Ventura County
Watershed Protection District
Water & Environmental Resources Division

2010 Groundwater Section
Annual Report

Ventura County
Watershed Protection District
Water & Environmental Resources Division

MISSION:

"Protect, sustain, and enhance
Ventura County watersheds now
and into the future for the benefit of
all by applying sound science,
technology, and policy."

2010 Groundwater Section
Annual Report

Cover Photo: Agricultural well in a citrus orchard in the West Las Posas Groundwater Basin.

Ventura County Watershed Protection District
Water & Environmental Resources Division
Groundwater Section

<u>2010 GROUNDWATER SECTION ANNUAL REPORT</u>

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Section 1.0
Introduction

The 2010 Groundwater Section Annual Report is a summary of this year's accomplishments, while also providing an overview of the groundwater conditions for the County for the past calendar year. For more thorough background information and an explanation of the day-to-day operations of the Groundwater Section, see the Groundwater Section 2005 & 2006 Annual Report.

1.1 – Summary of Accomplishments

Over the last 12 months the Groundwater Section:

- Reviewed and approved 80 land development project applications.
- Issued 141 various types of well permits, including 34 for new water supply wells, 14 water supply well destructions and 6 for water supply well repairs or modifications. There were 59 inspections performed by Groundwater Staff of sealing and perforation work.
- Sampled 179 wells as part of the annual groundwater sampling program. Analytical results are included in Section 3 and Appendix D.
- Measured every six weeks the water level in approximately 200 wells countywide. Groundwater levels measured during Spring 2010 were mixed, with approximately half of the key wells declining, and the rest rising from the Spring 2009 measurement levels.
- Completed water level surface elevation contour maps for the Santa Clara River Valley, Upper Aquifer System and Lower Aquifer System for 2010
- Created numerous new maps and map layers using ArcView GIS.
- Assisted the Fox Canyon Groundwater Management Agency (FCGMA) and other departments and Agencies with groundwater and mapping needs.
- Completed and published the 2009 Groundwater Section Annual Report.

1.2 - General County Information

The following sections contain a general overview regarding climate, population, surface water and changes in groundwater conditions in Ventura County for 2010.

1.2.1 - Population and Climate

On January 1, 2010, the California State Department of Finance estimated Ventura County's population to be 844,713, an increase of 1.1 percent over the 2009 population of 835,298. The City of Oxnard had the largest percentage increase (1.6 percent) over the previous year. The mean annual daily air temperature at the National Weather Service Oxnard area office was 60.3[1] degrees Fahrenheit, with an average daily high of 70.1[1] degrees Fahrenheit and an average low of 50.4[1] degrees Fahrenheit. The average annual rainfall, countywide (based on all active rain gages), was approximately 21.3 inches for 2010[2]. Throughout the County, precipitation for the 2009-2010 water year[2] was between 96 and 129 percent of normal, with Port Hueneme receiving 96% of normal, while the Matilija area received 129% of the normal rainfall total. Figure 1-1 below shows various rain gage/area rainfall totals comparing water year 2009-2010 to normal precipitation totals for that gage/area. Normals are determined from the 1957-1992 base period (i.e. the most recent 35 year period that represents average rainfall from gages with 80-120 years of record).

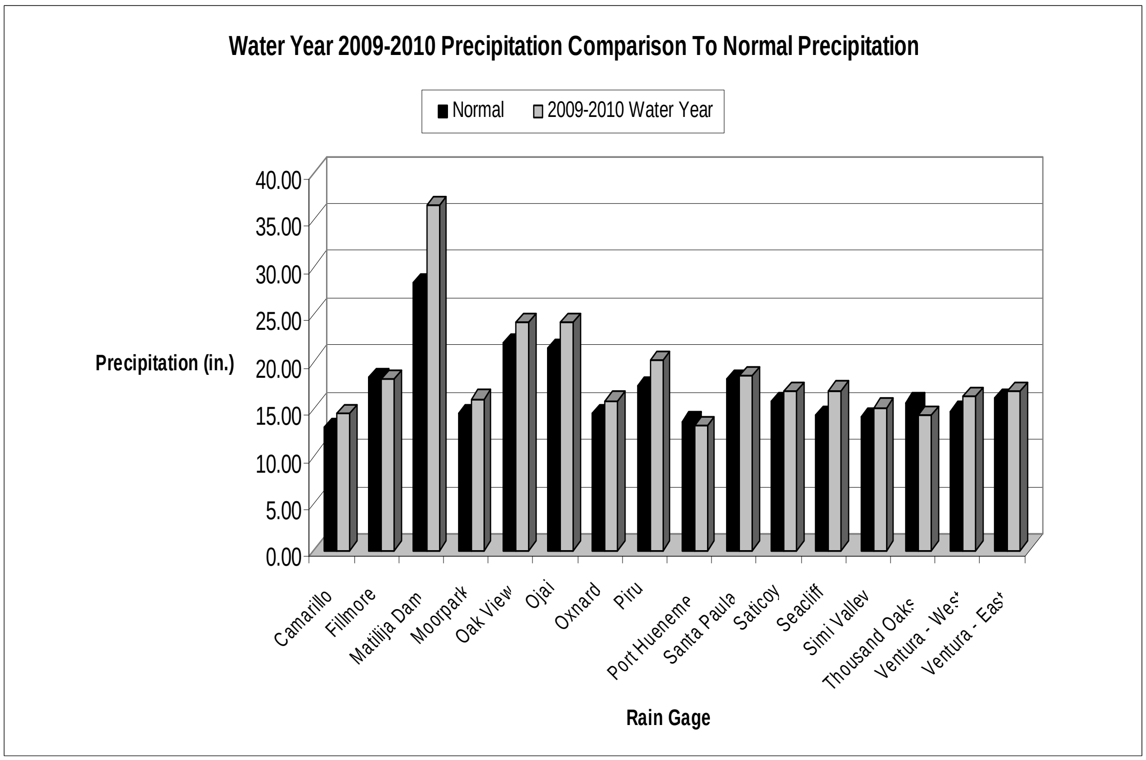

Figure 1-1: Chart comparing 2009-2010 rainfall totals to normal rainfall totals for the same area.

[1] Based on preliminary data from the National Climatic Data Center http://www.ncdc.noaa.gov.
[2] 2009-2010 Water Year defined as: October 1, 2009 to September 30, 2010. VCWPD precipitation data.

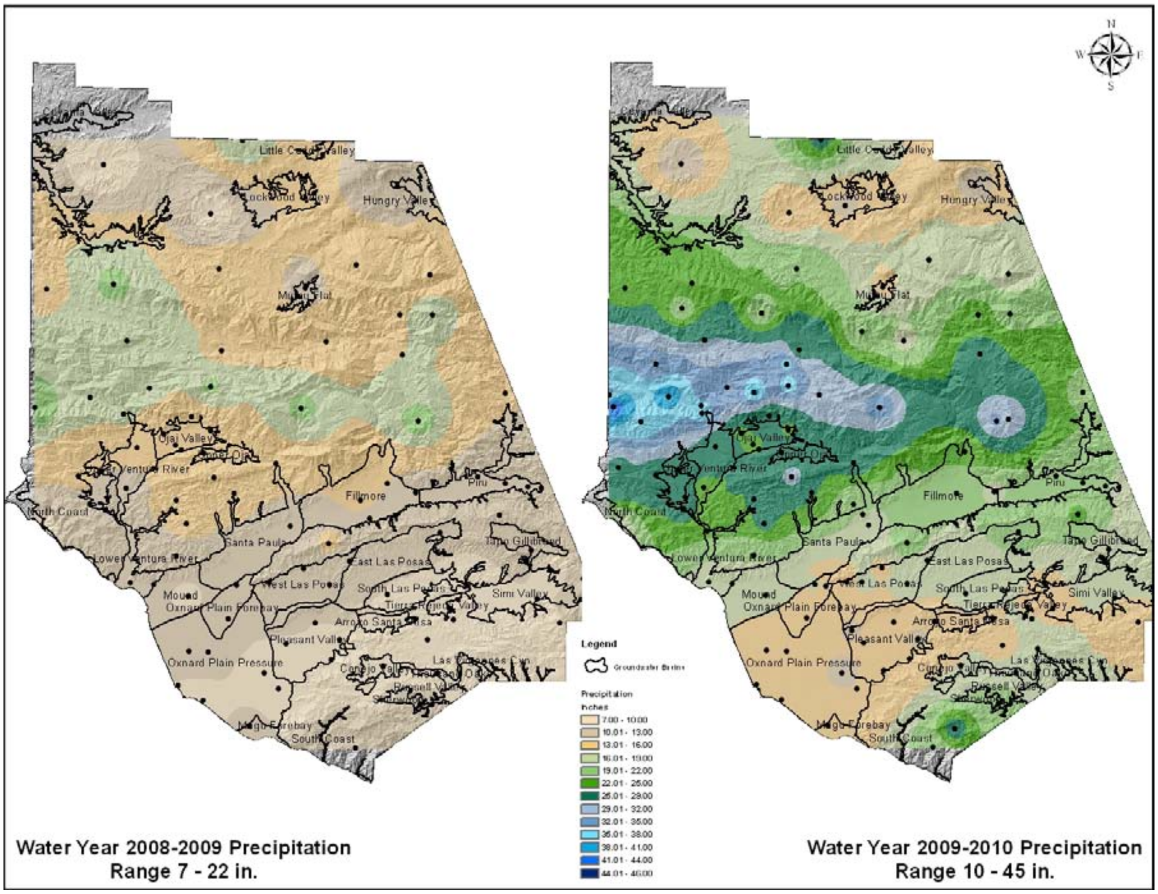

Figure 1-2: Generalized map[3] comparing precipitation between water years 2008/2009 and 2009/2010.

The map above (Figure 1-2) shows a generalized (map represents a 2D surface) distribution of rainfall across the county for water years 2008/2009 and 2009/2010. The chart below (Figures 1-3) depicts average water year rainfall for the period 1995/1996 to 2009/2010 for all of Ventura County.

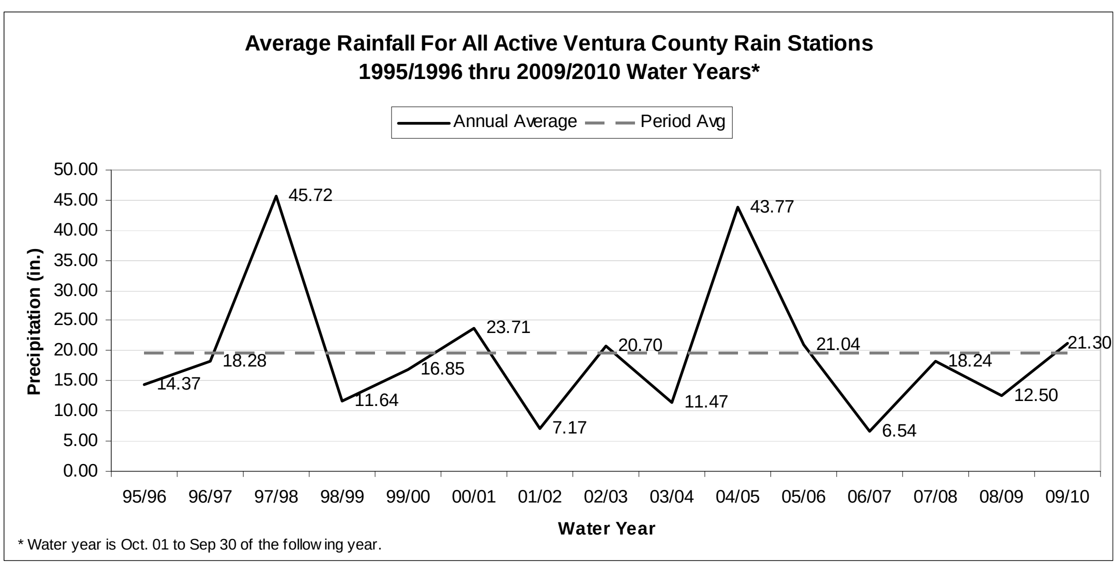

Figure 1-3: Chart comparing the average annual rainfall for Ventura County.

[3] Based on data from all active Ventura County rain gages.

1.2.2 – Surface Water

United Water Conservation District (UWCD) released 36,681[4] acre feet (AF) of water from Lake Piru in 2010, which includes a fish passage requirement of 5 cubic feet per second (cfs) per day. UWCD diverted 64,005[4] AF from the Santa Clara River at the Freeman Diversion Dam with 15,108[4] AF sent to the Saticoy Spreading Grounds, 30,125[4] AF sent to the El Rio Spreading Grounds and 995[4] AF sent to the Noble pit, with some surface water also going to agricultural customers through the Pumping Trough Pipeline (PTP) and the Pleasant Valley Pipeline (PVP). At the end of 2010 there was 30,702[4] AF of water in storage in Lake Piru, 182,695[5] AF in Lake Casitas and 10,300[6] AF in Lake Bard. Casitas Water District releases 3,200 AF per year from Lake Casitas for the Robles Diversion Fish Passage.

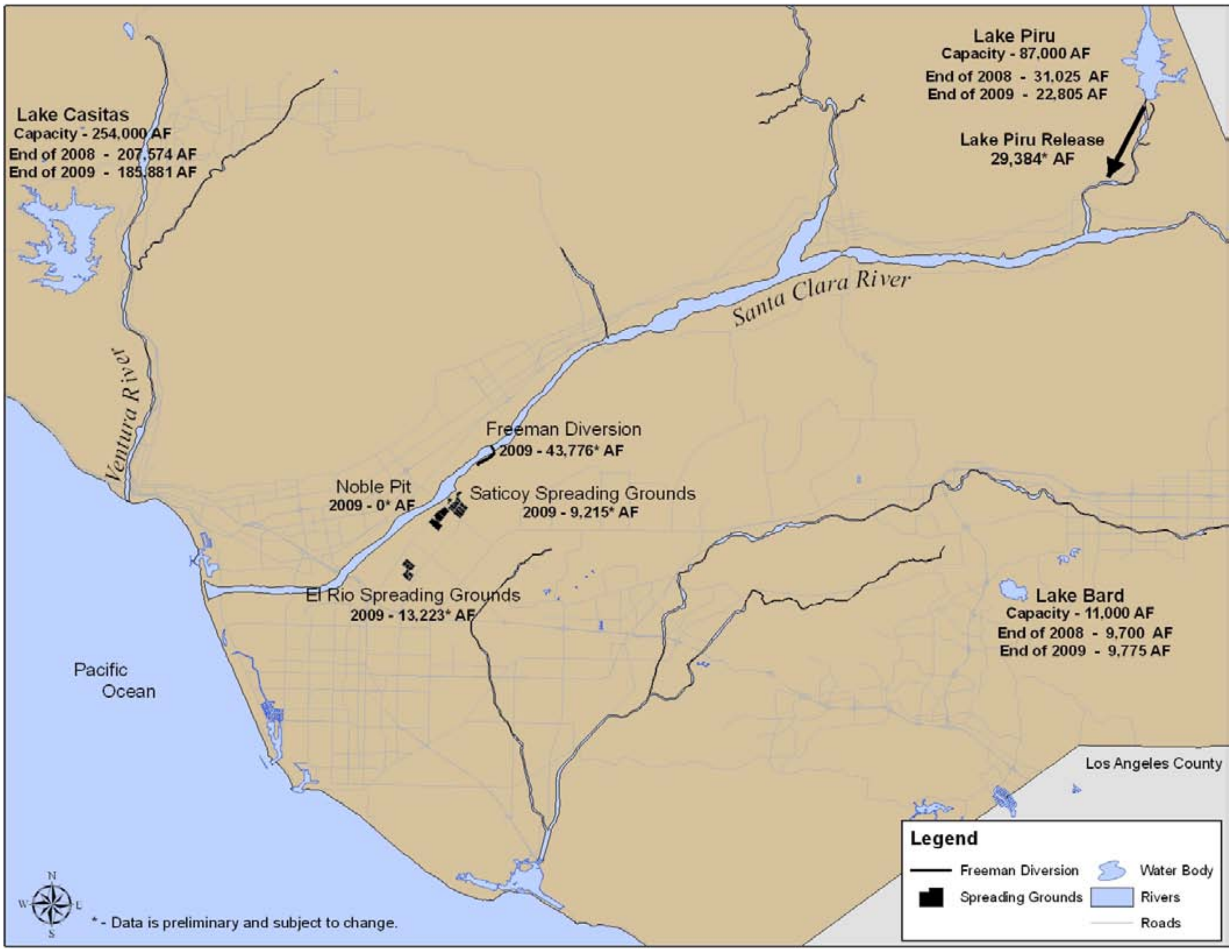

Figure 1-4: Map showing lake storage at the end of 2009 and Santa Clara River diversions.

1.2.3 – Groundwater

The majority of accessible groundwater is found in 32 groundwater basins within Ventura County. The groups of basins that make up the Santa Clara-Calleguas hydrologic unit contain the largest

[4] Data provided courtesy of UWCD-Data is preliminary and subject to change. Freeman diversion data from UWCD operations logs.
[5] Data provided courtesy of Casitas MWD.
[6] Data provided courtesy of Calleguas MWD.

groundwater reserves in the County. The Groundwater Section of the Ventura County Watershed Protection District, the United Water Conservation District, dozens of individual water purveyors, and to a lesser extent the United States Geological Survey, all collect data to provide information concerning the status of groundwater in the County. Recharge of groundwater occurs naturally from rainfall, river/streamflow infiltration and percolation, artificially through injection of imported water (Calleguas Municipal Water District) and spreading of diverted river water (United Water Conservation District).

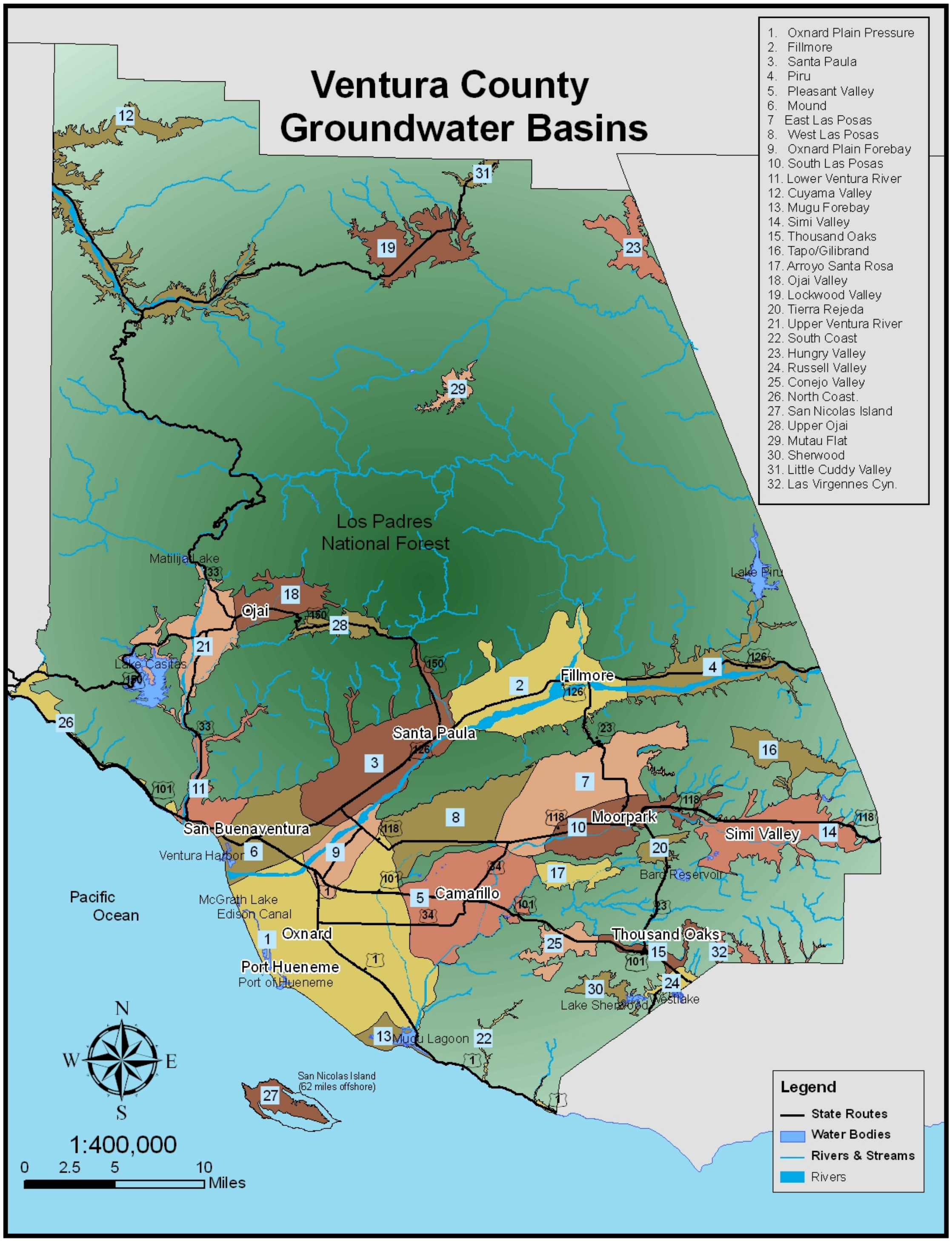

Figure 1-5: Map showing groundwater basins in Ventura County.

Section 2.0
Duties and Responsibilities

2.1 – Well Ordinance
2.1.1 – Permits

The Groundwater Section issues permits for wells and engineering test holes throughout the County, except within the City of Oxnard. The Groundwater Section conditioned and issued 141 permits for wells and engineering test holes during calendar year 2010. Table 2-1 below shows the total number of permits issued for the year by type of permit. Figure 2-1 below shows the total number of permits issued per year for the period 2000 to 2010.

Table 2-1: Permits issued by type for calendar year 2010.

Type of Work	Engineering Test Hole	Monitoring Well – Destruction	Monitoring Well – New	Water Supply Well – New	Water Supply Well – Destruction	Water Supply Well - Repair	Cathodic Protection Well	**TOTAL**
Number 2010	25	26	33	35	14	6	2	141

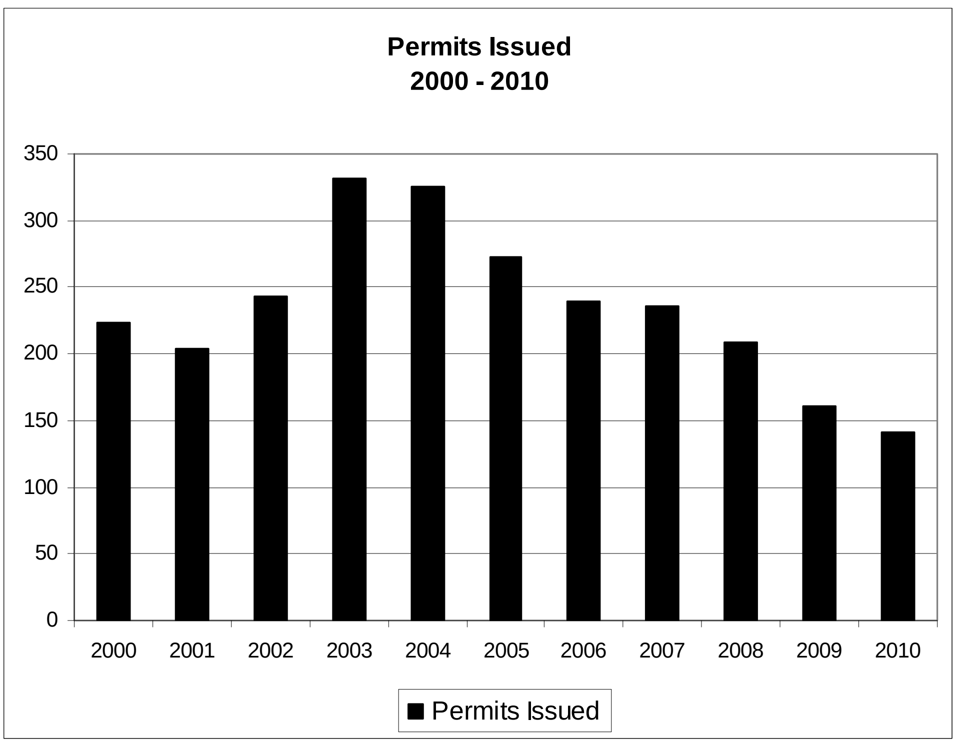

Figure 2-1: Permits issued for the period 2000 to 2010.

2.1.2 – Inspections

Groundwater Section staff perform inspections on all well perforation and sealing work required by specific permit conditions for each new water supply well, well destruction, new cathodic protection well or destruction, and major modifications or repairs to existing water supply wells per the County's Well Ordinance. In 2010, staff performed 59 inspections throughout the County. Figure 2-2 on the following page shows the distribution of new well and well destruction locations inspected by Groundwater staff in the County during 2010.

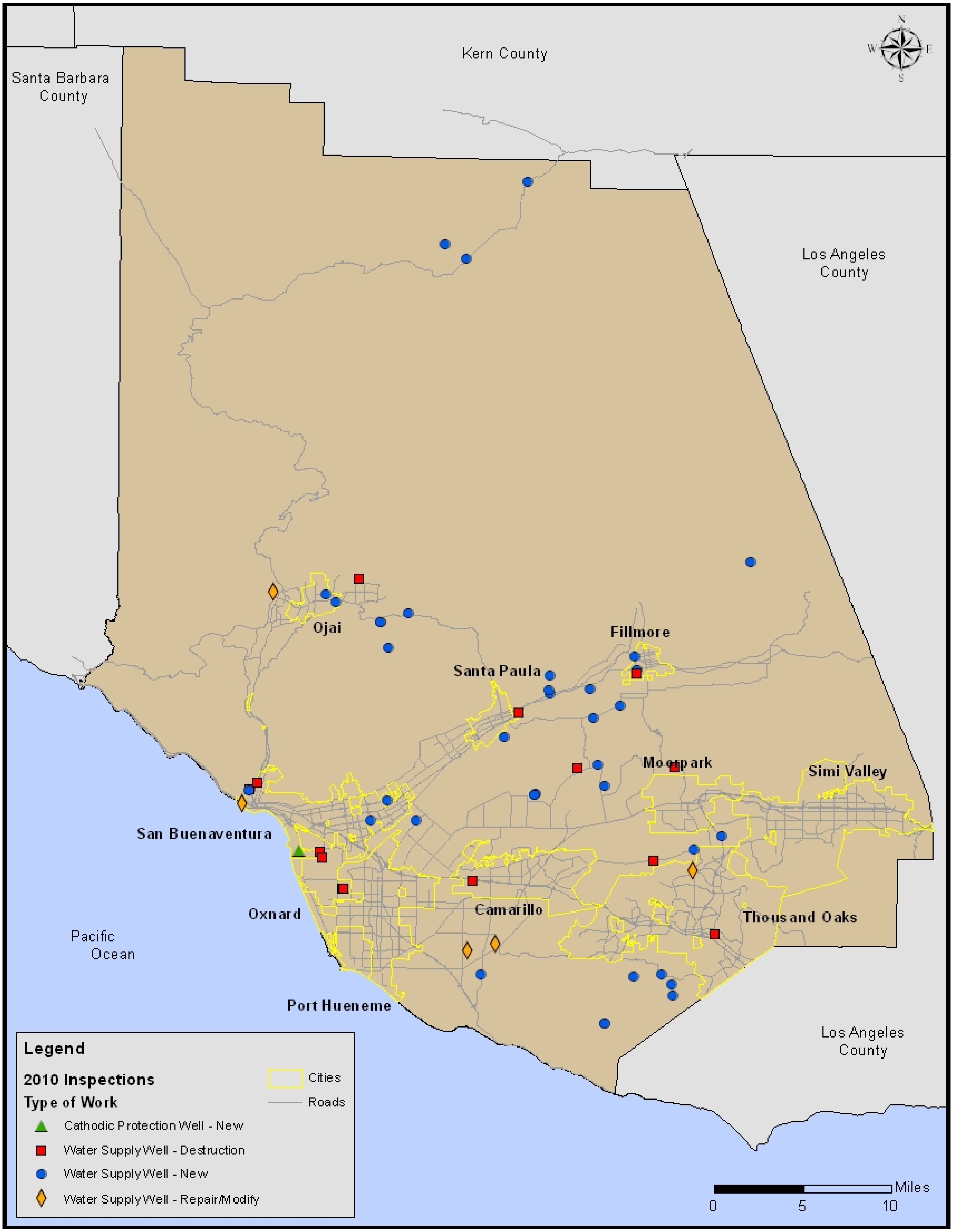

Figure 2-2: Location of well inspections in 2010.

2.2 – Project Reviews

The Groundwater Section reviews and conditions land development projects that have potential groundwater impacts. Reviews include proposed lot splits, lot legalizations, conditional use permits and other types of applications and plans requiring review and conditioning as required by the California Environmental Quality Act (CEQA). The type and number of proposed development projects reviewed by the Groundwater Section during Calendar Year 2010 is shown in the table below (Table 2-2). Staff reviewed and conditioned 80 projects during 2010.

Table 2-2: Development project reviews by type for 2010.

Type of Project	Land Use (LU)	Sub-Division (SD)	RMA (EIR)	Conditional Use Permit (CUP)	Env. Health/Solid Waste Ordinance Rev
Number 2010	54	11	10	4	1

2.3 – Inventory & Status of Wells

The Groundwater Section maintains an inventory in the Section's Water Resources Information database (WRIS) that includes the status of all wells within Ventura County. The database contains details for wells of all types including water supply wells, long-term monitoring wells, cathodic protection wells, and also springs that were given a state well number. At the end of 2010 there were 8,748 well records in the database in the following categories.

2010 Status	Number
Active	3,867
Abandoned	407
Can't Locate	1,747
Non Compliant	102
Non Compliant Abandoned	177
Destroyed	2,436
Exempt	12

Active wells are those wells that meet or exceed the minimum requirement of 8 hours pumping per calendar year as described in the County of Ventura Well Ordinance No. 4108. Abandoned wells are those wells that do not meet the 8 hour minimum usage requirement or are in a condition that no longer allows the well to be used. There are several reasons why a well may be listed as "Can't Locate". Generally, though, "Can't Locate" wells are old rural wells for which the Groundwater Section has historic well location data but the locations are now in areas that have subsequently been urbanized. The current owner of the property where the historical well is supposed to be located is unaware of the existence of a well on his/her property or an approved search has been conducted and no well has been found. Non Compliant wells are generally active wells where the owner of the well has failed to respond to written communication from the Groundwater Section. Non Complaint Abandoned wells are those wells where the owner of an abandoned well has failed to respond to written communication from the Groundwater Section to take action on an inactive well. The County's Well Ordinance prohibits anyone from owning an abandoned well. Abandoned wells pose a safety risk and may also act as a potential pathway for contaminants to reach groundwater. Destroyed wells are wells that have been verified to no longer be in existence or wells that have been properly destroyed under permit. Exempt wells are wells that have been found to be in good enough condition to remain inactive for a period of 5 years before being re-activated or re-inspected. To be listed as exempt a well inspection report, from a registered geologist or civil engineer, and application fee must be submitted by the well owner to the Groundwater Section for review and approval.

Section 3.0
Groundwater Quality

3.1 – Water Quality Sampling

The Groundwater Section collects data and performs studies as needed for purposes of groundwater resource assessment and management. In 2010, Groundwater staff sampled a total of 179 wells throughout the county. All samples were analyzed for general minerals under the Irrigation Suitability suite. Analyses were conducted by Fruit Growers Laboratory in Santa Paula. Some samples were also analyzed for Gross Alpha particles and two were sampled for Glyphosate (EPA 547) analysis. Title 22 metals were also analyzed on select samples under the Inorganic Chemical Suite. Analytical results were entered into the Section's database and used to describe the current chemistry of groundwater in the basins sampled. Complete results are listed in Appendix D, and interpretations are detailed in the following sub-sections. Wells sampled in the south half of the County are shown below in Figure 3-1. Wells sampled in the north half of the County are shown on the following page in Figure 3-2.

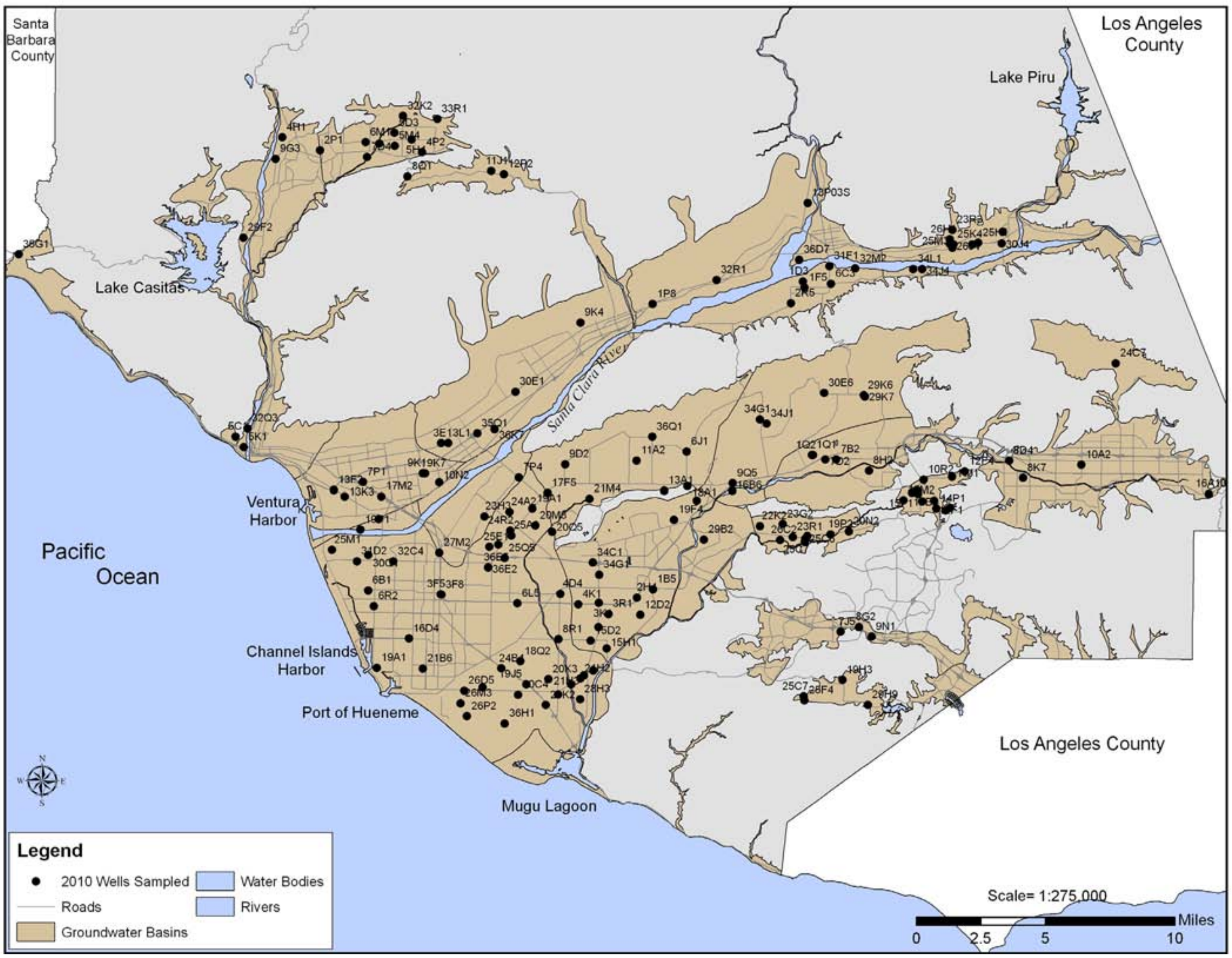

Figure 3-1: Map depicting sample locations for the south half of the County.

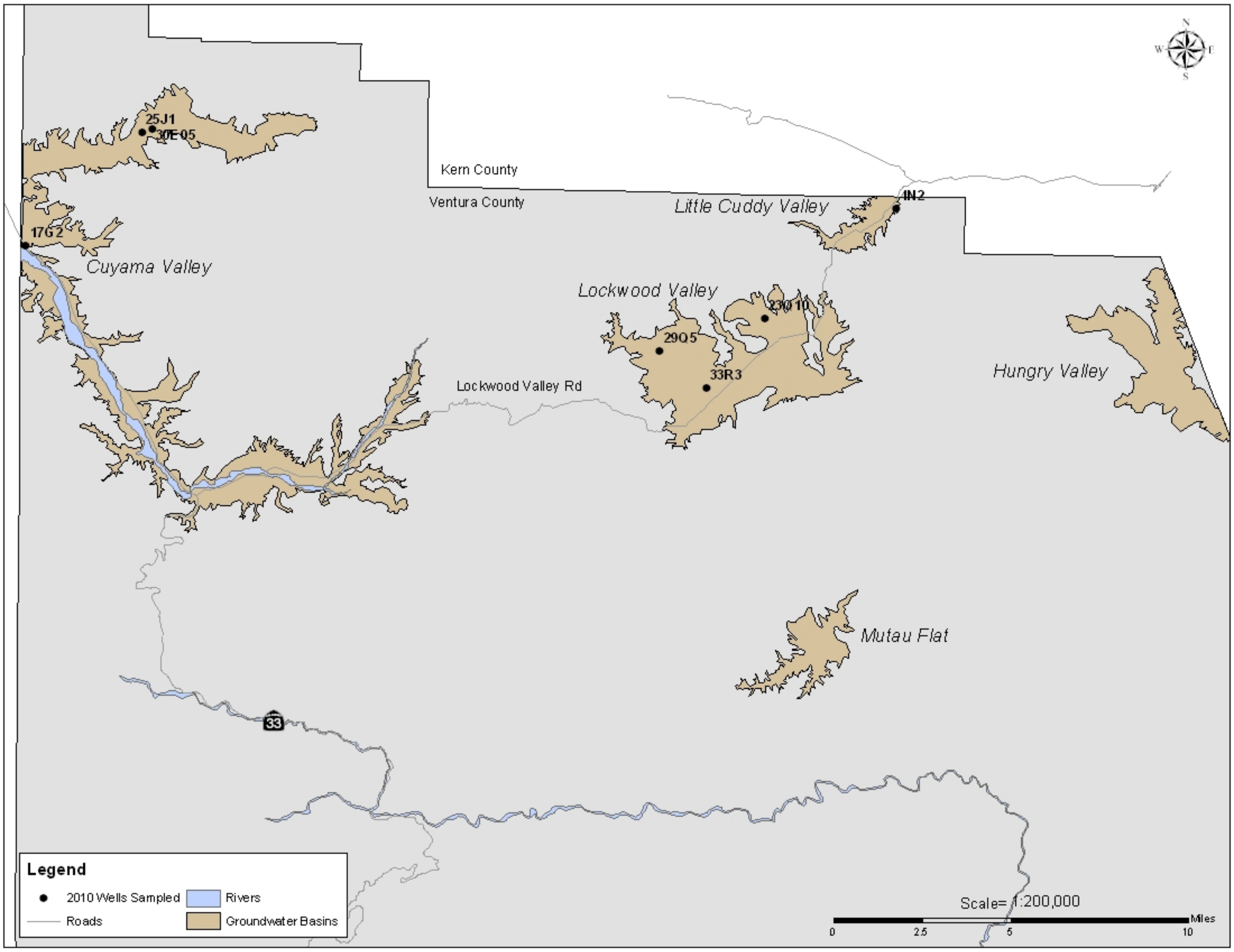

Figure 3-2: Map depicting sample locations for the northern half of the County.

3.2 – Current Conditions

A summary of the groundwater quality results for each groundwater basin sampled this year is included in this section. Basin summaries are presented in order from largest to smallest by total available storage capacity as reported in California Department of Water Resources Bulletin No. 118. Ventura County groundwater, in general, has slightly high TDS. Several areas are nitrate impacted and some areas have high concentrations of sulfates.

The Groundwater Section has adopted the United States Environmental Protection Agency (EPA) National Drinking Water Regulations and California Code of Regulations (CCR) Title 22, Section 64431 (Table 3-1 below) for describing groundwater quality in Ventura County. National Primary Drinking Water Regulations, or primary standards, are legally enforceable standards that apply to public water systems. Primary standards protect public health by limiting the levels of contaminants in drinking water. Maximum contaminant level or MCL is the highest level of a contaminant allowed in drinking water by the United States Environmental Protection Agency. MCLs are set as close as feasible to the level that below which there is no known or expected health risk. National Secondary Drinking Water Regulations, or secondary standards, are guidelines for contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water.

The EPA recommends secondary standards to water systems but does not require systems to comply with the secondary standards. However, states may choose to adopt the secondary standards as enforceable standards. CCR, Title 22, Section 64431 lists MCLs for inorganic chemicals adopted by the State of California. In order to be certified as a permanent domestic or municipal water supply, water from wells located in the County of Ventura must meet these standards.

Table 3-1: U.S. Environmental Protection Agency Primary and Secondary Standards and California Code of Regulations, Title 22 Maximum Contaminant Levels

Primary Contaminants	Chemical Formula	EPA MCL (mg/l)	CCR, Title 22 MCL (mg/l)
Antimony	Sb	0.006	0.006
Arsenic	As	0	0.01
Asbestos		7 MFL[1]	7 MFL[1]
Barium	Ba	2	1
Beryllium	Be	0.004	0.004
Cadmium	Cd	0.005	0.005
Chromium	Cr	0.1	0.05
Copper	Cu	1.3	
Cyanide		0.2	0.15
Fluoride	F^-	4	2
Lead	Pb	0	
Mercury	Hg	0.002	0.002
Nitrate (as Nitrogen)	N	10	10
Nitrate[2]	NO_3^-		45
Nitrite (as Nitrogen)	N	1	1
Selenium	Se	0.05	0.05
Thallium	Tl	0.0005	0.002
Secondary Contaminants			
Aluminum[3]	Al	0.5 to 0.2	
Chloride	Cl^-	250	
Iron	Fe	0.3	
Manganese	Mn	0.05	
pH		6.5-8.5	
Silver	Ag	0.1	
Sulfate	SO_4^{2-}	250	
Total Dissolved Solids	TDS	500	
Zinc	Zn	5	

[1] MFL = Million fibers per liter longer than 10 um

[2] CCR, Title 22 standard for Nitrate reported as NO_3

[3] CCR, Title 22 lists Aluminum as a primary contaminant

The piper diagram, shown by basin in Appendix D, is used here to graphically present various types of water and is drawn based on chemical composition of water. A piper diagram shows the percentage composition of six ions. Cations (calcium, sodium and magnesium) are plotted on one triangle and anions (chloride, sulfate and bicarbonate) on another with the apex representing 100 percent concentration of one of the three constituents. The diamond-shaped field between the two triangles represents the composition of the water with respect to both cations and anions. A second method to present results is a Stiff diagram. Ions are plotted on either side of a vertical axis in milliequivalents per liter, cations on the left of the axis and anions on the right. The polygonal shape created is useful in making a visual comparison between water from different sources. Piper and Stiff diagrams for wells sampled this year are included in Appendix D by basin.

3.2.1 - Oxnard Plain Pressure Basin

The Oxnard Plain Pressure Basin is the largest and most complicated, hydraulically and hydrologically of the groundwater basins in Ventura County. The Oxnard Plain Pressure Basin consists of two major aquifer systems. The Upper Aquifer System (UAS) consists of the Perched, Semi Perched, Oxnard, and Mugu aquifers. Of the UAS aquifers, only the Oxnard and Mugu aquifers are sampled for water quality by the County. The Lower Aquifer System (LAS) consists of the Hueneme, Fox Canyon and Grimes Canyon aquifers. There are no wells perforated solely in the Grimes Canyon aquifer so it is not sampled. Figure 3-3 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for the wells sampled in the Upper Aquifer System of the Oxnard Plain Pressure Basin. Figure 3-4 shows the same information for wells sampled in the Lower Aquifer System.

3.2.1.1 - Oxnard Aquifer (UAS)

The Oxnard aquifer is the shallowest of the confined aquifers. Average depth to the main water bearing material is 80 feet. The piper diagram Appendix D, Figure D-1 shows bicarbonate (HCO_3^-) is the major anion, and calcium (Ca^+) is the major cation. Groundwater samples were collected from ten wells in the Oxnard Aquifer. A comparison of the stiff diagrams with those from the 2009 report shows no significant change in water quality.

Water from one of the wells has a concentration of iron (Fe) above the maximum contaminant level (MCL) for drinking water. Samples from all sixteen of the wells have sulfate (SO_4^{2-}) above the MCL for drinking water with an average value of 653 mg/L. Both of these constituents are secondary standards. Total dissolved solids (TDS) ranged from 955 to 2710 mg/l with an average value of 1427 mg/l. Water from one of the wells sampled had a nitrate (NO_3^-) concentration above the MCL for drinking water. Samples from three wells were analyzed for inorganic chemicals (Title 22 metals). All inorganic constituents were below the MCL.

Groundwater plumes with elevated nitrate concentrations are common in the northern portion of the basin. Sources of nitrate are septic systems and nitrogen based fertilizers in agricultural areas.

3.2.1.2 - Mugu Aquifer (UAS)

The Mugu aquifer is the lowest layer of the UAS and has similar physical and chemical characteristics to the Oxnard Aquifer, but has slightly better water quality, in part, because with increasing depth contaminants are generally less likely to infiltrate. This is shown graphically in the piper and stiff diagrams, Figures D-1 and D-2. Average depth to the main water bearing material is 200 ft. Six wells that are perforated only in the Mugu aquifer and two that are perforated in the Mugu and Oxnard aquifers were sampled. TDS ranges from 880 to 1760 mg/l with an average of 1134 mg/l. All eight wells sampled have sulfate concentrations above the MCL, one has an iron concentration above the MCL and no samples have nitrate above the MCL for drinking water. Two samples were analyzed for inorganic chemicals (Title 22 metals). All inorganic constituents were below the MCL.

OXNARD PLAIN PRESSURE BASIN
Upper Aquifer System

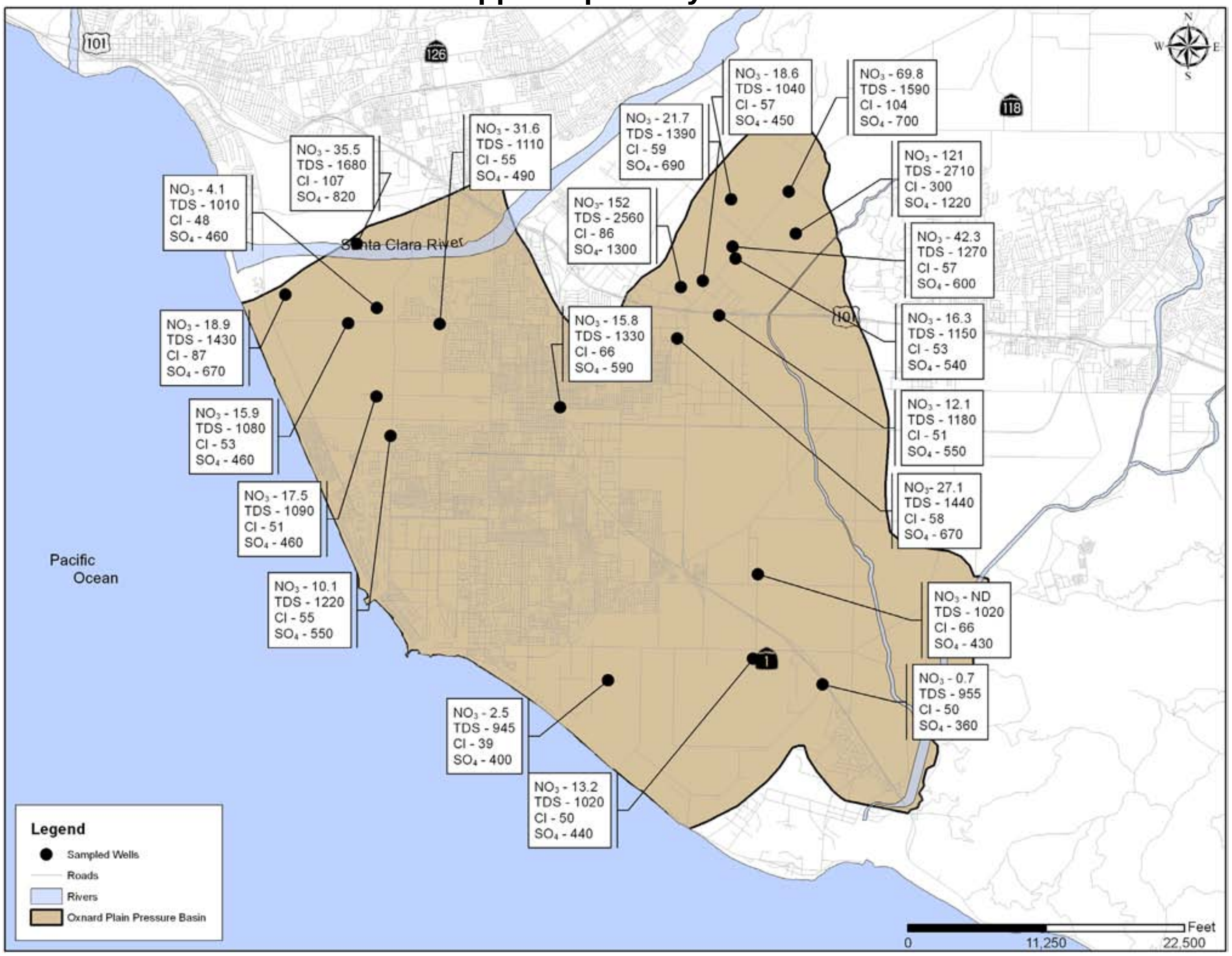

Figure 3-3: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.1.3 - Hueneme Aquifer (LAS)

The Hueneme aquifer is the shallowest of the Lower Aquifer System aquifers with depth to the main water bearing material approximately 375 feet. Very few wells are perforated exclusively in the Hueneme aquifer, making an accurate determination of water quality for the entire aquifer difficult. The historical average TDS concentration is 1180 mg/l. Only one well that is screened solely in the Hueneme was sampled this year. The well has elevated TDS and sulfate concentrations compared to the MCL for drinking water. Overall, water quality has not changed significantly since the previous round of sampling.

3.2.1.4 - Fox Canyon Aquifer (LAS)

The Fox Canyon aquifer is the second most developed production zone in the Oxnard Plain Pressure Basin. The Oxnard aquifer is the most developed production zone. Depth to the main water bearing material is approximately 580 feet. The Fox Canyon aquifer generally has excellent water quality and high yield rates, but is subject to seawater intrusion near Point Mugu and the Hueneme Submarine Canyon. Extractions are monitored and allocated by the Fox Canyon Groundwater Management

Agency in order to mitigate aquifer overdraft and reduce the intrusion of seawater. Of the wells sampled this year, TDS concentrations varied from 422 mg/l to 1090 mg/l with an average TDS of 810 mg/l and four water samples have a manganese concentration above the MCL. Five samples were analyzed for inorganic chemicals (Title 22 metals). All inorganic constituents were well below the MCL for drinking water.

Twelve of the Oxnard Plain Pressure Basin wells that were sampled this year are perforated in both the Hueneme aquifer and the Fox Canyon aquifer and will be referred to as the LAS wells. Results for those wells are included in Appendix D, Figure D-5, and shown on the map of the Lower Aquifer System (LAS). TDS concentrations of water from these wells vary between 422 mg/l and 1150 mg/l with an average of 907 mg/l for wells sampled this season. Samples from three LAS wells have iron concentrations above the MCL, three have manganese above the MCL, and seven have sulfate above the MCL. Water samples from two of these wells were analyzed for inorganic chemicals (Title 22 metals). All inorganic constituents were well below the MCL for drinking water. Piper diagrams for Hueneme aquifer, Fox Canyon aquifer, and the LAS, show all three have the same water chemistry as would be expected if there are cross-screened wells that allow communication between the aquifers. The sample from the well perforated solely in the Hueneme aquifer does not show a significant chemical difference from the Fox Canyon Aquifer. Stiff diagrams show that the water chemistry of the Fox Canyon Aquifer has more variation between wells, but overall the chemistry of water samples from the cross-screened wells is very similar to water samples from the wells screened in the individual aquifers. Two samples were analyzed for inorganic chemicals (Title 22 metals). All inorganic constituents were well below the MCL for drinking water. Five samples were analyzed for inorganic chemicals (Title 22 metals). All inorganic constituents were well below the MCL for drinking water.

The water from one well has very high concentrations of TDS, nitrate and zinc. The well has not been sampled before so we have no previous data for comparison. We reviewed the data and the ions and cations do not balance so we suspect there was a problem with the analytical process. We intend to sample the well again as part of the annual water sampling program in 2011 and will compare the data between the two years to determine whether or not the results are correct.

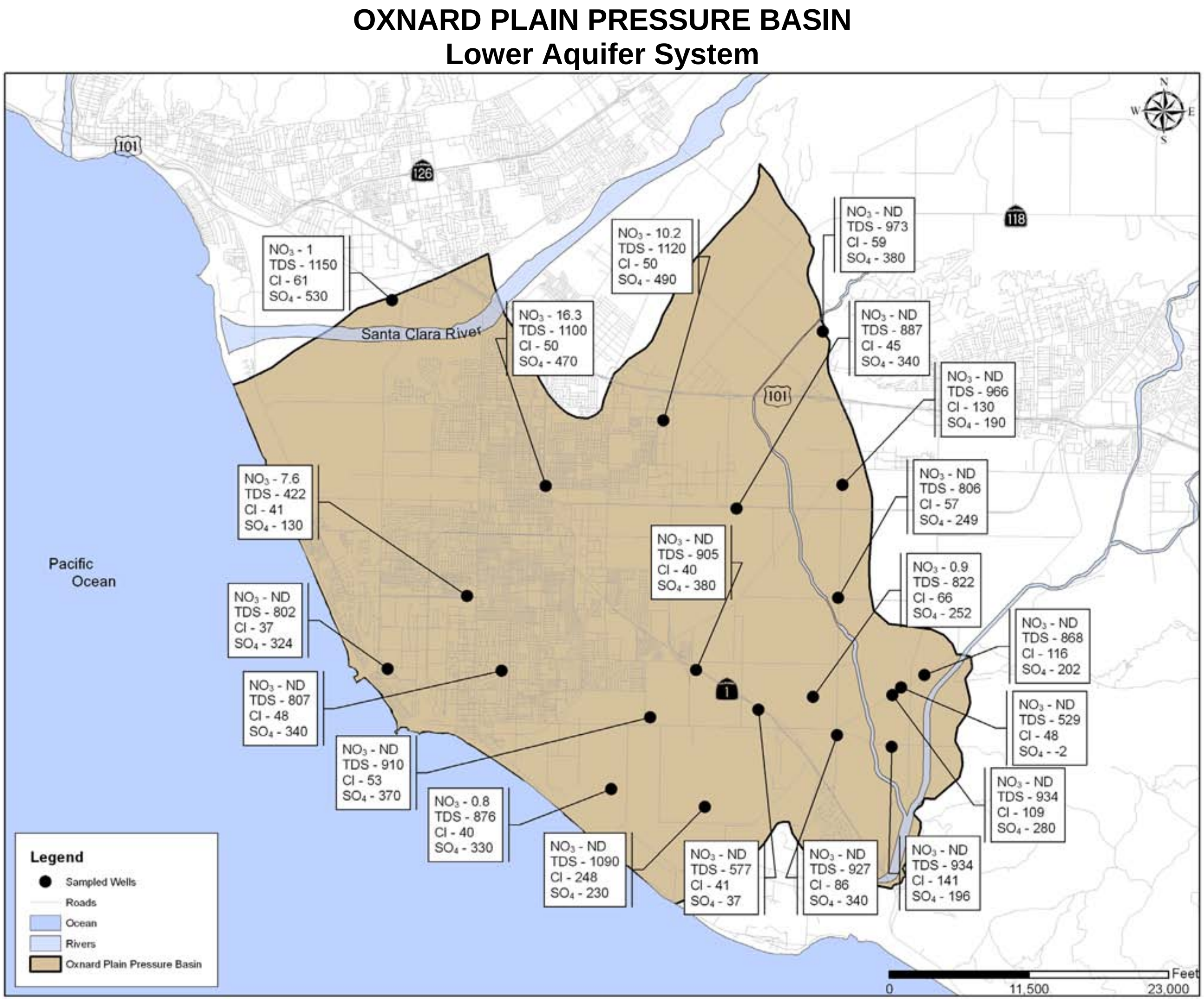

Figure 3-4: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.2 - Fillmore Basin

The Fillmore Basin, though small in geographic area, has a total aquifer thickness of almost 8,000 feet in some places. Therefore, water quality can vary greatly depending on depth of the well. Shallow groundwater is generally younger and recharged by river flows with varying chemistry. Deeper groundwater is older and has acquired its chemistry through dissolution of constituents from the surrounding sediments. Historically, nitrate (NO_3^-) concentrations have been elevated because of extensive use of fertilizers and septic system discharges, but of the ten wells sampled this year none showed elevated NO_3^- concentration relative to the MCL for drinking water. Groundwater samples from all ten wells are above the secondary MCL for sulfate (SO_4^{2-}). Average TDS for the wells sampled this year is 1256 mg/l with one sample at 2510 mg/l, well above the MCL for drinking water. Water samples from five wells were analyzed for inorganic chemicals (Title 22 metals). All inorganic constituents are below the MCL for drinking water. Water quality tends to degrade to the south east portion of the basin in the vicinity of the Oak Ridge fault. Figure 3-5 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}).

FILLMORE BASIN

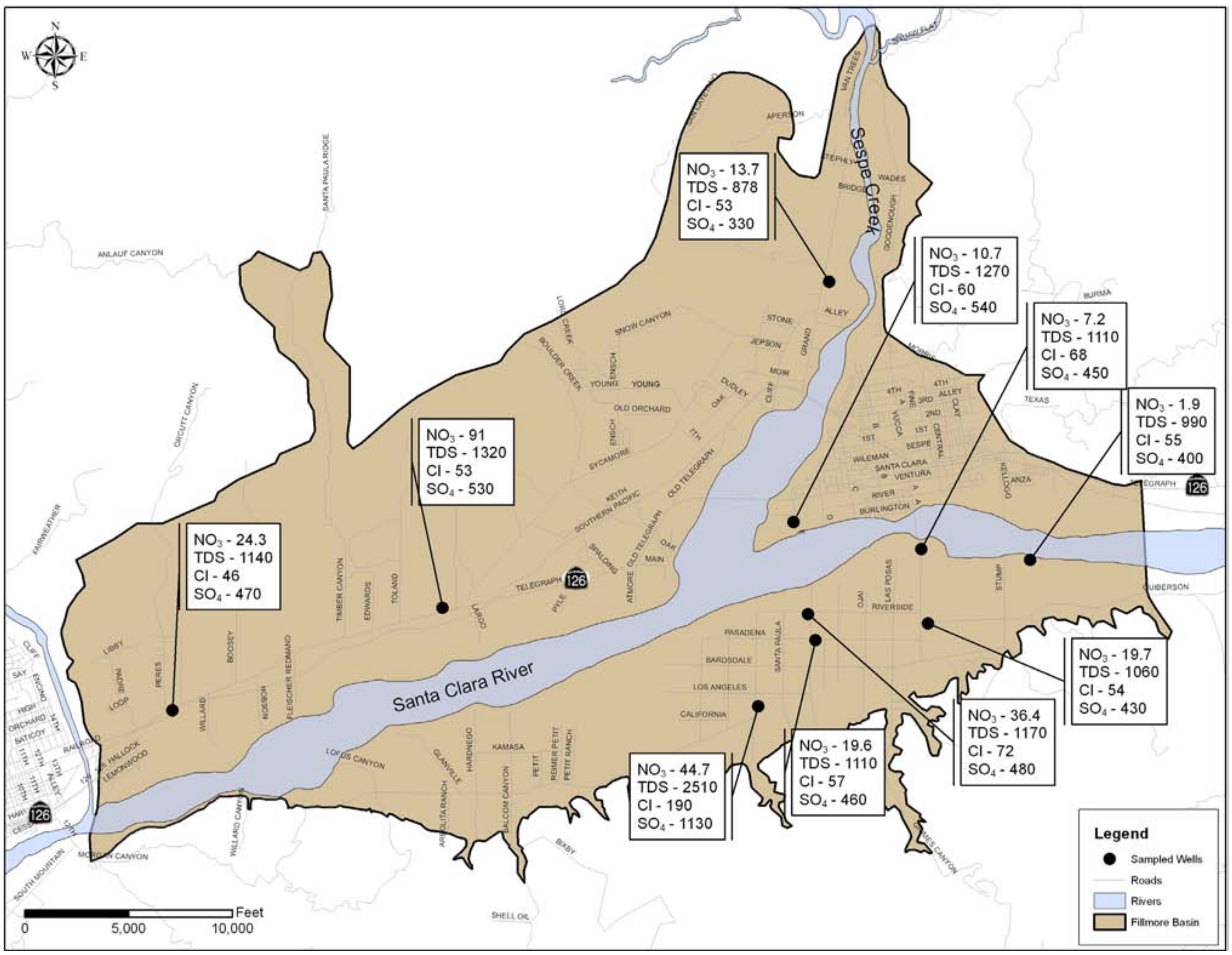

Figure 3-5: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.3 - Santa Paula Basin

The Santa Paula Basin is a court adjudicated groundwater basin. In an effort to prevent overdraft, a June 1991 judgment ordered the creation of the Santa Paula Basin Pumpers Association (SPBPA). The SPBPA regulates extractions in the Santa Paula Basin. The judgment stipulated an allotment of 27,000 acre-feet per year could be pumped from the basin. Water quality in the basin has not changed substantially since 2007. The depth to the water bearing material is 65 to 160 feet. TDS concentrations for water in the six wells sampled vary from 1110 to 2800 mg/l, with an average value of 1965 mg/l for wells sampled this season; all above the current secondary MCL. Water samples from all the wells have concentrations above the secondary MCL for sulfate and three have concentrations above the secondary MCL for iron. Water samples from five wells were analyzed for inorganic chemicals (Title 22 metals). One sample from an agricultural well has a selenium concentration above the MCL for drinking water. The concentrations of all remaining inorganic chemicals were below the MCL. Figure 3-7 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells in the Santa Paula Basin.

SANTA PAULA BASIN

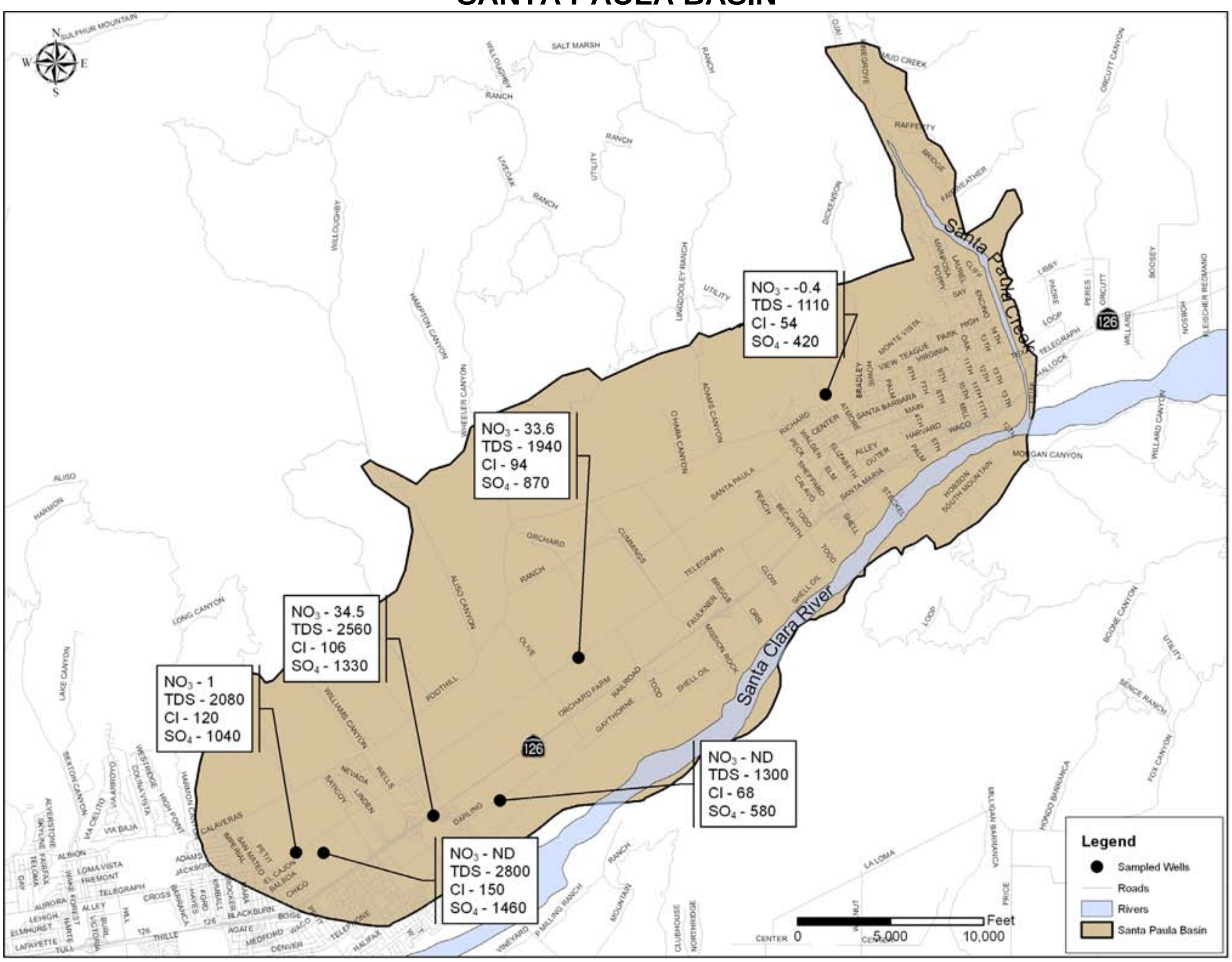

Figure 3-6: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.4 – Piru Basin

The Piru Basin recharge is principally from precipitation, releases of water by United Water Conservation District from Lake Piru, and the Santa Clara River. Flow from the Santa Clara River enters the basin from the east and carries discharges from wastewater treatment plants and urban runoff from Los Angeles County. Percolation of this poor quality water into the groundwater has likely affected water quality of wells in the area. Depth to the main water bearing material is approximately 30 to 90 feet. The Los Angeles Regional Water Quality Control Board (LARWQCB) has adopted a Basin Plan Amendment that includes a Total Maximum Daily Load (TMDL) of 117 mg/l for chloride (Cl^-) in surface water and 150 mg/l in groundwater for the stretch of the Santa Clara River in Ventura County east of Piru Creek.

Fourteen wells were sampled in the Piru Basin during this round of sampling. None of the groundwater sampled has a Cl^- concentration above the chloride TMDL. The average TDS concentration of the water sampled this season is 1450 mg/l with three wells having concentrations significantly above 2000 mg/l. Water samples from all fourteen wells have sulfate (SO_4^{-2}) concentrations greater than the secondary MCL for drinking water and three have Mn concentrations greater than the secondary MCL. Figure 3-8 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}).

Water samples from all fourteen wells were analyzed for inorganic chemicals (Title 22 metals). Three wells in the Piru Basin located south of Highway 126 have consistently been found to have selenium levels that exceed the MCL of 0.05 mg/l or 50 µg/l. These three wells also have the highest concentrations of SO_4^{2-} and TDS of all wells sampled in the basin. Elevated selenium concentrations occur in those wells perforated in the interval between approximately 125 to 250 feet below ground surface. A well located north of Highway 126 and perforated at a similar elevation does not have high selenium. Further testing of groundwater, surface water and cuttings obtained from future drilling is planned by staff in order to determine a possible source. Owners of the wells have been notified by Ventura County Environmental Health Department about possible adverse health effects from ingestion of water containing selenium.

High gross alpha particles were detected in one of the wells tested this year. In 2004, the Drinking Water Branch of the California Department of Public Health issued an Initial Monitoring and MCL Compliance Determination flow chart. The flow chart is used to determine the source of gross alpha for determining compliance in community water systems. Based on the flow chart, naturally occurring uranium was determined to be the source of the gross alpha in these samples.

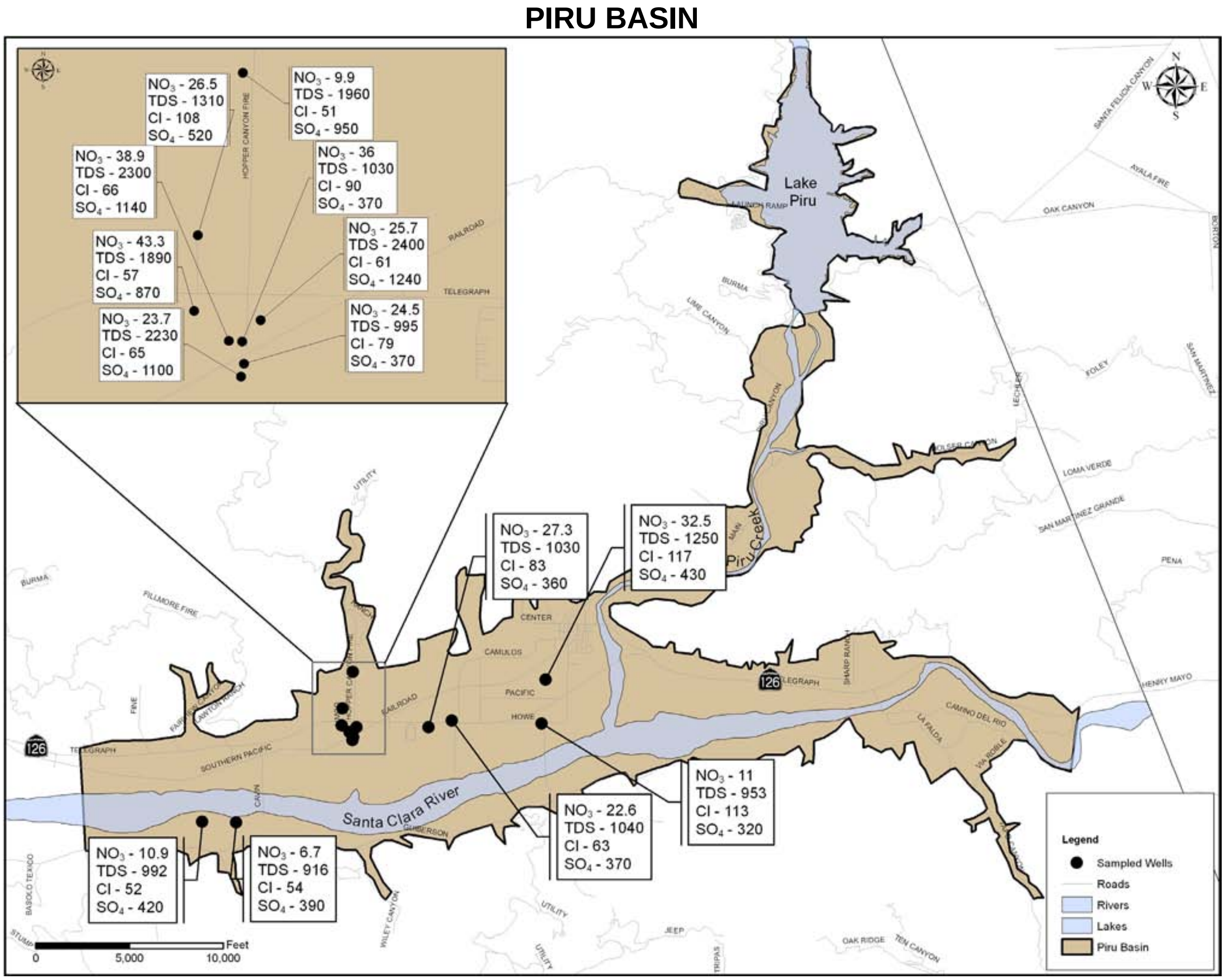

Figure 3-7: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.5 - Pleasant Valley Basin

In the Pleasant Valley Basin groundwater quality can vary greatly throughout the basin. Depth to the main water bearing unit is approximately 400 to 500 feet. The shallower groundwater bearing unit at 35 to 60 feet it is not used because the water quality is so poor. Fourteen wells were sampled during this round of sampling. TDS concentrations vary from 638 to 4890 mg/l with an average of 1591 mg/l. Sulfate (SO_4^{2-}) ranges from 50 to 2320 mg/l with eleven of the wells having concentrations above the secondary MCL with an average of 577 mg/l. One water sample has an iron concentration above the MCL and four have manganese concentrations above the MCL. Chloride (Cl^-) concentrations are above 117 mg/l in water samples from all except two wells with an average value of 236 mg/l. Samples from four wells have Cl^- concentration above the primary MCL for drinking water, but the LARWQCB Basin Plan indicates that agricultural beneficial uses are impaired when the concentration is above 117 mg/l. Comparison of Piper and Stiff diagrams with 2009 values shows no significant change. Water samples from four wells were analyzed for inorganic chemicals (Title 22 metals). No inorganic chemical was above the MCL. Figure 3-10 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}).

PLEASANT VALLEY BASIN

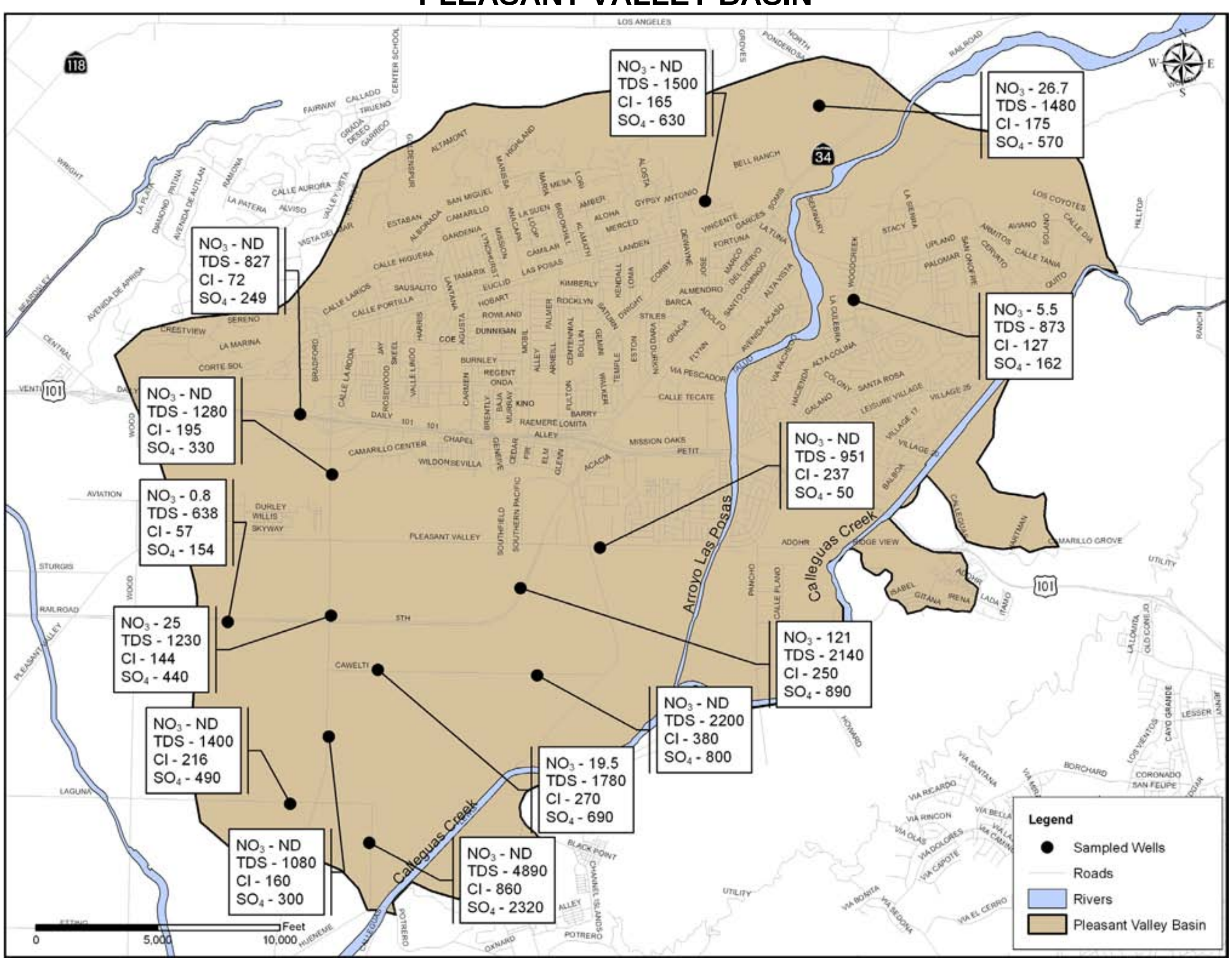

Figure 3-8: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.6 - Mound Basin

The Mound Basin water bearing units are alluvium and the San Pedro Formation. The alluvium consists of silts and clays with lenses of sand and gravel and reaches a maximum thickness of about 500 feet. The San Pedro Formation consists dominantly of fine sands and gravels and extends as deep as 4,000 feet. Groundwater is generally unconfined in the alluvium and confined in the San Pedro Formation. Based on the data collected this year and historic water quality data for the basin, water quality is generally better in the lower zone. The average TDS concentration for the seven wells sampled this year is 1663 mg/l; all above the MCL for drinking water. Sulfate is greater than the MCL in all seven wells and manganese is above the MCL in six wells and iron is above the MCL in three wells. Water samples from two wells were analyzed for inorganic chemicals (Title 22 metals). One sample had a selenium concentration above the MCL; all other inorganic constituents were below the MCL. Figure 3-11 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}).

MOUND BASIN

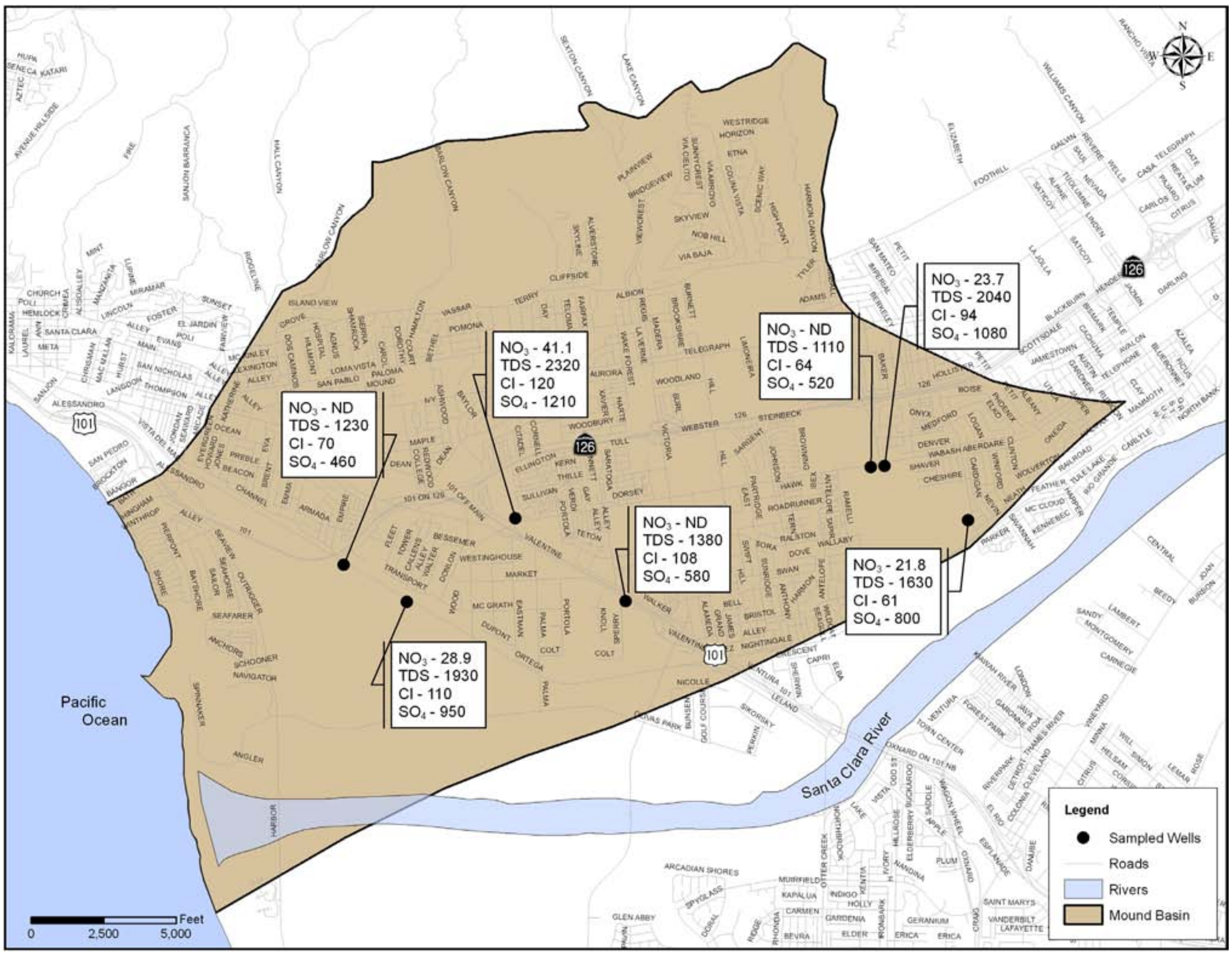

Figure 3-9: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.7 - East Las Posas Basin

Of the seven wells sampled in the East Las Posas Basin, the two wells located in the southwest portion of the basin near the Arroyo Las Posas, have very different water chemistry. The dominant cations in the southwestern wells are sodium, calcium and magnesium and the dominant anions are bicarbonate, sulfate and chloride. TDS, sulfate and manganese are above the MCL for drinking water in both these wells. The remainder of the wells sampled have good water quality with an average TDS of 415 mg/l. The dominant cations are sodium and calcium and bicarbonate is the dominant anion. Water from one well was analyzed for inorganic chemicals (Title 22 metals). No inorganic constituent was above the MCL. Depth to the upper water bearing unit is approximately 120 to 150 feet and to the lower unit is approximately 530 to 580 feet. Figure 3-12 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}).

EAST LAS POSAS BASIN

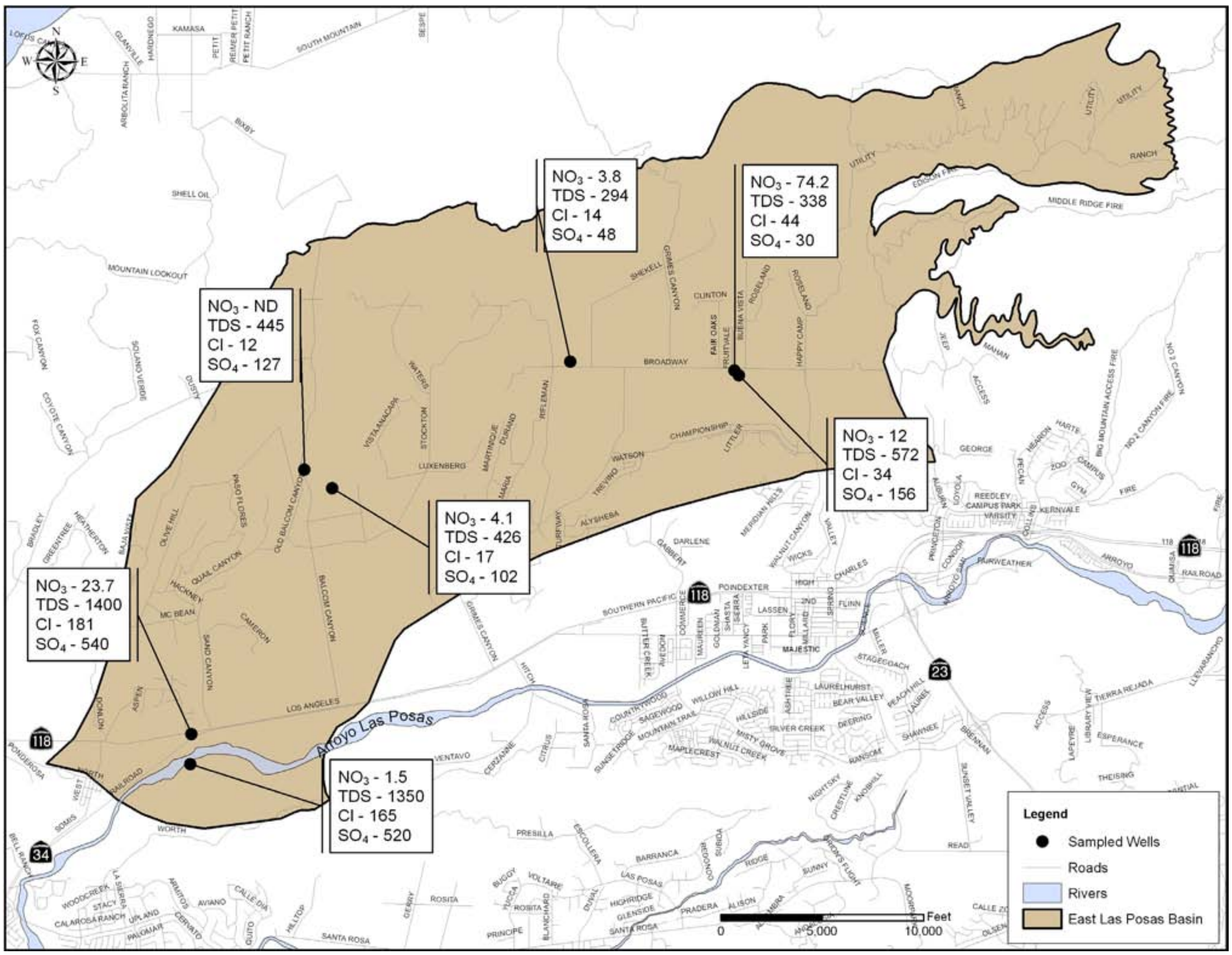

Figure 3-10: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.8 - West Las Posas Basin

All six wells sampled in the West Las Posas Basin this year have TDS above the MCL for drinking water with an average of 983 mg/L. Two wells have nitrate concentrations above the MCL for drinking water and 3 have sulfate (SO_4^{2-}) above the MCL. Figure 3-13 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for the wells sampled in the West Las Posas Basin.

WEST LAS POSAS BASIN

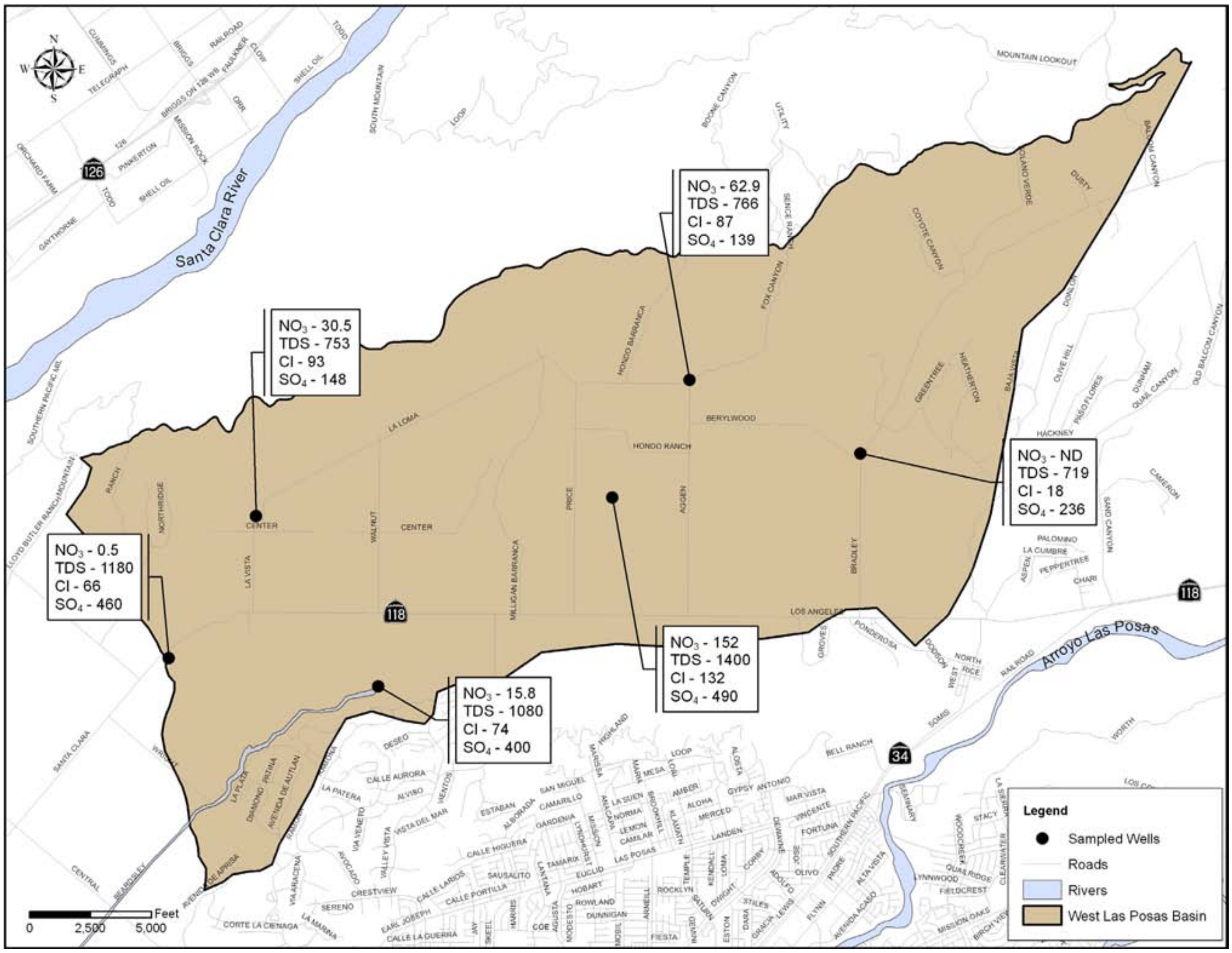

Figure 3-11: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.9 – Oxnard Forebay Basin

The Oxnard Forebay Basin is the principal recharge area for the Upper and Lower Aquifer Systems of the Oxnard Plain Pressure Basin. Approximate depth to the water bearing unit is 25 to 50 feet. The Oxnard Forebay generally has acceptable water quality except for the southern portion where high nitrate concentrations are common. The area to the north is predominantly agricultural with a few residential areas that still rely on individual septic systems. One of the wells sampled has a nitrate concentration higher than the MCL for drinking water. All three wells sampled have TDS and sulfate concentrations above the MCL for drinking water. A water sample from one well was analyzed for inorganic chemicals (Title 22 metals). No inorganic constituent was above the MCL for drinking water. Figure 3-14 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in the Oxnard Forebay Basin.

OXNARD FOREBAY BASIN

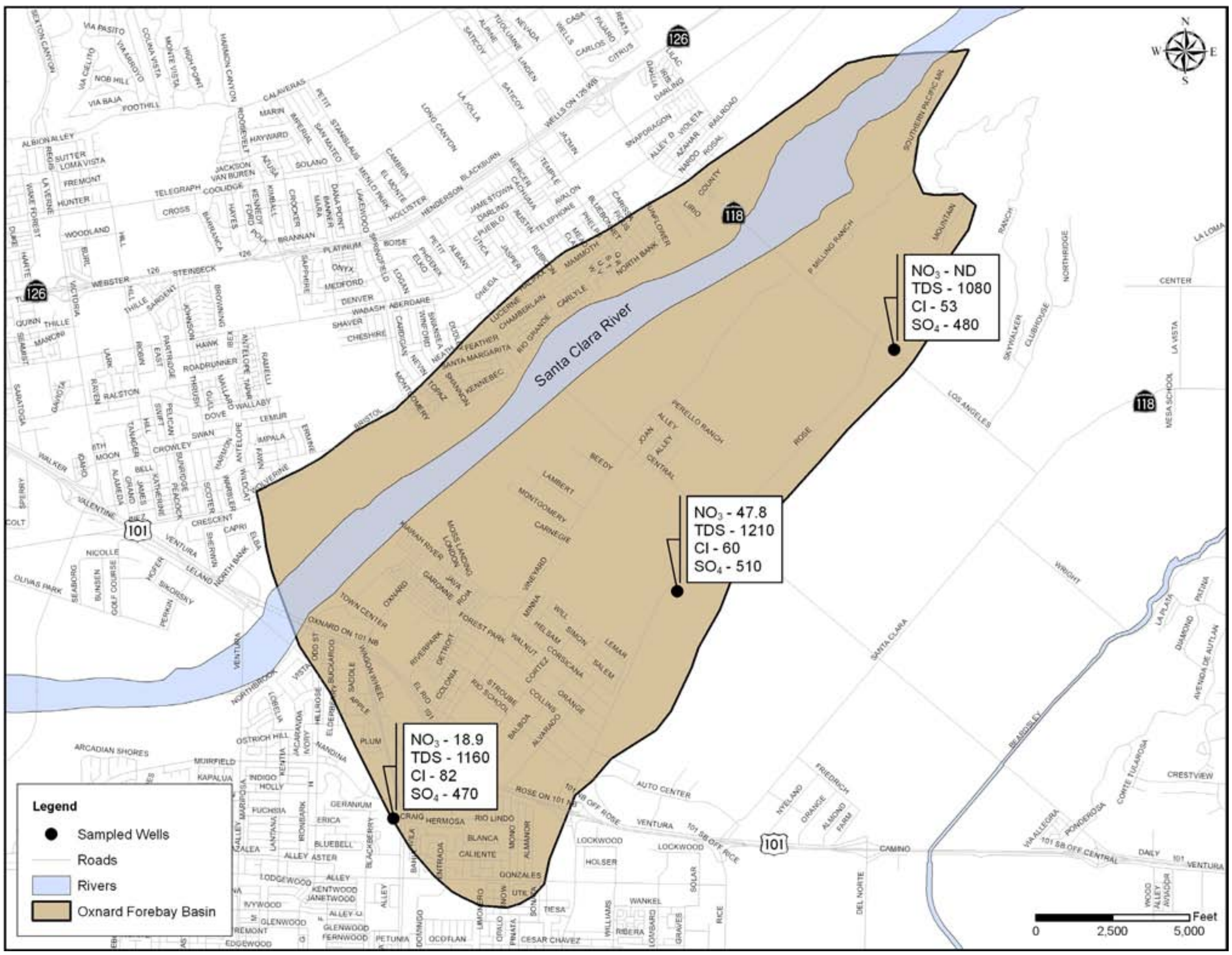

Figure 3-12: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.10 - South Las Posas Basin

The South Las Posas Basin has had no significant change in water quality over the past year. The upper water bearing unit is approximately 25 to 50 feet below ground surface and the lower is at approximately 350 to 500 feet deep. Generally, deeper wells perforated in the Fox Canyon aquifer tend to have better water quality, but that difference is not shown in these samples. Well 07B02 is perforated much deeper than the other two wells sampled but the chemistry is similar. Water from all five wells sampled has TDS and SO_4^{2-} concentrations above the MCL for drinking water and slightly elevated chloride; not above the MCL for drinking water (but high enough to be detrimental for some agricultural uses). Water samples from two wells were analyzed for inorganic chemicals (Title 22 metals). No inorganic constituent was above the MCL. Figure 3-15 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in the South Las Posas Basin.

SOUTH LAS POSAS BASIN

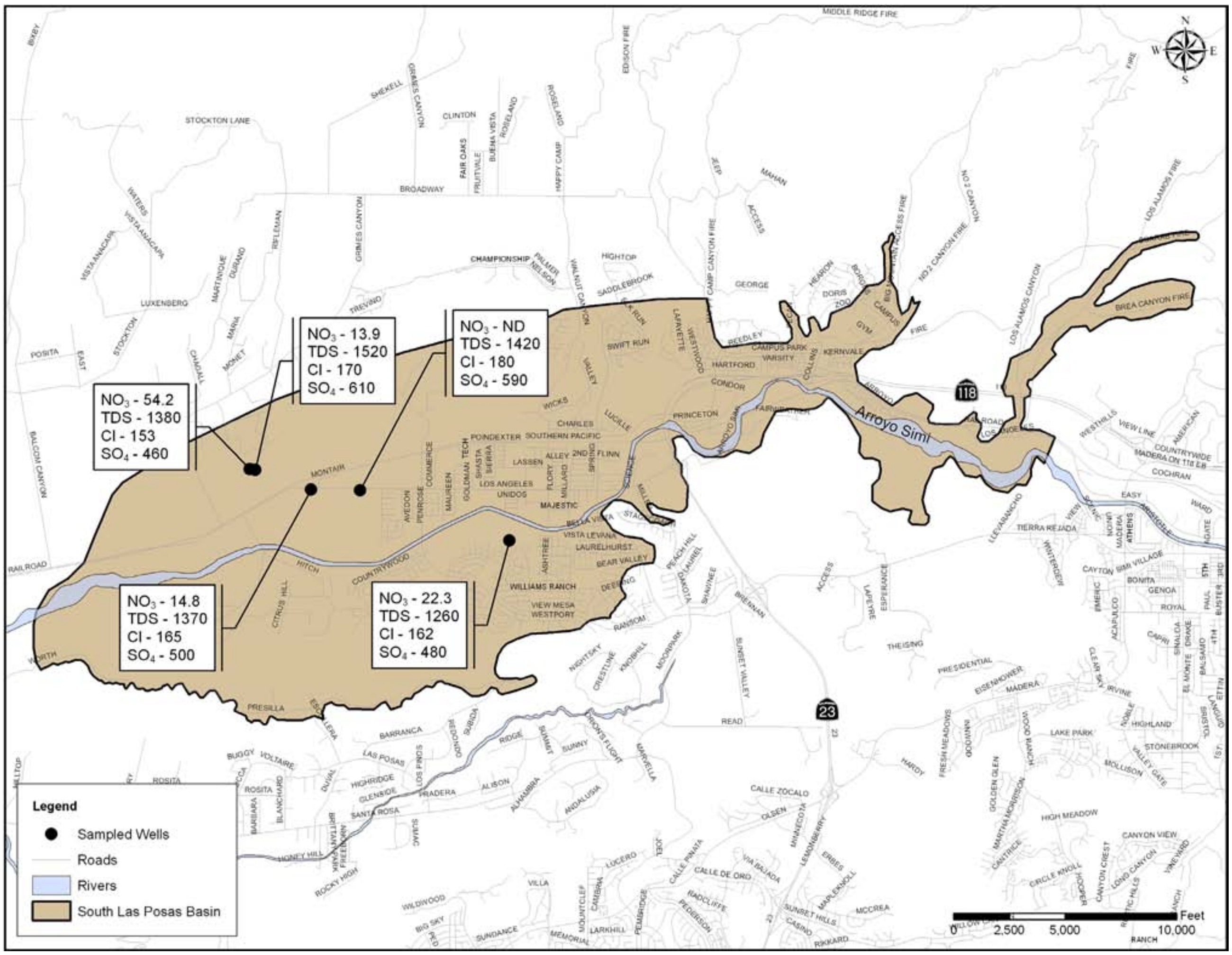

Figure 3-13: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.11 - Lower Ventura River Basin

The Lower Ventura River Basin has few remaining active water wells available for sampling. Depth to the water bearing unit is 3 to 13 feet in the floodplain and deeper as the ground surface elevation increases towards the edge of the basin. The two wells sampled this year are located in river alluvium near the coast. Total dissolved solids and sulfate concentrations are above the MCL, otherwise, both have relatively good water quality. Water samples from both wells were analyzed for inorganic chemicals (Title 22 metals). No inorganic constituent was above the MCL. Figure 3-14 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in the Lower Ventura River basin.

LOWER VENTURA RIVER BASIN

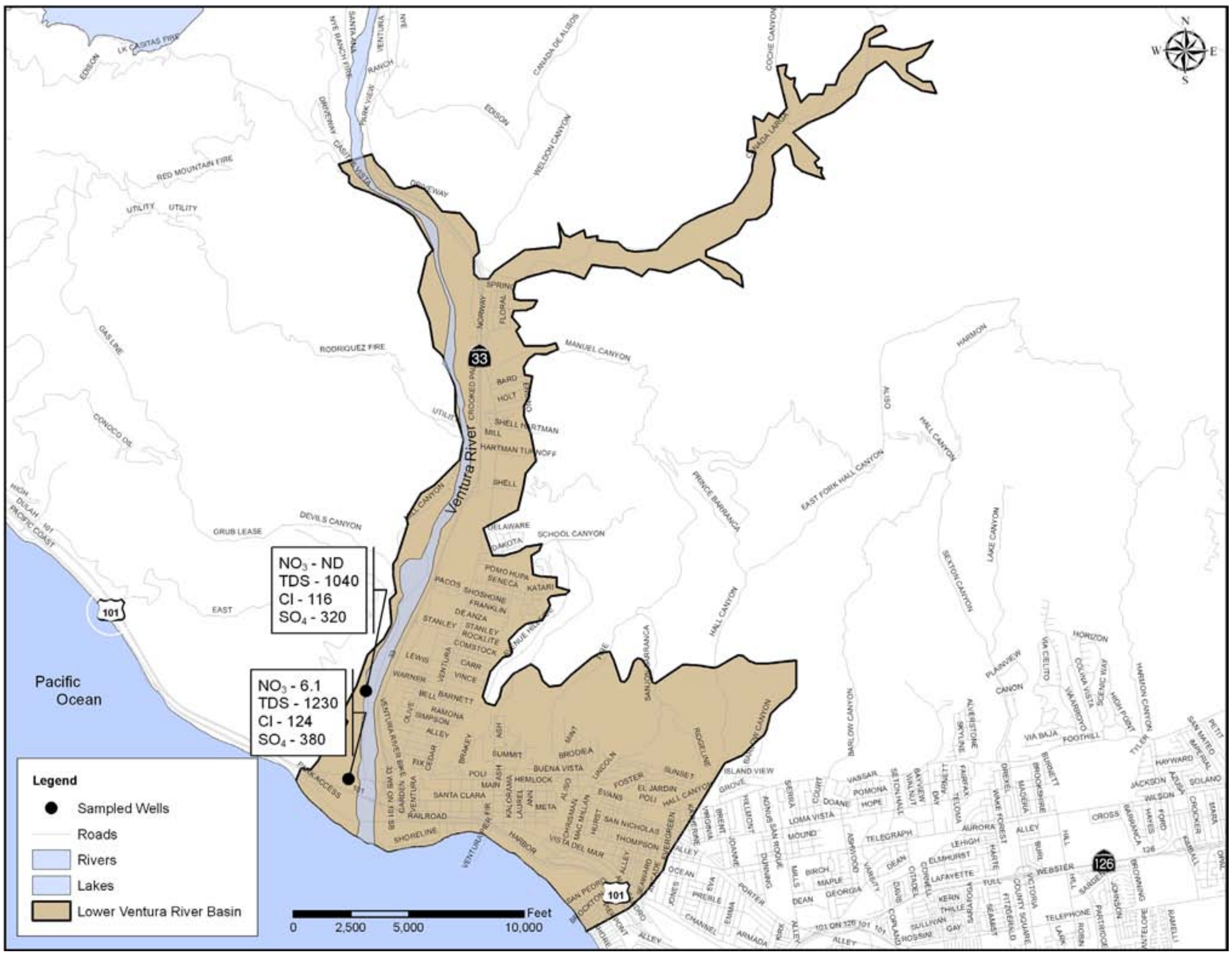

Figure 3-14: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.12 - Cuyama Valley Basin

The Cuyama Basin is in a remote area in northwestern Ventura County. Even though one of the wells sampled is located just south of an active gypsum mine, except for TDS concentrations above the MCL for drinking water, quality is relatively good with no other constituents above the MCL. It does not appear that mining activities affect groundwater quality. Water samples from all three wells were analyzed for inorganic chemicals (Title 22 metals). No inorganic constituent was above the MCL. Groundwater Bulletin No. 118 indicates groundwater quality has been deteriorating in some areas because of the constant cycling and evaporation of irrigation water. Depth to the main water bearing unit varies between 40 to 170 feet. Figure 3-17 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in the Cuyama Valley basin.

CUYAMA VALLEY BASIN

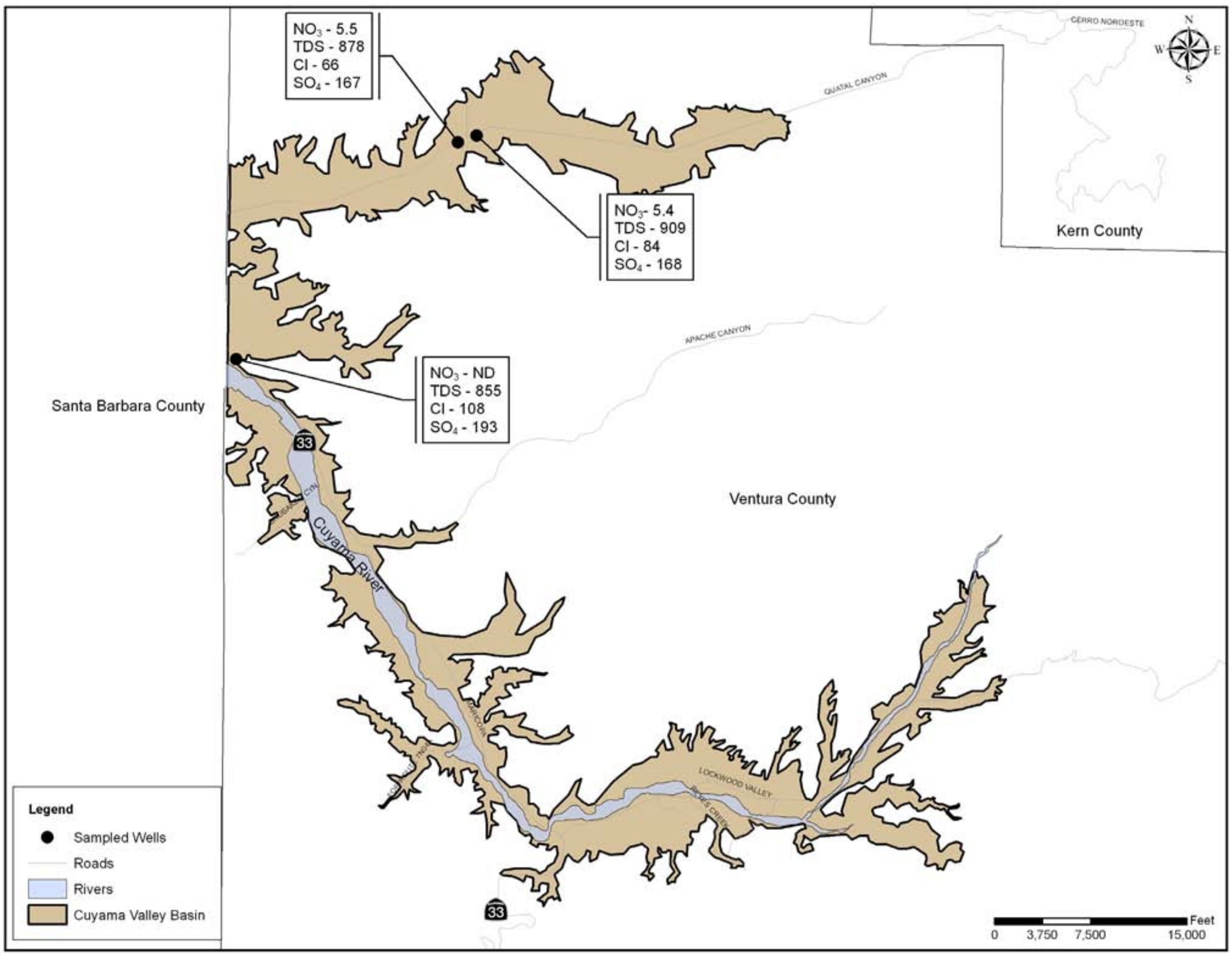

Figure 3-15: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.13 - Simi Valley Basin

The Simi Valley Basin drains to the west and historically, water quality gets worse farther west in the basin. Depth to water bearing material is approximately 5 to 25 feet below ground surface. The City of Simi Valley has a high water table at the west end of the valley and several extraction wells have been installed to remediate the problem when groundwater gets to high. Data from the wells sampled this year support the trend of worsening water quality to the west. The well located at the east end of the valley has the best water quality with no constituents, except TDS, above the MCL for drinking water. Water samples from the remaining three wells, located in the western half of the basin, have concentrations above the MCL for SO_4^{2-}, and TDS and two have elevated NO_3^-. All three samples also have concentrations of boron and chloride that cause agricultural beneficial uses for sensitive plants to be impaired, but neither contaminant is above the MCL for drinking water. Two samples were analyzed for inorganic chemicals (Title 22 metals). None of the inorganic chemicals was above the MCL for drinking water. Figure 3-18 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in the Simi Valley basin.

SIMI VALLEY BASIN

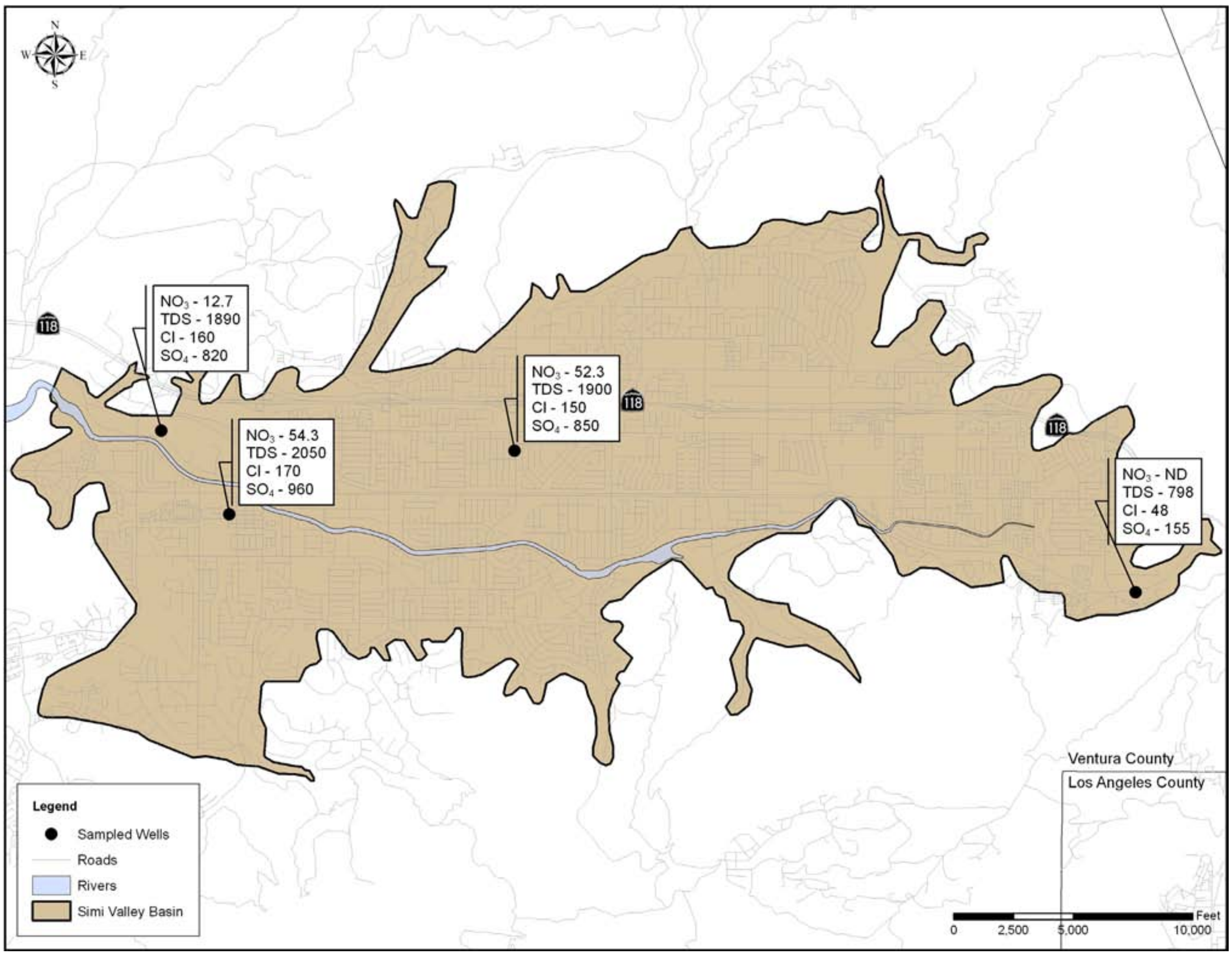

Figure 3-16: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.14 - Thousand Oaks Basin

The Thousand Oaks Basin has very few active water wells available for sampling. Two wells were sampled in the basin this year. Concentrations of iron, manganese, sulfate and TDS are above the MCL. One water sample was analyzed for inorganic chemicals (Title 22 metals). None of the inorganic chemicals was above the MCL for drinking water. The depth to the water bearing unit is approximately 25 to 30 feet. Figure 3-19 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in Thousand Oaks basin.

THOUSAND OAKS BASIN

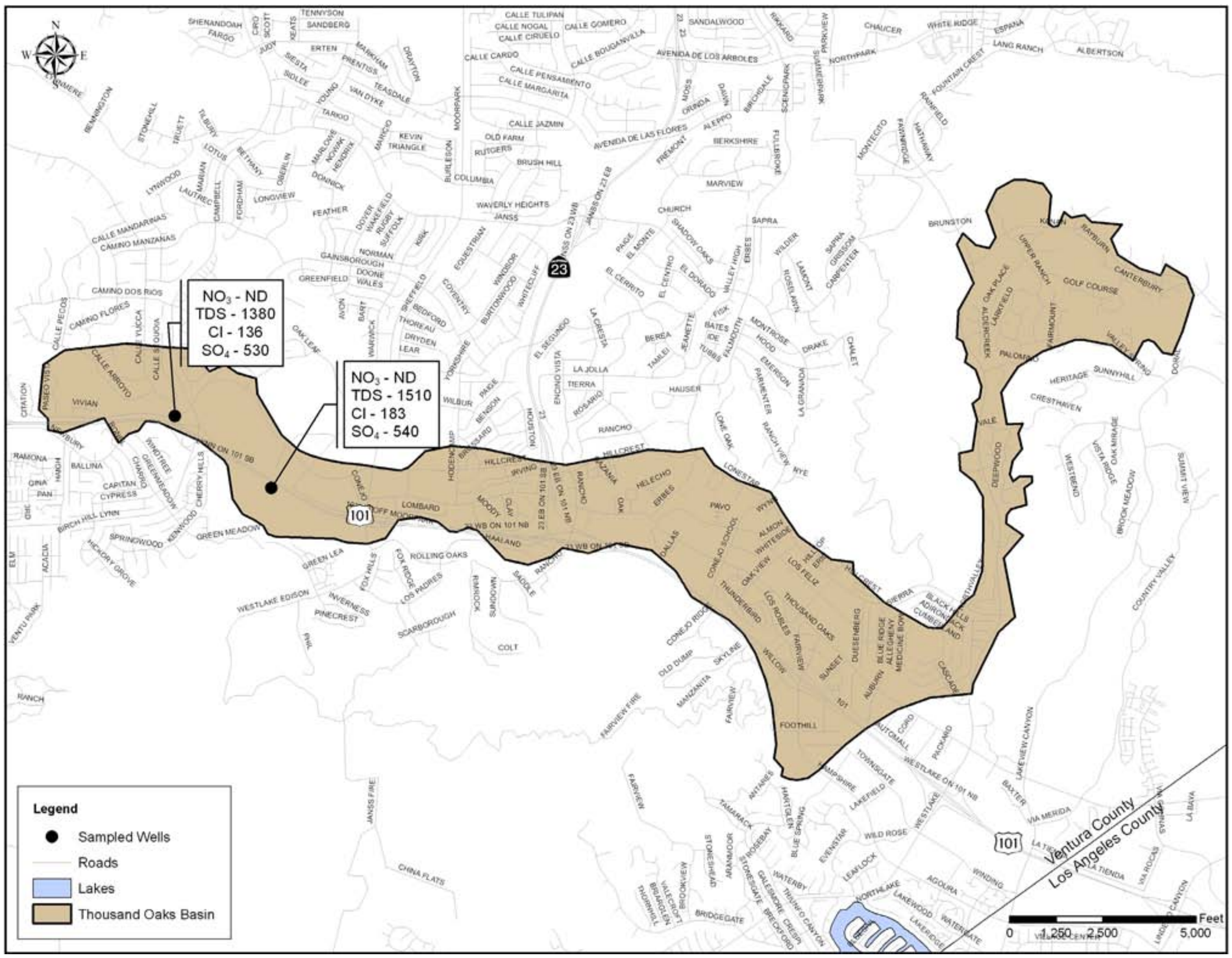

Figure 3-17: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.15 - Tapo/Gillibrand Basin

The Tapo/Gillibrand Basin is located to the north of Simi Valley and has very good groundwater quality. The City of Simi Valley operates several wells in the basin as a backup water supply. One well was sampled this year. It has TDS and sulfate concentrations above the MCL. The water sample was also analyzed for inorganic chemicals (Title 22 metals). No inorganic chemical was above the MCL for drinking water. Depth to the water bearing material is approximately 125 to 150 feet. Figure 3-20 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in Tapo/Gillibrand basin.

TAPO/GILLIBRAND BASIN

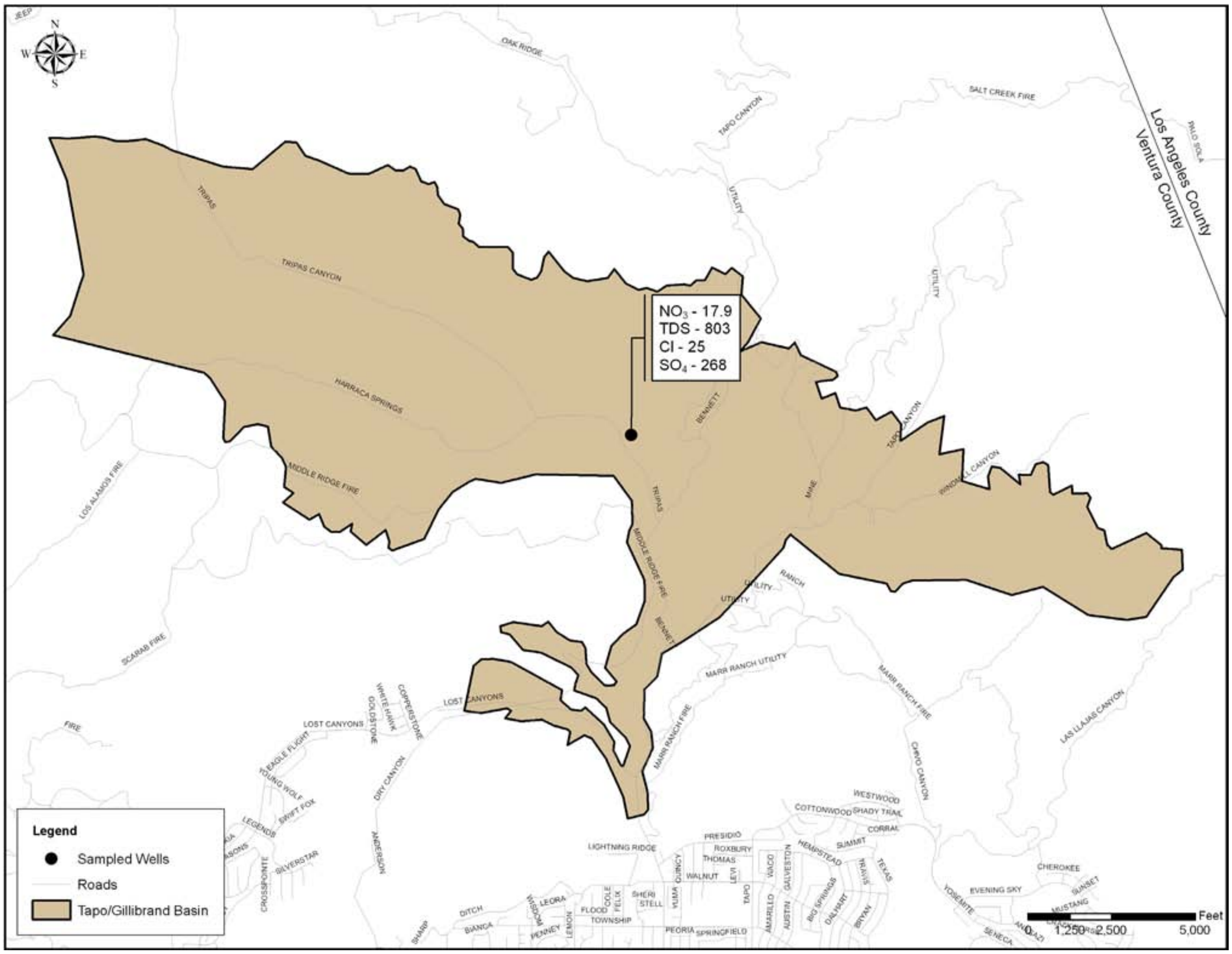

Figure 3-18: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.16 - Arroyo Santa Rosa Basin

The Arroyo Santa Rosa Basin has a large area dedicated to agricultural use and a high number of individual septic systems. A large portion of recharge to the basin is discharge from the Thousand Oaks Hill Canyon Wastewater Treatment Plant. Water from six of the nine wells sampled this season has iron (Fe) and nitrate (NO_3^-) concentrations higher than the MCL. All nine wells have TDS concentrations above the MCL with an average of 965 mg/l. The water sample from one well was analyzed for inorganic chemicals (Title 22 metals). No inorganic chemical was above the MCL for drinking water. Depth to water bearing material is approximately 50 feet. Figure 3-19 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in the Arroyo Santa Rosa basin.

ARROYO SANTA ROSA BASIN

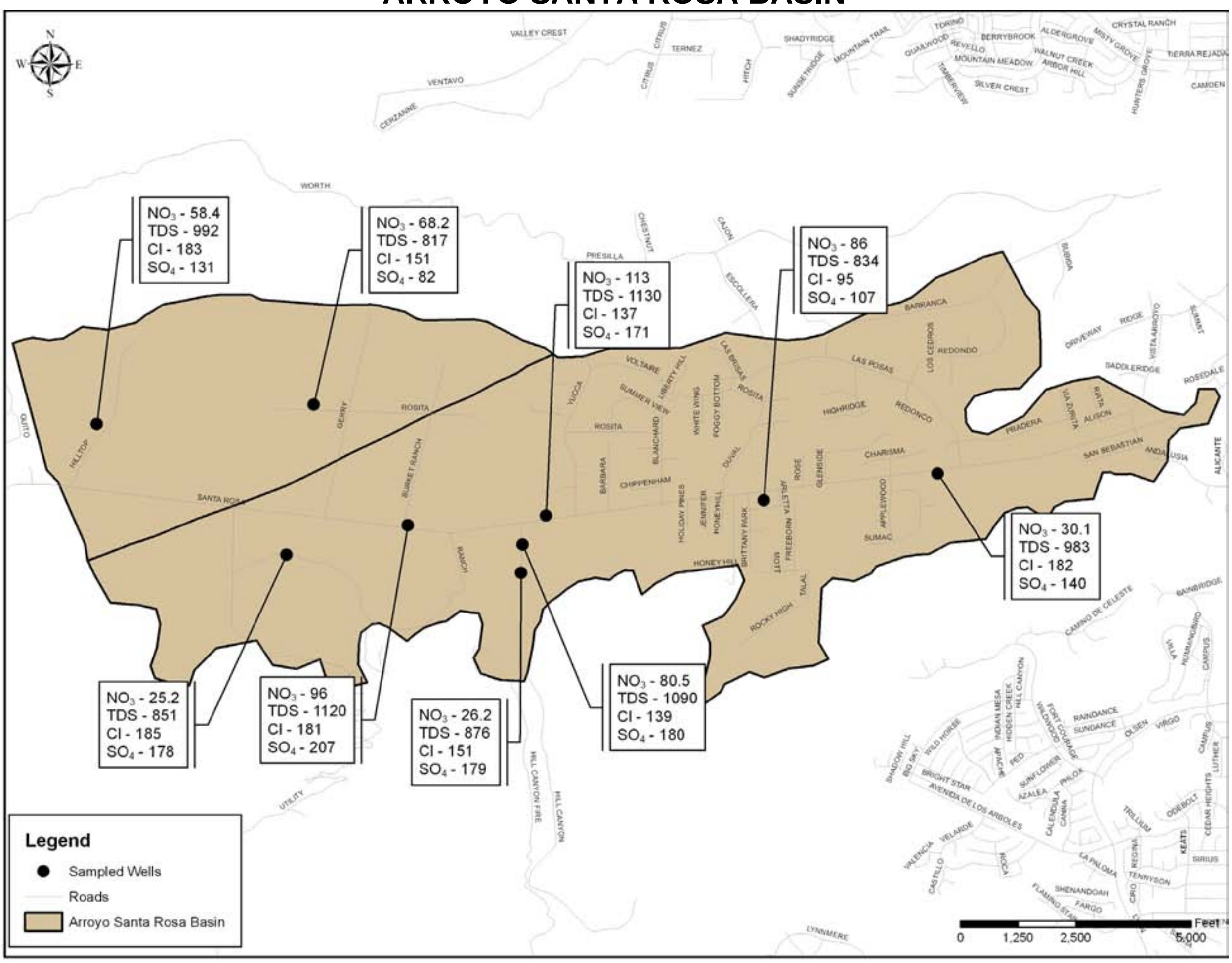

Figure 3-19: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

Figure 3-20 shows the geographic distribution of the wells sampled, with graduated symbols representing nitrate concentration. Figure 3-21 shows nitrate results for 1998 through 2010 in the same manner. The Groundwater Section has used three or more wells with nitrate concentrations above the state MCL in a given year as the criteria to classify the basin as nitrate-impacted. Comparison of the two shows that the Arroyo Santa Rosa Basin has remained nitrate impacted for at least ten years. Management practices now in place include limiting the number of large animals, limiting the size of new construction, and limiting septic systems to lots greater than 2.875 acres.

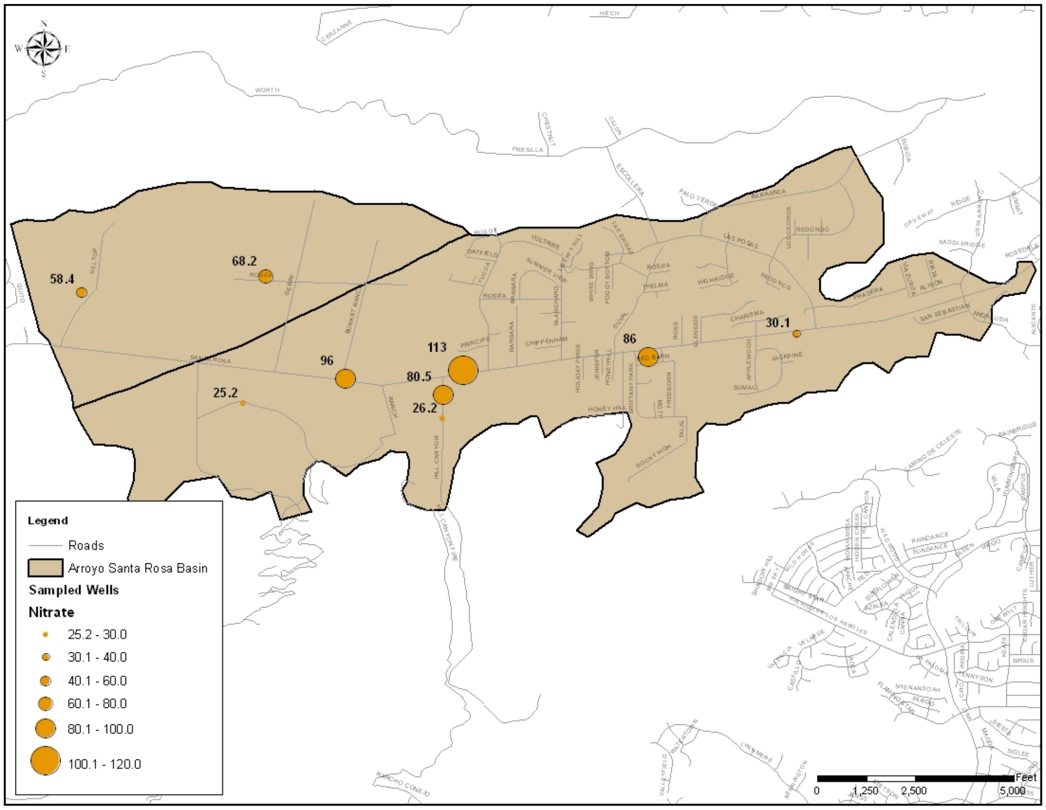

Figure 3-20: Map showing Nitrate results in mg/l for the year 2010.

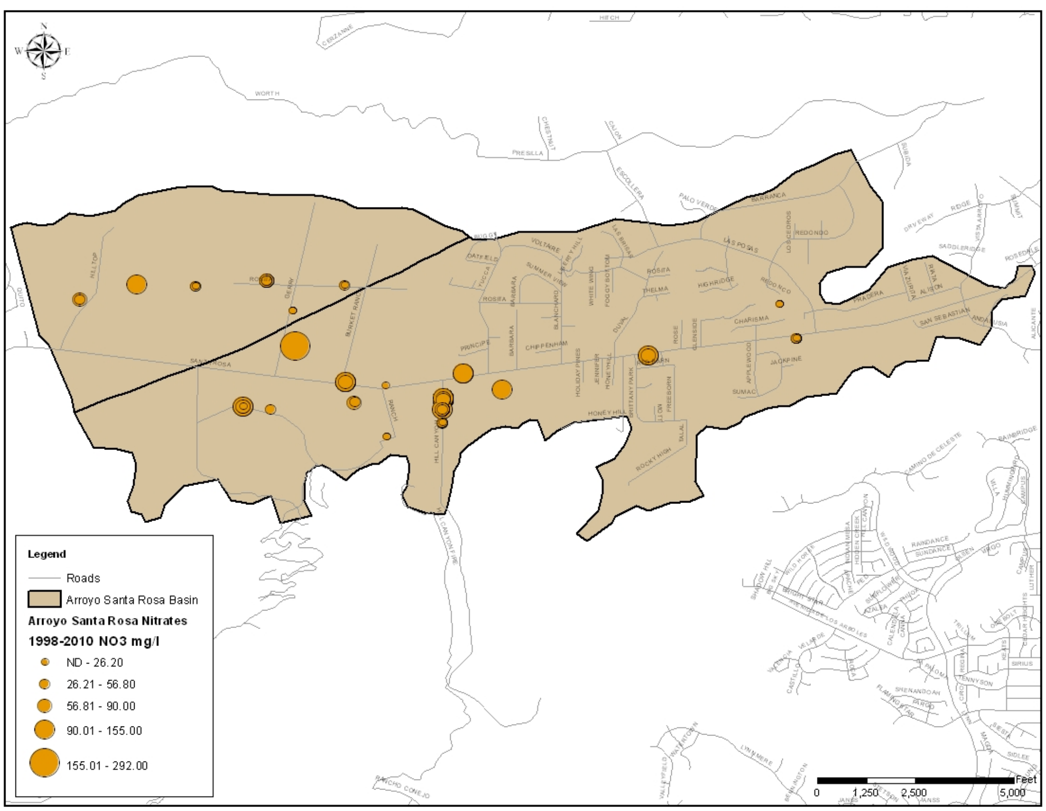

Figure 3-21: Map showing nitrate results for 1998 to 2010.

3.2.17 - Ojai Valley Basin

The Ojai Valley Basin water quality is considered good. Average TDS is 870 mg/l and ranges from 606 to 1300 mg/l. In the past, one well has consistently had an extremely high chloride concentration; two to three times the MCL. That is not the case this year. Further study is required to determine the reason for this sudden change. Water samples from six wells were analyzed for inorganic chemicals. No constituent was above the MCL. Depth to water bearing material is generally between 25 to 30 feet below ground surface. Figure 3-24 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in the Ojai Valley basin.

OJAI VALLEY BASIN

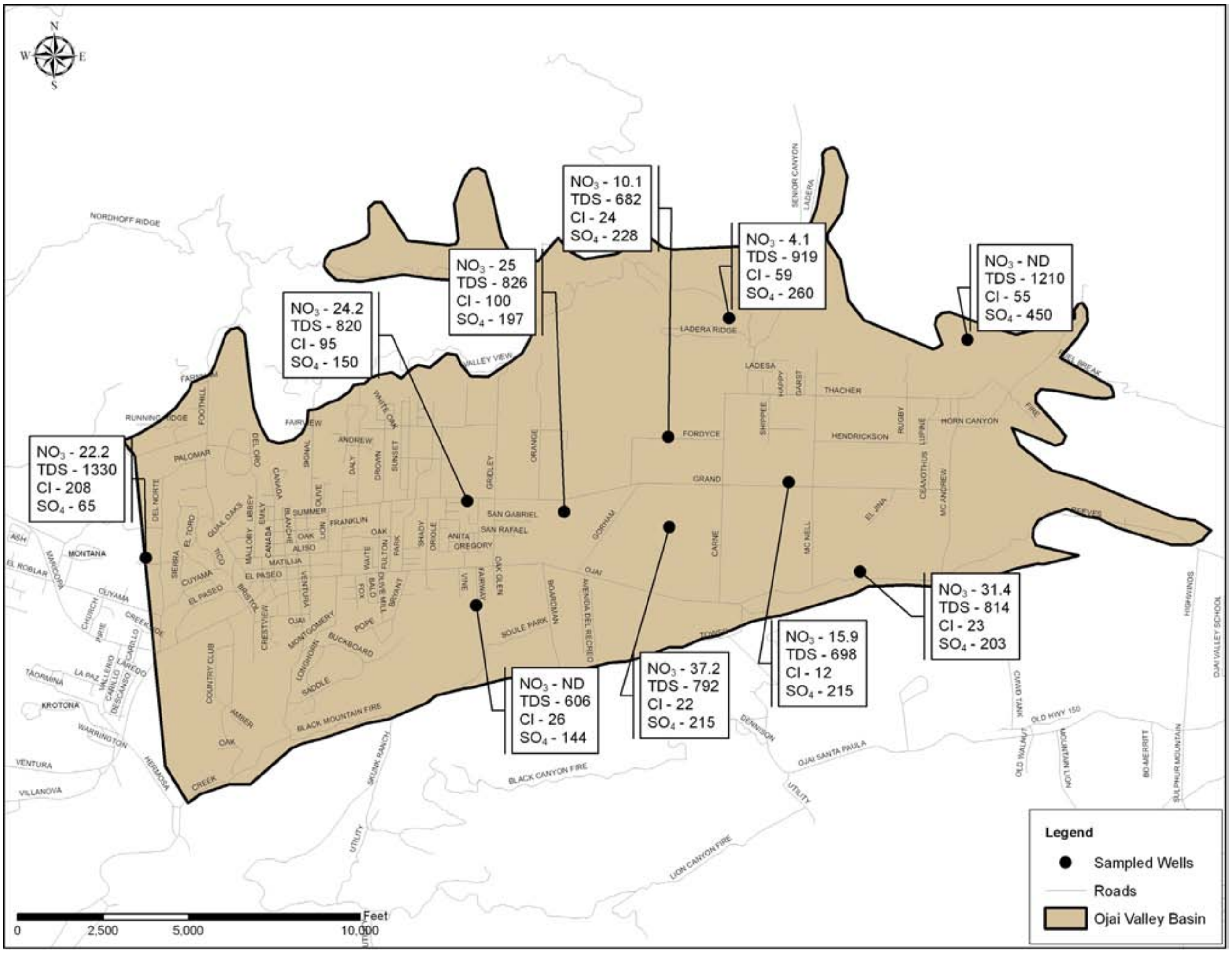

Figure 3-22: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.18 - Lockwood Valley Basin

The Lockwood Valley Basin groundwater quality ranges from good to unhealthful. The basin covers a large geographic area, approximately 34.1 square miles, and water bearing units vary. Depth to water bearing material is approximately 55 to 60 feet. Piper and Stiff diagrams in Appendix D, Figure D-21 show a variation in groundwater quality. Three wells were sampled this year and of those, all have TDS concentrations above the MCL for drinking water and one has sulfate (SO_4^{2-}) above the MCL. Samples from all three wells were also analyzed for inorganic chemicals. One well had an arsenic concentration above the MCL for drinking water. Water from one well was tested for radionuclides. The result for gross alpha was above 5 pCi/L, requiring the sample to be analyzed for uranium (see discussion in section 3.2.4 – Piru Basin for details regarding sampling protocols). Following the additional testing, radionuclides were determined to be below the MCL for drinking water. Water quality is best in wells perforated to a depth of less than 250 feet. Figure 3-25 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in the Lockwood Valley basin.

LOCKWOOD VALLEY BASIN

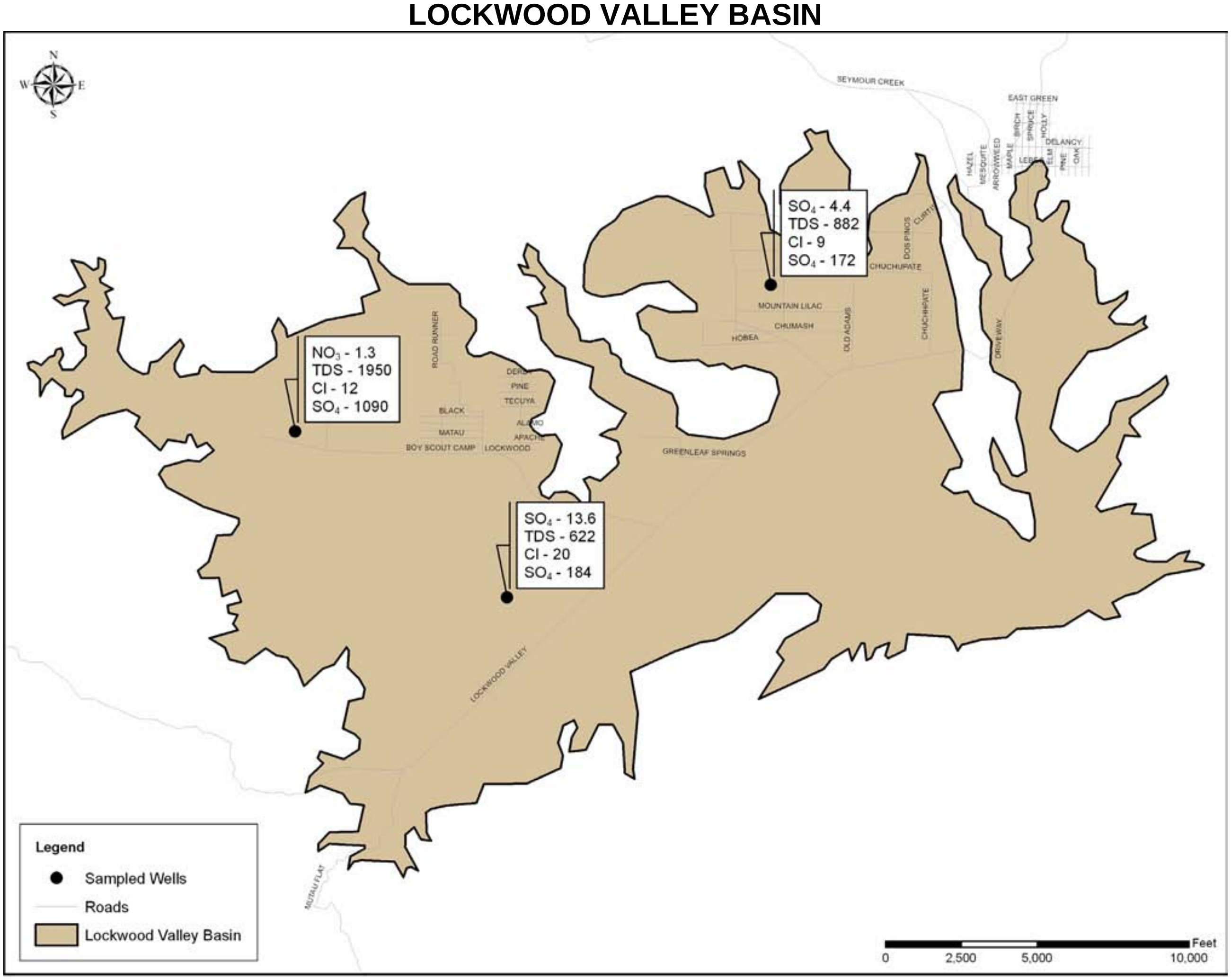

Figure 3-23: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.19 - Tierra Rejada Basin

In the past, the Tierra Rejada Basin groundwater quality has generally been considered to be good. Thirteen wells were sampled this year. All thirteen have concentrations above the MCL for TDS with an average of 834 mg/l. Nitrate concentrations in water samples from seven of the wells is above the primary MCL with an average of 46.2. For the second year in a row this basin has had more than three wells with high nitrate. As with Lockwood Valley Basin, Piper and Stiff diagrams show quite a bit of variation in water quality with well location. The major cations for the majority of the wells are calcium and magnesium and the major anions are sulfate and chloride. Two wells at the south east edge of the basin yield water that has considerably different chemistry. The major cations for those two wells are sodium and magnesium and the major anion is bicarbonate. Water samples from five wells were analyzed for inorganic chemicals (Title 22 metals). No inorganic chemical concentration was above the MCL for drinking water. Depth to water bearing materials varies between 20 to 80 feet. Figure 3-26 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in the Tierra Rejada basin.

TIERRA REJADA BASIN

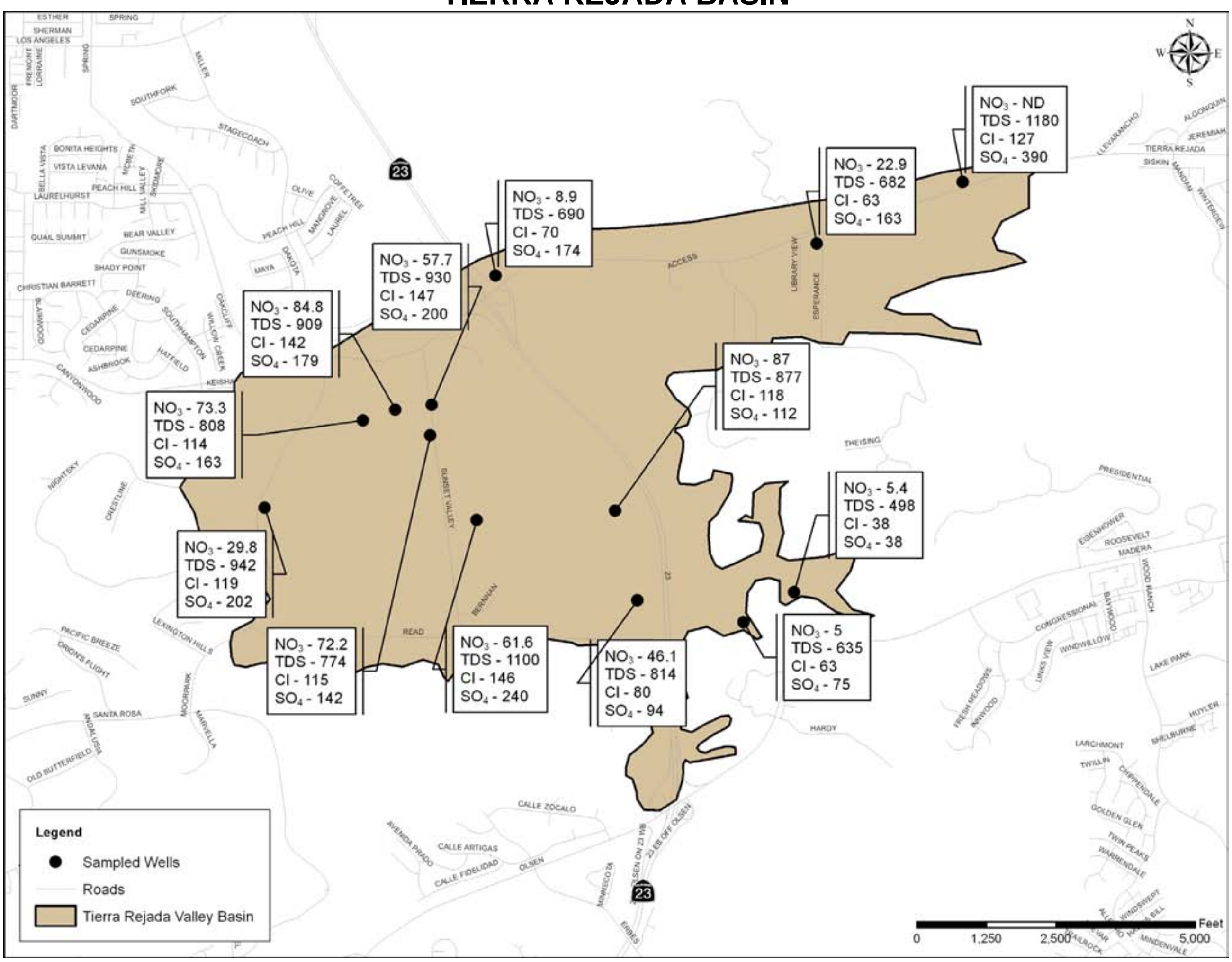

Figure 3-24: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

Figure 3-25 on the following page shows nitrate concentrations for wells sampled in Tierra Rejada Basin in 2010. Groundwater from seven of the wells sampled this year has a high nitrate concentration, thus, based on the criteria used by the Groundwater Section (See discussion in Arroyo Santa Rosa Basin section) for the second year in a row, the Tierra Rejada Basin should be considered nitrate impacted.

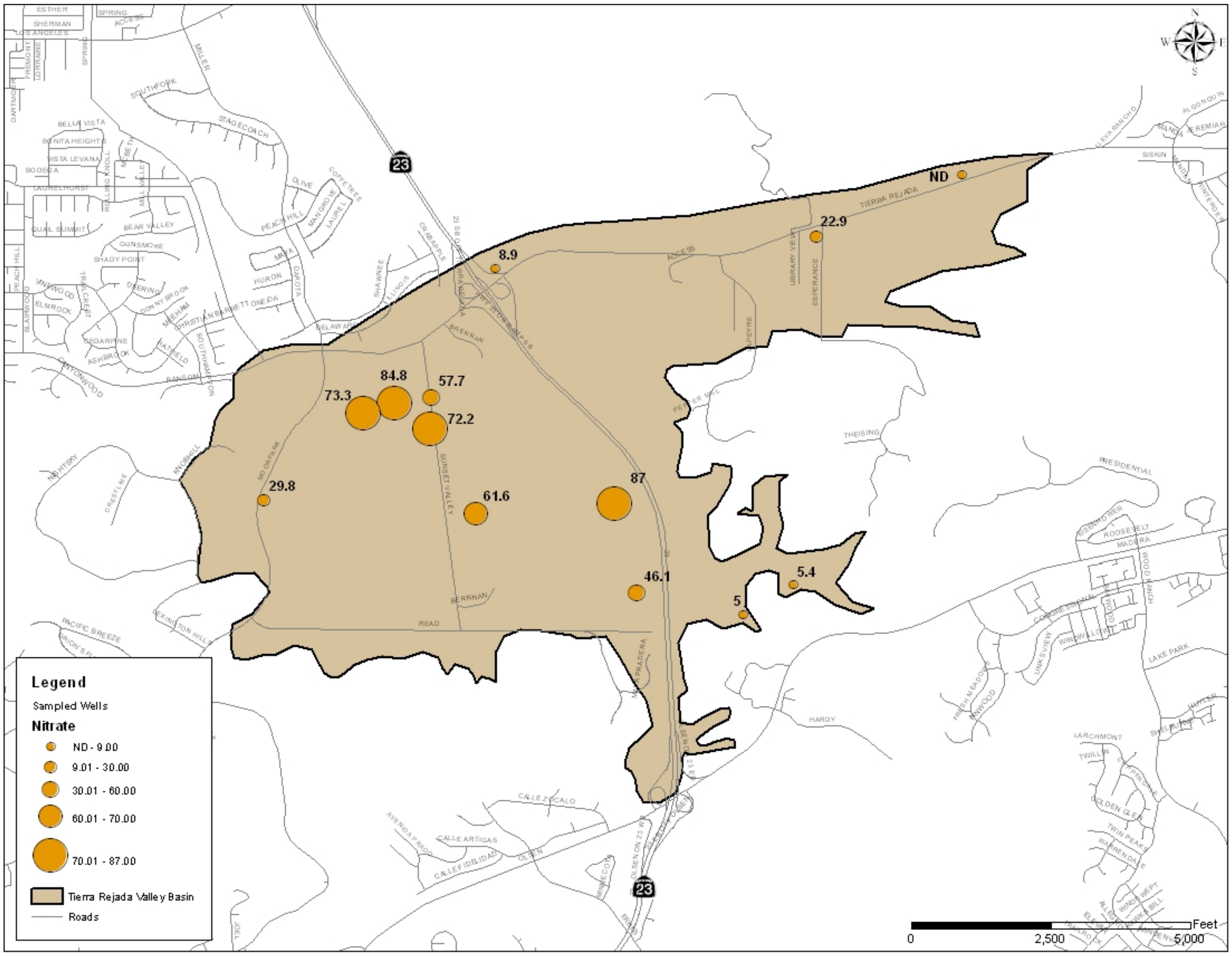

Figure 3-25: Map showing nitrate concentrations (mg/l). Seven of the thirteen wells sampled this year have a nitrate concentration above the MCL for drinking water.

3.2.20 - Upper Ventura River Basin

The Upper Ventura River Basin is mainly composed of thin alluvial deposits. The wells sampled are all less than 125 feet deep, and all have good water quality. The only constituent that exceeds the MCL for drinking water is TDS, a secondary MCL, with an average concentration of 750 mg/l. Groundwater from the three wells was also analyzed for inorganic chemicals and none of the constituents was above the MCL.

VCWPD is involved in the Matilija Dam Ecosystem Restoration Project, and as part of that project giant arundo is being removed along Matilija Creek above Matilija Dam using an herbicide called Glyphosate. Water from two wells downstream from the dam was tested for evidence of Glyphosate and results for both wells were non-detect. Figure 3-28 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in the Upper Ventura River basin.

Upper Ventura River Basin

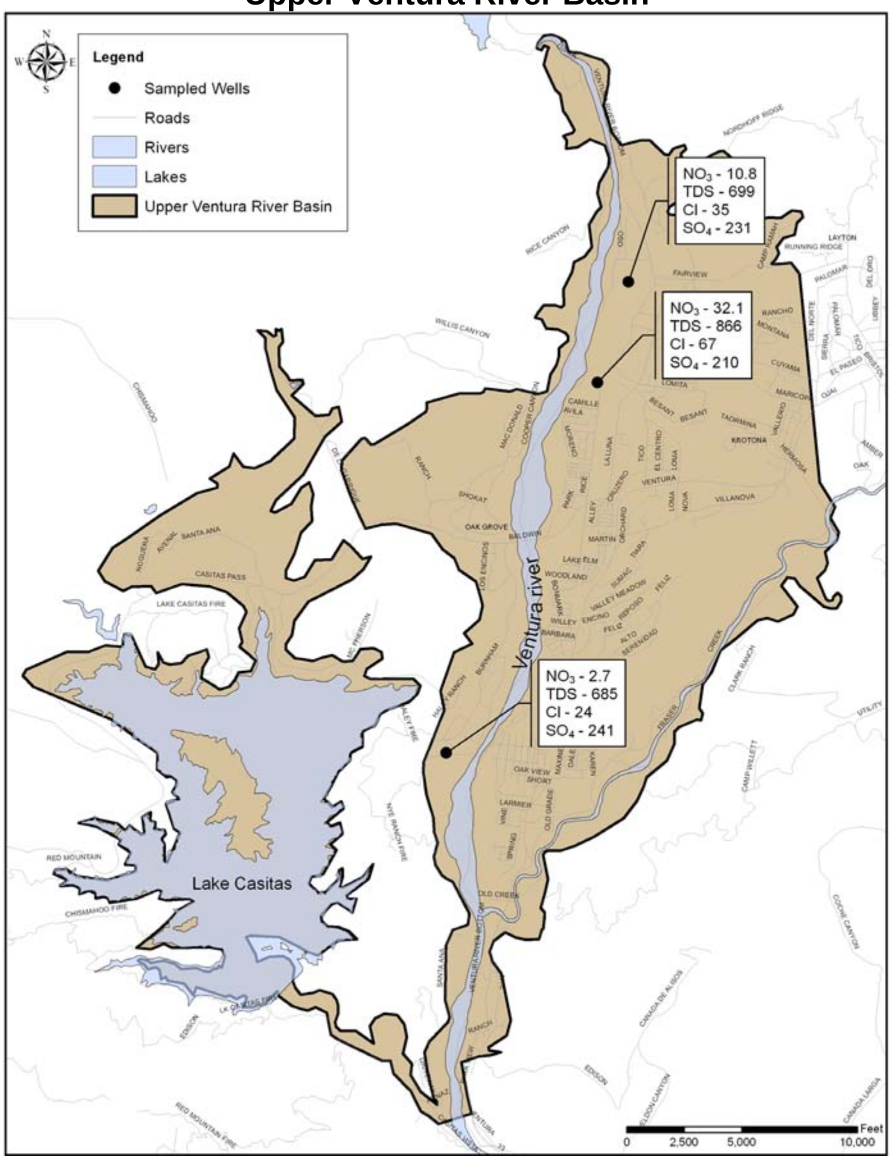

Figure 3-26: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.21 - North Coast Basin

The North Coast Basin does not fit the definition of a basin based solely on the Glossary of Geology definition as being an aquifer or aquifer system having well defined boundaries and more or less definite areas of recharge and discharge. The North Coast Basin consists of narrow, thin strips of permeable sediments and marine terrace deposits along the coastline from Rincon Creek to just north west of the Ventura River. There are only 14 active wells in the North Coast Basin with the majority in the northwest portion along Rincon Creek. Water samples were collected from one well at the northwest end and one at the southwest end of the basin. Water from one well has iron concentration above the MCL and both samples have TDS and sulfate concentrations above the MCL. Water samples from both wells were analyzed for inorganic chemicals (Title 22 metals). No inorganic chemical was above the MCL for drinking water. Figure 3-29 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) in the North Coast basin.

NORTH COAST BASIN

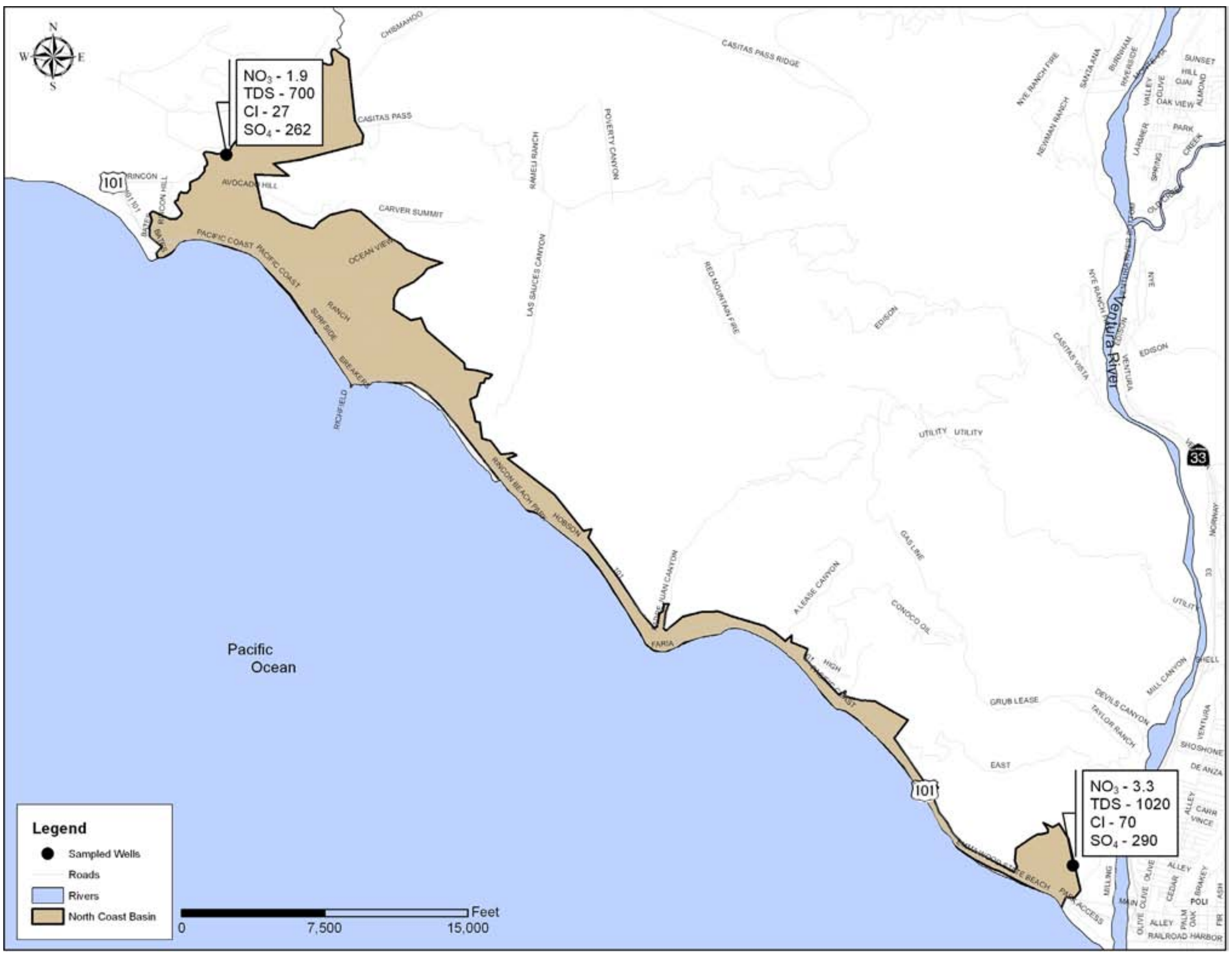

Figure 3-27: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.22 - Upper Ojai Basin

The Upper Ojai Basin is a small, linear valley southeast of and at a higher elevation than the Ojai Valley Basin. Groundwater quality is considered good, but varies seasonally, usually better during winter months. Historic average TDS is 549 mg/l. Groundwater from the wells sampled this year has an average TDS concentration of 658, a little higher than the historical average. One water sample has a nitrate (NO_3^-) concentration above the MCL for drinking water. Water samples from three wells were analyzed for inorganic chemicals (Title 22 metals). No inorganic chemical was above the MCL for drinking water. The average thickness of water bearing deposits is approximately 60 feet and is encountered approximately 45 to 60 feet below ground surface. Figure 3-30 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}).

UPPER OJAI BASIN

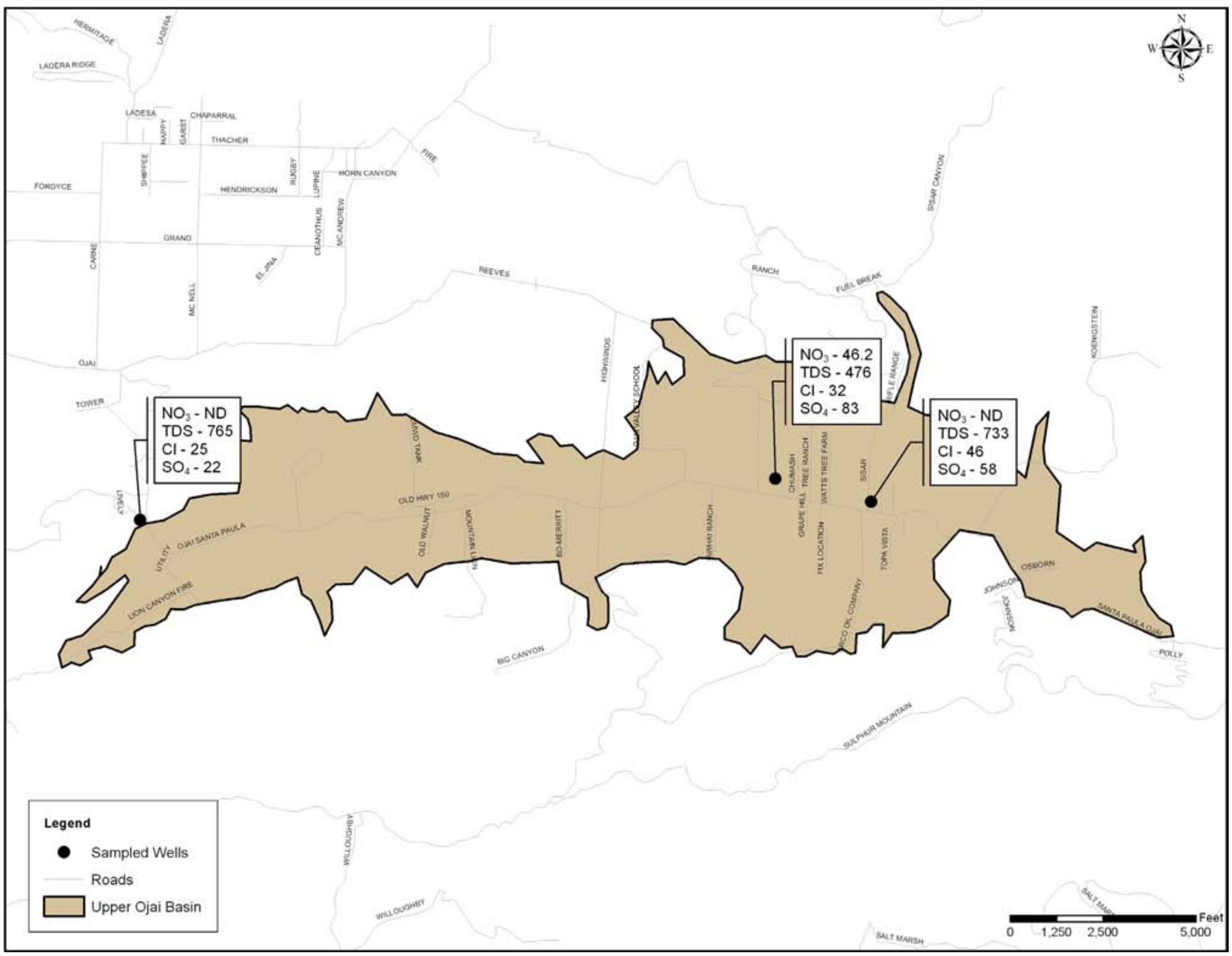

Figure 3-28: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.23 - Sherwood Basin

The Sherwood Basin consists mainly of fractured volcanic rock providing inconsistent groundwater supply and quality. Four wells were sampled and analyzed this year. Manganese is above the MCL in two wells; iron is above the MCL in two wells and TDS is above the MCL in three wells. TDS concentrations range from 436 to 1130 mg/l with an average of 772 mg/l for wells sampled this season. Water from one well was analyzed for inorganic chemicals (Title 22 metals). The aluminum (Al) concentration of 0.202 mg/l is just within the acceptable MCL for drinking water of 0.5 to 0.2. Figure 3-31 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in the Sherwood basin.

SHERWOOD BASIN

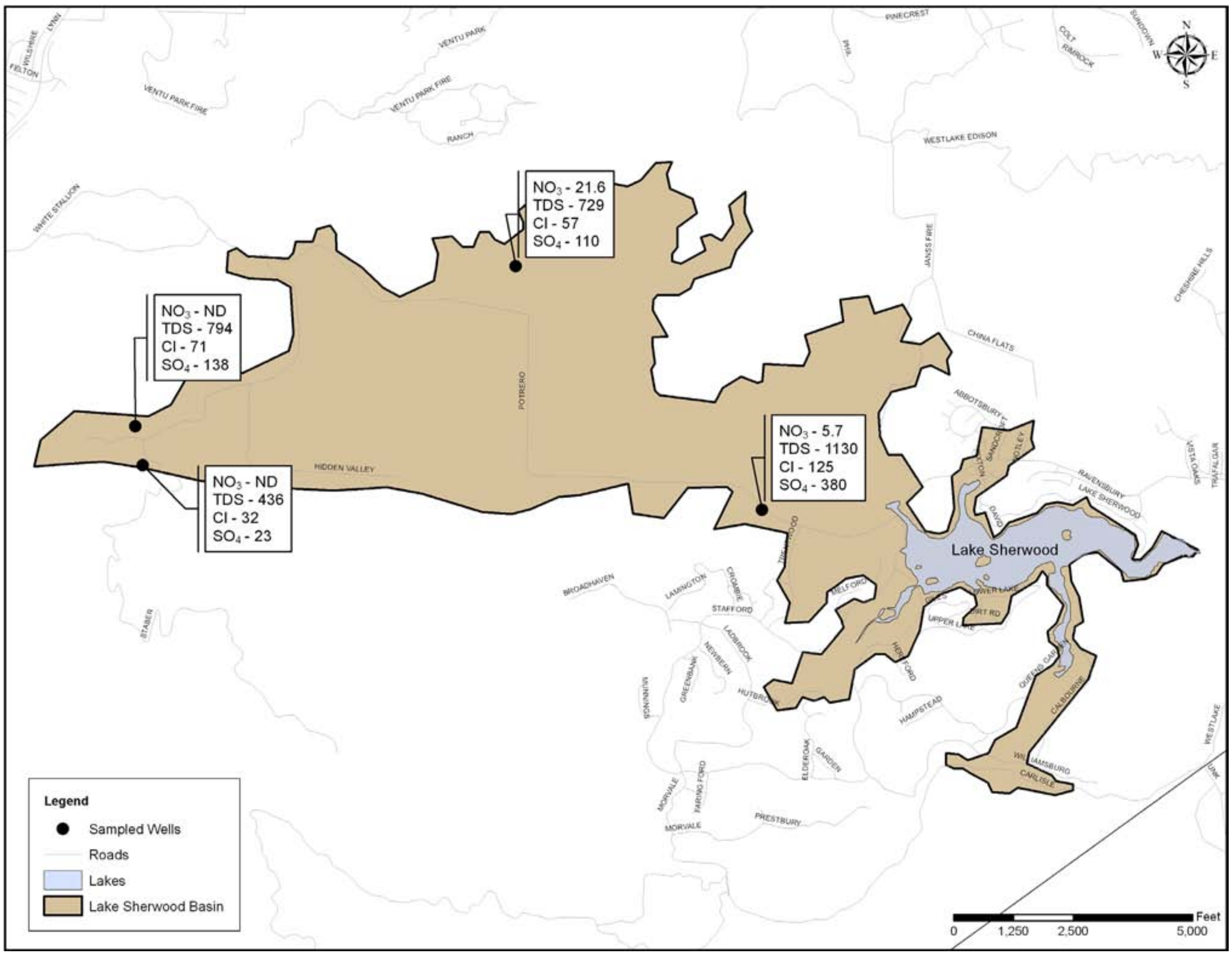

Figure 3-29: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

3.2.24 - Little Cuddy Valley Basin

The Little Cuddy Valley Basin is located in the northeastern part of Ventura County near the Kern County Line. Groundwater bearing layers consist of permeable sediment lenses in the Quaternary and Tertiary rocks and Holocene shallow alluvium with the syncline that makes up the valley floor. Depth to water bearing material is approximately 20 to 30 feet. Historically groundwater quality has been considered very good. Only one well was sampled in the basin. That water sample was analyzed for general minerals, inorganic chemicals (Title 22 metals) and gross alpha. Gross alpha was greater than 5 pCi/L so the sample was analyzed for uranium. Based on the uranium results, the sample should be analyzed for radium to determine the source of the radionuclides (see discussion in 3.2.4 – Piru Basin). The radionuclide regulations are for community water systems, but even so, if the results are similar next sampling season, we will also test for radium. No other constituent was above the MCL. Figure 3-32 shows approximate well locations and concentrations of total dissolved solids (TDS), chloride (Cl^-), nitrate (NO_3^-), and sulfate (SO_4^{2-}) for wells sampled in the Little Cuddy Valley basin.

LITTLE CUDDY VALLEY BASIN

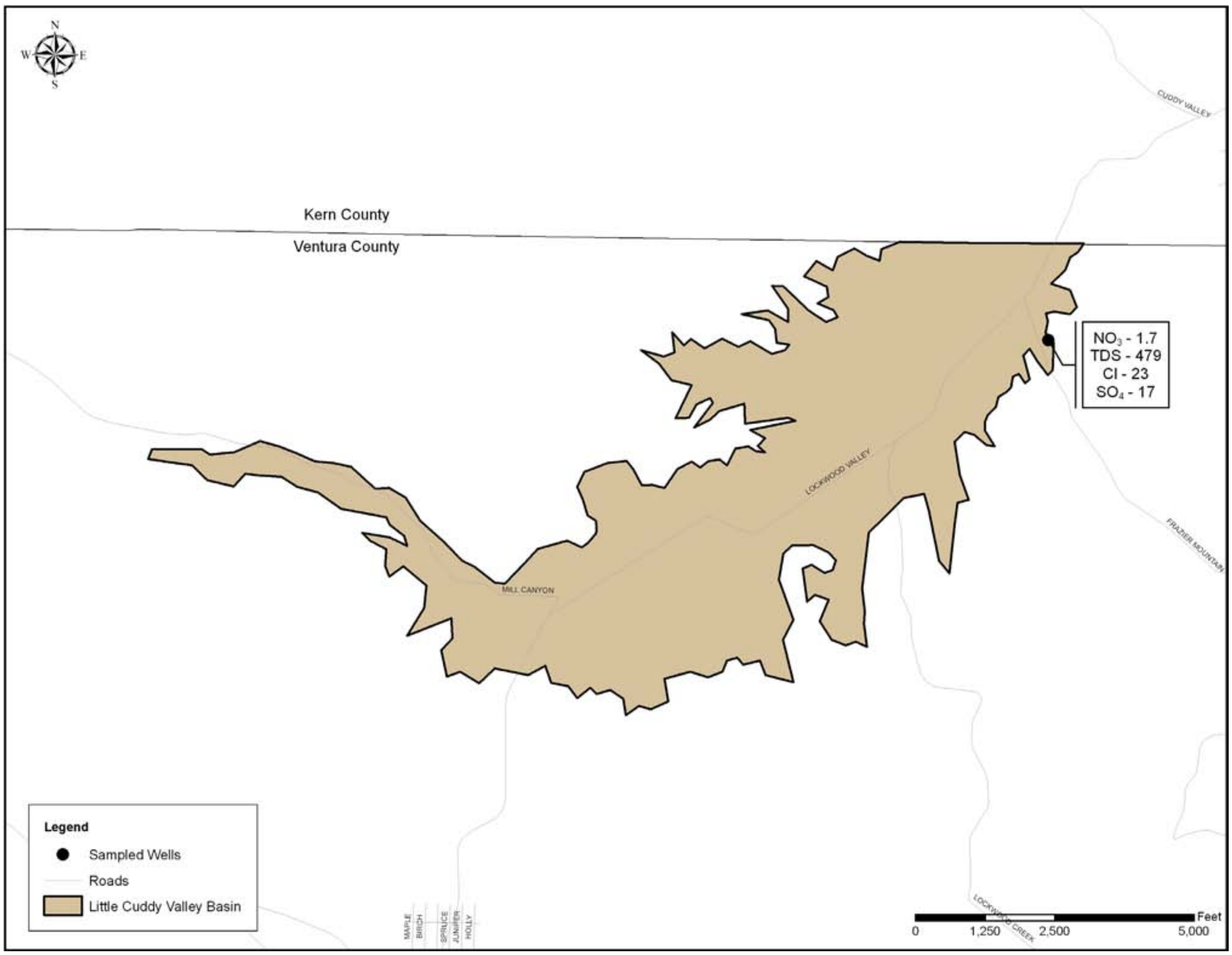

Figure 3-30: Map showing approximate location of sampled wells with concentrations (mg/l) of selected inorganic constituents.

Section 4.0
Water Quantity

4.1 – Groundwater

The following sub-sections describe the Groundwater Section's annual groundwater level monitoring program, as well as, a general overview of water use in the County for 2010.

4.1.1 – Water Level Measurements

Groundwater Section staff, and several water districts and purveyors measure water levels in production and monitoring wells throughout the County. Changes in water levels are tracked and help determine how much water each basin has in storage, and to track trends in groundwater extraction and recharge. Last year, water levels were measured every two months in approximately 200 wells throughout the County. In the southern half of the County, water levels were measured six times, while in the more remote northern half, wells are monitored twice each year. "Key" wells for seventeen of the largest groundwater basins in the County have been established. A key well is a well selected as one giving the most representational data for the basin, or for a specific aquifer in a basin. Key wells are chosen based on their location in the basin, and availability of construction information and historical water level data.

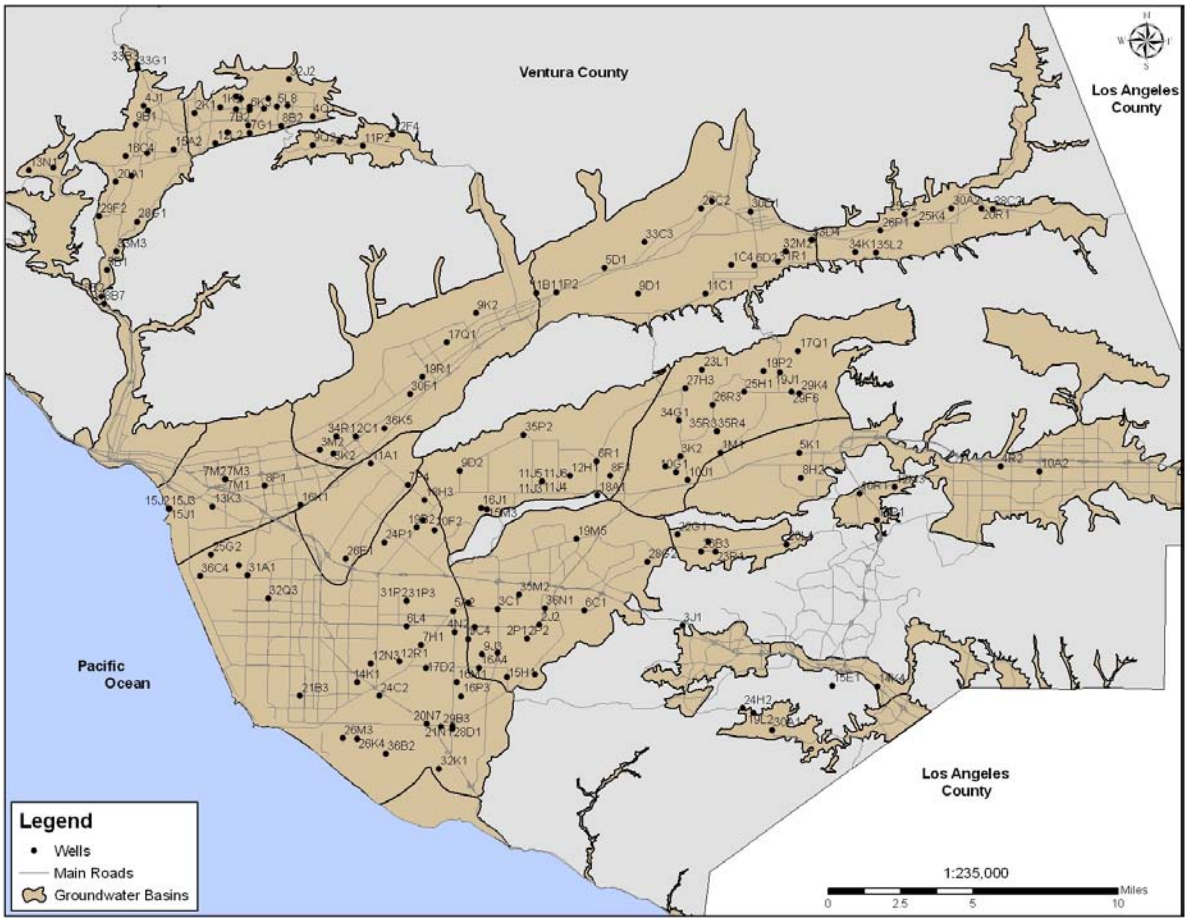

Figure 4-1: Water level wells measured in the southern half of the County.

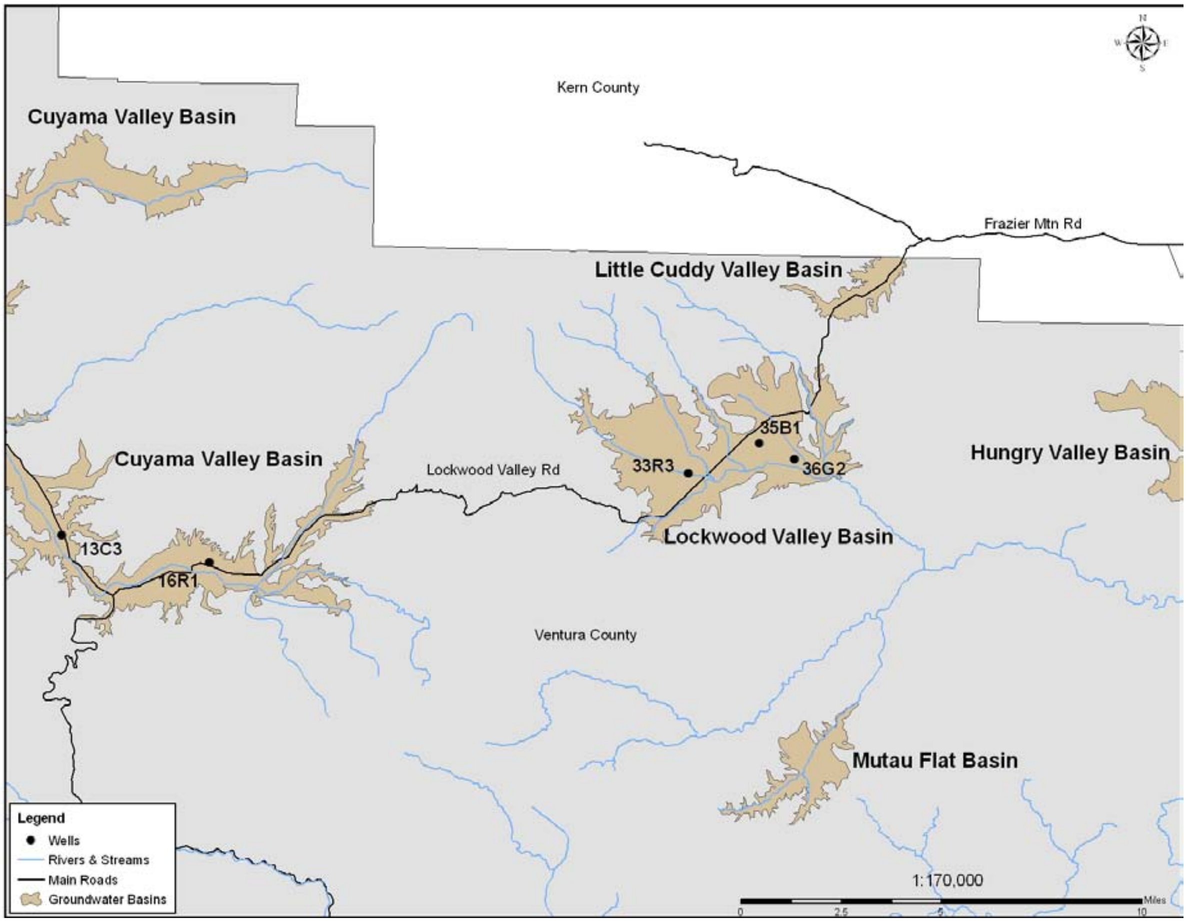

Figure 4-2: Water level wells measured in the northern half of the County.

4.1.2 – Water Level Hydrographs

The Groundwater Section maintains a database containing current and historical water levels for wells throughout the County. The database produces hydrographs for measured wells and can be used to show fluctuations in groundwater levels on a yearly basis or track long-term trends in a basin over decades. This data along with climate, stream flow, groundwater recharge, quality and pumping data can be used to determine groundwater conditions in the County. Hydrographs for all "key" water level wells are shown in Appendix B. An example hydrograph for Well No. 01N21W02J02S is shown on the following page (Figure 4-3).

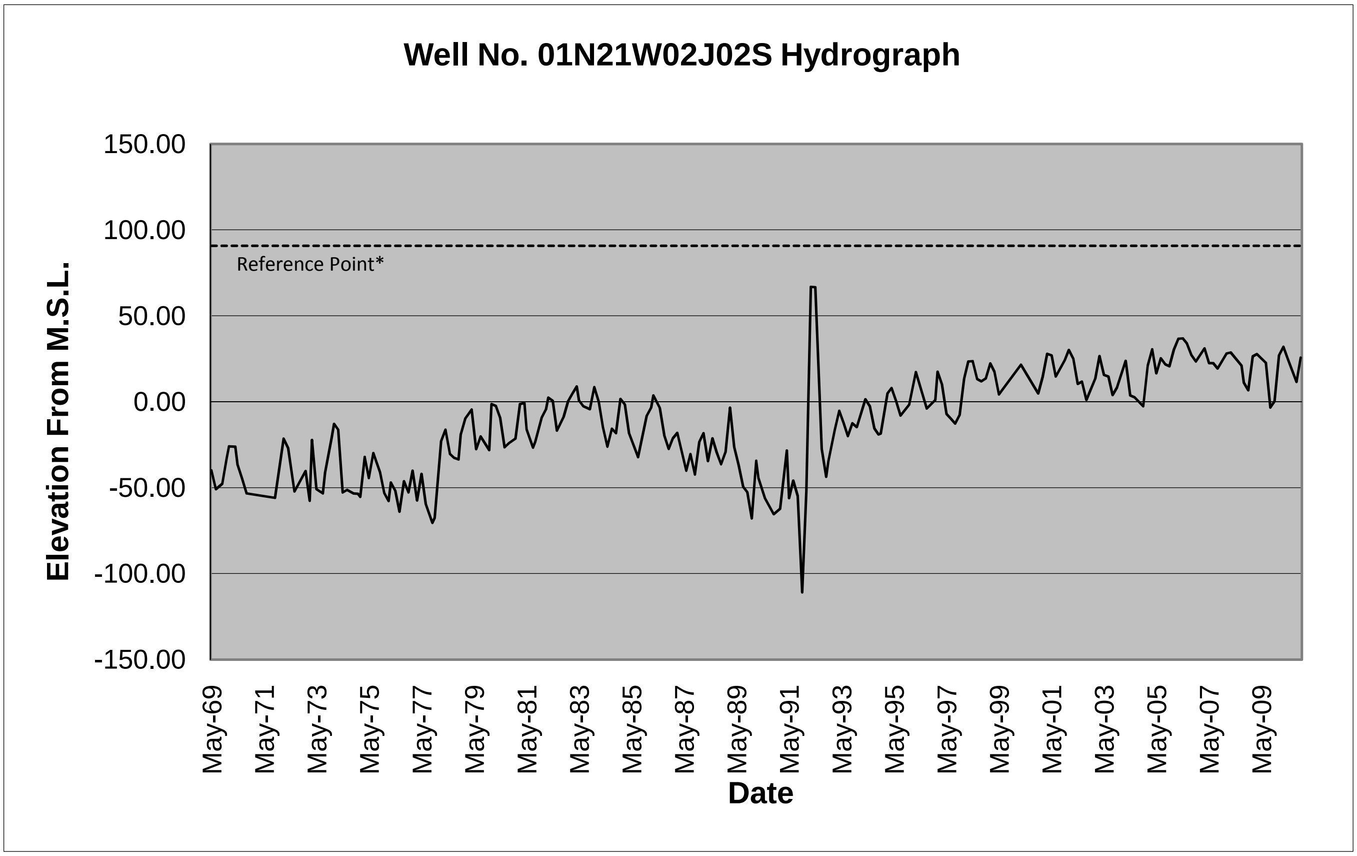

Figure 4-3: Water level hydrograph for Well No. 01N21W02J02S located in the Pleasant Valley basin. *reference point – the elevation of the measuring point of the well.

4.1.3 – Water Level Summary

The following summary is based on information gathered from key wells from major groundwater basins as shown in Table B-2 in Appendix B. The increase or decrease in water level for the year and the water level data referred to is the spring measurement or the first measurement of the year for those wells measured twice each year.

The Forebay area of the Oxnard Plain, responds quickly to seasonal and annual changes in precipitation and recharge. The water elevation in key Well No. 02N22W12R01S (UWCD) was up 7.3 feet from the 2009 measurement after being down 20.6 feet the past year. The water elevation in the Oxnard aquifer key Well No. 01N21W07H01S was down 5.9 feet after being up 4.6 feet the previous year. The water elevation in the Oxnard Plain Fox Canyon aquifer key Well No. 01N21W32K01S was up 2.0 feet above an 11.0 feet increase the previous year. In the Pleasant Valley Fox Canyon aquifer the water level elevation in key Well No. 01N21W03C01S was down 1.2 feet after being up 13.4 feet in 2009.

In the Las Posas valley, the water level elevation in the West Las Posas basin key Well No. 02N21W12H01S was up 8.0 feet from the 2009 spring measurement. In the East Las Posas basin the water level elevation in key Well No. 03N20W26R03S was down 11.3 feet continuing the decline of the last two spring measurements. The water level in this well had been declining slightly each year over the previous ten year period, with the exception of 2003 and 2007. The water level elevation in the South Las Posas key Well No. 02N19W05K01S continued its slight upward trend of the past several years but was down slightly 0.3 feet in 2010. The depth to water in this well has risen from 136 feet to 27 feet below ground surface since 1975. This trend is attributed to groundwater recharge from treated effluent from upstream waste water treatment plants and groundwater discharge to surface from the Simi Valley basin.

In the Santa Rosa Valley the water level elevation in key Well No. 02N20W26B03S was up 7.1 feet in 2010 after being down 5.7 feet in 2009. The water level elevation in the Simi Valley Basin key Well No. 02N18W10A02S was down 1.7 feet after being up slightly 0.2 feet in 2009. This well has seen only slight changes in depth over the past eight years (less than plus or minus 10 feet).

In the Ojai Valley, the water level elevation in key Well No. 04N22W05L08S recovered 13.0 feet after being down 31.1 feet in 2009. The Ojai Valley basin responds quickly to rainfall or the lack of rainfall, and it is not uncommon to see large drops in water level during dry periods and recovery to at or above normal levels during wet periods (see Hydrograph in Appendix B). In the northern end of the Upper Ventura River Basin, the water level elevation in key Well No. 04N23W16C04S was up 3.2 feet after being down 4.0 feet in 2009.

The basins that underlie the Santa Clara River valley are other areas that respond quickly to fluctuations in annual rainfall. The water level elevation in the Piru basin key well was up slightly 0.7 feet after being down 4.1 feet, the water level elevation in the Fillmore basin key well was down 4.1 feet after being up 3.7 feet, and in the Santa Paula basin the water level elevation in the key well was down 0.6 feet after being up 1.2 feet from the previous year's measurement. In the Mound basin the water level elevation in key Well No. 02N22W07M02S was down 3.5 feet after being up 9.4 feet in 2009.

In the north half of the County the Lockwood Valley basin key Well No. 08N21W35B01S was up 24.6 feet after being down 4.1 feet, the first rise in level after a four year decline after the wet year of 2005. The trend for this well had been a slight increase in water level elevation from the record low set in October of 1991. In the Cuyama Valley basin key Well No. 07N23W16R01S was up 1.3 feet after being down 7.4 feet in 2009.

4.1.4 – Groundwater Extractions

Though some groundwater is extracted and used for domestic, municipal and industrial uses, the majority of groundwater extracted in the County is used for agricultural irrigation purposes. The FCGMA reports that approximately 60% of groundwater extracted for agricultural purposes with the remaining 40% for municipal, industrial and domestic uses. The owners and operators of wells within the boundaries of any of the three Groundwater Management Agencies, Fox Canyon Groundwater Management Agency, Ojai Basin Groundwater Management Agency and United Water Conservation District, are required to report their groundwater extractions twice each year to the respective agency. Approximately 2,000 of the 3,500 plus active wells in the County are within one or more of these agency boundaries. Owners of wells located outside of these agencies are not required to report their extractions but are asked to report the status of their well to the County each year. The table at the top of the following page compares extractions reported to the three agencies for the years 2005 to 2010. Note: the boundaries of the FCGMA and UWCD overlap.

Table 4-1: Groundwater extractions within reporting agencies 2005-2010[3,7,8]

	Agency		
Reported Extractions (AF)	UWCD	FCGMA	OBGMA
2005-1	58,045.00	40,659.73	1,748.07
2005-2	95,174.00	61,008.48	2,880.39
Annual Total 2005	**153,219.00**	**101,668.21**	**4,628.46**
2006-1	65,469.00	42,693.88	1,722.17
2006-2	101,684.00	68,391.66	2,234.77
Annual Total 2006	**167,153.00**	**111,085.54**	**3,956.94**
2007-1	90,701.00	57,000.27	2,708.68
2007-2	108,289.70	78,737.29	2,759.06
Annual Total 2007	**198,990.70**	**135,737.56**	**5,467.74**
2008-1	90,997.65	62,491.65	2,650.38
2008-2	102106.68	73,337.20	2,590.30
Annual Total 2008	**193,104.33**	**135,828.85**	**5,240.68**
2009-1	82,505.37	61,918.32	2,553.48
2009-2	104,049.64	80,644.64	2,871.94
Annual Total 2009	**186,555.01**	**142,562.96**	**5,425.42**
2010-1	69,541.85	50,367.02	2,004.86
2010-2	**Not Yet Reported**		
Annual Total 2010	**69,541.85**	**50,367.02**	**2,004.86**

4.2 – Surface and Imported Water

The following subsections focus on water supplied and imported by the three wholesale water districts in the County: United Water Conservation District (UWCD), Casitas Municipal Water District (Casitas) and Calleguas Municipal Water District (Calleguas).

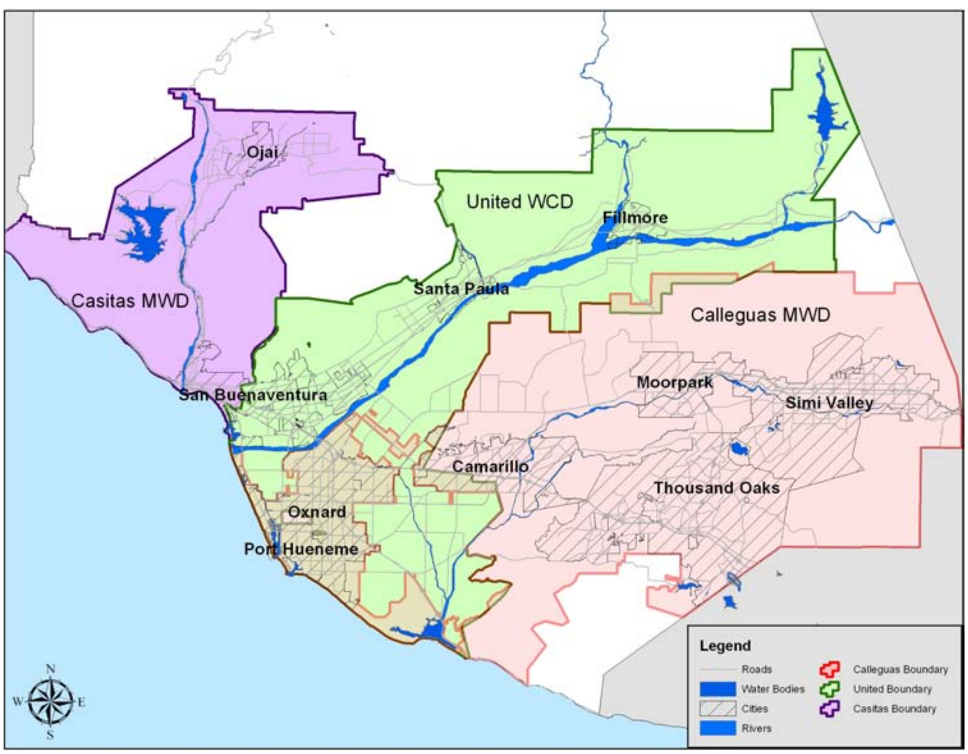

Figure 4-4: Map of the boundaries of the three wholesale water districts within the County.

7 Data courtesy of FCGMA.
8 Data courtesy of OBGMA.

4.2.1 – Surface & Imported Water Background

Of the ten incorporated cities within Ventura County only two, Santa Paula and Fillmore do not rely on water supplied by one of the three major wholesale districts (Casitas Municipal Water District, Calleguas Municipal Water District and United Water Conservation District).

Two cities (Ventura and Oxnard) use a blend of imported water, groundwater and treated surface water to meet demands. The City of Ventura's water supply comes from treated water diverted from the Ventura River, groundwater extracted from City wells, and from Lake Casitas delivered by Casitas. The City of Oxnard receives water from UWCD, imported water from Calleguas and groundwater from City well fields.

In the south half of the County, the cities of Simi Valley, Moorpark and Thousand Oaks as well as the Communities of Bell Canyon, Newbury Park, Hidden Valley, Lake Sherwood, Oak Park and part of Westlake Village rely mainly on water imported from Calleguas.

The City of Simi Valley (Ventura County Water Works District 8 (VCWWD8)) extracts groundwater, currently used for agricultural purposes, from two wells in the Tapo Canyon area. Also, groundwater is extracted from several wells at the west end of the city for de-watering purposes. The water from these wells is discharged to the Arroyo Simi. The City is currently nearing completion of the Tapo Canyon Water Treatment Plant, a 1 MGD treatment plant, which will utilize the two existing Tapo Canyon wells to provide water to approximately 500 homes. Golden State Water Company (GSWC) in Simi Valley extracts groundwater from two wells and blends it with imported water from Calleguas (10% groundwater, 90% imported water)[9]. VCWWD8 serves 66% of demand or over 23,000 AF of water while GSWC serves the remaining 34%, approximately 8,500 AF[10]. In 2010[6] Calleguas delivered 19,735.4 AF to VCWWD8 and 5,689.7 AF to GSWC.

The City of Moorpark residents receive water from Ventura County Water Works District 1 (VCWWD1). Approximately 75% of VCWWD1's water is imported from Calleguas. In 2010 Calleguas delivered 8,477.7[6] AF to VCWWD8. The City also extracts groundwater from two wells used for park irrigation.

The City of Thousand Oaks extracts groundwater using it for median irrigation on Hillcrest Ave and golf course irrigation at the Los Robles Golf Course. California Water Service and California American Water along with the City of Thousand Oaks Water Department provide water imported from Calleguas in the Thousand Oaks, Newbury Park and Westlake Village area. In 2010 these three water purveyors received 33,565[6] AF of water from Calleguas.

The City of Camarillo relies on groundwater and imported water from Calleguas. The city extracts groundwater from three wells, supplying approximately 50% of the city's water demand. In 2010 Calleguas delivered 4540.5[6] AF of water to the City of Camarillo. Water for some residents is supplied by Pleasant Valley Mutual (groundwater and imported water), Crestview Mutual (groundwater and imported water), California American Water Co. (imported water), and Camrosa Water District (groundwater and imported water).

The Port Hueneme Water Agency receives and treats water from UWCD and blends it with water from Calleguas for the City of Port Hueneme, Channel Islands Beach Services Community District and Naval Base Ventura County.

[9] Golden State Water Company, 2005 Urban Water Management Plan – Simi Valley.
[10] Ventura County Waterworks District No. 8, City of Simi Valley, 2005 Urban Water Management Plan.

In the Ojai Valley the City of Ojai and the communities of Casitas Springs, Meiners Oaks and Oak View rely on a mixture of groundwater extracted by local purveyors, and wholesale water from Lake Casitas delivered by Casitas to local water purveyors.

In the Santa Clara River Valley area, the City of Santa Paula relies on local groundwater (approximately 5,000 to 7,000 AF/yr based on reporting to UWCD). In addition, some surface water is diverted from Santa Paula Creek (approximately 500 AF/yr)[11] and is sent to Canyon Irrigation Company in exchange for extraction credits for the Santa Paula Basin. The City of Fillmore relies solely on groundwater extracted from City water wells (approximately 2,600 to 2,800 AF/yr based on reporting to UWCD). The community of Piru relies on groundwater delivered by local water purveyors.

Residents of the Lockwood Valley area and the Santa Monica Mountains area, as well as, residents living in areas not served by a water company rely on private domestic water wells. Water is extracted from one of the 32 groundwater basins, or from fractured volcanic rock and bedrock.

4.2.2 – Wholesale Districts

Of the three water wholesalers in the County, Calleguas delivers the largest volume of water to retailers. Approximately 75% of the population in the County receives water imported by Calleguas. Calleguas, a member agency of the Metropolitan Water District (MWD), imports State Water Project (SWP) water from northern California. Calleguas delivered 94,864[6] AF of water to retailers in 2010 down from 108,726[6] AF in 2009 and 125,368[6] AF in 2008[6]. The Calleguas Municipal Water District imported a total of 86,534 AF of treated SWP water in 2010[6]. Production from the District's ASR wellfield was 8,939 AF in 2010. Up to 11,000 AF of water can be stored by Calleguas in Lake Bard and can supply all of the District's needs for short periods of time. The end of year volume of water in storage in Lake Bard was 10,300[6] AF. Some imported water is also injected in the East Las Posas groundwater basin through the Las Posas Aquifer Storage and Recovery (ASR) Project. Using injection/extraction wells located in Calleguas's Las Posas well field, Calleguas reports that it can store approximately 300,000 AF of water for future extraction when imported supplies are limited due to scheduled maintenance shutdowns, drought, earthquake, or other emergencies. Calleguas reports it will have the capacity to pump 70,000 acre-feet per year during dry years or emergencies. The Las Posas Basin currently has 18 wells, operated by Calleguas, each with the capacity to extract water at about 4 cubic feet per second (cfs) and to inject water at 3 cfs. The wells are 800 to 1,200 feet deep and perforate the Fox Canyon Aquifer (Calleguas 2007).

UWCD delivered 34,076[4] AF of water to retailers and end-users in 2010 down from 41,478[4] AF in 2009[4]. UWCD can store up to 87,000 AF of water in Lake Piru. At the end of 2010 there was 30,702[4] AF of water in storage in Lake Piru. UWCD released 36,881[4] *(preliminary data)* AF of water from the lake in 2010. UWCD imported 3,150[4] AF of State Project water into Ventura County from Lake Pyramid in 2010. Water released from Lake Piru flows down Piru Creek to the Santa Clara River where it is ultimately diverted downstream at the Freeman Diversion Dam. UWCD operates spreading basins in the Oxnard Forebay Groundwater Basin for the purpose of groundwater recharge. Some of the water diverted from the Santa Clara River at the Freeman diversion is sent to the spreading basins in Saticoy and El Rio, the remainder is sent through the Pleasant Valley Pipeline (PVP) and the Pumping Trough Pipeline (PTP). Table 4-2 and Figure 4-3 on the following page compare the volume of water diverted and sent to spreading grounds by UWCD versus annual precipitation for the period of 1995 to 2010.

[11] Data from City of Santa Paula 2005 Urban Water Management Plan

Table 4-2: Comparison of precipitation versus recharge water volume for UWCD[4].

Year	Precipitation El Rio Spreading Grounds Gage 239 (in.)	Saticoy Recharge (AF)	El Rio Recharge (AF)	Noble Pit (AF)
1995	27.27	35,419.44	52,876.00	10,657.00
1996	20.25	25,608.38	24,633.00	3,806.00
1997	13.3	22,323.03	25,271.00	4,412.00
1998	30.88	56,934.95	43,027.00	18,710.00
1999	9.39	16,538.51	17,992.00	1,285.00
2000	15.59	28,620.11	23,173.00	0.00
2001	22.4	26,918.00	39,434.00	8,824.00
2002	8.97	5,291.00	14,886.00	32.00
2003	14.79	7,158.00	26,909.00	44.00
2004	16.13	8,105.00	15,061.00	0.00
2005	24.43	46,872.00	52,267.00	19,490.00
2006	15.29	29,005.00	40,840.00	10,709.00
2007	7.77	11,404.00	18,200.00	99.00
2008	14.07	28,631.00	19,631.00	8,562.00
2009	10.86	9,215.00	13,223.00	0.00
2010	22.07	15,108.00	30,125.00	995.00

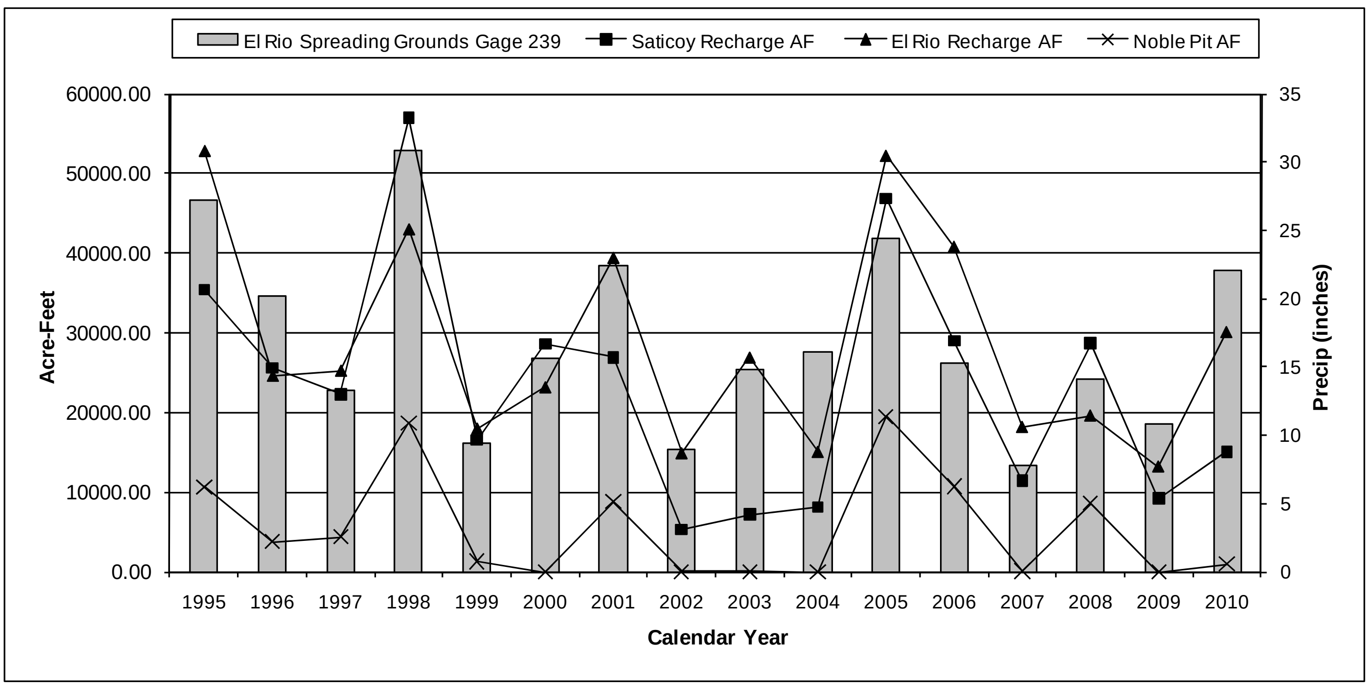

Figure 4-5: Graph depicting precipitation versus recharge for UWCD[4].

The Casitas Municipal Water District delivered a total of 13,498[5] AF in 2010, with 6,068[5] AF sold to retail water purveyors. The district provides water to residential and agricultural customers, and some of the 23 water purveyors located within the district's boundaries. Annual water deliveries can vary from 13,000 to 23,000 AF. Casitas provides a blend of groundwater and surface water to its customers. Surface water is stored in Lake Casitas which has an overall capacity of 254,000 AF. At the end of 2010 there was 182,695[5] AF of water stored in the lake. Water from the Ventura River is diverted at the Robles Diversion facility. The facility diverts high flows from rainstorms and operates on average only 53 days[5] per year. Casitas diverts, on average 31% of the Ventura River flow, with 10% of that volume being redirected downstream through the Robles Diversion Fish Passage for the endangered steelhead trout and to enhance recovery of the Ventura River habitat.

Table 4-3 below compares the volume of water delivered by the three major water districts in the County for the period of 2005 to 2010.

Table 4-3: Comparison of Wholesale District water deliveries 2005-2010.

	Water Deliveries in Acre Feet (AF)						
Wholesale District	2005	2006	2007	2008	2009	2010	Period Total
Casitas MWD	16,526.50	15,873.80	20,080.90	16,497.70	15,736.10	13,497.48	98,212.48
Calleguas MWD	116,431.80	120,736.30	131,206.10	125,367.50	108,726.00	94,863.70	697,331.40
United WCD	30,271.46	30,627.87	41,387.64	39,903.80	41,478.00	34,075.80	217,744.57
Combined Annual Total	163,229.76	167,237.97	192,674.64	181,769.00	165,940.10	142,436.98	

Section 5.0
Groundwater Surface Elevation Contour Maps

5.1 – Mapping

Contour maps are a useful way to visualize spatial distribution of data values. ESRI's ArcMap GIS software was used to generate the contours in the report. Because the contour lines are the end result of a series of code based mathematical calculations the resulting lines should be considered only as an interpretation of the conditions in the area mapped.

5.1.1 –Maps

The following pages contain groundwater surface elevation contour maps created from 2010 groundwater level data for the Santa Clara River Valley, the upper aquifer system of the Oxnard Plain, and the lower aquifer system of the Oxnard Plain, Pleasant Valley, and Las Posas Valley Basins. Figures 5-1 thru 5-2 on pages 51-52 depict water level contours for 2010 for the Santa Clara River Valley area encompassing the Mound, Santa Paula, Fillmore, and Piru groundwater basins. It was decided that because the basins in this area are essentially hydrologically connected, creating contours for the river valley as a whole would produce a good interpretation of the groundwater surface elevations for the area. The contours were created using data collected by County staff, United Water Conservation District staff, and the staff of other agencies, cities and water companies. For this exercise the basin area was truncated to include only the extent of the alluvial area of the valley, instead of using the full area of the basin as depicted by the dashed lines on the maps.

Figures 5-3 thru 5-4 on pages 53-54 depict 2010 groundwater potentiometric surface elevations for the upper aquifer system of the Oxnard Plain and Pleasant Valley area. The contours were created using data collected by County staff, United Water Conservation District staff, and the staff of other agencies, cities and water companies. Note, the Forebay area has no confining clay cap as there is overlying the Oxnard Plain Pressure Basin, therefore the Oxnard aquifer is not recognized as being present here. In the Pleasant Valley area the upper aquifer system is not typically present, but there are areas of shallow alluvial sediments similar to Oxnard and Mugu aquifer units from which wells are extracting groundwater. No well data from the perched or semi-perched zone of the Oxnard Plain was used to generate these contours.

Figures 5-5 thru 5-6 on pages 55-56 depict 2010 groundwater potentiometric surface elevations for the lower aquifer system of the Oxnard Plain and Las Posas Valley area. Data points for wells perforated in the shallow sand and gravel zones of the Las Posas Valley were not used to generate these contours since they are not believed to be in contact with the lower aquifers.

The Groundwater Section welcomes comments and suggestions concerning the contour maps presented on the following pages.

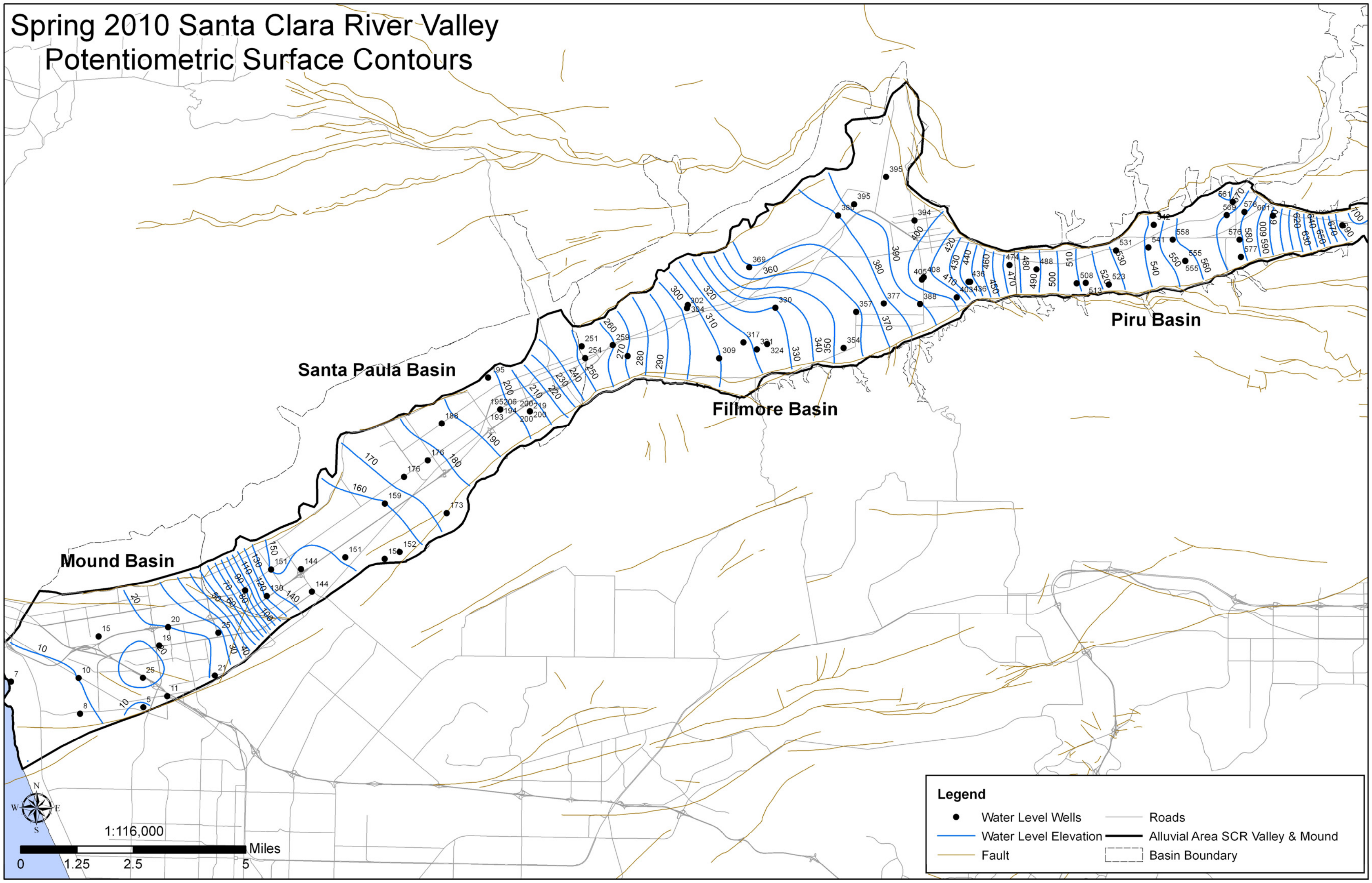

Figure 5-1: The map above depicts water level surface elevation contours for the Santa Clara River Valley area for Spring 2010.

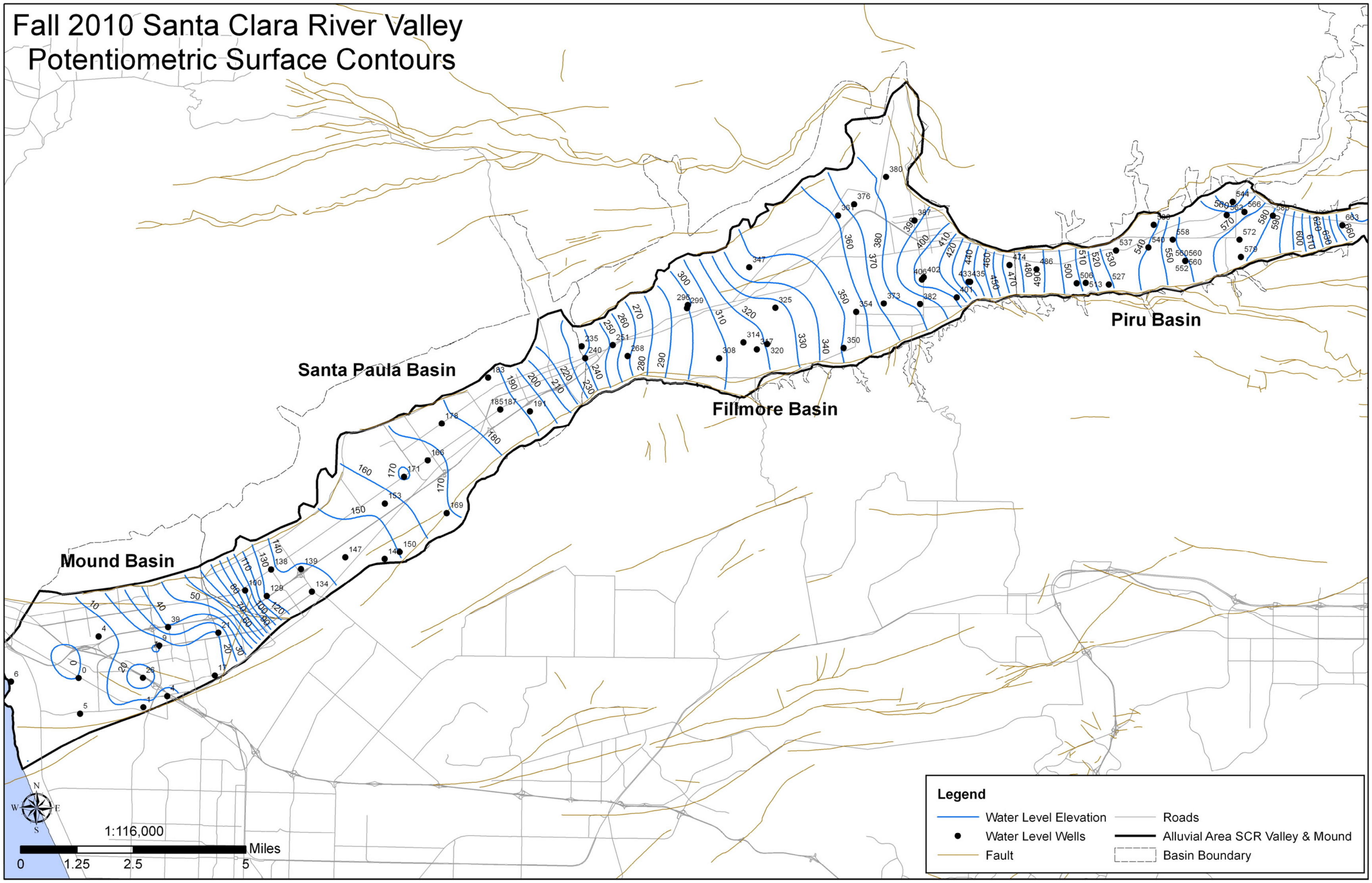

Figure 5-2: The map above depicts water level surface elevation contours for the Santa Clara River Valley area for Fall 2010.

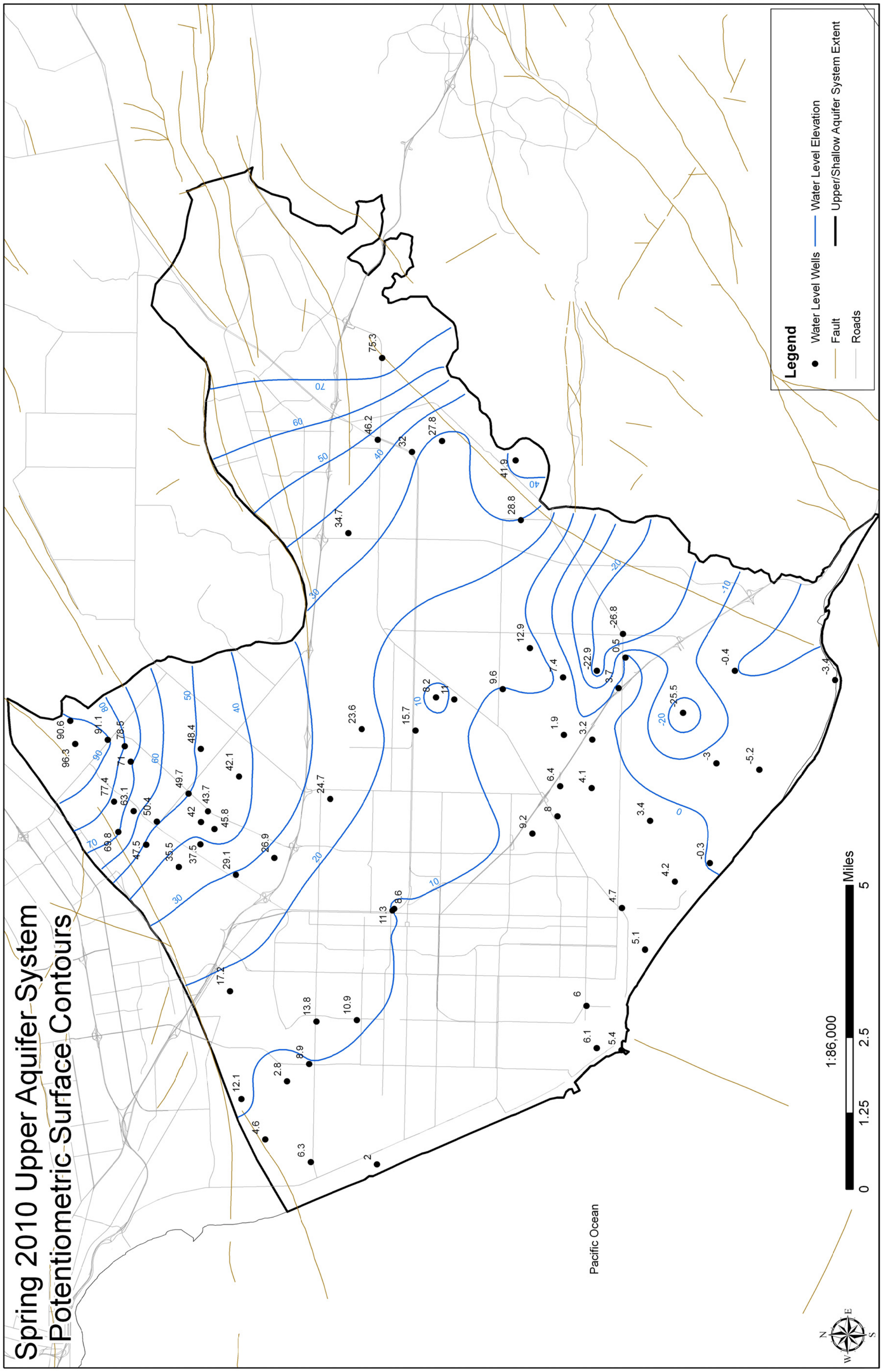

Figure 5-3: The map above depicts water level surface elevation contours for the Upper Aquifer System for Spring 2010.

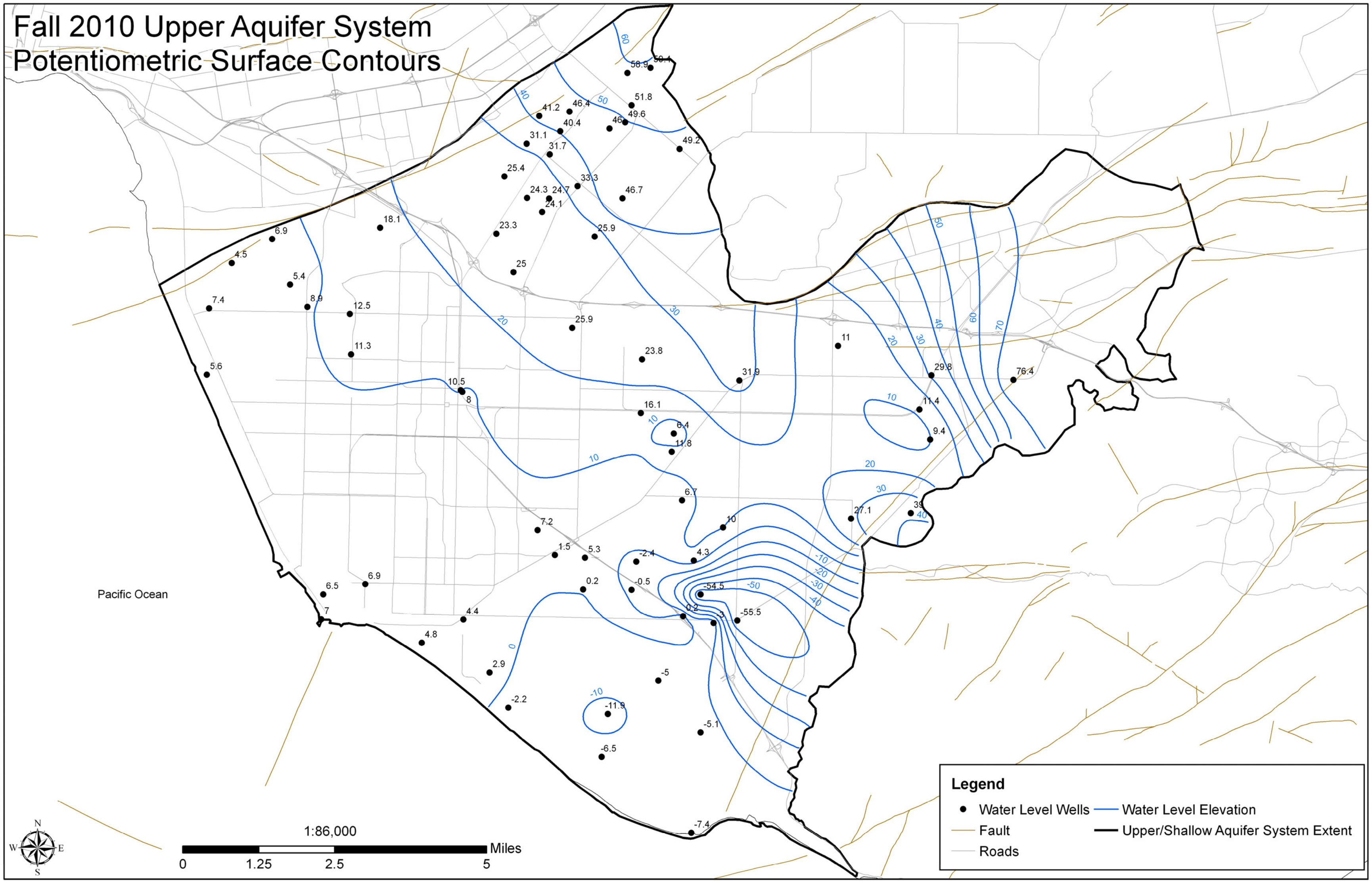

Figure 5-4: The map above depicts water level surface elevation contours for the Upper Aquifer System for Fall 2010.

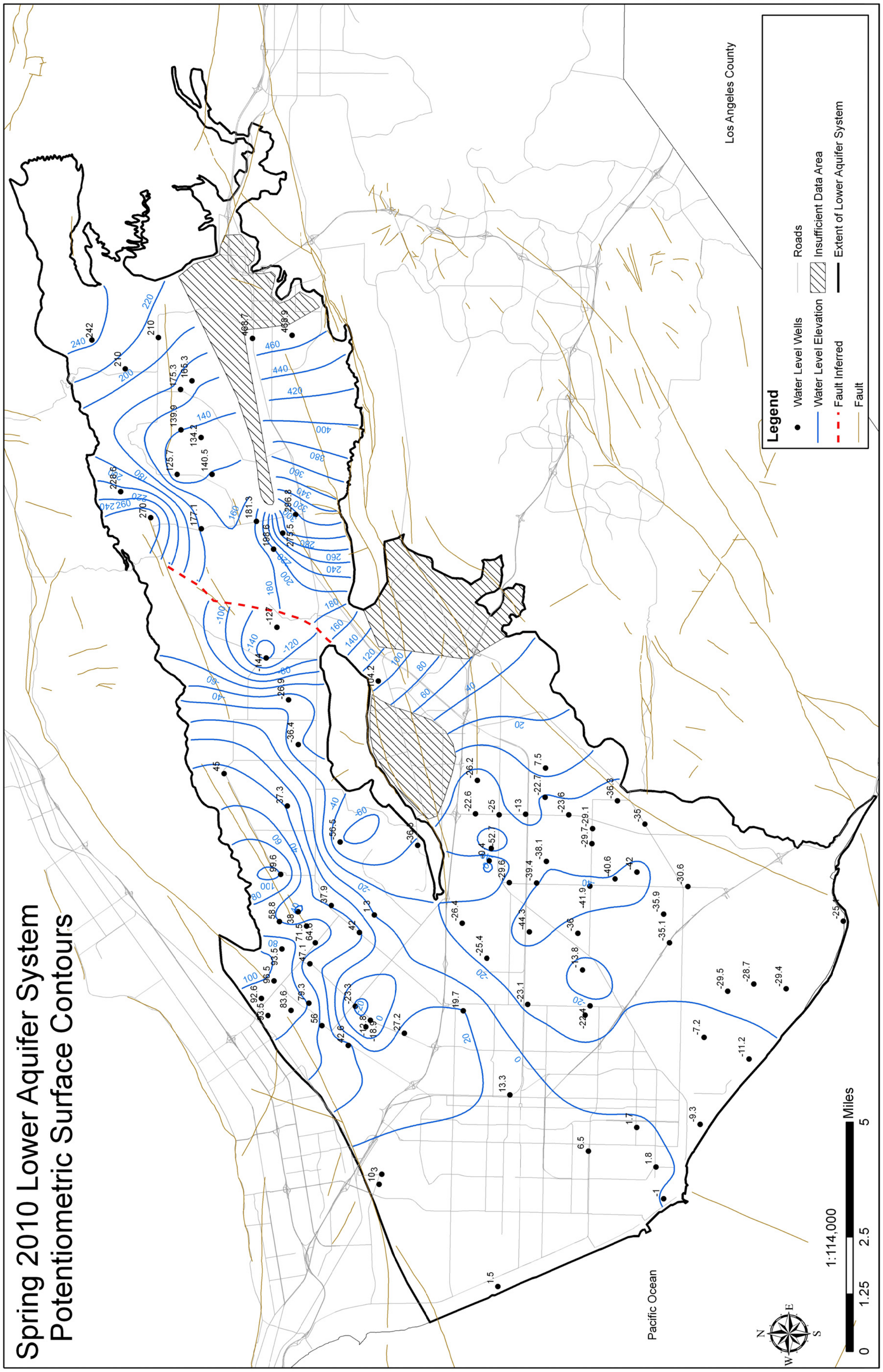

Figure 5-5: The map above depicts water level surface elevation contours for the Lower Aquifer System for Spring 2010.

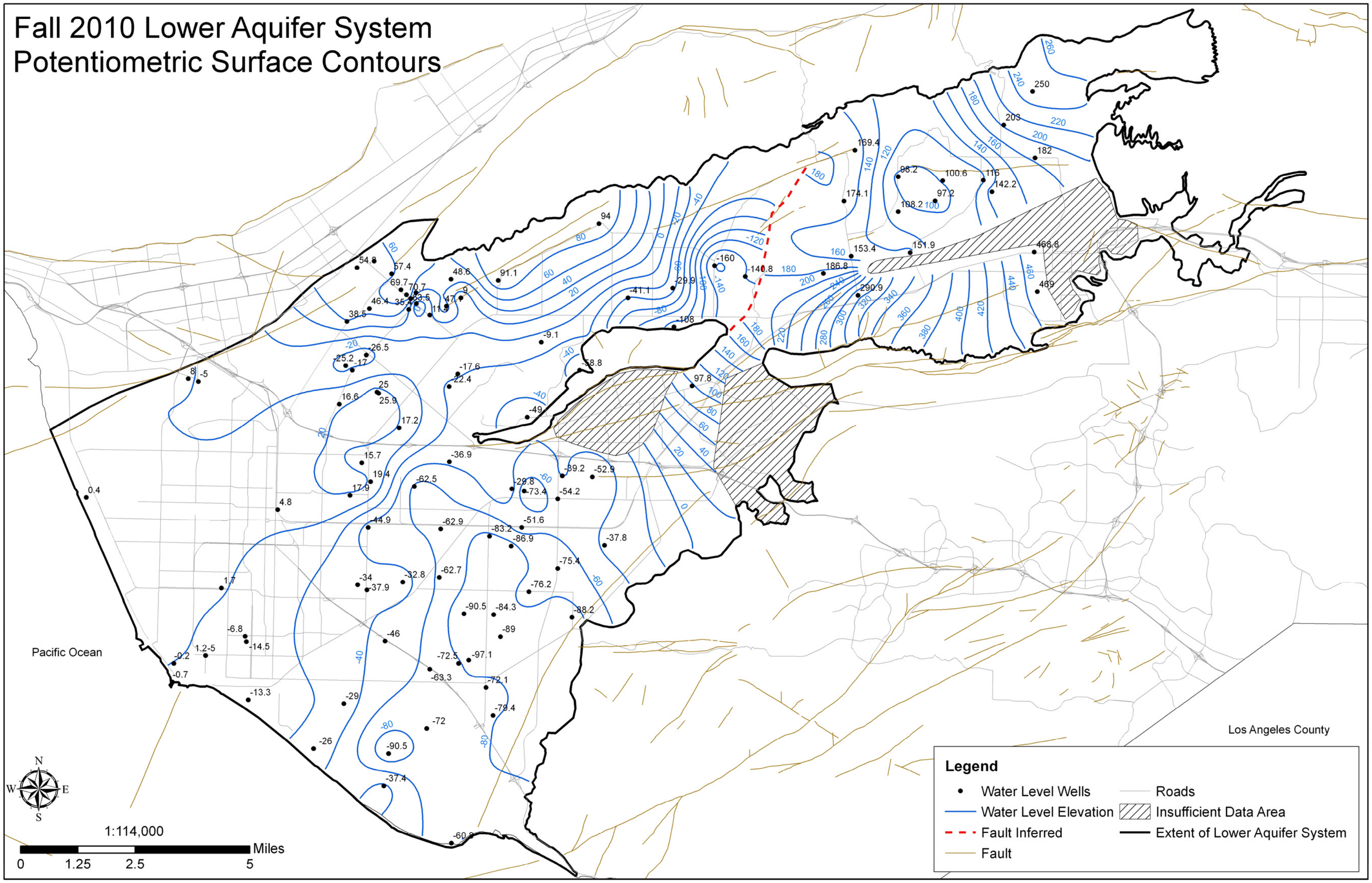

Figure 5-6: The map above depicts water level surface elevation contours for the Lower Aquifer System area for Fall 2010.

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11 - City of Santa Paula 2005 Urban Water Management Plan Update, Kennedy/Jenks Consultants,
June 2006

Appendix A – Glossary of Groundwater Terms

Aquifer: A geologic formation or structure that yields water in sufficient quantities to supply pumping wells or springs.

Abandoned Well: Means any of the following:

(1) A water well used less than 8 hours in any twelve-month period. Failure to submit reports of well usage will result in a well being classified as abandoned.
(2) A monitoring well from which no monitoring data has been taken for a period of two years.
(3) A well which is in such a state of disrepair that it cannot be made functional for its original use or any other use.
(4) An open engineering test hole after 24 hours has elapsed after construction and testing work has been completed on the site.
(5) A cathodic protection well which is no longer used for its intended purpose.

Confined Aquifer: An aquifer separated from the surface by an aquiclude or an aquitard to the extent that pressure can be created in the lower reaches of the aquifer.

Contamination: Alteration of waters by waste, salt-water intrusion or other materials to a degree which creates a hazard to the public health through actual or potential poisoning or through actual or potential spreading of disease.

Department of Water Resources: (DWR) operates and maintains the State Water Project, including the California Aqueduct. The department also provides dam safety and flood control services, assists local water districts in water management and conservation activities, promotes recreational opportunities, and plans for future statewide water needs.

Fox Canyon Groundwater Management Agency (FCGMA): The Agency created when the California State Legislature enacted and passed State Assembly Bill No. 2995 on Sept. 13, 1982 creating the *Fox Canyon Groundwater Management Agency (GMA)*. This law, also referred to as AB2995, granted jurisdiction over all lands overlying the Fox Canyon aquifer zone to control seawater intrusion, protect water quality, and manage water resources.

Groundwater: Water beneath the surface of the earth within the zone below the water table in which the soil is completely saturated with water.

Groundwater Basin: A geologically and hydrologically defined area containing one or more aquifers, which store and transmit water yielding significant quantities of water to extraction facilities.

Lower Aquifer System (LAS): The area underlying the Oxnard Pressure Basin, which contains the Hueneme aquifer, the Fox Canyon Aquifer and the Grimes Canyon aquifer. The LAS is recharged from the Fox Canyon and Grimes Canyon Outcrops, the areas where the aquifers come to the surface exposing the permeable sands and gravels to recharge from rainfall and surface runoff.

Overdraft: The condition of a groundwater basin or aquifer where the average annual amount of water extracted exceeds the average annual supply of water to a basin or aquifer.

Perched or Semi-Perched Aquifer: The water bearing area that is located between the earth's surface and clay deposits that exist above an Aquifer.

Receiving Waters: All waters that are "Waters of the State" within the scope of the State Water Code, including but not limited to, natural streams, creeks, rivers, reservoirs, lakes, ponds, water in vernal pools, lagoons, estuaries, bays, the Pacific Ocean, and ground water.

Appendix A – Glossary of Groundwater Terms

Seawater Intrusion: The overdrafting of aquifers, which results in, the depletion of water supplies, lowering of water levels and degradation from seawater intrusion. Seawater intrusion results from the reversal of hydrostatic pressure allowing water flow to be onshore rather than offshore.

Total Dissolved Solids: (TDS) is a term that represents the amount of all of our natural minerals that is dissolved in water.

Total Maximum Daily Load (TMDL) is a number that represents the assimilative capacity of a receiving water to absorb a pollutant. The TMDL is the sum of the individual waste-load allocations for point sources, load allocations for nonpoint sources plus an allotment for natural background loading, and a margin of safety. TMDL's can be expressed in terms of mass per time (the traditional approach) or in other ways such as toxicity or a percentage reduction or other appropriate measure relating to a state water quality objective. A TMDL is implemented by reallocating the total allowable pollution among the different pollutant sources (through the permitting process or other regulatory means) to ensure that the water quality objectives are achieved.

United Water Conservation District (UWCD): The District administers a "basin management" program for the Santa Clara Valley and Oxnard Plain, utilizing the surface flow of the Santa Clara River and its tributaries for replenishment of groundwater. Originally established as the Santa Clara River Water Conservation District in 1927.

Upper Aquifer System (UAS): The area underlying the Oxnard Pressure Basin, which contains the perched and semi-perched zones, the Oxnard aquifer zone, and the Mugu aquifer. The UAS is recharged via the twenty-three square mile unconfined Oxnard Forebay Basin near El Rio.

Water Quality Standards: Defined as the beneficial uses (e.g., swimming, fishing, municipal drinking water supply, etc.) of water and the water quality objectives adopted by the State or the United States Environmental Protection Agency to protect those uses.

Water Well Ordinance No. 4184: The Ventura County Groundwater Conservation Ordinance which was originally adopted by the Board of Supervisors in October 1970 and revised in 1979, 1984, 1985, 1987, 1991 and most recently in May 1999. The purpose of the ordinance is to ensure that all new or modified water wells, cathodic protection wells and monitoring wells are drilled by licensed water well contractors and are properly sealed so that they cannot serve as conduits for the movement of poor quality or polluted waters into useable aquifers or be hazardous to people or animals.

Well Destruction: To fill a well (including both interior and annular spaces if the well is cased) completely in such a manner that it will not produce water or act as a conduit for the transmission of water between any water-bearing formations penetrated.

Well Owner: The owner of the land on which a well is located.

Appendix B – Key Water Level Wells

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Appendix B – Key Water Level Wells

Key water levels for the most significant groundwater basins are depicted in chart or graph form on the following pages to provide visual representations of groundwater conditions as they existed during and at the date or time of measurement.

Note that the time durations of the graphs may cover varying lengths of time, however the main goal is to provide a quick reference view of water levels and/or changes for specific aquifers or groundwater basins for the longest or best available time interval.

Each of the following pages is organized to describe the set of key water level wells measured by staff every other month. Each well listed includes a line graph (hydrograph) of groundwater levels measured periodically in relation to the ground surface or some specific reference point (RP) which is usually the top of the well casing or the concrete slab at the wellhead (RP may be above or below the existing ground surface). The hydrographs are accompanied by an up-down graph to track trends in well levels.

The following summary sheet for 2010 is used by Groundwater Section Staff to track long-term trends and to monitor the average groundwater supplies (volume) in storage. Spring season measurements are used for comparison since this time period is typically at the end of the seasonal and annual rainfall year when groundwater basins should be at their fullest. Resource management strategies are judged and adjusted based on groundwater basin levels measured at these key wells, so they have value both for planning and evaluation in water supply and demand decisions. A quick glance at the 2010 key well table list shows that many of the historical high groundwater levels occurred in the wet (high rainfall) years of 1983, 1993 or 1998. Historical low water levels were mainly reflected in dry (low rainfall) years of 1990-1991 most recently, however the drought records from the early 1960's remain unbroken when groundwater levels were at their lowest.

Key wells were/are selected as representative data points based on a centralized location within any particular groundwater basin, a sufficient penetration (depth) or perforation interval within the target aquifer, proper structural or sanitary seals, adequate well construction and site access, and potential for long-term use (measurement).

These data are static water level measurements.

Appendix B – Key Water Level Wells

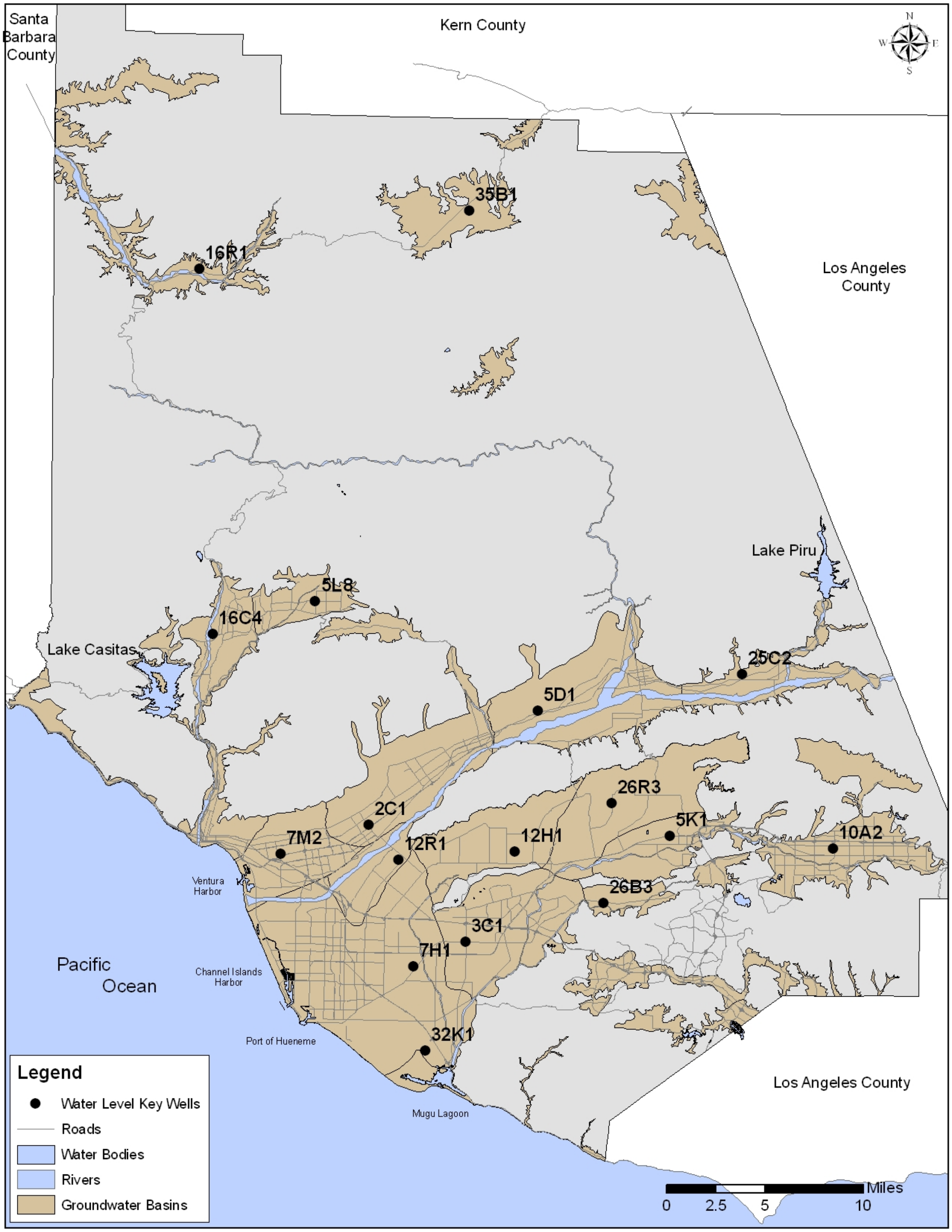

Figure B-1: Map showing key water level wells in Ventura County.

Appendix B– Key Water Level Wells

GROUND WATER LEVEL CHANGES
AT KEY WELLS IN VENTURA COUNTY
SPRING 2010

BASIN	WELL NUMBER (RECORD)	RECORD HIGH (DATE)	RECORD LOW (DATE)	WATER LEVEL (YEAR 2008)	WATER LEVEL (YEAR 2009)	WATER LEVEL (YEAR 2010)	CHANGE (UP/DOWN)
OXNARD PLAIN							
Oxnard Aquifer	01N21W07H01S	3.4 ft.	88.4 ft.	27.3 ft.	22.7 ft.	28.6 ft.	DOWN 5.9 ft.
	(1/31-present)	(3/99)	(9/64)	(3/24)	(3/20)	(3/29)	
Forebay Area	02N22W12R01S	14.6 ft.	136.8 ft.	43.1 ft.	63.7 ft.	56.4 ft.	UP 7.3 ft.
(UWCD)	(5/31-present)	(6/98)	(2/91)	(2/15)	(2/25)	(3/2)	
Fox Canyon	01N21W32K01S	18.0 ft.	129.0 ft.	47.0 ft.	36.0 ft.	34.0 ft.	UP 2.0 ft.
Aquifer	(12/72-present)	(4/83)	(12/90)	(3/31)	(3/23)	(3/29)	
PLEASANT VALLEY							
Fox Canyon	01N21W03C01S	87.5 ft.	253.9 ft.	109.5	96.1 ft.	97.3 ft.	DOWN 1.2 ft.
Aquifer	(2/73-present)	(8/95)	(11/91)	(3/19)	(3/18)	(3/26)	
WEST LAS POSAS	02N21W12H01S	422.2 ft.	501.8 ft.	456.0 ft.	452.0 ft.	444 ft.	UP 8.0 ft.
	(10/72-present)	(3/75)	(12/91)	(6/5)	(2/10)	(4/9)	
EAST LAS POSAS	03N20W26R03S	503.0 ft.	562.0 ft.	553.4 ft.	574.6 ft.	585.8 ft.	DOWN 11.3 ft.
	(1985-present)	(4/86)	(9/02)	(3/19)	(3/18)	(3/26)	
SOUTH LAS POSAS	02N19W05K01S	27.5 ft.	136.2 ft.	27.5 ft.	28.0	28.3 ft.	DOWN 0.3 ft.
	(6/75-present)	(7/06)	(6/75)	(3/18)	(3/17)	(3/24)	
SANTA ROSA	02N20W26B03S	13.2 ft.	60.3 ft.	32.0 ft.	37.7 ft.	30.6 ft.	UP 7.1 ft.
VALLEY	(10/72-present)	(4/79)	(11/04)	(3/18)	(3/17)	(3/26)	
SIMI VALLEY	02N18W10A02S	45.0 ft.	92.0 ft.	75.4 ft.	75.2 ft.	76.9 ft.	DOWN 1.7 ft.
	(12/84-present)	(2/98)	(6/92)	(3/18)	(3/17)	(3/26)	
VENTURA RIVER	04N23W16C04S	3.9 ft.	101.0 ft.	21.3 ft.	25.3 ft.	22.1 ft.	UP 3.2 ft.
	(7/49-present)	(3/83)	(2/91)	(3/27)	(3/26)	(4/2)	
OJAI VALLEY	04N22W05L08S	38.2 ft.	312.0 ft.	103.5 ft	134.6 ft.	121.6 ft.	UP 13.0 ft.
	(10/49-present)	(4/78)	(9/51)	(3/31)	(3/27)	(4/6)	
MOUND	02N22W07M02S	126.6 ft.	176.2 ft.	154.5 ft.	145.1 ft.	148.6 ft.	DOWN 3.5 ft.
	(4/96-present)	(4/98)	(4/96)	(4/2)	(3/31)	(4/6)	
SANTA PAULA	02N22W02C01S	20.7 ft.	51.9 ft.	34.4 ft.	33.2 ft.	33.8 ft.	DOWN 0.6 ft.
	(10/72-present)	(4/83)	(12/91)	(3/25)	(3/23)	(3/31)	
FILLMORE	03N20W05D01S	107.8 ft.	163.7 ft.	135.8 ft.	132.1 ft.	136.2 ft.	DOWN 4.1 ft.
	(10/72-present)	(2/79)	(12/77)	(5/29)	(3/24)	(3/31)	
PIRU	04N19W25C02S	43.1 ft.	183.2 ft.	66.1 ft.	70.2 ft.	69.5 ft.	UP 0.7 ft.
	(9/61-present)	(3/93)	(10/65)	(3/26)	(4/1)	(4/7)	
LOCKWOOD VALLEY	08N21W35B01S	19.3 ft.	52.9 ft.	39.8 ft.	43.9 ft.	19.3 ft.	UP 24.6 ft.
	(6/56-present)	(05/10)	(10/91)	(4/3)	(6/5)	(5/18)	
CUYAMA VALLEY	07N23W16R01S	15.0 ft.	47.5 ft.	28.5 ft.	35.9 ft.	34.6 ft.	UP 1.3 ft.
	(3/72-present)	(4/93)	(9/90)	(4/3)	(6/5)	(5/18)	

Data prepared by:
Ventura County Watershed Protection District
Water & Environmental Resources Division - Groundwater Section
12/22/10

Table B-1: Key Well Water Level Changes for 2010.

Appendix B – Key Water Level Wells

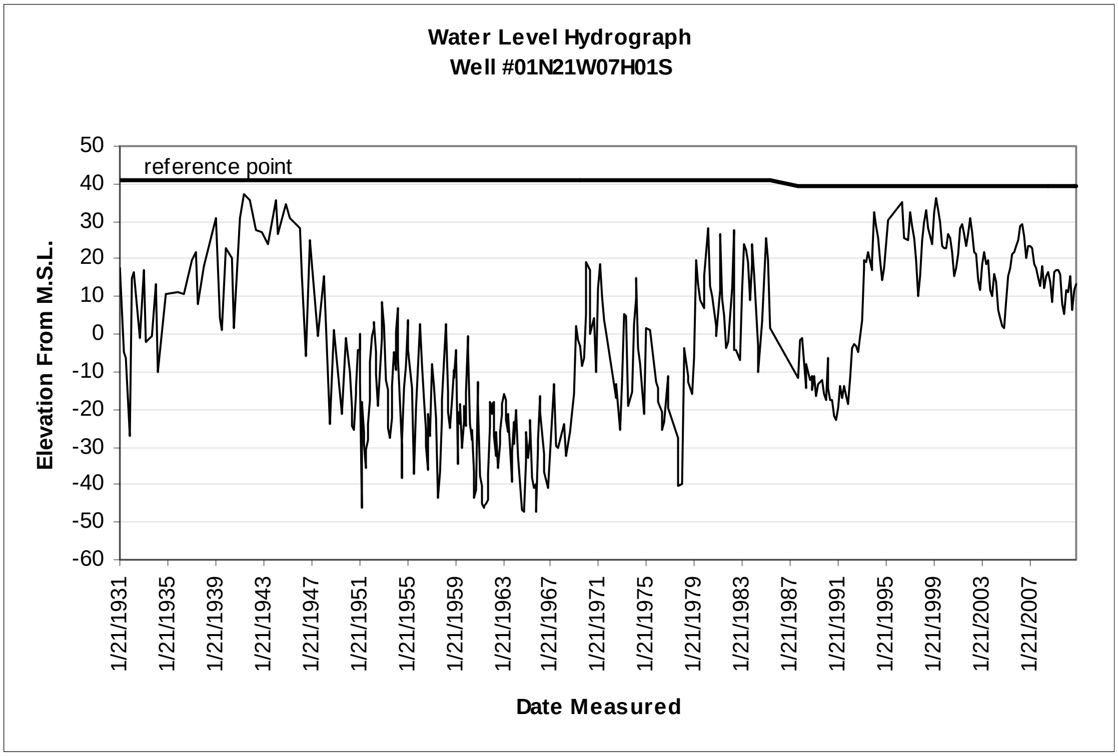

Figure B-2: Oxnard aquifer key well Hydrograph.

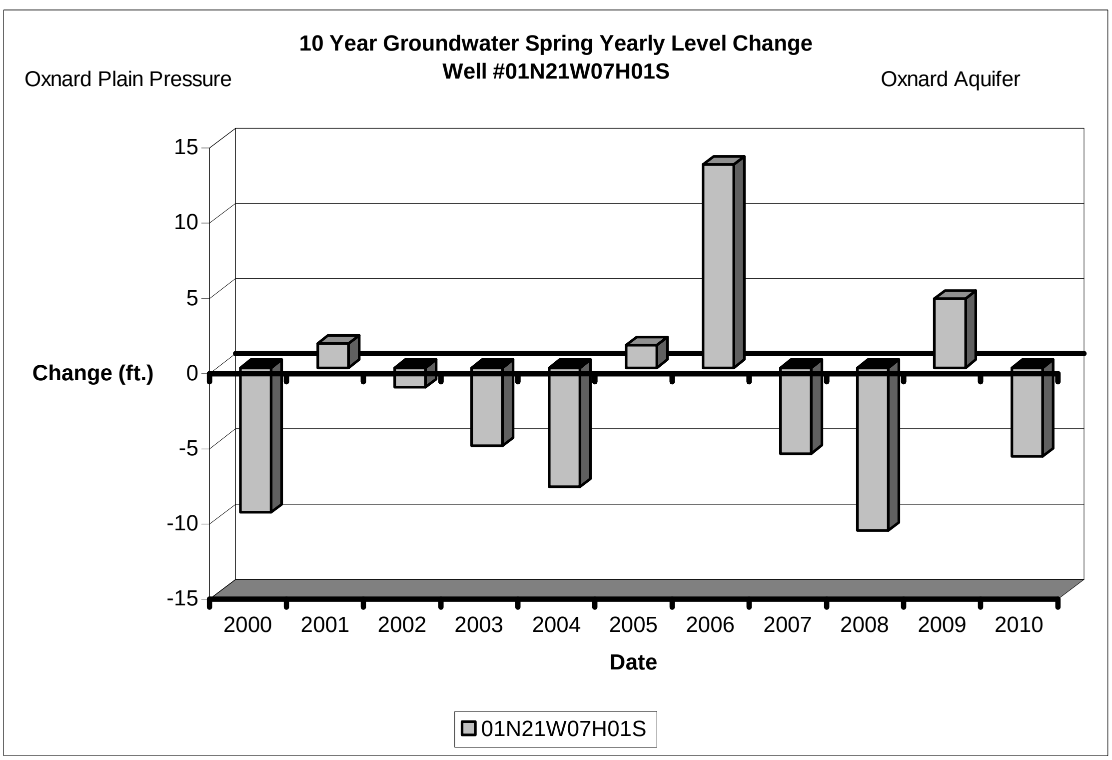

Figure B-3: Oxnard aquifer 10 year spring level change depicted on Up/Down graph.

Appendix B– Key Water Level Wells

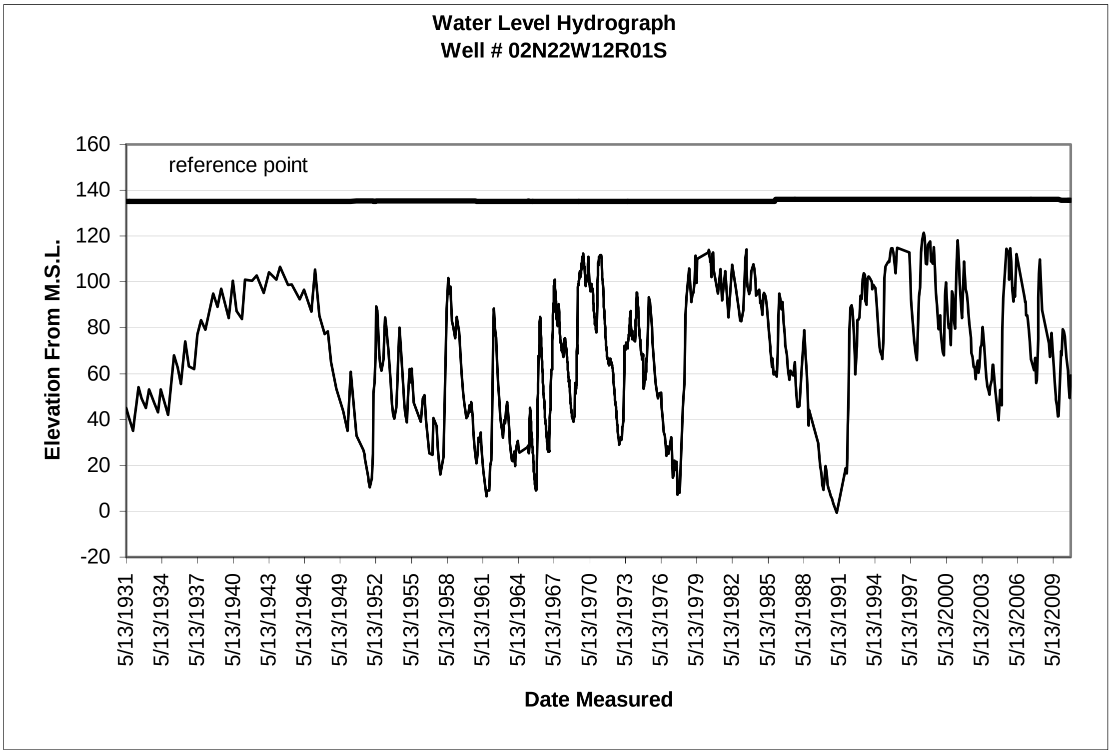

Figure B-4: Forebay area key well Hydrograph.

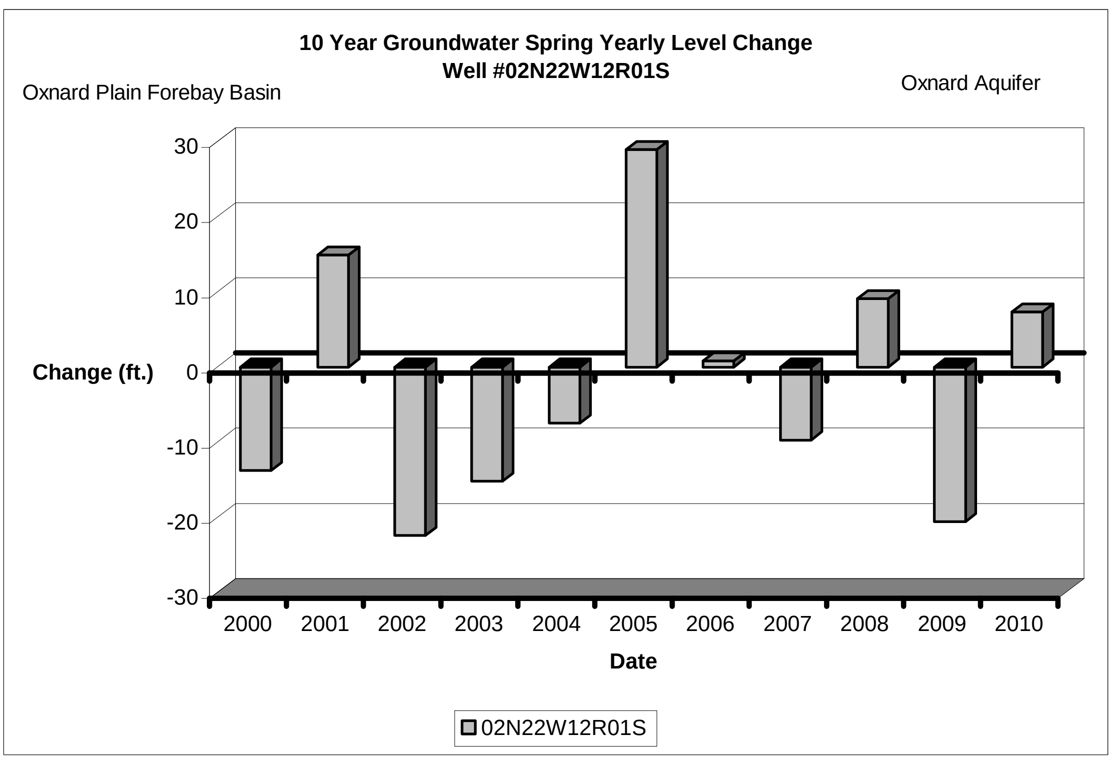

Figure B-5: Forebay Basin 10 year spring level change depicted on Up/Down graph.

Appendix B– Key Water Level Wells

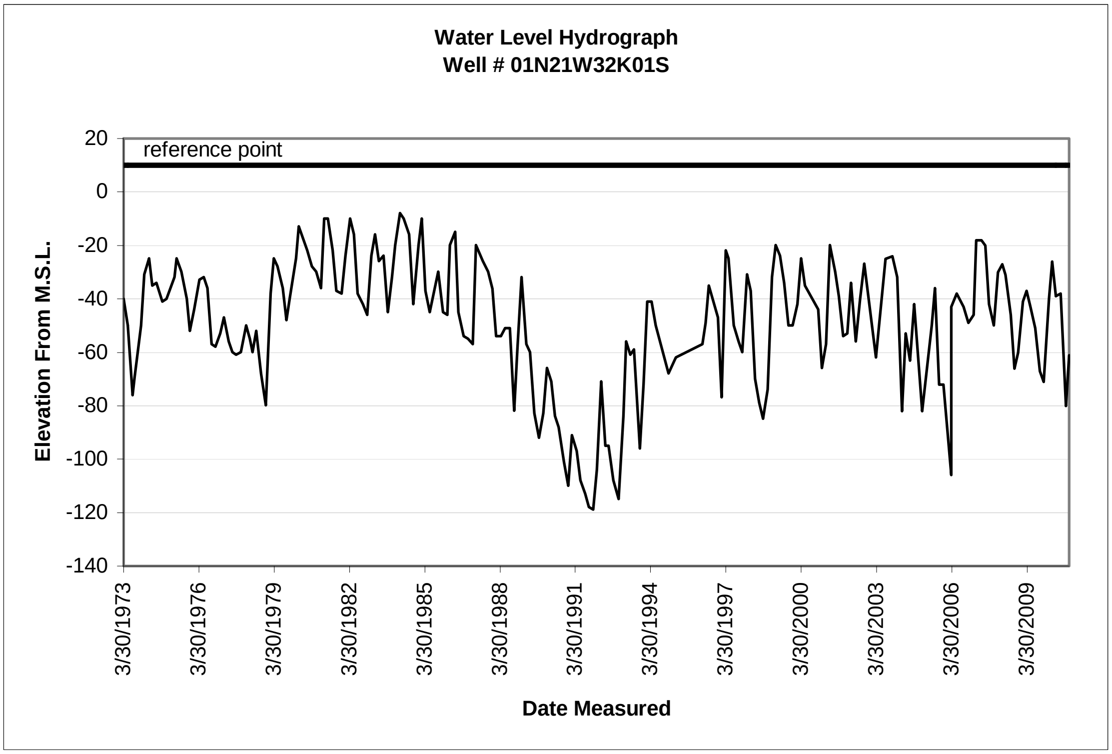

Figure B-6: Forebay Basin Fox Canyon Aquifer Key Well Hydrograph.

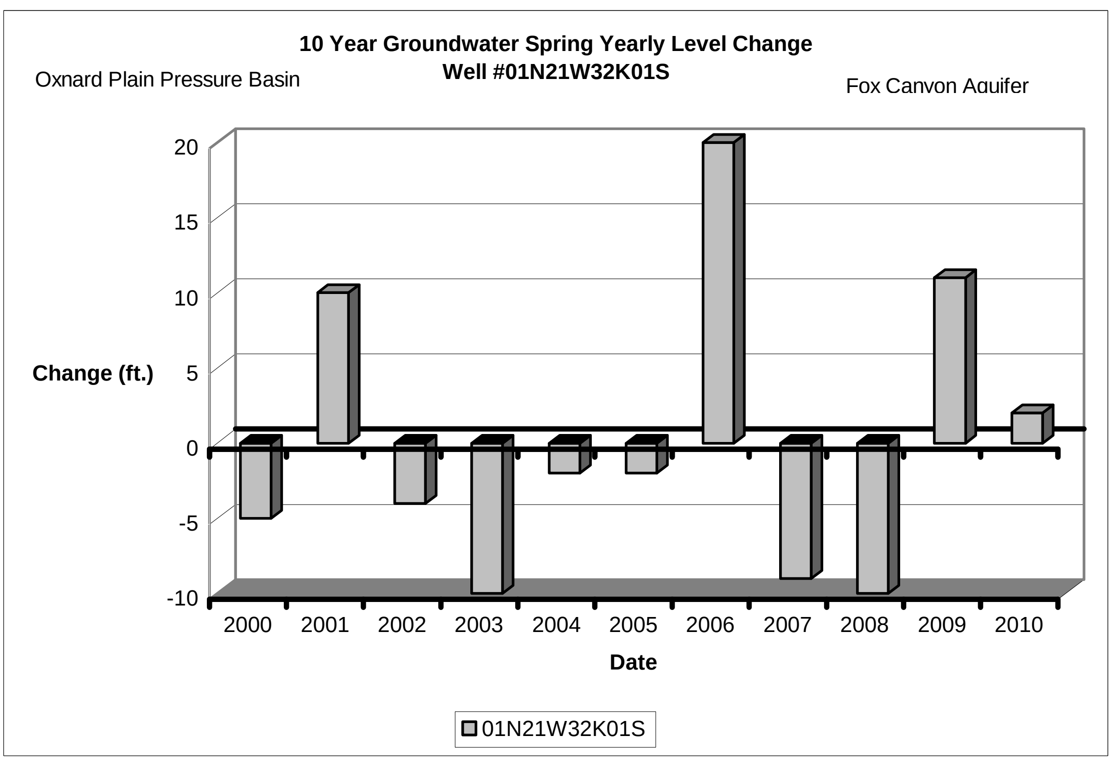

Figure B-7: Forebay Basin Fox Canyon Aquifer 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

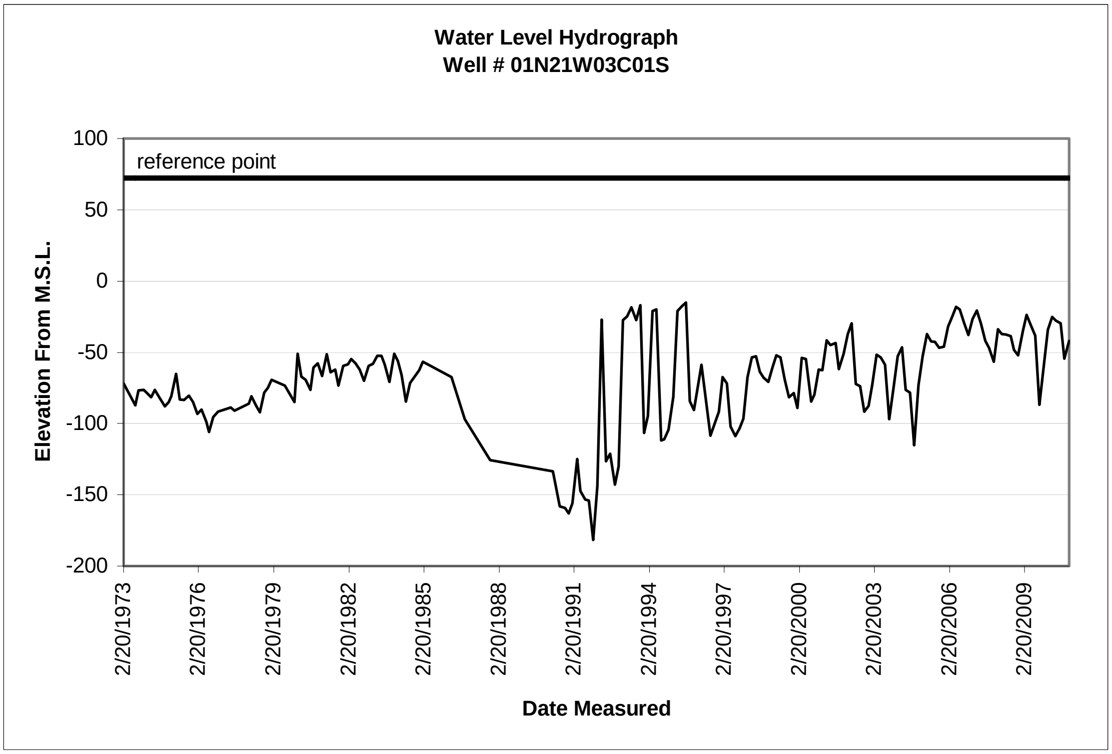

Figure B-8: Pleasant Valley Basin Fox Canyon Aquifer Key Well Hydrograph.

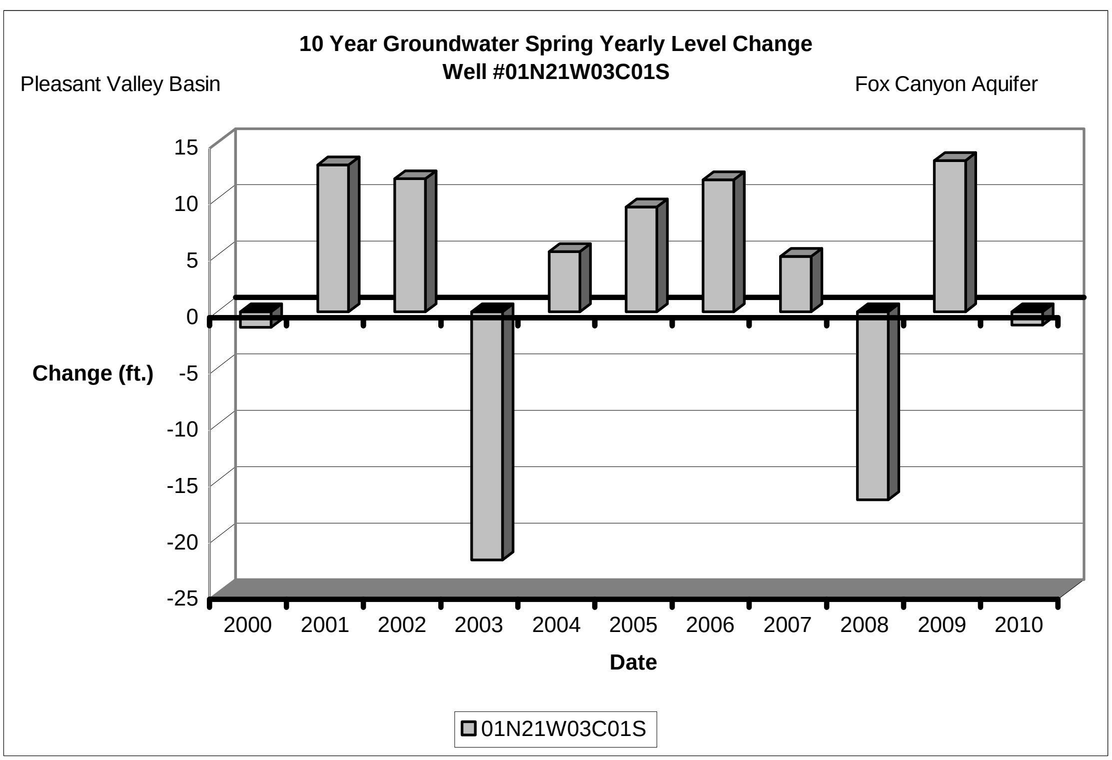

Figure B-9: Pleasant Valley Basin Fox Canyon Aquifer 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

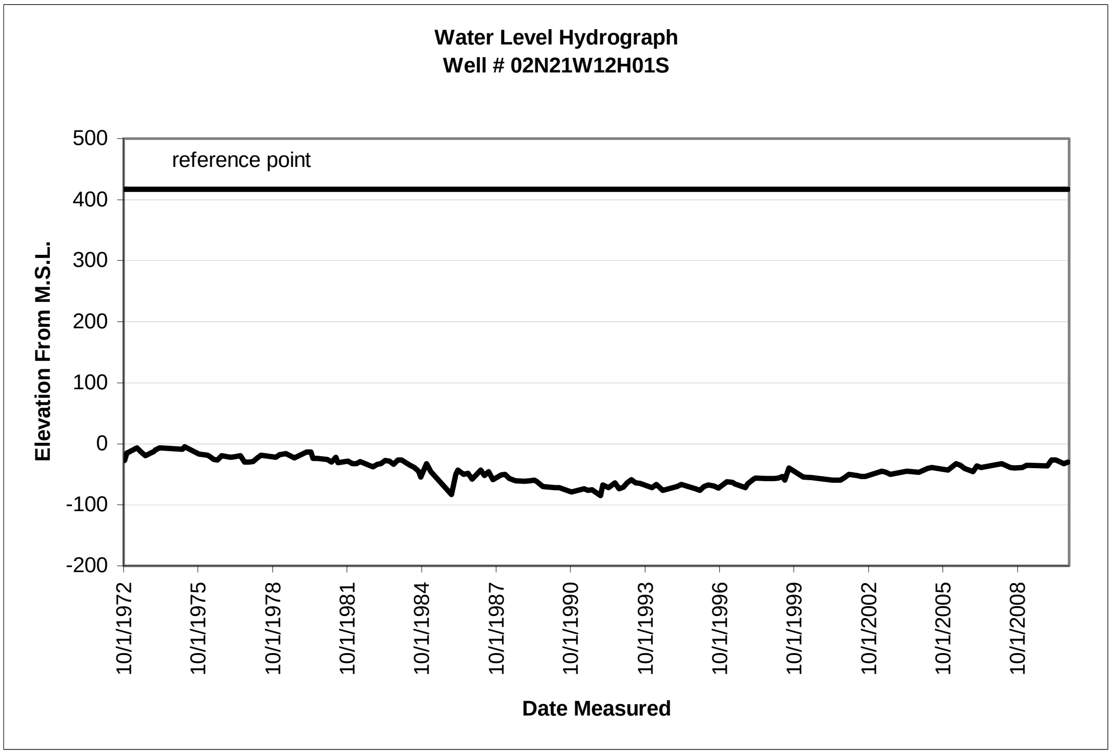

Figure B-10: West Las Posas Basin Key Well Hydrograph.

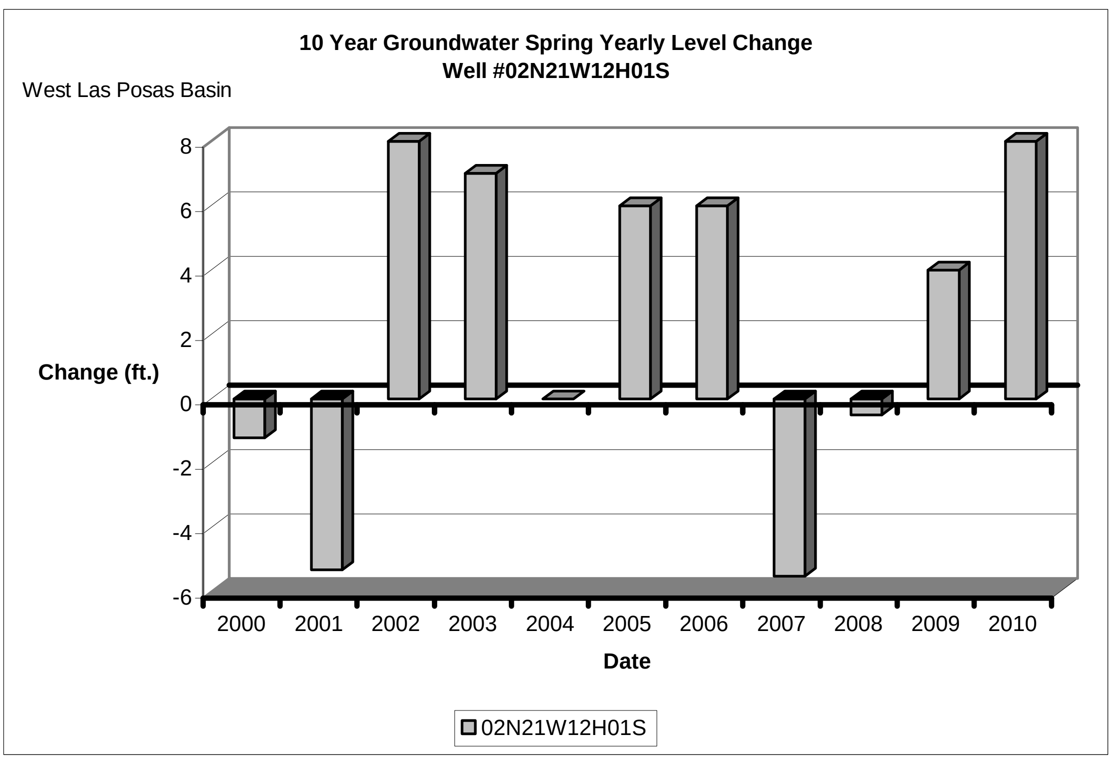

Figure B-11: West Las Posas Basin 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

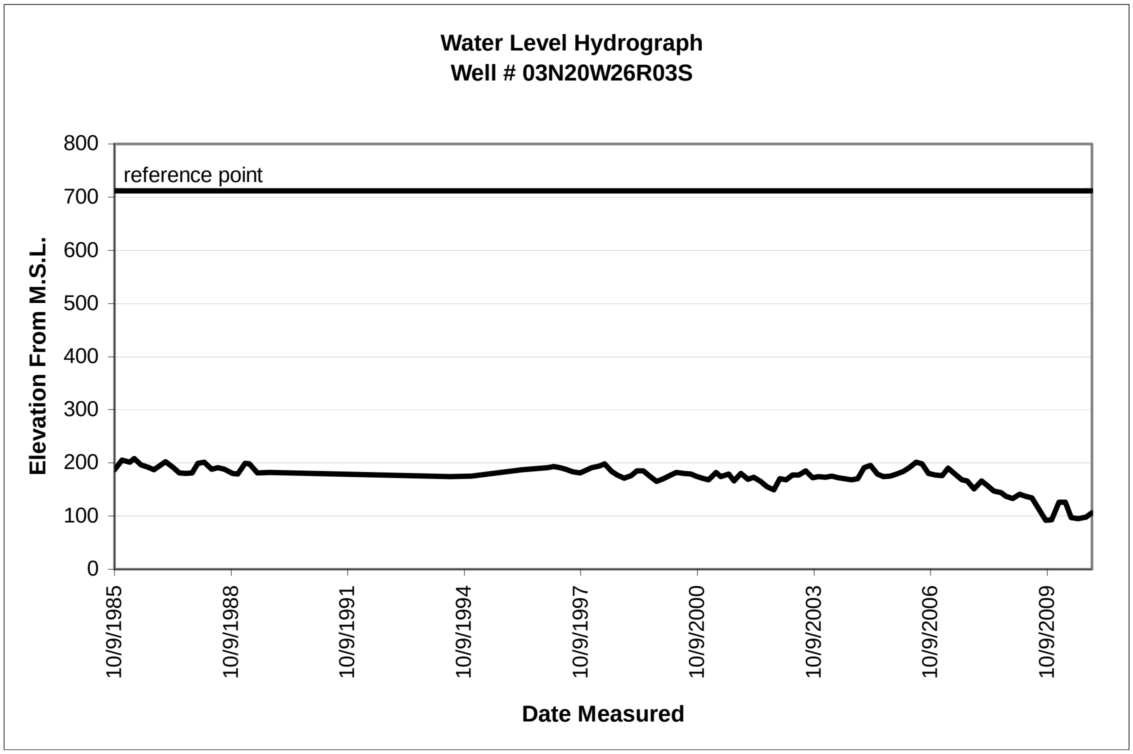

Figure B-12: East Las Posas Key Well Hydrograph.

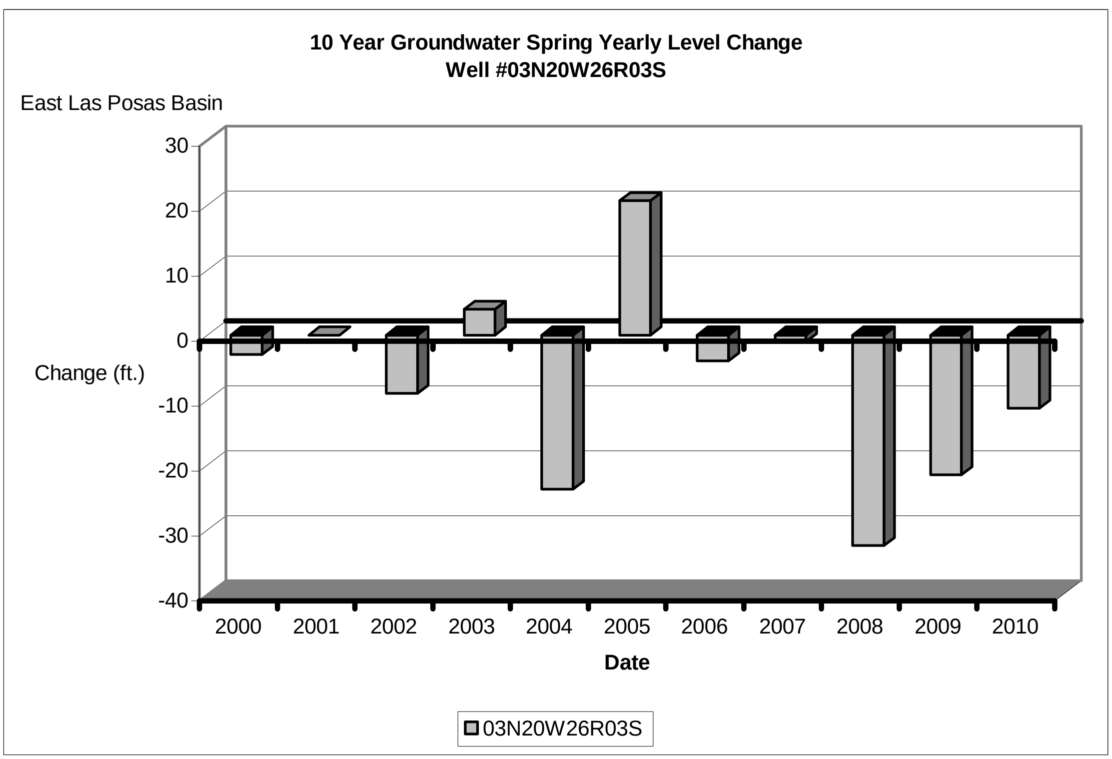

Figure B-13: East Las Posas Basin 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

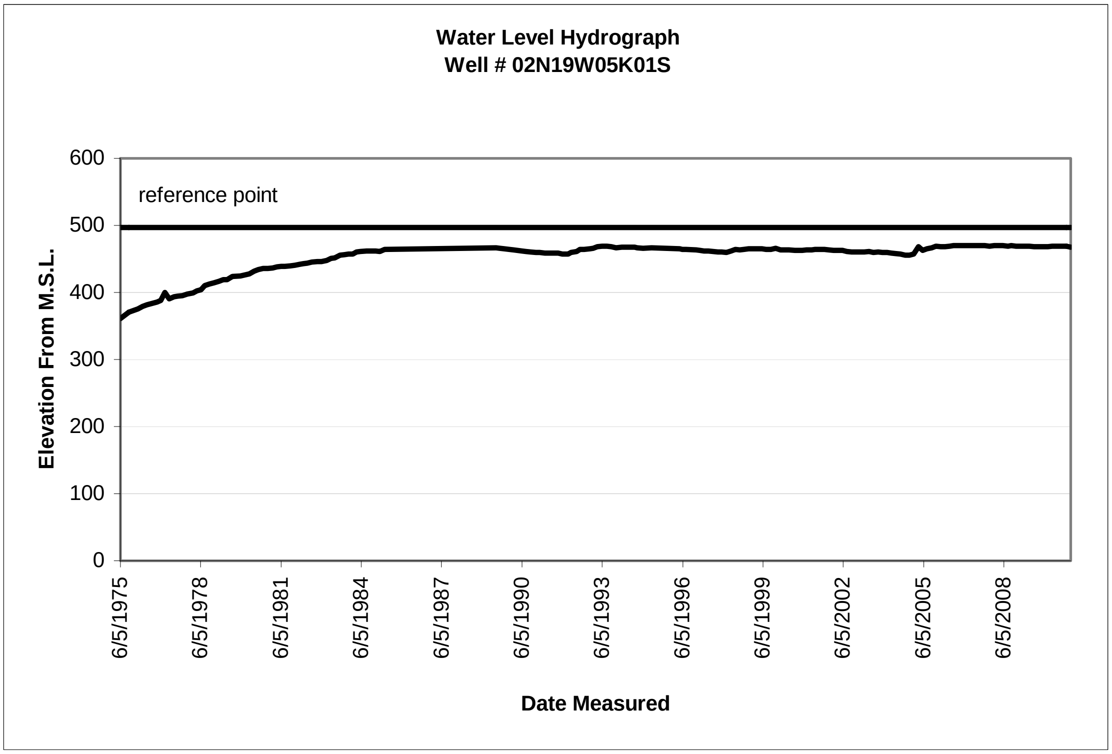

Figure B-14: South Las Posas Basin Key Well Hydrograph.

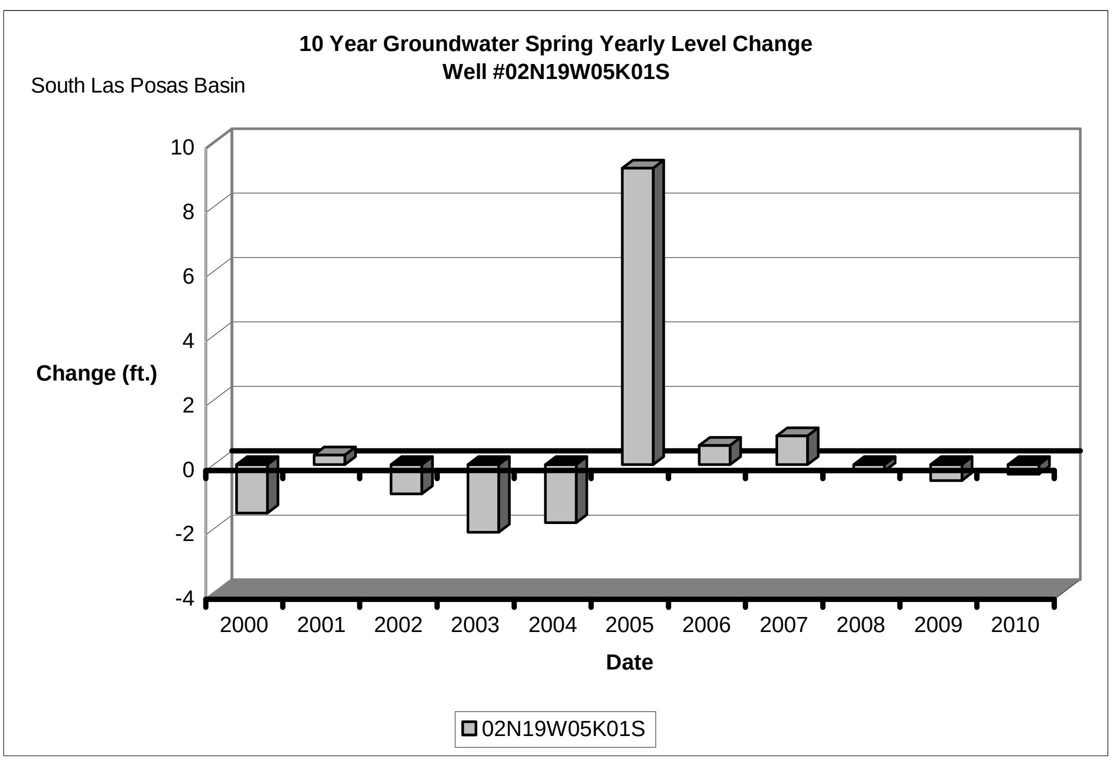

Figure B-15: South Las Posas Basin 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

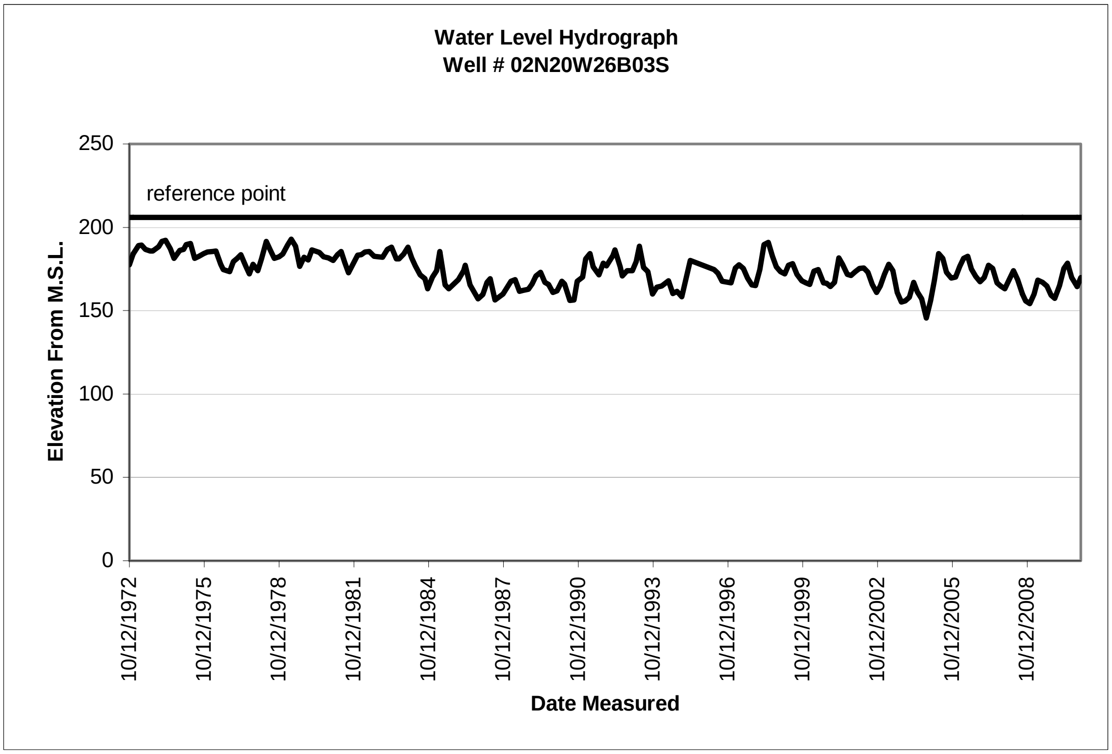

Figure B-16: Arroyo Santa Rosa Basin Key Well Hydrograph.

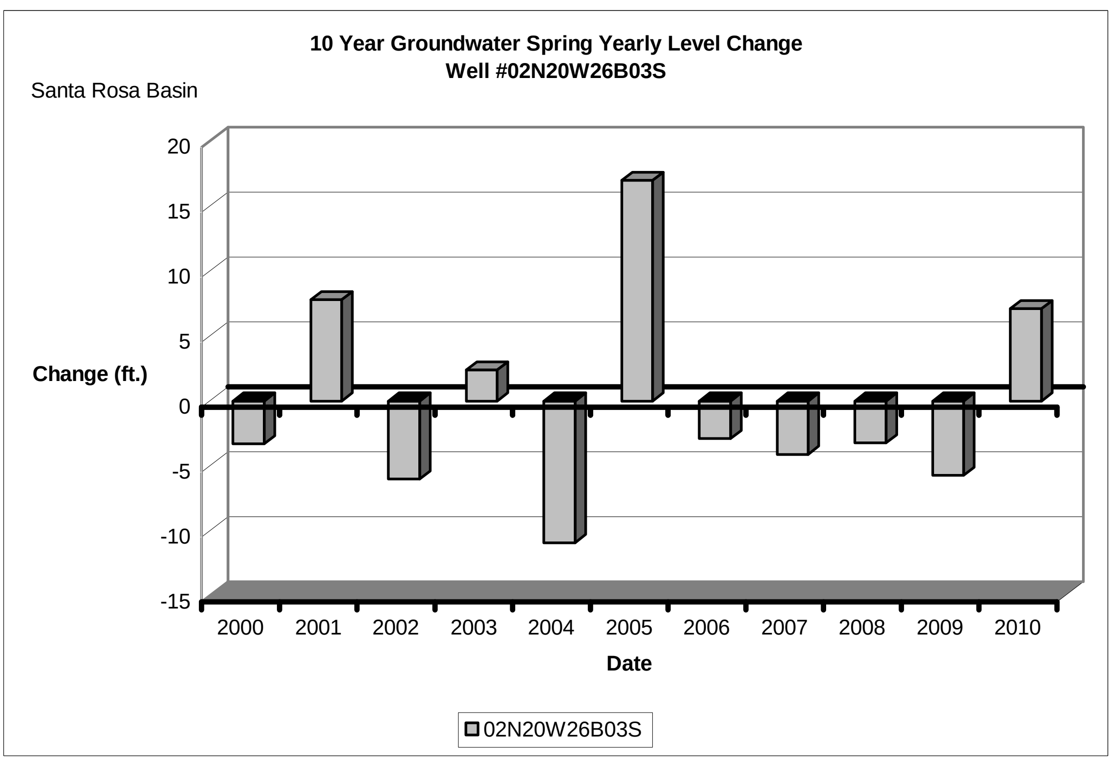

Figure B-17: Arroyo Santa Rosa Basin 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

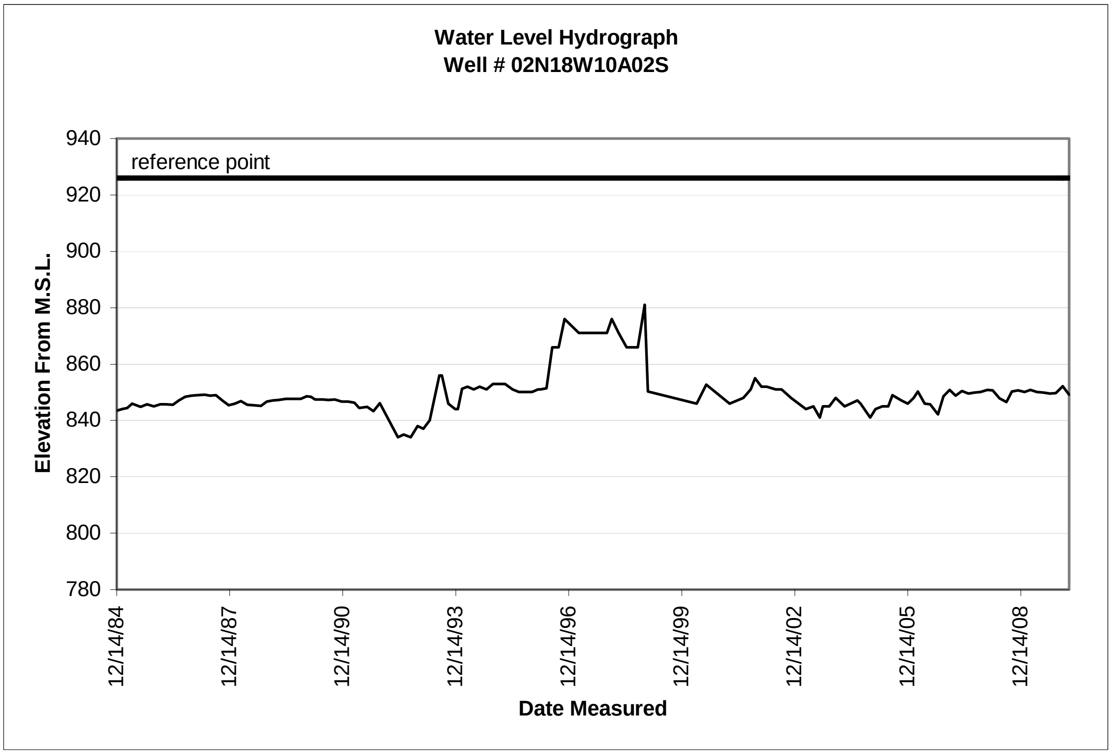

Figure B-18: Simi Valley Basin Key Well Hydrograph.

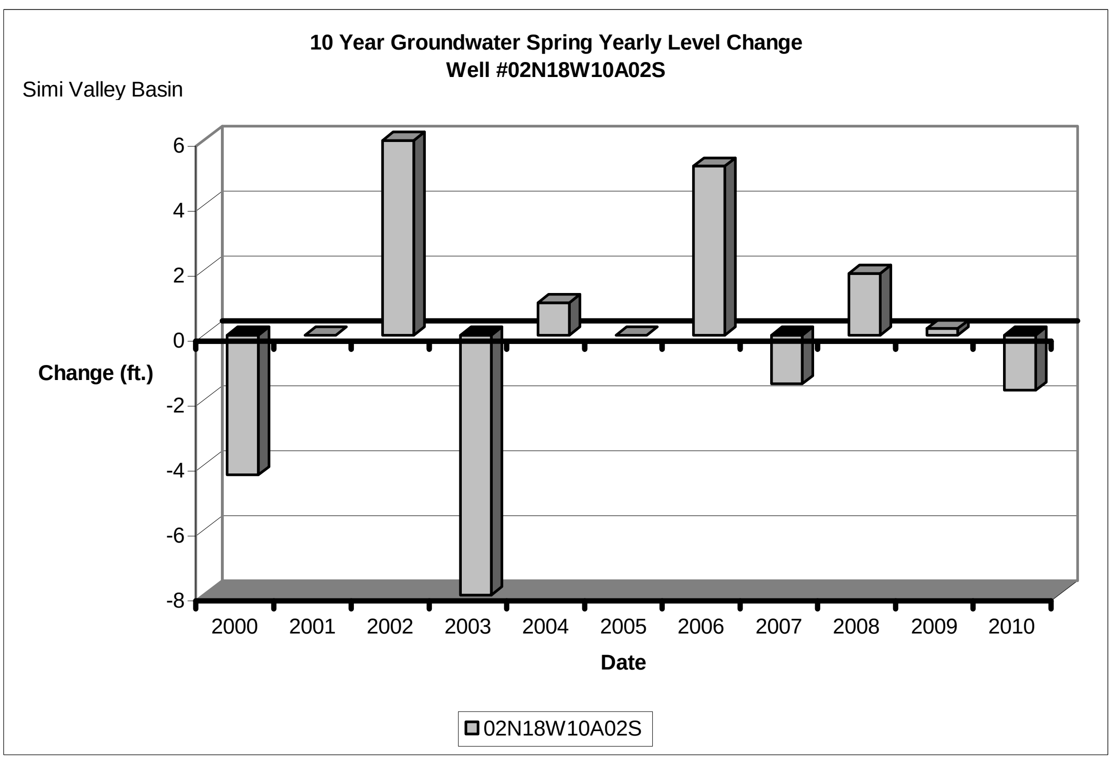

Figure B-19: Simi Basin 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

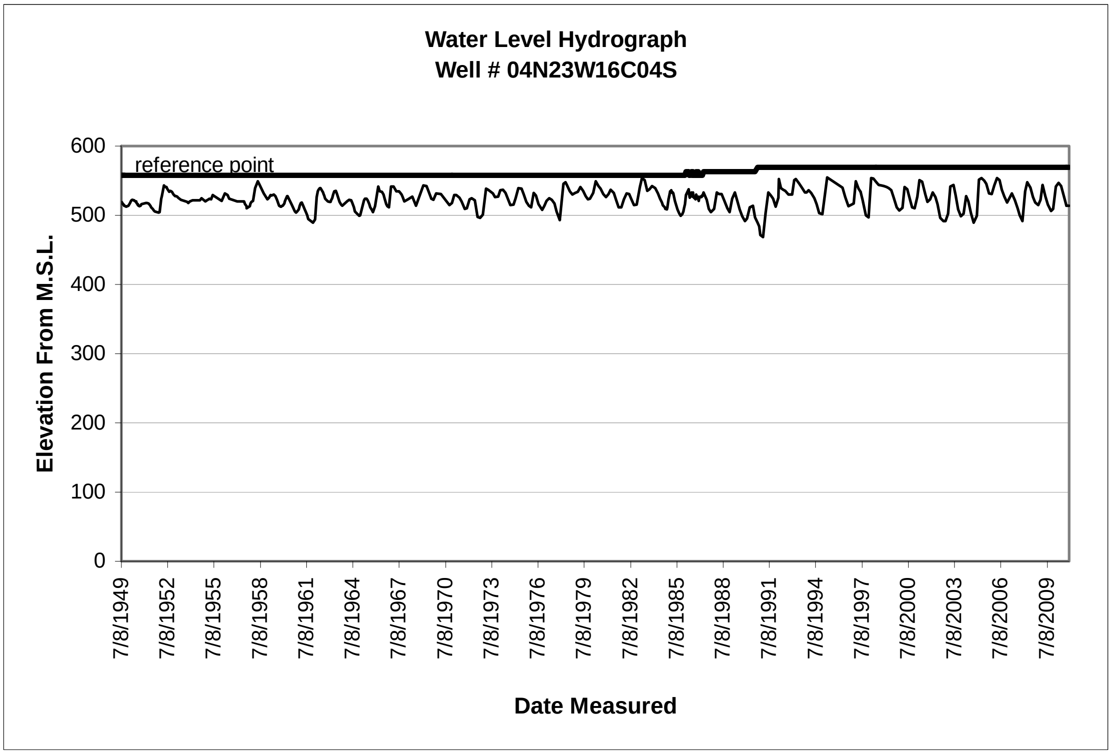

Figure B-20: Ventura River Basin Key Well Hydrograph.

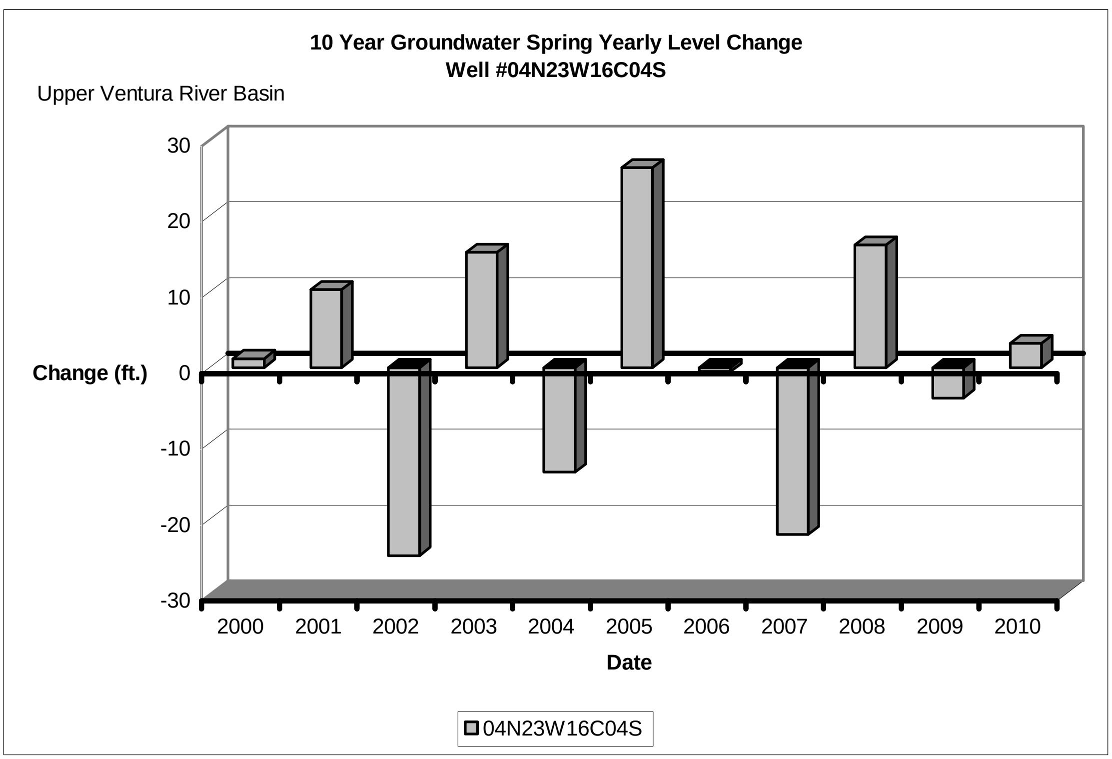

Figure B-21: Ventura River Basin 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

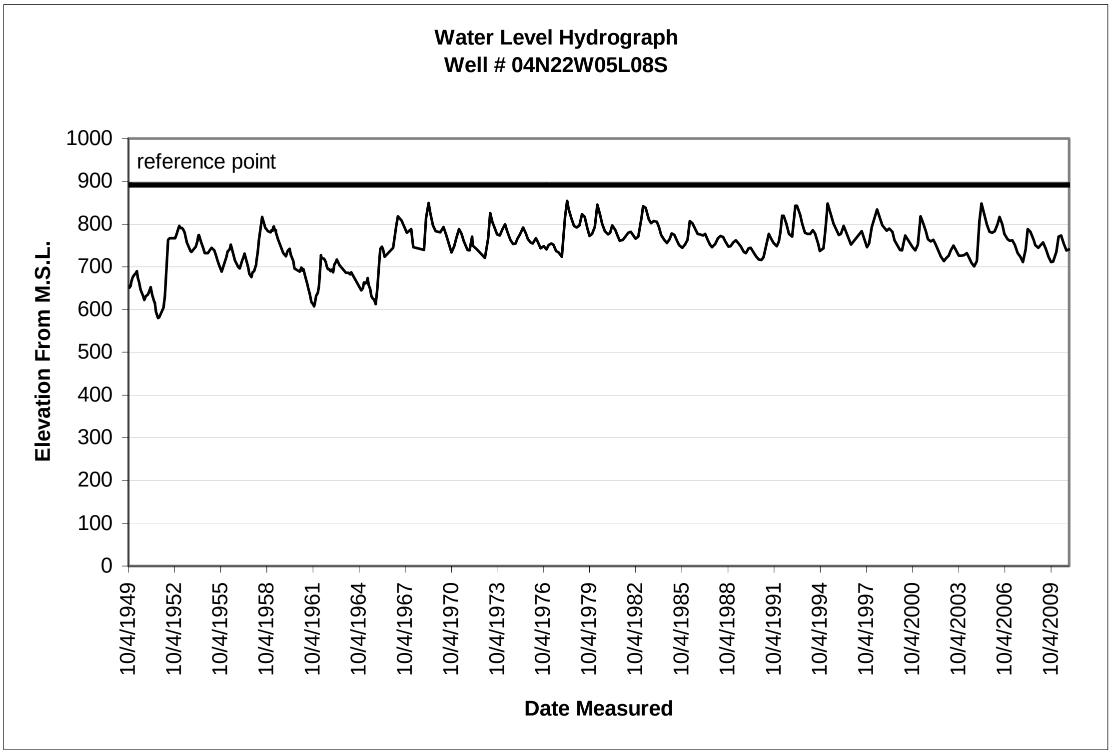

Figure B-22: Ojai Valley Basin Key Well Hydrograph.

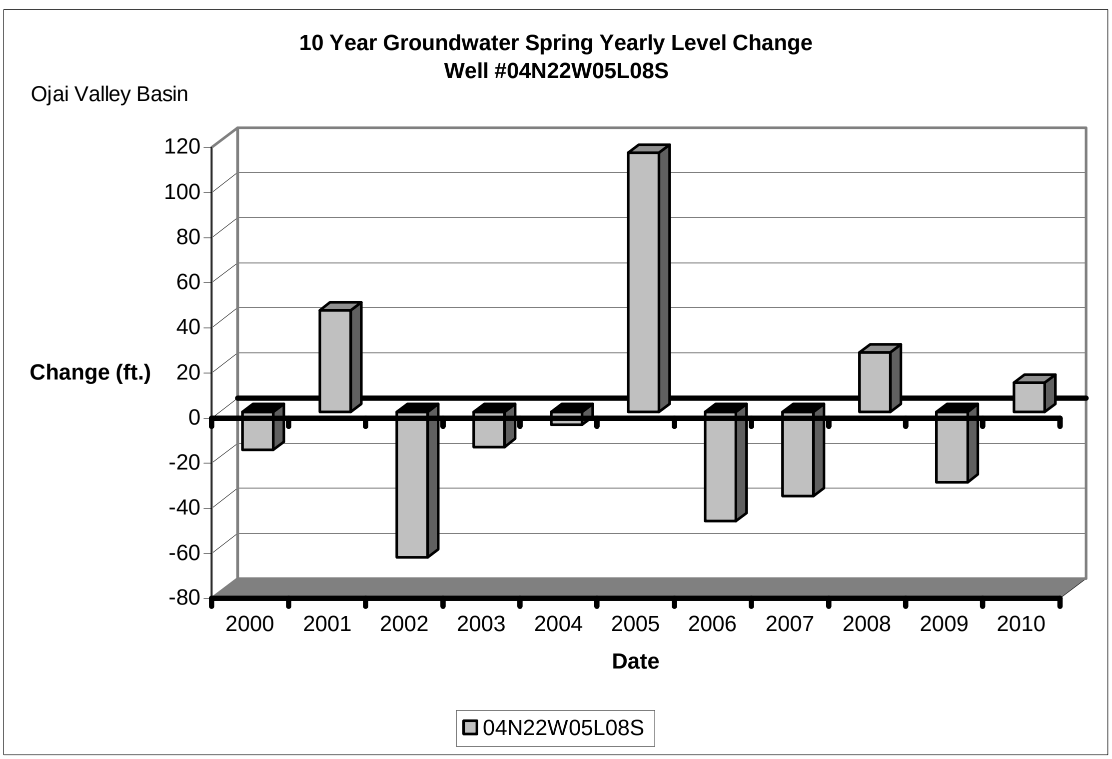

Figure B-23: Ojai Valley Basin 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

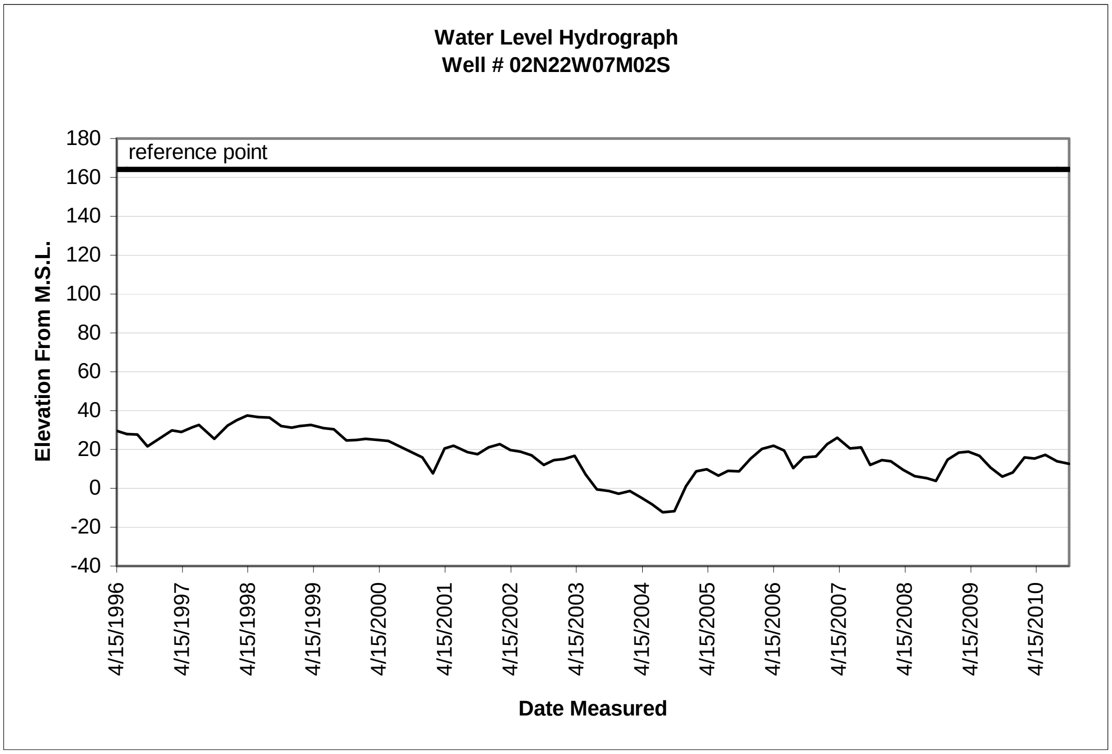

Figure B-24: Mound Basin Key Well Hydrograph.

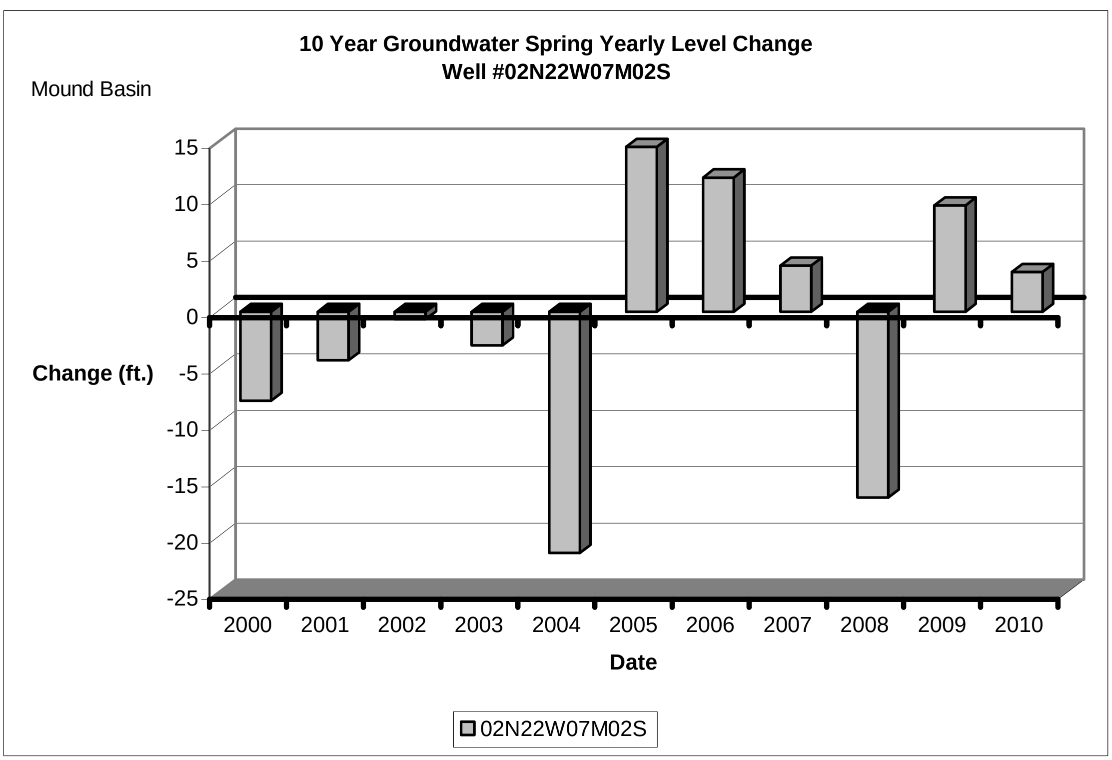

Figure B-25: Mound Basin 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

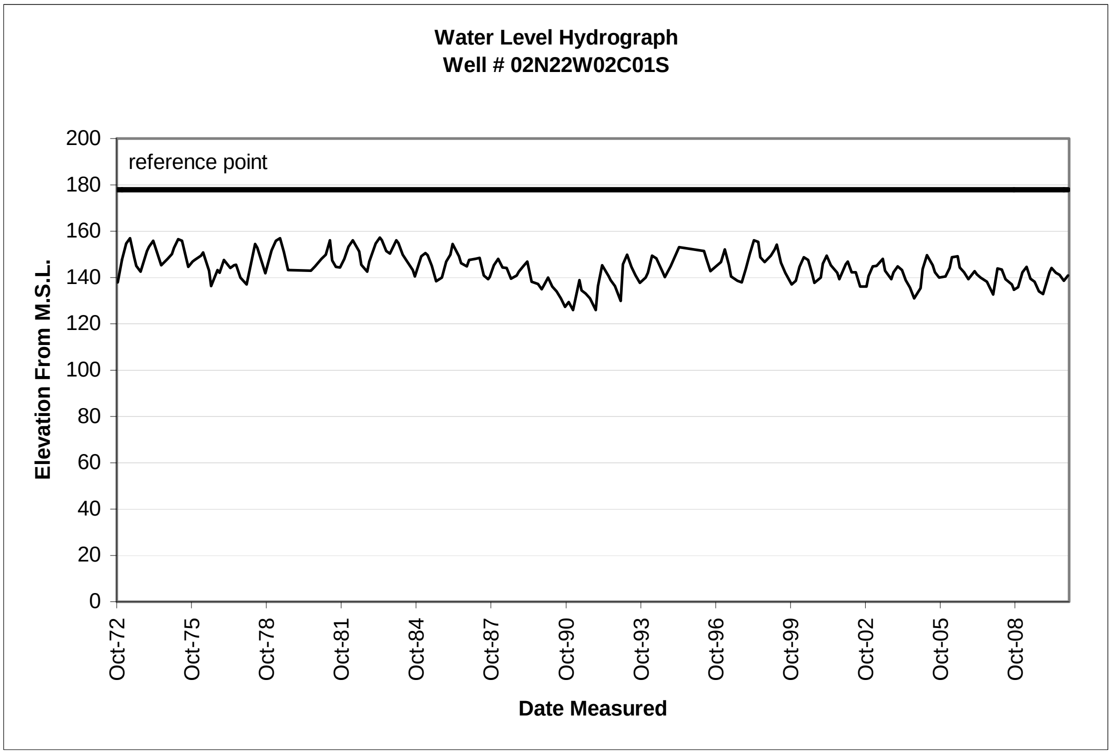

Figure B-26: Santa Paula Basin Key Well Hydrograph.

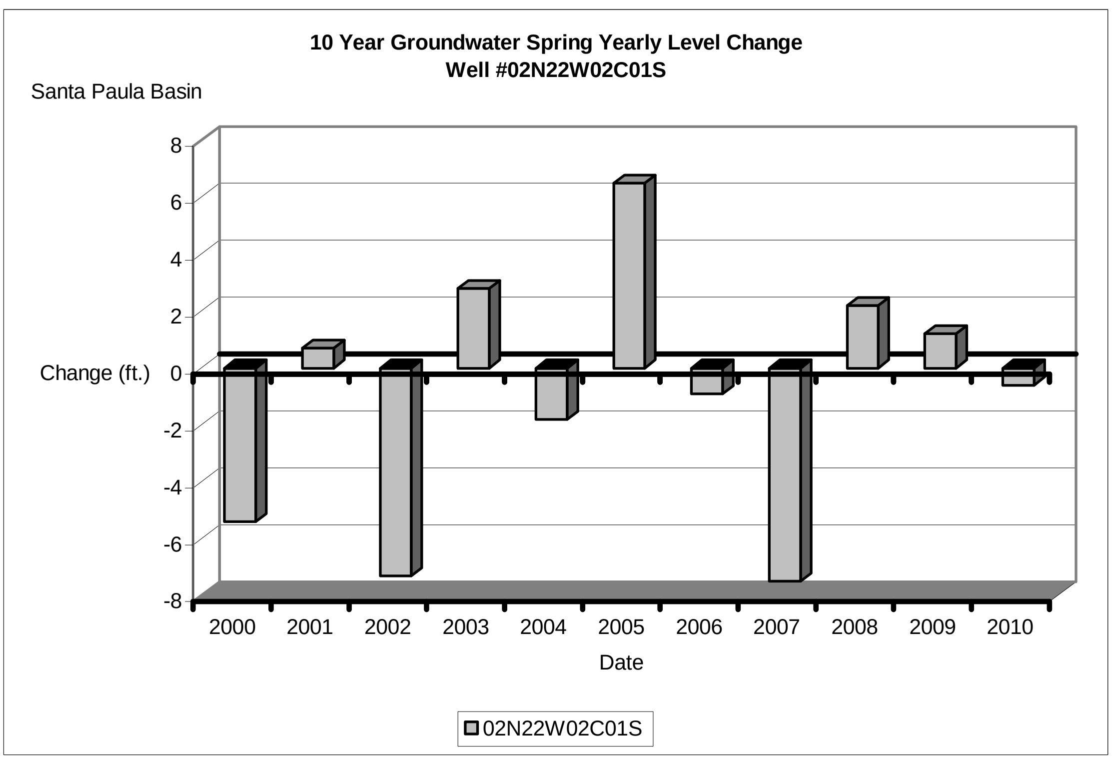

Figure B-27: Santa Paula Basin 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

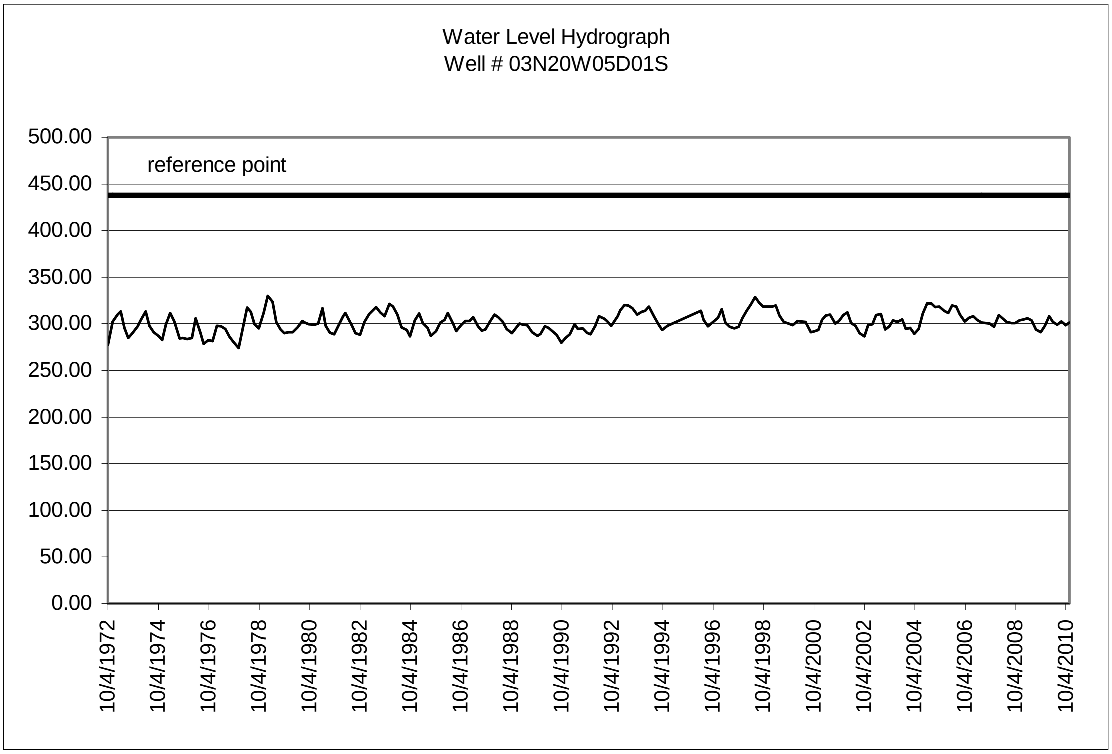

Figure B-28: Fillmore Basin Key Well Hydrograph.

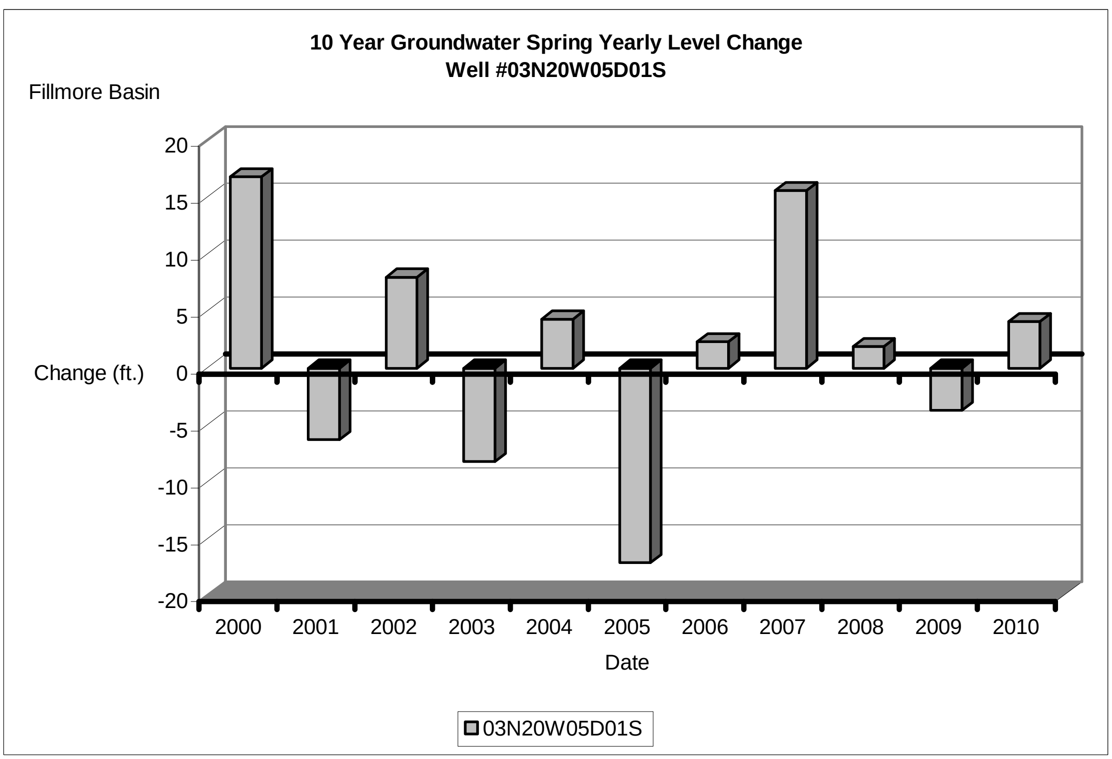

Figure B-29: Fillmore Basin 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

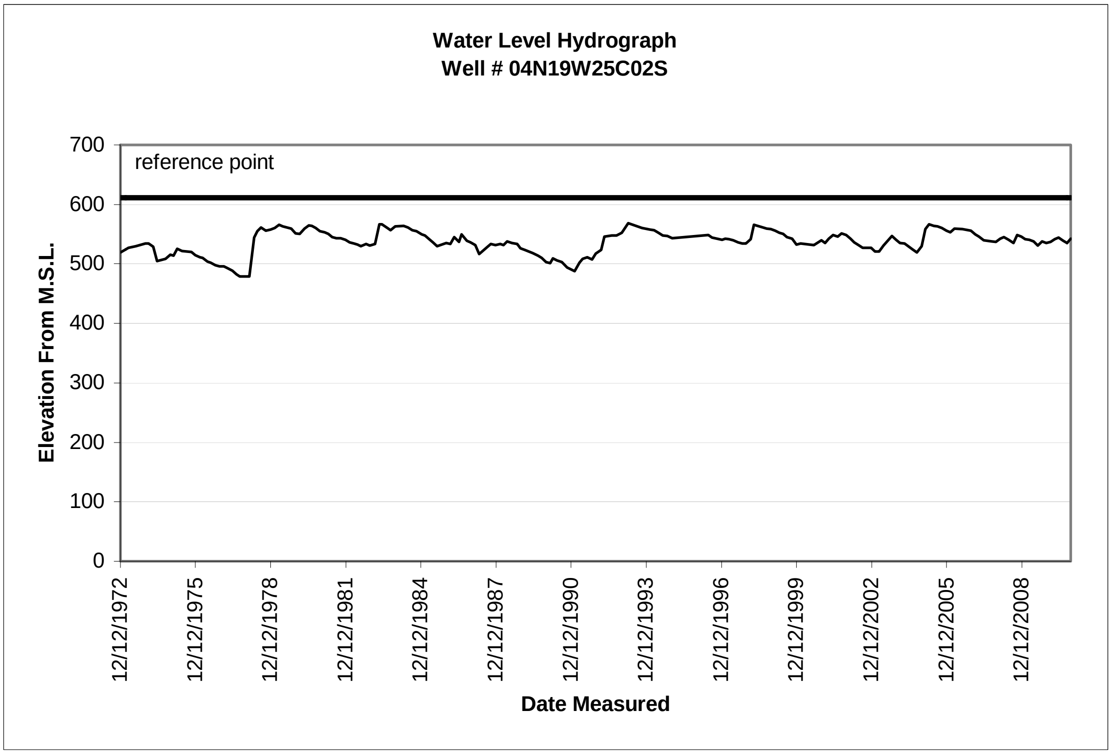

Figure B-30: Piru Basin Key Well Hydrograph.

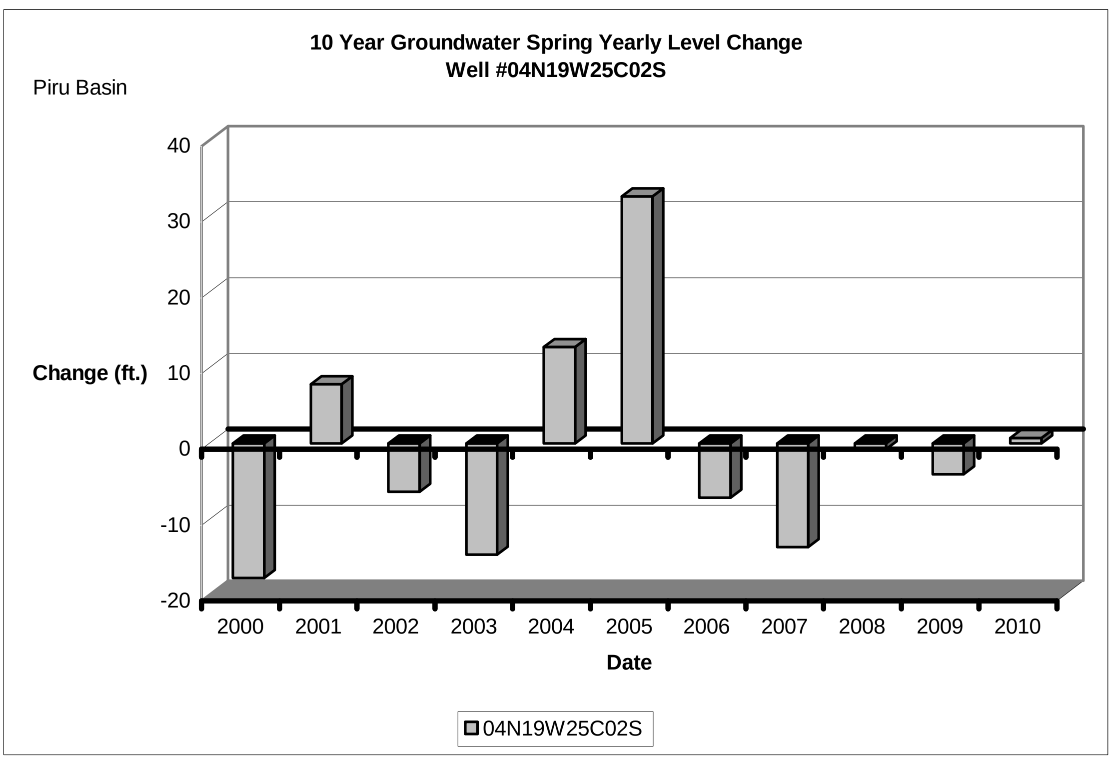

Figure B-31: Piru Basin 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

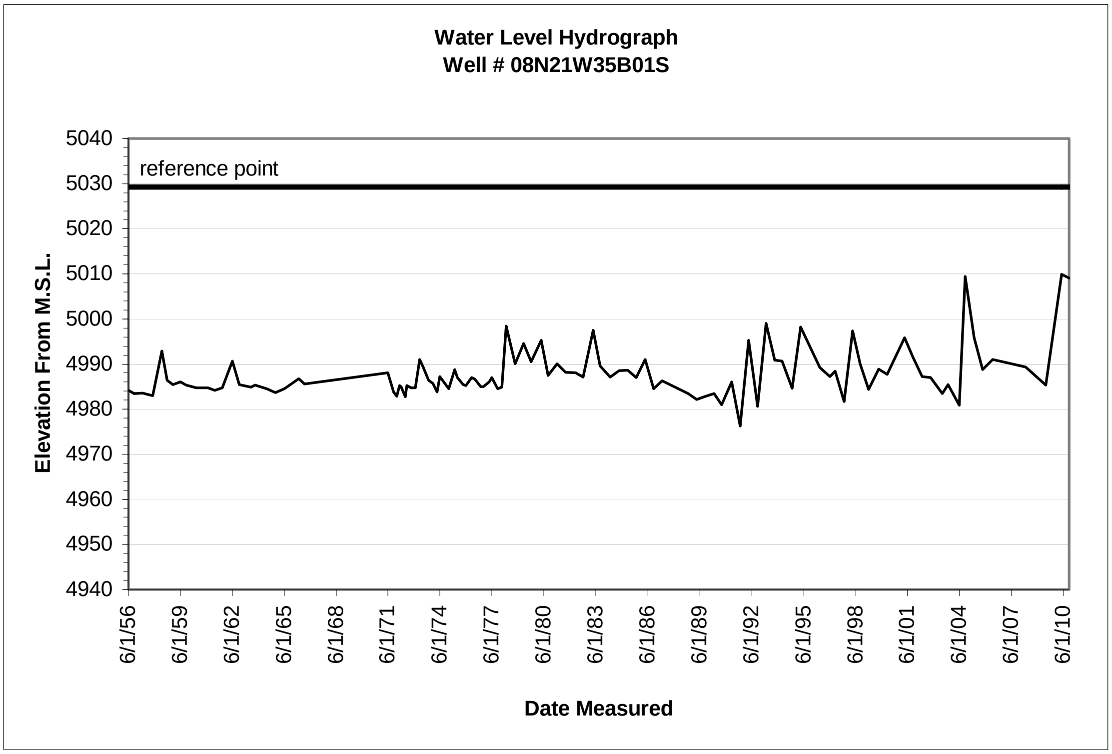

Figure B-32: Lockwood Valley Basin Key Well Hydrograph.

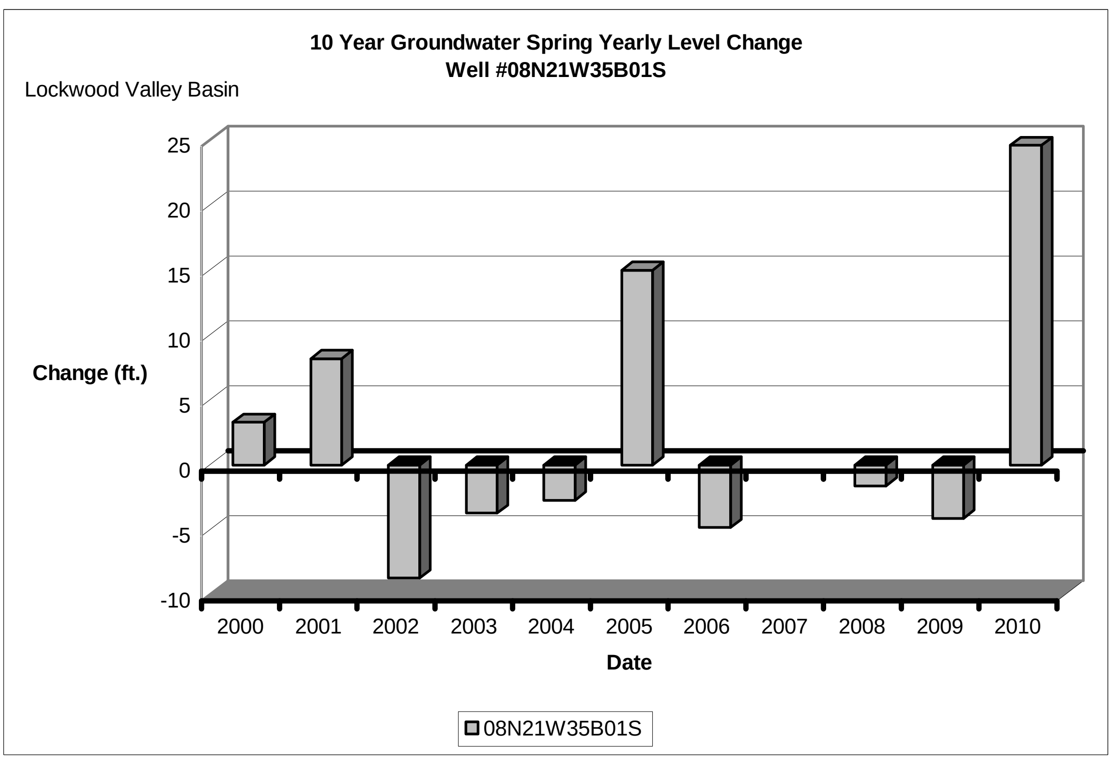

Figure B-33: Lockwood Valley Basin 10 year spring level change depicted on Up/Down graph.

Appendix B – Key Water Level Wells

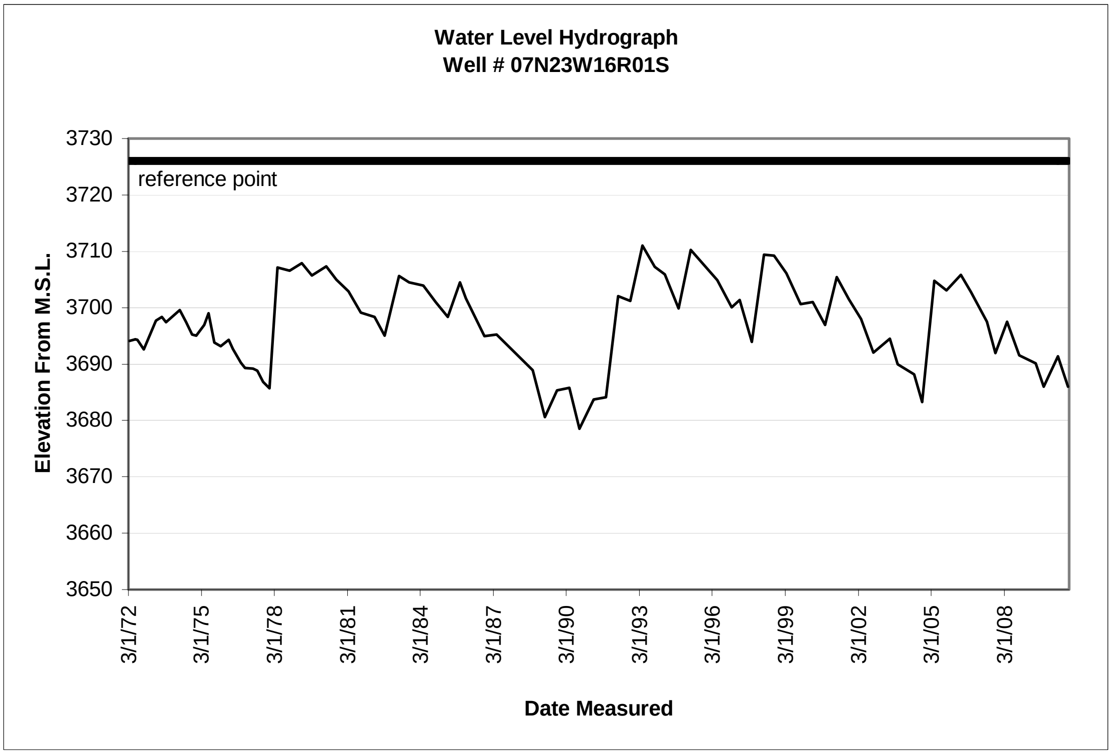

Figure B-34: Cuyama Valley Basin Key Well Hydrograph.

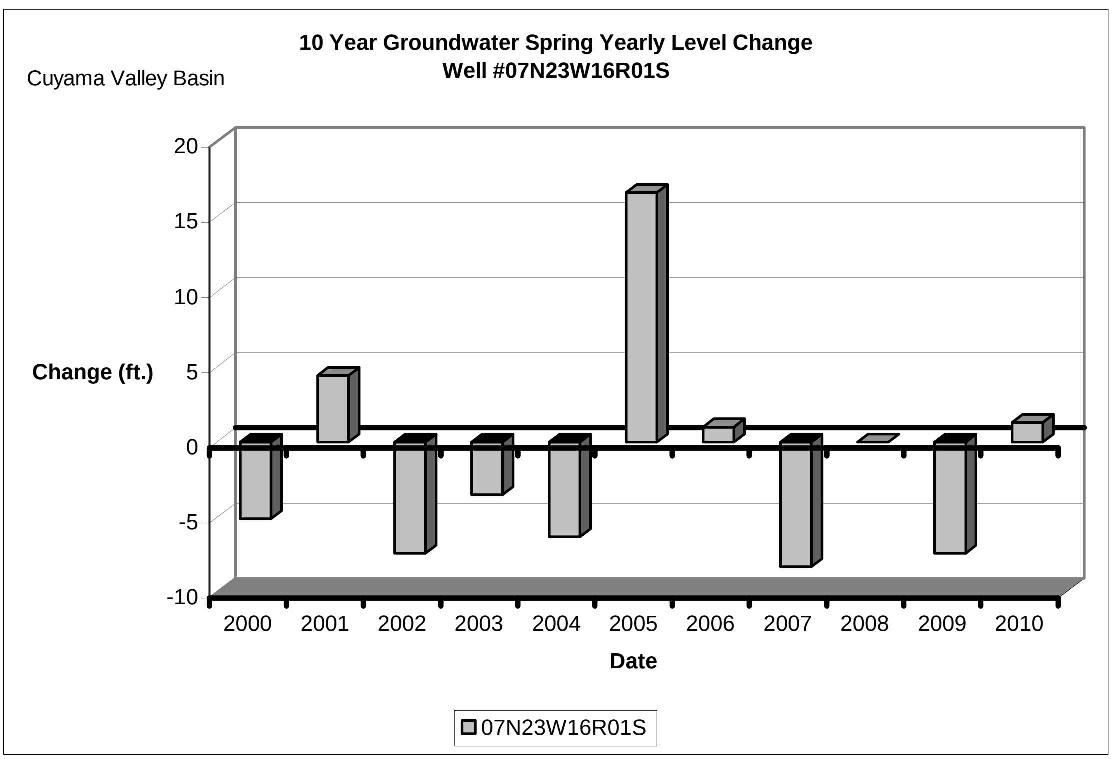

Figure B-35: Cuyama Valley Basin 10 year spring level change depicted on Up/Down graph.

Appendix C – Groundwater Level Measurement Data

Arroyo Santa Rosa	SWN	Date	RP	Depth	Elev	Note
First Measure	02N19W20L01S	1/25/2010	305.00	53.60	251.40	
	02N20W22G01S	1/25/2010	282.70	NM	-----	Tape Hung Up
	02N20W23K01S	1/25/2010	274.10	197.60	76.50	
	02N20W23R01S	1/25/2010	235.20	NM	-----	Locked Out
	02N20W26B03S	1/25/2010	205.90	40.70	165.20	
Second Measure	02N19W20L01S	3/26/2010	305.00	NM	-----	Pumping
	02N20W22G01S	3/26/2010	282.70	NM	-----	Tape Hung Up
	02N20W23K01S	3/26/2010	274.10	192.30	81.80	
	02N20W23R01S	3/26/2010	235.20	NM	-----	Pumping
	02N20W26B03S	3/26/2010	205.90	30.60	175.30	
Third Measure	02N19W20L01S	5/19/2010	305.00	49.60	255.40	
	02N20W22G01S	5/19/2010	282.70	NM	-----	Locked Out
	02N20W23K01S	5/19/2010	274.10	193.40	80.70	
	02N20W23R01S	5/19/2010	235.20	NM	-----	Pumping
	02N20W26B03S	5/19/2010	205.90	27.30	178.60	
Fourth Measure	02N19W20L01S	7/25/2010	305.00	NM	-----	Pumping
	02N20W23K01S	7/25/2010	274.10	205.00	69.10	
	02N20W23R01S	7/25/2010	235.20	NM	-----	Pumping
	02N20W26B03S	7/25/2010	205.90	36.10	169.80	
Fifth Measure	02N19W20L01S	10/7/2010	305.00	57.10	247.90	
	02N20W23K01S	10/7/2010	274.10	202.40	71.70	
	02N20W23R01S	10/7/2010	235.20	69.00	166.20	
	02N20W26B03S	10/7/2010	205.90	41.40	164.50	
Sixth Measure	02N19W20L01S	12/2/2010	305.00	NM	-----	Special
	02N20W23K01S	12/2/2010	274.10	196.90	77.20	
	02N20W23R01S	12/2/2010	235.20	69.90	165.30	
	02N20W26B03S	12/2/2010	205.90	36.10	169.80	
Conejo Valley	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	01N20W03J01S	1/25/2010	764.40	52.80	711.60	
Second Measure	01N20W03J01S	3/22/2010	764.40	38.50	725.90	
Third Measure	01N20W03J01S	5/17/2010	764.40	41.70	722.70	
Fourth Measure	01N20W03J01S	7/25/2010	764.40	45.80	718.60	
Fifth Measure	01N20W03J01S	9/21/2010	764.40	49.50	714.90	
Sixth Measure	01N20W03J01S	12/7/2010	764.40	50.10	714.30	
Cuyama Valley	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	07N23W16R01S	5/18/2010	3,726.00	34.60	3,691.40	
	07N24W13C03S	5/18/2010	3,435.00	24.70	3,410.30	
Second Measure	07N23W16R01S	10/8/2010	3,726.00	40.00	3,686.00	
	07N24W13C03S	10/8/2010	3,435.00	28.30	3,406.70	
Fillmore	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	03N20W05D01S	2/1/2010	437.90	129.60	308.30	
	03N20W09D01S	2/1/2010	335.00	5.70	329.30	
	03N20W11C01S	2/1/2010	397.10	41.90	355.20	
	03N21W01P02S	2/1/2010	298.00	33.80	264.20	
	03N21W11B01S	2/1/2010	336.00	78.50	257.50	
	04N19W30D01S	2/1/2010	434.40	42.50	391.90	
	04N20W23Q02S	2/1/2010	513.90	120.40	393.50	
	04N20W26C02S	2/1/2010	505.40	122.40	383.00	
	04N20W33C03S	2/1/2010	526.80	161.00	365.80	
	03N19W06D02S	2/2/2010	434.60	46.40	388.20	
	03N20W01C04S	2/2/2010	404.60	27.10	377.50	
	04N19W31R01S	2/2/2010	448.80	NM	-----	Pumping
	04N19W32M02S	2/2/2010	449.50	12.90	436.60	
	04N19W33D03S	2/2/2010	478.40	5.70	472.70	
	04N19W33D04S	2/2/2010	479.50	NM	-----	Pumping

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Second Measure	03N20W05D01S	3/31/2010	437.90	136.20	301.70	
	03N21W01P02S	3/31/2010	298.00	39.30	258.70	
	03N21W11B01S	3/31/2010	336.00	85.00	251.00	
	04N20W33C03S	3/31/2010	526.80	158.00	368.80	
	03N20W09D01S	4/2/2010	335.00	NM	-----	Pumping
	04N19W30D01S	4/2/2010	434.40	40.10	394.30	
	04N20W23Q02S	4/2/2010	513.90	119.20	394.70	
	04N20W26C02S	4/2/2010	505.40	125.80	379.60	
	03N19W06D02S	4/7/2010	434.60	46.20	388.40	
	03N20W01C04S	4/7/2010	404.60	27.60	377.00	
	03N20W11C01S	4/7/2010	397.10	43.10	354.00	
	04N19W31R01S	4/7/2010	448.80	NM	-----	Locked Out
	04N19W32M02S	4/7/2010	449.50	13.80	435.70	
	04N19W33D03S	4/7/2010	478.40	NM	-----	Pumping
	04N19W33D04S	4/7/2010	479.50	5.40	474.10	
Third Measure	03N20W05D01S	5/26/2010	437.90	138.80	299.10	
	03N21W01P02S	5/26/2010	298.00	44.70	253.30	
	03N20W01C04S	5/26/2010	404.60	29.20	375.40	
	03N20W11C01S	5/26/2010	397.10	45.00	352.10	
	03N21W11B01S	5/26/2010	336.00	95.10	240.90	
	04N19W30D01S	5/26/2010	434.40	42.20	392.20	
	04N19W31R01S	5/26/2010	448.80	46.00	402.80	
	04N19W32M02S	5/26/2010	449.50	14.60	434.90	
	04N19W33D03S	5/26/2010	478.40	NM	-----	Special
	04N19W33D04S	5/26/2010	479.50	NM	-----	Pumping
	04N20W26C02S	5/26/2010	505.40	132.20	373.20	
	03N19W06D02S	5/27/2010	434.60	48.00	386.60	
	03N20W09D01S	5/27/2010	335.00	8.40	326.60	
	04N20W23Q02S	5/27/2010	513.90	123.10	390.80	
	04N20W33C03S	5/27/2010	526.80	171.00	355.80	
Fourth Measure	03N19W06D02S	8/2/2010	434.60	49.50	385.10	
	03N20W01C04S	8/2/2010	404.60	30.80	373.80	
	03N20W05D01S	8/2/2010	437.90	135.50	302.40	
	03N20W09D01S	8/2/2010	335.00	9.20	325.80	
	03N20W11C01S	8/2/2010	397.10	NM	-----	Pumping
	03N21W01P02S	8/2/2010	298.00	44.80	253.20	
	03N21W11B01S	8/2/2010	336.00	93.40	242.60	
	04N19W30D01S	8/2/2010	434.40	NM	-----	Pumping
	04N19W31R01S	8/2/2010	448.80	NM	-----	Pumping
	04N19W32M02S	8/2/2010	449.50	NM	-----	Pumping
	04N20W23Q02S	8/2/2010	513.90	130.50	383.40	
	04N20W26C02S	8/2/2010	505.40	136.70	368.70	
	04N20W33C03S	8/2/2010	526.80	170.30	356.50	
	04N19W33D03S	8/3/2010	478.40	NM	-----	Pumping
	04N19W33D04S	8/3/2010	479.50	6.10	473.40	
Fifth Measure	03N19W06D02S	9/28/2010	434.60	52.30	382.30	
	03N20W01C04S	9/28/2010	404.60	31.80	372.80	
	03N20W05D01S	9/28/2010	437.90	139.30	298.60	
	03N20W09D01S	9/28/2010	335.00	NM	-----	Pumping
	03N20W11C01S	9/28/2010	397.10	46.80	350.30	
	03N21W01P02S	9/28/2010	298.00	47.30	250.70	
	03N21W11B01S	9/28/2010	336.00	101.20	234.80	
	04N19W30D01S	9/28/2010	434.40	47.10	387.30	
	04N20W26C02S	9/28/2010	505.40	144.60	360.80	
	04N20W33C03S	9/28/2010	526.80	180.00	346.80	
	04N19W31R01S	9/29/2010	448.80	NM	-----	Pumping
	04N19W32M02S	9/29/2010	449.50	14.20	435.30	
	04N19W33D03S	9/29/2010	478.40	NM	-----	Pumping
	04N19W33D04S	9/29/2010	479.50	5.30	474.20	
	04N20W23Q02S	10/6/2010	513.90	137.90	376.00	

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	03N20W05D01S	11/22/2010	437.90	136.50	301.40	
	03N21W01P02S	11/22/2010	298.00	37.30	260.70	
	03N21W11B01S	11/22/2010	336.00	83.60	252.40	
	04N19W30D01S	11/22/2010	434.40	45.57	388.83	
	04N19W33D03S	11/22/2010	478.40	NM	-----	Pumping
	04N19W33D04S	11/22/2010	479.50	4.90	474.60	
	04N20W23Q02S	11/22/2010	513.90	138.60	375.30	
Sixth Measure	04N20W33C03S	11/22/2010	526.80	167.00	359.80	
	03N19W06D02S	11/23/2010	434.60	47.80	386.80	
	03N20W01C04S	11/23/2010	404.60	28.50	376.10	
	03N20W09D01S	11/23/2010	335.00	7.30	327.70	
	03N20W11C01S	11/23/2010	397.10	43.70	353.40	
	04N19W31R01S	11/23/2010	448.80	47.70	401.10	
	04N19W32M02S	11/23/2010	449.50	14.20	435.30	
	04N20W26C02S	11/23/2010	505.40	129.20	376.20	
East Las Posas	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
	03N19W17Q01S	1/26/2010	1,300.00	NM	-----	Special
	03N19W19J01S	1/26/2010	1,050.00	843.00	207.00	
	03N19W19P02S	1/26/2010	1,059.30	NM	-----	Inaccessible
	03N19W29F06S	1/26/2010	855.20	242.60	612.60	
	03N19W29K04S	1/26/2010	852.00	NM	-----	Pumping
	03N20W23L01S	1/26/2010	970.30	750.00	220.30	
	03N20W26R03S	1/26/2010	711.50	585.00	126.50	
	02N20W03K02S	2/10/2010	483.50	290.00	193.50	
	03N20W25H01S	2/10/2010	823.30	223.20	600.10	
First Measure	03N20W27H03S	2/10/2010	860.00	NM	-----	Inaccessible
	03N20W34G01S	2/10/2010	680.10	501.00	179.10	
	03N20W35R02S	2/10/2010	590.00	425.80	164.20	
	03N20W35R03S	2/10/2010	590.00	427.80	162.20	
	03N20W35R04S	2/10/2010	590.00	291.90	298.10	
	02N20W01M01S	2/11/2010	472.00	NM	-----	Locked Out
	02N20W08F01S	2/11/2010	436.50	570.00	-133.50	
	02N20W10D02S	2/11/2010	462.00	263.90	198.10	
	02N20W10G01S	2/11/2010	415.50	143.00	272.50	
	02N20W10J01S	2/11/2010	406.80	112.60	294.20	
	03N19W17Q01S	3/24/2010	1,300.00	NM	-----	Special
	03N19W29K04S	3/24/2010	852.00	642.00	210.00	
	03N19W19J01S	3/26/2010	1,050.00	840.00	210.00	
	03N19W19P02S	3/26/2010	1,059.30	NM	-----	Special
	03N19W29F06S	3/26/2010	855.20	244.00	611.20	
	03N20W23L01S	3/26/2010	970.30	NM	-----	Special
	03N20W25H01S	3/26/2010	823.30	223.00	600.30	
	03N20W26R03S	3/26/2010	711.50	585.80	125.70	
	02N20W03K02S	4/8/2010	483.50	NM	-----	Destroyed
Second Measure	02N20W10D02S	4/8/2010	462.00	263.40	198.60	
	02N20W10G01S	4/8/2010	415.50	140.00	275.50	
	02N20W10J01S	4/8/2010	406.80	110.00	296.80	
	02N20W01M01S	4/9/2010	472.00	NM	-----	Pumping
	02N20W08F01S	4/9/2010	436.50	NM	-----	Pumping
	03N20W27H03S	4/9/2010	860.00	590.00	270.00	
	03N20W34G01S	4/9/2010	680.10	503.00	177.10	
	03N20W35R02S	4/9/2010	590.00	431.70	158.30	
	03N20W35R03S	4/9/2010	590.00	433.20	156.80	
	03N20W35R04S	4/9/2010	590.00	292.10	297.90	

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Third Measure	03N19W17Q01S	5/20/2010	1,300.00	1,058.00	242.00	
	03N19W19J01S	5/20/2010	1,050.00	842.50	207.50	
	03N19W19P02S	5/20/2010	1,059.30	NM	-----	Special
	03N19W29F06S	5/20/2010	855.20	238.50	616.70	
	03N19W29K04S	5/20/2010	852.00	659.00	193.00	
	03N20W23L01S	5/20/2010	970.30	741.70	228.60	
	03N20W25H01S	5/20/2010	823.30	223.30	600.00	
	03N20W26R03S	5/20/2010	711.50	614.50	97.00	
	02N20W01M01S	6/3/2010	472.00	NM	-----	Pumping
	02N20W08F01S	6/3/2010	436.50	NM	-----	Pumping
	02N20W10D02S	6/3/2010	462.00	NM	-----	Pumping
	02N20W10G01S	6/3/2010	415.50	145.30	270.20	
	02N20W10J01S	6/3/2010	406.80	112.60	294.20	
	03N20W27H03S	6/3/2010	860.00	542.00	318.00	
	03N20W34G01S	6/3/2010	680.10	501.50	178.60	
	03N20W35R02S	6/3/2010	590.00	487.40	102.60	
	03N20W35R03S	6/3/2010	590.00	489.50	100.50	
	03N20W35R04S	6/3/2010	590.00	293.00	297.00	
Fourth Measure	03N19W19J01S	7/26/2010	1,050.00	843.00	207.00	
	03N19W19P02S	7/26/2010	1,059.30	NM	-----	Inaccessible
	03N19W29F06S	7/26/2010	855.20	242.30	612.90	
	03N19W29K04S	7/26/2010	852.00	673.00	179.00	
	03N20W23L01S	7/26/2010	970.30	744.00	226.30	
	03N20W25H01S	7/26/2010	823.30	227.10	596.20	
	03N20W26R03S	7/26/2010	711.50	616.00	95.50	
	02N20W01M01S	8/9/2010	472.00	330.50	141.50	
	02N20W08F01S	8/9/2010	436.50	NM	-----	Pumping
	02N20W10D02S	8/9/2010	462.00	282.30	179.70	
	02N20W10G01S	8/9/2010	415.50	147.00	268.50	
	02N20W10J01S	8/9/2010	406.80	115.20	291.60	
	03N20W27H03S	8/9/2010	860.00	670.00	190.00	
	03N20W34G01S	8/9/2010	680.10	506.00	174.10	
	03N20W35R02S	8/9/2010	590.00	466.50	123.50	Nearby Pumping
	03N20W35R03S	8/9/2010	590.00	467.60	122.40	Nearby Pumping
	03N20W35R04S	8/9/2010	590.00	293.70	296.30	Nearby Pumping
Fifth Measure	03N19W17Q01S	10/7/2010	1,300.00	1,050.00	250.00	
	03N19W19J01S	10/7/2010	1,050.00	847.00	203.00	
	03N19W19P02S	10/7/2010	1,059.30	NM	-----	Special
	03N19W29F06S	10/7/2010	855.20	242.40	612.80	
	03N19W29K04S	10/7/2010	852.00	670.00	182.00	
	03N20W23L01S	10/7/2010	970.30	NM	-----	Inaccessible
	03N20W25H01S	10/7/2010	823.30	228.50	594.80	
	03N20W26R03S	10/7/2010	711.50	613.30	98.20	
	02N20W01M01S	10/11/2010	472.00	320.10	151.90	
	02N20W08F01S	10/11/2010	436.50	NM	-----	Pumping
	02N20W10D02S	10/11/2010	462.00	275.20	186.80	
	02N20W10G01S	10/11/2010	415.50	NM	-----	Pumping
	02N20W10J01S	10/11/2010	406.80	115.90	290.90	
	03N20W27H03S	10/11/2010	860.00	690.60	169.40	
	03N20W34G01S	10/11/2010	680.10	NM	-----	Pumping
	03N20W35R02S	10/11/2010	590.00	458.60	131.40	Nearby Pumping
	03N20W35R03S	10/11/2010	590.00	459.80	130.20	Nearby Pumping
	03N20W35R04S	10/11/2010	590.00	294.60	295.40	Nearby Pumping

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Sixth Measure	02N20W01M01S	12/1/2010	472.00	NM	-----	Pumping
	02N20W08F01S	12/1/2010	436.50	NM	-----	Pumping
	02N20W10D02S	12/1/2010	462.00	275.50	186.50	
	02N20W10G01S	12/1/2010	415.50	NM	-----	Pumping
	02N20W10J01S	12/1/2010	406.80	114.70	292.10	
	03N20W27H03S	12/1/2010	860.00	NM	-----	Special
	03N20W34G01S	12/1/2010	680.10	506.60	173.50	
	03N20W35R02S	12/1/2010	590.00	451.50	138.50	
	03N20W35R03S	12/1/2010	590.00	451.70	138.30	
	03N20W35R04S	12/1/2010	590.00	293.40	296.60	
	03N19W17Q01S	12/2/2010	1,300.00	NM	-----	Special
	03N19W19J01S	12/2/2010	1,050.00	847.00	203.00	
	03N19W19P02S	12/2/2010	1,059.30	NM	-----	Special
	03N19W29F06S	12/2/2010	855.20	239.80	615.40	
	03N19W29K04S	12/2/2010	852.00	NM	-----	Pumping
	03N20W23L01S	12/2/2010	970.30	NM	-----	Inaccessible
	03N20W25H01S	12/2/2010	823.30	228.70	594.60	Pumped Recently
	03N20W26R03S	12/2/2010	711.50	605.60	105.90	
South Las Posas	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	02N19W05K01S	1/26/2010	497.00	28.80	468.20	
	02N19W08H02S	1/26/2010	491.70	23.10	468.60	
Second Measure	02N19W05K01S	3/24/2010	497.00	28.30	468.70	
	02N19W08H02S	3/24/2010	491.70	22.80	468.90	
Third Measure	02N19W05K01S	5/19/2010	497.00	28.00	469.00	
	02N19W08H02S	5/19/2010	491.70	22.70	469.00	
Fourth Measure	02N19W05K01S	7/26/2010	497.00	28.00	469.00	
	02N19W08H02S	7/26/2010	491.70	23.00	468.70	
Fifth Measure	02N19W05K01S	10/7/2010	497.00	28.20	468.80	
	02N19W08H02S	10/7/2010	491.70	22.70	469.00	
Sixth Measure	02N19W05K01S	12/2/2010	497.00	29.70	467.30	
	02N19W08H02S	12/2/2010	491.70	21.80	469.90	
West Las Posas	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	02N20W06R01S	2/10/2010	459.00	557.50	-98.50	
	02N21W09D02S	2/10/2010	321.20	227.40	93.80	
	03N21W35P02S	2/10/2010	581.00	523.00	58.00	
	02N21W11J03S	2/11/2010	378.00	415.40	-37.40	
	02N21W11J04S	2/11/2010	378.00	372.80	5.20	
	02N21W11J05S	2/11/2010	378.00	209.70	168.30	
	02N21W11J06S	2/11/2010	378.00	184.00	194.00	
	02N21W12H01S	2/11/2010	417.10	444.00	-26.90	
	02N21W15M03S	2/11/2010	263.90	257.90	6.00	
	02N21W16J01S	2/11/2010	259.70	NM	-----	Not Accessible
Second Measure	02N20W06R01S	4/9/2010	459.00	554.00	-95.00	
	02N21W09D02S	4/9/2010	321.20	221.60	99.60	
	02N21W11J03S	4/9/2010	378.00	414.40	-36.40	
	02N21W11J04S	4/9/2010	378.00	374.40	3.60	
	02N21W11J05S	4/9/2010	378.00	206.00	172.00	
	02N21W11J06S	4/9/2010	378.00	181.40	196.60	
	02N21W12H01S	4/9/2010	417.10	444.00	-26.90	
	02N21W15M03S	4/9/2010	263.90	265.50	-1.60	
	02N21W16J01S	4/9/2010	259.70	10.90	248.80	
	03N21W35P02S	4/9/2010	581.00	536.00	45.00	

Appendix C – Groundwater Level Measurement Data

Third Measure	02N20W06R01S	6/3/2010	459.00	578.00	-119.00	
	02N21W09D02S	6/3/2010	321.20	226.60	94.60	
	03N21W35P02S	6/3/2010	581.00	537.20	43.80	
	02N21W11J03S	6/6/2010	378.00	418.60	-40.60	
	02N21W11J04S	6/6/2010	378.00	372.80	5.20	
	02N21W11J05S	6/6/2010	378.00	208.50	169.50	
	02N21W11J06S	6/6/2010	378.00	185.60	192.40	
	02N21W12H01S	6/6/2010	417.10	NM	-----	Pumping
	02N21W15M03S	6/6/2010	263.90	279.70	-15.80	
	02N21W16J01S	6/6/2010	259.70	11.40	248.30	
Fourth Measure	02N20W06R01S	8/9/2010	459.00	NM	-----	Pumping
	02N21W09D02S	8/9/2010	321.20	231.90	89.30	
	03N21W35P02S	8/9/2010	581.00	538.00	43.00	
	02N21W11J03S	8/10/2010	378.00	420.60	-42.60	
	02N21W11J04S	8/10/2010	378.00	374.50	3.50	
	02N21W11J05S	8/10/2010	378.00	212.30	165.70	
	02N21W11J06S	8/10/2010	378.00	181.60	196.40	
	02N21W12H01S	8/10/2010	417.10	449.50	-32.40	
	02N21W15M03S	8/10/2010	263.90	289.00	-25.10	Nearby Pumping
	02N21W16J01S	8/10/2010	259.70	12.30	247.40	
Fifth Measure	02N20W06R01S	10/11/2010	459.00	NM	-----	Pumping
	02N21W12H01S	10/11/2010	417.10	447.00	-29.90	
	02N21W09D02S	10/12/2010	321.20	230.10	91.10	
	03N21W35P02S	10/12/2010	581.00	487.00	94.00	
	02N21W11J03S	10/13/2010	378.00	419.10	-41.10	
	02N21W11J04S	10/13/2010	378.00	375.80	2.20	
	02N21W11J05S	10/13/2010	378.00	215.00	163.00	
	02N21W11J06S	10/13/2010	378.00	183.20	194.80	
	02N21W15M03S	10/13/2010	263.90	273.00	-9.10	
	02N21W16J01S	10/13/2010	259.70	12.30	247.40	
Sixth Measure	02N20W06R01S	12/1/2010	459.00	577.60	-118.60	
	02N21W11J03S	12/1/2010	378.00	418.90	-40.90	
	02N21W11J04S	12/1/2010	378.00	325.80	52.20	
	02N21W11J05S	12/1/2010	378.00	214.50	163.50	
	02N21W11J06S	12/1/2010	378.00	183.40	194.60	
	02N21W12H01S	12/1/2010	417.10	NM	-----	Special
	03N21W35P02S	12/1/2010	581.00	542.00	39.00	
	02N21W16J01S	12/13/2010	259.70	12.77	246.93	
	02N21W09D02S	12/14/2010	321.20	233.70	87.50	
	02N21W15M03S	12/14/2010	263.90	136.60	127.30	
Lockwood Valley	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	08N21W33R03S	5/18/2010	5,150.00	37.70	5,112.30	
	08N21W35B01S	5/18/2010	5,029.20	19.30	5,009.90	
	08N21W36G02S	5/18/2010	4,922.00	42.10	4,879.90	
Second Measure	08N21W33R03S	10/8/2010	5,150.00	40.20	5,109.80	
	08N21W35B01S	10/8/2010	5,029.20	20.10	5,009.10	
	08N21W36G02S	10/8/2010	4,922.00	NM	-----	Special
Mound	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	02N22W08P01S	1/25/2010	214.60	200.50	14.10	
	02N23W13K03S	1/25/2010	69.00	58.30	10.70	
	02N22W16K01S	1/29/2010	149.40	139.90	9.50	
	02N22W07M01S	2/8/2010	164.00	147.20	16.80	
	02N22W07M02S	2/8/2010	164.00	148.20	15.80	
	02N22W07M03S	2/8/2010	164.00	15.00	149.00	
	02N23W15J01S	2/8/2010	9.00	0.80	8.20	
	02N23W15J02S	2/8/2010	9.00	-----	9.1	Flowing
	02N23W15J03S	2/8/2010	9.00	-----	9.1	Flowing

Appendix C – Groundwater Level Measurement Data

Second Measure	02N22W16K01S	3/30/2010	149.40	128.30	21.10	
	02N23W13K03S	3/30/2010	69.00	58.90	10.10	
	02N22W08P01S	4/5/2010	214.60	195.40	19.20	
	02N22W07M01S	4/6/2010	164.00	147.00	17.00	
	02N22W07M02S	4/6/2010	164.00	148.60	15.40	
	02N22W07M03S	4/6/2010	164.00	15.00	149.00	
	02N23W15J01S	4/6/2010	9.00	-----	9.1	Flowing
	02N23W15J02S	4/6/2010	9.00	-----	9.1	Flowing
	02N23W15J03S	4/6/2010	9.00	-----	9.1	Flowing
Third Measure	02N22W08P01S	5/19/2010	214.60	191.50	23.10	
	02N22W16K01S	5/25/2010	149.40	123.20	26.20	
	02N23W13K03S	5/25/2010	69.00	71.20	-2.20	
	02N22W07M01S	6/2/2010	164.00	152.20	11.80	
	02N22W07M02S	6/2/2010	164.00	146.70	17.30	
	02N22W07M03S	6/2/2010	164.00	14.80	149.20	
	02N23W15J01S	6/2/2010	9.00	4.10	4.90	
	02N23W15J02S	6/2/2010	9.00	-----	9.1	Flowing
	02N23W15J03S	6/2/2010	9.00	-----	9.1	Flowing
Fourth Measure	02N22W08P01S	7/26/2010	214.60	194.60	20.00	
	02N22W16K01S	7/30/2010	149.40	128.00	21.40	
	02N22W07M01S	8/6/2010	164.00	153.30	10.70	
	02N22W07M02S	8/6/2010	164.00	150.10	13.90	
	02N22W07M03S	8/6/2010	164.00	15.20	148.80	
	02N23W13K03S	8/6/2010	69.00	76.00	-7.00	
	02N23W15J01S	8/6/2010	9.00	5.40	3.60	
	02N23W15J02S	8/6/2010	9.00	-----	9.1	Flowing
	02N23W15J03S	8/6/2010	9.00	-----	9.1	Flowing
Fifth Measure	02N22W16K01S	9/27/2010	149.40	132.70	16.70	
	02N23W13K03S	9/27/2010	69.00	68.90	0.10	
	02N22W08P01S	9/30/2010	214.60	205.20	9.40	
	02N22W07M01S	10/13/2010	164.00	152.80	11.20	
	02N22W07M02S	10/13/2010	164.00	151.30	12.70	
	02N22W07M03S	10/13/2010	164.00	14.90	149.10	
	02N23W15J01S	10/13/2010	9.00	1.80	7.20	
	02N23W15J02S	10/13/2010	9.00	0.10	8.90	
	02N23W15J03S	10/13/2010	9.00	-----	9.1	Flowing
Sixth Measure	02N22W16K01S	11/24/2010	149.40	130.80	18.60	
	02N23W13K03S	11/24/2010	69.00	66.00	3.00	
	02N22W08P01S	11/29/2010	214.60	155.20	59.40	
Ojai Valley	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	04N22W04Q01S	2/4/2010	1,040.50	64.80	975.70	
	04N22W05D03S	2/4/2010	896.00	161.80	734.20	
	04N22W05H04S	2/4/2010	950.20	216.50	733.70	
	04N22W05L08S	2/4/2010	892.10	157.50	734.60	
	04N22W05M01S	2/4/2010	843.50	112.20	731.30	
	04N22W06D01S	2/4/2010	847.00	88.40	758.60	
	04N22W06D05S	2/4/2010	841.44	97.30	744.14	
	04N22W06K12S	2/4/2010	808.95	83.20	725.75	
	04N22W06M01S	2/4/2010	794.80	65.80	729.00	
	04N22W07B02S	2/4/2010	773.80	53.20	720.60	
	04N22W07G01S	2/4/2010	771.20	44.00	727.20	
	04N22W08B02S	2/4/2010	871.60	130.70	740.90	
	04N23W01K02S	2/4/2010	786.40	17.80	768.60	
	04N23W02K01S	2/4/2010	869.50	0.70	868.80	
	05N22W32J02S	2/4/2010	1,139.80	55.60	1,084.20	
	04N22W06K03S	2/5/2010	801.80	76.00	725.80	
	04N23W12H02S	2/8/2010	720.00	29.00	691.00	
	04N23W12L02S	2/8/2010	680.00	9.00	671.00	

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Second Measure	04N22W06K03S	3/22/2010	801.80	34.00	767.80	
	04N23W12H02S	4/5/2010	720.00	25.20	694.80	
	04N22W05D03S	4/6/2010	896.00	127.30	768.70	
	04N22W05L08S	4/6/2010	892.10	121.60	770.50	
	04N22W05M01S	4/6/2010	843.50	82.20	761.30	
	04N22W06D01S	4/6/2010	847.00	60.10	786.90	
	04N22W06D05S	4/6/2010	841.44	70.70	770.74	
	04N22W06K12S	4/6/2010	808.95	64.60	744.35	
	04N22W06M01S	4/6/2010	794.80	34.30	760.50	
	04N23W01K02S	4/6/2010	786.40	12.80	773.60	
	04N23W02K01S	4/6/2010	869.50	0.80	868.70	
	04N23W12L02S	4/6/2010	680.00	9.60	670.40	
	04N22W04Q01S	4/7/2010	1,040.50	67.80	972.70	
	04N22W05H04S	4/7/2010	950.20	171.50	778.70	
	04N22W07B02S	4/7/2010	773.80	35.10	738.70	
	04N22W07G01S	4/7/2010	771.20	21.00	750.20	
	05N22W32J02S	4/7/2010	1,139.80	56.90	1,082.90	
Third Measure	04N22W06K03S	5/28/2010	801.80	47.00	754.80	
	04N23W12H02S	5/28/2010	720.00	24.60	695.40	
	04N23W12L02S	5/28/2010	680.00	10.80	669.20	
	04N22W04Q01S	6/2/2010	1,040.50	NM	-----	Pumping
	04N22W05D03S	6/2/2010	896.00	127.80	768.20	
	04N22W05H04S	6/2/2010	950.20	167.90	782.30	
	04N22W05L08S	6/2/2010	892.10	118.50	773.60	
	04N22W05M01S	6/2/2010	843.50	NM	-----	Pumping
	04N22W06D01S	6/2/2010	847.00	63.80	783.20	
	04N22W06D05S	6/2/2010	841.44	78.20	763.24	
	04N22W06K12S	6/2/2010	808.95	82.90	726.05	
	04N22W06M01S	6/2/2010	794.80	37.80	757.00	
	04N22W07B02S	6/2/2010	773.80	47.80	726.00	
	04N22W07G01S	6/2/2010	771.20	20.60	750.60	
	04N22W08B02S	6/2/2010	871.60	93.10	778.50	
	04N23W01K02S	6/2/2010	786.40	10.30	776.10	
	04N23W02K01S	6/2/2010	869.50	1.70	867.80	
	05N22W32J02S	6/2/2010	1,139.80	NM	-----	Pumping
Fourth Measure	04N22W06K03S	8/3/2010	801.80	111.00	690.80	
	04N23W01K02S	8/4/2010	786.40	36.20	750.20	
	04N23W02K01S	8/4/2010	869.50	2.90	866.60	
	04N23W12H02S	8/4/2010	720.00	25.40	694.60	
	04N23W12L02S	8/4/2010	680.00	13.70	666.30	
	04N22W04Q01S	8/5/2010	1,040.50	87.20	953.30	
	04N22W05D03S	8/5/2010	896.00	148.50	747.50	
	04N22W05H04S	8/5/2010	950.20	188.60	761.60	
	04N22W05L08S	8/5/2010	892.10	139.20	752.90	
	04N22W05M01S	8/5/2010	843.50	101.50	742.00	
	04N22W06D01S	8/5/2010	847.00	84.50	762.50	
	04N22W06D05S	8/5/2010	841.44	99.40	742.04	
	04N22W06K12S	8/5/2010	808.95	NM	-----	Pumping
	04N22W06M01S	8/5/2010	794.80	54.50	740.30	
	04N22W08B02S	8/5/2010	871.60	140.00	731.60	
	05N22W32J02S	8/5/2010	1,139.80	54.20	1,085.60	
	04N22W07B02S	8/6/2010	773.80	61.40	712.40	
	04N22W07G01S	8/6/2010	771.20	27.10	744.10	

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Fifth Measure	04N23W12L02S	9/30/2010	680.00	14.50	665.50	
	04N22W06D01S	10/5/2010	847.00	107.70	739.30	
	04N22W06D05S	10/5/2010	841.44	117.10	724.34	
	04N22W06M01S	10/5/2010	794.80	67.00	727.80	
	04N23W01K02S	10/5/2010	786.40	27.80	758.60	
	04N23W02K01S	10/5/2010	869.50	3.40	866.10	
	04N22W04Q01S	10/6/2010	1,040.50	96.30	944.20	
	04N22W05D03S	10/6/2010	896.00	170.30	725.70	
	04N22W05H04S	10/6/2010	950.20	207.30	742.90	
	04N22W05L08S	10/6/2010	892.10	154.20	737.90	
	04N22W05M01S	10/6/2010	843.50	118.60	724.90	
	04N22W06K03S	10/6/2010	801.80	108.00	693.80	
	04N22W06K12S	10/6/2010	808.95	128.60	680.35	
	04N22W07B02S	10/6/2010	773.80	76.00	697.80	Pumped Recently
	04N22W07G01S	10/6/2010	771.20	35.40	735.80	
	04N22W08B02S	10/6/2010	871.60	127.00	744.60	
	04N23W12H02S	10/6/2010	720.00	27.90	692.10	
	05N22W32J02S	10/6/2010	1,139.80	71.00	1,068.80	
Sixth Measure	04N22W06K03S	11/17/2010	801.80	121.00	680.80	
	04N22W05D03S	12/9/2010	896.00	163.70	732.30	
	04N22W05H04S	12/9/2010	950.20	202.50	747.70	
	04N22W05L08S	12/9/2010	892.10	151.10	741.00	
	04N22W05M01S	12/9/2010	843.50	110.20	733.30	
	04N22W06D01S	12/9/2010	847.00	99.08	747.92	
	04N22W06D05S	12/9/2010	841.44	113.00	728.44	
	04N22W06K12S	12/9/2010	808.95	91.30	717.65	
	04N22W06M01S	12/9/2010	794.80	64.60	730.20	
	04N23W01K02S	12/9/2010	786.40	19.00	767.40	
	04N23W02K01S	12/9/2010	869.50	2.55	866.95	
	04N23W12L02S	12/9/2010	680.00	11.40	668.60	
	04N22W04Q01S	12/10/2010	1,040.50	95.12	945.38	
	04N22W07B02S	12/10/2010	773.80	72.00	701.80	
	04N22W07G01S	12/10/2010	771.20	35.92	735.28	
	04N22W08B02S	12/10/2010	871.60	125.00	746.60	
	04N23W12H02S	12/10/2010	720.00	27.66	692.34	
	05N22W32J02S	12/10/2010	1,139.80	NM	-----	Special

Oxnard Plain Forebay	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	02N21W07P04S	1/28/2010	141.00	97.70	43.30	
	02N22W11A01S	2/1/2010	133.40	54.00	79.40	
	02N22W26E01S	2/8/2010	87.10	NM	-----	Inaccessible
Second Measure	02N22W11A01S	3/31/2010	133.40	40.20	93.20	
	02N22W26E01S	3/31/2010	87.10	60.20	26.90	
	02N21W07P04S	4/9/2010	141.00	NM	-----	Pumping
Third Measure	02N22W26E01S	5/25/2010	87.10	54.90	32.20	
	02N22W11A01S	5/26/2010	133.40	49.20	84.20	
	02N21W07P04S	6/3/2010	141.00	123.90	17.10	
Fourth Measure	02N22W11A01S	7/30/2010	133.40	68.20	65.20	
	02N22W26E01S	7/30/2010	87.10	NM	-----	Pumping
	02N21W07P04S	8/10/2010	141.00	137.00	4.00	
Fifth Measure	02N21W07P04S	9/24/2010	141.00	156.70	-15.70	
	02N22W26E01S	9/24/2010	87.10	62.10	25.00	
	02N22W11A01S	10/4/2010	133.40	79.80	53.60	
Sixth Measure	02N22W11A01S	11/23/2010	133.40	73.40	60.00	
	02N21W07P04S	12/1/2010	141.00	NM	-----	Pumping
	02N22W26E01S	12/14/2010	87.10	61.10	26.00	

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First Measure	01N21W05A02S	1/26/2010	51.90	NM	-----	Locked Out
	01N21W04N02S	1/27/2010	40.10	87.50	-47.40	
	01N21W28D01S	1/27/2010	17.50	50.70	-33.20	
	01N22W12N03S	1/27/2010	41.00	62.00	-21.00	
	01N22W12R01S	1/27/2010	36.00	52.10	-16.10	
	01N21W06L04S	1/28/2010	48.00	NM	-----	Tape Hung Up
	01N21W07H01S	1/28/2010	39.60	28.10	11.50	
	01N21W16M01S	1/28/2010	24.00	64.30	-40.30	
	01N21W16P03S	1/28/2010	20.30	60.40	-40.10	
	01N21W17D02S	1/28/2010	29.60	19.70	9.90	
	01N21W20N07S	1/28/2010	16.60	14.20	2.40	
	01N21W21N01S	1/28/2010	15.70	42.50	-26.80	
	01N21W29B03S	1/28/2010	18.20	16.60	1.60	
	01N22W14K01S	1/28/2010	34.00	27.50	6.50	
	01N22W21B03S	1/28/2010	15.30	18.50	-3.20	
	01N22W24C02S	1/28/2010	30.00	25.20	4.80	
	01N22W26K04S	1/28/2010	13.20	21.00	-7.80	
	01N22W26M03S	1/28/2010	13.40	34.70	-21.30	
	01N22W36B02S	1/28/2010	11.50	33.60	-22.10	
	02N21W18H03S	1/28/2010	119.20	61.80	57.40	
	02N21W19B02S	1/28/2010	98.90	61.50	37.40	
	02N21W31P02S	1/28/2010	57.80	40.80	17.00	
	02N21W31P03S	1/28/2010	57.40	88.20	-30.80	
	02N22W24P01S	1/28/2010	94.30	72.80	21.50	
	01N21W09C04S	1/29/2010	41.20	85.80	-44.60	
	02N22W30K01S	1/29/2010	36.70	34.50	2.20	
	02N22W31A01S	1/29/2010	42.30	32.80	9.50	
	02N22W32Q03S	1/29/2010	41.20	31.00	10.20	
	02N23W25G02S	1/29/2010	20.30	14.80	5.50	
	02N23W36C04S	1/29/2010	28.20	20.50	7.70	
	01N21W32K01S	2/8/2010	10.00	35.00	-25.00	
	02N21W19A03S	2/10/2010	102.70	55.30	47.40	
	02N21W20F02S	2/10/2010	112.90	102.90	10.00	
Second Measure	01N21W04N02S	3/26/2010	40.10	79.50	-39.40	
	01N21W05A02S	3/26/2010	51.90	NM	-----	Locked Out
	01N21W09C04S	3/26/2010	41.20	79.30	-38.10	
	01N21W06L04S	3/29/2010	48.00	32.30	15.70	
	01N21W07H01S	3/29/2010	39.60	28.60	11.00	
	01N21W16M01S	3/29/2010	24.00	64.60	-40.60	
	01N21W16P03S	3/29/2010	20.30	62.30	-42.00	
	01N21W17D02S	3/29/2010	29.60	20.00	9.60	
	01N21W20N07S	3/29/2010	16.60	12.90	3.70	
	01N21W21N01S	3/29/2010	15.70	42.50	-26.80	
	01N21W28D01S	3/29/2010	17.50	48.10	-30.60	
	01N21W29B03S	3/29/2010	18.20	17.70	0.50	
	01N21W32K01S	3/29/2010	10.00	34.00	-24.00	
	01N22W12N03S	3/29/2010	41.00	NM	-----	Pumping
	01N22W12R01S	3/29/2010	36.00	49.80	-13.80	
	01N22W26K04S	3/29/2010	13.20	20.40	-7.20	
	01N22W26M03S	3/29/2010	13.40	NM	-----	Pumping
	02N21W19B02S	3/29/2010	98.90	NM	-----	Tape Hung Up
	02N21W31P02S	3/29/2010	57.80	34.20	23.60	
	02N21W31P03S	3/29/2010	57.40	82.80	-25.40	
	02N22W24P01S	3/29/2010	94.30	NM	-----	Pumping
	01N22W14K01S	3/30/2010	34.00	24.80	9.20	
	01N22W21B03S	3/30/2010	15.30	12.80	2.50	
	01N22W24C02S	3/30/2010	30.00	23.60	6.40	
	01N22W36B02S	3/30/2010	11.50	41.00	-29.50	
	02N22W30K01S	3/30/2010	36.70	33.90	2.80	
	02N22W31A01S	3/30/2010	42.30	33.40	8.90	
	02N22W32Q03S	3/30/2010	41.20	30.30	10.90	
	02N23W25G02S	3/30/2010	20.30	15.70	4.60	
	02N23W36C04S	3/30/2010	28.20	21.90	6.30	
	02N21W18H03S	4/9/2010	119.20	NM	-----	Locked Out
	02N21W19A03S	4/9/2010	102.70	60.70	42.00	
	02N21W20F02S	4/9/2010	112.90	111.60	1.30	

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Third Measure	01N21W04N02S	5/21/2010	40.10	86.20	-46.10	
	01N21W05A02S	5/21/2010	51.90	NM	-----	Special
	01N21W09C04S	5/21/2010	41.20	86.30	-45.10	
	01N21W21N01S	5/21/2010	15.70	42.90	-27.20	
	01N21W28D01S	5/21/2010	17.50	55.50	-38.00	
	01N22W12N03S	5/21/2010	41.00	67.30	-26.30	
	01N22W12R01S	5/21/2010	36.00	NM	-----	Pumping
	01N21W06L04S	5/24/2010	48.00	26.00	22.00	
	01N21W07H01S	5/24/2010	39.60	24.00	15.60	
	01N21W16M01S	5/24/2010	24.00	75.30	-51.30	
	01N21W16P03S	5/24/2010	20.30	67.20	-46.90	
	01N21W17D02S	5/24/2010	29.60	14.80	14.80	
	01N21W20N07S	5/24/2010	16.60	12.30	4.30	
	01N21W29B03S	5/24/2010	18.20	16.80	1.40	
	01N21W32K01S	5/24/2010	10.00	42.00	-32.00	
	01N22W24C02S	5/24/2010	30.00	19.80	10.20	
	01N22W36B02S	5/24/2010	11.50	44.20	-32.70	
	02N21W19B02S	5/24/2010	98.90	NM	-----	Tape Hung Up
	02N21W31P02S	5/24/2010	57.80	NM	-----	Inaccessible
	02N21W31P03S	5/24/2010	57.40	NM	-----	Inaccessible
	02N22W24P01S	5/24/2010	94.30	52.20	42.10	
	01N22W14K01S	5/25/2010	34.00	19.60	14.40	
	01N22W21B03S	5/25/2010	15.30	10.70	4.60	
	01N22W26M03S	5/25/2010	13.40	NM	-----	Pumping
	02N22W30K01S	5/25/2010	36.70	29.20	7.50	
	02N22W31A01S	5/25/2010	42.30	26.30	16.00	
	02N22W32Q03S	5/25/2010	41.20	22.50	18.70	
	02N23W25G02S	5/25/2010	20.30	12.50	7.80	
	02N23W36C04S	5/25/2010	28.20	18.70	9.50	
	02N21W18H03S	6/3/2010	119.20	56.50	62.70	
	02N21W19A03S	6/3/2010	102.70	71.60	31.10	
	02N21W20F02S	6/3/2010	112.90	120.10	-7.20	
Fourth Measure	01N21W05A02S	7/26/2010	51.90	18.50	33.40	
	01N21W32K01S	7/26/2010	10.00	44.00	-34.00	
	01N21W04N02S	7/27/2010	40.10	86.60	-46.50	
	01N21W09C04S	7/27/2010	41.20	90.60	-49.40	
	01N21W28D01S	7/27/2010	17.50	NM	-----	Pumping
	01N22W12N03S	7/27/2010	41.00	61.20	-20.20	
	01N22W12R01S	7/27/2010	36.00	59.90	-23.90	
	01N21W06L04S	7/28/2010	48.00	30.00	18.00	
	01N21W07H01S	7/28/2010	39.60	33.20	6.40	
	01N21W16M01S	7/28/2010	24.00	73.70	-49.70	
	01N21W16P03S	7/28/2010	20.30	72.90	-52.60	
	01N21W17D02S	7/28/2010	29.60	NM	-----	Pumping
	01N21W20N07S	7/28/2010	16.60	12.20	4.40	
	01N21W21N01S	7/28/2010	15.70	40.00	-24.30	
	01N21W29B03S	7/28/2010	18.20	15.00	3.20	
	02N21W18H03S	7/28/2010	119.20	65.60	53.60	
	02N21W19B02S	7/28/2010	98.90	NM	-----	Inaccessible
	02N21W31P02S	7/28/2010	57.80	30.90	26.90	
	02N21W31P03S	7/28/2010	57.40	78.70	-21.30	
	02N22W24P01S	7/28/2010	94.30	63.30	31.00	
	01N22W14K01S	7/29/2010	34.00	24.80	9.20	
	01N22W21B03S	7/29/2010	15.30	12.80	2.50	
	01N22W24C02S	7/29/2010	30.00	23.00	7.00	
	01N22W26M03S	7/29/2010	13.40	49.30	-35.90	
	01N22W36B02S	7/29/2010	11.50	46.50	-35.00	
	02N22W30K01S	7/29/2010	36.70	37.00	-0.30	
	02N22W31A01S	7/29/2010	42.30	37.80	4.50	
	02N22W32Q03S	7/29/2010	41.20	NM	-----	Pumping
	02N23W25G02S	7/29/2010	20.30	24.00	-3.70	
	02N23W36C04S	7/29/2010	28.20	26.80	1.40	
	02N21W19A03S	8/9/2010	102.70	78.50	24.20	
	02N21W20F02S	8/9/2010	112.90	133.30	-20.40	

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Fifth Measure	01N21W04N02S	9/20/2010	40.10	123.30	-83.20	
	01N21W05A02S	9/20/2010	51.90	20.00	31.90	
	01N21W09C04S	9/20/2010	41.20	128.10	-86.90	
	01N21W20N07S	9/23/2010	16.60	16.40	0.20	
	01N21W21N01S	9/23/2010	15.70	71.20	-55.50	
	01N21W28D01S	9/23/2010	17.50	89.60	-72.10	
	01N22W12N03S	9/23/2010	41.00	75.00	-34.00	
	01N22W12R01S	9/23/2010	36.00	68.80	-32.80	
	01N21W06L04S	9/24/2010	48.00	31.90	16.10	
	01N21W07H01S	9/24/2010	39.60	27.80	11.80	
	01N21W16M01S	9/24/2010	24.00	108.30	-84.30	
	01N21W16P03S	9/24/2010	20.30	109.30	-89.00	
	01N21W17D02S	9/24/2010	29.60	22.90	6.70	
	01N21W29B03S	9/24/2010	18.20	21.20	-3.00	
	01N22W14K01S	9/24/2010	34.00	26.80	7.20	
	01N22W21B03S	9/24/2010	15.30	16.90	-1.60	
	01N22W24C02S	9/24/2010	30.00	24.70	5.30	
	01N22W26M03S	9/24/2010	13.40	71.40	-58.00	
	02N21W18H03S	9/24/2010	119.20	NM	-----	Pumping
	02N21W19B02S	9/24/2010	98.90	NM	-----	Special
	02N21W31P02S	9/24/2010	57.80	34.00	23.80	
	02N21W31P03S	9/24/2010	57.40	119.90	-62.50	
	02N22W24P01S	9/24/2010	94.30	68.40	25.90	
	01N22W36B02S	9/27/2010	11.50	NM	-----	Pumping
	02N22W30K01S	9/27/2010	36.70	35.60	1.10	
	02N22W31A01S	9/27/2010	42.30	33.40	8.90	
	02N22W32Q03S	9/27/2010	41.20	29.90	11.30	
	02N23W25G02S	9/27/2010	20.30	15.80	4.50	
	02N23W36C04S	9/27/2010	28.20	20.80	7.40	
	01N21W32K01S	10/11/2010	10.00	78.00	-68.00	
	02N21W19A03S	10/11/2010	102.70	83.80	18.90	
	02N21W20F02S	10/11/2010	112.90	130.50	-17.60	
Sixth Measure	01N22W14K01S	11/24/2010	34.00	25.80	8.20	
	01N22W21B03S	11/24/2010	15.30	13.00	2.30	
	01N22W24C02S	11/24/2010	30.00	24.80	5.20	
	01N22W26M03S	11/24/2010	13.40	46.40	-33.00	
	02N22W30K01S	11/24/2010	36.70	31.60	5.10	
	02N22W31A01S	11/24/2010	42.30	30.70	11.60	
	02N22W32Q03S	11/24/2010	41.20	NM	-----	Inaccessible
	02N23W25G02S	11/24/2010	20.30	14.50	5.80	
	02N23W36C04S	11/24/2010	28.20	17.40	10.80	
	01N21W04N02S	11/29/2010	40.10	94.00	-53.90	
	01N21W09C04S	11/29/2010	41.20	106.40	-65.20	
	01N21W28D01S	11/29/2010	17.50	64.10	-46.60	
	01N21W32K01S	11/29/2010	10.00	55.00	-45.00	
	01N21W05A02S	11/30/2010	51.90	22.64	29.26	
	01N21W06L04S	11/30/2010	48.00	31.40	16.60	
	01N21W07H01S	11/30/2010	39.60	26.50	13.10	
	01N21W16M01S	11/30/2010	24.00	79.50	-55.50	
	01N21W16P03S	11/30/2010	20.30	73.00	-52.70	
	01N21W17D02S	11/30/2010	29.60	21.34	8.26	
	01N21W20N07S	11/30/2010	16.60	NM	-----	Inaccessible
	01N21W21N01S	11/30/2010	15.70	61.00	-45.30	
	01N21W29B03S	11/30/2010	18.20	21.70	-3.50	
	01N22W12N03S	11/30/2010	41.00	69.10	-28.10	
	01N22W12R01S	11/30/2010	36.00	NM	-----	Pumping
	01N22W36B02S	11/30/2010	11.50	61.20	-49.70	
	02N21W31P02S	11/30/2010	57.80	33.60	24.20	
	02N21W31P03S	11/30/2010	57.40	93.80	-36.40	
	02N21W19A03S	12/1/2010	102.70	79.20	23.50	
	02N21W20F02S	12/1/2010	112.90	125.00	-12.10	
	02N21W19B02S	12/13/2010	98.90	NM	-----	Special
	02N21W18H03S	12/14/2010	119.20	70.00	49.20	
	02N22W24P01S	12/14/2010	94.30	61.00	33.30	

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Pleasant Valley	SWN	Date	RP	Depth	Elev	
First Measure	01N21W03C01S	1/26/2010	72.30	106.40	-34.10	
	02N21W33P02S	1/26/2010	65.40	77.00	-11.60	
	01N20W06C01S	1/27/2010	126.30	52.70	73.60	
	01N21W02J02S	1/27/2010	90.60	63.60	27.00	
	01N21W02P01S	1/27/2010	78.00	80.40	-2.40	
	01N21W04K01S	1/27/2010	53.00	87.00	-34.00	
	01N21W10G01S	1/27/2010	40.00	65.80	-25.80	
	01N21W14A01S	1/27/2010	52.20	11.80	40.40	
	01N21W15H01S	1/27/2010	33.70	5.90	27.80	
	01N21W16A04S	1/27/2010	29.00	59.50	-30.50	
	02N20W19M05S	1/27/2010	200.60	123.20	77.40	
	02N20W28G02S	1/27/2010	170.60	NM	-----	Can't Get Tape In Casing
	02N21W35M02S	1/27/2010	92.00	127.10	-35.10	
	02N21W36N01S	1/27/2010	111.10	57.40	53.70	
	01N21W09J03S	1/29/2010	33.00	NM	-----	Inaccessible
Second Measure	01N21W02J02S	3/26/2010	90.60	58.60	32.00	
	01N21W02P01S	3/26/2010	78.00	70.50	7.50	
	01N21W03C01S	3/26/2010	72.30	97.30	-25.00	
	01N21W09J03S	3/26/2010	33.00	NM	-----	Pumping
	01N21W10G01S	3/26/2010	40.00	63.60	-23.60	
	01N21W14A01S	3/26/2010	52.20	10.30	41.90	
	01N21W15H01S	3/26/2010	33.70	4.90	28.80	
	01N21W16A04S	3/26/2010	29.00	58.70	-29.70	
	02N21W33P02S	3/26/2010	65.40	65.80	-0.40	
	02N21W35M02S	3/26/2010	92.00	118.20	-26.20	
	02N21W36N01S	3/26/2010	111.10	64.90	46.20	
	01N20W06C01S	3/29/2010	126.30	51.00	75.30	
	01N21W04K01S	3/29/2010	53.00	79.20	-26.20	
	02N20W19M05S	3/29/2010	200.60	126.00	74.60	
	02N20W28G02S	3/29/2010	170.60	NM	-----	Can't Get Tape In Casing
Third Measure	01N21W02J02S	5/21/2010	90.60	65.30	25.30	
	01N21W02P01S	5/21/2010	78.00	77.90	0.10	
	01N21W03C01S	5/21/2010	72.30	100.20	-27.90	
	01N21W04K01S	5/21/2010	53.00	85.50	-32.50	
	01N21W09J03S	5/21/2010	33.00	NM	-----	Pumping
	01N21W10G01S	5/21/2010	40.00	72.20	-32.20	
	01N21W14A01S	5/21/2010	52.20	11.00	41.20	
	01N21W15H01S	5/21/2010	33.70	5.40	28.30	
	01N21W16A04S	5/21/2010	29.00	64.20	-35.20	
	02N21W33P02S	5/21/2010	65.40	62.80	2.60	
	02N21W35M02S	5/21/2010	92.00	129.50	-37.50	
	02N21W36N01S	5/21/2010	111.10	75.40	35.70	
	01N20W06C01S	5/24/2010	126.30	54.20	72.10	
	02N20W19M05S	5/24/2010	200.60	122.60	78.00	
	02N20W28G02S	5/24/2010	170.60	NM	-----	Can't Get Tape In Casing
Fourth Measure	01N21W03C01S	7/26/2010	72.30	101.90	-29.60	
	02N21W33P02S	7/26/2010	65.40	74.70	-9.30	
	01N21W02J02S	7/27/2010	90.60	NM	-----	Pumping
	01N21W02P01S	7/27/2010	78.00	83.80	-5.80	
	01N21W04K01S	7/27/2010	53.00	92.00	-39.00	
	01N21W09J03S	7/27/2010	33.00	NM	-----	Pumping
	01N21W10G01S	7/27/2010	40.00	NM	-----	Pumping
	01N21W14A01S	7/27/2010	52.20	11.50	40.70	
	01N21W15H01S	7/27/2010	33.70	5.20	28.50	
	01N21W16A04S	7/27/2010	29.00	79.70	-50.70	
	02N21W35M02S	7/27/2010	92.00	130.20	-38.20	
	02N21W36N01S	7/27/2010	111.10	75.40	35.70	
	01N20W06C01S	7/28/2010	126.30	92.00	34.30	
	02N20W19M05S	7/28/2010	200.60	122.20	78.40	
	02N20W28G02S	7/28/2010	170.60	NM	-----	Inaccessible

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Piru	SWN	Date	RP	Depth	Elev	
First Measure	04N18W19R01S	2/2/2010	655.50	92.20	563.30	
	04N18W20R01S	2/2/2010	661.30	72.20	589.10	
	04N18W28C02S	2/2/2010	676.40	89.20	587.20	
	04N19W25C02S	2/2/2010	611.10	74.10	537.00	
	04N19W25K04S	2/2/2010	595.40	33.20	562.20	
	04N19W26P01S	2/2/2010	565.00	35.40	529.60	
	04N19W34K01S	2/2/2010	519.50	11.80	507.70	
	04N19W35L02S	2/2/2010	541.10	16.50	524.60	
Second Measure	04N18W19R01S	4/7/2010	655.50	86.50	569.00	
	04N18W20R01S	4/7/2010	661.30	68.30	593.00	
	04N18W28C02S	4/7/2010	676.40	NM	-----	Pumping
	04N19W25C02S	4/7/2010	611.10	69.50	541.60	
	04N19W25K04S	4/7/2010	595.40	NM	-----	Pumping
	04N19W26P01S	4/7/2010	565.00	33.70	531.30	
	04N19W34K01S	4/7/2010	519.50	11.60	507.90	
	04N19W35L02S	4/7/2010	541.10	17.90	523.20	
Third Measure	04N18W19R01S	5/26/2010	655.50	79.40	576.10	
	04N18W20R01S	5/26/2010	661.30	57.00	604.30	
	04N19W25C02S	5/26/2010	611.10	66.80	544.30	
	04N19W25K04S	5/26/2010	595.40	37.60	557.80	
	04N19W26P01S	5/26/2010	565.00	27.80	537.20	
	04N19W34K01S	5/26/2010	519.50	11.70	507.80	
	04N19W35L02S	5/26/2010	541.10	17.50	523.60	
	04N18W28C02S	5/27/2010	676.40	NM	-----	Pumping
Fourth Measure	04N19W34K01S	8/2/2010	519.50	13.10	506.40	
	04N19W35L02S	8/2/2010	541.10	19.40	521.70	
	04N18W19R01S	8/3/2010	655.50	NM	-----	Pumping
	04N18W20R01S	8/3/2010	661.30	NM	-----	Pumping
	04N18W28C02S	8/3/2010	676.40	NM	-----	Pumping
	04N19W25C02S	8/3/2010	611.10	72.60	538.50	
	04N19W25K04S	8/3/2010	595.40	NM	-----	Pumping
	04N19W26P01S	8/3/2010	565.00	NM	-----	Pumping
Fifth Measure	04N18W19R01S	9/29/2010	655.50	92.10	563.40	
	04N18W20R01S	9/29/2010	661.30	81.40	579.90	
	04N18W28C02S	9/29/2010	676.40	98.30	578.10	
	04N19W25C02S	9/29/2010	611.10	75.60	535.50	
	04N19W25K04S	9/29/2010	595.40	37.80	557.60	Pumping
	04N19W26P01S	9/29/2010	565.00	NM	-----	Pumping
	04N19W34K01S	9/29/2010	519.50	13.30	506.20	Pumping
	04N19W35L02S	9/29/2010	541.10	13.70	527.40	
Sixth Measure	04N18W19R01S	11/22/2010	655.50	85.10	570.40	
	04N18W20R01S	11/22/2010	661.30	75.30	586.00	
	04N18W28C02S	11/22/2010	676.40	91.00	585.40	
	04N19W25C02S	11/22/2010	611.10	68.20	542.90	
	04N19W25K04S	11/22/2010	595.40	38.00	557.40	
	04N19W26P01S	11/22/2010	565.00	27.80	537.20	
	04N19W35L02S	11/22/2010	541.10	10.50	530.60	
	04N19W34K01S	11/23/2010	519.50	8.20	511.30	

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Fifth Measure	01N21W03C01S	9/20/2010	72.30	126.50	-54.20	
	01N21W09J03S	9/20/2010	33.00	NM	-----	Pumping
	02N21W33P02S	9/20/2010	65.40	95.20	-29.80	
	01N21W02J02S	9/22/2010	90.60	79.20	11.40	
	01N21W02P01S	9/22/2010	78.00	115.80	-37.80	
	01N21W10G01S	9/22/2010	40.00	115.40	-75.40	
	01N21W14A01S	9/22/2010	52.20	13.20	39.00	
	01N21W15H01S	9/22/2010	33.70	6.60	27.10	
	01N21W16A04S	9/22/2010	29.00	105.20	-76.20	
	02N21W35M02S	9/22/2010	92.00	144.90	-52.90	
	02N21W36N01S	9/22/2010	111.10	81.30	29.80	
	01N20W06C01S	9/23/2010	126.30	NM	-----	Can't Get Tape In Casing
	01N21W04K01S	9/23/2010	53.00	104.60	-51.60	
	02N20W19M05S	9/23/2010	200.60	128.20	72.40	
	02N20W28G02S	9/23/2010	170.60	NM	-----	Can't Get Tape In Casing
Sixth Measure	01N20W06C01S	11/29/2010	126.30	49.90	76.40	
	01N21W02J02S	11/29/2010	90.60	64.90	25.70	
	01N21W02P01S	11/29/2010	78.00	86.00	-8.00	
	01N21W03C01S	11/29/2010	72.30	114.10	-41.80	
	01N21W04K01S	11/29/2010	53.00	91.00	-38.00	
	01N21W09J03S	11/29/2010	33.00	71.15	-38.15	
	01N21W10G01S	11/29/2010	40.00	83.60	-43.60	
	01N21W14A01S	11/29/2010	52.20	13.50	38.70	
	01N21W15H01S	11/29/2010	33.70	7.30	26.40	
	01N21W16A04S	11/29/2010	29.00	72.60	-43.60	
	02N20W19M05S	11/29/2010	200.60	NM	-----	Special
	02N20W28G02S	11/29/2010	170.60	NM	-----	Special
	02N21W33P02S	11/29/2010	65.40	70.10	-4.70	
	02N21W35M02S	11/29/2010	92.00	135.35	-43.35	
	02N21W36N01S	11/29/2010	111.10	67.80	43.30	
Santa Paula	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	02N22W03K02S	1/29/2010	250.60	124.80	125.80	
	02N22W03M02S	1/29/2010	292.30	199.50	92.80	
	03N22W34R01S	1/29/2010	267.50	119.60	147.90	
	02N22W02C01S	2/1/2010	177.90	35.70	142.20	
	03N21W09K02S	2/1/2010	362.10	166.00	196.10	
	03N21W17Q01S	2/1/2010	284.20	95.20	189.00	
	03N21W19R01S	2/1/2010	236.00	58.80	177.20	
	03N21W30F01S	2/1/2010	221.70	62.50	159.20	
	03N22W36K05S	2/1/2010	181.10	31.70	149.40	
Second Measure	02N22W02C01S	3/31/2010	177.90	33.80	144.10	
	02N22W03K02S	3/31/2010	250.60	120.70	129.90	
	02N22W03M02S	3/31/2010	292.30	199.10	93.20	
	03N21W19R01S	3/31/2010	236.00	59.60	176.40	
	03N21W30F01S	3/31/2010	221.70	62.70	159.00	
	03N22W34R01S	3/31/2010	267.50	117.00	150.50	
	03N22W36K05S	3/31/2010	181.10	30.00	151.10	
	03N21W09K02S	4/7/2010	362.10	167.60	194.50	
	03N21W17Q01S	4/7/2010	284.20	96.00	188.20	
Third Measure	02N22W03K02S	5/25/2010	250.60	119.40	131.20	
	02N22W03M02S	5/25/2010	292.30	198.70	93.60	
	03N22W34R01S	5/25/2010	267.50	123.90	143.60	
	02N22W02C01S	5/26/2010	177.90	35.80	142.10	
	03N21W09K02S	5/26/2010	362.10	NM	-----	Pumping
	03N21W17Q01S	5/26/2010	284.20	NM	-----	Pumping
	03N21W19R01S	5/26/2010	236.00	64.40	171.60	
	03N21W30F01S	5/26/2010	221.70	65.00	156.70	
	03N22W36K05S	5/26/2010	181.10	31.00	150.10	

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Fourth Measure	02N22W02C01S	7/30/2010	177.90	36.70	141.20	
	02N22W03K02S	7/30/2010	250.60	121.40	129.20	
	02N22W03M02S	7/30/2010	292.30	191.80	100.50	
	03N22W34R01S	7/30/2010	267.50	NM	-----	Pumping
	03N22W36K05S	7/30/2010	181.10	35.00	146.10	
	03N21W09K02S	8/2/2010	362.10	175.30	186.80	
	03N21W17Q01S	8/3/2010	284.20	103.50	180.70	
	03N21W19R01S	8/3/2010	236.00	NM	-----	Pumping
	03N21W30F01S	8/3/2010	221.70	NM	-----	Pumping
Fifth Measure	02N22W02C01S	9/28/2010	177.90	39.30	138.60	
	02N22W03M02S	9/28/2010	292.30	192.80	99.50	
	03N21W09K02S	9/28/2010	362.10	178.80	183.30	
	03N22W36K05S	9/28/2010	181.10	33.70	147.40	
	03N21W17Q01S	10/4/2010	284.20	105.80	178.40	
	02N22W03K02S	10/6/2010	250.60	121.40	129.20	
	03N21W19R01S	10/6/2010	236.00	65.40	170.60	
	03N21W30F01S	10/6/2010	221.70	69.20	152.50	
	03N22W34R01S	10/6/2010	267.50	129.50	138.00	
Sixth Measure	02N22W02C01S	11/23/2010	177.90	37.00	140.90	
	02N22W03K02S	11/23/2010	250.60	121.50	129.10	
	02N22W03M02S	11/23/2010	292.30	190.10	102.20	
	03N21W09K02S	11/23/2010	362.10	172.10	190.00	
	03N21W17Q01S	11/23/2010	284.20	98.50	185.70	
	03N21W19R01S	11/23/2010	236.00	62.80	173.20	
	03N21W30F01S	11/23/2010	221.70	64.00	157.70	
	03N22W34R01S	11/23/2010	267.50	NM	-----	Special
	03N22W36K05S	11/23/2010	181.10	31.00	150.10	
Sherwood	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	01N19W19L02S	1/25/2010	1,082.00	295.00	787.00	
	01N19W30A01S	1/25/2010	1,000.00	42.80	957.20	
Second Measure	01N19W19L02S	3/22/2010	1,082.00	275.00	807.00	
	01N19W30A01S	3/22/2010	1,000.00	33.30	966.70	
Third Measure	01N19W19L02S	5/17/2010	1,082.00	260.00	822.00	
	01N19W30A01S	5/17/2010	1,000.00	35.30	964.70	
Fourth Measure	01N19W19L02S	7/25/2010	1,082.00	270.00	812.00	
	01N19W30A01S	7/25/2010	1,000.00	40.50	959.50	
Fifth Measure	01N19W19L02S	9/21/2010	1,082.00	284.00	798.00	
	01N19W30A01S	9/21/2010	1,000.00	NM	-----	Pumping
Sixth Measure	01N19W19L02S	12/7/2010	1,082.00	284.00	798.00	
	01N19W30A01S	12/7/2010	1,000.00	42.86	957.14	
Simi Valley	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	02N18W04R02S	1/26/2010	870.00	48.40	821.60	
	02N18W10A02S	1/26/2010	926.00	73.90	852.10	
Second Measure	02N18W04R02S	3/26/2010	870.00	48.30	821.70	
	02N18W10A02S	3/26/2010	926.00	76.90	849.10	
Third Measure	02N18W04R02S	5/19/2010	870.00	48.80	821.20	
	02N18W10A02S	5/19/2010	926.00	NM	-----	Pumping
Fourth Measure	02N18W04R02S	7/26/2010	870.00	49.00	821.00	
	02N18W10A02S	7/26/2010	926.00	NM	-----	Pumping
Fifth Measure	02N18W04R02S	10/7/2010	870.00	49.50	820.50	
	02N18W10A02S	10/7/2010	926.00	NM	-----	Pumping
Sixth Measure	02N18W04R02S	12/2/2010	870.00	49.20	820.80	
	02N18W10A02S	12/2/2010	926.00	NM	-----	Pumping

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Thousand Oaks	SWN	Date	RP	Depth	Elev	
First Measure	01N19W14K04S	1/25/2010	908.80	21.70	887.10	
Second Measure	01N19W14K04S	3/22/2010	908.80	21.60	887.20	
Third Measure	01N19W14K04S	5/17/2010	908.80	22.70	886.10	
Fourth Measure	01N19W14K04S	7/25/2010	908.80	23.70	885.10	
Fifth Measure	01N19W14K04S	9/21/2010	908.80	24.30	884.50	
Sixth Measure	01N19W14K04S	12/7/2010	908.80	24.25	884.55	
Tierra Rejada	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	02N19W10R01S	1/25/2010	620.00	98.60	521.40	
	02N19W12M03S	1/25/2010	719.00	84.90	634.10	
	02N19W14P01S	2/8/2010	678.10	29.00	649.10	
Second Measure	02N19W10R01S	3/26/2010	620.00	98.00	522.00	
	02N19W12M03S	3/26/2010	719.00	84.50	634.50	
	02N19W14P01S	3/26/2010	678.10	27.90	650.20	
Third Measure	02N19W10R01S	5/19/2010	620.00	NM	-----	Pumping
	02N19W12M03S	5/19/2010	719.00	86.60	632.40	
	02N19W14P01S	5/19/2010	678.10	28.50	649.60	
Fourth Measure	02N19W14P01S	7/25/2010	678.10	29.20	648.90	
	02N19W10R01S	7/26/2010	620.00	98.20	521.80	
	02N19W12M03S	7/26/2010	719.00	85.10	633.90	
Fifth Measure	02N19W10R01S	10/7/2010	620.00	100.50	519.50	
	02N19W12M03S	10/7/2010	719.00	85.70	633.30	
	02N19W14P01S	10/7/2010	678.10	NM	-----	Inaccessible
Sixth Measure	02N19W10R01S	12/2/2010	620.00	NM	-----	Pumping
	02N19W12M03S	12/2/2010	719.00	85.90	633.10	
	02N19W14P01S	12/2/2010	678.10	32.00	646.10	
Undefined	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	01N20W24H02S	1/25/2010	1,126.50	116.00	1,010.50	0
	02N20W18A01S	2/11/2010	375.60	NM	-----	Locked Out
Second Measure	01N20W24H02S	3/22/2010	1,126.50	87.60	1,038.90	
	02N20W18A01S	4/9/2010	375.60	NM	-----	Special
Third Measure	01N20W24H02S	5/17/2010	1,126.50	95.30	1,031.20	
	04N22W21F01S	6/1/2010	2,570.00	129.00	2,441.00	
	04N22W22K01S	6/1/2010	2,400.00	235.40	2,164.60	
	02N20W18A01S	6/3/2010	375.60	NM	-----	Special
Fourth Measure	01N20W24H02S	7/25/2010	1,126.50	107.90	1,018.60	
	04N22W21F01S	8/6/2010	2,570.00	124.40	2,445.60	
Fifth Measure	04N22W22K01S	8/6/2010	2,400.00	236.00	2,164.00	
	02N20W18A01S	8/9/2010	375.60	NM	-----	Inaccessible
	01N20W24H02S	9/21/2010	1,126.50	107.70	1,018.80	
	04N22W21F01S	10/1/2010	2,570.00	125.00	2,445.00	
Sixth Measure	04N22W22K01S	10/1/2010	2,400.00	236.00	2,164.00	
	01N20W24H02S	12/7/2010	1,126.50	120.80	1,005.70	
Upper Ojai	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	04N22W09Q02S	2/8/2010	1,278.80	16.80	1,262.00	
	04N22W10K02S	2/8/2010	1,325.90	19.20	1,306.70	
	04N22W11P02S	2/8/2010	1,420.60	8.50	1,412.10	
	04N22W12F04S	2/8/2010	1,616.90	115.70	1,501.20	
Second Measure	04N22W09Q02S	4/5/2010	1,278.80	16.30	1,262.50	
	04N22W10K02S	4/5/2010	1,325.90	18.80	1,307.10	
	04N22W11P02S	4/5/2010	1,420.60	9.70	1,410.90	
	04N22W12F04S	4/5/2010	1,616.90	111.00	1,505.90	

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Third Measure	04N22W12F04S	5/18/2010	1,616.90	114.90	1,502.00	
	04N22W09Q02S	6/1/2010	1,278.80	17.30	1,261.50	
	04N22W10K02S	6/1/2010	1,325.90	20.70	1,305.20	
	04N22W11P02S	6/1/2010	1,420.60	12.50	1,408.10	
Fourth Measure	04N22W12F04S	8/2/2010	1,616.90	129.30	1,487.60	
	04N22W09Q02S	8/6/2010	1,278.80	18.70	1,260.10	
	04N22W10K02S	8/6/2010	1,325.90	22.30	1,303.60	
	04N22W11P02S	8/6/2010	1,420.60	15.20	1,405.40	
Fifth Measure	04N22W09Q02S	10/4/2010	1,278.80	19.70	1,259.10	
	04N22W10K02S	10/4/2010	1,325.90	23.20	1,302.70	
	04N22W11P02S	10/4/2010	1,420.60	18.00	1,402.60	
	04N22W12F04S	10/4/2010	1,616.90	137.00	1,479.90	
Sixth Measure	04N22W09Q02S	12/10/2010	1,278.80	20.42	1,258.38	
	04N22W10K02S	12/10/2010	1,325.90	23.05	1,302.85	
	04N22W11P02S	12/10/2010	1,420.60	16.50	1,404.10	
	04N22W12F04S	12/10/2010	1,616.90	NM	-----	Pumping
Lower Ventura River	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	03N23W08B07S	2/3/2010	239.20	13.10	226.10	
Second Measure	03N23W08B07S	4/2/2010	239.20	13.50	225.70	
Third Measure	03N23W08B07S	5/28/2010	239.20	13.70	225.50	
Fourth Measure	03N23W08B07S	8/3/2010	239.20	13.80	225.40	
Fifth Measure	03N23W08B07S	9/30/2010	239.20	13.90	225.30	
Sixth Measure	03N23W08B07S	12/8/2010	239.20	14.80	224.40	
Upper Ventura River	**SWN**	**Date**	**RP**	**Depth**	**Elev**	
First Measure	03N23W05B01S	2/3/2010	293.20	22.80	270.40	
	03N23W08B02S	2/3/2010	249.30	14.60	234.70	
	04N23W03M01S	2/3/2010	760.80	89.50	671.30	
	04N23W04J01S	2/3/2010	713.00	37.50	675.50	
	04N23W09B01S	2/3/2010	662.30	15.00	647.30	
	04N23W15D02S	2/3/2010	634.30	121.00	513.30	
	04N23W16C04S	2/3/2010	569.10	27.40	541.70	
	04N23W16P01S	2/3/2010	621.30	69.10	552.20	
	04N23W20A01S	2/3/2010	488.90	4.70	484.20	
	04N23W29F02S	2/3/2010	396.50	13.80	382.70	
	04N23W33M03S	2/3/2010	330.00	13.70	316.30	
	04N24W13J04S	2/3/2010	626.40	6.00	620.40	
	04N24W13N01S	2/3/2010	642.10	-----	642.20	Flowing
	05N23W33B03S	2/3/2010	829.00	22.10	806.90	
	05N23W33G01S	2/3/2010	816.20	20.80	795.40	
	04N23W15A02S	2/8/2010	680.90	NM	-----	Inaccessible
	04N23W28G01S	2/8/2010	402.40	8.00	394.40	
Second Measure	03N23W05B01S	4/2/2010	293.20	23.40	269.80	
	03N23W08B02S	4/2/2010	249.30	14.70	234.60	
	04N23W16C04S	4/2/2010	569.10	22.10	547.00	
	04N23W20A01S	4/2/2010	488.90	7.40	481.50	
	04N23W29F02S	4/2/2010	396.50	12.00	384.50	
	04N23W33M03S	4/2/2010	330.00	13.30	316.70	
	04N24W13J04S	4/2/2010	626.40	6.30	620.10	
	04N24W13N01S	4/2/2010	642.10	-----	642.20	Flowing
	04N23W03M01S	4/5/2010	760.80	86.00	674.80	
	04N23W09B01S	4/5/2010	662.30	15.60	646.70	
	04N23W15D02S	4/5/2010	634.30	103.80	530.50	
	04N23W16P01S	4/5/2010	621.30	68.70	552.60	
	04N23W28G01S	4/5/2010	402.40	8.60	393.80	
	04N23W04J01S	4/6/2010	713.00	39.80	673.20	
	04N23W15A02S	4/6/2010	680.90	89.30	591.60	
	05N23W33B03S	4/6/2010	829.00	22.60	806.40	
	05N23W33G01S	4/6/2010	816.20	20.10	796.10	

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Third Measure	03N23W05B01S	5/28/2010	293.20	25.80	267.40	
	03N23W08B02S	5/28/2010	249.30	14.90	234.40	
	04N23W03M01S	5/28/2010	760.80	88.50	672.30	
	04N23W04J01S	5/28/2010	713.00	45.00	668.00	
	04N23W09B01S	5/28/2010	662.30	17.50	644.80	
	04N23W15A02S	5/28/2010	680.90	90.00	590.90	
	04N23W15D02S	5/28/2010	634.30	98.90	535.40	
	04N23W16C04S	5/28/2010	569.10	27.10	542.00	
	04N23W16P01S	5/28/2010	621.30	66.90	554.40	
	04N23W20A01S	5/28/2010	488.90	8.20	480.70	
	04N23W29F02S	5/28/2010	396.50	12.20	384.30	
	04N23W33M03S	5/28/2010	330.00	14.20	315.80	
	04N24W13J04S	5/28/2010	626.40	6.50	619.90	
	04N24W13N01S	5/28/2010	642.10	-----	642.20	Flowing
	05N23W33B03S	5/28/2010	829.00	23.20	805.80	
	05N23W33G01S	5/28/2010	816.20	20.80	795.40	
	04N23W28G01S	6/1/2010	402.40	11.00	391.40	
Fourth Measure	03N23W05B01S	8/3/2010	293.20	32.80	260.40	
	03N23W08B02S	8/3/2010	249.30	15.80	233.50	
	04N23W16C04S	8/3/2010	569.10	41.20	527.90	
	04N23W20A01S	8/3/2010	488.90	13.10	475.80	
	04N23W29F02S	8/3/2010	396.50	19.30	377.20	
	04N23W33M03S	8/3/2010	330.00	14.70	315.30	
	04N24W13J04S	8/3/2010	626.40	9.30	617.10	
	04N24W13N01S	8/3/2010	642.10	0.80	641.30	
	05N23W33G01S	8/3/2010	816.20	21.80	794.40	
	04N23W03M01S	8/4/2010	760.80	94.00	666.80	
	04N23W04J01S	8/4/2010	713.00	58.70	654.30	
	04N23W09B01S	8/4/2010	662.30	40.50	621.80	
	04N23W15A02S	8/4/2010	680.90	89.30	591.60	
	04N23W15D02S	8/4/2010	634.30	108.10	526.20	
	04N23W16P01S	8/4/2010	621.30	66.90	554.40	
	04N23W28G01S	8/4/2010	402.40	15.20	387.20	
	05N23W33B03S	8/4/2010	829.00	25.30	803.70	
Fifth Measure	03N23W05B01S	9/30/2010	293.20	35.50	257.70	
	03N23W08B02S	9/30/2010	249.30	16.10	233.20	
	04N23W20A01S	9/30/2010	488.90	25.30	463.60	
	04N23W29F02S	9/30/2010	396.50	28.60	367.90	
	04N23W33M03S	9/30/2010	330.00	15.80	314.20	
	04N24W13J04S	9/30/2010	626.40	11.50	614.90	
	04N24W13N01S	9/30/2010	642.10	1.30	640.80	
	04N23W03M01S	10/1/2010	760.80	97.00	663.80	
	04N23W09B01S	10/1/2010	662.30	61.20	601.10	
	04N23W15D02S	10/1/2010	634.30	120.70	513.60	
	04N23W16C04S	10/1/2010	569.10	55.20	513.90	
	04N23W16P01S	10/1/2010	621.30	67.50	553.80	
	04N23W28G01S	10/1/2010	402.40	19.80	382.60	
	04N23W04J01S	10/5/2010	713.00	64.00	649.00	
	04N23W15A02S	10/5/2010	680.90	90.50	590.40	
	05N23W33B03S	10/5/2010	829.00	28.10	800.90	
	05N23W33G01S	10/5/2010	816.20	22.60	793.60	
Sixth Measure	03N23W05B01S	12/8/2010	293.20	36.90	256.30	
	03N23W08B02S	12/8/2010	249.30	14.20	235.10	
	04N23W03M01S	12/8/2010	760.80	97.50	663.30	
	04N23W04J01S	12/8/2010	713.00	62.00	651.00	
	04N23W09B01S	12/8/2010	662.30	49.00	613.30	
	04N23W15A02S	12/8/2010	680.90	91.60	589.30	
	04N23W15D02S	12/8/2010	634.30	127.20	507.10	
	04N23W16C04S	12/8/2010	569.10	55.63	513.47	
	04N23W16P01S	12/8/2010	621.30	68.90	552.40	
	04N23W29F02S	12/8/2010	396.50	45.25	351.25	
	04N23W33M03S	12/8/2010	330.00	13.90	316.10	
	04N24W13J04S	12/8/2010	626.40	7.10	619.30	
	04N24W13N01S	12/8/2010	642.10	-----	642.20	Flowing
	04N23W28G01S	12/9/2010	402.40	NM	-----	Special
	05N23W33B03S	12/9/2010	829.00	26.10	802.90	
	05N23W33G01S	12/9/2010	816.20	20.00	796.20	
	04N23W20A01S	12/10/2010	488.90	28.50	460.40	

Appendix D – Water Quality Section

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PIPER AND STIFF DIAGRAMS

General Minerals

Constituents (mg/l)

B – Boron
HCO_3^- – Bicarbonate
Ca – Calcium
Cu – Copper
CO_3^{2-} – Carbonate
Cl^- – Chloride
eC – Electrical Conductivity *(µmhos/cm)*
F^- – Fluoride
Fe – Iron
K – Potassium
Mg – Magnesium
Mn – Manganese
NO_3^- – Nitrate
Na – Sodium
SO_4^{2-} – Sulfate
TDS – Total Dissolved Solids
Zn – Zinc
pH *(units)*

Table D-1 General Minerals

GW Basin	SWN	Date	B	HCO_3^-	Ca	CO_3^{2-}	Cl^-	Cu	E C	F^-	Fe	K	Mg	Mn	NO_3^-	Na	SO_4^{2-}	TDS	ZN	pH
Arroyo Santa Rosa	02N19W19P02S	8/26/2010	0.2	340	70	ND	95	0.04	1130	0.2	0.05	1	68	ND	86	67	107	834	ND	7.4
Arroyo Santa Rosa	02N20W24Q03S	8/26/2010	0.2	420	98	ND	137	ND	1500	0.2	0.06	2	95	ND	113	89	171	1130	ND	7.6
Arroyo Santa Rosa	02N20W25C07S	8/26/2010	0.3	410	99	ND	139	ND	1460	0.2	0.05	2	89	0.01	80.5	88	180	1090	ND	7.4
Arroyo Santa Rosa	02N20W25C06S	8/26/2010	0.3	280	72	ND	151	ND	1240	0.3	0.05	1	58	ND	26.2	108	179	876	ND	7.4
Arroyo Santa Rosa	02N20W26C02S	8/26/2010	0.4	200	63	ND	185	ND	1270	0.8	0.2	12	41	0.01	25.2	146	178	851	ND	7.5
Arroyo Santa Rosa	02N20W22K02S	9/9/2010	0.2	360	84	ND	183	ND	1450	0.1	0.3	2	83	0.2	58.4	91	131	992	0.04	7.1
Arroyo Santa Rosa	02N19W20N02S	9/10/2010	0.2	380	92	ND	182	ND	1370	0.3	0.05	1	87	ND	30.1	71	140	983	ND	7.2
Arroyo Santa Rosa	02N20W23R01S	9/10/2010	0.3	330	97	ND	181	ND	1530	0.2	0.05	1	77	ND	96	126	207	1120	ND	7.2
Arroyo Santa Rosa	02N20W23G03S	9/15/2010	0.2	310	62	ND	151	ND	1170	0.2	0.2	1	66	ND	68.2	77	82	817	ND	7.2
Cuyama Valley	08N24W17G02S	10/26/2010	0.4	280	17	ND	108	ND	1190	0.4	ND	2	2	0.03	ND	253	193	855	0.12	8.0
Cuyama Valley	09N24W25J01S	10/26/2010	0.4	380	51	ND	66	ND	1130	1	ND	2	9	ND	5.5	197	167	878	ND	7.2
Cuyama Valley	09N23W30E05S	10/26/2010	0.4	380	61	20	84	ND	1190	1	ND	2	10	ND	5.4	198	168	909	ND	7.2
Fillmore	03N21W01P08S	8/18/2010	0.6	290	176	ND	46	ND	1400	0.5	0.06	3	45	0.4	24.3	89	470	1140	ND	7.0
Fillmore	04N19W31F01S	11/3/2010	0.7	290	136	ND	68	ND	1380	0.7	ND	6	54	ND	7.2	101	450	1110	0.03	7.2
Fillmore	03N20W02R05S	11/3/2010	1.4	440	311	ND	190	ND	2880	0.5	0.06	11	98	0.02	44.7	285	1130	2510	ND	6.9
Fillmore	04N20W32R01S	11/12/2010	0.1	290	221	ND	53	ND	1580	0.5	0.2	2	55	ND	91	74	530	1320	ND	7.0
Fillmore	04N20W36D07S	11/12/2010	0.6	310	172	ND	60	ND	1560	0.8	0.06	5	65	0.4	10.7	109	540	1270	ND	7.2
Fillmore	04N19W32M02S	11/12/2010	0.6	260	131	ND	55	ND	1270	0.9	0.1	5	48	0.06	1.9	88	400	990	ND	7.2
Fillmore	03N20W01D03S	8/19/2010	0.6	260	158	ND	72	0.02	1480	0.7	ND	5	57	ND	36.4	99	480	1170	ND	7.2
Fillmore	03N20W01F05S	8/19/2010	0.7	270	149	ND	57	0.06	1410	0.7	0.1	5	53	ND	19.6	100	460	1110	0.28	7.3
Fillmore	03N19W06C03S	8/19/2010	0.7	270	143	ND	54	ND	1340	0.8	0.06	5	50	ND	19.7	88	430	1060	0.02	7.6
Fillmore	04N20W13P03S	8/20/2010	1.3	240	133	ND	53	0.04	1120	0.9	0.05	3	32	ND	13.7	72	330	878	0.04	7.2
Gillibrand/Tapo	03N18W24C07S	9/13/2010	0.2	280	141	ND	25	0.03	1010	0.2	0.06	3	29	ND	17.9	39	268	803	ND	7.4
Las Posas - East	02N20W16B06S	8/30/2010	0.8	260	146	ND	165	ND	1790	0.4	0.3	5	59	0.07	1.5	192	520	1350	ND	7.2
Las Posas - East	03N20W34G01S	8/13/2010	ND	190	68	ND	12	0.05	578	0.3	0.6	3	16	0.1	ND	29	127	445	ND	7.2
Las Posas - East	03N19W29K07S	8/26/2010	0.2	210	92	ND	34	ND	763	0.3	0	3	16	ND	12	49	156	572	ND	7.4
Las Posas - East	03N19W29K06S	8/26/2010	ND	100	49	ND	44	0.02	491	0.3	0	1	8	ND	74.2	31	30	338	ND	7.7
Las Posas - East	03N19W30E06S	8/26/2010	ND	150	42	ND	14	ND	396	0.3	0	2	8	ND	3.8	26	48	294	0.03	7.0
Las Posas - East	02N20W09Q05S	9/10/2010	0.7	240	165	ND	181	ND	1860	0.3	0.3	5	51	0.1	23.7	192	540	1400	0.05	7.2
Las Posas - East	03N20W34J01S	9/20/2010	0.1	190	64	ND	17	ND	568	0.3	0.05	2	12	ND	4.1	35	102	426	ND	7.5
Las Posas - South	02N19W07D02S	8/13/2010	0.9	310	152	ND	165	ND	1740	0.5	0.08	3	39	ND	14.8	187	500	1370	ND	7.2
Las Posas - South	02N19W07B02S	8/13/2010	1	240	116	ND	180	ND	1810	0.8	0.09	4	50	ND	ND	239	590	1420	ND	8.0
Las Posas - South	02N20W01Q02S	8/26/2010	1	270	153	ND	170	0.02	2000	0.5	0.06	5	53	ND	13.9	249	610	1520	ND	7.8
Las Posas - South	02N20W01Q01S	9/9/2010	0.8	310	177	ND	153	ND	1800	0.2	0.06	3	49	ND	54.2	171	460	1380	ND	7.0
Las Posas - South	02N19W08H02S	9/13/2010	0.8	230	150	ND	162	ND	1690	0.3	0.05	4	42	ND	22.3	172	480	1260	ND	7.8

Table D-1 General Minerals (cont.)

GW Basin	SWN	Date	B	HCO_3^-	Ca	CO_3^-	Cl^-	Cu	E C	F^-	Fe	K	Mg	Mn	NO_3^-	Na	SO_4^{2-}	TDS	ZN	pH
Las Posas - West	02N21W11A02S	8/30/2010	0.3	240	206	ND	132	ND	1820	0.3	0.07	3	71	ND	152	109	490	1400	ND	7.0
Las Posas - West	03N21W36Q01S	8/19/2010	0.2	270	79	ND	87	ND	1040	0.4	ND	4	40	ND	62.9	84	139	766	ND	7.4
Las Posas - West	02N21W15M04S	8/13/2010	0.4	300	100	ND	74	ND	1340	0.3	0.2	6	35	0.05	15.8	153	400	1080	ND	7.6
Las Posas - West	02N21W09D02S	8/13/2010	0.2	280	87	ND	93	ND	1000	0.4	0.07	3	30	0.02	30.5	81	148	753	ND	7.3
Las Posas - West	02N21W17F05S	8/26/2010	0.6	320	103	ND	66	ND	1490	0.2	0.5	5	40	0.05	0.5	186	460	1180	0.17	7.0
Las Posas - West	02N20W06J01S	10/26/2010	0.1	280	89	ND	18	ND	909	0.3	0.38	6	30	0.16	ND	60	236	719	ND	7.6
Little Cuddy Valley	08N20W04N02S	8/6/2010	ND	310	73	ND	23	0.02	585	0.3	ND	2	9	ND	1.7	43	17	479	ND	6.9
Lockwood Valley	08N21W33R03S	8/6/2010	0.7	240	101	ND	20	ND	809	0.6	ND	1	22	ND	13.6	40	184	622	ND	7.2
Lockwood Valley	08N21W29Q05S	10/26/2010	6.3	220	36	ND	12	ND	2500	1.3	ND	3	4	ND	1.3	581	1090	1950	ND	7.9
Lockwood Valley	08N21W23Q10S	10/26/2010	10.7	400	3	ND	9	ND	1120	1.5	ND	ND	ND	ND	4.4	272	172	882	ND	8.8
Mound	02N22W09K01S	8/16/2010	0.7	310	220	ND	94	ND	2390	0.4	0.08	6	71	0.3	23.7	234	1080	2040	ND	7.4
Mound	02N22W07P01S	8/16/2010	0.7	350	306	ND	120	ND	2590	0.4	0.2	8	96	0.2	41.1	193	1210	2320	ND	7.1
Mound	02N22W17M02S	8/16/2010	0.6	330	161	ND	108	ND	1710	0.4	0.9	5	44	0.2	ND	154	580	1380	ND	7.7
Mound	02N23W13K03S	8/16/2010	0.7	340	238	ND	110	ND	2250	0.5	ND	7	69	0.2	28.9	190	950	1930	0.03	8.0
Mound	02N23W13F02S	8/16/2010	0.6	380	140	ND	70	ND	1520	0.4	0.4	5	39	0.3	ND	135	460	1230	ND	7.1
Mound	02N22W09K07S	9/9/2010	0.4	200	131	ND	64	ND	1430	0.2	0.5	4	22	0.2	ND	167	520	1110	ND	7.4
Mound	02N22W10N02S	9/9/2010	0.6	300	198	ND	61	ND	1970	0.4	0.1	6	67	0.01	21.8	174	800	1630	ND	7.1
North Coast	02N23W05C01S	11/9/2010	0.6	360	89	ND	70	ND	1320	0.2	1	8	34	0.01	3.3	164	290	1020	ND	7.3
North Coast	04N25W35G01S	11/9/2010	0.3	230	83	ND	27	ND	904	0.4	ND	4	41	ND	1.9	51	262	700	ND	7.8
Ojai Valley	04N22W07D04S	10/14/2010	ND	270	84	ND	26	ND	773	0.5	0.3	1	17	0.6	ND	63	144	606	ND	7.0
Ojai Valley	04N22W06M01S	10/14/2010	ND	330	114	ND	95	ND	1110	0.3	0.06	1	31	0.2	24.2	75	150	820	0.87	6.6
Ojai Valley	04N22W06K10S	10/14/2010	0.2	270	126	ND	100	ND	1130	0.3	0.09	1	28	0.04	25	79	197	826	ND	6.9
Ojai Valley	04N22W05H04S	10/14/2010	ND	270	126	ND	12	ND	872	0.2	0.09	2	30	ND	15.9	27	215	698	ND	6.9
Ojai Valley	05N22W32K02S	11/2/2010	0.1	350	168	ND	59	ND	1110	0	0.8	2	28	0.3	4.1	48	260	919	0.27	7.0
Ojai Valley	05N22W33J01S	11/2/2010	ND	400	203	ND	55	0.01	1440	0.5	2	2	46	0.4	ND	56	450	1210	0.12	6.9
Ojai Valley	04N22W04P05S	11/5/2010	ND	380	109	ND	23	ND	881	0.4	ND	0	29	ND	31.4	38	203	814	ND	6.8
Ojai Valley	04N22W05D03S	11/5/2010	0.1	240	113	ND	24	ND	880	0.3	ND	1	29	ND	10.1	34	228	682	ND	6.8
Ojai Valley	04N22W05M04S	11/5/2010	ND	320	135	ND	22	0.01	987	0.3	0.06	1	34	ND	37.2	31	215	792	ND	6.9
Ojai Valley	04N23W02P01S	11/4/2010	0.1	720	131	ND	208	0.01	1770	0.3	0.06	1	131	ND	22.2	47	65	1330	0.06	7.1
Oxnard Pl. Forebay	02N21W07P04S	8/19/2010	0.6	250	142	ND	53	ND	1320	0.6	0.6	5	47	0.1	ND	99	480	1080	ND	7.5
Oxnard Pl. Forebay	02N22W27M02S	8/17/2010	0.6	300	150	ND	82	ND	1490	0.7	0.05	4	50	ND	18.9	88	470	1160	0.04	7.2
Oxnard Pl. Forebay	02N22W23H03S	8/17/2010	0.7	270	160	ND	60	ND	1510	0.7	ND	5	54	ND	47.8	98	510	1210	ND	7.2
Oxnard Pl. Press.	01N21W06L05S	8/17/2010	0.4	260	82	ND	45	ND	1160	0.2	0.1	6	30	0.07	ND	124	340	887	0.05	7.5
Oxnard Pl. Press.	01N21W21H03S	8/17/2010	0.4	340	29	ND	48	ND	683	ND	0	3	22	0.03	ND	87	ND	529	ND	7.2
Oxnard Pl. Press.	01N21W21K03S	8/17/2010	0.4	260	63	ND	79	ND	1170	0.1	0.3	5	37	0.03	ND	130	280	854	ND	7.6

Table D-1 General Minerals (cont.)

GW Basin	SWN	Date	B	HCO_3^-	Ca	CO_3^-	Cl^-	Cu	E C	F^-	Fe	K	Mg	Mn	NO_3^-	Na	SO_4^{2-}	TDS	ZN	pH
Oxnard Pl. Press.	01N21W19J05S	8/17/2010	0.6	340	49	ND	41	ND	753	ND	0.05	5	24	ND	ND	81	37	577	0.08	7.3
Oxnard Pl. Press.	02N22W25F01S	8/17/2010	0.8	250	181	ND	59	0.02	1710	0.7	0.6	5	65	0.02	21.7	118	690	1390	0.02	7.2
Oxnard Pl. Press.	02N22W24R02S	8/17/2010	0.7	240	169	ND	57	ND	1580	0.7	0.2	5	58	0.01	42.3	102	600	1270	0.36	6.9
Oxnard Pl. Press.	02N22W25A02S	8/17/2010	0.6	230	155	ND	53	ND	1450	0.7	0.06	4	53	ND	16.3	95	540	1150	0.03	7.3
Oxnard Pl. Press.	02N21W20Q05S	8/17/2010	0.6	270	102	ND	59	0.01	1270	0.3	0.4	5	35	0.07	ND	122	380	973	ND	7.4
Oxnard Pl. Press.	02N22W19J03S	8/16/2010	0.6	260	140	ND	61	ND	1420	0.6	0.09	4	41	0.2	1	113	530	1150	ND	7.6
Oxnard Pl. Press.	02N22W19P01S	8/16/2010	0.6	280	208	ND	107	ND	2010	0.4	ND	5	58	0.5	35.5	163	820	1680	ND	7.2
Oxnard Pl. Press.	02N23W25M01S	8/16/2010	0.6	280	184	ND	87	ND	1750	0.5	ND	5	51	0.09	18.9	136	670	1430	ND	7.1
Oxnard Pl. Press.	02N22W30Q01S	8/16/2010	0.6	240	125	ND	48	ND	1260	0.7	0.08	4	39	0.2	4.1	87	460	1010	0.12	7.6
Oxnard Pl. Press.	01N21W22C01S	8/24/2010	0.4	300	58	ND	116	ND	1190	0.1	0.1	5	40	0.03	ND	147	202	868	ND	7.4
Oxnard Pl. Press.	01N21W21H02S	8/24/2010	0.5	280	67	ND	109	ND	1270	0.2	0.1	5	35	0.02	ND	158	280	934	ND	7.8
Oxnard Pl. Press.	01N21W28D01S	8/24/2010	0.4	250	80	ND	86	ND	1190	0.2	0.1	7	33	0.02	ND	131	340	927	ND	7.7
Oxnard Pl. Press.	01N21W08R01S	8/24/2010	0.3	270	74	ND	57	ND	1070	0.3	0.3	6	27	0.04	ND	123	249	806	ND	7.7
Oxnard Pl. Press.	01N21W04D04S	8/24/2010	0.5	350	62	ND	130	ND	1340	0.3	0.09	10	25	0.03	ND	199	190	966	ND	7.7
Oxnard Pl. Press.	01N22W24B04S	8/24/2010	0.6	240	120	ND	40	ND	1160	0.4	0.3	4	34	0.2	ND	87	380	905	ND	7.6
Oxnard Pl. Press.	01N22W06R02S	8/24/2010	0.8	270	159	ND	55	ND	1520	0.7	0.08	5	53	ND	10.1	116	550	1220	ND	7.5
Oxnard Pl. Press.	01N22W06B01S	8/24/2010	0.8	260	141	ND	51	ND	1360	0.7	0.06	5	49	ND	17.5	101	460	1090	ND	7.6
Oxnard Pl. Press.	02N22W25E01S	8/24/2010	1.3	340	324	ND	86	ND	2850	0.4	0.09	9	130	ND	152	219	1300	2560	ND	7.3
Oxnard Pl. Press.	02N22W24A02S	8/24/2010	0.6	230	138	ND	57	ND	1320	0.7	0.09	4	48	ND	18.6	91	450	1040	ND	7.6
Oxnard Pl. Press.	01N22W03F05S	9/1/2010	0.7	240	157	ND	50	ND	1360	0.7	0.3	5	50	0.03	16.3	111	470	1100	0.02	7.2
Oxnard Pl. Press.	01N22W03F08S	9/1/2010	0.7	280	193	ND	66	ND	1610	0.6	0.1	6	63	0.06	15.8	113	590	1330	0.17	7.1
Oxnard Pl. Press.	02N22W36E02S	9/1/2010	0.7	250	157	ND	50	ND	1390	0.7	0.2	5	49	ND	10.2	109	490	1120	ND	7.2
Oxnard Pl. Press.	02N22W36E05S	9/1/2010	1	280	189	ND	58	ND	1750	0.6	0.07	6	70	0.05	27.1	143	670	1440	ND	7.2
Oxnard Pl. Press.	01N21W28H03S	9/1/2010	0.4	310	88	ND	141	ND	1280	0.2	0.2	5	37	0.07	ND	157	196	934	ND	7.5
Oxnard Pl. Press.	01N21W20K03S	9/1/2010	0.5	260	82	ND	66	ND	1070	0.3	0.2	6	31	ND	0.9	124	252	822	0.08	7.4
Oxnard Pl. Press.	01N22W23R02S	9/15/2010	0.6	240	120	ND	53	ND	1180	0.5	0.6	6	36	0.2	ND	84	370	910	ND	7.3
Oxnard Pl. Press.	02N22W32C04S	9/23/2010	0.7	230	148	ND	55	ND	1420	0.7	0	5	49	ND	31.6	99	490	1110	ND	7.4
Oxnard Pl. Press.	02N22W31D02S	9/23/2010	0.7	250	146	ND	53	0.66	1390	0.6	0.07	7	44	0.2	15.9	103	460	1080	0.09	7.3
Oxnard Pl. Press.	01N22W16D04S	9/27/2010	0.4	120	50	ND	41	0.01	623	1.1	7	3	16	0.06	7.6	53	130	422	ND	7.6
Oxnard Pl. Press.	01N22W21B06S	9/27/2010	0.5	190	97	ND	48	ND	1080	0	2	5	30	0.07	ND	97	340	807	ND	7.7
Oxnard Pl. Press.	01N22W19A01S	9/27/2010	0.7	220	104	ND	37	ND	1050	0.5	0.3	5	31	0.1	ND	81	324	802	1	7.9
Oxnard Pl. Press.	01N21W18Q02S	10/14/2010	0.6	240	127	ND	66	ND	1300	0.6	0.1	5	49	0.4	ND	106	430	1020	ND	7.1
Oxnard Pl. Press.	01N21W29K02S	10/12/2010	0.6	280	121	ND	50	ND	1200	0.2	0.061	5	40	0.65	0.7	98	360	955	ND	7.1
Oxnard Pl. Press.	01N21W30C04S	10/12/2010	0.6	230	142	ND	50	330	1270	0.6	0.07	5	50	ND	13.2	88	440	1020	50	7.1
Oxnard Pl. Press.	01N22W36H01S	10/12/2010	0.6	280	143	ND	248	ND	1540	0.3	0.39	8	48	0.24	ND	129	230	1090	ND	7.4

Table D-1 General Minerals (cont.)

GW Basin	SWN	Date	B	HCO_3^-	Ca	CO_3^-	Cl^-	Cu	E C	F^-	Fe	K	Mg	Mn	NO_3^-	Na	SO_4^{2-}	TDS	ZN	pH
Oxnard Pl. Press.	01N22W26P02S	10/12/2010	0.4	260	98	ND	40	ND	1100	0.2	0.34	7	39	0.02	0.8	101	330	876	ND	7.5
Oxnard Pl. Press.	01N22W26M03S	10/12/2010	0.5	230	128	ND	39	30	1180	0.2	0.42	7	38	0.17	2.5	100	400	945	ND	7.4
Oxnard Pl. Press.	01N22W26D05S	10/12/2010	0.5	240	130	ND	48	60	7260	0.2	0.07	7	39	0.23	2630	100	410	3600	40	7.2
Oxnard Pl. Press.	02N21W19A01S	9/20/2010	0.8	280	201	ND	104	ND	1980	0.5	0.07	6	73	0.01	69.8	153	700	1590	-0.2	7.5
Oxnard Pl. Press.	02N21W20M03S	9/20/2010	0.7	330	369	ND	300	ND	3270	0.3	0.1	9	129	0.36	121	234	1220	2710	-0.2	7.0
Oxnard Pl. Press.	02N22W25Q05S	9/20/2010	0.7	240	160	ND	51	ND	1500	0.6	0.07	5	50	0.02	12.1	111	550	1180	-0.2	7.6
Piru	04N19W26J01S	8/18/2010	0.7	400	255	ND	57	0.01	2150	0.5	0.08	6	92	0.02	43.3	162	870	1890	ND	6.9
Piru	04N19W26J02S	8/18/2010	0.9	430	315	ND	66	ND	2540	0.7	0.08	7	117	0.5	38.9	190	1140	2300	ND	7.0
Piru	04N19W26J03S	8/18/2010	0.6	240	123	ND	79	ND	1280	0.7	ND	5	44	ND	24.5	109	370	995	ND	7.3
Piru	04N19W26J05S	8/18/2010	1	440	309	ND	65	ND	2470	0.7	0.08	7	117	0.7	23.7	169	1100	2230	ND	7.0
Piru	04N19W25M03S	8/18/2010	0.7	420	297	ND	61	ND	2670	0.9	0.08	8	121	0.8	25.7	227	1240	2400	ND	7.2
Piru	04N19W26J04S	8/18/2010	0.6	250	120	ND	90	ND	1350	0.7	0.4	5	45	0.02	36	115	370	1030	0.03	7.4
Piru	04N19W25K04S	8/18/2010	0.6	270	134	ND	83	ND	1330	0.7	ND	6	46	ND	27.3	102	360	1030	ND	7.4
Piru	04N19W26H01S	8/18/2010	0.7	290	172	ND	108	10	1640	0.7	0.05	5	68	ND	26.5	118	520	1310	ND	7.4
Piru	04N18W30J04S	8/6/2010	0.5	240	103	ND	113	ND	1280	0.6	ND	6	37	ND	11	122	320	953	0.07	7.3
Piru	04N19W34J04S	8/6/2010	0.5	220	118	ND	54	ND	1180	0.8	ND	4	44	ND	6.7	79	390	916	0.05	7.2
Piru	04N18W30A03S	11/3/2010	0.6	330	150	ND	117	ND	1240	0.5	0.8	7	58	ND	32.5	122	430	1250	0.08	7.0
Piru	04N19W25H01S	11/3/2010	0.7	300	134	ND	63	ND	1380	0.7	ND	6	45	ND	22.6	96	370	1040	0.04	7.1
Piru	04N19W34L01S	11/3/2010	0.6	250	120	ND	52	ND	1240	0.8	ND	5	47	ND	10.9	86	420	992	ND	7.1
Piru	04N19W23R03S	11/12/2010	0.4	420	203	ND	51	ND	2250	0.7	0.1	7	112	0.07	9.9	211	950	1960	ND	7.1
Pleasant Valley	02N20W17L01S	8/30/2010	0.8	260	187	ND	175	ND	1930	0.3	0.2	6	54	0.3	26.7	199	570	1480	ND	7.1
Pleasant Valley	01N21W15H01S	8/19/2010	1.6	260	636	ND	860	ND	5570	0	3	9	237	2	ND	564	2320	4890	ND	7.0
Pleasant Valley	01N21W02H04S	8/17/2010	0.8	300	286	ND	250	ND	2660	0.2	0.08	5	81	ND	121	209	890	2140	ND	7.3
Pleasant Valley	02N21W34G01S	8/24/2010	0.7	360	89	ND	195	ND	1740	0.3	0.2	8	31	0.03	ND	264	330	1280	ND	7.7
Pleasant Valley	01N21W03K01S	8/24/2010	0.5	260	151	ND	144	ND	1640	0.2	0.07	5	42	0.02	25	160	440	1230	ND	7.7
Pleasant Valley	01N21W03R01S	8/24/2010	0.6	290	232	ND	270	ND	2340	0.2	0.08	6	74	0.03	19.5	200	690	1780	ND	7.5
Pleasant Valley	01N21W10G01S	8/24/2010	0.5	300	95	ND	160	ND	1470	0.2	0.1	6	41	0.03	ND	176	300	1080	ND	7.3
Pleasant Valley	01N21W15D02S	8/24/2010	0.5	290	170	ND	216	ND	1880	0.2	0.09	6	56	0.2	ND	174	490	1400	ND	7.6
Pleasant Valley	01N21W04K01S	8/24/2010	0.3	250	70	ND	57	0.05	867	0.2	1	4	24	0.3	0.8	78	154	638	ND	7.7
Pleasant Valley	02N20W29B02S	8/26/2010	0.2	340	75	ND	127	ND	1210	0.4	0.08	3	52	0.05	5.5	108	162	873	ND	7.3
Pleasant Valley	02N21W34C01S	9/1/2010	0.3	260	102	ND	72	ND	1090	0.4	0.4	5	28	0.05	ND	111	249	827	ND	7.3
Pleasant Valley	02N20W19F04S	9/1/2010	0.6	260	215	ND	165	ND	1880	0.2	0.2	6	53	0.15	ND	166	630	1500	ND	7.1
Pleasant Valley	01N21W01B05S	9/1/2010	0.3	380	68	ND	237	ND	1400	0.1	0.07	7	59	0.07	ND	150	50	951	ND	7.5
Pleasant Valley	01N21W12D02S	9/20/2010	0.7	390	245	ND	380	ND	2870	ND	0.24	5	113	0.2	ND	265	800	2200	-0.2	7.3
Santa Paula	03N22W36K07S	8/17/2010	0.4	300	212	ND	68	ND	1570	0.4	0.3	4	49	0.1	ND	85	580	1300	0.02	7.2

Table D-1 General Minerals (cont.)

GW Basin	SWN	Date	B	HCO_3^-	Ca	CO_3^-	Cl^-	Cu	E C	F^-	Fe	K	Mg	Mn	NO_3^-	Na	SO_4^{2-}	TDS	ZN	pH
Santa Paula	03N22W35Q01S	8/16/2010	1	430	298	ND	106	ND	2860	0.5	ND	6	89	0.7	34.5	265	1330	2560	0.07	7.3
Santa Paula	03N21W09K04S	8/6/2010	0.4	320	155	ND	54	ND	1380	0.3	0.4	4	34	0.5	ND	123	420	1110	0.02	7.2
Santa Paula	02N22W03E01S	8/19/2010	0.6	360	290	ND	120	ND	2360	0.4	0.86	6	84	0.52	1	180	1040	2080	ND	6.9
Santa Paula	02N22W03L01S	8/19/2010	0.8	410	358	ND	150	ND	3070	0.4	2.11	8	112	0.82	ND	302	1460	2800	ND	7.0
Santa Paula	03N21W30E01S	8/19/2010	0.9	410	240	ND	94	ND	2220	0.5	0.06	5	64	0.25	33.6	223	870	1940	ND	7.0
Sherwood	01N19W29H09S	8/19/2010	ND	300	201	ND	125	ND	1470	0	0.2	1	31	0.5	5.7	89	380	1130	0.5	7.0
Sherwood	01N19W19H03S	8/19/2010	ND	350	104	ND	57	0.03	948	0.2	4	2	45	0.09	21.6	39	110	729	2.36	7.0
Sherwood	01N20W25C07S	8/19/2010	0.2	380	90	ND	71	ND	1030	0.1	0.3	2	45	0.02	ND	68	138	794	0.17	7.2
Sherwood	01N20W25F04S	8/19/2010	ND	260	30	ND	32	ND	540	0	1	0	7	0.03	ND	84	23	436	0.43	7.6
Simi Valley	02N18W08D04S	9/13/2010	1.2	360	233	ND	160	ND	2340	0.3	0.1	6	87	0.2	12.7	208	820	1890	ND	7.2
Simi Valley	02N18W08K07S	9/13/2010	1	300	286	ND	170	ND	2460	0.4	1	5	85	ND	54.3	193	960	2050	ND	7.3
Simi Valley	02N17W16A10S	10/20/2010	ND	370	50	ND	48	ND	1030	0.9	2	4	28	0.09	ND	142	155	798	0.41	7.6
Simi Valley	02N18W10A02S	10/18/2010	1.1	320	234	ND	150	ND	2310	0.5	0.06	7	85	ND	52.3	199	850	1900	ND	6.9
Thousand Oaks	01N19W08G02S	9/15/2010	0.1	360	135	ND	136	ND	1760	0.2	4	3	110	0.2	ND	106	530	1380	ND	7.0
Thousand Oaks	01N19W09N01S	9/15/2010	0.2	390	154	ND	183	ND	1940	0.3	1	4	114	0.04	ND	120	540	1510	ND	7.0
Tierra Rejada	02N19W14P01S	9/15/2010	0.2	400	61	ND	80	ND	1070	0.2	0.1	1	68	ND	46.1	64	94	814	ND	7.2
Tierra Rejada Valley	02N19W11J03S	8/26/2010	0.2	260	62	ND	63	ND	933	0.2	0.2	1	56	ND	22.9	54	163	682	0.22	8.5
Tierra Rejada Valley	02N19W10R02S	8/26/2010	0.2	260	56	ND	70	ND	957	0.4	0.06	2	58	ND	8.9	61	174	690	0.02	7.6
Tierra Rejada Valley	02N19W15B01S	9/9/2010	0.1	280	106	ND	147	ND	1330	0.2	0.06	1	72	ND	57.7	66	200	930	ND	7.1
Tierra Rejada Valley	02N19W15J02S	9/10/2010	0.2	370	94	ND	146	ND	1460	0.1	0.07	3	85	ND	61.6	99	240	1100	0.02	7.3
Tierra Rejada Valley	02N19W12F04S	9/13/2010	0.4	360	88	ND	127	ND	1570	0.3	0.06	2	100	ND	ND	117	390	1180	0.79	7.5
Tierra Rejada Valley	02N19W14R03S	9/13/2010	ND	290	27	ND	38	ND	648	0.2	0.07	5	31	0.02	5.4	63	38	498	0.06	7.9
Tierra Rejada Valley	02N19W14Q02S	9/13/2010	ND	330	42	ND	63	0.02	853	ND	ND	6	44	0.04	5	70	75	635	0.18	8.0
Tierra Rejada Valley	02N19W15F01S	9/14/2010	ND	250	89	ND	114	ND	1150	0.3	0.5	1	64	0.02	73.3	53	163	808	ND	7.6
Tierra Rejada Valley	02N19W15G01S	9/14/2010	ND	250	92	ND	115	0.19	1110	0.3	2	1	59	0.08	72.2	43	142	774	ND	7.6
Tierra Rejada Valley	02N19W15B03S	9/15/2010	0.1	270	112	ND	142	ND	1300	0.2	0.1	0	69	ND	84.8	52	179	909	0.07	7.1
Tierra Rejada Valley	02N19W14F01S	9/15/2010	0.1	350	89	ND	118	0.03	1200	0.2	0.06	1	76	ND	87	44	112	877	0.17	7.0
Tierra Rejada Valley	02N19W15M02S	9/23/2010	0.2	350	102	ND	119	0.03	1280	0.3	0.5	1	67	0.04	29.8	71	202	942	ND	7.4
U N D E F I N E D	02N20W18A01S	8/19/2010	0	170	67	ND	21	ND	602	0.3	ND	2	15	0.05	3.9	38	126	443	ND	7.5
U N D E F I N E D	02N21W13A01S	8/26/2010	ND	230	77	ND	12	ND	626	0	0.2	3	16	0.08	2.2	39	107	486	0.41	7.5
U N D E F I N E D	01N19W07J05S	9/15/2010	0.1	450	151	ND	137	ND	1560	0.1	0.09	0	92	ND	6.2	57	310	1200	ND	6.8
Upper Ojai	04N22W08Q01S	10/29/2010	0.4	510	53	ND	25	ND	902	0.7	0.05	2	16	0.02	ND	136	22	765	0.14	7.4
Upper Ojai	04N22W11J01S	10/29/2010	ND	200	58	ND	32	0.01	629	0.4	ND	0	21	ND	46.2	35	83	476	ND	6.7
Upper Ojai	04N22W12P02S	10/29/2010	0.1	440	79	ND	46	ND	909	0.3	2	1	28	3	ND	81	58	733	0.06	6.5

* Undefined – These wells are outside of established groundwater basin boundaries.

Table D-1 General Minerals (cont.)

GW Basin	SWN	Date	B	HCO_3^-	Ca	CO_3^-	Cl^-	Cu	E C	F^-	Fe	K	Mg	Mn	NO_3^-	Na	SO_4^{2-}	TDS	ZN	pH
Lower Ventura River	02N23W05K01S	11/9/2010	0.8	370	131	ND	124	ND	1560	0.6	0.2	10	46	0.1	6.1	158	380	1230	ND	7.4
Lower Ventura River	03N23W32Q01S	11/9/2010	0.7	310	116	ND	116	ND	1380	0.6	ND	0.2	41	0.2	ND	132	320	1040	ND	7.2
Upper Ventura River	04N23W29F02S	10/29/2010	0.5	240	109	ND	24	ND	874	0.5	ND	2	26	ND	2.7	40	241	685	0.15	7.1
Upper Ventura River	04N23W04H01S	10/29/2010	0.5	240	106	ND	35	ND	902	0.6	ND	2	28	ND	10.8	46	231	699	ND	7.1
Upper Ventura River	04N23W09G03S	10/29/2010	0.4	330	131	ND	67	ND	1120	0.3	ND	2	38	ND	32.1	56	210	866	0.09	7.1

Inorganic Metals and Radio Chemistry
Elements (µg/L)

Al – Aluminum
Sb – Antimony
As – Arsenic
Ba – Barium
Be – Beryllium
Cd – Cadmium
Cr – Chromium

Pb – Lead
Hg – Mercury
Ni – Nickel
Se – Selenium
Ag – Silver
Tl – Thallium
V – Vanadium

Table D-2 Inorganic Metals

GW Basin	SWN	Date	Al	Sb	As	Ba	Be	Cd	Cr	Pb	Hg	Ni	Se	Ag	Tl	V
Arroyo Santa Rosa	02N19W20N02S	9/10/2010	ND	ND	3.00	3.90	ND	ND	7.00	0.90	ND	ND	5.00	ND	ND	40.00
Cuyama Valley	08N24W17G02S	10/26/2010	ND	ND	ND	23.00	ND	ND	2.00	0.40	ND	ND	ND	ND	ND	ND
Cuyama Valley	09N23W30E05S	10/26/2010	ND	ND	ND	24.40	ND	ND	3.00	0.20	ND	ND	6.00	ND	ND	ND
Cuyama Valley	09N24W25J01S	10/26/2010	ND	ND	ND	22.00	ND	ND	3.00	ND	ND	ND	7.00	ND	ND	ND
Fillmore	03N20W02R05S	11/3/2010	ND	ND	ND	22.10	ND	0.60	ND	ND	ND	ND	17.00	ND	ND	ND
Fillmore	04N19W32M02S	11/12/2010	ND	ND	ND	22.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fillmore	04N20W13P03S	8/20/2010	20.00	ND	ND	23.70	ND	ND	ND	3.60	ND	ND	4.00	ND	ND	ND
Fillmore	04N20W32R01S	11/12/2010	80.00	ND	ND	47.00	ND	ND	ND	ND	ND	2.00	9.00	ND	ND	ND
Fillmore	04N20W36D07S	11/12/2010	ND	ND	ND	20.90	ND	1.40	ND	ND	ND	2.00	12.00	ND	ND	4.00
Gilibrand/Tapo	03N18W24C07S	9/13/2010	ND	ND	ND	27.40	ND	ND	1.00	ND	ND	5.00	ND	ND	ND	26.00
Las Posas East	03N19W29K07S	8/26/2010	ND	ND	ND	71.80	ND	ND	4.00	0.20	ND	ND	5.00	ND	ND	10.00
Las Posas South	02N20W01Q01S	9/9/2010	ND	ND	ND	25.00	ND	ND	4.00	ND	ND	5.00	7.00	ND	ND	6.00
Las Posas South	02N20W01Q02S	8/26/2010	ND	ND	ND	19.00	ND	ND	2.00	1.10	0.50	6.00	6.00	ND	ND	6.00
Little Cuddy Valley	08N20W04N02S	8/6/2010	ND	ND	ND	149.00	ND	ND	ND	0.60	ND	26.00	ND	ND	ND	ND
Lockwood Valley	08N21W23Q10S	10/26/2010	10.00	ND	58.00	27.40	ND	ND	3.00	ND	ND	ND	22.00	ND	ND	121.00
Lockwood Valley	08N21W29Q05S	10/26/2010	ND	ND	8.00	11.20	ND	ND	2.00	0.20	ND	ND	13.00	ND	ND	15.00
Lockwood Valley	08N21W33R03S	8/6/2010	ND	ND	ND	27.20	ND	ND	2.00	ND	ND	ND	8.00	ND	ND	5.00
Mound	02N22W07P01S	8/16/2010	ND	ND	2.00	25.50	ND	ND	2.00	ND	ND	ND	73.00	ND	ND	3.00
Mound	02N22W10N02S	9/9/2010	20.00	ND	ND	24.20	ND	0.30	ND	ND	ND	2.00	19.00	ND	ND	2.00
North Coast	02N23W05C01S	11/9/2010	40.00	ND	3.00	24.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ojai Valley	04N22W04P05S	11/5/2010	ND	ND	ND	29.90	ND	0.70	ND	ND	ND	ND	3.00	ND	ND	ND
Ojai Valley	04N22W05H04S	10/14/2010	ND	ND	ND	27.20	ND	ND	ND	0.40	0.09	ND	4.00	ND	ND	ND
Ojai Valley	04N22W05M04S	11/5/2010	ND	ND	ND	32.80	ND	ND	ND	ND	ND	ND	4.00	ND	ND	ND
Ojai Valley	04N22W07J04S	10/14/2010	ND	ND	ND	34.70	ND	0.20	1.00	ND	ND	ND	ND	ND	ND	ND
Ojai Valley	05N22W33J01S	11/2/2010	10.00	ND	ND	22.30	ND	ND	ND	2.00	ND	ND	ND	ND	ND	ND
Ojai Valley	05N22W32K02S	11/2/2010	20.00	ND	ND	77.20	ND	ND	ND	1.90	ND	1.00	2.00	ND	ND	2.00
Oxnard Plain Forebay	02N21W07P04S	8/19/2010	ND	1.00	2.00	20.40	ND	ND	ND	0.40	ND	ND	ND	ND	ND	ND
Oxnard Plain Pressure	01N21W21H03S	8/17/2010	10.00	1.00	2.00	35.80	ND	ND	ND	ND	ND	ND	2.00	ND	ND	2.00
Oxnard Plain Pressure	01N21W28H03S	9/1/2010	30.00	ND	ND	79.50	ND	ND	ND	ND	ND	ND	7.00	ND	ND	ND
Oxnard Plain Pressure	01N22W19A01S	9/27/2010	ND	ND	ND	24.50	ND	ND	ND	2.20	ND	1.00	ND	ND	ND	ND
Oxnard Plain Pressure	01N22W21B06S	9/27/2010	ND	ND	ND	38.40	ND	ND	ND	0.20	ND	2.00	ND	ND	ND	ND
Oxnard Plain Pressure	01N22W23R02S	9/15/2010	ND	ND	ND	44.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Oxnard Plain Pressure	01N22W03F05S	9/1/2010	ND	6.00	13.00	20.70	10.10	ND	ND	12.00	ND	1.00	15.00	11.00	ND	2.00
Oxnard Plain Pressure	01N22W16D04S	9/27/2010	100.00	ND	6.00	26.20	ND	ND	1.00	1.20	ND	1.00	7.00	1.00	ND	4.00
Oxnard Plain Pressure	02N22W25Q05S	9/20/2010	ND	ND	ND	19.80	0.30	ND	ND	ND	ND	2.00	16.00	ND	ND	3.00

Table D-2 Inorganic Metals (cont.)

GW Basin	SWN	Date	Al	Sb	As	Ba	Be	Cd	Cr	Pb	Hg	Ni	Se	Ag	Tl	V
Oxnard Plain Pressure	02N22W30Q01S	8/16/2010	ND	ND	ND	23.90	ND	0.30	1.00	ND	ND	ND	28.00	ND	ND	2.00
Oxnard Plain Pressure	01N21W18Q02S	10/14/2010	ND	ND	2.00	12.00	ND	ND	ND	0.50	ND	ND	2.00	ND	ND	ND
Oxnard Plain Pressure	02N22W19P01S	8/16/2010	ND	ND	ND	17.40	ND	0.50	2.00	ND	ND	5.00	21.00	ND	ND	3.00
Oxnard Plain Pressure	02N22W24R02S	8/17/2010	ND	ND	ND	24.00	ND	0.20	ND	-0.50	ND	ND	22.00	ND	ND	ND
Piru	04N18W30A03S	11/3/2010	120.00	ND	ND	33.80	ND	0.30	2.00	1.10	ND	3.00	4.00	ND	ND	3.00
Piru	04N18W30J04S	8/6/2010	ND	ND	ND	26.00	ND	ND	-0.10	0.30	ND	3.00	5.00	-0.10	ND	ND
Piru	04N19W23R03S	11/12/2010	ND	ND	ND	20.30	ND	0.80	1.00	ND	ND	7.00	10.00	ND	ND	3.00
Piru	04N19W25H01S	11/3/2010	ND	ND	ND	18.00	ND	0.20	ND	0.30	ND	ND	6.00	ND	ND	3.00
Piru	04N19W25K04S	8/18/2010	20.00	ND	ND	20.60	ND	ND	1.00	0.30	ND	ND	4.00	ND	ND	3.00
Piru	04N19W25M03S	8/18/2010	ND	ND	8.00	22.80	ND	1.20	ND	ND	ND	3.00	343.00	ND	ND	3.00
Piru	04N19W26H01S	8/18/2010	ND	ND	ND	20.80	ND	0.20	1.00	ND	ND	ND	5.00	ND	ND	3.00
Piru	04N19W26J01S	8/18/2010	ND	ND	ND	19.80	ND	1.10	1.00	0.20	ND	3.00	4.00	ND	ND	2.00
Piru	04N19W26J02S	8/18/2010	ND	ND	4.00	20.70	ND	1.40	1.00	ND	ND	5.00	185.00	ND	ND	3.00
Piru	04N19W26J03S	8/18/2010	ND	ND	ND	20.40	ND	ND	1.00	0.40	ND	ND	5.00	ND	0.20	2.00
Piru	04N19W26J04S	8/18/2010	ND	ND	ND	20.90	ND	ND	ND	ND	ND	1.00	3.00	ND	ND	2.00
Piru	04N19W26J05S	8/18/2010	ND	ND	5.00	19.80	ND	1.20	1.00	ND	ND	4.00	212.00	ND	ND	2.00
Piru	04N19W34J04S	8/6/2010	ND	ND	ND	17.90	ND	ND	1.00	ND	ND	ND	6.00	ND	ND	3.00
Piru	04N19W34L01S	11/3/2010	ND	ND	ND	16.40	ND	ND	ND	ND	ND	ND	9.00	ND	ND	3.00
Pleasant Valley	01N21W01B05S	9/1/2010	ND	ND	ND	522.00	ND	ND	ND	ND	ND	ND	6.00	ND	ND	ND
Pleasant Valley	01N21W02H04S	8/17/2010	10.00	ND	ND	23.80	ND	ND	5.00	ND	ND	ND	21.00	ND	ND	5.00
Pleasant Valley	01N21W12D02S	9/20/2010	ND	ND	ND	48.70	ND	ND	1.00	0.20	ND	2.00	6.00	ND	ND	ND
Pleasant Valley	01N21W15H01S	8/19/2010	ND	ND	4.00	33.40	ND	ND	ND	ND	ND	-5.00	7.00	ND	ND	ND
Santa Paula	02N22W03L01S	8/19/2010	ND	ND	ND	22.40	ND	ND	1.00	ND	ND	-5.00	3.00	ND	ND	ND
Santa Paula	03N21W30E01S	8/19/2010	ND	ND	ND	29.70	ND	0.60	1.00	ND	ND	ND	21.00	ND	ND	3.00
Santa Paula	03N21W09K04S	8/6/2010	ND	ND	5.00	27.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Santa Paula	03N22W35Q01S	8/16/2010	ND	ND	3.00	21.60	ND	0.30	3.00	0.30	ND	ND	79.00	ND	ND	3.00
Santa Paula	03N22W36K07S	8/17/2010	10.00	ND	ND	31.90	ND	ND	ND	1.50	ND	ND	ND	ND	ND	ND
Sherwood	01N19W19H03S	8/19/2010	2020.00	2.00	7.00	10.30	ND	1.10	4.00	20.20	ND	10.00	5.00	ND	0.30	8.00
Simi Valley	02N17W16A10S	10/20/2010	ND	ND	ND	35.70	ND	ND	3.00	0.30	ND	ND	ND	ND	ND	ND
Simi Valley	02N18W08D04S	9/13/2010	ND	ND	ND	14.70	ND	ND	1.00	0.70	ND	ND	12.00	ND	ND	2.00
Tierra Rejada Valley	02N19W10R02S	8/26/2010	ND	ND	ND	20.00	ND	ND	2.00	0.90	ND	ND	ND	ND	ND	24.00
Tierra Rejada Valley	02N19W14P01S	9/15/2010	ND	ND	3.00	8.10	ND	ND	4.00	0.30	ND	1.00	3.00	ND	ND	80.00
Tierra Rejada Valley	02N19W14R03S	9/13/2010	ND	ND	6.00	10.10	ND	ND	2.00	0.80	ND	ND	ND	ND	ND	6.00
Tierra Rejada Valley	02N19W15F01S	9/14/2010	60.00	ND	3.00	52.70	ND	ND	10.00	0.20	ND	1.00	12.00	ND	ND	34.00
Tierra Rejada Valley	02N19W15M02S	9/23/2010	50.00	ND	ND	45.40	ND	ND	2.00	3.80	ND	5.00	6.00	ND	ND	26.00

Table D-2 Inorganic Metals (cont.)

GW Basin	SWN	Date	Al	Sb	As	Ba	Be	Cd	Cr	Pb	Hg	Ni	Se	Ag	Tl	V
Thousand Oaks	01N19W09N01S	9/15/2010	ND	ND	ND	24.90	ND	ND	ND	0.50	ND	1.00	2.00	ND	ND	ND
Upper Ojai	04N22W08Q01S	10/29/2010	10.00	ND	ND	247.00	ND	ND	ND	1.00	ND	2.00	4.00	ND	ND	ND
Upper Ojai	04N22W11J01S	10/29/2010	ND	ND	ND	48.20	ND	ND	ND	0.70	ND	ND	3.00	ND	ND	ND
Upper Ojai	04N22W12P02S	10/29/2010	100.00	ND	ND	98.30	ND	ND	1.00	0.90	ND	ND	2.00	ND	ND	ND
Undefined	02N21W13A01S	8/26/2010	ND	ND	ND	41.80	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ventura River - Lower	02N23W05K01S	11/9/2010	ND	ND	ND	27.20	ND	ND	ND	0.60	ND	2.00	5.00	ND	ND	ND
Ventura River - Lower	03N23W32Q01S	11/9/2010	ND	ND	ND	21.90	ND	0.40	ND	0.30	ND	5.00	2.00	ND	ND	ND
Ventura River - Upper	04N23W04H01S	10/29/2010	ND	ND	ND	26.70	ND	ND	ND	0.30	ND	ND	ND	ND	ND	ND
Ventura River - Upper	04N23W09G03S	10/29/2010	ND	ND	ND	39.20	ND	ND	ND	0.30	ND	ND	ND	ND	ND	ND

Table D-3 Radiochemistry

Groundwater Basin	SWN	Date	Alpha pCi/L	CE	Uranium pCi/L	CE
Little Cuddy Valley	08N20W04N02S	8/6/2010	8.93	2.07	3.83	1.83
Lockwood Valley	08N21W33R03S	8/6/2010	6.65	2.34	4.78	1.83
Piru	04N19W23R03S	11/12/2010	13.80	5.38	8.42	1.85

* CE – Counting Error

Piper and Stiff Diagrams

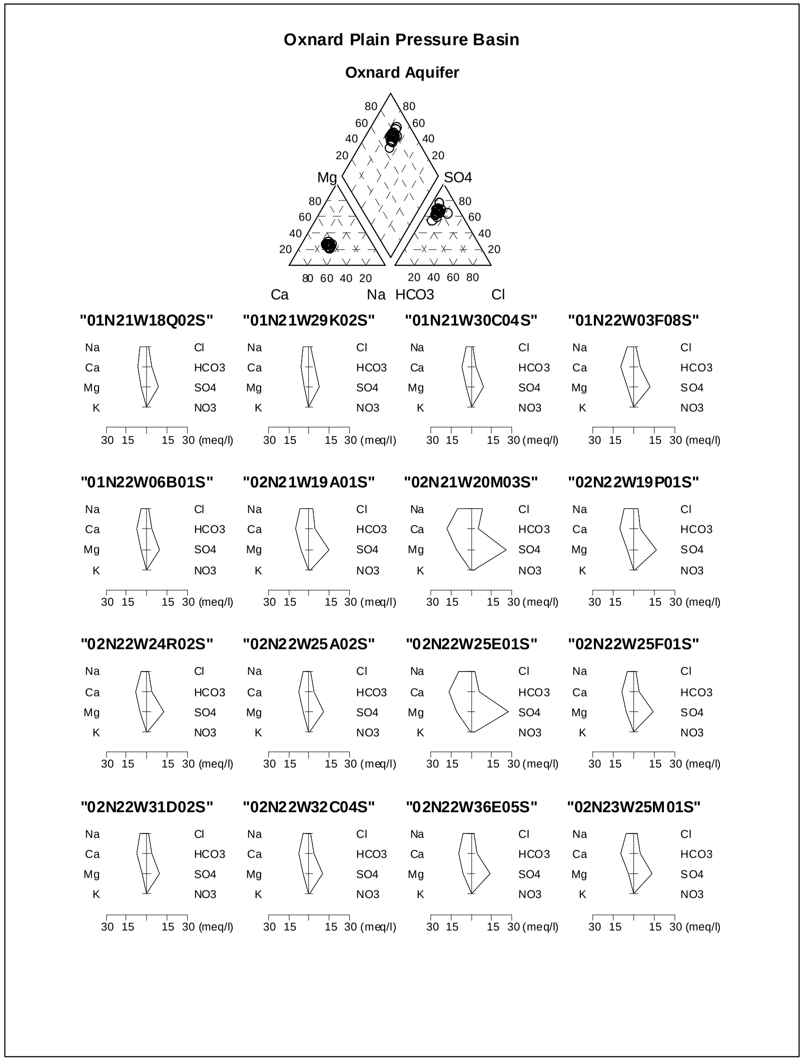

Figure D-1: Piper and Stiff diagrams showing water quality. for the Oxnard Aquifer groundwater

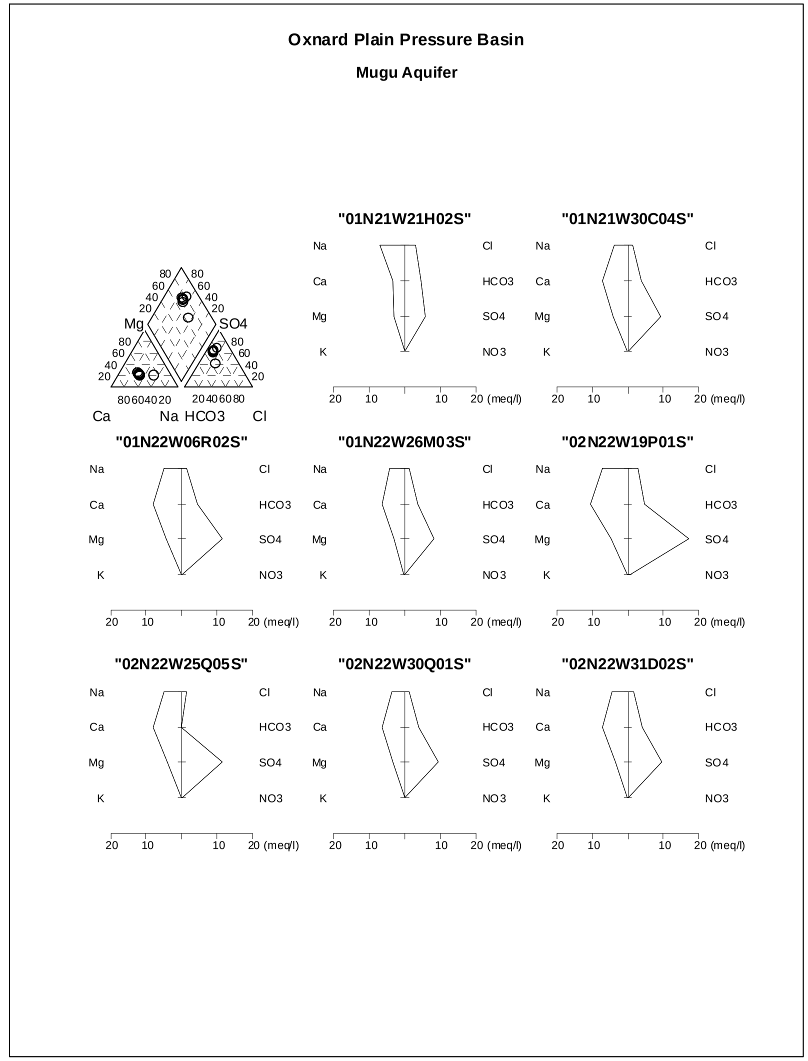

Figure D-2: Piper and Stiff diagrams showing water quality for the Mugu Aquifer groundwater

Piper and Stiff Diagrams

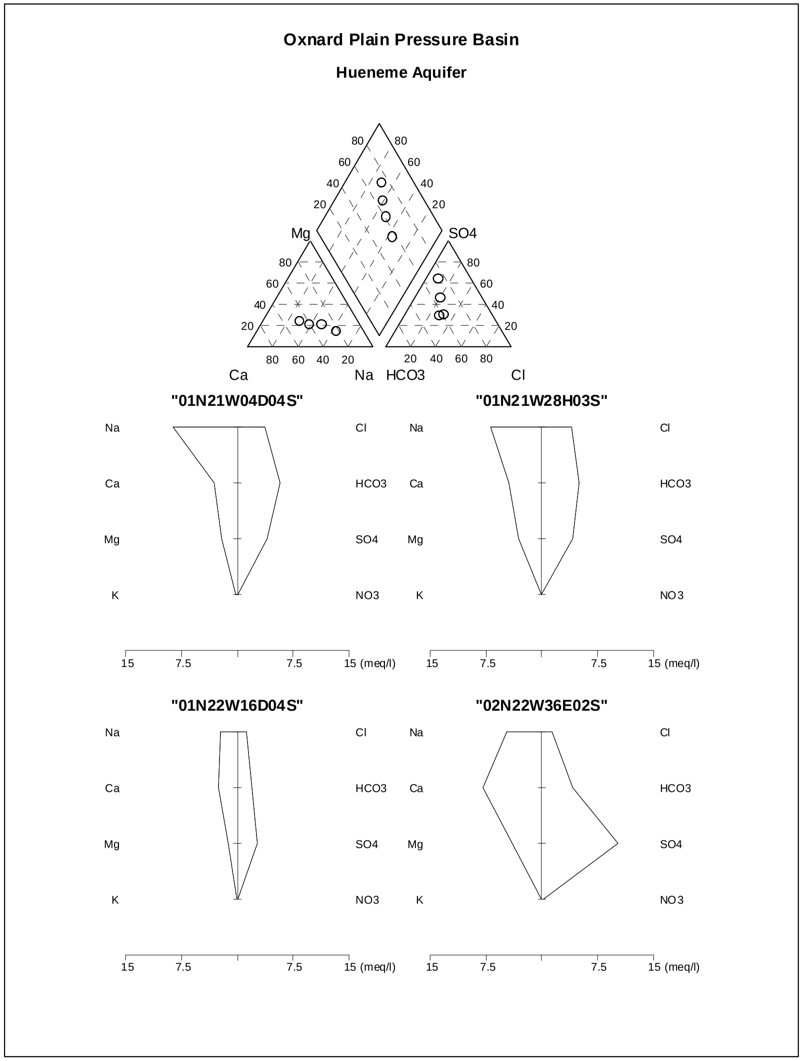

Figure D-3: Piper and Stiff diagrams showing water quality for the Hueneme Aquifer groundwater.

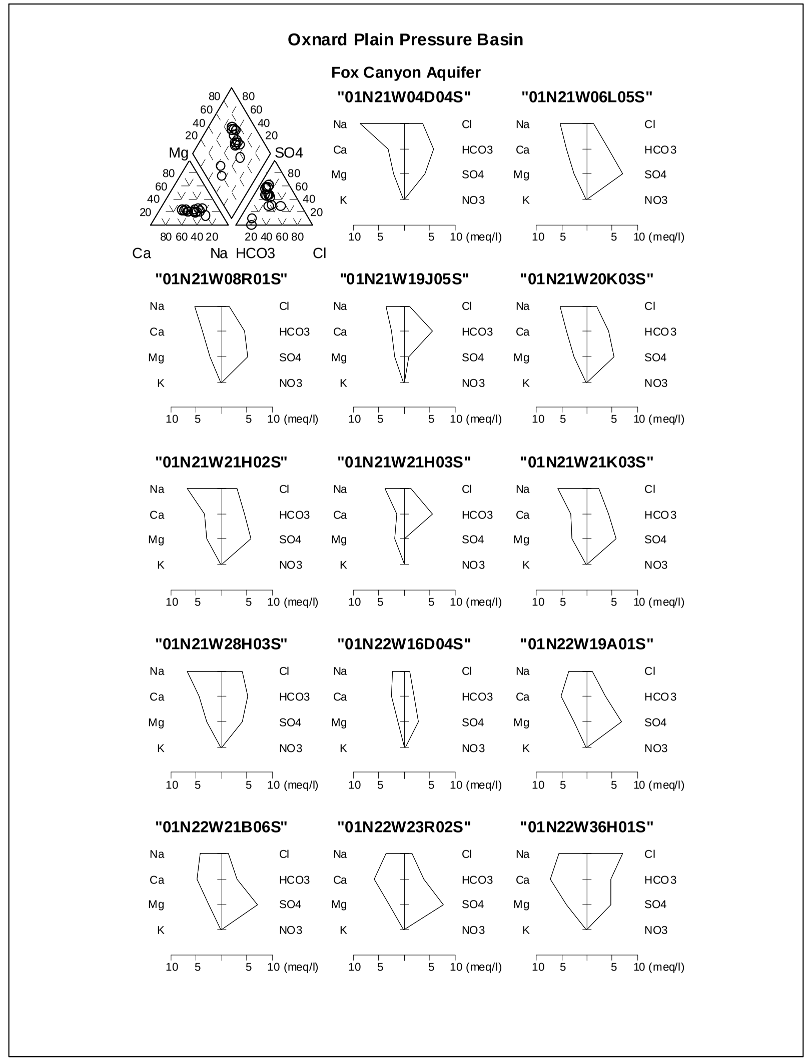

Figure D-4: Piper and Stiff diagrams showing water quality for the Fox Canyon Aquifer groundwater.

Piper and Stiff Diagrams

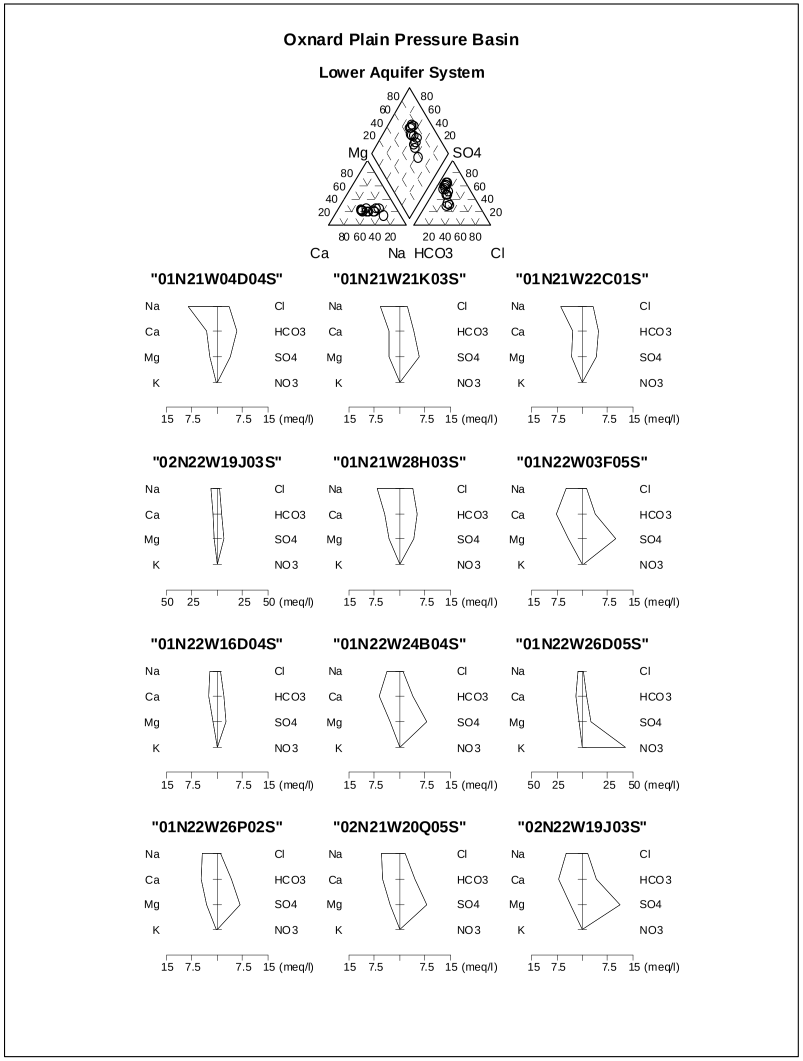

Figure D-5: Piper and Stiff diagrams showing water quality for the Lower Aquifer System groundwater.

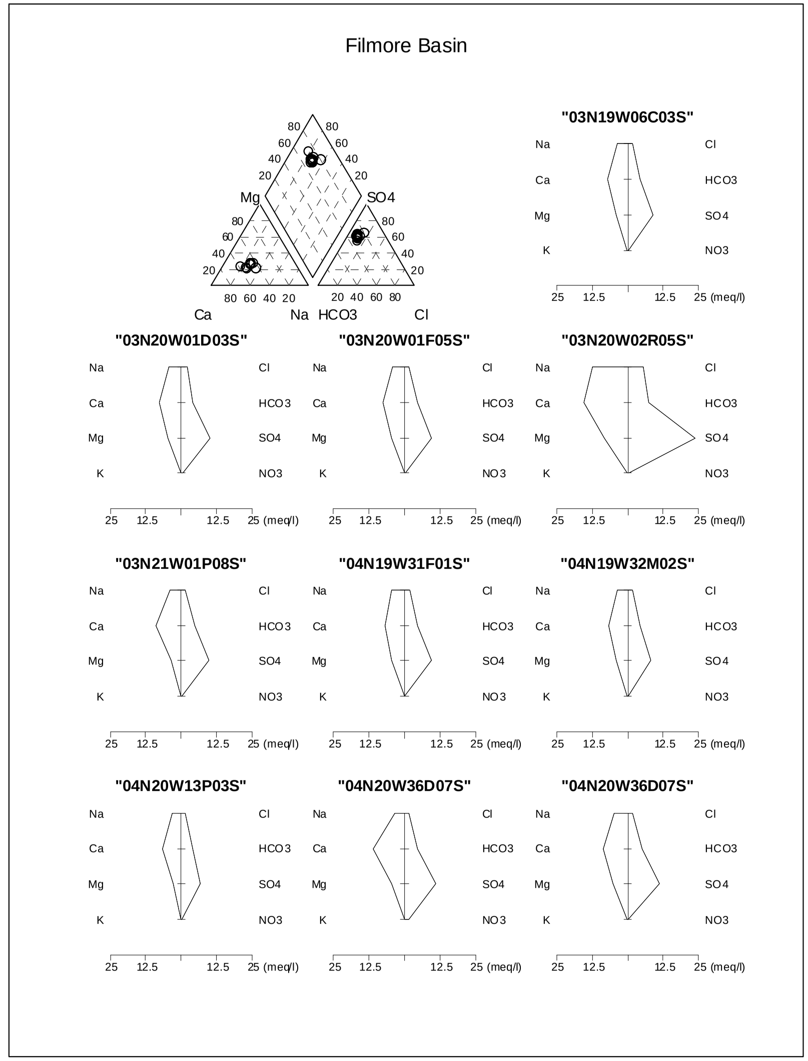

Figure D-6: Piper and Stiff diagrams showing water quality for the Fillmore Basin groundwater.

Piper and Stiff Diagrams

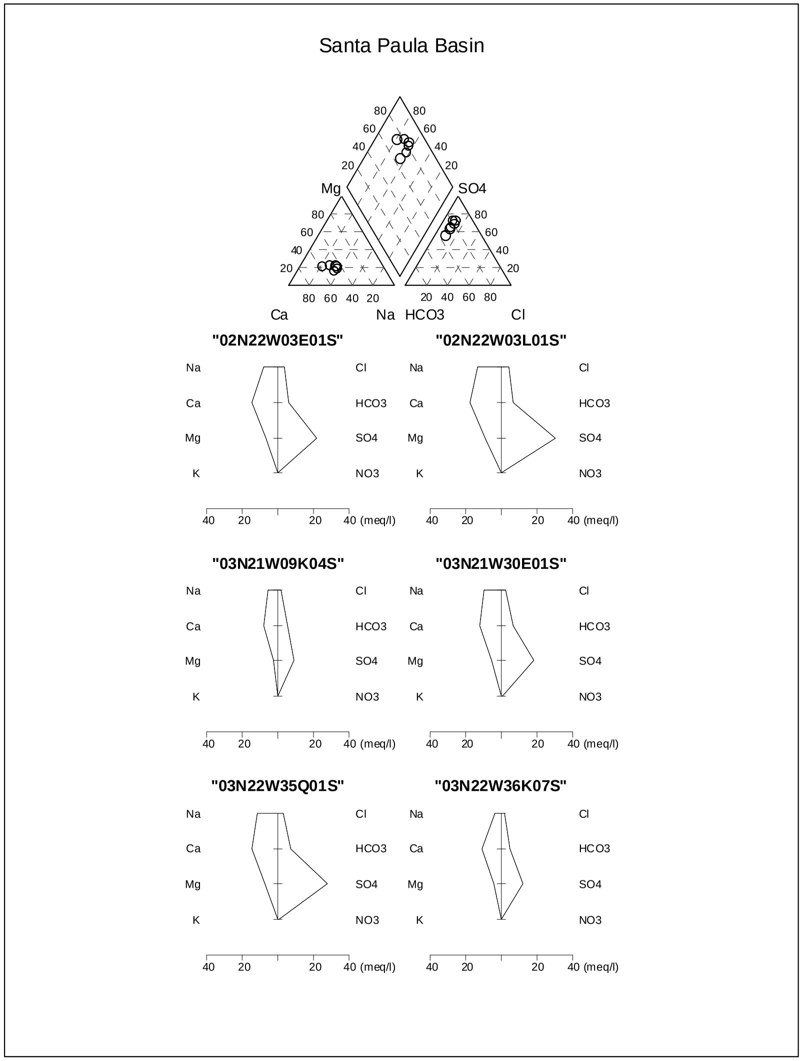

Figure D-7: Piper and Stiff diagrams showing water quality for Santa Paula Basin groundwater

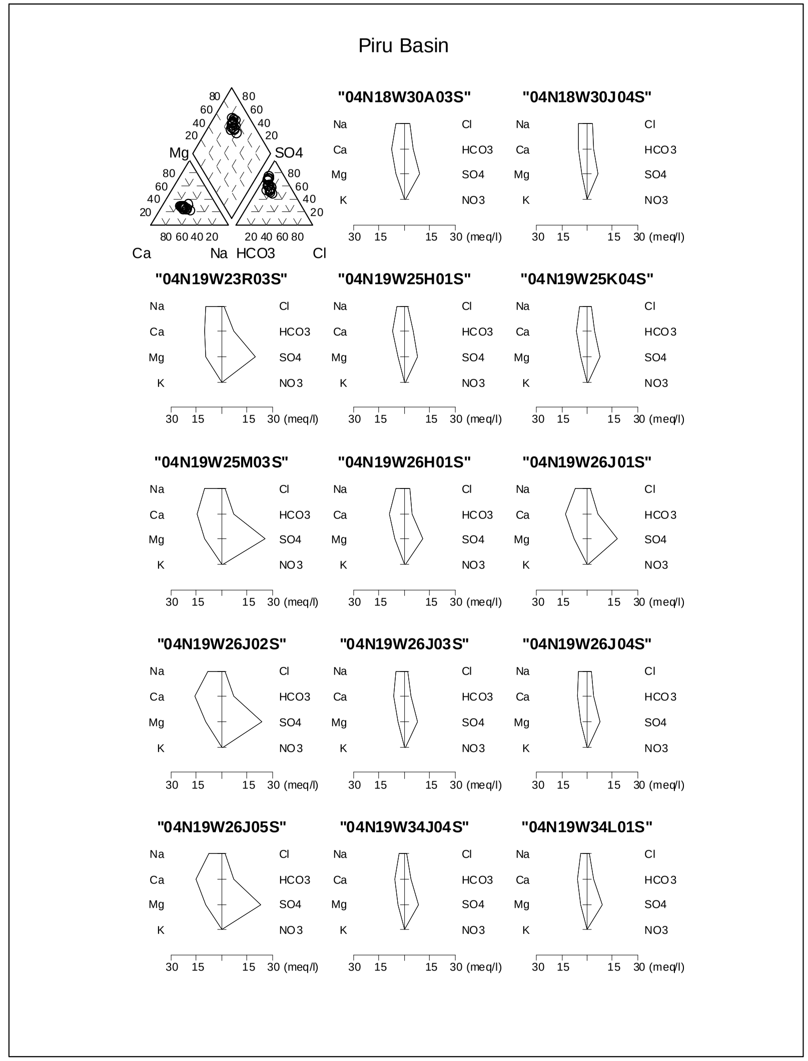

Figure D-8: Piper and Stiff diagrams showing water quality for Piru Basin groundwater.

Piper and Stiff Diagrams

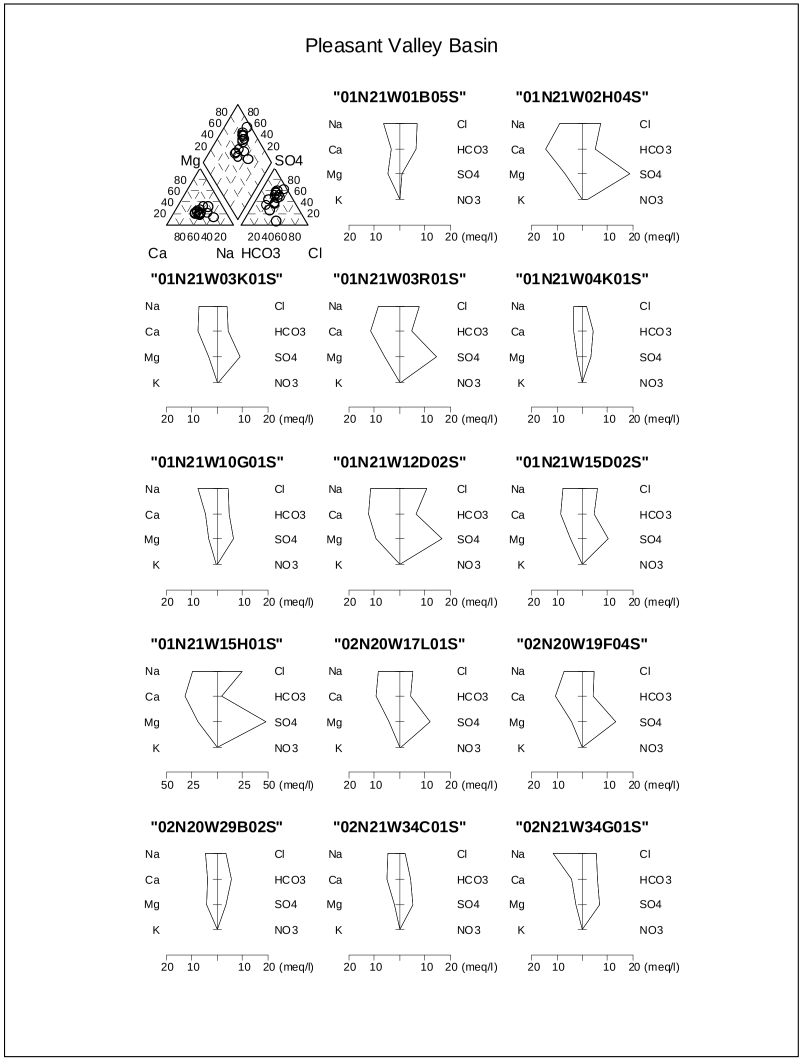

Figure D-9: Piper and Stiff diagrams showing water quality for Pleasant Valley Basin groundwater.

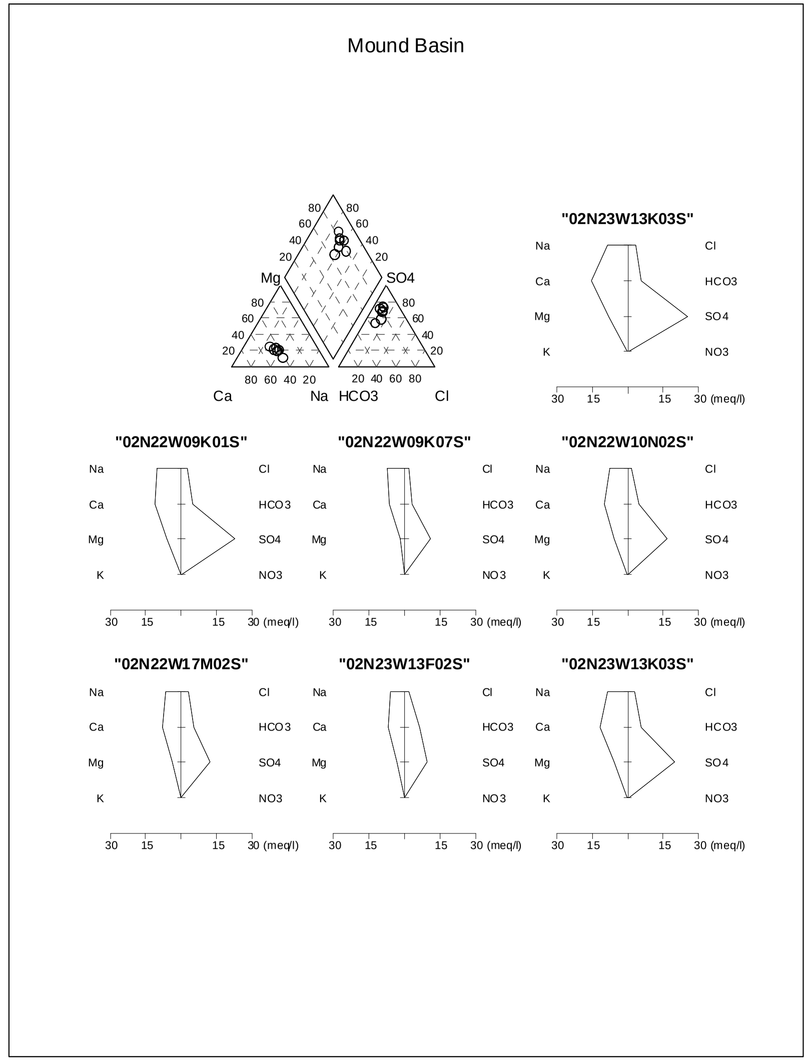

Figure D-10: Piper and Stiff diagrams showing water quality for Mound Basin groundwater.

Piper and Stiff Diagrams

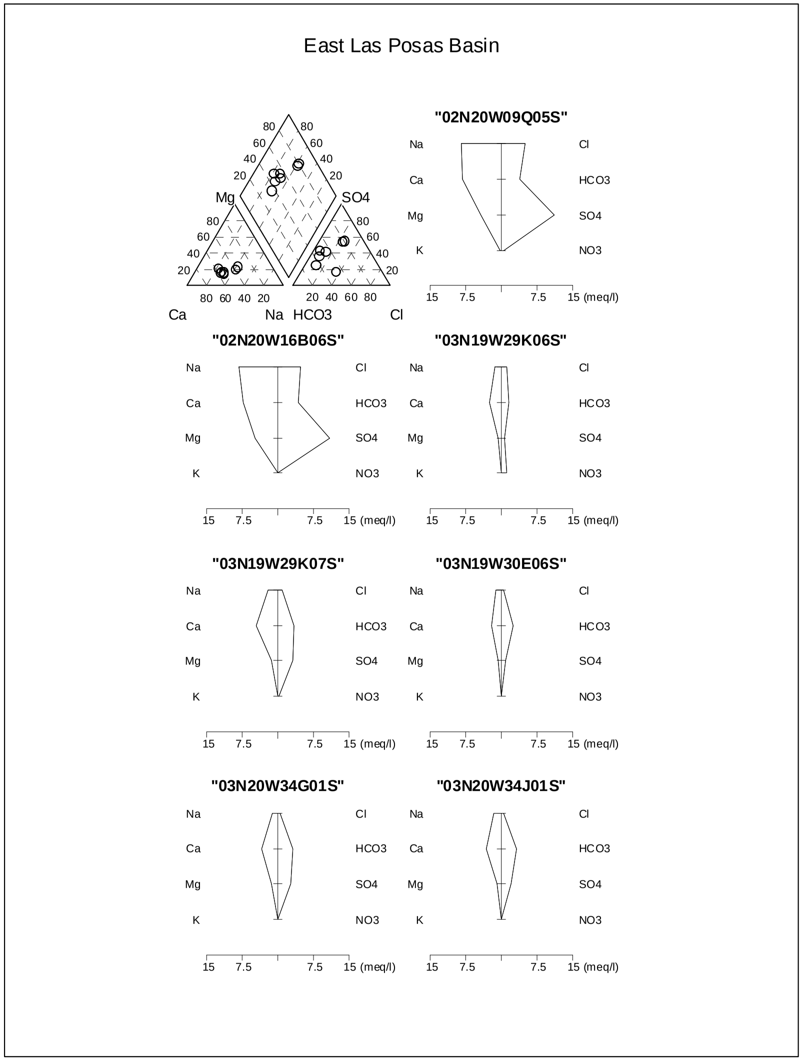

Figure D-11: Piper and Stiff diagrams showing water quality for East Las Posas Basin groundwater.

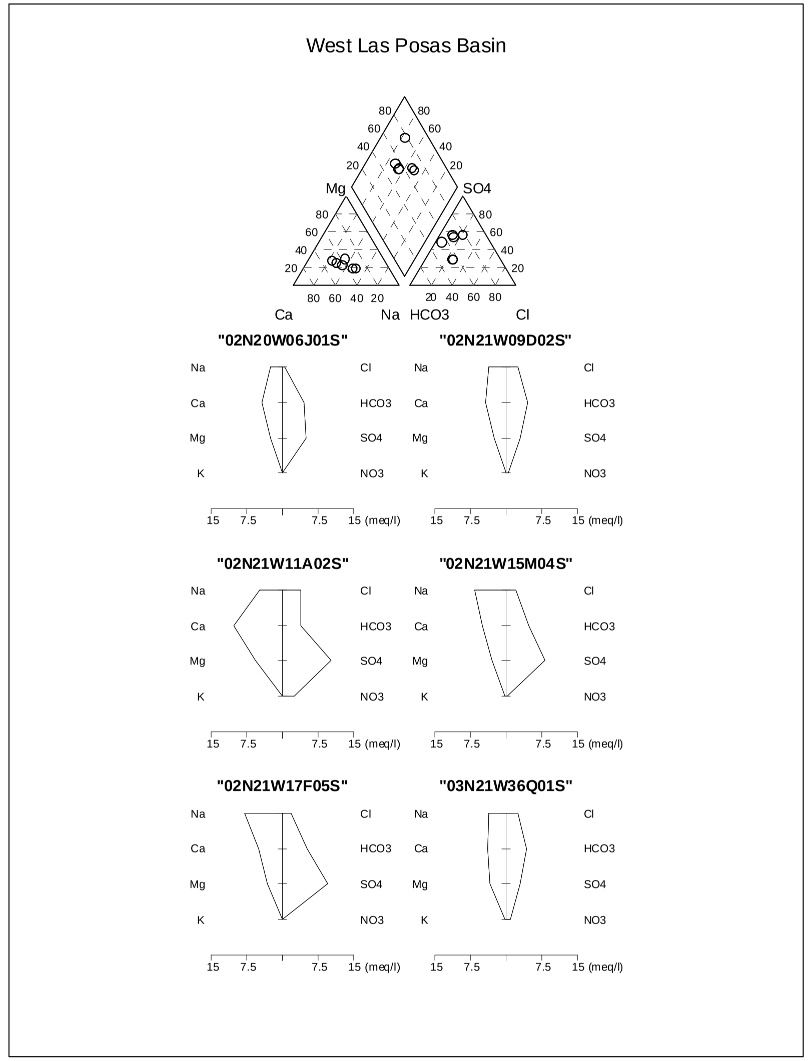

Figure D-12: Piper and Stiff diagrams showing water quality for West Las Posas Basin groundwater.

Piper and Stiff Diagrams

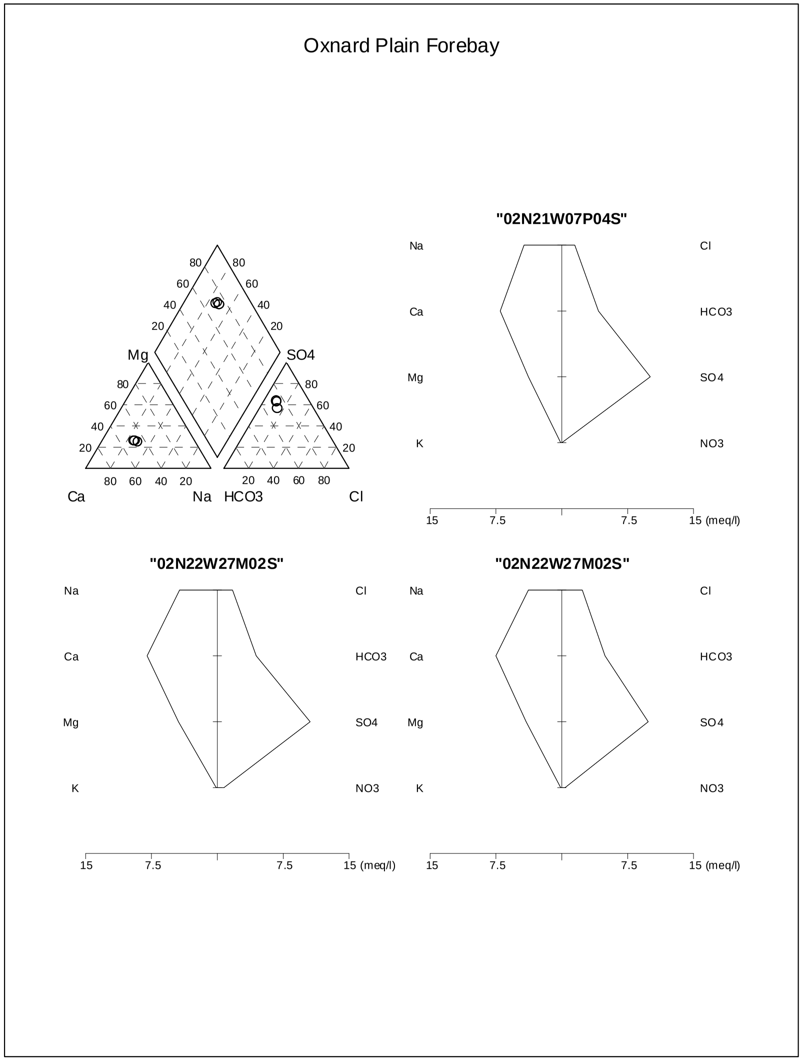

Figure D-13: Piper and Stiff diagrams showing water quality for Oxnard Plain Forebay Basin groundwater.

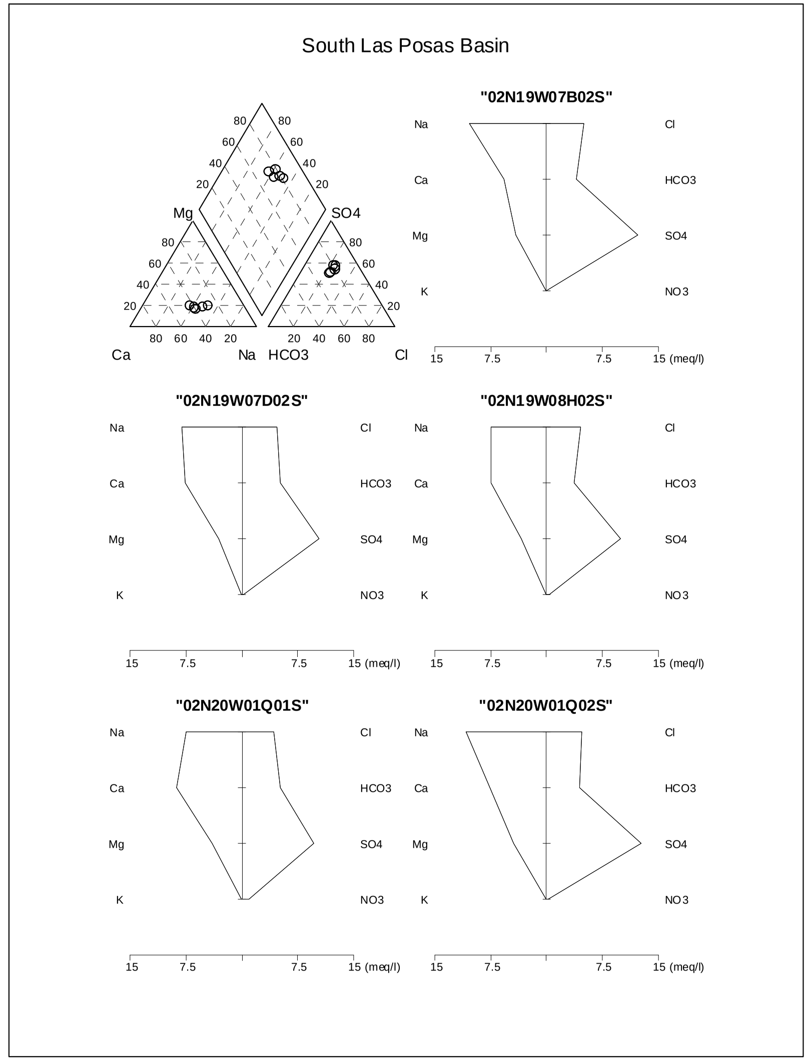

Figure D-14: Piper and Stiff diagrams showing water quality for South Las Posas Basin groundwater.

Piper and Stiff Diagrams

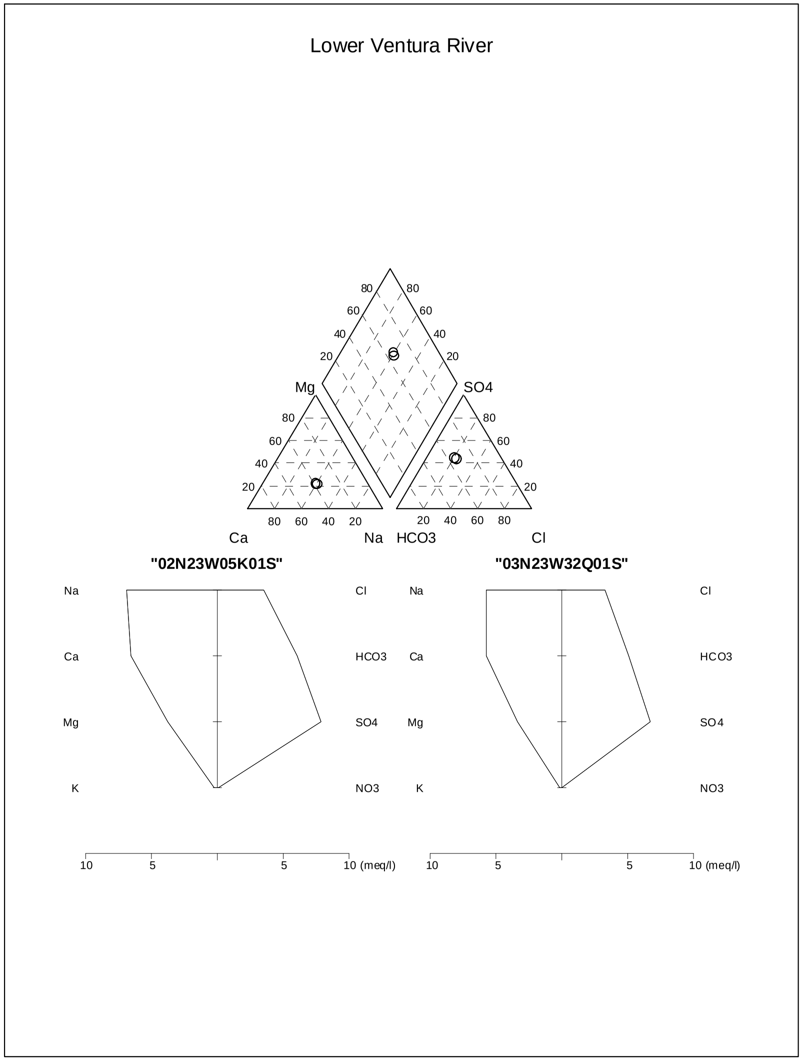

Figure D-15: Piper and Stiff diagrams showing water quality for Lower Ventura River Basin groundwater.

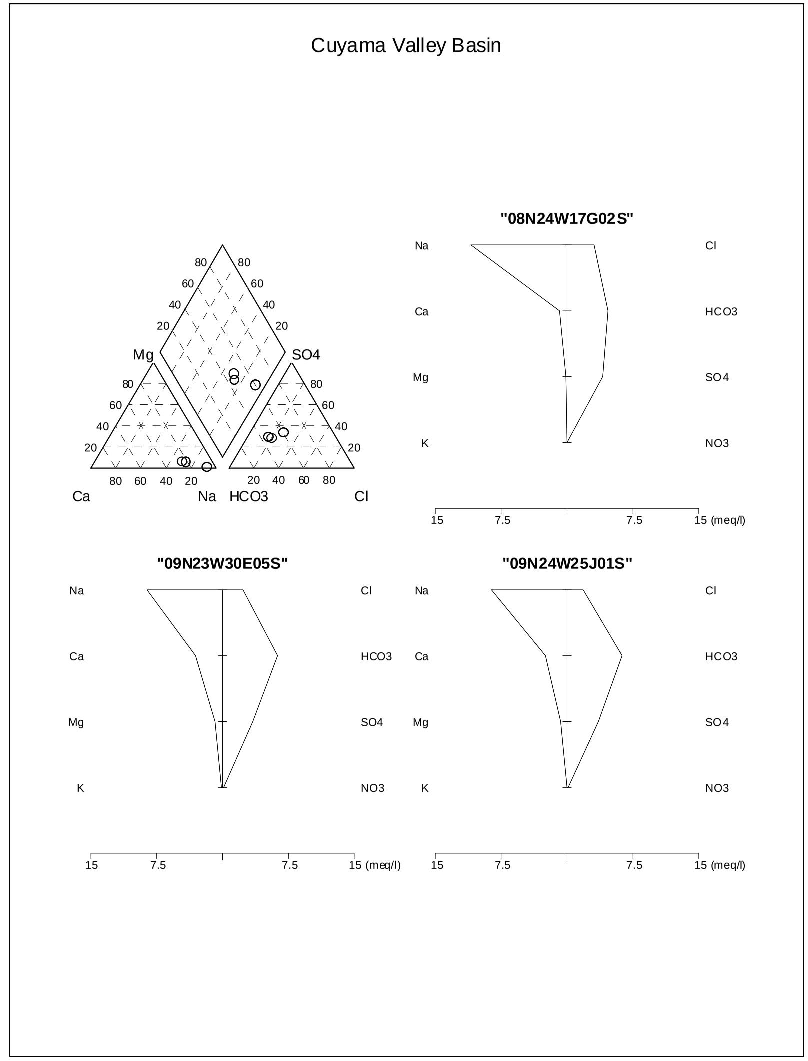

Figure D-16: Piper and Stiff diagrams showing water quality for Cuyama Valley Basin groundwater.

Piper and Stiff Diagrams

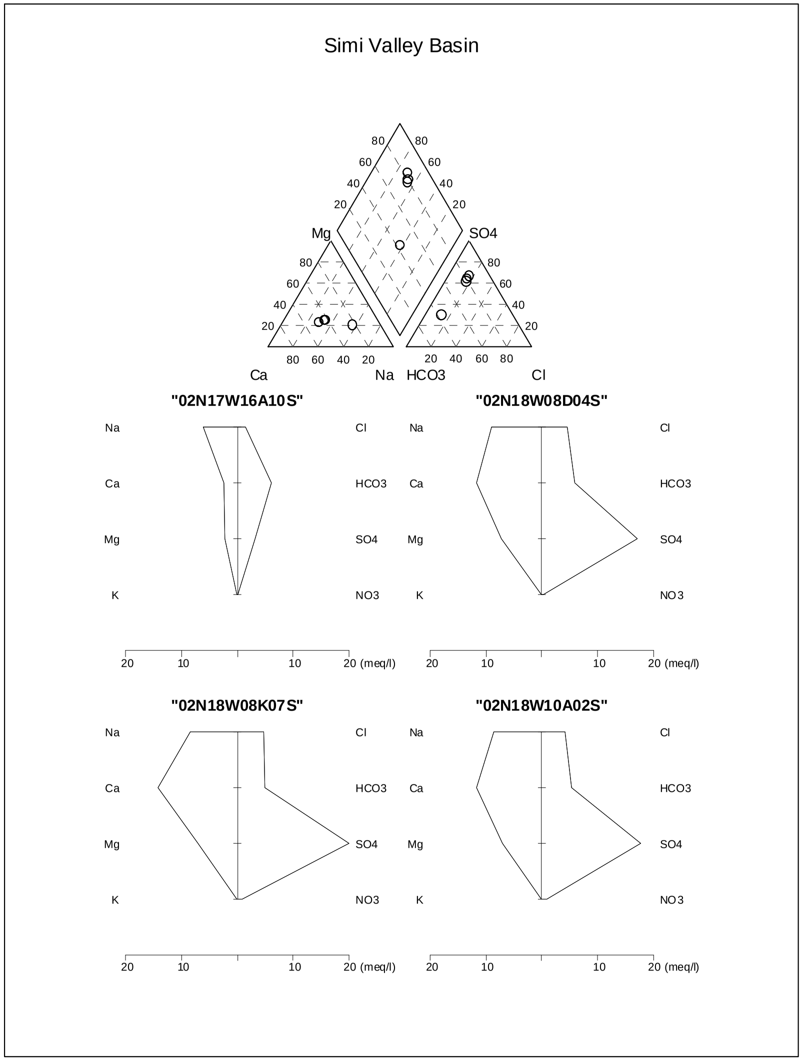

Figure D-17: Piper and Stiff diagrams showing water quality. for Simi Valley Basin groundwater

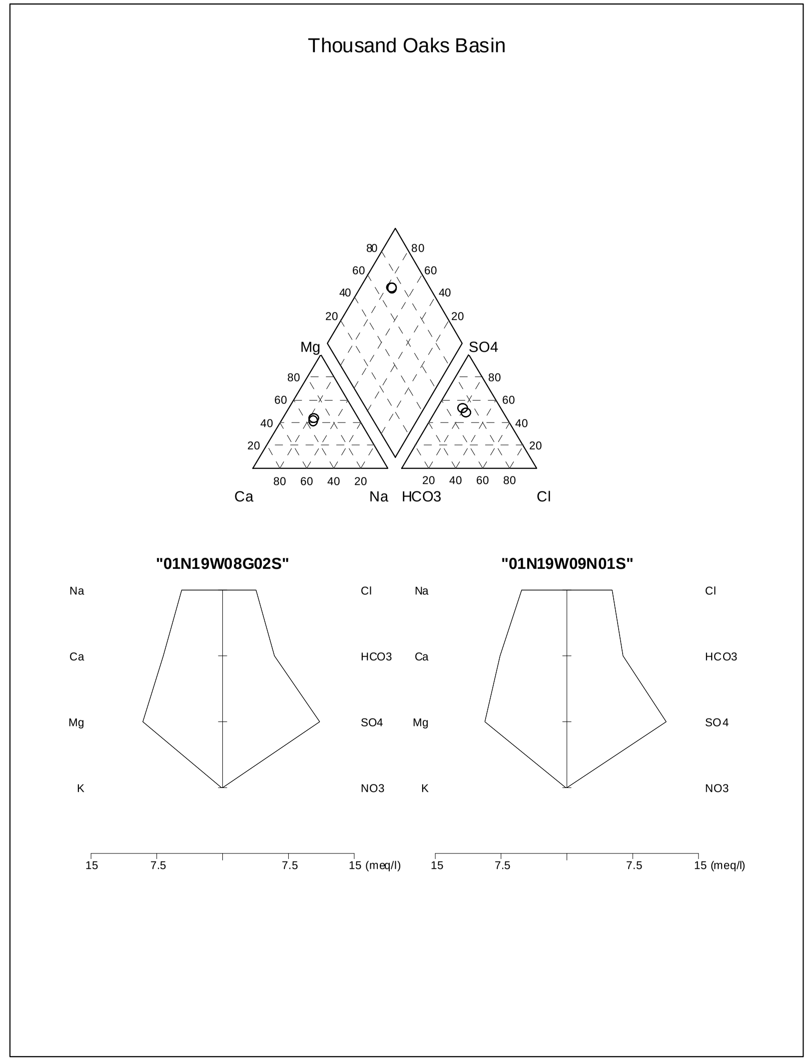

Figure D-18: Piper and Stiff diagrams showing water quality for Thousand Oaks Basin groundwater.

Piper and Stiff Diagrams

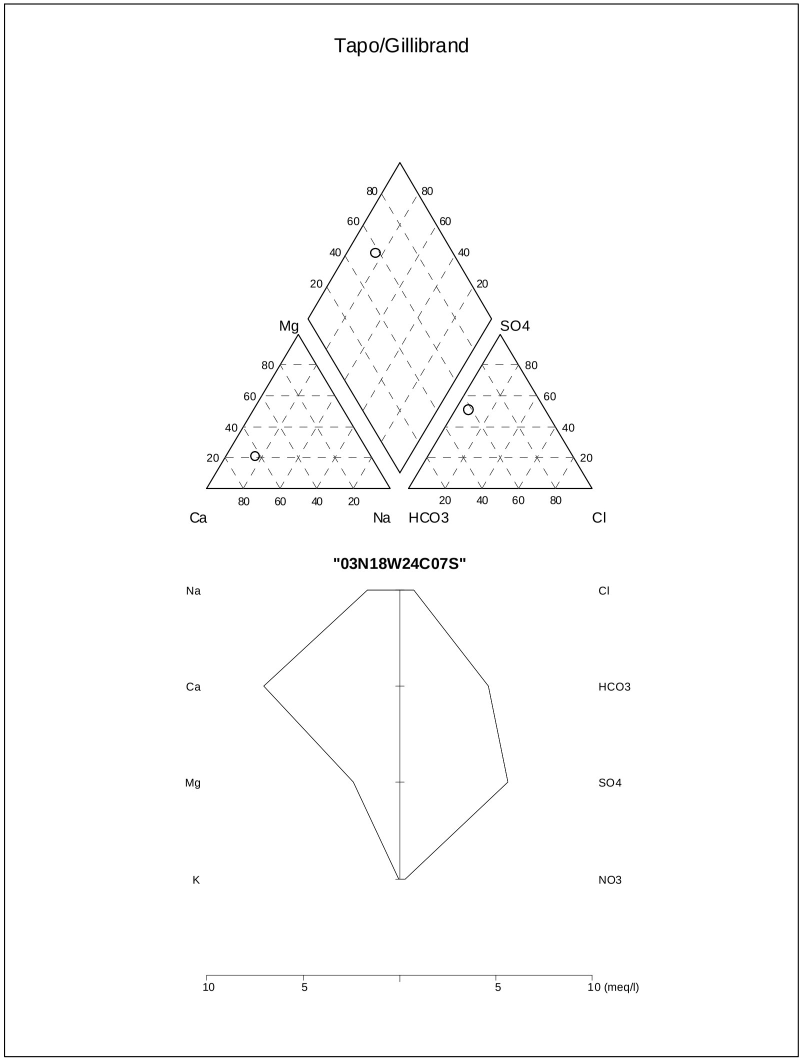

Figure D-19: Piper and Stiff diagrams showing water quality for Tapo/Gillibrand Basin groundwater.

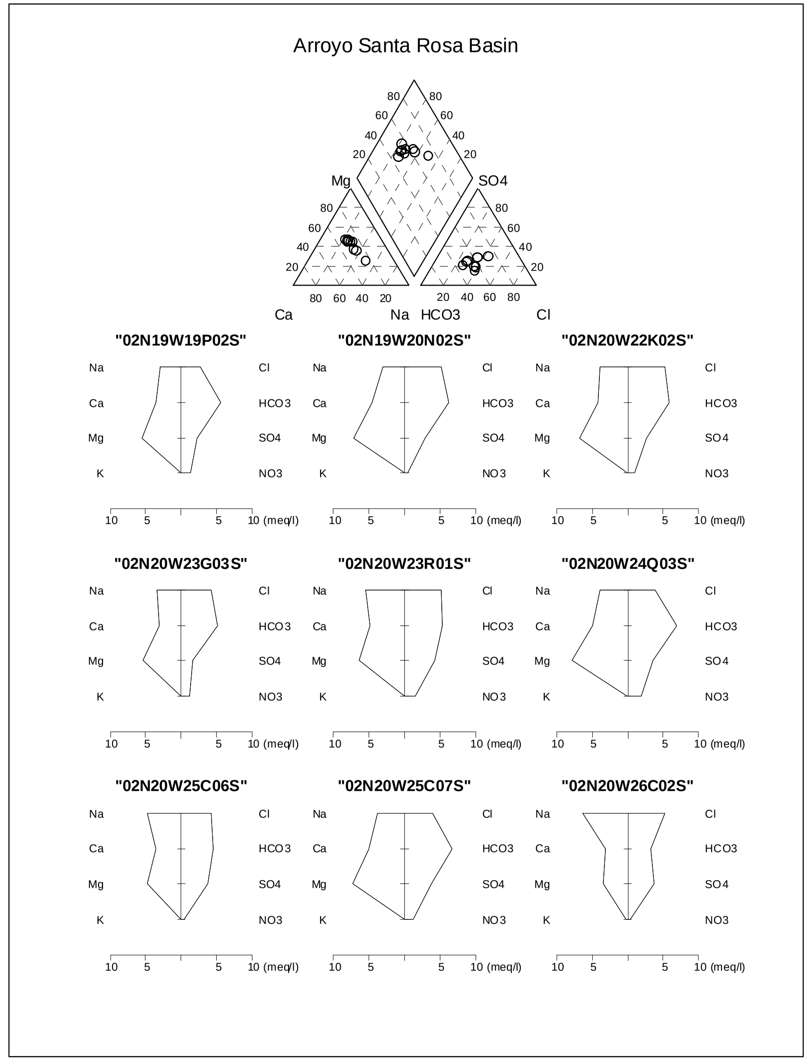

Figure D-20: Piper and Stiff diagrams showing water quality for selected wells in the Arroyo Santa Rosa Basin.

Piper and Stiff Diagrams

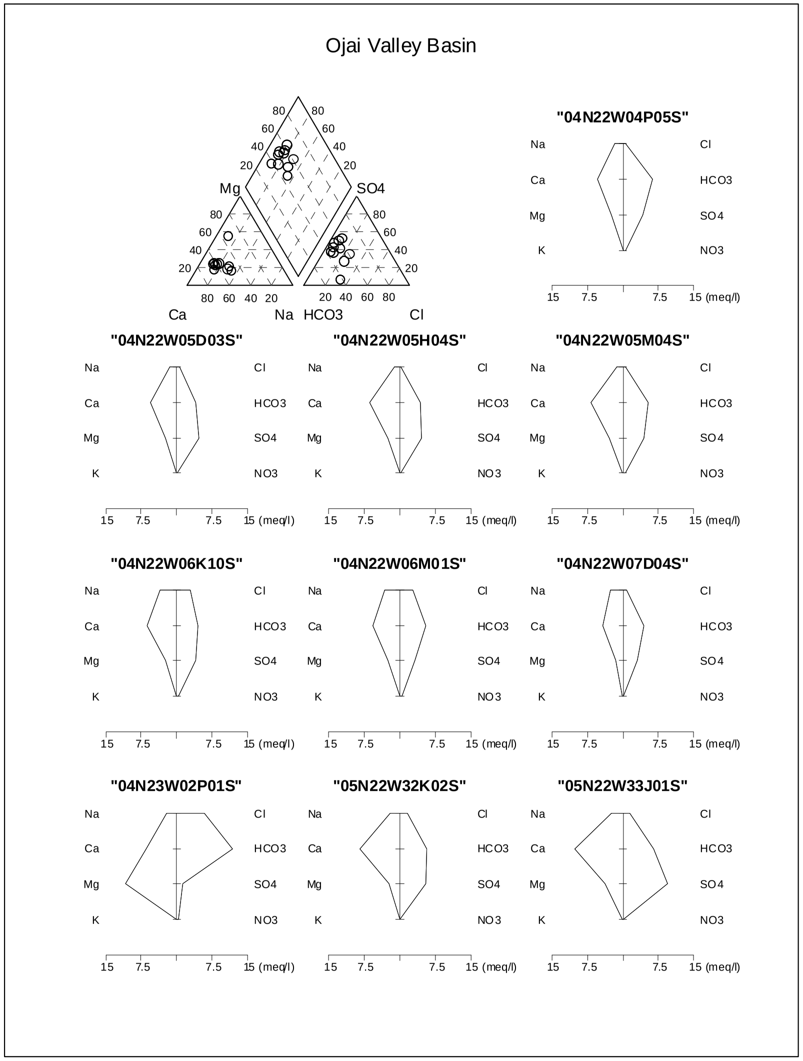

Figure D-21: Piper and Stiff diagrams showing water quality for Ojai Valley Basin groundwater.

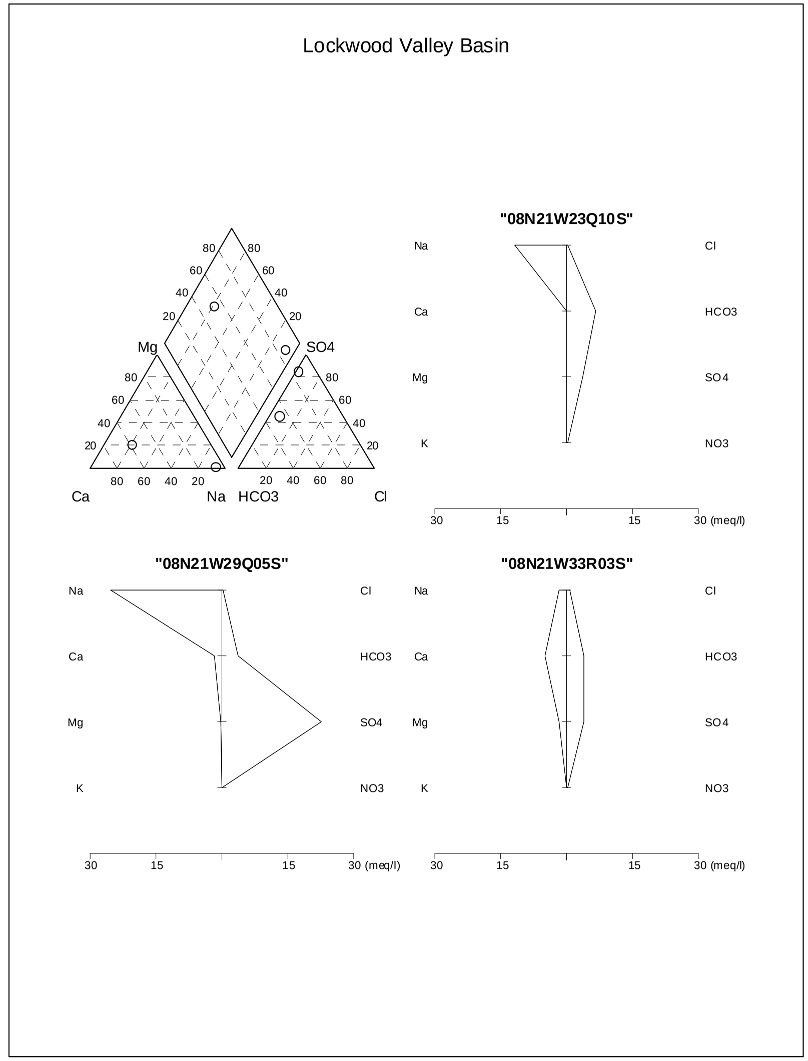

Figure D-22: Piper and Stiff diagrams showing water quality for Lockwood Valley Basin groundwater.

Piper and Stiff Diagrams

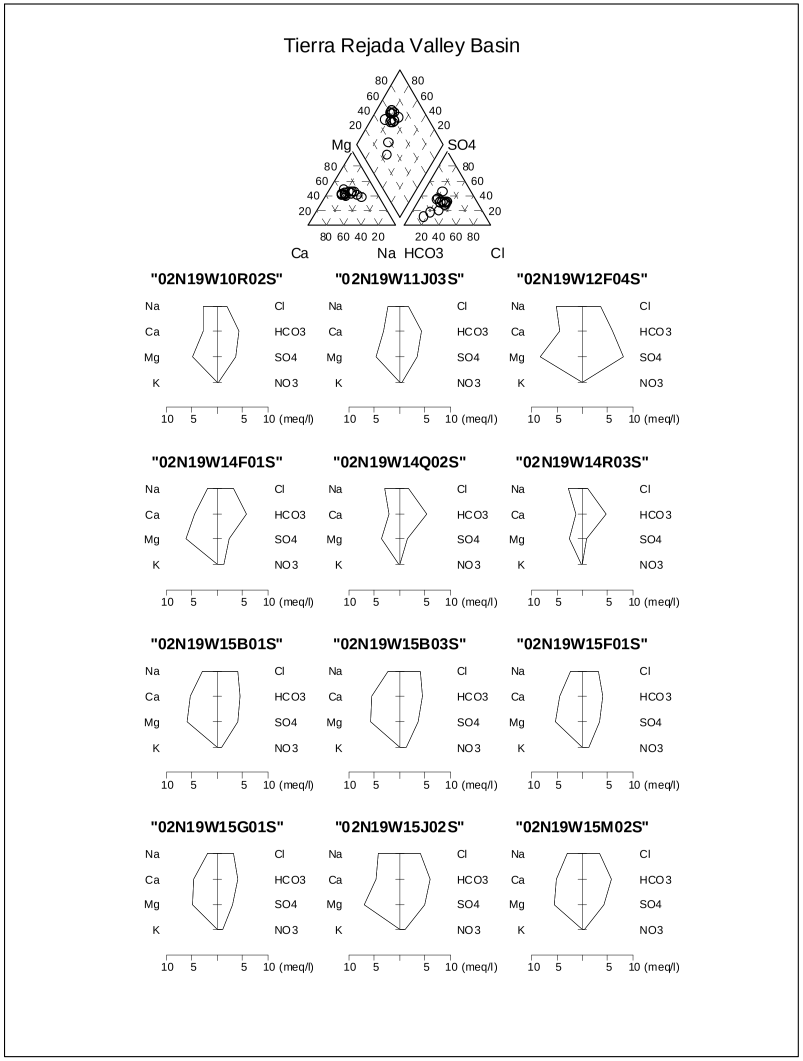

Figure D-23: Piper and Stiff diagrams showing water quality for Tierra Rejada Basin groundwater.

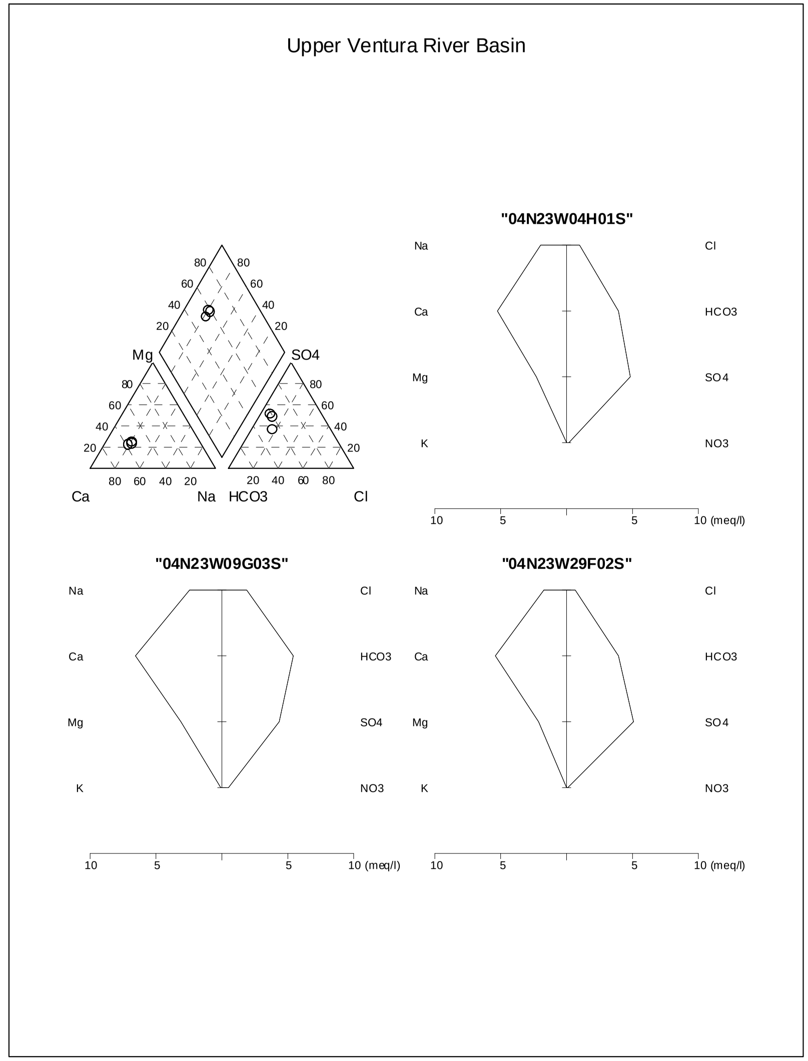

Figure D-24: Piper and Stiff diagrams showing water quality for Upper Ventura River Basin groundwater.

Piper and Stiff Diagrams

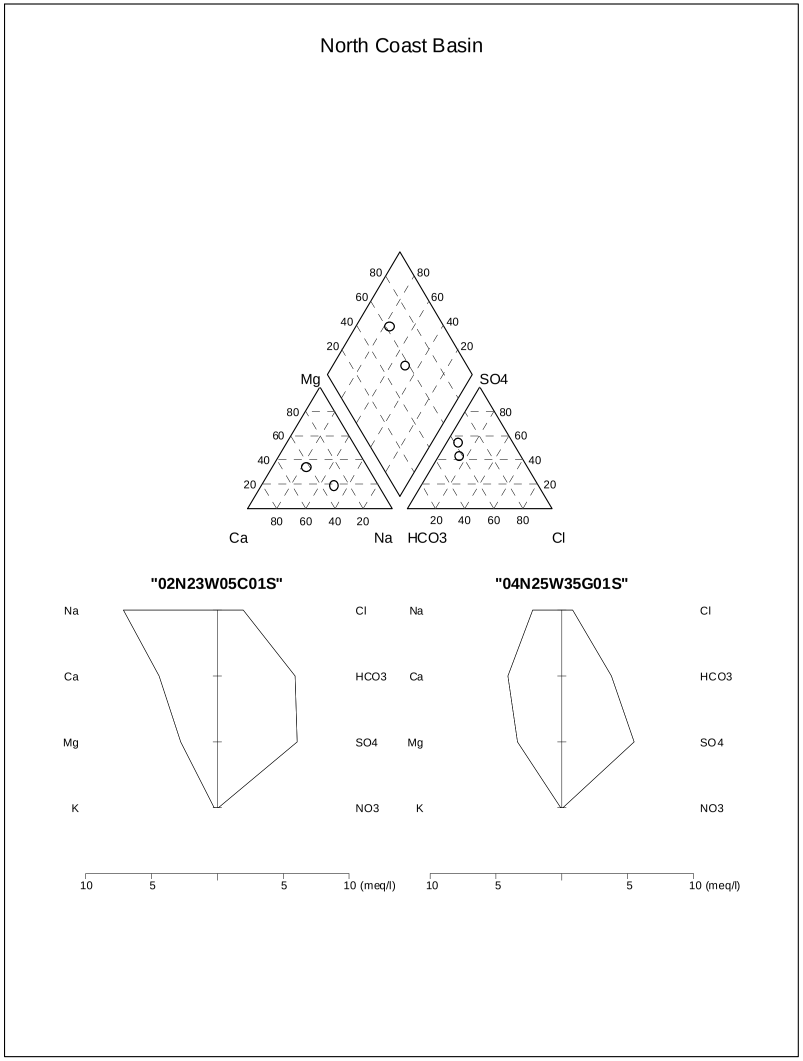

Figure D-25: Piper and Stiff diagrams showing water quality for North Coast Basin groundwater.

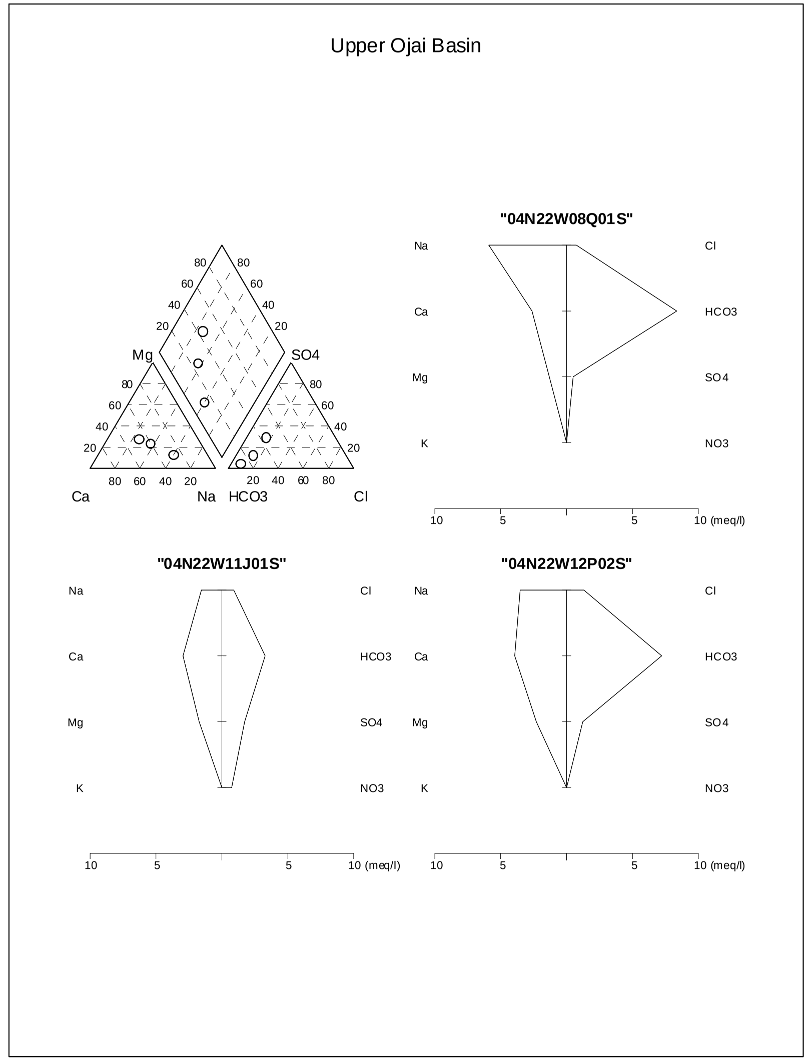

Figure D-26: Piper and Stiff diagrams showing water quality for Upper Ojai Basin groundwater.

Piper and Stiff Diagrams

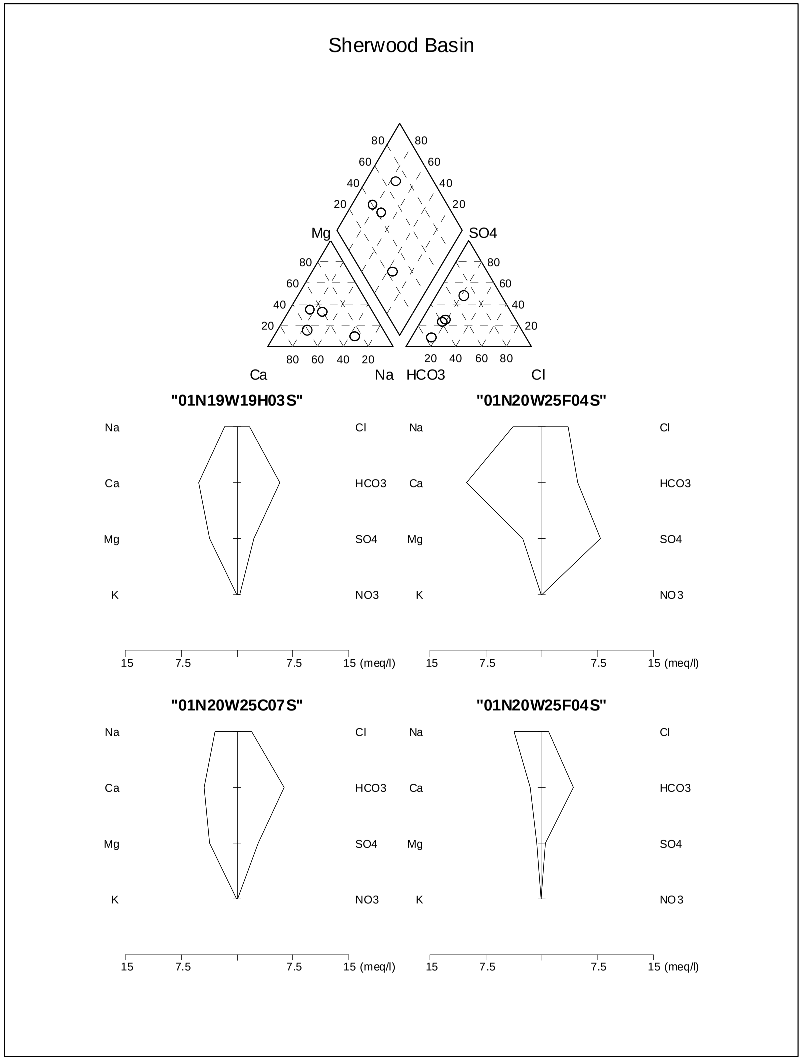

Figure D-27: Piper and Stiff diagrams showing water quality for Sherwood Basin groundwater.

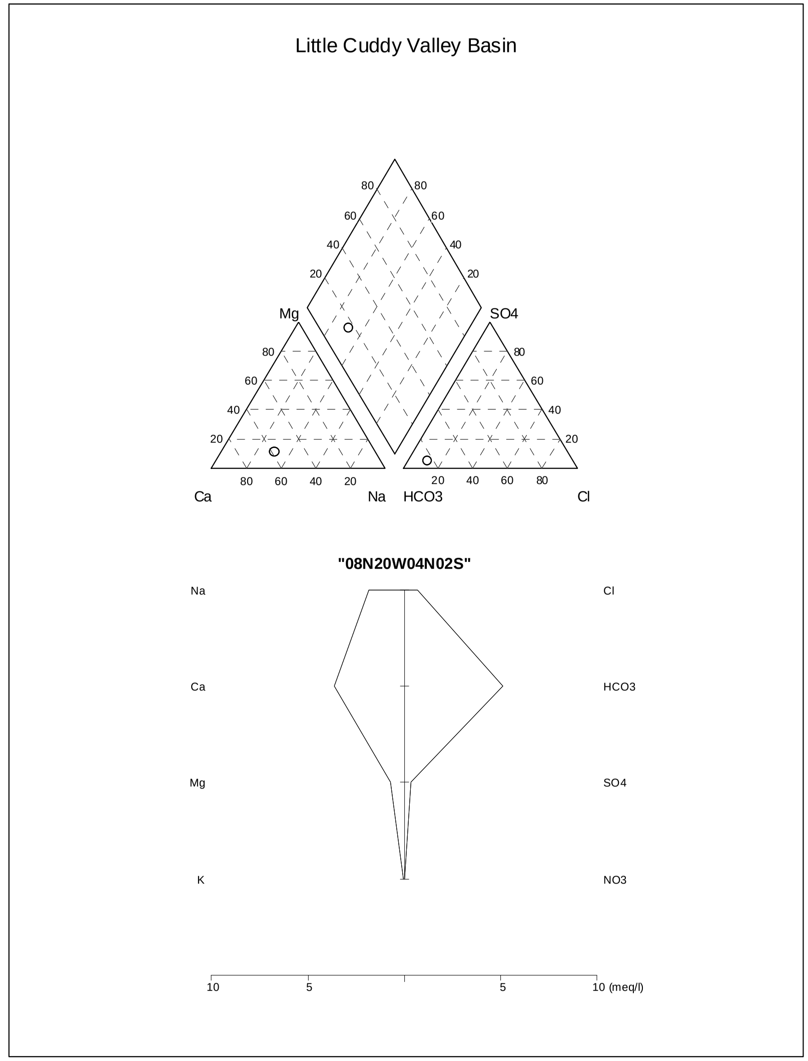

Figure D-28: Piper and Stiff diagrams showing water quality for Little Cuddy Basin groundwater.