Appendix **2A**

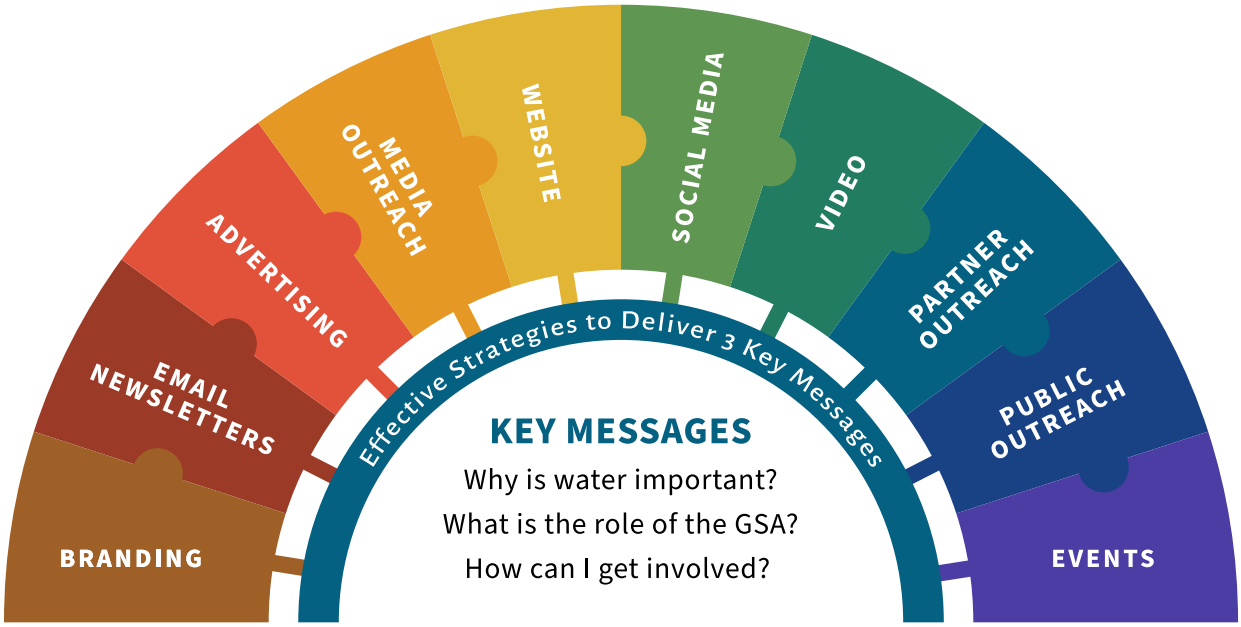
Public Comments
(TO BE ADDED)

Appendix 2B

Agency-Wide Marketing & Communications Plan

APPENDIX 2B. AGENCY-WIDE MARKETING & COMMUNICATIONS PLAN

Marketing & Communications Plan



Appendix 2C

Key Messages

APPENDIX 2C. KEY MESSAGES

Initially, our message points focused on: (1) getting to know your GSA; (2) an overview of groundwater sustainability planning for our community; and (3) how we got here. The key messages expanded as the work evolved to include: (4) the future of water availability and protection; (5) ongoing water efficiency efforts including Agency-supported programs; (6) methods for water demand management and regulation; (7) potential projects in support of groundwater sustainability.

Key Messages: Get to Know Your GSA

- SVBGSA is on a mission to develop a Salinas Valley Integrated Groundwater Sustainability Plan by 2023 and achieve groundwater sustainability in the Salinas Valley by 2040.
- Our groundwater basin is comprised of 6 subbasins one of which is identified as "Critically Over-Drafted" – the 180/400-Foot Aquifer.
- The rate of the community's current water use is unsustainable. To meet our community's ongoing water supply needs now and into the future we must balance the basin.
- The State has put us on a tight timeline to fix the problem. We ambitiously accept the challenge.
- As of 2020, we have GSP for the 180/400-Foot Aquifer Subbasin and have scoped projects and programs to bring the subbasin back into balance.
- From 2020 through 2022 we worked on GSPs for the other five basins.
- We are implementing our plans and efficiently use our GSA sustainability fee to work towards sustainability.
- Developing a sustainability plan for groundwater impacts everyone. That's why the SVBGSA Board and our Advisory Committee are diverse and include stakeholders from every walk of life in the Salinas Valley.
- We have an unprecedented opportunity, and responsibility, to work together collaboratively and develop a science-based Groundwater Sustainability Plan.
- Join us! Visit our website, sign up for updates, attend the next meeting and follow us on Facebook.

Key Messages: Groundwater Sustainability Plan

The Subbasin Groundwater Sustainability Plans and Salinas Valley Integrated Implementation Strategy (IIS) are long term plans to ensure that the Salinas Valley Groundwater Basin (SVGB) will be managed sustainably for our current and future generations.

- Groundwater sustainability planning is not only critical to our future - it's mandatory. SGMA mandated that science-based GSPs be developed for the Salinas Valley subbasins by 2020 and 2022. These plan identify projects and management actions that must be implemented to achieve sustainability by 2040 and 2042.
- The stakes are high. Should we choose not to act, or be unable to demonstrate progress, or fail to meet the milestones set by the plans, the State can intervene with required (and potentially hefty) pumping restrictions and extraction fees.
- To meet these milestones, we have been granted the authority to develop GSPs, monitor and measure the basin and individual wells within the basin, implement projects and management actions, and assess necessary fees for planning and implementation.
- Six "Sustainability Indicators" will be evaluated in the GSPs and used to gauge what we need to do to bring our groundwater supply and demand back into balance.
- Given the hydrologic and geographic diversity of the Salinas Valley, the IIS will identify overlapping projects and programs which benefit the basins.
- Our planning process has included the involvement of subbasin committees, coordination with other GSAs and agencies, and ongoing our governance by the Board and its committees, including the Advisory Committee.
- Stakeholder engagement is a key component to the development and implementation of the GSP. We encourage and invite the community to get involved. Attend our monthly Board meetings, attend a Subbasin Committee meeting, sign up for our newsletter.

Key Messages: How We Got Here

- The Salinas Valley Basin GSA is firmly rooted in stakeholder engagement.
- From 2015-2017, local agencies and stakeholders worked with the Consensus Building Institute (CBI) to facilitate the formation of the GSA.
- In 2015, CBI began with a Salinas Valley Groundwater Stakeholder Issue Assessment, which included interviews and surveys. This process resulted in recommendations for a transparent, inclusive process for the local implementation of SGMA and the formation of the GSA.

- Following the Issue Assessment, The Collaborative Work Group of stakeholders representing a broad range of interests met from March 2016 through April 2017 and developed recommendations on the governance structure, voting, and legal structure of the GSA.
- The Stakeholder Forum was simultaneously held throughout 2016 and served as a critical element for interested stakeholders and the public to learn about and provide input on the GSA.
- After nearly two years of community engagement led by the top consensus-building professionals in the nation, the Salinas Valley Basin Groundwater Sustainability Agency was formed in April 2017 with a broad and diverse foundation of support.

Key Messages: Future Water Availability and Protection

- SVBGSA is working to protect and restore the region's groundwater by balancing use with recharge, studying supplemental supply projects, improving coordination, and guiding local solutions through inclusive, science-based planning.
- SVBGSA hosted five workshops in spring 2024 to provide residents and businesses of the Salinas Valley with an opportunity to learn about water use and management in the region.
- Regulatory compliance, climate extremes, data uncertainty, and the high cost of new supply projects add to the challenge and urgency.

Key Messages: Water Efficiency Efforts

- Water is a precious resource that is essential for the Salinas Valley community. One of the most effective ways to contribute to water conservation is by being more water-conscious at home.
- Many rural areas in California rely heavily on groundwater. These communities are often more vulnerable to drought due to limited infrastructure and financial resources.
- To build awareness about water use efficiency among rural residents and empower them to contribute to sustainable groundwater management, the SVBGSA created the Water Efficiency Pilot Program (WEPP) to assist rural residential water users served by small water systems or private wells.
- We are working in our rural residential areas to provide residents with tools to improve water efficiency at home, which will assist the community with achieving sustainable groundwater management in the Salinas Valley.

- Residents who are customers of large water systems are encouraged to determine if they are eligible for rebates, conservation programs or free resources from their water agency.
- SVBGSA contracted with WaterWise Consulting, Inc. to provide free home visits to rural homes owned or rented in any of the six subbasins that fall under the jurisdiction of SVBGSA to assess how residents could improve their water use efficiency.

Key Messages: Methods for Water Demand Management and Regulation

- SVBGSA conducted an assessment to investigate how stakeholders understand and support demand management. The report is brought to the SVBGSA Board of Directors in March 2023.
- A legal white paper summarizing California law considerations for demand management was shared with the community during the SVBGSA Board meeting in March 2025.
- Also in spring 2025, the "Our Water Future in the Salinas Valley: Planning for Uncertainty" community workshops provided an opportunity for community dialogue.
- The demand management strategy was developed and discussed by subbasin committees for 18 months before the SVBGSA Board adopted the Demand Management Framework.
- Recommended initial stage classifications for each subbasin based on triggers were developed through a public process and the recommendations were received by the SVBGSA Board in February 2026.

Key Messages: Potential Projects

- In Spring 2026, SVBGSA completed a series of feasibility studies and technical investigations evaluating the projects and management actions needed to meet the Sustainable Management Criteria established in the GSPs for the six Salinas Valley subbasins.
- This technical was translated into policy through the Integrated Implementation Strategy (IIS) — a process for evaluating combinations of projects and management actions across the Salinas Valley. Rather than assessing individual projects in isolation, the IIS evaluates scenarios that reflect the hydraulic connectivity of the subbasins and the need for coordinated solutions.
- The IIS process to select the portfolio involved three key steps: (1) SVBGSA staff develops integrated implementation scenarios based on the technical studies; (2) the Advisory Committee reviews scenarios, gathers public input, and develops

recommendations; (3) the Board of Directors considers Advisory Committee recommendations before selecting the preferred implementation scenario

- The Board selected a portfolio in August 2026 as the preferred implementation pathway to guide the Salinas Valley toward long-term groundwater sustainability.

Appendix 2D

Media Policy

APPENDIX 2D. MEDIA POLICY

The press is an important partner for getting our message out to the community. To maximize our effectiveness in working with the media, a consistent protocol will be followed by staff, consultants, board members, and committee members.

Agency Spokesperson(s)

- The primary spokesperson for all media inquiries is the General Manager (GM). Media inquiries should first be directed to the GM to coordinate a response.
- Reporters may want to also interview board and community members. Some board members may enjoy media conversations, while others do not. The SVBGSA will maintain a standby list of board and community members, who will be prepared and can be called on for media inquiries.
- In preparation for the interview, the GM and communications team will work closely with the spokespeople in preparation for media interviews. Factual and coordinated talking points will be provided in advance of the interview.

Responding Quickly

- Reporters work on tight deadlines. To ensure an opportunity is not missed, all media inquiries should receive an immediate response and referred to the GM at the earliest possible opportunity.

The Back-Up Plan

- If the GM is unavailable and cannot be reached for comment, media inquiries should be directed to the Board's back-up media representative. The Board's representative will contact the communications team to determine whether a response is necessary. If the response is not urgent, offer the media an appointment time for when the GM is available. If it is a time sensitive and urgent matter, a statement will be released from the Board representative in close coordination with the communications team.

News Monitoring and Tracking

- Following the interview or statement, if published, the GM or communications team will circulate the coverage to the Board and committee members.

Appendix 2E

Disadvantaged Communities

APPENDIX 2E. DISADVANTAGED COMMUNITIES

Introduction and Purpose of Appendix

Many of the communities in the Salinas Valley Groundwater Basin are classified as Disadvantaged Communities (DACs) and Severely Disadvantaged Communities (SDACs), as well as Economically Distressed Areas (EDAs). The SVBGSA jurisdictional area has well documented DAC-designated areas including 5 Cities or Census Designated Places (CDPs), 50 Block Groups, and 18 Tracts. Additionally, work conducted by the Greater Monterey County Integrated Regional Water Management (IRWM) Program identified 25 small disadvantaged, severely disadvantaged, and suspected disadvantaged communities in unincorporated areas of the IRWMP region (Greater Monterey County Regional Water Management Group, 2018), which includes the entire SVBGSA area. As many of these communities are dependent on groundwater for drinking water, they face challenges associated with drinking water quality.

The State of California has recognized challenges in providing clean, safe, and affordable drinking water to all its citizens, especially low-income and minority communities. In 2012, California law AB 685, the Human Right to Water, declared that every person has a right to clean, safe, and affordable drinking water. In 2019, the State further made it a priority by passing SB 200, the Safe and Affordable Drinking Water Fund. In Fiscal Year 2019-2020, it dedicated $130 million for safe drinking water solutions in DACs that do not have access to safe drinking water.

The Salinas Valley Groundwater Basin is one of the most productive agricultural regions in the world. However, over several decades seawater intrusion and intensive fertilizer use resulting in nitrate contamination have compromised drinking water quality in parts of the Salinas Valley. Nitrate contamination in groundwater can pose serious health risks to pregnant women and infants if consumed at concentrations above the maximum contaminant level (MCL) of 10 milligrams per liter (mg/L) nitrate as nitrogen (NO_3-N). Nitrate contamination not only poses health risks but also results in major costs for small rural communities. This is particularly challenging for economically disadvantaged communities in the Salinas Valley.

SGMA has limited requirements with regards to improving groundwater quality; the SGMA regulations are written in terms of avoiding degradation (CWC, §354.28 (c)(4)). However, the SVBGSA seeks to continue to engage constructively with disadvantaged communities throughout GSP implementation. SVBGSA maintains strong relationships with agencies monitoring and addressing water quality issues in the Salinas Valley. The purpose of this appendix is to provide background information on the relationship between DACs (including SDACs and EDAs) and groundwater conditions, particularly with respect to the drinking water challenges in the Salinas Valley.

Unless otherwise noted, the information in this appendix is based on and much is excerpted from the Integrated Regional Water Management (IRWM) Plan for the Greater Monterey County Region (Greater Monterey Regional Water Management Group, 2018).

Identifying DACs in the Salinas Valley

A Disadvantaged Community (DAC) is defined in the California Water Code (§79505.5(a)) as a community with an annual median household income (MHI) that is less than 80% of the statewide annual MHI, based on 5-year estimates. Further, a Severely Disadvantaged Community (SDAC) is defined as a community with an annual median household income that is less than 60% of the statewide annual MHI, based on five-year estimates. The Prop 4 Climate Bond updates this criteria to also define DACs and SDACs as communities with an MHI that is 80% and 60% of the *area* average, respectively.

For information on how these designations are determined, see the Greater Monterey County Integrated Regional Water Management Plan (Greater Monterey County Regional Water Management Group, 2018). These designations are significant because in order for a community to be eligible for State grant funds specially allocated for disadvantaged communities, or to be eligible for reduced matching fund requirements, a community must meet one of these strict definitions. Furthermore, the Prop 4 Climate Bond stipulates that at least 40 percent of grant funding be invested in programs or projects that provide meaningful direct benefits to DACs, SDACs, and vulnerable populations, which are defined as:

> *...a subgroup population within a region or community that faces a disproportionately heightened risk or increased sensitivity to impacts of climate change and that lacks adequate resources to cope with, adapt to, or recover from such impacts. (Note: tribes are considered vulnerable populations).*

There are several areas in the Salinas Valley that contain vulnerable populations based on their combination of high climate hazard and medium social vulnerability; high climate hazard and high social vulnerability; or medium climate hazard and high social vulnerability. The state's Vulnerable Communities Platform (https://vcp.lci.ca.gov/) maps these populations.

At the same time, the California Department of Water Resources (DWR) also recognizes the existence of communities that are economically challenged but that are not designated as being disadvantaged according to U.S. Census data. These communities have been labeled Suspected Disadvantaged Communities until their status can be established.

In addition to disadvantaged communities, DWR recognizes Economically Distressed Areas. An economically distressed area (EDA) is defined as:

> *...a municipality with a population of 20,000 persons or less, a rural county, or a reasonably isolated and divisible segment of a larger municipality where the segment of the population is 20,000 persons or less, with an annual median household income that is less than 85 percent of the statewide median household income, and with one or more of the following conditions as determined by the department: (1) financial hardship, (2) unemployment rate at least 2 percent higher than the statewide average, or (3) low population density (Water Code §79702(k)).*

Figure 1 shows the communities currently designated as DACs, SDACs, or EDAs in the Salinas Valley. This figure combines Census Tracts and Census Places to give a more complete representation of the communities within this area. Census block groups were not included in the figure because they are excluded from the newer Climate Bond (Proposition 4) (S)DAC Mapping Tool due to high margins of error and data privacy concerns.

For the most recent Census American Community Survey (ACS) dataset, the 5-year (2019-2023) statewide MHI is $96,334; thus, $77,067 and $57,800 represent the DAC and SDAC thresholds, respectively Salinas Valley(see https://gis.water.ca.gov/app/dacs/). For example, Gonzales has a median household income of $76,060 and is thus designated as a DAC, and San Lucas has a median household income of $54,375 and is thus designated as an SDAC. The 85% MHI threshold for EDAs is $81,884, and the statewide unemployment rate for 2023 is 4.7%. The Census Tracts, as well as Census Places with populations of less than 20,000 people, with MHIs below this threshold are shown in Figure 1. Since Monterey County has an unemployment rate of 7.3%, which is more than 2% higher than the statewide average, all of the Tracts and Places shown in Figure 1 can be considered EDAs, as they meet at least one of conditions of the second set of EDA criteria.

Table 1 shows the estimated percent of population of each subbasin that resides in DACs, SDACs, and EDAs by Census Block Group and Census Tract for each subbasin. These populations were estimated using a proportional area analysis, where the proportion of the area of the Census Block Group or Tract located in the subbasin was multiplied by the population of that Census Block Group or Tract. This analysis assumes equal distribution of population across the Census units. The same analysis was completed for Census Places; however, percentages for these units are not included in Table 1 because Places do not account for the full estimated population of each subbasin.

Table 1: Estimated Percent of Population Residing in DAC/SDAC/EDA by Subbasin in 2023

Subbasin	Census Block Group			Census Tract		
	DAC*	SDAC	EDA	DAC*	SDAC	EDA
180/400	28.1%	2.5%	34.9%	11.5%	1.5%	12.8%
Eastside	29.5%	10.3%	38.4%	44.0%	4.7%	47.5%
Forebay	31.2%	8.8%	31.4%	28.3%	0.0%	46.6%
Langley	13.4%	1.5%	13.4%	1.5%	1.5%	8.8%
Upper Valley	52.3%	38.1%	74.8%	77.7%	46.8%	85.1%
Total	**30.2%**	**9.6%**	**37.7%**	**31.9%**	**4.7%**	**37.7%**
*DACs are inclusive of SDACs						

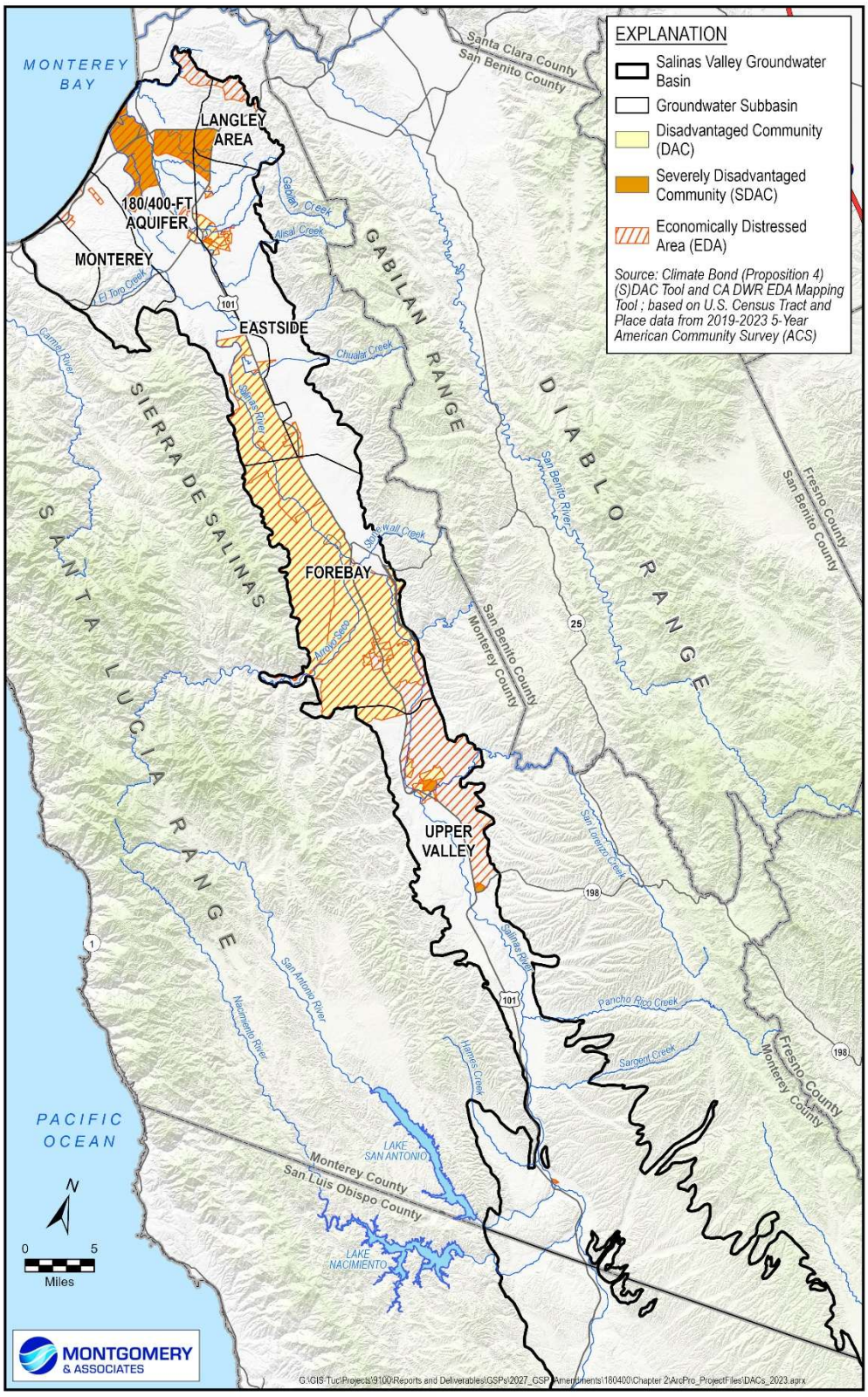


Figure 1. DAC/SDAC/EDA in the Salinas Valley Groundwater Basin

As highlighted in the IWRM Plan, small disadvantaged communities in unincorporated areas often have small public water systems that serve fewer than 200 connections. The smallest of these communities have State Small Water Systems (SSWS), which serve between 5 and 14 connections); Local Small Water Systems (LSWS), which serve between 2 and 4 connections; and/or households served by private domestic groundwater wells. There is a significant difference in capacity, water supply, and infrastructure needs between a DAC served by a large water system (e.g., a large disadvantaged community of several thousand people, or a small disadvantaged community served by a large water utility) and a small disadvantaged community served by a small water system or by private wells. The State Water Resources Control Board (SWRCB) summarized these differences in its 2015 report, Safe Drinking Water Plan for California (SWRCB, 2015):

- Small water systems have the greatest difficulty in providing safe drinking water because they are least able to address the threats to public health associated with water quality.

- Larger water systems are better equipped to deal with water quality issues because they have more customers to fund the necessary improvements, have economy of scale, more technical expertise, better management skills and knowledge, are able to solve operational problems internally, and have dedicated financial and business-related staff. They generally have more sophisticated treatment and distribution system operators who are able to react to incidents and changes in treatment conditions that may occur during operations.

- On the other hand, small systems, especially those in disadvantaged communities, have only a small number of customers, which provides them with limited fiscal assets and no economy of scale. They often lack technical expertise, the ability to address many of the issues pertinent to operating a water system, as well as qualified management and financial and business personnel. In many instances, especially for very small water systems, the system operator may be just a part-time position.

Following the Greater Monterey County IRWM Plan, this Appendix includes DACs, SDACs, and EDAs and places an emphasis on small disadvantaged communities for the reasons highlighted by the SWRCB.

Jurisdictional Responsibilities

A number of agencies and groups have existing jurisdictional responsibility over groundwater quality. The SVBGSA will collaborate with these agencies and groups so as to not duplicate efforts or overstep its institutional authority. The following agencies and groups have responsibility over various aspects of groundwater (Greater Monterey County Regional Water Management Group, 2018):

- **Greater Monterey County IRWM Regional Water Management Group** – AB1630 appropriated State grant funds to enable this Group to develop solutions for DACs to be integrated into the broader IRWM planning effort. IRWM is a voluntary, collaborative effort to identify and implement water management solutions on a regional scale to increase regional self-reliance, reduce conflict, and manage water resources. The IRWM planning process brings together water and natural resource managers along with other community stakeholders to collaboratively plan for and ensure the region's continued water supply reliability, improved water quality, flood management, and healthy functioning ecosystems. The Department of Water Resources manages grant programs specifically designated for adopted IRWM Plans including funding for water quality improvement projects.

- **State Water Resources Control Board (SWRCB)** – The SWRCB administers the state's Drinking Water Program as the federally-designated Primary Agency responsible for the administration and enforcement of the Safe Drinking Water Act requirements in California. Prior to July 1, 2014, the California Department of Public Health was designated as the Primary Agency. These requirements are defined in the California Health and Safety Code and Titles 17 and 22, California Code of Regulations. The CDPH continues to maintain the State's Drinking Water and Radiation Laboratory, which serves as the state's principal laboratory as required for primacy under the Safe Drinking Water Act. The SWRCB is responsible for the regulatory oversight of over 7,600 public water systems in California. It may delegate oversight responsibility of public water systems with less than 200 service connections to local county health departments, which it has done in Monterey County.

- **Monterey County Department of Environmental Health (MCDEH)** – Delegated oversight responsibility by the SWRCB, MCDEH is the Local Primary Agency and its Drinking Water Protection Services regulates domestic water systems in the County that serve between two and 199 connections. MCDEH also regulates all well construction in Monterey County.

- **SWRCB and Central Coast Regional Water Quality Control Board** – State policy on water quality control falls under the SWRCB, which is the state water pollution control agency for all purposes under the Clean Water Act (CWC §13160), including drinking water sources from both surface water and groundwater. The SWRCB has nine regional boards, including the Central Coast Regional Water Quality Control Board (CCRWQCB), which is responsible for the day-to-day implementation of the federal Clean Water Act and California's Porter-Cologne Water Quality Control Act in the Central Coast. Together, the State Water Board and Regional Boards are responsible for the protection of the quality of ambient surface and groundwater up to the point where the water enters a drinking water well or surface water intake. The Regional Boards are

responsible for developing and enforcing water quality objectives and implementation plans to protect the beneficial uses of the State's waters. The Regional Boards enforce water quality regulations through the following means.

- **Basin Plan –** Each Regional Board is directed to formulate a water quality control plan, called a Basin Plan, that includes water quality standards under the Clean Water Act. The CCRWQCB implements the Basin Plan in the Central Coast Region, in part by issuing and enforcing waste discharge requirements to individuals, communities, or businesses whose waste discharges can affect water quality, including surface water, groundwater, or wetlands.

- **Waste Discharge Requirements (WDRs) –** WDRs, sometimes simply known as Orders, for discharges to waters of the United States also serve as National Pollutant Discharge Elimination System (NPDES) permits. The SWRCB and CCRWQCB regulate discharges from wastewater treatment and disposal systems under general WDRs. Small, domestic wastewater treatment systems having a maximum daily flow of 100,000 gallons per day (gpd) or less that discharge to land are covered under a statewide general WDR permit for small systems (Order WQ 2014-0153-DWQ). The State and Regional Boards are also responsible for plans and permits related to other uses, such as farming, septic tanks, and larger scale sewage treatment that can also impact the quality of surface and ground waters.

- **Irrigated Lands Program (ILP) –** The SWRCB initiated the ILP in 2003 to control agricultural runoff's impairment of surface waters. In 2012, groundwater regulations were added to the program. Waste discharge requirements, which protect both surface water and groundwater, address agricultural discharges throughout the Central Coast. Anyone who irrigates land to produce crops or pasture commercially must seek ILP permit coverage and maintain in good standing with their coalitions. This regulatory program has since been updated with Agricultural Order 4.0.

- **Department of Pesticide Regulation** – The California Department of Pesticide Regulation is responsible for ensure that pesticides do not contaminate the groundwater.

- **Office of Environmental Health Hazard Assessment** – The California Office of Environmental Health Hazard Assessment is responsible for providing the SWRCB with health-based risk assessments for contaminants. These assessments are used to develop primary drinking water standards.

- **California Public Utilities Commission (CPUC)** – The CPUC is responsible for ensuring that California's investor-owned water utilities deliver clean, safe, and reliable

water to their customers at reasonable rates. The Water Division regulates over 100 investor-owned water and sewer utilities under the CPUC's jurisdiction; providing water service to about 16 percent of California's residents.

- **Local Agency Formation Commissions (LAFCOs)** – These commissions oversee the expansion of service areas of public agencies, including cities that own or operate public water systems. They can review public agencies to determine if the agency is providing municipal services in a satisfactory manner, including the delivery of safe drinking water.

- **Central Coast Groundwater Coalition (CCGC)** – The CCGC is a non-profit 501(c)5 mutual benefit organization that represents landowners and growers who operate in Monterey, San Benito, Santa Clara, Santa Cruz, San Luis Obispo, and Santa Barbara counties, as well as the northern portion of Ventura County in the Central Coast Region. The CCGC is not a governmental organization like the other jurisdictional agencies, and therefore does not have legal jurisdictional authority. However, the CCGC is the primary organization tasked with fulfilling the groundwater quality regulatory requirements in the Irrigated Lands Regulatory Program (ILRP) of the Central Coast Regional Water Quality Control Board. The organization combines the resources of its members to achieve economies of scale to comply with the regulatory requirements of the CCRWQCB. Between 2013 and 2015, the CCGC characterized the rural drinking water supply and shallow groundwater aquifer in the CCGC region which includes the previously noted six counties. In addition to using data from member wells, CCGC gathered publicly available data generated by the counties and data submitted by landowners and growers who perform individual monitoring as part of the current ILRP. Information collected on tested wells included depth to groundwater and well perforation levels where available. For many wells, quality parameters were collected, such as nitrates and total dissolved solids (TDS). In the groundwater characterization report, the information from the six counties was compiled and analyzed to produce maps showing areas where groundwater quality exceeds drinking water limits for nitrates. This information enabled CCGC to develop an accurate groundwater characterization in 2015 which provides growers, regulators and the public with a better understanding of local aquifers and geology in the six-county region.

DAC Drinking Water Challenges

Drinking water systems are categorized according to the number of service connections:

- Public water systems, which are referred to as municipal public water systems in this GSP for clarity, are water systems that provide drinking water to at least 15 service connections or serve an average of at least 25 people for at least 60 days a year,

- State small water systems are water systems that provide piped drinking water to between five and 14 service connections, and do not regularly serve drinking water to more than an average of 25 individuals daily for more than 60 days out of the year,

- Local small water systems are water systems that provide drinking water to between two and four service connections, and

- Private domestic wells usually provide water to only one or two connections.

Since state small water systems, local small water systems, and private domestic wells face more severe drinking water challenges than public water systems, they are the focus for the following discussion.

Private domestic wells are not regulated by the State. MCDEH requires one-time nitrate testing of newly installed private domestic wells, but there are no additional requirements. The SWRCB's Groundwater Ambient Monitoring and Assessment (GAMA) Domestic Well Project was developed in order to address the lack of domestic well water quality data. The GAMA Groundwater Information System includes numerous datasets that can be downloaded by users. The CCRWQCB also collects domestic well data per Irrigated Lands Regulatory Program (ILRP) groundwater monitoring requirements.

Between October 2013 and August 2014, the CCGC compiled water quality data from 229 samples from domestic and irrigation wells in the Salinas Valley. Data were collected from the GeoTracker GAMA database that includes data from the California Department of Public Health, GAMA-SWRCB data collection efforts and Regulated Sites. Additional data were collected from the USGS National Water Information System data, and data were extracted from the GAMA special study carried out by Lawrence Livermore National Laboratory. In its 2015 *Groundwater Characterization Report* (CCGC, 2015), CCGC made the following conclusions regarding nitrate in the Salinas Valley:

- 41% of wells with nitrate concentrations (or 309 of 758 total wells sampled) had maximum concentrations over the MCL.

- 34% of the land area within the Salinas Valley has nitrate concentrations over the MCL.

- 55% of domestic wells or 121 of 221 total sampled on CCGC-member properties had concentrations exceeding the MCL.

Domestic wells and wells associated with local small and state small water systems are generally more susceptible to nitrate contamination since they are typically shallow and are more likely to be located in rural areas within or adjacent to agricultural areas. They are also more susceptible to potential nitrate contamination from nearby septic systems. Public water systems, on the other

hand, tend to access deeper groundwater and are more likely to be located in areas that are less susceptible nitrate contamination. Public water system operators implement regular water quality testing and treatment as necessary, and wells are usually taken out of service once they become contaminated. Funding programs are often available for public water systems, and costs are spread out over a large number of ratepayers over time. When contamination is detected in private domestic wells, treatment options are limited and the individual homeowner will typically have to bear the full cost of addressing the problem (CCGC, 2015).

According to the IRWM Plan, only a very small percentage of domestic wells in Monterey County have been tested through the Central Coast Regional Water Quality Board's groundwater monitoring programs. MCDEH has adopted a policy to begin requiring well testing when an application for repair or replacement of a septic system is proposed, which will provide new additional data.

MCDEH Drinking Water Protection Services regulates state small and local small water systems through their Small Water System Program. There are currently 694 local small and 276 state small water systems in Monterey County, which serve about 4,232 connections (Greater Monterey County Regional Water Management Group, 2018).

DACs in the Salinas Valley rely primarily on groundwater for their drinking water supply, except for those who have to rely on bottled water due to unsafe or poor water quality conditions. The primary drinking water problems experienced by small DACs in Monterey County are related to nitrate contamination, seawater intrusion, or other contaminants of concern. Numerous studies over the decades have documented these challenges.

Although several of the subbasins in the Salinas Valley are in overdraft, poor or unsafe drinking water quality in some locations is a persistent challenge. During the recent prolonged drought, while Monterey County was classified as experiencing "exceptional" drought, very few water users in the Greater Monterey County IRWM region actually suffered from a lack of water availability. While the drought had immediate impacts on surface water supplies throughout the State, it tended to have a more gradual impact on groundwater supplies. Groundwater quality, rather than quantity, is of primary concern for drinking water supplies in the Salinas Valley, particularly nitrate contamination and seawater intrusion.

Nitrate Contamination

Nitrate contamination is particularly problematic in the Salinas Valley Groundwater Basin, where agriculture dominates the landscape. Nitrate is currently extensively monitored and evaluated by the CCGC and is documented in a report submitted to the CCRWQCB (CCGC, 2015). Nitrate contamination in the Salinas Valley was first documented in a report published by the Association of Monterey Bay Area Governments (AMBAG) in 1978. In 1988, a report by the State Water Board documented that nitrate levels in the Salinas Valley groundwater had

impaired its beneficial use as a drinking water supply. In a July 1995 staff report, the SWRCB ranked the Salinas Valley as their number one water quality concern due to the severity of nitrate contamination. All of the Salinas Valley cities have had to replace domestic water wells due to high nitrate levels that exceed the drinking water MCL. Maps prepared by the MCWRA indicate that elevated nitrate concentrations in groundwater were locally present through the 1960s, but significantly increased in the 1970s and 1980s.

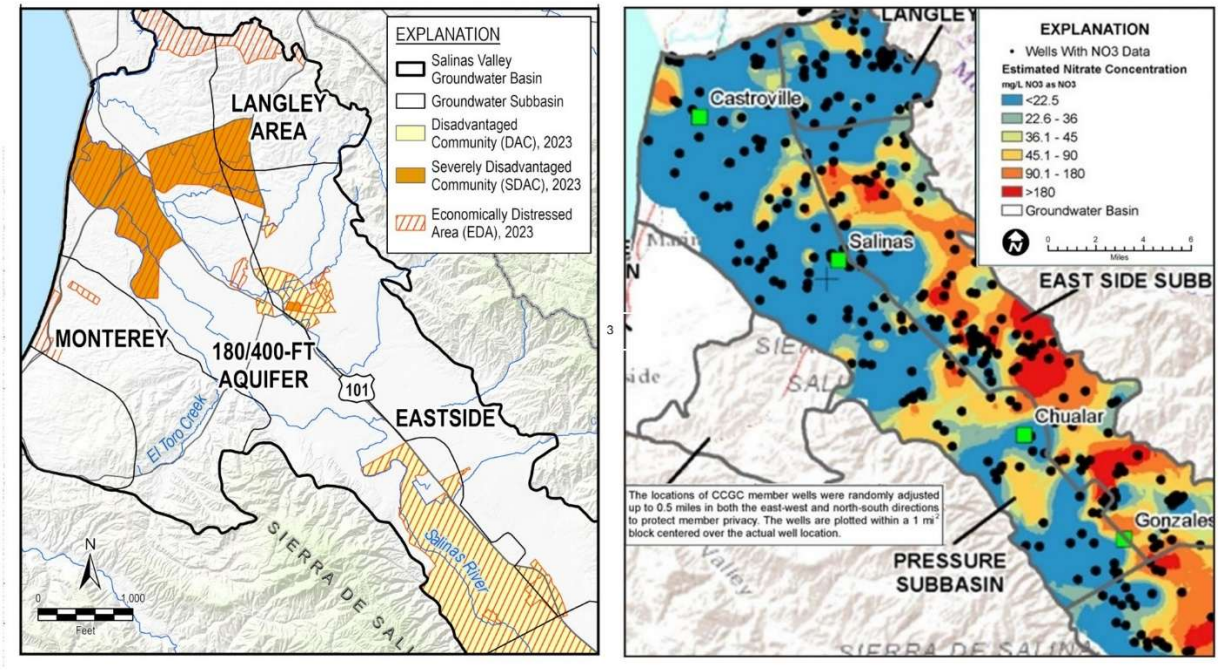
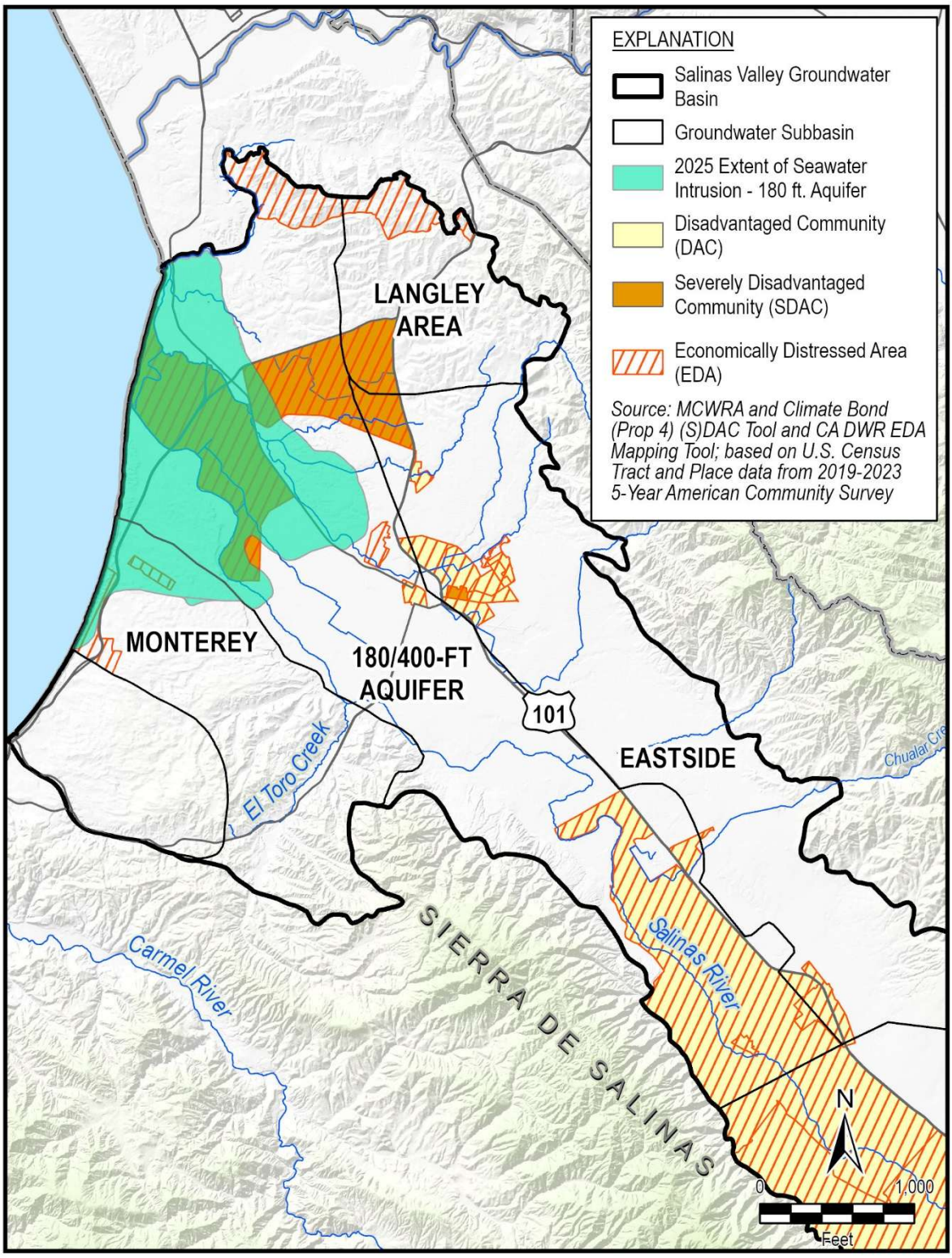


Figure 2. DACs, SDACs, and EDAs in the 180/400-Foot Aquifer Subbasin and Nitrate Concentration Map developed by CCGC (2015)

Seawater Intrusion

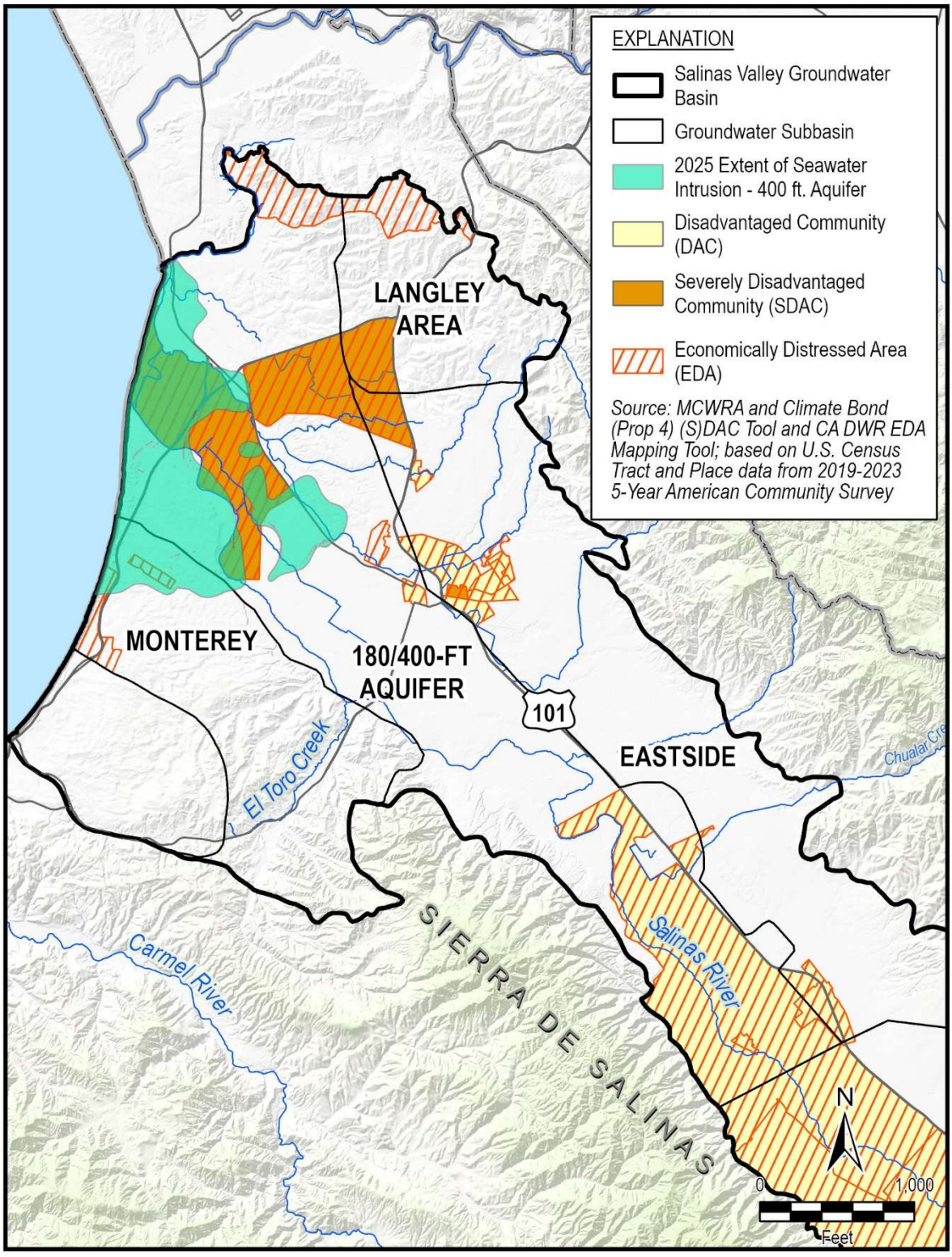
Seawater Intrusion is another significant water quality concern for DACs and SDACs, primarily impacting coastal communities in the northern part of the Salinas Valley Groundwater Basin. Seawater intrusion has been observed in the 180-Foot and 400-Foot Aquifer Subbasin for over 70 years, and was documented in DWR Bulletin 52 in 1946. By the 1940s, many agricultural wells in the Castroville area had become so salty that they had to be abandoned (Greater Monterey County Regional Water Management Group, 2018). Seawater is high in chlorides. EPA defines the 1000 mg/L threshold as an Upper Limit Secondary Maximum Contaminant Level (SMCL). Locally 500 mg/L is the threshold for seawater intrusion, with impacts to agriculture at lower levels that the drinking water standard. Seawater intrusion is the primary threat to drinking water supplies for many DACs located in the northern coastal portion of the Salinas Valley.

Seawater has intruded inland in the 180-Foot and 400-Foot Aquifers, as shown on Figure 3 and Figure 4. Seawater intrusion in the 180-Foot Aquifer covered approximately 20,000 acres in 1995 and had expanded to approximately 28,000 acres by 2010. Since then, the rate of expansion has decreased, with an overlying area of 28,300 acres in 2017. The area overlying intrusion into the 400-Foot Aquifer is not as extensive, with an overlying area of approximately 12,000 acres in 2010. However, between 2013 and 2015, the 400-Foot Aquifer experienced a significant increase in the area of seawater intrusion, from approximately 12,500 acres to approximately 18,000 acres, likely resulting from localized downward migration between aquifers.



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Figure 3. 2025 Extent of Seawater Intrusion in the 180-Foot Aquifer



G:\GIS-Tuc\Projects\9100\Reports and Deliverables\GSPs\2027_GSP_Amendments\180400\Chapter 2\ArcPro_ProjectFiles\DACs_2023.aprx DACs_2023_SWI_400ft_202513Jul2026

Figure 4. 2025 Extent of Seawater Intrusion in the 400-Foot Aquifer

Other Contaminants of Concern

In addition to nitrates and seawater intrusion, there are a few other contaminants of concern. With the recent passage of Assembly Bill (AB) 1249 (Salas, Chapter 717, Statutes of 2014), the State has recognized the prevalence, and urgency to address, the contamination of drinking water supplies in California by not only nitrate, but specifically by arsenic, perchlorate, and hexavalent chromium. The Greater Monterey County IRWM Regional Water Management Group convened a Technical Advisory Committee with MCDEH and the Central Coast Regional Water Quality Control Board to identify the extent of nitrate, arsenic, perchlorate, and hexavalent chromium contamination in communities throughout the region.

Conclusion

The State of California has recognized the severity of drinking water challenges for DACs with the passage of the 2012 Human Right to Water Act (AB 685), which declared that every person has a right to clean, safe, and affordable drinking water. Further, it emphasized this state-wide focus with the Safe and Affordable Drinking Water Fund in 2019, which is intended to provide funding specifically for safe drinking water solutions in DACs that do not have access to safe drinking water.

This appendix highlights the relationship between DACs and groundwater in the Salinas Valley Groundwater Basin, particularly with respect to drinking water. It provides a base for the SVBGSA to engage DACs in groundwater management activities and support state and local efforts related to drinking water.

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Appendix **3A**

Water Systems

Table 1. Small Water Systems (2-14 connections)

Water System Name	ID	Connections	Population Served	Subbasin
ALISAL RD WS #01	2702233	N/A	N/A	EASTSIDE AQUIFER
ALISAL RD WS #02	2702497	N/A	N/A	EASTSIDE AQUIFER
ALISAL RD WS #03	2702519	N/A	N/A	EASTSIDE AQUIFER
BORONDA RD WS #07	2702557	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #01	2701188	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #03	2701523	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #04	2701775	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #05	2701810	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #07	2701478	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #09	2702136	N/A	N/A	EASTSIDE AQUIFER
CHUALAR CANYON WS #11	2702386	N/A	N/A	EASTSIDE AQUIFER
CORONA RD WS 3	2702505	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #01	2700560	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #28	2701758	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #33	2701108	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #34	2700508	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #35	2701218	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #37	2701920	N/A	N/A	EASTSIDE AQUIFER
EL CAMINO REAL WS #43	2702282	N/A	N/A	EASTSIDE AQUIFER
ESPINOSA RD WS #08	2702012	N/A	N/A	EASTSIDE AQUIFER
ESPINOSA RD WS #09	2702298	N/A	N/A	EASTSIDE AQUIFER
GLORIA RD WS #01	2701678	N/A	N/A	EASTSIDE AQUIFER
GOULD RD WS #01	2701064	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #02	2701433	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #03	2701746	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #04	2701994	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #06	2702128	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #07	2702297	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #08	2702401	N/A	N/A	EASTSIDE AQUIFER
HARRISON RD WS #09	2702549	N/A	N/A	EASTSIDE AQUIFER
HARTNELL RD WS #01	2702681	N/A	N/A	EASTSIDE AQUIFER
HWY 101 WS #05	2702436	N/A	N/A	EASTSIDE AQUIFER
IVERSON RD WS #01	2701846	N/A	N/A	EASTSIDE AQUIFER
KOHARA NURSERY WS	2702161	N/A	N/A	EASTSIDE AQUIFER
MARTINES RD WS #03	2702119	N/A	N/A	EASTSIDE AQUIFER
MIDDLEFIELD RD WS #02	2700651	N/A	N/A	EASTSIDE AQUIFER
MIDDLEFIELD RD WS #03	2700652	N/A	N/A	EASTSIDE AQUIFER
MIDDLEFIELD RD WS #04	2700653	N/A	N/A	EASTSIDE AQUIFER
MIDDLEFIELD RD WS #09	2702515	N/A	N/A	EASTSIDE AQUIFER

Water System Name	ID	Connections	Population Served	Subbasin
MONTEREY ROSES WS	2700851	N/A	N/A	EASTSIDE AQUIFER
NATIVIDAD RD WS #03	2701456	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #06	2702107	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #07	2701993	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #08	2702366	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #13	2701780	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #14	2702017	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #15	2702191	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #16	2702310	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #17	2702443	N/A	N/A	EASTSIDE AQUIFER
OLD STAGE RD WS #19	2702548	N/A	N/A	EASTSIDE AQUIFER
RANCHO SALINAS PACKING WS	2702067	N/A	N/A	EASTSIDE AQUIFER
SAN JUAN GRADE WS #01	2701521	N/A	N/A	EASTSIDE AQUIFER
SAN JUAN GRADE WS #02	2700737	N/A	N/A	EASTSIDE AQUIFER
SPENCE RD WS #04	2701964	N/A	N/A	EASTSIDE AQUIFER
SPENCE RD WS #08	2701729	N/A	N/A	EASTSIDE AQUIFER
UTO GREENHOUSE WS	2701716	N/A	N/A	EASTSIDE AQUIFER
WHITE RD WS #01	2700805	N/A	N/A	EASTSIDE AQUIFER
ZABALA RD WS #01	2700860	N/A	N/A	EASTSIDE AQUIFER
ZABALA RD WS #02	2702518	N/A	N/A	EASTSIDE AQUIFER
APPLE AVE WS #01	2701580	N/A	N/A	FOREBAY AQUIFER
APPLE AVE WS #04	2705021	N/A	N/A	FOREBAY AQUIFER
AROYO SECO RD WS #04	2701831	N/A	N/A	FOREBAY AQUIFER
ARROYO SECO RD WS #08	2701045	N/A	N/A	FOREBAY AQUIFER
ARROYO SECO RD WS #13	2702352	N/A	N/A	FOREBAY AQUIFER
ARROYO SECO RD WS #14	2702376	N/A	N/A	FOREBAY AQUIFER
BOEKENOOGAN WINERY WS	2702744	N/A	N/A	FOREBAY AQUIFER
BRYAN EQUIP/VALLEY ELECT WS	2702359	N/A	N/A	FOREBAY AQUIFER
CENTRAL AVE WS	2701419	N/A	N/A	FOREBAY AQUIFER
DOUD RD WS #01	2701790	N/A	N/A	FOREBAY AQUIFER
DOUD RD WS #02	2702062	N/A	N/A	FOREBAY AQUIFER
EL CAMINO REAL WS #32	2701794	N/A	N/A	FOREBAY AQUIFER
ELM AVE WS #01	2701845	N/A	N/A	FOREBAY AQUIFER
FAIRVIEW RD WS #01	2702181	N/A	N/A	FOREBAY AQUIFER
FORT ROMIE RD WS #01	2700562	N/A	N/A	FOREBAY AQUIFER
FORT ROMIE RD WS #02	2701830	N/A	N/A	FOREBAY AQUIFER
KITZMILLER RD WS #01	2701574	N/A	N/A	FOREBAY AQUIFER
LUCERNE RD WS	2701900	N/A	N/A	FOREBAY AQUIFER
MAESTRI RANCH WS	2701110	N/A	N/A	FOREBAY AQUIFER
METZ RD WS #01	2701713	N/A	N/A	FOREBAY AQUIFER

Water System Name	ID	Connections	Population Served	Subbasin
METZ RD WS #02	2701209	N/A	N/A	FOREBAY AQUIFER
METZ RD WS #04	2701147	N/A	N/A	FOREBAY AQUIFER
METZ RD WS #06	2702016	N/A	N/A	FOREBAY AQUIFER
METZ RD WS #09	2701180	N/A	N/A	FOREBAY AQUIFER
MILE END RD WS #01	2700603	N/A	N/A	FOREBAY AQUIFER
MILE END RD WS #02	2702367	N/A	N/A	FOREBAY AQUIFER
MISSION RD WS #02	2702170	N/A	N/A	FOREBAY AQUIFER
MISSION RD WS #03	2702543	N/A	N/A	FOREBAY AQUIFER
MISSION RD WS #04	2702619	N/A	N/A	FOREBAY AQUIFER
MORISOLI RD WS	2701038	N/A	N/A	FOREBAY AQUIFER
PINE ST WS #03	2701916	N/A	N/A	FOREBAY AQUIFER
PRYOR FARMS INC WS	2702911	N/A	N/A	FOREBAY AQUIFER
RIVER RD WS #27	2702419	N/A	N/A	FOREBAY AQUIFER
RIVER RD WS #33	2702754	N/A	N/A	FOREBAY AQUIFER
SAN VICENTE RD WS #01	2700774	N/A	N/A	FOREBAY AQUIFER
THIRD ST WS #01	2701730	N/A	N/A	**FOREBAY AQUIFER**
UNDERWOOD RD WS #01	2702340	N/A	N/A	FOREBAY AQUIFER
VIDA RD WS #01	2702603	N/A	N/A	FOREBAY AQUIFER
WALNUT AVE WS #01	2701999	N/A	N/A	FOREBAY AQUIFER
WALNUT AVE WS #02	2702099	N/A	N/A	FOREBAY AQUIFER
AVERY LN WS #01	2701620	N/A	N/A	LANGLEY AREA
AVERY LN WS #02	2701834	N/A	N/A	LANGLEY AREA
AVERY LN WS #03	2702159	N/A	N/A	LANGLEY AREA
AVERY LN WS #04	2702580	N/A	N/A	LANGLEY AREA
BERTA CANYON WS #03	2700513	N/A	N/A	LANGLEY AREA
BERTA CANYON WS #04	2702570	N/A	N/A	LANGLEY AREA
BERTA CANYON WS #06	2700985	N/A	N/A	LANGLEY AREA
BERTA CANYON WS #07	2702167	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #04	2700517	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #06	2700843	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #07	2701524	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #08	2701555	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #09	2701594	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #10	2701607	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #11	2701651	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #15	2702218	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #16	2702139	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #17	2702142	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #19	2702341	N/A	N/A	LANGLEY AREA
BLACKIE RD WS #20	2701602	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #01	2700524	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
CASTROVILLE BLVD WS #03	2700526	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #04	2700527	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #06	2700529	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #09	2702385	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #10	2702423	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #11	2702463	N/A	N/A	LANGLEY AREA
CASTROVILLE BLVD WS #14	2702632	N/A	N/A	LANGLEY AREA
COKER RD WS #01	2700533	N/A	N/A	LANGLEY AREA
COKER RD WS #02	2701148	N/A	N/A	LANGLEY AREA
COKER RD WS #03	2702228	N/A	N/A	LANGLEY AREA
CRAZY HORSE WS #01	2700537	N/A	N/A	LANGLEY AREA
CRAZY HORSE WS #05	2702124	N/A	N/A	LANGLEY AREA
CRAZY HORSE WS #06	2701720	N/A	N/A	LANGLEY AREA
CRAZY HORSE WS #07	2702278	N/A	N/A	LANGLEY AREA
CRAZY HORSE WS #08	2702582	N/A	N/A	LANGLEY AREA
CROSS RD WS #01	2701509	N/A	N/A	LANGLEY AREA
CROSS RD WS #02	2701585	N/A	N/A	LANGLEY AREA
CROSS RD WS #03	2701771	N/A	N/A	LANGLEY AREA
CROSS RD WS #04	2701807	N/A	N/A	LANGLEY AREA
CROSS RD WS #05	2701818	N/A	N/A	LANGLEY AREA
CROSS RD WS #06	2701817	N/A	N/A	LANGLEY AREA
CROSS RD WS #08	2700951	N/A	N/A	LANGLEY AREA
CROSS RD WS #09	2701921	N/A	N/A	LANGLEY AREA
CROSS RD WS #10	2702095	N/A	N/A	LANGLEY AREA
CUNHA LN WS #01	2702126	N/A	N/A	LANGLEY AREA
DEL MONTE FARMS RD WS #09	2702054	N/A	N/A	LANGLEY AREA
DESMOND RD WS #01	2700545	N/A	N/A	LANGLEY AREA
DESMOND RD WS #02	2700546	N/A	N/A	LANGLEY AREA
DESMOND RD WS #05	2701571	N/A	N/A	LANGLEY AREA
DESMOND RD WS #06	2701644	N/A	N/A	LANGLEY AREA
DESMOND RD WS #08	2702109	N/A	N/A	LANGLEY AREA
DESMOND RD WS #09	2702117	N/A	N/A	LANGLEY AREA
DESMOND RD WS #10	2702207	N/A	N/A	LANGLEY AREA
DESMOND RD WS #11	2702536	N/A	N/A	LANGLEY AREA
DYER RD WS #02	2700550	N/A	N/A	LANGLEY AREA
DYER RD WS #03	2701559	N/A	N/A	LANGLEY AREA
DYER RD WS #04	2701610	N/A	N/A	LANGLEY AREA
DYER RD WS #05	2701646	N/A	N/A	LANGLEY AREA
DYER RD WS #06	2702618	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #01	2700553	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #02	2700554	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
ECHO VALLEY RD WS #03	2700555	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #04	2700556	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #06	2701893	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #07	2701210	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #08	2701424	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #09	2701235	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #10	2701425	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #11	2701556	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #12	2701640	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #13	2701642	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #14	2701662	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #15	2701749	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #18	2701808	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #19	2701914	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #22	2702234	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #25	2702400	N/A	N/A	LANGLEY AREA
ECHO VALLEY RD WS #26	2702417	N/A	N/A	LANGLEY AREA
EDEN LN WS #01	2701650	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #02	2700561	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #07	2700566	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #08	2700567	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #15	2700574	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #19	2701426	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #23	2701427	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #25	2702362	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #26	2701536	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #29	2701785	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #31	2701429	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #36	2701934	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #38	2702201	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #39	2702106	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #40	2702127	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #42	2702158	N/A	N/A	LANGLEY AREA
EL CAMINO REAL WS #48	2702808	N/A	N/A	LANGLEY AREA
EL DORO WS #01	2700576	N/A	N/A	LANGLEY AREA
ERMCO WATER SYSTEM	2702721	N/A	N/A	LANGLEY AREA
EXECUTIVE DR WS #01	2700583	N/A	N/A	LANGLEY AREA
FRISCH RD WS #01	2700584	N/A	N/A	LANGLEY AREA
FRISCH RD WS #02	2700588	N/A	N/A	LANGLEY AREA
HIDDEN VALLEY RD WS #13	2701534	N/A	N/A	LANGLEY AREA
HOLLY HILLS MOTEL WS #01	2700582	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
HOLLY HILLS MOTEL WS #02	2700604	N/A	N/A	LANGLEY AREA
HOLLY HILLS WS #01	2701141	N/A	N/A	LANGLEY AREA
HOLLY HILLS WS #02	2701979	N/A	N/A	LANGLEY AREA
HOLLY HILLS WS #03	2702424	N/A	N/A	LANGLEY AREA
HWY 156 WS #01	2701844	N/A	N/A	LANGLEY AREA
HWY 156 WS #02	2705582	N/A	N/A	LANGLEY AREA
JOSHUA LN WS	2701007	N/A	N/A	LANGLEY AREA
KING RD WS #01	2702288	N/A	N/A	LANGLEY AREA
KING RD WS #02	2702307	N/A	N/A	LANGLEY AREA
KING RD WS #03	2702313	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #01	2700617	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #02	2700618	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #03	2700619	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #04	2700620	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #05	2700621	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #06	2701440	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #08	2701243	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #09	2701244	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #10	2701762	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #12	2701437	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #13	2701908	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #15	2701441	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #16	2702346	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #17	2702232	N/A	N/A	LANGLEY AREA
LANGLEY CANYON WS #18	2702309	N/A	N/A	LANGLEY AREA
LAVENDER LN WS #01	2700623	N/A	N/A	LANGLEY AREA
LAVENDER LN WS #02	2701548	N/A	N/A	LANGLEY AREA
LINDA VISTA MWC	2701400	N/A	N/A	LANGLEY AREA
MAHER RD WS #04	2700637	N/A	N/A	LANGLEY AREA
MAHER RD WS #07	2701395	N/A	N/A	LANGLEY AREA
MAHER RD WS #09	2701883	N/A	N/A	LANGLEY AREA
MAHER RD WS #11	2702162	N/A	N/A	LANGLEY AREA
MAHER RD WS #14	2702281	N/A	N/A	LANGLEY AREA
MAHER RD WS #18	2701781	N/A	N/A	LANGLEY AREA
MAHER RD WS #21	2702301	N/A	N/A	LANGLEY AREA
MAHER RD WS #22	2702433	N/A	N/A	LANGLEY AREA
MAHER RD WS #23	2702447	N/A	N/A	LANGLEY AREA
MAHER RD WS #24	2702589	N/A	N/A	LANGLEY AREA
MAHER RD WS #25	2702683	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #01	2701917	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #02	2700640	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
MALLORY CANYON WS #03	2700641	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #04	2701637	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #05	2701448	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #07	2701840	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #08	2701546	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #09	2701723	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #10	2702114	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #11	2702435	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #12	2705586	N/A	N/A	LANGLEY AREA
MALLORY CANYON WS #20	2701137	N/A	N/A	LANGLEY AREA
MARJORIE RD WS	2700921	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #01	2700644	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #03	2701409	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #05	2701596	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #06	2702355	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #07	2702096	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #08	2701449	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #09	2701632	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #10	2702236	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #11	2701643	N/A	N/A	LANGLEY AREA
MCGUFFIE RD WS #12	2702160	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #02	2700646	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #03	2700647	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #04	2701091	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #06	2701451	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #07	2701494	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #08	2701502	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #10	2701875	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #11	2701135	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #12	2701664	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #13	2701919	N/A	N/A	LANGLEY AREA
MERIDIAN RD WS #14	2702092	N/A	N/A	LANGLEY AREA
MESSICK RD WS #01	2700649	N/A	N/A	LANGLEY AREA
MESSICK RD WS #02	2701953	N/A	N/A	LANGLEY AREA
MESSICK RD WS #03	2702112	N/A	N/A	LANGLEY AREA
MESSICK RD WS #04	2702459	N/A	N/A	LANGLEY AREA
MORO RD WS #01	2700657	N/A	N/A	LANGLEY AREA
MORO RD WS #02	2700658	N/A	N/A	LANGLEY AREA
MORO RD WS #03	2700659	N/A	N/A	LANGLEY AREA
MORO RD WS #04	2701925	N/A	N/A	LANGLEY AREA
MORO RD WS #06	2701238	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
MORO RD WS #07	2701454	N/A	N/A	LANGLEY AREA
MORO RD WS #08	2701453	N/A	N/A	LANGLEY AREA
MORO RD WS #10	2702357	N/A	N/A	LANGLEY AREA
MORO RD WS #13	2701528	N/A	N/A	LANGLEY AREA
MORO RD WS #15	2701764	N/A	N/A	LANGLEY AREA
MORO RD WS #16	2700744	N/A	N/A	LANGLEY AREA
MORO RD WS #17	2702725	N/A	N/A	LANGLEY AREA
MUSTANG WA	2701801	N/A	N/A	LANGLEY AREA
OAK ESTATES DR WS #01	2700661	N/A	N/A	LANGLEY AREA
OAK RD WS #01	2700666	N/A	N/A	LANGLEY AREA
OAKRIDGE DR WS #02	2702272	N/A	N/A	LANGLEY AREA
OLD STAGE RD WS #18	2702446	N/A	N/A	LANGLEY AREA
ORCHARD LN WS #01	2700668	N/A	N/A	LANGLEY AREA
ORCHARD LN WS #03	2700670	N/A	N/A	LANGLEY AREA
ORCHARD LN WS #04	2701387	N/A	N/A	LANGLEY AREA
ORCHARD LN WS #06	2701514	N/A	N/A	LANGLEY AREA
PARADISE RD WS #02	2700675	N/A	N/A	LANGLEY AREA
PARADISE RD WS #03	2700676	N/A	N/A	LANGLEY AREA
PARADISE RD WS #04	2700677	N/A	N/A	LANGLEY AREA
PARADISE RD WS #06	2700679	N/A	N/A	LANGLEY AREA
PARADISE RD WS #07	2700680	N/A	N/A	LANGLEY AREA
PARADISE RD WS #11	2701134	N/A	N/A	LANGLEY AREA
PARADISE RD WS #12	2701460	N/A	N/A	LANGLEY AREA
PARADISE RD WS #13	2701461	N/A	N/A	LANGLEY AREA
PARADISE RD WS #22	2701634	N/A	N/A	LANGLEY AREA
PARADISE RD WS #23	2701638	N/A	N/A	LANGLEY AREA
PARADISE RD WS #28	2701462	N/A	N/A	LANGLEY AREA
PARADISE RD WS #29	2701696	N/A	N/A	LANGLEY AREA
PARADISE RD WS #31	2702263	N/A	N/A	LANGLEY AREA
PARADISE RD WS #33	2702337	N/A	N/A	LANGLEY AREA
PESANTE RD WS #01	2701021	N/A	N/A	LANGLEY AREA
PESANTE RD WS #03	2700688	N/A	N/A	LANGLEY AREA
PESANTE RD WS #04	2700689	N/A	N/A	LANGLEY AREA
PESANTE RD WS #07	2700692	N/A	N/A	LANGLEY AREA
PESANTE RD WS #08	2701083	N/A	N/A	LANGLEY AREA
PESANTE RD WS #12	2700734	N/A	N/A	LANGLEY AREA
PESANTE RD WS #13	2701399	N/A	N/A	LANGLEY AREA
PESANTE RD WS #14	2700616	N/A	N/A	LANGLEY AREA
PESANTE RD WS #15	2701923	N/A	N/A	LANGLEY AREA
PESANTE RD WS #16	2701990	N/A	N/A	LANGLEY AREA
PESANTE RD WS #17	2702006	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
PESANTE RD WS #18	2701983	N/A	N/A	LANGLEY AREA
PESANTE RD WS #19	2702111	N/A	N/A	LANGLEY AREA
PESANTE RD WS #21	2701788	N/A	N/A	LANGLEY AREA
PESANTE RD WS #22	2702131	N/A	N/A	LANGLEY AREA
PESANTE RD WS #24	2707025	N/A	N/A	LANGLEY AREA
PESANTE RD WS #25	2702333	N/A	N/A	LANGLEY AREA
PESANTE RD WS #27	2702648	N/A	N/A	LANGLEY AREA
PESANTE RD WS #29	2702794	N/A	N/A	LANGLEY AREA
PEZZINI LN WS #01	2701392	N/A	N/A	LANGLEY AREA
PINE TREE WAY WS #01	2700695	N/A	N/A	LANGLEY AREA
PINE TREE WAY WS #02	2700696	N/A	N/A	LANGLEY AREA
PLAZA SERENA WS	2701636	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #01	2700697	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #02	2701129	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #03	2700699	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #04	2701088	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #05	2702005	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #06	2702051	N/A	N/A	LANGLEY AREA
POLLOCK LN WS #07	2702051	N/A	N/A	LANGLEY AREA
PRUNEDALE RD WS #02	2700704	N/A	N/A	LANGLEY AREA
PRUNEDALE RD WS #03	2701469	N/A	N/A	LANGLEY AREA
PRUNEDALE RD WS #04	2702360	N/A	N/A	LANGLEY AREA
PRUNEDALE RD WS #06	2702425	N/A	N/A	LANGLEY AREA
REESE CIR WS #01	2700712	N/A	N/A	LANGLEY AREA
REESE CIR WS #03	2702222	N/A	N/A	LANGLEY AREA
REESE CIR WS #04	2702591	N/A	N/A	LANGLEY AREA
SAN JUAN GRADE WS #03	2702775	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #02	2700739	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #06	2700743	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #08	2700745	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #13	2700750	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #18	2701680	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #20	2700767	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #26	2701474	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #29	2701501	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #30	2701506	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #31	2701530	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #37	2701988	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #38	2701567	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #39	2701962	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #43	2701674	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
SAN MIGUEL WS #44	2701715	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #45	2701748	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #49	2702120	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #54	2702420	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #59	2702599	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #62	2702690	N/A	N/A	LANGLEY AREA
SAN MIGUEL WS #64	2702731	N/A	N/A	LANGLEY AREA
SANDY HILL DR WS #01	2701787	N/A	N/A	LANGLEY AREA
STRAWBERRY RD WS #01	2700761	N/A	N/A	LANGLEY AREA
STRAWBERRY RD WS #03	2700763	N/A	N/A	LANGLEY AREA
STRAWBERRY RD WS #10	2700770	N/A	N/A	LANGLEY AREA
STRAWBERRY RD WS #22	2702389	N/A	N/A	LANGLEY AREA
STRONG CIR WS	2702264	N/A	N/A	LANGLEY AREA
TARAWILD CT WS #01	2701657	N/A	N/A	LANGLEY AREA
TIMEVIEW WAY WS #01	2702504	N/A	N/A	LANGLEY AREA
TUCKER RD WS #01	2701554	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #01	2700776	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #02	2700777	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #03	2700778	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #04	2701484	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #05	2701380	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #07	2702380	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #08	2700569	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #09	2701366	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #10	2701485	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #14	2701591	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #15	2701724	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #16	2701767	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #17	2701728	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #18	2701970	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #19	2701992	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #20	2702177	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #21	2702178	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #22	2702260	N/A	N/A	LANGLEY AREA
TUSTIN RD WS #23	2702415	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #01	2700780	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #02	2700781	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #03	2700782	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #04	2700783	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #05	2700784	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #09	2702168	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
VALLE PACIFICO WS #11	2702379	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #12	2702025	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #14	2702152	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #15	2702470	N/A	N/A	LANGLEY AREA
VALLE PACIFICO WS #16	2702695	N/A	N/A	LANGLEY AREA
VIA DEL SOL WS #01	2701652	N/A	N/A	LANGLEY AREA
VIA DEL SOL WS #02	2700814	N/A	N/A	LANGLEY AREA
VIA DEL SOL WS #03	2702153	N/A	N/A	LANGLEY AREA
VIA DEL SOL WS #04	2702499	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #01	2701719	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #02	2700791	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #04	2700793	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #05	2700794	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #06	2700795	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #07	2700796	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #08	2701119	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #09	2701488	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #10	2701512	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #11	2701531	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #12	2701532	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #13	2701533	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #14	2700667	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #15	2701565	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #16	2701601	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #17	2701611	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #18	2701617	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #20	2701660	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #21	2701895	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #23	2701725	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #24	2701747	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #27	2701401	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #28	2700722	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #32	2702129	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #33	2702169	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #34	2702249	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #35	2702402	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #36	2702489	N/A	N/A	LANGLEY AREA
VIERRA CANYON WS #37	2702429	N/A	N/A	LANGLEY AREA
WILD HORSE WS #01	2701933	N/A	N/A	LANGLEY AREA
WILD PINTO WS #01	2701795	N/A	N/A	LANGLEY AREA
WILD PINTO WS #02	2701913	N/A	N/A	LANGLEY AREA

Water System Name	ID	Connections	Population Served	Subbasin
WILDER CT WS #01	2702287	N/A	N/A	LANGLEY AREA
CATTLEMEN RD WS #01	2701677	N/A	N/A	UPPER VALLEY AQUIFER
DELICATO VINEYARD WS	2702538	N/A	N/A	UPPER VALLEY AQUIFER
INDIAN VALLEY RD WS #01	2702547	N/A	N/A	UPPER VALLEY AQUIFER
LOS LOBOS RD WS	2701693	N/A	N/A	UPPER VALLEY AQUIFER
MESA VERDE RD WS #01	2701741	N/A	N/A	UPPER VALLEY AQUIFER
MONTEREY-DIXIE WS	2701960	N/A	N/A	UPPER VALLEY AQUIFER
NACIMIENTO LAKE DR WS #01	2701936	N/A	N/A	UPPER VALLEY AQUIFER
RANCHITA CANYON RD WS #01	2705555	N/A	N/A	UPPER VALLEY AQUIFER
SARGENTS RD WS #01	2701710	N/A	N/A	UPPER VALLEY AQUIFER
SARGENTS RD WS #03	2701710	N/A	N/A	UPPER VALLEY AQUIFER
SPRECKELS RD WS - KING CITY	2702075	N/A	N/A	UPPER VALLEY AQUIFER
TEAGUE AVE WS #04	2702465	N/A	N/A	UPPER VALLEY AQUIFER
TOPO RANCH WS	2701162	N/A	N/A	UPPER VALLEY AQUIFER
VINEYARD CANYON WS	2701930	N/A	N/A	UPPER VALLEY AQUIFER

Table 2. Public Water Systems (15 < connections or serving more than 25 peoplefor at least 60 days out of the year)

Water System Name	PWSID	Connections	Population Served	Subbasin	State Water System Classification
ALBA WS	CA2702572	4	40	EASTSIDE AQUIFER	NC
ALCO WATER SERVICE	CA2710001	9,272	29,179	EASTSIDE AQUIFER	C
ALTMAN PLANTS WS #01	CA2700856	5	45	EASTSIDE AQUIFER	NTNC
ALTMAN PLANTS WS #02	CA2702616	3	25	EASTSIDE AQUIFER	NTNC
ASSISI MWC	CA2700503	42	126	EASTSIDE AQUIFER	C
CAL AM WATER COMPANY - RALPH LANE WS	CA2702004	30	66	EASTSIDE AQUIFER	C
COLOR SPOT NURSERY WS #01	CA2700853	4	200	EASTSIDE AQUIFER	NTNC
COLOR SPOT NURSERY WS #02	CA2702482	1	25	EASTSIDE AQUIFER	NTNC
CWSC FOOTHILL ESTATES	CA2702198	45	183	EASTSIDE AQUIFER	C
CWSC SALINAS	CA2710010	24,036	106,858	EASTSIDE AQUIFER	C
EL CAMINO WC INC	CA2702409	31	90	EASTSIDE AQUIFER	C
ENCINAL RD WS #01	CA2701241	18	41	EASTSIDE AQUIFER	C
ESPERANZA RD WS	CA2702615	1	160	EASTSIDE AQUIFER	NTNC
FOOTHILL ESTATES WS	CA2702198	61	183	EASTSIDE AQUIFER	C
FREE WILL BAPTIST CHURCH WS	CA2702475	2	80	EASTSIDE AQUIFER	NC
GABILAN WC	CA2700586	162	454	EASTSIDE AQUIFER	C

Water System Name	PWSID	Connections	Population Served	Subbasin	State Water System Classification
GREEN VALLEY FLORAL WS	CA2701151	1	25	EASTSIDE AQUIFER	NTNC
GROWERS COMPANY INC WS	CA2702202	6	200	EASTSIDE AQUIFER	NTNC
HARRISON RD WS #01	CA2700592	4	40	EASTSIDE AQUIFER	NTNC
IVERSON & JACKS APTS WS	CA2701068	31	150	EASTSIDE AQUIFER	C
IVERSON RD WS #03	CA2702621	1	40	EASTSIDE AQUIFER	NTNC
JOHNSON CYN WS #01	CA2702626	8	28	EASTSIDE AQUIFER	NTNC
LHOIST NORTH AMERICA WS	CA2702259	1	100	EASTSIDE AQUIFER	NTNC
MATSUI NURSERY WS	CA2701931	2	75	EASTSIDE AQUIFER	NTNC
MISIONERO VEGETABLES WS	CA2701946	3	60	EASTSIDE AQUIFER	NTNC
NATIVIDAD RD WS #02	CA2701922	3	35	EASTSIDE AQUIFER	NTNC
OLD NATIVIDAD RD WS #01	CA2701232	3	25	EASTSIDE AQUIFER	NC
PENTECOSTAL WS	CA2700558	1	25	EASTSIDE AQUIFER	NTNC
PREMIUM PACKING WS	CA2702537	1	5	EASTSIDE AQUIFER	NC
ROSEHART INDUSTRIAL PARK WS	CA2702121	13	28	EASTSIDE AQUIFER	NTNC
SAN JERARDO COOP WS	CA2701904	67	249	EASTSIDE AQUIFER	C
SPENCE RD WS #05	CA2701726	4	25	EASTSIDE AQUIFER	NTNC
SUNNY ACRES MWS	CA2701589	15	45	EASTSIDE AQUIFER	C
APPLE AVE WS #02	CA2701034	18	75	FOREBAY AQUIFER	C
APPLE AVE WS #03	CA2701036	20	60	FOREBAY AQUIFER	C
ARROYO SECO ESTATES MWS	CA2702520	20	70	FOREBAY AQUIFER	C
CAMPHORA APARTMENTS	CA2701046	42	126	FOREBAY AQUIFER	C
CAMPHORA STATION WS	CA2701579	5	25	FOREBAY AQUIFER	NTNC
CAMPHORA-GLORIA RD WS #01	CA2702642	2	25	FOREBAY AQUIFER	NC
CORRECTIONAL TRAINING FACILITY - SOLEDAD	CA2710850	2,769	5,500	FOREBAY AQUIFER	C
DOLE FRESH VEGETABLES WS	CA2702412	1	80	FOREBAY AQUIFER	NTNC
ESTANCIA WINERY WS	CA2702613	1	70	FOREBAY AQUIFER	NTNC
FOOTHILL RD WS #01	CA2702431	4	25	FOREBAY AQUIFER	NTNC
GOLDEN STATE VINTNERS WS	CA2701550	1	30	FOREBAY AQUIFER	NTNC
GONZALES, CITY OF	CA2710007	1,930	8,383	FOREBAY AQUIFER	C
GREENFIELD, CITY OF	CA2710008	3,720	17,517	FOREBAY AQUIFER	C
KENDALL-JACKSON WINERY WS	CA2702496	2	45	FOREBAY AQUIFER	NTNC
MCCOY RD WS #05	CA2701040	24	72	FOREBAY AQUIFER	C
MISSION SCHOOL WS	CA2702317	1	100	FOREBAY AQUIFER	NTNC
OAK PARK WS	CA2700999	1	29	FOREBAY AQUIFER	NC
OASIS CAFE WS	CA2701000	5	31	FOREBAY AQUIFER	NC

Water System Name	PWSID	Connections	Population Served	Subbasin	State Water System Classification
PARADISE RD WS #21	CA2701633	16	48	FOREBAY AQUIFER	C
PARAISO HOT SPRINGS WS	CA2701001	5	25	FOREBAY AQUIFER	NC
PINE ST WS #01	CA2701403	17	65	FOREBAY AQUIFER	C
SALINAS VALLEY STATE PRISON	CA2710851	2,208	3,386	FOREBAY AQUIFER	C
SAN SABA WINERY WS	CA2702609	2	29	FOREBAY AQUIFER	NC
SAN VICENTE MWC	CA2702466	21	90	FOREBAY AQUIFER	C
SOLEDAD MISSION WS	CA2701176	2	25	FOREBAY AQUIFER	NC
SOLEDAD, CITY OF	CA2710011	3,669	16,729	FOREBAY AQUIFER	C
AMERICAN LEGION #593 WS	CA2702679	2	25	LANGLEY AREA	NC
BLACKIE RD WS #05	CA2700837	18	54	LANGLEY AREA	C
BLACKIE RD WS #18	CA2702094	21	60	LANGLEY AREA	C
CABANA HOLIDAY WS	CA2700522	146	400	LANGLEY AREA	C
CALVARY CHURCH INC WS	CA2700703	5	150	LANGLEY AREA	NTNC
CENTRAL BAY HIGH SCHOOL WS	CA2702490	1	250	LANGLEY AREA	NTNC
CHETMOORE ACRES WA	CA2700634	24	50	LANGLEY AREA	C
COLONIAL OAK WC INC	CA2700534	66	198	LANGLEY AREA	C
COUNTRY MEADOWS MWC	CA2701929	107	621	LANGLEY AREA	C
COUNTRYSIDE ESTATES MWC	CA2702374	18	73	LANGLEY AREA	C
CWSC COUNTRY MEADOWS	CA2701929	107	294	LANGLEY AREA	C
CWSC OAK HILLS	CA2710019	894	3,904	LANGLEY AREA	C
ECHO VALLEY RD WS #05	CA2701423	16	48	LANGLEY AREA	C
ECHO VALLEY SCHOOL WS	CA2700552	1	579	LANGLEY AREA	NTNC
GARLEN COURT WS	CA2700686	23	69	LANGLEY AREA	C
GLENN AVE WS #01	CA2700589	26	78	LANGLEY AREA	C
HIDDEN CANYON RANCH MWC	CA2702554	27	102	LANGLEY AREA	C
HIDDEN VALLEY WA	CA2700594	31	51	LANGLEY AREA	C
HOLLY HILLS MWC	CA2701789	27	108	LANGLEY AREA	C
LA TAPATIA TAQUERIA WS	CA2702382	1	25	LANGLEY AREA	NC
LANGLEY/VALLE PACIFICO WS	CA2701670	31	81	LANGLEY AREA	C
MAHER RD WS #05	CA2700638	17	51	LANGLEY AREA	C
MANZANITA PARK WS	CA2702229	1	300	LANGLEY AREA	NC
MERIDIAN RD WS #09	CA2701837	2	35	LANGLEY AREA	NTNC
MONTEREY BAY NURSERY WS	CA2702336	3	25	LANGLEY AREA	NTNC
MONTEREY DUNES MWA	CA2701452	137	280	LANGLEY AREA	C
MONTEREY MUSHROOMS WS	CA2701940	1	450	LANGLEY AREA	NTNC
MORO COJO MWA	CA2700656	19	67	LANGLEY AREA	C

Water System Name	PWSID	Connections	Population Served	Subbasin	State Water System Classification
MORO RD WS #09	CA2701926	65	210	LANGLEY AREA	C
NORMCO	CA2700511	267	928	LANGLEY AREA	C
OAK HEIGHTS W & R CO INC	CA2700665	35	105	LANGLEY AREA	C
OAK MANOR WS	CA2700509	28	71	LANGLEY AREA	C
ORCHARD LN WS #02	CA2700669	16	32	LANGLEY AREA	C
ORCHARD LN WS #09	CA2702165	5	25	LANGLEY AREA	NC
PAJARO/SUNNY MESA COMMUNITY SERVICES DISTRICT	CA2710020	457	6,500	LANGLEY AREA	C
PARADISE RD WS #05	CA2700678	15	42	LANGLEY AREA	C
PARADISE RD WS #09	CA2700682	18	250	LANGLEY AREA	C
PESANTE RD WS #02	CA2700687	40	120	LANGLEY AREA	C
PESANTE RD WS #06	CA2700691	16	48	LANGLEY AREA	C
POND-DEROSA OAKS WC	CA2701553	72	216	LANGLEY AREA	C
PRUNEDALE CHEVRON WS	CA2701630	1	25	LANGLEY AREA	NC
PRUNEDALE MWC	CA2700702	84	252	LANGLEY AREA	C
PRUNEDALE PLAZA WS	CA2701814	11	90	LANGLEY AREA	NC
PRUNEDALE SCHOOL WS	CA2700705	1	400	LANGLEY AREA	NTNC
PRUNEDALE SHOPPING CENTER WS	CA2701231	1	150	LANGLEY AREA	NTNC
PRUNETREE SHOPPING CENTER WS	CA2702368	38	200	LANGLEY AREA	NTNC
RANCHO BORROMEO MWS	CA2700709	36	100	LANGLEY AREA	C
ROLLING HILLS RANCHO WA	CA2700713	59	177	LANGLEY AREA	C
ROYAL OAK PLACE WS	CA2702388	20	60	LANGLEY AREA	C
ROYAL OAKS PARK WS	CA2700636	1	25	LANGLEY AREA	NC
SALINAS TRANSPLANT WS	CA2702021	1	58	LANGLEY AREA	NC
SAN MIGUEL WS #01	CA2700738	34	100	LANGLEY AREA	C
SAN MIGUEL WS #03	CA2700740	16	48	LANGLEY AREA	C
SAN MIGUEL WS #22	CA2702073	31	93	LANGLEY AREA	C
SPRING CANYON WA	CA2700838	33	99	LANGLEY AREA	C
SUMMERHILL MHP WS	CA2700792	34	102	LANGLEY AREA	C
THIMIO MWC	CA2702608	21	60	LANGLEY AREA	C
VIERRA CANYON WS #29	CA2701942	2	25	LANGLEY AREA	NC
VIERRA ESTATES WS	CA2702007	53	164	LANGLEY AREA	C
VIERRA KNOLLS MWC	CA2702055	22	66	LANGLEY AREA	C
VIERRA MEADOWS MWC	CA2702003	25	75	LANGLEY AREA	C
WOODLAND HEIGHTS MWC	CA2702439	19	57	LANGLEY AREA	C
AERA ENERGY LLC WS	CA2701187	1	75	UPPER VALLEY AQUIFER	NTNC

Water System Name	PWSID	Connections	Population Served	Subbasin	State Water System Classification
BERNARDO RD WS #02	CA2702486	3	25	UPPER VALLEY AQUIFER	NC
BRADLEY UNION SCHOOL WS	CA2700964	1	100	UPPER VALLEY AQUIFER	NTNC
CALIFORNIA ORCHARD WS	CA2701742	50	150	UPPER VALLEY AQUIFER	C
CAMP ROBERTS - CALIFORNIA NATIONAL GUARD	CA2710705	342	385	UPPER VALLEY AQUIFER	NTNC
CHEVRON OIL FIELD WS	CA2701171	1	75	UPPER VALLEY AQUIFER	NTNC
CWSC KING CITY	CA2710009	2,778	14,441	UPPER VALLEY AQUIFER	C
LITTLE BEAR WATER COMPANY	CA2710016	705	2,303	UPPER VALLEY AQUIFER	C
SAN ARDO WD	CA2700728	162	550	UPPER VALLEY AQUIFER	C
SAN LUCAS WD	CA2701676	96	500	UPPER VALLEY AQUIFER	C
SCHEID VINEYARD WS	CA2702539	1	45	UPPER VALLEY AQUIFER	NTNC
WILDHORSE CAFE WS	CA2701172	6	50	UPPER VALLEY AQUIFER	NTNC

Appendix 4A

ISW Seasonality Analysis

APPENDIX 4A. ISW SEASONALITY ANALYSIS

Surface water and groundwater can be hydrologically connected along a stream reach during some months of the year and not others. These temporal variations of interconnected surface water (ISW) during a given year are the result of variations in recharge, precipitation, groundwater pumping, and riparian evapotranspiration. Along the Salinas River, monthly changes in reservoir operations also influence ISW reaches. The river and groundwater systems in the valley, particularly in the Upper Valley and Forebay Subbasins, are supported by water released from the Nacimiento and San Antonio Reservoirs. The releases add water to the river, which in turn provides a substantial amount of recharge to groundwater via channel seepage. Hydrologic connectivity in the Salinas Valley is estimated using results from the SVIHM (version 1, M&A, 2025), which is calibrated to historical groundwater levels and stream flows. For this analysis, stream reaches were considered to have ISW when simulated historical groundwater levels under the river and tributaries were at or above the bottom of the channel (ie a simulated gaining reach), based on the DWR definition of interconnection as a continuous saturated zone under the surface water body as described in Section 4.4.5.1.

The Salinas River is a dynamic system that responds to climate conditions, reservoir releases, and groundwater pumping. Along the Salinas River, the timing of reservoir releases is an important factor for ISW since releases during the conservation release period (April through October) are intended in part for groundwater recharge. The ISW locations described in section 4.4.5.1 of the GSP represent reaches that are connected more than 10% of time over the SVIHM simulation period from WY 1980 to WY 2022. The number of interconnected reaches is similar regardless of whether a threshold of 10% or 50% time-connected is used; therefore, 10% was selected as a conservative assumption. River and tributary reaches overlying the Salinas Valley Aquitard are not included in this analysis because the aquitard prevents recharge of surface water to the principal aquifer in the subbasin. The identified ISW locations are the best estimates of where persistent hydrologic connections potentially occur along streams in the Salinas Valley. However, the lateral extents (lengths) of these reaches vary from month to month during the year, as well as from year to year.

ISW was analyzed on a monthly basis to understand temporal variations throughout the year. Figure 4A-1 shows the monthly distribution of the percentage of modeled stream cells in the Upper Valley Subbasin with comparison to the entire Salinas Valley. A box plot for each month shows the distribution for that month. For example, the January box summarizes the percentage of modeled stream cells connected during the month of January across the SVIHM simulation period from WY 1980 to WY 2022. The box extends from the 25th to the 75th percentile, the horizontal line represents the median, and the whiskers extend to the lowest and highest values within 1.5 times the interquartile range. Outliers beyond the whiskers are not shown.

The monthly analysis shows the average temporal connectivity along the entire length of a stream; however, some reaches of the stream have much lower or higher connectivity than indicated by the average values. Model results demonstrate that the Upper Valley Subbasin consistently exhibits a higher percentage of hydrologic connection throughout the entire water year compared to the Valley-wide average.

In addition to seasonal variability, interannual climatic conditions significantly influence the extent and duration of ISW. Figure 4A-2 shows estimated average annual percent connection for the SVIHM model period. ISW extents decreased substantially during drought periods, such as around 1990, 2015, and 2022. Figure 4A-3 demonstrates the percentage of streams hydrologically connected across varying water year types, categorized from dry to wet classifications based on historical hydrology. Expectedly, connectivity exhibits a positive correlation with water year wetness. Consistent with the monthly findings, the Upper Valley Subbasin demonstrates a higher connectivity across all climatic conditions relative to all subbasins in aggregate. Connectivity is generally more variable during dry or dry-normal climate conditions than wet or wet-normal conditions.

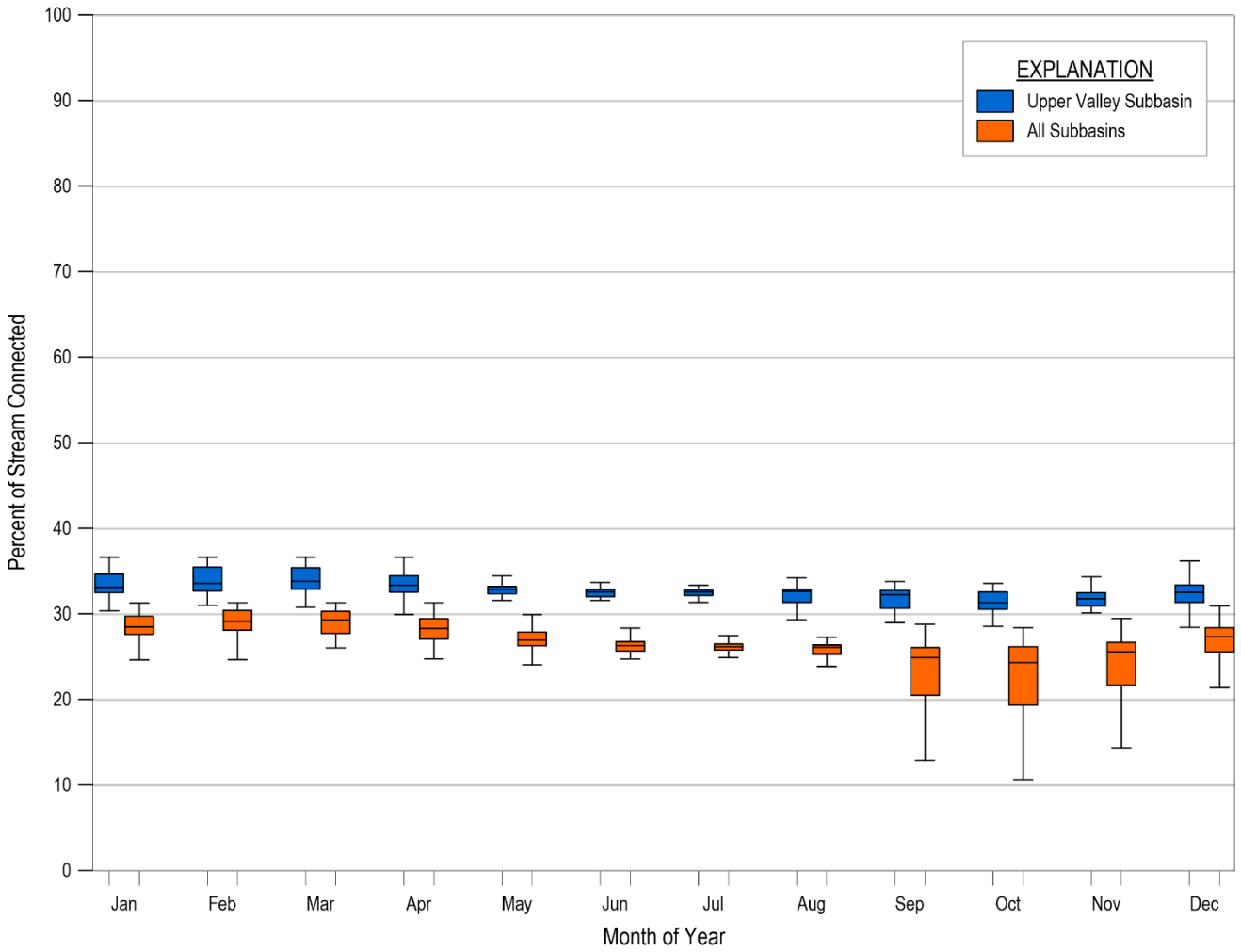


Figure 4A-1. Monthly Distribution of Percent of Streams Connected

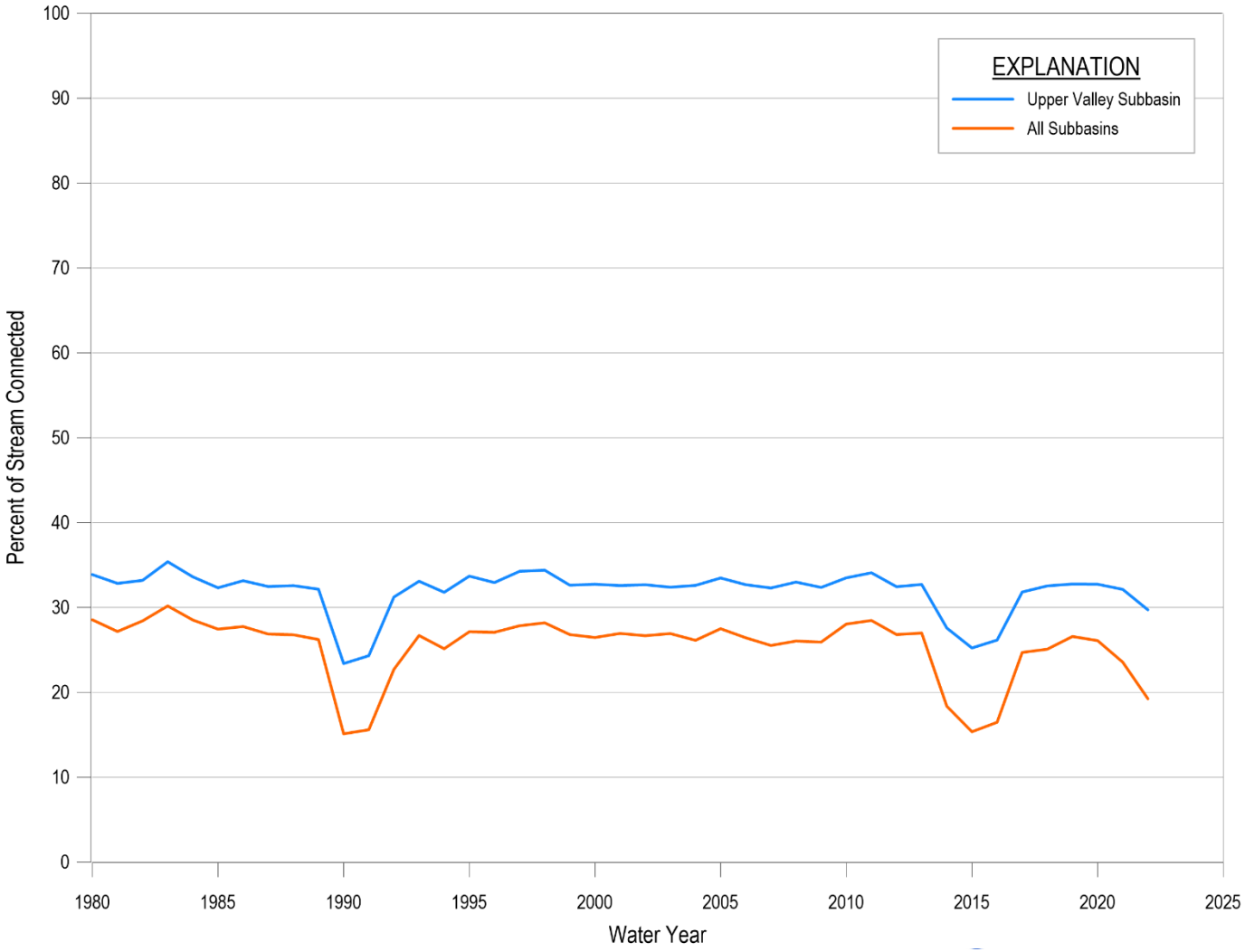


Figure 4A-2. Average Annual Percent of Streams Connected

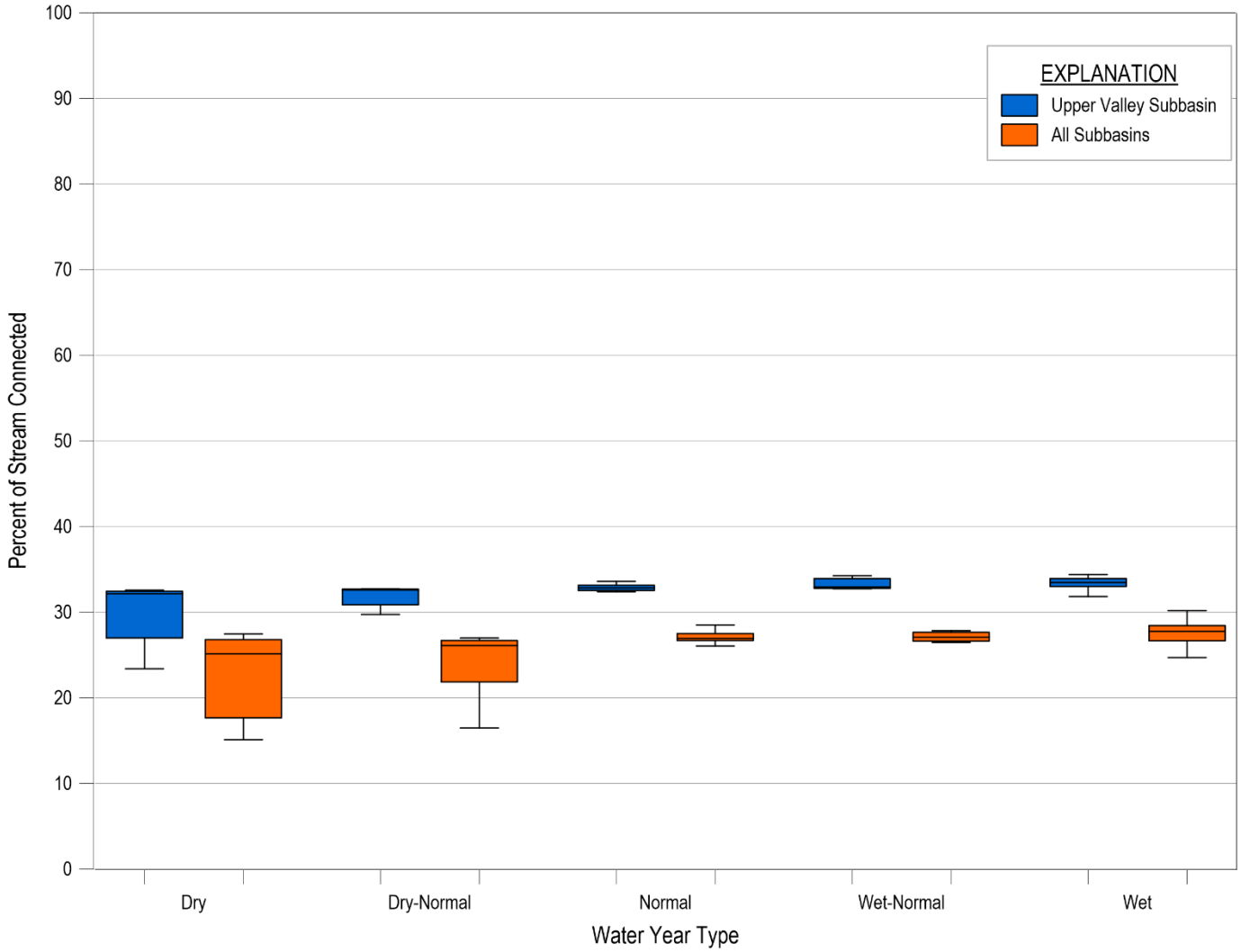


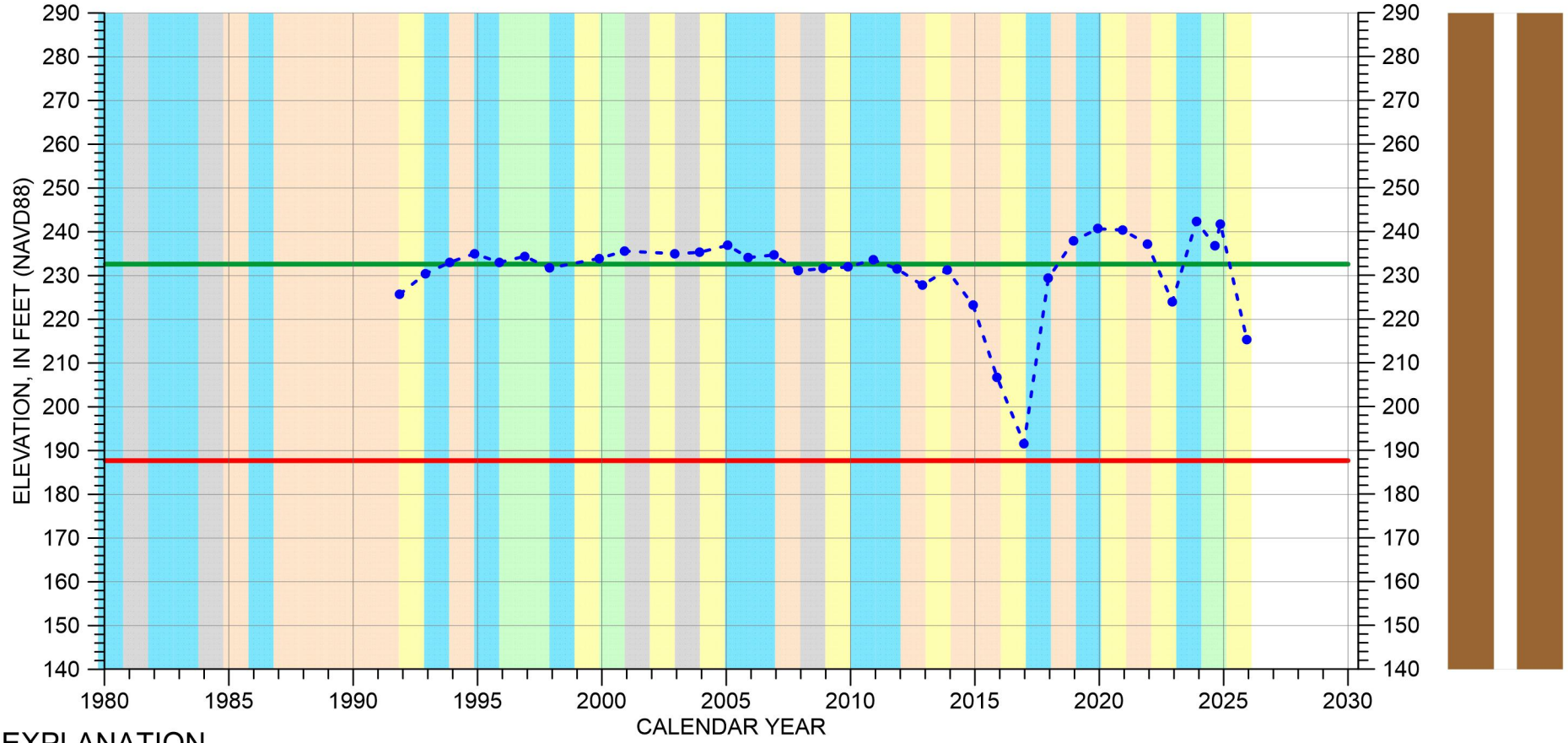
Figure 4A-3. Distribution of Percent of Streams Connected Across Water Year Types (Dry to Wet)

Appendix **5A**

RMS Hydrographs

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/07E-14N02

Upper Valley Aquifer Subbasin

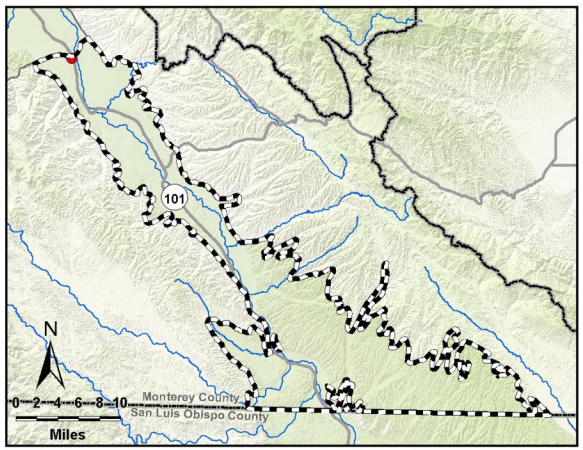


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (322 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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



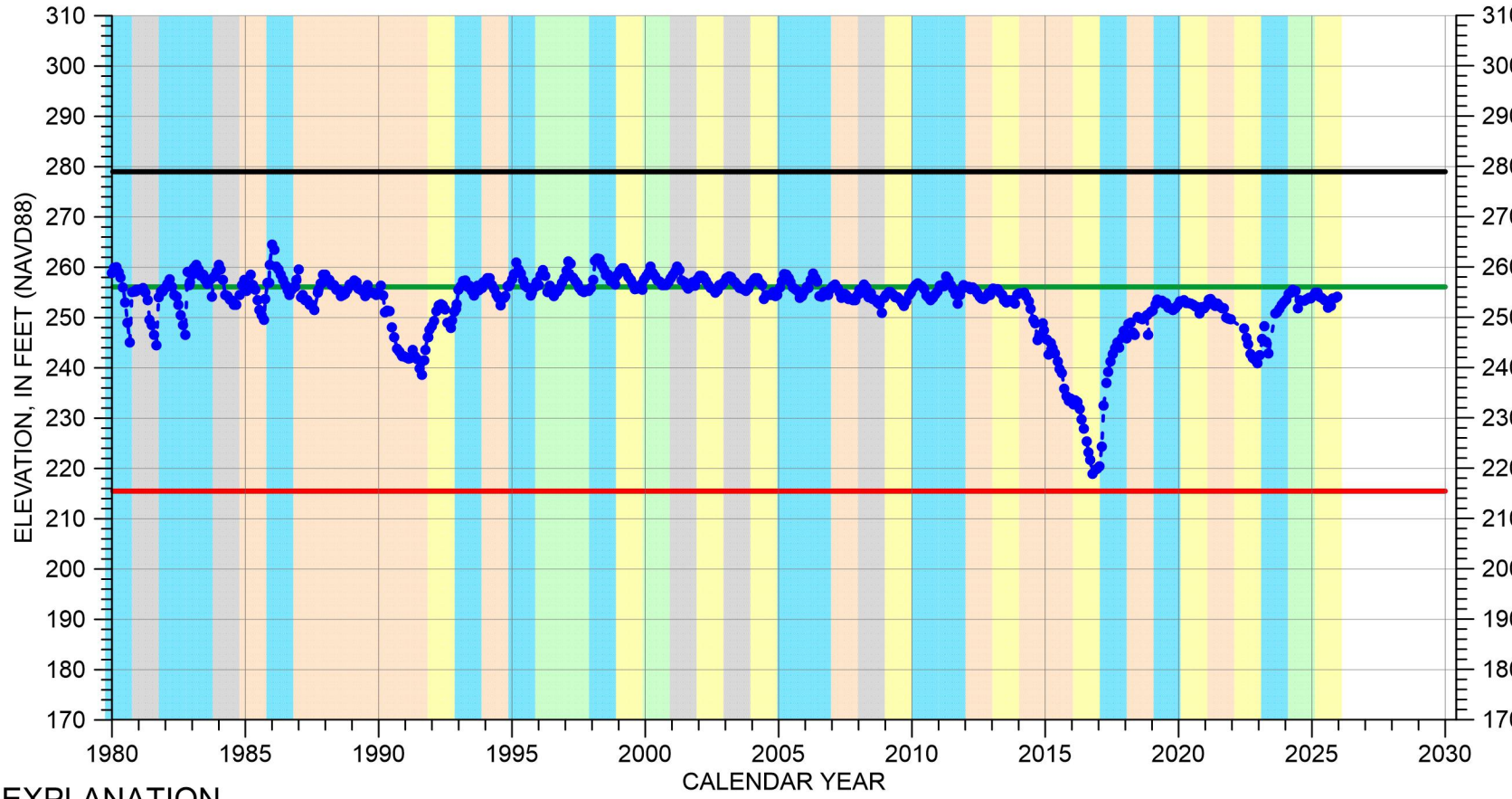
Perforated interval unknown

Well bottom 72 feet msl

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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 19S/08E-19K03

Upper Valley Aquifer Subbasin

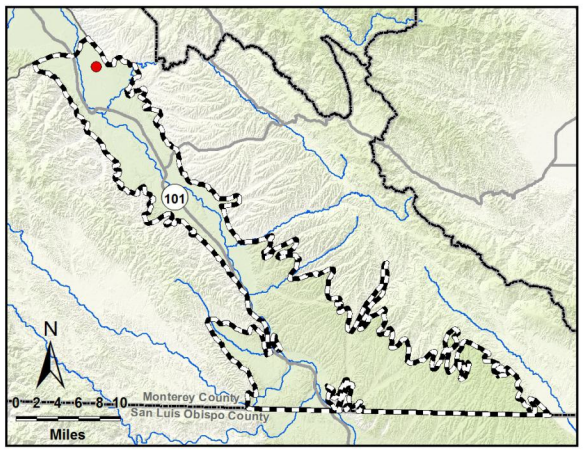


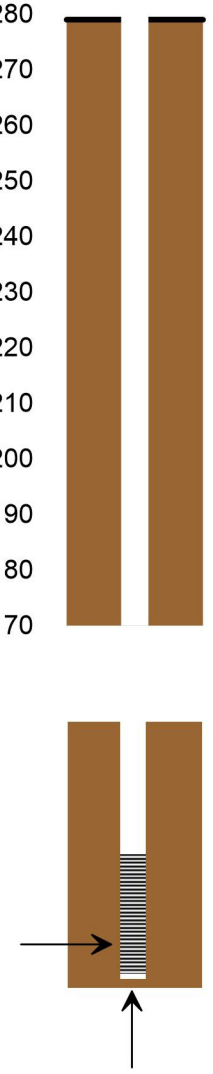
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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

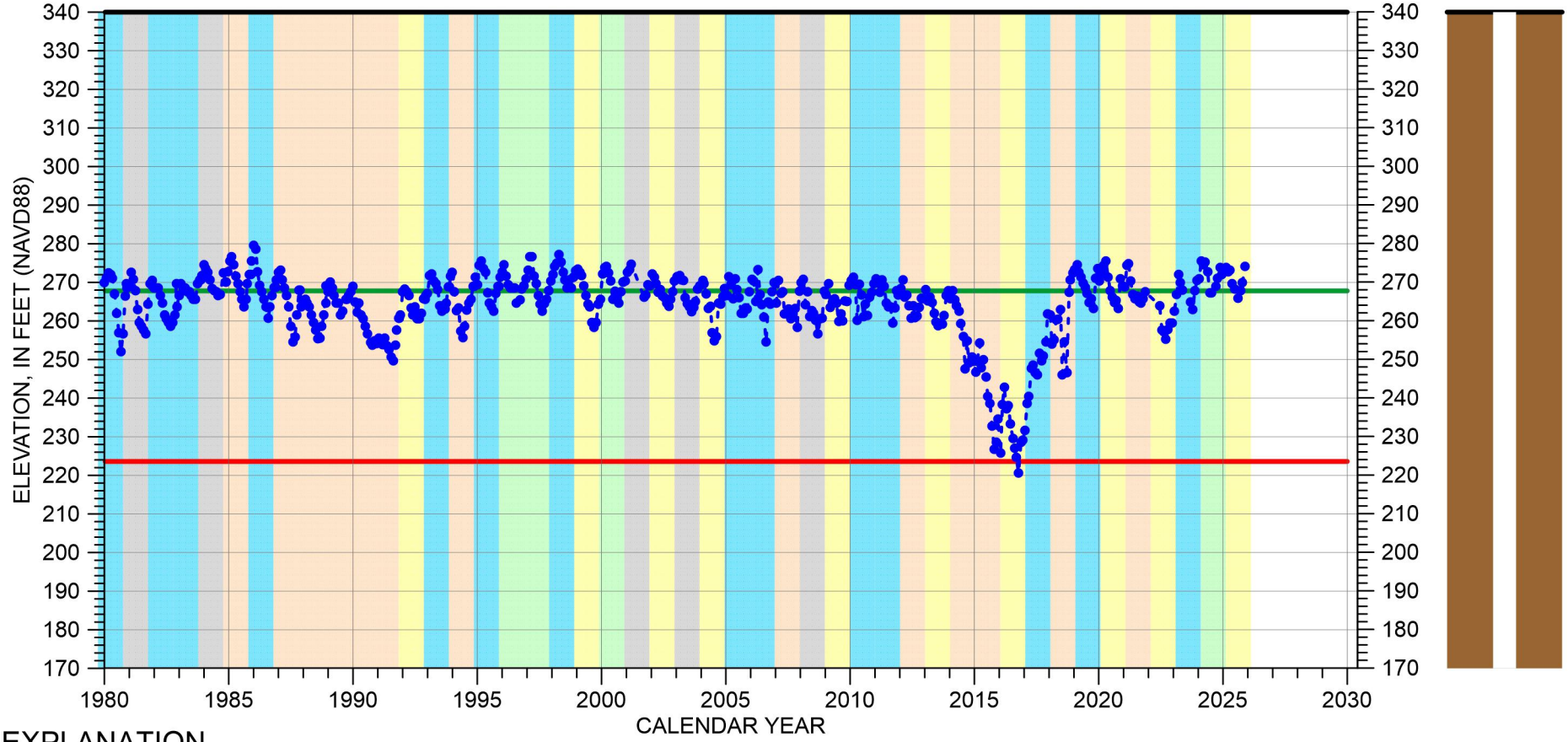




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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 20S/08E-05R03

Upper Valley Aquifer Subbasin

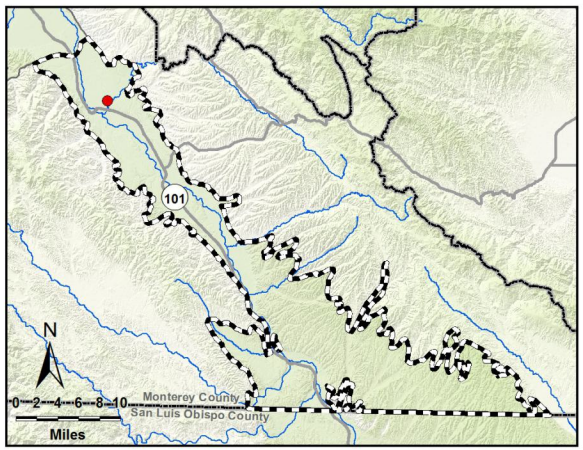


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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



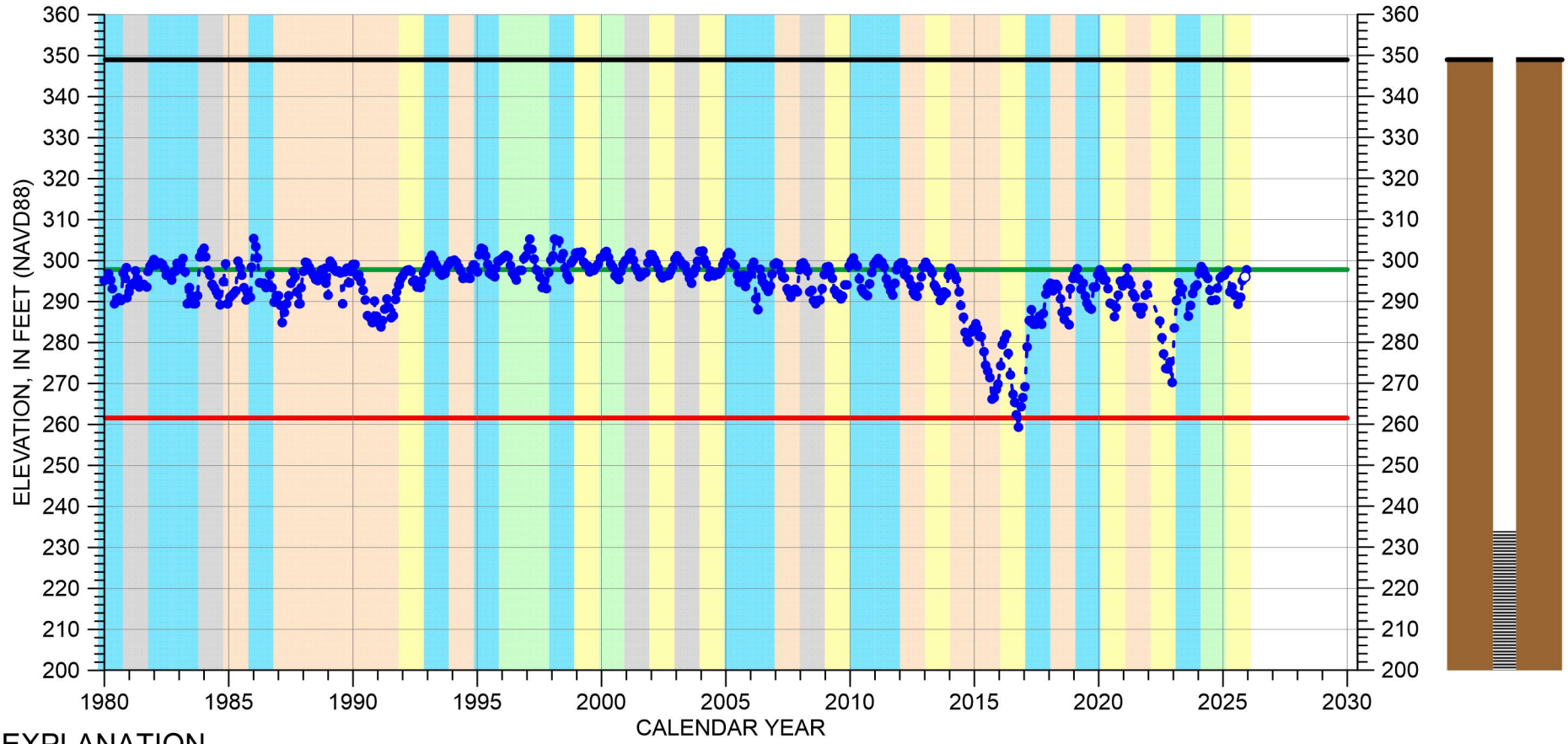
Perforated interval unknown

Well bottom -10 feet msl

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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 20S/08E-14K01

Upper Valley Aquifer Subbasin

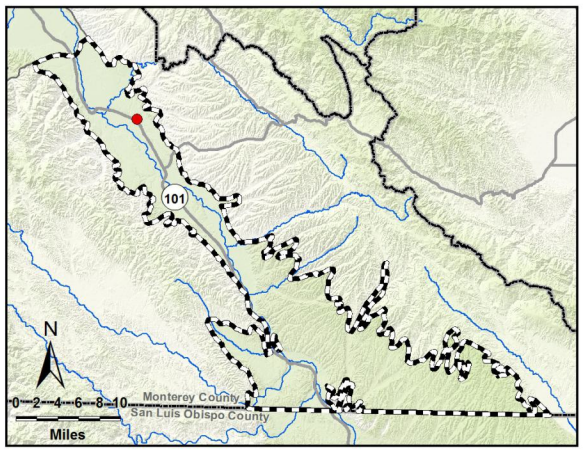


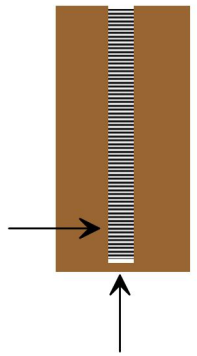
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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





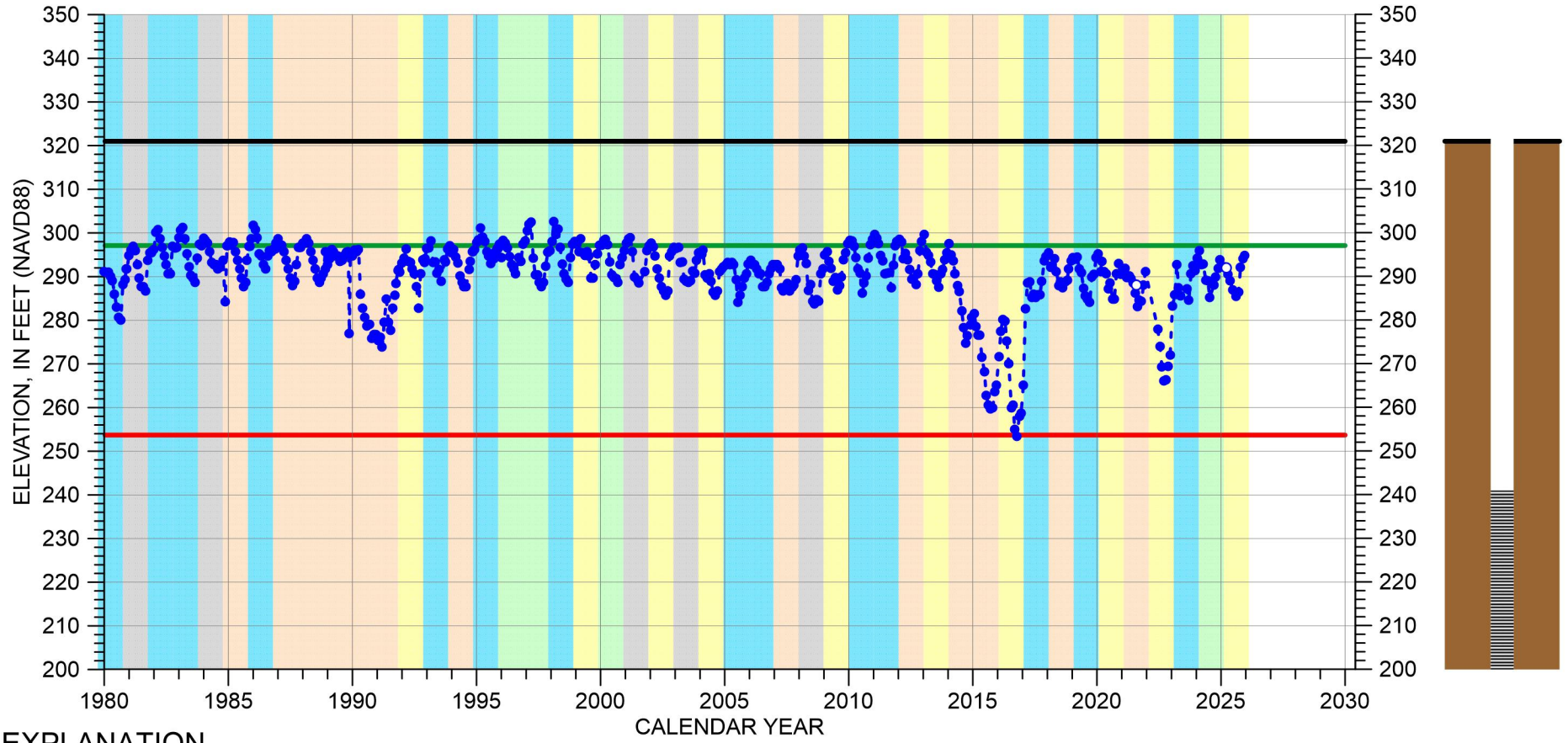
Multiple perforated intervals from 234 to 144 feet msl

Well bottom 113 feet msl

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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 20S/08E-15H03

Upper Valley Aquifer Subbasin

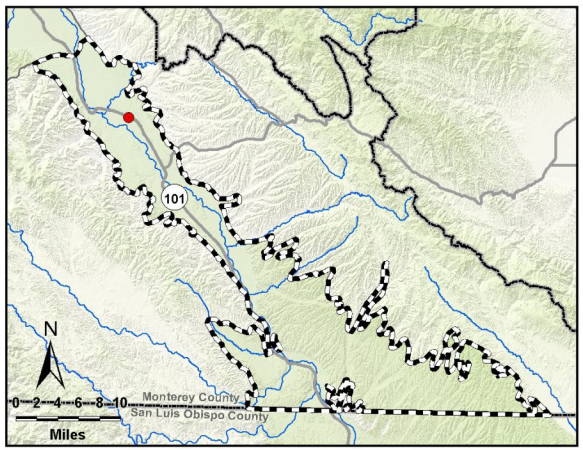


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

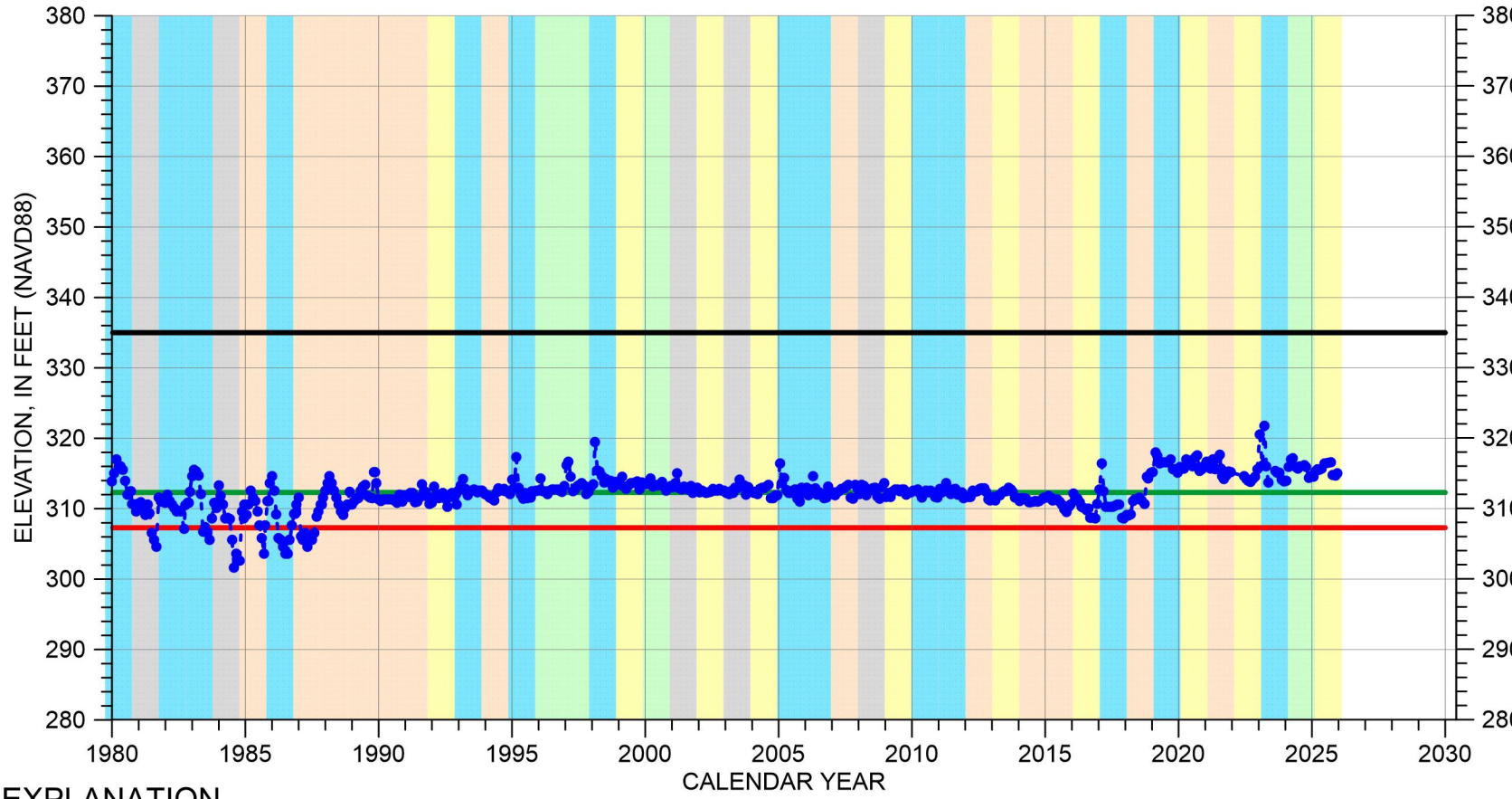
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 20S/08E-25Q01

Upper Valley Aquifer Subbasin

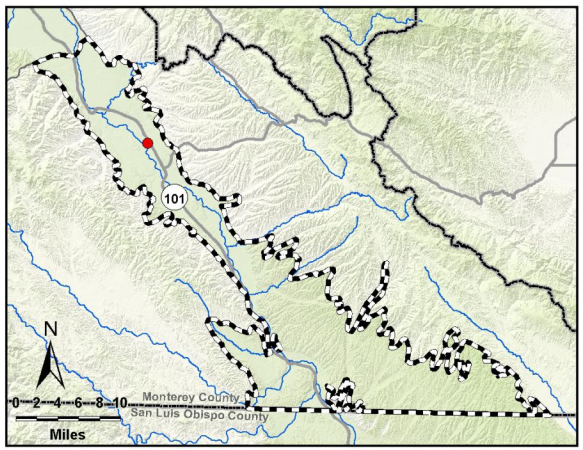


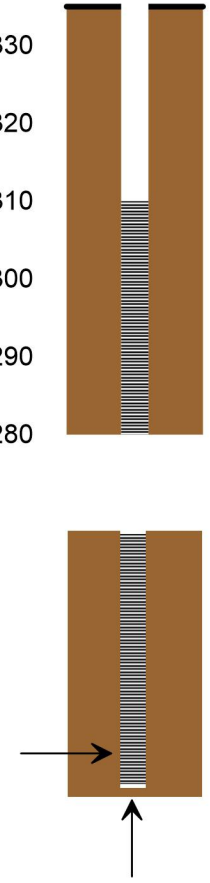
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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

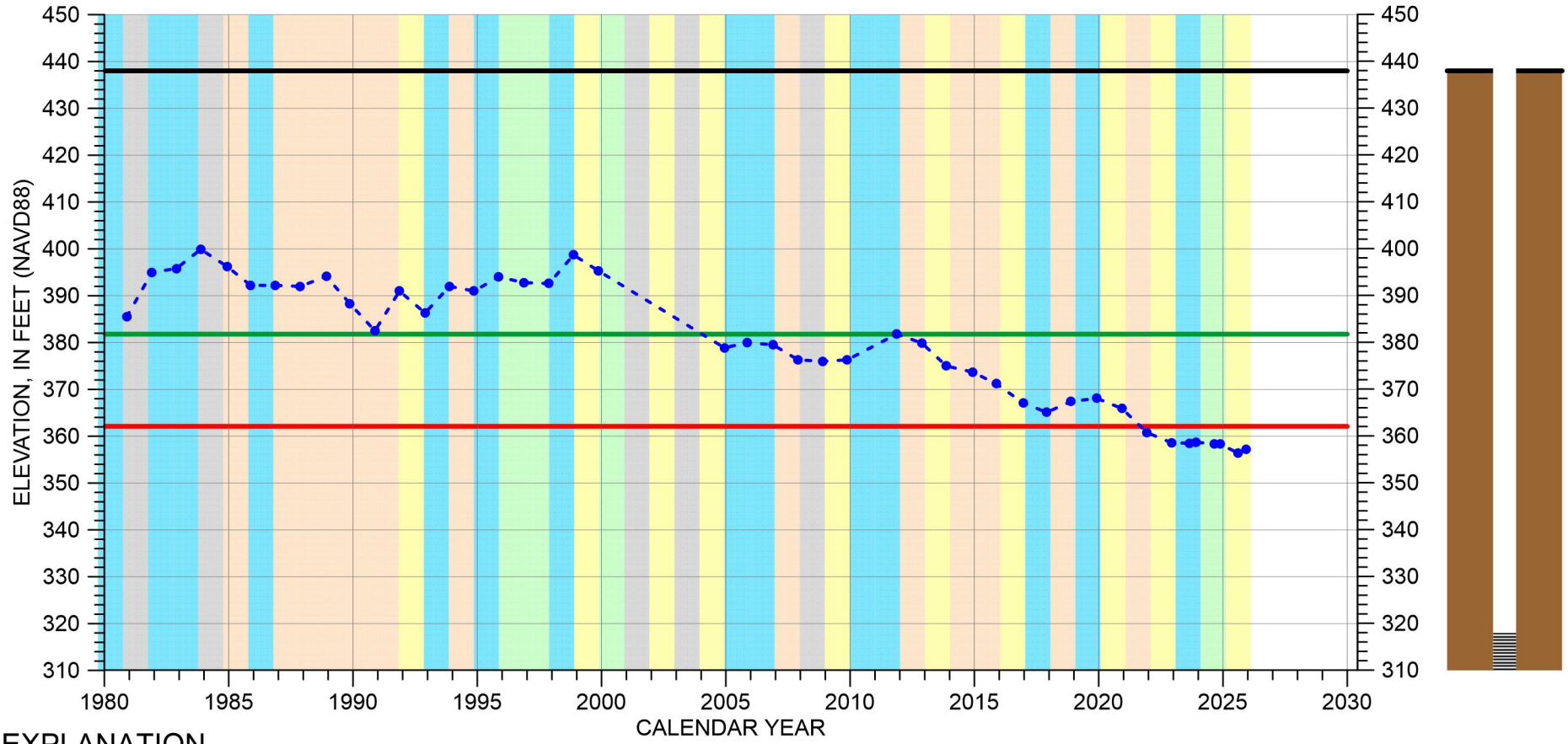




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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 20S/08E-34G01

Upper Valley Aquifer Subbasin

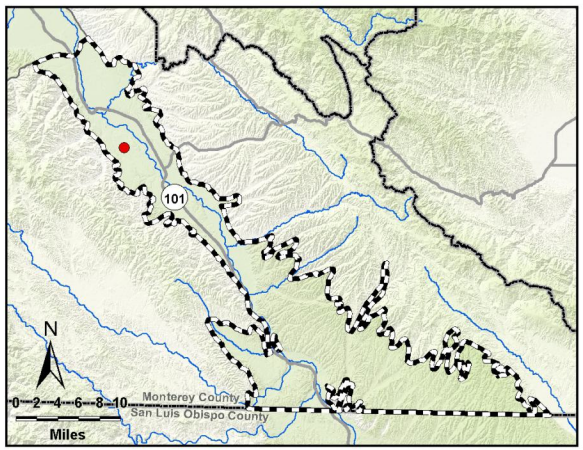


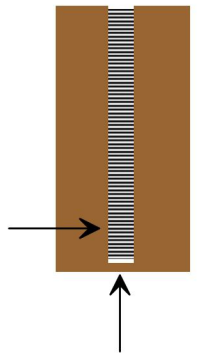
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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

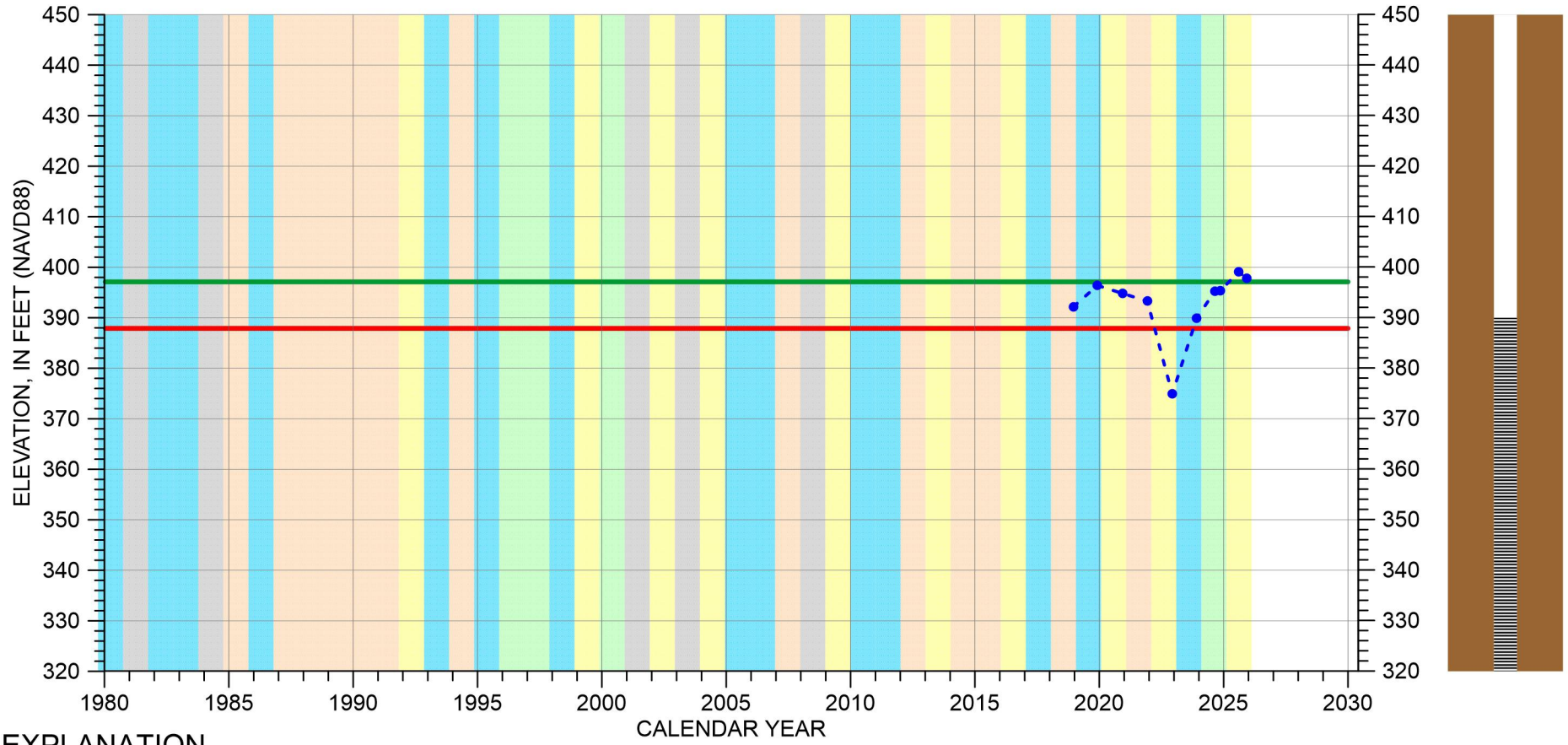




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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 21S/08E-13H01

Upper Valley Aquifer Subbasin

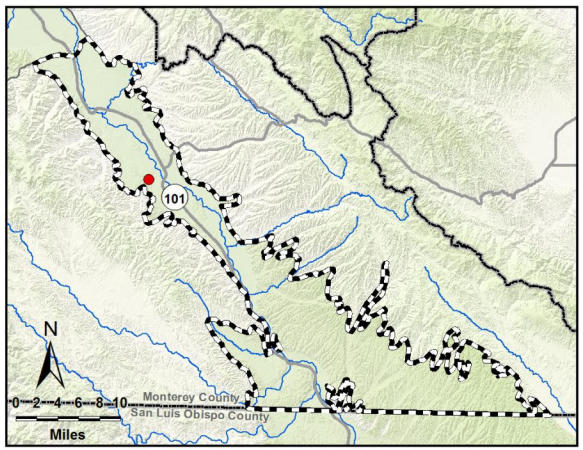


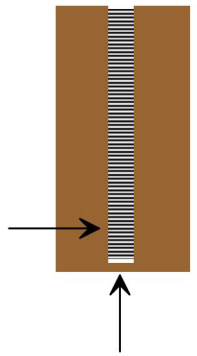
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (480 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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

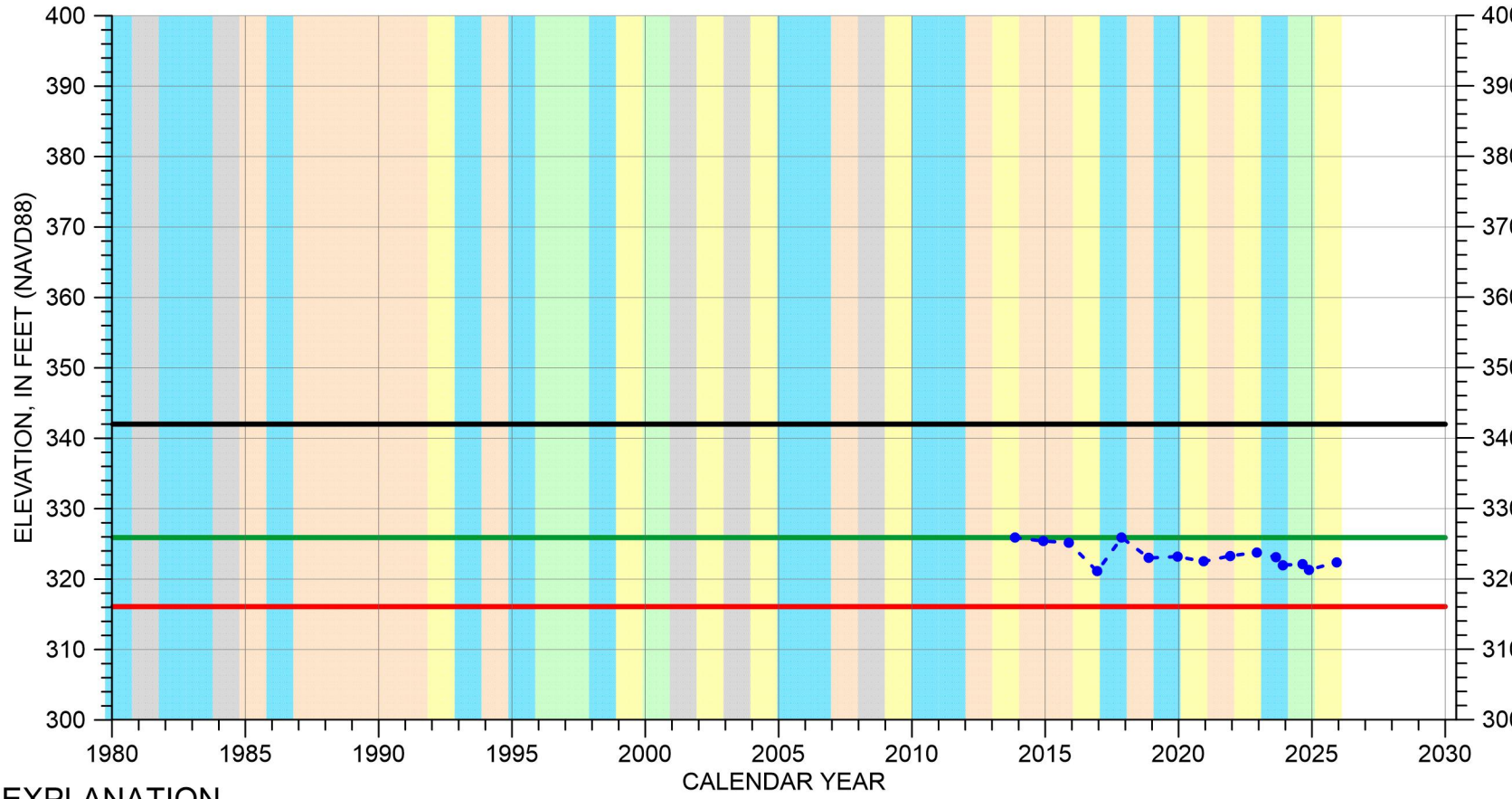




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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 21S/09E-06F50

Upper Valley Aquifer Subbasin

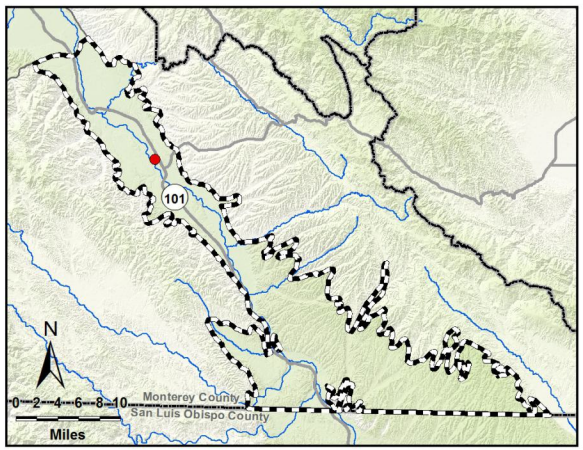


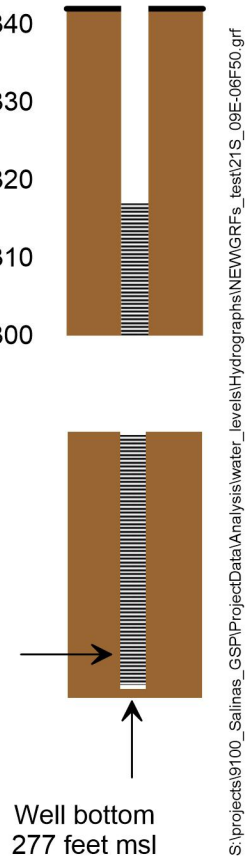
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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

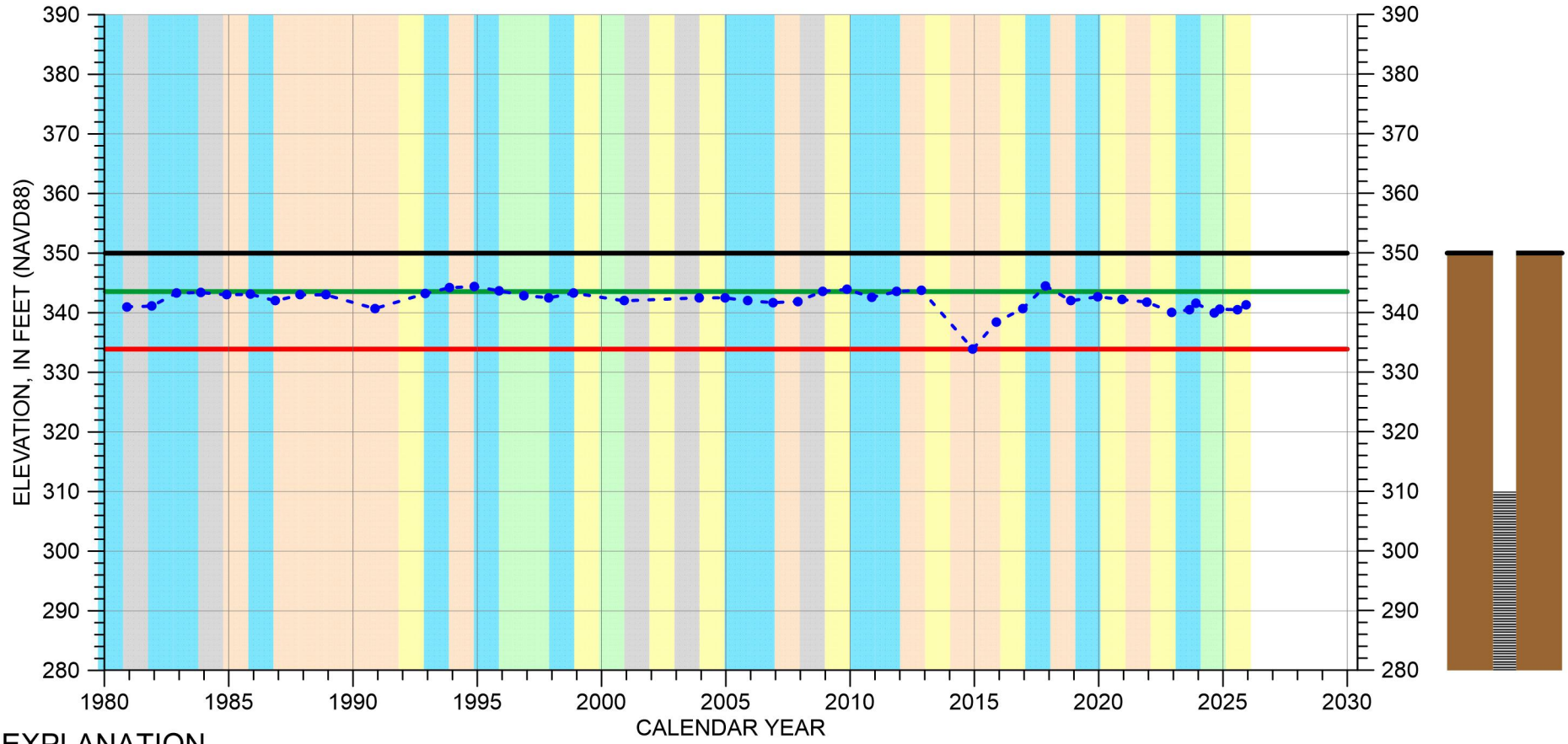




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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 21S/09E-16E01

Upper Valley Aquifer Subbasin

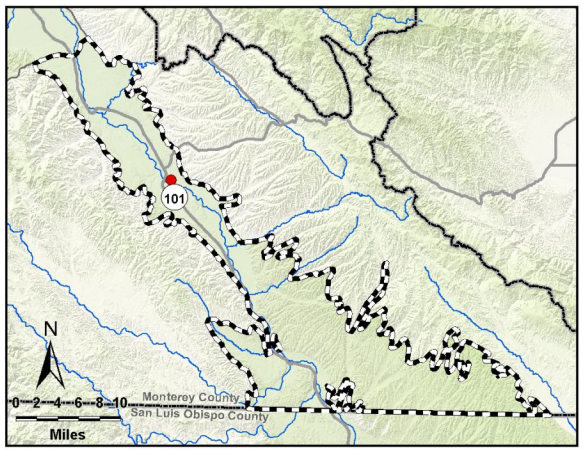


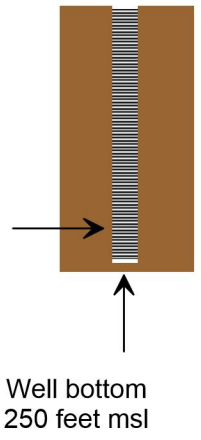
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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

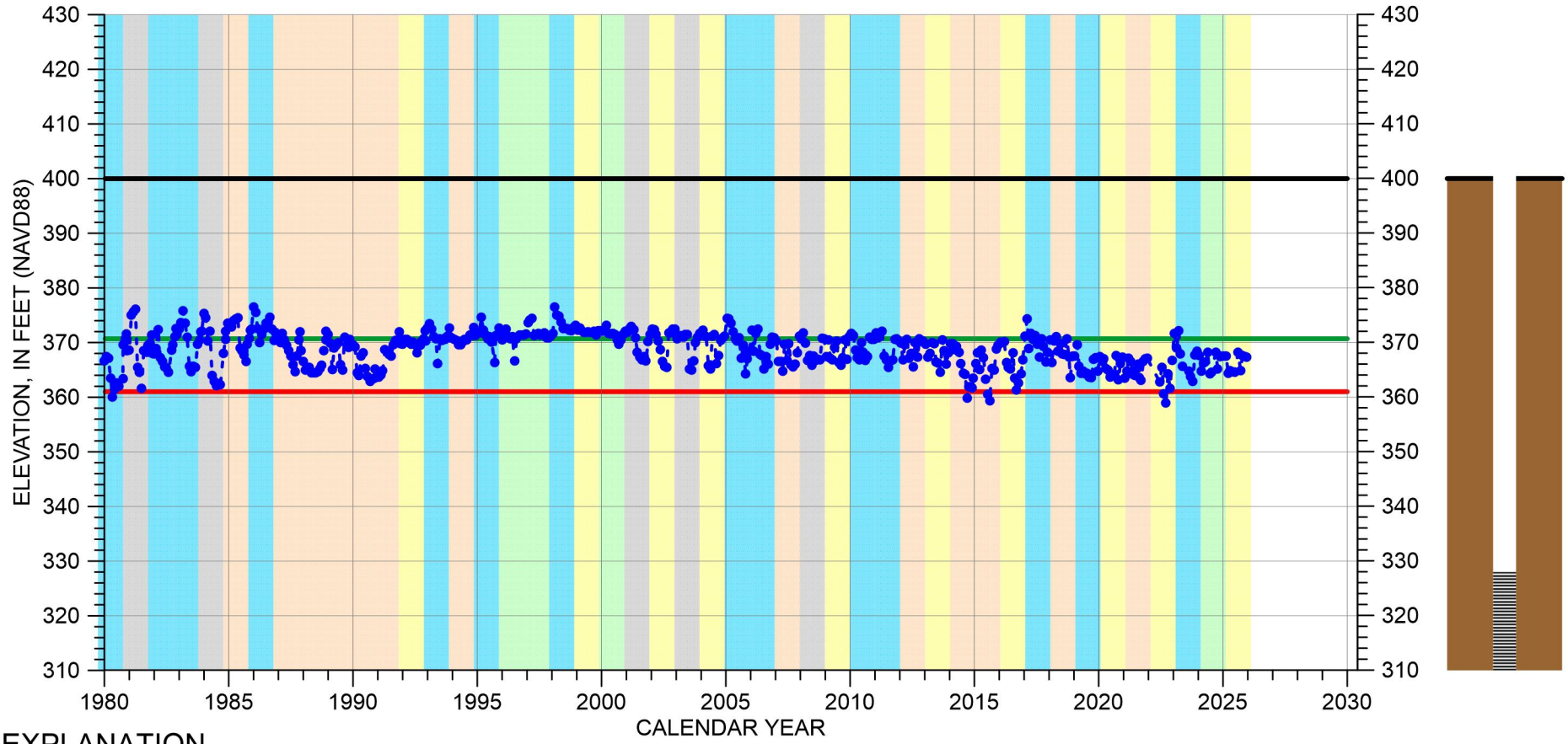




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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 21S/09E-24L01

Upper Valley Aquifer Subbasin

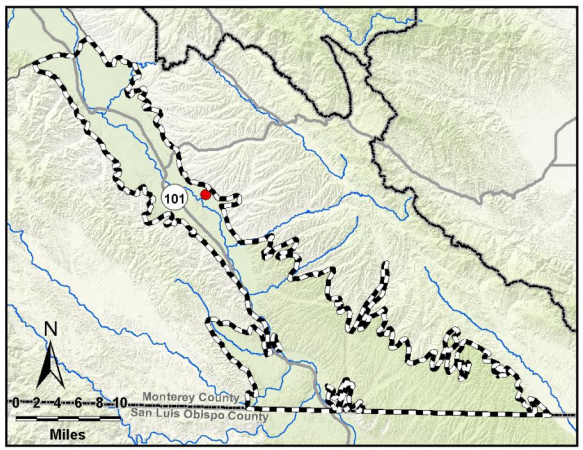


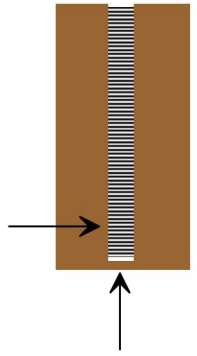
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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





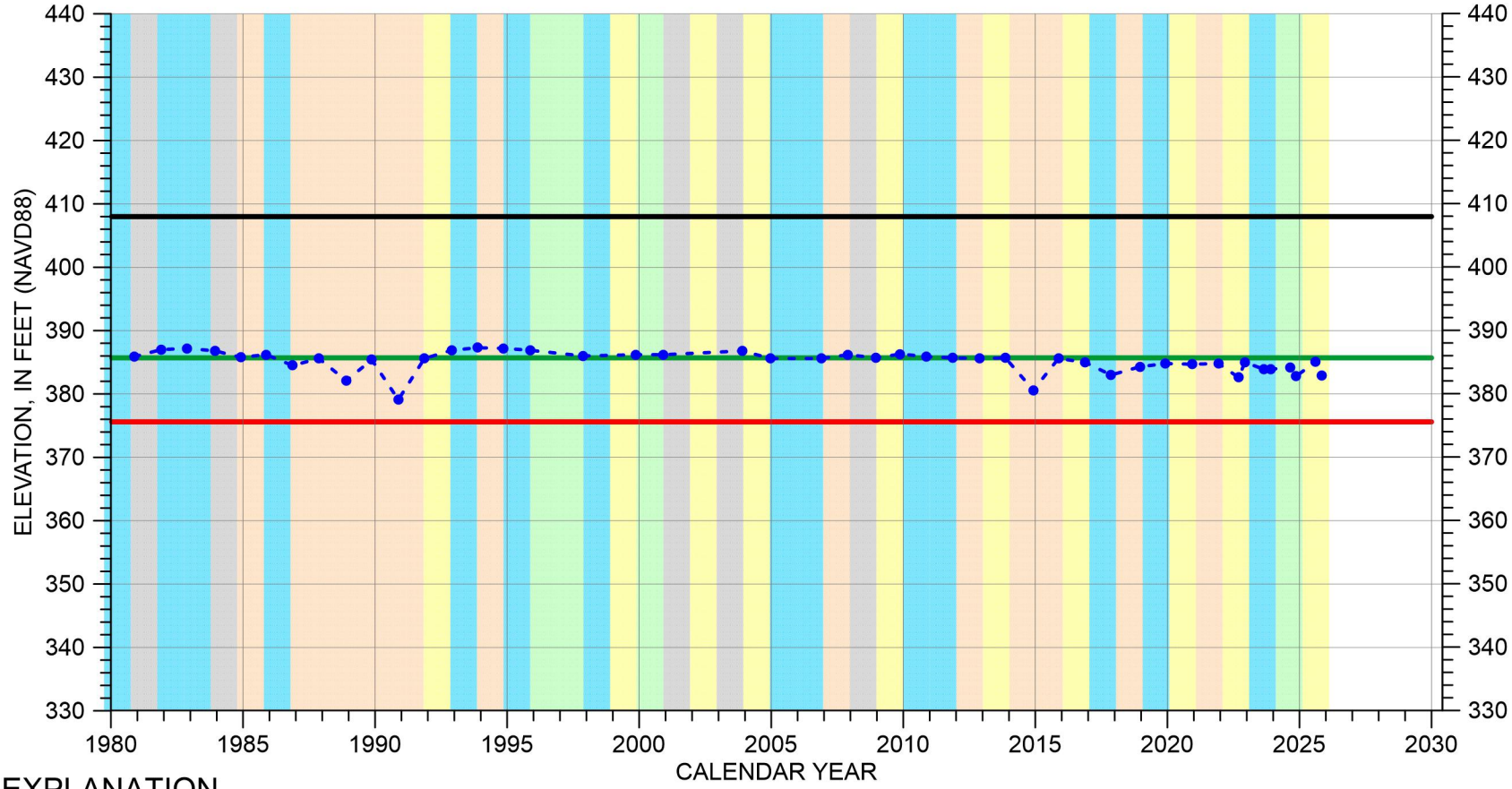
Perforated from
328 to 294 feet msl

Well bottom
280 feet msl

S:\projects\9100_Salinas_GSP\ProjectData\Analysis\water_levels\Hydrographs\NEWGRFs_test\21S_09E-24L01.grf

HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 21S/10E-32N01

Upper Valley Aquifer Subbasin

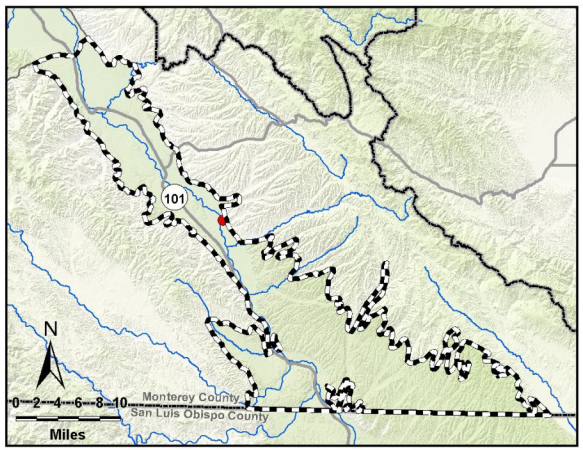


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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



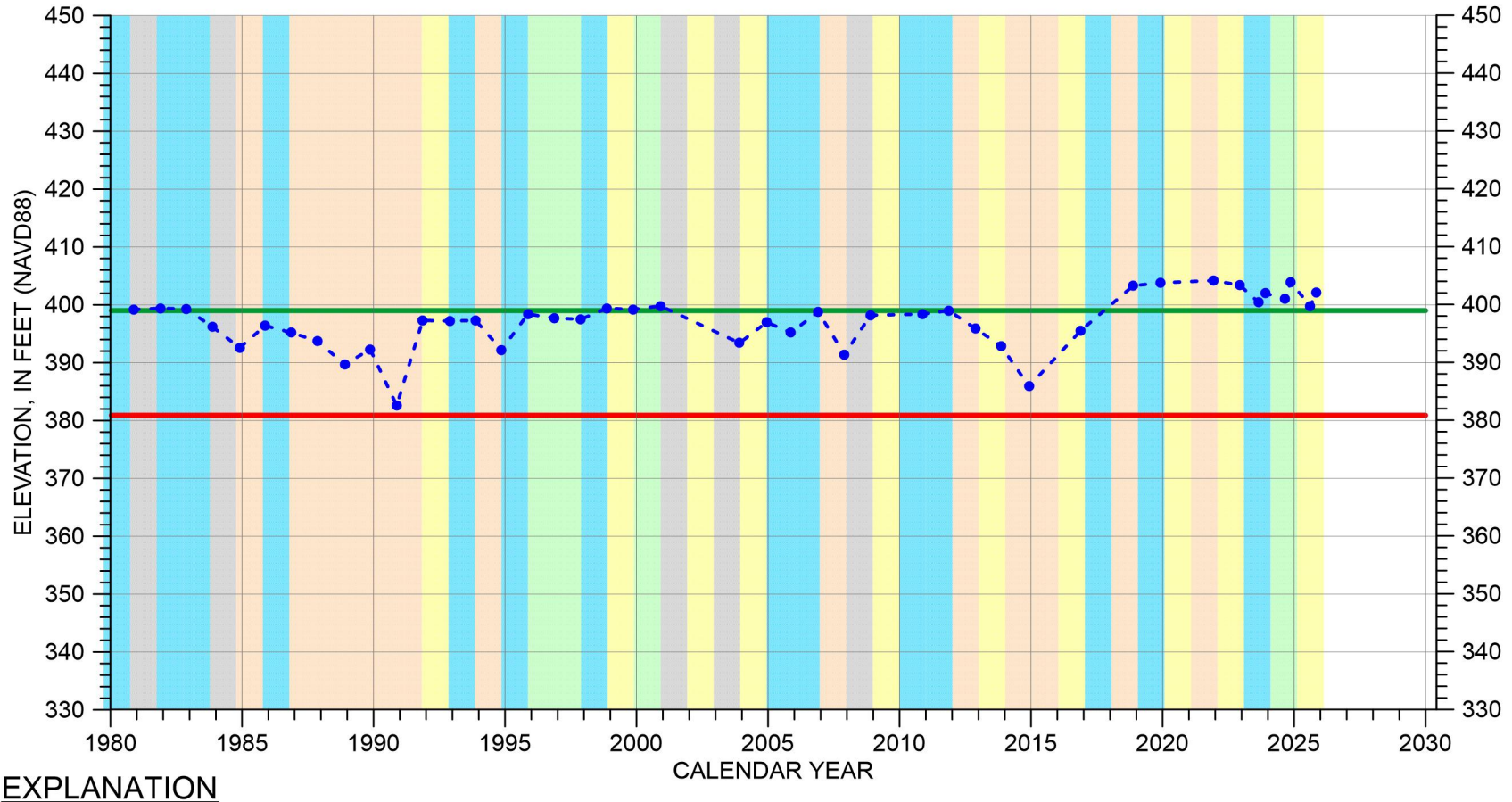
Perforated interval unknown

Well bottom elevation unknown

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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 22S/10E-09P01

Upper Valley Aquifer Subbasin

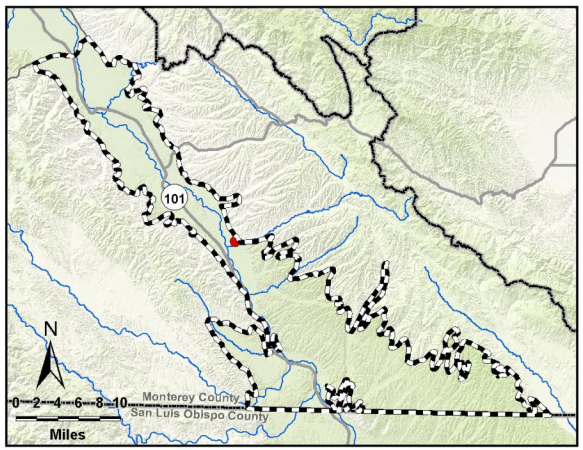


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (465 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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



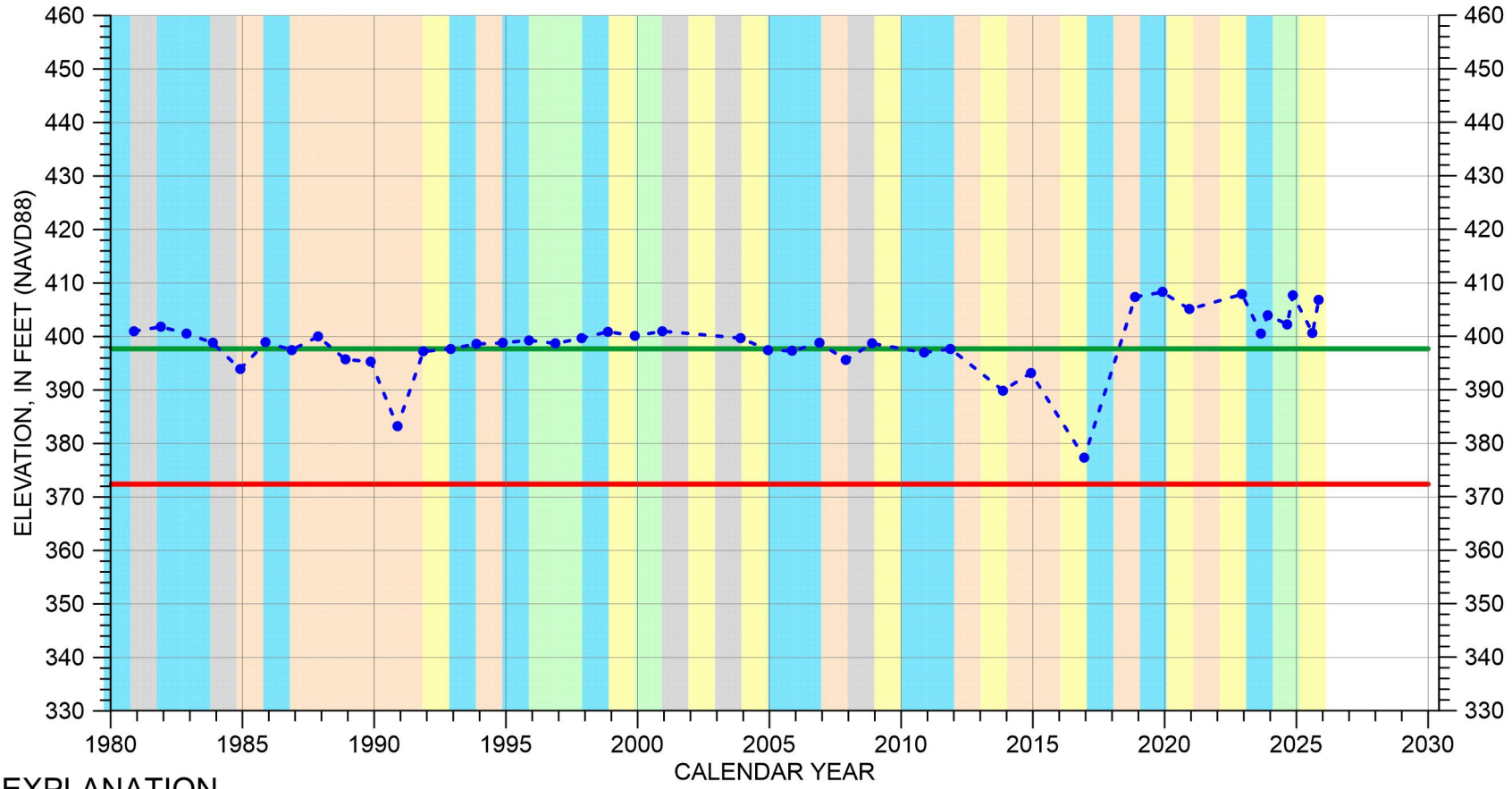
Perforated interval unknown

Well bottom elevation unknown

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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 22S/10E-16K01

Upper Valley Aquifer Subbasin

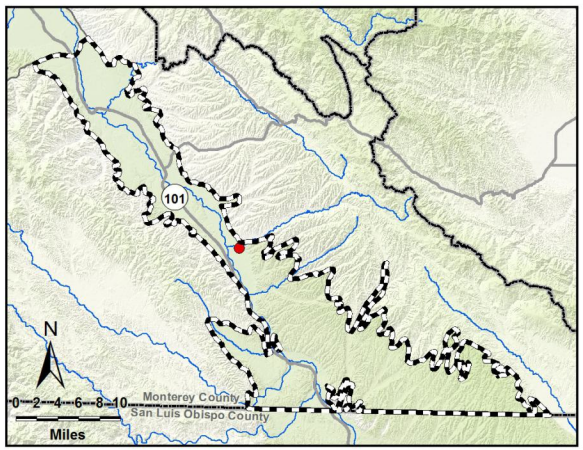


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (479 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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



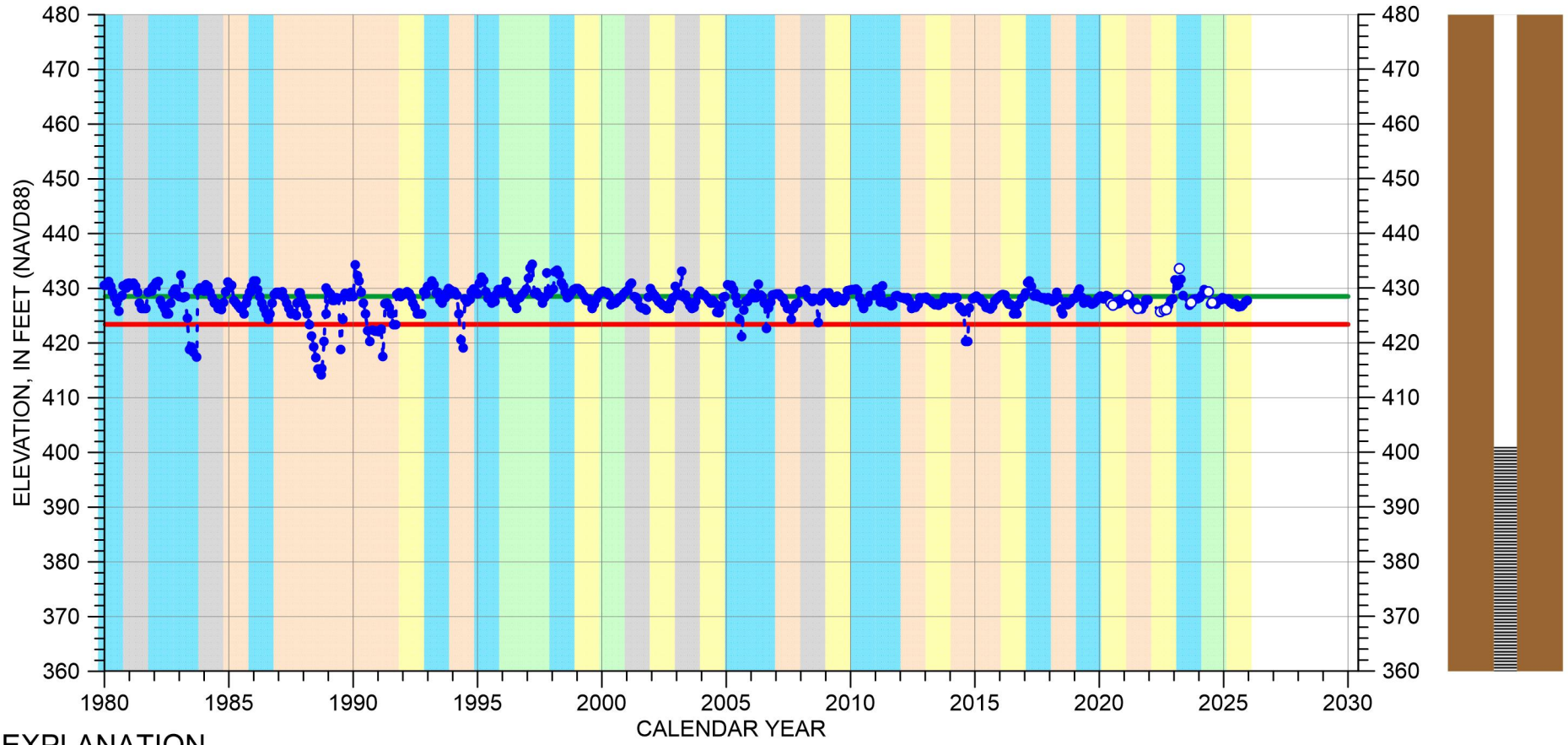
Perforated interval unknown

Well bottom elevation unknown

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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 22S/10E-34G01

Upper Valley Aquifer Subbasin

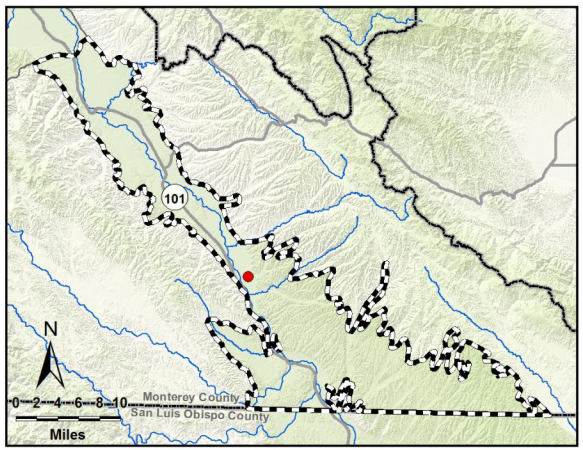


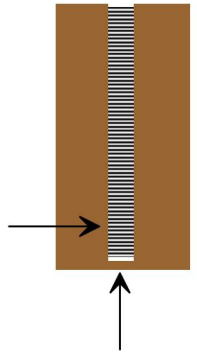
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (486 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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





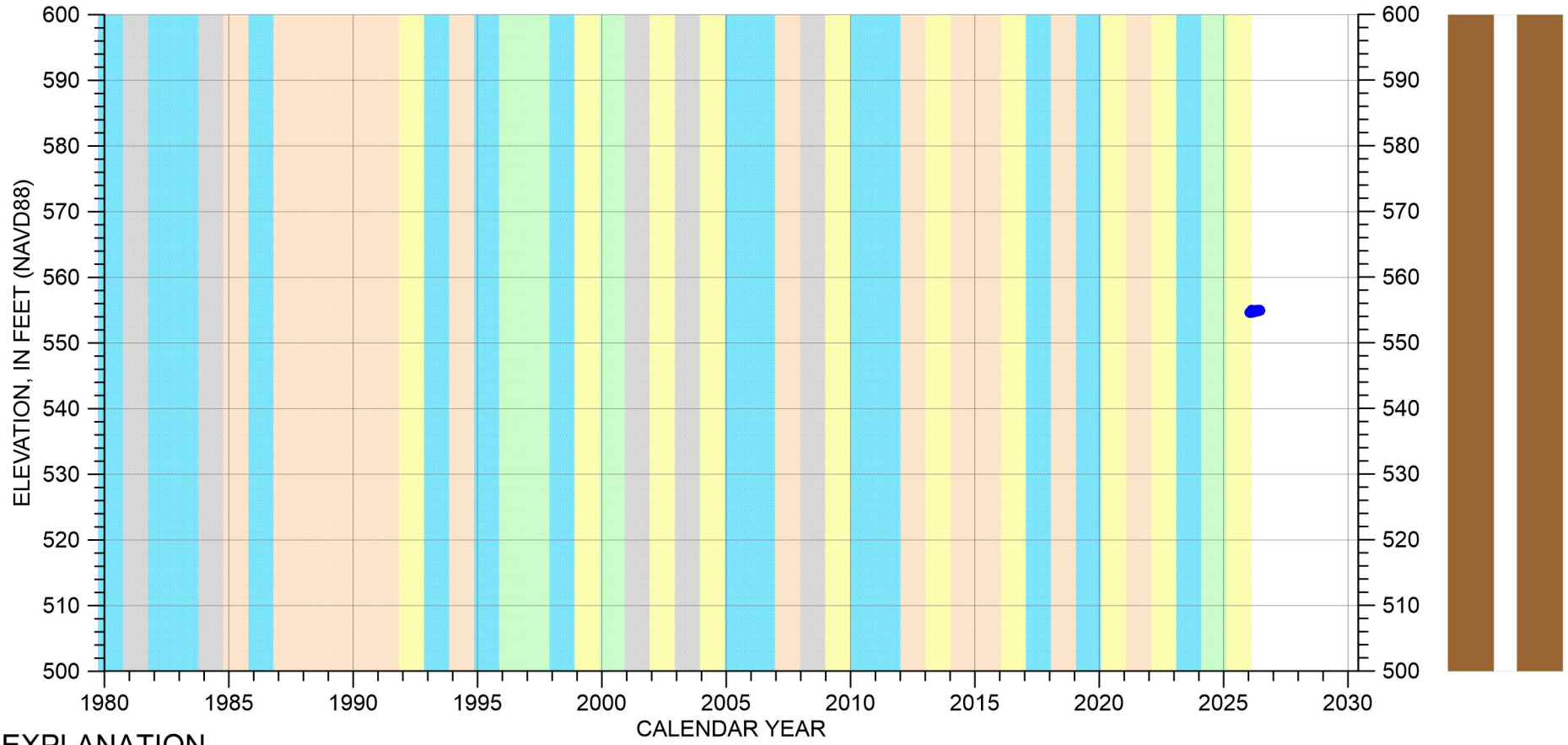
Perforated from
401 to 319 feet msl

Well bottom
304 feet msl

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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 23S/11E-36E01

Upper Valley Aquifer Subbasin

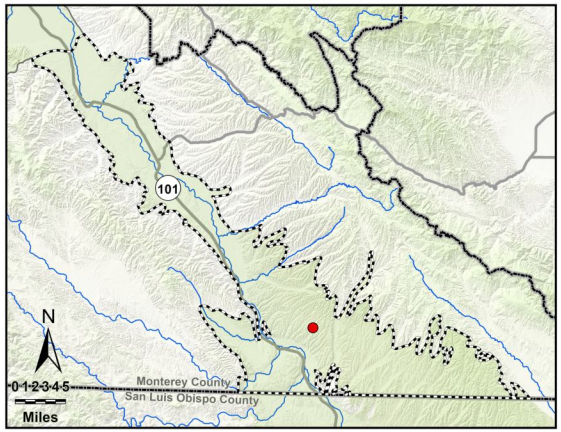


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (898.94 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

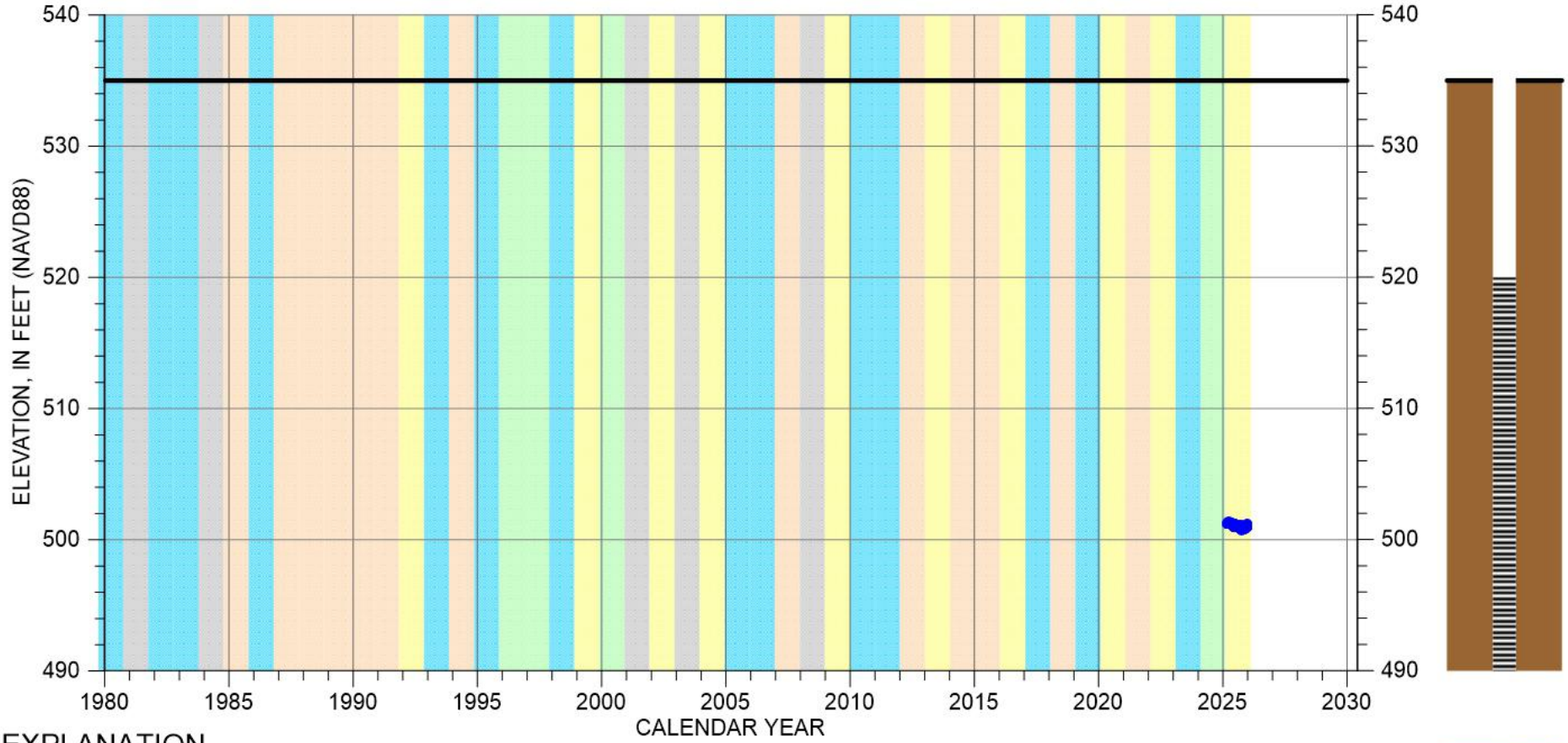
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 24S/11E-05Q01

Upper Valley Aquifer Subbasin

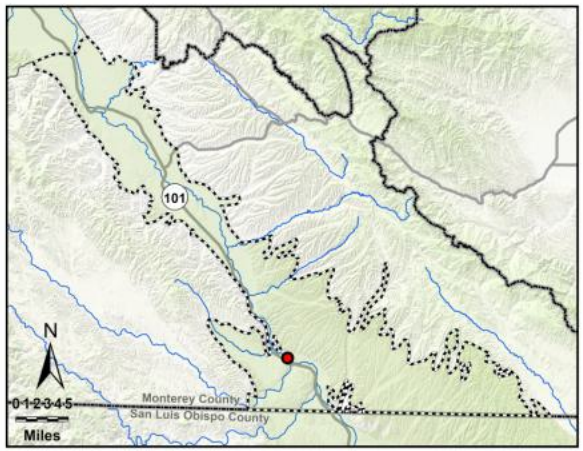


EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

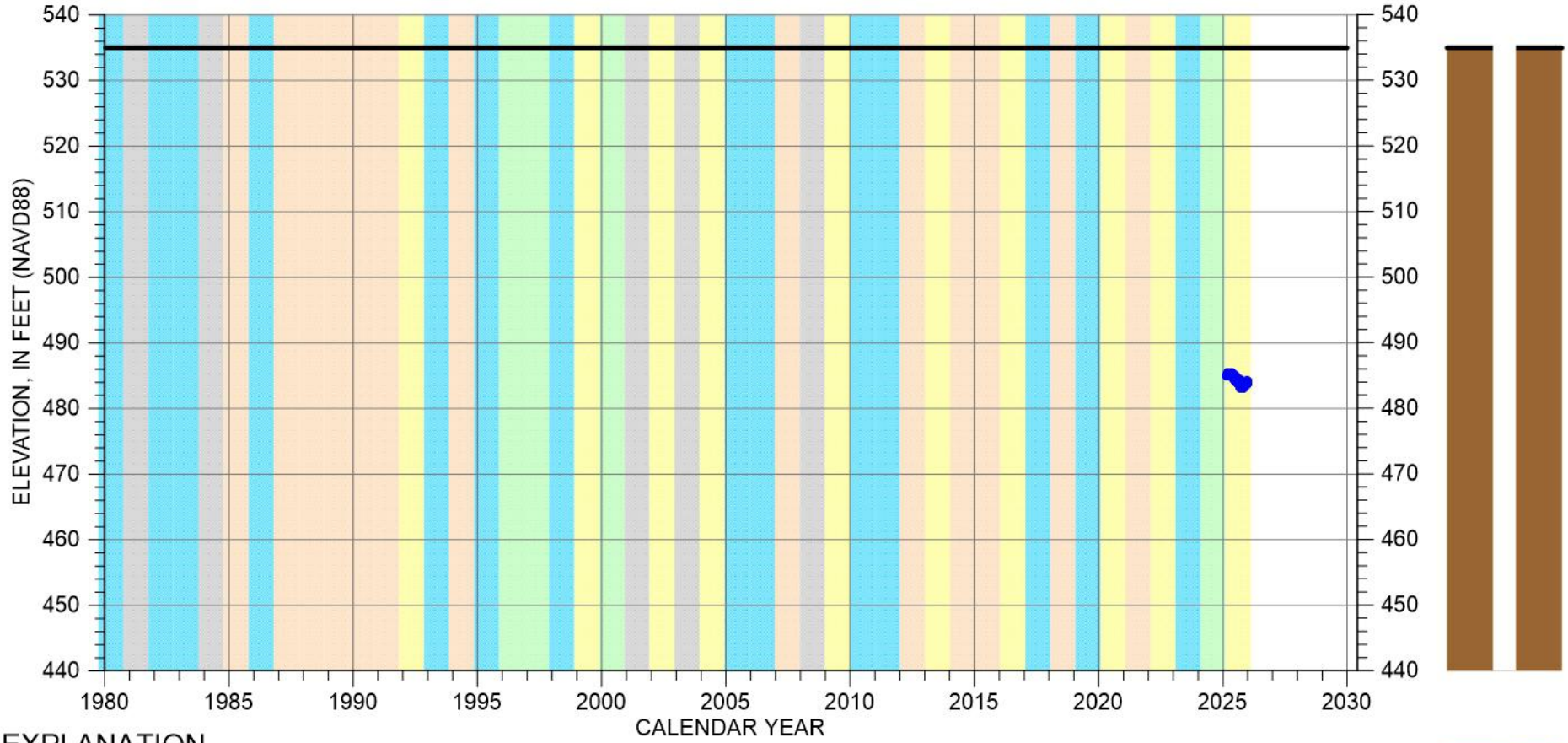
- DRY
- DRY - NORMAL
- NORMAL
- WET - NORMAL
- WET



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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 24S/11E-05Q02

Upper Valley Aquifer Subbasin

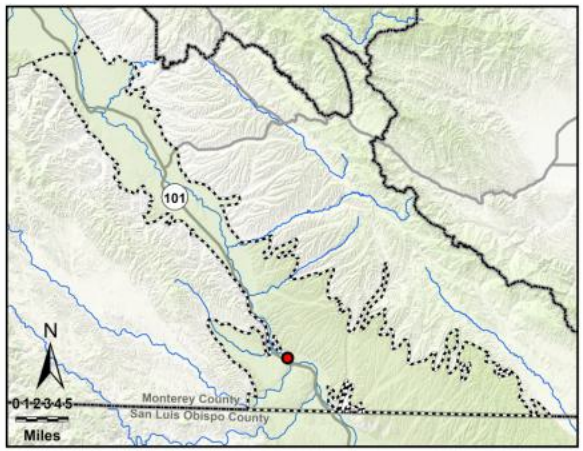


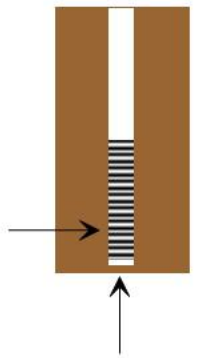
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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

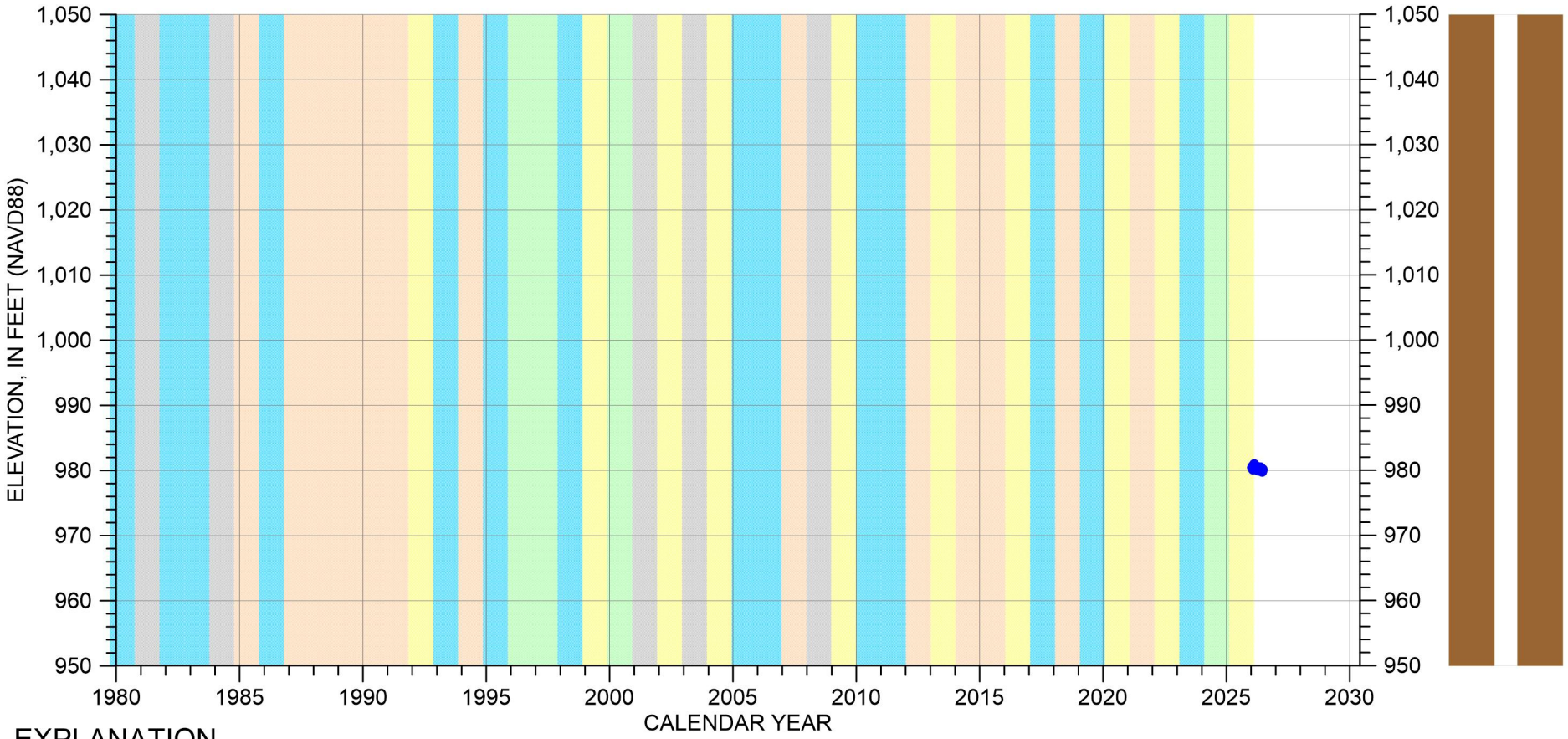




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HYDROGRAPH OF MEASURED GROUNDWATER ELEVATION FOR 24S/13E-27P01

Upper Valley Aquifer Subbasin

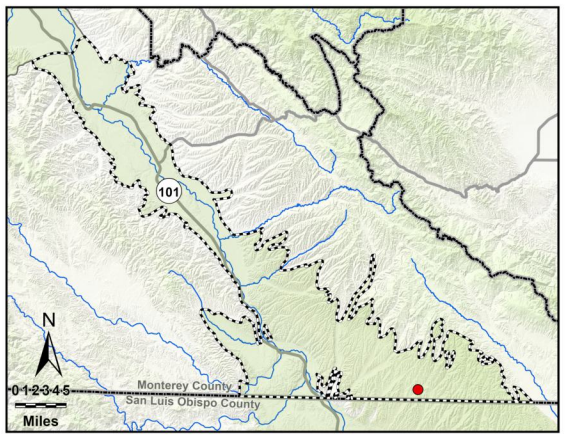


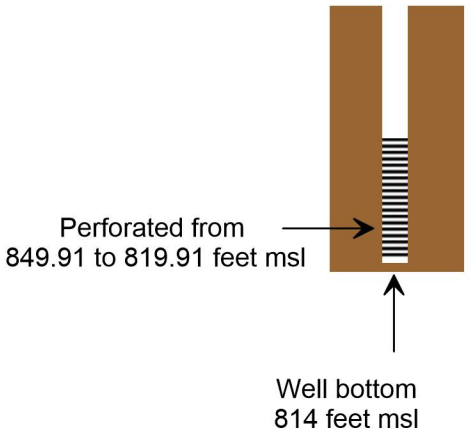
EXPLANATION

- Groundwater Elevation
- Suspect Measurement
- Land Surface (1309 FT MSL)
- Measurable Objective
- Minimum Threshold

WATER YEAR TYPE DESIGNATION

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

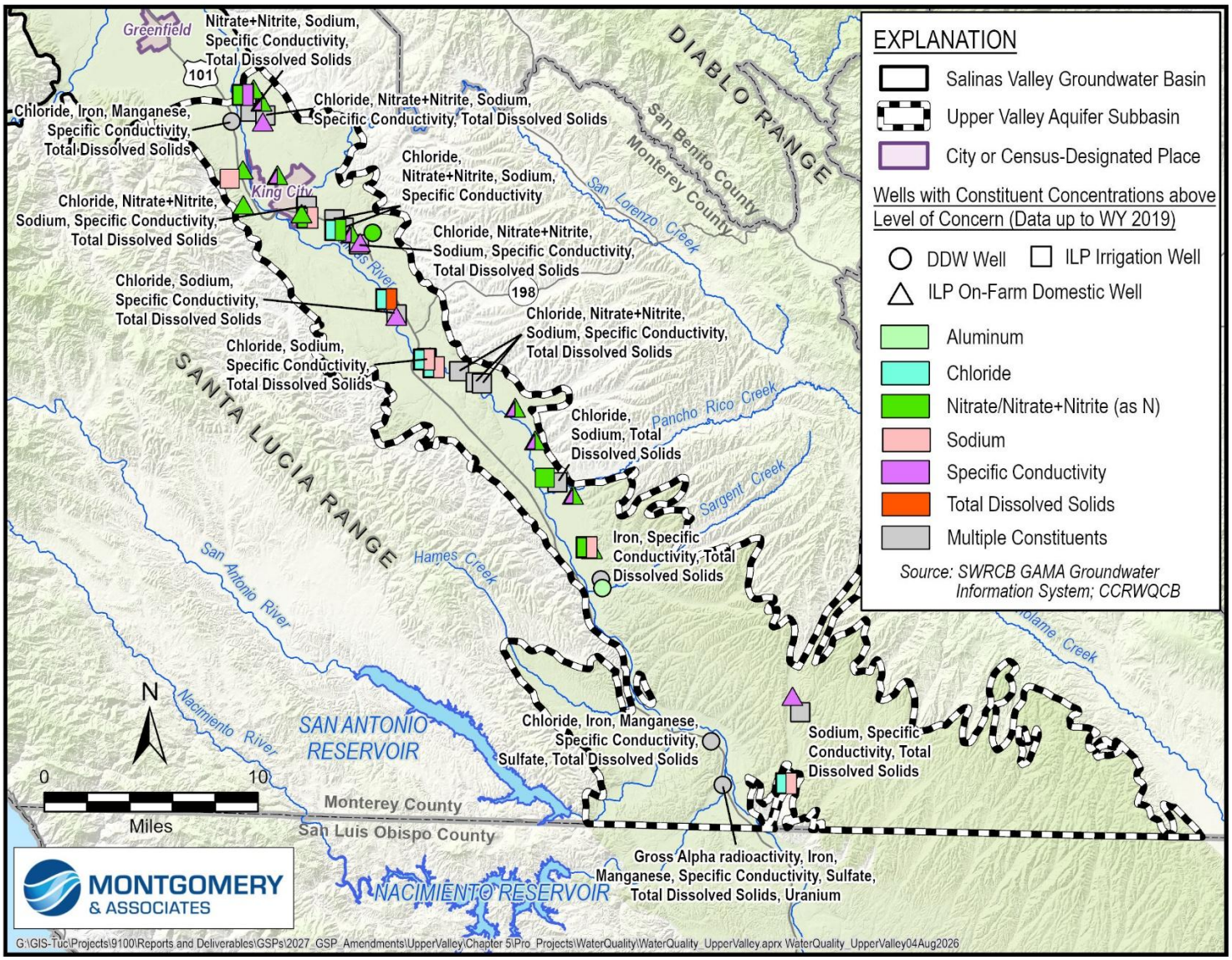




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Appendix 5B

Constituent Level of Concern Exceedances Map



Exceedances of Concentration Level of Concern

MONTGOMERY
& ASSOCIATES

Appendix 6A

Upper Valley Subbasin Multi-Metric Trend Analysis for the Determination of Overdraft

MONTGOMERY
& ASSOCIATES
Water Resource Consultants

Groundwater experts since 1984

TECHNICAL MEMORANDUM

DATE: September 15, 2026 **PROJECT #:** 9101.0103

TO: Salinas Valley Basin Groundwater Sustainability Agency

FROM: Stephen Hundt

REVIEWER: Staffan Schorr and Abby Ostovar, Ph.D.

PROJECT: Salinas Valley Groundwater Sustainability Plan 2027 Amendments

SUBJECT: Upper Valley Multi-Metric Trend Analysis for the Determination of Overdraft

INTRODUCTION

SGMA requires avoiding undesirable results for all sustainability indicators and mitigating long-term overdraft by 2040 for critically-overdrafted basins and 2042 for high- and medium-priority basins. Long-term overdraft is the condition of a groundwater basin where the average annual amount of water extracted for a long-term period exceeds the long-term average annual supply of water to the basin. This depletion is distinct from the ordinary rise and fall of levels between wet and dry years. A decline in groundwater levels or storage during drought does not, by itself, constitute overdraft if extractions and recharge are managed so that dry-year losses are offset by wet-year gains. Accordingly, overdraft is evaluated based on long-term groundwater level trends over a period that is sufficiently long enough to distinguish persistent depletion from short-term climate variability, while remaining recent enough to reflect current conditions.

This appendix explains the methodology used to evaluate those long-term trends and presents the resulting well-by-well trend results that support the determination in Chapter 8.

METHODOLOGY

This section describes the methodology used to evaluate groundwater level trends and make the overdraft determination presented in Chapter 8. It explains the statistical approach used to detect trends and the reasoning behind the annual water level metric and trend period selected to represent long-term conditions. It then describes the weight-of-evidence approach used to combine statistical trend results with individual review of well records into a determination for each well, and how those well-level determinations were considered alongside other lines of evidence in reaching an overdraft determination for the Subbasin.

Statistical Trend Detection Approach

Groundwater level trends were assessed using the Mann-Kendall test (Kendall 1938, Mann 1945), a nonparametric method for detecting monotonic trends in time-series data, together with the Sen-slope estimator to quantify the rate of change where a trend was found. A single trend test applied to a single dataset can produce a result that is statistically valid but misleading as a description of the aquifer's long-term condition. Both the choice of annual metric and the choice of period can introduce this kind of distortion, as described below.

Rather than applying this test once, trends were calculated for each well across up to 5 candidate periods (the most recent 10, 15, 20, 25, and 30 years of record: 2016–2025, 2011–2025, 2006–2025, 2001–2025, and 1996–2025) and up to 3 annual metrics, for a maximum of 15 combinations per well depending on data availability.

Representative Annual Values

Groundwater levels vary continuously in response to pumping, recharge, and seasonal and interannual weather patterns. No single date, or point in the annual cycle, represents a truly stable annual snapshot of aquifer conditions. The date of the annual minimum and maximum shifts from year to year, and the annual peak and trough can be deeper or shallower, so a fixed measurement date can fall on a different part of the recovery curve in different years even where the underlying pattern of pumping and recharge is unchanged.

Where sufficiently frequent data were available, a 12-month rolling average was considered to smooth the seasonal cycle, but too few wells had data of that frequency to apply the approach broadly. Priority was given to retaining spatial coverage across the well network over narrowing the dataset to wells with more frequent measurements. The fall (November–December) water level, typically after the pumping season and before winter recharge, was used as the primary annual metric; the annual minimum and maximum were also evaluated where more frequent monitoring data supported them. Any of the 3 metrics were used to assess trends where enough years of data were available.

Trend Period

SGMA does not define a specific timeframe for determining overdraft. Nevertheless, a trend analysis period was needed to assess water level trends. In selecting that period, 2 considerations had to be balanced.

The hydrologic system is subject to 3 broad sources of climate-related variability and change, each relevant to trend detection. Annual and multi-year variability is the ordinary expression of

natural variance in precipitation and temperature from one year, or a few years, to the next. Decadal and multidecadal cycles, such as the Pacific Decadal Oscillation, may hold the system at a wetter or drier tendency for multiple decades, without permanently altering the underlying distribution of precipitation and temperature. Climate change is the third source and differs from the other two by shifting distributions of temperature and (potentially) precipitation.

These 3 sources call for different treatment. A genuine climate change-driven shift is not something this analysis attempts to isolate: it is itself the kind of long-term change relevant to an overdraft determination, so no special adjustment is needed to separate it from the signal the analysis is meant to detect.

Annual and multi-year variability, by contrast, is readily recognizable, and its impact on a trend calculation can be mitigated by choosing an appropriate period. The most recent 10 years illustrate the risk at the short end: a 2020-2022 drought was subsequently followed by above-normal years, producing a strongly positive trend that, taken at face value, would suggest the subbasins are in excellent condition. The broader record does not support that conclusion. The same risk exists at the long end of the record: the unusually wet mid-to-late 1990s can skew a long-term trend just as the recent drought-to-wet sequence can. A longer period of record was used, in part, to lessen the influence of the recent drought-recovery swing, without extending back far enough to reintroduce the same problem from the 1990s.

Decadal and multidecadal cycles are difficult to detect within a single basin's period of record, and even where recognized, SGMA's deadlines do not allow waiting 2 or 3 decades for a return to some prior climatic normal. No attempt was made to detect and correct for these cycles for this analysis.

Water management and use can also shift the system, through changes in land use, water use efficiency, alternative (non-groundwater) supplies, or reservoir operations. Where a change produces a clear, dateable shift in a hydrograph (as a change in reservoir operations or water supply source more often does), evaluating only the period after that shift can be reasonable. Where a change instead unfolds gradually, as most changes in irrigated land use and water use efficiency do, no comparably obvious point exists for drawing that line. The objective here differs from the climate consideration above. Because the current, or near-current, pattern of pumping and use is the condition SGMA calls on a subbasin to manage (unlike climate, which management cannot change), the period selected should weight recent conditions more heavily, favoring a shorter window than the climate consideration alone would suggest.

Balancing these considerations, trends over the most recent 15 and 20 years were used as the primary basis for the evaluation. The most recent 10 years was considered too short because it was heavily influenced by recovery from the mid-2010s drought and may not adequately represent longer-term conditions. Periods of 25 years or more were generally excluded because

they extend into the anomalously wet 1990s. The 25-year period was used only in occasional close cases, where the 15- and 20-year results were near the boundary between a discernible trend and no trend.

Weight-of-evidence Approach

Determining which wells' water level records provide reliable evidence of a long-term trend calls for a different kind of judgment than the statistical trend test itself. A well's data can be technically sufficient for a trend calculation while still reflecting measurement issues or an incomplete record that make the resulting trend a poor representation of the subbasin's long-term behavior.

A formal set of statistical screening criteria could be used to exclude such records, but developing a reliable filter is challenging. Criteria strict enough to remove potentially misleading records may also exclude data that, despite imperfections, provide valuable information and improve spatial coverage. Conversely, more permissive criteria may retain records that could be misleading. SGMA does not prescribe a threshold or methodology for making these distinctions, providing little basis for a purely rule-based approach. At the same time, relying solely on professional judgment without a documented framework would reduce transparency and make the evaluation difficult to reproduce.

To balance these considerations, a weight-of-evidence approach was used. Statistical trend results were calculated systematically for every well and metric described above, and the well-by-well hydrographs were then reviewed individually to identify cases where a statistically valid result did not represent a genuine long-term change in the subbasin. This individual review was practical because the number of wells with sufficient data for trend analysis was manageable to examine individually.

Trend Determination for Wells

Consistent with the period selection above, the 15- and 20-year results across all 3 annual metrics (up to 6 results per well) were used to evaluate whether a well showed a trend. In rare cases, where the 15 and 20-year results were inconclusive, the 25-year results were referenced. Trends were considered statistically significant at $p < 0.05$.

No fixed rule required agreement among a minimum number of these results before declaring a trend. A single significant result was generally treated as sufficient unless it was weak or visual review of the hydrograph suggested it should be discounted. Where a mix of significant positive and negative trends was found among the available results, no overall trend was identified. In

most wells with a discernible trend, multiple of the available results agreed in both direction and general magnitude.

Where a well showed a statistically significant trend, a Sen-slope (Sen 1968, Theil 1950) was calculated for each significant result and used to place the well into a slope category, in feet per year: 0 to 0.05, 0.05 to 0.1, 0.1 to 0.5, 0.5 to 2, or greater than 2. For representative monitoring sites (RMS), which carry a defined minimum threshold (MT), the slope was also used to classify how close the well is to crossing its MT if the observed rate of change continued. Each RMS well was placed into 1 of 6 categories: already below the MT and not increasing; already above the MT and not decreasing; or, for wells in neither of those 2 states, an estimated 0 to 10 years, 10 to 30 years, 30 to 50 years, or greater than 50 years until the MT would be crossed. Where a well's available results spanned more than 1 category, for either the slope category or the years-to-MT category, the most frequently indicated category was used as the well's representative category.

The years-to-MT estimate does not factor into the overdraft evaluation in this appendix. A statistically significant trend can be real without being large enough to consider it as consequential, and for non-RMS wells there is no established basis for determining when a trend warrants concern. For RMS wells, the MT provides that basis, and this metric is reported as additional context that may be useful to other management discussions.

Overdraft Determination

The well-level trend results described above are one of several lines of evidence considered in the overdraft determination presented in Chapter 8. Other lines of evidence include the change in groundwater storage estimated from the subbasin's historical water budget and a separate, single-period trend analysis using the most recent 15 years of data, both also presented in the amendment. No fixed threshold (for example, a required percentage of wells showing a declining trend) was used to determine whether these results, on balance, indicate overdraft. The determination instead reflects the relative weight of wells showing declining trends compared with those showing no trend or an increasing trend, considered together with the other lines of evidence above.

In most cases, wells showing no statistically significant trend were the majority result across a subbasin, even where the overall determination was that the subbasin is experiencing overdraft. A subbasin does not need to show statistically significant declining trends across most or all its monitoring network to be experiencing a net water imbalance and an overall decline in storage. A comparatively smaller number of consistent declining trends, combined with the other lines of evidence, can still support that conclusion.

RESULTS

Water level trends indicate that the Upper Valley Subbasin is experiencing overdraft, though conditions vary spatially, with a transition occurring roughly between King City and San Lucas. North of that transition zone, wells generally recovered to near their starting levels following the 2010s drought; south of it, wells are more likely than not to show declining trends. Of the 31 wells with sufficient data for trend analysis, 15 wells showed declining trends (12 clear and 3 more subtle), 5 showed increasing trends, and 11 showed no trend. Rates of decline were generally modest, mostly between 0.1 and 0.5 feet per year. Taken together, the relatively high proportion of wells showing declining trends indicates that the Upper Valley Subbasin is experiencing overdraft, concentrated in the south and largely absent in the north.

Table 6A-1 presents the well-by-well trend results described in the Trend Determination for Wells section, for each well with sufficient data to support a trend calculation. For each well, the table reports whether a statistically significant trend was identified and its direction, the magnitude of that trend expressed as a slope category, and, for RMS wells, the estimated number of years until the well's MT would be reached at the observed rate of change if it continued. The results are sorted first by the trend evidence column, then RMS well, then alphabetically by well name. Wells with the classifier “high-confidence” had particularly strong trends and agreement across periods and annual metrics.

Table 6A-1. Trend Results for Upper Valley Subbasin Wells

Well	RMS Well	Trend Evidence	Slope, in ft/year	Years to MT
20S08E34G01	yes	down - high confidence	0.1 - 0.5	Below, not increasing
21S09E06F50	yes	down - high confidence	0.1 - 0.5	10 to 30
21S09E24L01	yes	down - high confidence	0.1 - 0.5	30 to 50
21S10E32N01	yes	down - high confidence	0.1 - 0.5	> 50
22S10E34G01	yes	down - high confidence	0.05 - 0.1	> 50
23S10E14D01	yes	down - high confidence	0.1 - 0.5	0 to 10
20S08E06K01	no	down - high confidence	0.5 - 2	N/A
21S09E17Q01	no	down - high confidence	0.1 - 0.5	N/A
21S09E23G01	no	down - high confidence	0.1 - 0.5	N/A
22S10E16P01	no	down - high confidence	0.1 - 0.5	N/A
22S10E21R01	no	down - high confidence	0.1 - 0.5	N/A
23S10E33P01	no	down - high confidence	>2	N/A
19S08E19K03	yes	down	N/A	> 50
20S08E14K01	yes	down	N/A	> 50
21S10E30P01	no	down	N/A	N/A
19S07E14N02	yes	no	N/A	Above, not decreasing
20S08E15H03	yes	no	N/A	Above, not decreasing

Well	RMS Well	Trend Evidence	Slope, in ft/year	Years to MT
21S09E16E01	yes	no	N/A	Above, not decreasing
22S10E16K01	yes	no	N/A	Above, not decreasing
19S07E24H02	no	no	N/A	N/A
19S08E31B01	no	no	N/A	N/A
19S08E33J02	no	no	N/A	N/A
20S08E07F01	no	no	N/A	N/A
20S08E16C01	no	no	N/A	N/A
22S10E21R01	no	no	N/A	N/A
23S10E03H01	no	no	N/A	N/A
19S07E14H01	yes	up	N/A	Above, not decreasing
20S08E05R03	yes	up	N/A	Above, not decreasing
20S08E25Q01	yes	up	N/A	Above, not decreasing
22S10E09P01	yes	up	N/A	Above, not decreasing
22S10E09P01	yes	up	N/A	N/A
19S07E13D01	no	insufficient	N/A	N/A
19S08E27N03	no	insufficient	N/A	N/A
20S08E05C01	no	insufficient	N/A	N/A
20S08E09M01	no	insufficient	N/A	N/A
22S10E15N02	no	insufficient	N/A	N/A
22S10E22D02	no	insufficient	N/A	N/A

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Appendix 7A

Monitoring Procedures from MCWRA CASGEM Monitoring Plan

4.0 Monitoring Procedures

This section addresses the various procedures and protocols involved in collecting, processing, and reporting data from wells in the CASGEM network.

4.1 Monitoring Frequency and Timing

Nineteen (19) of the CASGEM wells are currently, and will continue to be, measured on a monthly basis. The three (3) voluntary wells are also measured monthly. MCWRA will use the monthly measurements from August and either January, February, or March to satisfy the biannual CASGEM reporting criteria.

To determine the monthly distribution of seasonal high and low groundwater elevations, MCWRA analyzed measurements from approximately 50 wells throughout the Salinas Valley Groundwater Basin. This included wells in the 180/400 Foot Aquifer, East Side Aquifer, Forebay Aquifer, and Upper Valley Aquifer. The measurements were collected during eight (8) different Water Years (WY): WY 1985, representative of near normal conditions; WY 1991, representative of dry conditions; and the six most recent Water Years, WY 2009 through WY 2014. MCWRA reports this data on a quarterly basis; a sample report is included in Appendix B.

Based on this analysis of historical data, August is typically representative of seasonal low conditions (Figure 10). A relaxation of groundwater levels, or seasonal high conditions, is evident during the period from January to March (Figure 11). Data from these three months will be evaluated and the highest groundwater elevation from that series will be submitted to the CASGEM online submittal system. The month chosen to be representative of the seasonal high groundwater conditions will be consistent across all data groups.

Nineteen (19) of the CASGEM wells are equipped with pressure transducers which collect depth to water data on an hourly basis. This data will be synthesized so that biannual measurements representing seasonal high and low conditions are available for CASGEM reporting. The groundwater level measurement collected at noon on the fifteenth day of the month will be selected and compared to other monthly data to ensure that it is a representative value. Data from the month of August will be used to represent the seasonal low and a fall/winter measurement from either January, February, or March will be used to represent the seasonal high; the same month will be used as was selected based on monthly well measurements, as discussed above.

Four (4) of the wells in the CASGEM network are currently measured once per year, during the period from November to January. Based on the recent analysis of seasonal groundwater highs, this period will be shifted to cover the months from January through March. An additional measurement event will be added during the month of August for these wells in order to also capture the seasonal groundwater low.

Appendix C contains a summary of the frequency and timing of measurement of wells in the CASGEM network. Any new wells that are brought into the CASGEM program will be monitored on a

biannual basis, with data collection occurring on the same schedule as the other wells that are measured twice a year.

4.2 Well Locations

The latitude and longitude of each well was collected using a handheld GPS unit, which has accuracy to within one (1) meter. Coordinates for wells in the CASGEM network are shown in Appendix A. Any wells incorporated into the CASGEM network in the future will be geographically located using a similar method.

4.3 Reference Points

All of the wells that comprise the CASGEM network described herein are currently part of a groundwater level monitoring program conducted by MCWRA. As part of the existing monitoring programs, reference points (RP) have been established for all of the wells. To ensure consistency in measuring depth to water, a description of each well's RP is recorded in a field data collection notebook. In many cases, photographs have also been taken of the RP. Reference point elevations have been determined for all wells that are currently in a monitoring program; this data is listed in Appendix A.

A reference point will be determined for any new wells that are brought into the CASGEM network. Reference point elevations are determined using a digital elevation model from the United States Geological Survey (USGS) with a cell size of 32 feet by 32 feet.

Figure 10 – Distribution of Seasonal High Groundwater Elevations by Month

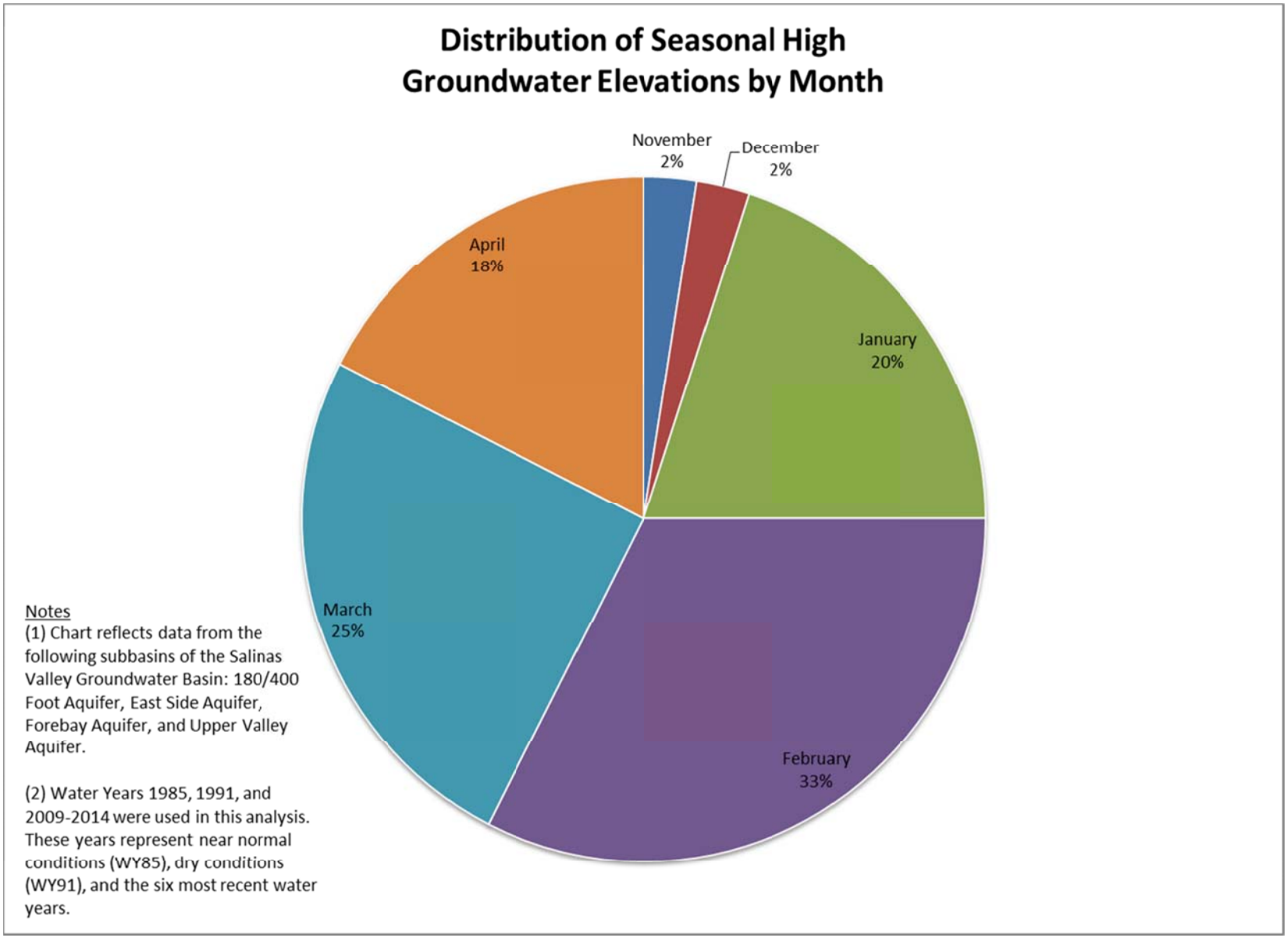
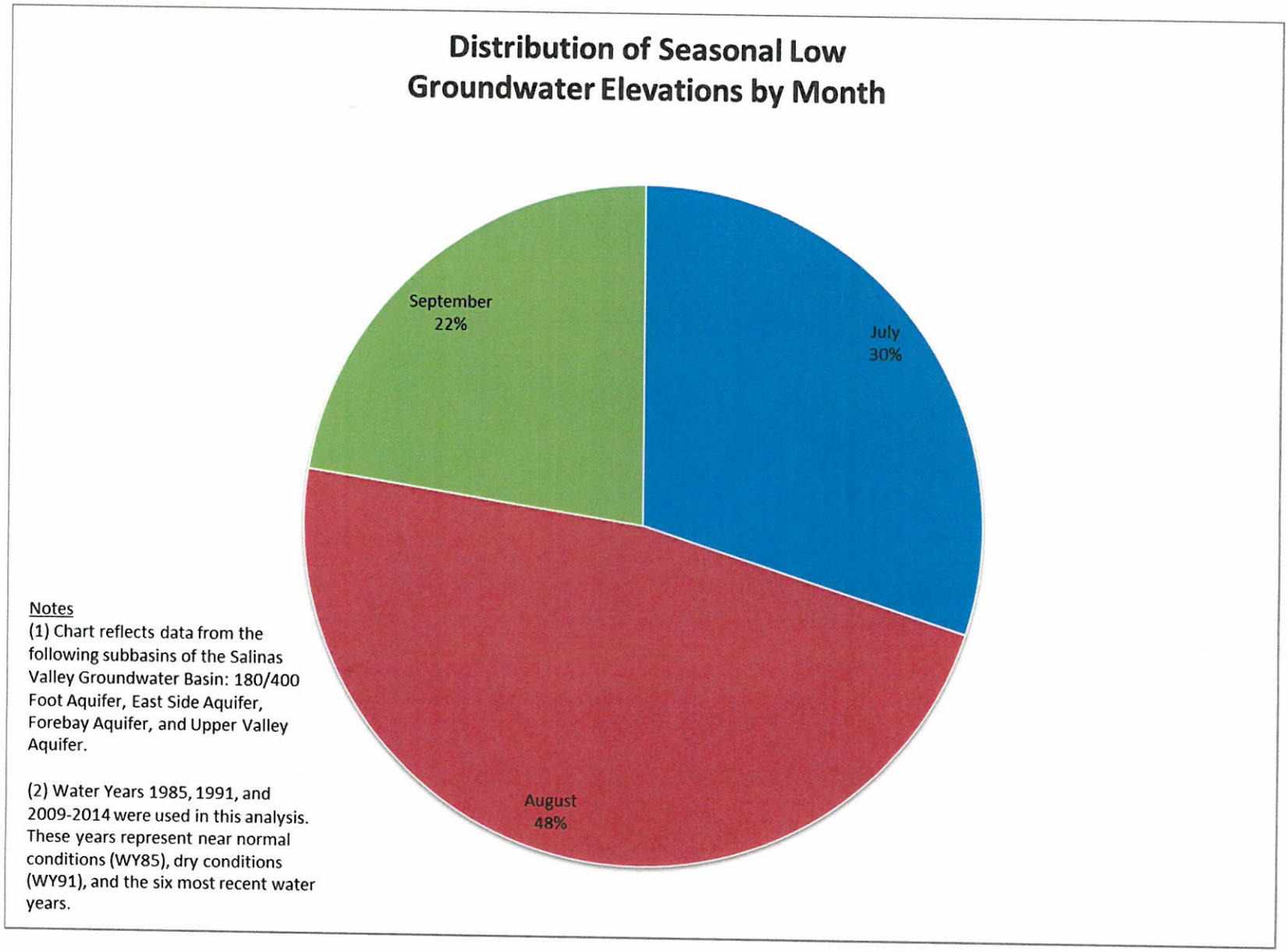


Figure 11 – Distribution of Seasonal Low Groundwater Elevations by Month



4.4 Field Methods

Groundwater elevation data collected from wells in the CASGEM network is intended to reflect static conditions. Best efforts will be made to ensure that wells have not recently been pumped prior to collecting a data point. Depth to water measurements will be made using one or more of the methods discussed in the following sections. Measurement methods described in the following sections are based on the Department of Water Resources document *Groundwater Elevation Monitoring Guidelines* (December 2010) with some alterations specific to wells in the monitored basins/subbasins described in this Monitoring Plan.

4.4.1 Graduated steel tape

Prior to measurement:

- Ensure that the reference point on the well can be clearly determined. Check notes in the field data collection notebook.
- Review the notes and comments for previous measurements in the field data collection notebook to determine if there are any unique circumstances at this well.
- Take note of whether oil has previously been present at this well; this will be recorded in the comments section of the data form.

Making a measurement:

- Use the previous depth to water measurement to estimate a length of tape that will be needed.
- Lower the tape into the well, feeling for a change in the weight of the tape, which typically indicates that either (a) the tape has reached the water surface or (b) the tape is sticking to the side of the well casing.
- Continue lowering the tape into the well until the next whole foot mark is at the reference point. This value on the tape should be recorded in the field data collection notebook.
- Bring the tape to the surface and record the number of the wetted interval to the nearest foot.
- If an oil layer is present, read the tape at the top of the oil mark to the nearest foot. Note in the comments section of the data form that oil was present.
- Repeat this procedure a second time and note any differences in measurement in the field data collection notebook.

4.4.2 Electric water level meter

This method of measurement employs a battery-powered water level meter and a small probe attached to a ruled length of cable. Depth to water measurements collected using this equipment are recorded to the nearest tenth of an inch. This instrument is sometimes referred to as a "sounder".

Prior to measurement:

- Review the field data sheet for the well and note whether oil has been present at this well in the past. The electric water level meter should not be used in wells where oil is present.
- Ensure that the reference point on the well can be clearly determined. Check notes in the field data collection notebook.
- Confirm that the water level meter is functioning and is turned on so that the beeping indicator will operate properly.

Making a measurement:

- Review previous depth to water measurements for the well to estimate the length of tape that will be needed.
- Lower the electrode into the well until the indicator sounds, showing the probe is in contact with the water surface.
- Place the tape against the reference point and read the depth to water to the nearest 0.1 foot. Record this value on the field data sheet.
- Make a second measurement and note any differences in measurement in the field data collection notebook.

4.4.3 Sonic water level meter

This meter uses sound waves to measure the depth to water in a well. The meter must be adjusted to the air temperature outside the well; there is a card with reference temperatures in the case with the sonic meter.

Making a measurement:

- Insert the meter probe into the access port and push the power-on switch. Record the depth from the readout.
- Record the depth to water measurement in the field data collection notebook.

4.4.4 Pressure transducer

Automated water-level measurements are made with a pressure transducer attached to a data logger. Pressure transducers are lowered to a depth below the water level in the well and fastened to the well head at a reference point. Data points are logged on an hourly basis. MCWRA uses factory-calibrated, vented pressure transducers (Appendix D). MCWRA staff collects the pressure transducer data once per quarter. During the data collection process, data loggers are stopped, and the data is downloaded onto a laptop, and then the data logger is reactivated and scheduled to begin collecting data again on the next hour. Upon return from the field, data is processed and reviewed for errors.

4.5 Data Collection, Processing, and Reporting

Following completion of all fieldwork, data is transcribed from field data sheets and checked for errors before being loaded into MCWRA's Oracle platform database. All data will be stored in the MCWRA database before being uploaded to the CASGEM website. Submittal of data to the CASGEM website will occur at a minimum of twice per year, no later than January 1 and July 1, per DWR CASGEM program guidelines.

Bi-annual submittal of data to the CASGEM website will include the following for each well in the CASGEM network, as described in the DWR document *CASGEM Procedures for Monitoring Entity Reporting*:

- Well identification number
- Measurement date
- Reference point and land surface elevation, in feet, using NAVD88 vertical datum
- Depth to water, in feet
- Method of measuring water depth
- Measurement quality codes
- Measuring agency identification
- Comments about measurement, if applicable

The following information will also be submitted to the CASGEM online system, as it is required by DWR unless otherwise noted:

- Monitoring Entity name, address, telephone number, contact person name and email address, and any other relevant contact information
- Groundwater basins being monitored (both entire and partial basins)
- State Well Identification number (recommended)
- Decimal latitude/longitude coordinates of well (NAD83)
- Groundwater basin or subbasin
- Reference point elevation of the well, in feet, using NAVD88 vertical datum
- Elevation of land surface datum at the well, in fee, using NAVD88 vertical datum
- Use of well
- Well completion type (e.g. single well, nested well, or multi-completion well)
- Depth of screened interval(s) and total depth of well, in feet, if available
- Well Completion Report number (DWR Form 188), if available

Appendix 7**B**

Water Quality Monitoring Network Wells

Upper Valley Subbasin Water Quality Network

Well Type	Well Name	Top Perforation	Bottom Perforation	Water System	Latitude	Longitude
DDW Municipal	CA2700728_001_001	80	130	SAN ARDO WD	36.01373	-120.91523
DDW Municipal	CA2700728_002_002			SAN ARDO WD	36.01359	-120.91530
DDW Municipal	CA2700964_001_001	60	100	BRADLEY UNION SCHOOL WS	35.86275	-120.80598
DDW Municipal	CA2700983_003_003			HWY 101 SOUTH REST STOP-CT MAINT (DIST)	35.84956	-120.76905
DDW Municipal	CA2700984_001_001	100	160	HWY 101 NORTH REST STOP-CT MAINT (DIST)	35.83094	-120.75781
DDW Municipal	CA2701171_002_002			CHEVRON OIL FIELD WS	35.95806	-120.86345
DDW Municipal	CA2701171_004_004			CHEVRON OIL FIELD WS	35.96391	-120.87083
DDW Municipal	CA2701171_005_005			CHEVRON OIL FIELD WS	35.96321	-120.87107
DDW Municipal	CA2701172_003_003			WILDHORSE CAFE WS	36.18757	-121.07664
DDW Municipal	CA2701187_001_001			AERA ENERGY LLC WS	35.95222	-120.86214
DDW Municipal	CA2701423_001_001	309	345	ECHO VALLEY RD WS #05	35.95222	-120.86214
DDW Municipal	CA2701676_006_006			SAN LUCAS WD	36.10554	-121.01337
DDW Municipal	CA2701693_001_001			LOS LOBOS RD WS	35.98000	-120.90000
DDW Municipal	CA2701741_001_001			MESA VERDE RD WS #01	36.19000	-121.06000
DDW Municipal	CA2701742_001_001	176	252	CALIFORNIA ORCHARD WS	36.26318	-121.18024
DDW Municipal	CA2701742_006_006			CALIFORNIA ORCHARD WS	36.26336	-121.18068
DDW Municipal	CA2702083_001_001			SAN LORENZO PARK	36.20000	-121.14000
DDW Municipal	CA2702141_001_001			BRADLEY FORESTRY STATION WATER SYSTEM	35.86000	-120.80000
DDW Municipal	CA2702486_001_001	100	180	BERNARDO RD WS #02	36.00683	-120.91821
DDW Municipal	CA2702539_001_001	214	214	SCHEID VINEYARD WS	36.27565	-121.18749
DDW Municipal	CA2702539_002_002			SCHEID VINEYARD WS	36.27547	-121.18895
DDW Municipal	CA2702802_001_001	120	424	OASIS RD WS #2	36.14979	-121.09307
DDW Municipal	CA2710009_006_006	130	202	CWSC KING CITY	36.20159	-121.13336
DDW Municipal	CA2710009_007_007	180	280	CWSC KING CITY	36.21149	-121.13521
DDW Municipal	CA2710009_008_008	125	200	CWSC KING CITY	36.20461	-121.14020
DDW Municipal	CA2710009_012_012	182	232	CWSC KING CITY	36.21146	-121.13858
DDW Municipal	CA2710009_014_014	130	220	CWSC KING CITY	36.21811	-121.14123
DDW Municipal	CA2710009_015_015	130	220	CWSC KING CITY	36.20904	-121.14068
DDW Municipal	CA2710016_001_001			LITTLE BEAR WATER COMPANY	36.19278	-121.13250
DDW Municipal	CA2710016_002_002	147	193	LITTLE BEAR WATER COMPANY	36.19246	-121.13375
DDW Municipal	CA2710016_003_003	160	220	LITTLE BEAR WATER COMPANY	36.18834	-121.12530
DDW Municipal	CA2710705_003_003	0	50	CAMP ROBERTS - CALIFORNIA NATIONAL GUARD	35.80092	-120.76116
DDW Municipal	CA2710705_015_015	120	260	CAMP ROBERTS - CALIFORNIA NATIONAL GUARD	35.79577	-120.77173
DDW Municipal	CA2710706_001_001	0	50	CAMP ROBERTS WELL 6A	35.82015	-120.75855
DDW Municipal	CA4000504_001_001	47	58	VISTA DE LAS FLORES WATER	35.83200	-120.58638

Upper Valley Subbasin Water Quality Network

Well Type	Well Name	Top Perforation	Bottom Perforation	Water System	Latitude	Longitude
ILRP On-Farm Domestic	AGL020000518-M-D			N/A	36.26443	-121.15434
ILRP On-Farm Domestic	AGL020000519-J-D			N/A	36.24786	-121.15166
ILRP On-Farm Domestic	AGL020000520-LO-D			N/A	36.27792	-121.15582
ILRP On-Farm Domestic	AGL020000522-PN-D			N/A	36.28630	-121.16272
ILRP On-Farm Domestic	AGL020000601-BLACKJ_DOM			N/A	36.17731	-121.04337
ILRP On-Farm Domestic	AGL020000601-SWEETW_DOM			N/A	36.18615	-121.06757
ILRP On-Farm Domestic	AGL020000617-LYNCH DOM			N/A	36.02860	-120.90961
ILRP On-Farm Domestic	AGL020000619-BRES_DOM			N/A	36.02366	-120.89835
ILRP On-Farm Domestic	AGL020000621-CHERRY DOM			N/A	36.01566	-120.88828
ILRP On-Farm Domestic	AGL020000624-LOMBA_DOM			N/A	35.99311	-120.87797
ILRP On-Farm Domestic	AGL020000740-DOM WELL			N/A	36.01110	-120.92184
ILRP On-Farm Domestic	AGL020001067-CKV DOM			N/A	36.01650	-120.92667
ILRP On-Farm Domestic	AGL020001398-32W2_0062			N/A	36.27546	-121.18898
ILRP On-Farm Domestic	AGL020001410-H2W3_0386			N/A	35.88783	-120.90481
ILRP On-Farm Domestic	AGL020002554-BH-D			N/A	36.20280	-121.12019
ILRP On-Farm Domestic	AGL020002562-DP-D2			N/A	36.20041	-121.11543
ILRP On-Farm Domestic	AGL020002565-CR-D			N/A	36.19149	-121.10250
ILRP On-Farm Domestic	AGL020002568-LE-D			N/A	36.19458	-121.09255
ILRP On-Farm Domestic	AGL020002572-TO-D2			N/A	36.18399	-121.07059
ILRP On-Farm Domestic	AGL020002573-LA3			N/A	36.16642	-121.06696
ILRP On-Farm Domestic	AGL020003371-M-D			N/A	36.20788	-121.16909
ILRP On-Farm Domestic	AGL020003374-PRIMARY			N/A	35.88203	-120.70197
ILRP On-Farm Domestic	AGL020003375-H-D			N/A	36.22097	-121.17593
ILRP On-Farm Domestic	AGL020003665-WELL 97			N/A	36.14983	-121.09315
ILRP On-Farm Domestic	AGL020003760-DOM WELL			N/A	35.86758	-120.86826
ILRP On-Farm Domestic	AGL020003769-DOM WELL			N/A	35.97903	-120.87140
ILRP On-Farm Domestic	AGL020003831-CLAUSEN_D			N/A	36.07028	-120.93860
ILRP On-Farm Domestic	AGL020003986-DOMESTIC			N/A	36.18991	-121.07833
ILRP On-Farm Domestic	AGL020003988-DOMESTIC			N/A	36.08960	-120.96620
ILRP On-Farm Domestic	AGL020003990-DOMESTIC			N/A	36.13464	-121.03903
ILRP On-Farm Domestic	AGL020004087-DUAL WELL			N/A	35.89054	-120.92286
ILRP On-Farm Domestic	AGL020007439-CCGC_0181			N/A	36.21599	-121.14012
ILRP On-Farm Domestic	AGL020007443-0203-002			N/A	36.21732	-121.14121
ILRP On-Farm Domestic	AGL020007443-CCGC_0636			N/A	36.22839	-121.14116
ILRP On-Farm Domestic	AGL020007540-GH12-09			N/A	36.23165	-121.17023

Upper Valley Subbasin Water Quality Network

Well Type	Well Name	Top Perforation	Bottom Perforation	Water System	Latitude	Longitude
ILRP On-Farm Domestic	AGL020007855-DUPLEX			N/A	35.98713	-120.88627
ILRP On-Farm Domestic	AGL020007855-GALLAGER			N/A	35.97055	-120.87315
ILRP On-Farm Domestic	AGL020007855-SHOP			N/A	36.00177	-120.90171
ILRP On-Farm Domestic	AGL020011482-CCGC_0391			N/A	36.10706	-121.01013
ILRP On-Farm Domestic	AGL020011483-SAN LUC W3			N/A	36.10553	-121.01335
ILRP On-Farm Domestic	AGL020011783-WELL DOM			N/A	36.07397	-120.93814
ILRP On-Farm Domestic	AGL020013091-WELL 30			N/A	36.03414	-120.92696
ILRP On-Farm Domestic	AGL020014062-DOMESTIC			N/A	35.90093	-120.91485
ILRP On-Farm Domestic	AGL020015908-DOM WELL			N/A	36.00683	-120.91819
ILRP On-Farm Domestic	AGL020016682-DOMESTIC			N/A	36.13902	-121.09176
ILRP On-Farm Domestic	AGL020017563-WELL DOM			N/A	36.05212	-120.92085
ILRP On-Farm Domestic	AGL020025002-CARTAN WELL 1			N/A	35.85518	-120.84989
ILRP On-Farm Domestic	AGL020025002-CARTAN_W1			N/A	35.86577	-120.85168
ILRP On-Farm Domestic	AGL020027950-DTRANCH_D			N/A	36.09137	-120.97184
ILRP On-Farm Domestic	AGL020027951-IV DOM WELL			N/A	35.87097	-120.69437
ILRP On-Farm Domestic	AGL020028337-WELL			N/A	35.97930	-120.90091
ILRP On-Farm Domestic	AGL020035609-AZUL_DP			N/A	35.83536	-120.53790
ILRP On-Farm Domestic	AGL020036268-ECH-DOM			N/A	36.08933	-120.98492
ILRP On-Farm Domestic	AGL020037522-VWR_DOM			N/A	35.80909	-120.67191
ILRP On-Farm Domestic	AGL020037703-MH1-DOM			N/A	35.81762	-120.84150
ILRP On-Farm Domestic	AGL020037703-MH2-DOM			N/A	35.80682	-120.85147
ILRP On-Farm Domestic	AGL020038123-#4			N/A	36.03917	-120.93331
ILRP On-Farm Domestic	AGL020038444-CENT DOM			N/A	36.24929	-121.19640
ILRP On-Farm Domestic	AGL020039214-MONTESI_DP			N/A	35.80206	-120.56772
ILRP On-Farm Domestic	AGL020039378-DOMESTIC			N/A	35.89511	-120.92662
ILRP On-Farm Domestic	AGL020039704-DOMESTIC			N/A	36.19014	-121.07082
ILRP On-Farm Domestic	AGL020039778-DOMESTIC			N/A	36.18995	-121.07832
ILRP On-Farm Domestic	AGL020039797-CENT DOM			N/A	36.24923	-121.19614
ILRP On-Farm Domestic	AGL020039797-SLC 19			N/A	36.25571	-121.17837
ILRP Irrigation	AGL020000518-M-24			N/A	36.27036	-121.16484
ILRP Irrigation	AGL020000519-J-23			N/A	36.25756	-121.15992
ILRP Irrigation	AGL020000519-J-26			N/A	36.24976	-121.16017
ILRP Irrigation	AGL020000523-T-3			N/A	36.28204	-121.16862
ILRP Irrigation	AGL020000523-T-4			N/A	36.28152	-121.17166
ILRP Irrigation	AGL020000524-G3			N/A	36.27385	-121.16998

Upper Valley Subbasin Water Quality Network

Well Type	Well Name	Top Perforation	Bottom Perforation	Water System	Latitude	Longitude
ILRP Irrigation	AGL020000524-G-3			N/A	36.27382	-121.16968
ILRP Irrigation	AGL020000526-DW-1			N/A	36.20654	-121.11633
ILRP Irrigation	AGL020000527-DE-4			N/A	36.19847	-121.09246
ILRP Irrigation	AGL020000528-R-1			N/A	36.20715	-121.11589
ILRP Irrigation	AGL020000537-NORTH WELL			N/A	35.99393	-120.90955
ILRP Irrigation	AGL020000601-MAGGIO #1			N/A	36.17518	-121.07158
ILRP Irrigation	AGL020000601-MAGGIO #10			N/A	36.17965	-121.06881
ILRP Irrigation	AGL020000601-SWRI			N/A	36.18464	-121.06838
ILRP Irrigation	AGL020000612-FOLET1_IRR			N/A	36.02338	-120.89830
ILRP Irrigation	AGL020000612-FOLET2_IRR			N/A	36.02562	-120.90400
ILRP Irrigation	AGL020000613-FERRINI1			N/A	36.00901	-120.88618
ILRP Irrigation	AGL020000615-RAINBOW #1			N/A	36.20900	-121.11752
ILRP Irrigation	AGL020000617-LYNCH #1			N/A	36.02615	-120.91208
ILRP Irrigation	AGL020000618-DUDL2_IRR			N/A	36.02699	-120.90500
ILRP Irrigation	AGL020000621-CHERRY1IRR			N/A	36.01368	-120.89222
ILRP Irrigation	AGL020000623-GLAU1IRR			N/A	36.00826	-120.88601
ILRP Irrigation	AGL020000624-LOMBA1_IRR			N/A	35.98814	-120.87903
ILRP Irrigation	AGL020000625-GALLA_1			N/A	35.97415	-120.87563
ILRP Irrigation	AGL020000626-ROSEN1_IRR			N/A	36.00991	-120.89951
ILRP Irrigation	AGL020000628-TOGNET AG1			N/A	36.19219	-121.08521
ILRP Irrigation	AGL020000632-BELLA_2			N/A	36.17721	-121.10088
ILRP Irrigation	AGL020000740-LOT 18			N/A	36.00661	-120.91814
ILRP Irrigation	AGL020000740-MIDDLE			N/A	36.01060	-120.92149
ILRP Irrigation	AGL020000740-SOUTH			N/A	36.00903	-120.91969
ILRP Irrigation	AGL020001067-WELL #1			N/A	36.01619	-120.92679
ILRP Irrigation	AGL020001067-WELL #2			N/A	36.01780	-120.92684
ILRP Irrigation	AGL020001067-WELL #3			N/A	36.02092	-120.93050
ILRP Irrigation	AGL020001384-50-W1-AME			N/A	36.08774	-120.97826
ILRP Irrigation	AGL020001384-50-W2-AME			N/A	36.08743	-120.97735
ILRP Irrigation	AGL020001384-50-W3-AME			N/A	36.08766	-120.97710
ILRP Irrigation	AGL020001410-H2-W1-AMD			N/A	35.87495	-120.88126
ILRP Irrigation	AGL020001622-WELL 5			N/A	36.05780	-120.93275
ILRP Irrigation	AGL020002554-BH-1			N/A	36.20280	-121.11681
ILRP Irrigation	AGL020002560-BE-1			N/A	36.19300	-121.08460
ILRP Irrigation	AGL020002562-DP-2			N/A	36.19920	-121.11520

Upper Valley Subbasin Water Quality Network

Well Type	Well Name	Top Perforation	Bottom Perforation	Water System	Latitude	Longitude
ILRP Irrigation	AGL020002564-JP-3			N/A	36.19270	-121.10579
ILRP Irrigation	AGL020002565-CR-2			N/A	36.19141	-121.10393
ILRP Irrigation	AGL020002568-LE-1			N/A	36.19131	-121.09155
ILRP Irrigation	AGL020002571-MA-4			N/A	36.18066	-121.08361
ILRP Irrigation	AGL020002572-TO-1			N/A	36.18194	-121.07151
ILRP Irrigation	AGL020002574-WE-3			N/A	36.14515	-121.04762
ILRP Irrigation	AGL020003361-WELL 4			N/A	36.10918	-121.02630
ILRP Irrigation	AGL020003375-H-1			N/A	36.22449	-121.18095
ILRP Irrigation	AGL020003665-WELL 26			N/A	36.18034	-121.11688
ILRP Irrigation	AGL020003760-AG WELL			N/A	35.86834	-120.87037
ILRP Irrigation	AGL020003769-AG WELL			N/A	35.97952	-120.87597
ILRP Irrigation	AGL020003831-CLAUSEN1_I			N/A	36.06886	-120.93929
ILRP Irrigation	AGL020003986-WELL 3			N/A	36.18746	-121.08615
ILRP Irrigation	AGL020003988-WELL 2			N/A	36.08952	-120.96569
ILRP Irrigation	AGL020003990-WELL 5			N/A	36.13493	-121.03879
ILRP Irrigation	AGL020006688-VICTORIA 7			N/A	36.26324	-121.18018
ILRP Irrigation	AGL020007439-0107-05			N/A	36.21861	-121.14772
ILRP Irrigation	AGL020007439-0109-004			N/A	36.21671	-121.14887
ILRP Irrigation	AGL020007443-0202-003			N/A	36.22389	-121.14298
ILRP Irrigation	AGL020007446-0409-002			N/A	36.24190	-121.15334
ILRP Irrigation	AGL020007446-0414-003			N/A	36.24002	-121.16391
ILRP Irrigation	AGL020007538-GH15-02			N/A	36.25567	-121.17665
ILRP Irrigation	AGL020007540-GH12-08			N/A	36.23287	-121.17089
ILRP Irrigation	AGL020007540-GH12-10			N/A	36.22543	-121.16816
ILRP Irrigation	AGL020007818-WELL			N/A	36.08129	-120.94911
ILRP Irrigation	AGL020007819-WELL			N/A	36.02321	-120.90139
ILRP Irrigation	AGL020007855-24 ACRE			N/A	35.97235	-120.88001
ILRP Irrigation	AGL020007855-CAT			N/A	36.00381	-120.90043
ILRP Irrigation	AGL020007855-CAT BERN			N/A	36.00666	-120.91444
ILRP Irrigation	AGL020007855-CATBERN AG			N/A	36.00718	-120.91427
ILRP Irrigation	AGL020007855-DIESEL			N/A	36.00604	-120.90305
ILRP Irrigation	AGL020007855-E PUMP			N/A	36.00151	-120.89760
ILRP Irrigation	AGL020007855-EPUMP			N/A	36.00161	-120.89761
ILRP Irrigation	AGL020007855-FORD			N/A	35.99112	-120.90355
ILRP Irrigation	AGL020007855-MAIN 1 (CAT)			N/A	36.00399	-120.90033

Upper Valley Subbasin Water Quality Network

Well Type	Well Name	Top Perforation	Bottom Perforation	Water System	Latitude	Longitude
ILRP Irrigation	AGL020007855-MAIN 2 (DIESEL)			N/A	36.00605	-120.90305
ILRP Irrigation	AGL020007855-RUTHYS			N/A	36.01300	-120.90770
ILRP Irrigation	AGL020007855-RUTHY'S			N/A	36.01279	-120.90759
ILRP Irrigation	AGL020007855-TOMAS			N/A	35.98426	-120.90169
ILRP Irrigation	AGL020007855-TOMAS PUMP			N/A	35.98430	-120.90149
ILRP Irrigation	AGL020011482-3485-10			N/A	36.10574	-121.01285
ILRP Irrigation	AGL020011483-3305-002			N/A	36.09959	-121.00677
ILRP Irrigation	AGL020011484-3314-005			N/A	36.09928	-121.00339
ILRP Irrigation	AGL020011484-3486-011			N/A	36.10522	-121.01404
ILRP Irrigation	AGL020011484-3486-012			N/A	36.10475	-121.01494
ILRP Irrigation	AGL020011783-WELL 2			N/A	36.08623	-120.94988
ILRP Irrigation	AGL020011783-WELL 3			N/A	36.08910	-120.95399
ILRP Irrigation	AGL020013091-WELL 4			N/A	36.03876	-120.92975
ILRP Irrigation	AGL020014062-SUNSET 3			N/A	35.87683	-120.89124
ILRP Irrigation	AGL020014062-SUNSET IRR 3			N/A	35.87686	-120.89109
ILRP Irrigation	AGL020015908-AG WELL			N/A	36.00761	-120.91880
ILRP Irrigation	AGL020015908-R16 L8			N/A	36.00786	-120.91883
ILRP Irrigation	AGL020017562-WELL 2			N/A	36.06600	-120.93606
ILRP Irrigation	AGL020017563-WELL 2			N/A	36.05194	-120.92073
ILRP Irrigation	AGL020021763-0613-002			N/A	36.22602	-121.13748
ILRP Irrigation	AGL020021842-ALANS VINE WELL			N/A	36.27189	-121.18505
ILRP Irrigation	AGL020021842-WELL #12			N/A	36.27193	-121.18500
ILRP Irrigation	AGL020023542-PIANETTA A			N/A	35.82191	-120.70592
ILRP Irrigation	AGL020026123-AG WELL			N/A	35.86330	-120.85462
ILRP Irrigation	AGL020026124-BUCHMAN WELL 3			N/A	35.85506	-120.84985
ILRP Irrigation	AGL020026124-BUCHMAN_3			N/A	35.85514	-120.84995
ILRP Irrigation	AGL020027405-AG WELL			N/A	35.86311	-120.86224
ILRP Irrigation	AGL020027704-WILSON 122			N/A	36.10968	-121.02669
ILRP Irrigation	AGL020027704-WILSON 130			N/A	36.10883	-121.02625
ILRP Irrigation	AGL020027705-WILSON 121			N/A	36.10946	-121.02653
ILRP Irrigation	AGL020027705-WILSON 131			N/A	36.10911	-121.02629
ILRP Irrigation	AGL020027753-WELL1			N/A	36.08998	-120.98360
ILRP Irrigation	AGL020027946-AG WELL			N/A	35.86911	-120.88716
ILRP Irrigation	AGL020027950-DUGHI AG			N/A	36.09722	-120.98542
ILRP Irrigation	AGL020027950-TAYLOR AG			N/A	36.09003	-120.97138

Upper Valley Subbasin Water Quality Network

Well Type	Well Name	Top Perforation	Bottom Perforation	Water System	Latitude	Longitude
ILRP Irrigation	AGL020027951-IV AG WELL			N/A	35.87040	-120.69519
ILRP Irrigation	AGL020028032-EADE AG			N/A	36.08931	-120.96619
ILRP Irrigation	AGL020028048-TH-1			N/A	36.26796	-121.15227
ILRP Irrigation	AGL020028472-SPURWELL1			N/A	36.18746	-121.08615
ILRP Irrigation	AGL020032741-PVR AW 4			N/A	36.08802	-120.97914
ILRP Irrigation	AGL020032741-PVR AW 5			N/A	36.08678	-120.97725
ILRP Irrigation	AGL020032858-0503-002			N/A	36.24715	-121.14797
ILRP Irrigation	AGL020035966-FREW 105			N/A	36.25846	-121.17986
ILRP Irrigation	AGL020036242-5000-001			N/A	36.18754	-121.07110
ILRP Irrigation	AGL020036242-5000-003			N/A	36.19147	-121.07474
ILRP Irrigation	AGL020036266-5209-009			N/A	36.02871	-120.92888
ILRP Irrigation	AGL020036268-5109-009			N/A	36.08688	-120.97816
ILRP Irrigation	AGL020036284-WELL 10			N/A	36.02576	-120.91328
ILRP Irrigation	AGL020037481-R4-WELL#4			N/A	35.85216	-120.84508
ILRP Irrigation	AGL020037522-VWR_IRR			N/A	35.81165	-120.67136
ILRP Irrigation	AGL020037664-AG WELL			N/A	36.00341	-120.91576
ILRP Irrigation	AGL020037703-JSP#5			N/A	35.81453	-120.84274
ILRP Irrigation	AGL020037703-JVEP#4			N/A	35.81513	-120.84280
ILRP Irrigation	AGL020038027-WILSON 129			N/A	36.09848	-121.01512
ILRP Irrigation	AGL020038123-#1			N/A	36.06449	-120.93890
ILRP Irrigation	AGL020038123-#2			N/A	36.06068	-120.93037
ILRP Irrigation	AGL020038123-#3			N/A	36.05659	-120.92681
ILRP Irrigation	AGL020038123-#5			N/A	36.02757	-120.92457
ILRP Irrigation	AGL020038123-#6			N/A	36.02868	-120.92126
ILRP Irrigation	AGL020038123-#7			N/A	36.02488	-120.92190
ILRP Irrigation	AGL020038123-#8			N/A	36.02281	-120.91837
ILRP Irrigation	AGL020038323-MESA DEL5			N/A	36.26425	-121.18369
ILRP Irrigation	AGL020038442-PUMP #7			N/A	36.26323	-121.18024
ILRP Irrigation	AGL020038444-24			N/A	36.25517	-121.19139
ILRP Irrigation	AGL020038500-MAININI_IRR			N/A	35.83530	-120.70590
ILRP Irrigation	AGL020038516-R5-WELL #5			N/A	35.86831	-120.87043
ILRP Irrigation	AGL020039236-LOT 18			N/A	36.00653	-120.91825
ILRP Irrigation	AGL020039398-WELL 1			N/A	36.19634	-121.14510
ILRP Irrigation	AGL020039589-WELL #009			N/A	36.02864	-120.92895
ILRP Irrigation	AGL020039704-AG WELL			N/A	36.18979	-121.07136

Upper Valley Subbasin Water Quality Network

Well Type	Well Name	Top Perforation	Bottom Perforation	Water System	Latitude	Longitude
ILRP Irrigation	AGL020039778-WELL 3			N/A	36.18736	-121.08623
ILRP Irrigation	AGL020039794-WELL 7			N/A	36.26327	-121.18023
ILRP Irrigation	AGL020039892-MANN WELL 1			N/A	36.19399	-121.13830
ILRP Irrigation	AGL020039913-WILSON 145			N/A	36.09997	-121.01391
ILRP Irrigation	AGL020039913-WISLON WEST			N/A	36.09854	-121.01510
ILRP Irrigation	AGL020039935-R6			N/A	35.86317	-120.86206
ILRP Irrigation	AGL020040188-FREW 105			N/A	36.25835	-121.17980
ILRP Irrigation	AGL020040724-WELL 1			N/A	36.08986	-120.98360
ILRP Irrigation	AGL020040845-UWW7			N/A	36.10965	-121.02660
ILRP Irrigation	AGL020040857-WW2			N/A	36.10874	-121.02622

Appendix 7C

Central Coast Ag Order 4.0 Monitoring and Reporting Program

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

GENERAL WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES FROM IRRIGATED LANDS

ORDER NO. R3-2021-0040

April 15, 2021

ATTACHMENT B

Monitoring and Reporting Program

Table of Contents

Section A. General Monitoring and Reporting Requirements 1
Section B. Irrigation and Nutrient Management Monitoring and Reporting Requirements 2
TNA Report Requirements 3
INMP Summary Report Requirements 7
Section C. Groundwater Monitoring and Reporting 12
On-Farm Domestic Wells 13
Notification to On-Farm Domestic Well Users 14
Irrigation Wells Prior to the Start of Groundwater Quality Trend Monitoring 15
Groundwater Quality Trend Monitoring 15
Ranch-Level Groundwater Discharge 19
Section D. Third-Party Alternative Compliance Pathway for Groundwater Protection 21
Monitoring and Reporting 22
Section E. Surface Water Monitoring and Reporting 22
Surface Receiving Water Quality Trends 22
Follow-Up Surface Receiving Water Implementation 25
Ranch-Level Surface Discharge 29
Section F. Annual Compliance Form (ACF) 31
Section G. Sampling and Analysis Plan and Quality Assurance Project Plan 32
Tables related to Monitoring and Reporting Requirements 34
Tables related to Section B: Irrigation and Nutrient Management Plan Monitoring and Reporting Requirements 34
Table MRP-1. Comparison of TNA and INMP Summary Monitoring and Reporting 34
Table MRP-2. Monitoring and Reporting Schedule for Irrigation and Nutrient Management 34
Table MRP-3. Organic Fertilizer Discount Factor 35
Table MRP-4. Nitrogen Removal Conversion Coefficients 36

Tables related to Section C: Groundwater Monitoring and Reporting 37

Table MRP-5. On-Farm Domestic Drinking Water Supply Well Monitoring and Reporting Requirements 37

Table MRP-6. Primary Irrigation Well Monitoring and Reporting Requirements Until Groundwater Quality Trend Monitoring Program Starts ("Pre-Trend") 39

Table MRP-7. Minimum Groundwater Quality Trend Monitoring and Reporting Requirements (Third-Party Option) 40

Table MRP-8. Minimum Groundwater Quality Trend Monitoring and Reporting Requirements (Individual Option) 42

Tables related to Section E: Surface Water Monitoring and Reporting 48

Table MRP-9. Major Waterbodies in Agricultural Areas 48

Table MRP-10. Surface Receiving Water Quality Monitoring Parameters 49

Section A. General Monitoring and Reporting Requirements

1. This Monitoring and Reporting Program (MRP) is issued pursuant to California Water Code section 13267, which authorizes the Central Coast Regional Water Quality Control Board (Central Coast Water Board) to require preparation and submittal of technical and monitoring reports.

2. The Central Coast Water Board needs the information required by this MRP to determine compliance with Order No. R3-2021-0040. The evidence supporting the need for and benefits of to be obtained from these monitoring and reporting requirements is included in the findings the Order.

3. Pursuant to Water Code section 13268, a violation of a request made pursuant to section 13267 may subject the Discharger to civil liability of up to $1000 per day. Pursuant to Water Code section 13350, a violation of a request made pursuant to section 13350 may subject the Discharger to civil liability of up to $5000 per day.

4. Dischargers must submit reports in the format specified by the Executive Officer. Reports must be submitted electronically, unless otherwise specified by the Executive Officer. A transmittal letter must accompany each report, containing the following penalty of perjury statement signed by the Discharger or the Discharger's authorized agent:

   "In compliance with Water Code section 13267, I certify under penalty of perjury that this document and all attachments were prepared by me, or under my direction or supervision, following a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. To the best of my knowledge and belief, this document and all attachments are true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

5. All technical and monitoring reports submitted in compliance with this MRP must be complete and accurate. The submittal of an incomplete or inaccurate report does not constitute compliance with the requirement.

6. Unless otherwise noted[1], all water quality analyses must be conducted at a laboratory certified for such analysis through a California Environmental Laboratory Accreditation Program (ELAP) and in accordance with approved standard and United States Environmental Protection Agency (USEPA) methods.[2] Unless otherwise noted, all sampling, sample preservation, and analyses must be performed in accordance with the latest edition of Test

[1] As noted in paragraph 12.c, below, it is acceptable for a Discharger to use either laboratory analysis or a portable measuring device to obtain precise measurements of nitrogen in irrigation wells for total nitrogen applied and irrigation and nutrient management plan summary reporting purposes

[2] Certified laboratories can be found online in the **List of Qualified Laboratories for Groundwater Monitoring**.

Methods for Evaluating Solid Waste, SW-846, USEPA, and analyzed as specified herein by the above analytical methods and reporting limits indicated.

7. Any laboratory data submitted to the Central Coast Water Board must be submitted by, or under the direction of, a state registered professional engineer, registered geologist, state certified laboratory, or other similarly qualified professional. Surface water quality data must be submitted electronically, in a format that is compatible with the California Environmental Data Exchange Network (CEDEN), or as directed by the Executive Officer. Groundwater quality data must be submitted in a format compatible with the electronic deliverable format (EDF) electronic data deliverable (EDD) criteria and protocols used by the State Water Board's GeoTracker data management system, or as directed by the Executive Officer.

8. Dischargers must provide the geographic information necessary to determine the Groundwater Phase Area and Surface Water Priority Area that applies to each individual ranch when they enroll or update their electronic Notice of Intent (eNOI).

9. Dischargers with wells on their ranch must indicate on their eNOI the number of domestic and irrigation wells that are in use on their ranch. Dischargers must also update their eNOI within 60 days when a new well is put in service, when a previously reported well is taken out of service (e.g., a well is either destroyed or becomes inactive) or when use of a previously inactive well resumes.

10. The Central Coast Water Board encourages Dischargers to participate in third-party monitoring programs to comply with monitoring and reporting requirements contained herein. Dischargers not participating in a third-party monitoring program must conduct required monitoring and reporting individually. Participation in a third-party monitoring program does not relieve Dischargers of the responsibility to comply with these requirements or of the requirement to have their ranch-level data reported to the Central Coast Water Board.

11. Dischargers must report on CEQA mitigation measure implementation electronically in the ACF.

Section B. Irrigation and Nutrient Management Monitoring and Reporting Requirements

1. **By March 1 of each year**, all Dischargers, including those participating in a third-party alternative compliance pathway, must provide the Central Coast Water Board with either:

    a. A Total Nitrogen Applied (TNA) report, which includes applied nitrogen and irrigation information, or
    b. An Irrigation and Nutrient Management Plan (INMP) Summary report, which includes information from the TNA report, total nitrogen removed,

and additional specific irrigation management information noted in paragraph 15 below.

2. A comparison of information required in TNA reporting versus INMP Summary reporting is included in **Table MRP-1**. TNA reports will be used to determine the relative contribution of nitrogen applied to a ranch from all sources. INMP Summary reports will be used to determine compliance with the nitrogen discharge targets and limits established in the Order. Required information for both reports must be recorded for the calendar year prior to the report due date (for example, if a report is due March 1, 2024, the monitoring information must be recorded from January 1 through December 31, 2023). The physical area reported on in each report form must represent no more than 640 acres; if a ranch is greater than 640 acres in size then multiple reports must be submitted.

3. Eventually, all Dischargers must submit an INMP Summary report; however, the timeframe for when Dischargers transition from TNA reporting to the more comprehensive INMP Summary reporting is phased in over time, as shown in **Table MRP-2**. With the exception of Dischargers who were enrolled in Order No. R3-2017-0002 (Ag Order 3.0) and required to submit TNA reports under Ag Order 3.0, the timeframe for when a Discharger must begin conducting expanded INMP monitoring and INMP Summary reporting is based on a Discharger's Groundwater Phase area.

4. For the first two years the Order is in effect (2021 and 2022), all Dischargers (regardless of Groundwater Phase area) who were required to submit TNA reports under Ag Order 3.0 must continue to conduct monitoring, recordkeeping, and reporting as described below for submittal of a complete and accurate TNA report **by March 1, 2022 and 2023**. This Ag Order 3.0 requirement for specific Dischargers will be superseded by requirements summarized in **Table MRP-2** (i.e., according to Dischargers' ranch locations within specific Groundwater Phase areas).

5. Beginning in 2023, Dischargers in Groundwater Phase 1,[3] 2, and 3 areas must conduct monitoring and reporting associated with required TNA and/or INMP Summary reporting requirements in accordance with **Table MRP-2.**

TNA Report Requirements

6. On an annual basis, Dischargers required to submit the TNA report must monitor and report the total amount of nitrogen applied from all sources, as described below, including fertilizer nitrogen ($\mathbf{A_{FER}}$), compost nitrogen ($\mathbf{A_{COMP}}$), organic fertilizer nitrogen ($\mathbf{A_{ORG}}$), irrigation water nitrogen ($\mathbf{A_{IRR}}$)**,** nitrogen present in the

[3] Dischargers in Groundwater Phase 1 areas are not required to submit a stand-alone TNA report; rather, due to the prioritization of Phase 1 areas, Dischargers in portions of the Gilroy-Hollister Valley (Llagas Area) groundwater basin, the Forebay Aquifer and Upper Valley subbasins of the Salinas Valley basin, the Santa Maria area of the Santa Maria River Valley basin, and the Santa Ynez River Valley basin must conduct the expanded monitoring and reporting associated with INMP Summary reporting before Dischargers in Groundwater Phase areas 2 and 3.

soil, nitrogen concentration of the irrigation water, volume of irrigation water applied to the ranch, and additional information described, below.

7. Fertilizer nitrogen (**A_{FER}**) for each specific crop.

   Dischargers must monitor and report the total amount of nitrogen applied to the ranch from fertilizers during the reporting period. **A_{FER}** includes nitrogen applied from fertilizers and all other materials or products containing nitrogen excepting compost and organic fertilizer nitrogen (both tracked and reported separately), including but not limited to, inorganic fertilizers, fertilizers applied through the irrigation water (i.e., fertigation), foliar fertilizers, slow release products, compost teas, manure, and compost or manure extracts.

8. Compost nitrogen (**A_{COMP}**) by specific crop or for the entire ranch.

   a. Dischargers must monitor and report the total amount of compost nitrogen applied to the ranch during the report period.
   b. Dischargers have the option of using a compost discount factor (**C**) to calculate the amount of compost nitrogen mineralized during the report year the compost was applied to the ranch. The compost discount factor can only be applied to compost reported as **A_{COMP}**. If compost is reported under **A_{FER}** then the compost discount factor cannot be applied.
   c. The Central Coast Water Board's standard compost discount factors (**C**) are defined below. Different compost discount factors are applied based on the carbon to nitrogen (C:N) ratio of the product.[4]
      i. For C:N ratio > 11:1, C = 0.05. That is, 5 percent of the nitrogen in the compost will be counted in the A-R compliance calculation.
      ii. For C:N ratio ≤ 11:1, C= 0.10. That is, 10 percent of the nitrogen in the compost will be counted in the A-R compliance calculation.
   d. Only a final product (or stabilized compost) can receive the compost discount factors defined above. Other materials containing nitrogen that are not final products are not eligible for the compost discount factor. Vegetative food materials include the crop residues left on the field after harvest and are not considered to be a final product. A final product is a material that has been composted and completed the curing composting phase.
   e. Dischargers who elect to use their own compost discount factor (C) to determine the amount of compost nitrogen mineralized during the report year must report their C value. Records detailing the rationale and sampling methods used to determine the C value must be maintained in the Farm Plan and must be submitted to the Central Coast Water Board upon request.

[4] **Attachment A, Section C.1** includes information on the source of the standard compost discount factors.

f. If compost nitrogen is reported as **A_{COMP}** it should not also be included in the **A_{FER}** calculation (i.e., it should not be reported twice in the same report form).

9. Organic fertilizer nitrogen (**A_{ORG}**) by specific crop.

   a. Dischargers must monitor and report the total amount of organic fertilizer nitrogen applied to the ranch during the report period.
   b. Dischargers have the option of using an organic fertilizer discount factor (O) to calculate the amount of organic fertilizer nitrogen mineralized during the first 12 weeks the organic fertilizer was applied to the ranch. The organic fertilizer discount factor can only be applied to organic fertilizer reported as **A_{ORG}**. If organic fertilizer is reported under **A_{FER}** then the organic fertilizer discount factor cannot be used.
   c. The Central Coast Water Board's organic fertilizer discount factors (O) are defined in **Table MRP-3**. Different organic fertilizer discount factors can be applied based on the carbon to nitrogen (C:N) ratio of an organic product.
   d. If organic fertilizer nitrogen is reported as **A_{ORG}** it should be calculated and reported separately from **A_{FER}** (i.e., it should not be reported as part of **A_{FER}** to avoid double counting in the same report).
   e. The following products are not eligible to receive the organic fertilizer discount: a) products with no organic compounds (long chain carbon) molecules, such as conventional fertilizer, slow release fertilizers, b) products that do not depend on microbial mineralization to release nitrogen to mineral form to make it available for crop uptake, c) products without C:N ratio information available, and d) organic liquid fertilizers that are in the liquid and/or emulsified form.

10. Irrigation water nitrogen (**A_{IRR}**) for the entire ranch.

    a. The amount of irrigation water nitrogen applied, **A_{IRR}**, is calculated using the nitrogen concentration of the irrigation water and the volume of water applied to the ranch during the reporting period.
    b. **A_{IRR}** does not include liquid fertilizers applied during fertigation (i.e., fertigation nitrogen is accounted for in A_{FER} as noted above).
    c. The volume of water used in this calculation must include all water applied, including water applied for irrigation, leaching, runoff, backflush, operational spills, etc. Rainwater should not be included in this calculation.

11. Nitrogen present in the soil.

    a. Dischargers must conduct soil nitrogen monitoring to inform fertilizer application decisions for their ranch. Dischargers must measure and report the amount of soil nitrogen present in the soil at least once per

reporting period. Soil nitrogen monitoring locations and frequencies should be representative of cropping patterns and soil types as needed to inform nitrogen management decisions.

b. Dischargers should take a soil sample for laboratory analysis, use a nitrate quick test, or use an alternative method to evaluate nitrogen content in the soil prior to each crop planting, prior to seeding the field, prior to pre-side dressing, or when appropriate to determine nitrogen available in the soil for the current or following crop, prior to applying fertilizer nitrogen. These records must be maintained in the Farm Plan and submitted to the Central Coast Water Board upon request.
c. Soil nitrogen content must be measured at the time of year or the stage during the crop cycle when soil nitrogen content is high and therefore should be accounted for as a source of nitrogen. Records describing the timing of the soil nitrogen monitoring and the rationale used to determine the timing must be maintained in the Farm Plan and must be submitted to the Central Coast Water Board upon request.

12. Nitrogen concentration of the irrigation water.

a. Dischargers must, at a minimum, obtain and report a precise[5] nitrogen concentration from the primary source of irrigation water (e.g., primary irrigation well, municipal supply water, recycled water, etc.) during the report period. If Dischargers obtain multiple precise nitrogen samples from their primary irrigation well, they must compute and report the average nitrogen concentration based on all samples taken.
b. Dischargers using an irrigation source for their ranch that is not located on their ranch property (e.g., sharing an irrigation well with a neighbor) are still responsible for obtaining a precise nitrogen concentration from the primary source of irrigation water.
c. Examples of methods used to obtain precise values include laboratory analyses and portable measuring devices. A method that produces a concentration range, such as a nitrate quick test strip, cannot be used to satisfy this requirement unless additional technology or methods are used to obtain a precise value from the test strip.
d. Where possible, Dischargers are encouraged to obtain precise nitrogen samples from all sources of irrigation water and compute a weighted average irrigation water nitrogen concentration. The weighted average is calculated using volume and concentration information from each water source. The methodology for calculating the weighted average is described below.

[5] For the purposes of this MRP, a “precise” represents an exact measurement (e.g., 2.5 mg/L or 4 mg/L), as opposed to a measurement expressed as a range (e.g. 1-5 mg/L).

13. Volume of irrigation water applied to the ranch.

    a. Dischargers must, at a minimum, estimate and report the total volume of irrigation water applied to the ranch during the report period. Where possible, Dischargers are encouraged to measure the volume of irrigation water applied to the ranch or to each specific crop grown. Records describing the method used to estimate the volume of irrigation water applied must be maintained in the Farm Plan and must be submitted to the Central Coast Water Board upon request.

14. Additional information.

    a. Dischargers must report additional information required in the TNA report form, including acres of each specific crop grown, whether each specific crop was grown using organic or conventional methods, irrigation system type(s), and information describing the basis for the amount of nitrogen applied (e.g., University of California (UC) Farm Advisor consultation, on-farm research trials, trade publication, etc.).

INMP Summary Report Requirements

15. On an annual basis, Dischargers required to submit the INMP Summary report must monitor and report all nitrogen applied information noted in the TNA Report Requirements paragraphs above, in addition to the following specific irrigation management information and total nitrogen removed requirements:

    a. **Nitrogen concentration of irrigation water**: Dischargers must obtain sufficient samples to calculate the amount of nitrogen applied with the irrigation water to be used in determining compliance with nitrogen discharge targets and limits. At a minimum, Dischargers must obtain and report a precise nitrogen concentration from **all** sources of irrigation water used for their ranch during the reporting period (i.e., all irrigation wells, rather than only the primary irrigation well for TNA reporting). Dischargers may obtain multiple samples per well to increase the accuracy of their reporting and improve their ability to utilize irrigation water nitrogen in place of fertilizer nitrogen. If Dischargers obtain multiple precise nitrogen samples from a given well, they must compute and report the given well's average nitrogen concentration based on all samples taken from that well.
    b. **Weighted average irrigation water nitrogen concentration for the ranch**: Dischargers **must** calculate and report a weighted average irrigation water nitrogen concentration for their ranch. The weighted average is calculated using volume and concentration information from each water source. The following equation must be used to compute the

weighted average nitrogen concentration of irrigation water:

$$Weighted\ Average\ Concentration = \frac{((C1 * V1) + (C2 * V2) + (C3 * V3) + \cdots)}{(V1 + V2 + V3 + \cdots)}$$

where C1 is the nitrogen concentration if well 1, V1 is the volume of well 1, C2 is the concentration of well 2, etc.

c. **Volume of irrigation water applied to the ranch**: Dischargers **must measure** and report the total volume of irrigation water applied to the ranch during the reporting period. Dischargers must estimate, and are encouraged to measure, the volume of irrigation water applied to each specific crop.

d. **Recordkeeping**: Dischargers must maintain records of all irrigation water sampling and all weighted average nitrogen calculations. Dischargers must also maintain records describing the method used to measure the volume of irrigation water applied to the ranch and/or to estimate or measure the irrigation water volume applied to each specific crop. These records must be maintained in the Farm Plan and must be submitted to the Central Coast Water Board upon request.

16. Dischargers must monitor and report information associated with all nitrogen removed in annual INMP Summary reports.

    a. **Total nitrogen removed from the field (R) for each specific crop:** Dischargers must monitor and report the total amount of nitrogen removed from the field through harvest (**R_{HARV}**), sequestration (**R_{SEQ}**), scavenging (**$R_{SCAVENGE}$**), treatment (**R_{TREAT}**), or other removal methods (**R_{OTHER}**).

$$\mathbf{R = R_{HARV} + R_{SEQ} + R_{SCAVENGE} + R_{TREAT} + R_{OTHER}}$$

    b. **R_{HARV} = Conversion Coefficient x Material Removed**

        i. All Dischargers must monitor the total mass of each specific crop in pounds per acre removed from the field during the reporting period.

        ii. To calculate the amount of nitrogen removed from the field, Dischargers must either use a conversion coefficient provided by the Central Coast Water Board in **Table MRP-4** or develop and use their own conversion coefficient. Dischargers who elect to develop their own conversion coefficient must do so by obtaining a laboratory result from samples collected from their operation, or similar operation, following standard protocols to be developed by the Water Board in coordination with UCCE and CDFA and approved by the Executive Officer within 12 months of order adoption, to determine the nitrogen concentration in the crop material. Dischargers must maintain any data collected and rationale used in determining their individual conversion coefficient in the Farm Plan.

This information must be submitted to the Central Coast Water Board upon request.

iii. For crops that do not yet have approved conversion coefficients in **Table MRP-4**, Dischargers must either select a conversion coefficient for a crop that is similar to their crop or develop their own conversion coefficient, individually or cooperatively, following the approved standard protocol described above. Dischargers must maintain records detailing how and why they selected a particular conversion coefficient for their crop and, if applicable, information on the method used to obtain the conversion coefficient in the Farm Plan. These records must be submitted to the Central Coast Water Board upon request.

c. **R_{SEQ}**

i. Dischargers with permanent or semi-permanent crops may determine the amount of nitrogen sequestered in their crops during the reporting year and quantify and report this as **R_{SEQ}** for use in their nitrogen applied minus nitrogen removed reporting. Dischargers must maintain any data collected and rationale used in determining the amount of sequestered nitrogen in the Farm Plan. This information must be submitted to the Central Coast Water Board upon request.

d. **$R_{SCAVENGE}$**

i. Dischargers may claim a nitrogen scavenging credit (**$R_{SCAVENGE}$**) one time per year for each ranch acre by utilizing any of the four options described below.

ii. The total acres receiving the nitrogen scavenging credit may not exceed total ranch acres. Substantiating records for this credit must be maintained in the Farm Plan and submitted to the Central Coast Water Board upon request.

iii. Dischargers electing to claim the nitrogen scavenging credit must ensure that their cover crop, high carbon amendment , or high carbon woody materials meets the definition of a nitrogen scavenging cover crop, nitrogen scavenging high carbon amendment, or high carbon woody materials as outlined below and also in Attachment A and Attachment C of this Order.

1. **Option 1: Cover Crop.**

i. Maximum allowable nitrogen scavenging credit is 30 pounds of nitrogen per acre per year.

ii. A cover crop grown on a ranch to prevent leaching of nitrogen during the wet/rainy season. The cover crop must not contain nitrogen fixing plants. The cover crop must be

grown for a minimum of three months during the wet/rainy season. The cover crop must have a minimum estimated biomass of 4,500 pounds of oven-dry matter per acre. Substantiating records must be retained in the farm plan and include dated photo documentation, locations of implemented practice, date(s) of seeding, estimated cover crop biomass and method to estimate, and type of cover crop seed.

2. **Option 2: Cover Crop – Calculated Credit.**
   i. A cover crop grown on a ranch to prevent leaching of nitrogen during the wet/rainy season. The cover crop must not contain nitrogen fixing plants. The cover crop must be grown for a minimum of three months during the wet/rainy season. The cover crop must have a minimum biomass of 4,500 pounds of oven dry shoot matter per acre. Substantiating records must be retained in the farm plan and include dated photo documentation, locations of implemented practice, date(s) of seeding, cover crop biomass, and type of cover crop seed.
   ii. The cover crop must have a carbon to nitrogen ratio (C:N) greater than or equal to 20:1.
   iii. Standard protocols will be developed by the Water Board in coordination with UCCE and approved by the Executive Officer within 18 months of order adoption, to determine the nitrogen concentration in the crop material.
   iv. The Cover Crop - Calculated Credit is the difference between the nitrogen contained in the cover crop and the amount mineralized based on the organic fertilizer discount factor (O)[6] of **Table MRP-3**.[7]
   v. Vegetative food materials (crop residues) left on the field are not considered cover crops and the credit may not be applied to such vegetative food materials.
3. **Option 3: High Carbon Amendments.**
   i. Maximum allowable nitrogen scavenging credit is 30 pounds of nitrogen per acre per year.
   ii. High carbon material (e.g., almond shells, glycerol) added to the ranch to reduce nitrogen leaching in the wet/rainy season. The high carbon amendment must have a carbon to nitrogen ratio (C:N) greater than 30:1. The high carbon

[6] The cover crop credit is calculated similarly to the organic fertilizer discount and is based on the predicted mineralization rate, which depends on the C:N ratio.
[7] The credit amount for cover crops with for a C:N ratio greater than or equal to 20:1, will be based on **Table MRP-3**, for products with a C:N ratio of greater than or equal to 15:1.

amendment must be finely ground to less than a quarter of an inch in diameter. The high carbon amendment must be incorporated into the top foot of soil. The high carbon amendment must be retained for a minimum of three months during the wet/rainy season. The high carbon amendment must have a minimum application rate of 10,000 pounds per acre. If glycerol is used as a high carbon amendment it must have a minimum application rate of 5,000 pounds per acre. Substantiating records must be retained in the farm plan and include dated photo documentation, locations of implemented practice, material and material size, confirmation that the material was incorporated in to the first foot of soil, material application rate per acre, and testing or documentation to confirm the materials C:N ratio.

4. **Option 4: High Carbon Woody Mulch Materials.**
   i. Maximum allowable nitrogen scavenging credit is 30 pounds of nitrogen per acre per year.
   ii. Woody mulch materials from crops producing semi-permanent or permanent woody plant tissue, from crops of at least 6 months of age and with a carbon nitrogen ratio (C:N) greater than 30:1. Mulch must be applied at a minimum 2-inch thickness of particles and achieve a minimum 70-percent ground cover, or at a minimum of 3,000 pounds per acre woody mulch application. Crop mulching practices should follow recommendations outlined in NRCS Conservation Practice Standard for Mulching (Code 484).

e. **R_{TREAT}**
   i. Dischargers using treatment systems on their ranch or by participating in collective treatment programs or systems may monitor the inflow and outflow nitrate concentration and volume of the treatment systems and quantify and report this as **R_{TREAT}** for use in their nitrogen applied minus nitrogen removed reporting. Dischargers must maintain any data collected and rationale used in determining the amount of nitrogen removed through treatment in the Farm Plan. This information must be submitted to the Central Coast Water Board upon request.

f. **R_{OTHER}**
   i. If Dischargers remove nitrogen from their ranch in ways not quantified above, they may monitor this nitrogen removed and

report this as R_{OTHER} for use in their nitrogen applied minus nitrogen removed reporting. Dischargers must maintain any data collected and rationale used in determining any other methods of nitrogen removal in the Farm Plan. This information must be submitted to the Central Coast Water Board upon request.

17. Dischargers must monitor and report information associated with irrigation management in annual INMP Summary reports

    a. **Crop evapotranspiration**.
        i. Dischargers must calculate and report the evapotranspiration for each specific crop. Acceptable methods include, but are not limited to, using reference evapotranspiration data from a local weather station (e.g., California Irrigation Management Information System (CIMIS)[8] or an on-farm station) with a crop coefficient conversion value, and direct measurement.
    b. **Irrigation discharge to surface water**.
        i. Dischargers must estimate and report the volume of water discharged through surface outflows, including tile drains.

Section C. Groundwater Monitoring and Reporting

This section contains four types of monitoring and reporting related to the evaluation of groundwater and drinking water quality: ***On-Farm Domestic Wells***, ***Irrigation Wells Prior to Start of Groundwater Quality Trend Monitoring***, and ***Groundwater Quality Trends*** which are required of all Dischargers and ***Ranch-Level Groundwater Discharge*** that must be completed when required by the Executive Officer.

1. All groundwater monitoring data sampled to meet the minimum groundwater monitoring requirements of the Order must be submitted electronically to the State Water Board's GeoTracker database by the testing laboratory. Submitted data must include the ranch AGL, the well coordinates (latitude and longitude), the well name (i.e., Location Identifier (LOCID)/Field Point Name) that is consistently and repeatedly used to refer to the same well each time the well is sampled, and the well type (i.e., Field Point Class; PRIW for Domestic/Private Drinking Water Well or AGIR for Agricultural/Irrigation Well). It is recommended the well name be affixed to the well to eliminate confusion during sample collection and labeling and laboratory reporting.

2. All groundwater samples must be collected by a qualified third party (e.g., consultant, technician, person conducting third-party monitoring) using proper

[8] CIMIS station data can be found online at the California Irrigation Management Information Services, Department of Water Resources website: **CIMIS Station Reports**.

sample collection and handling method, chain-of-custody, and quality assurance/quality control protocols associated with monitoring and reporting.

3. To ensure the collection of representative groundwater samples, all groundwater samples must be collected once field parameters stabilize (i.e., pH: ± 0.1, specific conductance: ± 3 – 5%, and temperature: ± 3%).

On-Farm Domestic Wells

4. Monitoring of on-farm domestic supply wells and the reporting requirements described below are necessary to protect public health by identifying domestic water wells that do not meet drinking water standards, providing timely health risk notifications, and verifying well users have alternative replacement water as may be appropriate

5. **Beginning in 2022**, **all** Dischargers, must conduct annual sampling of all on-farm domestic drinking water supply wells (see definition in **Attachment C**) between March 1 and May 31. Dischargers must report monitoring results by **July 31 each year**.

6. To ensure the collected samples are representative of the as-produced water from the domestic well, groundwater samples must be collected at or near the well head (before the pressure tank and prior to any well head treatment). If this is not possible, the water sample must be collected from a sampling point as close to the pressure tank as possible, or from a cold-water spigot located before any filters or water treatment devices or systems.

7. At a minimum, samples must be analyzed for nitrate as nitrogen or nitrate + nitrite as nitrogen, 1,2,3-trichloropropane (1,2,3-TCP), and field parameters as specified in **Table MRP-5**.

8. If a domestic supply well noted on the Discharger's electronic Notice of Intent (eNOI) becomes inactive (i.e., is taken out of service) or is abandoned (i.e., destroyed per local and state well standards), sampling may cease until such time as the domestic supply well is returned to service or a new well is installed. The Discharger must keep any records establishing that a well is not being used for domestic purposes.

9. The Discharger must ensure an inactive domestic supply well is properly maintained as follows and in accordance with local well and drinking water program requirements:

    a. The well or well plumbing is physically disconnected from any water distribution system plumbing serving a residential residence.
    b. The top of the well or well casing must be provided with a cover that is secured by a lock or other means to prevent its removal without the use of

equipment or tools. A pump, motor, or other surface feature of a supply well are considered examples of acceptable domestic supply well covers.

c. The cover must be adequate to prevent unauthorized access, a safety hazard to humans and animals, or the entrance of foreign material, pollutants, or contaminants into the well.
d. The Discharger must immediately update their eNOI when a domestic well is taken out of service, returned to service, or replaced by a new well to indicate the accurate number of operating domestic supply wells on the ranch.
e. If a domestic supply well is permanently taken out of service, the Discharger must destroy the well in accordance with California Department of Water Resources (DWR) and local requirements for well destruction (including obtaining well destruction permits).

Notification to On-Farm Domestic Well Users

10. On an annual basis, Dischargers must provide well users with a summary of laboratory analytical results within **3 business days** of receiving results from the laboratory. Dischargers must also provide a summary of the most recent laboratory analytical results to any new well users (e.g., tenants and employees with access to the sampled well) within **3 business days** whenever there is a change in the population using the well. Dischargers may use the Drinking Water Notification template on the Central Coast Water Board website for provision of the analytical results summary, or an alternative notification form approved by the Executive Officer.

11. Notification of annual laboratory analytical result summaries to well users must include information regarding health risks associated with the following:

    a. Consuming, boiling, and/or cooking with well water containing nitrate in excess of the Maximum Contaminant Level (MCL:10 mg/L nitrate [or nitrate plus nitrite] as nitrogen).
    b. Consuming and/or showering with well water containing 1,2,3-TCP in excess of the MCL (0.005 µg/L).

12. All notification materials must be provided in appropriate languages to sufficiently inform well users

13. Dischargers must update their electronic Notice of Intent (eNOI) within **30 days** of receiving results from the laboratory to confirm the following:

    a. Well users have been provided with a summary of laboratory analytical results.
    b. Well users have been provided with information regarding health risks associated with well water containing nitrate and/or 1,2,3-TCP in excess of

their respective public health drinking water standards (i.e., maximum contaminant levels (MCLs).

c. Well users have an alternate source of water for domestic purposes if the sampled well contains nitrate and/or 1,2,3-TCP in excess of their respective MCLs.
d. If there has been a change in the population using the well in the past year (e.g., new tenants or residents), confirm that new well users have been provided with the information and resources described above.

Irrigation Wells Prior to the Start of Groundwater Quality Trend Monitoring

14. The objectives of sampling on-farm irrigation wells during the period between the effective date of this Order and the initiation of groundwater quality trend monitoring are as follows:

    a. To evaluate groundwater conditions in agricultural areas.
    b. To inform establishment of a groundwater quality trend monitoring network.

15. **Beginning in 2022,** all Dischargers must conduct annual sampling of the primary irrigation well **between March 1 and May 31**. Dischargers must report monitoring results by **July 31 each year**. This annual monitoring and reporting requirement will cease upon initiation of an Executive Officer-approved groundwater quality trend monitoring and reporting work plan.

16. At a minimum, samples must be analyzed for nitrate as nitrogen or nitrate + nitrite as nitrogen, total dissolved solids (TDS), and field parameters as specified in **Table MRP-6**.

Groundwater Quality Trend Monitoring

17. The objectives of groundwater quality trend monitoring and reporting are as follows:

    a. To evaluate the status of groundwater quality over time, including whether groundwater quality objectives are attained, and beneficial uses are protected.
    b. To quantitatively evaluate the impact of irrigated agricultural waste discharges to groundwater.
    c. To evaluate short-term patterns and long-term trends (five to ten years or more) in groundwater quality.

18. Dischargers must conduct groundwater quality trend monitoring and reporting, either individually or via membership in a third party that is approved by the Executive Officer.

Third Party Approach

19. An approved third-party representing Dischargers must develop and submit a regional groundwater trend monitoring and reporting work plan,[9] by the dates specified below or by an alternative schedule approved by the Executive Officer. Alternatively, Dischargers may elect to participate in the Third Party Alternative Compliance Pathway for Groundwater Protection (see **Order Part 2, Section C.2** and **Section D** in this MRP). The work plan must be prepared by a qualified professional and designed to quantitatively evaluate groundwater quality trends and quantitatively assess the impacts of agricultural discharges on groundwater quality over time.

    a. **September 1, 2023** for groundwater basins within Groundwater Phase 1 areas;
    b. **September 1, 2025** for groundwater basins within Groundwater Phase 2 areas;
    c. **September 1, 2027** for all other areas.

20. At a minimum, the work plan must include the following:

    a. Description of the geographic and hydrogeologic area(s) in which the groundwater quality trend monitoring program will be established, including identification of groundwater basins and subbasins, recharge and discharge areas, as well as supporting data and maps.
    b. Rationale for a sufficiently representative monitoring well network and sampling schedule to monitor discrete depth intervals with an emphasis on shallow or first encountered groundwater, including supporting soils, geologic, and hydrogeologic information such as cross-sections and groundwater depth and flow characteristics.
    c. Proposal for obtaining well completion reports and/or well driller's logs and maintain such data.
    d. Location and construction details associated with proposed wells composing the monitoring network, including existing and new wells.
    e. If applicable, a description of how data from existing monitoring networks will be incorporated into the groundwater quality trend monitoring program and how those data will be uploaded to GeoTracker.
    f. Table showing proposed monitoring parameters that will be evaluated to assess water quality changes over time. At a minimum, groundwater quality trend monitoring wells must be sampled for monitoring parameters included in **Table MRP-7**.

[9] Examples of acceptable scales covered by "regional" work plans could be at the groundwater basin or subbasin scale, the entire central coast region, or an area smaller than a groundwater subbasin with specific hydrogeologic conditions, such as recharge or discharge areas.

g. Proposed protocol used to evaluate trends in groundwater quality data, including statistical methods and data depiction.
h. Proposed reporting schedule for water quality and depth the groundwater data and trend analysis.
i. SAP and QAPP (see **Section G** below).

21. The third party is responsible for implementing a groundwater quality trend monitoring and reporting work plan on behalf of Dischargers who are third party members. Work plan implementation shall not begin until the Executive Officer has approved the work plan.

22. If one or more wells from an ongoing, established non-agricultural monitoring program are incorporated into the groundwater quality trend monitoring network, monitoring data from these wells must also be uploaded to the GeoTracker database and must comply with GeoTracker EDF and EDD criteria and protocols. Incorporation of such data must occur as described in the work plan approved by the Executive Officer.

Individual Approach

23. Dischargers electing to perform groundwater quality trend monitoring and reporting individually must submit an individual groundwater quality trend monitoring work plan to the Executive Officer for approval prior to implementation. Dischargers must submit the work plan by the following dates:

    a. **September 1, 2023** for ranches groundwater basins with Groundwater Phase 1 areas;
    b. **September 1, 2025** for ranches groundwater basins with Groundwater Phase 2 areas;
    c. **September 1, 2027** for ranches in all other areas.

24. At a minimum, the work plan must include the following:

    a. Identification and description of wells used for groundwater quality trend monitoring (in narrative form and in map view) with supporting technical rationale justifying the effectiveness of the well(s) in assessing ranch level groundwater quality trends over time.[10]
    b. Identification of the water-bearing zone monitored by each well used for groundwater quality trend monitoring.

[10] Acceptable justification for well inclusion in individual trend monitoring is well construction information typically included on well driller logs, also known as well completion reports. Dischargers are encouraged to locate all such well completion reports and submit the reports to the GeoTracker database as a Bore Log File (i.e., GEO_BORE) in pdf format. DWR is a repository for well completion reports, and Dischargers are encouraged to contact DWR or local well permitting authority to obtain these reports as necessary.

c. Proposed location(s) and well construction characteristics for any proposed new purpose-built monitoring wells to be used in groundwater quality trend monitoring if existing wells are not adequate for long-term monitoring.
d. Determination of the statistical method that will be used for groundwater quality trend evaluation.

25. The monitoring and reporting schedule and minimum list of testing parameters is shown in **Table MRP-8.**[11]

26. Dischargers must monitor wells used in groundwater quality trend monitoring on a semi-annual basis during the **first and third quarters of each calendar year**. Monitoring data must be reported to GeoTracker **by May 31 for sampling occurring in the first quarter** and **by November 30 for sampling occurring in the third quarter**.

27. Dischargers must submit a groundwater quality trend evaluation report by January 31 each year. The groundwater quality trend evaluation report must be provided in a format specified by the Executive Officer.

28. At a minimum, the groundwater quality trend evaluation report must include the following:

a. For each well used in groundwater quality trend monitoring, plots of concentration versus time for each monitoring parameter, except for field parameters pH, temperature, and specific conductance. The groundwater quality trend plots must reflect concentrations detected during each sampling event and are expected to expand over time.
b. Discussion of groundwater quality trends represented in the trend plots (i.e., increasing or decreasing groundwater quality trends, implications associated with farm management practices, etc.).

29. Dischargers who do not have a well on their property and do not choose to join a third-party program must still perform groundwater quality trend monitoring and reporting in accordance with **Table MRP-8**. Dischargers who do not have a well on their property may choose one of the following options for groundwater quality trend monitoring and reporting:

a. Install a monitoring well or wells as needed to sufficiently characterize groundwater quality trends.

[11] To the extent practicable, the depth to groundwater (in feet below ground surface) must also be measured and reported for wells used in individual groundwater trend determination. Measurements must be made from the same location at the top of the well that is accessible ("x"), and the height of that measuring location above the ground surface must also be measured ("y") for an accurate depth to water calculation (i.e., x – y = depth to groundwater below the ground surface).

b. Develop a coordinated groundwater quality trend monitoring and reporting program by partnering with adjacent property owner(s) with wells to sufficiently characterize groundwater quality trends.
c. Obtain authorization from adjacent property owners with one or more wells to collect water quality samples from their well or wells.
d. Obtain authorization from individual property owners or a third-party groundwater quality trend monitoring and reporting program to utilize their water quality data.

The conditions of "authorization" will be up to the negotiating parties, and documentation of the authorization will be a condition of the individual trend monitoring program work plan approval process.

30. Dischargers who obtain authorization from individual property owners (including adjacent property owners) or a third-party program for use of water quality data must document in the annual groundwater quality trend evaluation report how data obtained from wells not on the Discharger's property are representative of groundwater conditions at the Discharger's property.

Ranch-Level Groundwater Discharge

31. Based on groundwater quality data or significant and repeated exceedance of the nitrogen discharge targets or limits, the Executive Officer may require a Discharger to conduct ranch-level groundwater discharge monitoring and reporting[12]. Such monitoring and reporting efforts, including planning, must be explicitly designed and implemented to achieve the following objectives:

    a. Assess and quantify the Discharger's contribution to the exceedance of the nitrogen discharge targets or limits and the discharge of nitrogen below the root zone.
    b. Assess the timeframe over which discharge below the root zone occurs.
    c. Assess management practice implementation to identify management practices that can be implemented on the ranch to control or eliminate discharges below the root zone.
    d. Evaluate effects of the discharge on groundwater quality and beneficial uses with respect to applicable water quality objectives.
    e. Demonstrate compliance with applicable nitrogen discharge targets or limits and water quality objectives over time.

[12] Dischargers that are members in good standing with a third-party alternative compliance pathway program are exempt from ranch-level groundwater discharge monitoring and reporting, as noted in **Section D**.

32. **Within 120 days**[13] of being required by the Executive Officer to conduct ranch-level groundwater discharge monitoring, Dischargers must submit a work plan to the Executive Officer for approval prior to implementation. The workplan will be in a format specified by the Executive Officer. The Discharger may choose to submit and implement the work plan either individually or through participation in an approved third-party program. The work plan must include a SAP and QAPP (see **Section G** below) and the minimum following elements:

    a. Schedule for work plan implementation.
    b. Description of monitoring methodologies, frequencies and analytical methods to measure the concentration of nitrate and other relevant parameters in discharge water (i.e., percolation below the root zone).
    c. Description of monitoring methodologies and frequencies to measure the volume of water that percolates below the root zone.
    d. Proposal and justification for the reporting frequency for Ranch-Level Discharge Monitoring Reports.
    e. Description of how the Discharger's impact on groundwater quality will be quantified.
    f. Description of how ranch-level groundwater discharge monitoring data will be used to assess and improve management practices.
    g. Description of how nitrogen discharge targets/limits will be achieved over time.

33. **Within 90 days** of receiving Executive Officer approval of the work plan, or in accordance with an alternative schedule approved in the work plan, the Discharger must implement the work plan either individually or through participation in an approved third-party program.

34. Dischargers must select appropriate monitoring locations and methodologies to effectively characterize the concentration of nitrate and other relevant parameters in discharge water.

35. Dischargers must report ranch-level groundwater discharge monitoring data and information in Ranch-Level Discharge Monitoring Reports, in a format specified by the Executive Officer. Reported data and information must contain the items listed below, unless approved otherwise by the Executive Officer:

    a. The Discharger's ranch name and AGL number, site/test plot name(s), project contact, and report date.
    b. Map(s) depicting the location of monitoring sites/test plots.

[13] Central Coast Water Board staff will inform the Discharger and/or the third party representing the Discharger **90** days before the Executive Officer intends to require ranch-level discharge monitoring. The purpose of this advance notice is to provide flexibility to Dischargers in the event that circumstances beyond their control have adversely impacted the ability to achieve nitrogen discharge targets/limits by prescribed timeframes.

c. In tabular format, all monitoring data and information obtained over time, including field-measured and laboratory analytical results[14].
d. Calculations of pollutant loading, including equations used in the calculation.
e. Photographs of monitoring sites/test plots, including labels indicating photograph location and date.

Section D. Third-Party Alternative Compliance Pathway for Groundwater Protection

This section contains monitoring and reporting requirements associated with the development and implementation of the third-party alternative compliance pathway program for groundwater protection and the effectiveness assessment and evaluation outlined in **Order, Part 2, Section C.2**.

1. Members in good standing with the third-party alternative compliance pathway program are referred to as "participating Dischargers."

2. An approved third-party alternative compliance pathway program administrator, on behalf of its participating Dischargers, must develop and submit incremental draft and final work plans by the timeframes specified below.

    a. Submit the **first draft (35%) work plan** within 24 months of Order adoption.
    b. Submit the **second draft (70%) work plan** within 18 months of a first draft work plan conditional approval by the Executive Officer.
    c. Submit the **final (100%) work plan** within 10 months of a second draft work plan conditional approval by the Executive Officer.

3. The **first draft (35%) work plan** must include the following, at a minimum:

    a. Proposed groundwater protection (GWP) areas and supporting scientific justification,
    b. Proposed GWP formulas, objectives, and supporting scientific justification,
    c. GWP value methodology and objectives,
    d. GWP target methodology and objectives,
    e. Follow-up action and consequence concepts if targets are not achieved, and
    f. Assessment and evaluation program outline, methodology, and objectives.

4. The **second draft (70%) work plan** must include the following, at a minimum:

    a. Conditionally approved GWP areas,

[14] Chain-of-custody forms do not need to be submitted but must be made available to Central Coast Water Board staff upon request.

b. Conditionally approved GWP formulas,
c. Proposed GWP values, objectives, and supporting scientific justification,
d. Proposed GWP targets and supporting scientific justification,
e. Proposed follow-up actions and consequences if targets are not achieved, and
f. Draft assessment and evaluation program and associated objectives and rationale.

5. The **final (100%) work plan** must include the following, at a minimum:

a. Conditionally approved GWP areas,
b. Conditionally approved GWP formulas,
c. Conditionally approved GWP values,
d. Conditionally approved GWP targets,
e. Conditionally approved follow-up actions and consequences if targets are not achieved, and
f. Final assessment and evaluation program.

Monitoring and Reporting

6. Participating Dischargers must submit ACF, TNA, and INMP Summary information according to requirements outlined in the **Order, Part 2, Section C.1** and as described in this MRP in **Section B**.

7. Participating Dischargers must submit Groundwater Monitoring and Reporting information according to requirements outlined in the **Order, Part 2, Section C.1** and as described in this MRP in **Section C**.

8. Participating Dischargers are not required to conduct ranch-level groundwater discharge monitoring and reporting.

Section E. Surface Water Monitoring and Reporting

This section contains three types of monitoring and reporting related to surface water quality: ***Surface Receiving Water Quality Trends*** and ***Follow-Up Surface Receiving Water Implementation*** that are required of all Dischargers and ***Ranch-Level Surface Discharge*** that must be completed when required by the Executive Officer.

Surface Receiving Water Quality Trends

1. Surface receiving water refers to water flowing in creeks and other surface waters of the state. Surface receiving water monitoring and reporting must be conducted through either a monitoring program on behalf of Dischargers, or Dischargers may choose to conduct surface receiving water monitoring and reporting individually. Key monitoring and reporting requirements for surface receiving water monitoring are shown in **Table MRP-9** and **Table MRP-10**.

2. Dischargers, either individually or as part of a third-party program, must conduct surface receiving water monitoring and reporting to achieve the following:

    a. Evaluate the impact of irrigated agricultural waste discharges on receiving waters;
    b. Evaluate compliance with the numeric limits described in the Order;
    c. Evaluate the status of receiving water quality, including whether water quality objectives are attained, and beneficial uses are protected;
    d. Evaluate short-term patterns and long-term trends (five to ten years or more) in receiving water quality;
    e. Evaluate water quality impacts of tile drain discharges from irrigated agricultural operations;
    f. Evaluate water quality impacts of stormwater discharges from irrigated agricultural operations;
    g. Evaluate the condition of existing perennial, intermittent, and ephemeral streams and riparian and wetland areas, including degradation resulting from erosion or irrigated agricultural discharges of waste; and
    h. Assist in the identification of specific sources of water quality problems.

3. Prior to the initiation of the work plan process outlined below, entities wishing to implement a third-party program must submit a third-party program proposal consistent with the third-party program requirements outlined in Order, Part 2, Section A as well as the request for proposal process and associated third-party program expectations document forthcoming after Order adoption."

4. **By July 1, 2022**, Dischargers, either individually or as part of a third-party program, must submit a surface receiving water quality trends work plan including a Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP; see **Section G** below). The SAP must be developed to describe how the proposed monitoring will achieve the objectives of the MRP and evaluate compliance with the Order. The SAP may propose alternative monitoring and reporting site locations, adjusted monitoring parameters, and other changes as necessary to assess the impacts of irrigated agricultural wasted discharges to receiving water. The Executive Officer must approve the work plan, SAP, and QAPP prior to implementation.

5. Dischargers, either individually or as part of a third-party program, must perform surface receiving water quality trend monitoring and reporting in accordance with the work plan, SAP, and QAPP approved by the Executive Officer.

6. The work plan must, at a minimum, include monitoring sites to evaluate waterbodies identified in **Table MRP-9**, unless otherwise approved by the Executive Officer. The SAP must include sites to evaluate receiving water quality impacts most directly resulting from areas of irrigated agricultural discharge (including areas receiving tile drain discharges). Site selection must take into consideration the existence of any long-term monitoring sites included in related

monitoring programs (e.g., Central Coast Ambient Monitoring Program (CCAMP) and the existing third-party monitoring program). Sites may be added or modified, subject to prior approval by the Executive Officer, to better assess the pollutant loading from individual sources or the impacts to receiving waters caused by individual discharges. Any modifications must consider sampling consistency for purposes of trend evaluation.

7. The work plan must, at a minimum, include the types of monitoring and evaluation parameters listed below and identified in **Table MRP-10**.

    a. Flow monitoring;
    b. Water quality (physical parameters, metals, nutrients, pesticides);
    c. Toxicity (water and sediment);
    d. Assessment of benthic invertebrates, physical habitat monitoring, and Riparian Rapid Assessment Method (RipRAM) monitoring.

8. The work plan must include a schedule for sampling. Timing, duration, and frequency of monitoring must be based on the land use, complexity, hydrology, and size of the waterbody. **Table MRP-10** includes minimum monitoring frequency and parameter lists. Agricultural parameters that are less common may be monitored less frequently. Modifications to the receiving water quality monitoring parameters, frequency, and schedule must be submitted for Executive Officer consideration and approval. At a minimum, the SAP schedule must consist of monthly monitoring of common agricultural parameters, including two major storm events during the wet season (October 1 – April 30).

9. Water column toxicity analyses must be conducted on 100% (undiluted) samples. At sites where persistent unresolved toxicity is found, the Executive Officer may require concurrent toxicity and chemical analyses and a Toxicity Identification Evaluation (TIE) to identify the individual discharges causing the toxicity.

10. Stormwater monitoring must be conducted within 18 hours of storm events, preferably including the first flush run-off event (see definition in Attachment C) that results in significant increase in stream flow. For the purposes of this MRP, a storm event is defined as precipitation producing onsite runoff (surface water flow) capable of creating significant ponding, erosion, or other water quality problems. A significant storm event will generally result in greater than a half-inch of rain within a 24-hour period.

11. **By January 1, April 1, July 1, and October 1 of each year**, Dischargers, either individually or as part of a third-party program, must submit water quality monitoring data electronically to CEDEN, according to CEDEN submittal guidelines, or in a format specified by the Executive Officer.

12. **By July 1 annually**, Dischargers, either individually or as part of a third-party program, must submit an Annual Report for the previous year of collected data,

electronically, in a format specified by the Executive Officer. The Annual Report must include the following minimum elements:

a. Signed transmittal letter;
b. Title page;
c. Table of contents;
d. Executive summary;
e. Monitoring objectives and design;
f. Monitoring site descriptions and rainfall records for the time period covered;
g. Location of monitoring sites and map(s);
h. Results of all analyses arranged in tabular form so that the required information is readily discernible;
i. Summary of water quality data for any sites monitored as part of related monitoring programs and used to evaluate receiving water as described in the SAP;
j. Discussion of data to clearly illustrate compliance with the Order, water quality standards, and surface water limits required by the Order, including watershed-level data analysis for each hydrologic subarea in **Table MRP-9** (for example data analysis and discussion for sub-watersheds 30510, 30530, etc.);
k. Discussion of short-term patterns and long-term trends in receiving water quality and beneficial use protection;
l. Evaluation of pesticide and toxicity analyses results, and recommendation of candidate sites for TIEs;
m. Sampling and analytical methods used;
n. Copy of chain-of-custody forms;
o. Field data sheets, signed laboratory reports, laboratory raw data;
p. Associated laboratory and field quality control samples results;
q. Summary of Quality Assurance Evaluation results;
r. The method used to obtain flow at each monitoring site during each monitoring event;
s. Electronic or hard copies of photos obtained from all monitoring sites, clearly labeled with site ID and date;
t. Potential follow-up actions to correct any observed exceedances of the surface water limits;
u. Conclusions.

Follow-Up Surface Receiving Water Implementation

13. Dischargers, either individually or as party of a third-party program, must develop a follow-up surface receiving water implementation work plan to achieve the following:

a. Identify and abate source of water quality impacts;
b. Evaluate the impact of irrigated agricultural waste discharges on receiving waters;
c. Evaluate the condition of existing perennial, intermittent, and ephemeral streams and riparian and wetland areas, including degradation resulting from erosion or irrigated agricultural discharges of waste;
d. Evaluate compliance with the numeric limits described in the Order; and
e. Identify follow-up actions, including outreach, education, additional monitoring and reporting, and management practice implementation that will be implemented to achieve compliance with the numeric limits described in the Order.

14. Prior to the initiation of the work plan process outlined below, entities wishing to implement a third-party program must submit a third-party program proposal consistent with the third-party program requirements outlined in **Order, Part 2, Section A** as well as the request for proposal process and associated third-party program expectations document forthcoming after Order adoption. Ranches that are enrolled as part of an approved third-party follow-up surface receiving water implementation program are assigned the Surface Water Priority of high priority, medium priority, or low priority of the drainage unit where the ranch is located, as shown in **Table C.3-1.3P** and the map shown in **Figure C-3.1.3P**.

15. The work plan must include the following minimum components:

    a. Description of implementation measures that will be taken to reduce the discharge of relevant constituents and comply with the limits established in the Order.
    b. Numeric interim quantifiable milestones to confirm progress is being made to reduce the discharge of relevant constituents and achieved the numeric limits established in the Order, consistent with their time schedule. Numeric quantifiable milestones include numeric interim quantifiable milestones for relevant constituents (e.g., pollutant load or concentration) and numeric interim quantifiable milestones for management practices implemented that confirm progress towards reducing the discharge of relevant constituents (e.g., volume of discharge water diverted to treatment systems, treatment system pollutant reduction, distance of riparian area improvements, acres no longer receiving conventional pesticide applications).
    c. Consideration of the level of water quality impairment identified through surface receiving water monitoring. Work plans for areas with persistent exceedances of the surface water limits in the Order must identify follow-up actions to restore the degraded areas (e.g., outreach, education, management practice implementation) and additional surface receiving water monitoring locations for pollutant source identification and

abatement. Work plans for areas that are already achieving the surface water limits in the Order must identify actions to be taken to protect the high-quality areas (e.g., outreach and education).

d. Where appropriate based on water quality data, follow-up monitoring sites to further evaluate the waterbody(s) specified by the Executive Officer. The work plan must include sites to evaluate receiving water quality impacts most directly resulting from areas of irrigated agricultural discharge (including areas receiving tile drain discharges). Site selection must take into consideration the existence of any long-term monitoring sites included in related monitoring programs (e.g., CCAMP and the existing third-party monitoring program). Sites may be added or modified, subject to prior approval by the Executive Officer, to better assess the pollutant loading from individual sources or the impacts to receiving waters caused by individual discharges.
e. SAP and QAPP (see **Section G** below). The SAP must be developed to describe how the proposed monitoring will achieve the objectives of the MRP, identify additional follow-up monitoring sites upstream of observed exceedances to identify sources of the exceedances, and evaluate compliance with the limits established in the Order.

16. The parameters to be monitored through follow-up monitoring may vary based on the water quality exceedances observed at downstream sites through the surface receiving water trend monitoring. The work plan must, at a minimum, include the types of monitoring and evaluation of parameters identified by the Executive Officer as requiring follow-up monitoring, such as the parameters listed below and identified in **Table MRP-10**.

    a. Flow monitoring;
    b. Water quality (physical parameters, metals, nutrients, pesticides); and
    c. Toxicity (water and sediment).

17. The work plan must include a schedule for sampling. Timing, duration, and frequency of monitoring must be based on the land use, complexity, hydrology, and size of the waterbody. **Table MRP-10** includes minimum monitoring frequency for parameters requiring follow-up monitoring by the Executive Officer. Agricultural parameters that are less common may be monitored less frequently. Modifications to the follow-up receiving water quality monitoring parameters, frequency, and schedule may be submitted for Executive Officer consideration and approval. At a minimum, the work plan schedule must consist of monthly monitoring of common agricultural parameters, including two major storm events during the wet season (October 1 – April 30).

18. If water column toxicity analyses must be conducted to comply with follow-up monitoring requirement, the analyses must be performed on 100% (undiluted) samples. At sites where persistent unresolved toxicity is found, the Executive

Officer may require concurrent toxicity and chemical analyses and a TIE to identify the individual discharges causing the toxicity.

19. Stormwater monitoring must be conducted within 18 hours of storm events, preferably including the first flush run-off event (see definition in **Attachment C**) that results in significant increase in stream flow. For the purposes of this MRP, a storm event is defined as precipitation producing onsite runoff (surface water flow) capable of creating significant ponding, erosion, or other water quality problems. A significant storm event will generally result in greater than half-inch of rain within a 24-hour period.

20. **By January 1, April 1, July 1, and October 1 of each year**, Dischargers, either individually or as part of a third-party program, must submit follow-up surface receiving water quality monitoring data electronically to CEDEN, according to CEDEN submittal guidelines, or in a format specified by the Executive Officer.

21. **By July 1 annually**, Dischargers, either individually or as part of a third-party program, must submit an Annual Report, electronically, in a format specified by the Executive Officer. The Annual Report must include the following minimum elements:

    a. Signed transmittal letter;
    b. Title page;
    c. Table of contents;
    d. Executive summary;
    e. Monitoring objectives and design;
    f. Monitoring site descriptions and rainfall records for the time period covered;
    g. Location of monitoring sites and map(s);
    h. Results of all analyses arranged in tabular form so that the required information is readily discernible;
    i. Summary of water quality data for any sites monitored as part of related monitoring programs and used to evaluate receiving water as described in the work plan;
    j. Discussion of data to clearly illustrate compliance with the Order, water quality standards, and surface water limits required by the Order;
    k. Discussion of specific information about the identified sources of water quality impairment;
    l. Discussion of management practice implementation and other follow-up activities performed to correct the persistent water quality impairment;
    m. Sampling and analytical methods used;
    n. Copy of chain-of-custody forms;
    o. Field data sheets, signed laboratory reports, laboratory raw data;
    p. Associated laboratory and field quality control samples results;
    q. Summary of Quality Assurance Evaluation results;

r. The method used to obtain flow at each monitoring site during each monitoring event;
s. Electronic or hard copies of photos obtained from all monitoring sites, clearly labeled with site ID and date; and
t. Conclusions.

Ranch-Level Surface Discharge

22. Based on exceedances of applicable surface water quality limits, including concentration and loading for all applicable parameters in their discharge, the Executive Officer, may require a Discharger to conduct ranch-level surface discharge monitoring and reporting. Such monitoring and reporting efforts, including planning, must be explicitly designed and implemented to achieve the following objectives:

    a. Assess and quantify the Discharger's contribution to the exceedance of applicable surface water quality limits, including concentration and loading for all applicable parameters in their discharge;
    b. Evaluate effects of the discharge on receiving water quality and beneficial uses; and
    c. Demonstrate compliance with applicable surface water limits and water quality objectives over time.

23. **Within 120 days**[15] of being required to conduct ranch-level surface discharge monitoring, Dischargers must submit a ranch-level surface discharge work plan, to the Executive Officer for approval prior to implementation. The workplan will be in a format specified by the Executive Officer. The Discharger may choose to submit and implement the work plan either individually or through participation in an approved third party. The work plan must include a SAP and QAPP (see **Section G**) designed to monitor individual discharges of irrigation water and stormwater that leave the ranch from an outfall location, including tile drain discharge points, and the minimum following elements.

    a. A schedule for work plan implementation;
    b. Description of monitoring methodologies, frequencies, and analytical methods of all applicable parameters where exceedances have occurred or are occurring;
    c. Description of monitoring methodologies and frequencies to measure flow volumes;
    d. Quantification of the Discharger's impact on surface water quality;

[15] Central Coast Water Board staff will inform the Discharger and/or the third party representing the Discharger **90** days before the Executive Officer intends to require ranch-level surface discharge monitoring. The purpose of this advance notice is to provide flexibility to Dischargers in the event that circumstances beyond their control have adversely impacted the ability to achieve surface receiving water limits by the compliance dates.

e. Description of how ranch-level surface discharge monitoring data will be used to assess and improve management practices; and
f. Description of how surface water quality limits and water quality objectives will be achieved over time.

24. **Within 90 days** of receiving Executive Officer approval, or in accordance with an alternate schedule approved in the work plan, the work plan must be implemented.

25. Dischargers must select monitoring sites that characterize both irrigation and stormwater discharges. For irrigation discharge, Dischargers must select monitoring points to characterize at least 80 percent of the estimated maximum irrigation discharge volume, based on the typical discharge patterns of the ranch, and must include points of tailwater and tile drain (if present) discharges. The SAP must be designed such that monitoring must occurs when it is highly probable that the irrigation discharge volume is the greatest during an irrigation event. Stormwater discharge sites must be selected to characterize the majority of stormwater discharge and must include first-flush monitoring. All selected monitoring sites must characterize discharge from the required farm/ranch, i.e., the discharge is not comingled with discharge from adjacent farms.

26. Dischargers must conduct monitoring for all parameters necessary to achieve the goals described for individual discharge monitoring.

27. Analytical methods, maximum practical quantitation limits (PQL), and reporting limits (RL) must be consistent with those outlined in Section G, or as approved by the Executive Officer.

28. Individual surface discharge sampling must occur at each site a minimum of four times per year, with one sample drawn during each of the following calendar quarters: **January to March**, **April to June**, **July to September**, **October to December**, or as approved by the Executive Officer.

29. **By March 1 and September 1 of each year**, Dischargers must submit individual surface discharge monitoring data and information. The information must be submitted electronically, in a format specified by the Executive Officer and must contain the items listed below, unless otherwise approved by the Executive Officer.

    a. All data and information from monitoring occurring in the preceding two calendar quarters and data not yet reported on previous semi-annual reports.
    b. Data in a tabular format, showing all data for each parameter and each monitoring event.
    c. Electronic laboratory data.
    d. All reports of results must contain the ranch name and Global ID, site name(s), project contact, and date.

e. Electronic laboratory data reports of chemical results must include analytical results, as well as associated quality assurance data including method detection limits, reporting limits, matrix spikes, matrix spike duplicates, laboratory blanks, and other quality assurance results required by the analysis method.
f. Electronic laboratory data reports of toxicity results shall include summary results comparable to those required in a CEDEN file delivery, including test and control results. For each test result, the mean, associated control performance, calculated percent of control, statistical test results and determination of toxicity, must be included. Test results must specify the control ID used to calculate statistical outcomes.
g. Field data results, including temperature, pH, conductivity, turbidity and flow measurements, any field duplicates or blanks, and field observations.
h. Calculations of un-ionized ammonia concentrations (based on total ammonia value and field measurements for pH and water temperature).
i. Calculations of total flow and pollutant loading (for nitrate, pesticides if sampled, total ammonia, and turbidity) (include formulas).
j. Location of sampling sites and map(s).
k. Sampling and analytical methods used.
l. Specify the method used to obtain flow at each monitoring site during each monitoring event.
m. Photos obtained from all monitoring sites, clearly labeled with location and date.
n. Sample chain-of-custody forms do not need to be submitted but must be made available to Central Coast Water Board staff, upon request.

Section F. Annual Compliance Form (ACF)

1. **By March 1, 2022, and annually thereafter by March 1**, all Dischargers must submit an ACF electronically, in a format specified by the Executive Officer. The ACF includes, but is not limited to, the items listed below.

    a. Irrigation, stormwater, and tile drain discharge characteristics (e.g., number of discharge points, estimated flow and volume, and number of tailwater days).
    b. Status of Farm Plan development and implementation.
    c. Identification of specific water quality management practices implemented and assessed for effectiveness on the ranch to reduce water quality impacts, including:
        i. Irrigation management practices;
        ii. Nutrient management practices;
        iii. Salinity management practices;
        iv. Pesticide management practices;
        v. Sediment and erosion management practices; and

vi. Stormwater management practices.

d. Reporting an estimation of riparian area (average width and length, in feet) for dischargers with waterbodies within or bordering their ranch.[16]
e. Reporting on water quality and management practice education obtained.

Section G. Sampling and Analysis Plan and Quality Assurance Project Plan

1. The Sampling and Analysis Plan (SAP) must include the following minimum components as applicable depending on the monitoring requirement:

    a. Monitoring strategy to achieve objectives of the Order and MRP;
    b. Map and Global Positioning System (GPS) coordinates of monitoring sites (e.g., well, receiving water locations, outfall locations etc.);
    c. Monitoring parameters;
    d. Monitoring schedule, including description and frequencies of monitoring events;
    e. Identification of beneficial uses and applicable water quality standards (with the following as appropriate for surface water monitoring);
    f. Identification of known water quality impairments and impaired waterbodies per the most recent USEPA approved Clean Water Act 303(d) List of Impaired Waterbodies (List of Impaired Waterbodies);
    g. Identification of applicable Total Maximum Daily Loads (TMDLs);
    h. Sample collection and handling procedures (e.g., preservation, storage, transport, holding times, etc.);
    i. Chain of custody procedures;
    j. Quality Assurance and Quality Control (QA/QC) sampling and analysis criteria and procedures;
    k. Data management and reporting procedures; and
    l. Description of data analytical methods, specifications, and limits (e.g., PQL and RL).

2. The QAPP must include site-specific information, project organization and responsibilities, and quality assurance components of the MRP. The QAPP must also include the laboratory and field requirements to be used for analysis and data evaluation. The QAPP must contain adequate detail for project and Water Board staff to identify and assess the technical and quality objectives, measurement and data acquisition methods, and limitations of the data generated under the monitoring program. All sampling and laboratory methodologies and QAPP content must be consistent with USEPA methods. Following USEPA guidelines,[17] the monitoring QAPP must include the following minimum required components:

[16] Staff guidance on how to measure and report riparian areas will be included on the Annual Compliance Form.

[17] USEPA. 2001 (2006) USEPA Requirements for Quality Assurance Project Plans (QA/R-5) Office of Environmental Information, Washington, D.C. USEPA QA/R-5.

a. Project Management: Address basic project management, including the project history and objectives, roles and responsibilities of the participants, and other aspects.
b. Data Generation and Acquisition: Address all aspects of project design and implementation. Implementation of these elements ensures that appropriate methods for sampling, measurement and analysis, data collection or generation, data handling, and quality control activities are employed and are properly documented. Quality control requirements are applicable to all the constituents sampled as part of the MRP, as described in the appropriate method.
c. Assessment and Oversight: Address the activities for assessing the effectiveness of the implementation of the project and associated quality assurance (QA) and quality control (QC) activities. The purpose of the assessment is to provide project oversight that will ensure that the QAPP is implemented as prescribed.
d. Data Validation and Usability: Address the quality assurance activities that occur after the data collection, laboratory analysis and data generation phase of the project is completed. Implementation of these elements ensures that the data conform to the specified criteria, thus achieving the MRP objectives. The Executive Officer may conduct an audit of contracted laboratories at any time in order to evaluate compliance with the SAP and QAPP.

3. The SAP and QAPP, and any proposed revisions, are subject to approval by the Executive Officer. The Executive Officer may also revise the SAP, including adding, removing, or changing monitoring site locations, changing monitoring parameters, and other changes as necessary to assess the impacts of irrigated agricultural discharges on water quality.

Tables related to Monitoring and Reporting Requirements

Tables related to Section B: Irrigation and Nutrient Management Plan Monitoring and Reporting Requirements

Table MRP-1. Comparison of TNA and INMP Summary Monitoring and Reporting

Required Information	TNA Monitoring & Reporting	INMP Monitoring & Reporting
Nitrogen applied	X	X
Nitrogen removed		X
Irrigation management information	X	X

Table MRP-2. Monitoring and Reporting Schedule for Irrigation and Nutrient Management

Ranches	TNA[1] Monitoring Period[2]	TNA Report Due March 1	Annual INMP[3] Monitoring Period[2]	Annual INMP Summary Report Due March 1
Required per Ag Order 3.0	2021 2022	2022 2023	-	-
Groundwater Phase Area 1 [4]	-	-	Beginning 2023	Beginning 2024
Groundwater Phase Area 2	2023 2024	2024 2025	Beginning 2025	Beginning 2026
Groundwater Phase Area 3	2023 2024 2025 2026	2024 2025 2026 2027	Beginning 2027	Beginning 2028

[1] Only the primary irrigation well must be monitored for TNA monitoring and reporting.
[2] Monitoring period = calendar year (Jan. 1 – Dec. 31).
[3] All irrigation wells must be monitored for INMP monitoring and INMP Summary reporting.
[4] Dischargers in Groundwater Phase 1 areas are not required to submit a stand-alone TNA report; rather, due to the prioritization of Phase 1 areas, Dischargers in portions of the Gilroy-Hollister Valley (Llagas Area) groundwater basin, the Forebay Aquifer and Upper Valley subbasins of the Salinas Valley basin, the Santa Maria area of the Santa Maria River Valley basin, and the Santa Ynez River Valley basin must conduct the expanded nitrogen applied and removed monitoring and reporting associated with INMP Summary reporting before Dischargers in Groundwater Phase areas 2 and 3.

Table MRP-3. Organic Fertilizer Discount Factor

C to N Ratio of Organic Product	Discount Factor Based on Predicted Mineralization Rate (O)
< 1.5	1.00
1.5	0.904
2.0	0.852
2.5	0.802
3.0	0.754
3.5	0.707
4.0	0.661
4.5	0.617
5.0	0.574
5.5	0.533
6.0	0.493
6.5	0.455
7.0	0.418
7.5	0.383
8.0	0.349
8.5	0.317
9.0	0.285
9.5	0.256
10.0	0.228
10.5	0.202
11.0	0.177
11.5	0.153
12.0	0.131
12.5	0.111
13.0	0.091
13.5	0.074
14.0	0.058
14.5	0.043
15.0	0.030

Note: Refer to **Attachment A, Section C.1** for a discussion of the source of these discount factors.

Table MRP-4. Nitrogen Removal Conversion Coefficients

Crop	Conversion Coefficient	Crop	Conversion Coefficient
Alfalfa - Hay	**0.03115**	Lemons	**0.00154**
Alfalfa - Silage	**0.01200**	Lettuce, Baby	**0.00376**
Apples	**0.00050**	Lettuce, Iceberg	**0.00132**
Apricots	**0.00280**	Lettuce, Romaine	**0.00181**
Asparagus	**0.00293**	Melon, Cantaloupe	**0.00240**
Avocados	**0.00220**	Melon, Watermelon	**0.00070**
Barley - Grain	**0.01680**	Mixed Greens	**0.00405**
Barley - Straw	**0.00770**	Mizuna	**0.00405**
Beans, dry - Blackeye	**0.03650**	Oat Hay	**0.01085**
Beans, dry - Garbanzo	**0.03360**	Olives	**0.00314**
Beans, dry - Lima	**0.03615**	Onions, dry	**0.00197**
Beans, green (snap beans)	**0.00289**	Oranges	**0.00150**
Broccoli	**0.00460**	Peaches	**0.00113**
Brussels Sprouts	**0.00649**	Pears	**0.00065**
Cabbage Green	**0.00218**	Peppers, Bell	**0.00185**
Cabbage Red	**0.00224**	Pistachios	**0.02800**
Carrots	**0.00160**	Plums	**0.00142**
Cauliflower	**0.00288**	Potatoes	**0.00310**
Celery	**0.00120**	Pumpkin	**0.00368**
Cherries - Sweet	**0.00220**	Ryegrass, Perennial - Hay	**0.02745**
Cilantro	**0.00605**	Safflower	**0.02840**
Corn - Grain	**0.01200**	Spinach, Bunch	**0.00371**
Corn - Silage	**0.00378**	Spinach, Clip	**0.00427**
Corn - Sweet	**0.003585**	Spring Mix	**0.00405**
Cucumbers	**0.00108**	Squash, Winter	**0.001835**
Figs	**0.00127**	Strawberry	**0.00133**
Garlic	**0.00760**	Tangerines	**0.00127**
Grapefruit	**0.00150**	Tomatoes, Fresh Market	**0.00130**
Grapes - Table	**0.00113**	Walnuts, English	**0.01590**
Grapes - Wine	**0.00131**	Wheat, Common - Grain	**0.00690**
Kale, Baby	**0.00504**		

Note: Refer to **Attachment A, Section C.1** for a discussion of the source of these coefficients.

Tables related to Section C: Groundwater Monitoring and Reporting

Table MRP-5. On-Farm Domestic Drinking Water Supply Well Monitoring and Reporting Requirements

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
pH	0.1	Field Measurement[3]	pH Units	Annual (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Specific conductance	2.5	Field Measurement[3]	µS/cm	Annual (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Temperature	0.1	Field Measurement[3]	°C	Annual (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Nitrate + nitrite (as N)[4] *or* Nitrate as N	0.1	USEPA Method 300 or SM 4500NO3	mg/L	Annual (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
1,2,3-Trichloropropane (1,2,3-TCP)	0.005	SRL-524M	µg/L	Annual per above for first 2 years (2022 & 2023). Continue annual monitoring and reporting until 2 consecutive samples = non-detect; then resample 3 years since last non-detect. If non-detect 3 years after last 2 consecutive non-detects, no further monitoring. If detected 3 years after last 2 consecutive non-detects, annual sampling resumes.	**Monitoring** March 1 – May 31 **Reported** by July 31

[1] Reporting limit, or level of quantification, defined as the level that can be reliably detected and quantified within acceptable limits of precision and bias for a given method.
[2] Dischargers may use alternative analytical methods approved by USEPA after obtaining Executive Officer approval.
[3] To ensure the collection of representative groundwater samples, all groundwater samples must be collected once field parameters stabilize (i.e., pH: ± 0.1, specific conductance: ± 3 – 5%, and temperature: ± 3%).
[4] This MRP allows analysis of "nitrate plus nitrite" to represent nitrate concentrations (as N). The "nitrate plus nitrite" analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short sample holding time required for nitrate as N.

Table MRP-6. Primary Irrigation Well Monitoring and Reporting Requirements Until Groundwater Quality Trend Monitoring Program Starts ("Pre-Trend")

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
pH	0.1	Field Measurement[3]	pH Units	Annual until Groundwater Quality Trend Monitoring Program starts (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Specific conductance	2.5	Field Measurement[3]	µS/cm	Annual until Groundwater Quality Trend Monitoring Program starts (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Temperature	0.1	Field Measurement[3]	°C	Annual until Groundwater Quality Trend Monitoring Program starts (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Total dissolved solids (TDS)	10	SM 2540-D	mg/L	Annual until Groundwater Quality Trend Monitoring Program starts (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31
Nitrate + nitrite (as N)[4] *or* Nitrate as N	0.1	USEPA Method 300 or SM 4500NO3	mg/L	Annual until Groundwater Quality Trend Monitoring Program starts (beginning 2022)	**Monitoring** March 1 – May 31 **Reported** by July 31

[1] Reporting limit, or level of quantification, defined as the level that can be reliably detected and quantified within acceptable limits of precision and bias for a given method.
[2] Dischargers may use alternative analytical methods approved by USEPA after obtaining Executive Officer approval.
[3] To ensure the collection of representative groundwater samples, all groundwater samples must be collected once field parameters stabilize (i.e., pH: ± 0.1, specific conductance: ± 3 – 5%, and temperature: ± 3%).
[4] This MRP allows analysis of "nitrate plus nitrite" to represent nitrate concentrations (as N). The "nitrate plus nitrite" analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short sample holding time required for nitrate as N.

Table MRP-7. Minimum Groundwater Quality Trend Monitoring and Reporting Requirements (Third-Party Option)

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Depth to groundwater	±0.01	Field Measurement	Feet	In accordance with approved Work Plan	In accordance with approved Work Plan
pH	0.1	Field[3] or Laboratory Measurement or USEPA General Methods	pH Units	In accordance with approved Work Plan	In accordance with approved Work Plan
Specific conductance	2.5	Field[3] or Laboratory Measurement or USEPA General Methods	µS/cm	In accordance with approved Work Plan	In accordance with approved Work Plan
Temperature	0.1	Field[3] or Laboratory Measurement or USEPA General Methods	°C	In accordance with approved Work Plan	In accordance with approved Work Plan
Total dissolved solids (TDS)	10	SM 2540-D	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Total alkalinity as $CaCO_3$	-	USEPA Method 310.1 or 310.2	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Calcium	0.05	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Magnesium	0.02	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Sodium	0.1	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Potassium	0.1	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Sulfate (SO_4)	1.0	General Anions USEPA Method 300	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Chloride	0.1	General Anions USEPA Method 300	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan
Nitrate + Nitrite (as N)[3] *or* Nitrate as N	0.1	General Anions USEPA Method 300 or SM 4500NO3	mg/L	In accordance with approved Work Plan	In accordance with approved Work Plan

[1] Reporting limit, or level of quantification, defined as the level that can be reliably detected and quantified within acceptable limits of precision and bias for a given method.

[2] Dischargers may use alternative analytical methods approved by USEPA after obtaining Executive Officer approval.

[3] To ensure the collection of representative groundwater samples, all groundwater samples must be collected once field parameters stabilize (i.e., pH: ± 0.1, specific conductance: ± 3 – 5%, and temperature: ± 3%).

[4] This MRP allows analysis of “nitrate plus nitrite” to represent nitrate concentrations (as N). The “nitrate plus nitrite” analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short sample holding time required for nitrate as N.

Table MRP-8. Minimum Groundwater Quality Trend Monitoring and Reporting Requirements (Individual Option)

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
pH	0.1	Field[3] or Laboratory Measurement or USEPA General Methods	pH Units	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trend Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31
Specific conductance	2.5	Field[3] or Laboratory Measurement or USEPA General Methods	µS/cm	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trend Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Temperature	0.1	Field[3] or Laboratory Measurement or USEPA General Methods	°C	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trend Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31
Total dissolved solids (TDS)	10	SM 2540-D	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trend Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Total alkalinity as $CaCO_3$	-	USEPA Method 310.1 or 310.2	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trend Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31
Calcium	0.05	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trend Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Magnesium	0.02	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trend Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31
Sodium	0.1	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trend Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Potassium	0.1	General Cations USEPA Method 200.7, 200.8, 200.9	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trend Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31
Sulfate (SO_4)	1.0	General Anions USEPA Method 300	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trend Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31

Parameter	RL[1]	Analytical Method[2]	Units	Frequency	Due Date
Chloride	0.1	General Anions USEPA Method 300	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trend Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31
Nitrate + Nitrite (as N)[4] *or* Nitrate as N	0.1	General Anions USEPA Method 300 or SM 4500NO3	mg/L	Semi-annual monitoring in 1st and 3rd quarters Semi-annual data reporting Annual Groundwater Quality Trend Reporting	1st Q semi-annual monitoring: January 1 – March 31 1st Q data reported by May 30 3rd Q semi-annual monitoring: July 1 – September 30 3rd Q data reported by November 30 Annual Groundwater Trend Report by January 31

[1] Reporting limit, or level of quantification, defined as the level that can be reliably detected and quantified within acceptable limits of precision and bias for a given method.

[2] Dischargers may use alternative analytical methods approved by USEPA after obtaining Executive Officer approval.[3] This MRP allows analysis of "nitrate plus nitrite" to represent nitrate concentrations (as N).

[3] The "nitrate plus nitrite" analysis allows for extended laboratory holding times and relieves the Discharger of meeting the short sample holding time required for nitrate as N.

[4] To ensure the collection of representative groundwater samples, all groundwater samples must be collected once field parameters stabilize (i.e., pH: ± 0.1, specific conductance: ± 3 – 5%, and temperature: ± 3%).

Tables related to Section E: Surface Water Monitoring and Reporting

Table MRP-9. Major Waterbodies in Agricultural Areas

Hydrologic SubArea	Waterbody Name	Hydrologic SubArea	Waterbody Name
30510	Pajaro River	30920	Quail Creek
30510	Salsipuedes Creek	30920	Salinas Reclamation Canal
30510	Watsonville Slough	31022	Chorro Creek
30510	Watsonville Creek	31023	Los Osos Creek
30510	Beach Road Ditch	31023	Warden Creek
30530	Carnadero Creek	31024	San Luis Obispo Creek
30530	Furlong Creek	31024	Prefumo Creek
30530	Llagas Creek	31031	Arroyo Grande Creek
30530	Miller's Canal	31031	Los Berros Creek
30530	San Juan Creek	31210	Bradley Canyon Creek
30530	Tesquisquita Slough	31210	Bradley Channel
30600	Moro Cojo Slough	31210	Green Valley Creek
30910	Alisal Slough	31210	Main Street Canal
30910	Blanco Drain	31210	Orcutt Solomon Creek
30910	Old Salinas River	31210	Oso Flaco Creek
30910	Salinas River (below Gonzales Rd.)	31210	Little Oso Flaco Creek
30920	Salinas River (above Gonzales Rd. and below Nacimiento R.)	31210	Santa Maria River
30910	Santa Rita Creek	31310	San Antonio Creek
30910	Tembladero Slough	31410	Santa Ynez River
30920	Alisal Creek	31531	Bell Creek
30920	Chualar Creek	31531	Glenn Annie Creek
30920	Espinosa Slough	31531	Los Carneros Creek
30920	Gabilan Creek	31534	Arroyo Paredon Creek
30920	Natividad Creek	31534	Franklin Creek

Note: At a minimum, monitoring sites must be included for these waterbodies in agricultural areas, unless otherwise approved by the Executive Officer. Monitoring sites may be proposed for addition or modification to better assess the impacts of waste discharges from irrigated lands to surface water. These waterbodies are included because they are listed waterbodies on the most recent USEPA approved 303(d) List of Impaired Waters that are associated with areas of agricultural discharge. The list is subject to change based on most recent USEPA approved 303(d) List of Impaired Waters and/or other changes approved by the Executive Officer.

Table MRP-10. Surface Receiving Water Quality Monitoring Parameters

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Photo Monitoring		
Upstream and downstream photographs at monitoring location	-	With every monitoring event
RipRAM		
RipRAM assessment and score at each monitoring location collected in accordance with the CCWG SOP	-	Annually beginning the first full calendar year following adoption of the Agricultural Order
Bioassessment		
Benthic invertebrate and associated physical habitat assessment collected in accordance with the SWAMP SOP. Data reported with CSCI numeric values for each monitoring location on Santa Ynez, Salinas, Santa Maria and Pajaro Rivers	-	Every five years beginning in 2023 from April-June
WATER COLUMN SAMPLING		
Physical Parameters and General Chemistry		
Flow (field measure) (CFS) following SWAMP field SOP[9]	0.25	Monthly, including 2 stormwater events
pH (field measure)	0.1	Monthly, including 2 stormwater events
Electrical Conductivity (field measure) (µS/cm)	2.5	Monthly, including 2 stormwater events
Dissolved Oxygen (field measure) (mg/L)	0.1	Monthly, including 2 stormwater events
Temperature (field measure) (°C)	0.1	Monthly, including 2 stormwater events

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Turbidity (NTU)	0.5	Monthly, including 2 stormwater events
Total Dissolved Solids (mg/L)	10	Monthly, including 2 stormwater events
Total Suspended Solids (mg/L)	0.5	Monthly, including 2 stormwater events
Total Alkalinity (as CaCO3)	EPA 310.1 or 310.2	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Calcium	0.05	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Magnesium	0.02	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Sodium	0.1	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December
Potassium	0.1	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Sulfate (SO4)	1.0	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Chloride	0.1	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Nutrients		
Total Nitrogen (mg/L)	0.5	Monthly, including 2 stormwater events

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Nitrate + Nitrite (mg/L as nitrogen)	0.1	Monthly, including 2 stormwater events
Total Ammonia (mg/L)	0.1	Monthly, including 2 stormwater events
Unionized Ammonia (calculated value including total ammonia and field measures of water temperature and pH, mg/L as nitrogen)	-	Monthly, including 2 stormwater events
Total Phosphorus (as P) (mg/L)	0.02	Monthly, including 2 stormwater events
Soluble Orthophosphate (mg/L)	0.01	Monthly, including 2 stormwater events
Water column chlorophyll a (µg/L)	1.0	Monthly, including 2 stormwater events
Algae cover, Floating Mats, % coverage	-	Monthly, including 2 stormwater events
Algae cover, Attached, % coverage	-	Monthly, including 2 stormwater events
Water Column Toxicity Test		
Algae - *Selenastrum capricornutum (*96-hour chronic; Method1003.0 in EPA/821/R-02/013)	-	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Water Flea – *Ceriodaphnia dubia* (7-day chronic; Method 1002.0 in EPA/821/R-02/013)	-	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Midge - *Chironomus spp.* (96- hour acute; Alternate test species in EPA 821-R-02-012)	-	4 times each year; once from each of the following calendar quarters: January – March, April – June, July – September, October – December.
Toxicity Identification Evaluation (TIE)	-	As directed by Executive Officer

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Pesticides[2] (Insecticides and Herbicides) (µg/L)		
Organophosphate Pesticides		
Azinphos-methyl	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Chlorpyrifos	0.005	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Diazinon	0.005	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Dichlorvos	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Dimethoate	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Dimeton-s	0.005	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Disulfoton (Disyton)	0.005	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Malathion	0.005	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Methamidophos	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Methidathion	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Parathion-methyl	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Phorate	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Phosmet	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Neonicotinoids		
Thiamethoxam	0.002	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Imidacloprid	0.002	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Thiacloprid	0.002	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Dinotefuran	0.006	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Acetamiprid	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Clothianidin	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Carbamates		
Aldicarb	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Carbaryl	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Carbofuran	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Methiocarb	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Methomyl	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Oxamyl	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Herbicides		
Atrazine	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Cyanazine	0.20	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Diuron	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Glyphosate	2.0	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Linuron	0.10	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Paraquat	0.20	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Simazine	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.
Trifluralin	0.05	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September, and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Metals (µg/L)		
Arsenic (total) [5,7]	0.3	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September and October – December.
Boron (total) [6,7]	10	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September and October – December.
Cadmium (total & dissolved) [4,5,7]	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Copper (total and dissolved) [4,7]	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September and October – December.
Lead (total and dissolved) [4,7]	0.01	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September and October – December.
Nickel (total and dissolved) [4,7]	0.02	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Molybdenum (total) [7]	1	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September and October – December.
Selenium (total)[7]	0.30	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September and October – December.
Zinc (total and dissolved) [4,5,7]	0.10	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters: January – March, April – June, July – September and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Other (µg/L)		
Total Phenolic Compounds[8]	5	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters concurrent with water toxicity monitoring: January – March, April – June, July – September and October – December.
Hardness (mg/L as CaCO3)	1	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters concurrent with water toxicity monitoring: January – March, April – June, July – September and October – December.
Total Organic Carbon (ug/L)	0.6	2 times in 2021 concurrent with water toxicity monitoring; once from July – September and once from October – December. 2 times in 2022 concurrent with water toxicity monitoring; once from January – March and once from April – June. Then, 4 times every fourth year beginning in 2026 concurrent with water toxicity monitoring from each of the following calendar quarters concurrent with water toxicity monitoring: January – March, April – June, July – September and October – December.

Parameters and Tests	RL[3]	Monitoring Frequency[1]
SEDIMENT SAMPLING		
Sediment Toxicity - *Hyalella azteca* 10-day static renewal (EPA, 2000)	-	2 times in 2021; once from April – June and once from August – October. Then once per year in calendar quarter April – June.
Pyrethroid Pesticides in Sediment (µg/kg)		
Gamma-cyhalothrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Lambda-cyhalothrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June “
Bifenthrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Beta-cyfluthrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Cyfluthrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Esfenvalerate	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Permethrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Cypermethrin	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Danitol	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Fenvalerate	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Fluvalinate	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Other Monitoring in Sediment		
Chlorpyrifos (µg/kg)	2	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June

Parameters and Tests	RL[3]	Monitoring Frequency[1]
Total Organic Carbon	0.01%	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June
Sediment Grain Size Analysis	1%	1 time in 2021 from August – October concurrent with sediment toxicity sampling and 1 time in 2022 from April – June concurrent with sediment toxicity sampling. Then, once every fourth year beginning in 2026 concurrent with sediment toxicity monitoring, in calendar quarter April – June

[1]Minimum monitoring frequency may be used as a guide for developing alternative Sampling and Analysis Plans implemented by individual growers.
[2]Pesticide list may be modified based on specific pesticide use in Central Coast Region. Analytes on this list must be reported, at a minimum.
[3] Reporting Limit, taken from SWAMP where applicable.
[4] Holmgren, Meyer, Cheney, and Daniels. 1993. Cadmium, Lead, Zinc, Copper and Nickel in Agricultural Soils of the United States. J. of Environ. Quality 22:335-348.
[5]Sax and Lewis, ed. 1987. Hawley's Condensed Chemical Dictionary. 11th ed. New York: Van Nostrand Reinhold Co., 1987. Zinc arsenate is an insecticide.
[6]Boron is applied directly or as a component of fertilizers as a plant nutrient.
[7]Madramootoo, Johnston, Willardson, eds. 1997. Management of Agricultural Drainage Water Quality. International Commission on Irrigation and Drainage. U.N. FAO. SBN 92-6-104058.3.
[8] Include Nonylphenol. Phenols are breakdown products of herbicides and pesticides. Phenols can be directly toxic and cause endocrine disruption. Requirement may be removed or modified based on 2019-2020 monitoring results.
[9]See SWAMP field measures SOP, p. 17
mg/L – milligrams per liter; ug/L – micrograms per liter; ug/kg – micrograms per kilogram;
NTU – Nephelometric Turbidity Units; CFS – cubic feet per second.