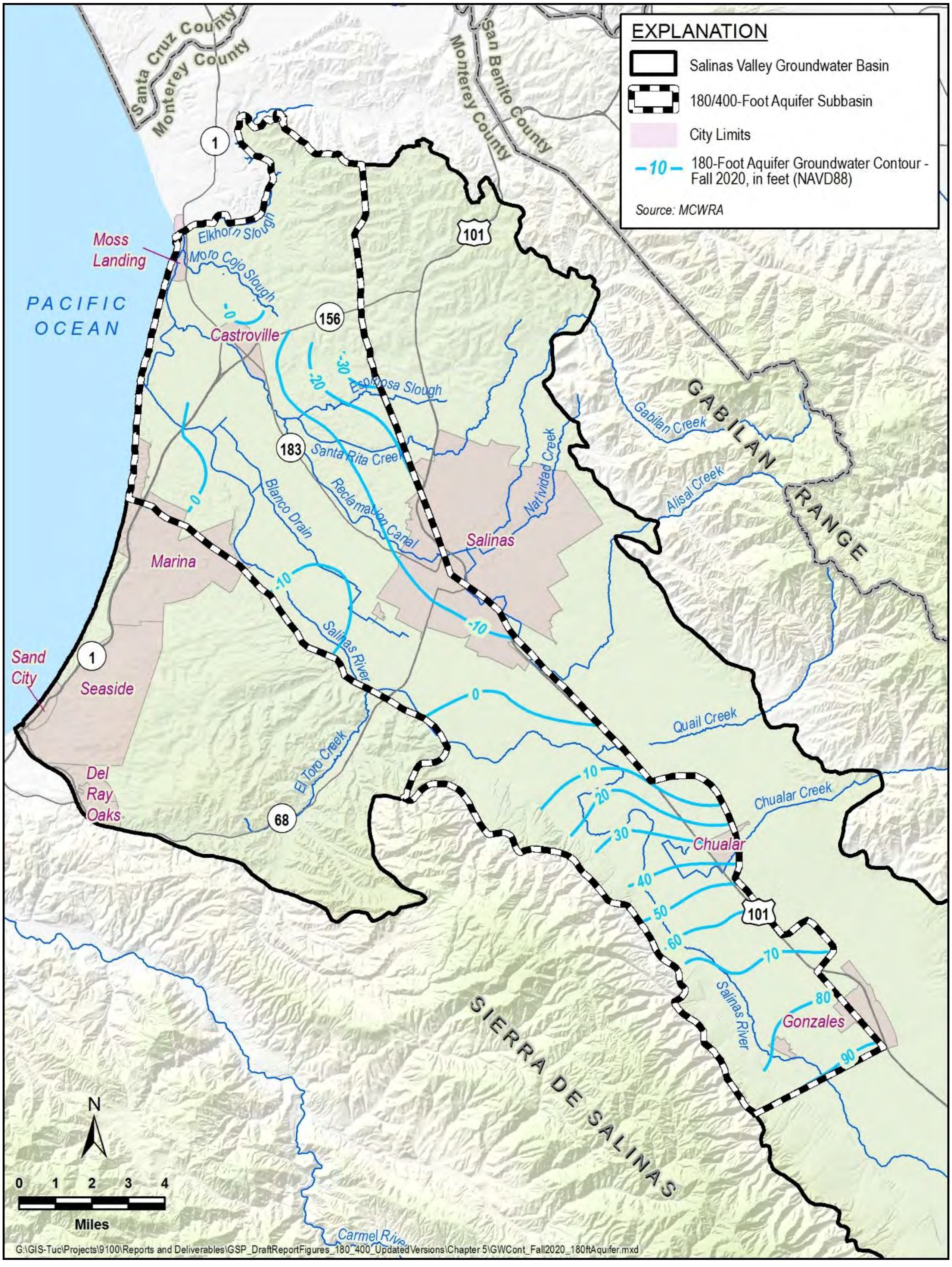

Figure 15. Fall 2020 Groundwater Elevation Contour Map for 180-Foot Aquifer

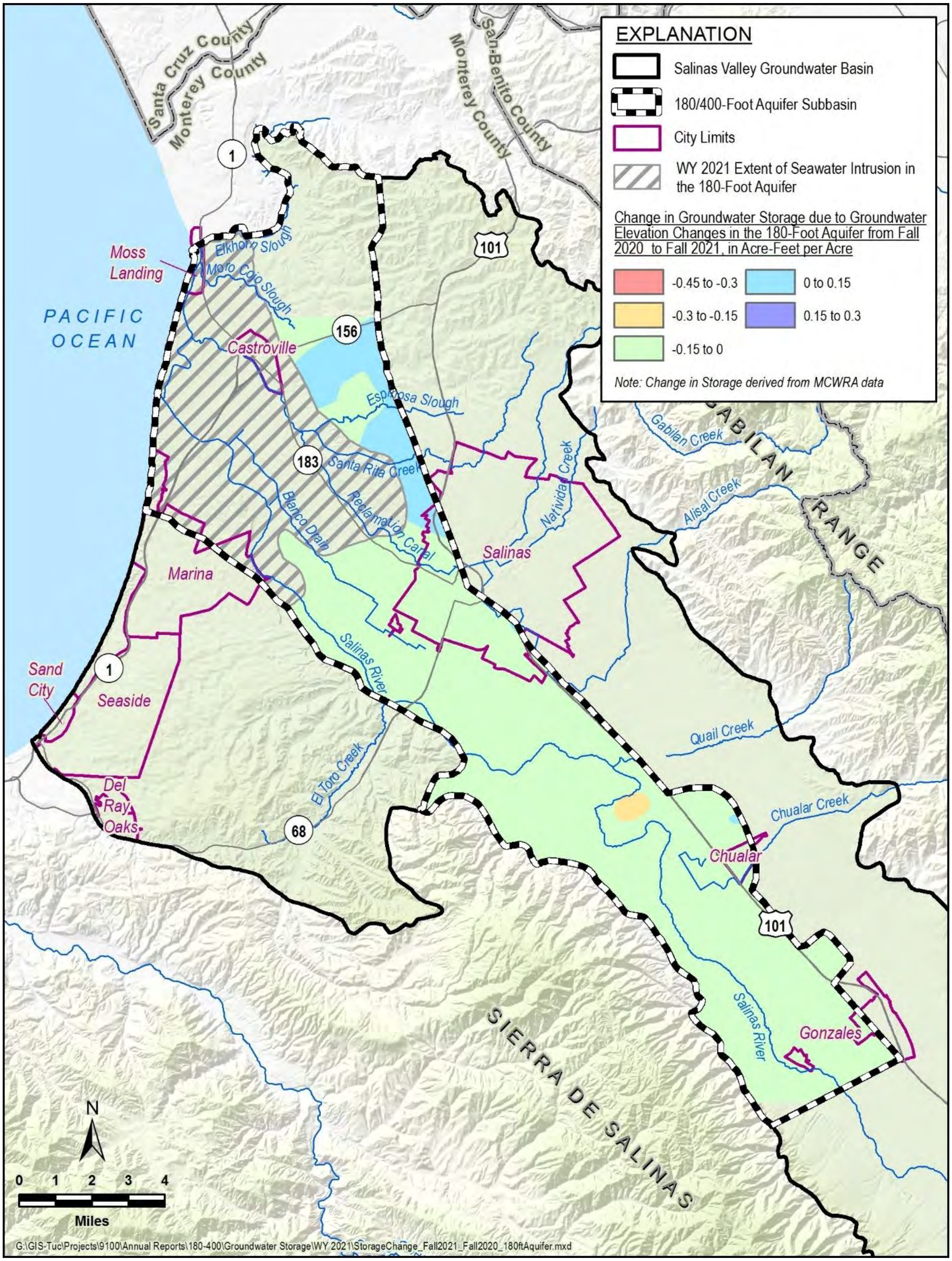

Figure 16. Average Annual Change in Groundwater Storage Between WY 2020 and WY 2021 in the 180-Foot Aquifer

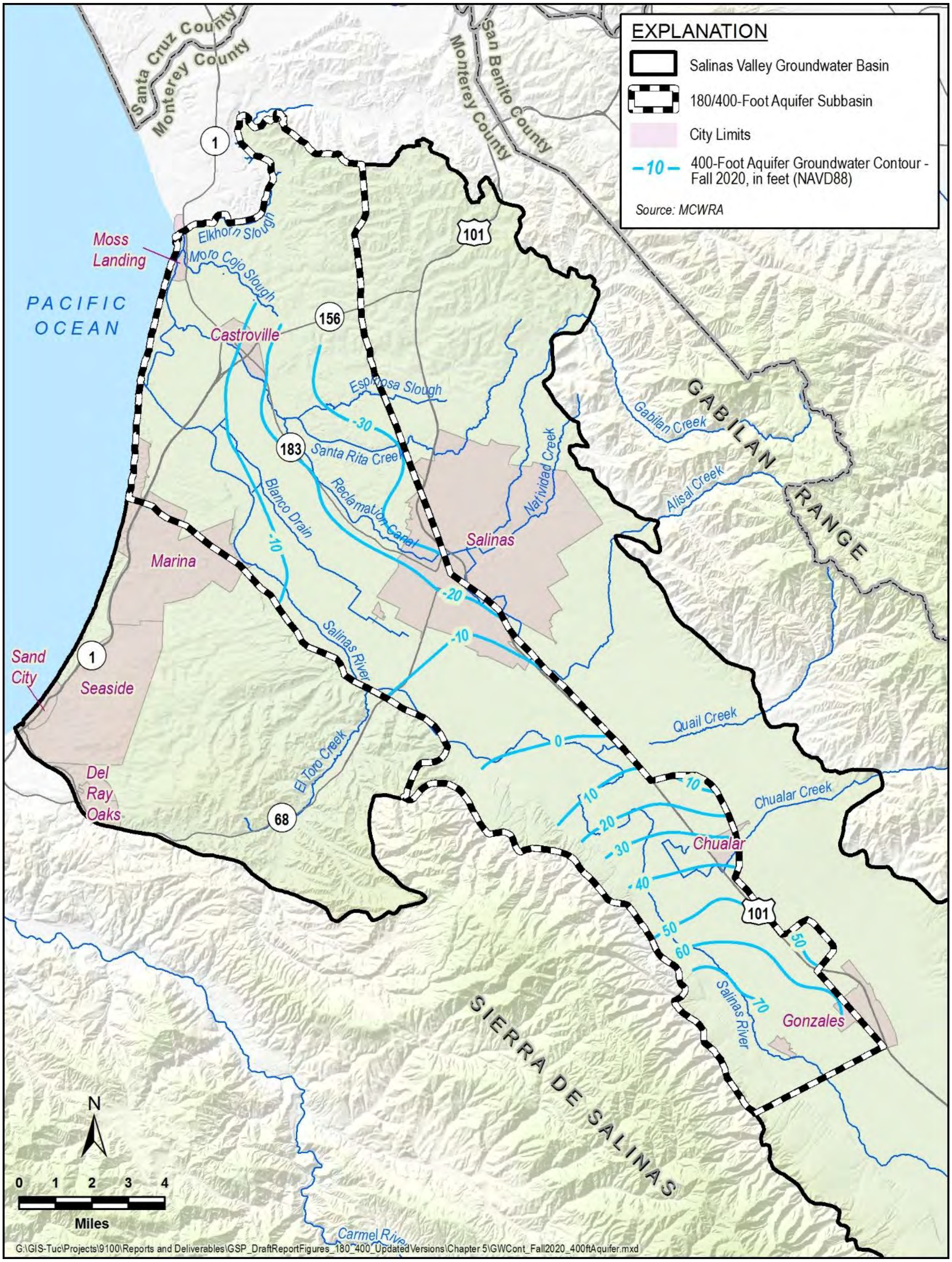

Figure 17. Fall 2020 Groundwater Elevation Contour Map for 400-Foot Aquifer

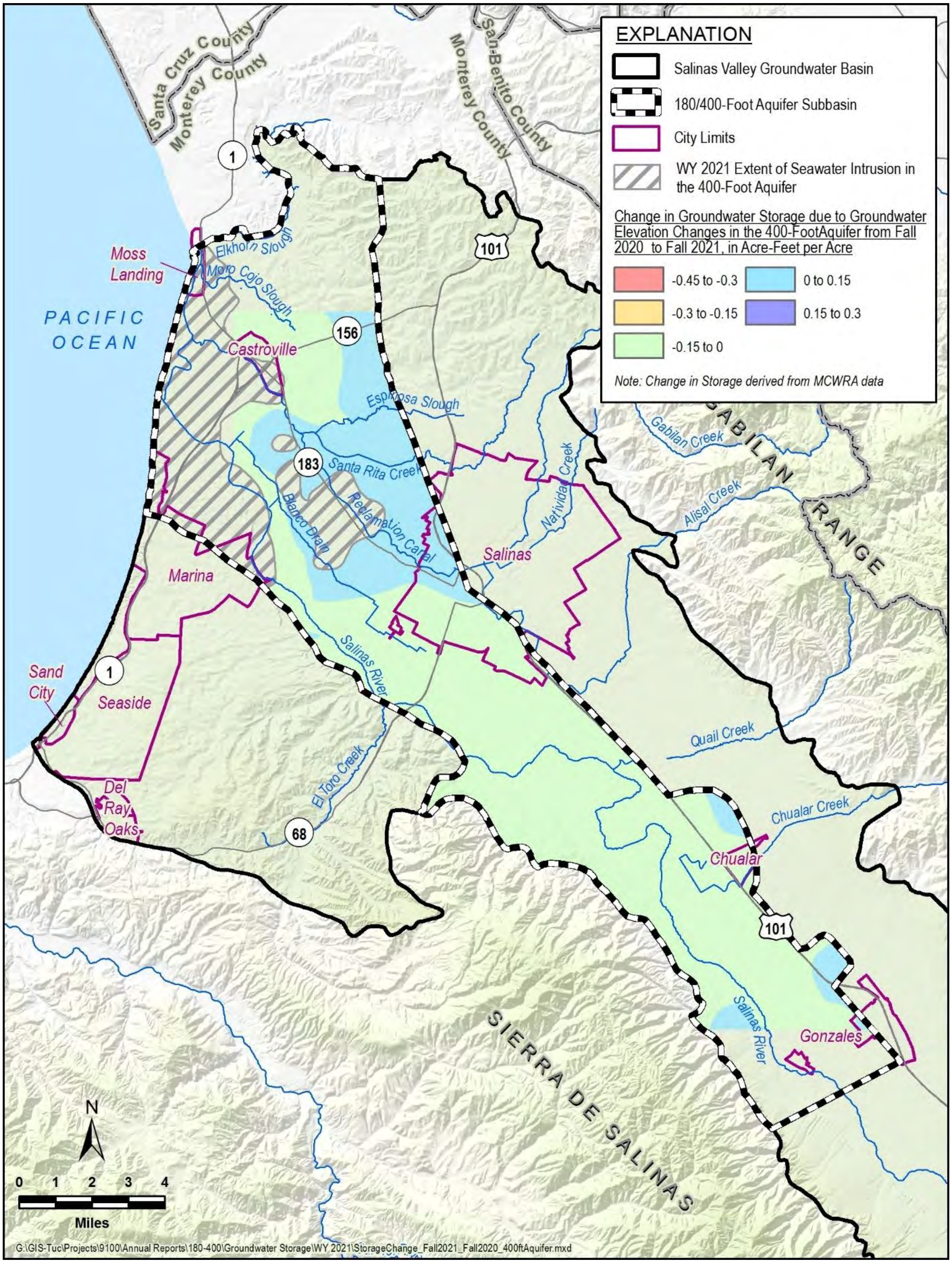

Figure 18. Average Annual Change in Groundwater Storage Between WY 2020 and WY 2021 in the 400-Foot Aquifer

3.4.2 Change in Groundwater Storage due to Seawater Intrusion

Groundwater storage loss due to seawater intrusion is estimated based on the change in seawater intrusion area from WY 2020 to WY 2021, as mapped by MCWRA. As described in Section 3.3 of this report, there was no increase in seawater intrusion in the 180-Foot Aquifer in WY 2021 so the change in storage due to seawater intrusion occurred only in the 400-Foot Aquifer. The area of change from 2020 to 2021 was multiplied by an assumed aquifer thickness and effective porosity of 0.12 to estimate the average annual loss of groundwater storage due to seawater intrusion. The 2 previous annual reports multiplied the increase in seawater intruded acreage by a storage coefficient; however, an effective porosity is more appropriate when calculating change in storage due to seawater intrusion. Storage coefficients are more representative of the quantity of the water that can be drained from an aquifer. Since seawater is moving into the aquifer, an effective porosity should be used for this calculation. Average aquifer thickness is approximately 150 feet in the 180-Foot Aquifer and 200 feet in the 400-Foot Aquifer, based on descriptions in the GSP. Average annual groundwater storage loss due to seawater intrusion in the Subbasin from 2020 to 2021 is approximately 10,200 AF/yr., all of which occurred in the 400-Foot Aquifer. A summary of parameters used for estimating change in groundwater storage due to seawater intrusion is shown in Table 6.

Table 6. Parameters Used for Estimating Loss in Groundwater Storage Due to Seawater Intrusion

Component	180-Foot Aquifer	400-Foot Aquifer
Change in seawater intrusion area from WY 2020 to WY 2021 (acres)	0	-424
Effective Porosity	0.12	0.12
Approximate aquifer thickness (feet)	150	200
Change in groundwater storage from WY 2020 to WY 2021 (AF)	0	-10,200
Total average annual change in groundwater storage due to seawater intrusion (AF/yr.)	**-10,200**	

Note: Increases in acreage intruded by seawater are indicated by negative values. Negative values indicate loss, positive values indicate gain.

3.4.3 Total Change in Groundwater Storage

The total change in groundwater storage is the sum of the changes in groundwater storage due to groundwater elevation changes and seawater intrusion from WY 2020 to WY 2021. The estimated total average annual change in groundwater storage is summarized in Table 7. As explained in Section 3.4.1, the storage changes in the individual aquifers do not sum to the estimated change in storage in the whole Subbasin (outside the seawater intruded area). The difference between the storage changes could be due to loss in storage that occurs in the Deep Aquifers or in the shallow sediments above the 180-Foot Aquifer.

Table 7. Total Average Annual Change in Groundwater Storage

Component	Aquifer Specific Calculation		Whole Subbasin Calculation
	180-Foot Aquifer	400-Foot Aquifer	
Annual storage change due to groundwater elevation changes (AF/yr.)	-3,000	-700	-16,600
Annual storage change due to seawater intrusion (AF/yr.)	0	-10,200	-10,200
Total annual storage change (AF/yr.)	**-13,900**		**-26,800**

Note: Negative values indicate loss, positive values indicate gain.

GSP Regulations also require that annual and cumulative changes in groundwater storage and groundwater use along with water year type data are plotted together, as shown on Figure 19. The annual and cumulative groundwater storage changes included on Figure 19 are based on Subbasin-wide average groundwater elevation changes. This figure includes groundwater extraction from 1995 to 2021, the 1995 to 2016 average historical extraction, and the 2070 projected extraction from Chapter 6 of the 2022 GSP Amendment. Pumping in 2021 increased since the previous reporting year, and is slightly lower than the historical average pumping and the projected pumping. The orange line represents cumulative storage change since 1944 (i.e., zero is the amount of groundwater in storage in 1944, and each year the annual change in storage is added to produce the cumulative change in storage). The green line represents the annual change in storage from the previous year. The 1995 annual change in storage value is based on change in storage from 1994. In WY 2021, the increase in pumping led to a decrease in the cumulative and annual change in storage, as shown by the orange and green lines, respectively. .

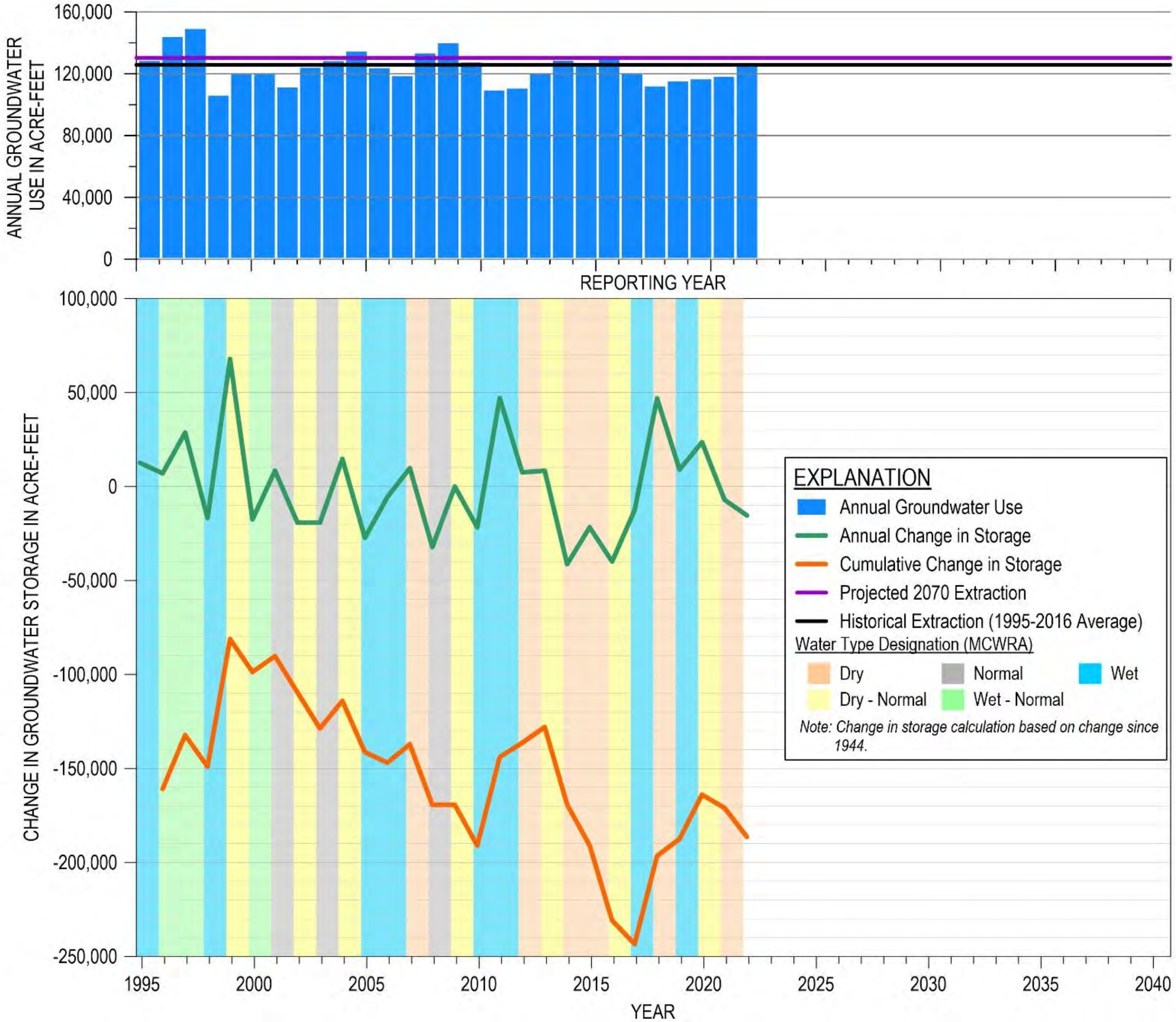

Figure 19. Groundwater Use and Annual and Cumulative Change in Groundwater Storage

3.5 Groundwater Quality

Degradation of groundwater quality is measured in public water system supply wells using data from the SWRCB Division of Drinking Water (DDW). Under the Irrigated Lands Regulatory Program (ILRP), water quality degradation is monitored for on-farm domestic wells and irrigation supply wells. Water quality data for both programs can be found on SWRCB's GAMA groundwater information system. The constituents of concern (COC) for municipal public water system supply wells and domestic wells have a Maximum Contaminant Level (MCL) or Secondary Maximum Contaminant Level (SMCL) established by the State's Title 22 Regulations. The COCs for irrigation supply wells include those that may lead to reduced crop production and are outlined in the Central Coast Regional Water Quality Control Board (CCRWQCB)'s Basin Plan (2019). As discussed in the GSP, each set of wells has its own COCs. Table 8 and Figure 20 show the number of wells that were sampled and that have exceeded the regulatory standard in WY 2021 for the COCs in the GSP Amendment currently being drafted. A new analysis was completed for the GSP Amendment that includes an expanded list of COC for the Subbasin. The table shows the number of wells that exceeded the regulatory standard in WY 2021: eight of the 33 COCs in the GSP Amendment had exceedances and 25 COCs did not have any exceedances of either the drinking water regulatory standards for drinking water wells or Basin Plan objectives for irrigation wells. One new constituent—perchlorate—was not included in the GSP Amendment because there were no exceedances at that time, but it had an exceedance of the regulatory standard in WY 2021.

Table 8. WY 2021 Groundwater Quality Data

Constituents of Concern (COC)	Regulatory Exceedance Standard	Standard Units	Number of Wells Sampled for COC in WY 2021	Number of Wells Exceeding Regulatory Standard in WY 2021
DDW Wells				
1,2-Dibromo-3-chloropropane	0.2	UG/L	0	0
1,2,3-Trichloropropane	0.005	UG/L	11	2
1,2,4-Trichlorobenzene	4	UG/L	6	0
Aluminum	1000	UG/L	7	0
Arsenic	10	UG/L	10	1
Benzo(a)Pyrene	0.2	MG/L	8	0
Chloride	500	MG/L	7	1
Di(2-ethylhexyl) phthalate	4	UG/L	8	0
Dinoseb	7	UG/L	9	0
Fluoride	2	MG/L	3	0
Heptachlor	0.01	UG/L	2	0
Hexachlorobenzene	1	UG/L	2	0
Iron	300	UG/L	8	1
Manganese	50	UG/L	9	1
Methyl-tert-butyl ether (MTBE)	13	UG/L	6	0
Nitrate (as nitrogen)	10	MG/L	56	7
Perchlorate	6	UG/L	6	1
Selenium	20	UG/L	7	0
Specific Conductance	1600	UMHOS/CM	12	1
Tetrachloroethene	5	UG/L	6	0
Total Dissolved Solids	1000	MG/L	6	2
Vinyl Chloride	0.5	UG/L	6	0
ILRP On-Farm Domestic Wells				
Chloride	500	MG/L	0	0
Iron	300	UG/L	0	0
Manganese	50	UG/L	0	0
Nitrite	1	MG/L	0	0
Nitrate (as nitrogen)	10	MG/L	5	0
Nitrate + Nitrite (sum as nitrogen)	10	MG/L	0	0
Specific Conductance	1600	UMHOS/CM	0	0
Sulfate	500	MG/L	0	0
Total Dissolved Solids	1000	MG/L	0	0
ILRP Irrigation Supply Wells				
Chloride	350	MG/L	0	0
Iron	5000	UG/L	0	0

Manganese	200	UG/L	0	0

Note: MG/L= milligram/Liter, UG/L = micrograms/Liter, UMHOS/CM = micromhos/centimeter

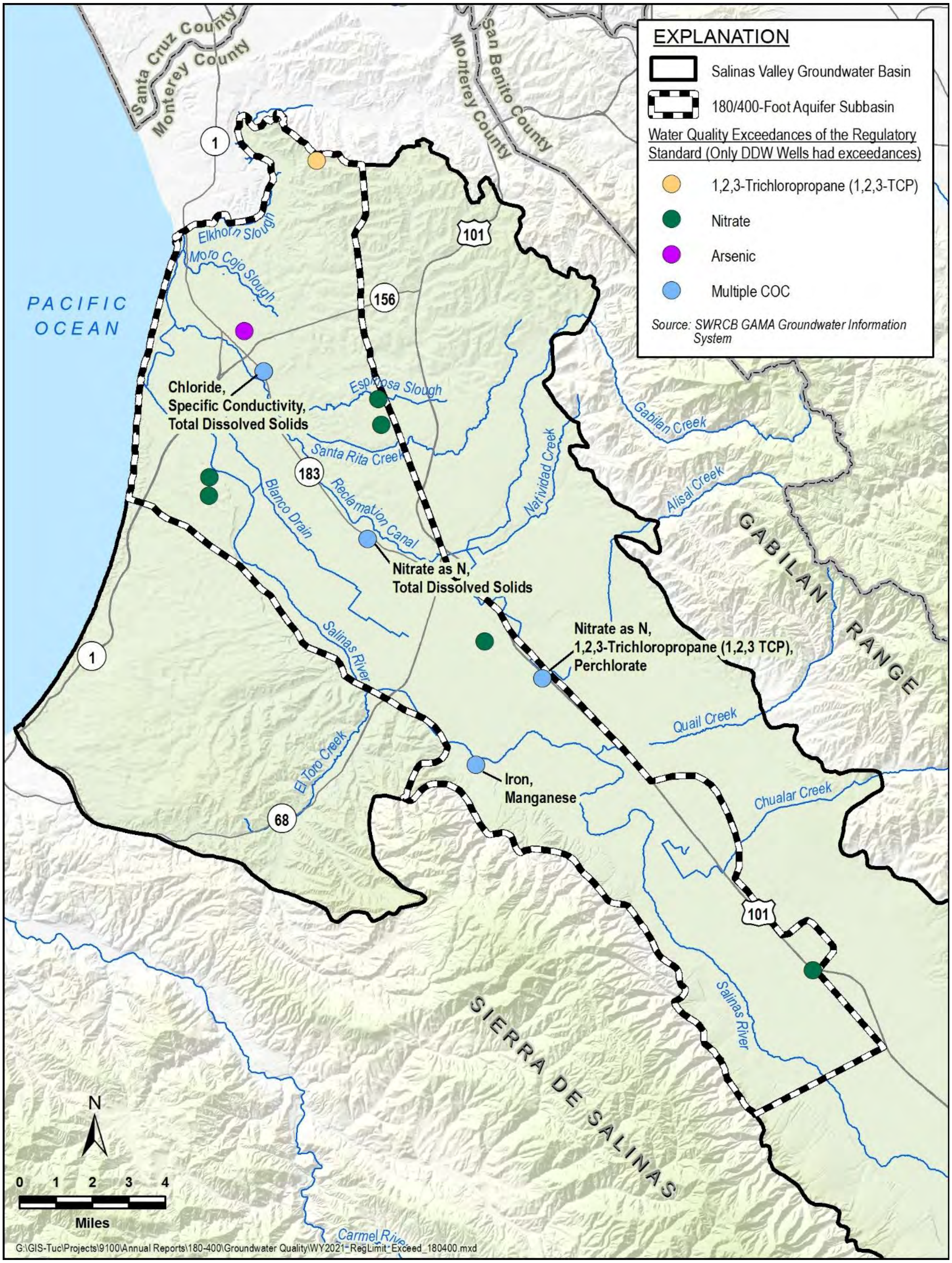

Figure 20. Wells with an Exceedance of the Regulatory Standard in WY 2021

3.6 Subsidence

Subsidence is measured using Interferometric Synthetic-Aperture Radar (InSAR) data. These data are provided by DWR on the SGMA data viewer portal (DWR, 2021). Figure 21 shows the annual subsidence for the 180/400-Foot Aquifer Subbasin from October 2020 to October 2021. Data continue to show negligible subsidence. All land movement was within the estimated error of measurement of +/- 0.1 foot.

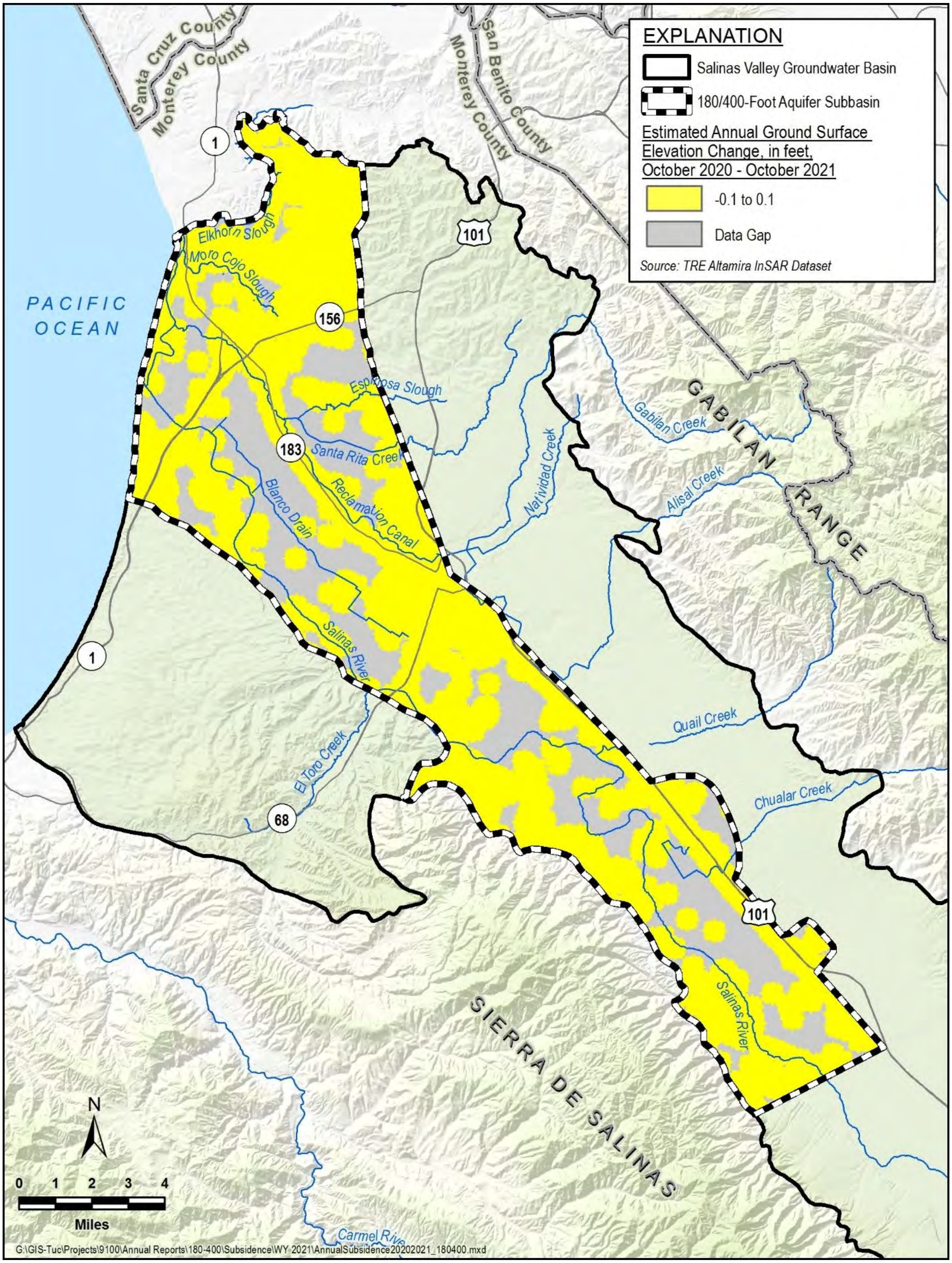

Figure 21. Annual Subsidence

3.7 Depletion of Interconnected Surface Water

The GSP Amendment currently being drafted updates the original GSP with more refined mapping of locations of ISW and rate of depletion. As described in Section 4.4.5.1 of the GSP Amendment, locations of ISW in the 180/400-Foot Aquifer Subbasin are mainly along the Salinas River and in part along some of its tributaries. The Salinas Valley Aquitard extends across much of the Subbasin and inhibits hydraulic connection between the stream and the underlying principal aquifers where groundwater pumping occurs, and therefore, the GSP Amendment and this Annual Report assumes that ISW in the Subbasin occurs along stream reaches located outside the mapped extent of the Aquitard. SVBGSA is including 2 existing shallow wells in the ISW monitoring network to monitor interconnection in the Subbasin. These wells will be supplemented with 2 new shallow wells that will be installed along the Salinas River. The 2 existing monitoring wells and the 2020 and 2021 shallow groundwater elevations are listed in Table 9.

Table 9. Shallow Groundwater Elevation Data

Monitoring Well	WY 2020 Elevation Data (ft)	WY 2021 Elevation Data (ft)
16S/04E-08H02	39.3	32.2
16S/05E-31P02	89.3	88.1

*Groundwater elevation estimated.

Depletion of ISW along the Salinas River due to groundwater pumping was estimated using the provisional Salinas Valley Integrated Hydrologic Model (SVIHM), as described in Section 5.6.2 of the GSP Amendment. This analysis defines a “peak” conservation release period from June to September, reflecting when most conservation releases are made. However, releases can be made at any point during the full MCWRA conservation release period that occurs from April to October. Depletion of interconnected sections of surface water bodies in the Subbasin is estimated separately for the peak conservation release period of June through September, and the non-peak conservation release period of October through May. Depletion of ISW was estimated to be 2,600 AF/yr. during peak conservation release period and 5,800 AF/yr. during the non-peak period.

4 ANNUAL PROGRESS TOWARD IMPLEMENTATION OF THE GSP

4.1 WY 2021 GSP Implementation Activities

This section details groundwater management activities that have occurred in WY 2021 that contribute to GSP implementation. These include activities of SVBGSA and MCWRA that promote groundwater sustainability and are important for reaching the GSP sustainability goal.

Since GSP submittal, SVBGSA and MCWRA have completed several groundwater management activities, as highlighted in past annual reports. These included the following activities completed between GSP submittal and Annual Report submittal: developing a 2-year schedule, further stakeholder engagement, developing a Cooperation Agreement with MCGSA, applying for and receiving a DWR Proposition 68 Grant, assessing data gaps, planning the implementation approach, developing a 2-year work plan and initiating long-term strategic planning, establishment of the Seawater Intrusion Working Group (SWIG), initiation of a Strategic Dialogue with Disadvantaged Communities (DACs), beginning development of a SGMA Implementation Grant application, and filling data gaps.

MCWRA published a *Recommendations Report to Address the Expansion of Seawater Intrusion in the Salinas Valley Groundwater Basin: 2020 Update* (MCWRA, 2020), which outlined 9 recommendations aimed at halting seawater intrusion and evaluated the effectiveness of the expired Monterey County Ordinance 5303 in halting seawater intrusion. It established a new drought operations technical advisory committee (D-TAC) to develop standards and guiding principles for managing the operations of Nacimiento and San Antonio reservoirs during multi-year drought periods. Finally, it began a well destruction program to destroy abandoned or inactive wells.

In WY 2021, SVBGSA and MCWRA undertook additional activities. Activities are separated into 4 main categories: coordination and engagement, data and monitoring, planning, and project and implementation activities.

4.1.1 Coordination and Engagement

SVBGSA continued robust stakeholder engagement and strengthened collaboration with key agencies and partners. In spring 2021, SVBGSA undertook a concerted effort to review the existing committee structure and adjust with a focus on implementation. SVBGSA established the 180/400-Foot Aquifer Subbasin Implementation Committee and appointed 17 members in September 2021. In line with the revised committee structure with a focus on implementation, this effort also included identifying the need for an Integrated Implementation Committee to guide development of an Integrated Implementation Plan for 6 Subbasins within the Salinas Valley. The Integrated Implementation Committee will provide input on basin wide and regional projects and management actions and resolve neighboring basin concerns. The intent of the Committee is to ensure the Salinas Valley Basin is on a cohesive path to sustainability. Over the course of WY 2021, SVBGSA held 12 Valley-wide Board meetings and 11 Valley-wide Advisory Committee Meetings.

SVBGSA and MCWRA also increased coordination and collaboration through weekly meetings between agency leads and consultants. This resulted in increased awareness of each other's activities, objectives, and challenges. MCWRA and SVBGSA have scoped the roles of the 2 agencies and are developing a Memorandum of Understanding (MOU) to be reviewed by each agency Board. The MOU will further outline how the 2 agencies will coordinate through the implementation of the GSPs.

SVBGSA conducted meetings throughout the year to reach out to additional agencies and stakeholders to coordinate. These included meetings with:

- National Marine Fisheries Service on the effect of groundwater extraction on surface water depletion and steelhead and its habitat.
- Monterey County Health Department on data and the existing well permitting and water quality monitoring programs.
- CCRWQCB on data and future coordination with the multiple agencies involved in water quality.
- Integrated Regional Water Management Plan, including coordinating with Central Coast Wetlands Group on watershed coordinator grant.

The SVBGSA contracted with Consensus Building Institute (CBI) to conduct a work program to help the SVBGSA better define a meaningful engagement strategy with DACs, and underrepresented communities more broadly, and to develop a work plan that aligned with GSP development and ultimately with SVBGSA long term goals around groundwater sustainability. CBI conducted interviews to gage primary groundwater issues of concern in underrepresented communities, identified possible SVBGSA focus with underrepresented communities, confirmed barriers to engagement with underrepresented communities, and identified outreach and education materials and approaches to achieve success with these communities over the long term. Underrepresented communities are an important stakeholder for the SVBGSA to develop meaningful and long-term relationships with regard to groundwater sustainability.

4.1.2 Data and Monitoring

SVBGSA also undertook several efforts to further increase data collection and monitoring forward. During WY 2021:

- SVBGSA expanded the groundwater level monitoring network in the 180/400-Foot Aquifer Subbasin beyond the California Statewide Groundwater Elevation Monitoring network. To the extent possible existing wells are used. This effort expands the network from 21 to 91, of which 35 are in the 180-Foot Aquifer, 45 in the 400-Foot Aquifer, and 11 in the Deep Aquifers. These 91 wells areRepresentative Monitoring Sites; however, 157 wells are used in the development of groundwater elevation contours. These wells are included in this Annual Report, as they are inclusive of the original monitoring network. The monitoring network will formally be submitted to DWR as part of the 2-year Update to the 180/400-Foot Aquifer Subbasin GSP.
- SVBGSA reassessed data gaps and selected 2 to request be filled through DWR's Technical Support Services. SVBGSA evaluated land ownership and access. In doing so, SVBGSA worked with MCWRA and Marina Coast Water District to ensure the wells will be strategically located and contribute data that is useful for all agencies.
- SVBGSA and MCWRA began discussions on expanding and enhancing the GEMS program. This effort will primarily take place in 2022 and 2023. These early discussions focused on understanding the challenges to changing the program and steps involved.
- SVBGSA participated in DWR's planning for an airborne electromagnetic (AEM) survey across the Salinas Valley. SVBGSA undertook communication and engagement with stakeholders, and it gave feedback on flight lines.

4.1.3 Planning

As an agency, SVBGSA GSP planning efforts during WY 2021 focused on developing 5 additional groundwater sustainability plans, 4 of which are in adjacent subbasins to the 180/400-Foot Aquifer Subbasin: Forebay Aquifer, Eastside Aquifer, Langley Area, and Monterey Subbasins. While SVBGSA developed these plans through a bottom-up process working with subbasin planning committees, it ensured that they aligned with the 180/400-Foot Aquifer Subbasin GSP, particularly with regards to selecting SMC that would not prevent the 180/400-Foot Aquifer Subbasin from avoiding undesirable results. For example, all adjacent subbasin GSPs selected groundwater level minimum thresholds that are based on not exceeding recent low levels. SVBGSA coordinated with Marina Coast Water District GSA and Arroyo Seco GSA throughout plan development.

In June 2021, SVBGSA received DWR's review and approval of the 180/400-Foot Aquifer Subbasin GSP. Since the 2022 GSPs were under development, SVBGSA took action immediately to address the corrective action on the water quality undesirable result. SVBGSA sought legal advice, revised the undesirable result for 2022 GSPs, and brought the revised language to the partner GSAs, subbasin planning committees, Advisory Committee, and Board of Directors for approval. SVBGSA plans to include the revised language in the 180/400 two-Year GSP Amendment currently being drafted.

Finally, SVBGSA appointed members to the 180/400-Foot Aquifers Subbasin Implementation Committee in September. As part of its charge, the Implementation Committee will provide stakeholder input on the 2-Year GSP Amendment that is under development. This Committee consists of 17 stakeholders, including landowners, municipalities, and water providers.

4.1.4 Project Implementation Activities

SVBGSA and MCWRA undertook several activities during WY 2021 that contribute to GSP Implementation:

SWIG and SWIG Technical Advisory Committee (SWIG TAC): SVBGSA worked throughout WY 2021 with SWIG and SWIG TAC, thus implementing one of the key management actions within the 180/400-Foot Aquifer Subbasin GSP. SWIG aims to develop consensus on the science of seawater intrusion in the Salinas Valley Groundwater Basin and ultimately develop a comprehensive set of projects and management actions that control seawater intrusion while providing cost effective water supplies for the region. After creating working guidelines for themselves and understanding the landscape of current projects occurring to stop seawater intrusion, in WY 2021, SWIG and SWIG TAC meetings focused on reviewing and better understanding additional projects that could stop seawater intrusion in the 180/400-Foot Aquifer Subbasin. SWIG discussed and provided input on demand management approaches and reviewed the various project types including specific project ideas and examples such as an extraction barrier and aquifer storage and recovery. SWIG also completed the development of a Request for Qualifications for the Deep Aquifer Study and recommended tasks for the Deep Aquifer Study.

Deep Aquifers Study: In WY 2021, SVBGSA solicited contributions to fund the Deep Aquifers Study from local agencies and stakeholders. In October 2021 The SVBGSA secured the $850,000 needed for the study when the Board approved the Agreement for Contribution to Funding the Deep Aquifer Investigation to be entered into with the following agencies and entities for the Deep Aquifer Study: Monterey County; Monterey County Water Resources Agency; Castroville Community Services District; Marina Coast Water District; City of Salinas; Alco Water; California Water Service; and irrigated agriculture entities include the Salinas Valley Water Coalition. SVBGSA drafted the Request for Qualifications and released it in September 2021.

Seawater Intrusion Model Expansion: SVBGSA began development on a Seawater Intrusion Model in the Monterey Subbasin through a Proposition 68 grant; however, most of the seawater-intruded area of the Valley is within the 180/400-Foot Aquifer Subbasin. SVBGSA and Monterey County decided to co-fund the expansion of the Model to cover the entire intruded or potentially intruded area within the Salinas Valley Groundwater Basin. The model is a variable density USG-TRANSPORT model. The SVIHM/SVOM developed by USGS does not have the capability of assessing how seawater interacts with groundwater based on their differing densities. This Seawater Intrusion Model will provide a critical tool in assessing which projects and management actions can adequately address seawater intrusion and assist with scoping them.

SGMA Implementation Grant: SVBGSA and MCWRA finished the development of an application for a SGMA Implementation Grant, and submitted it in January 2021. While unsuccessful, the process helped evaluate, prioritize, and further scope potential projects for early implementation, as well as better understand the project benefits in terms of contributing to GSP goals.

USBR WaterSmart Grant: MCWRA and SVBGSA submitted a WaterSmart grant application to USBR for improvements that would help optimize the Castroville Seawater Intrusion Project. The grant included right-sizing the A1 junction, hydraulic modeling, and water scheduling, the combination of which would contribute to reduced need for groundwater extraction.

Well destruction: During WY 2021, MCWRA continued to implement its agreement with the SWRCB: *Protection of Domestic Drinking Water Supplies for the Lower Salinas Valley* project. Through this well destruction project, MCWRA will destroy a minimum of 100 of abandoned or inactive wells in the coastal Salinas Valley to prevent vertical migration of seawater- and nitrate-contaminated groundwater between aquifers. Project implementation is ongoing and will be completed by February 2023.

D-TAC: During WY 2021, MCWRA continued to convene D-TAC. D-TAC completed the development of standards and guiding principles for drought operations, which were adopted by the Agency Board of Directors on February 16, 2021. Moving forward, D-TAC will meet any time a drought trigger occurs to develop a recommended release schedule for Nacimiento and San Antonio Reservoirs.

4.2 Sustainable Management Criteria

The 180/400-Foot Aquifer Subbasin GSP includes descriptions of significant and unreasonable conditions, minimum thresholds, interim milestones, measurable objectives, and undesirable results for each of DWR's 6 sustainability indicators. The SVBGSA determined locally defined significant and unreasonable conditions based on public meetings and staff discussions. The SMC are individual criterion that will each be met simultaneously, rather than in an integrated manner. A brief comparison of the data presented in Section 3 and the SMC criteria are included for each sustainability indicator in the following sections.

Since the GSP addresses long-term groundwater sustainability, some of the metrics for the sustainability indicators may not be applicable in each individual future year. The GSP is developed to avoid undesirable results—under average hydrogeologic conditions—with long-term, deliberate management of groundwater. Pursuant to SGMA regulations (California Water Code § 10721(w)(1)), "Overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods." Therefore, groundwater levels may temporarily exceed minimum thresholds during prolonged droughts, which could be more extreme than those that have been anticipated based on historical data and anticipated climate change conditions. Such temporary exceedances do not constitute an undesirable result.

Average hydrogeologic conditions are the anticipated future groundwater conditions in the Subbasin, averaged over the planning horizon and accounting for anticipated climate change. Future groundwater conditions are based on historical precipitation, evapotranspiration, and streamflow, as well as reasonably anticipated climate change and sea level rise. The average hydrogeologic conditions include reasonably anticipated wet and dry periods.

The 2 solid green lines on Figure 22 show the anticipated average precipitation for 2030 and 2070, accounting for reasonable future climatic change (DWR, 2018). Measured annual precipitation from WY 2019 to WY 2021 are shown as the 2 blue dots, and the dashed blue line shows the average measured precipitation since GSP implementation. This figure shows that WY 2021 was below the average hydrologic conditions expected for the Subbasin. Furthermore, average rainfall since GSP implementation has not risen to the anticipated future average conditions. As a result, it is not anticipated that all measurable objectives have been achieved this year because these measurable objectives were based on managing to average future climatic conditions. This does not mean that minimum thresholds should be exceeded. However, WY 2021 was dry, and therefore it is more likely that minimum thresholds are exceeded in 2021. Because the Subbasin is not expected to achieve sustainability until 2040, the current minimum threshold exceedances do not imply unsustainable groundwater management. However, areas with current minimum threshold exceedances should be monitored, and should demonstrate progress toward measurable objectives as conditions approach expected average conditions.

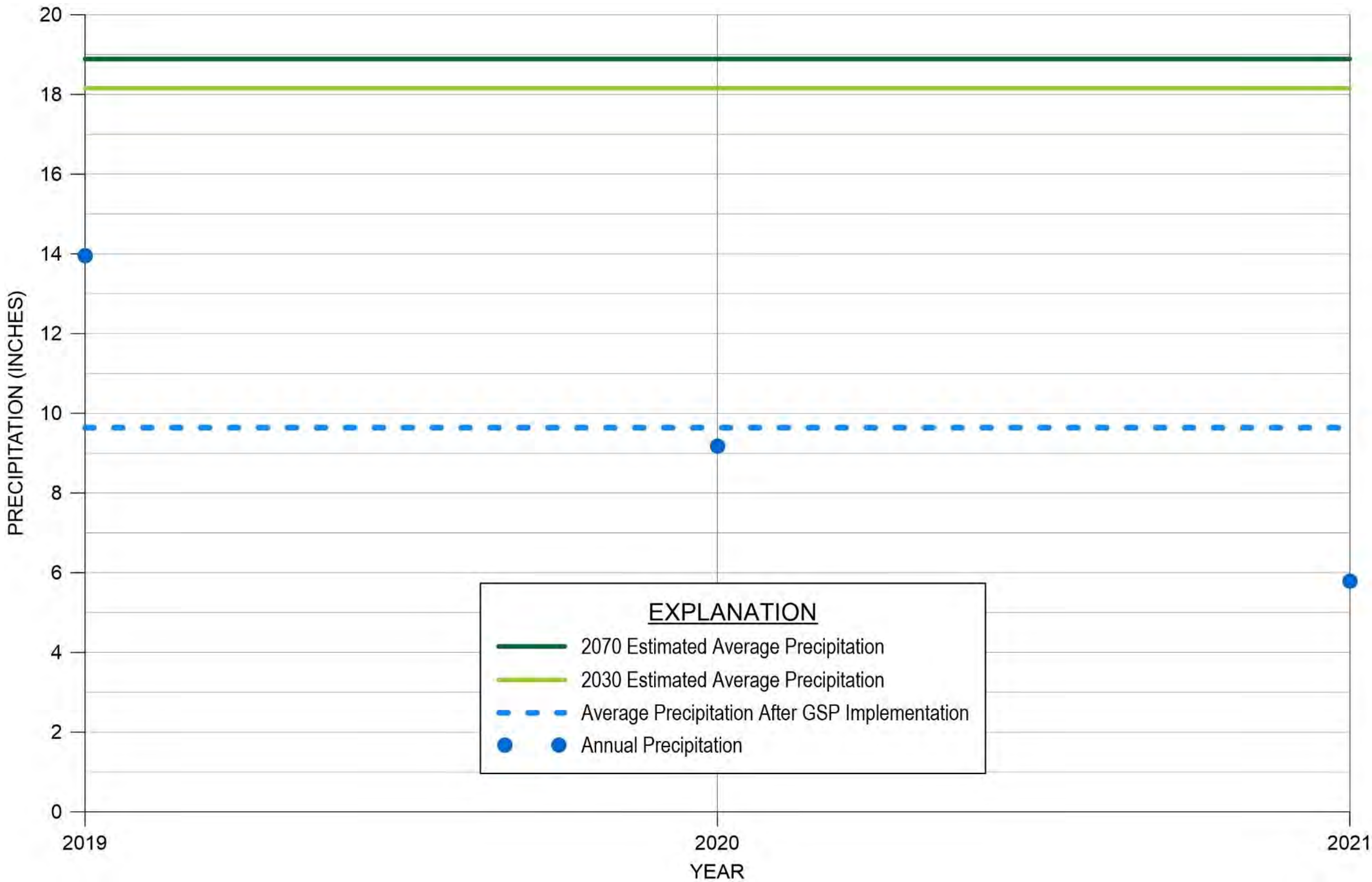

Figure 22. Comparison of Average Precipitation Since GSP Implementation and Estimated Future Average Precipitation

4.2.1 Chronic Lowering of Groundwater Levels SMC

4.2.1.1 Minimum Thresholds

Section 8.6.2.1 of the 180/400-Foot Aquifer Subbasin GSP Amendment currently being drafted describes the information and methodology used to establish minimum thresholds for chronic lowering of groundwater levels. In the 180/400-Foot Aquifer Subbasin, the minimum threshold was set to 1 foot above 2015 groundwater elevations. The minimum threshold values for each well within the groundwater elevation monitoring network are provided in Table 10. Fall groundwater elevation data are color-coded on this table: red cells mean the groundwater elevation is below the minimum threshold, yellow cells mean the groundwater elevation is above the minimum threshold but below the measurable objective, and green cells mean the groundwater elevation is above the measurable objective. In WY 2021, 3 wells in the 180-Foot Aquifer, 6 wells in the 400-Foot Aquifer, and 9 wells in the Deep Aquifers, exceeded their minimum thresholds as indicated by the red cells below.

Table 10. Groundwater Elevation Data, Minimum Thresholds, and Measurable Objectives (in feet)

Below minimum threshold		Above minimum threshold		Above measurable objective	
Monitoring Site	**Minimum Threshold**	**WY 2020 Elevation Data**	**WY 2021 Elevation Data**	**Interim Milestone at Year 2027**	**Measurable Objective (goal to reach at 2042)**
180-Foot Aquifer					
13S/02E-13N01	6.2	6.6*	6.6*	7.8	11.2*
13S/02E-21Q01	6.4*	8.6	9.6	8.6	8.5*
13S/02E-26L01	-6.2*	-4.2*	-3.5	-3.9	-3.0*
13S/02E-29D04	-4.5*	-3.3	-3.3*	-3.1	-2.5
14S/02E-03F04	-7.9	-5.2	-5.2*	-5.0	-4.5
14S/02E-10P01	-17.8	-19.4	-14.4	-16.2	-6.4
14S/02E-11A02	-10.6	-8.2	-8.1	-7.7	-6.0*
14S/02E-12B02	-10.8	-7.6	-7.6*	-6.2	-2.0*
14S/02E-13F03	-11.2	-8.0	-8.6	-7.4	-5.7
14S/02E-17C02	5.5	9.3	9.5	9.9	11.5
14S/02E-21L01	-6.0	-5.0	-5.9	-4.2	-1.8
14S/02E-26H01	-12.3	-9.5	-9.5*	-8.7	-6.2
14S/02E-27A01	-9.9	-7.3	-7.3*	-6.3	-3.1*
14S/02E-34B03	-21.8	-12.8	-13.6	-10.8	-4.8
14S/02E-36E01	-15.7	-12.5	-13.3	-10.2	-3.3
14S/03E-18C01	7.6	11.8	11.8*	12.0	12.4*
14S/03E-30G08	-17.4	-13.1	-13.1*	-12.0	-8.5

14S/03E-31F01	-11.4	-7.2	-8.7	-6.0	-2.2
15S/02E-12C01	-13.0*	-13.7	-14.1	-11.0	-3.0*
15S/03E-09E03	-15.1	-4.4	-9.3	-2.6	2.9
15S/03E-13N01	-10.0	-11.4	-7.0	-5.4	12.8
15S/03E-16M01	-6.0	3.6*	-2.6	5.6	11.5
15S/03E-17M01	-4.6	4.7*	-9.1	6.5	11.9
15S/03E-25L01	-2.7	13.6*	2.7	16.4	24.6
15S/03E-26F01	-8.1	0.3	-5.7	3.4	12.5
15S/04E-31A02	16.6	30.7	23.4	33.4	41.5
16S/04E-05M02	18.7	35.8	27.4	38.8	47.9
16S/04E-13R02	63.9	74.2	67.5	77.0	85.3
16S/04E-15D01	30.6	48.3	48.3*	50.9	58.6
16S/04E-15R02	35.0	55.1	49.4	57.4	64.3
16S/04E-27B02	69.5*	69.5*	69.5*	73.3	84.5*
16S/05E-30E01	60.7	77.1*	73.8	79.1	85.0
16S/05E-31M01	70.0	87.6	82.9	89.4	94.8
17S/04E-01D01	75.9	74.5	69.7	81.1	100.9
17S/05E-06C02	65.1	71.9	71.9*	76.8	91.5
400-Foot Aquifer					
12S/02E-33H02	-3.0*	2.3	2.2	2.5	3.0*
13S/02E-10K01	-19.3	-20.4*	-20.3	-19.3	-16.0*
13S/02E-21N01	-6.3	-6.1	-5.5	-5.3	-3.0*
13S/02E-24N01	-7.0	-2.0	-1.5	-1.5	0.0*
13S/02E-27P01	-44.5	-28.5	-39.0	-26.6	-20.8
13S/02E-29D03	-6.4	-4.3	-5.5	-3.8	-2.4
13S/02E-31N02	-5.0*	-1.8	-1.3	-1.5	-0.4
13S/02E-32A02	-4.6*	-2.5	-1.8	-2.1	-1.0*
14S/02E-02C03	-29.9	-29	-31.6	-26.8	-20.0*
14S/02E-03F03	-13.5	-11.8	-11.8*	-10.2	-5.2
14S/02E-05F04	-15.2	-8.5	-9.8	-8.1	-6.86
14S/02E-08M02	-5.0*	-3.2	-3.7	-2.7	-1.0*
14S/02E-11A04	-25.1	-26.7	-25.1	-24.4	-17.5
14S/02E-11M03	-30.0*	-24	-25.1	-23.0	-20.0*
14S/02E-12B03	-27.8	-28.2	-28.2*	-25.8	-18.5
14S/02E-12Q01	-13.6	-10.9	-11.7	-10.5	-9.3
14S/02E-16A02	-19.6	-14.5	-14.8	-12.9	-7.9
14S/02E-22L01	-22.9	-12.7	-12.5	-10.3	-3.1
14S/02E-26J03	-20.6*	-18.7	-15.9	-15.3	-5
14S/02E-27G03	-17.1	-13.9	-13.6	-12.5	-8.3
14S/02E-34A03	-12.4	-13.4	-12.0	-11.9	-7.5
14S/02E-36G01	-13.7	-9.8	-10.7	-7.4	-0.1

14S/03E-18C02	-19.7	-18.3	-18.3*	-16.9	-12.5
14S/03E-20C01	-41	-41	-41*	-39.5	-35.0*
14S/03E-29F03	-26	-23	-23.0	-21.0	-15.0*
14S/03E-31L01	-9	-9	-10.0	-7.5	-3.0*
15S/02E-01A03	-15.3	-12.7	-13.9	-9.7	-0.7
15S/02E-02G01	-28	-23	-23.4	-20.1	-11.2
15S/02E-12A01	-17.1	-13.8	-16.5	-11.5	-4.7
15S/03E-03R02	-17	-8	-10.0	-6.3	-1.0*
15S/03E-04Q01	-11	-6	-9.0	-4.5	0.0*
15S/03E-05C02	-16	-16	-15.0	-13.3	-5.0*
15S/03E-08F01	-17.8	-15.4	-15.4*	-12.9	-5.2
15S/03E-14P02	-11.7	-7.6	-13.0	-3.6	8.4
15S/03E-15B01	-14.1	-5.5	-11.5	-2.7	5.8
15S/03E-16F02	-6.5	0.4	-9.4	1.6	5.0*
15S/03E-17P02	-17	-8	-9.0	-6.5	-2.0*
15S/03E-26A01	-4.5	5.1	-2.3	7.6	15
15S/03E-28B02	-0.5	4	7.0	6.8	15.0*
15S/04E-29Q02	5.8	17.4	11.9	21.5	33.9
16S/04E-04C01	11.7	34.4	27.0	37.6	47.2
16S/04E-08H03	24.6	42.8	42.8*	45.8	54.65
16S/04E-10R02	40.7	55	51.9	58.1	67.2
16S/04E-25G01	51.3	70.3	63.3	71.8	76.4
16S/05E-30J02	67.2	83.0	79.7	84.9	90.7
Deep Aquifers					
13S/01E-36J02	-4.2	-9.6	-11.8	-6.7	2.0*
13S/02E-19Q03	-2.4	-8.9	-10.7	-5.1	6.3
13S/02E-28L03	-40.0*	-27.4	-45.0	-27.8	-29.0*
13S/02E-32E05	-9.2	-14.7	-14.7*	-10.6	1.6
14S/02E-06L01	-7.2	-14.7	-16.5	-10.3	3.0
14S/02E-18B01	-35.0*	-27.6*	-36.2*	-27.0	-25.0*
14S/02E-22A03	-80.0*	-103.2	-49.2	-92.4	-60.0*
14S/02E-28C02	-41.2	-40	-45.3	-33.8	-15.0*
15S/03E-10D04	-20.0*	-21.7	-25.7	-18.8	-10.0*
15S/03E-17E02	-15.0*	-14	-12.6	-13.0	-10.0*
16S/04E-11D51	43.0*	48.5	42.1	48.9	50.0*

*Groundwater elevation was estimated.

4.2.1.2 Measurable Objectives and Interim Milestones

The measurable objectives for chronic lowering of groundwater levels represent target groundwater elevations that are higher than the minimum thresholds. These measurable objectives provide operational flexibility to ensure that the Subbasin can be managed sustainably over a reasonable range of hydrologic variability. Measurable objectives for the chronic lowering of groundwater levels are summarized in Table 10. 2 wells, one in the 180-Foot Aquifer and one in the Deep Aquifers, had groundwater elevations higher than their measurable objective in WY 2021 and are represented by the green cells in Table 10.

To help reach measurable objectives, the SVBGSA set interim milestones at 5-year intervals. The 2025 interim milestones for groundwater elevations are also shown in Table 10. The WY 2021 groundwater elevations in 11 wells are already higher than the 2025 interim milestones.

4.2.1.3 Undesirable Result

The chronic lowering of groundwater levels undesirable result is a quantitative combination of groundwater elevation minimum threshold exceedances. For the Subbasin, the groundwater elevation undesirable result is:

> *Over the course of any one year, no more than 15% of the groundwater elevation minimum thresholds shall be exceeded in any single aquifer. Additionally, the minimum threshold in any one well shall not be exceeded for more than two sequential years.*

Based on the data in Table 10, 9% of wells in the 180-Foot Aquifer, 13% in the 400-Foot Aquifer, and 82% in the Deep Aquifers exceed their minimum thresholds. Furthermore, 2 wells in the 180-Foot and 400-Foot Aquifers, and 5 wells in the Deep Aquifers exceeded their minimum thresholds in 2 consecutive years. Therefore, all the principal aquifers exceed the 20-year planning horizon undesirable result. Groundwater elevation minimum threshold exceedances, compared with the 2040 undesirable result, is shown on Figure 23. If a value is in the shaded red area, it would constitute undesirable result in 2040. This graph will be updated annually with new data to demonstrate the sustainability indicator’s direction toward sustainability.

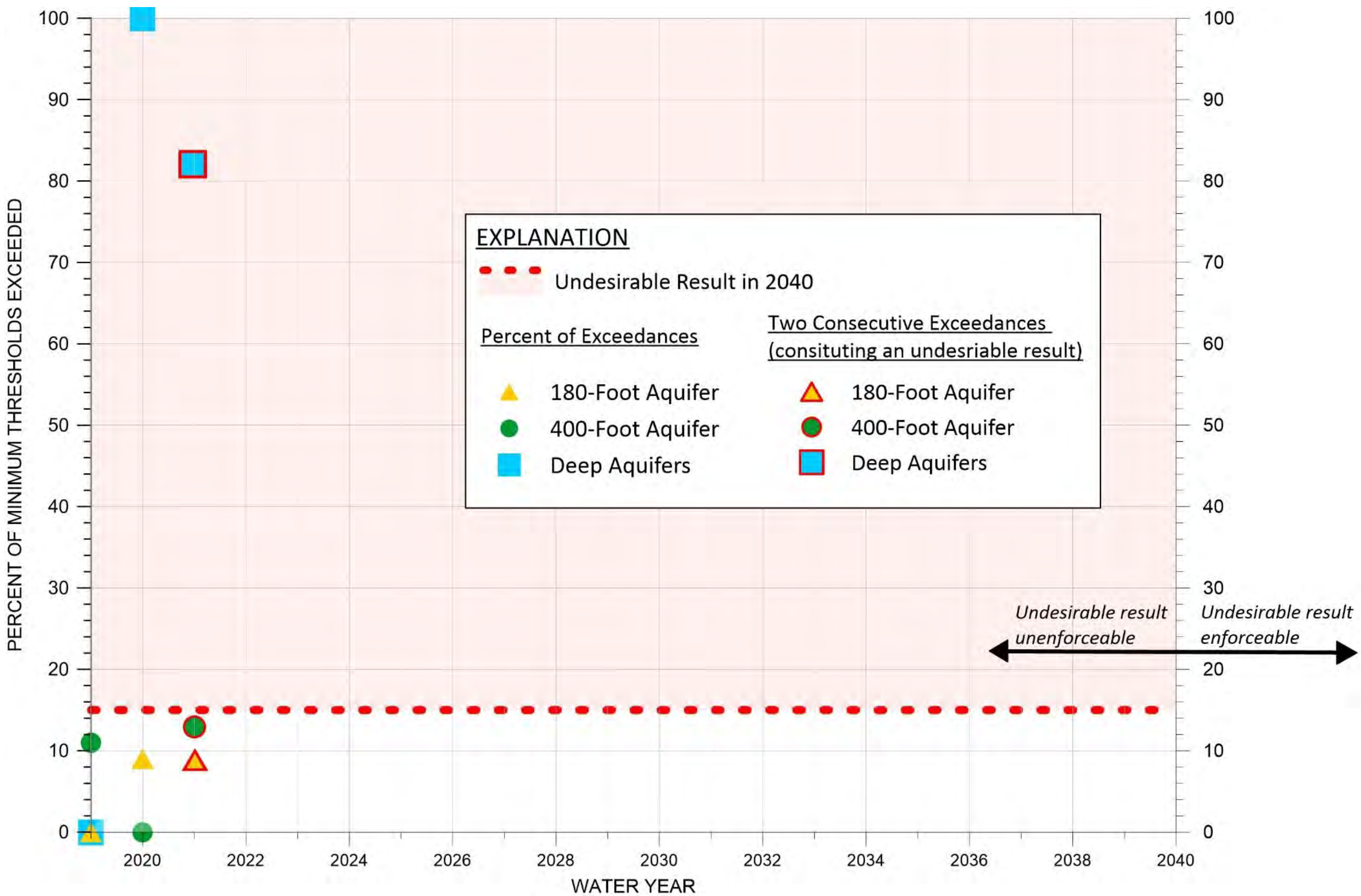

Figure 23. Groundwater Elevation Exceedances Compared to 2040 Undesirable Result

4.2.2 Reduction in Groundwater Storage SMC

4.2.2.1 Minimum Thresholds

In accordance with SGMA regulations, the minimum threshold for reduction of groundwater storage is a total volume of groundwater that can be withdrawn from the subbasin without causing conditions that may lead to undesirable results. Section 8.7.2.1 of the 180/400-Foot Aquifer Subbasin GSP describes the information and methodology used to establish minimum thresholds for reduction in groundwater storage. The future long-term sustainable yield of the Subbasin under reasonable climate change assumptions is 112,000 AF/yr. as described in Chapter 6 of the GSP. Therefore, the minimum threshold is set at the long-term future sustainable yield of 112,000 AF/yr. This sustainable yield does not include reductions that may be necessary to reach sustainability. It also does not include rural domestic pumping and thus the 200 AF/yr. estimation is not counted to determine if the minimum threshold was exceeded. The total groundwater extraction for reporting year 2021, without rural domestic pumping, was 126,800 AF and exceeds the minimum threshold by 14,800 AF.

The minimum threshold applies to pumping of natural recharge only. Natural recharge includes items such as recharge from precipitation and percolation of excess irrigation water. Pumping of intentionally recharged water that is not part of the natural recharge is not considered when compared against the minimum threshold.

4.2.2.2 Measurable Objective and Interim Milestones

The measurable objective for reduction in groundwater storage is the same as the minimum threshold, set at the long-term future sustainable yield of 112,000 AF/yr. for the entire 180/400-Foot Aquifer Subbasin. The reduction in storage 2025 interim milestone is also set to 112,000 AF/yr. and therefore is also exceeded by 14,800 AF.

4.2.2.3 Undesirable Result

For the reduction in groundwater storage SMC, the undesirable result is a quantitative combination of minimum threshold exceedances. The reduction in groundwater storage undesirable result is:

> *During average hydrogeologic conditions, and as a long-term average over all hydrogeologic conditions, the total groundwater pumping shall not exceed the minimum threshold, which is equivalent to the long-term sustainable yield of the aquifers in the Subbasin.*

Based on the data in Section 3.1 the amount of groundwater pumping in 2021 was 126,800 AF/yr. not including the rural domestic pumping estimate. The 2021 groundwater extractions exceeded the 20-year planning horizon undesirable result. Figure 24 shows groundwater extractions compared to the 2040 change in storage undesirable results goal. If a value is in the shaded red area, it would constitute undesirable result in 2040. This graph will be updated annually with new data to demonstrate the sustainability indicator's direction toward sustainability.

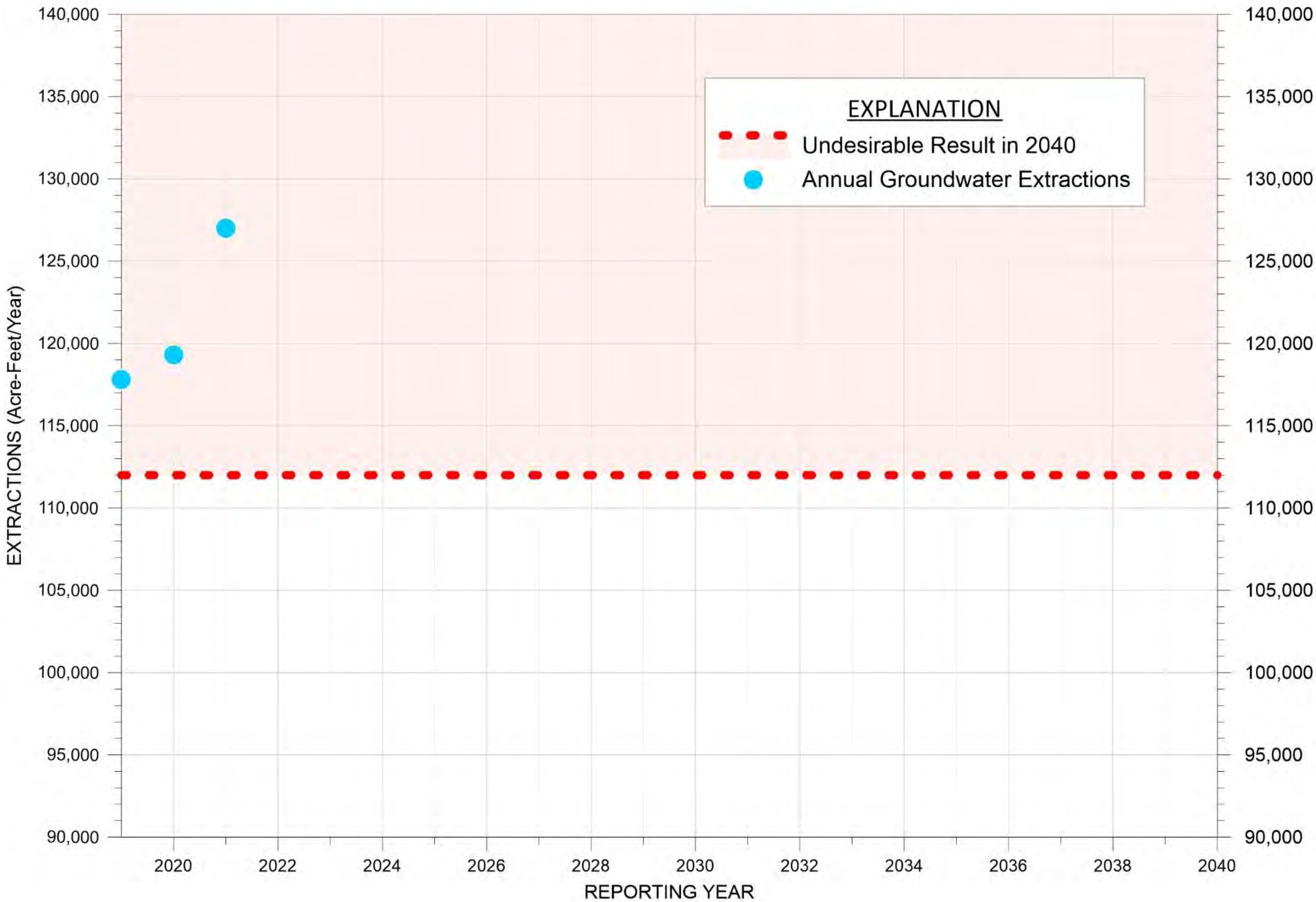

Figure 24. Groundwater Extraction Compared to the Groundwater Storage 2040 Undesirable Result

4.2.3 Seawater Intrusion SMC

4.2.3.1 Minimum Thresholds

The minimum threshold for seawater intrusion is defined by a chloride concentration isocontour of 500 mg/L for each principal aquifer where seawater intrusion may lead to undesirable results. Section 8.8.2.1 of the 180/400-Foot Aquifer Subbasin GSP describes the information and methodology used to establish minimum thresholds for seawater intrusion. In the 180/400-Foot Aquifer Subbasin, the 2017 extent of the 500 mg/L chloride concentration isocontour as mapped by MCWRA is adopted as the seawater intrusion minimum threshold for both the 180-Foot and 400-Foot Aquifers. The line defined by Highway 1 is adopted as the seawater intrusion minimum threshold for the Deep Aquifers, as shown on Figure 25 and Figure 26.

As described in Section 3.3, seawater intrusion in the 180-Foot Aquifer did not increase in WY 2021 but did increase slightly in the 400-Foot Aquifer. Figure 25 and Figure 26 show that the WY 2021 extent of seawater intrusion in the 180-Foot Aquifer and 400-Foot Aquifer are still exceeding the 2017 extents, and therefore exceed the minimum thresholds. The red lines on Figure 25 and Figure 26 represent the minimum thresholds and the purple lines represent the measurable objectives.

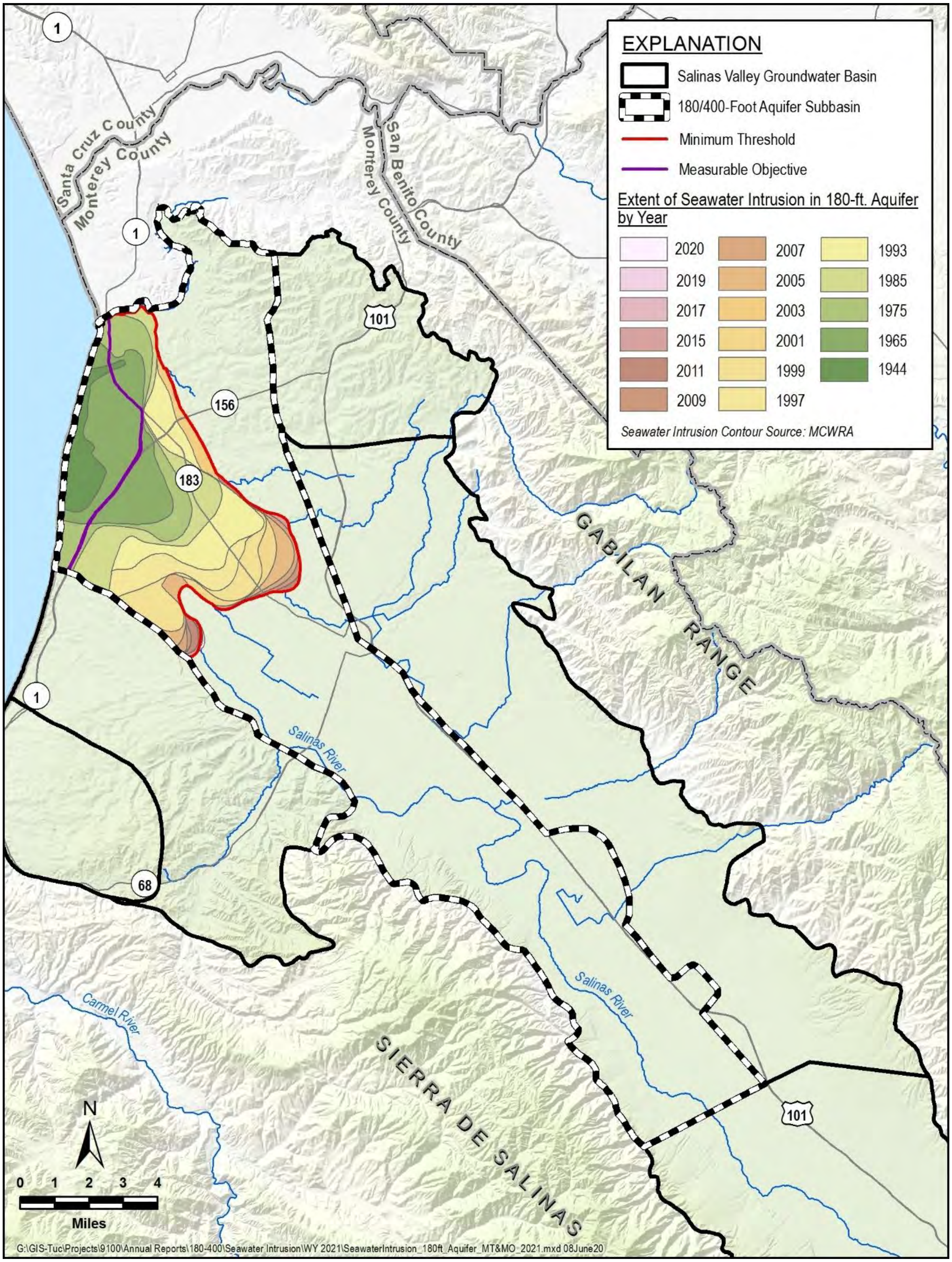

Figure 25. Seawater Intrusion Compared to the Seawater Intrusion Minimum Threshold, 2040 Undesirable Result, and Measurable Objective for the 180-Foot Aquifer

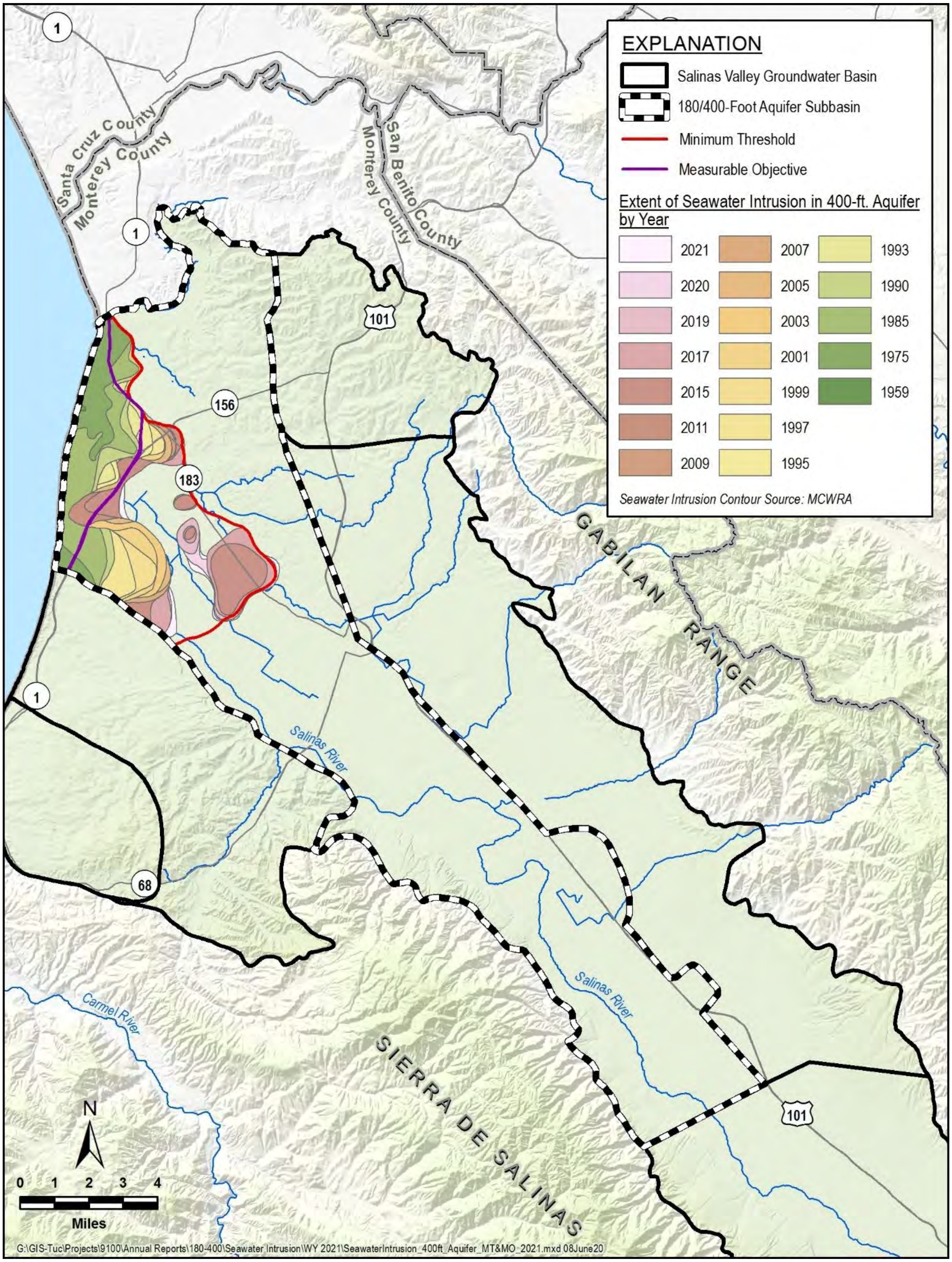

Figure 26. Seawater Intrusion Compared to the Minimum Threshold, 2040 Undesirable Result, and Measurable Objective for the 400-Foot Aquifer

4.2.3.2 Measurable Objectives and Interim Milestones

The measurable objective for the seawater intrusion SMC is to move the 500 mg/L chloride isocontour to the line defined by Highway 1. To reach measurable objectives, the SVBGSA set interim milestones at 5-year intervals. The interim milestones for seawater intrusion are:

- 5-Year: identical to current conditions
- 10-year: one-third of the way to the measurable objective
- 15-year: two-thirds of the way to the measurable objective

Because seawater intrusion in both the 180-Foot Aquifer and 400-Foot Aquifer in WY 2021 is still exceeding the minimum thresholds, seawater intrusion is not yet progressing toward the interim milestones. The extent of seawater intrusion did not increase in the 180-Foot Aquifer but the increase in seawater intruded acreage more than doubled from WY 2020 to WY 2021in the 400-Foot Aquifer within the Subbasin. The slowing rate of intrusion in the 180-Foot Aquifer indicates could make it easier to move toward measurable objectives in future years.

4.2.3.3 Undesirable Result

The seawater intrusion undesirable result is a quantitative combination of chloride concentrations minimum threshold exceedances. There is only one minimum threshold for each of the 3 aquifers. Because even localized seawater intrusion is not acceptable, the subbasin-wide undesirable result is zero exceedances of minimum thresholds. For the Subbasin, the seawater intrusion undesirable result is:

On average in any one year there shall be no exceedances of any minimum threshold.

Figure 25 and Figure 26 show that the 2021 extent of seawater intrusion in the 180-Foot Aquifer and 400-Foot Aquifer exceeded the 2017 extents, and therefore exceed the exceed the 20-year planning horizon undesirable result. Insufficient data are available to map the extent of seawater intrusion in the Deep Aquifers. This is a data gap that the SVBGSA will address during GSP implementation.

4.2.4 Degraded Groundwater Quality SMC

4.2.4.1 Minimum Thresholds

The degraded groundwater quality minimum threshold for each constituent of concern is based on the number of supply wells monitored that had higher concentrations of constituents than the regulatory standards for drinking water and irrigation water during the last sampling. Section 8.9.2.1 of the 180/400-Foot Aquifer Subbasin GSP Amendment currently being drafted describes the information and methodology used to establish minimum thresholds for degraded groundwater quality. The minimum threshold values for each well within the groundwater quality monitoring network are provided in Table 11. Table 11 also shows the WY 2021 exceedances of the regulatory standard discussed in Section 3.5 and the running total of regulatory standard exceedances used to measure against the minimum thresholds. Only the latest sample for each COC at each well is used for the running total. The minimum thresholds are set at zero additional exceedances of each constituent, based on the exceedances in 2017. These conditions were determined to be significant and unreasonable because groundwater quality in exceedance of these will cause a financial burden on groundwater users. Public water systems with COC concentrations above the MCL or SMCL are required to add treatment to the drinking water supplies or drill new wells. Agricultural wells with COCs that significantly reduce crop production will reduce grower's yields and profits.

In WY 2021, there were 18 exceedances of the minimum thresholds. The last column in Table 11 includes the number of exceedances above the minimum thresholds, the COCs that exceeded the minimum threshold are highlighted in orange. The negative numbers in the last column indicate wells that once exceeded the regulatory limit are no longer exceeding the limit.

Table 11. Minimum Thresholds and Measureable Objectives for Degradation of Groundwater Quality

Constituent of Concern (COC)	Minimum Threshold/Measurable Objective (existing exceedances of Regulatory Standard in 2017)	WY 2021 Exceedances of Regulatory Standard (new exceedances based on wells monitored in WY 2021)	Running Total of Exceedances of Regulatory Standard	Number of Exceedances above Minimum Threshold
DDW Wells				
1,2-Dibromo-3-chloropropane	9	0	9	0
1,2,3-Trichloropropane	11	2	13	2
1,2,4-Trichlorobenzene	1	0	1	0
Aluminum	1	0	1	0
Arsenic	1	1	2	1
Benzo(a)Pyrene	2	0	2	0
Chloride	2	1	3	1
Di(2-ethylhexyl)phthalate	2	0	2	0
Dinoseb	2	0	2	0
Fluoride	1	0	1	0
Heptachlor	2	0	2	0
Hexachlorobenzene	2	0	2	0
Iron	2	1	6	4
Manganese	1	1	5	4
Methyl-tert-butyl ether (MTBE)	3	0	3	0
Nitrate (as nitrogen)	4	7	14	10

Perchlorate	0	1	1	1
Selenium	2	0	2	0
Specific Conductance	2	1	4	2
Tetrachloroethene	1	0	1	0
Total Dissolved Solids	4	2	7	3
Vinyl Chloride	34	0	34	0
ILRP On-Farm Domestic Wells				
Chloride	9	0	9	0
Iron	7	0	11	4
Manganese	1	0	3	2
Nitrate (as nitrogen)	36	0	49	13
Nitrate + Nitrite (sum as nitrogen)	4	0	9	5
Nitrite	1	0	1	0
Specific Conductance	35	0	41	6
Sulfate	2	0	3	1
Total Dissolved Solids	33	0	44	11
ILRP Irrigation Supply Wells				
Chloride	19	0	27	8
Iron	2	0	2	0
Manganese	0	0	1	1

4.2.4.2 Measurable Objectives and Interim Milestones

The measurable objectives for degradation of groundwater quality represent a target number of groundwater quality exceedances in the Subbasin. SGMA does not require the improvement of groundwater quality. Therefore, the 180/400-Foot Aquifer GSP and GSP Amendment include measurable objectives identical to the minimum thresholds, as defined in Table 11. Interim milestones are also set at the minimum threshold levels. Although there were 18 groundwater quality minimum threshold exceedances in WY 2021, the groundwater quality data already meet the 2025 interim milestones because these exceedances are not due to GSA actions.

4.2.4.3 Undesirable Result

The degradation of groundwater quality undesirable result is a quantitative combination of groundwater quality minimum threshold exceedances. Any groundwater quality degradation as a direct result of GSP implementation is unacceptable. Some groundwater quality changes are expected to occur independent of SGMA activities; because these changes are not related to SGMA activities they do not constitute an undesirable result. The degradation of groundwater quality undesirable result is:

> *During any one year, no groundwater quality minimum threshold shall be exceeded when computing annual averages at each well, as a direct result of projects or management actions taken as part of GSP implementation.*

This undesirable result statement is in the process of being revised as part of the GSP Amendment based on DWR's GSP review and recommended corrective actions. Table 11 shows 18 constituents exceeded their minimum thresholds in WY 2021, compared to the WY 2017 baseline. However, since SVBGSA has yet to implement any projects or management actions in the Subbasin, these exceedances are not due to GSA actions. Therefore, the groundwater quality data do not exceed the 20-year planning horizon undesirable result. The groundwater quality minimum threshold exceedances, compared with the 2040 undesirable results, is shown on Figure 27. If a value is in the shaded red area, it would constitute undesirable result in 2040. This graph is updated annually with new data to demonstrate the sustainability indicator's direction toward sustainability.

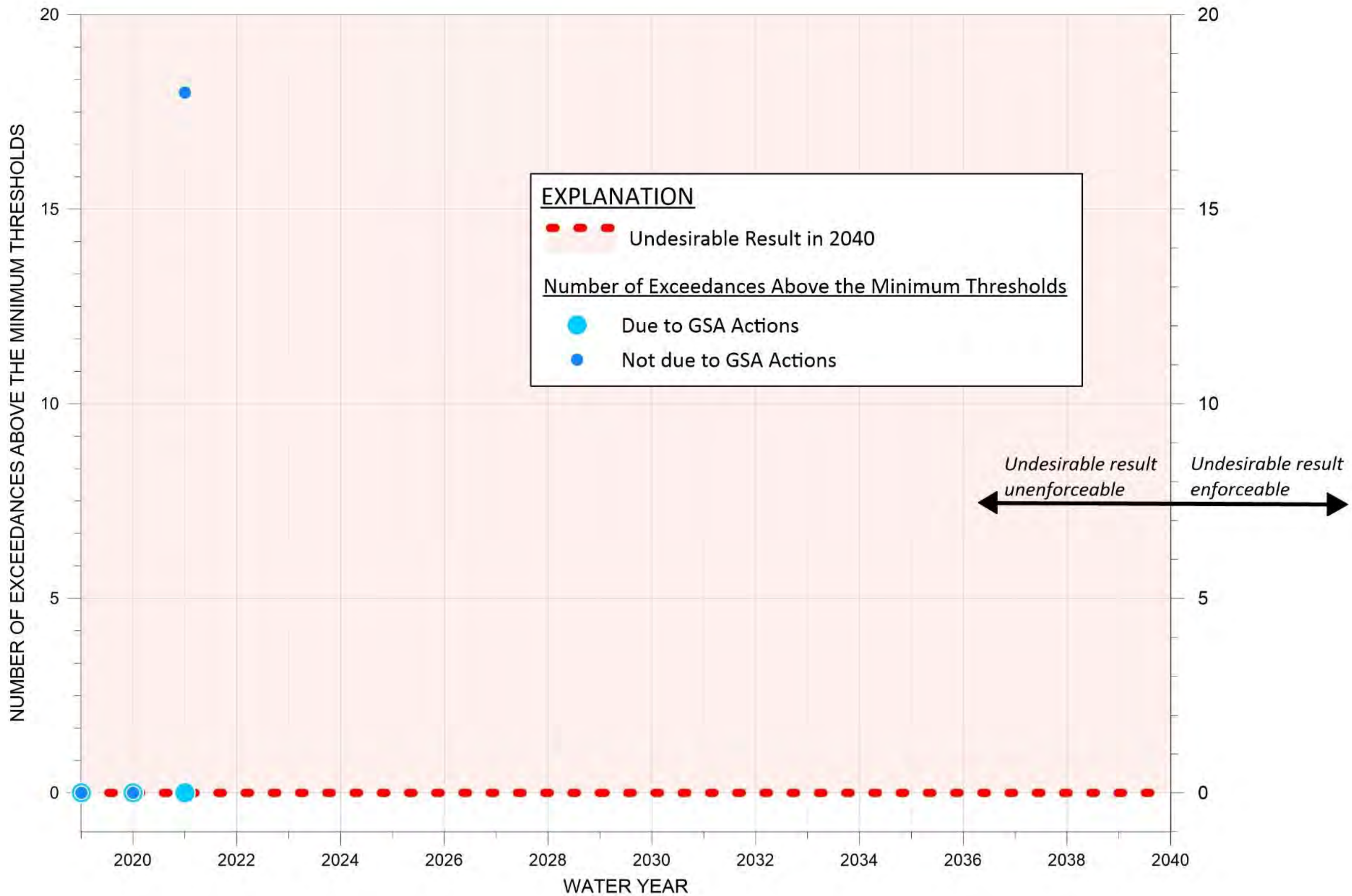

Figure 27. Groundwater Quality Minimum Threshold Exceedences Compared to the 2040 Groundwater Quality Undesirable Result

4.2.5 Land Subsidence SMC

4.2.5.1 Minimum Thresholds

Accounting for measurement errors in the InSAR data, the minimum threshold for land subsidence in the GSP is zero net long-term subsidence, with no more than 0.1 foot per year of estimated land movement to account for InSAR errors. Section 8.10.2.1 of the 180/400-Foot Aquifer Subbasin GSP describes the information and methodology used to establish minimum thresholds for subsidence. A single minimum threshold is set for the entire Subbasin. Annual subsidence data from October 2020 to October 2021 demonstrated less than the minimum threshold of 0.1 foot/year, as shown on Figure 18.

4.2.5.2 Measurable Objectives and Interim Milestones

The measurable objectives for ground surface subsidence represent target subsidence rates in the Subbasin. Because the minimum thresholds of zero net long-term subsidence are the best achievable outcome, the measurable objectives are identical to the minimum thresholds: zero net long-term subsidence, with no more than 0.1 foot per year of estimated land movement to account for InSAR errors. Figure 18 demonstrates that data from October 2020 to October 2021 showed less than the measurable objective of no more than 0.1 foot per year of measured subsidence is being met. The interim milestones are identical to minimum threshold of 0.1 foot per year. The latest subsidence data shows that the 2025 subsidence interim milestone is already being met.

4.2.5.3 Undesirable Result

The ground surface subsidence undesirable result is a quantitative combination of subsidence minimum threshold exceedances. For the 180/400-Foot Subbasin, no long-term subsidence that impacts infrastructure is acceptable. Therefore, the land subsidence undesirable result is:

> *In any one year, there will be zero exceedances of the minimum thresholds for subsidence.*

Data from October 2020 to October 2021 showed subsidence was below the minimum threshold of 0.1 foot per year. The latest land subsidence, therefore, does not exceed the 20-year planning horizon undesirable result. Maximum measured subsidence in the Subbasin, compared with the 2040 change in subsidence undesirable results goal, is shown on Figure 28. If a value is in the shaded red area, it would constitute undesirable result in 2040.

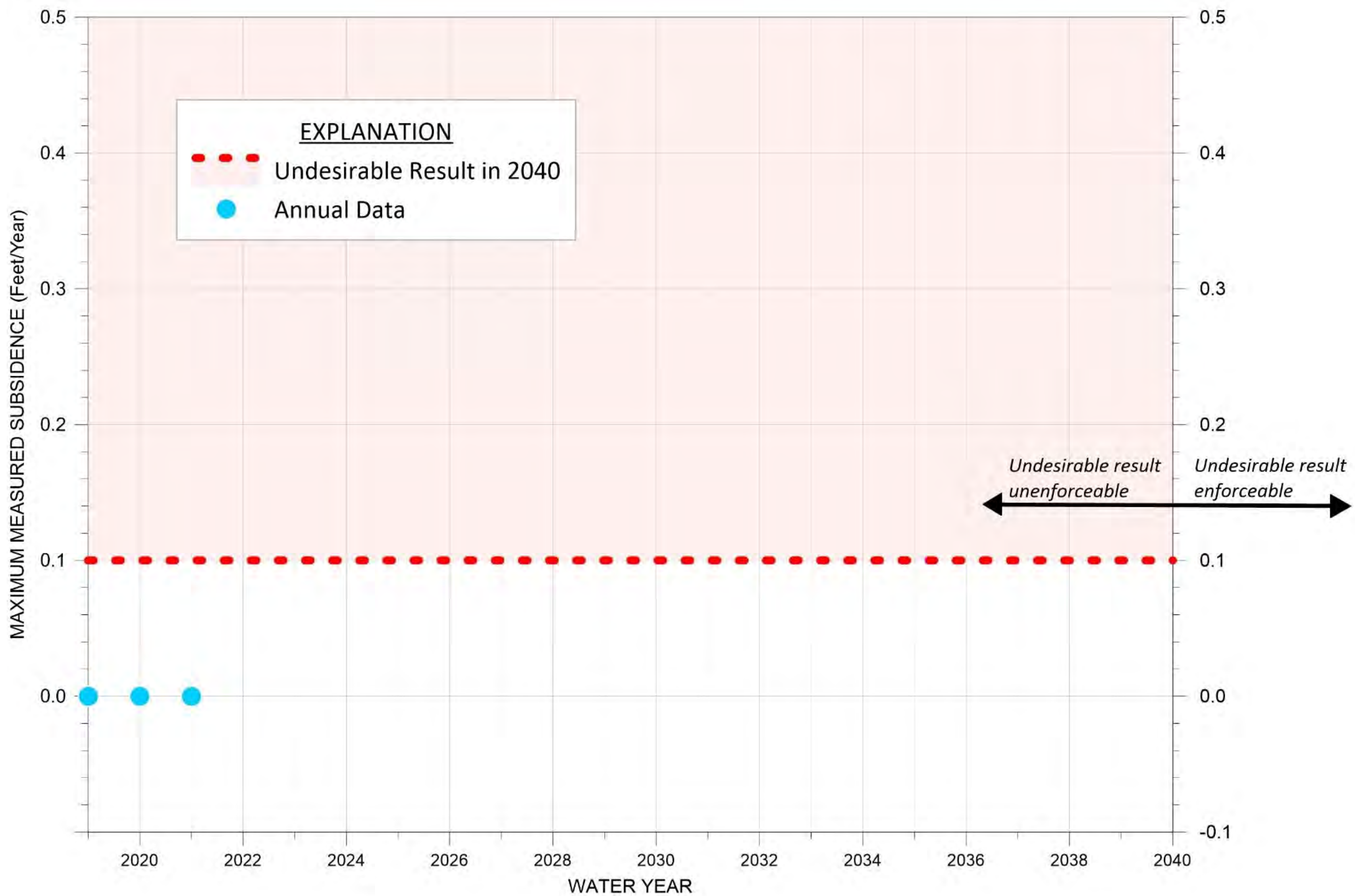

Figure 28. Maximum Measured Subsidence Compared to the Undesirable Result

4.2.6 Depletion of Interconnected Surface Water SMC

The original GSP planned to estimate depletion of ISW through regularly updating the SVIHM, when it becomes available. However, the final SVIHM is still under development and updating and calibrating it annually would be an intensive process. Further, relying on the SVIHM would need to be lagged by several years due to data availability and would produce an indirect estimate of depletion. The GSP Amendment under development currently shifts the approach to ISW taken in other subbasins in the Salinas Valley, which uses shallow groundwater elevations as proxies for ISW. However, since the GSP Amendment is not yet finalized and submitted to DWR, this Annual Report assesses the ISW SMC according to the approach in the original GSP.

4.2.6.1 Minimum Thresholds

The minimum threshold for depletion of ISW is the rate or volume of surface water depletions caused by groundwater use that has adverse impacts on beneficial uses of the surface water and may lead to undesirable results. The current ISW depletion rate due to groundwater pumping discussed in Chapter 8 of the original GSP is not considered significant and unreasonable. Therefore, the minimum threshold for depletion of ISW is set to the current average rate of 69,700 AF/yr. This estimate will be modified as better data become available. Minimum thresholds only apply to the interconnected stream reaches.

The provisional SVIHM currently does not provide ISW depletion rates for WY 2021, as its model period only extends up to 2016. Therefore, there are no reliable ISW depletion data for WY 2021 to compare to the minimum threshold.

4.2.6.2 Measurable Objectives and Interim Milestones

The measurable objective and interim milestones for depletion of ISW are identical to the minimum threshold, and as mentioned in Section 4.2.6.1 there are no reliable data from WY 2020 to compare to the measurable objective or the 2025 interim milestone.

4.2.6.3 Undesirable Result

The depletion of ISW undesirable result is a quantitative combination of minimum threshold exceedances. There is only one reduction in depletion of ISW minimum threshold. Therefore, no minimum threshold exceedances are allowed to occur and the undesirable result for depletion of ISW is:

> *During average hydrogeologic conditions, and as a long-term average over all hydrogeologic conditions, the depletion of interconnected surface waters shall not exceed the single minimum threshold.*

There are no reliable ISW data for WY 2021 to compare to the 2040 planning horizon undesirable result.

5 CONCLUSION

This 2021 Annual Report updates data and information for the 180/400-Foot Aquifer Subbasin GSP from WY 2020 to WY 2021 with the best available data. It covers GSP implementation activities up to September 30, 2021. All GSP implementation and annual reporting meets the regulations set forth in the SGMA GSP Regulations.

Results show little change in groundwater sustainability indicators when compared to the current conditions described in the GSP. WY 2021 was classified as dry. Groundwater elevations decreased in WY 2021, with most wells showing elevations above their minimum thresholds but still below their measurable objectives. Reduction in groundwater storage, as measured by pumping, continued to exceed the minimum threshold in WY 2021. In WY 2021 seawater intrusion in the Subbasin did not increase in the 180-Foot Aquifer but continued to intrude into the 400-Foot Aquifer. Groundwater quality data showed 18 exceedances of minimum thresholds. Negligible subsidence was observed in WY 2021. Finally, insufficient data exist to estimate ISW depletion rates due to groundwater pumping according to the SMC in the original GSP; however, the GSP Amendment under development currently includes shifting to shallow groundwater elevations as proxies for ISW, which allows for annual evaluation of progress. SVBGSA will shift the ISW measurement approach once the GSP Amendment is submitted.

Since GSP submittal and the last 2 Annual Reports, the SVBGSA has continued to actively engage stakeholders and has started planning activities to implement the GSP. The SVBGSA continues to engage stakeholders through its participatory Advisory Committee, Board of Directors, and SWIG. It has also begun to fill data gaps and start implementing projects and management actions in the 180/400-Foot Aquifer Subbasin GSP.

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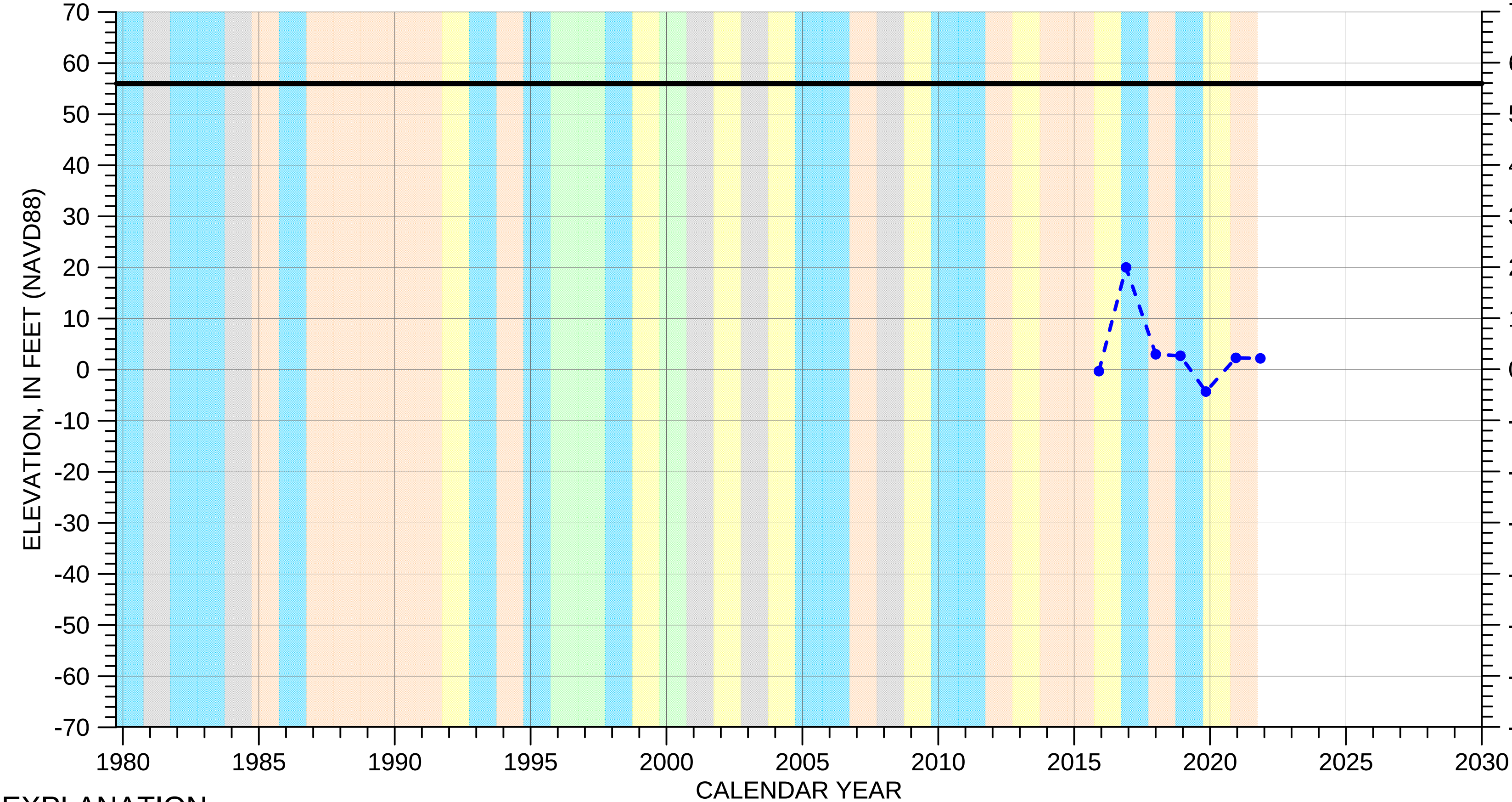
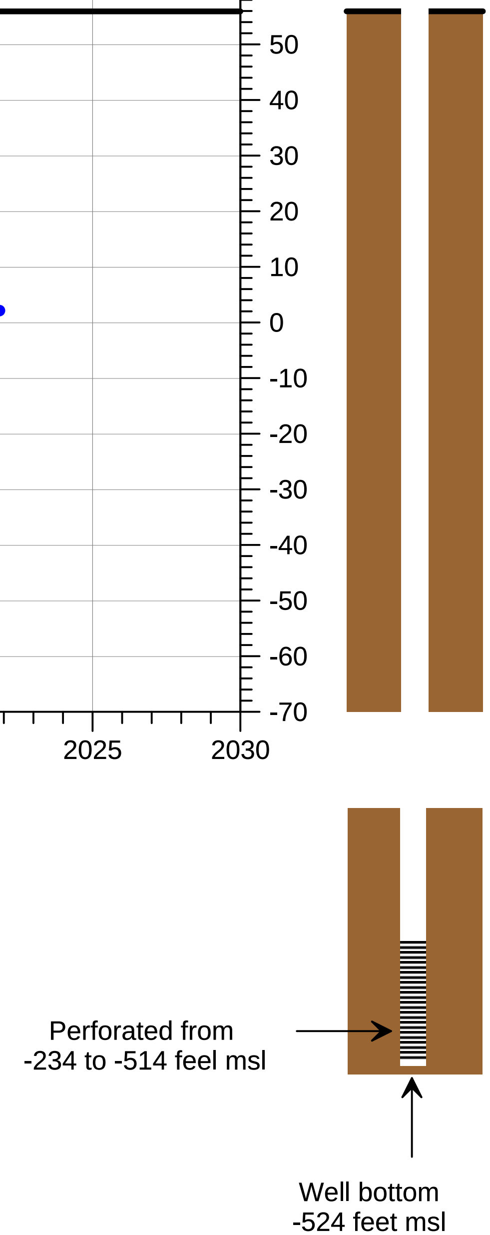
APPENDIX A. HYDROGRAPHS OF REPRESENTATIVE MONITORING SITE WELLS

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 12S/02E-33H02

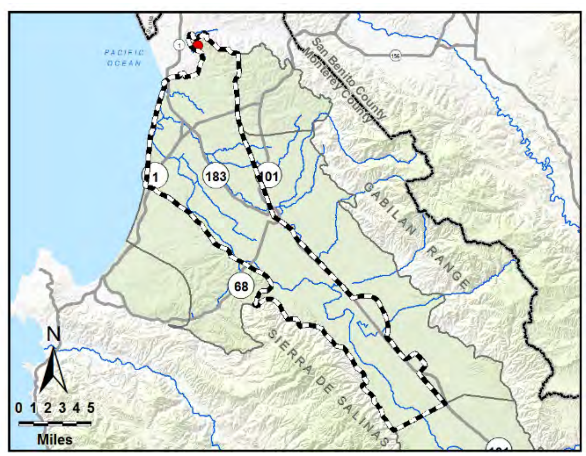
180/400-Foot Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

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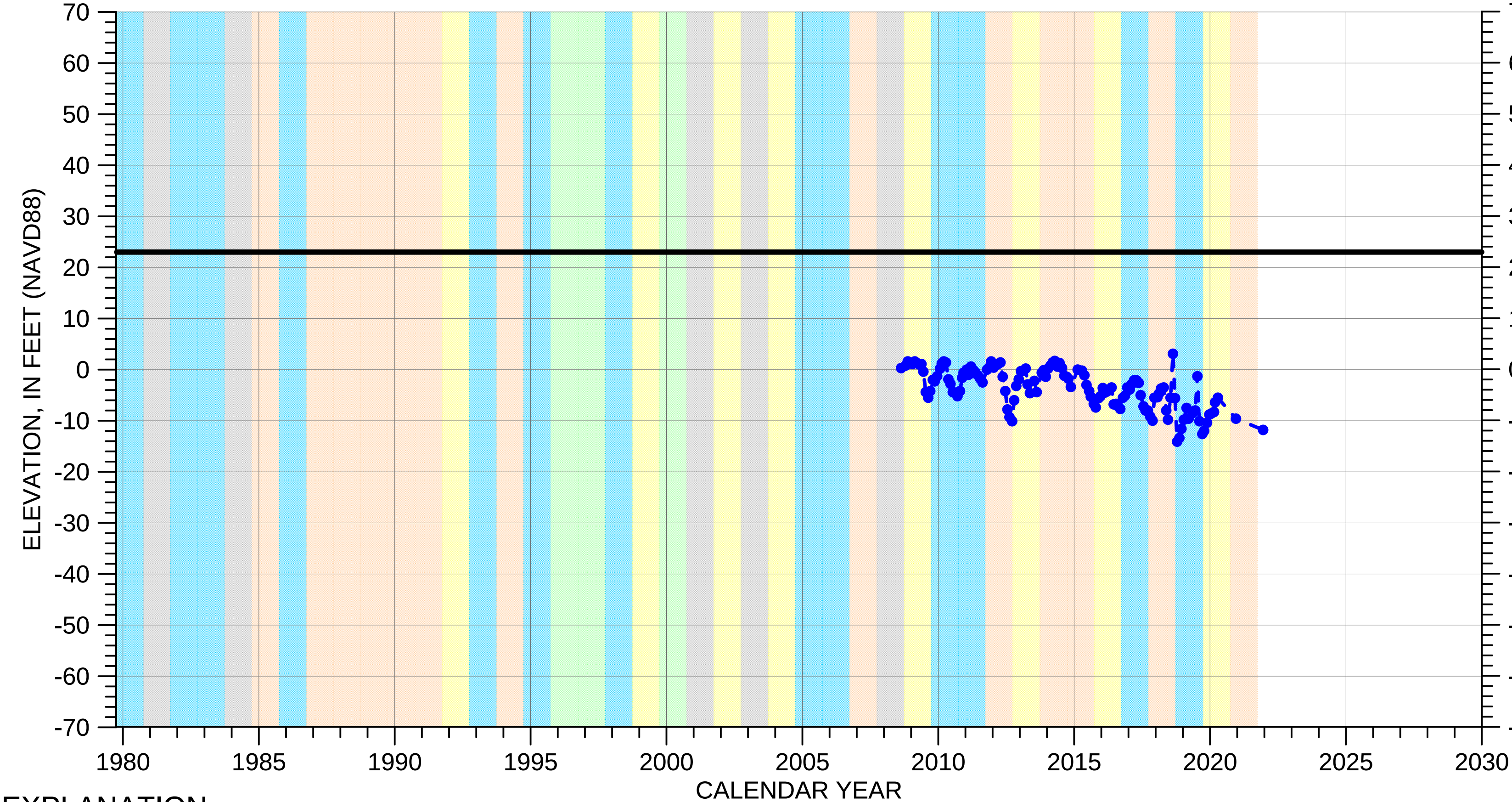
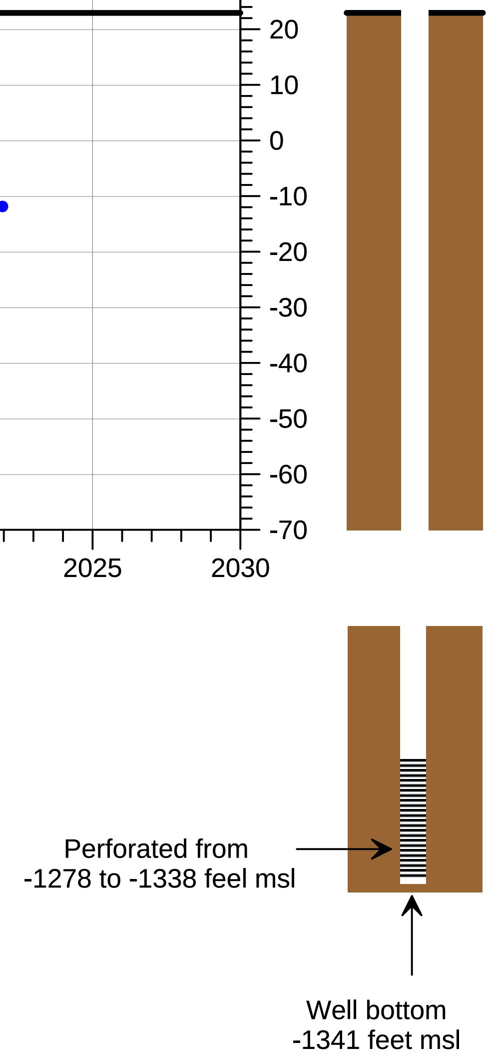
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/01E-36J02

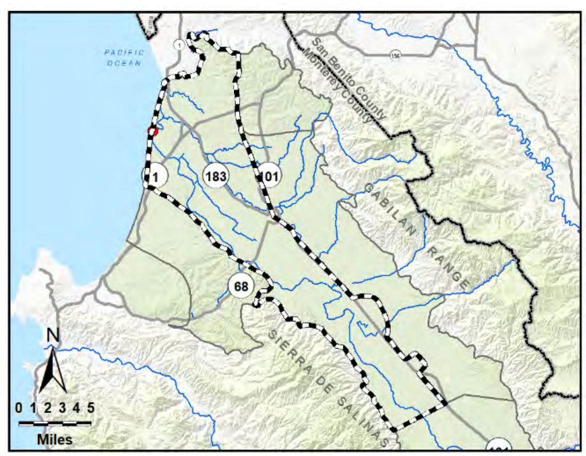
180/400-Foot Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



WATER YEAR TYPE DESIGNATION

DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET

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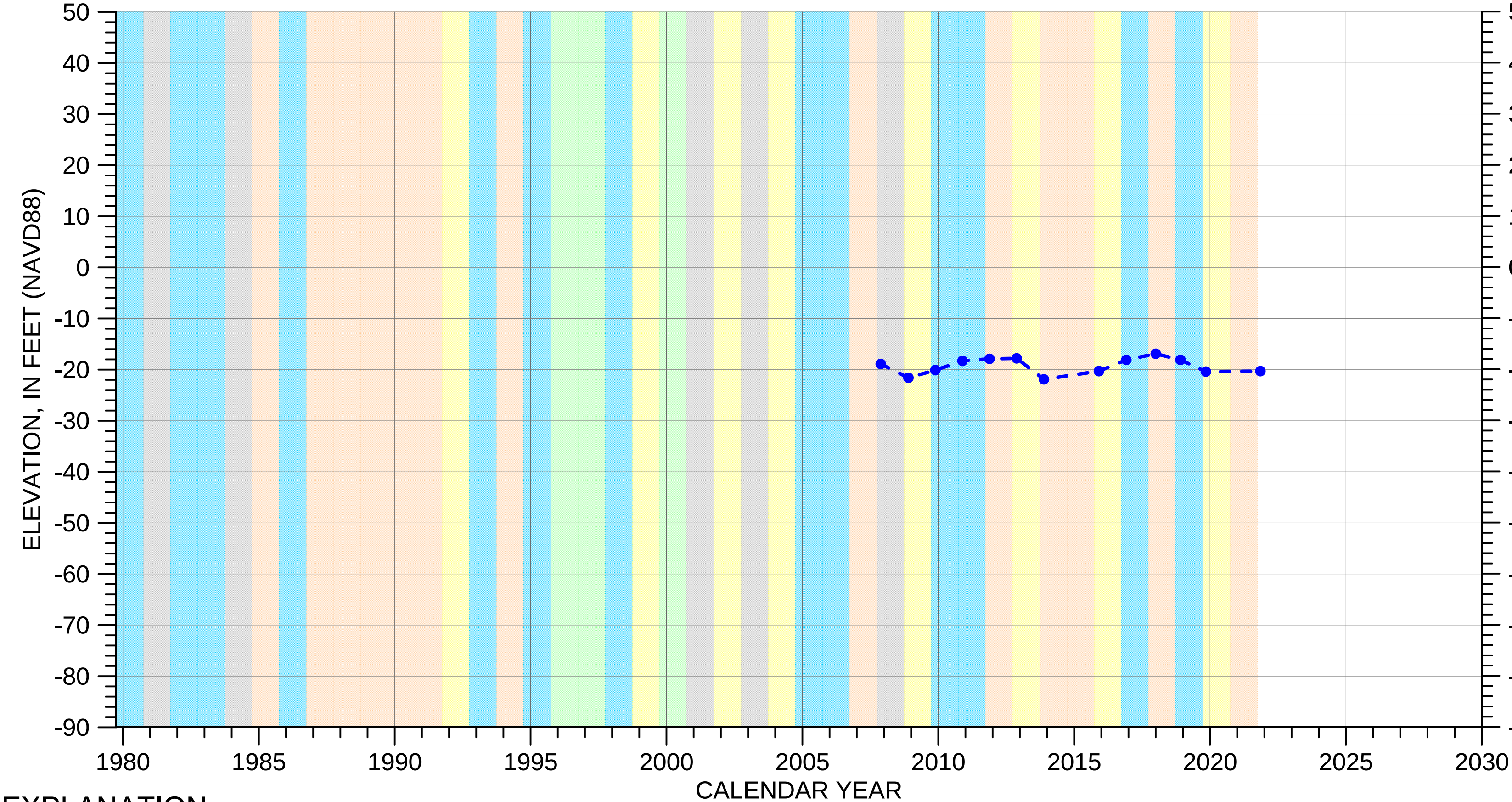
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-10K01

180/400-Foot Aquifer Subbasin

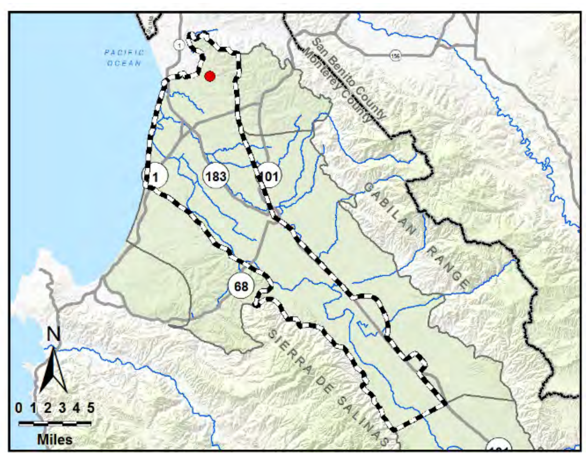


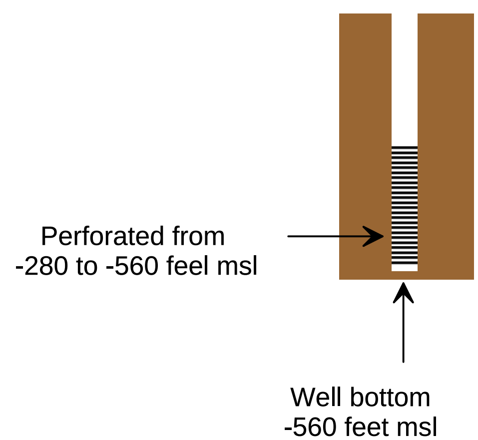
EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (100 FT MSL)





WATER YEAR TYPE DESIGNATION

DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET

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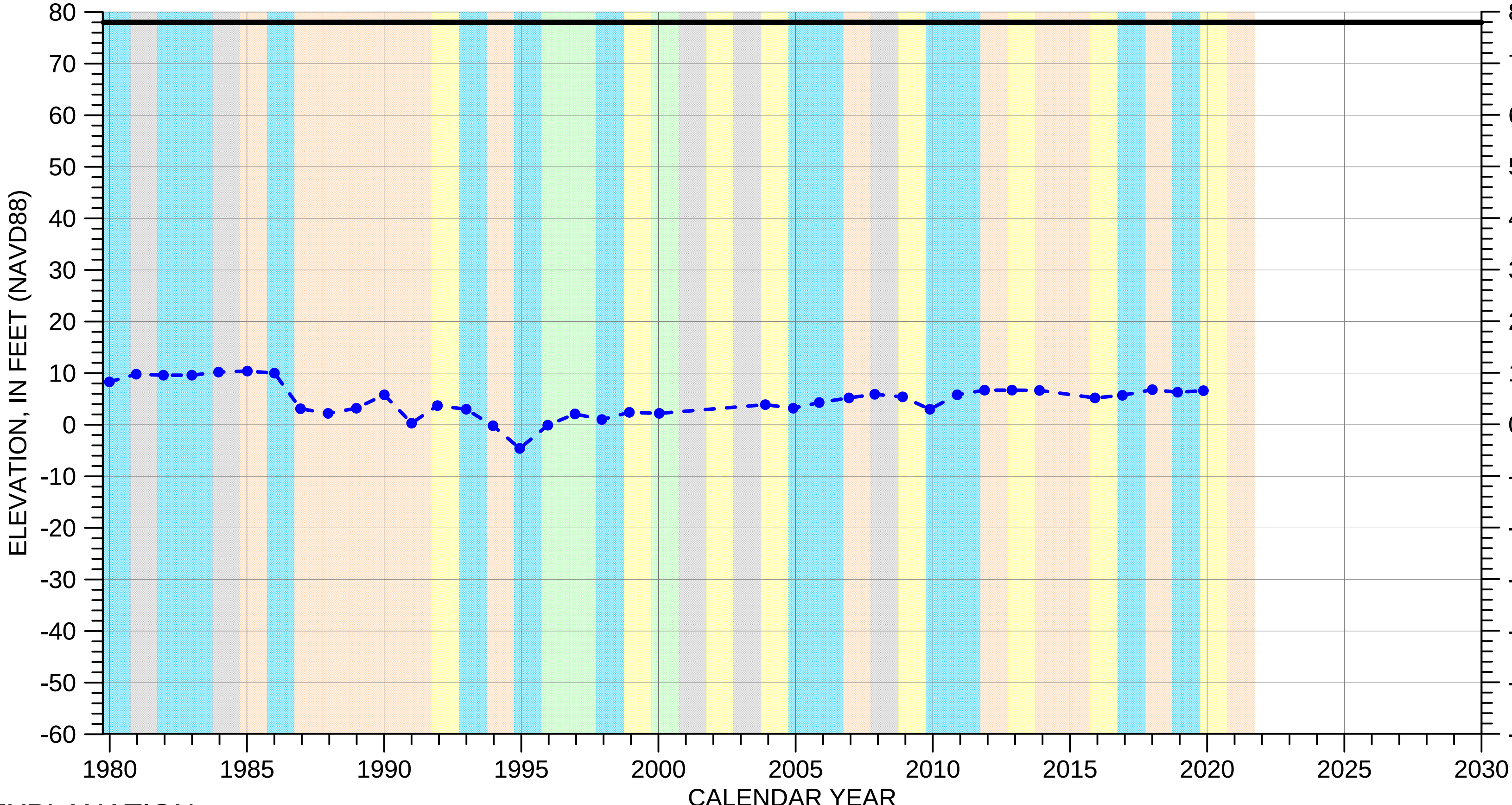
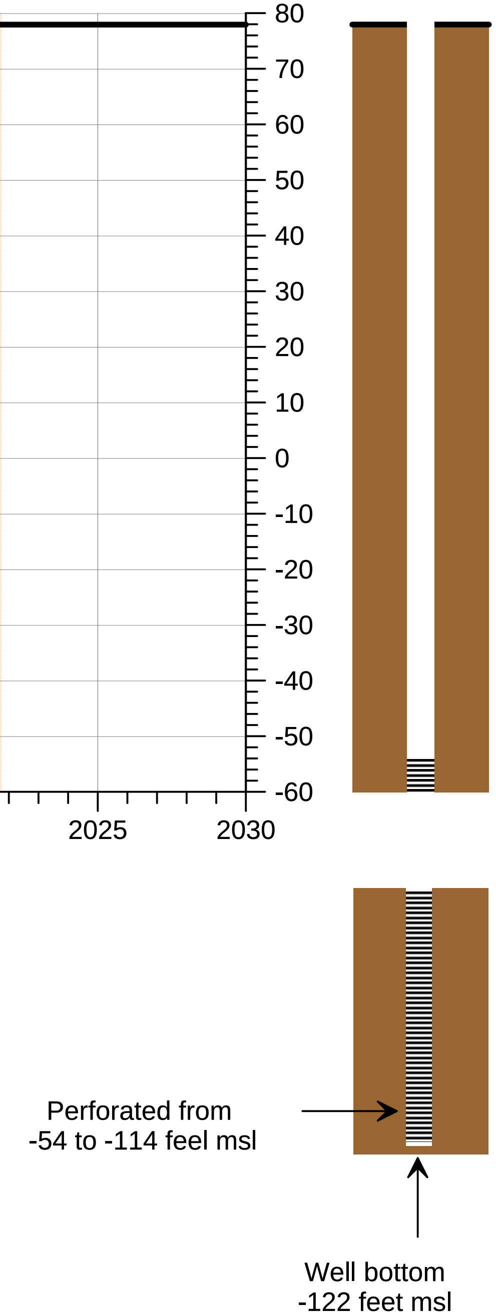
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-13N01

180/400-Foot Aquifer Subbasin





EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

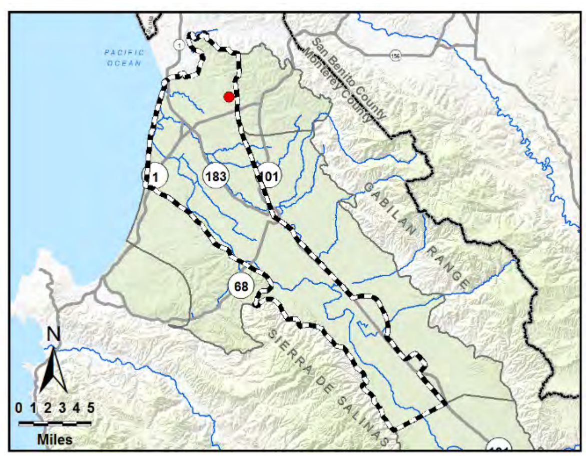
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET



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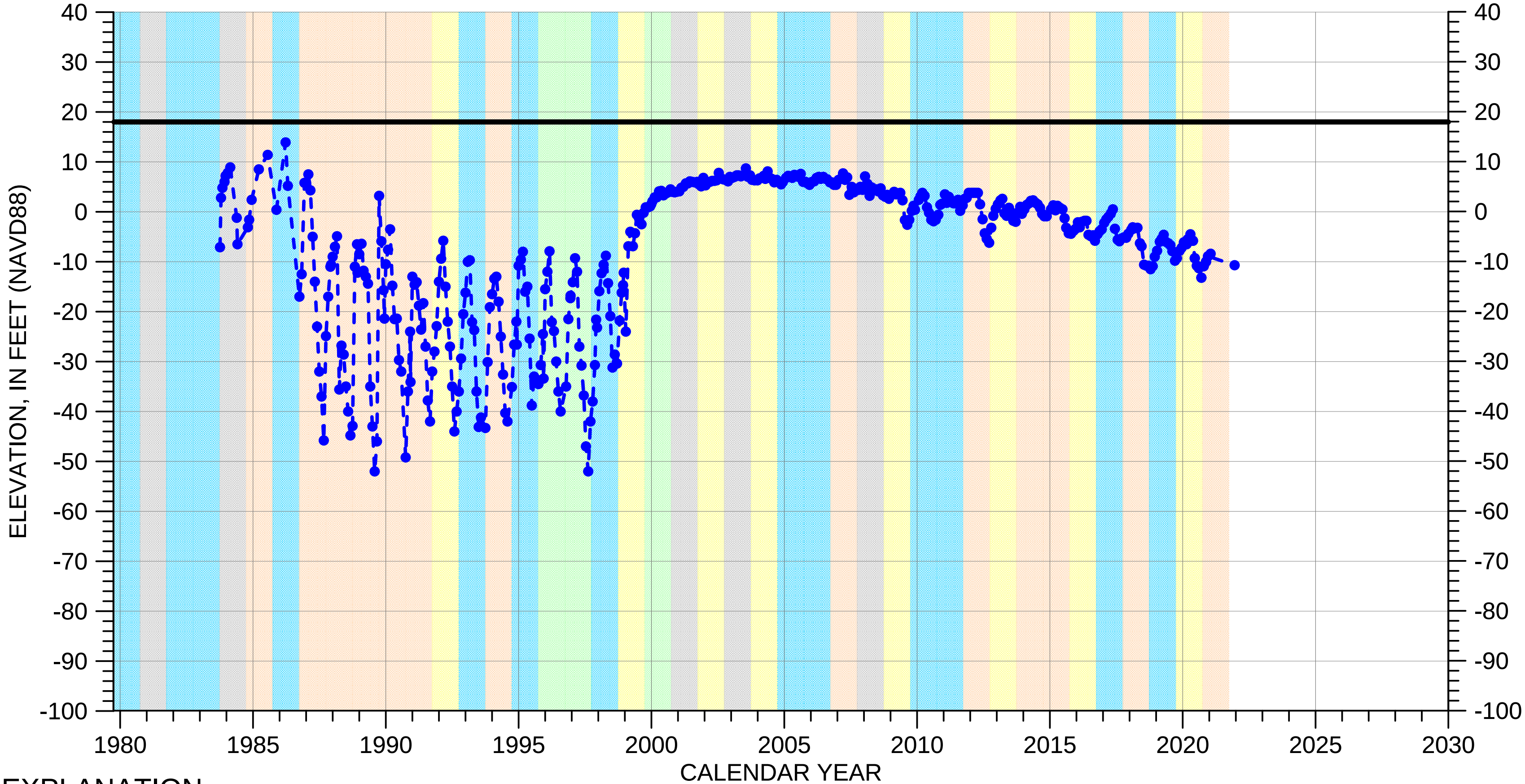
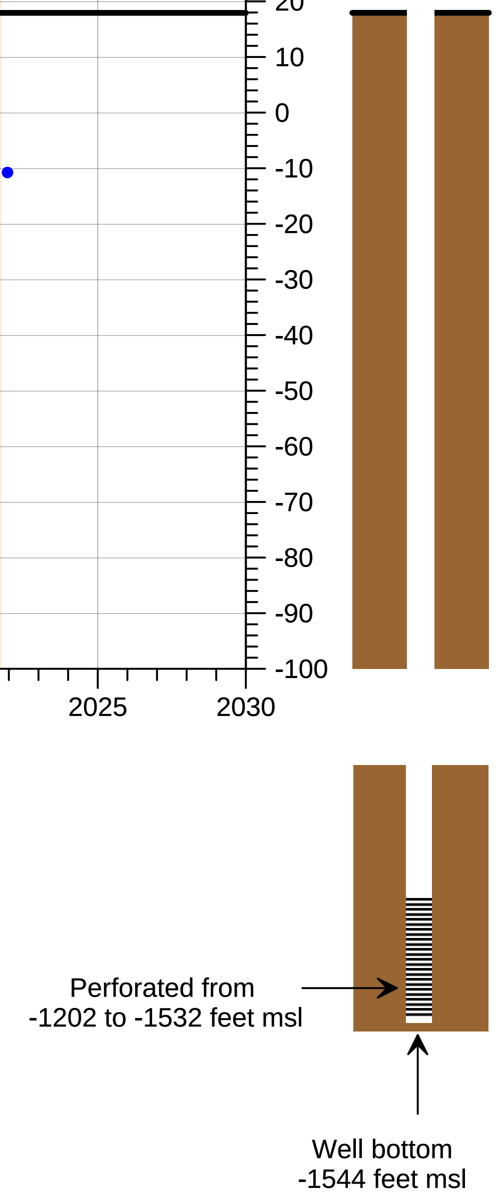
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-19Q03

180/400-Foot Aquifer Subbasin





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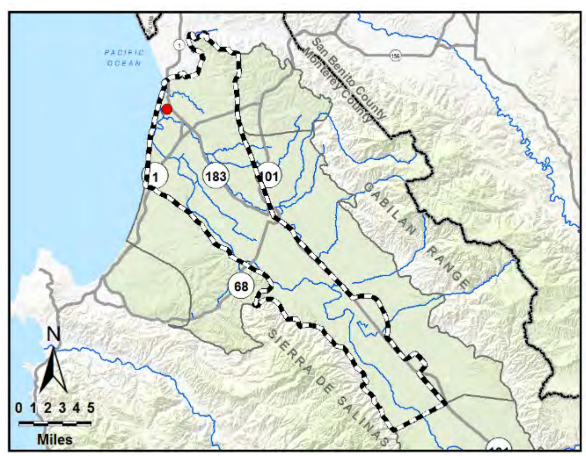
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

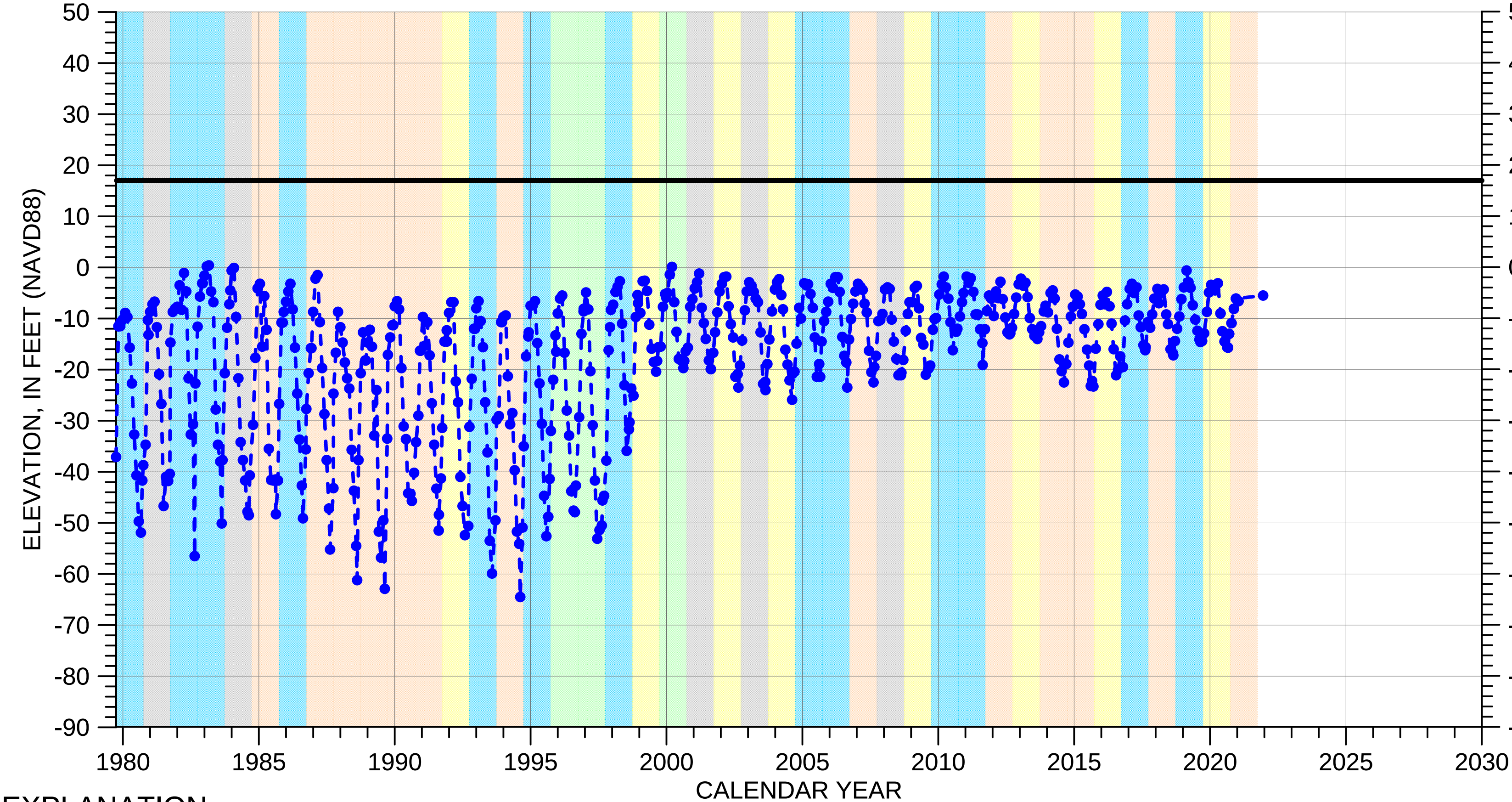
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-21N01

180/400-Foot Aquifer Subbasin

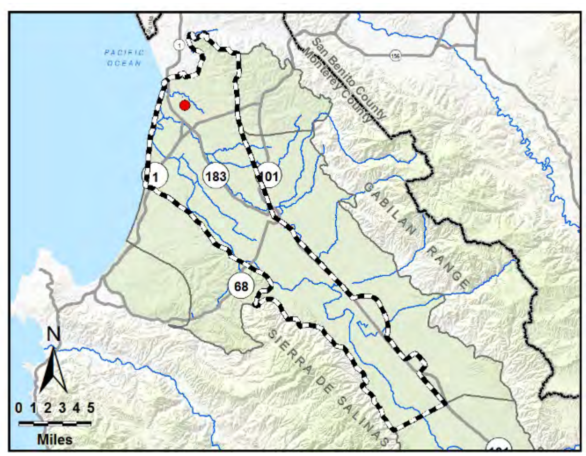


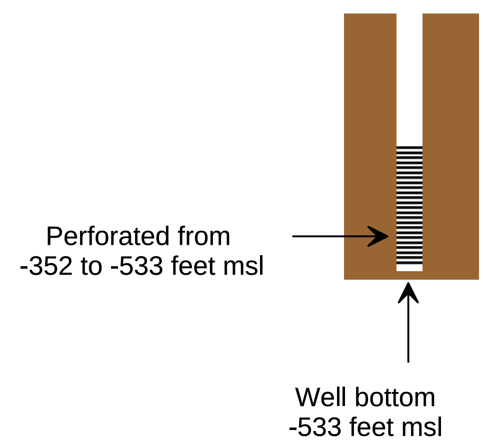
EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface





WATER YEAR TYPE DESIGNATION

DRY

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NORMAL

WET - NORMAL

WET

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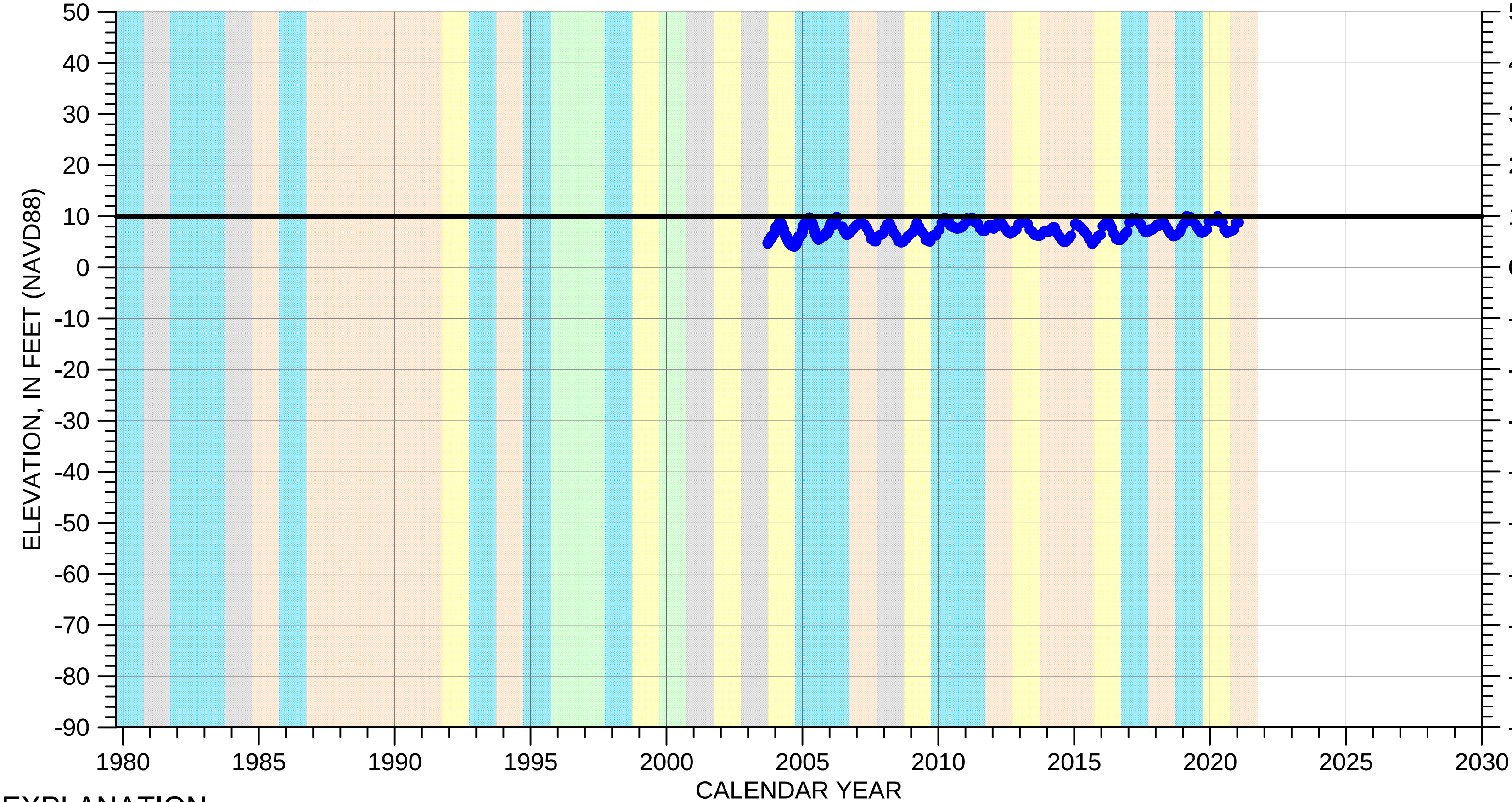
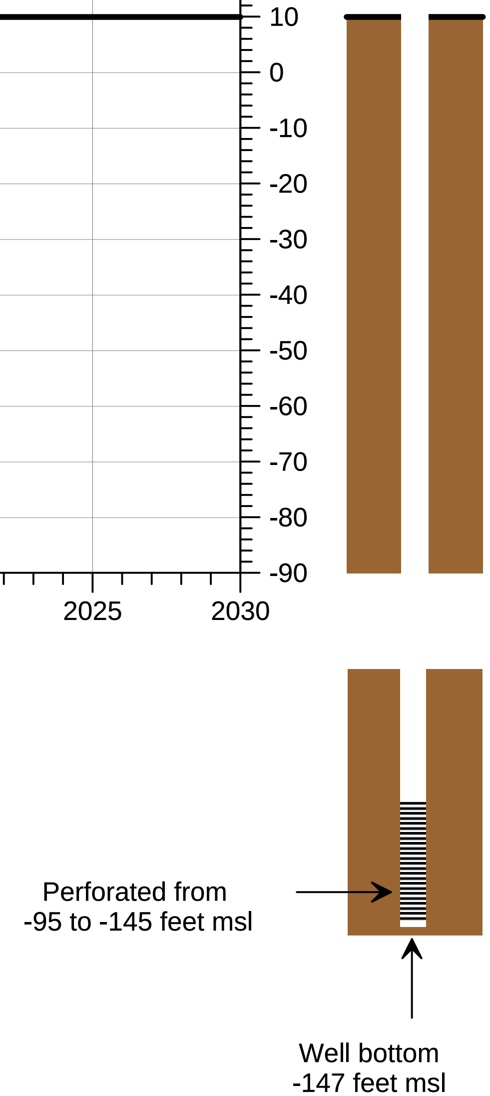
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-21Q01 180/400-Foot Aquifer Subbasin



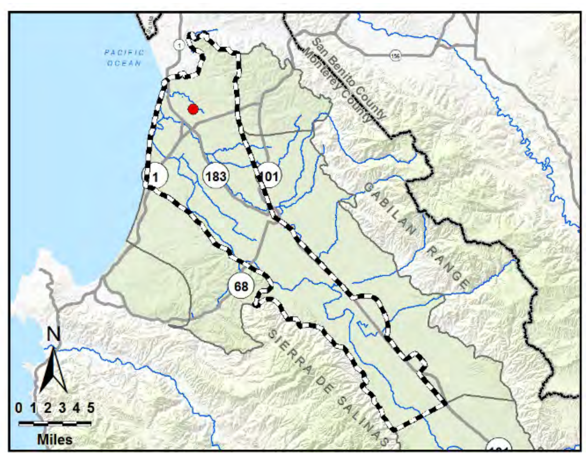


EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface



WATER YEAR TYPE DESIGNATION

DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET

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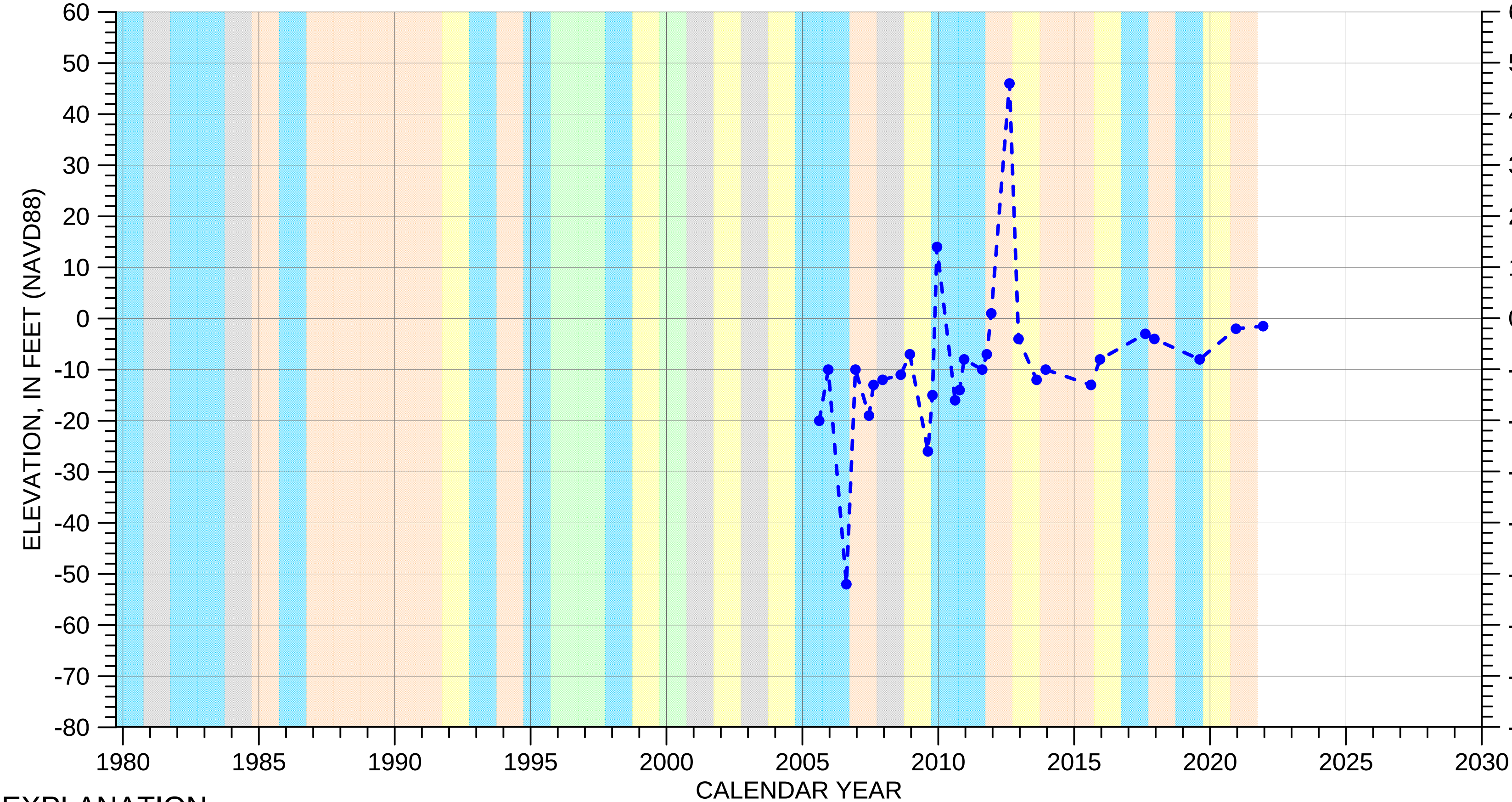
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-24N01

180/400-Foot Aquifer Subbasin

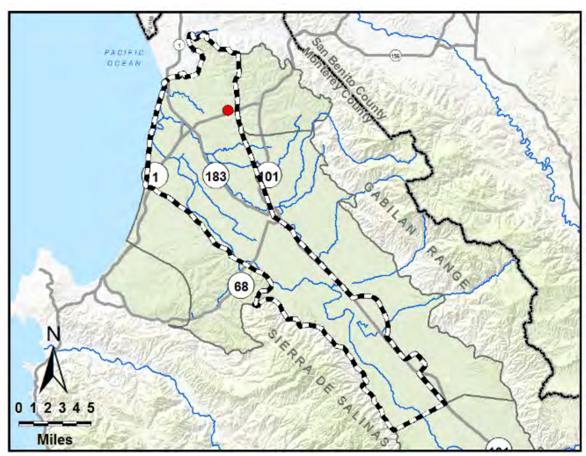


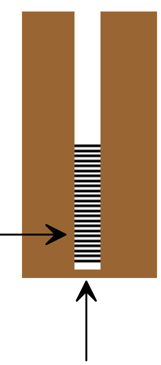
EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (162 FT MSL)





WATER YEAR TYPE DESIGNATION

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WET

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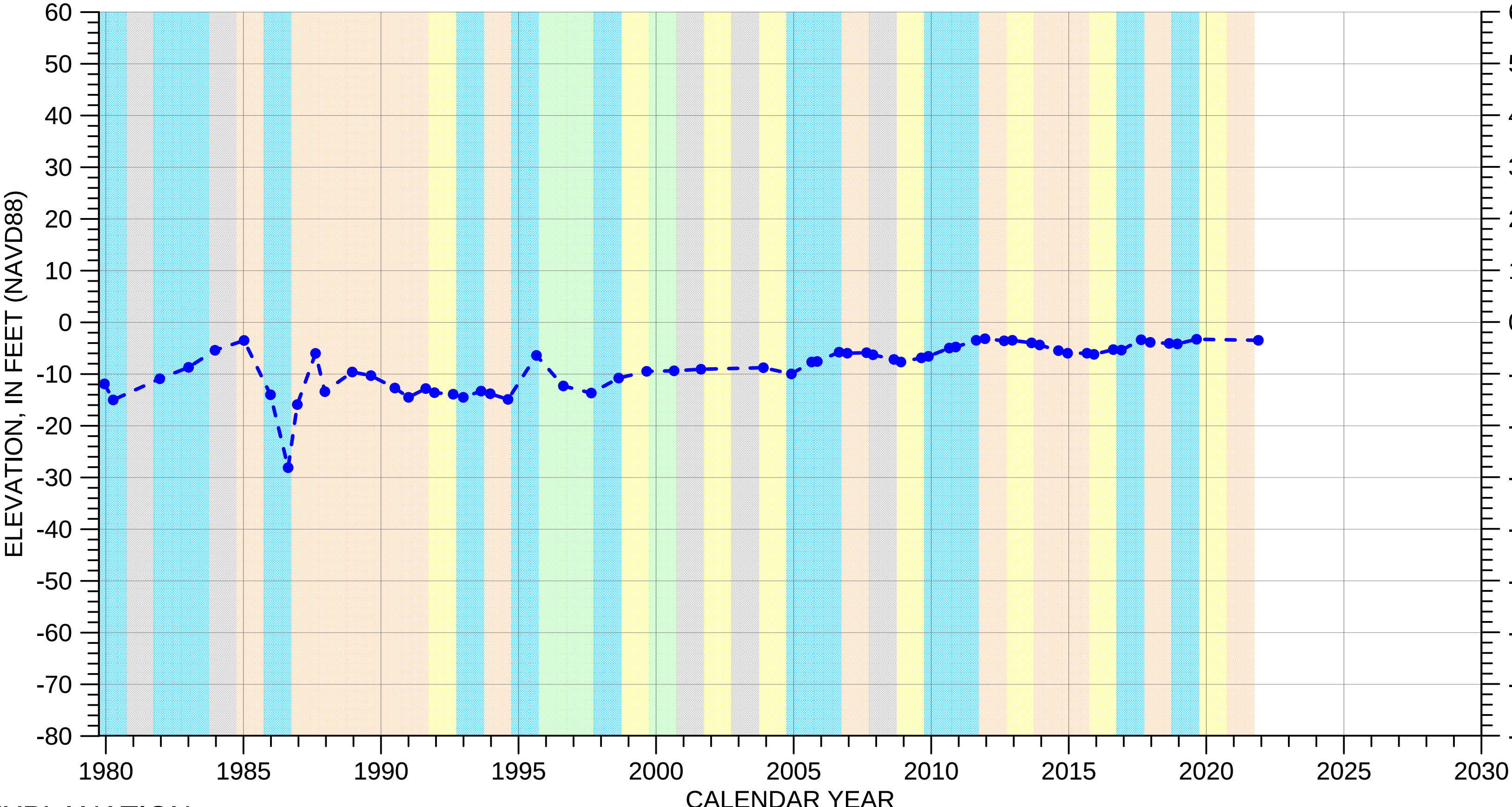
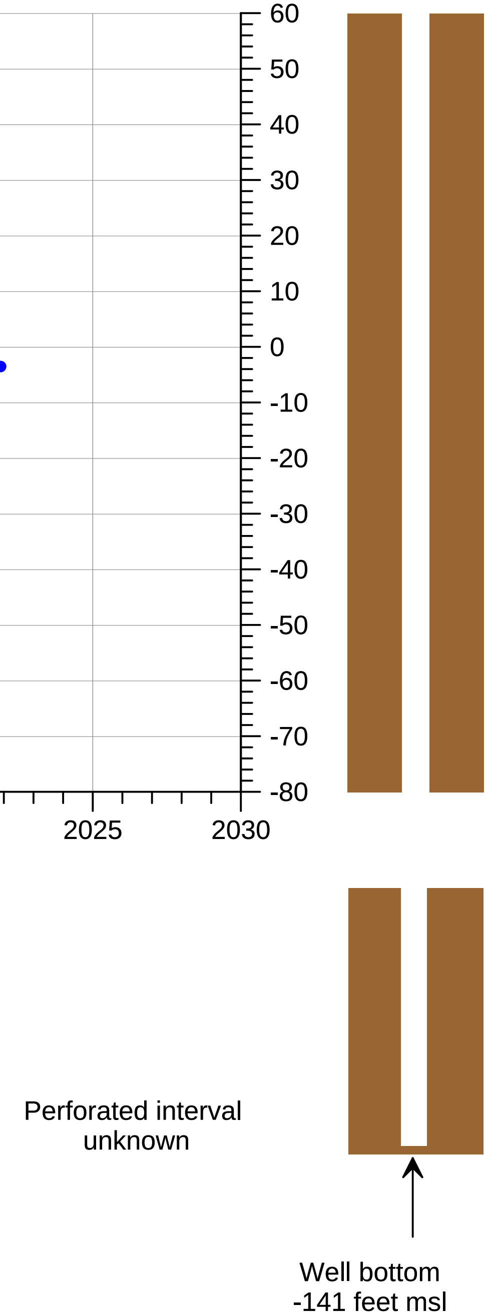
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-26L01

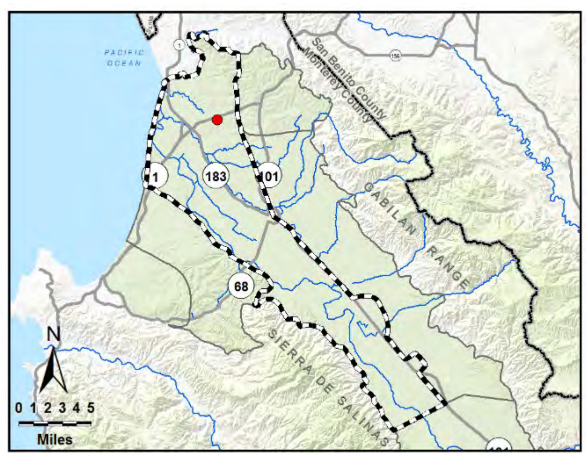
180/400-Foot Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (109 FT MSL)



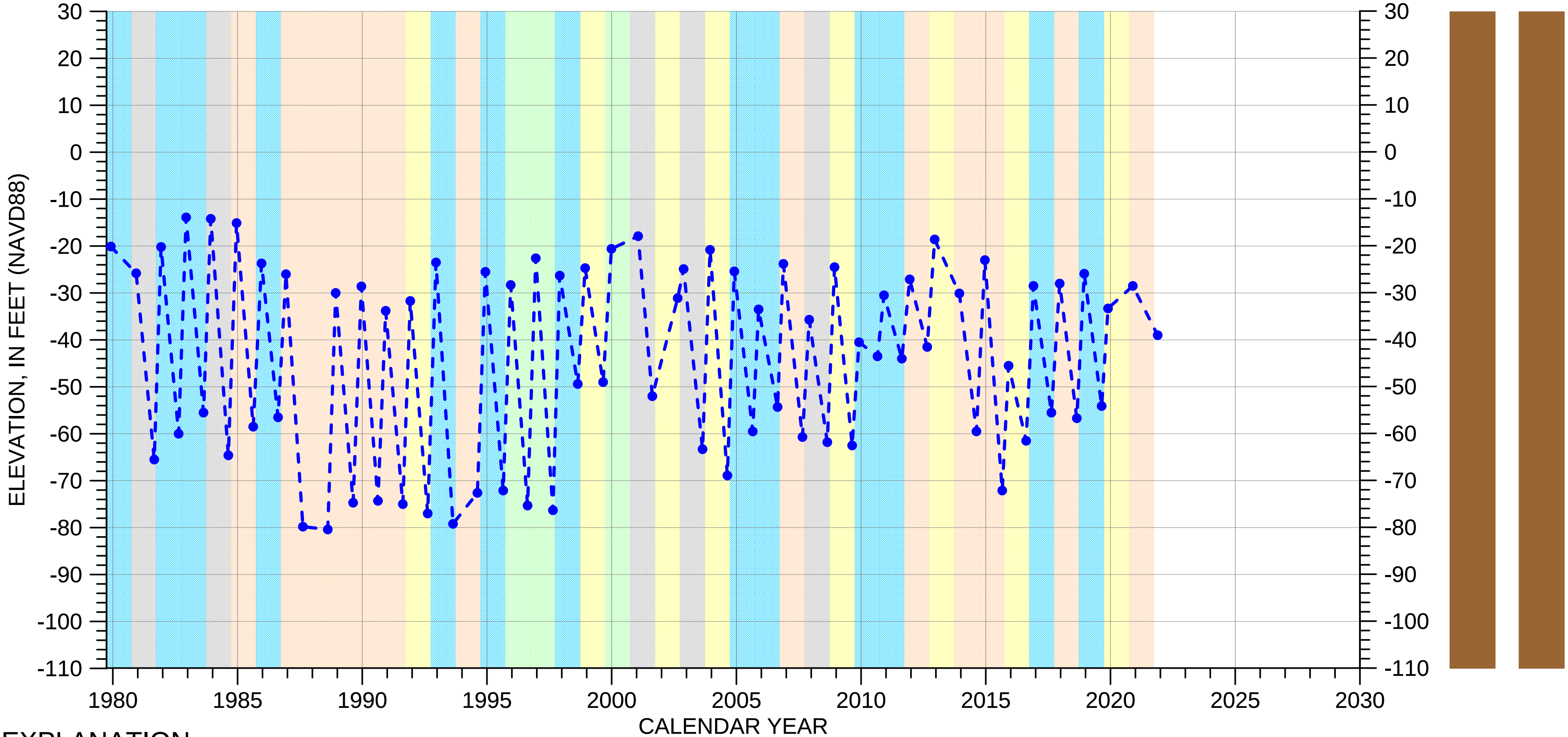
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch513S_02E-26L01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-27P01

180/400-Foot Aquifer Subbasin

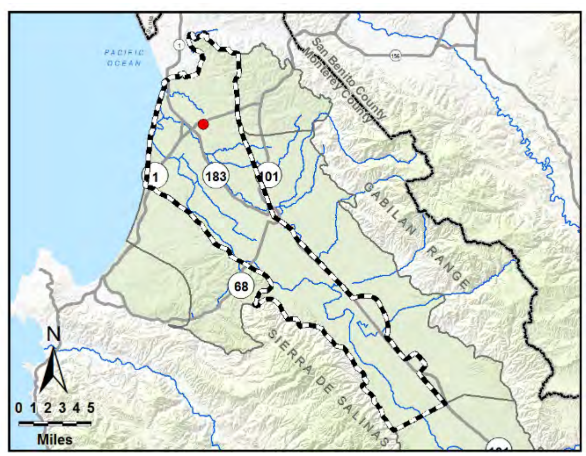


EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (55 FT MSL)



WATER YEAR TYPE DESIGNATION

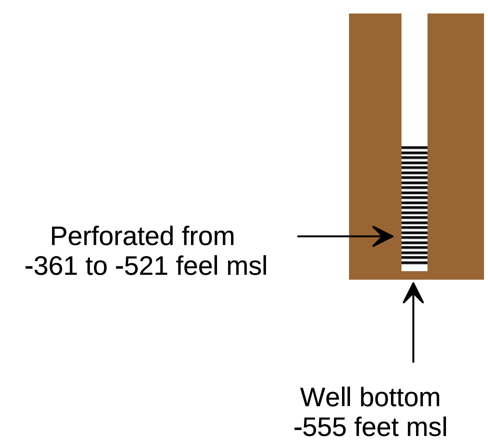
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET



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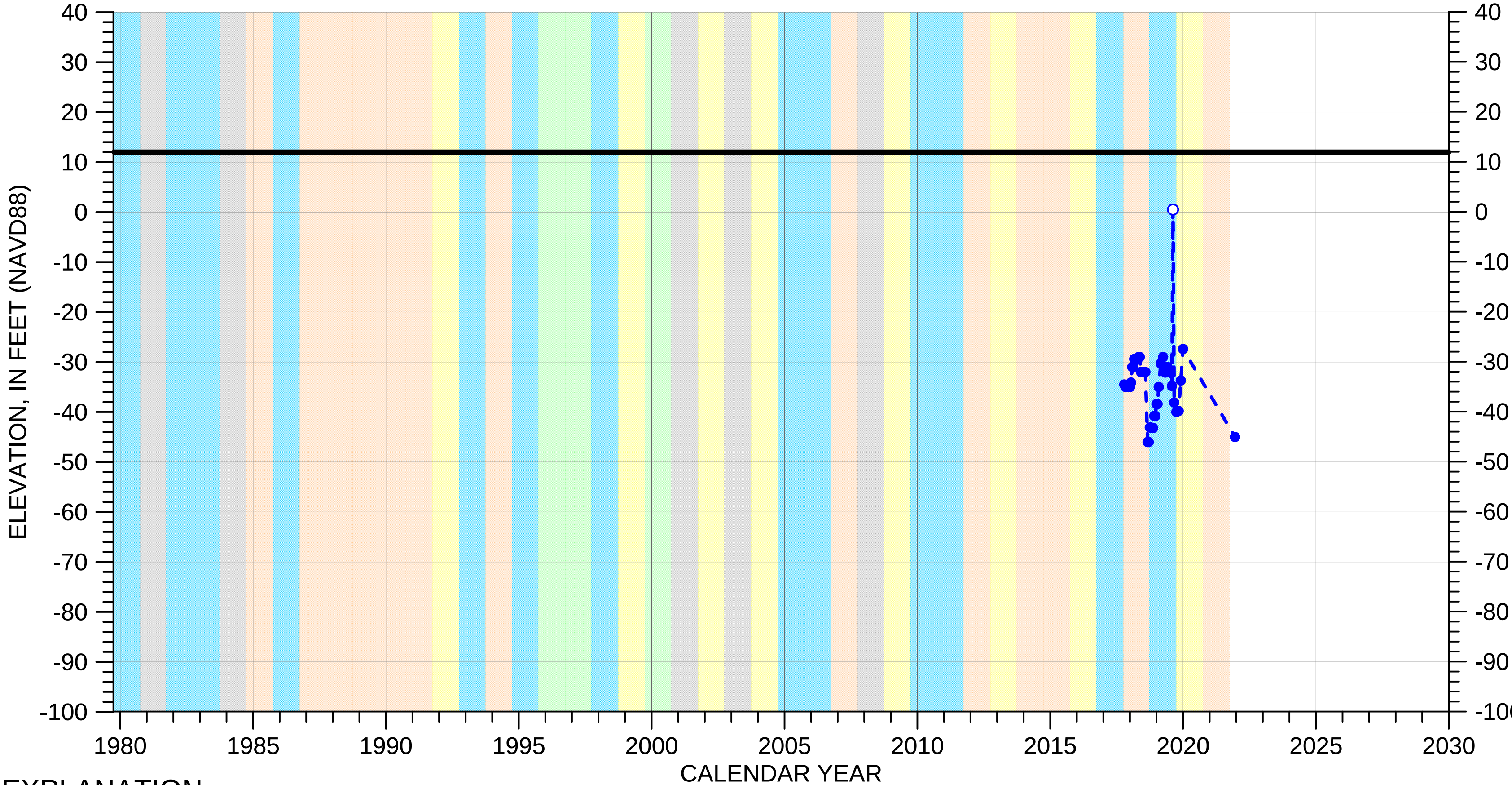
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-28L03

180/400-Foot Aquifer Subbasin



Multiple perforated intervals from -1068 to -1438 feet msl

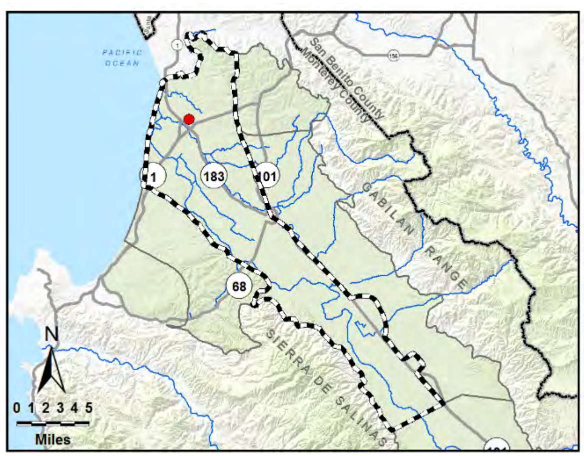
Well bottom -1448 feet msl

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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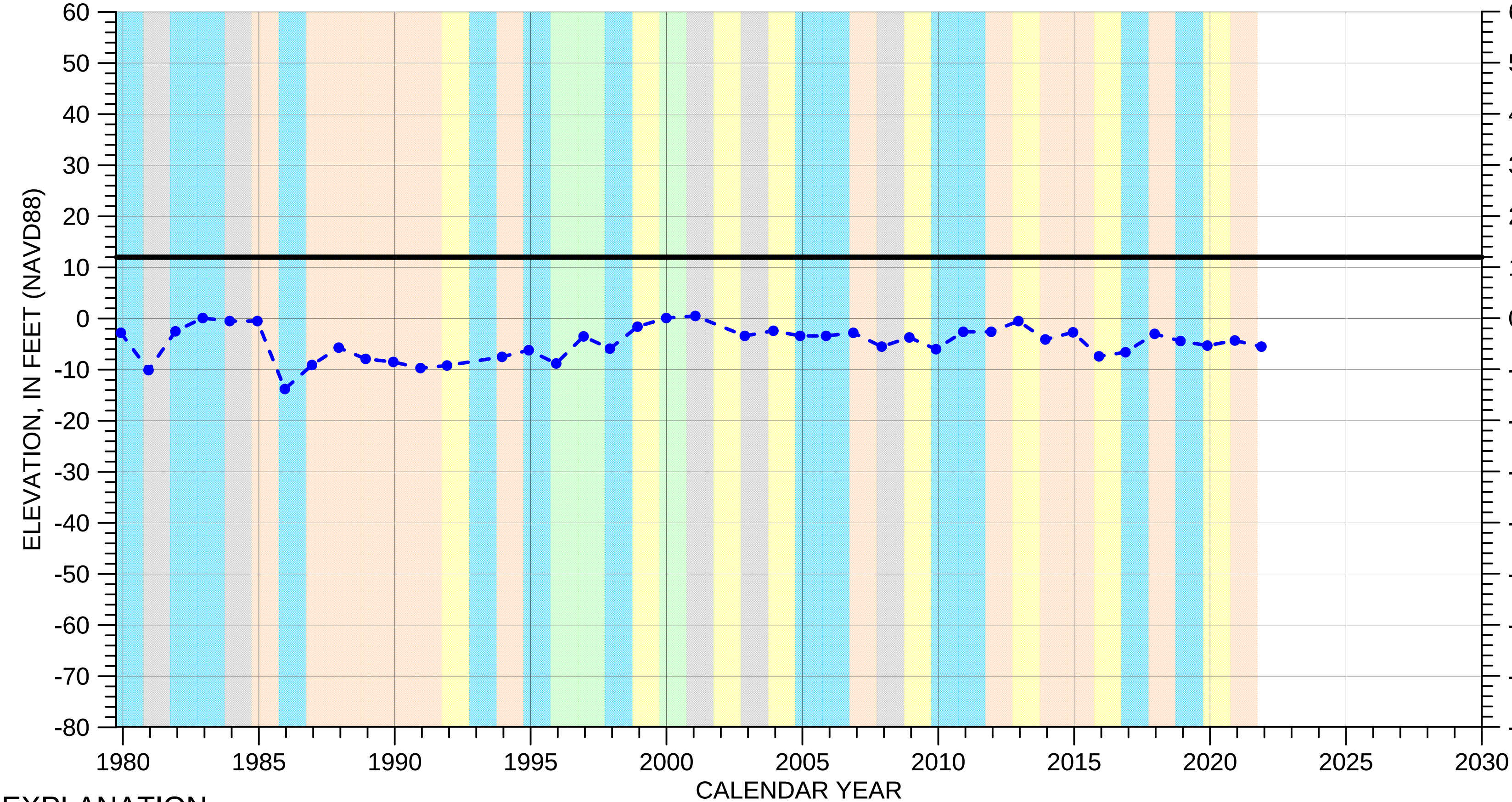
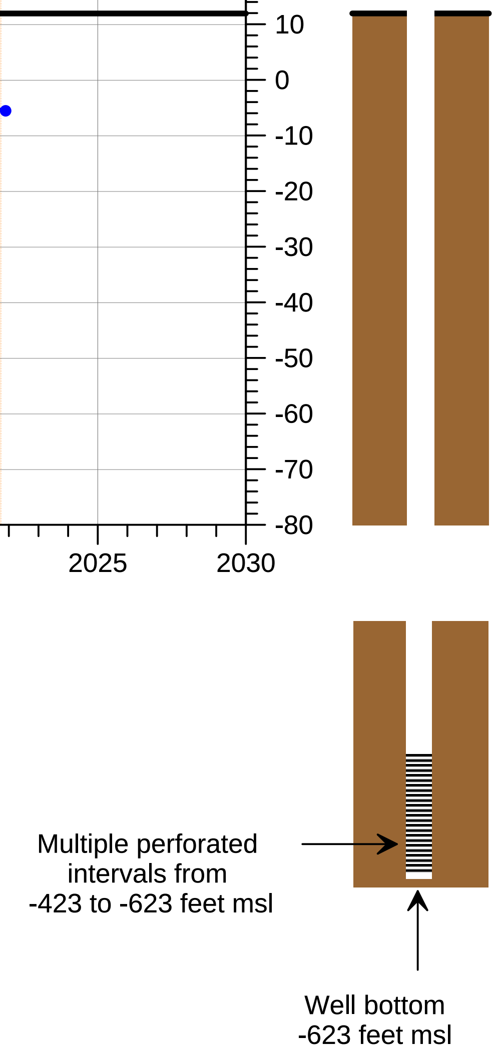
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-29D03

180/400-Foot Aquifer Subbasin





EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

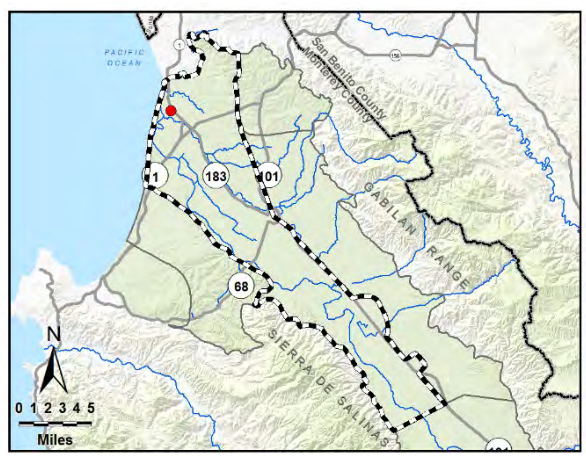
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET



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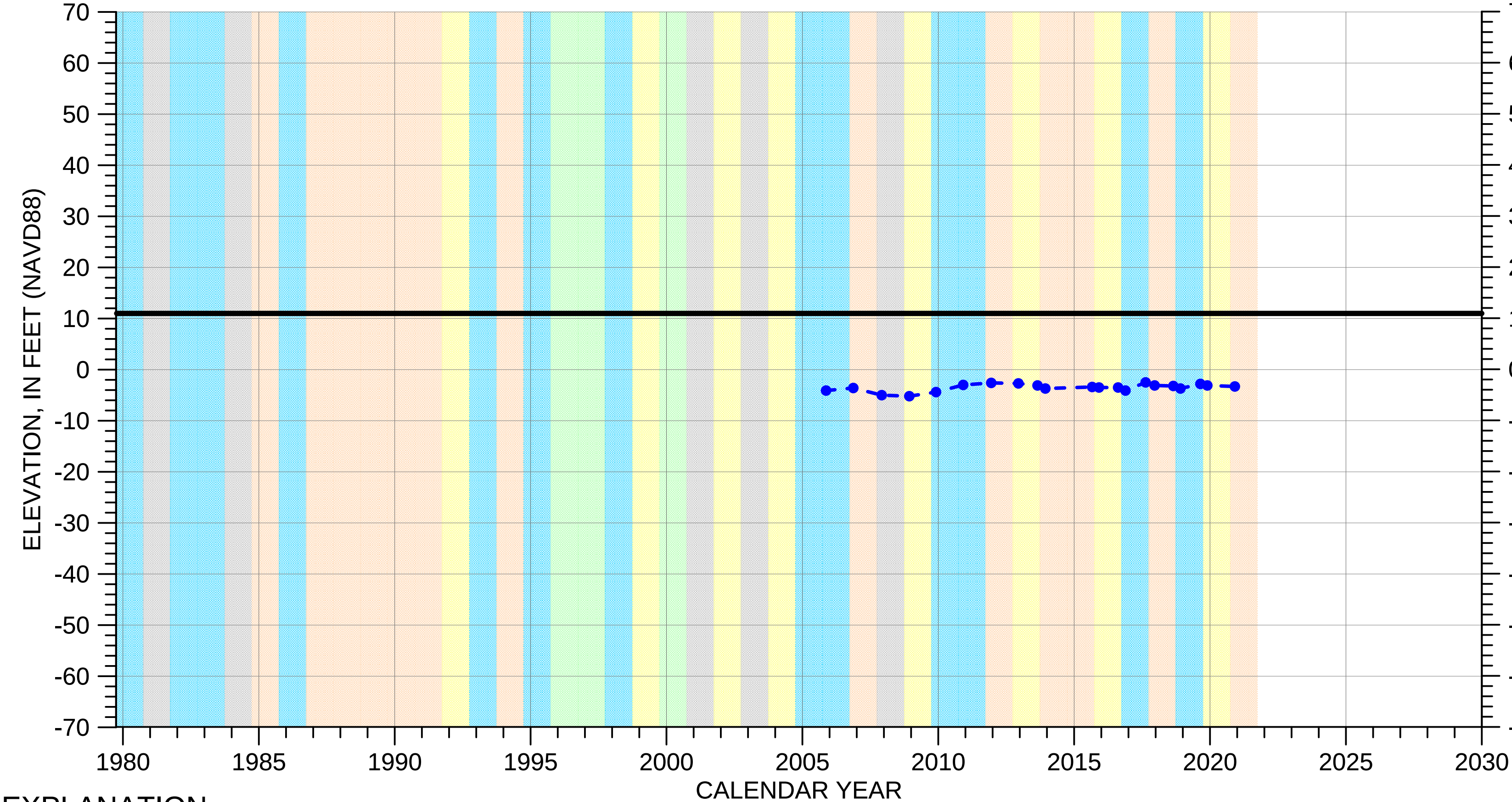
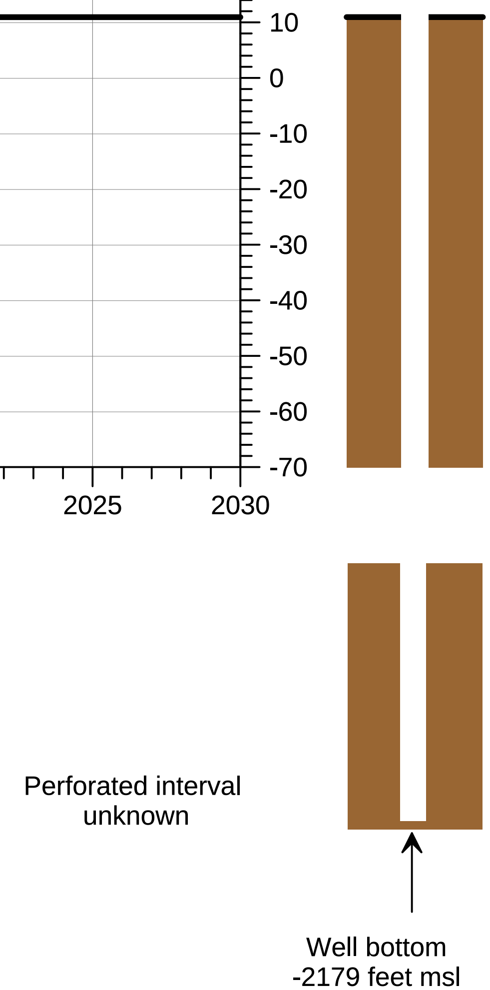
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-29D04

180/400-Foot Aquifer Subbasin





EXPLANATION

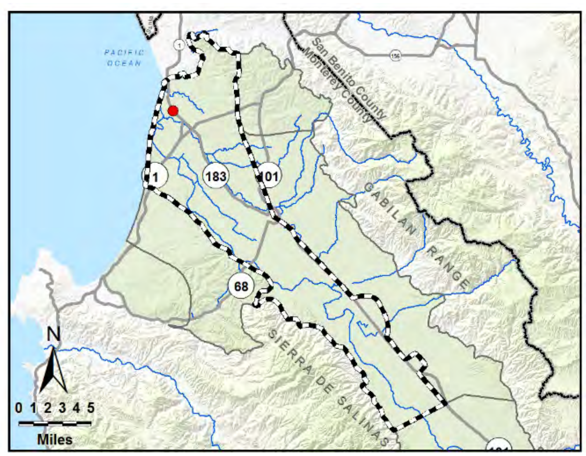
Groundwater Elevation

Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET



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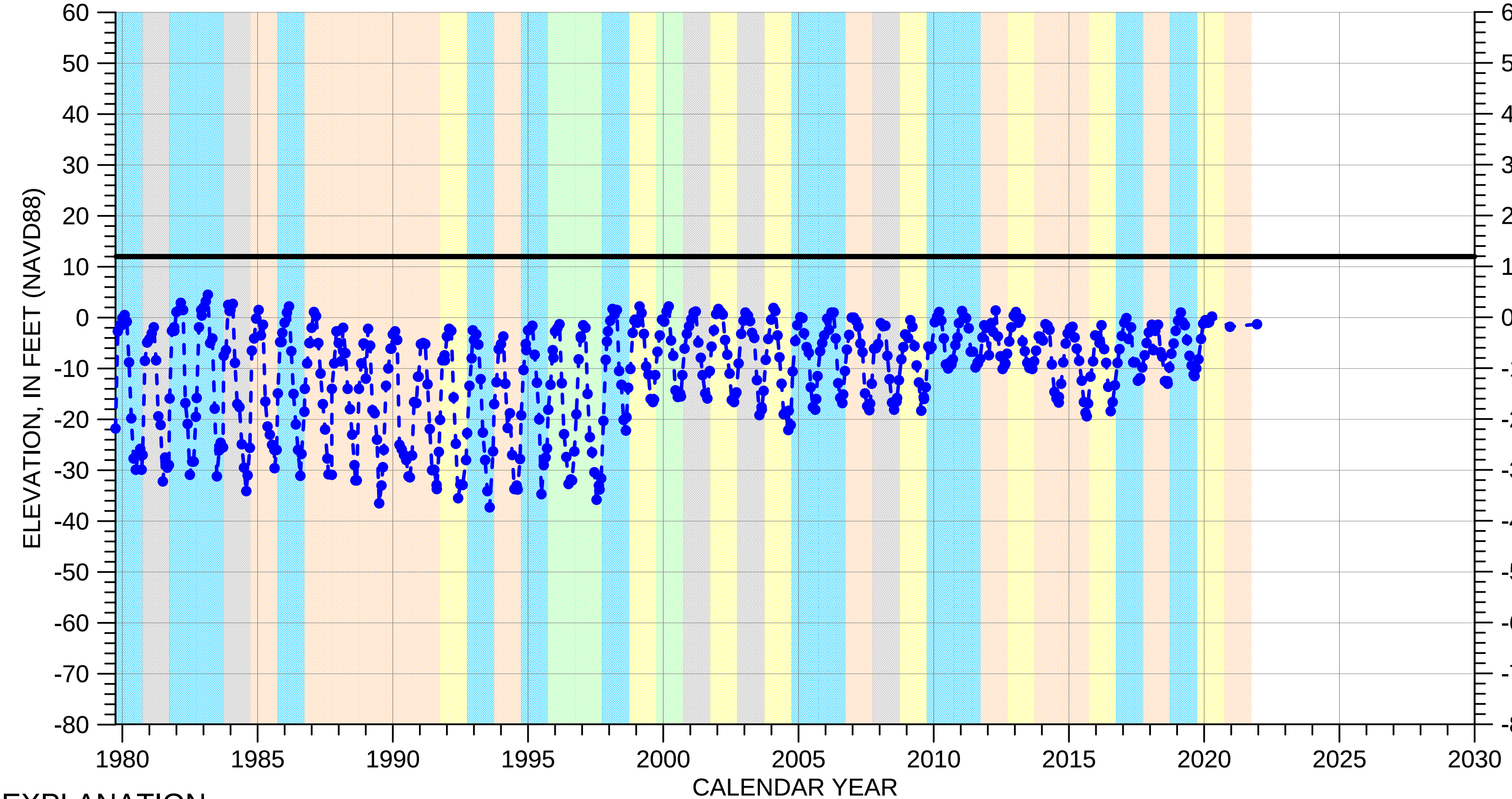
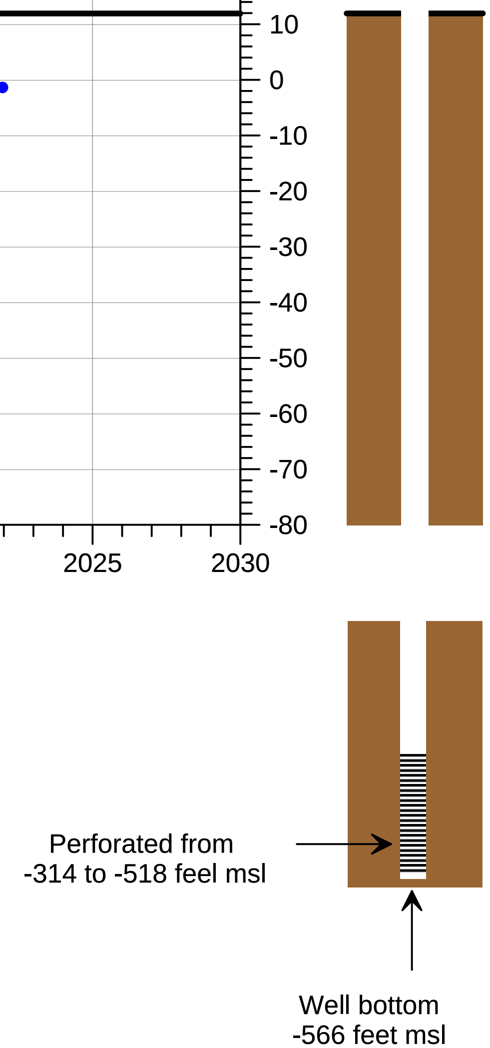
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-31N02

180/400-Foot Aquifer Subbasin



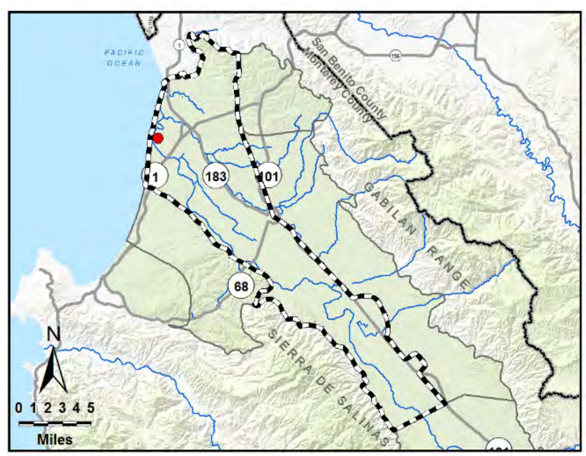


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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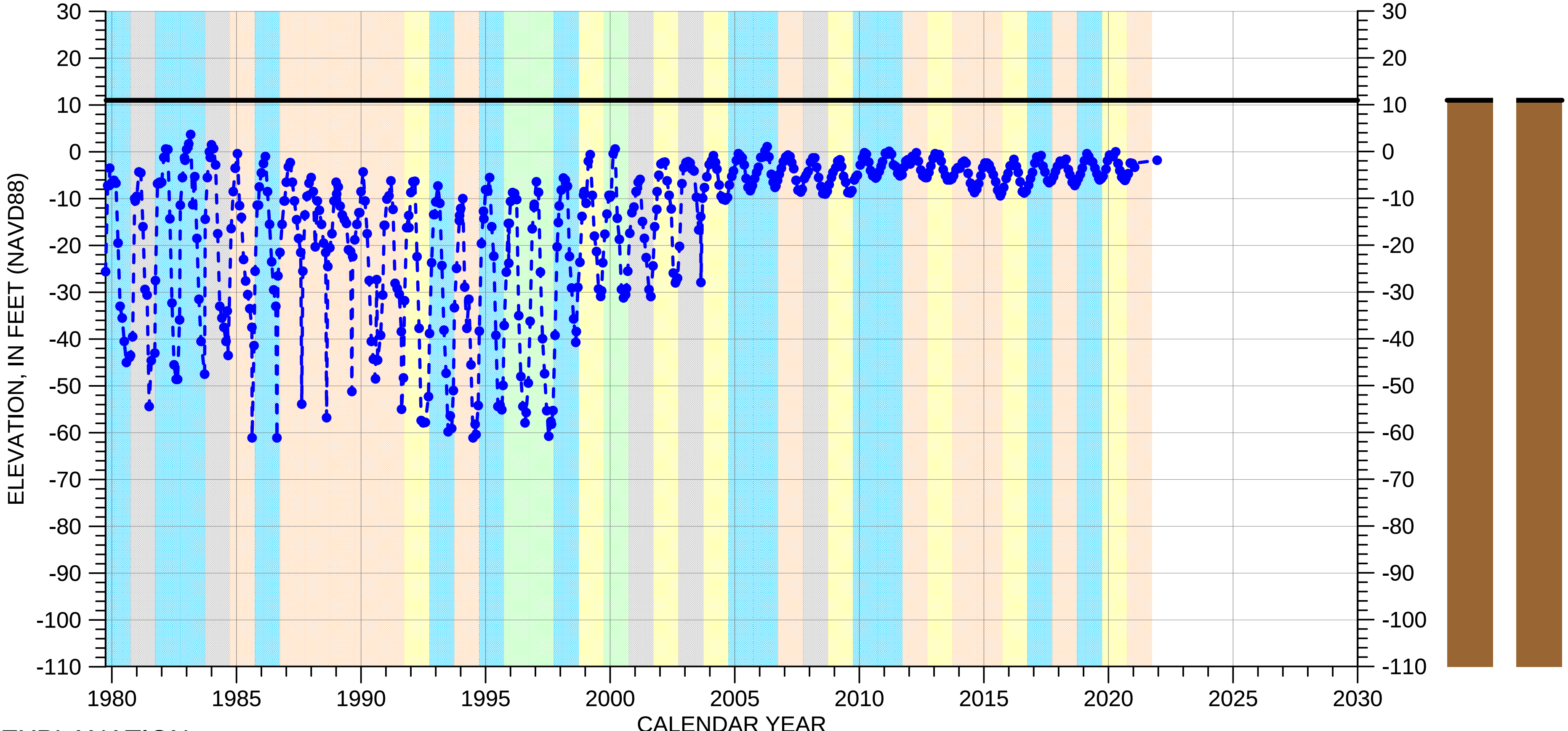
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-32A02

180/400-Foot Aquifer Subbasin

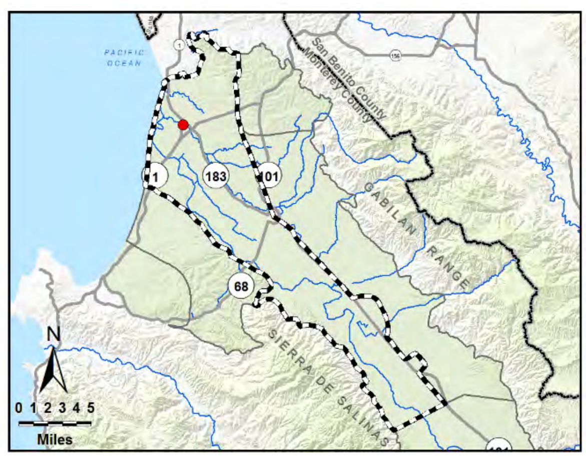


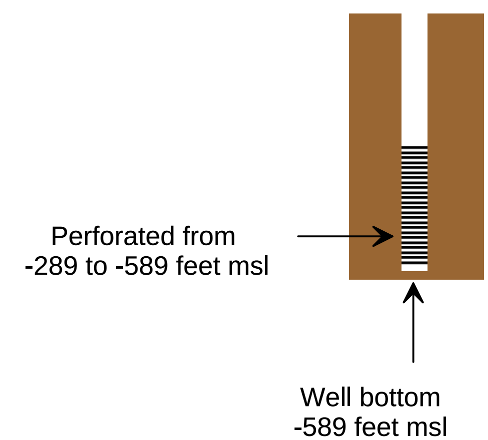
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET





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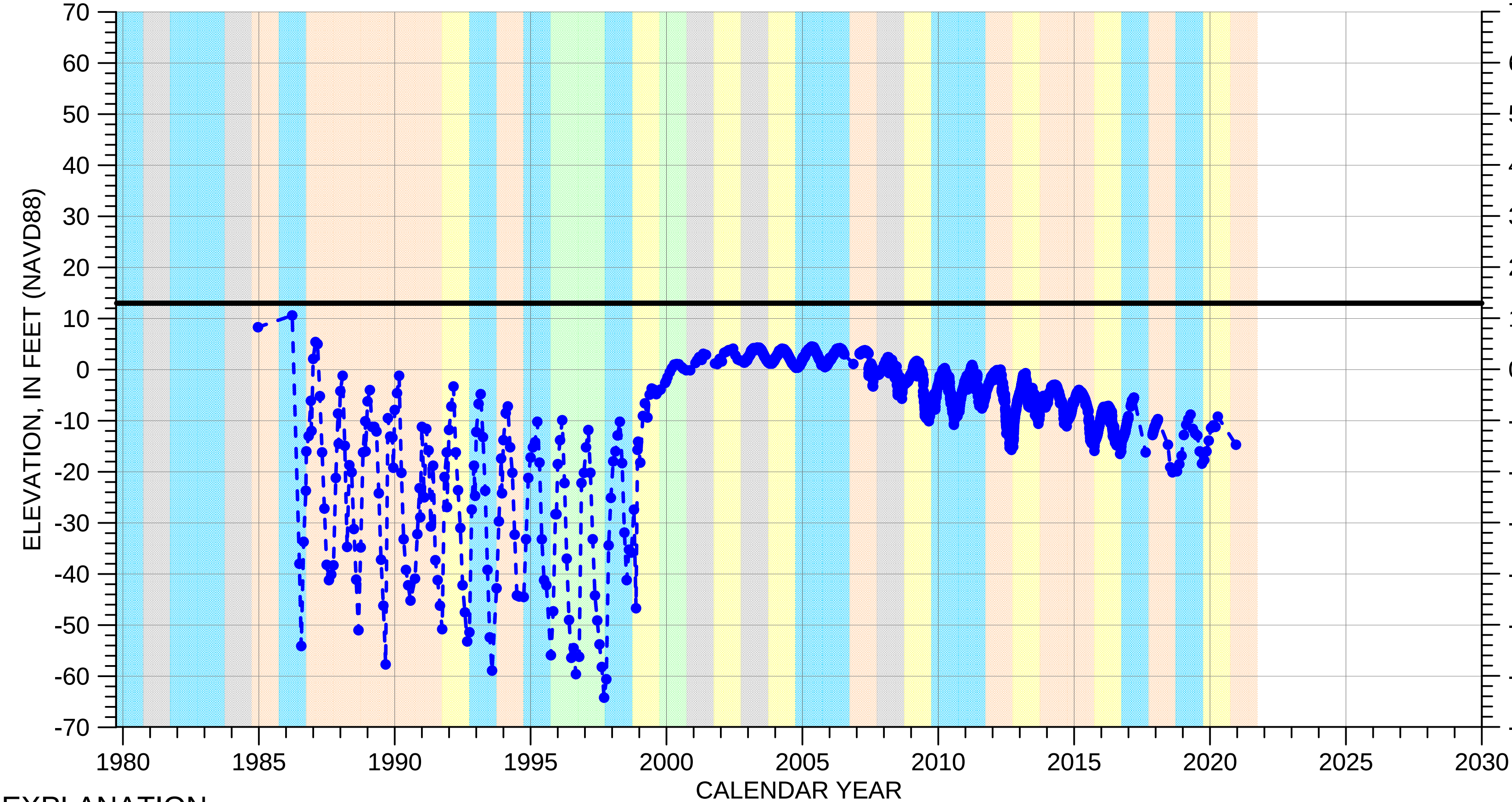
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 13S/02E-32E05

180/400-Foot Aquifer Subbasin



EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

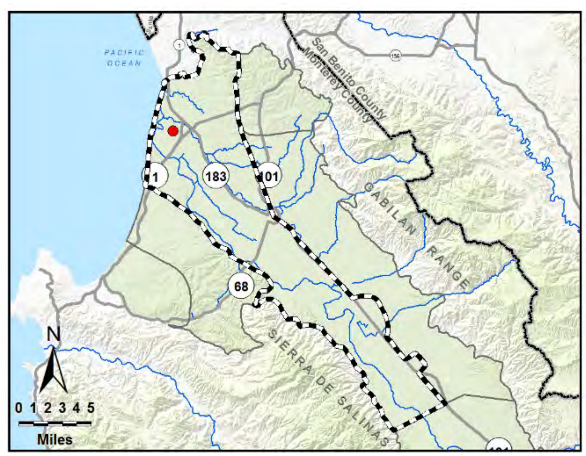
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET



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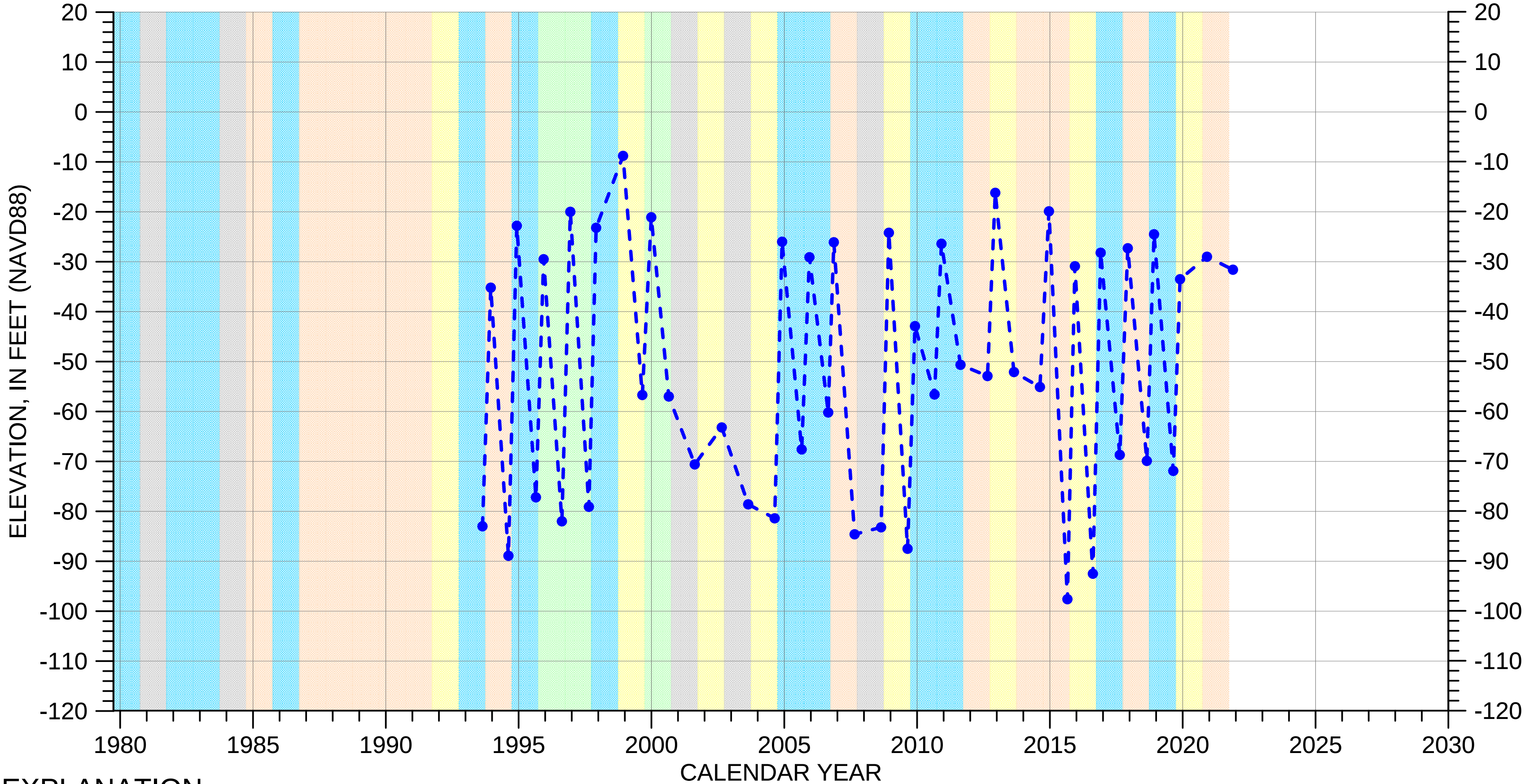
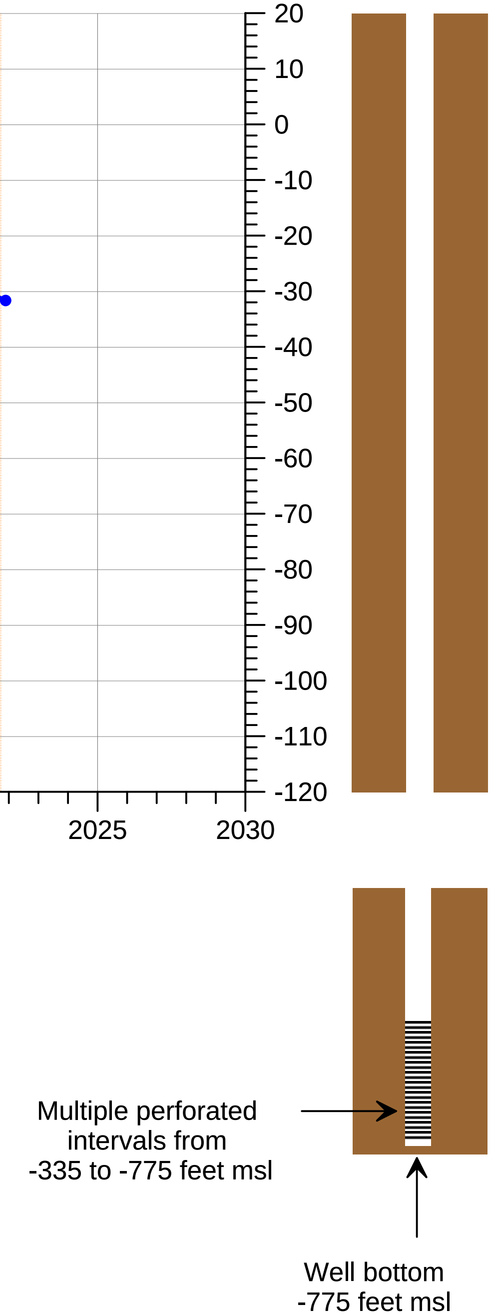
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-02C03

180/400-Foot Aquifer Subbasin



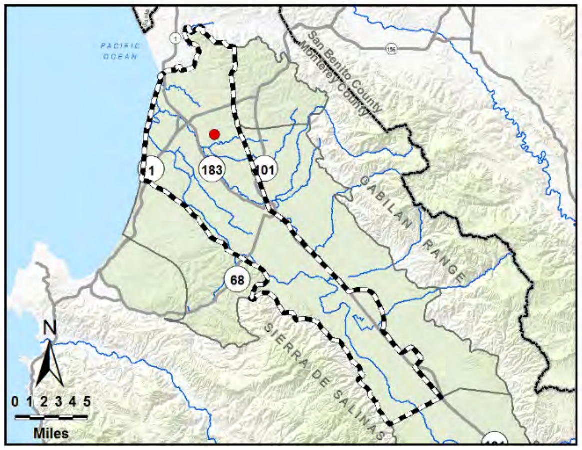


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (66 FT MSL)

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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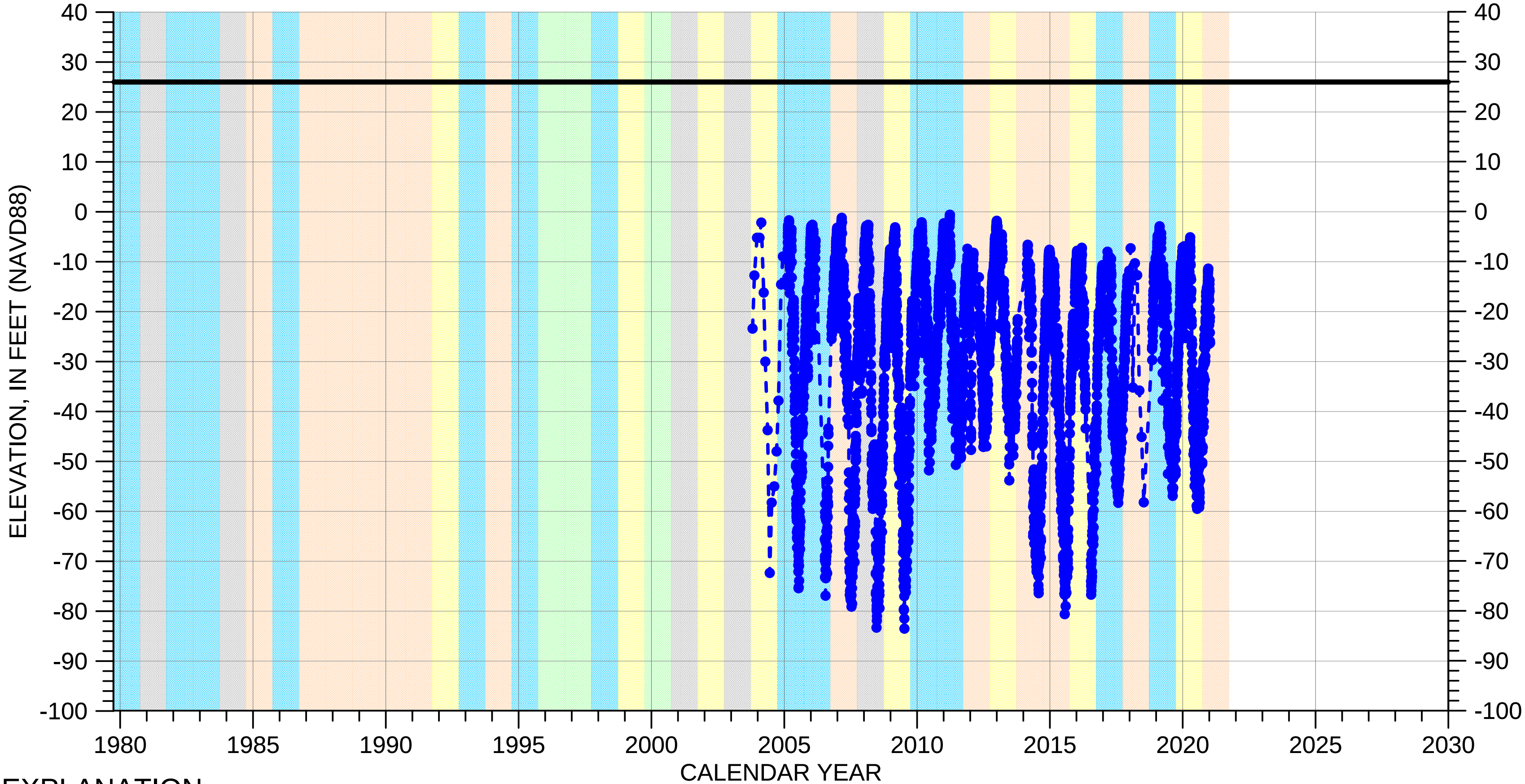
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-03F03

180/400-Foot Aquifer Subbasin



EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

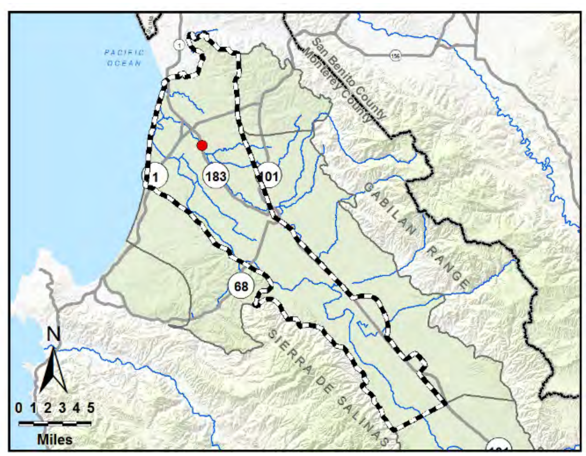
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET



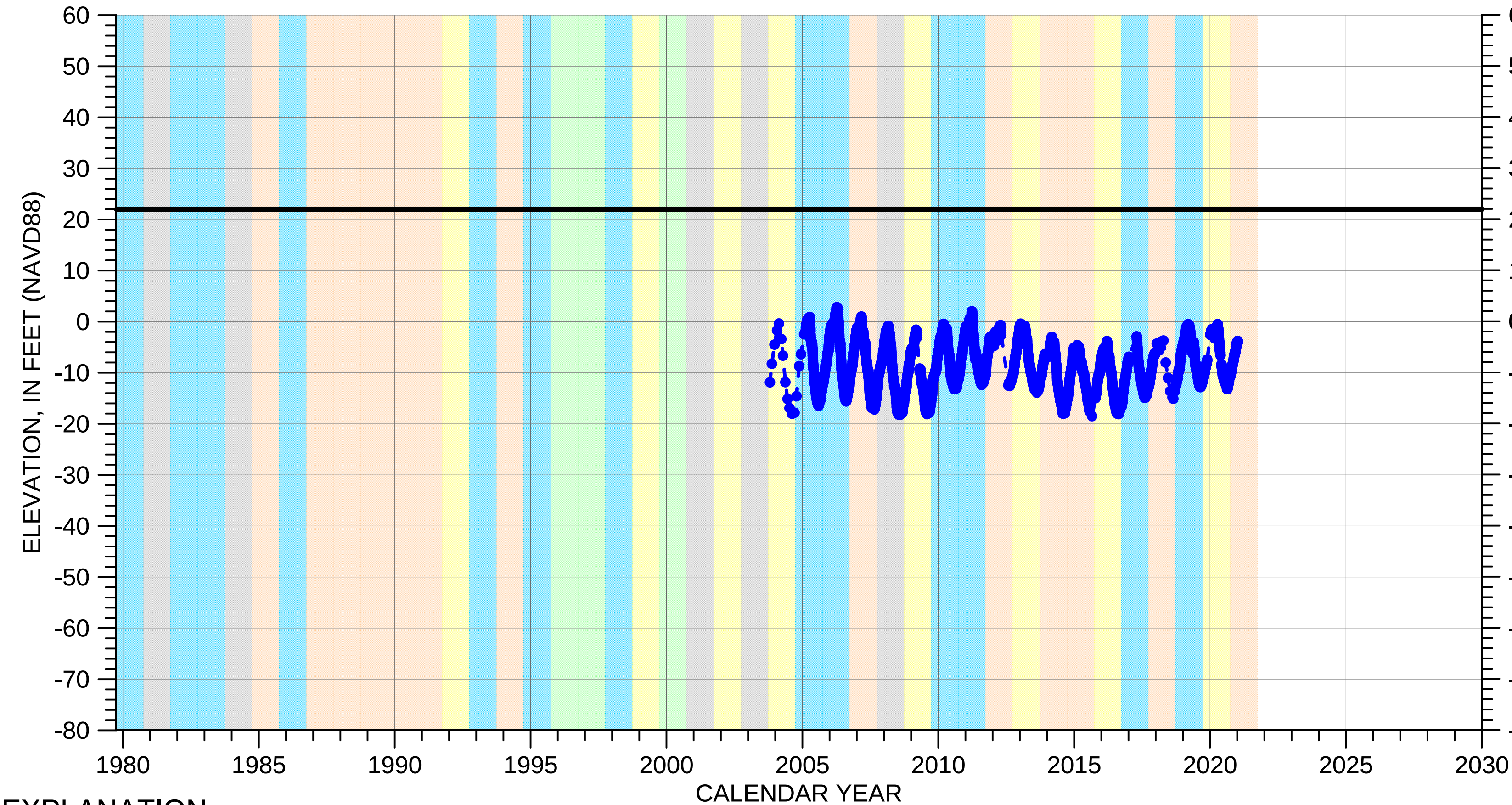
Perforated from -395 to -425 feet msl

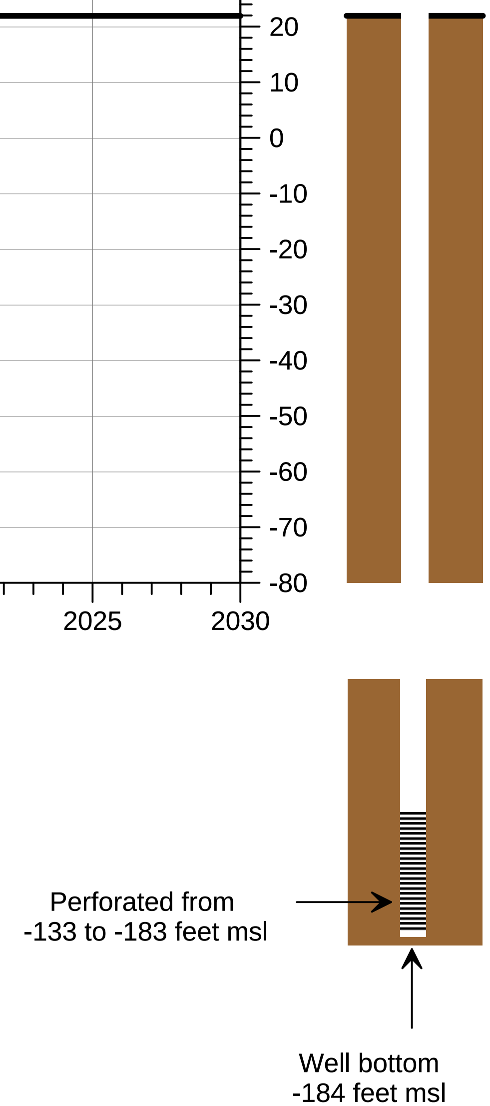
Well bottom -430 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-03F03.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-03F04

180/400-Foot Aquifer Subbasin



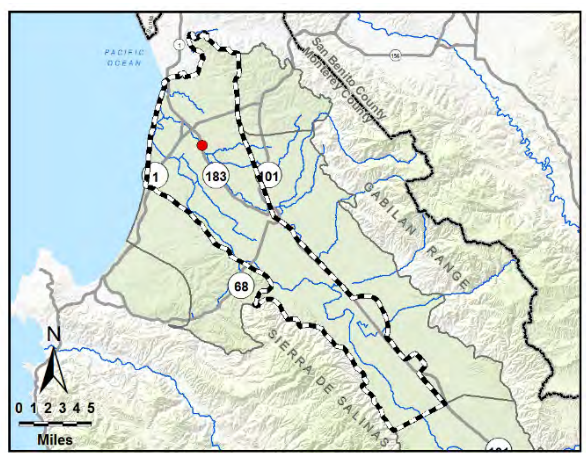


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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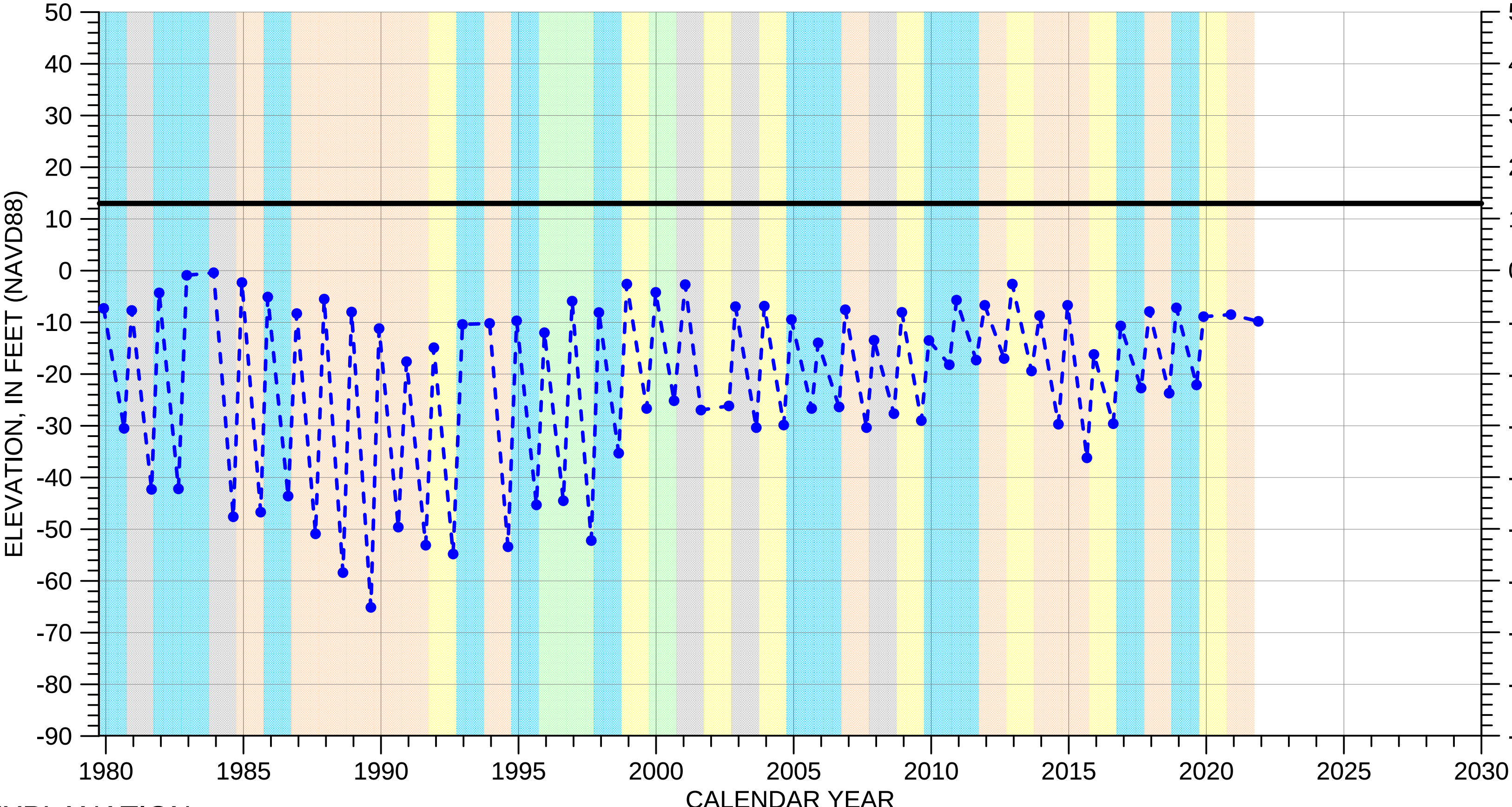
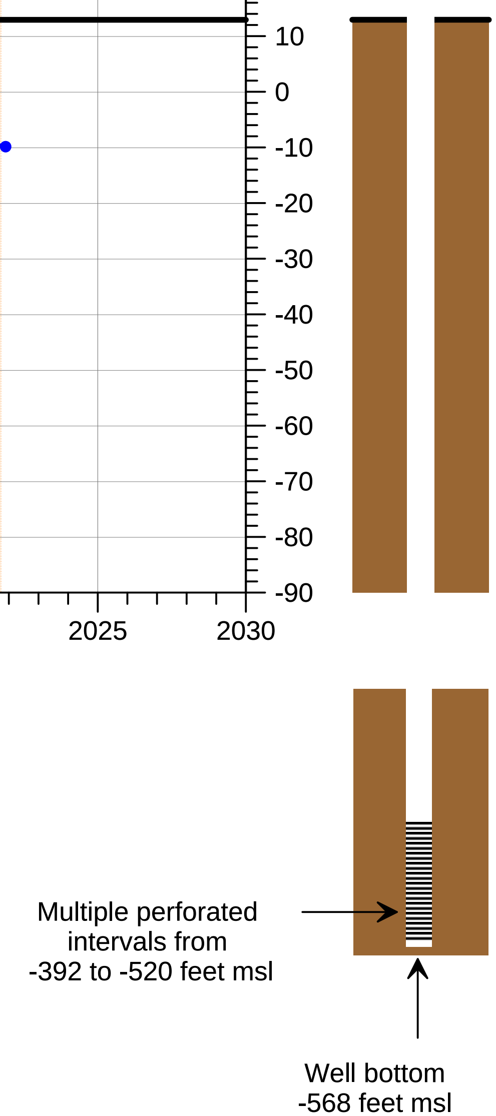
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-05F04

180/400-Foot Aquifer Subbasin





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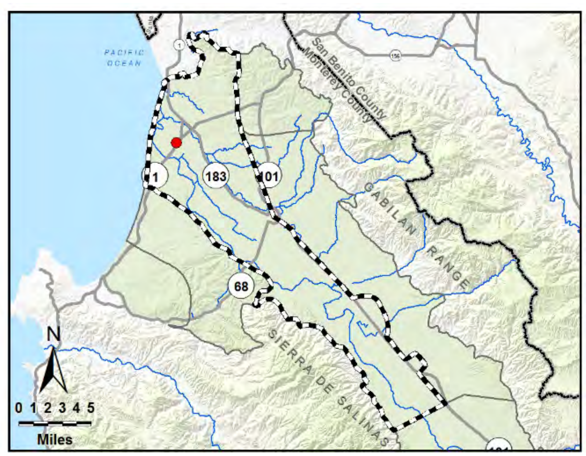
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

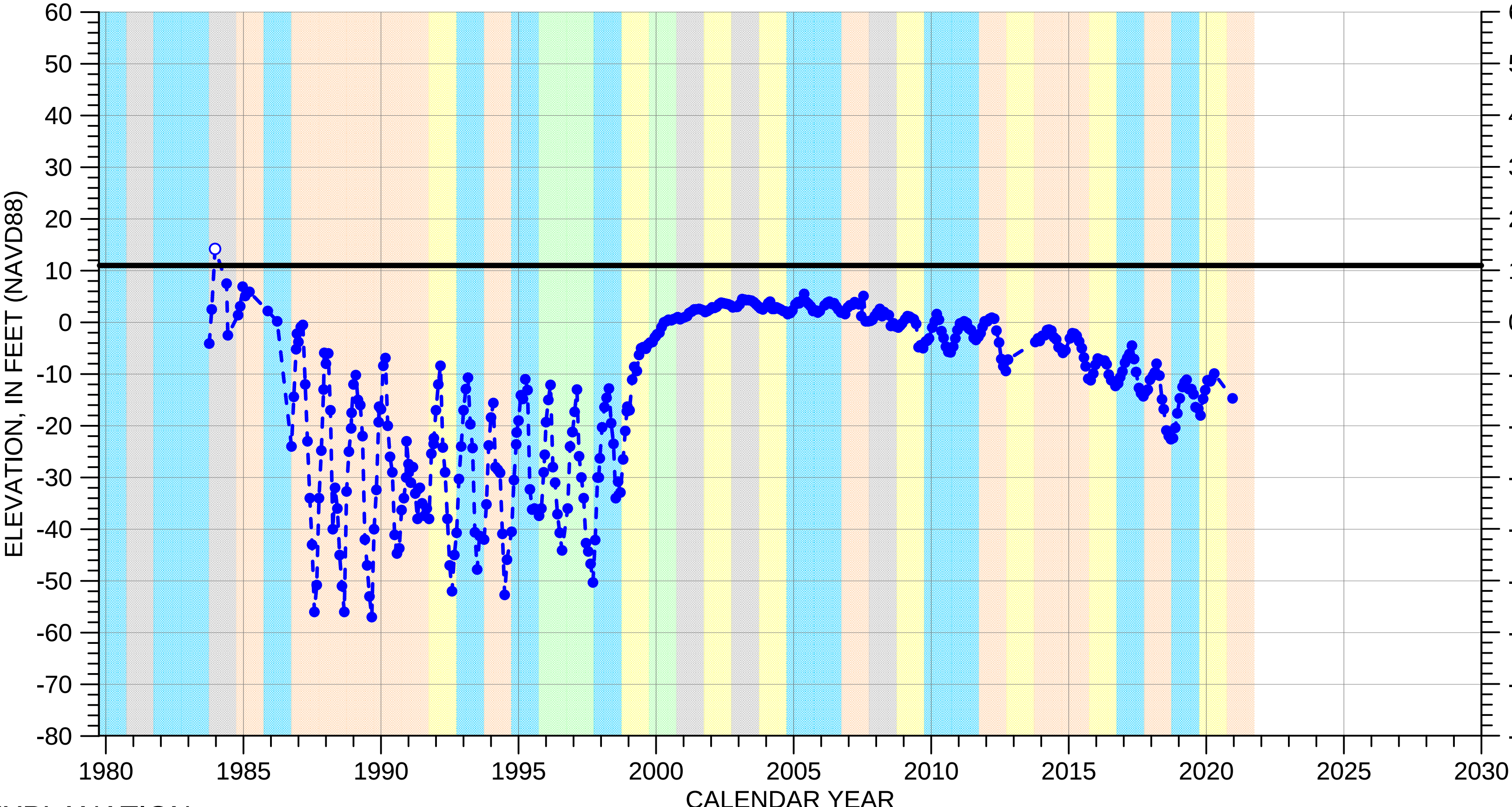


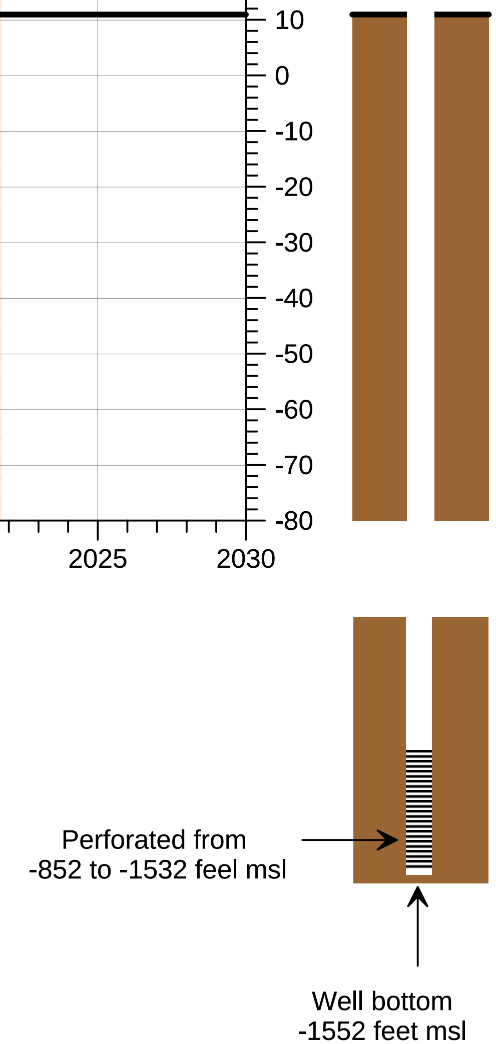
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-06L01

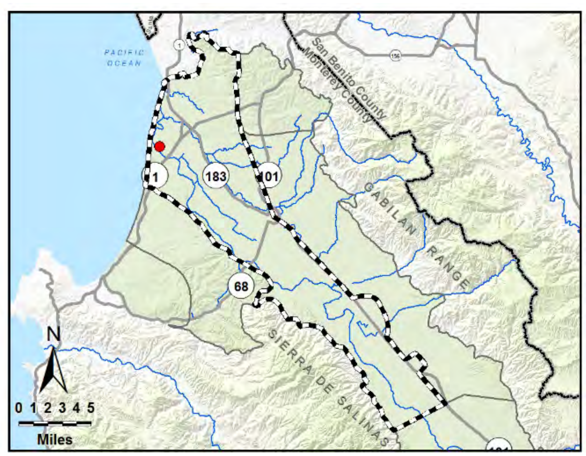
180/400-Foot Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



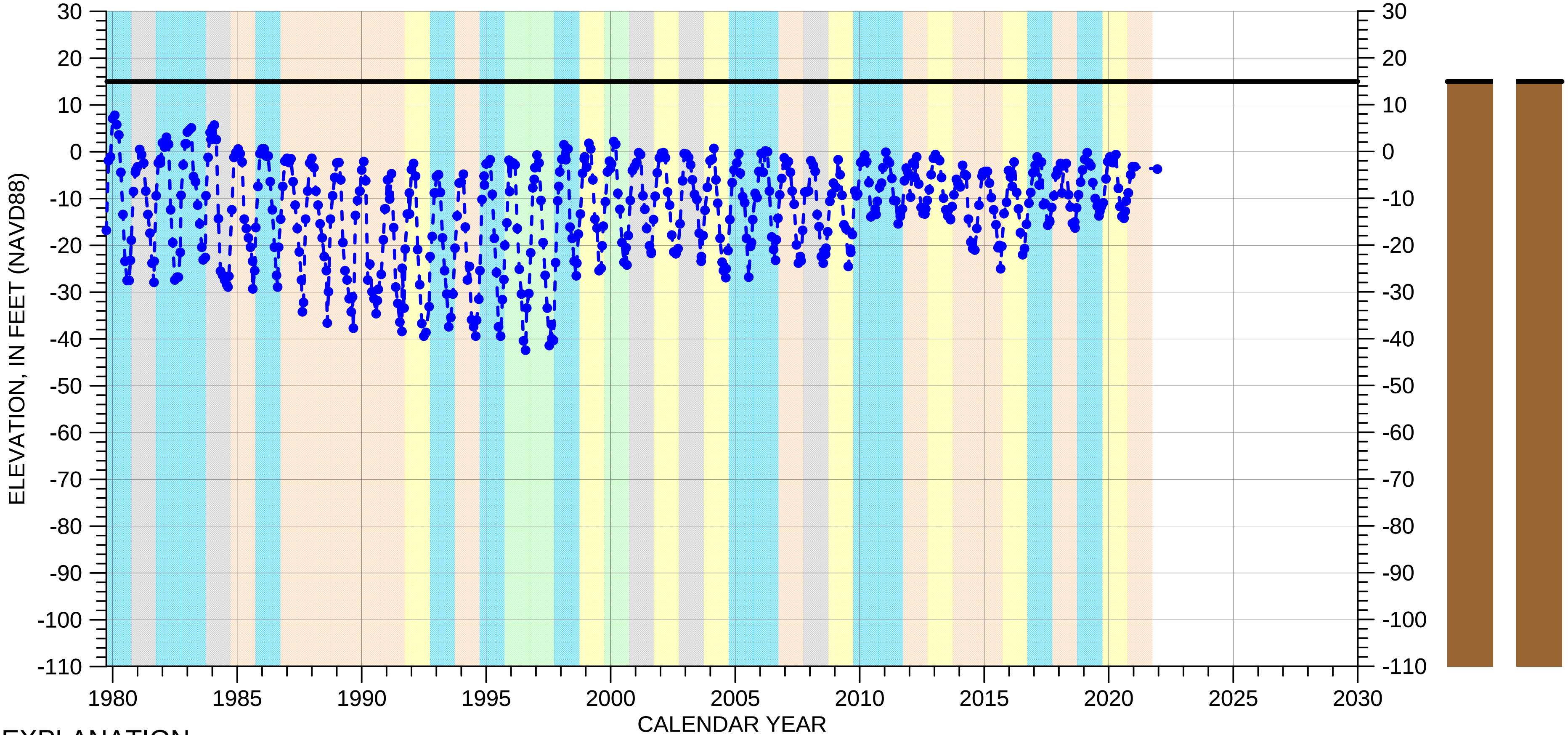
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-06L01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-08M02

180/400-Foot Aquifer Subbasin

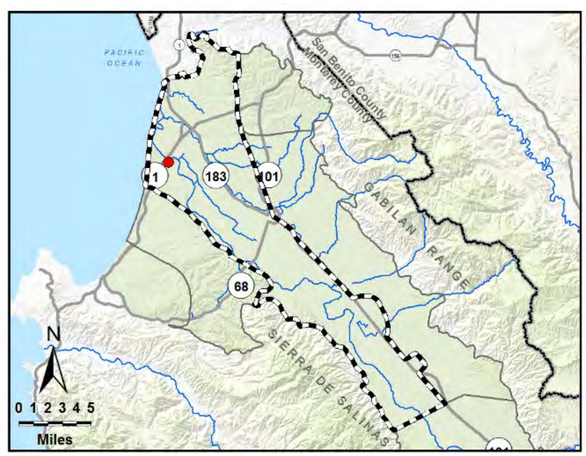


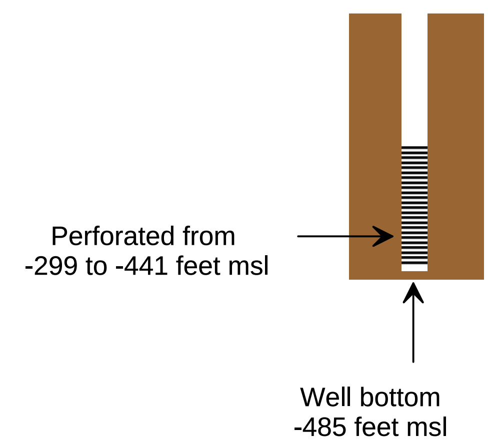
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET





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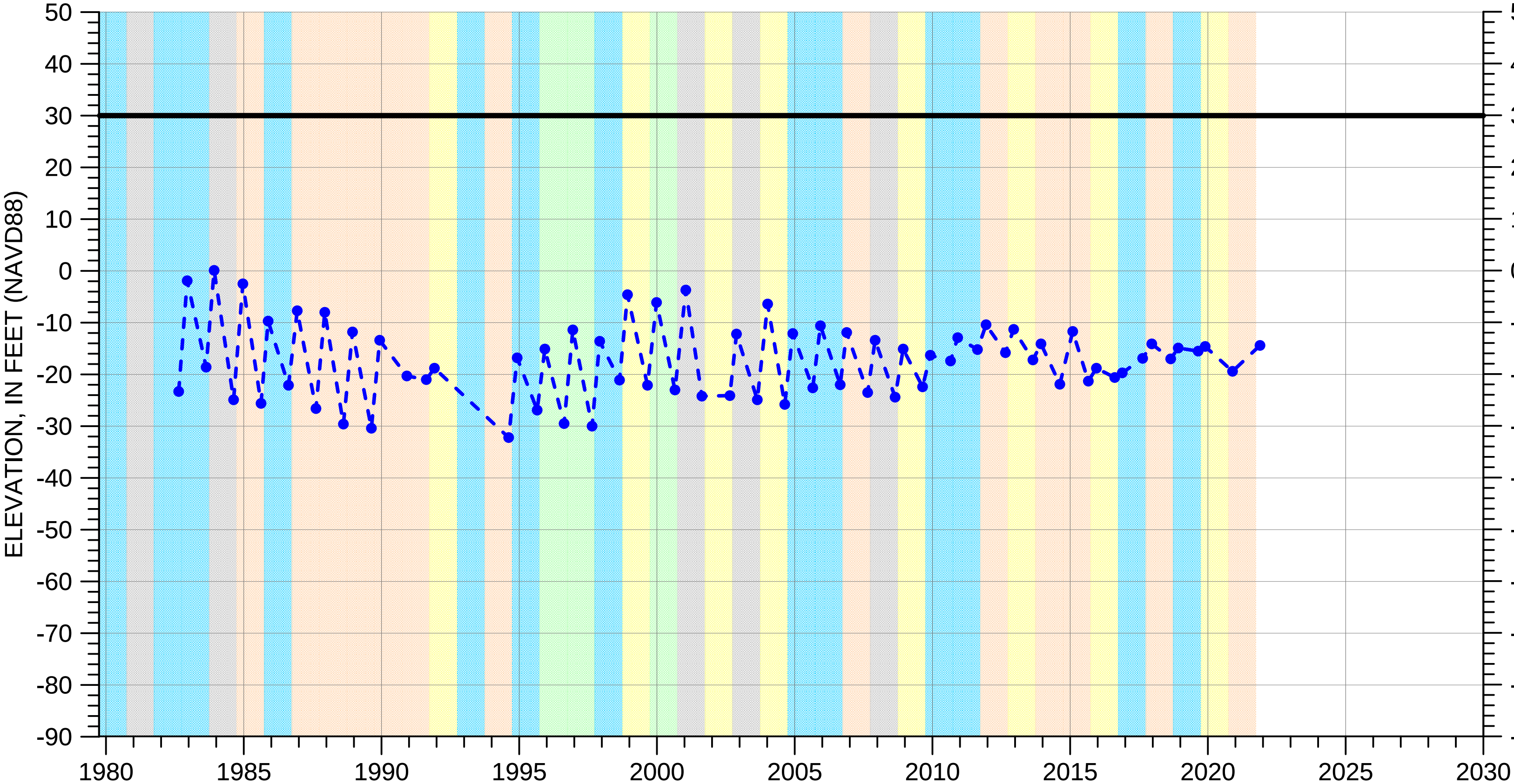
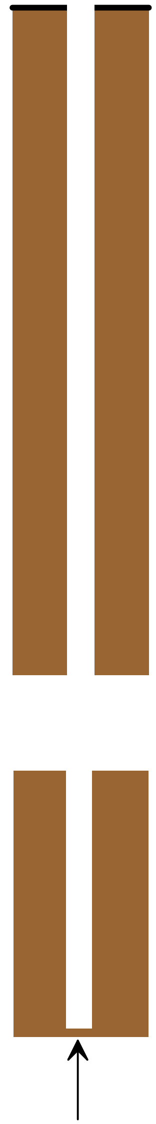
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-10P01

180/400-Foot Aquifer Subbasin





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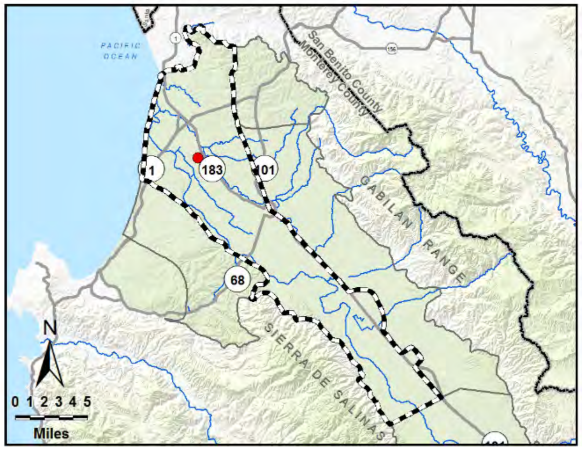
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

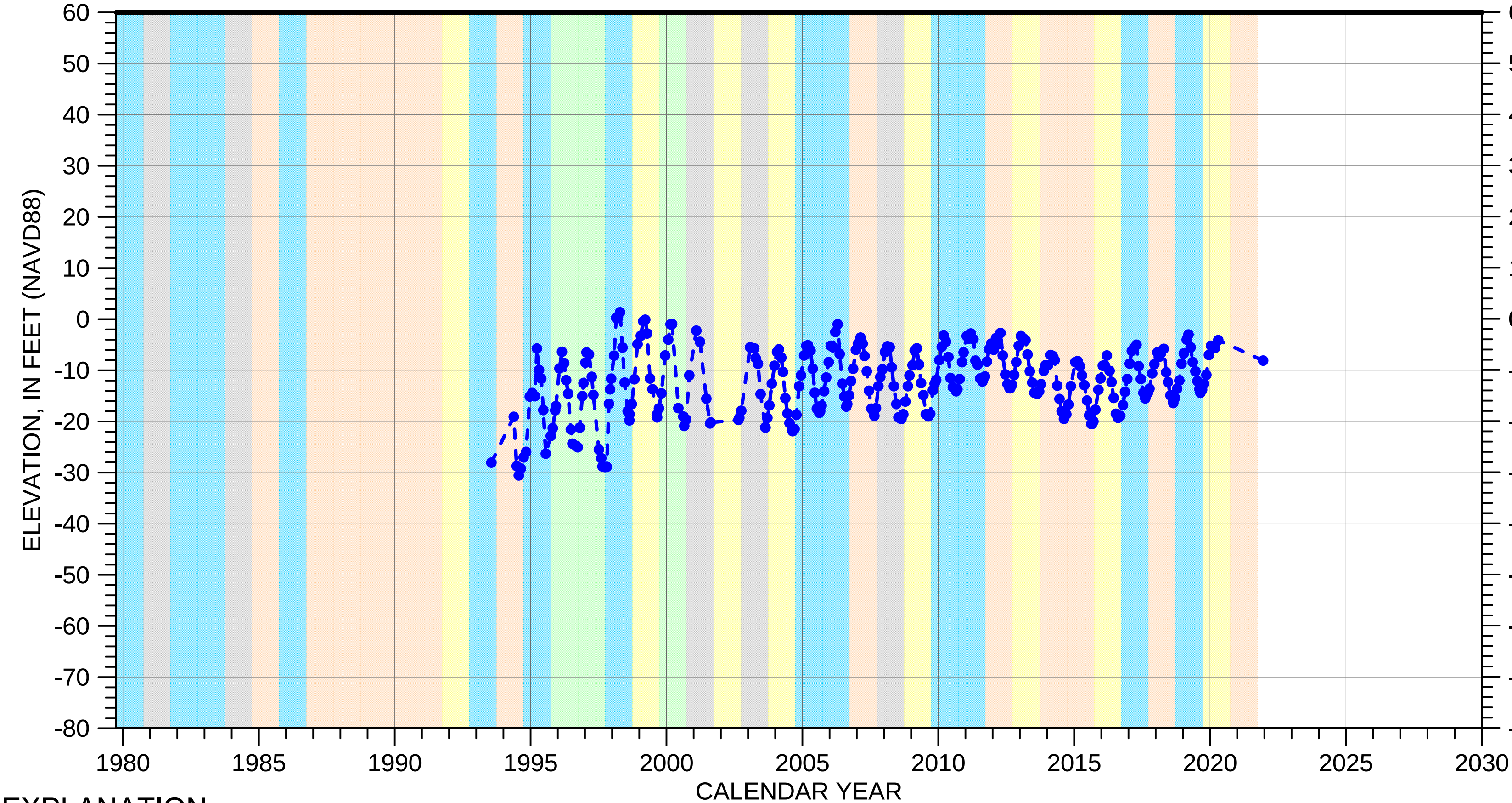
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-11A02

180/400-Foot Aquifer Subbasin

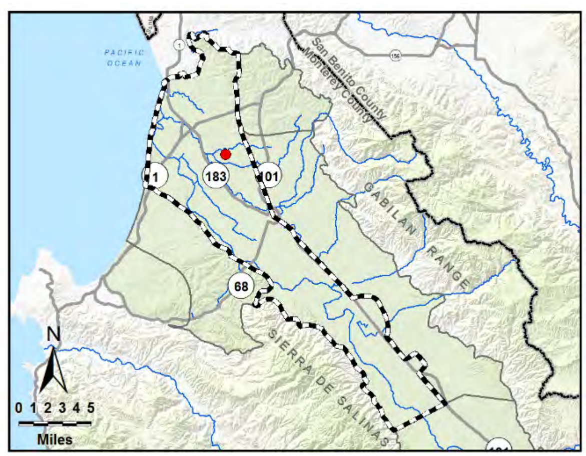


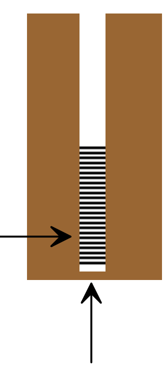
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET





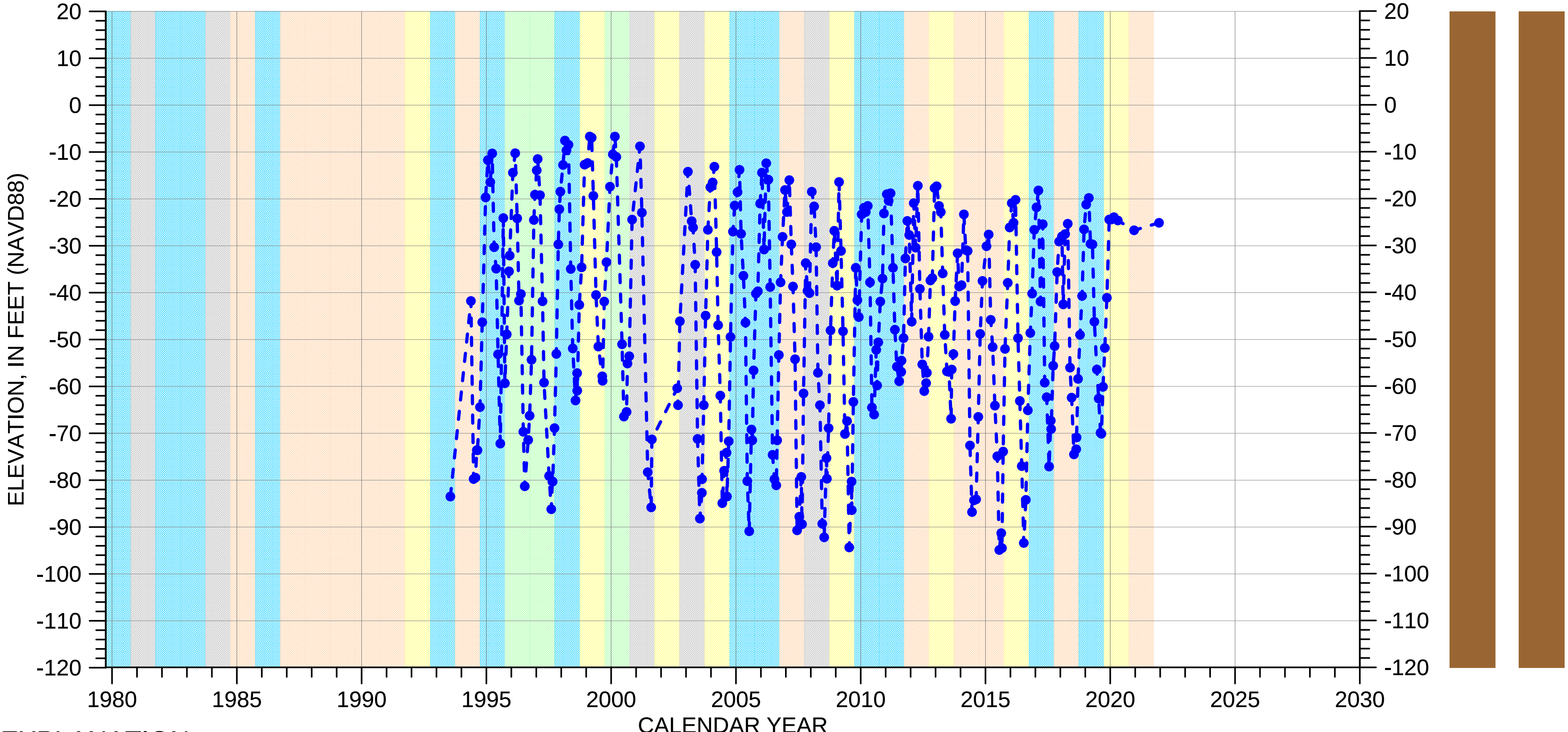
Multiple perforated intervals from -131 to -181 feet msl

Well bottom -191 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-11A02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-11A04

180/400-Foot Aquifer Subbasin

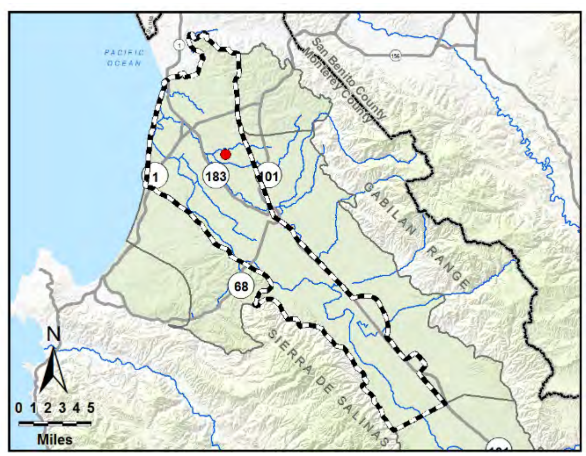


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (59 FT MSL)

WATER YEAR TYPE DESIGNATION

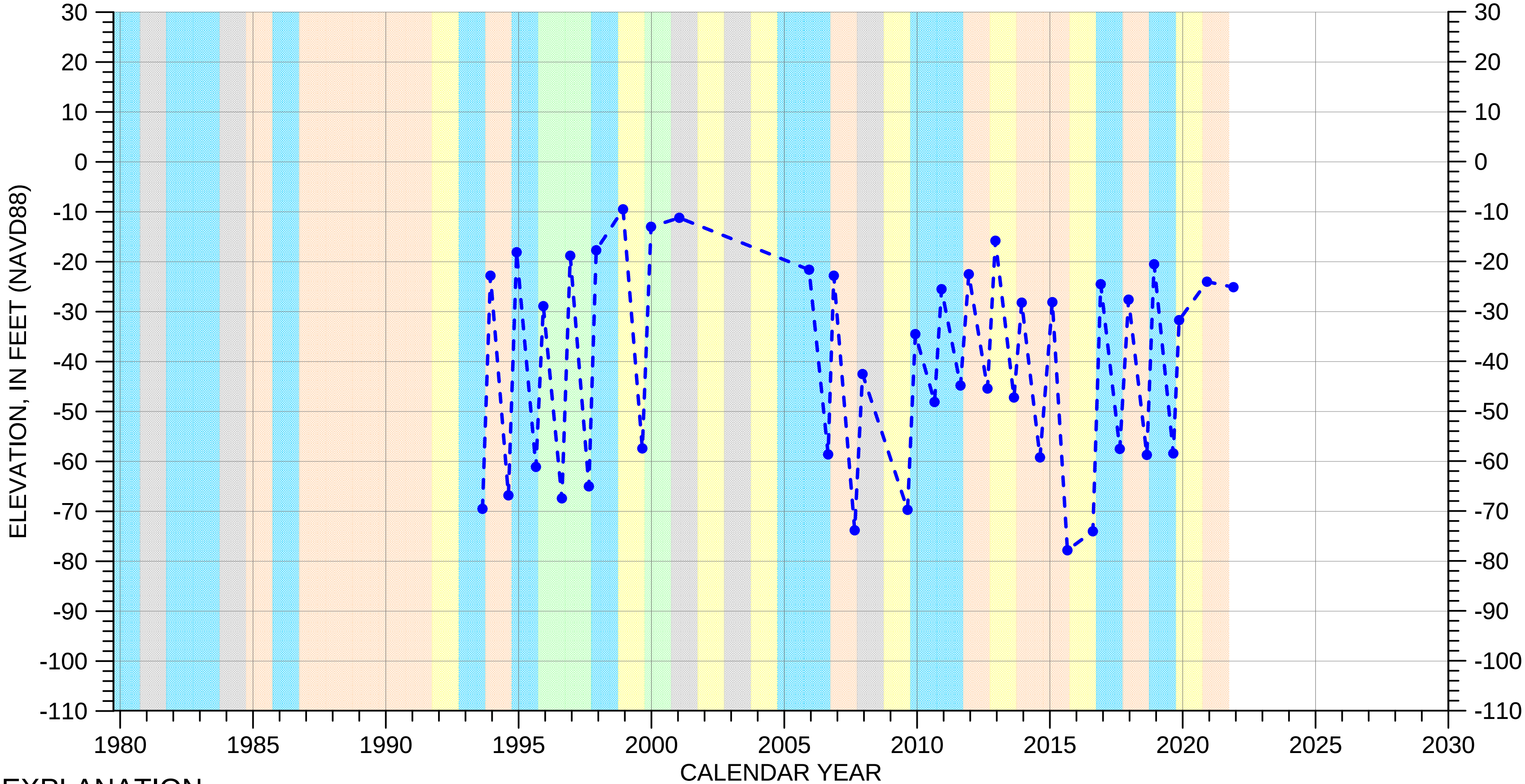
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-11A04.grf

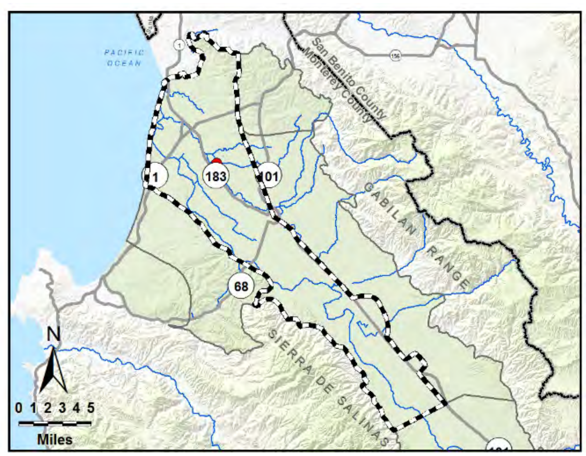
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-11M03

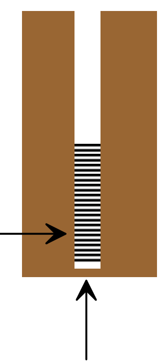
180/400-Foot Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (38 FT MSL)





Multiple perforated intervals from -358 to -618 feet msl

Well bottom -618 feet msl

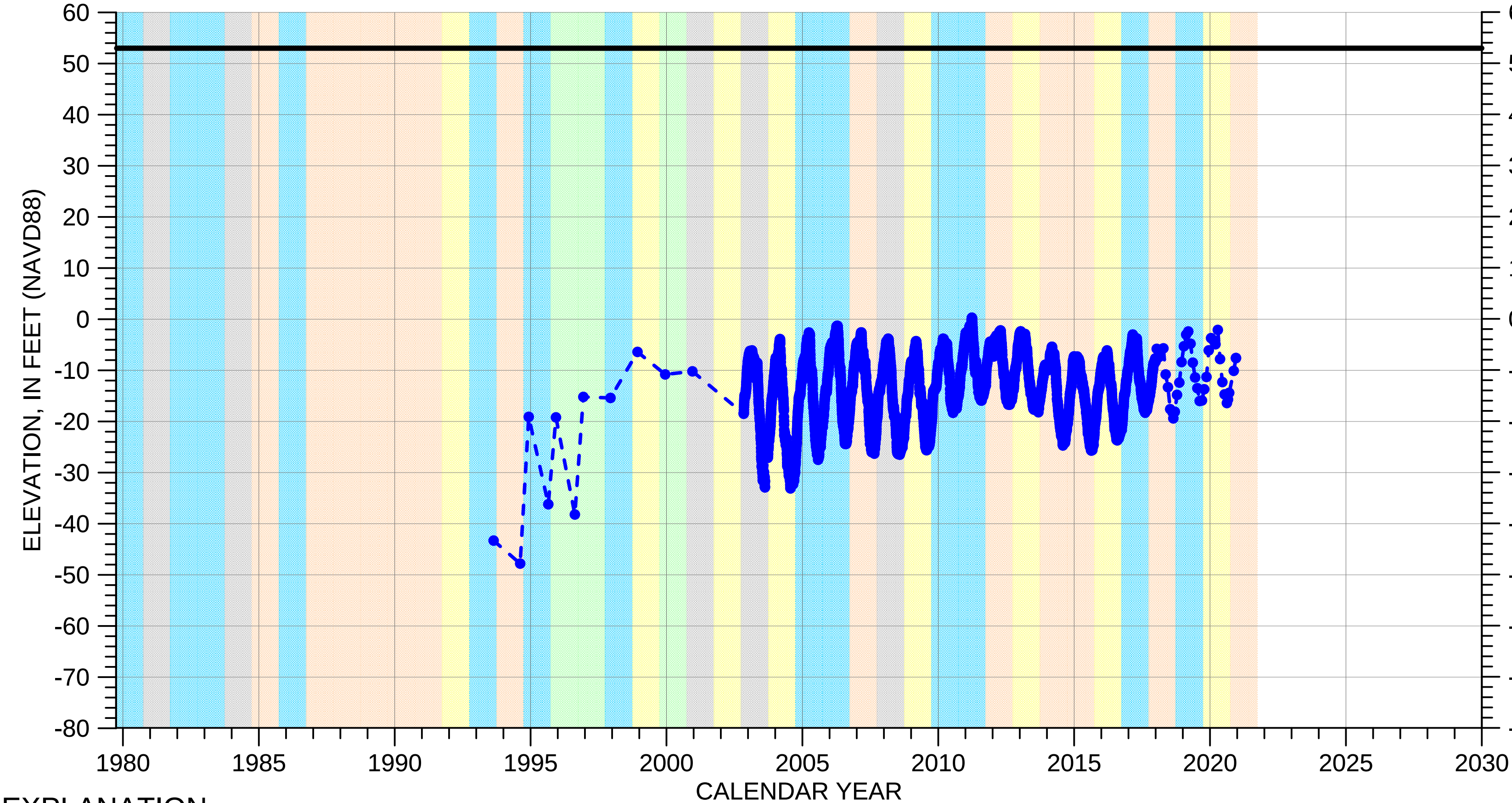
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-11M03.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-12B02

180/400-Foot Aquifer Subbasin

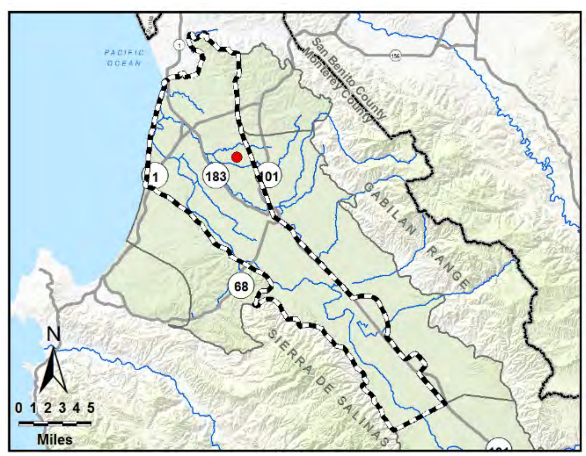


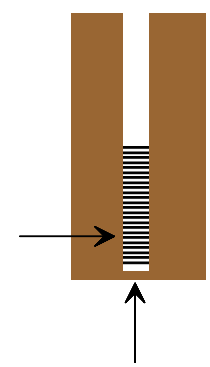
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

DRY	WET - NORMAL
DRY - NORMAL	WET
NORMAL	





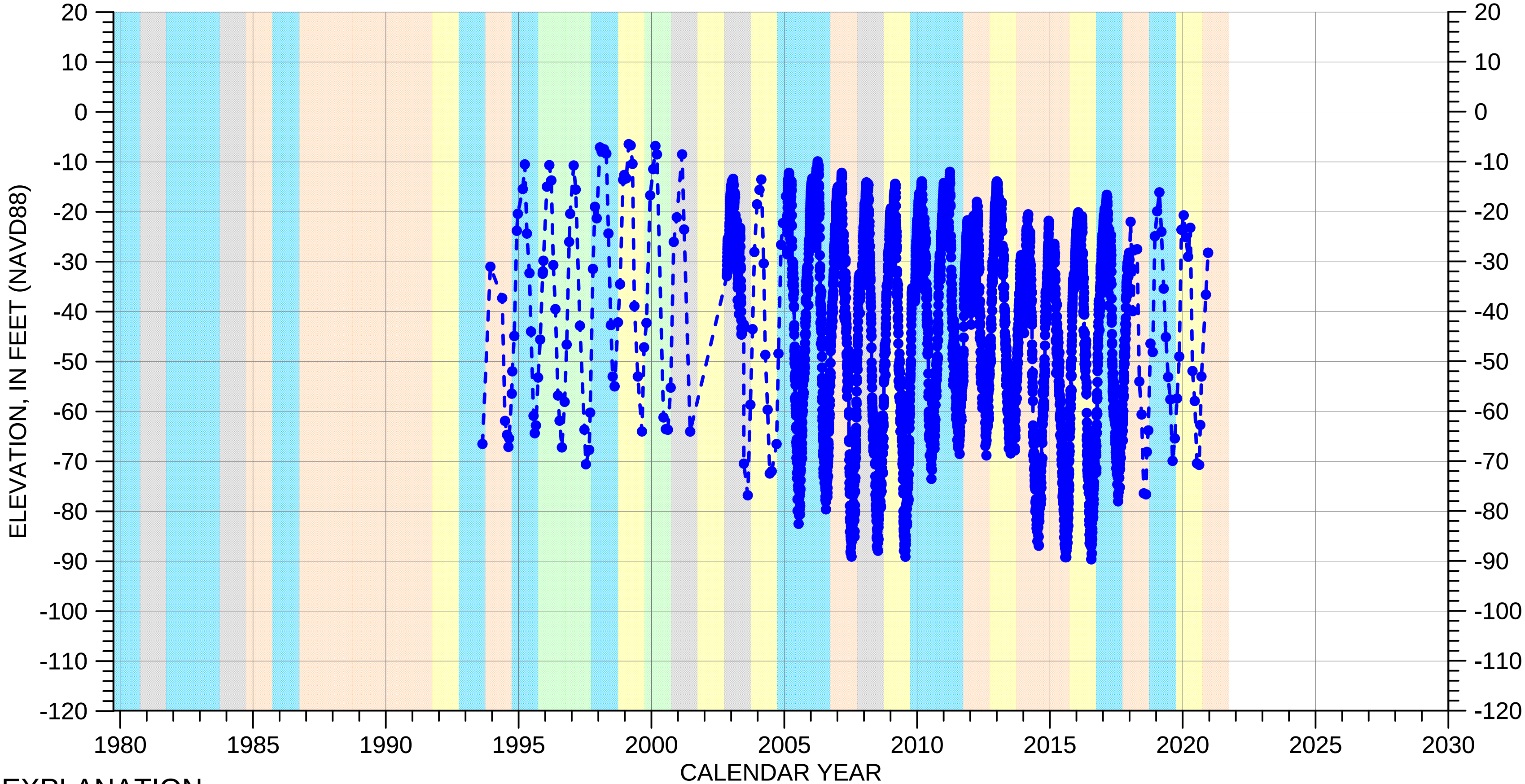
Perforated from
-157 to -207 feet msl

Well bottom
-212 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-12B02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-12B03

180/400-Foot Aquifer Subbasin



EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (53 FT MSL)

WATER YEAR TYPE DESIGNATION

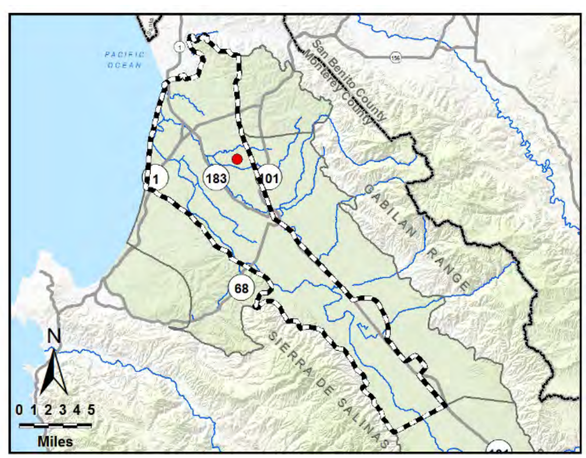
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET



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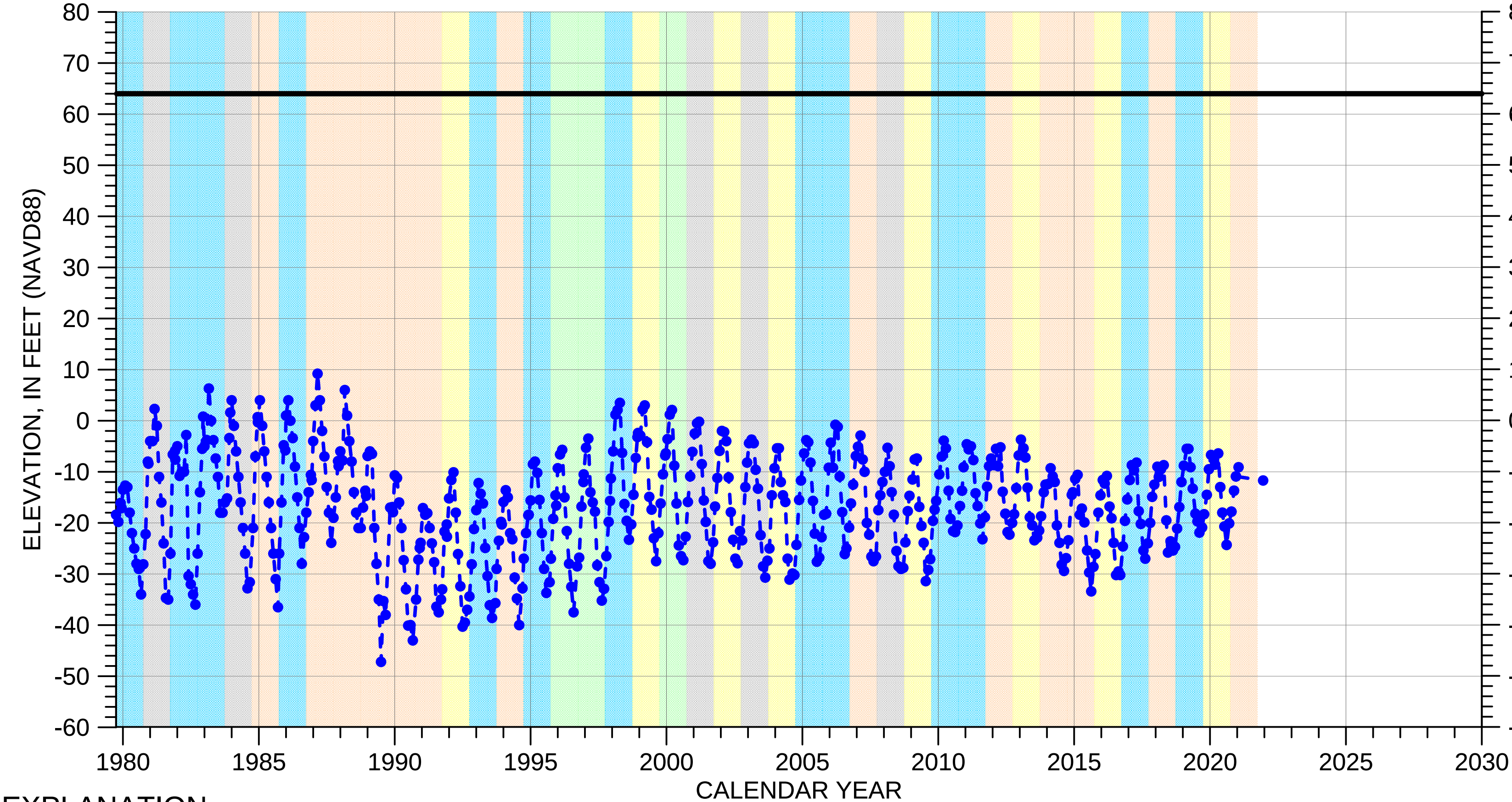
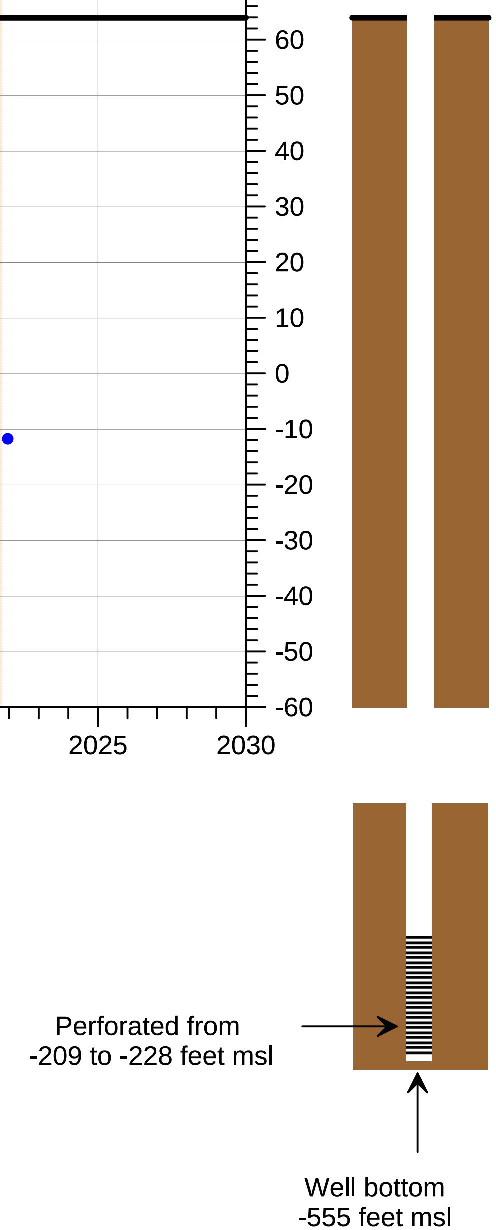
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-12Q01

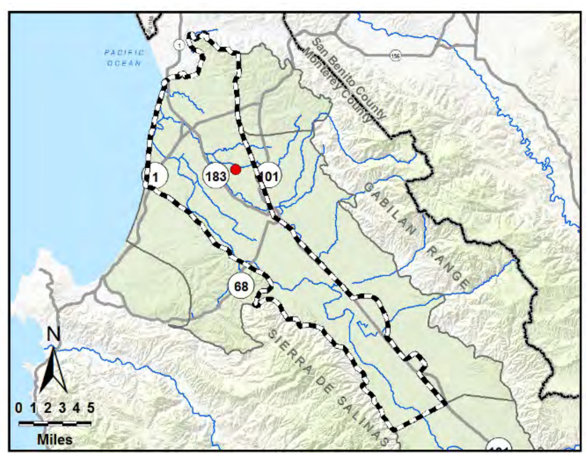
180/400-Foot Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



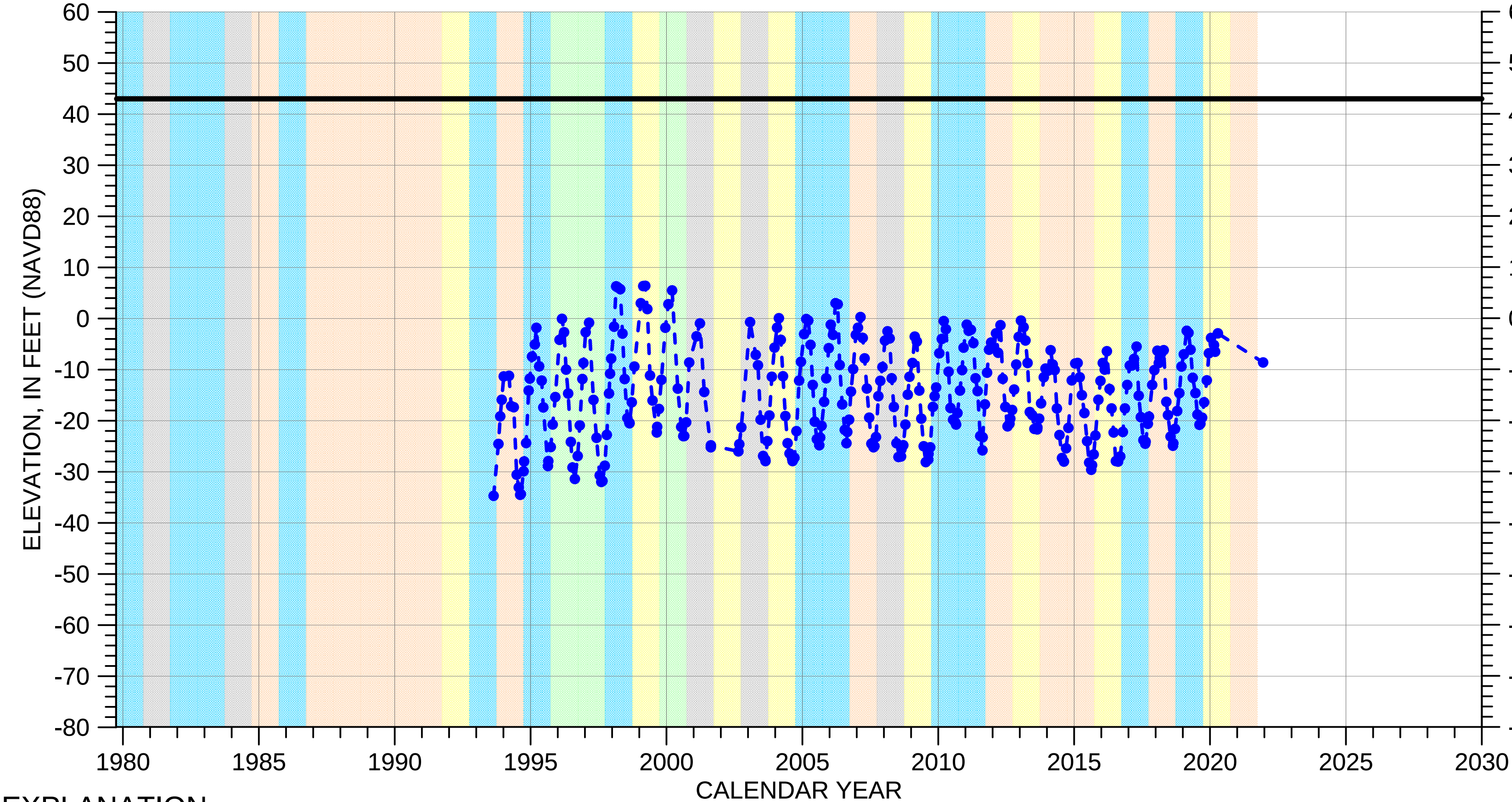
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-12Q01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-13F03

180/400-Foot Aquifer Subbasin



Multiple perforated intervals from -185 to -225 feet msl

Well bottom -235 feet msl

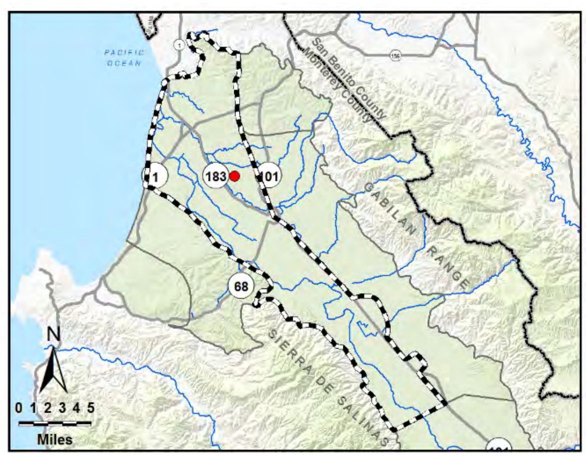
\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-13F03.grf

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

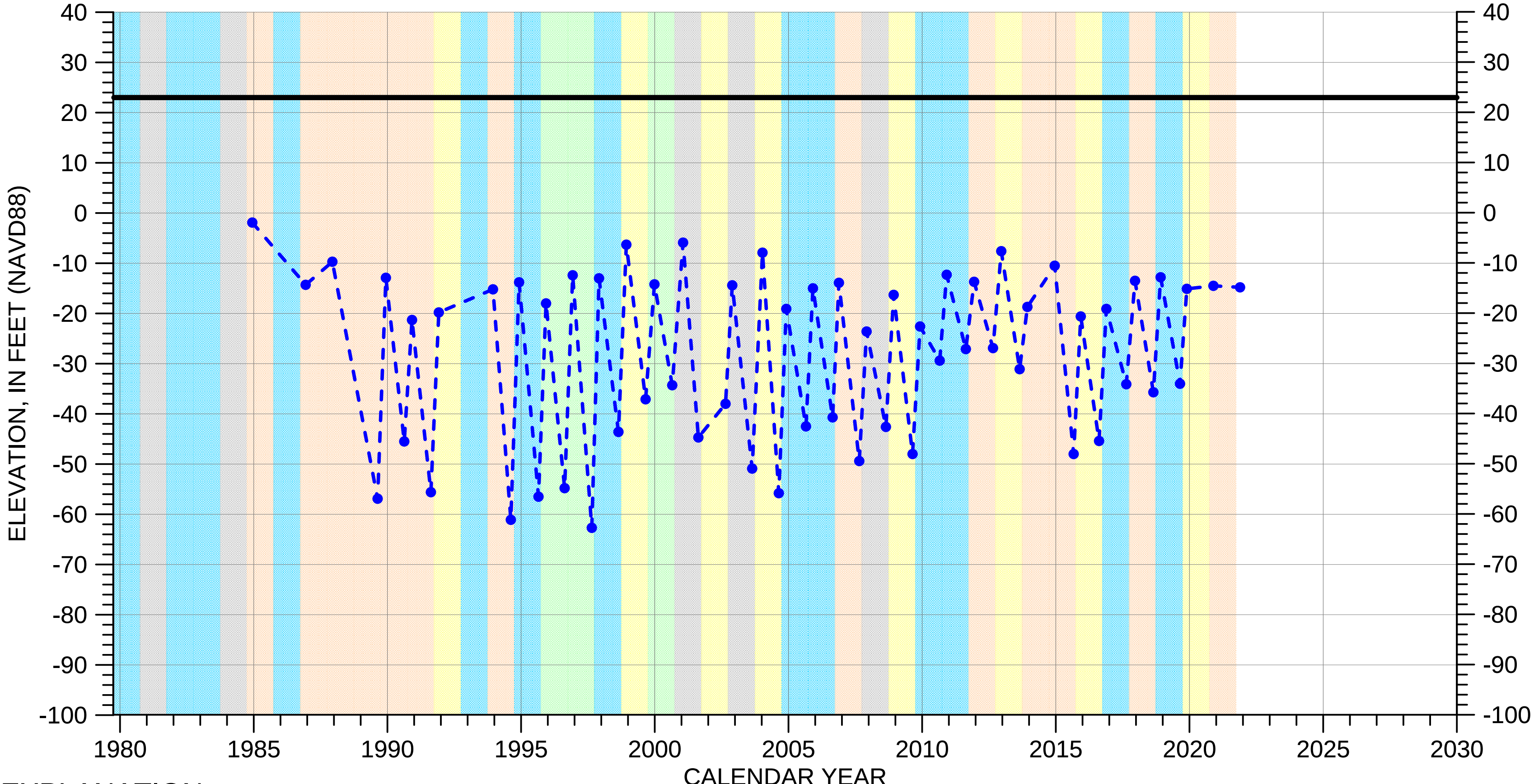
WATER YEAR TYPE DESIGNATION

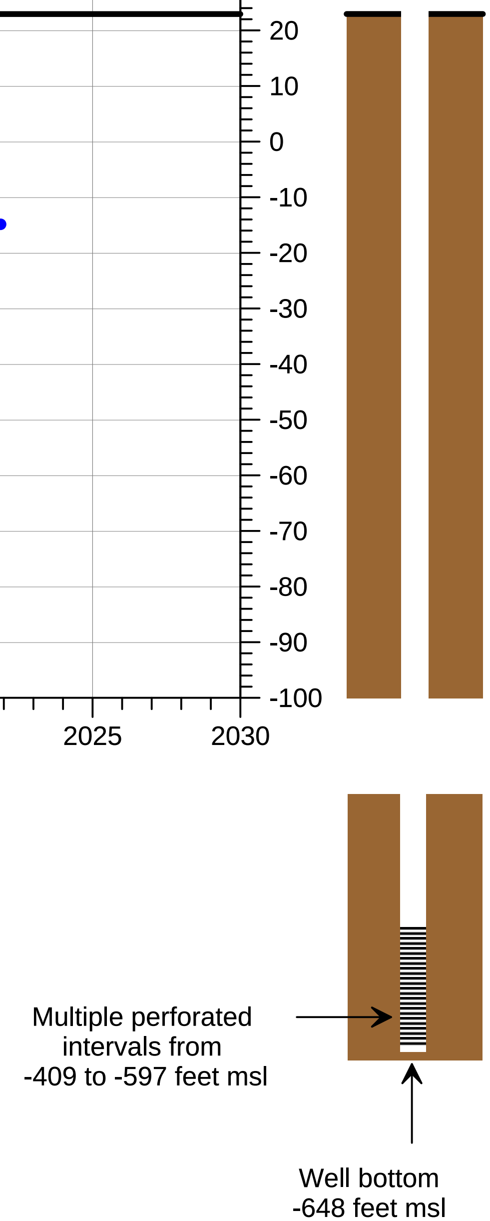
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-16A02

180/400-Foot Aquifer Subbasin





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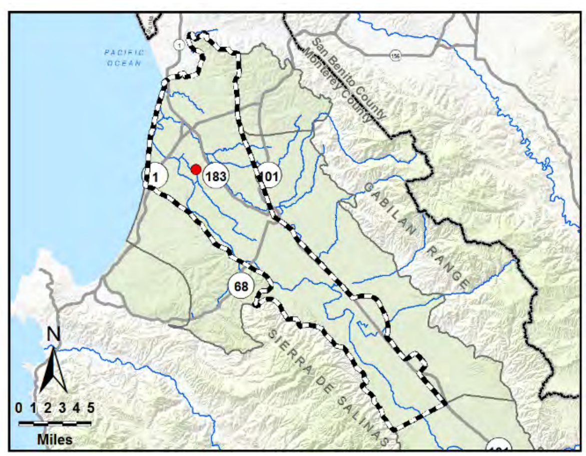
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

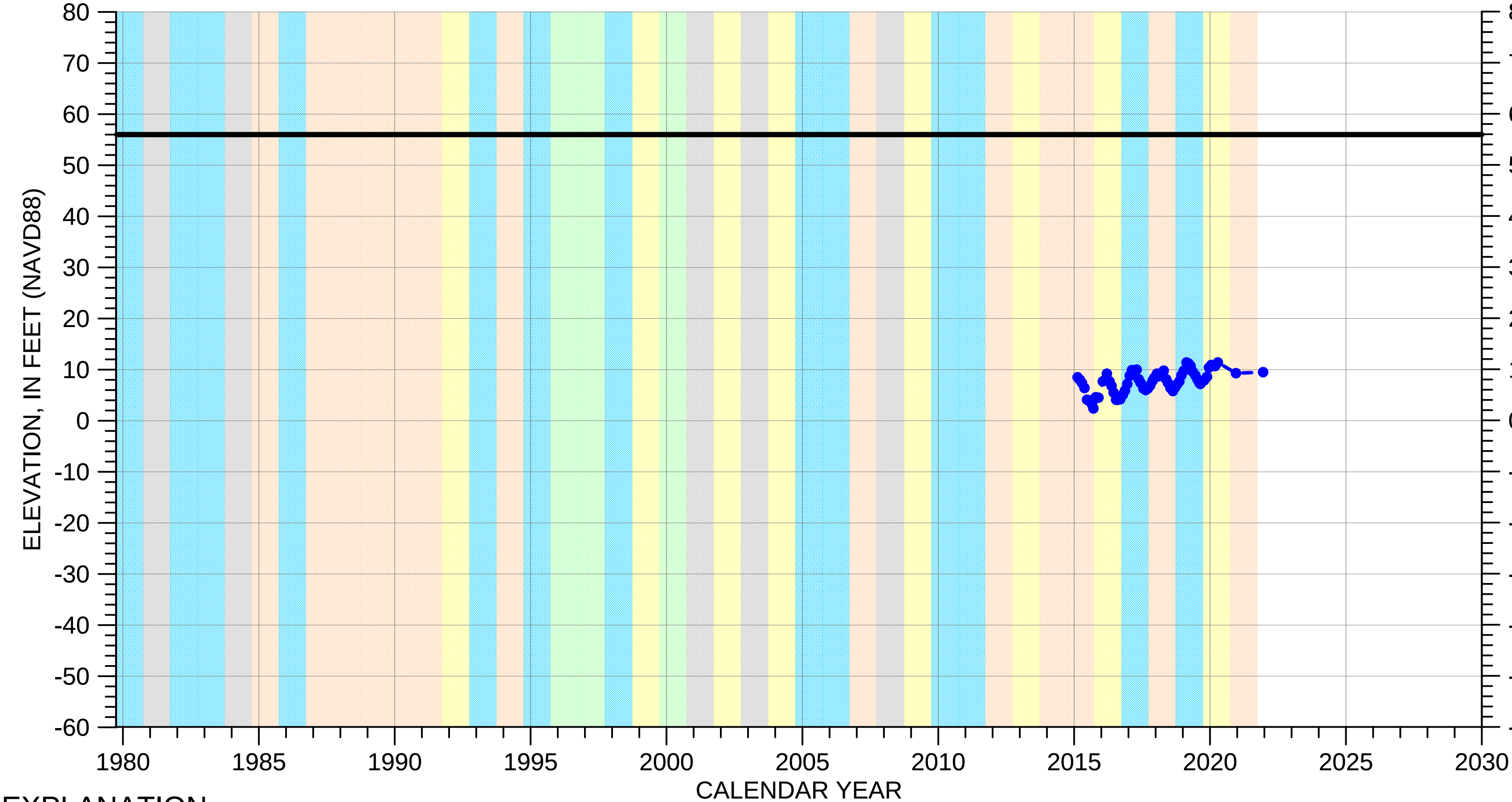


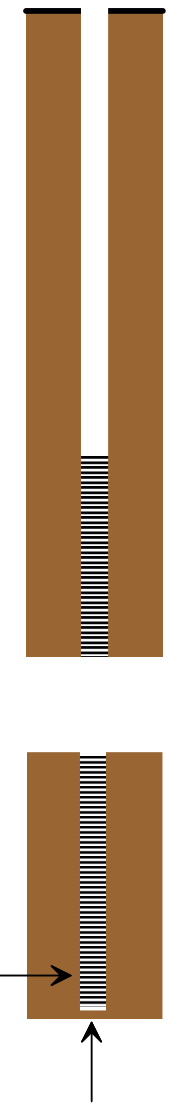
WATER YEAR TYPE DESIGNATION

DRY	WET - NORMAL
DRY - NORMAL	WET
NORMAL	

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-17C02

180/400-Foot Aquifer Subbasin



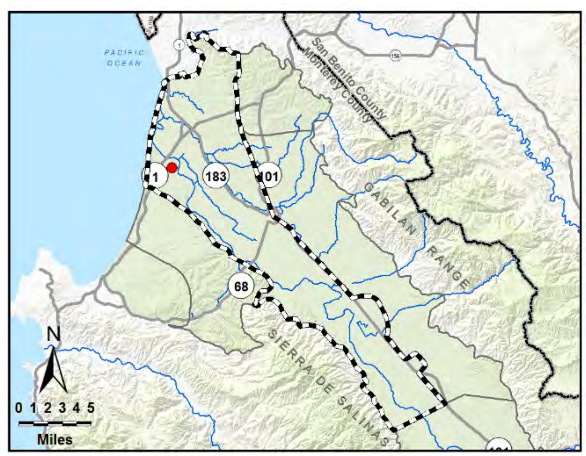


Perforated from
-24 to -84 feel msl

Well bottom
-84 feet msl

EXPLANATION

Groundwater Elevation
Suspect Measurement
Land Surface



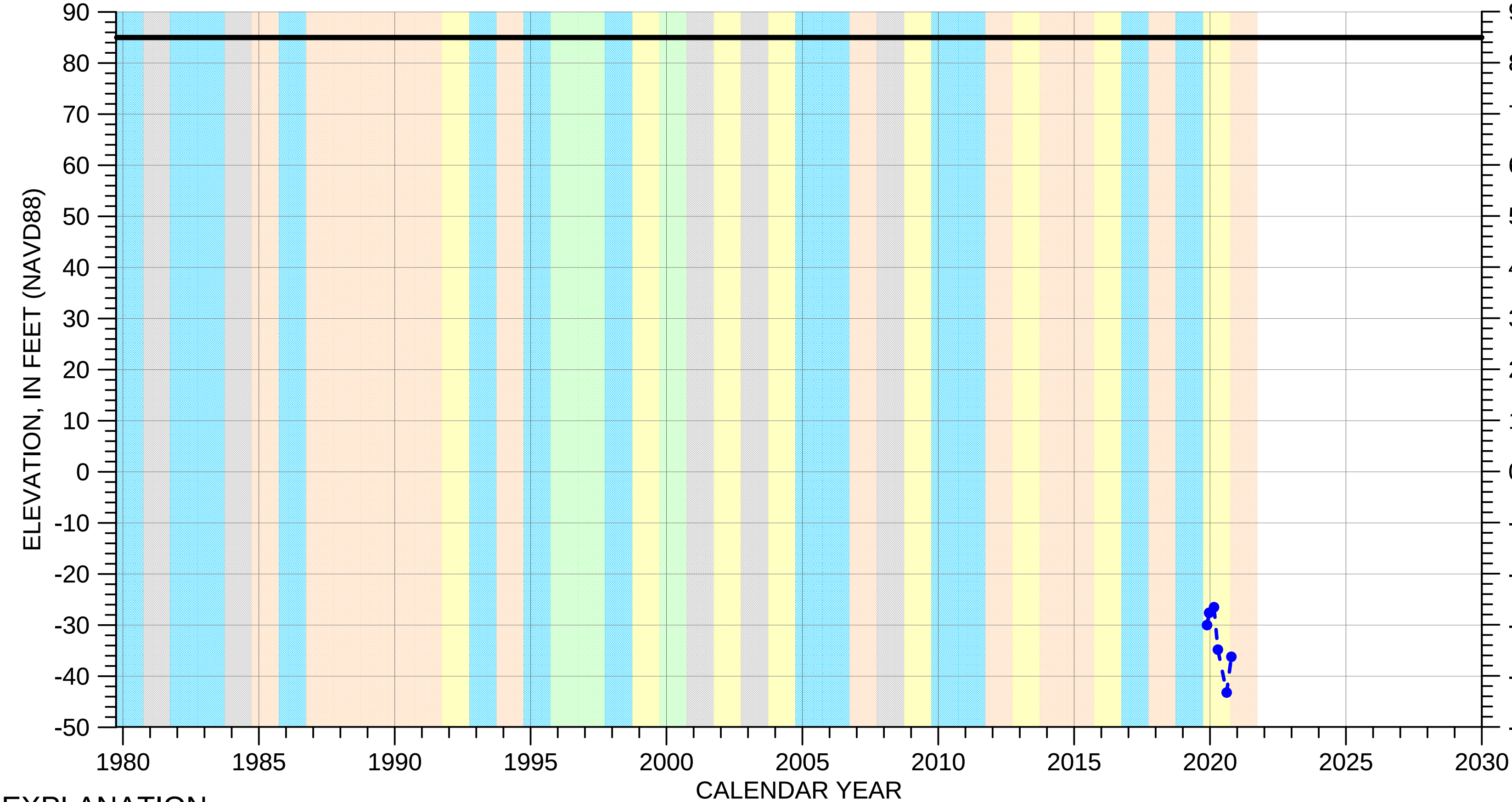
WATER YEAR TYPE DESIGNATION

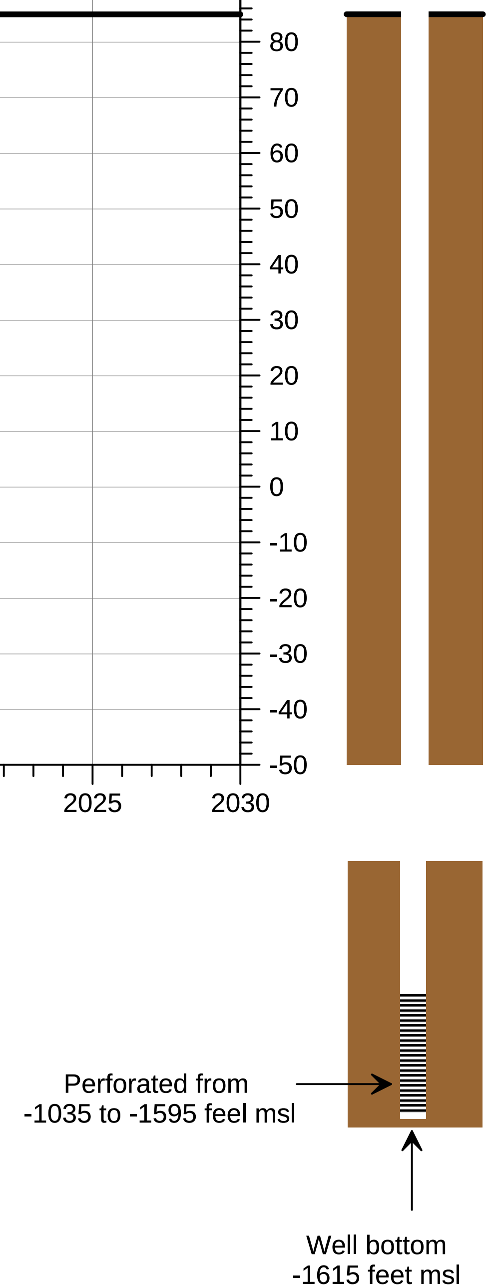
DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-17C02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-18B01

180/400-Foot Aquifer Subbasin



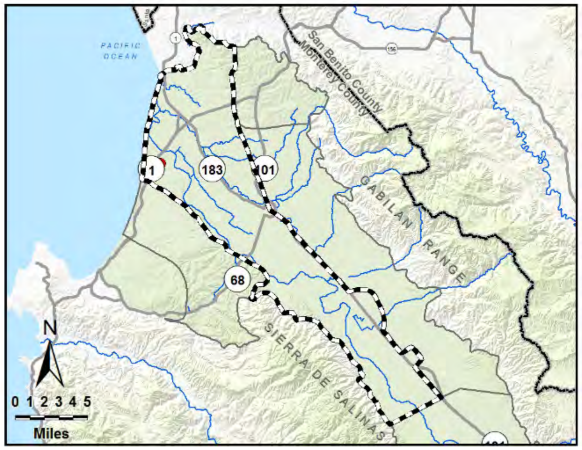


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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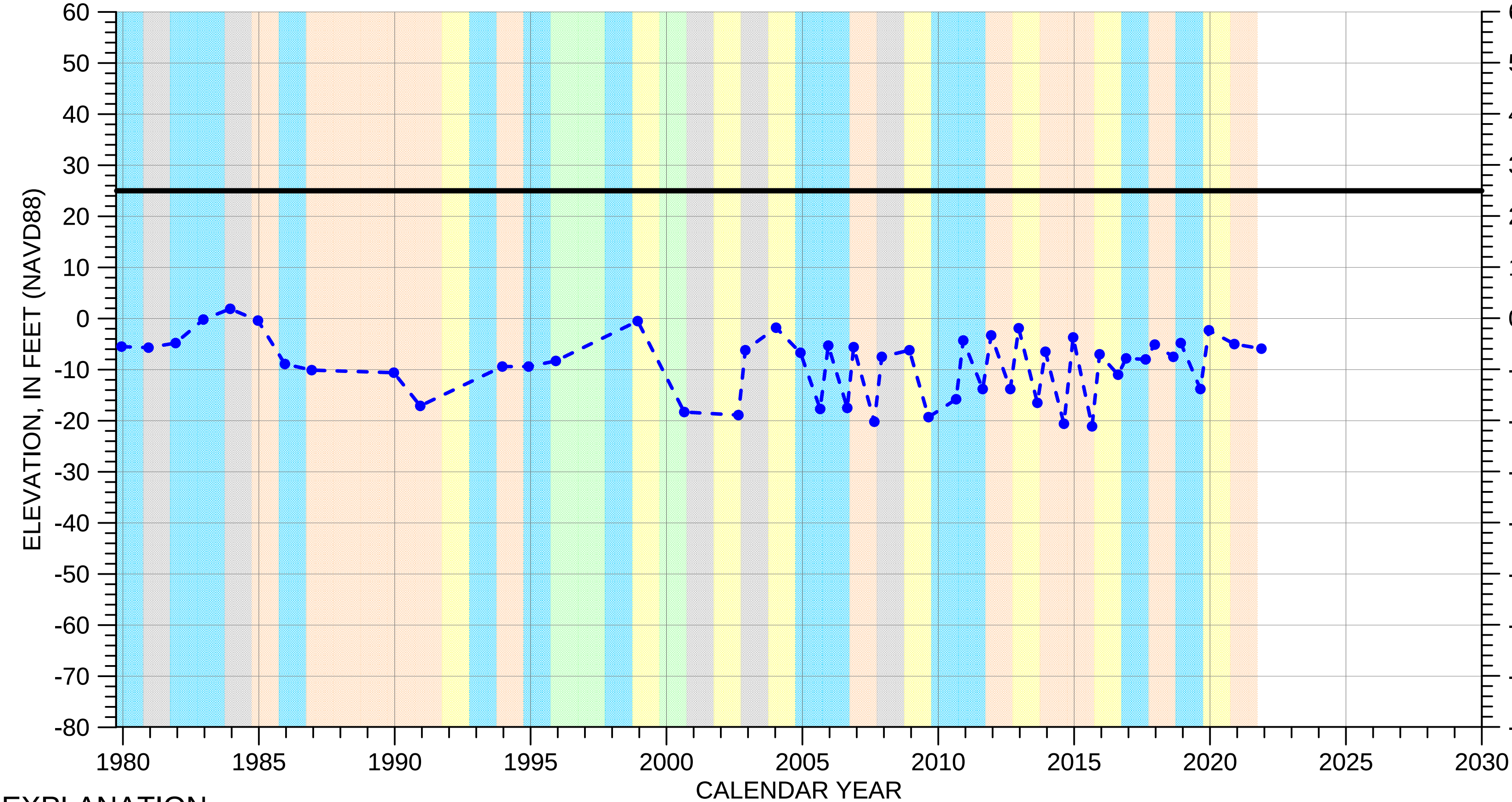
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-21L01

180/400-Foot Aquifer Subbasin

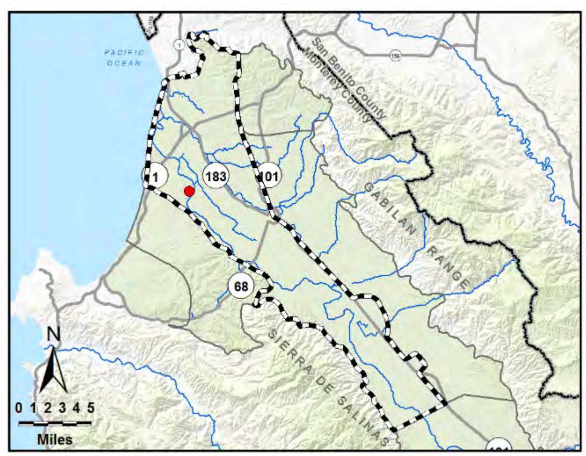


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



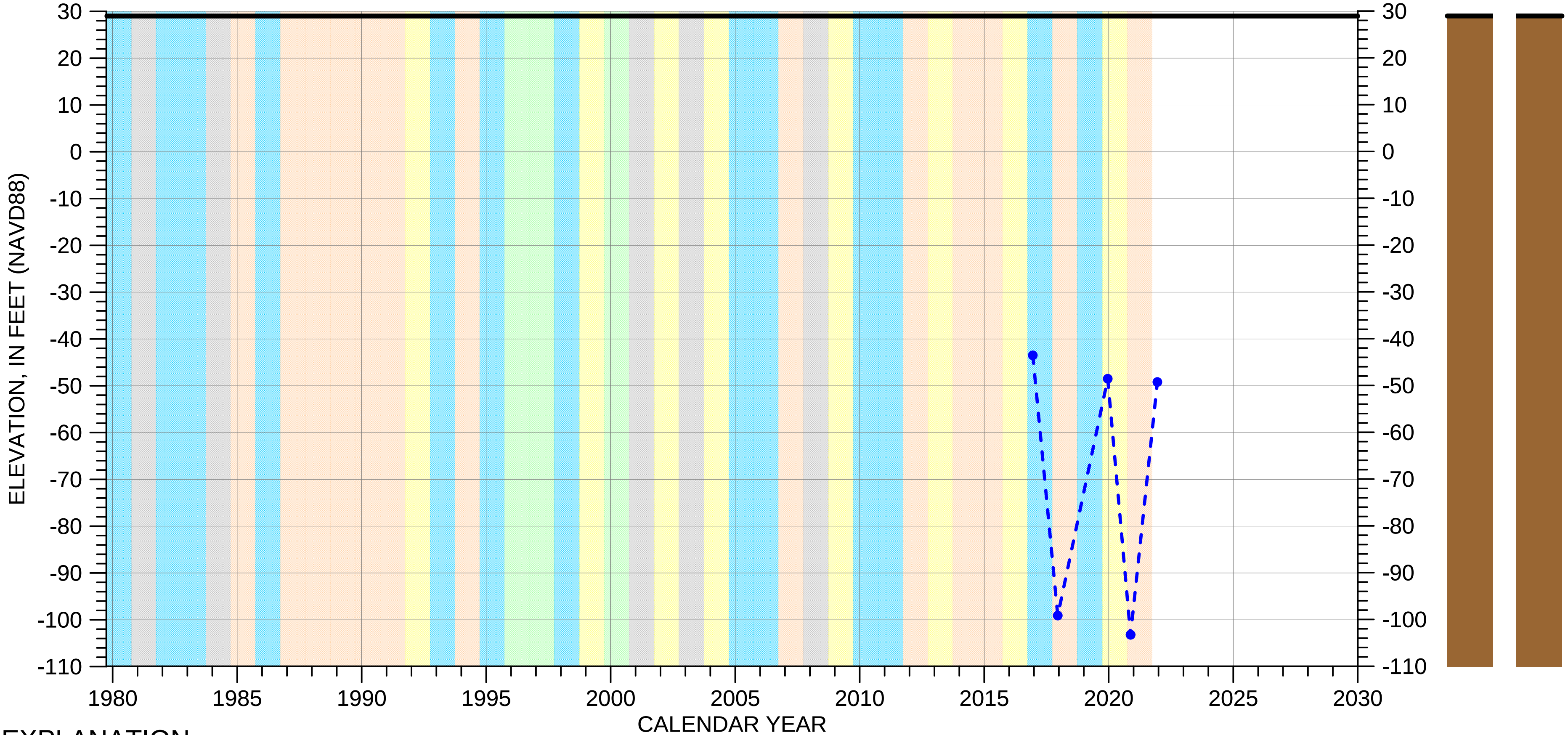
Multiple perforated intervals from -147 to -242 feet msl

Well bottom -222 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-21L01.grf

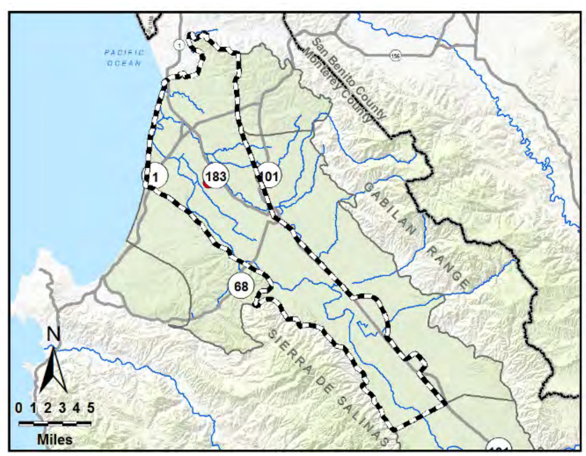
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-22A03

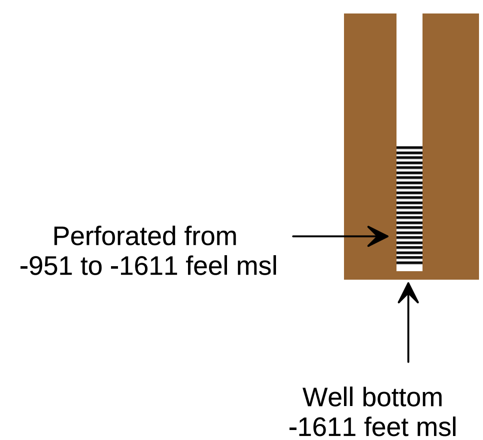
180/400-Foot Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface





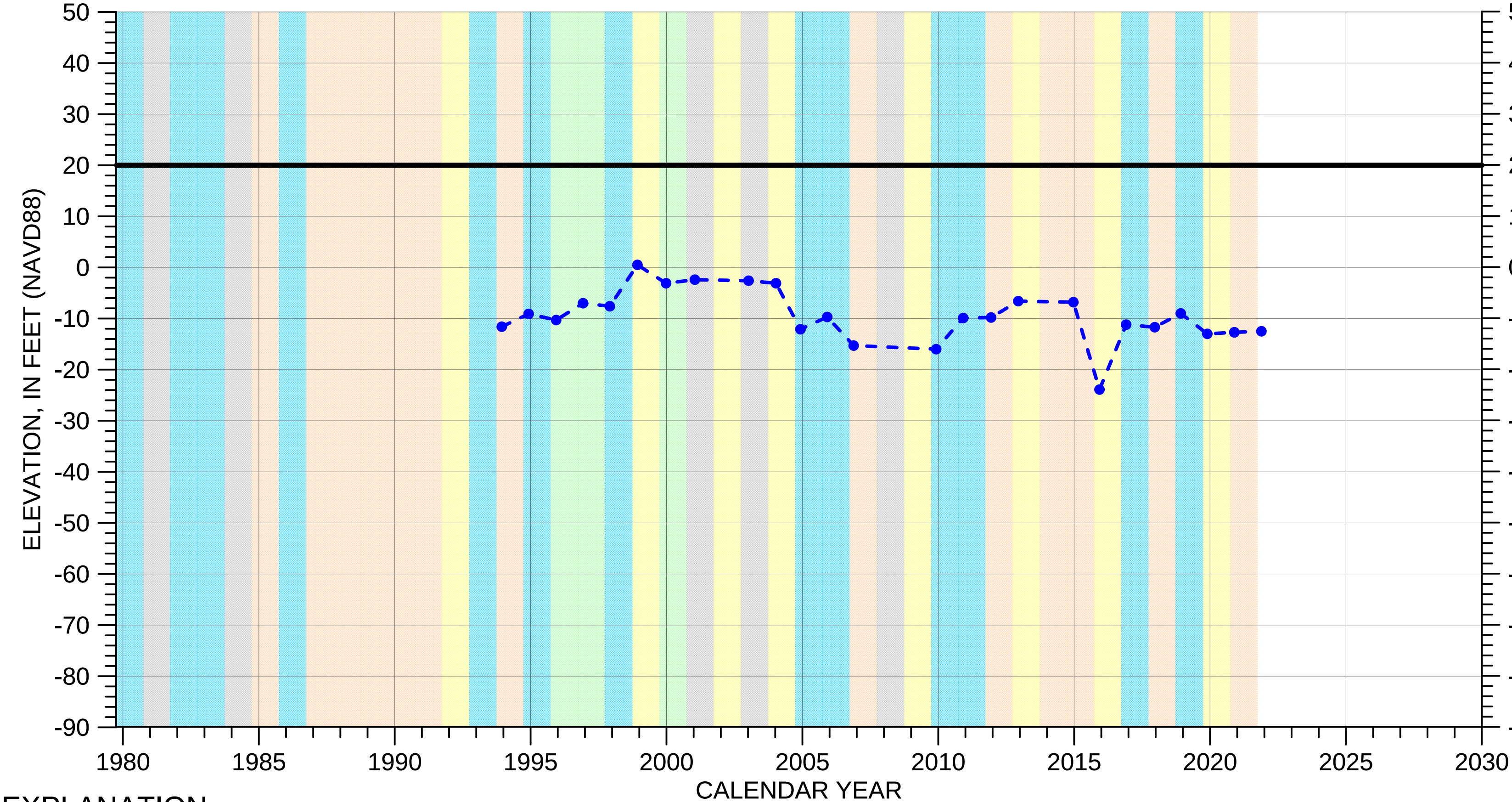
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEW\GRFs_Ch5\14S_02E-22A03.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-22L01

180/400-Foot Aquifer Subbasin

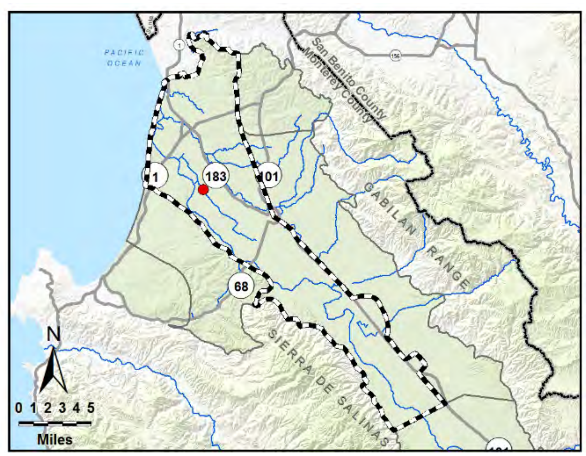


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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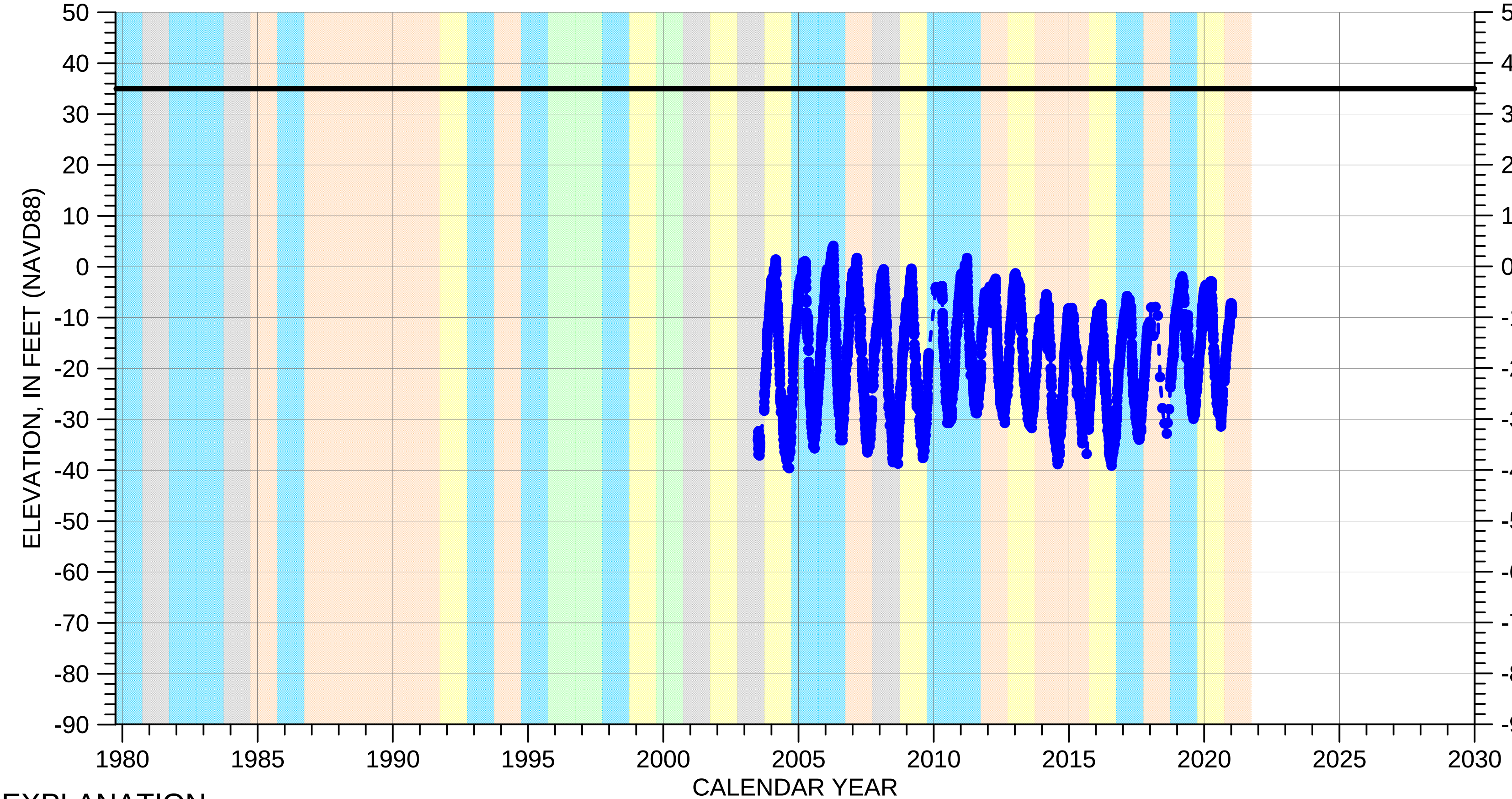
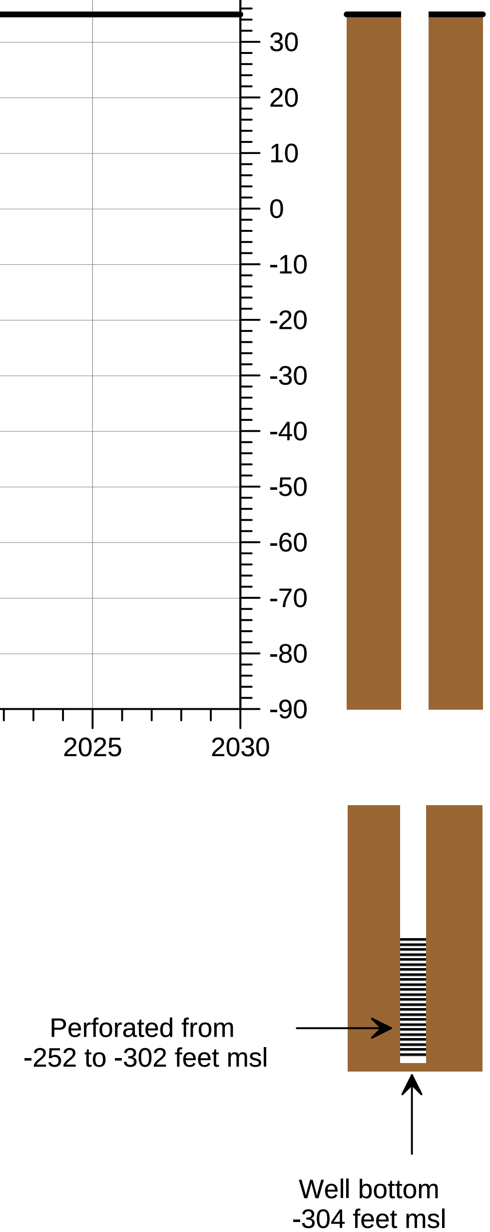
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-26H01

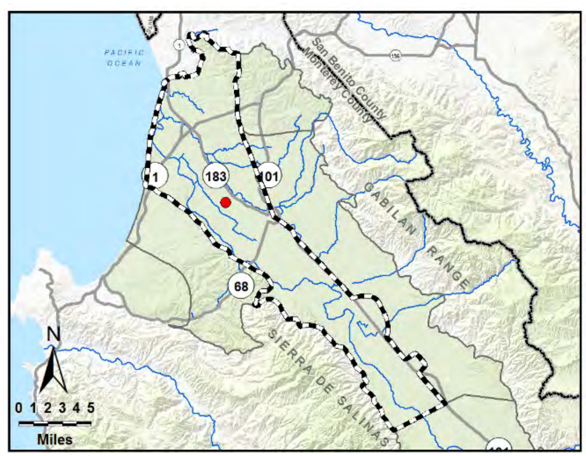
180/400-Foot Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



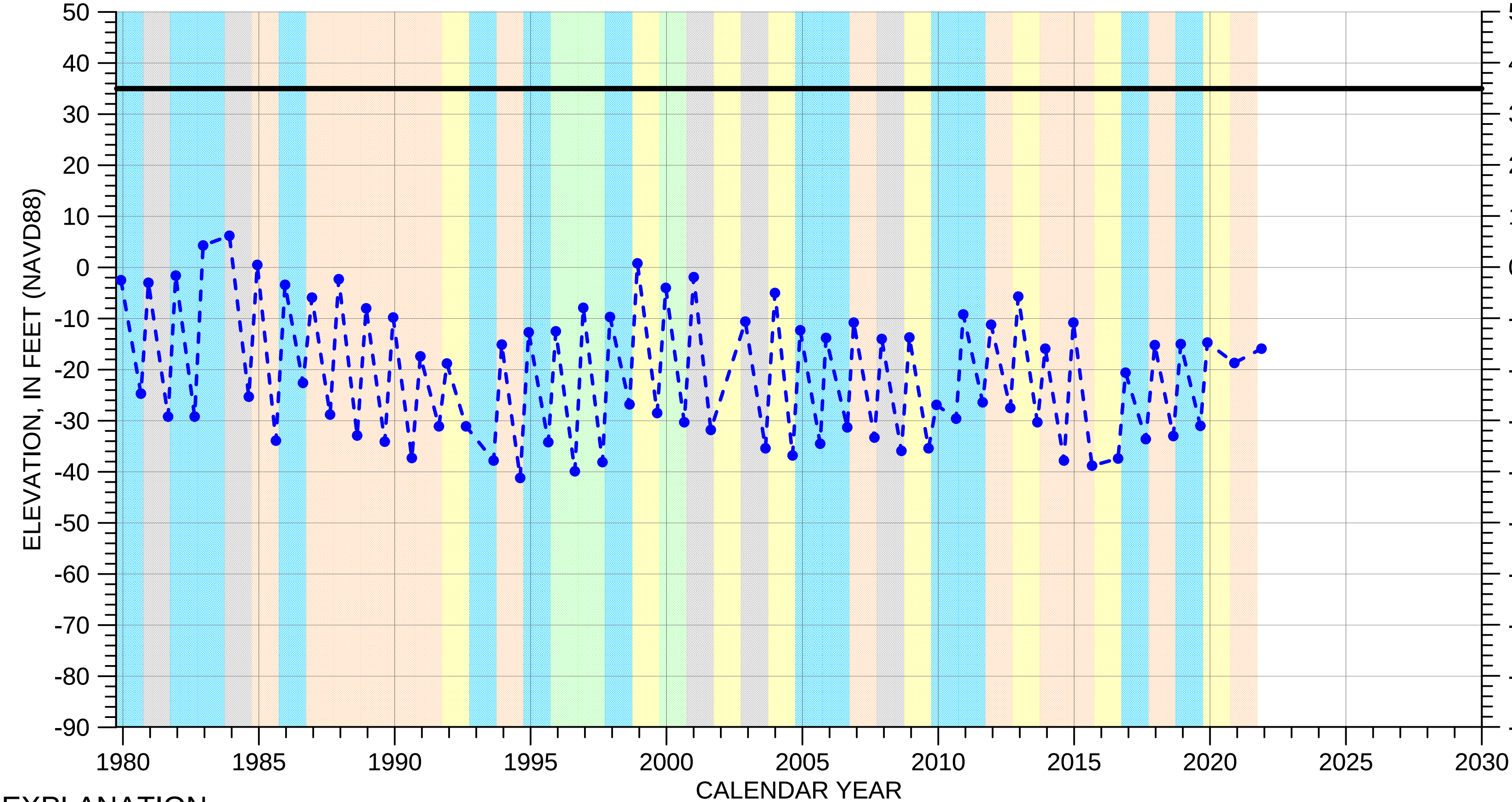
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-26H01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-26J03

180/400-Foot Aquifer Subbasin

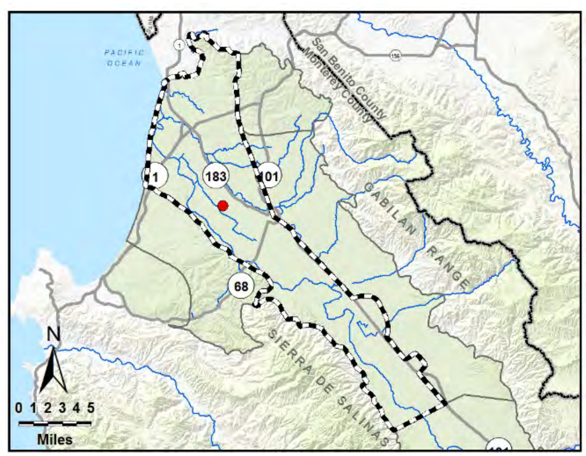


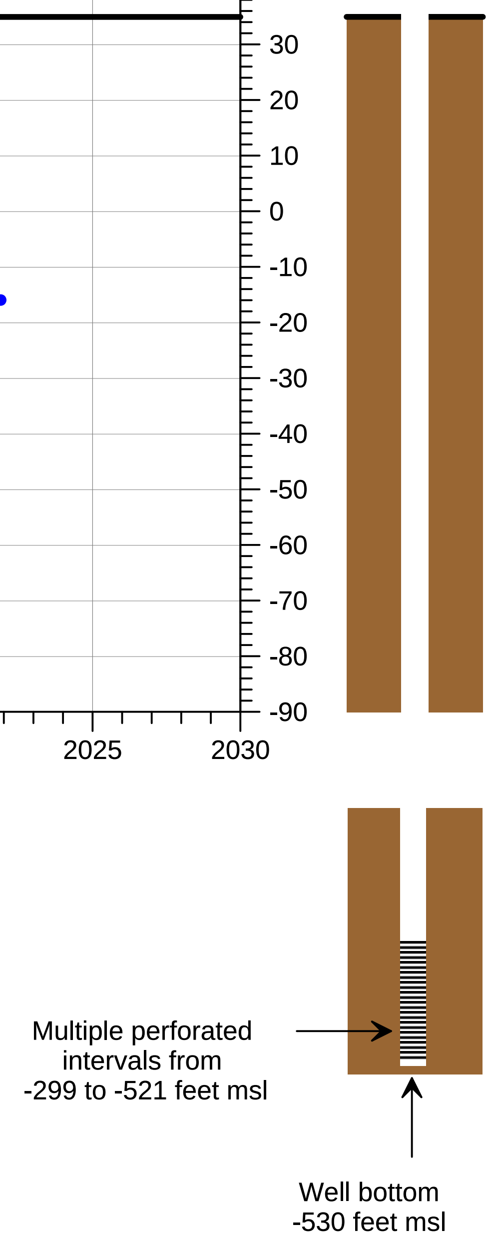
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET





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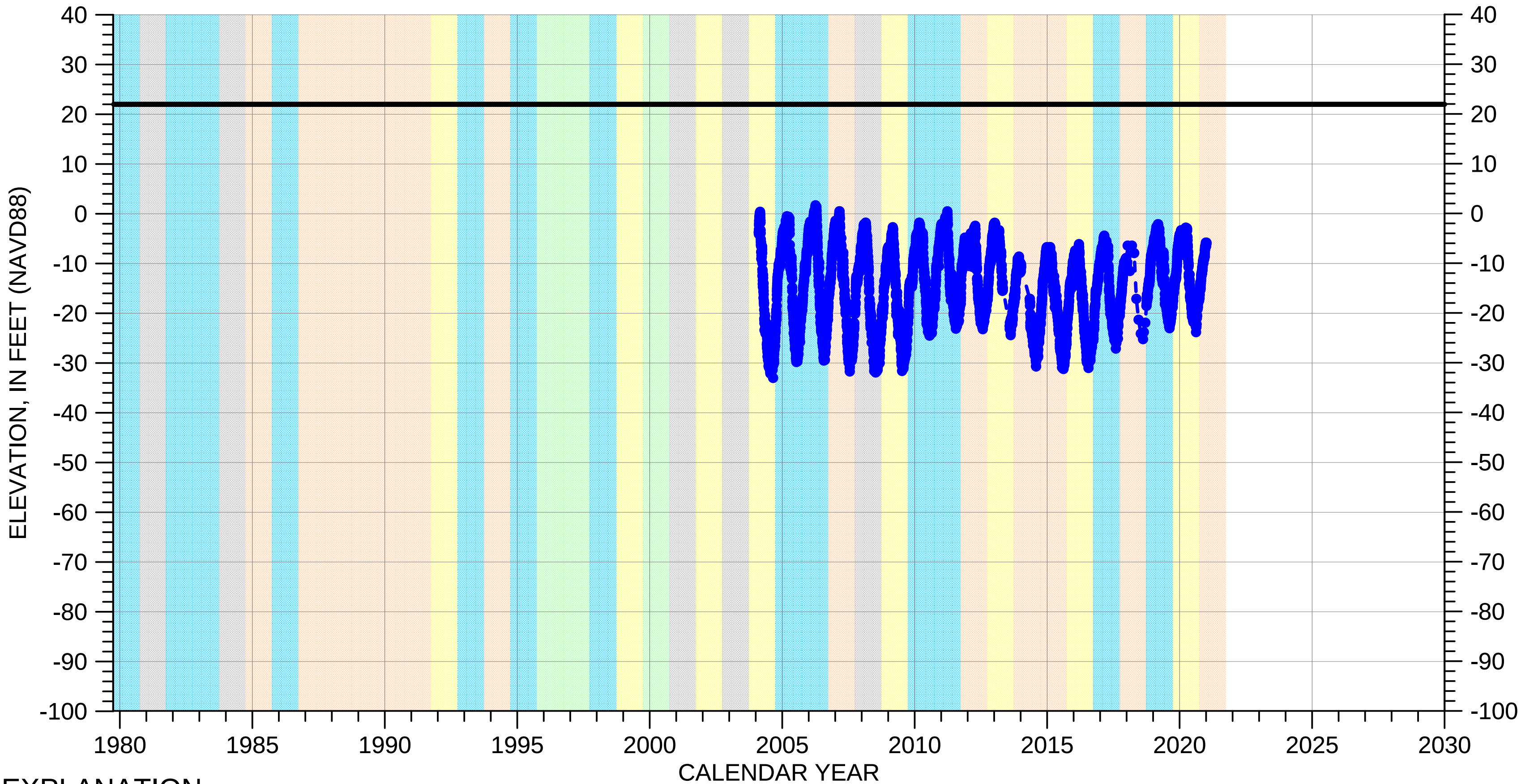
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-27A01

180/400-Foot Aquifer Subbasin

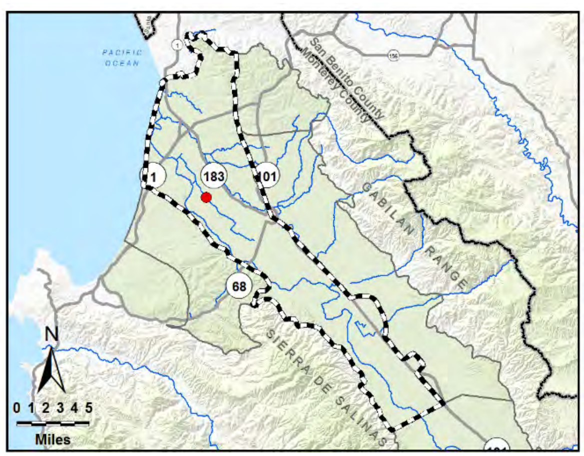


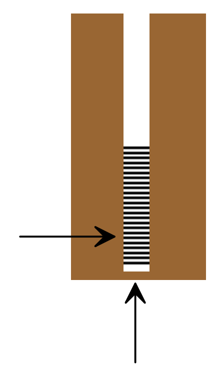
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET





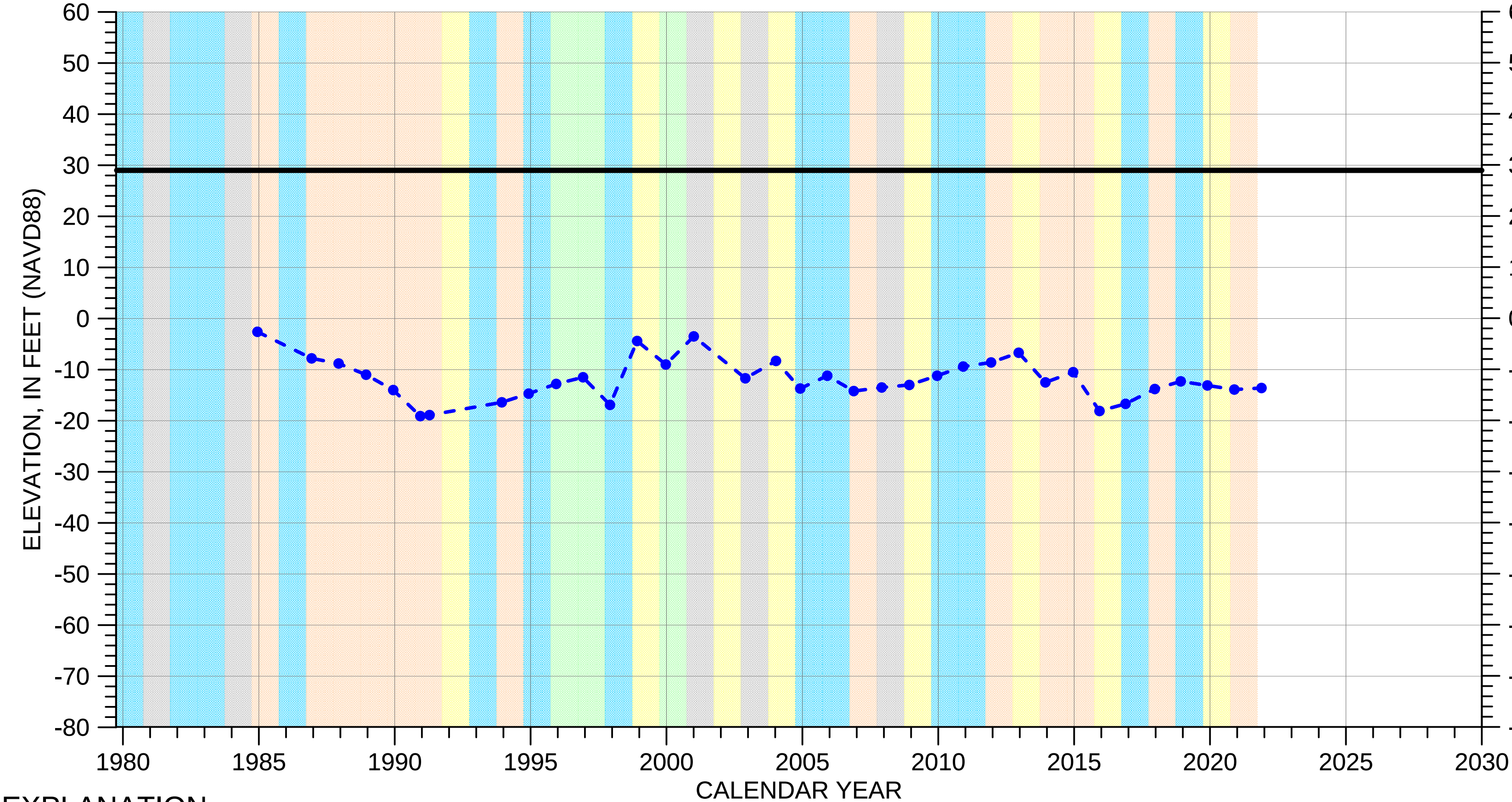
Perforated from -218 to -268 feet msl

Well bottom -271 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-27A01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-27G03

180/400-Foot Aquifer Subbasin

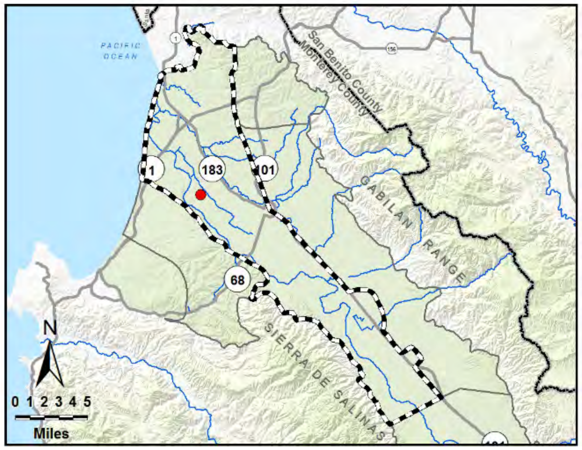


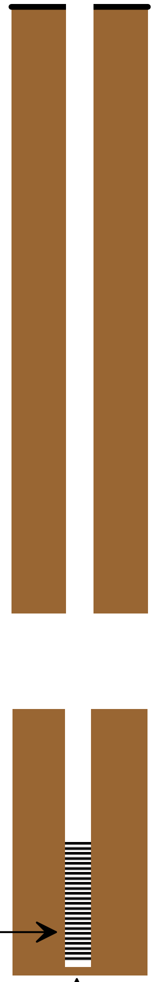
EXPLANATION

Groundwater Elevation
Suspect Measurement
Land Surface

WATER YEAR TYPE DESIGNATION

DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET





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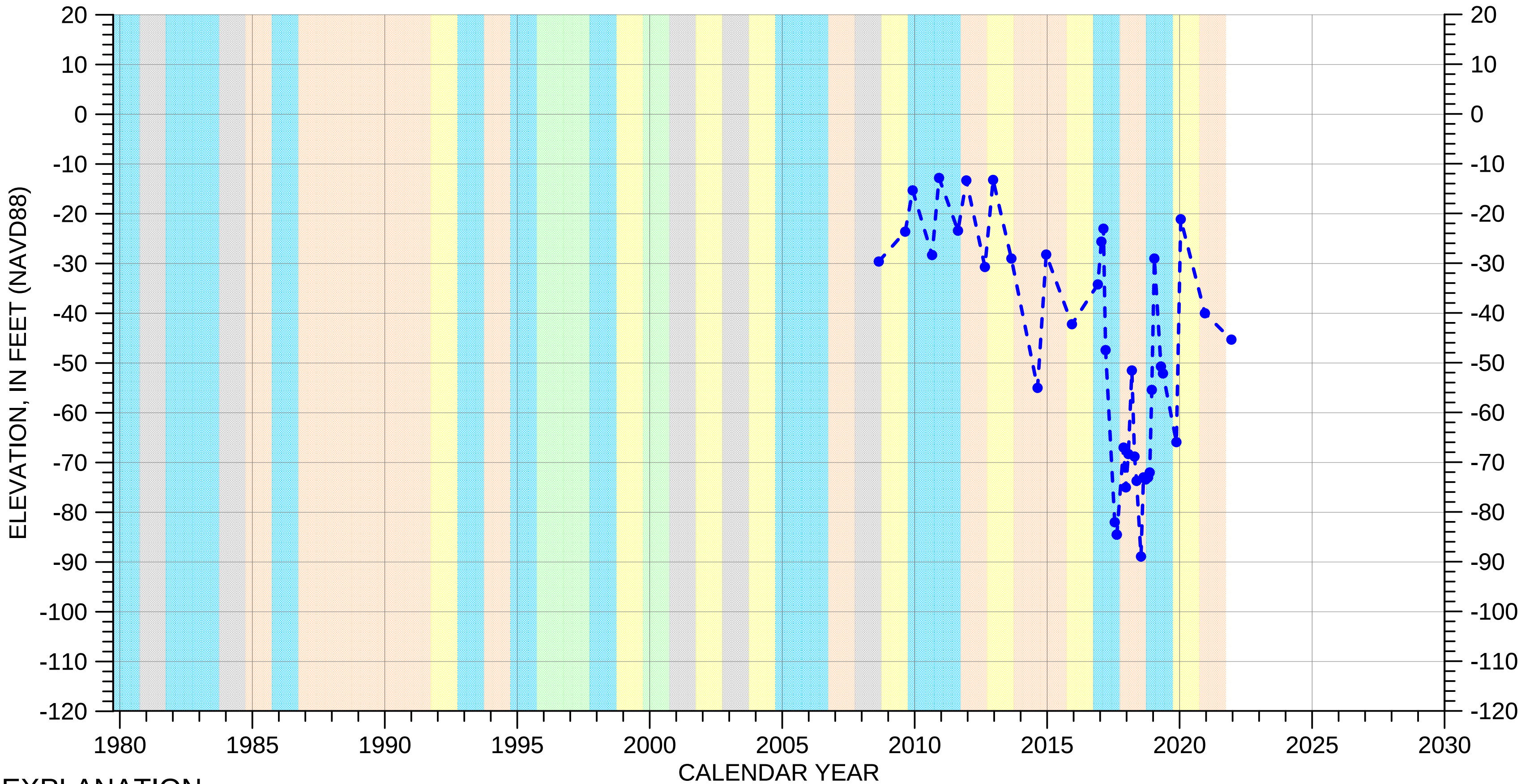
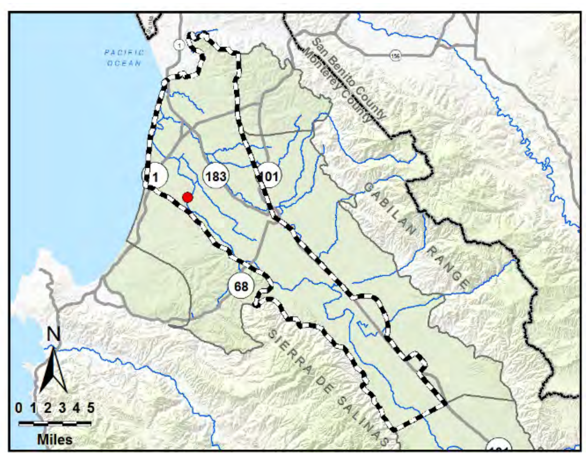
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-28C02

180/400-Foot Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (45 FT MSL)



Multiple perforated intervals from -675 to -1095 feet msl

Well bottom -1115 feet msl

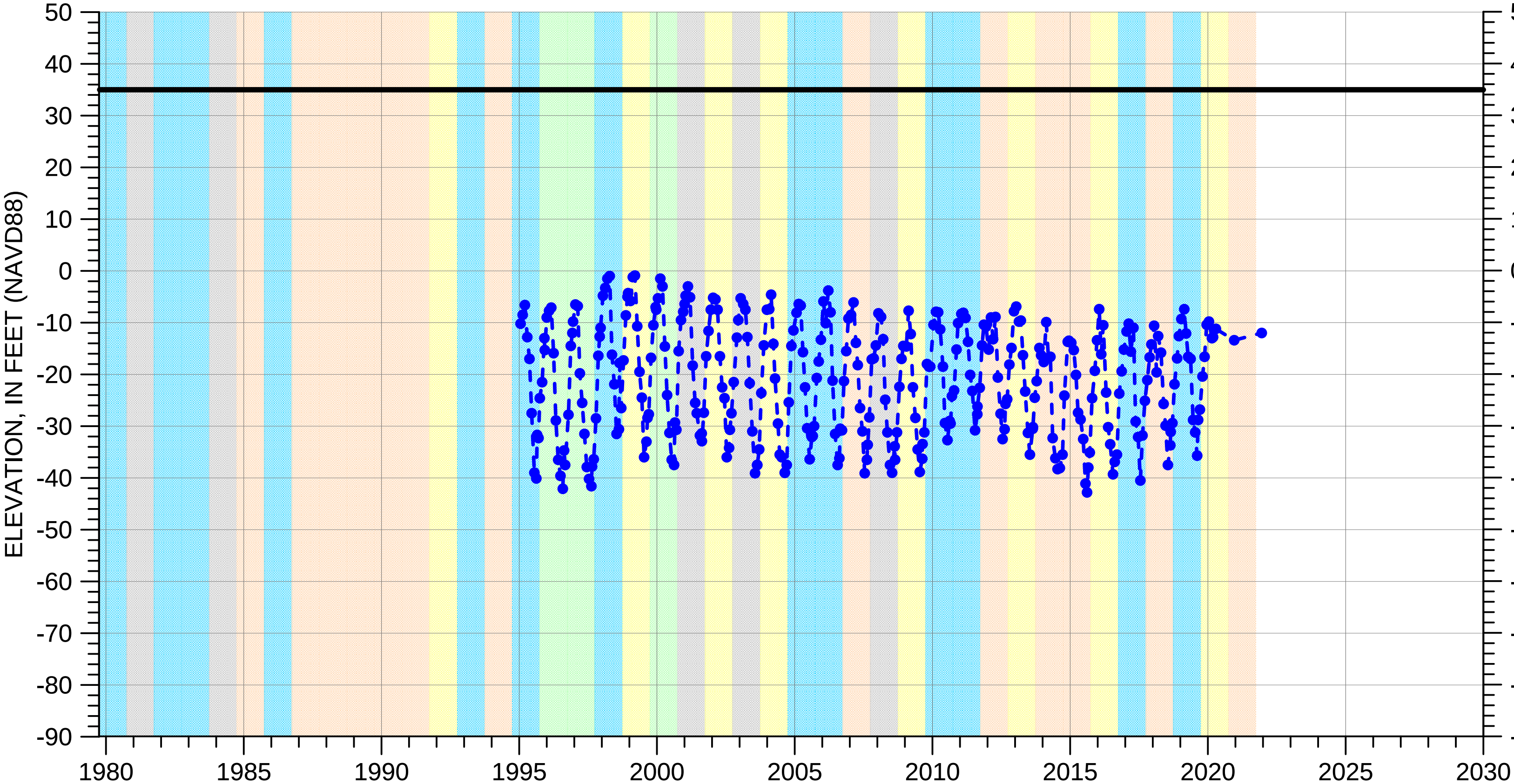
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\14S_02E-28C02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-34A03

180/400-Foot Aquifer Subbasin



EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

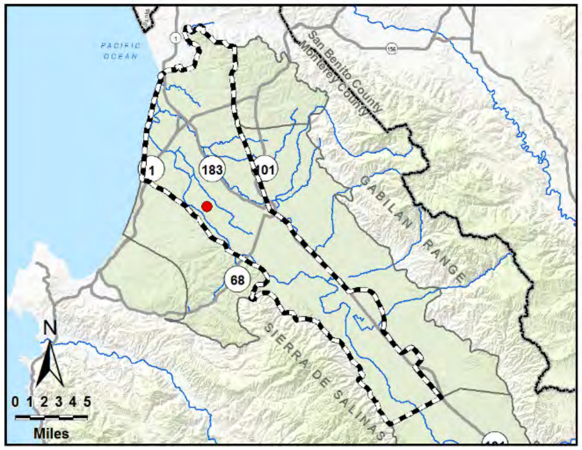
DRY

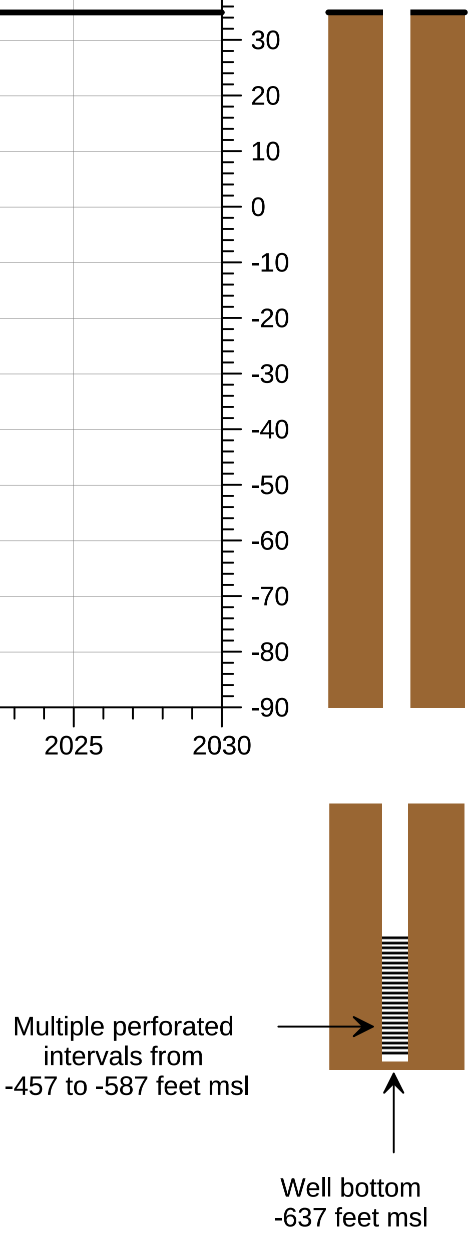
DRY - NORMAL

NORMAL

WET - NORMAL

WET





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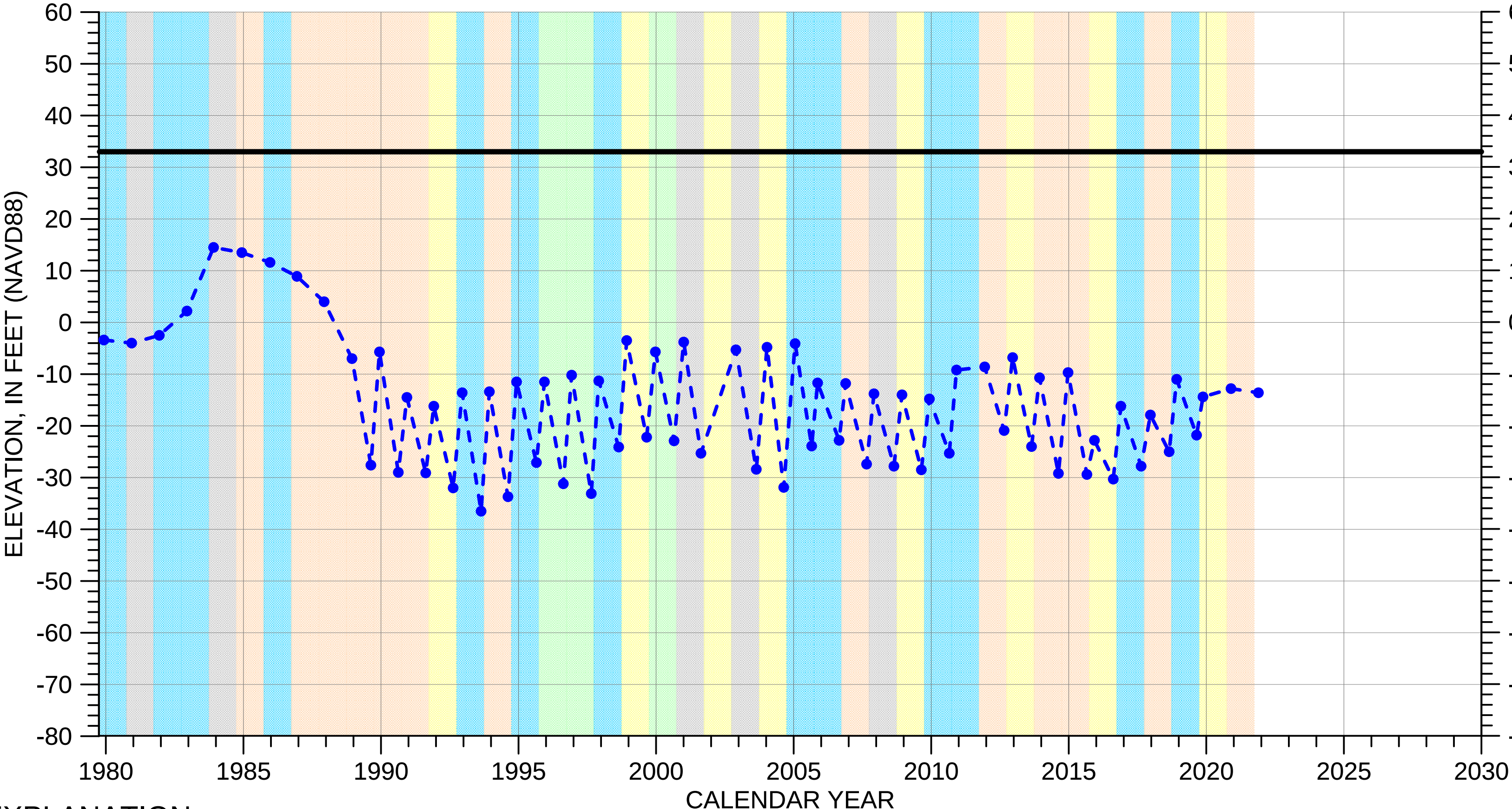
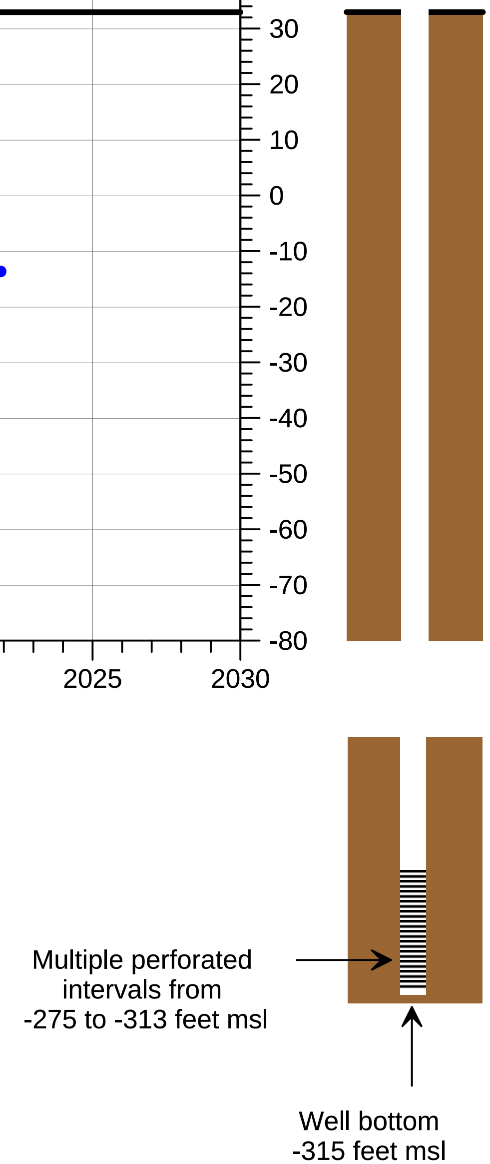
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-34B03

180/400-Foot Aquifer Subbasin





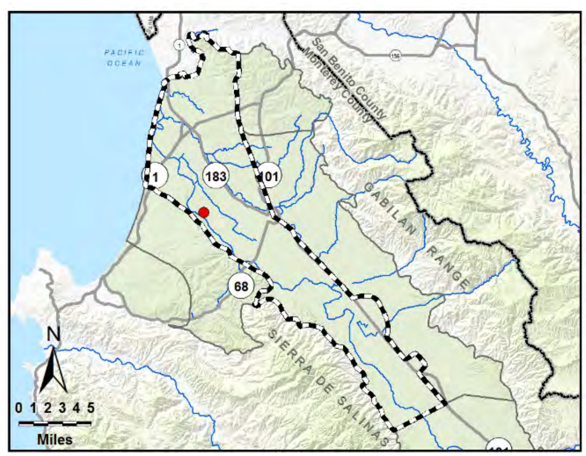
\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\14S_02E-34B03.grf

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

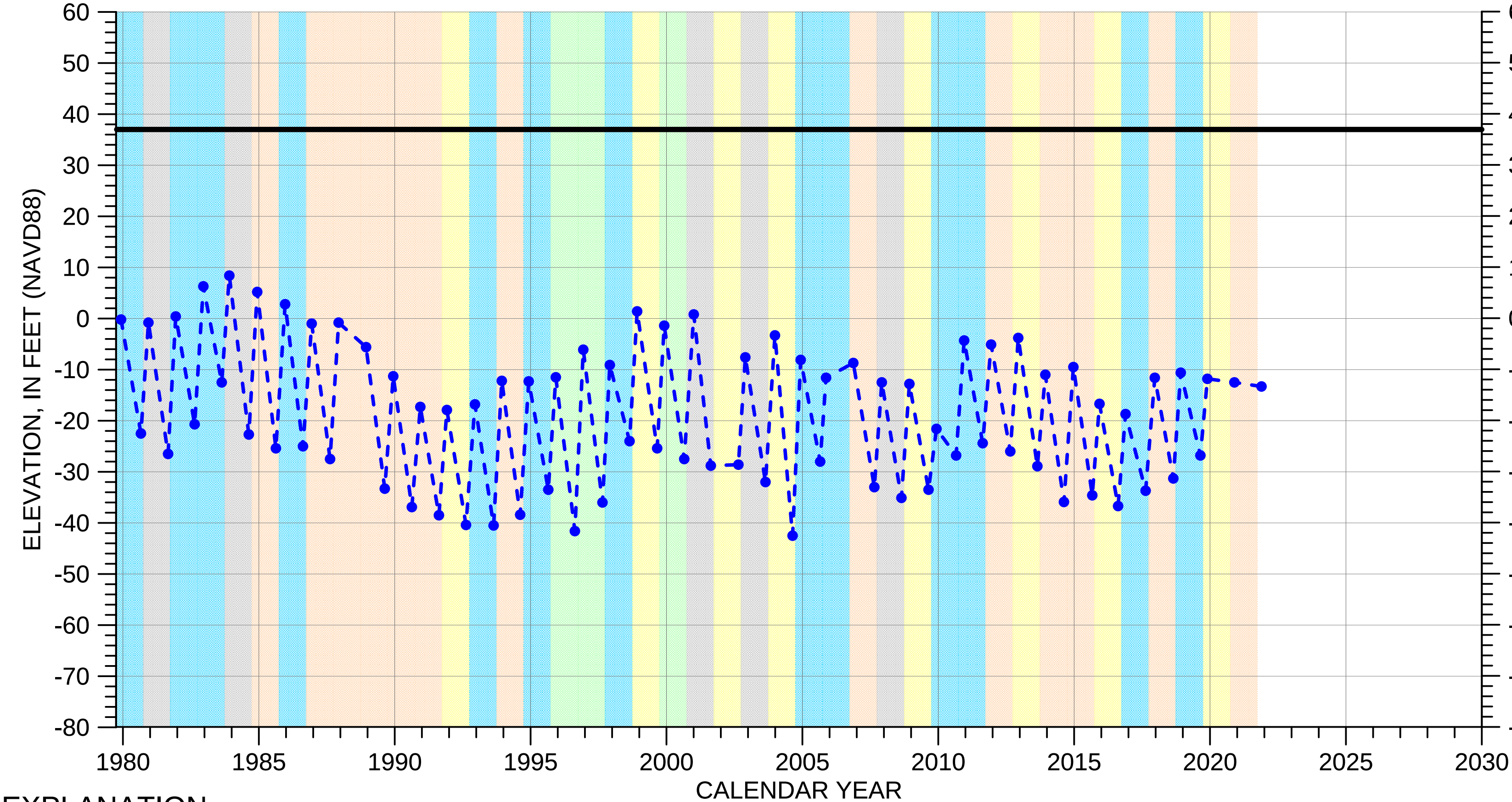
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



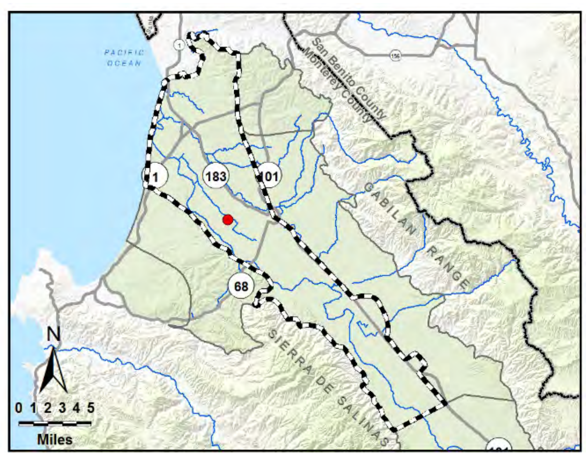
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-36E01

180/400-Foot Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



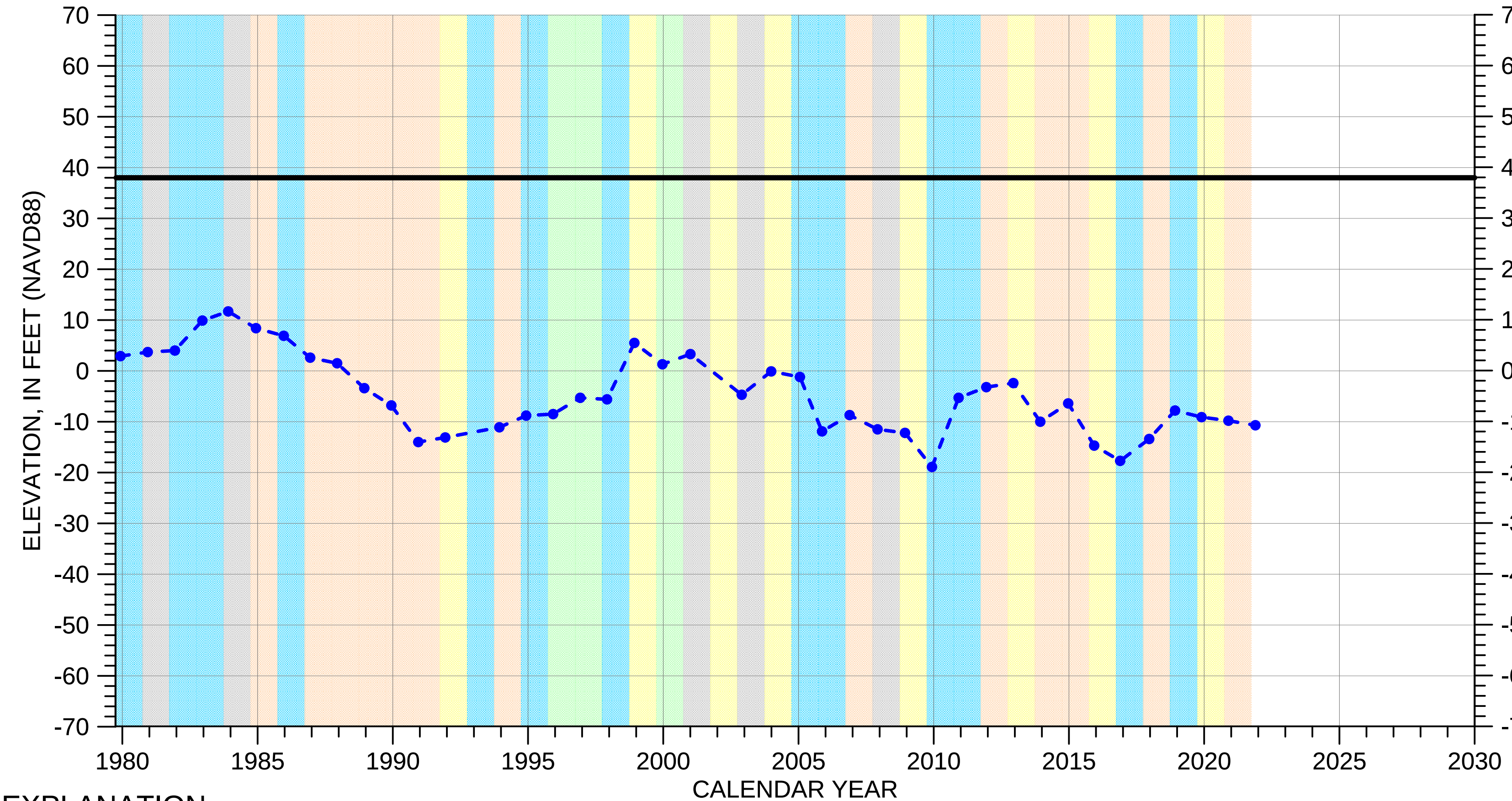
WATER YEAR TYPE DESIGNATION

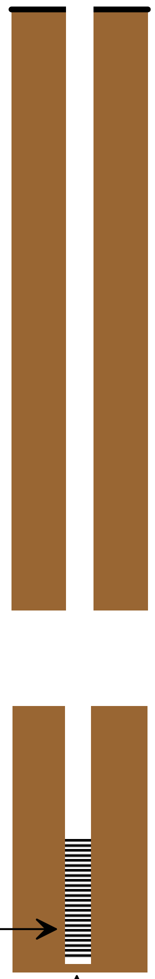
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-36E01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/02E-36G01

180/400-Foot Aquifer Subbasin



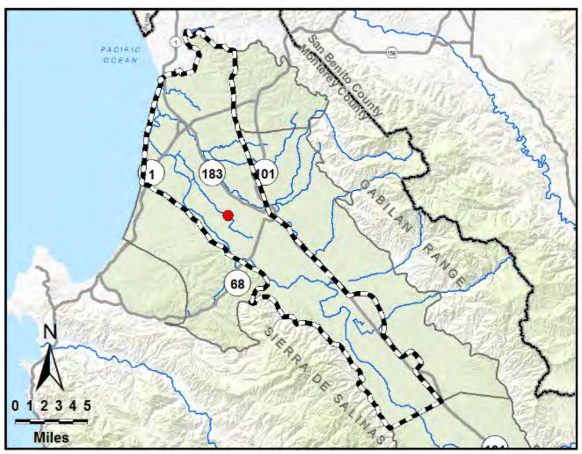


Multiple perforated intervals from -301 to -375 feet msl

Well bottom -381 feet msl

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



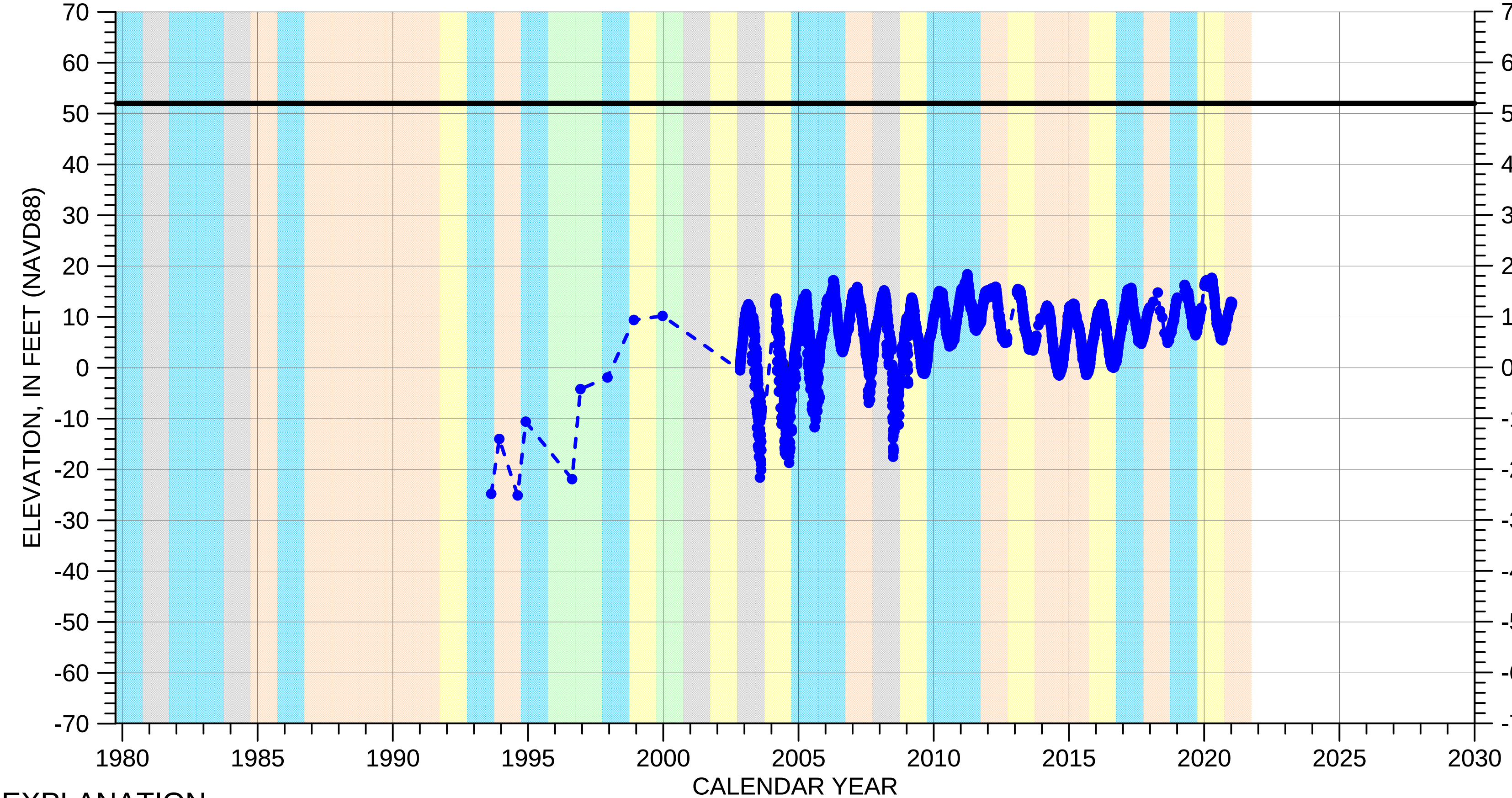
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_02E-36G01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-18C01

180/400-Foot Aquifer Subbasin

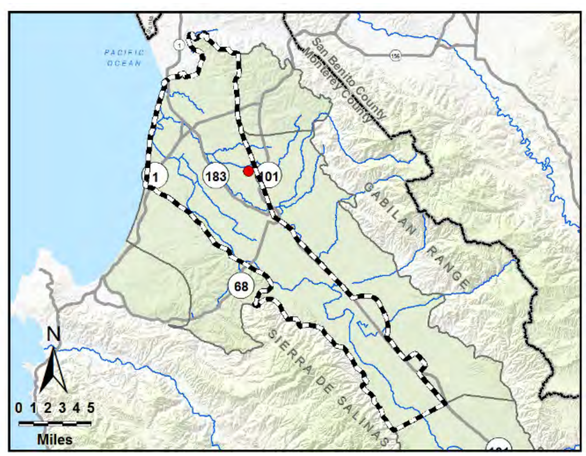


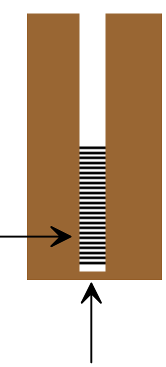
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET





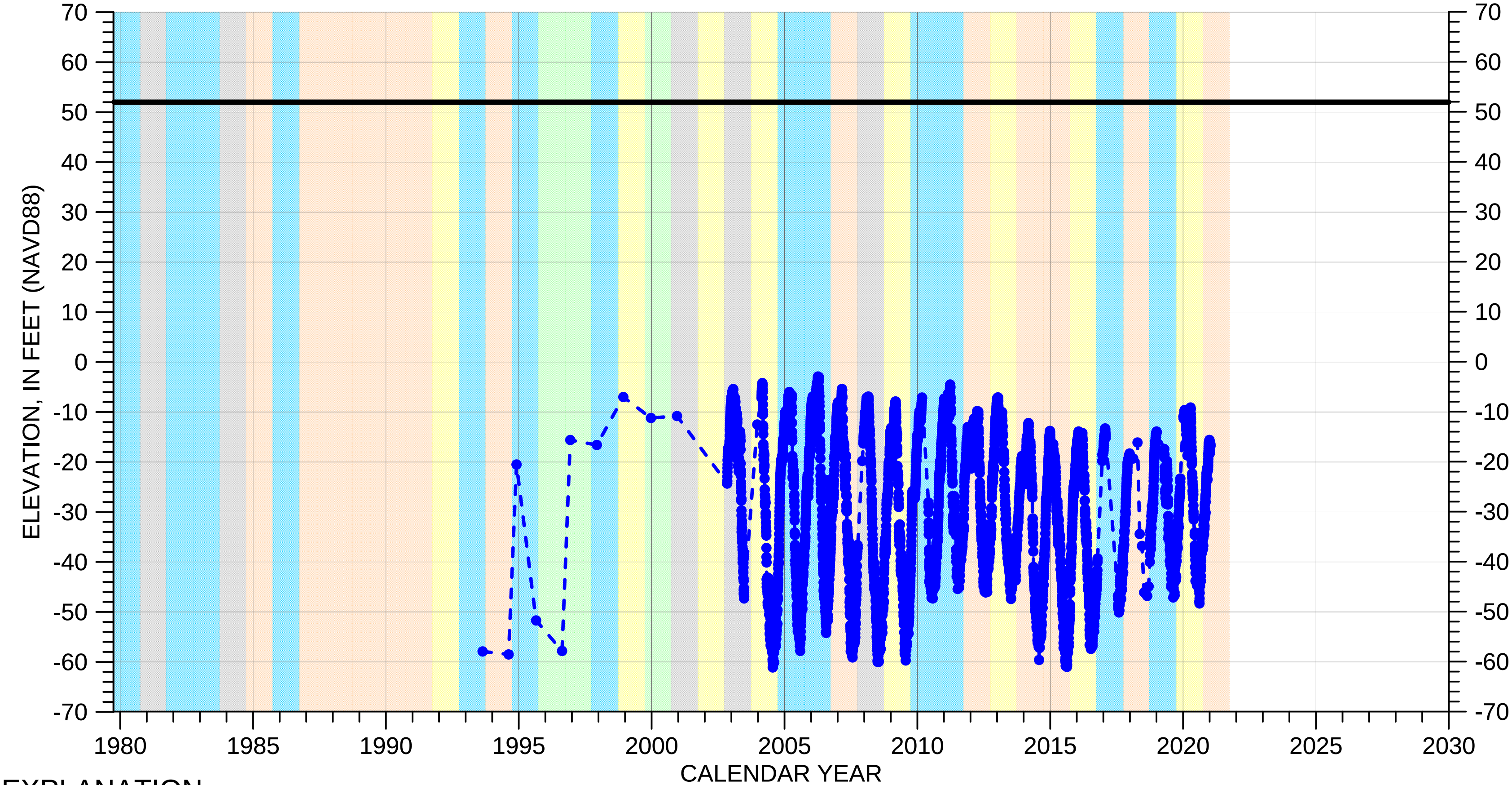
Perforated from
-113 to -163 feet msl

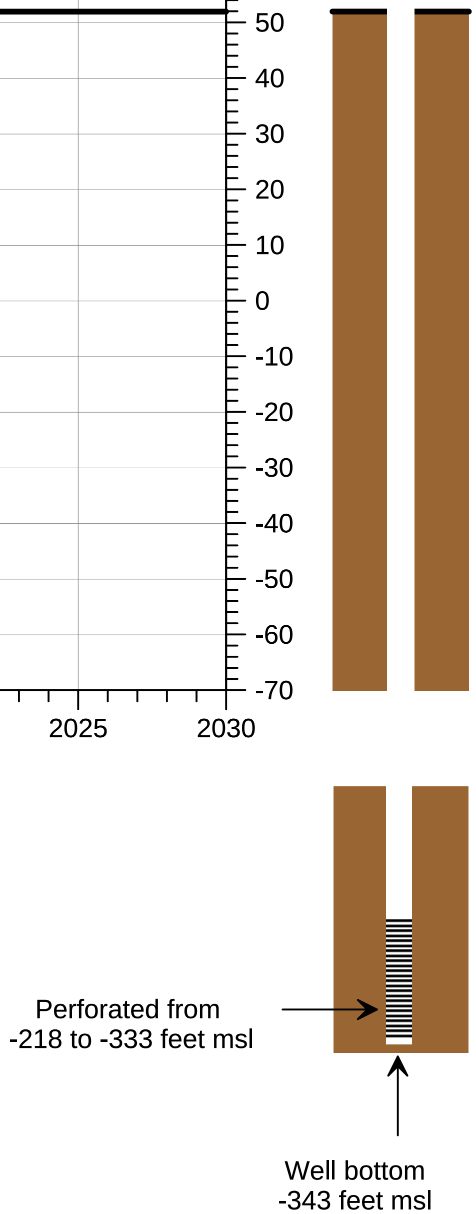
Well bottom
-173 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-18C01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-18C02

180/400-Foot Aquifer Subbasin



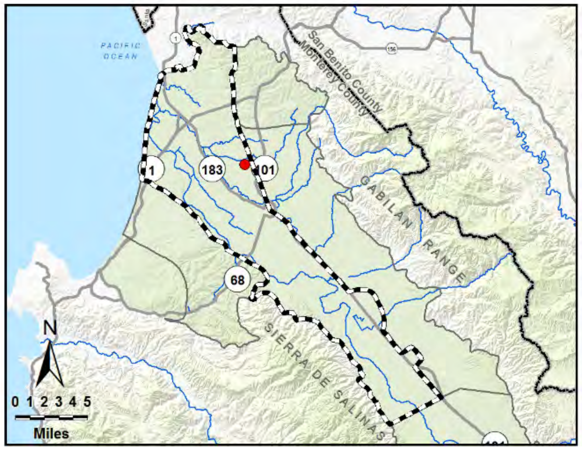


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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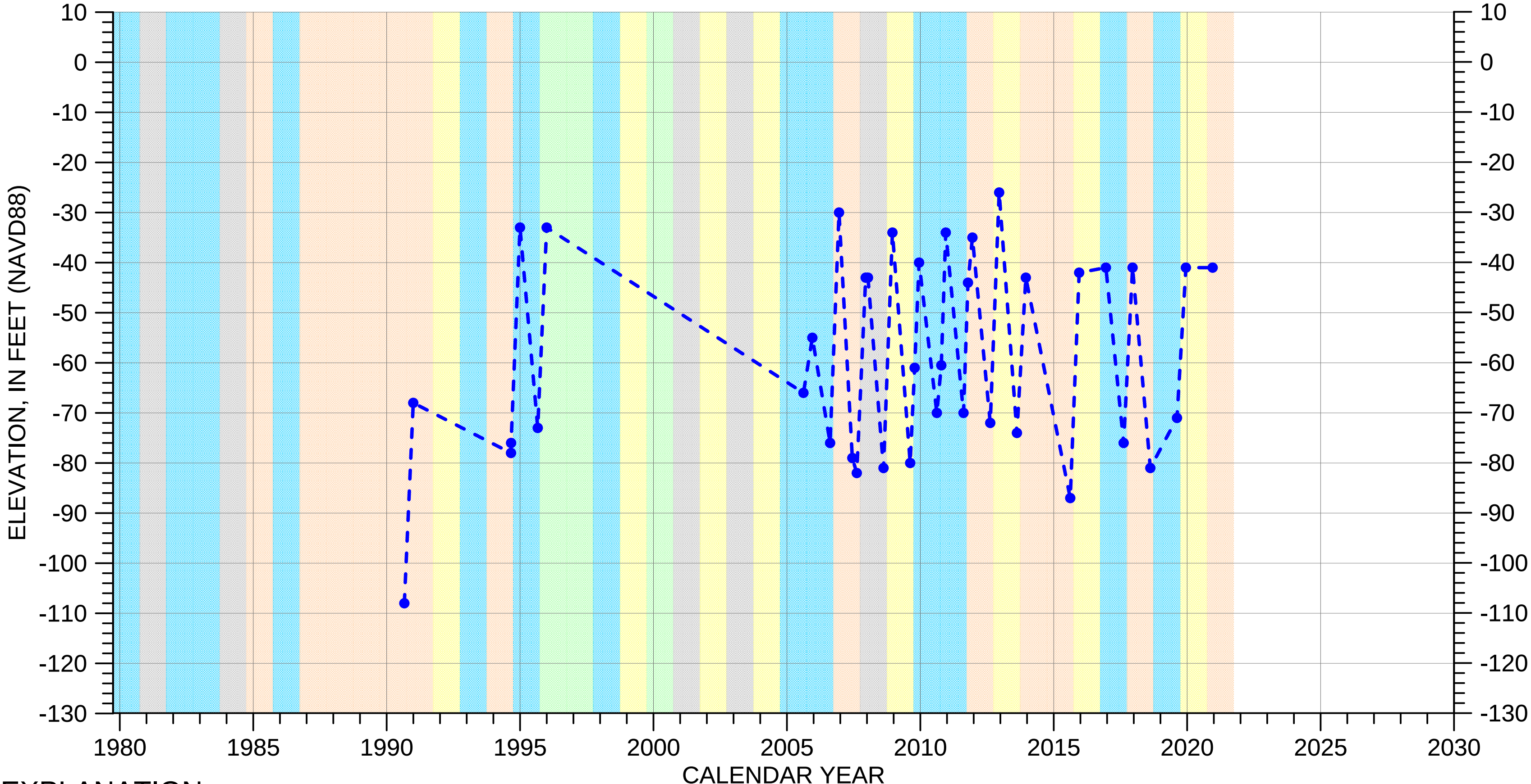
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-20C01

180/400-Foot Aquifer Subbasin

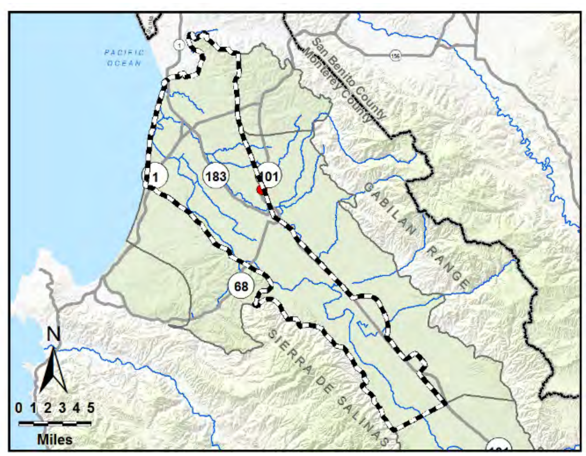


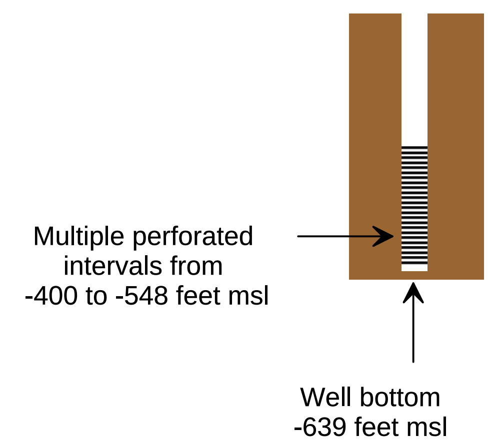
EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (63 FT MSL)





WATER YEAR TYPE DESIGNATION

DRY

DRY - NORMAL

NORMAL

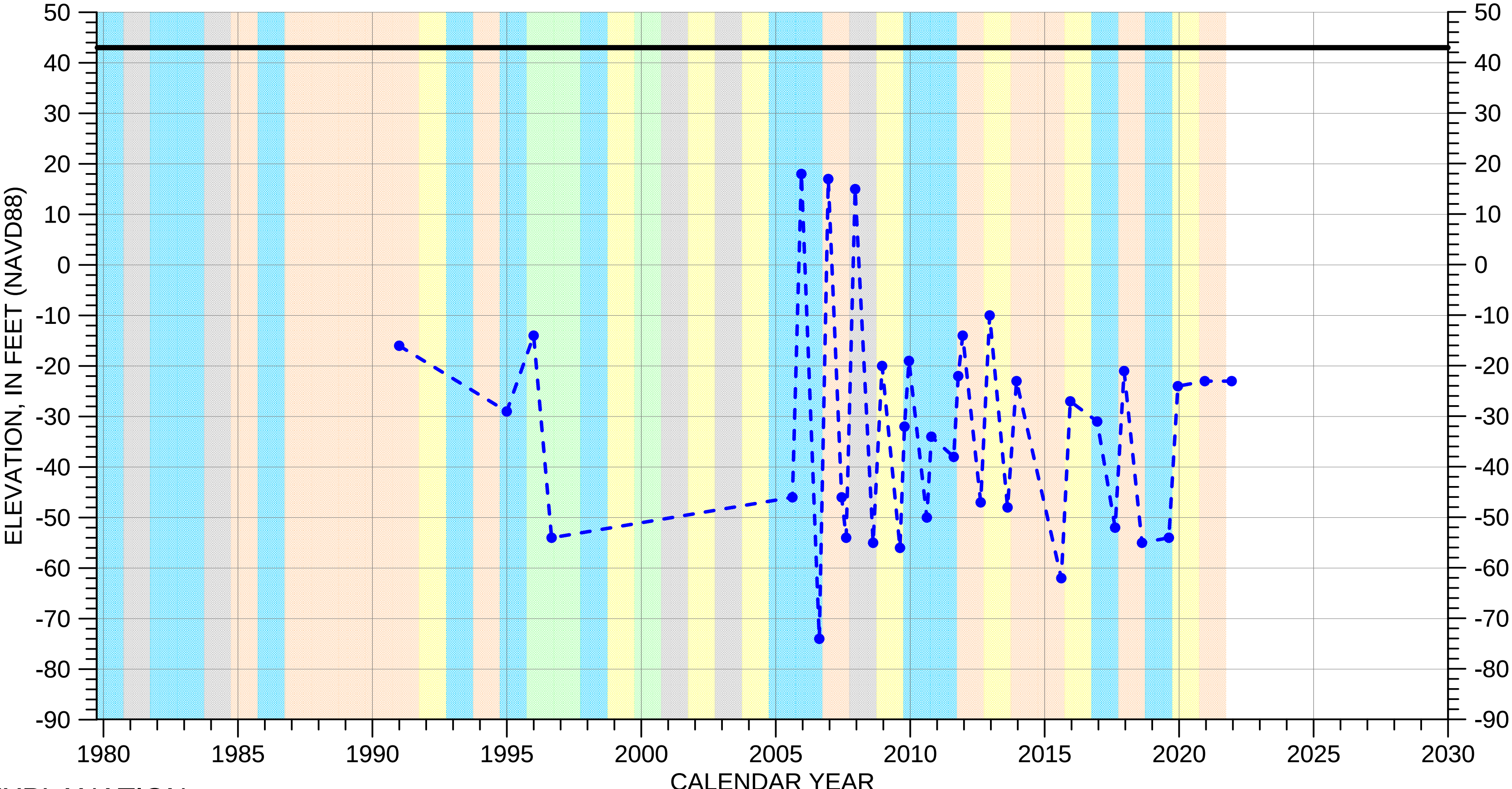
WET - NORMAL

WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-20C01.grf

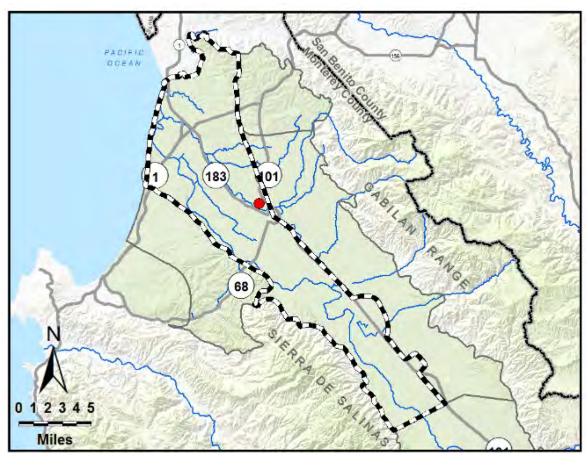
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-29F03

180/400-Foot Aquifer Subbasin



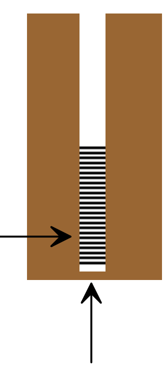
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



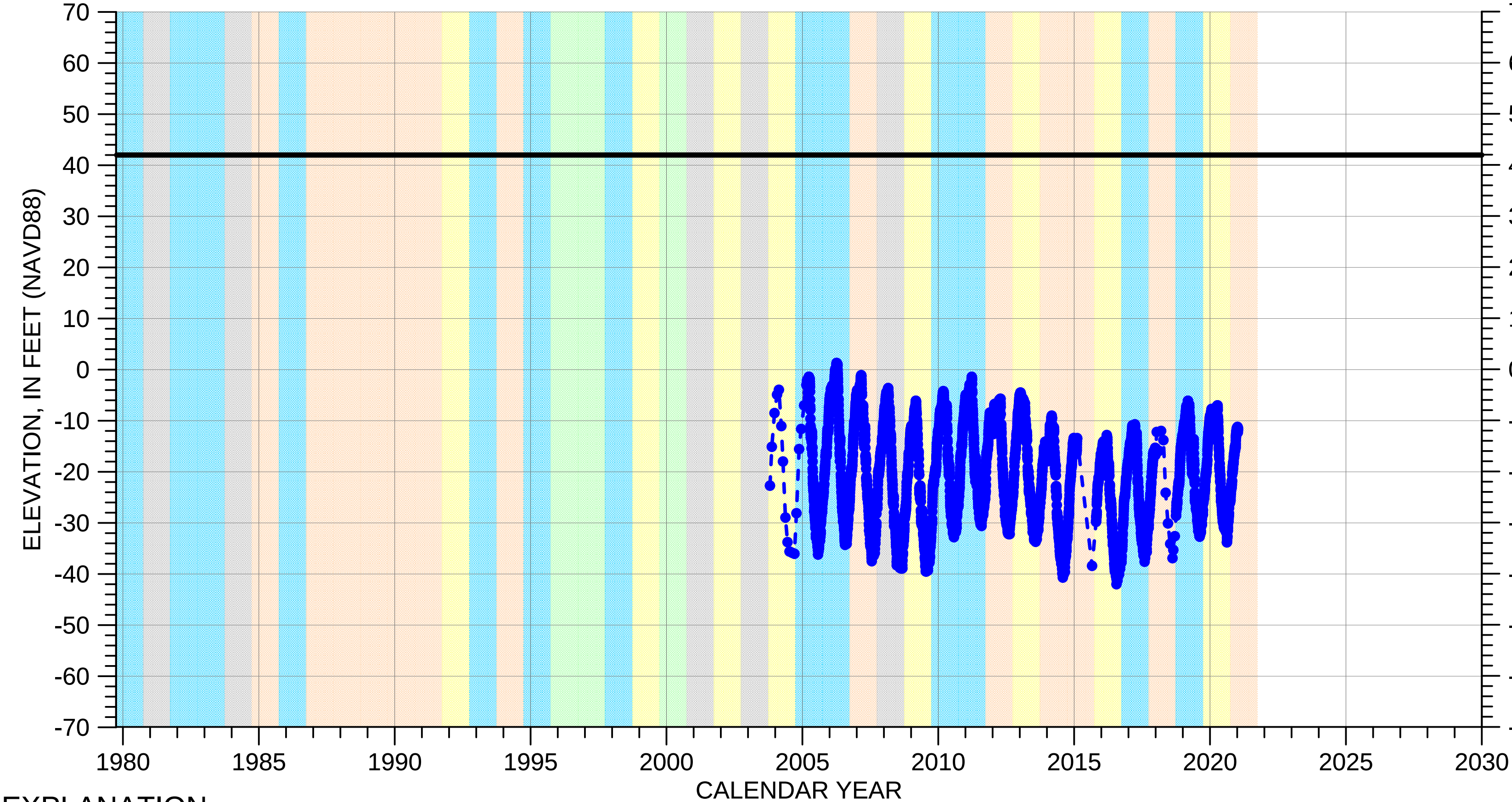
Multiple perforated intervals from -438 to -588 feet msl

Well bottom -598 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-29F03.grf

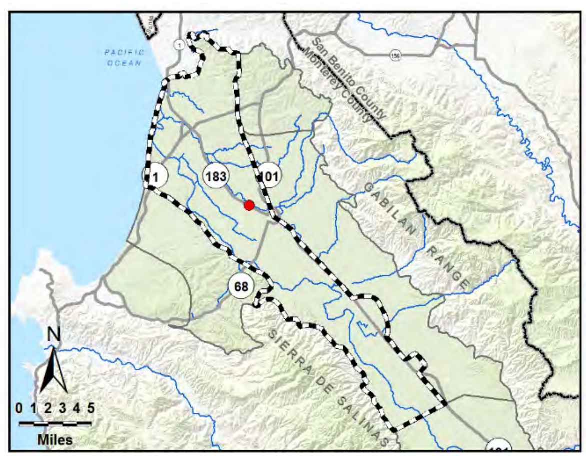
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-30G08

180/400-Foot Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



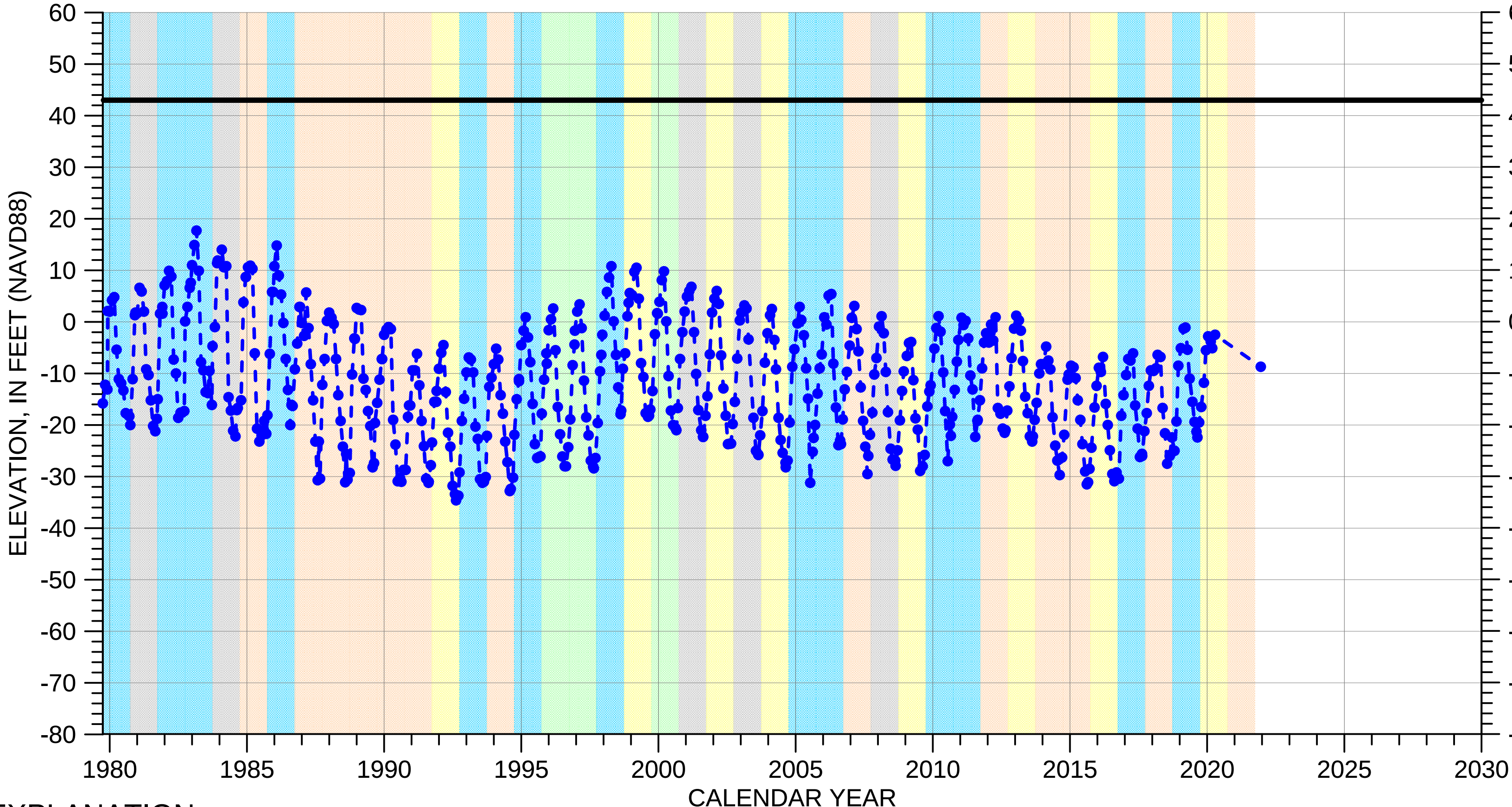
WATER YEAR TYPE DESIGNATION

DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\14S_03E-30G08.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-31F01

180/400-Foot Aquifer Subbasin



Perforated interval unknown

Well bottom -163 feet msl

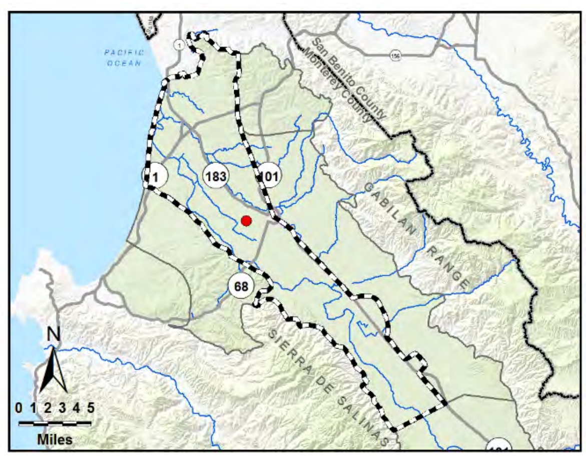
\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\14S_03E-31F01.grf

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

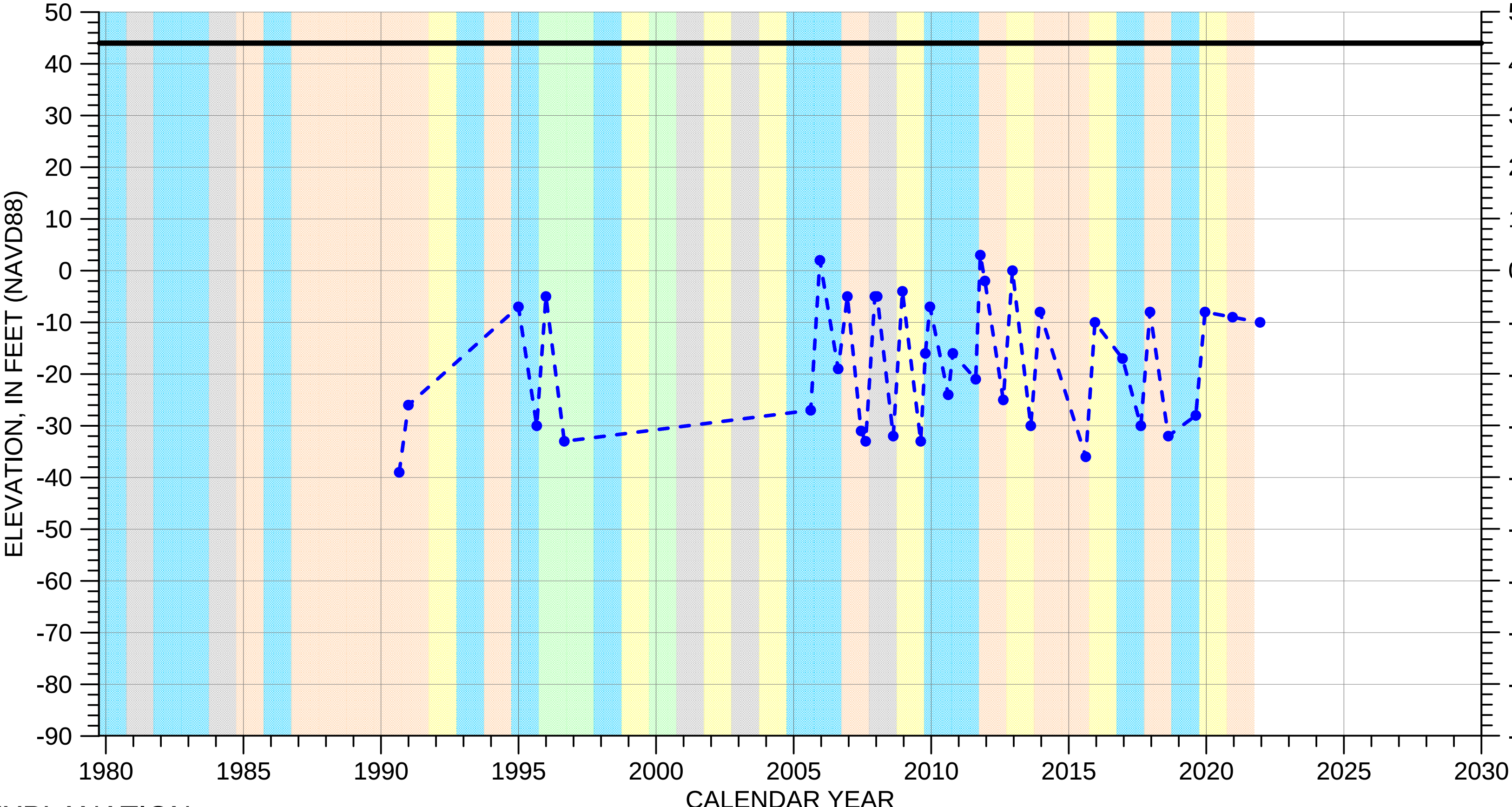
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



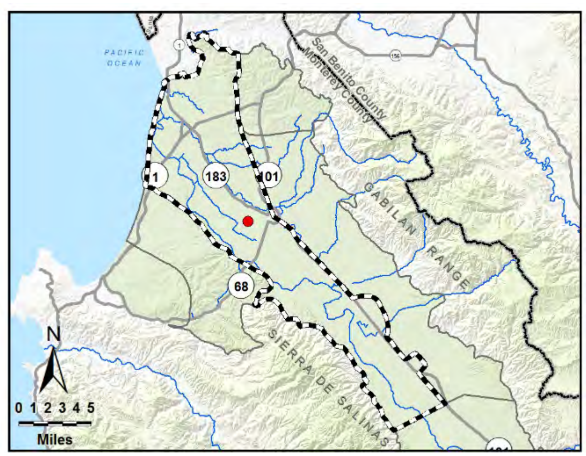
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 14S/03E-31L01

180/400-Foot Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



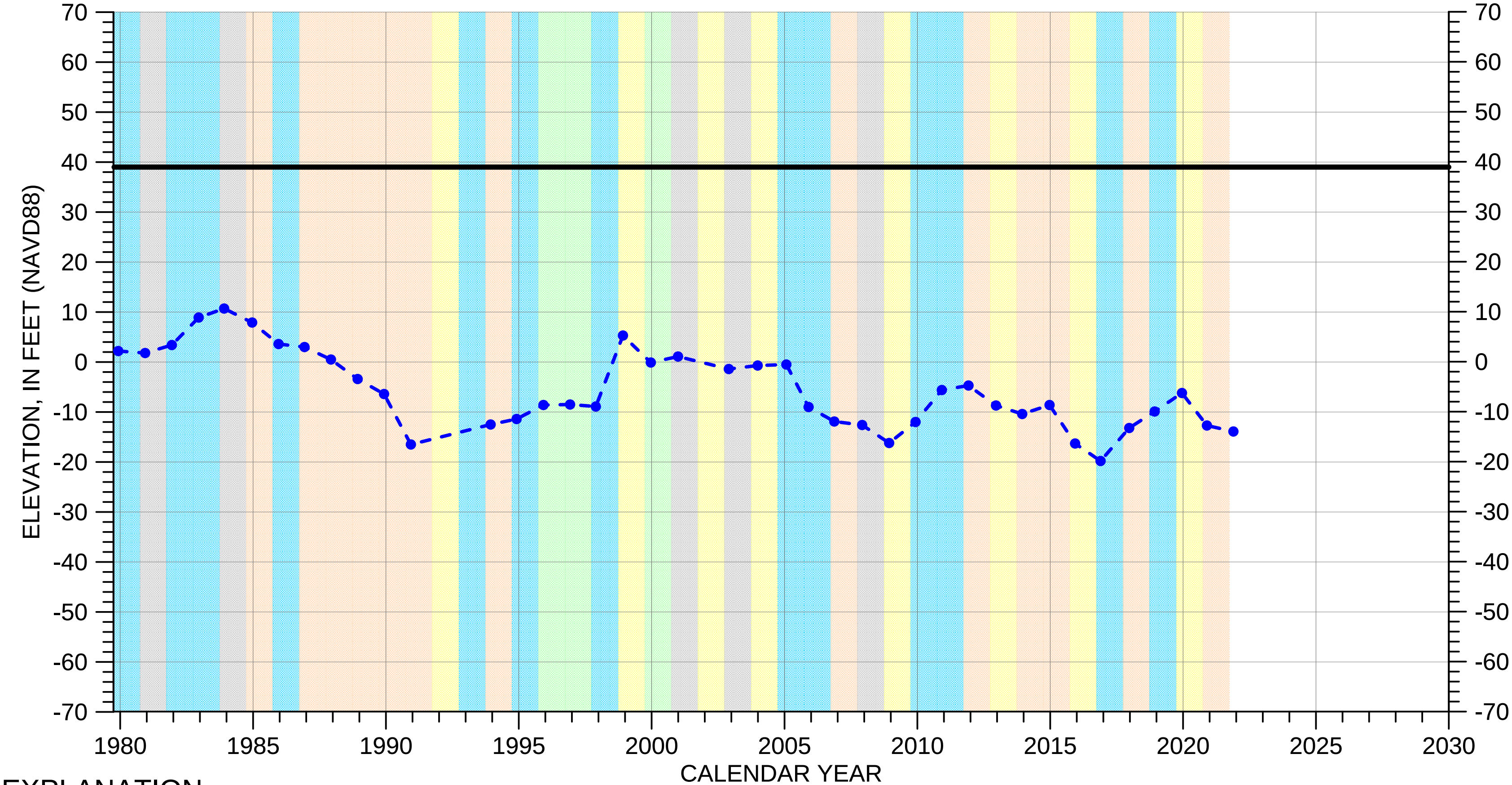
WATER YEAR TYPE DESIGNATION

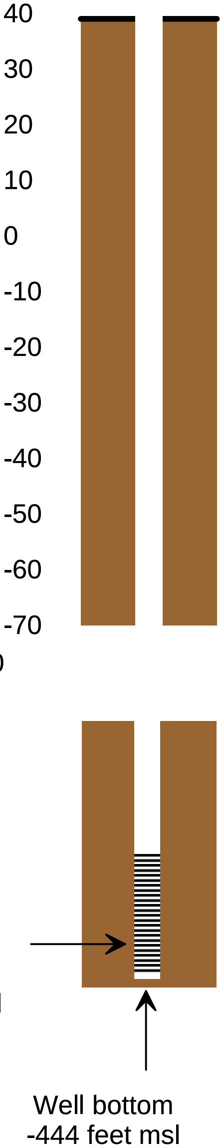
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\14S_03E-31L01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/02E-01A03

180/400-Foot Aquifer Subbasin





EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

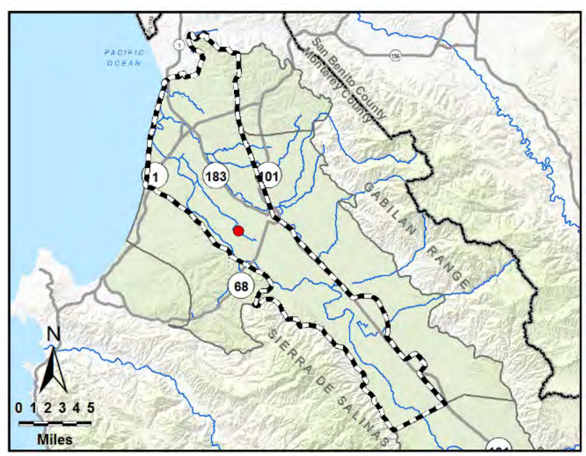
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET



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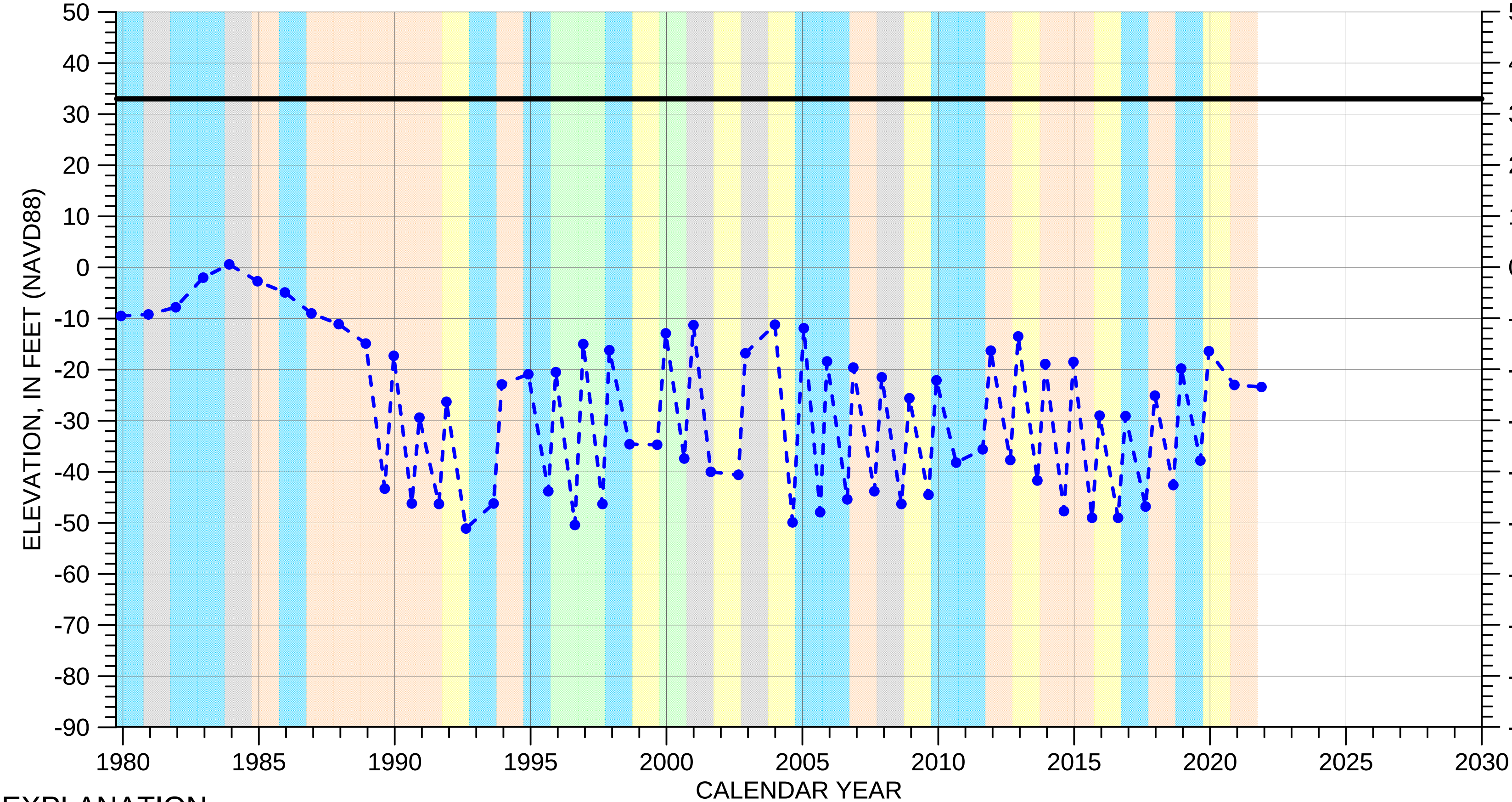
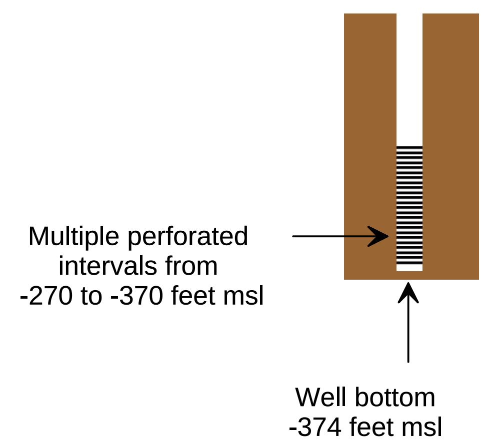
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/02E-02G01

180/400-Foot Aquifer Subbasin



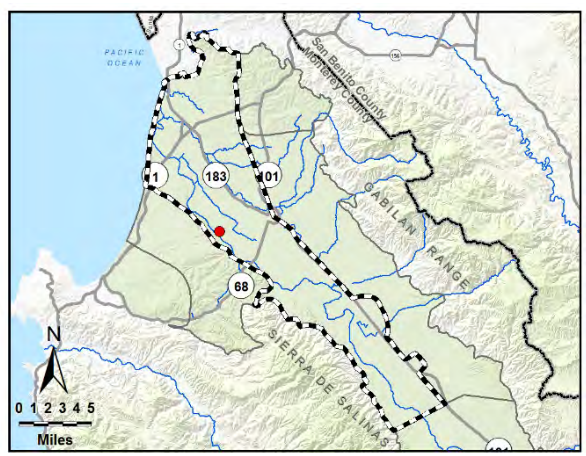


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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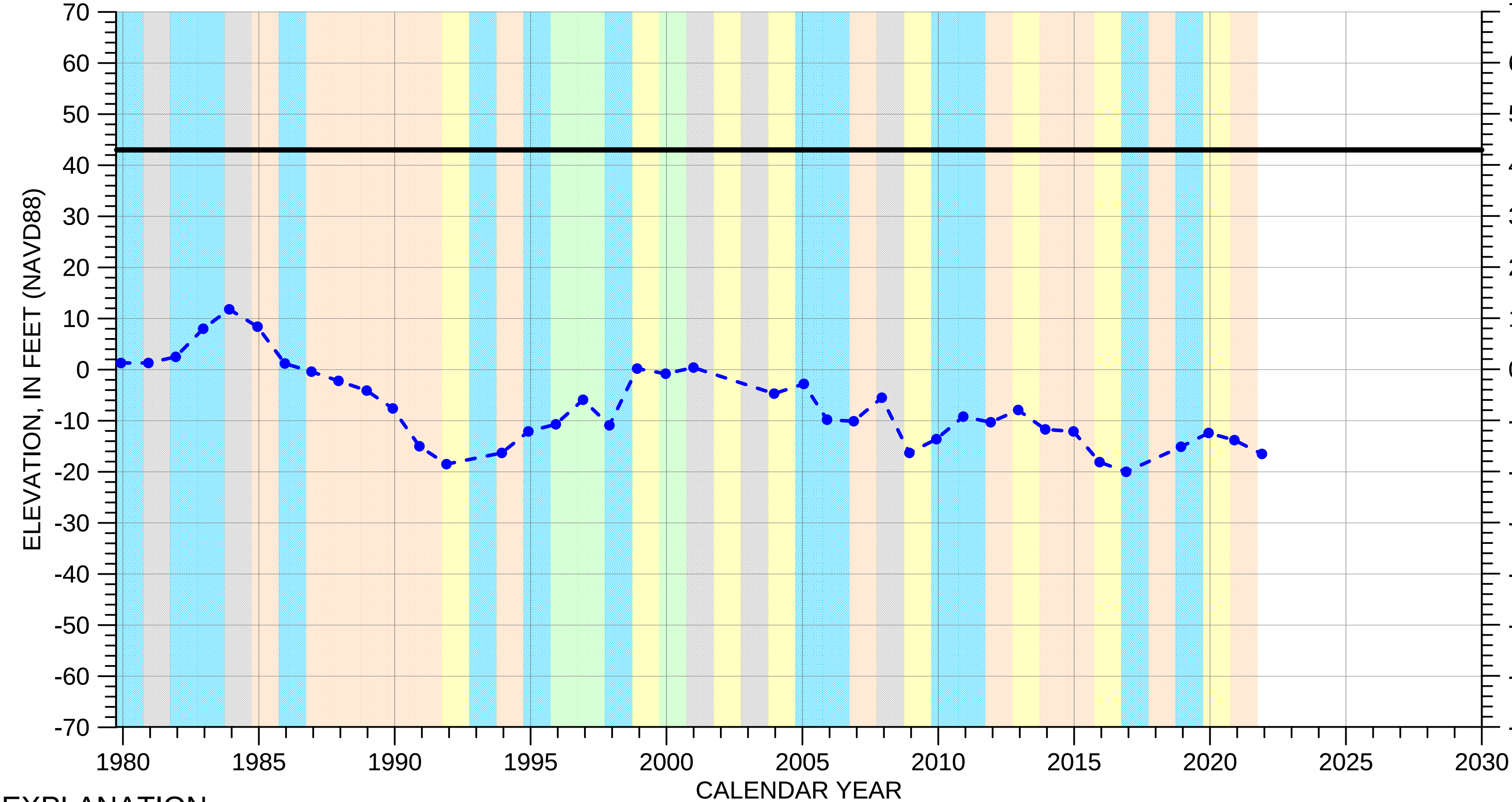
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/02E-12A01

180/400-Foot Aquifer Subbasin

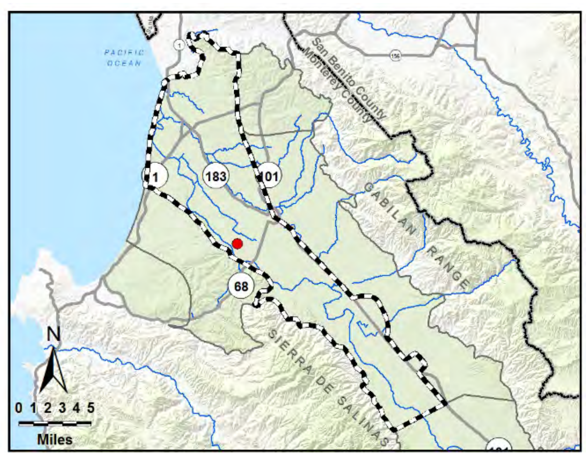


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET



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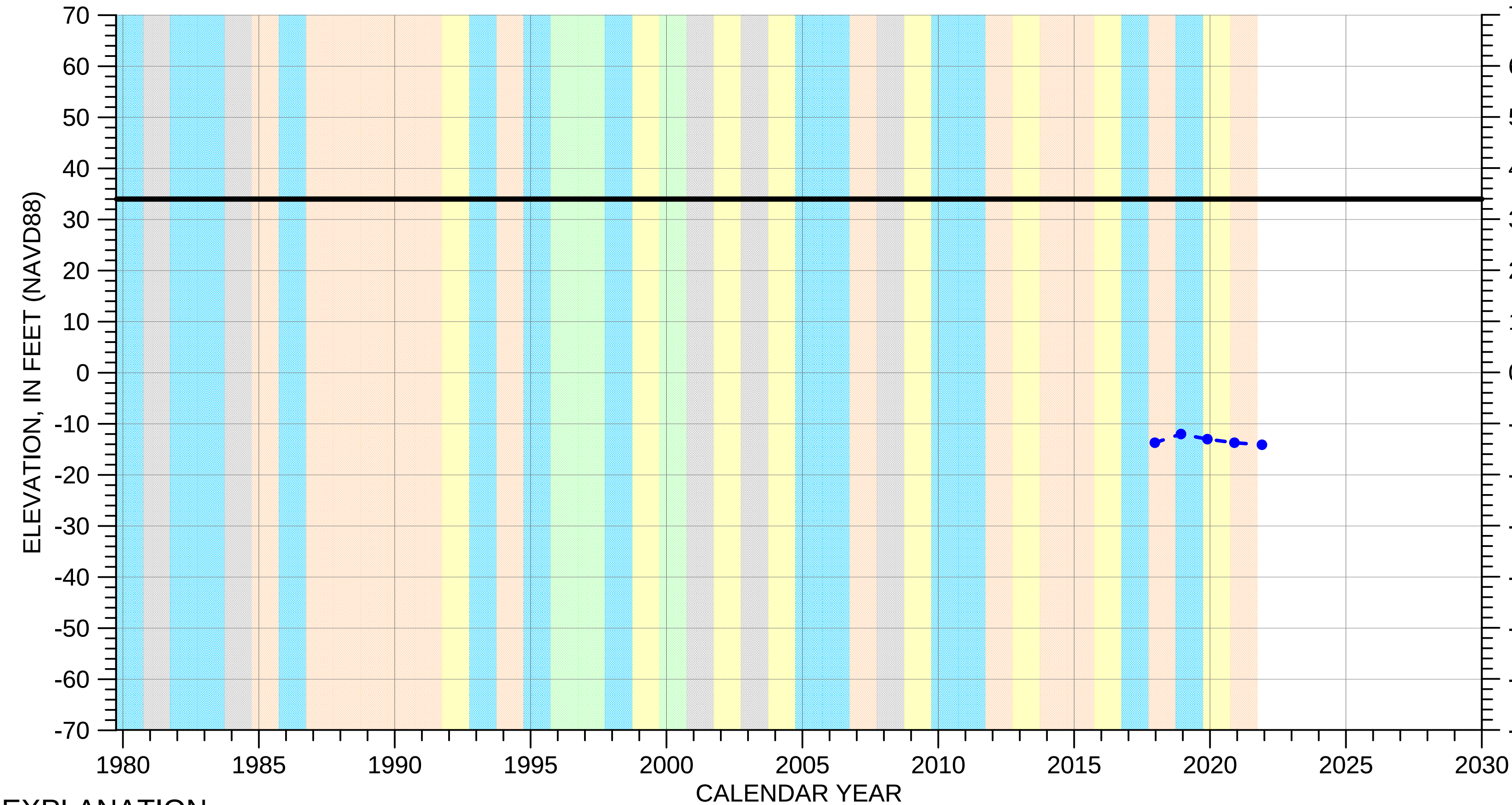
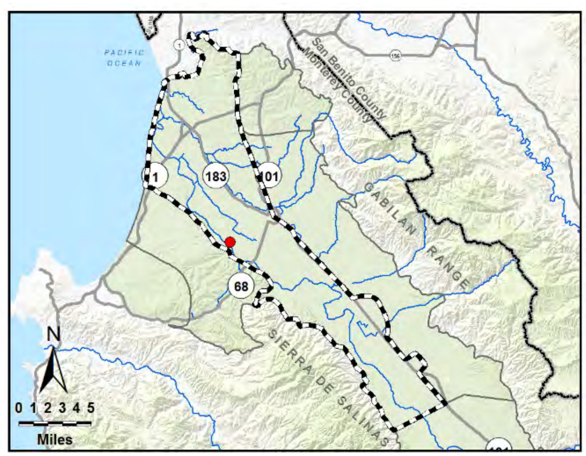
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/02E-12C01

180/400-Foot Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



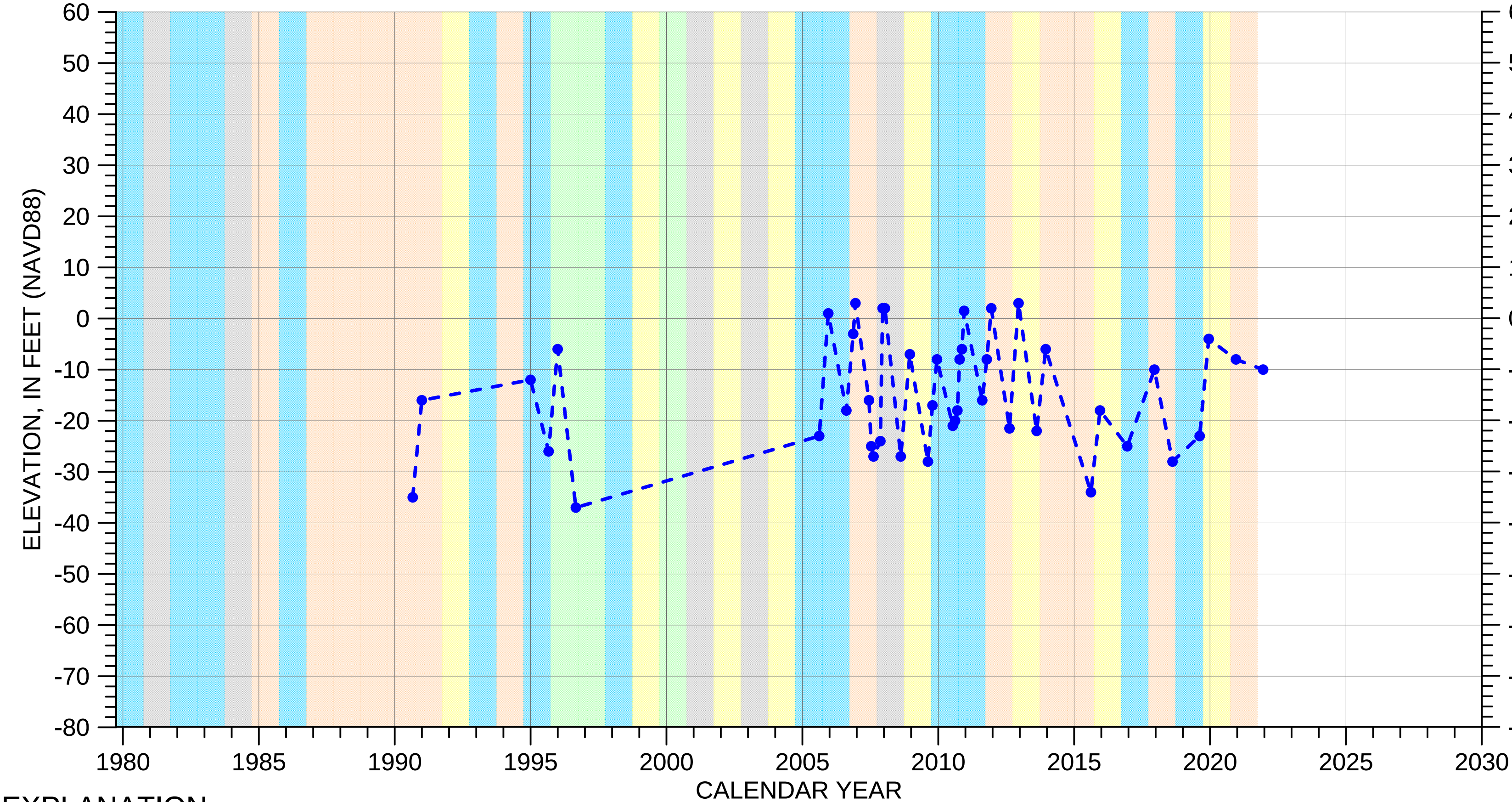
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\15S_02E-12C01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-03R02

180/400-Foot Aquifer Subbasin

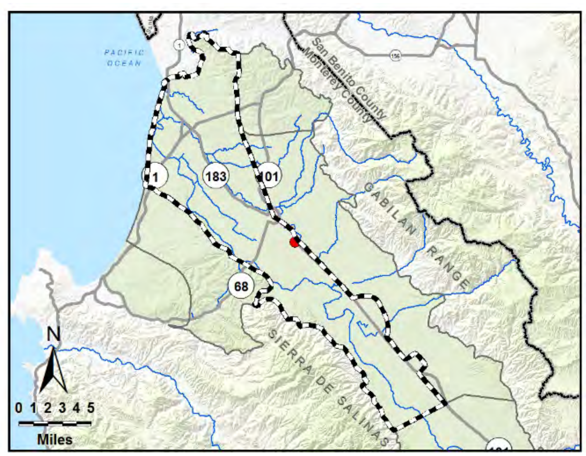


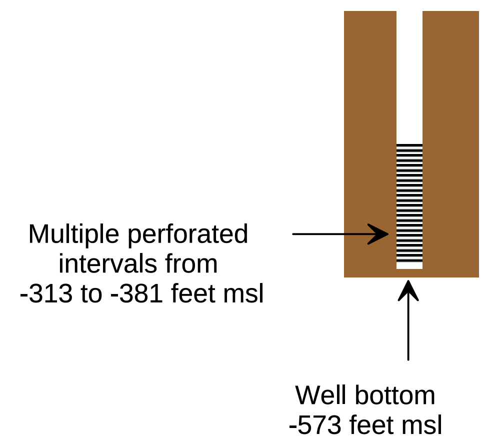
EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface (63 FT MSL)





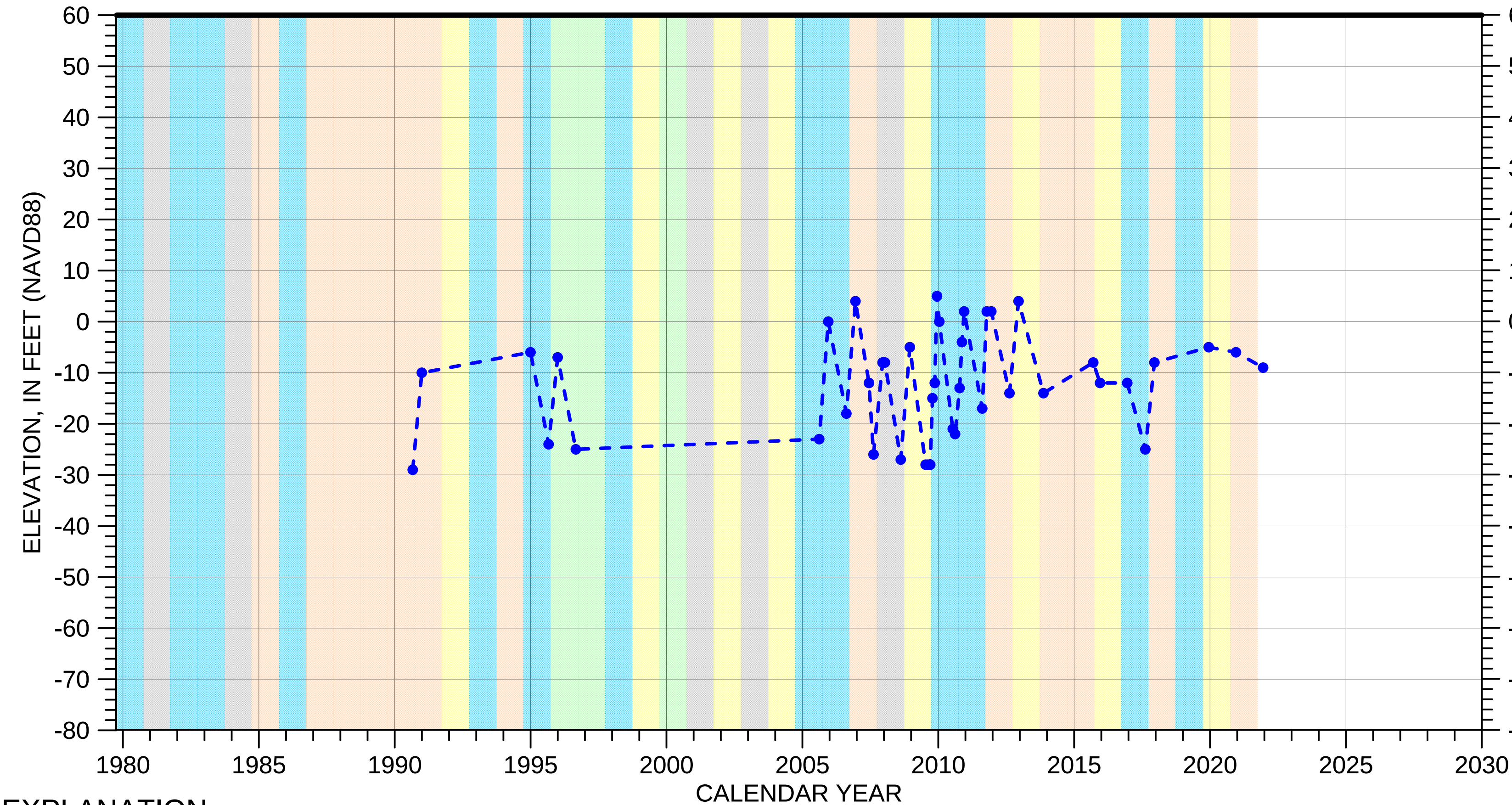
WATER YEAR TYPE DESIGNATION

DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_03E-03R02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-04Q01

180/400-Foot Aquifer Subbasin



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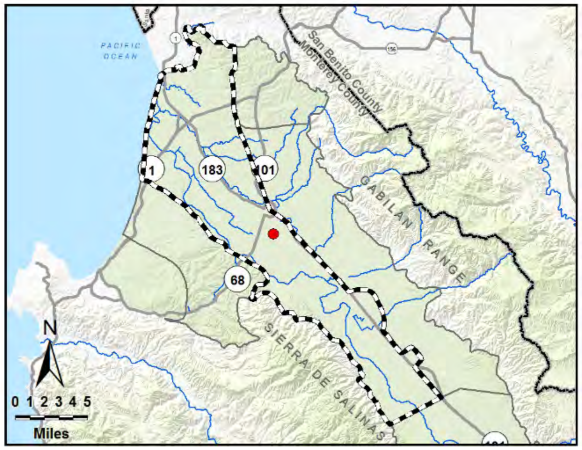
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

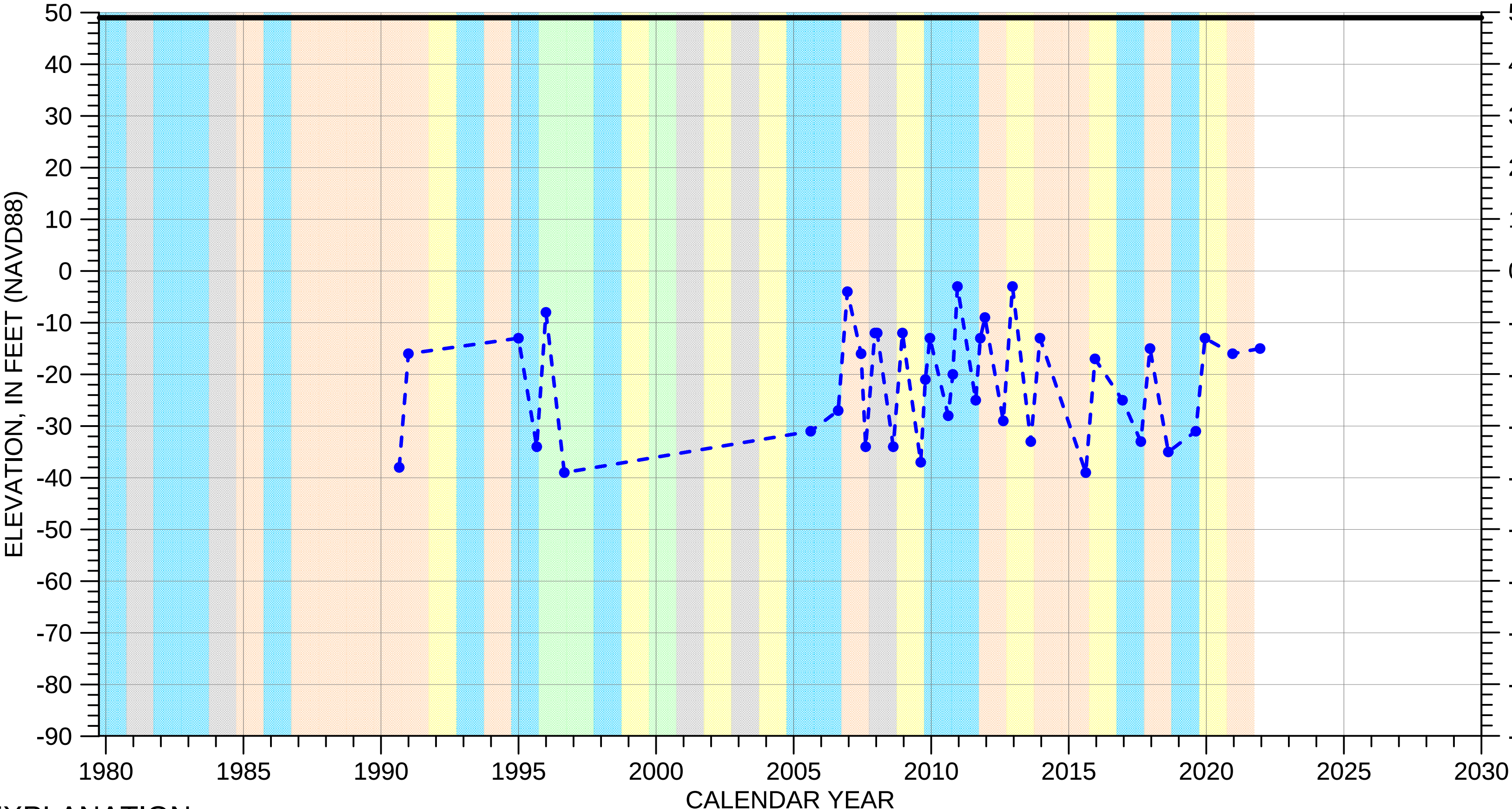
WATER YEAR TYPE DESIGNATION

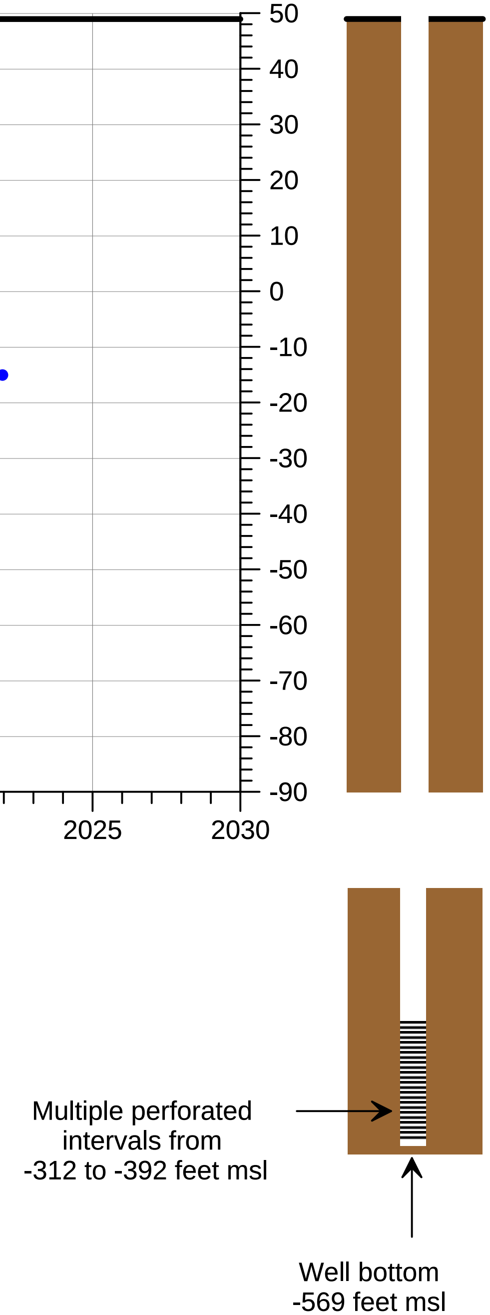
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-05C02

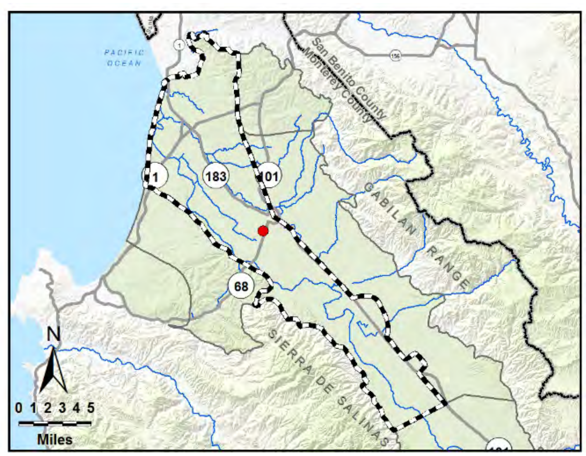
180/400-Foot Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

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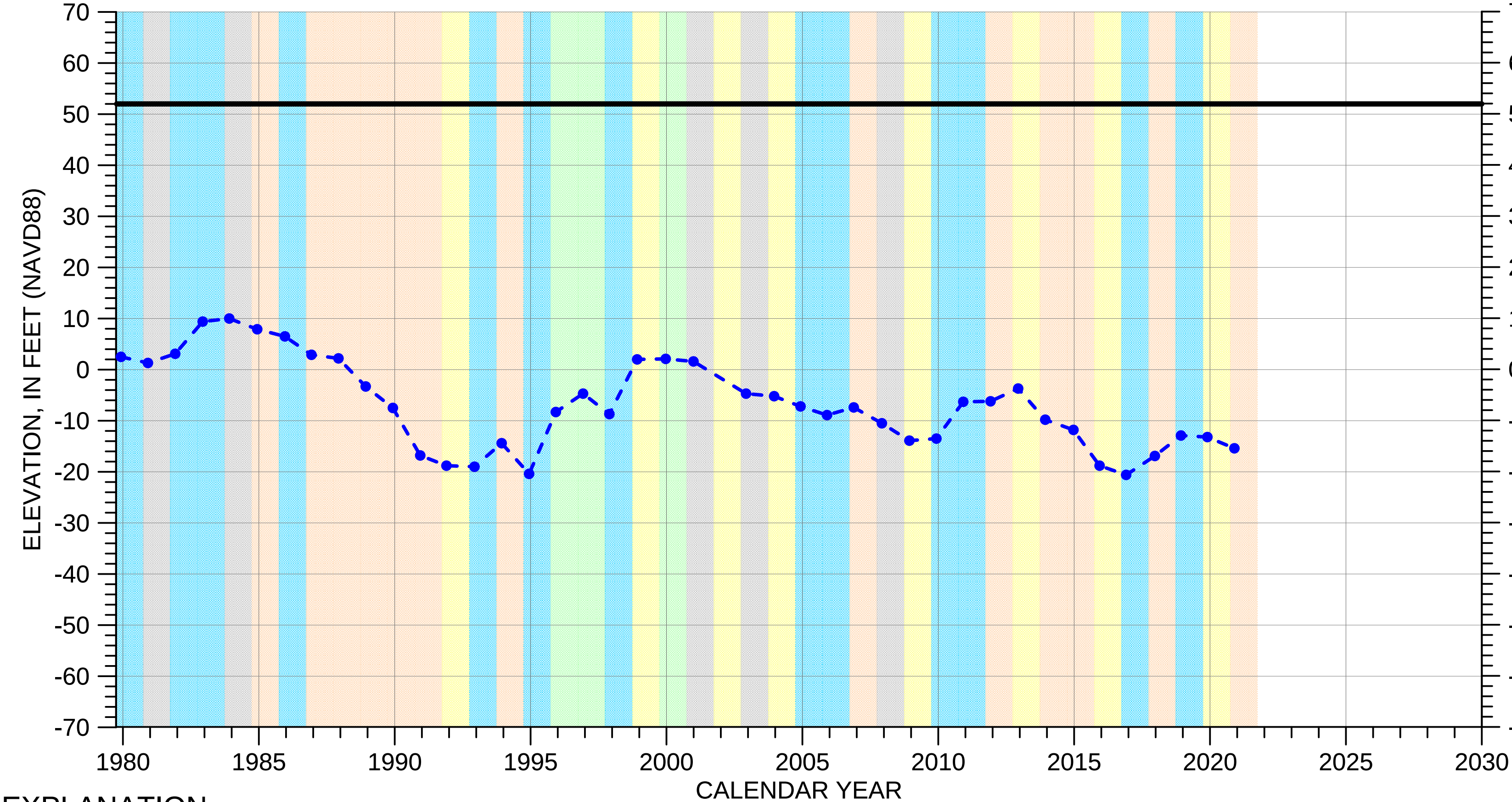
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-08F01

180/400-Foot Aquifer Subbasin

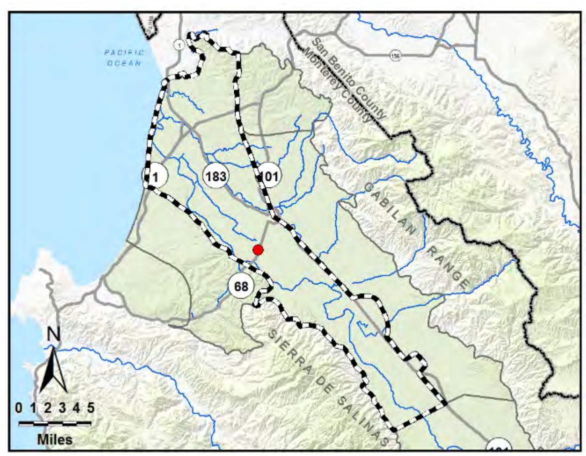


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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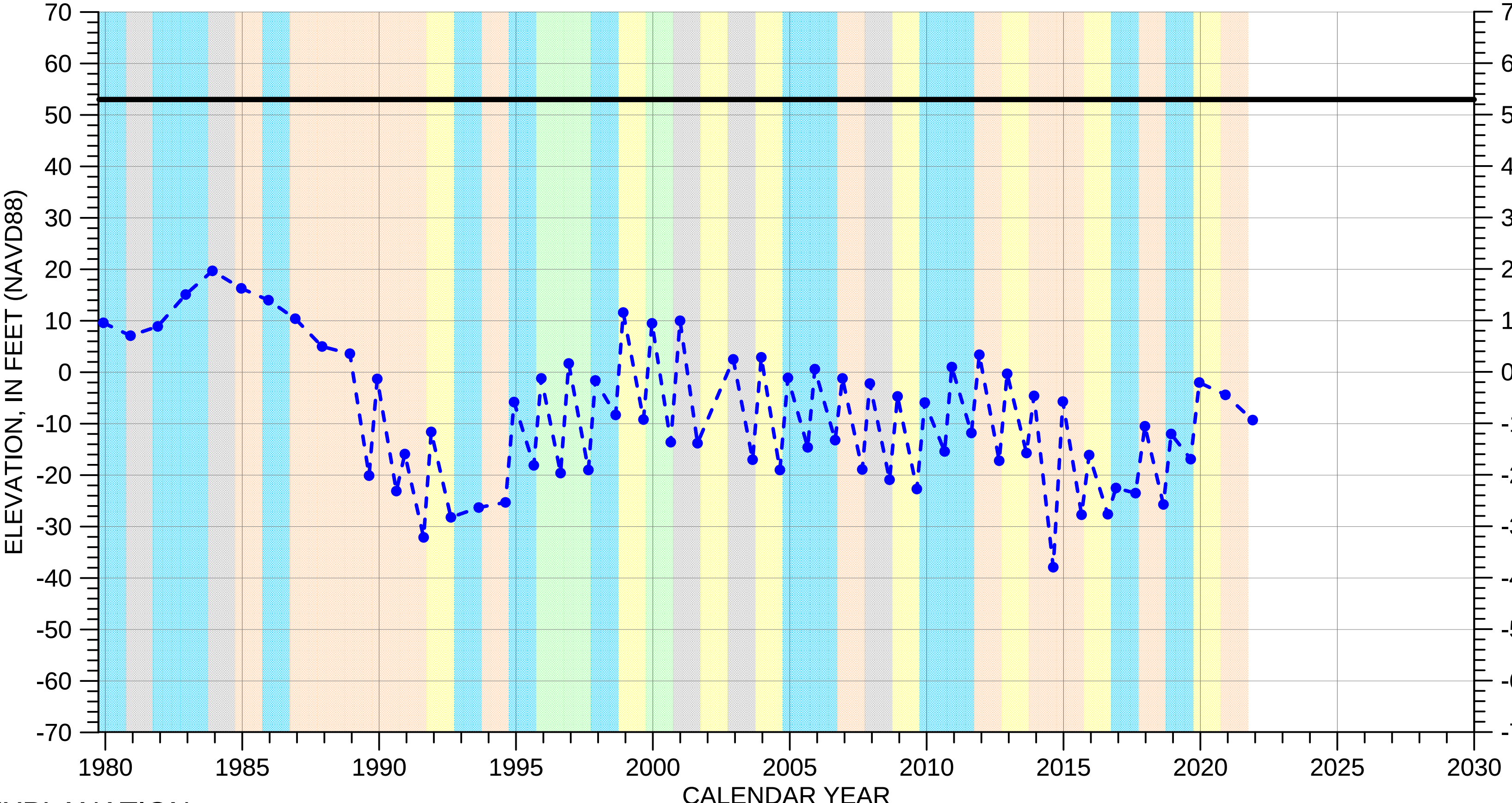
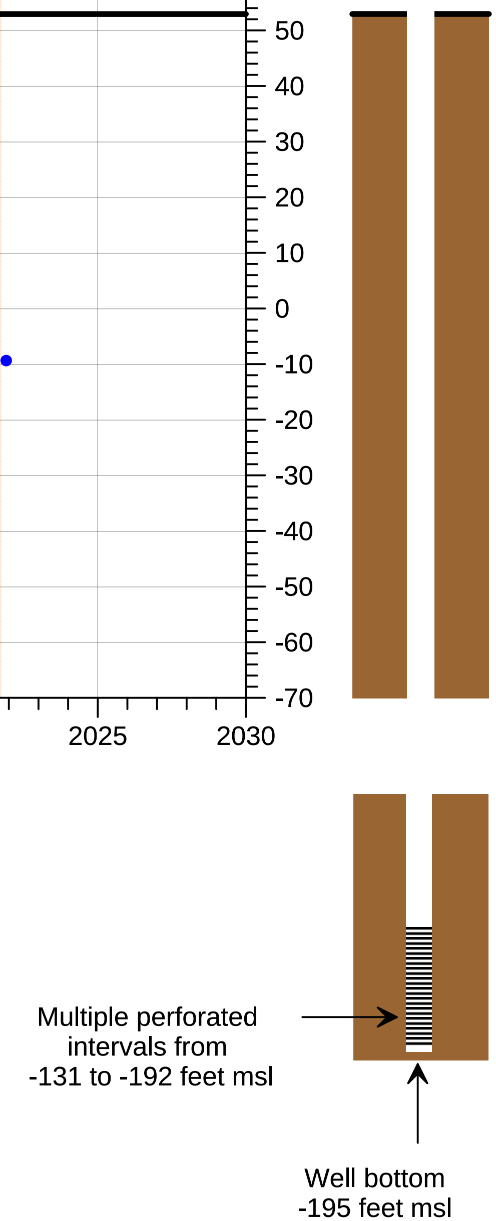
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-09E03

180/400-Foot Aquifer Subbasin





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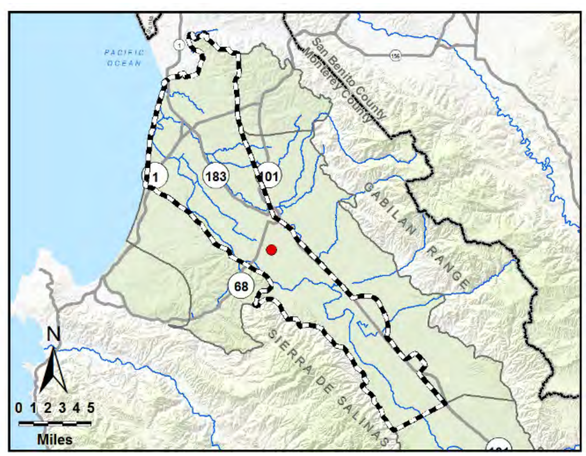
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

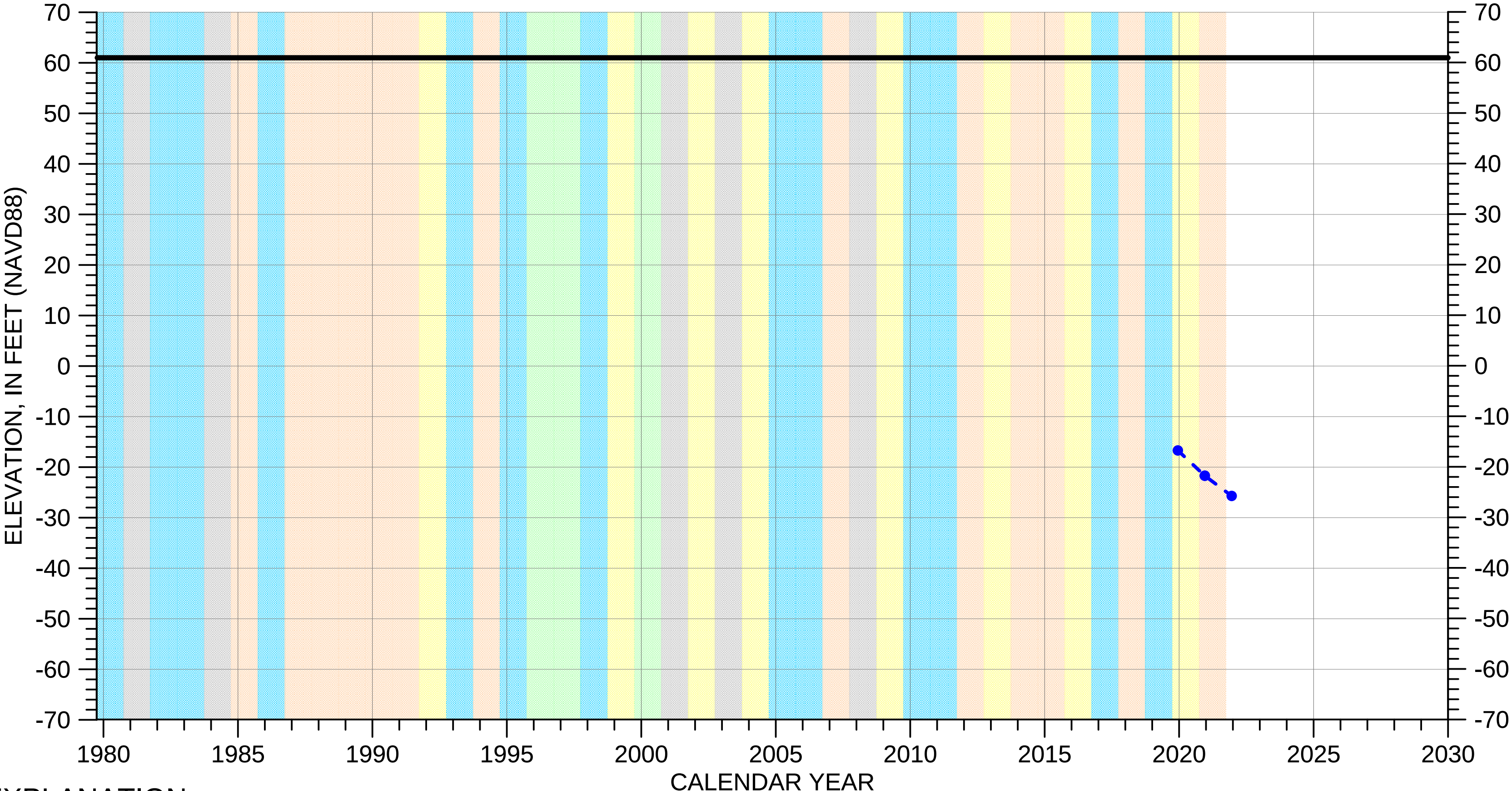
WATER YEAR TYPE DESIGNATION

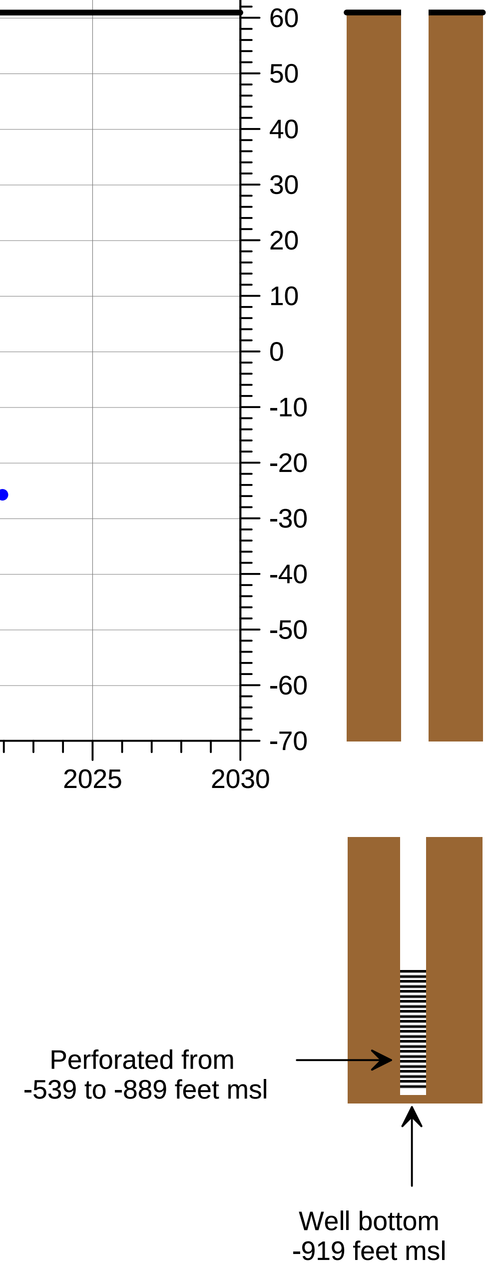
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-10D04

180/400-Foot Aquifer Subbasin





EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

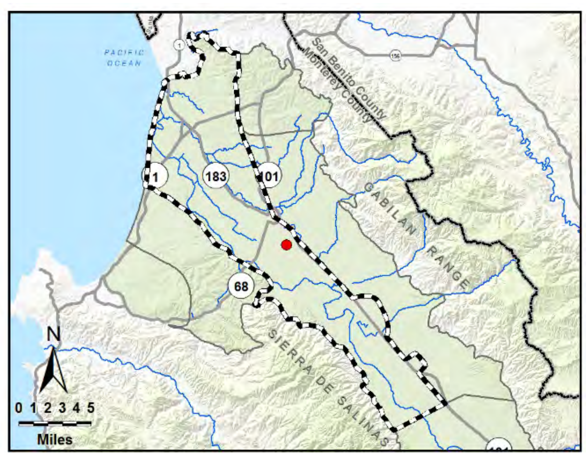
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET



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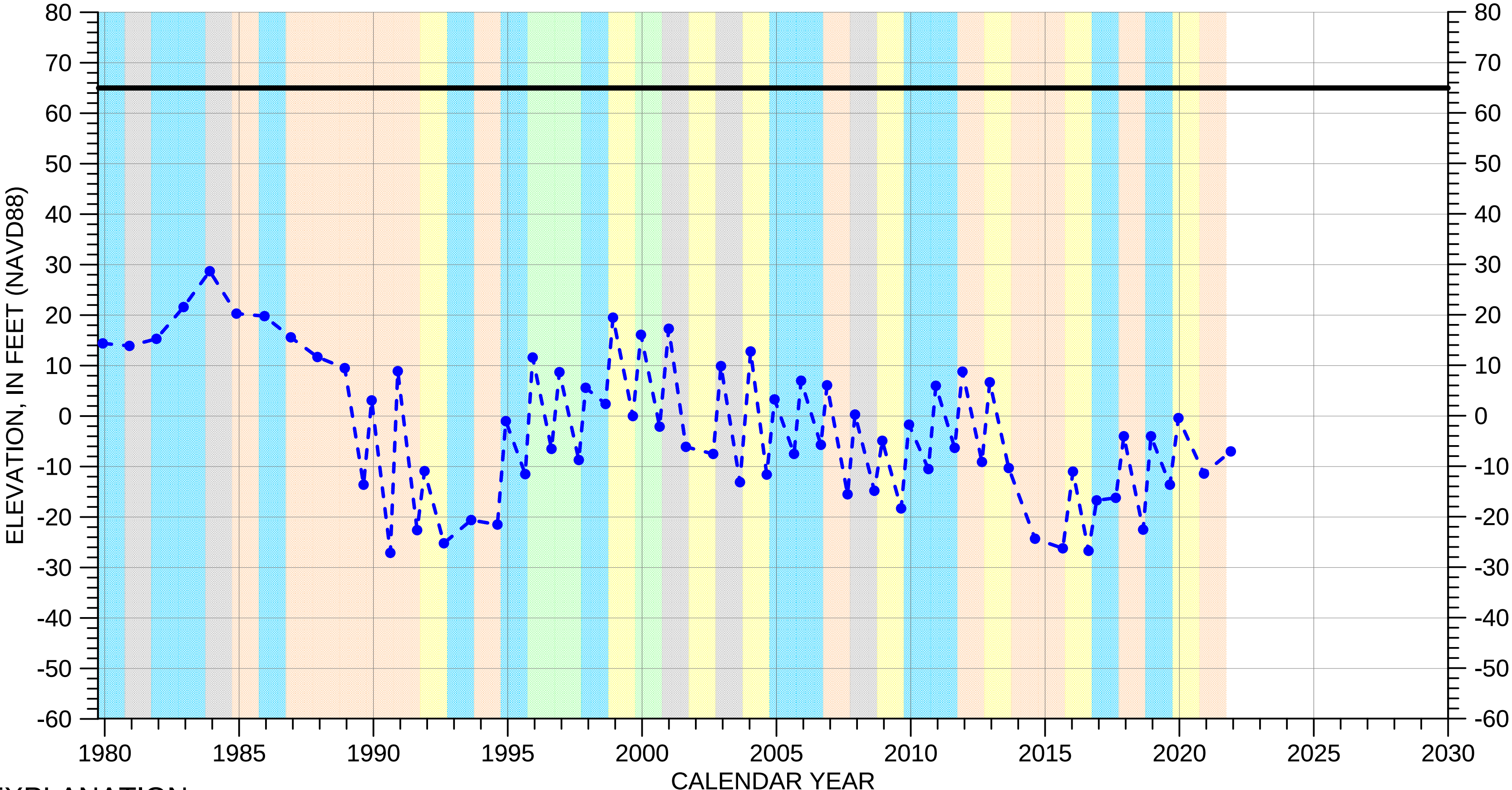
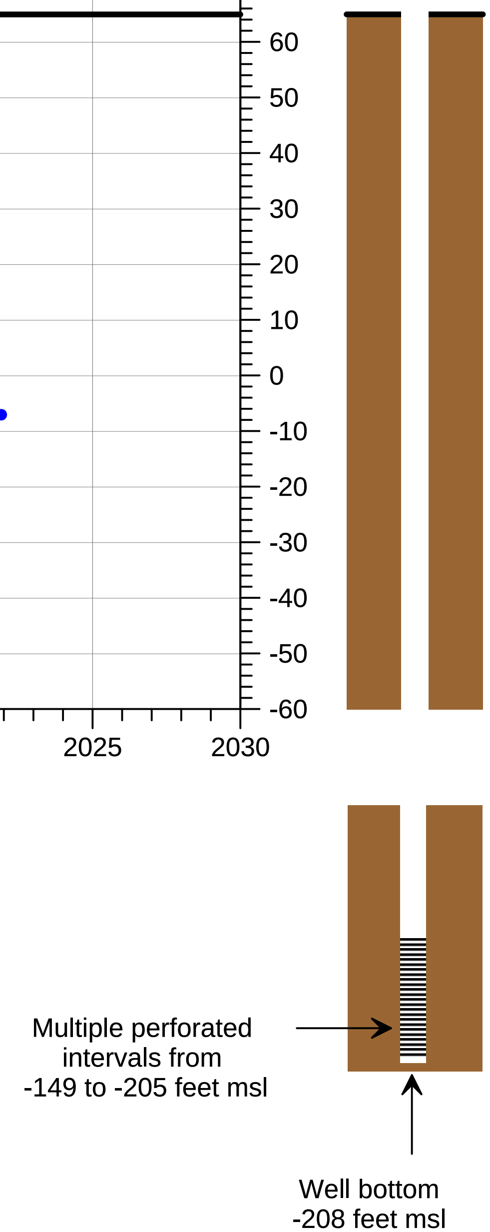
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-13N01

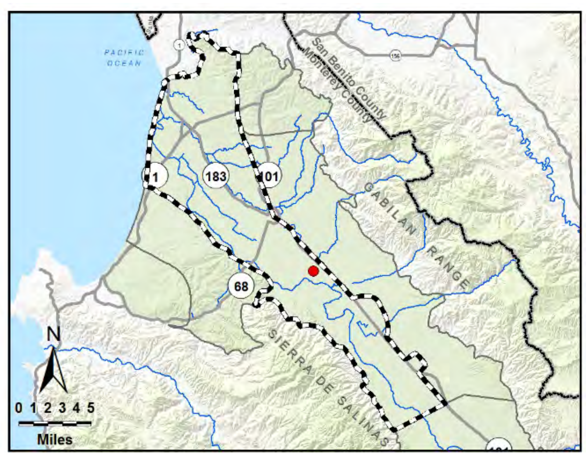
180/400-Foot Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



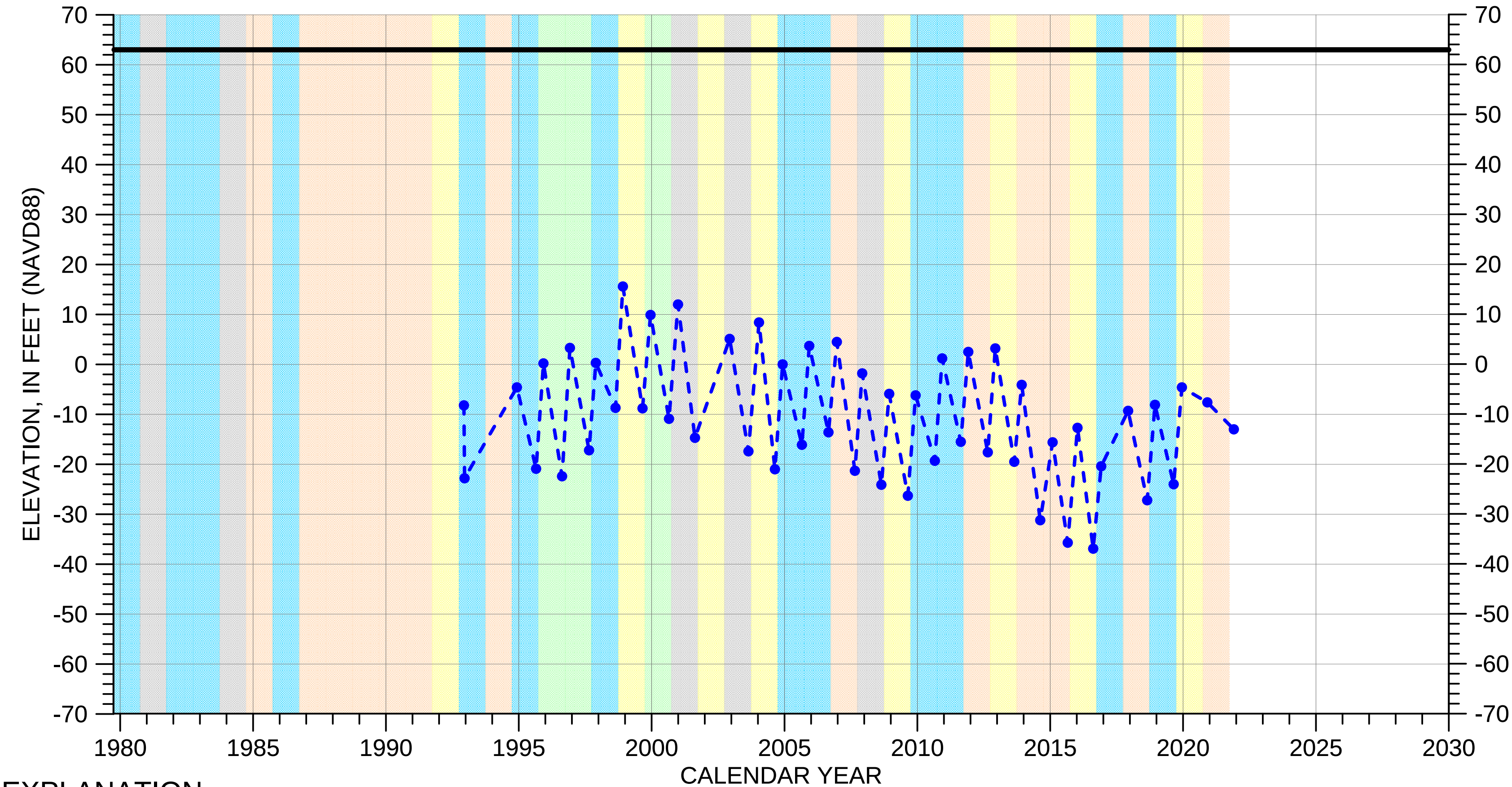
WATER YEAR TYPE DESIGNATION

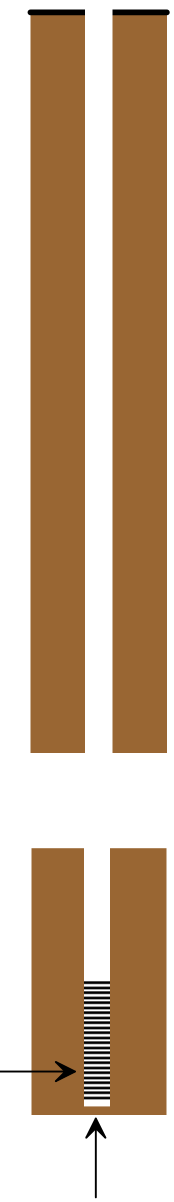
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_03E-13N01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-14P02

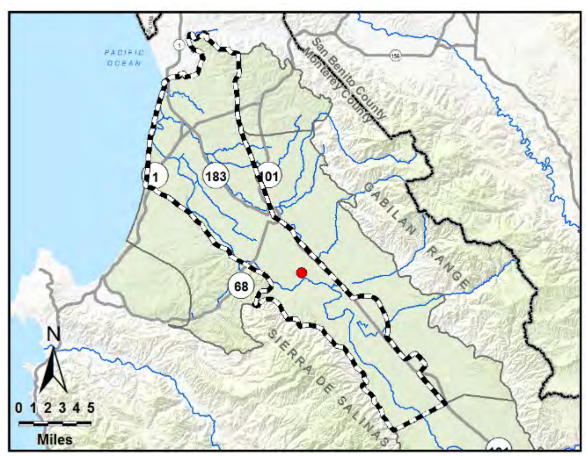
180/400-Foot Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



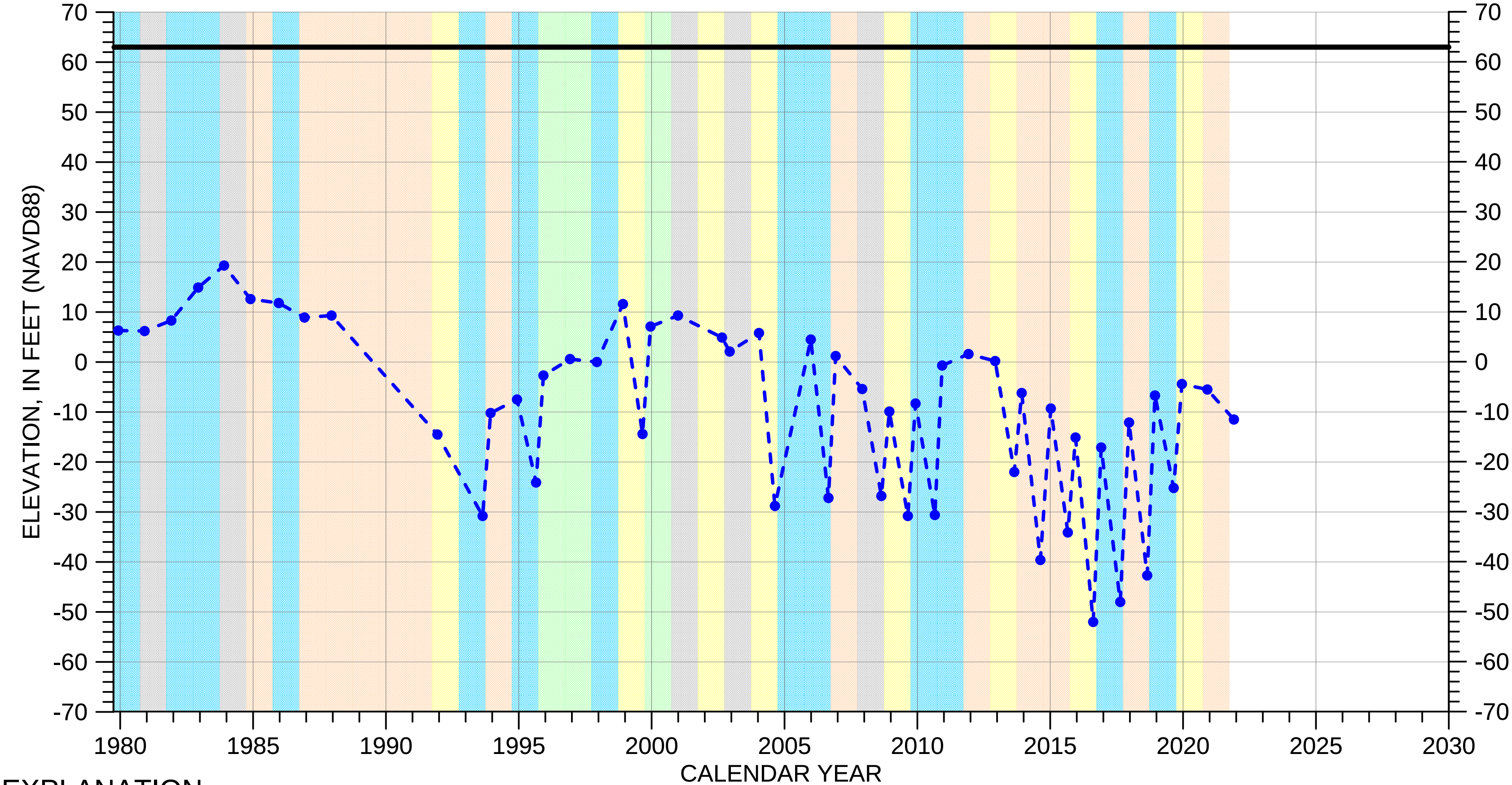
WATER YEAR TYPE DESIGNATION

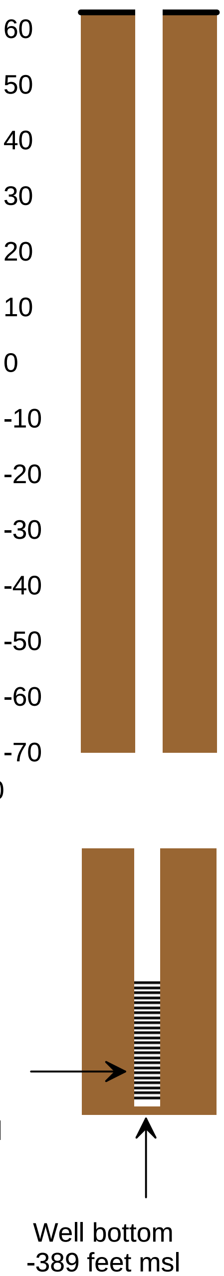
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_03E-14P02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-15B01

180/400-Foot Aquifer Subbasin





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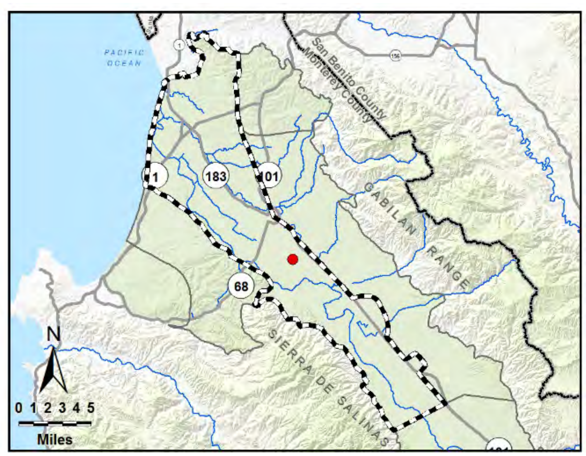
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

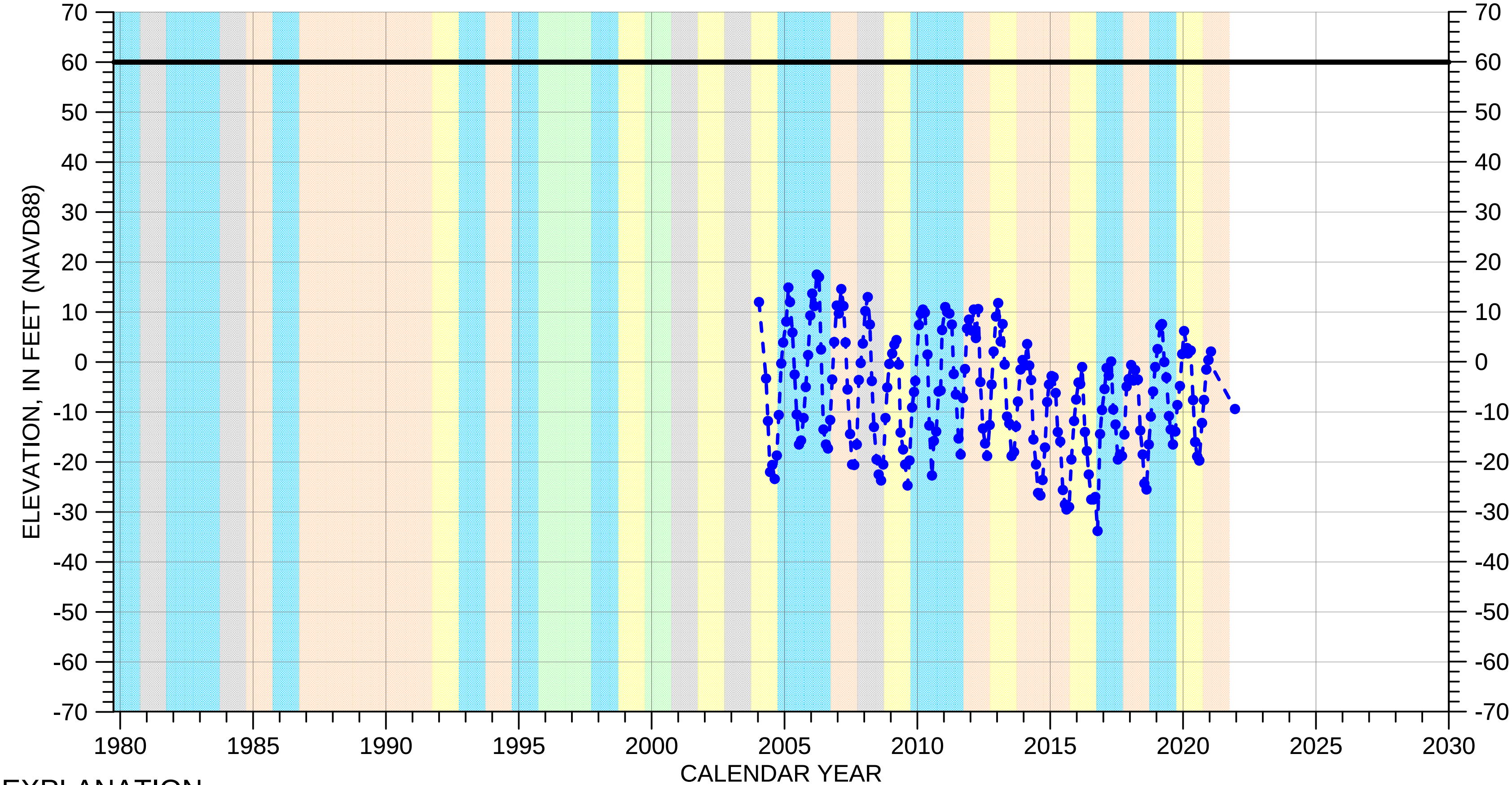


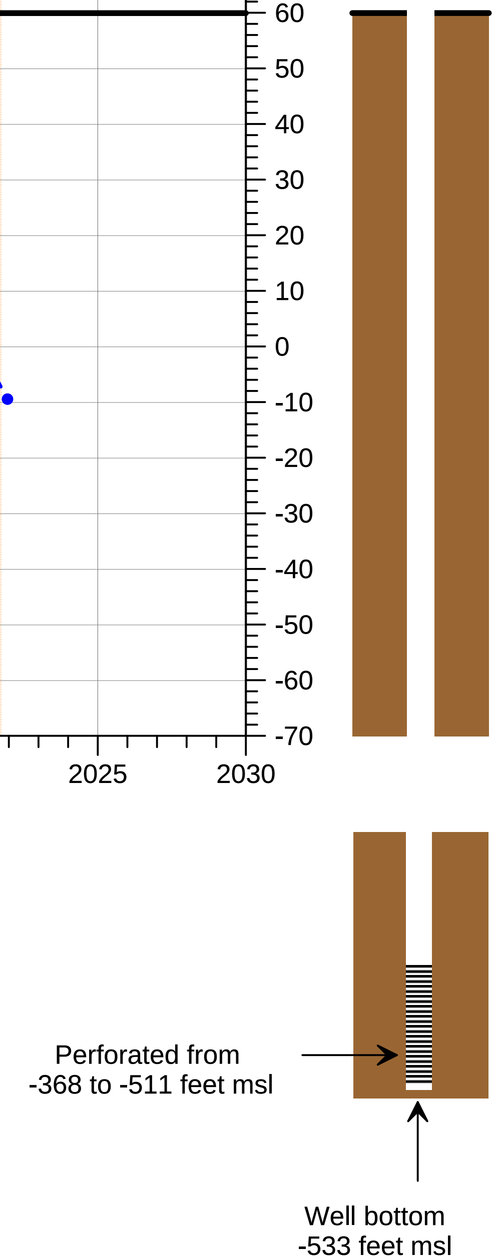
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-16F02

180/400-Foot Aquifer Subbasin



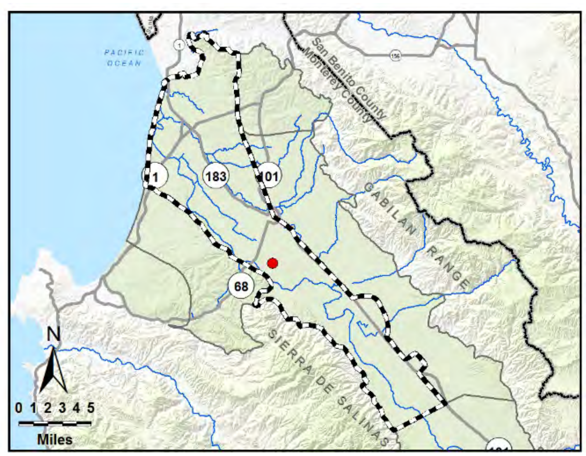


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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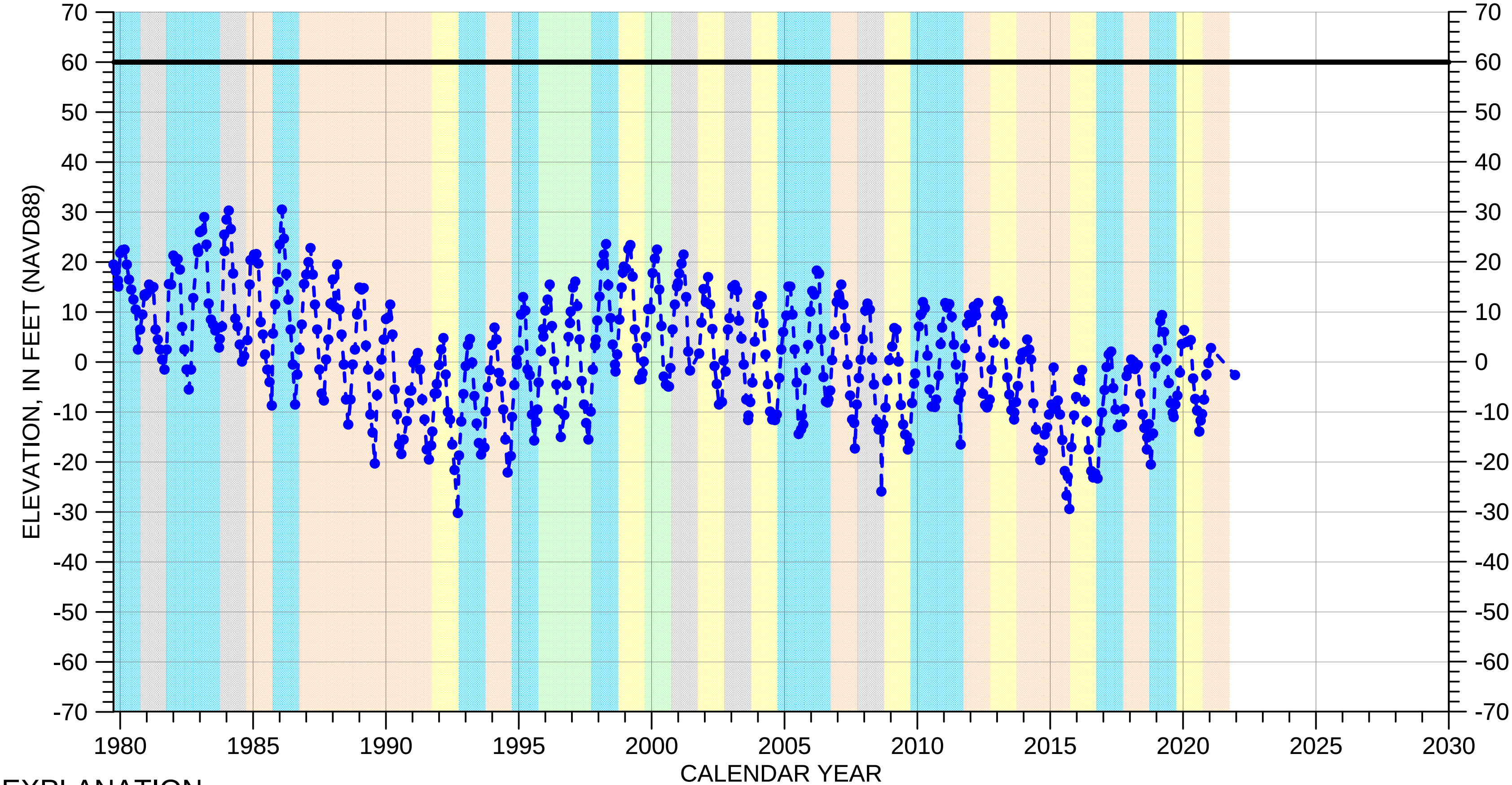
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-16M01

180/400-Foot Aquifer Subbasin



EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

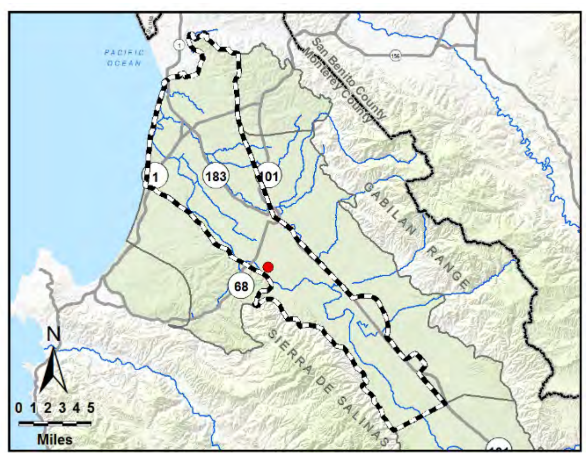
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET



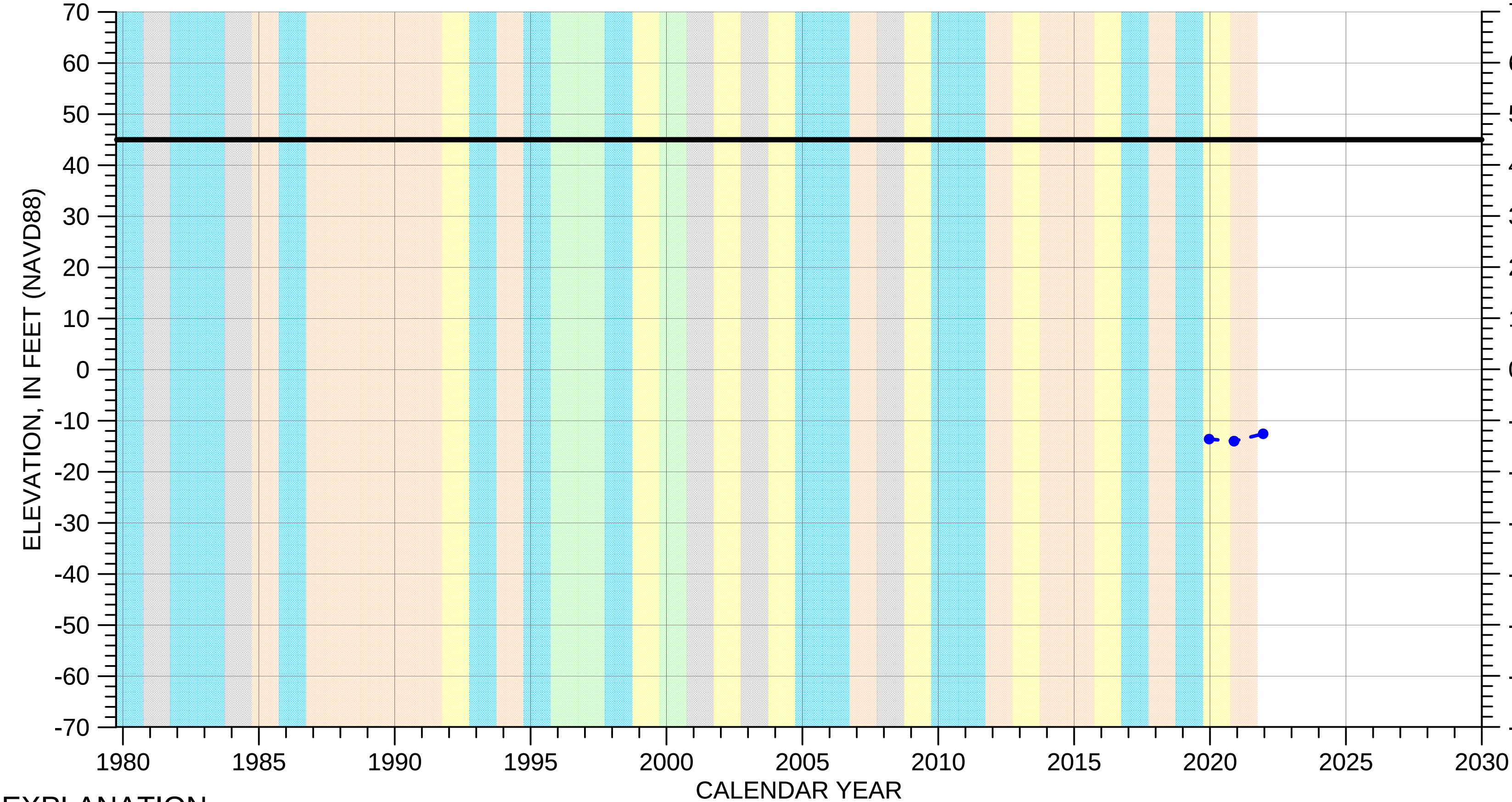
Perforated interval unknown

Well bottom elevation unknown

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_03E-16M01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-17E02

180/400-Foot Aquifer Subbasin



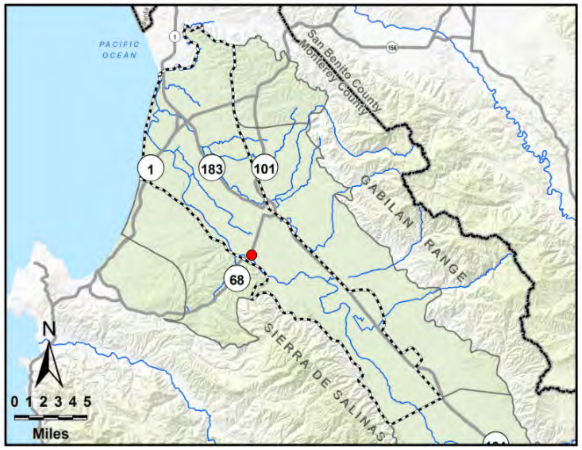
Perforated from
-535 to -635 feet msl

Well bottom
-655 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_03E-17E02.grf

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

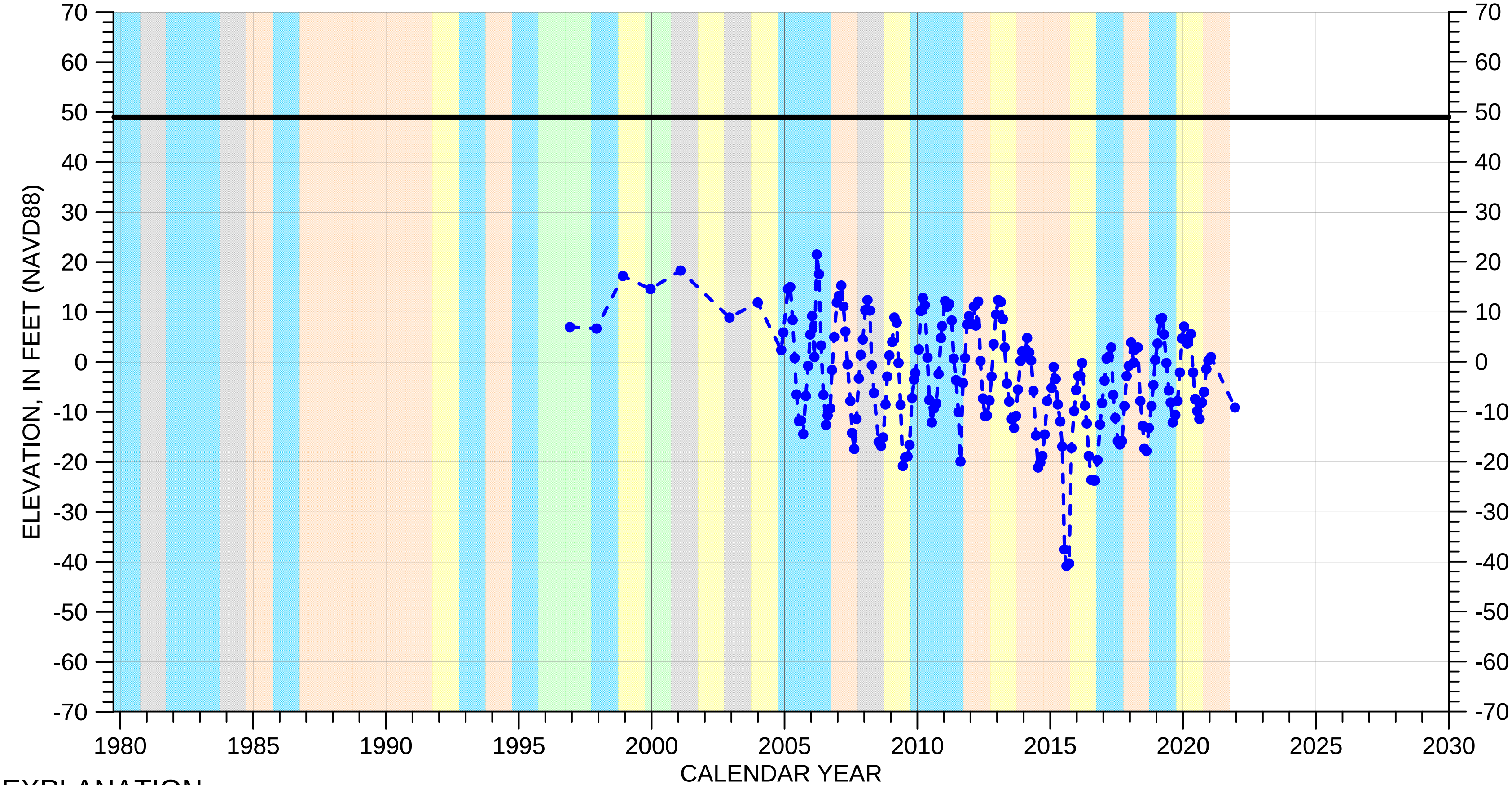


WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-17M01

180/400-Foot Aquifer Subbasin

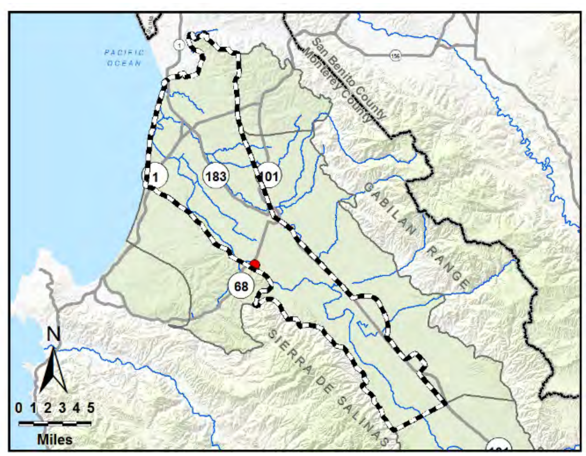


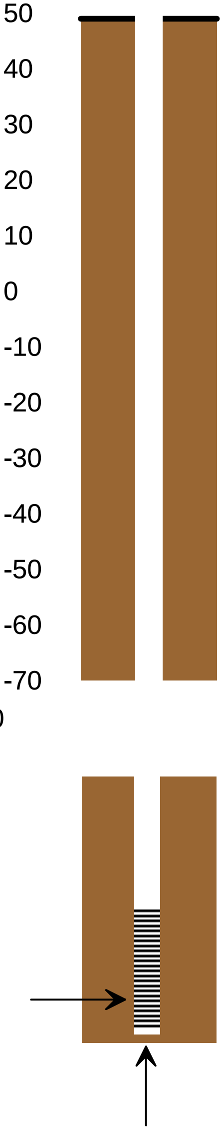
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET





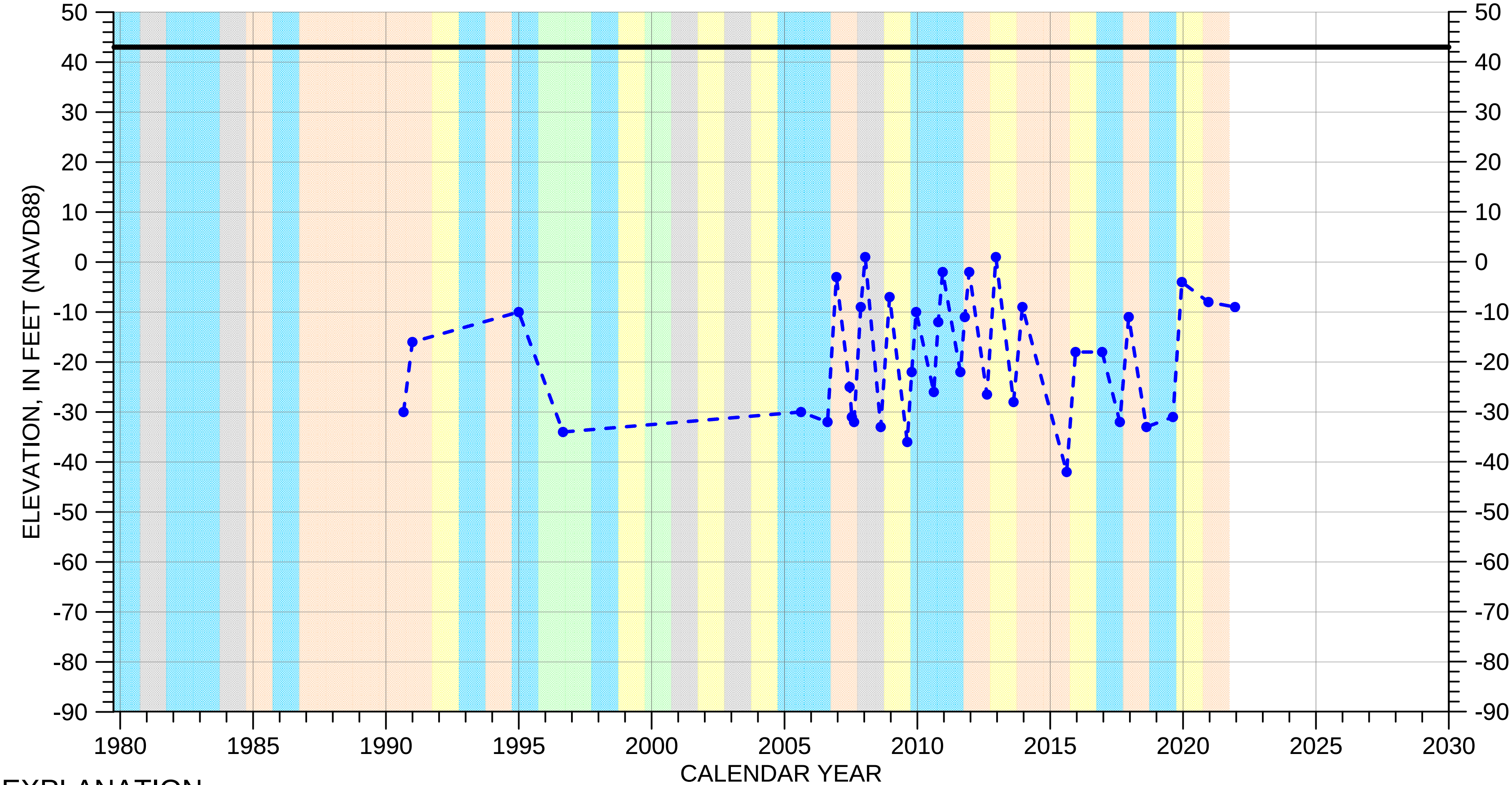
Perforated from
-79 to -131 feet msl

Well bottom
-222 feet msl

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_03E-17M01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-17P02

180/400-Foot Aquifer Subbasin

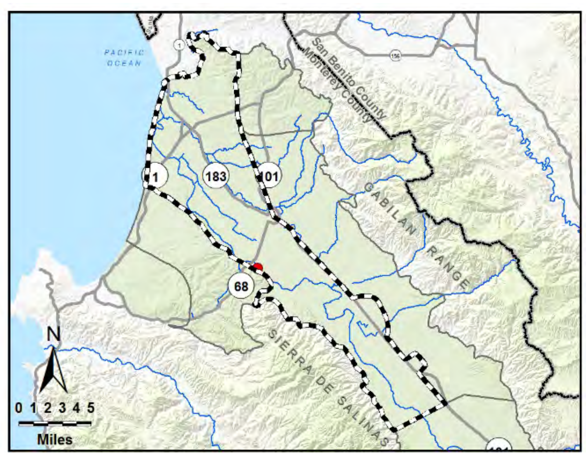


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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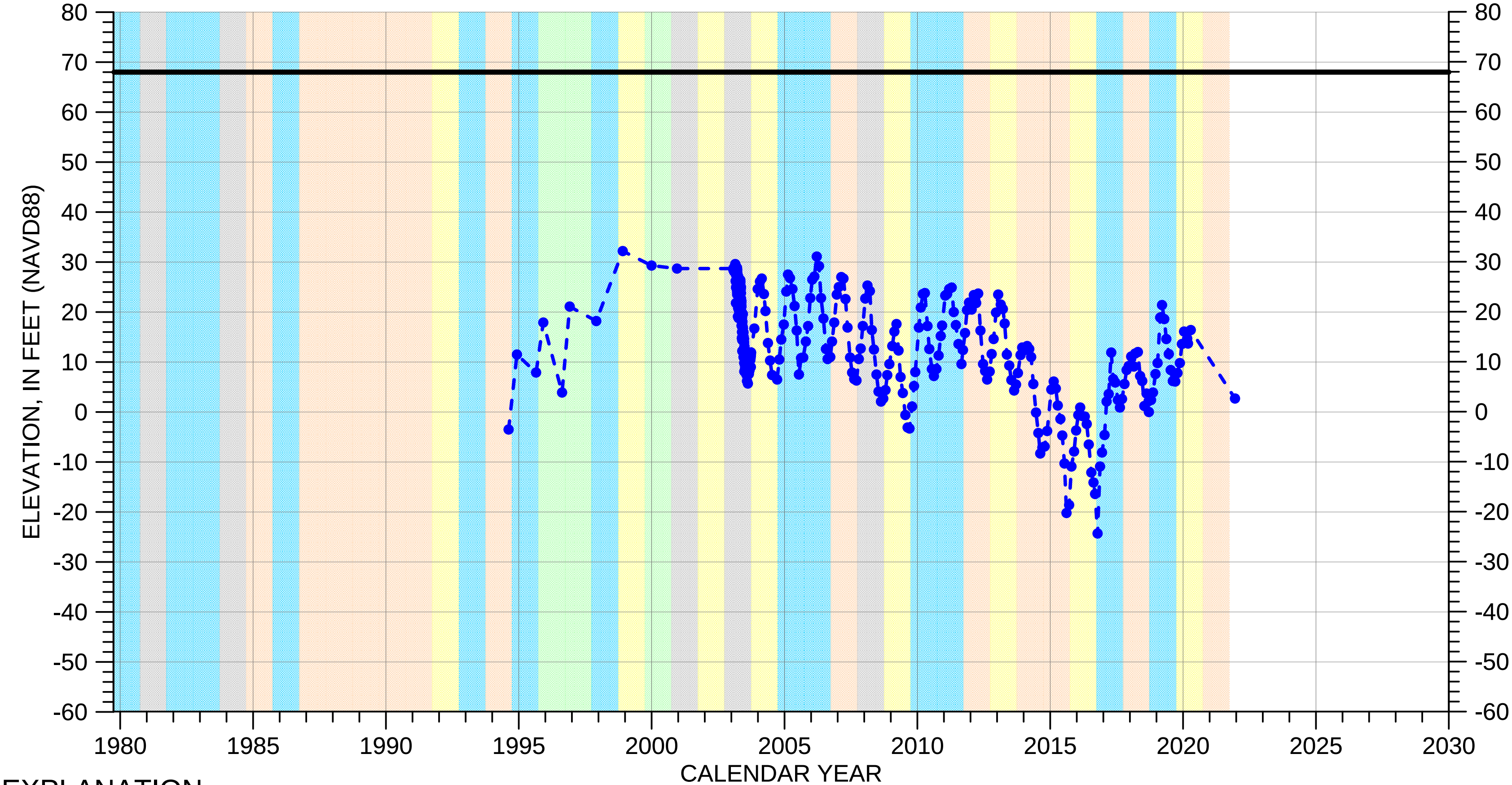
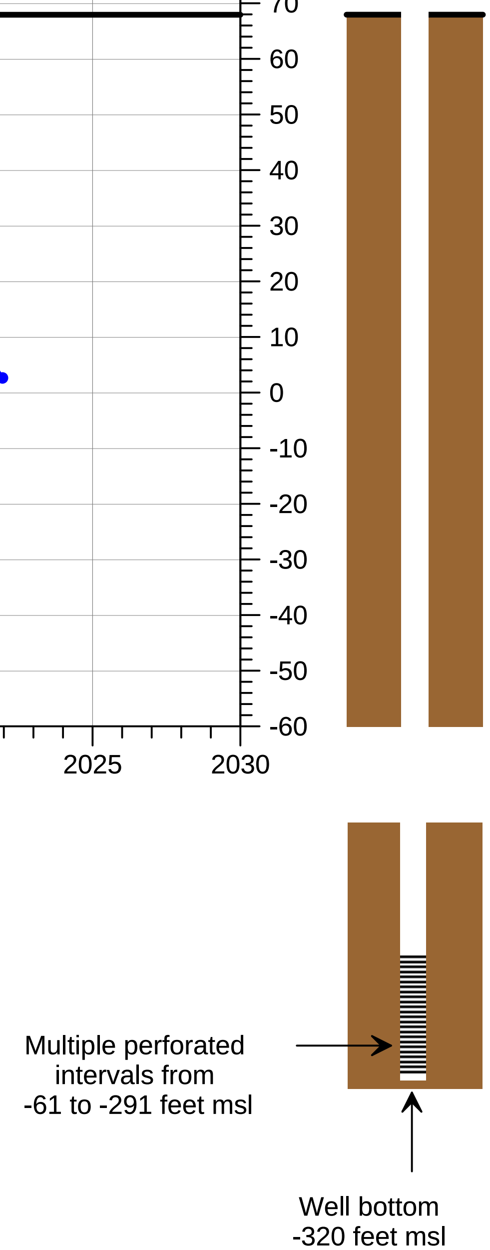
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-25L01

180/400-Foot Aquifer Subbasin





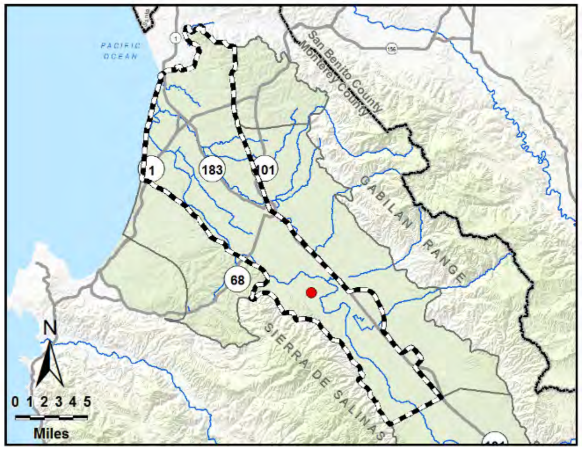
\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\15S_03E-25L01.grf

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

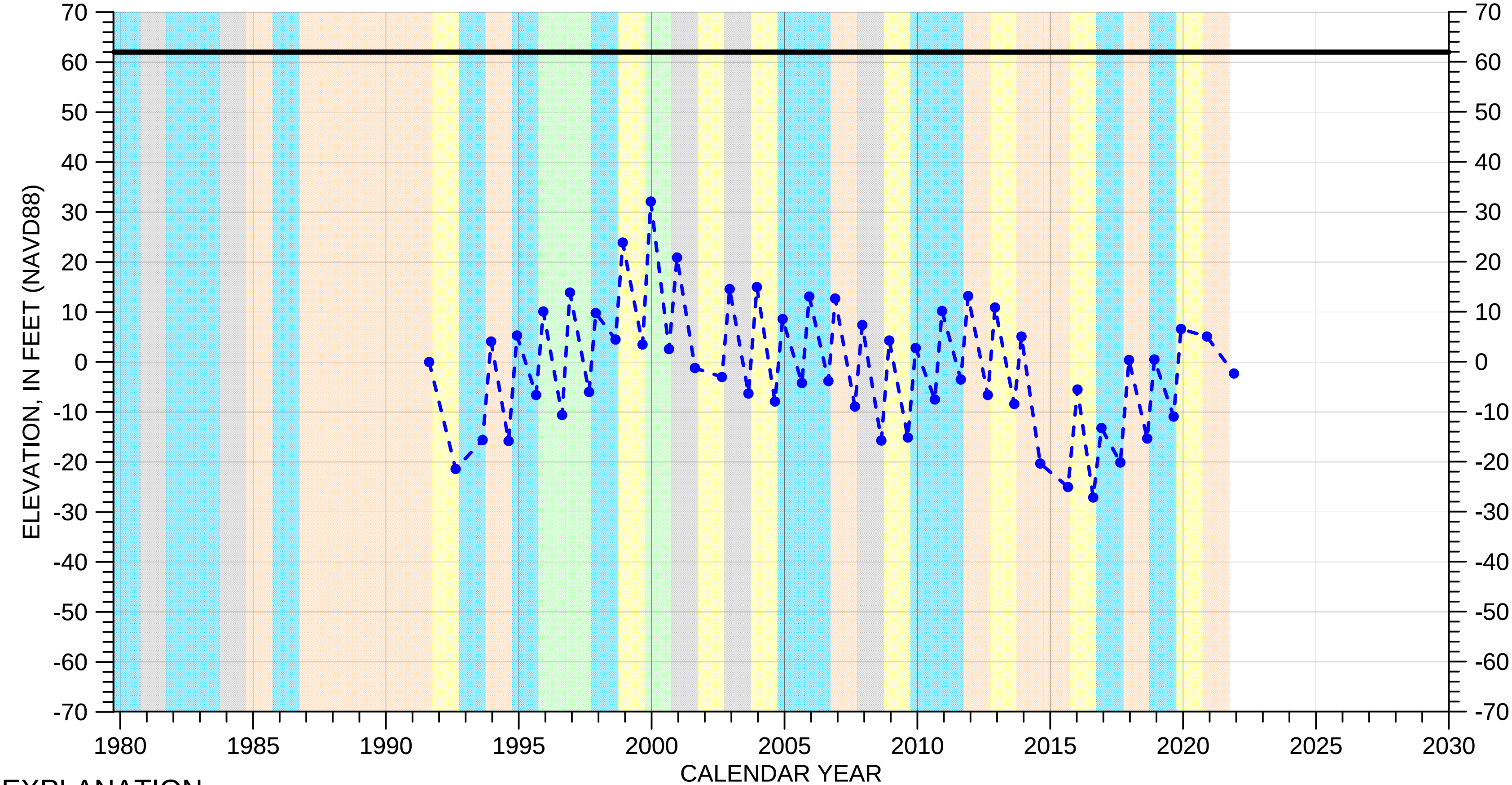
WATER YEAR TYPE DESIGNATION

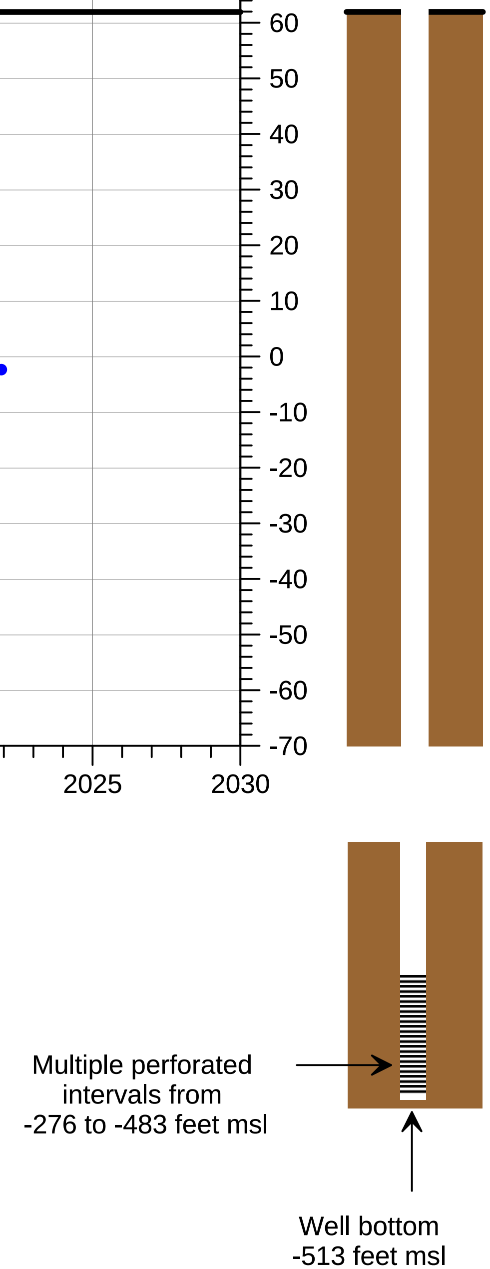
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-26A01

180/400-Foot Aquifer Subbasin



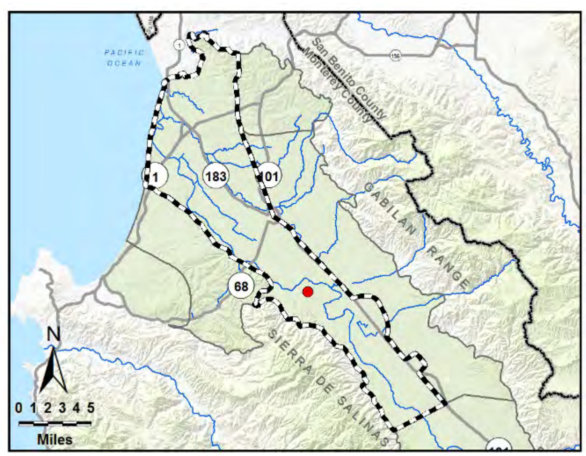


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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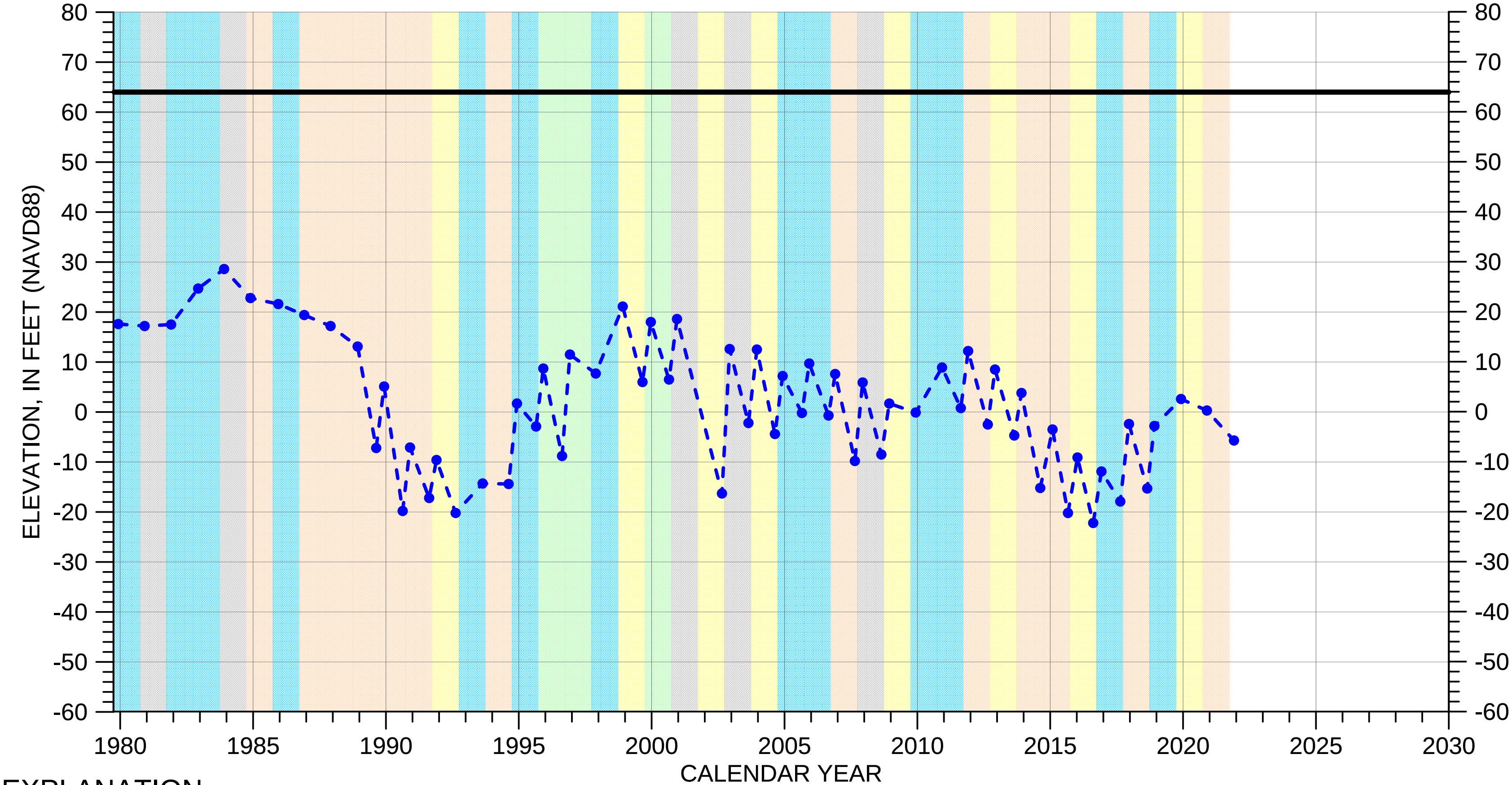
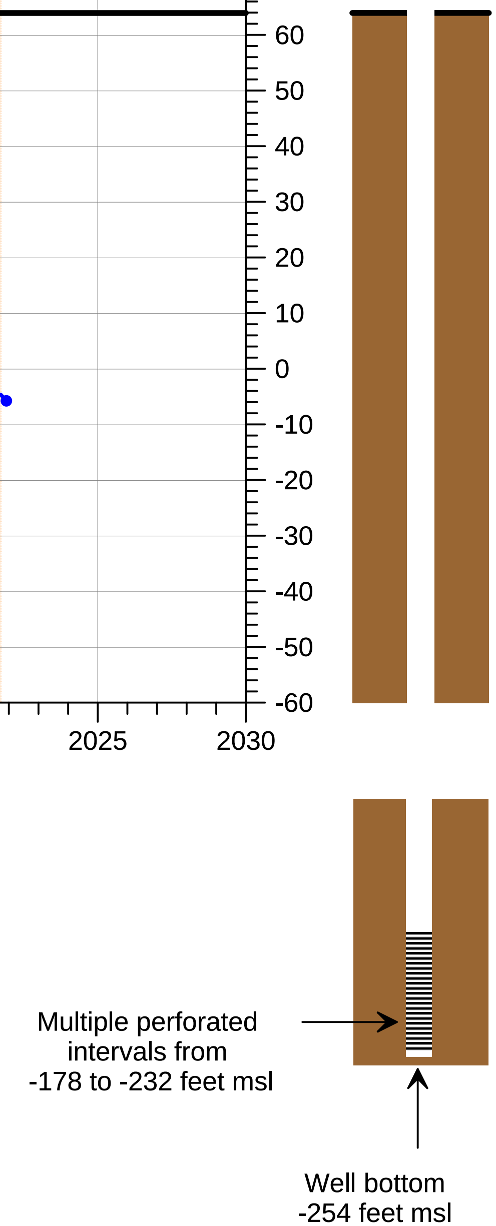
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-26F01

180/400-Foot Aquifer Subbasin



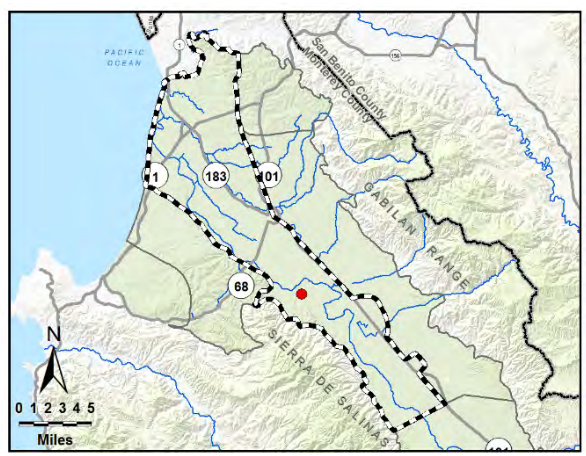


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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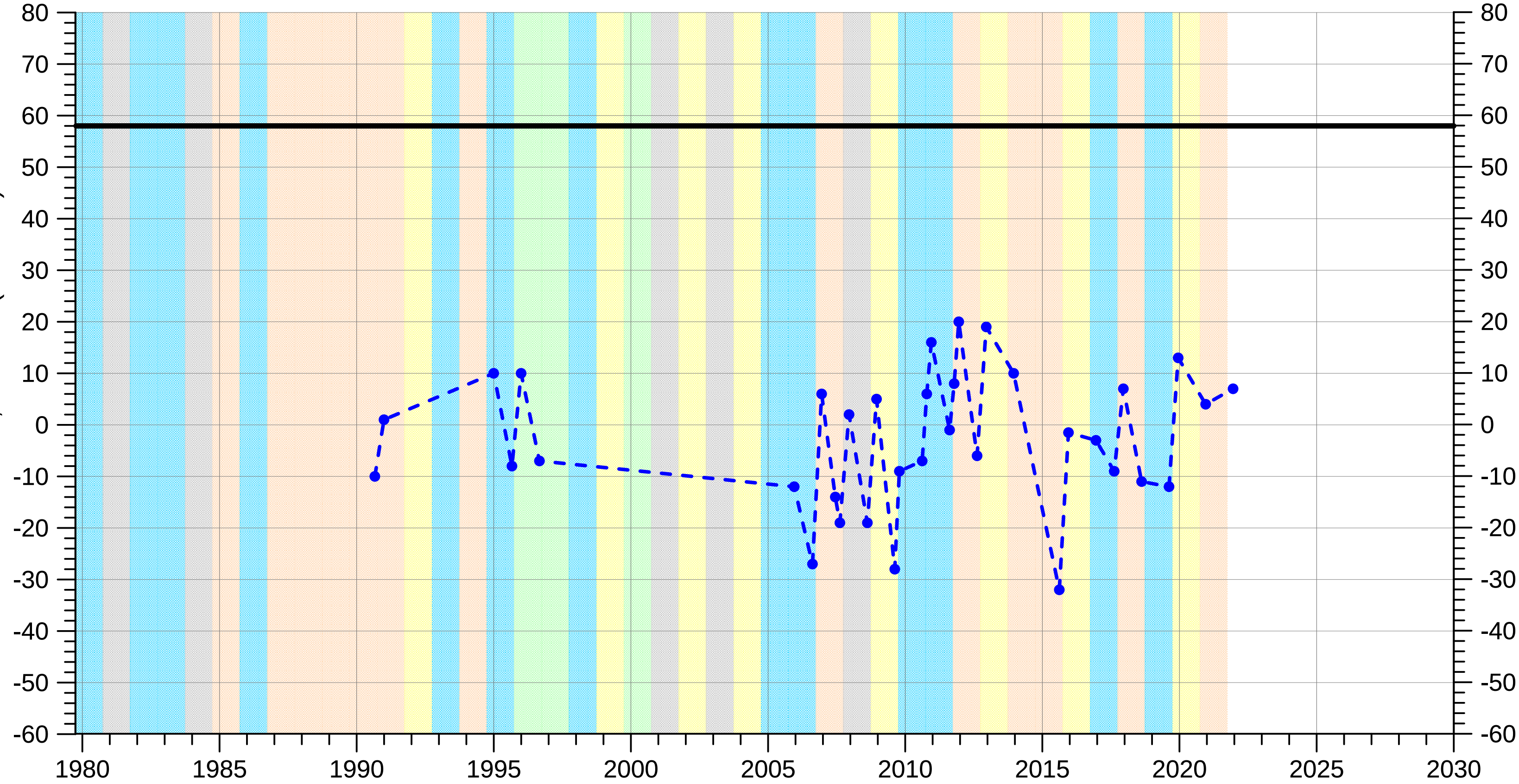
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/03E-28B02

180/400-Foot Aquifer Subbasin



EXPLANATION

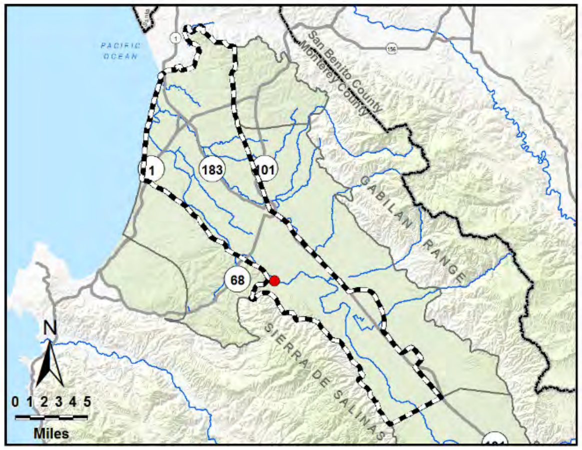
Groundwater Elevation

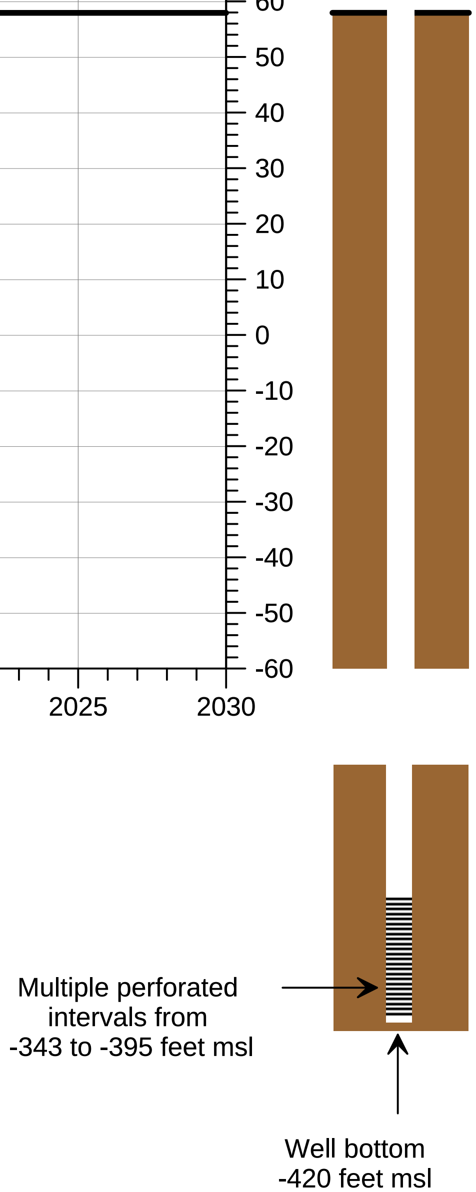
Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET





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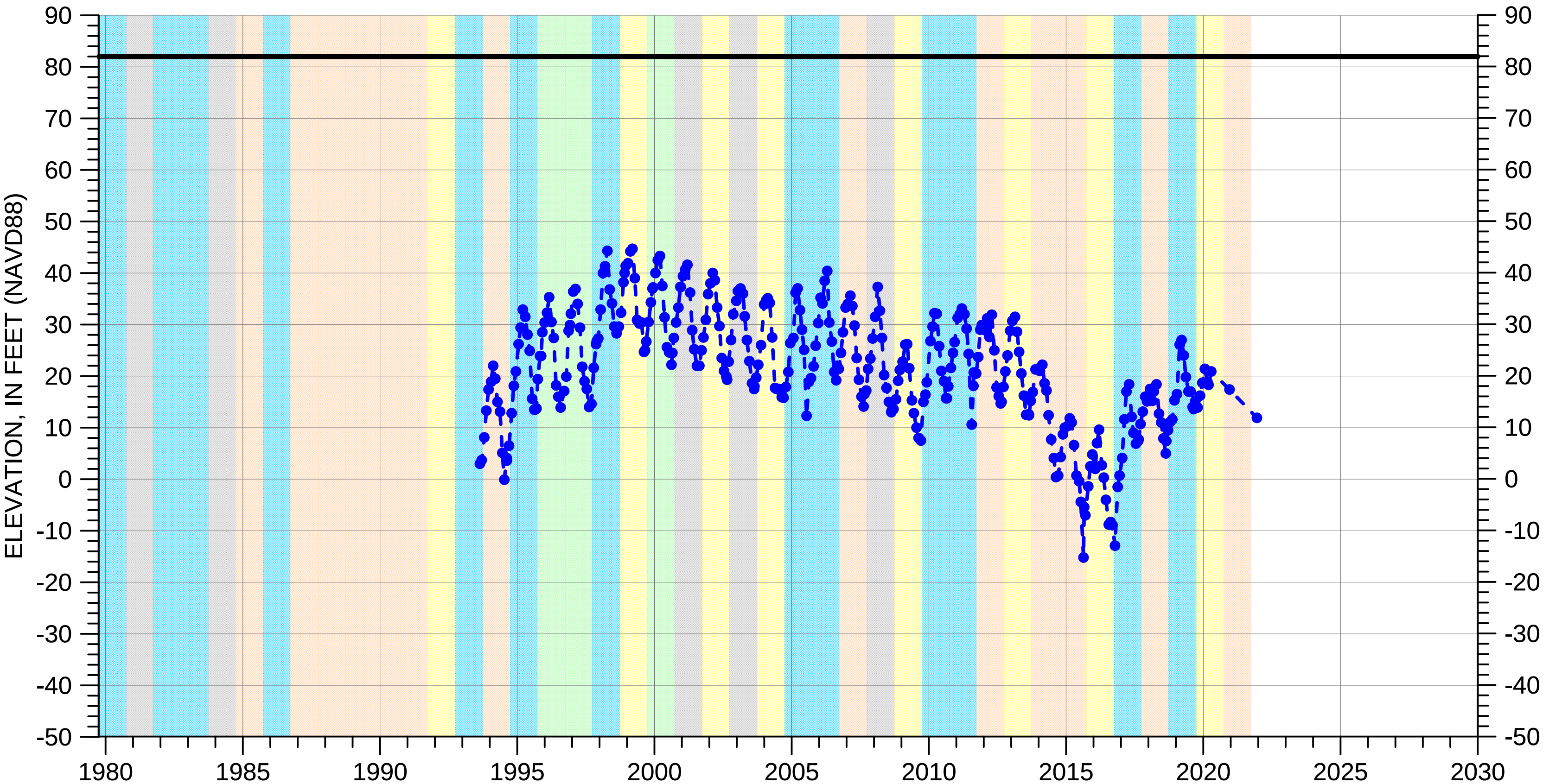
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/04E-29Q02

180/400-Foot Aquifer Subbasin

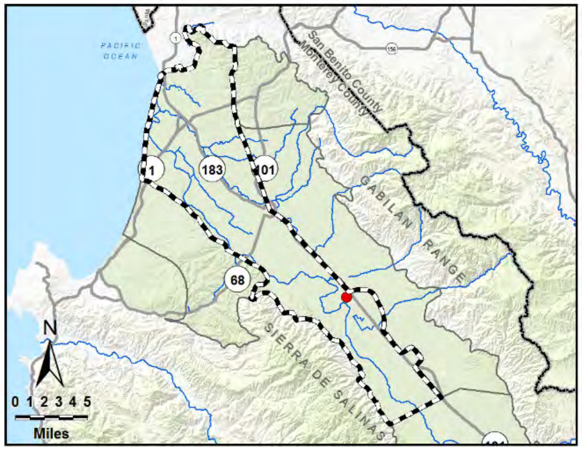


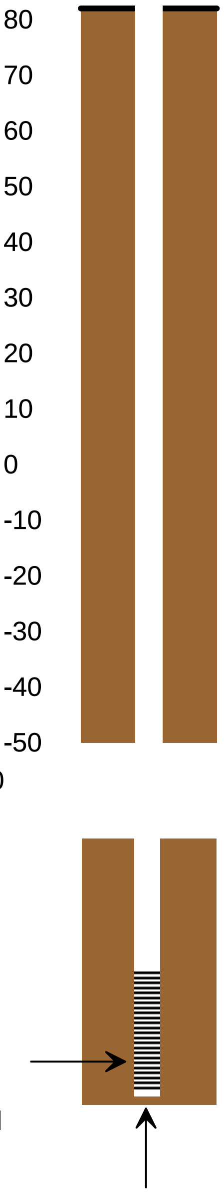
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET





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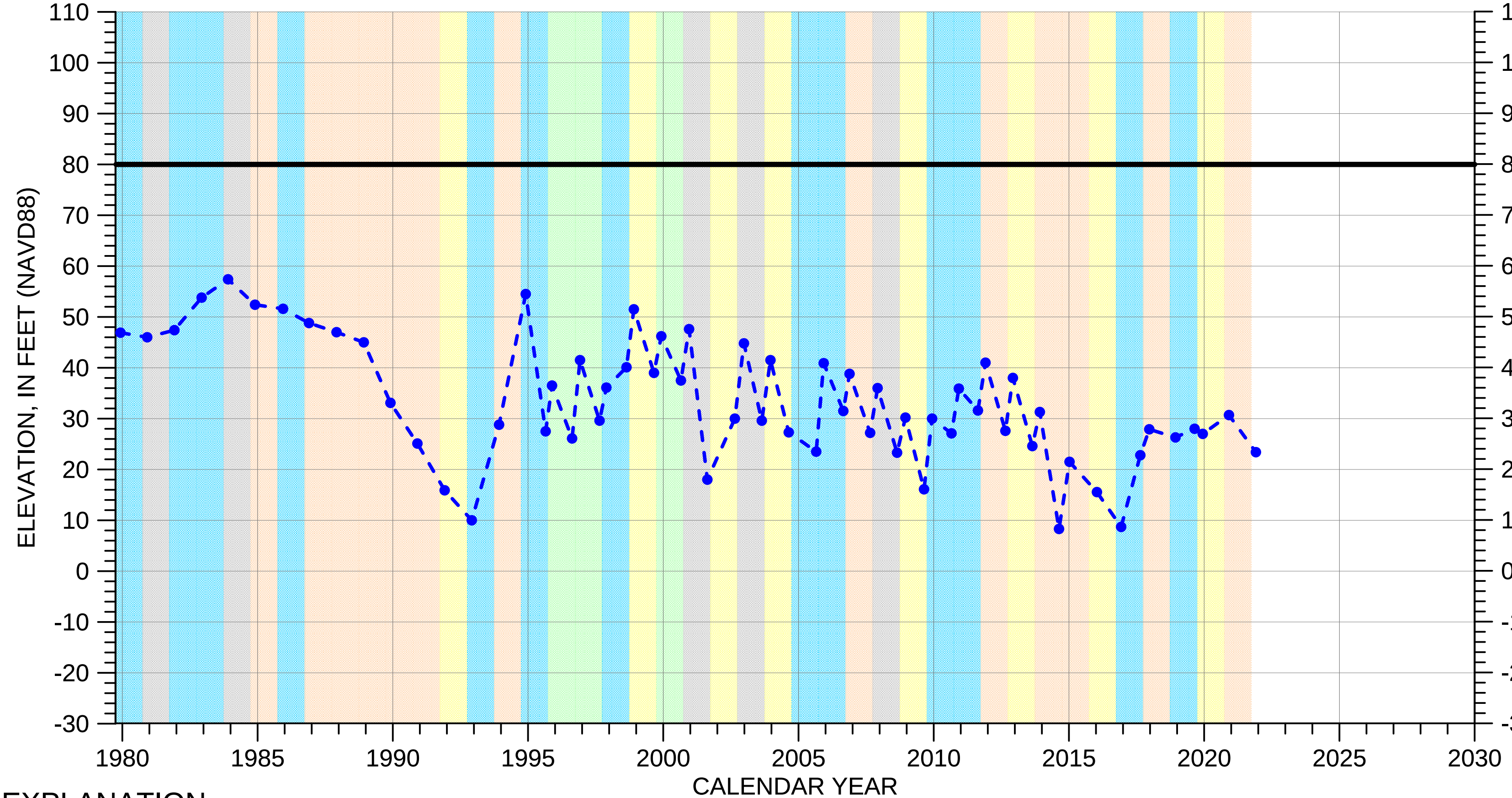
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 15S/04E-31A02

180/400-Foot Aquifer Subbasin



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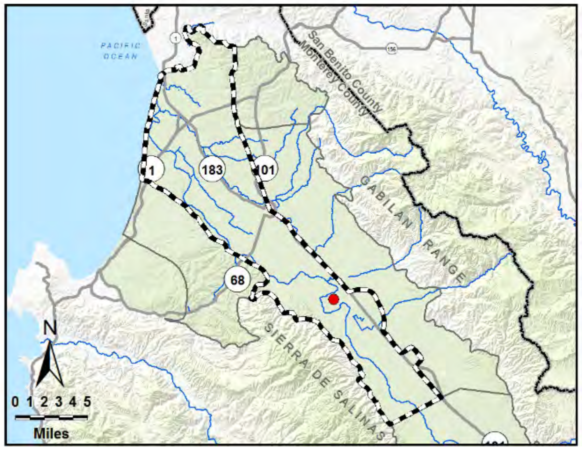
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

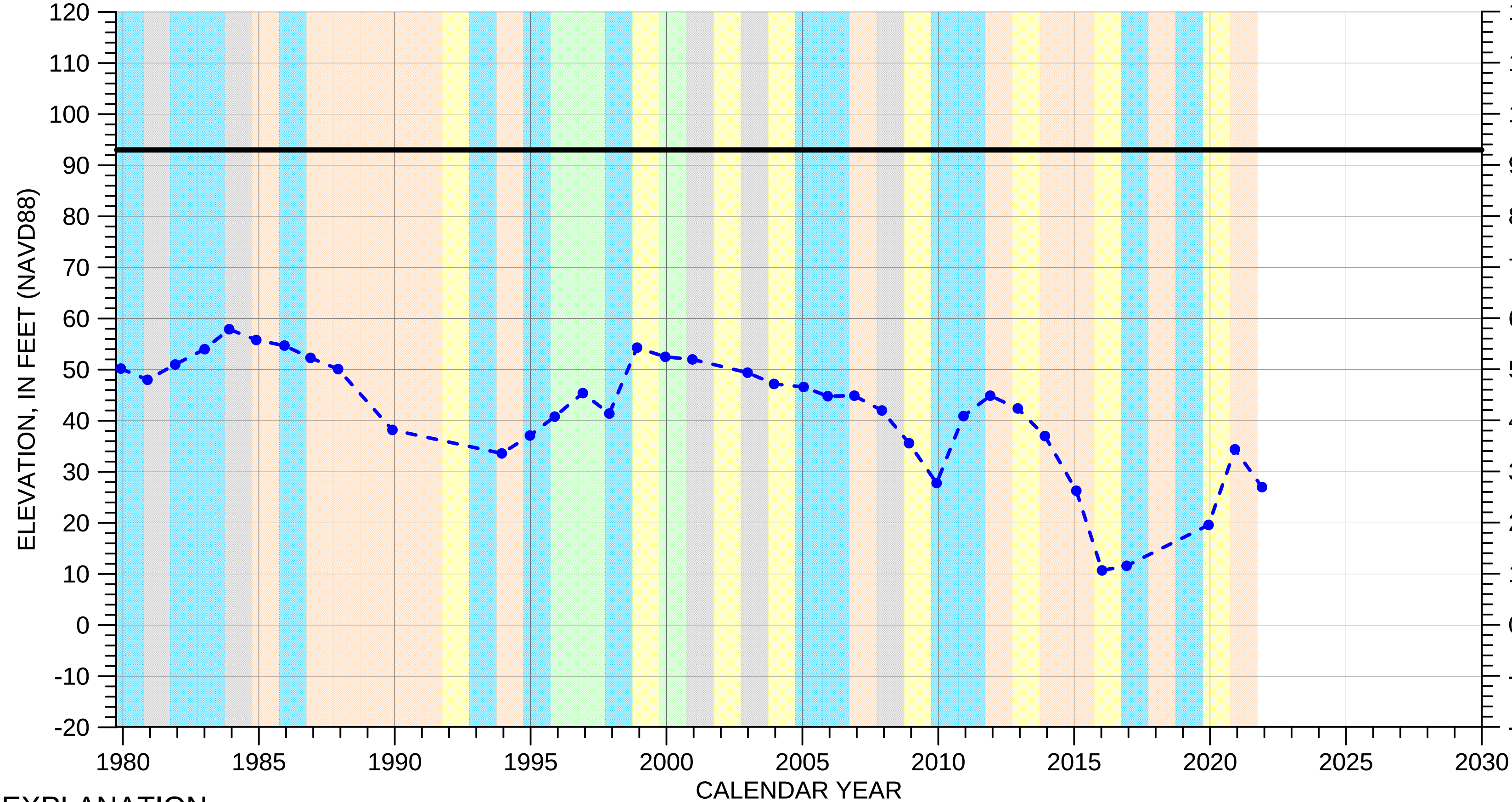


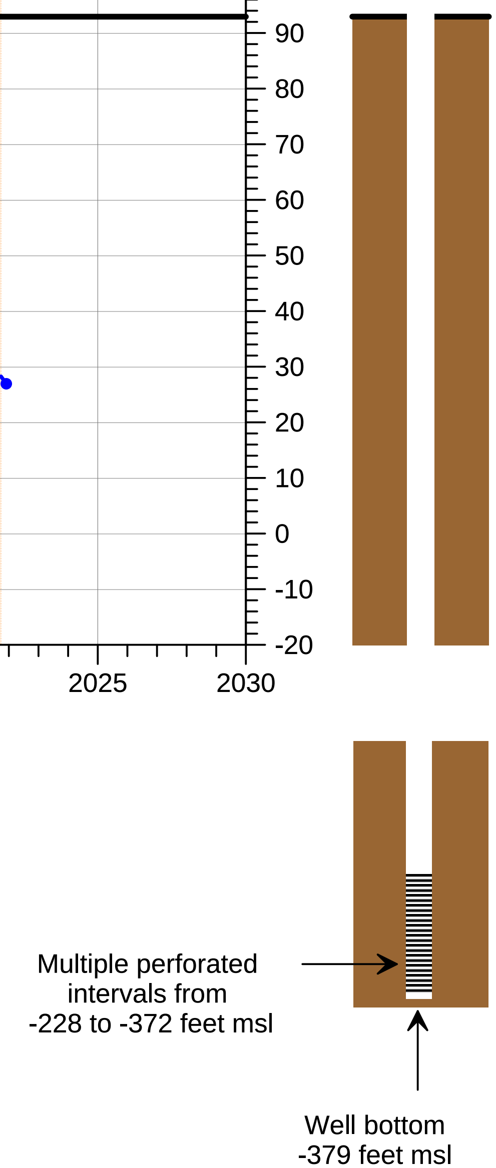
WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/04E-04C01

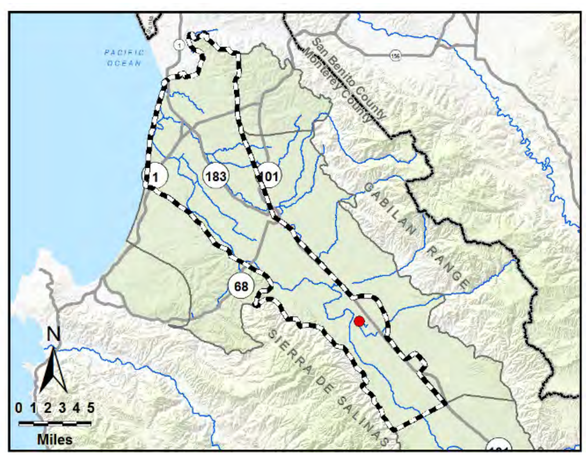
180/400-Foot Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



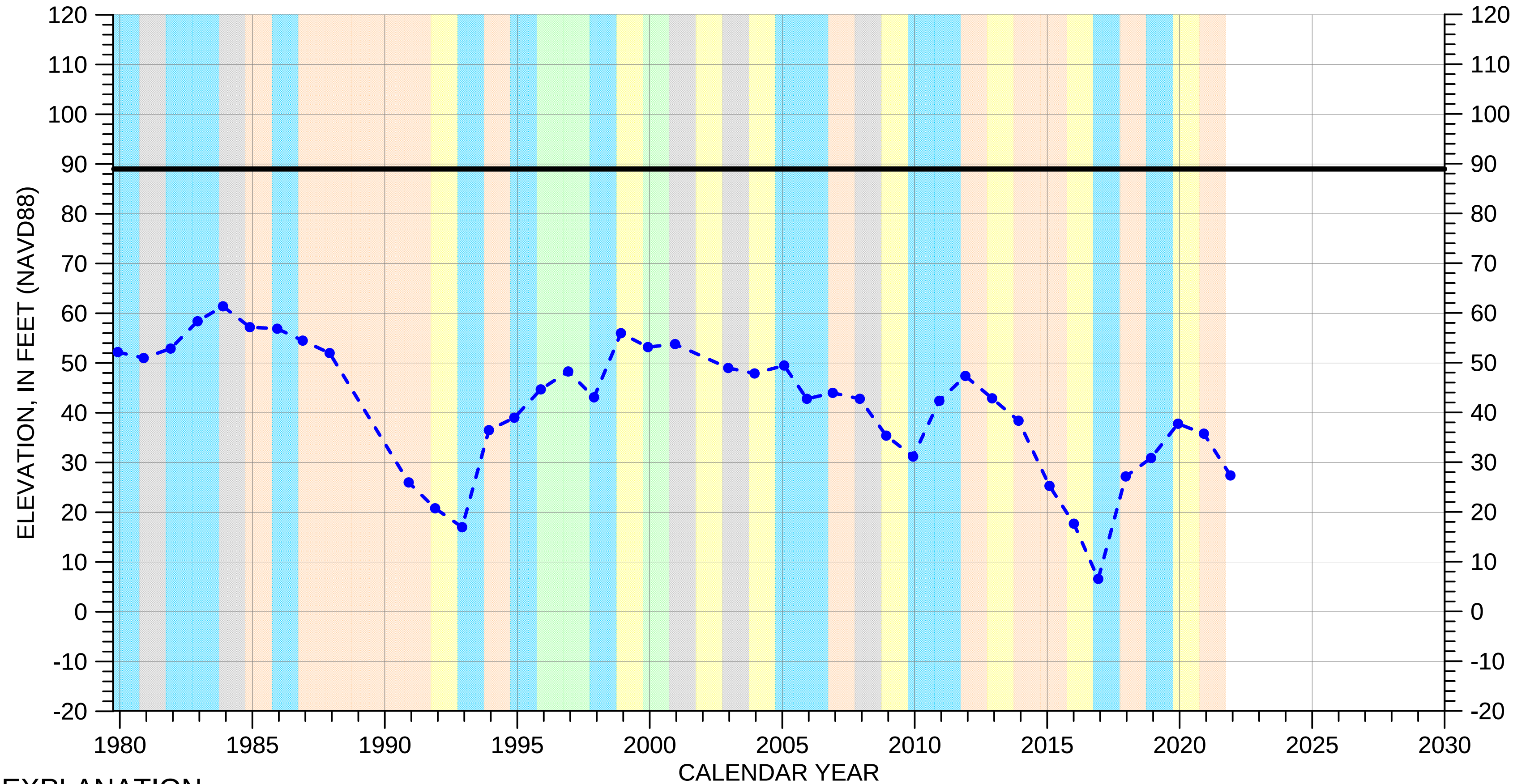
WATER YEAR TYPE DESIGNATION

DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEWGRFs_Ch5\16S_04E-04C01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/04E-05M02

180/400-Foot Aquifer Subbasin

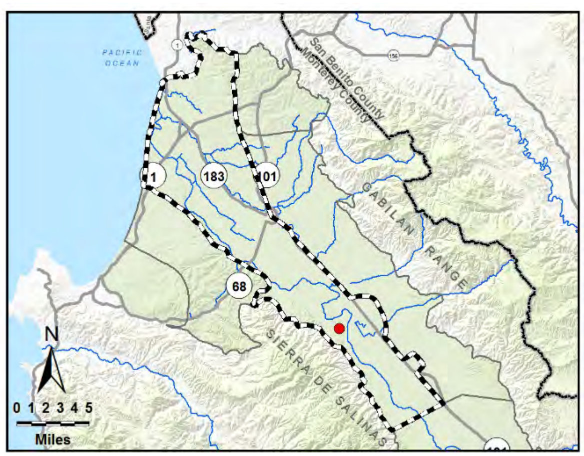


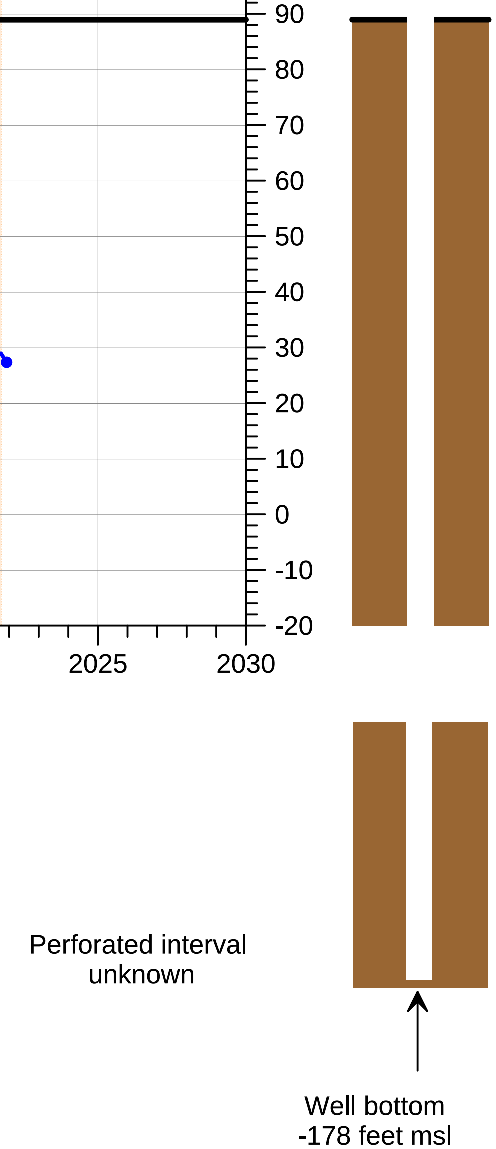
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET





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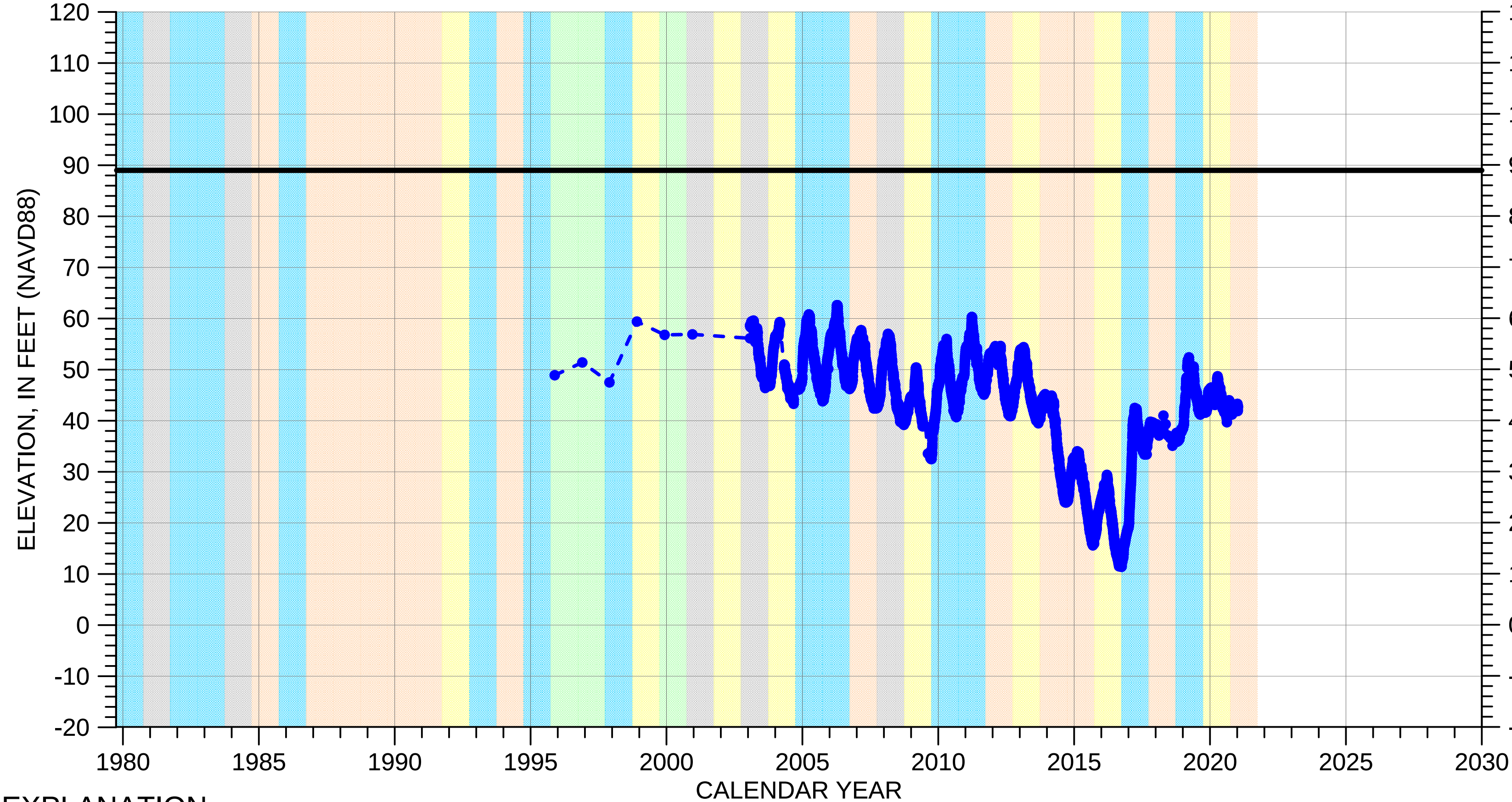
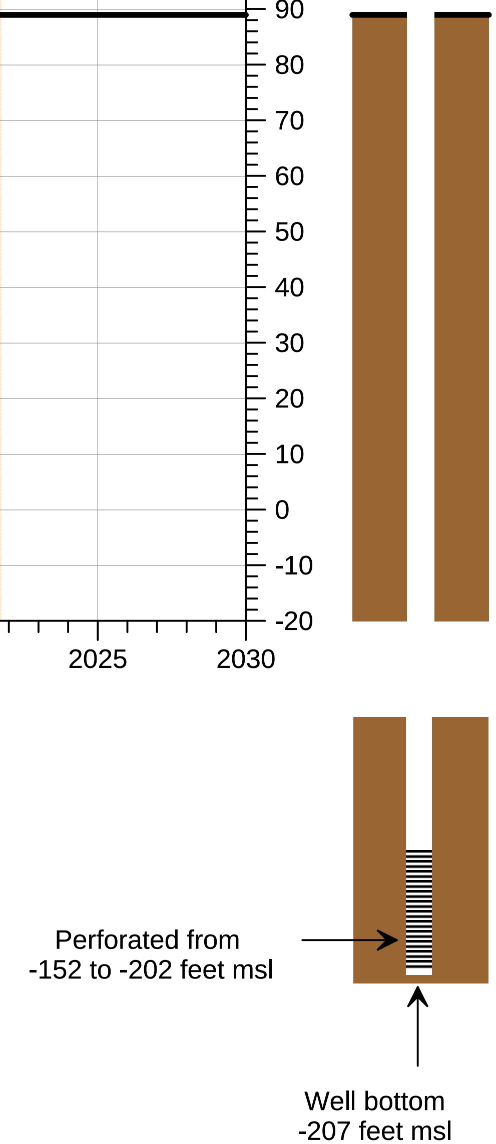
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/04E-08H03

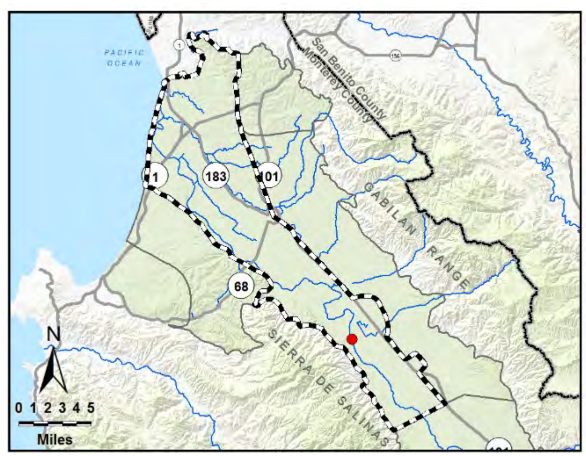
180/400-Foot Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



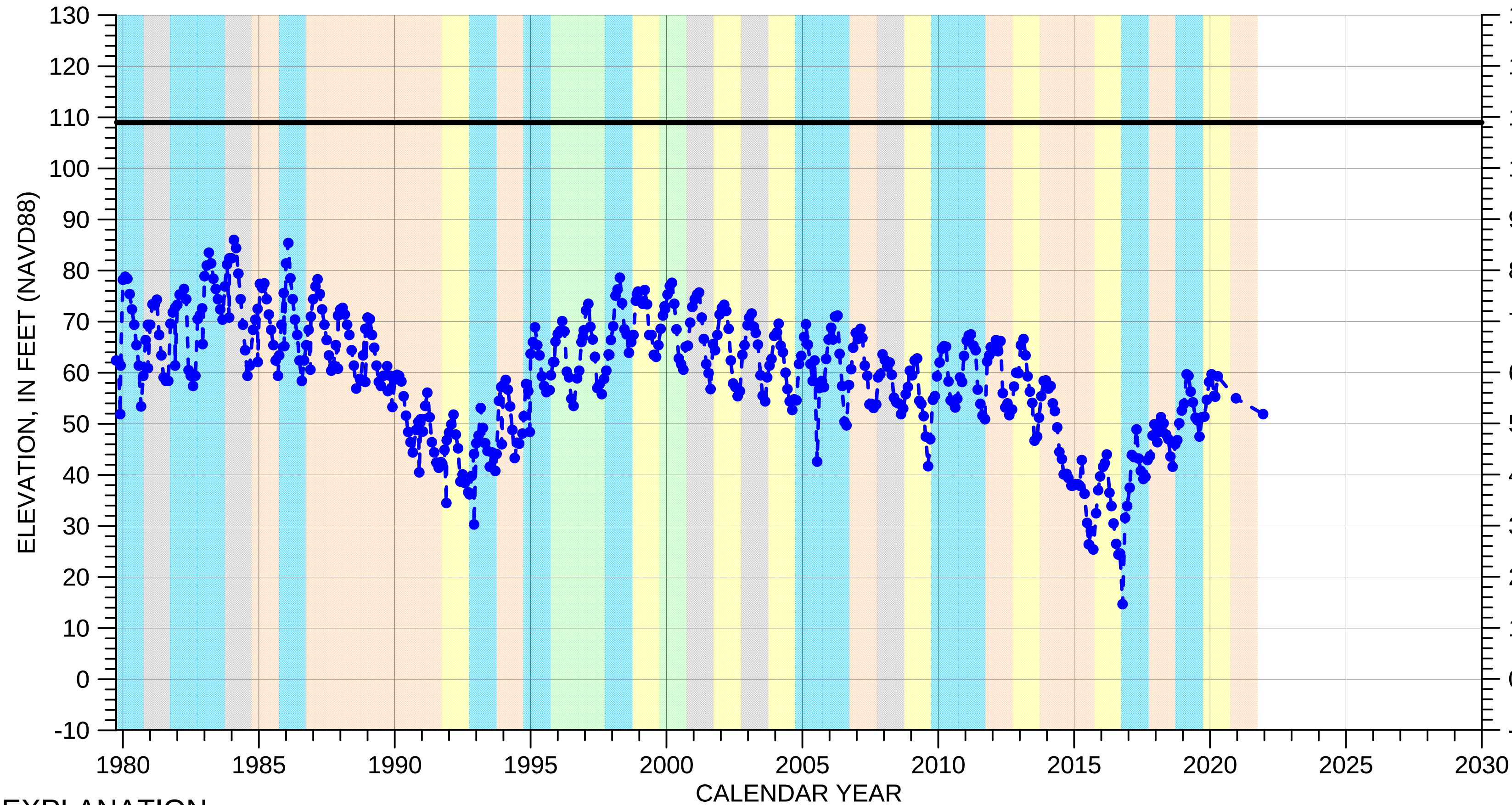
WATER YEAR TYPE DESIGNATION

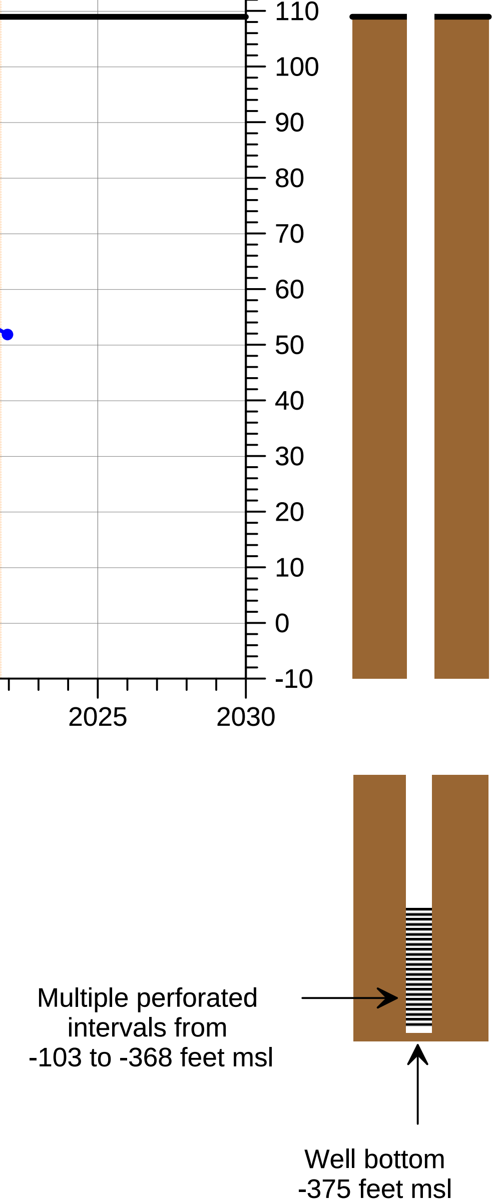
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\16S_04E-08H03.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/04E-10R02

180/400-Foot Aquifer Subbasin



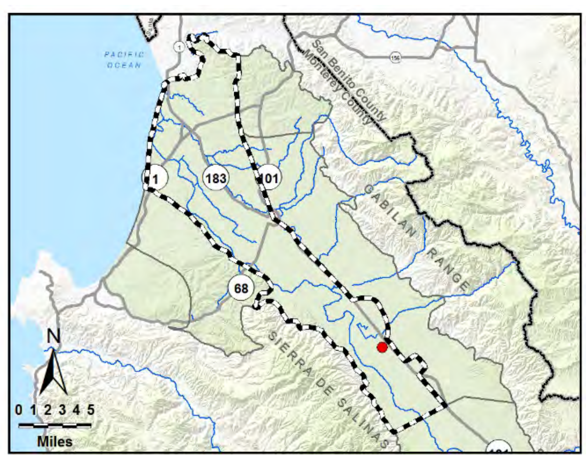


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

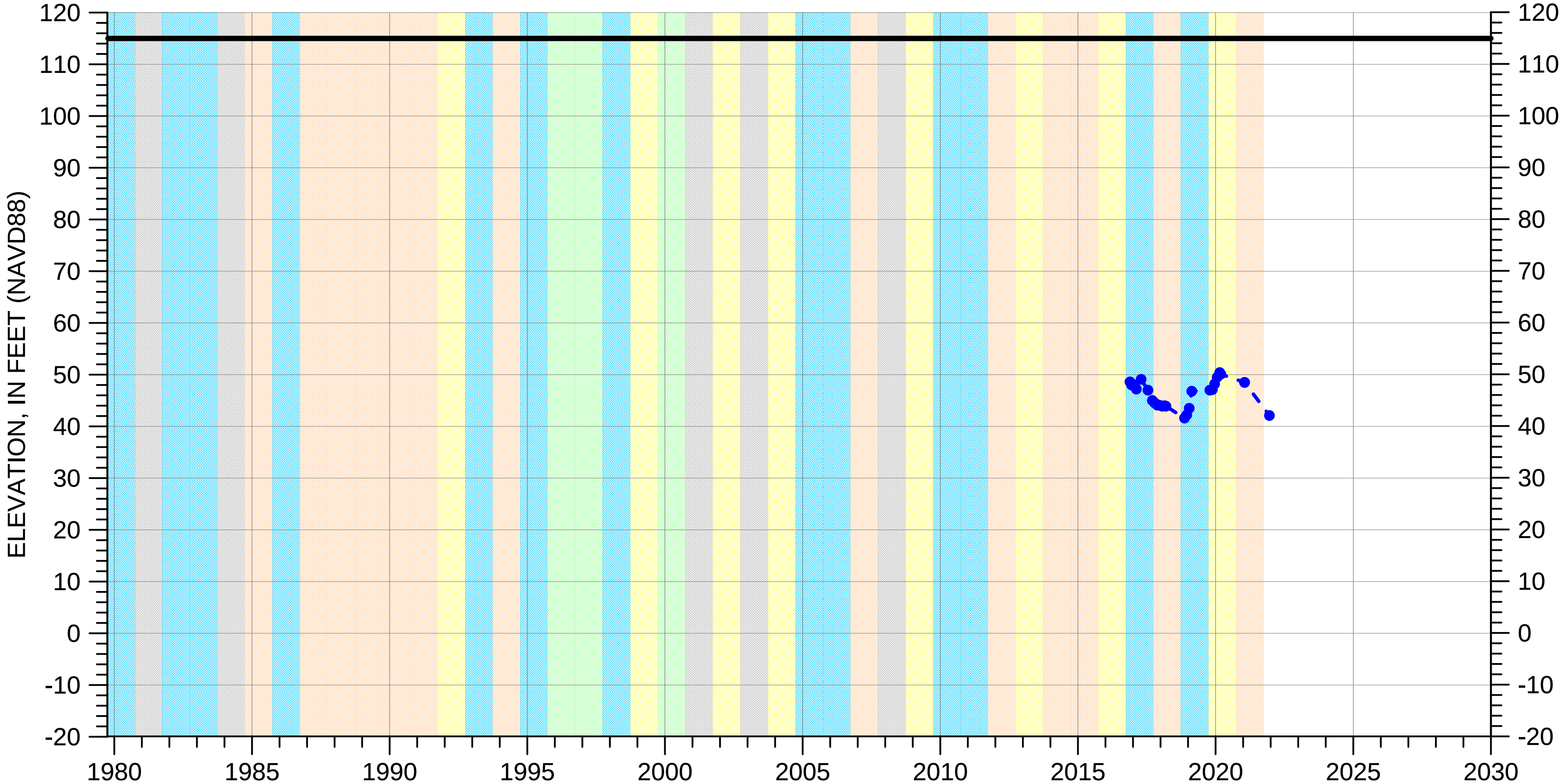
WATER YEAR TYPE DESIGNATION

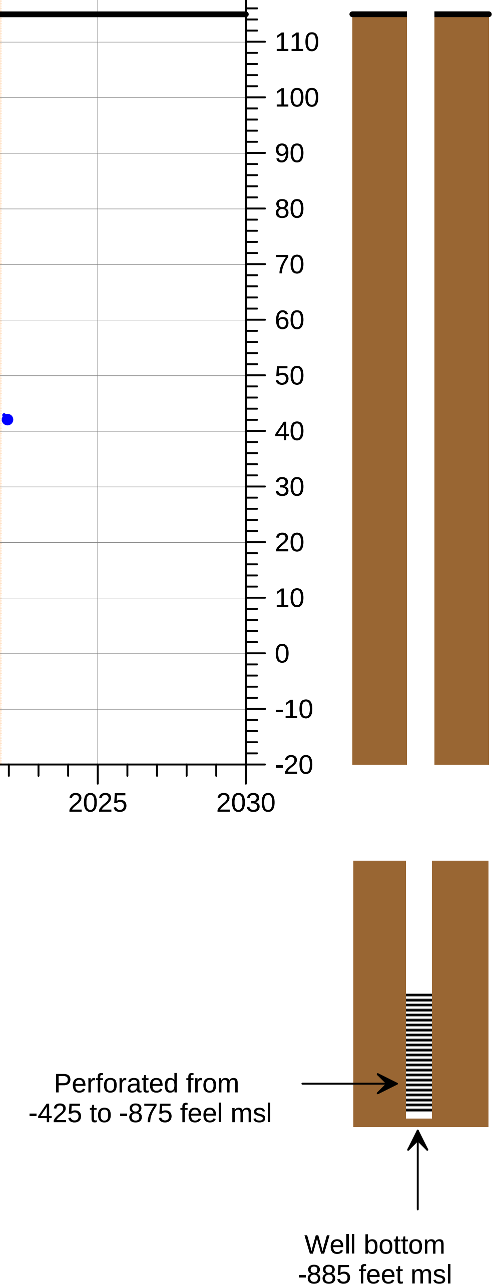
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/04E-11D51

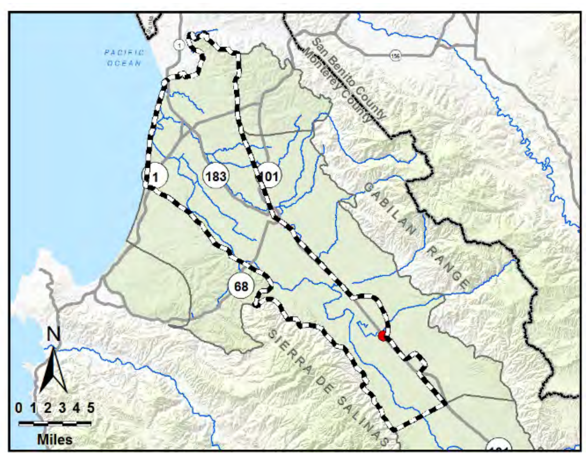
180/400-Foot Aquifer Subbasin





EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



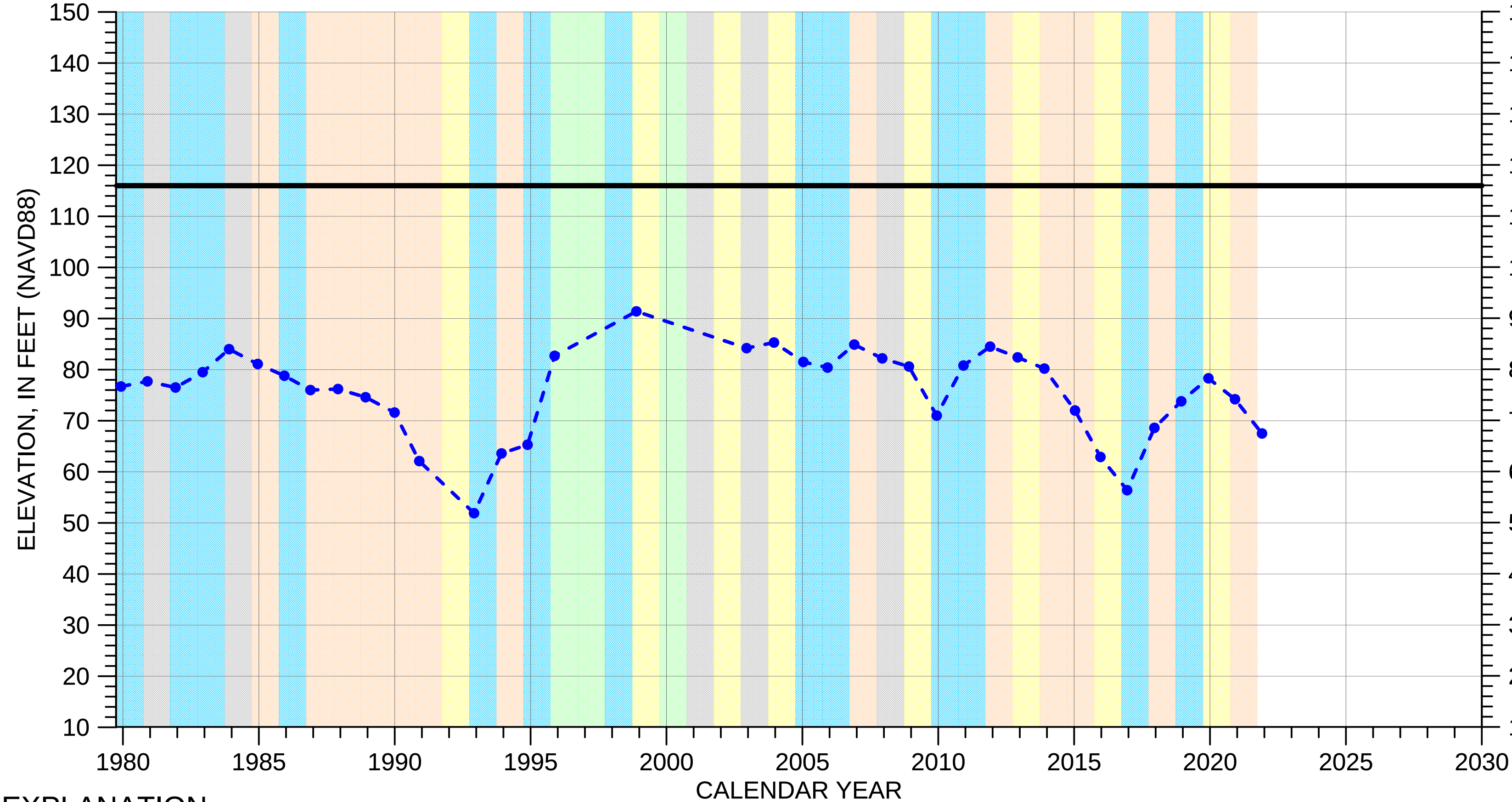
WATER YEAR TYPE DESIGNATION

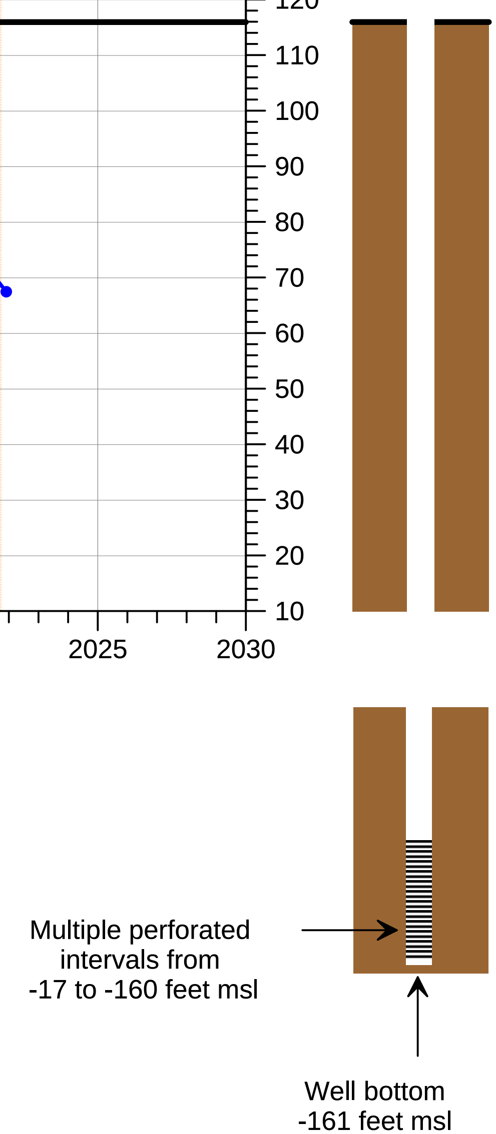
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\16S_04E-11D51.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/04E-13R02

180/400-Foot Aquifer Subbasin



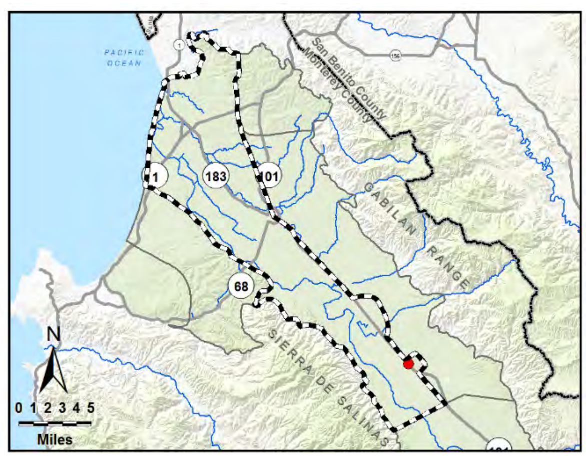


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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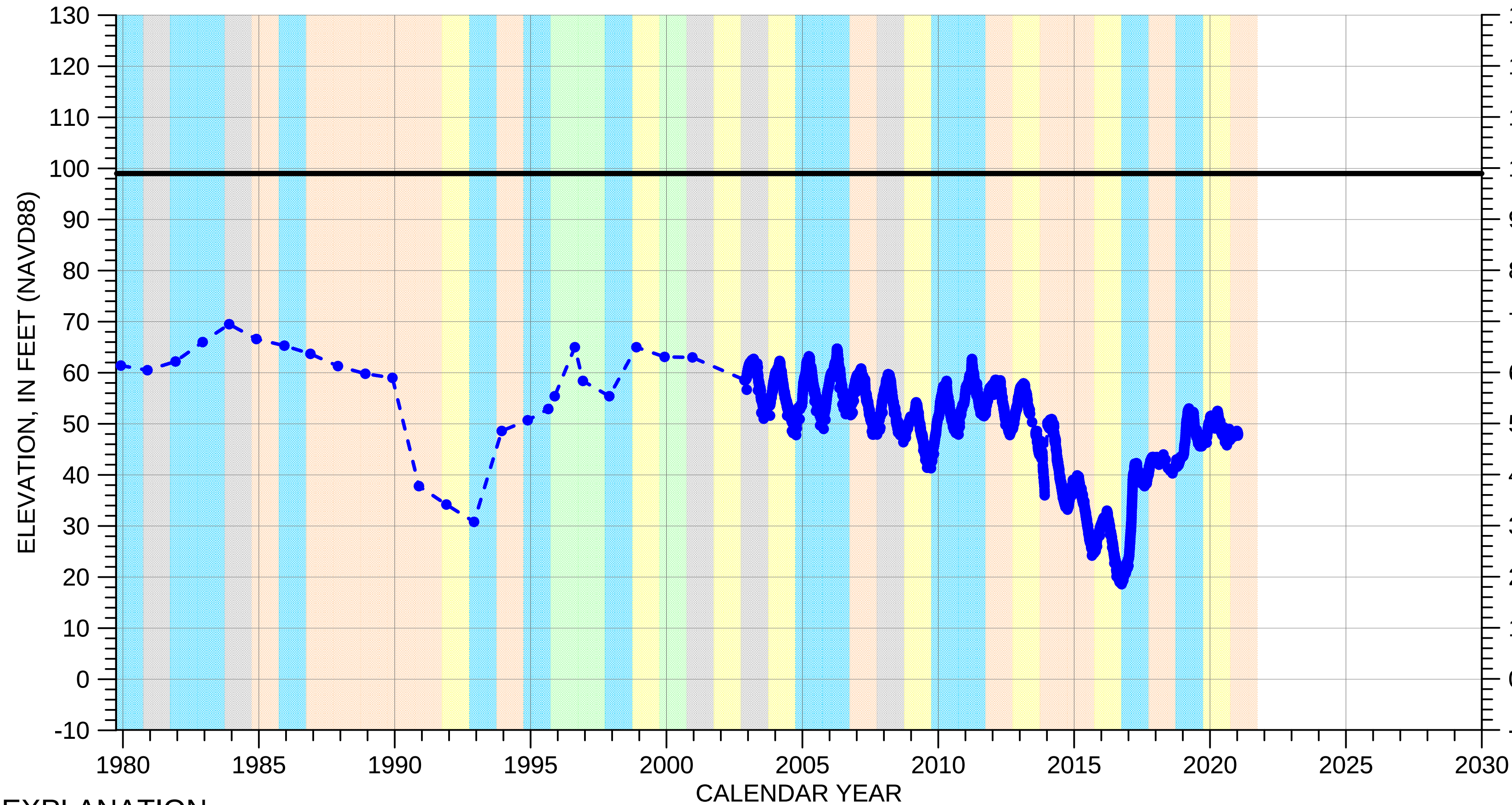
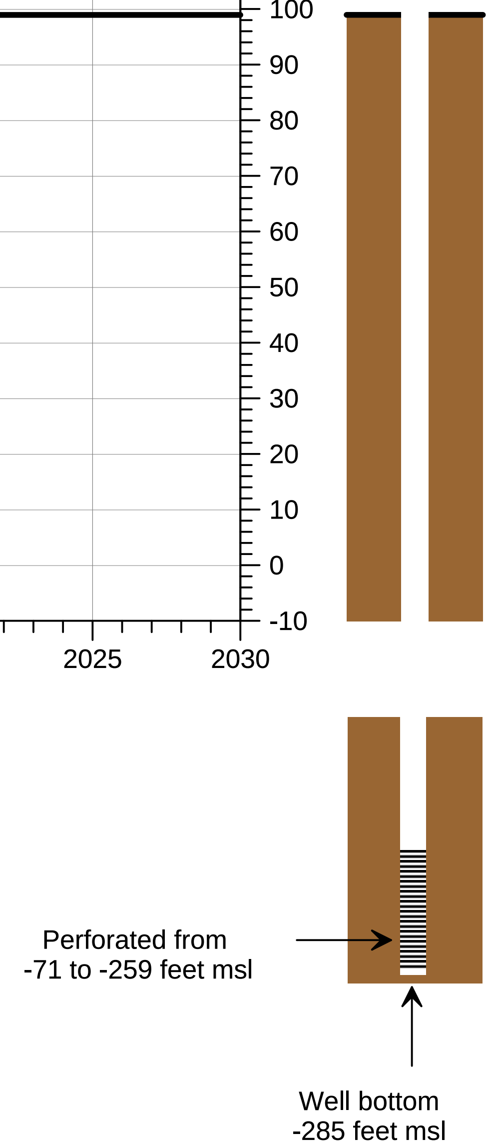
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/04E-15D01

180/400-Foot Aquifer Subbasin



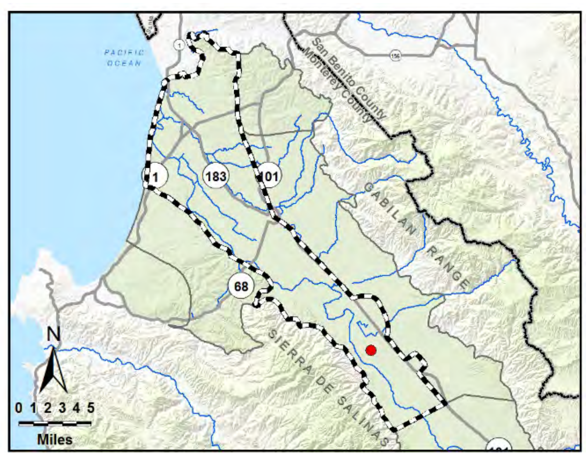


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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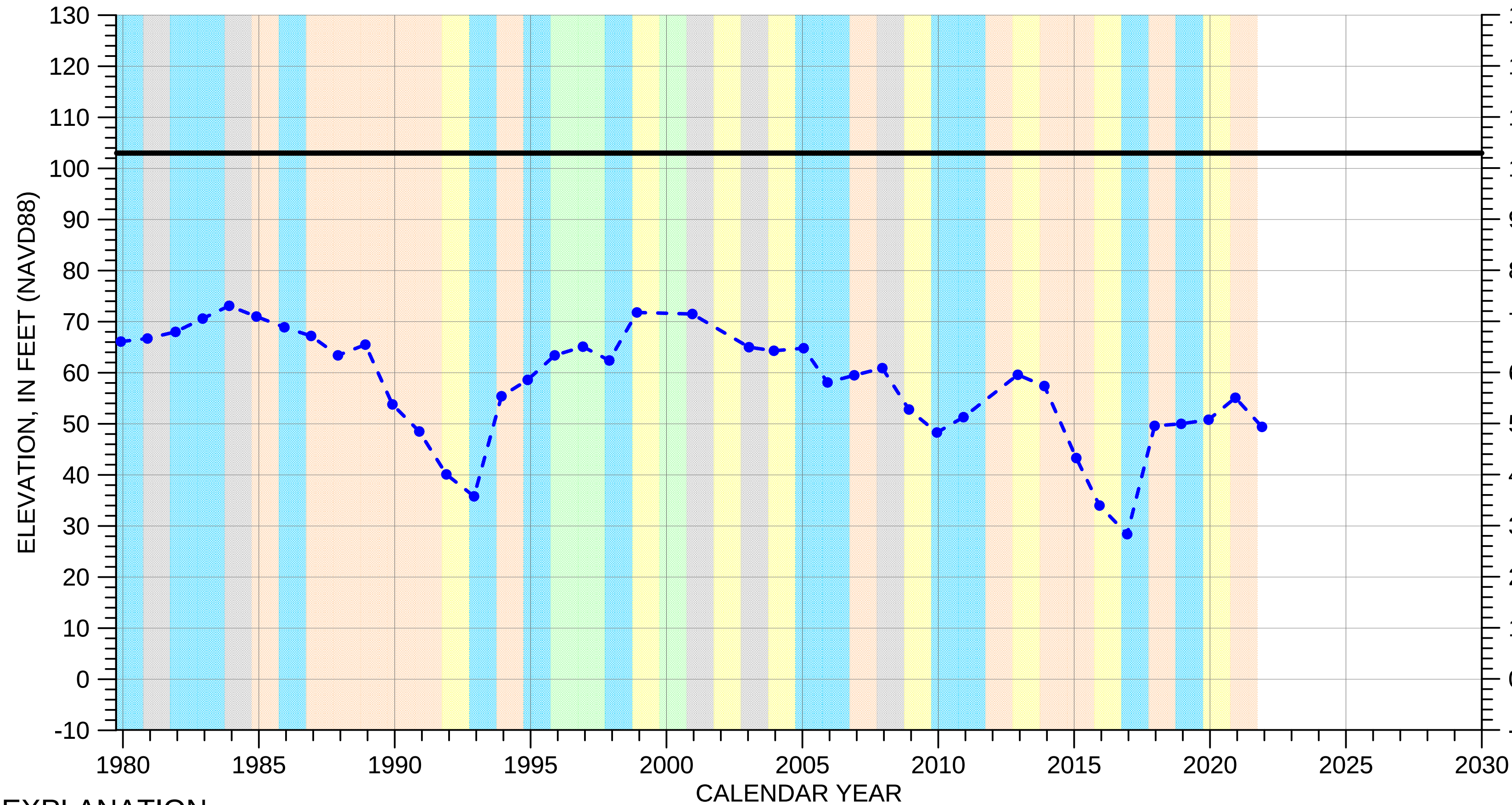
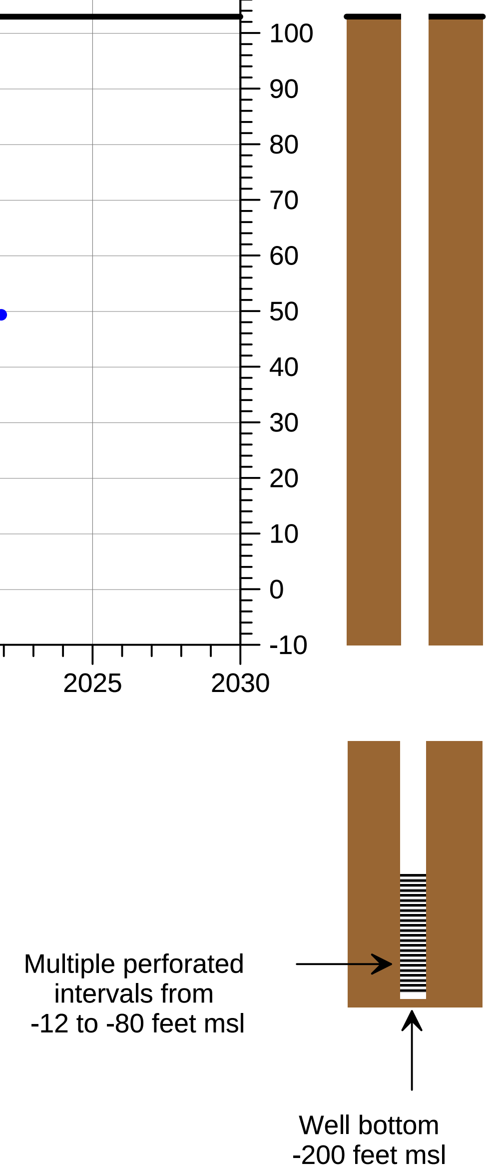
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/04E-15R02

180/400-Foot Aquifer Subbasin



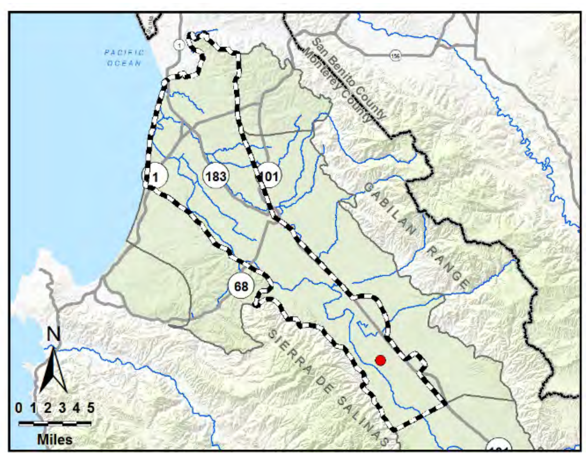


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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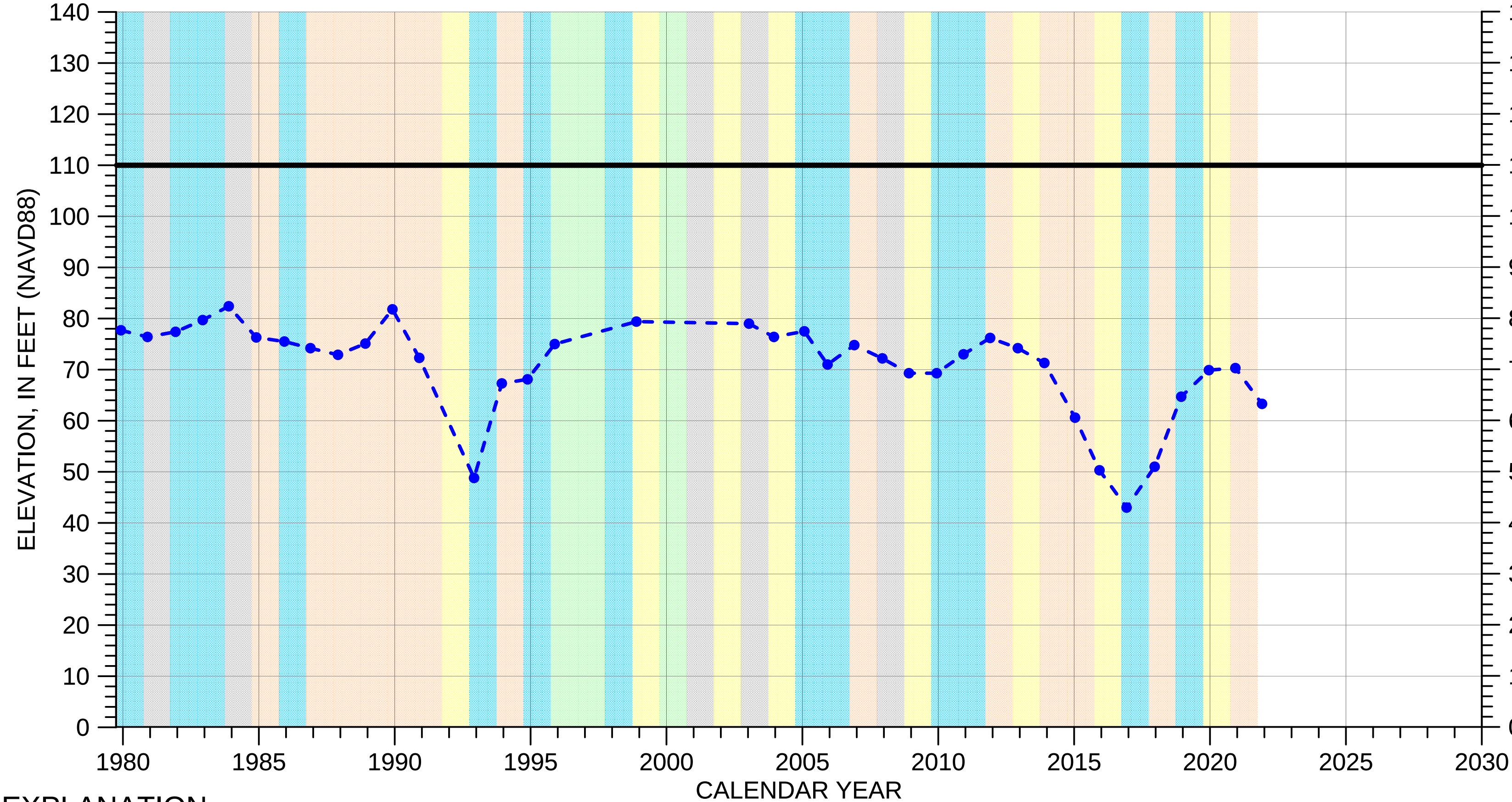
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/04E-25G01

180/400-Foot Aquifer Subbasin



EXPLANATION

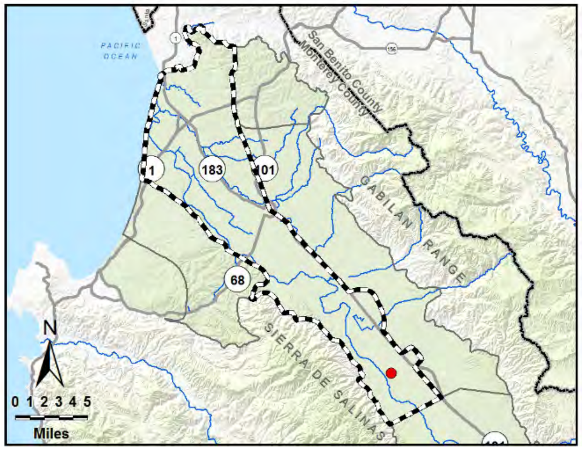
Groundwater Elevation

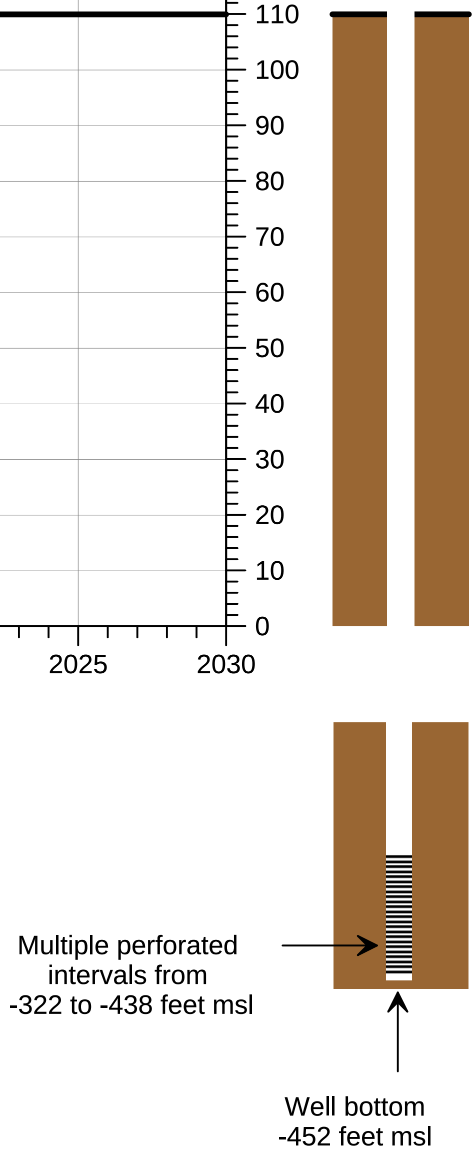
Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

DRY
DRY - NORMAL
NORMAL
WET - NORMAL
WET





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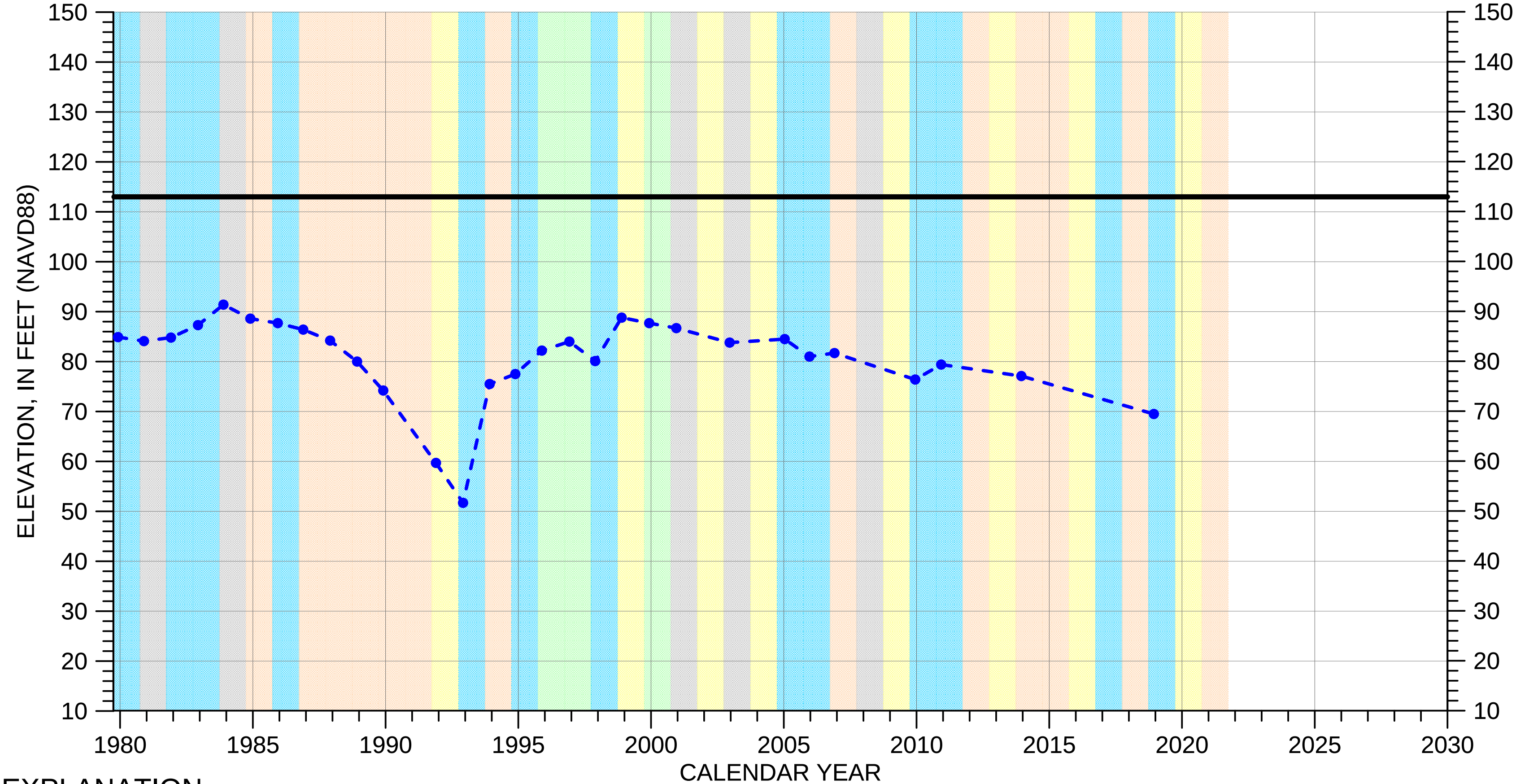
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/04E-27B02

180/400-Foot Aquifer Subbasin



EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface

Perforated interval unknown

Well bottom
-192 feet msl

WATER YEAR TYPE DESIGNATION

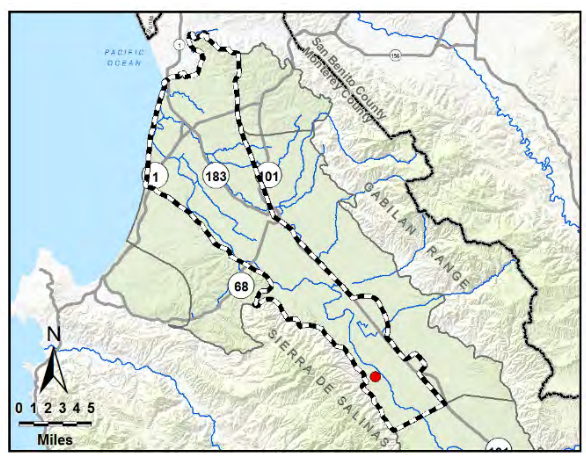
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET



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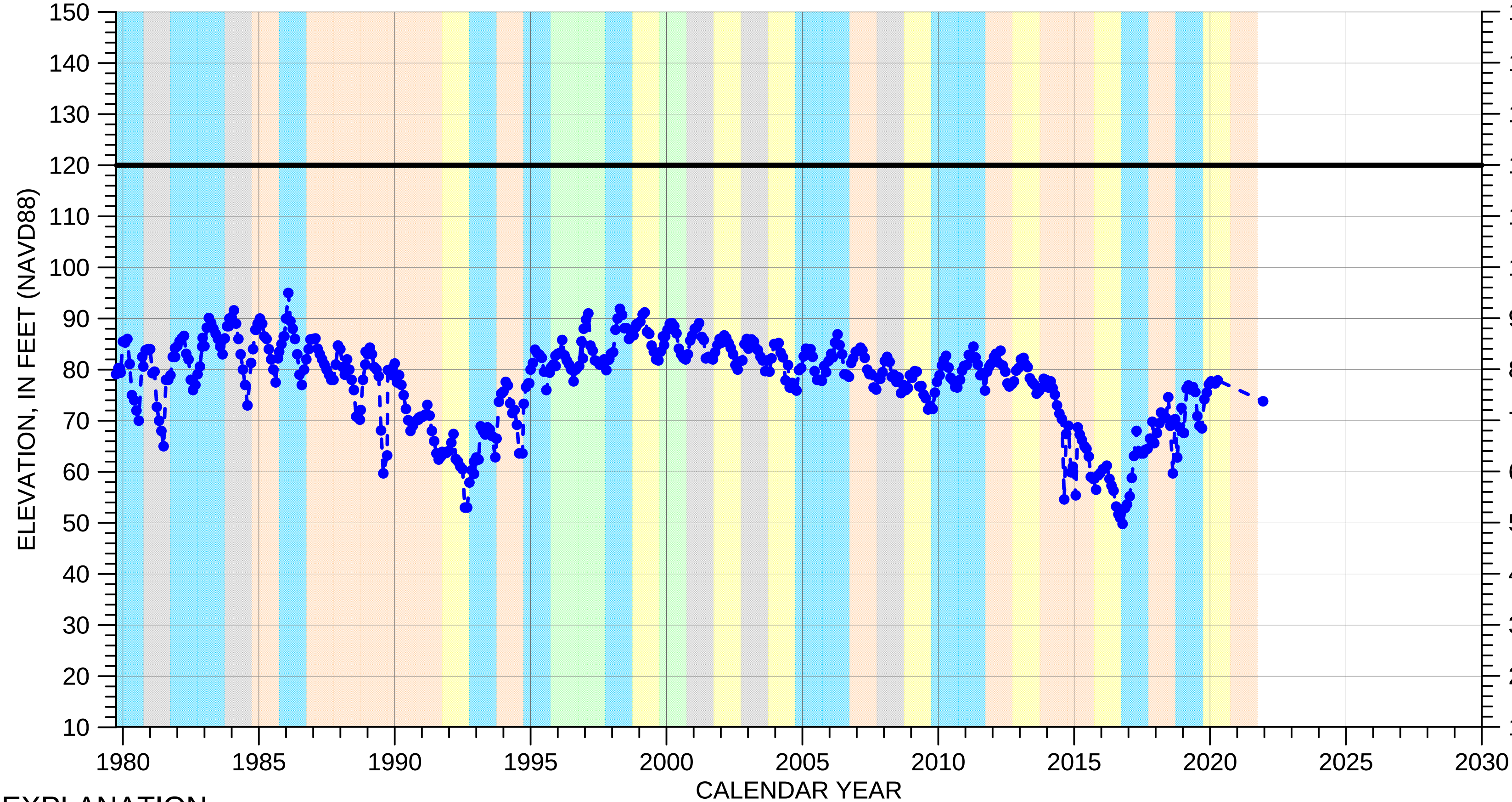
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/05E-30E01

180/400-Foot Aquifer Subbasin



EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface

WATER YEAR TYPE DESIGNATION

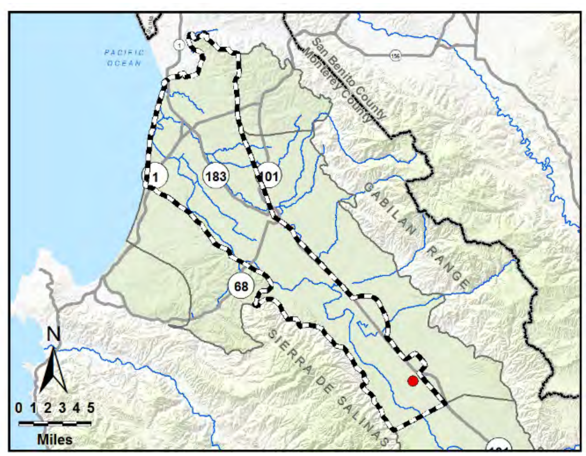
DRY

DRY - NORMAL

NORMAL

WET - NORMAL

WET



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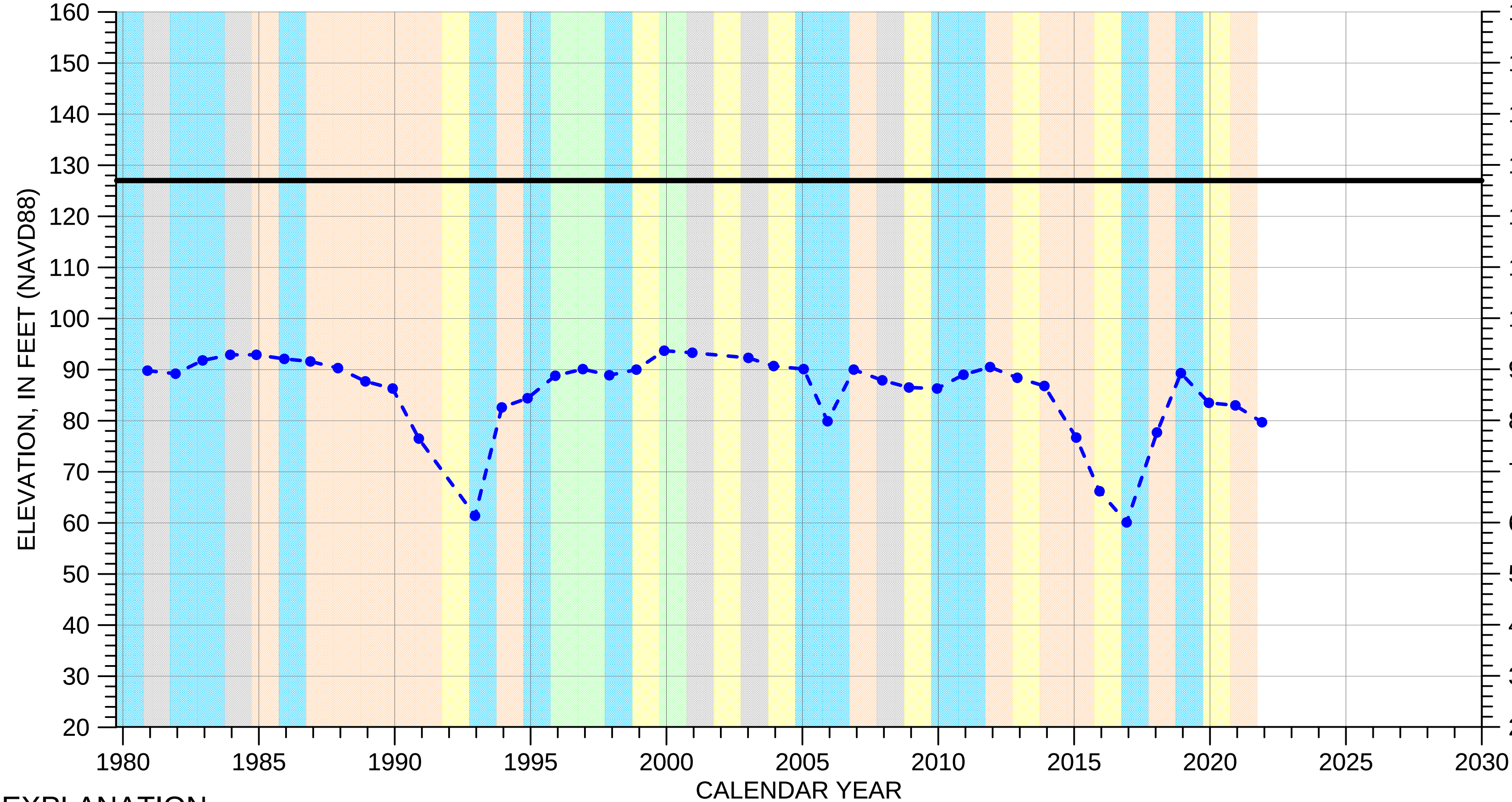
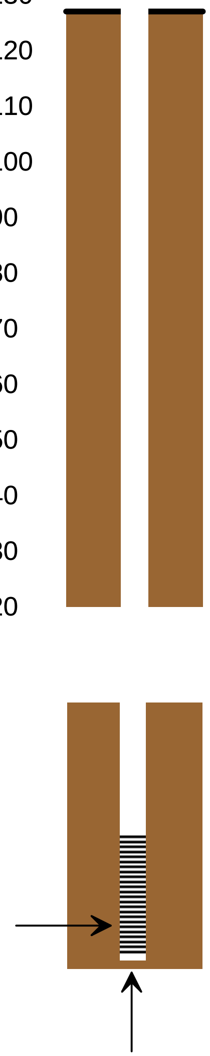
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/05E-30J02

180/400-Foot Aquifer Subbasin



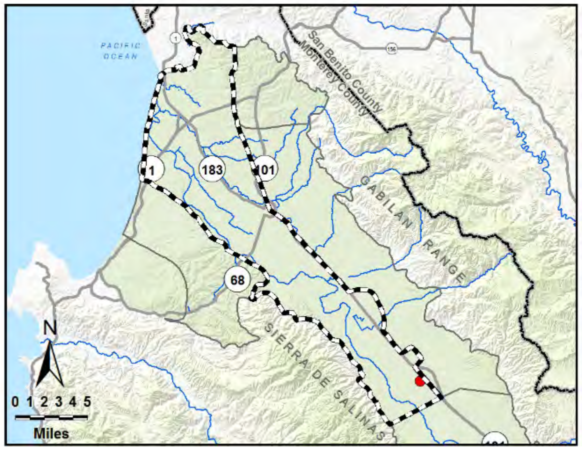


EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface



WATER YEAR TYPE DESIGNATION

DRY

DRY - NORMAL

NORMAL

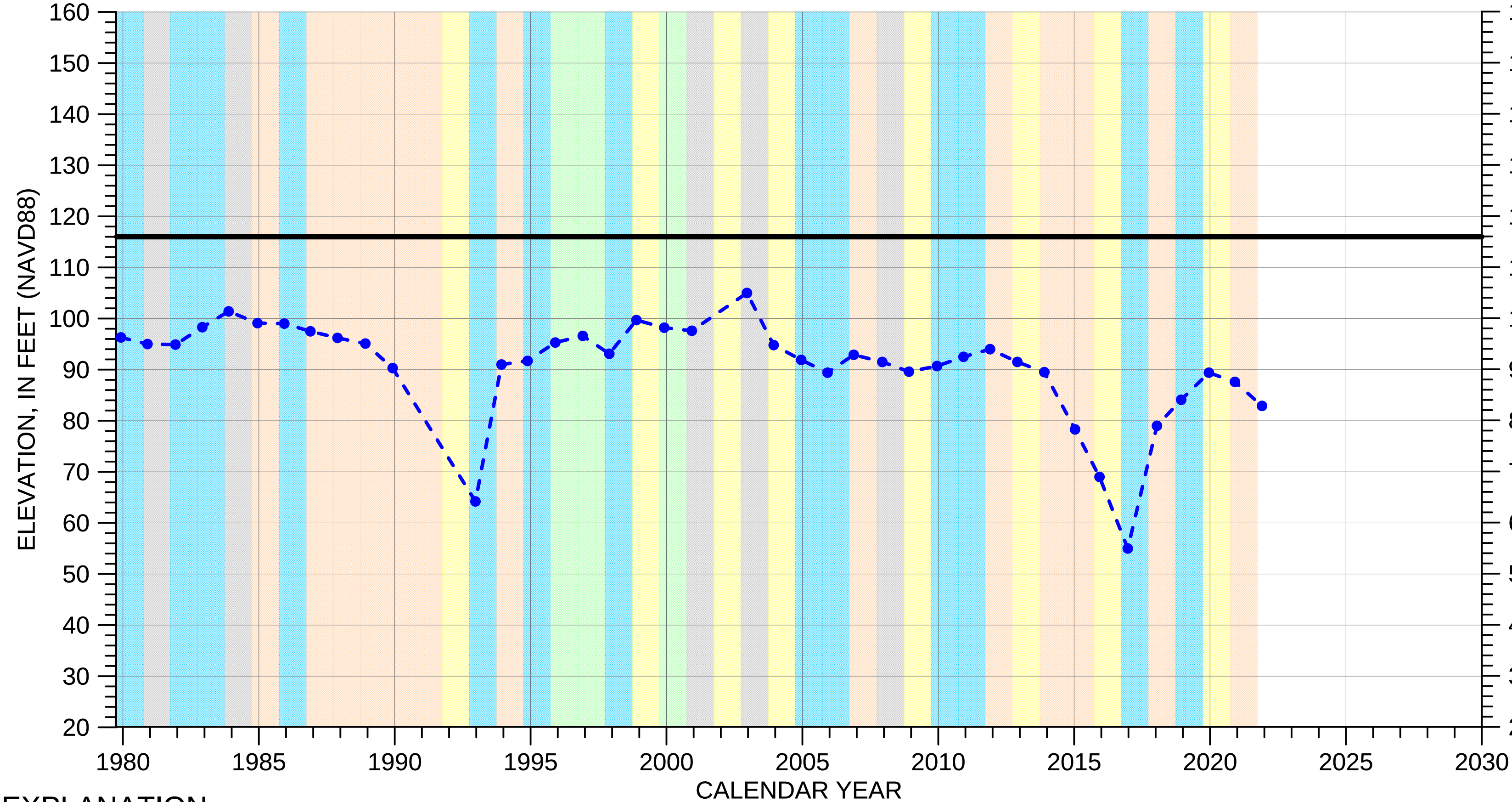
WET - NORMAL

WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\16S_05E-30J02.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 16S/05E-31M01

180/400-Foot Aquifer Subbasin



Perforated interval unknown

Well bottom
-51 feet msl

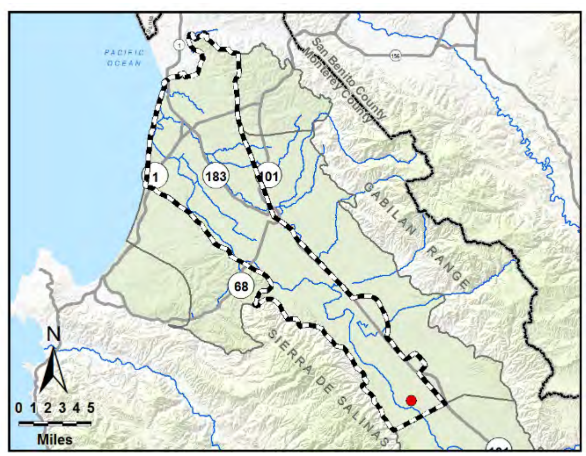
\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\16S_05E-31M01.grf

EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface

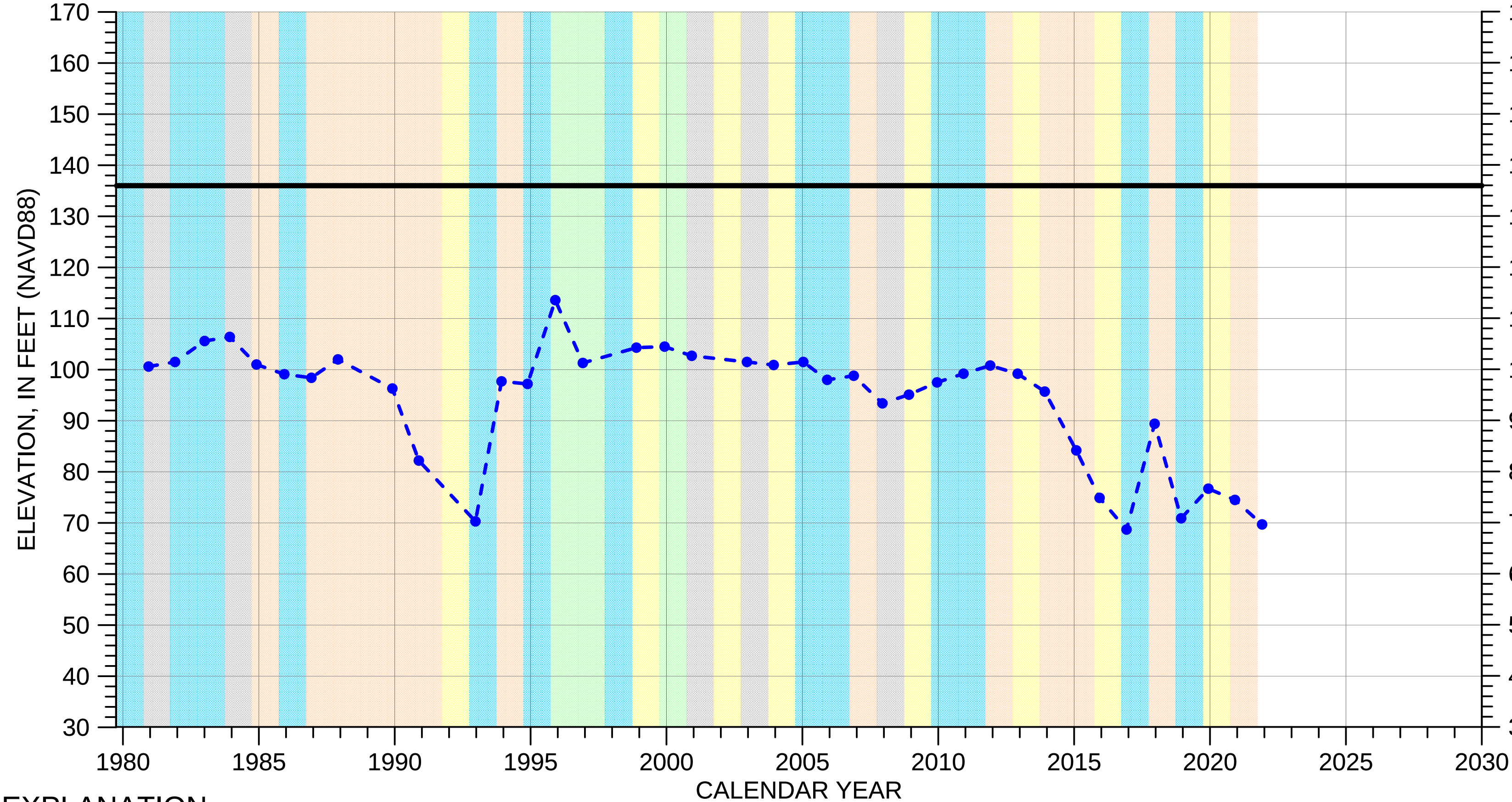
WATER YEAR TYPE DESIGNATION

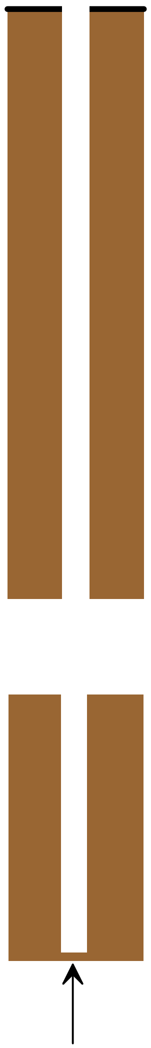
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/04E-01D01

180/400-Foot Aquifer Subbasin



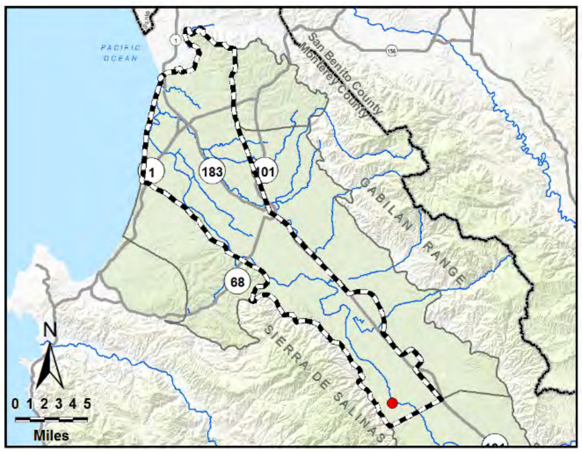


EXPLANATION

Groundwater Elevation

Suspect Measurement

Land Surface



Perforated interval unknown

Well bottom -175 feet msl

WATER YEAR TYPE DESIGNATION

DRY

DRY - NORMAL

NORMAL

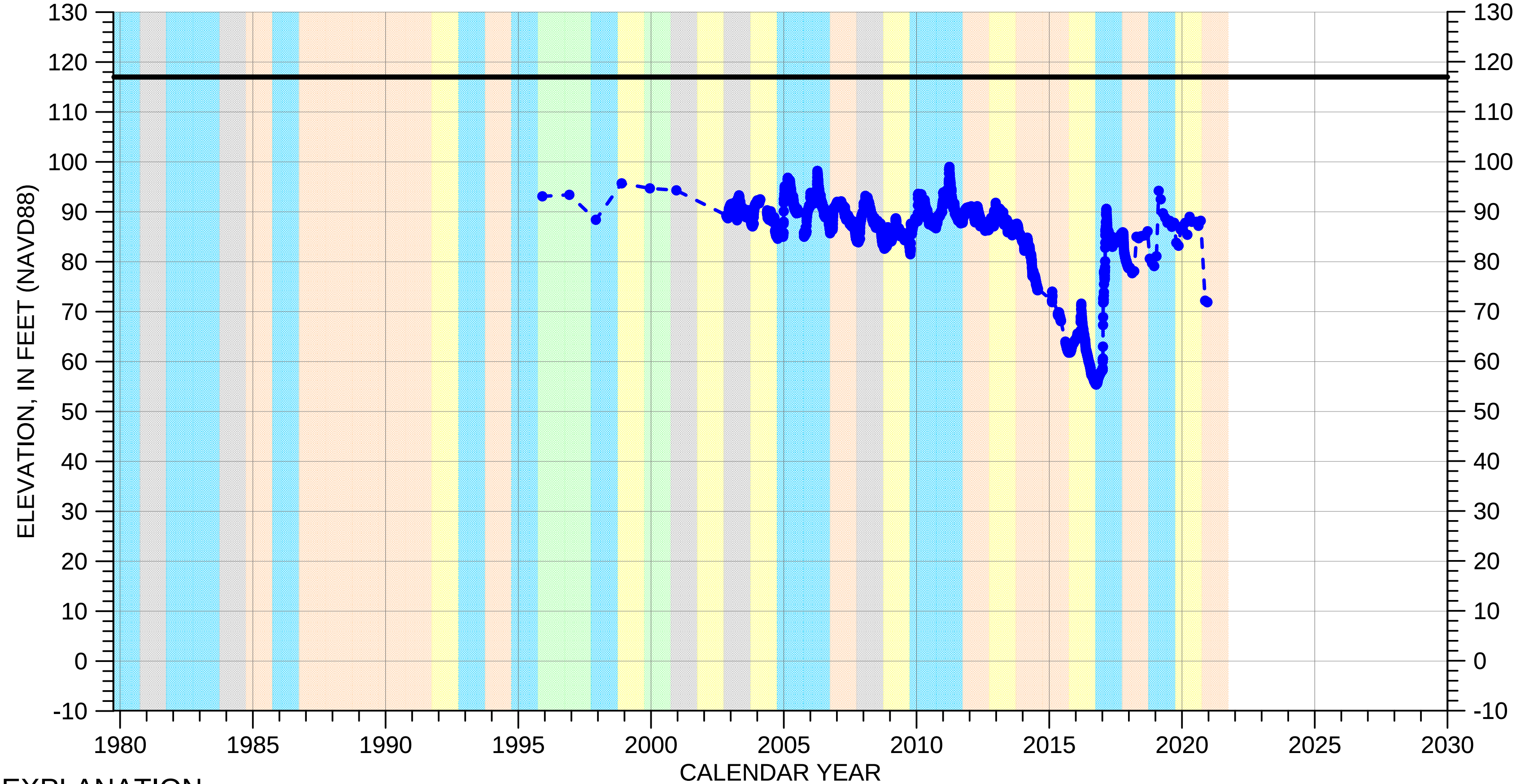
WET - NORMAL

WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRA\NEW\GRFs_Ch5\17S_04E-01D01.grf

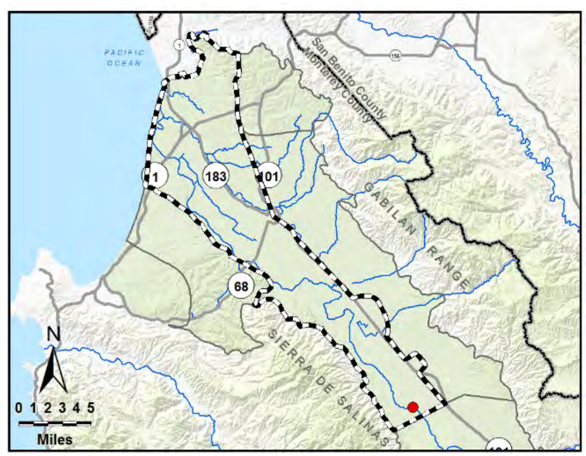
HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 17S/05E-06C02

180/400-Foot Aquifer Subbasin



EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface



WATER YEAR TYPE DESIGNATION

- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET

\\tuc-data\public\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs_MCWRANEWGRFs_Ch5\17S_05E-06C02.grf