



**ANNUAL REPORT
FOR
CALENDAR YEAR 2016**

FOX CANYON GROUNDWATER MANAGEMENT AGENCY ANNUAL REPORT FOR CALENDAR YEAR 2016

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1.0 EXECUTIVE SUMMARY

This 2016 Annual Report provides background on the formation and operations of the Fox Canyon Groundwater Management Agency (FCGMA or Agency); a description of groundwater basin geology and hydrogeology, climatic conditions, and condition of the groundwater basins including water-level and water-quality monitoring; and highlights of Agency actions and accomplishments in 2016.

The statewide drought persisted through 2016, which was the sixth consecutive year (2011 through 2016) of below-average rainfall. The 2016 average-annual rainfall within the Agency boundaries was 11.47 inches, 84% of the long-term average of 13.72 inches (1985 through 2016). The 2016 average evapotranspiration of 51.84 inches was close to the long-term average of 51.36 inches (1997 through 2016).

Groundwater levels generally declined in the western half of the Agency between Fall 2015 and Fall 2016. In the Upper Aquifer System (UAS), Fall 2016 water levels were below sea level in the Oxnard Plain Basin and most of the Oxnard Forebay and Pleasant Valley basins. In the Lower Aquifer System (LAS), Fall 2016 water levels were below sea level in the Oxnard Plain Basin and most of the Oxnard Forebay, Pleasant Valley, and West Las Posas basins. None of the 16 water-level Basin Management Objectives (BMOs) in the Oxnard Plain and Pleasant Valley basins were met. Of the 36 water-quality BMOs for chloride, nitrate and total dissolved solids (TDS) monitored in 2016, 14 (39%) were met, 18 (50%) were not met, and data were unavailable for four (11%).

Calendar year 2016 was the sixth consecutive year (2011 through 2016) of below average rainfall, which was coupled with near average evapotranspiration (ETO). The continuing drought led to the continuance of Ordinance E, which was adopted in 2014 with the goal of reducing by 20% groundwater extractions¹ from the 10-year (2003 to 2012) average extractions of 126,802 acre-feet per year (AFY)². With the adoption of Ordinance E, the annual allocation systems were replaced or modified for Municipal and Industrial (M&I) and Agricultural (AG) well operators.

Groundwater extractions are self-reported to the Agency by well owners or operators. Reported 2016 extractions totaled 133,990 acre-feet (AF)³. This represents a 5% increase above the Ordinance E baseline, but is less than reported during calendar years 2012, 2007, 1994, 2008, 2015, 1991, 2009, 2014 and 2013 (listed in order of increasing reported annual extractions). Reported AG extraction was 102,717 AF, less than the 109,397 AF reported in 2015; reported M&I extraction was 31,023 AF, less than the 32,486 AF reported in 2015; and reported Domestic extraction was 250 AF, less than the 339 AF reported in 2015. The extractions by user type and percent of 2016 total extractions were AG 77%, M&I 23%, and Domestic 0.2%.

In response to the Sustainable Groundwater Management Act, the Agency elected to become the Groundwater Sustainability Agency (GSA) for the portions of the four groundwater basins identified by the

¹ Reductions to allocations in effect during 2016 were as follows: Agricultural accounts utilized an Annual Efficiency allocation which included 25% reduced Irrigation Allowance Index values; and M&I accounts utilized a Temporary Extraction Allocation (TEA) allocation with 20% (TEA x 0.80/2) beginning July 1, 2015.

² Revised 10-year average of reported groundwater extractions for period 2003 to 2012 (as of May 10, 2018) includes extractions reported since adoption of Ordinance E on April 11, 2014.

³ As of March 2, 2018.

State of California Department of Water Resources (DWR) that are within the Agency boundaries. Development of Groundwater Sustainability Plans (GSPs) for the basins began in 2016.

The body of this Annual Report along with the attached tables and figures provide a more detailed description of actions and activities that occurred during 2016.

2.0 PURPOSE OF THE REPORT

The Fox Canyon Groundwater Management Agency Act [AB-2995], §502, requires that “*The agency prepare annually or receive from its member agencies reports on groundwater and supplemental water supplies and conditions in the territory of the agency, including groundwater management and conjunctive use objectives and a plan for implementation of those objectives.*” The purpose of this report is to fulfill that obligation. In addition, this report summarizes the Agency’s background and natural setting of lands within the Agency’s jurisdiction, and presents a synopsis of the technical and administrative groundwater-resource management activities for 2016. Because the Agency’s fiscal year is not concurrent with the calendar year or technical reporting year, this report includes only a brief summary of financial activities. Fiscal data covering the first reporting period of 2016 are in the *Fiscal Year 2015-16 Year-End Actual Budget Performance Report* presented to the Board of Directors on September 28, 2016.

3.0 AGENCY OVERVIEW

3.1 Introduction

The FCGMA is a public agency tasked with managing groundwater resources in the southwestern portion of Ventura County, California (see Figure 1 – *Fox Canyon Groundwater Management Agency Boundary*). The FCGMA is an independent State Special District, separate from the County of Ventura or any city government, with jurisdiction over all lands lying above the Fox Canyon aquifer (California Water Code, CWC, Appendix 121, §102). The Agency was created in 1982 by the California Legislature via the Fox Canyon Groundwater Management Agency Act [AB-2995] for the express purposes of regulating, conserving, managing, and controlling the use and extraction of groundwater to help preserve resources, and to counter seawater intrusion beneath the Oxnard Plain. Groundwater resources within the boundary of the Agency are used by the cities of Ventura, Oxnard, Port Hueneme, Camarillo, and Moorpark, along with the unincorporated communities of Saticoy, El Rio, Somis, Moorpark Home Acres, Nyeland Acres, and Montalvo. The Agency is funded solely by fees paid by those who extract groundwater within the Agency’s boundaries. These extraction fees are used by the Agency to administer and manage local underlying groundwater resources within several aquifers.

3.2 Mission Statement

State legislation created the FCGMA to manage groundwater in both overdrafted and potentially seawater-intruded areas within Ventura County. The prime objectives and purposes of the Agency are to preserve groundwater resources for agricultural, municipal, and industrial uses in the best interests of the public and the common benefit of all water users (FCGMA et al., 2007). Protection of water quality and quantity along with maintenance of long-term water supply are included in those goals and objectives. In 2006, the Agency formally adopted the following mission statement:

The Fox Canyon Groundwater Management Agency (Agency), established by the State Legislature in 1982, is charged with the preservation and management of groundwater resources within the areas or lands overlying the Fox Canyon aquifer for the common benefit of the public and all agricultural, municipal and industrial users.

Figure 1 - Fox Canyon Groundwater Management Agency Boundary



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Date Prepared: October 2016
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DISCLAIMER: The information contained herein was created by the Fox Canyon Groundwater Management Agency solely for its own use. The FCGMA assumes no liability for damages incurred directly or indirectly as a result of errors, omissions or discrepancies.

1. City limits: Ventura County Geographic Information Systems, 2007
2. FCGMA Boundary VCBOS, 1992; Revised 1996.

Figure 1: Fox Canyon Groundwater Management Agency Boundary

4.0 NATURAL SETTING

4.1 Location and Geographic Description of the FCGMA

The Agency boundary encompasses a northeast-southwest oriented, wedge-shaped area of 183 square miles that widens to the west and is bounded to the north by the Santa Clara River and South Mountain. To the east, the Agency boundary is defined by uplifted Tertiary and Quaternary-age consolidated rocks north and east of the City of Moorpark. The southern edge of the Agency is bounded by the Bailey Fault and the uplifted Santa Monica Mountains (Dibblee and Ehrenspeck 1990a and b). The western and southwestern boundaries are geographically limited by the Pacific Ocean coastline.

The eastern portion of the FCGMA bifurcates into two separate lobes east of the City of Camarillo. The longer northern lobe, which includes the Las Posas Valley, terminates east of the City of Moorpark near the central portion of the Happy Camp Syncline (Dibblee, 1992a and 1992b). The furthest eastern extent of the Agency terminates in the County's Happy Camp Canyon Regional Park northeast of the City of Moorpark. The shorter southern lobe, which includes the western portion of Pleasant Valley, terminates approximately one-third of the distance into the Santa Rosa Valley (Dibblee and Ehrenspeck, 1990a). These two valleys widen to the west and merge near the City of Camarillo to encompass the broader Oxnard Plain where the majority of groundwater extractions occur within the Agency. The Santa Clara River Valley intersects with the northeastern portion of the Oxnard Plain near the unincorporated area of Saticoy. The northern boundary of the Agency turns west-southwest across from South Mountain just north of the Santa Clara River at Saticoy, then parallels the river's course westward all the way to the Pacific Ocean. This latter stage of Santa Clara River flow is generally parallel to the Oak Ridge Fault System (Dibblee, 1992c), which also constitutes much of the northern Agency boundary line. Southwest of the City of San Buenaventura, the boundary crosses back to the south bank of the river just east of the Pacific Ocean.

4.2 Climate: Rainfall and Evapotranspiration

The majority of groundwater extracted from the FCGMA aquifers is used for agriculture; therefore, the volume of groundwater extracted in any given year is strongly influenced by rainfall and evapotranspiration (ET_o). In general, lower than average rainfall and higher than average ET_o result in greater than average groundwater extractions.

The amount of rainfall reported for the Agency for calendar year 2016 is an average of data collected at five County of Ventura rainfall stations (Sta. 032A, 126A, 190, 175A, and 259)⁴. Based on past Agency average rainfall totals and the 2016 average rainfall total of 11.47 inches, the long-term average rainfall for the period of 1985 to 2016 is 13.72 inches. Annual rainfall has been below the long-term average since 2011 (12.12 inches in 2011; 8.66 inches in 2012; 3.49 inches in 2013; 10.05 inches in 2014; 5.72 inches in 2015; and 11.47 inches in 2016). The 2016 average precipitation totals were 6.67 inches in January through June (58%) and 4.80 inches in July through December (42%) for an annual total of 11.47 inches.

The Agency's 2016 ET_o value is an average of data collected at three California Irrigation Management Information System (CIMIS) stations (Sta. 152 - Camarillo, Sta. 156 - Oxnard, and Sta. 217 - Moorpark). The 2016 three-station average ET_o was 51.84 inches. The average annual ET_o value for 2016 was slightly (0.9%) above the 51.36 inch long-term average (1997 through 2016).

⁴ Data used are identified by County of Ventura as *Approved for Publication* at the time that this report was prepared.

5.0 GROUNDWATER

5.1 Geology and Hydrogeology of the FCGMA

The FCGMA is located near the western margin of the Transverse Ranges Geologic Province in Southern California. This geologic province is characterized by east-west oriented mountain ranges separated by valleys, faults, and basins. East-west trending folds and faults are common throughout the province and their surface expression is evident at many locations within the FCGMA boundary (Figure 2 – *Major Hydrologic Features and Groundwater Basins within the FCGMA*). The water-bearing sediments that comprise the valley fill and alluvial plains within the FCGMA consist of significantly deep unconsolidated and semi-consolidated sediments that range from Pliocene to recent (Holocene) time in geologic age. The geologic formations from oldest to youngest include the Plio-Pleistocene-age Santa Barbara Formation (includes the Grimes Canyon aquifer), the Pleistocene-age San Pedro Formation (contains the Fox Canyon aquifer), and semi-consolidated and unconsolidated sediments of Upper-Pleistocene and recent (Holocene) ages (Hueneme, Mugu, and Oxnard aquifers, and semi-perched zone). Local and regional unconformities (i.e., gaps in the geologic sedimentation record caused by uplift and subsequent erosion) occur between each of these formations (DWR, 1976).

Two main drainages lie within the boundaries of the FCGMA. The Santa Clara River originates in the San Gabriel Mountains east of Ventura County (in central Los Angeles County) and flows westward through the Santa Clara River Valley, which lies north and northeast of the FCGMA. The Santa Clara River intersects the northwestern boundary of the FCGMA near the unincorporated area of Saticoy. The Santa Clara River supplies recharge to aquifers in the western third of the FCGMA by direct infiltration through the streambed, and infiltration of diverted river water in percolation ponds. A large man-made drop structure owned and operated by United Water Conservation District (UWCD) called the Vern Freeman Diversion extends across the river and diverts river water via channels to off-stream percolation ponds in the permeable Oxnard Forebay Basin. A majority of the river flows occur during runoff periods associated with winter storms, and this muddy, turbid water is difficult to capture and too silt-laden to be of practical use for direct groundwater recharge. Calleguas Creek lies near the southern and southeastern boundaries of the FCGMA, which carries water during high-runoff periods, and has a nearly continuous baseflow of discharge from upstream wastewater treatment plants in Simi Valley, Moorpark, Thousand Oaks and Camarillo, and dewatering operations in Simi Valley. Additional water is contributed to these streams by irrigation return flows and urban runoff. The Conejo Creek Diversion facility exists on a tributary to Calleguas Creek and surface water diverted from this location primarily supplements agricultural groundwater extractions in the Pleasant Valley area south of the City of Camarillo. Some Conejo Creek water also helps to add irrigation supply to the western end of the Santa Rosa Valley portion of eastern Camarillo. Although there are a number of small private reservoirs and County Watershed Protection District (WPD) stormwater retention basins, there are no major surface-water lakes or reservoirs within the FCGMA boundary used for water supply needs.

Seven groundwater basins lie wholly or partially within the FCGMA:

1. Arroyo Santa Rosa Basin,
2. East Las Posas Basin,
3. Oxnard Forebay Basin,
4. Oxnard Plain Basin,
5. Pleasant Valley Basin,
6. South Las Posas Basin, and
7. West Las Posas Basin.⁵

⁵ Historic references have segregated the southeastern portion of the Oxnard Plain into a separate basin identified as the Mugu Forebay Basin. This Basin is not shown in Figure 2 because like the Agency's Groundwater Management Plan, this document considers these areas as a single

Each basin has significant groundwater resources with unique physical and water quality characteristics (Izbicki et al., 2005). Descriptions of the physical, hydrogeological, and water quality characteristics of each of these groundwater basins are more thoroughly described in the 2007 FCGMA Groundwater Management Plan (GMP).

There are six named aquifers in the FCGMA boundaries. From deepest to shallowest these are: (1) the Grimes Canyon aquifer, (2) the Fox Canyon aquifer, (3) the Hueneme aquifer, (4) the Mugu aquifer, (5) the Oxnard aquifer, and (6) the perched or semi-perched zone (DWR, 1976). These aquifers are grouped into a Lower Aquifer System (LAS) [Grimes Canyon, Fox Canyon, and Hueneme aquifers], and the Upper Aquifer System (UAS) [Mugu and Oxnard aquifers]. The semi-perched zone is considered by some to be separate from the UAS because it is only locally extensive and of poorer quality than the deeper, more geographically extensive aquifers (Turner, 1975).

Faulting has significantly affected the local Tertiary and Quaternary-aged geologic formations and the hydrogeology within the FCGMA reflects that. Significant faults that occur within or near the margins of the Agency include the Oak Ridge fault, the Berylwood fault, the Somis fault, the Springville fault, the Simi-Santa Rosa fault zone (includes Santa Rosa fault, Northern Simi fault, and Southern Simi fault), the Camarillo fault, the Wright Road fault, the Epworth fault, and the Bailey fault. Although the general groundwater flow direction in FCGMA aquifers is to the southwest, faults and other structural features may form partial or complete barriers to groundwater flow, or cause local variability in flow direction.

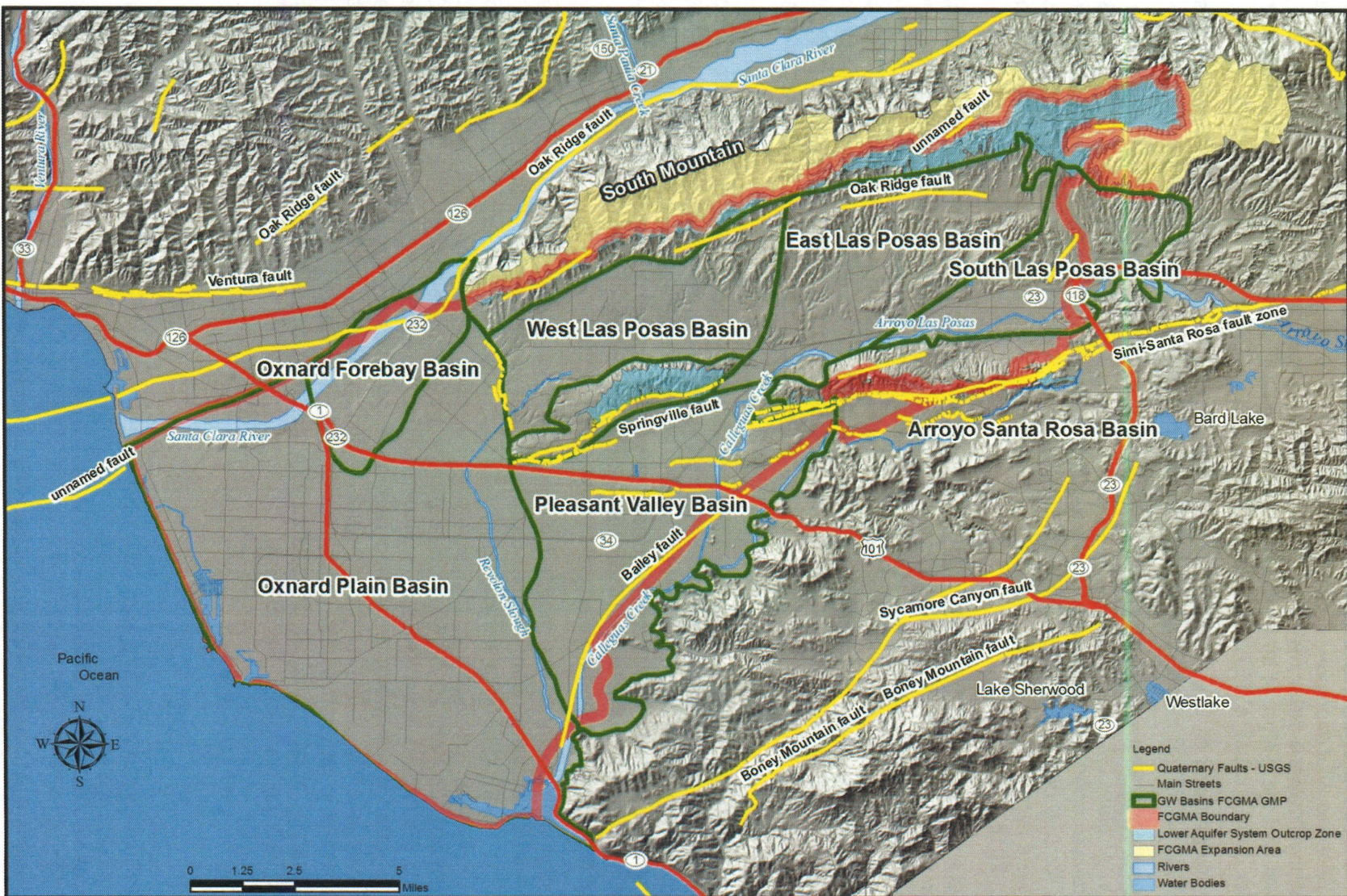
A comprehensive hydrologic and geologic study that includes areas within the FCGMA boundary was prepared by Hanson, Martin and Koczot (2003). Numeric groundwater flow models are currently being developed by UWCD and Calleguas Municipal Water District (CMWD), which include the basins within the Agency boundary with the exception of the Arroyo Santa Rosa Basin.


5.2 Groundwater Resource Management

The FCGMA's enabling legislation (CWC, Appendix 121) established the ability of the FCGMA to perform groundwater management activities including, but not limited to, registration of extraction facilities (wells), control of groundwater extractions, regulation of extraction facility construction, prosecution of legal actions against unreasonable use of water resources, imposition of reasonable operating regulations, and collection of fees. Through this legislation and a series of ordinances, the FCGMA has developed a groundwater-record management system to record well facility owner/operator information; to collect and record extraction data; to regulate groundwater extraction through the application of an annual allocation system; to assign credits as an incentive for non-use of allocations and/or for direct replenishment actions; to collect civil penalties and surcharges for overuse of groundwater; and to collect groundwater extraction fees to fund the Agency.

groundwater basin, the Oxnard Plain Basin. Data and discussions included in this annual report treat all rainfall, extraction, and credit information from both the Oxnard Plain Pressure Basin and the Mugu Forebay Basin as one single basin.

Figure 2 - Major Hydrogeologic Features and Groundwater Basins within the FCGMA



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There were four specific groundwater allocation methods used by the FCGMA during 2016 (see the FCGMA Ordinance Code, and Ordinance E for additional information). Allocation types include Historical Allocation (HA), Baseline Allocation (BA), Temporary Extraction Allocation (TEA) and Efficiency Allocation utilizing an Irrigation Allowance Index (IAI) method. The type of allocation available depends upon the use of the groundwater and the history of land. The allocation system by user type is as follows: adjusted HA (AHA)⁶ and BA for domestic users; TEA for municipal/industrial; and IAI for agricultural users.

Extraction wells are grouped by use into three type categories: Agricultural (AG), Municipal & Industrial (M&I), and Domestic (DOM). The definition of each type is specified in the Ordinance Code.

- **Agricultural (AG) Extraction Facility:** *“a facility whose groundwater is used on lands in the production of plant crops or livestock for market, and uses incidental thereto.”* During 2016, all agricultural well operators reported extractions using a reduced IAI. Conservation credits were not available for use during the year. Based on self-reported extraction data, agricultural extraction facilities were responsible for approximately 77% of the reported groundwater extracted within the Agency in 2016 (Table 1).
- **Municipal and Industrial (M&I) Extraction Facility:** an extraction facility operated by an M&I User (*“a person or other entity that used or uses water for any purpose other than agricultural irrigation”*) or an M&I Provider (a *“person [or entity] which provides water for domestic, industrial, commercial, or fire protection purposes within the Agency Boundary”*). During 2016, M&I Well Operators reported extractions using TEA; conservation credits could not be used to reduce surcharges and no conservation credits were earned on unused AHA. Based on self-reported extraction data, M&I facilities were responsible for approximately 23% of the reported groundwater extracted within the Agency in 2016.
- **Domestic (DOM) Extraction Facility:** a facility whose groundwater is used for domestic purposes only. During 2016, domestic well operators reported extractions using AHA and BA. Conservation credits could not be used. Typically, domestic users are responsible for a nominal pumping amount (less than 1%) of the total groundwater extracted within the Agency during any given calendar year. Based on self-reported extraction data, domestic facilities were responsible for approximately 0.2% of the reported groundwater extracted within the Agency in 2016.

All extraction facility (well) operators are required to report their groundwater extraction on a semi-annual basis using an Agency provided Semi-Annual Extraction Statement (SAES). For 2016, the M&I and Domestic Operators reporting periods were January 1 through June 30 (-01 Period), and July 1 through December 31 (-02 Period). For Agricultural Operators, the reporting periods were January 1 through July 31 (-01 Period or Crop Year 2015/16 - 02) and August 1 through December 31 (-02 Period or Crop Year 2016/17 - 01). Each completed SAES lists all wells under a particular operator code, any available allocations, the reported groundwater extraction (acre-feet) for each well, and the specific allocation method used to calculate the permitted groundwater extraction. Based on the groundwater extraction reported, each operator is required by the Ordinance Code to calculate the extraction charge due, plus any surcharges, interest, or late penalties associated with their user account, and then remit payment to the FCGMA along with the completed SAES form.

⁶ Adjusted Historic Allocation (AHA) is Historical Allocation (HA) reduced by the current reduction factor, which was 25% in 2016.

Table 1 - Summary of Reported Groundwater Extractions and Well Use-Type within the FCGMA for Calendar Year 2016² by FCGMA Basin

FCGMA Groundwater Basin	Groundwater Use-Type	Total Reported Groundwater Extractions for 2016 (AF/Year) ²	Percent of Individual Groundwater Basin Extractions	Portion of 2016 Groundwater Extractions (%)	Total Number of Wells ⁴	Active Wells in Basin ⁵ (by use type)	Wells Active in Basin by Use (%)
Arroyo Santa Rosa	Basin Total	1,202	100%	0.9%	20	7	35.0%
	Agricultural	1,202	100.0%	0.9%	19	7	35.0%
	Domestic	0	0.0%	0.0%	1	0	0.0%
	M & I	0	0.0%	0.0%	0	0	0.0%
East Las Posas	Basin Total	21,987	100%	16.4%	220	138	62.7%
	Agricultural	20,762	94.4%	15.5%	160	98	44.5%
	Domestic	18	0.1%	0.0%	23	16	7.3%
	M & I	1,207	5.5%	0.9%	37	24	10.9%
Oxnard Forebay	Basin Total	18,866	100%	14.1%	158	74	46.8%
	Agricultural	7,151	37.9%	5.3%	79	38	24.1%
	Domestic	16	0.1%	0.0%	10	4	2.5%
	M & I	11,699	62.0%	8.7%	69	32	20.3%
Oxnard Plain ³	Basin Total	60,846	100%	45.4%	633	315	49.8%
	Agricultural	48,934	80.4%	36.5%	427	221	34.9%
	Domestic	175	0.3%	0.1%	95	60	9.5%
	M & I	11,737	19.3%	8.8%	111	34	5.4%
Pleasant Valley	Basin Total	16,692	100%	12.5%	172	62	36.0%
	Agricultural	12,208	73.1%	9.1%	120	40	23.3%
	Domestic	7	0.0%	0.0%	36	14	8.1%
	M & I	4,478	26.8%	3.3%	16	8	4.7%
South Las Posas	Basin Total	1,595	100%	1.2%	49	18	36.7%
	Agricultural	1,499	94.0%	1.1%	37	14	28.6%
	Domestic	2	0.1%	0.0%	4	2	4.1%
	M & I	93	5.9%	0.1%	8	2	4.1%
West Las Posas	Basin Total	12,800	100%	9.6%	102	58	56.9%
	Agricultural	10,960	85.6%	8.2%	77	42	41.2%
	Domestic	32	0.3%	0.0%	8	6	5.9%
	M & I	1,808	14.1%	1.3%	17	10	9.8%
2016 Totals		133,990	100%	100%	1,354	672	50%

Notes:

AF = Acre-feet; 1 acre-foot equals 325,851 gallons

M & I - Municipal and Industrial

1. Table provides data on reported groundwater extractions, however approximately 3% of the well operator accounts were not reported.

2. Groundwater extractions are reported twice a year. Extractions are listed by basin and reported usage of the well.

3. Oxnard Plain Basin includes area formerly identified as Mugu Forebay Groundwater Basin.

4. Total number of wells ever registered with the FCGMA in each basin (includes inactive and destroyed wells).

5. Wells reported as being used in each basin during 2016.

5.3 Groundwater Extractions ⁷

Groundwater extractions are self-reported to the Agency by the well owners or operators. At the time that this report was prepared, three (3) percent of the user accounts had not reported.

For the calendar year 2016, total groundwater extractions reported to the FCGMA were 133,990 acre-feet⁸ (AF). The total annual reported groundwater extractions were 6% above the long-term average of 126,686 AF (1991 to 2015). Annual extraction data is presented in Table 1 – *Summary of Reported Groundwater Extractions and Well Use-Type within the FCGMA for Calendar Year 2016 by FCGMA Basin*,

⁷ Tables 1 and 2 provide data on reported groundwater extractions. Approximately 3% of the operators did not report their extractions for 2016.

⁸ One acre-foot (AF) equals 325,851 U.S. gallons at Standard Temperature and Pressure (STP).

in Table 2 – *Summary of Reported Groundwater Extractions and Well Use-Type within the FCGMA for Calendar Year 2016 by DWR Basin*, and in Figure 3 - *2016 Annual Rainfall and Reported Groundwater Extractions in the FCGMA*.

Table 2 - Summary of Reported Groundwater Extractions and Well Use-Type within the FCGMA for Calendar Year 2016 by DWR Basin

DWR Groundwater Basin	Groundwater Use-Type	Total Reported Groundwater Extractions for 2016 (AF/Year) ²	Percent of Individual Groundwater Basin Extractions	Portion of 2016 Groundwater Extractions (%)	Active Wells in Basin ³ (by use type)
Arroyo Santa Rosa Valley	Basin Total	1,202	100%	0.9%	7
	Agricultural	1,202	100.0%	0.9%	7
	Domestic	0	0.0%	0.0%	0
	M & I	0	0.0%	0.0%	0
Las Posas Valley	Basin Total	38,430	100%	28.7%	224
	Agricultural	35,268	91.8%	26.3%	161
	Domestic	53	0.1%	0.0%	27
	M & I	3,109	8.1%	2.3%	36
Oxnard	Basin Total	77,953	100%	58.2%	383
	Agricultural	54,327	69.7%	40.5%	254
	Domestic	190	0.2%	0.1%	63
	M & I	23,436	30.1%	17.5%	66
Pleasant Valley	Basin Total	16,404	100%	12.2%	58
	Agricultural	11,920	72.7%	8.9%	38
	Domestic	7	0.0%	0.0%	12
	M & I	4,478	27.3%	3.3%	8
2016 Totals		133,990	100%	100%	672

Notes:

AF = Acre-feet; 1 acre-foot equals 325,851 gallons

M & I - Municipal and Industrial

1. Table provides data on reported groundwater extractions, however approximately 3% of the well operator accounts were not reported.
2. Groundwater extractions are reported twice a year. Extractions are listed by basin and reported usage of the well.
3. Wells reported as being used in each basin during 2016.

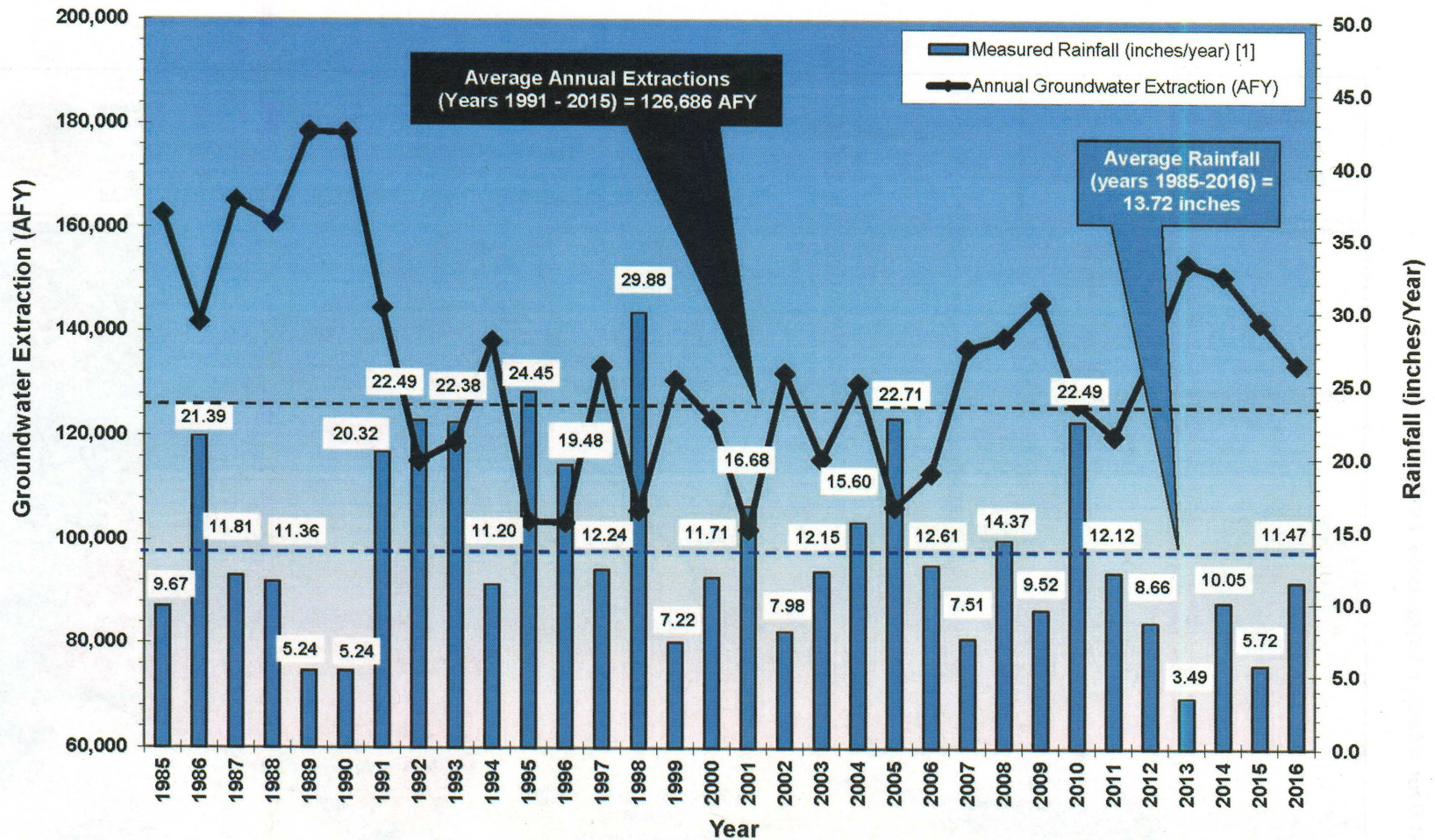
Groundwater Use in the FCGMA

Self-reported extraction data for 2016 (see Table 1) indicate there were 460 active agricultural wells, 110 active M&I wells, and 102 active domestic wells. Based on the 2016 reported extractions, approximately 77% of groundwater use was for agriculture and roughly 23% for M&I use. Agricultural operators collectively reported 102,717 AF of extractions (down from 109,381 AF in 2015). M&I operators reported 31,023 AF of extractions (down from 32,483 AF in 2015). The reported annual extraction by domestic well operators was approximately 250 AF compared to 175 AF in 2015. It should be noted that domestic⁹ well operators are not required to use flowmeters to report groundwater extraction, providing the Ordinance Code criteria are met. Total domestic annual extractions are not considered as a significant percentage (0.19%) of the annual groundwater total use within the Agency.

The FCGMA extraction data provide the ratio of groundwater use to well use-type in each basin (Table 1 and Figure 4). The basins have been classified based on primary groundwater use during 2016: agricultural use; agricultural mixed-use; or M&I mixed-use.

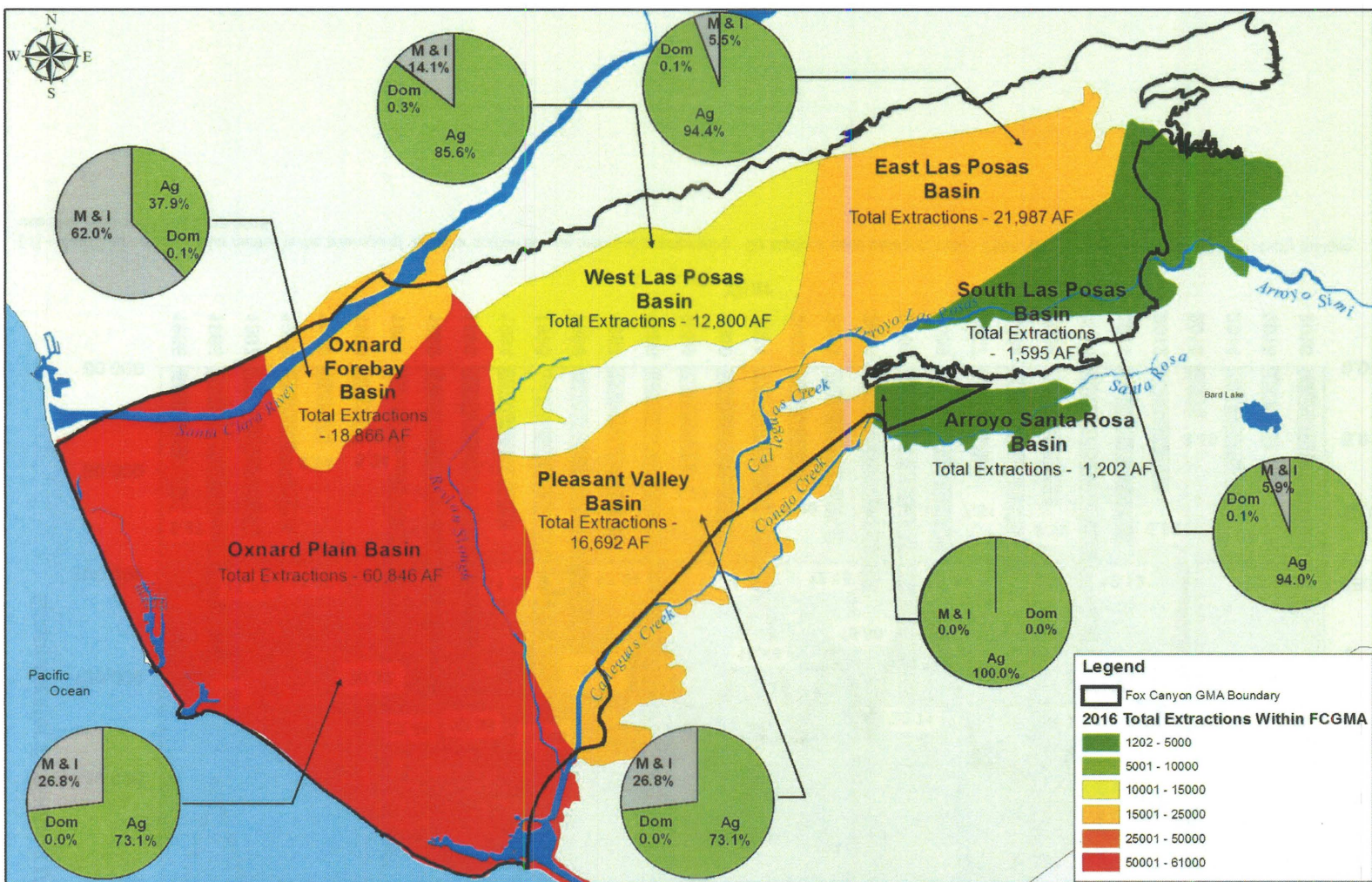
⁹ Wells for domestic use, serving a single-family residence, on a parcel of one acre or less, with no income producing operations on the site, are not required to use a flowmeter.

Figure 3 - 2016 Annual Rainfall and Reported Groundwater Extractions in the FCGMA



[1] - Measured calendar year rainfall is the average of weather station annual recorded precipitation. Six stations used between 1991 - 2006, and five between 2007-2016. County gauges used for 1985-1990 and 2013-2016.

Figure 4 - 2016 Ratio of Reported Groundwater Extractions by Basin



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 Reviewed By: KR
 Date Prepared: March, 2018
 Date Reviewed: March, 2018

DISCLAIMER: The information contained herein was created by the Fox Canyon Groundwater Management Agency solely for its own use. The FCGMA assumes no liability for damages incurred directly or indirectly as a result of errors, omissions or discrepancies.



Figure 4: 2016 Ratio of Reported Groundwater Extractions By Basin

5.3.1 **Groundwater Use and Extraction by Basin**

The majority of groundwater extractions occur within the Oxnard Plain Basin. The primary use of the extracted groundwater is for agriculture. Additional detail regarding groundwater use by basin is presented in Figure 4 – *2016 Ratio of Reported Groundwater Extractions by Basin*.

- 5.3.2.1 Arroyo Santa Rosa (ASR): The Arroyo Santa Rosa is an agricultural-use basin as groundwater is primarily used for agricultural demand. All (100%) of the reported groundwater extractions (1,202 AF) were reportedly used for agricultural purposes.
- 5.3.2.2 East Las Posas (ELP): The East Las Posas Basin is an agricultural-use basin, as groundwater is primarily used for agricultural demand. Reported use of the 21,987 AF of groundwater extracted was 94.4% Agricultural (20,762 acre-feet), 5.5% M&I (1,207 AF), and 0.1% Domestic (18 AF).
- 5.3.2.3 Oxnard Forebay (FOR): The Oxnard Forebay Basin is an M&I mixed-use basin as groundwater is primarily used for M&I demand and a lesser amount to agricultural demand and only nominal volumes to domestic demand. Reported use of the 18,866 AF of groundwater extracted was 37.9% Agricultural (7,151 AF), 62.0% M&I (11,699 AF), and 0.1% Domestic (16 AF).
- 5.3.2.4 Oxnard Plain Basin (OXF): The Oxnard Plain Basin is an agricultural mixed-use basin. Significant groundwater extractions are by both agricultural and M&I operators with relatively little domestic groundwater extraction. Reported use of the 60,846 AF of groundwater extracted was 80.4% Agricultural (48,934 AF), 0.3% Domestic (175 AF), and 19.3% M&I (11,737 AF).
- 5.3.2.5 Pleasant Valley Basin (PVB): The Pleasant Valley Basin is an agricultural mixed-use basin. Significant groundwater extractions are by both agricultural and M&I operators with relatively little domestic groundwater extraction. Reported use of the 16,692 AF of groundwater extracted was 73.1% Agricultural (12,208 AF), 26.8% M&I (4,478 AF), and 0.0% Domestic (7 AF).
- 5.3.2.6 South Las Posas Basin (SLP): The South Las Posas Basin is an agricultural-use basin as groundwater is primarily used for agricultural demand. Reported use of the 1,595 AF of groundwater extracted was 94.0% Agricultural (1,499 AF), 5.9% M&I (93 AF), and 0.1% Domestic (2 AF).
- 5.3.2.7 West Las Posas Basin (WLP): The West Las Posas Basin is an agricultural-use basin as groundwater is primarily used for agricultural demand. Reported use of the 12,800 AF of groundwater extracted was 85.6% Agricultural (10,960 AF), 14.1% M&I (1,808 AF), and 0.3% Domestic (32 AF).

5.4 **Health of the Basins**

The GMP establishes BMOs (quantitative groundwater quantity and quality targets) used to measure and evaluate the “health” of the basins, and the potential effectiveness of various groundwater management strategies. BMOs are specific to each of the groundwater basins within the FCGMA. The current program is described in the GMP and is comprised of monitoring 26 wells/monitoring points. For coastal groundwater basins, a critical BMO is maintaining groundwater levels at elevations high enough to prevent or minimize intrusion by seawater. Sixteen wells along the coast have concurrent BMOs for water levels and chloride. In inland areas, water quality BMOs have been established to monitor potential impacts to the drinking water supply, water supply for irrigation of crops, and to meet the California Regional Water Quality Control Board Basin Plan Objectives. Ten inland wells have concurrent BMOs of either chloride/TDS, nitrate/TDS, or nitrate/chloride. The 2016 BMO Report Cards were presented to the Board at the April 26, 2017, FCGMA Board Meeting. The 2016 BMO Report Cards are included as Appendix A.

5.4.1 Groundwater Levels

During 2016, Agency staff prepared potentiometric surface maps for the Upper Aquifer System (UAS) and Lower Aquifer System (LAS) using Fall 2015 groundwater data collected by the County of Ventura, UWCD, CMWD, and others. Initial contouring was generated using ESRI's ArcMap GIS software, with manual adjustments made to better reflect expected edge-of-basin conditions. The maps prepared are consistent in aerial extent, display of data collection points, contour intervals, and geographic reference information with those prepared in 2013 (Fall 1972 to Fall 2012, even years only), 2014 (Fall 2013), and 2015 (Fall 2014). The maps were submitted for independent technical review and comment prior to being presented to the FCGMA Board. The Fall 2016 potentiometric surface maps were prepared in a similar manner to previous maps. The Fall 2015 and 2016 potentiometric surface maps (prepared in 2016 and 2017 respectively) are presented in Appendices B and C.

A comparison of the maps indicates that groundwater levels generally declined within the Agency boundaries between Fall 2015 and Fall 2016. In the UAS, groundwater levels in Fall 2016 were below sea level in the Oxnard Plain Basin, most of the Oxnard Forebay Basin and roughly half of the Pleasant Valley Basin. In the LAS, groundwater levels in Fall 2016 were below sea level in the Oxnard Plain Basin and West Las Posas basins, and most of the Oxnard Forebay and Pleasant Valley basins. None of the sixteen BMOs for water levels in the Oxnard Plain and Pleasant Valley basins were met.

5.4.2 Groundwater Quality

Water quality data are presented in this section by basin, relative to the BMO criteria established in the GMP. Of the 36 water-quality BMOs monitored for chloride, nitrate, and TDS in 2016, 14 were met, 18 were not met¹⁰, and no data were available for eight; however, interim replacement data were available and used for four. The BMO Report Cards for 2016 are included in this report as Appendix A. The BMO Report cards include maps indicating the BMO monitoring well locations and the associated objectives. A summary of the water quality conditions relative to the BMOs in each basin is presented below.

5.4.2.1 Arroyo Santa Rosa (ASR): BMOs have been established for nitrate and chloride in the Arroyo Santa Rosa Basin to protect groundwater quality for potable and irrigation uses. Monitoring is conducted at two wells located in the south-central portion of the basin. At one of the two locations, the nitrate concentration in the sample collected exceeded the BMO of 45 mg/L¹¹ (the Maximum Contaminant Level for drinking water) by 48 mg/L (concentration 93 mg/L). At both of the locations, the chloride concentrations in the collected samples exceeded the BMO of 150 mg/L, detected at 156 mg/L and 153 mg/L. At BMO well 25C05, nitrate concentrations have decreased from approximately 68 mg/L to 28 mg/L during the five-year period 2012 through 2016. However, at BMO well 25D01, nitrate concentrations have been increasing from approximately 52 mg/L to 93 mg/L over the past five years. Chloride concentrations have generally increased over the five-year period 2012 through 2016, fluctuating above and below the BMO at both well locations.

5.4.2.2 East Las Posas (ELP): The East Las Posas Basin has BMOs for chloride and TDS at three well locations to protect groundwater quality for potable and irrigation uses. The wells are located in the southwestern portion of the basin. Data were available for two of the three locations. Based on an average of the analytical results, chloride BMOs were exceeded at the two sample locations

¹⁰ Totals reflect corrected tally. SLP BMO for chloride was incorrectly indicated on report card. The SLP BMO for chloride is *less than 160 mg/L* and not *less than 100 mg/L*. The BMO was met.

¹¹ mg/L = milligrams per liter, generally equivalent to parts per million.

monitored. Based on an average of the analytical results, the TDS BMO was exceeded at one of the two monitoring locations. Chloride concentrations generally declined at two of the locations over the five-year period 2012 through 2016, from 182 mg/L to 14 mg/L at well 09F01, and from 195 mg/L to 175 mg/L (later sample collected 2015) at well 09R01. Chloride concentrations over the five-year period 2012 through 2016 fluctuated within a limited range (approximately 73 to 100 mg/L) at the BMO interim replacement location 01E02. During the five-year period 2012 through 2016, chloride and TDS concentrations decreased at well 9F01. Chloride and TDS concentrations over the five-year period 2012 through 2016 generally fluctuated at wells 09R01 and 01E02, within a range of approximately 1,400 to 1,600 mg/L and 600 to 800 mg/L, respectively, for chloride, and 1,300 to 1,700 mg/L and 300 to 900 mg/L, respectively, for TDS.

5.4.2.3 Oxnard Forebay (FOR): The Forebay has BMOs at two locations in the central portion of the basin for nitrate and TDS to protect groundwater quality for potable and irrigation uses. Average nitrate concentrations exceeded the BMO of 22.5 mg/L, by 49.5 mg/L (average concentration was 72 mg/L) and 8.5 mg/L (average concentration was 31 mg/L). Average TDS concentrations were above and below the BMO of less than 1,200 mg/L. At west central location (El Rio #15), the average concentration was below the BMO by 150 mg/L. At the east central location (El Rio #5), the average concentration exceeded the BMO by 173 mg/L. During the five-year period of 2012 through 2016, the average nitrate and TDS concentrations have increased at both locations.

5.4.2.4 Oxnard Plain Basin (OXP): The basin has water-level and chloride-concentration BMOs for both the UAS and LAS. The primary focus and function of the BMOs are protection of the aquifers against seawater intrusion. None of the water-level BMOs in the basin were met in 2016. Chloride concentration BMOs are monitored at nine locations in the UAS, and at five locations in the LAS. These BMOs monitor saline intrusion (chloride is a direct indicator of intrusion). The chloride BMOs were generally not met near Port Hueneme and Point Mugu in either the UAS or LAS. During the five-year period 2012 through 2016, chloride concentrations generally remained within a range of fluctuation at five of the nine UAS BMO monitoring locations, increased at 3 locations, and decreased at one location. Measured chloride concentrations have been stable within a range of fluctuation at two of the five LAS BMO monitoring locations (north coastal, and inland), decreased at two locations (Port Hueneme and northern Point Mugu), and increased at the southern Point Mugu LAS BMO monitoring location.

5.4.2.5 Pleasant Valley Basin (PVB): The basin has water level and chloride concentration BMOs designed to detect migration of saline groundwater from coastal areas, and from lateral and underlying sources. There are two monitoring locations in the western portion of the basin. Neither water-level BMO was met in 2016. The chloride concentration in the sample collected at the monitoring location near the southwestern corner of the basin was detected at 131 mg/L, below the BMO of less than 150 mg/L. The chloride BMO was exceeded in a sample collected at the other monitoring location in the west-central portion of the basin, detected at 205 mg/L. During the five-year period 2012 through 2016, water levels have declined at both locations. Chloride concentrations have fluctuated above and below the BMO at the west-central monitoring location but are generally increasing, and near the southwestern corner of the basin remained below the BMO at the monitoring well.

5.4.2.6 South Las Posas Basin (SLP): The basin has BMOs for chloride and TDS to protect groundwater quality for potable and irrigation uses. The designated BMO well, located in the north-central portion of the basin, has been abandoned and no data were available for 2016. A nearby well, which has monitoring data available back to 2009, was selected as a temporary replacement. Based on averages of chloride and TDS concentrations, the chloride BMO

(160 mg/L) and TDS BMO (less than 1,500 mg/L) were met. During the five-year period 2012 through 2016, chloride concentrations have been stable within a range of fluctuation at the temporary replacement BMO location, while TDS concentrations have decreased.

5.4.2.7 West Las Posas Basin (WLP): The basin has BMOs for chloride (<100 mg/L) and TDS (<600 mg/L) to protect groundwater quality for potable and irrigation uses. Two wells are monitored in the southeastern portion of the basin. No 2016 water-quality analytical results were available for one well (6R01). Based on averages of chloride and TDS concentrations, the chloride and TDS BMOs were met at the well 8F01 BMO monitoring location. During the five-year period 2012 through 2016, chloride and nitrate concentrations have been stable within the range of fluctuation at both locations.

6.0 FCGMA PROGRAMS

6.1 Permitting and Registration of Wells

As of year-end 2016, there were 1,362 wells identified by State Well Numbers within the Agency boundaries: 672 wells reported as active; 254 wells listed as inactive; 428 wells destroyed; and 8 permanent monitoring or cathodic protection wells. On an ongoing basis, Agency staff register new wells permitted by the County of Ventura¹² and/or by the City of Oxnard. The status of existing wells is regularly updated based on information reported by the well owners or operators.

The continuation of the moratorium on issuance of permits for new extraction facilities imposed by Ordinance E has resulted in a decrease in FCGMA well permit activity. Ordinance E allows for certain exceptions to the moratorium. Agency staff processed 19 groundwater-extraction well permit applications for new extraction facilities, which are to serve as replacement or backup wells, plus one for a test well¹³ for a proposed Aquifer Storage and Recovery (ASR) project. All applications were verified for compliance with the Ordinance Code.

The FCGMA Ordinance Code requires registration of all groundwater extraction facilities in addition to semi-annual reporting of extraction volumes and payment of extraction fees. Agency staff mailed 24 Notices to register wells (18 First Notices and 6 Second Notices) and processed well registration documents.

6.2 Flowmeter Calibration Program

The FCGMA Ordinance Code requires the use of flowmeters for all extraction facilities except inactive wells¹⁴ and exempt well operators¹⁵. The use of accurate flowmeters for reporting groundwater extractions is critical to the Agency for a number of reasons. First, it provides a relatively uniform and equitable method of reporting for all stakeholders. Second, it increases the efficiency of data management. Third, it allows Agency staff to analyze the extraction and use of the groundwater resources to help make meaningful recommendations to the Board.

¹² Refers to wells permitted in accordance with the County of Ventura Ordinance No. 4184. All permitting in accordance with this ordinance is performed by Ventura County. The City of Oxnard is the only other entity in Ventura County that issues water well permits.

¹³ The FCGMA Board granted an exception to Ordinance E, Article 4, on June 22, 2016.

¹⁴ An inactive well is a well that conforms to the County Water Well Ordinance requirements for an active well, but is being held in an idle status in case of future need. Idle status means the well is pumped no more than 8 hours during any 12-month period.

¹⁵ Exempt well operators are well operators operating extraction facilities supplying a single-family dwelling on one acre or less, with no income producing operations.

Flowmeters have been required on non-exempt extraction facilities since July 1, 1994, following the adoption of Ordinance No. 3.1 on July 28, 1993. The current groundwater metering program was officially launched via a revision of Chapter 3.0 in Ordinance 8.1 (July 2005), and the initial passage of Resolution No. 2006-01 (adopted in March 2006). The initial groundwater-flowmeter-calibration program began in earnest in 2007 and continued into 2009. Resolution No. 2008-04 (adopted May 2008) replaced the original Resolution No. 2006-01 to clarify the methods and rules governing the meter-calibration program; Resolution No. 2008-04 was again revised on September 24, 2008. Staff continued to enforce flowmeter-calibration requirements throughout 2016.

Of the 1,354 wells with State Well Numbers listed in the FCGMA database, 672 (50%) were actively used in 2016. In the past, well extractions were reported using water flowmeters, electrical power meters, or a consumptive-use method that estimated annual water-use volume for domestic or farm use based on number of people in a home, or estimated from the number of irrigated acres and crop. Because of a concerted effort by the Agency, the only known wells within the FCGMA that still use consumptive use methods to report extractions are domestic wells that qualify for an exemption from flowmeter requirements. Per Agency records, four wells were exempt from the flowmeter requirement based on meeting Ordinance Code criteria. At the end of 2016, 218 flowmeters were due for calibration and calibration test data were current for approximately 480 flowmeters.

6.3 FCGMA Groundwater Management Plan

The GMP identifies a series of short- and long-term groundwater-management projects and strategies designed to address the imbalance between water supply and demand. The following summarizes the progress made in 2016 in implementing the GMP projects and strategies:

- Limitation of Groundwater Extractions – Continuation of the 25% Pumping Reduction applied to domestic well operators. Continued to implement the Ordinance E 20% reduced Temporary Extraction Allocation for M&I well operators.
- Additional Water Conservation – To further reduce groundwater extractions during the current drought, the allocation systems associated with Ordinance E for agricultural, and municipal and industrial well operators were implemented during calendar year 2016.
- Verification of Extraction Reporting (verify accuracy of reporting) – For Calendar Year 2016, the Agency sent approximately 878 Semi-Annual Groundwater Extraction Statements, keyed in data received, and followed-up with non-reporters. Fifty-five (55) Notices of Violations (41 first, and 14 second) were sent to non-reporters.
- Irrigation Efficiency – Continued to implement the Ordinance E modified Annual Efficiency Allocation for agricultural well operators. Agency Staff worked with filers to complete applications. Four Notices for non-filing or incomplete filing of Efficiency Allocation Applications were sent (3 Second Notices and 1 Final Notice).
- South Las Posas Pump/Treat (pump-poor quality water and blend/ treat it) – Ventura County Water Works District No. 1 Moorpark Desalter Project is moving forward. An update was provided to the Board.
- Development of Brackish Groundwater in the Pleasant Valley – The City of Camarillo continued studies towards development of the brackish groundwater in the Pleasant Valley Basin. Agency staff reviewed and commented on the Draft Supplemental Environmental Impact Report, the revised Groundwater Analysis and Modeling Report, and the Monitoring and Contingency Plan. With the adoption of Resolution No. 2016-04, the Board approved a project groundwater allocation.

- **Separate Strategies for Each Basin** – The Agency continued the effort to develop Groundwater Sustainability Plans (GSPs) for each of the four DWR groundwater basins within or partially within the Agency boundaries.

6.3.1 **Credit Programs**

The Agency has implemented a number of different groundwater-extraction credit programs:

- 6.3.1.1 **Conservation Credits:** In the past, well owners or operators with Historical Allocation would take advantage of this credit system by not using the full AHA associated with their wells. The credits granted under this system are called Conservation Credits to designate that they were earned by not pumping the full allocation. The Conservation Credit program has been suspended while Ordinance E is in effect.
- 6.3.1.2 **Injection Credits:** Operators that recharge aquifers within the FCGMA boundaries through direct injection of “foreign water,” as defined in the Agency’s Ordinance Code, earn Injection Credits (in acre-feet). The FCGMA received and approved one Injection Credit request for calendar year 2016. CMWD injected approximately 3,110 AF of water into the East Las Posas Basin.
- 6.3.1.3 **Storage Credits:** The Storage Credit Program of which in-lieu deliveries are a part, provides for the transfer of credit from the user of foreign water to the supplier in the amount of one acre-foot for each acre-foot of delivered water for direct use by the user. The water represented by the credits transferred is not available for use in the year the credit is accrued. During 2016, the FCGMA processed and approved two Storage Credit transfers totaling approximately 49 AF.
- 6.3.1.4 **Supplemental Municipal and Industrial (M&I) Water Program Credits:** The Supplemental M&I Water Program allows for the transfer of credits (Conejo Credits) when Pleasant Valley County Water District (PVCWD) takes delivery of water from Conejo Creek instead of extracting groundwater. The surface water is diverted via the Conejo Creek Diversion constructed to enhance groundwater storage by allowing surface water, normally lost to the ocean, to be used prior to and instead of extracting groundwater. Camrosa Water District (Camrosa) operates the Conejo Creek Diversion. In accordance with Resolution No. 2014-01, Conejo Credits are transferred from PVCWD to Camrosa. The Conejo Credits are used by Camrosa to offset surcharges for excess groundwater extractions. During 2016, there were two Supplemental M&I credit transfers, which totaled approximately 2,419 AF.
- 6.3.1.5 **Credit Transfers:** Conservation credits were not transferred in 2016.

The accumulation of credits represents a long-term resource management challenge for the Agency and its stakeholders. However, while Ordinance E is in effect, Conservation Credits cannot be earned or used.

7.0 **AGENCY ACTIONS FOR CALENDAR YEAR 2016**

7.1 **Significant Agency Actions**

7.1.1 **Adopted Changes to the Ordinance Code**

The FCGMA Board of Directors did not adopt any changes to the Ordinance Code during calendar year 2016.

7.1.2 **Implementation of Ordinance E**

On April 11, 2014, the FCGMA Board of Directors adopted Ordinance E to address declining groundwater levels: *“An Emergency Ordinance Limiting Extractions from Groundwater Extractions Facilities, Suspending Use of Credits and Prohibiting Construction of Any Groundwater Extraction Facility and/or the*

Issuance of Any Permit Therefor.” This action followed the Governor of California proclaiming a state of emergency on January 17, 2014, because of the continued drought. Ordinance E remained in effect through 2016 due to the continuing drought. The following actions were completed or were in review during 2016:

- Article 2. Reduction of Groundwater Extractions: Granted six (6) variances to Temporary Extraction Allocation (TEA).
- Article 4. Prohibition on New Extraction Facilities: Board granted one (1) exception.
- Modified Annual Efficiency Allocation (for 2016 portion of Crop Years 2015/16 and 2016/17):
 - Effectiveness of allocation systems under Ordinance E and proposed further cutbacks were reviewed by Board.
 - Progress made by stakeholder groups towards developing replacement allocation systems.
 - Public outreach – Prepare semi-annual newsletter and attend stakeholder meetings.

7.1.3 **Adopted Resolutions**

The FCGMA Board of Directors adopted five (5) Resolutions during calendar year 2016 (Appendix D):

- Resolution No. 2016-01: *Delegating Authority to the Executive Officer to Initiate and Compromise Legal Action for Enforcement of the Agency Ordinance Code;*
- Resolution No. 2016-02: *Initiating a Request to the California Department of Water Resources to Modify the Bulletin 118 Groundwater Basin Boundaries for the Las Posas Basin, Pleasant Valley Basin and Oxnard Subbasin;*
- Resolution No. 2016-03: *Increasing Fee on Groundwater Extractions to Fund the Costs of a Groundwater Sustainability Program;*
- Resolution No. 2016-04: *Concerning Adjustments to Extraction Allocation for the City of Camarillo Regarding Special Use of Mounded, Degraded Water in the North Eastern Portion of the Pleasant Valley Basin; and*
- Resolution No. 2016-05: *Adopting a Policy for Evaluating and Authorizing Proposals for Groundwater Supply Projects.*

7.1.4 **Implementation of Sustainable Groundwater Management Act**

On January 9, 2015, FCGMA accepted the responsibility of becoming the Groundwater Sustainability Agency (GSA) for those portions of the four California State Department of Water Resources (DWR) groundwater basins, which are within the FCGMA boundary by adopting Resolution No. 2015-01. Actions taken during 2016 include:

- The Technical Advisory Group (TAG) held ten (10) meetings;
- Progress made towards developing an approach for evaluating Groundwater Dependent Ecosystems;
- Preliminary Draft sections of the GSPs were prepared by HydroMetrics Water Resources, Inc. for four (4) basins;
- The Agency terminated its contract with HydroMetrics and hired Dudek to complete the four GSPs;
- Shared cost with CMWD to fund the completion of the Las Posas Basin Replacement Water Study;

- Issued charters to stakeholder groups to develop plans for a Water Market and new basin pumping allocation systems, which will be based on the sustainable yield of the applicable basin.
- Submitted a request to DWR for modification of the boundaries of the Las Posas Valley and Pleasant Valley basins, and the Oxnard subbasin; and
- Prepared progress reports associated with Proposition 1 Sustainable Groundwater Planning Grant to Develop Groundwater Sustainability Plans for Oxnard and Pleasant Valley basins.

7.2 Project Reviews Performed in 2016

Agency Staff review and comment on submitted documents (draft to final) which are associated with proposed groundwater projects, including modeling reports, monitoring and contingency plans, and environmental documents. Project reviews conducted in 2016 included:

- City of Camarillo Desalter Project: Draft Supplemental Environmental Impact Report; Groundwater Analysis and Modeling Report; and Monitoring and Contingency Plan; and
- Calleguas Municipal Water District: Las Posas Replacement Water Study – Project Alternatives.

At times, Agency staff provide formal comments on proposed projects within the Agency jurisdiction, on behalf of the Agency and to the County of Ventura Planning Department, as part of CEQA review. In 2016, Agency staff provided approximately twelve project reviews. Typically, proposed development projects are reviewed to identify the following groundwater-related issues: changes to the well ownership/operator; property-use changes that may affect or impact FCGMA extraction allocations; changes to land or crops; potential short- or long-term impacts to groundwater quality and/or groundwater quantity; alterations or modifications in well status; changes to water distribution systems; and construction of structures that might impair infiltration of water to FCGMA aquifers. Projects may be approved with no further action needed, or approved with conditions and/or modifications based in part on potential impacts to the FCGMA groundwater resources.

7.3 Other Activities Performed in 2016

The Agency performed and completed the following additional activities during 2016:

- Prepared the 2015 Annual Basin Management Objective Report Card, and Calendar Year 2015 Annual Report including 2015 Fall Water Level Maps (Lower and Upper Aquifer Systems).
- Processed applications for Historical Allocation, and/or Baseline Allocation:
 - Approved one (1) baseline allocation application
 - Denied one (1) baseline allocation application
- Informational updates:
 - Ventura County Wastewater District No. 1 Moorpark Desalter Project
 - City of Camarillo's North Pleasant Valley Desalter Project
 - Proposed Las Posas Valley Basin Groundwater Pumping Allocation System
 - Water Market and Advanced Metering Infrastructure (AMI) Pilot Programs
 - City of Oxnard GREAT Program proposed aquifer storage and recovery (ASR) pilot project
- To improve stakeholder outreach and communication, staff attended stakeholder and Las Posas User Group meetings, and continued mailing of Semi-Annual Newsletters.
- Upgrades to FCGMA Online Software.
- Reviewed and commented on environmental documents for proposed developments:

- Springville Commercial: City of Camarillo Revised Draft Subsequent Environmental Impact Report
- Camarillo Village Homes: City of Camarillo Draft Environmental Impact Report
- Amara Shopping Center, Springville Drive: City of Camarillo Subsequent Mitigated Negative Declaration
- Enforcement Program: Filed legal action for recovery of delinquent groundwater extraction charges, imposition of civil penalties and injunctive relief.

8.0 FINANCIAL STATUS OF THE AGENCY FOR 2016

The FCGMA's fiscal year begins July 1 and ends on June 30 of the following calendar year. Accordingly, the financial status information contained in this 2016 Annual Report covers the Fiscal Year period beginning July 1, 2015 and ending on June 30, 2016. Fiscal administration and oversight of the Agency's financial transactions is performed by Agency management in consultation with the Fiscal Services Section, Central Services Department, of the Ventura County Public Works Agency pursuant to an existing and ongoing contractual arrangement between the Agency and the County of Ventura.

Year-end budget-to-actual performance reports were presented to the FCGMA Board of Directors for their information, review, and where necessary, adjustment, as well as a first-quarter budget performance report for Fiscal Year 2016-17. The information below highlights key fiscal performance metrics reported by Agency management during the 2015-16 Fiscal Year period.

8.1 Fiscal Year End Report June 30, 2016

- FCGMA revenues received in 2015-16 totaled \$2,480,252; an amount that reflected a \$1,072,402 or 76% increase versus 2014-15 adjusted actual revenues received.
- FCGMA expenditures incurred in 2015-16 totaled \$1,431,744; an amount that reflected a \$342,793, or 31% increase above 2014-15 adjusted actual expenditures incurred by the Agency.

8.2 Financial Audits

Pursuant to Government Code § 26909, the audit requirements applicable to FCGMA are in the *Minimum Audit Requirements and Reporting Guidelines* for California Special Districts, as published by the Division of Accounting and Reporting, Office of the State Controller. Essentially, the minimum requirements reflect Generally Accepted Auditing Standards (GAAS), as described in the American Institute of Certified Public Accountants publication, *Audits of State and Local Governmental Units*.

Under GAAS, the FCGMA, which is a special purpose governmental agency engaged in the preservation and management groundwater resources for the common benefit within its boundary, is required to prepare its financial statements in an enterprise format. The FCGMA is funded primarily through user extraction charges (set at \$6.00 per acre-foot), a *Sustainability Fee* (\$4.00 per acre-foot implemented during the first half of the year in accordance with Board adopted Resolution No. 2015-04, and \$6.50 per acre-foot implemented during the second half of the year in accordance with Board adopted Resolution No. 2016-03), and is operated on a cash-accounting basis. The only other income to the Agency is from surcharge fees, civil penalties, and accumulated interest earnings on Agency funds on deposit with the County Treasurer's Pooled Investment Fund.

In 2016, the 2015-2016 biennial financial audit was initiated, and completed in 2017. The Auditors' report was presented at the April 26, 2017 Board meeting and can be viewed on the Agency website: www.fcgma.org.

9.0 REFERENCES

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- Ventura County Board of Supervisor's (VCBOS), 1982. Item 32, Document # 431, *Minutes of December 21, 1982 Meeting*.
- Ventura County Office of County Recorder (VCOR), 1996. *Document 96-106221*.
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APPENDIX A

- 2016 Agency Annual Basin Management Objectives Report Cards and Fall 2016 Groundwater Levels Board Letter (without attachments)
- 2016 FCGMA Basin Management Objectives Report Cards

FOX CANYON GROUNDWATER MANAGEMENT AGENCY

A STATE OF CALIFORNIA WATER AGENCY



BOARD OF DIRECTORS

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EXECUTIVE OFFICER
Jeff Pratt, P.E.

April 26, 2017

Board of Directors
Fox Canyon Groundwater Management Agency
800 South Victoria Avenue
Ventura, CA 93009-1600

SUBJECT: 2016 AGENCY ANNUAL BASIN MANAGEMENT OBJECTIVES REPORT CARDS AND FALL 2016 GROUNDWATER LEVELS – (New Item)

RECOMMENDATION: Receive and file the Agency's staff report regarding groundwater conditions relative to the Agency's Basin Management Objectives and regarding Fall 2016 groundwater levels.

EXECUTIVE SUMMARY:

The 2007 Update to the FCGMA Groundwater Management Plan (GMP) established Basin Management Objectives (BMOs) for the basins within the Agency. BMOs are groundwater level and/or water quality concentration thresholds measured at specific locations (as identified in the GMP) that serve as quantitative performance metrics for evaluating the effectiveness of the Agency's groundwater management strategies in meeting its GMP goals.

The Agency's "Report Cards" for these BMOs have been updated with data collected during calendar year 2016. The Report Cards are used to communicate the status of groundwater conditions and progress toward meeting the Agency's goals. This is accomplished by comparing groundwater levels and/or quality to the BMOs.

In summary, none of the 16 water-level BMOs in the Oxnard Plain and Pleasant Valley basins were met. Compared to the 2015 BMO averages, 2016 groundwater levels declined at all but one BMO location (94% declined). The water level at the one BMO location remained at essentially the same average water level.

Of the 36 water-quality BMOs for chloride, nitrate, and total dissolved solids (TDS) monitored in 2016, 13 (36%) were met, 19 (53%) were not met, and data was not available for four (11%) BMOs. Compared to the 2015 BMO averages, in 2016:

- Chloride concentrations increased at fifteen locations (63%), decreased at six locations (25%), and there was inadequate information at three locations (12%);
- Nitrate concentrations increased at three locations (75%) and decreased at one location (25%); and
- TDS concentrations increased at two locations (25%), decreased at three locations (37.5%), and there was inadequate information at three locations (37.5%).

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Item 8 – Page 1 of 4

Fall 2016 groundwater levels were generally lower than those observed in the Fall of 2015, on the order of -4 to -15 feet lower, with localized areas of decline on the order of -19 to -37 feet. Water levels did rise at a few locations. In 2016, total rainfall of 11.47 inches (five rainfall station average) was below the Agency's 1985 to 2016 average annual rainfall of 13.72 inches. Calendar year 2016 was the sixth year of below-average rainfall and the statewide drought.

The primary areas of concern remain:

1. Oxnard Plain Basin and Pleasant Valley Basin: Depressed water levels allow salts (from the ocean and/or geologic sources) to migrate into the aquifers. Areas of greatest concern are the coastal portions of the Oxnard Plain Basin near Port Hueneme (especially the Lower Aquifer System) and Point Mugu (both Upper and Lower Aquifer Systems), and in the Pleasant Valley Basin where saline intrusion has been previously documented. Salt migration would be expected to increase during an extended drought.
2. Las Posas Basins: Poor quality water continues to migrate northward into the East Las Posas (ELP) Basin from sources in the South Las Posas (SLP) Basin, although the current set of BMO locations is not situated to monitor this movement.
3. Oxnard Forebay and Arroyo Santa Rosa Basins: High nitrate concentrations remain a concern.

DISCUSSION OF GROUNDWATER CONDITIONS AND BMO STATUS BY BASIN:

The status of the BMOs for each basin is summarized on the attached report cards (Item 8A). Further details are provided in the "Status Summary Table" located on each report card, where the status of each BMO is displayed quantitatively and visually. The geographic location of each BMO monitoring well can be found on the map located below the table on each report card. Time-series plots of groundwater levels and constituent concentrations are presented on the right side of the report card. It should be noted that there are 52 BMO status check locations identified in the GMP (representing two status checks at each of the 26 monitoring wells or screened intervals).

The Agency BMO program relies on data collected and provided by others. The data collected in 2016 and used for this update report were provided by United Water Conservation District, Calleguas Municipal Water District, Pleasant Valley County Water District, Zone Mutual Water Company, Camrosa Water District, and Ventura County Watershed Protection District.

Data for 2016 was not available for eight of the BMO status check locations (four monitoring wells) (two in the ELP Basin, one in the West Las Posas Basin (WLP), and one in the SLP Basin). Interim replacement wells for 01E01 and 06N03 were used to provide data for this monitoring period.

Oxnard Plain Forebay Basin (Forebay)

- Number of Monitoring Locations: Two (2)
- BMO Status:
 - Nitrate BMO of <22.5 milligrams per liter (mg/L) was not met at either monitoring location. Average annual concentrations exceeded the BMO by approximately 38% and 220%.
 - TDS BMO of <1,200 mg/L was met at one location but not at the other location. Average annual concentrations exceeded the BMO by approximately 14%.
- Five-Year Trend: During the last five years, the average nitrate and TDS concentrations of samples collected at both locations have increased.

Oxnard Plain Basin – Upper Aquifer System

- Number of Monitoring Locations: Nine (9)
- BMO Status:
 - Water Level BMOs range from 3 to 8 feet above mean sea level (msl). The BMOs were not met. Average annual levels were below the BMO by approximately 5 to 50 feet.
 - Chloride BMO of <150 mg/L was met at three (3) of the nine (9) locations. At the six locations where the BMO was not met, the average annual concentrations were at or exceeded the BMO by up to approximately 11,000%.
- Five-Year Trend: In 2016, water levels were at their lowest measured levels during the past five years. Chloride concentrations were generally stable with the exceptions of increasing and decreasing chloride concentrations. Chloride concentrations increased near Port Hueneme at the monitoring well location A1 in the water bearing zones at depths of 155 to 195 feet and 280 to 320 feet, and near Point Mugu at monitoring well location CM6 in the water bearing zones at depths of 310 to 330 feet. Chloride concentrations decreased at monitoring well location CM4 in the water bearing zones at depths of 255 to 275 feet.

Oxnard Plain Basin – Lower Aquifer System

- Number of Monitoring Locations: Five (5)
- BMO Status:
 - Water Level BMOs range from 13 to 20 feet above msl. The BMOs were not met. Average annual levels were below the BMO by approximately 47 to 136 feet.
 - Chloride BMO of <150 mg/L was met at three (3) of the five (5) locations. At the two locations where the BMO was not met, the average annual concentrations exceeded the BMO by approximately 185% and 6,526%.
- Five-Year Trend: In 2016, water levels were at or near the lowest levels measured during the past five years. Chloride concentrations were generally stable at the northern (CM3-695) and inland (PTP#1) locations, decreasing near Port Hueneme (CM2-760) and both increasing and decreasing near Point Mugu (increased at CM1A at depths 525 to 565 feet, decreased at CM6 at depths 490 to 550 feet).

Pleasant Valley Basin

- Number of Monitoring Locations: Two (2)
- BMO Status:
 - Water Level BMO is 20 feet above msl. The BMOs were not met at either location. Average annual levels were below the BMO by approximately 117 and 134 feet.
 - Chloride BMO of <150 mg/L was met at one of the two locations. At the location where the BMO was not met, the average annual concentration exceeded the BMO by approximately 37%.
- Five-Year Trend: In 2016, water levels were generally at or near the lowest levels measured during the past five years. Chloride concentrations were generally increasing.

Arroyo Santa Rosa Basin

- Number of Monitoring Locations: Two (2).
- BMO Status:
 - Nitrate BMO of <45 mg/L was met at one of the two locations sampled. The average annual concentration exceeded the BMO by approximately 107%.
 - Chloride BMO of <150 mg/L was not met at either location.
- Five-Year Trend: Nitrate concentrations were generally declining at the location of Well No. 25C05, and generally increasing at the location of Well No. 25D01. Chloride concentrations were generally increasing at the locations of Well NOs. 25C05 and 25D01.

Las Posas Basins

- Number of Monitoring Locations: Six (6) [three in the ELP Basin, two in the WLP Basin, and one in the SLP Basin]. No data was available for four of the six locations; one is a destroyed well in the ELP Basin and another is an abandoned well in the SLP Basin. Interim replacements were used for the two locations beginning 2014.
- BMO Status:
 - Chloride BMO of <100 mg/L was met in the WLP Basin, and not met in the ELP and SLP basins at the monitoring locations sampled. At the locations where the BMO was not being met, the average annual concentration was at the BMO limit or exceeded the BMO by approximately 49%.
 - TDS BMOs in the Las Posas basins range from <500 to <1,500 mg/L. The BMOs were met at monitoring locations in the ELP, WLP and SLP basins. The BMO was not met at a monitoring location in the southwestern portion of the ELP Basin; the BMO was exceeded by approximately 164% at this location.
- Five-Year Trend: Chloride concentrations were generally stable with the exceptions of chloride concentrations declining at Well NOs. 09F01 and 09R01 in the ELP Basin, and chloride concentrations increasing in ELP Basin at Well No. 01E02. TDS concentrations were generally stable with the exceptions of TDS concentrations declining at Well Nos. 09F01 in the ELP Basin and 07D02 in the SLP Basin.

FALL 2016 GROUNDWATER LEVELS:

The Draft Fall 2016 Upper Aquifer System (UAS) Potentiometric Surface Map (Item 8B), and Lower Aquifer System (LAS) Potentiometric Surface Map (Item 8C) indicate that groundwater levels were below sea level underlying most of the Oxnard Forebay, Oxnard Plain, Pleasant Valley and WLP basins. In addition, there were depressions in the potentiometric surface greater than 100 feet below sea level in each of the basins. Fall 2016 water levels were generally lower than in Fall 2015. Groundwater levels underlying most of the Oxnard Forebay, Oxnard Plain, Pleasant Valley and WLP basins generally declined about -4 to -15 feet, with localized areas of decline about -19 to -37 feet. A rise in groundwater levels of less than 10 feet was noted at a few monitoring locations. Groundwater levels in the LAS of the ELP and SLP basins were generally lower than those in Fall 2015, with declines ranging from less than -1 to -17 feet. Fall water levels rose at two monitoring well locations. The draft maps were submitted to the Technical Advisory Group (TAG) members for review and comment.

This letter has been reviewed by Agency Counsel. If you have any questions, please call Kathleen Riedel at (805) 654-2954.

Sincerely,



Kathleen Riedel, P.G.
Groundwater Specialist

Attachments:

1. Basin Management Objectives Report Cards (Item 8A1-6)
2. Draft Fall 2016 Upper Aquifer System Potentiometric Surface Map (Item 8B)
3. Draft Fall 2016 Lower Aquifer System Potentiometric Surface Map (Item 8C)

**FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
OXNARD PLAIN FOREBAY
2016**

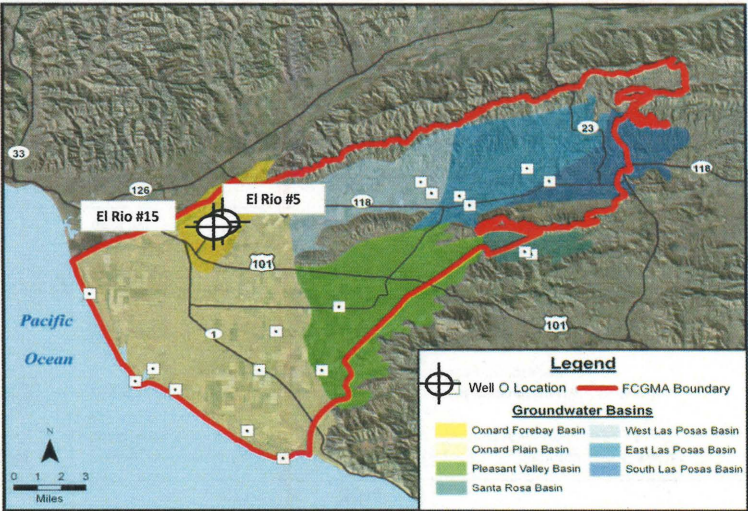
Goal: Protect water quality at public drinking water wells (nitrate and TDS) and irrigation suitability (TDS). (Note TDS = total dissolved solids)

BMOs: Nitrate Concentration: <22.5 mg/L-NO₃ (50% of State of California MCL)

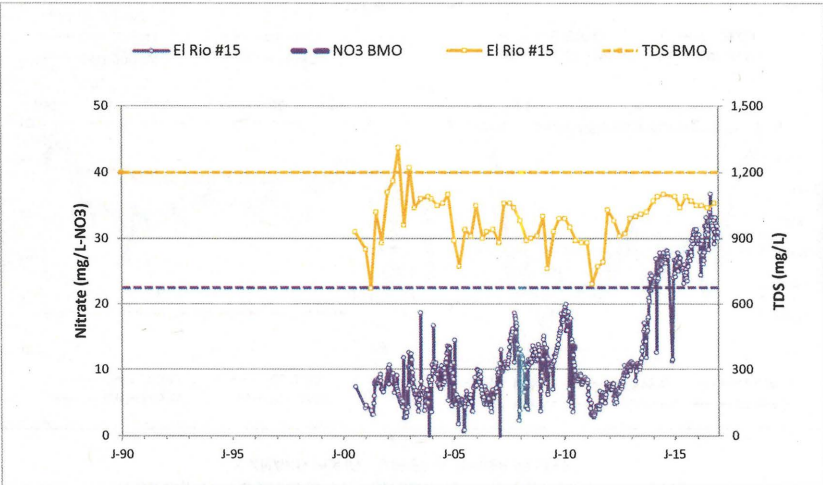
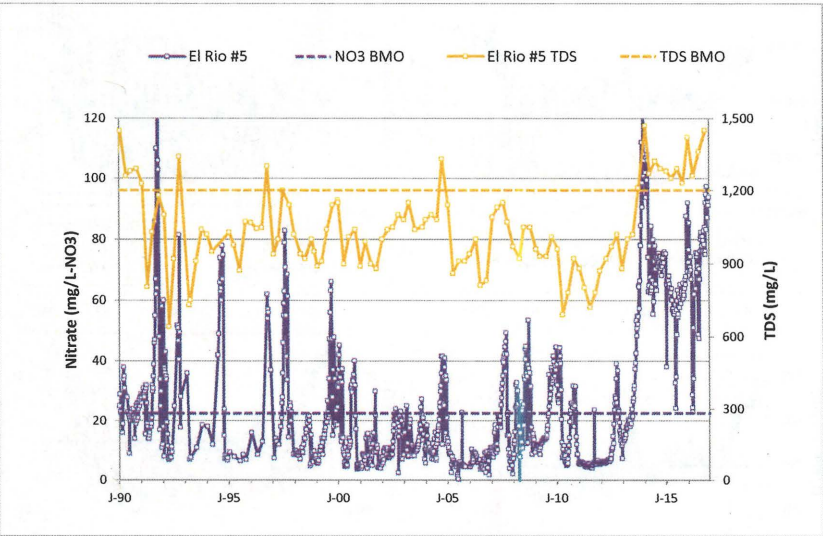
TDS Concentration: <1,200 mg/L (LARWQCB Basin Plan Objective)

Status Summary: In 2016, average nitrate concentrations were above the BMO of 22.5 mg/L in both wells, with El Rio #5 at 72 mg/L and El Rio #15 at 31 mg/L. Average TDS concentrations were above the BMO at well El Rio #5 at 1,373 mg/L, yet below at well El Rio #15 at 1,050 mg/L. The general five-year trends, nitrate concentrations increased at both locations. TDS concentrations generally increased at well El Rio #5, while remaining within a range of fluctuation at well El Rio #15.

State Well Number (name)	Depth (ft)	Status Summary Table				5-yr Trend	
		Nitrate (mg/L)		TDS (mg/L)		Nitrate	TDS
02N22W23B02S (El Rio #5)	135-277	22.5	72	<1200	1,373	↑	↑
02N22W23C05S (El Rio #15)	140-310	22.5	31	<1200	1,050	↑	↑



**FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
OXNARD PLAIN FOREBAY
2016**



**FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
OXNARD PLAIN - UPPER AQUIFER SYSTEM
2016**

Goal: Prevent saline intrusion in the Oxnard and Mugu Aquifers. Primary source is seawater inflow via aquifer outcrops in submarine canyons near Port Hueneme and Pt. Mugu.

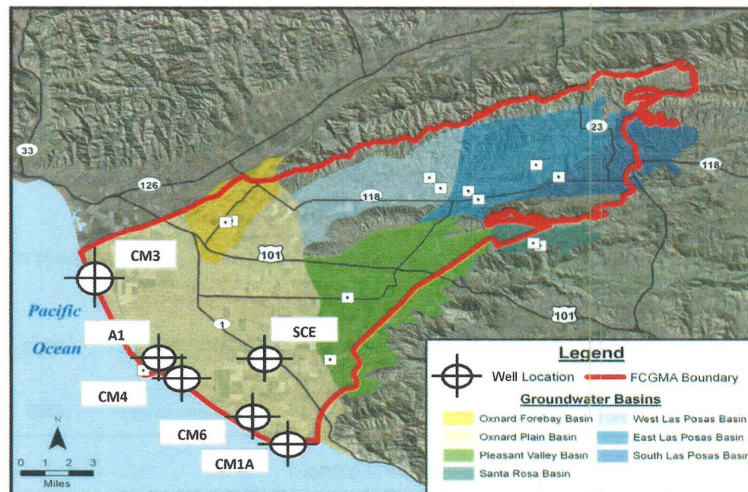
BMOs: Water Levels: Average groundwater elevations sufficient to maintain slight seaward groundwater gradient. Elevation varies with location.

Chloride Concentration: <150 mg/L Chloride (LARWQCB Basin Plan Objective).

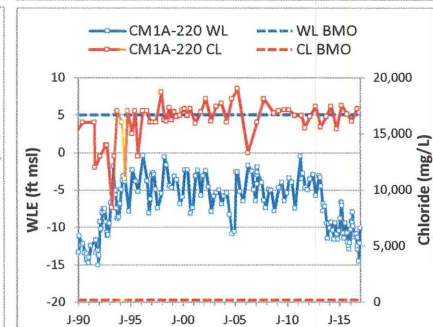
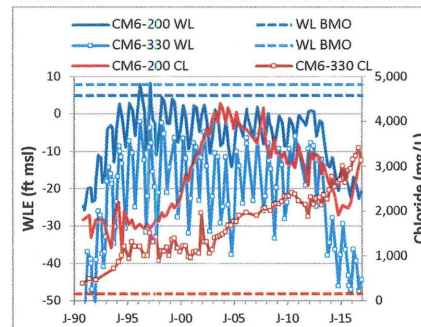
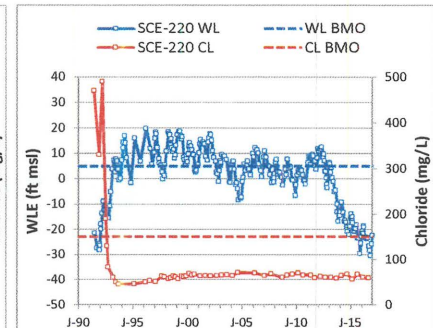
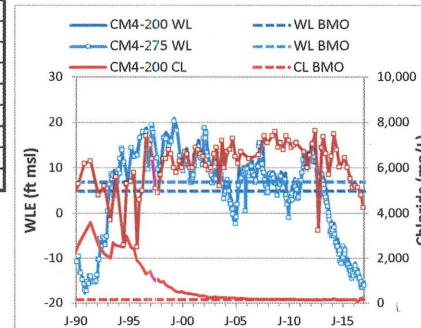
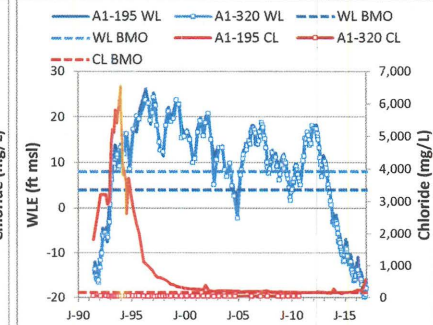
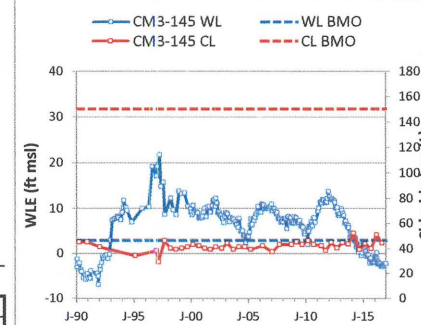
Status Summary: Water level BMOs were not met in 2016. A comparison of water levels indicates that water levels have declined at all nine monitoring locations over the past four years. Chloride BMOs were met at approximately 33% of the monitoring locations. Consistent with past results, chloride BMOs were not met near Port Hueneme (A1-195 and CM4) and Pt. Mugu (CM6 and CM1A).

Status Summary Table

State Well Number (name)	Depth (ft)	Water Level (ft msl)		Chloride (mg/L)		5-yr Trend	
		BMO	2016 Avg	BMO	2016 Avg	Water Level	Chloride
01N23W01C05S (CM3-145)	120-145	3	-2	<150	47	↓	→
01N22W20J08S (A1-195)	155-195	4	-15	<150	317	↓	→
01N22W20J07S (A1-320)	280-320	8	-17	<150	40	↓	→
01N22W28G05S (CM4-200)	180-200	5	-14	<150	172	↓	→
01N22W28G04S (CM4-275)	255-275	8	-14	<150	4,848	↓	→
01N21W19L12S (SCE-220)	200-220	5	-23	<150	60	↓	→
01S22W01H04S (CM6-200)	180-200	5	-20	<150	2,845	↓	→
01S22W01H03S (CM6-330)	310-330	8	-42	<150	3,230	↓	→
01S21W08L04S (CM1A-220)	200-220	5	-11	<150	16,650	↓	→



**FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
OXNARD PLAIN - UPPER AQUIFER SYSTEM
2016**



FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
OXNARD PLAIN - LOWER AQUIFER SYSTEM
2016

Goal: Prevent saline intrusion in the LAS. Sources are seawater inflow via aquifer outcrops in submarine canyons near Port Hueneme and Pt. Mugu and marine sediments.

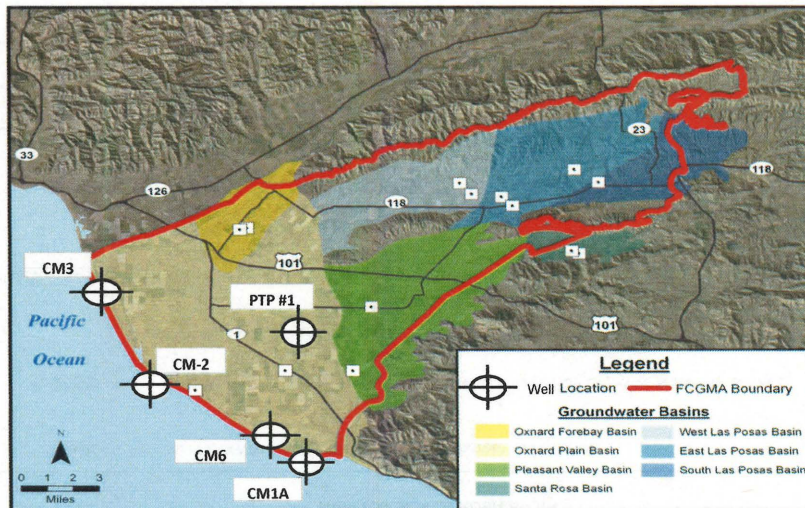
BMOs: Water Levels: Average groundwater elevations sufficient to maintain slight seaward groundwater gradient. Elevation varies with location.

Chloride Concentration: <150 mg/L Chloride (LARWQCB Basin Plan Objective).

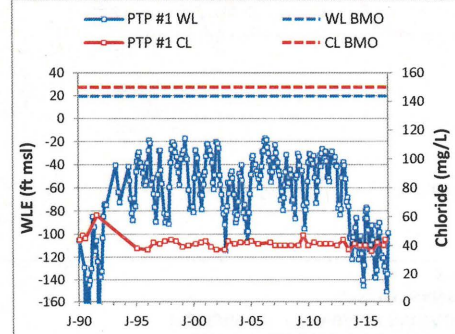
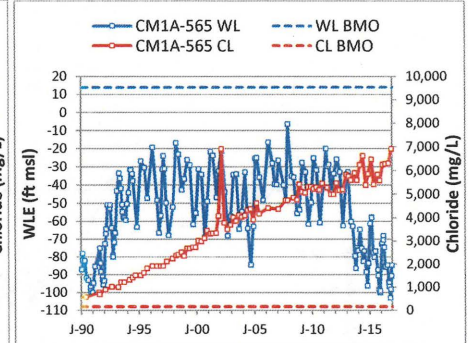
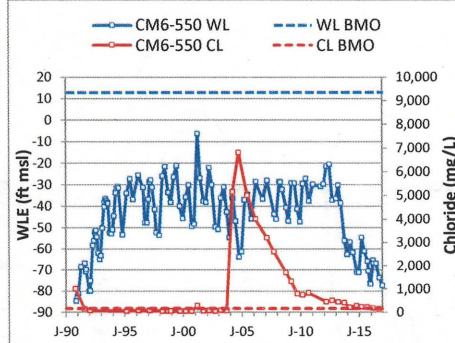
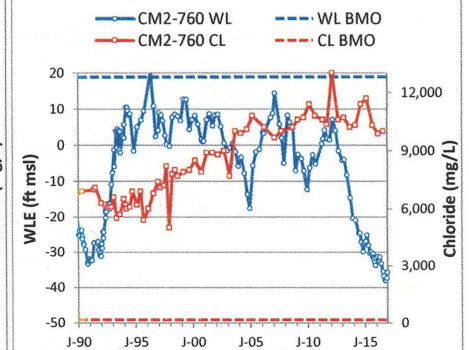
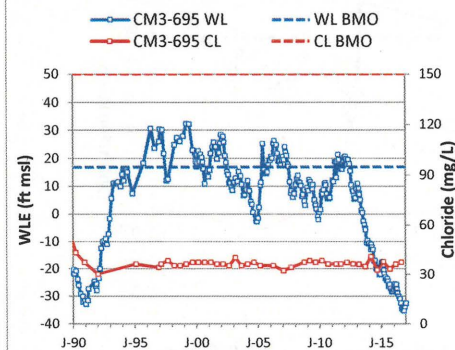
Status Summary: In 2016, water level BMOs were not met. Average water level at inland PTP #1 location was below its respective BMO by 136 feet. As long as water levels remain depressed, the potential for saline intrusion remains. Consistent with the past, chloride BMOs were not met near Port Hueneme (CM2) and Pt. Mugu (CM1A) (areas of documented seawater intrusion).

Status Summary Table

State Well Number (name)	Depth (ft)	Water Level (ft msl)		Chloride (mg/L)		5-yr Trend	
		BMO	2016 Avg	BMO	2016 Avg	Water Level	Chloride
01N23W01C04S (CM3-695)	630-695	17	-30	<150	36	↓	→
01N22W29D02S (CM2-760)	720-760	19	-35	<150	9,940	↓	→
01S22W01H01S (CM6-550)	490-550	13	-71	<150	145	↓	→
01S21W08L03S (CM1A-565)	525-565	14	-85	<150	6,428	↓	→
01N21W07J02S (PTP #1)	590-1280	20	-116	<150	42	↓	→



FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
OXNARD PLAIN - LOWER AQUIFER SYSTEM
2016



FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
ARROYO SANTA ROSA BASIN
2016

Goal: Meet LARWQCB Basin Plan Objectives for nitrate and chloride.

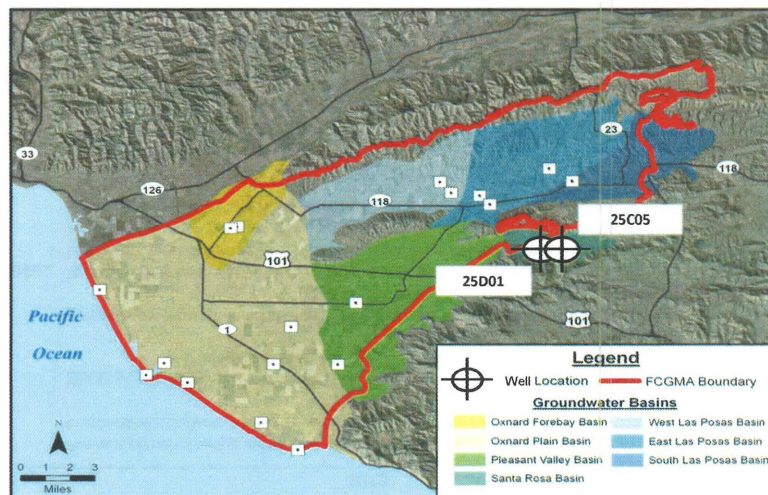
BMOs: Nitrate Concentration: <45 mg/L-NO₃ (LARWQCB Basin Plan Objective & State of CA MCL)

Chloride Concentration: <150 mg/L (LARWQCB Basin Plan Objective)

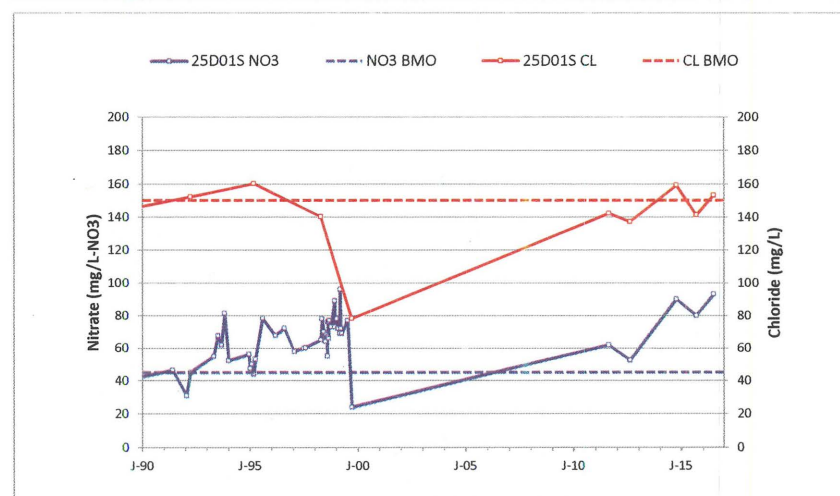
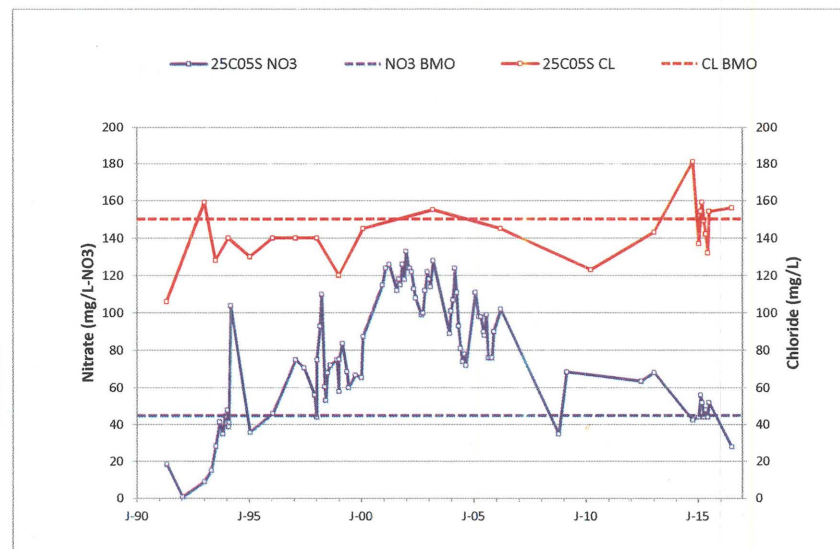
Status Summary: Analytical results indicate that the nitrate concentrations were below the BMO of 45 mg/L by 17 mg/L in the eastern well, 25C05, yet exceeded the BMO by 48 mg/L in the western well, 25D01. The chloride concentrations exceeded the BMO at both locations (156 mg/L and 153 mg/L vs. 150 mg/L). Over the past 5 years: nitrate concentrations have decreased at 25C05 and increased at 25D01; and chloride concentrations have increased at both BMO monitoring locations.

Status Summary Table

State Well Number (name)	Depth (ft)	Nitrate (mg/L)		Chloride (mg/L)		5-yr Trend *	
		BMO	2016 Avg	BMO	2016 Avg	Nitrate	Chloride
02N20W25C05S	160-260	45	28	<150	156	↓	↑
02N20W25D01S	Unknown	45	93	<150	153	↑	↑



FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
ARROYO SANTA ROSA BASIN
2016



**FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
PLEASANT VALLEY BASIN
2016**

Goal: Prevent inland migration of saline groundwater from coastal areas, underlying sources, and fine-grained interbeds.

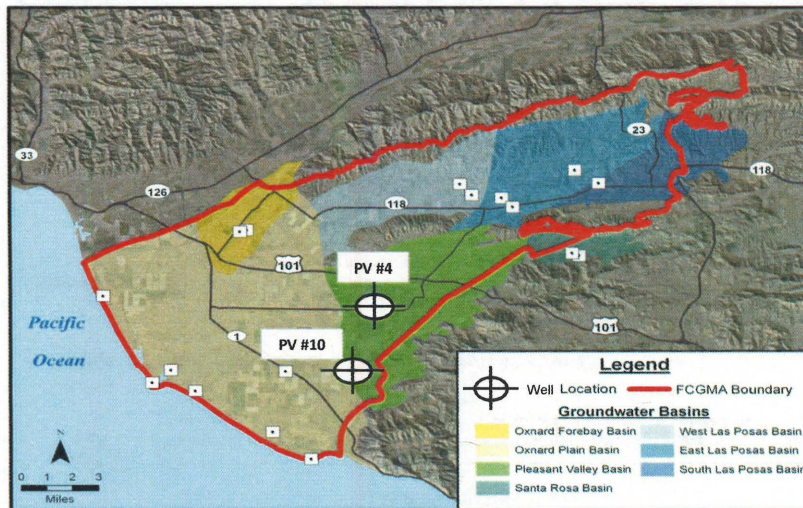
BMOs: Water Levels: Average groundwater elevations sufficient to prevent landward migration from coastal areas and minimize vertical gradients.

Chloride Concentration: <150 mg/L Chloride (LARWQCB Basin Plan Objective).

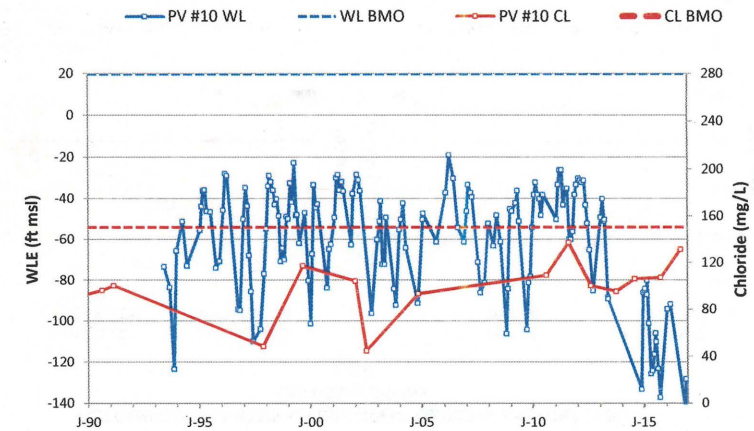
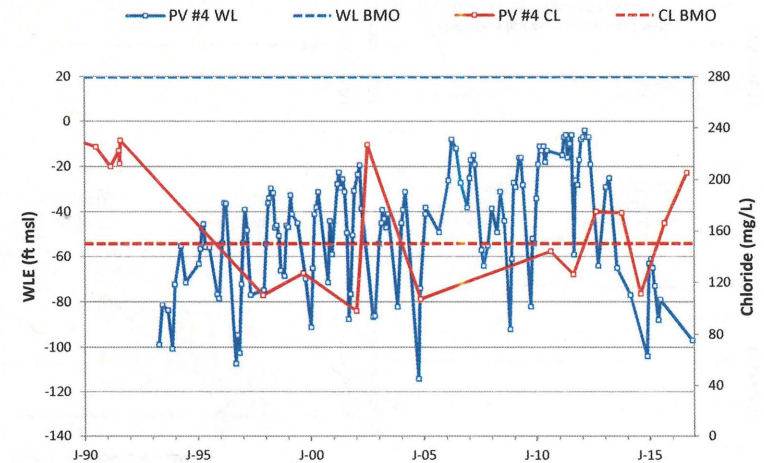
Status Summary: In 2016, water level BMOs were not met at either location. Water levels have fluctuated annually yet the overall waterlevels have declined during the last 4 of the last 5 years, remaining significantly below the BMOs. The chloride BMO was met at monitoring location PV#10, but not met at PV#4. Over the past 5-years, the chloride concentrations at both monitoring locations have increased.

Status Summary Table

State Well Number (name)	Depth (ft)	Water Level (ft msl)		Chloride (mg/L)		5-yr Trend	
		BMO	2016 Avg	BMO	2016 Avg	Water Level	Chloride
01N21W03K01S (PV #4)	403-1433	20	-97	<150	205	↓	↑
01N21W21H02S (PV #10)	503-863	20	-114	<150	131	↓	↑



**FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
PLEASANT VALLEY BASIN
2016**



**FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
LAS POSAS BASINS
2016**

Goal: Maintain chloride and TDS concentrations suitable for irrigation of salt-sensitive crops, particularly avocados and berries. BMOs for SLP are equal to the concentrations observed in surface water in Arroyo Las Posas.

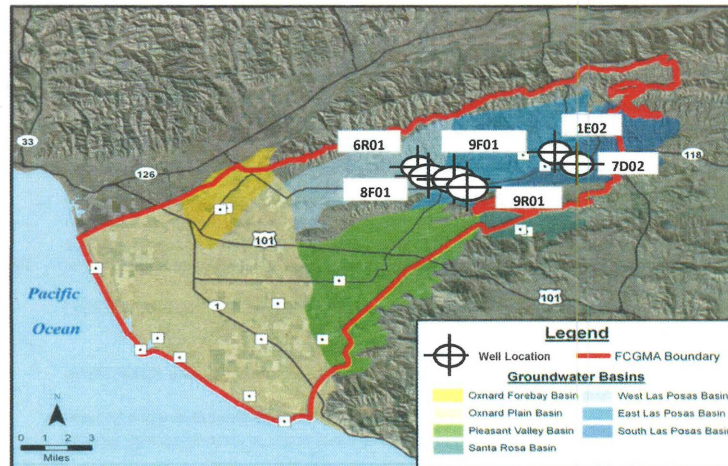
BMOs: Chloride Concentration: WLP & ELP: <100 mg/L; SLP: <160 mg/L.

TDS Concentration: ELP: <500 mg/L; WLP: <600 mg/L; and SLP: <1,500 mg/L.

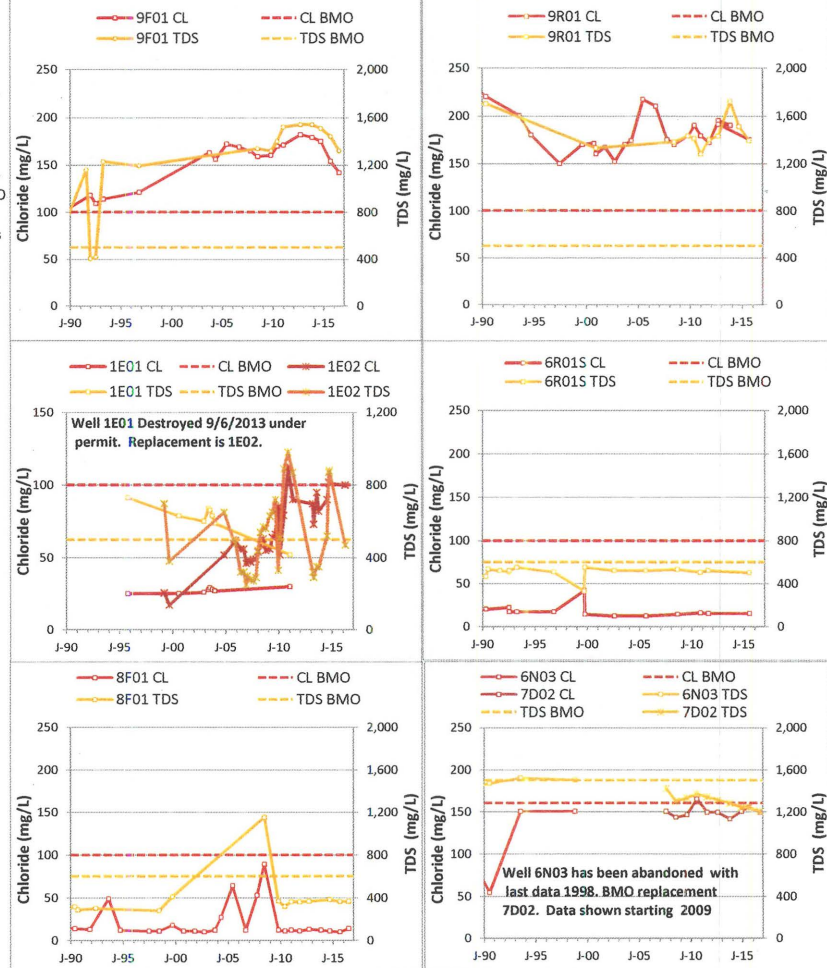
Status Summary: BMO monitoring locations 1E01 and 6N03 were replaced with 1E02 and 7D02 respectively. No data were available for 2016 at BMO monitoring locations 9R01 (ELP), and 6R01 (WLP). In the ELP, the chloride BMO was not met. The TDS BMO was met at one location but not met at the other. In the WLP, the chloride and TDS BMOs were met at the location for which data were available. In the SLP, the chloride BMO was not met while the TDS BMO was met. Generally, the five-year trends in the Las Posas basins for chloride and TDS concentrations were generally remaining within a range of fluctuation or decreasing.

Status Summary Table

State Well Number (name)	Depth (ft)	Chloride (mg/L)		TDS (mg/L)		5-yr Trend	
		BMO	2016 Avg	BMO	2016 Avg	Chloride	TDS
02N20W09F01S (ELP)	906-1,290	100	142	<500	1,320	→	→
02N20W09R01S (ELP)	456-724	<100	No Data	<500	No Data	→	→
02N20W01E02S (ELP) Replacement	680-1,000	100	100	<500	470	→	→
02N20W06R01S (WLP)	1,090-1,512	<100	No Data	<600	No Data	→	→
02N20W08F01S (WLP)	752-1,406	100	14	<600	366	→	→
02N19W07D02S (SLP) Replacement	98-170	<100	149	<1500	1,200	→	→

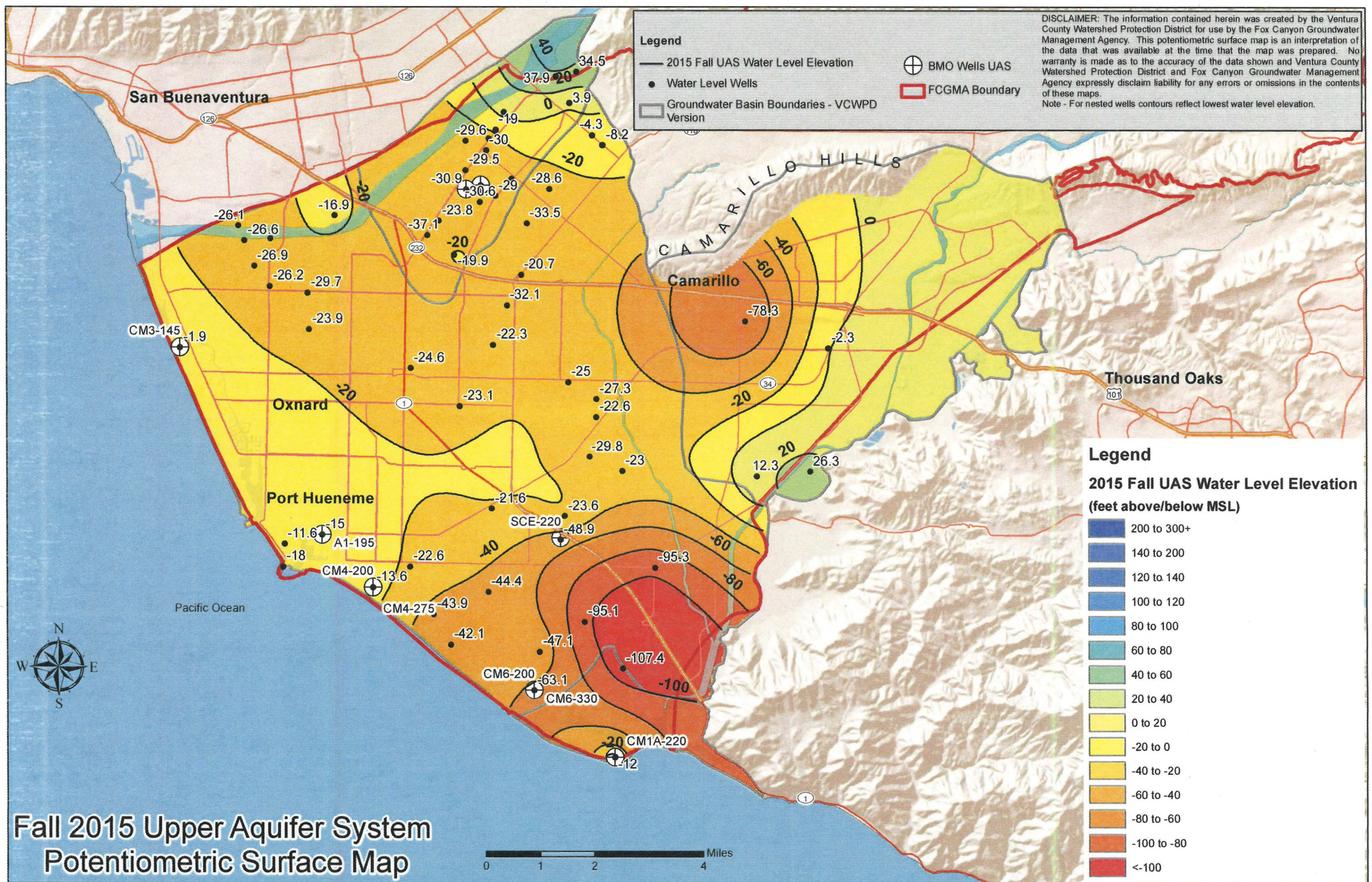


**FOX CANYON GMA BASIN MANAGEMENT OBJECTIVES REPORT CARD
LAS POSAS BASINS
2016**

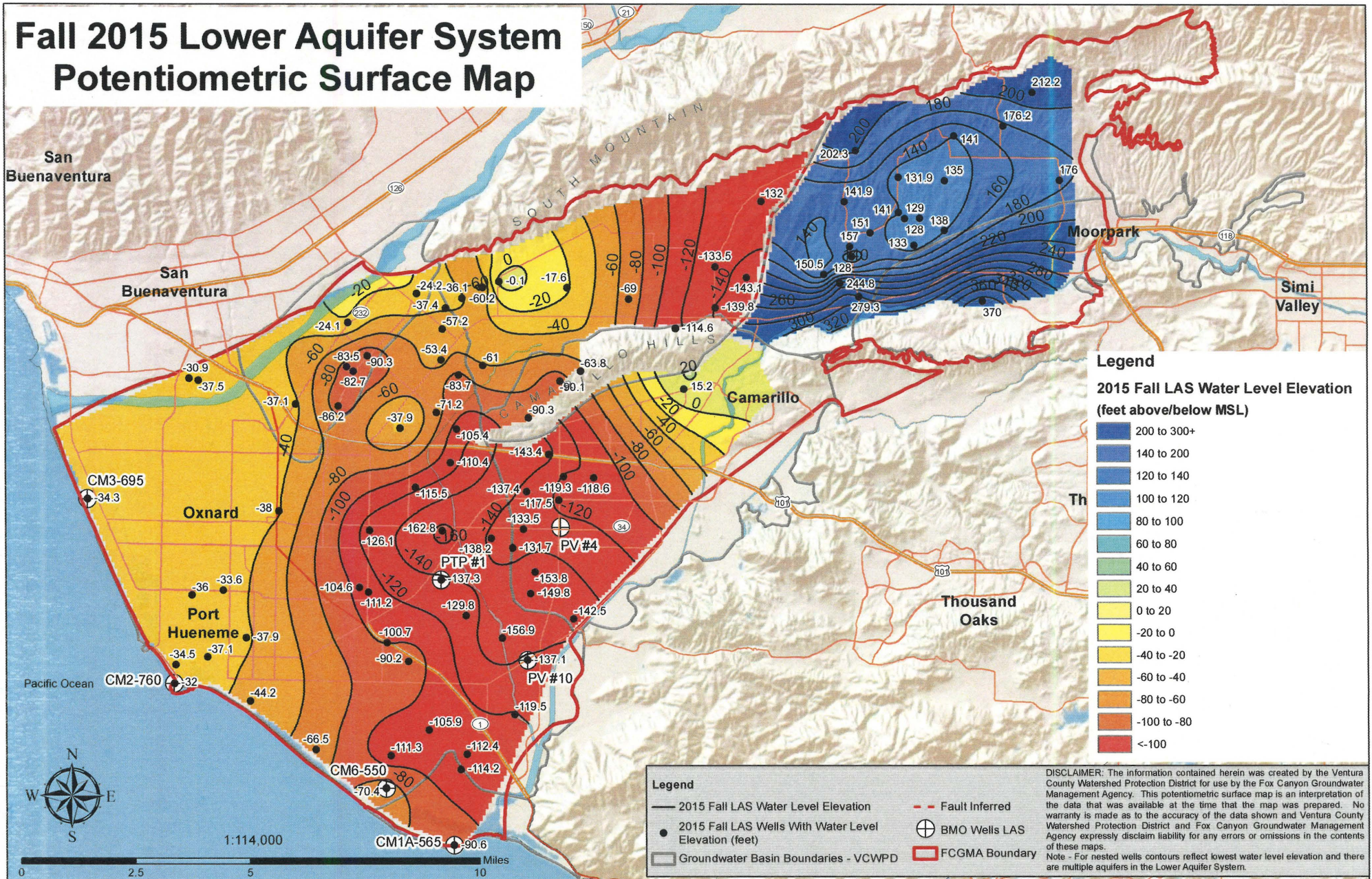


APPENDIX B

- Fall 2015 Upper Aquifer System Potentiometric Surface Maps
- Fall 2015 Lower Aquifer System Potentiometric Surface Maps

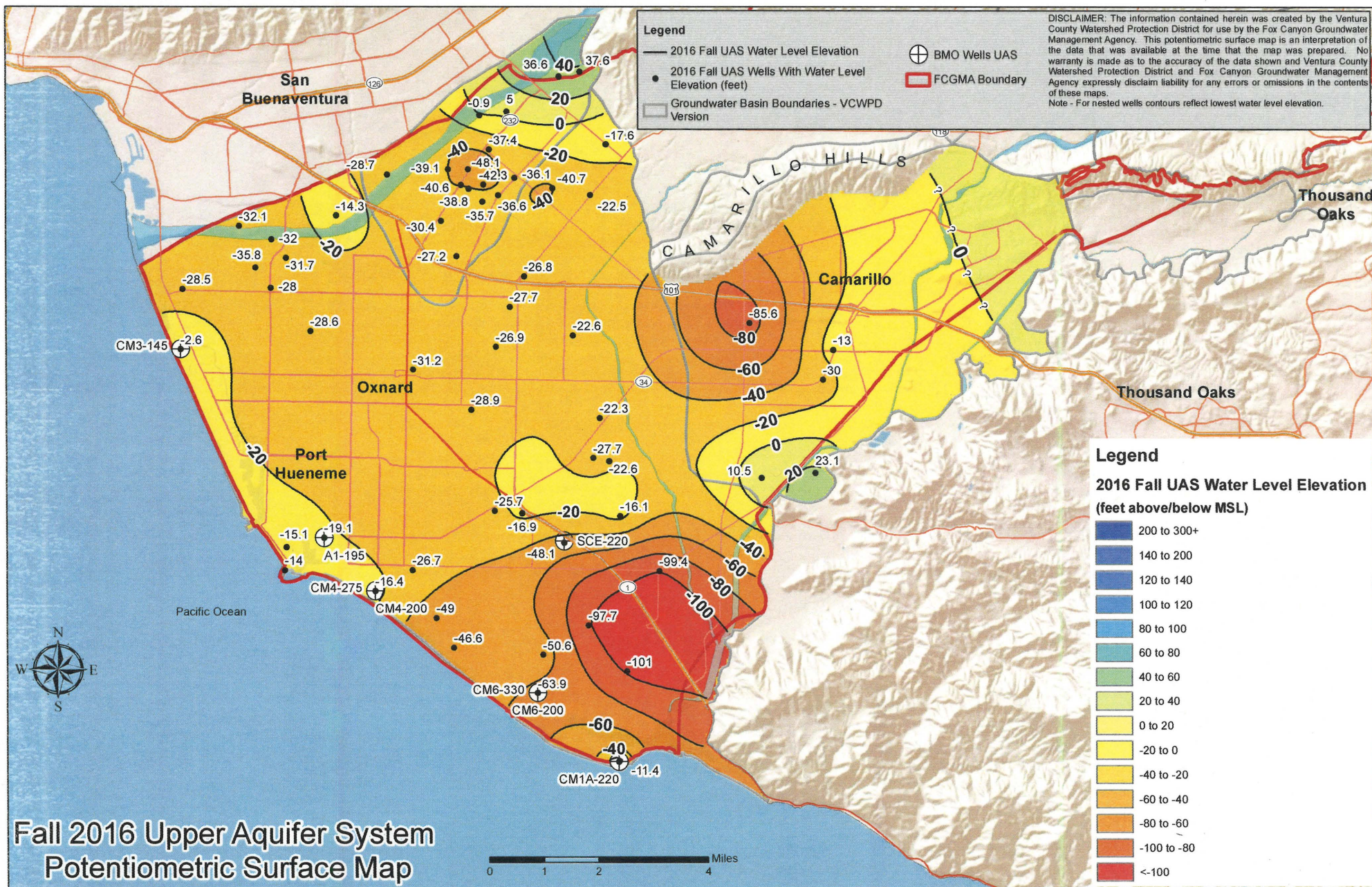


Fall 2015 Lower Aquifer System Potentiometric Surface Map



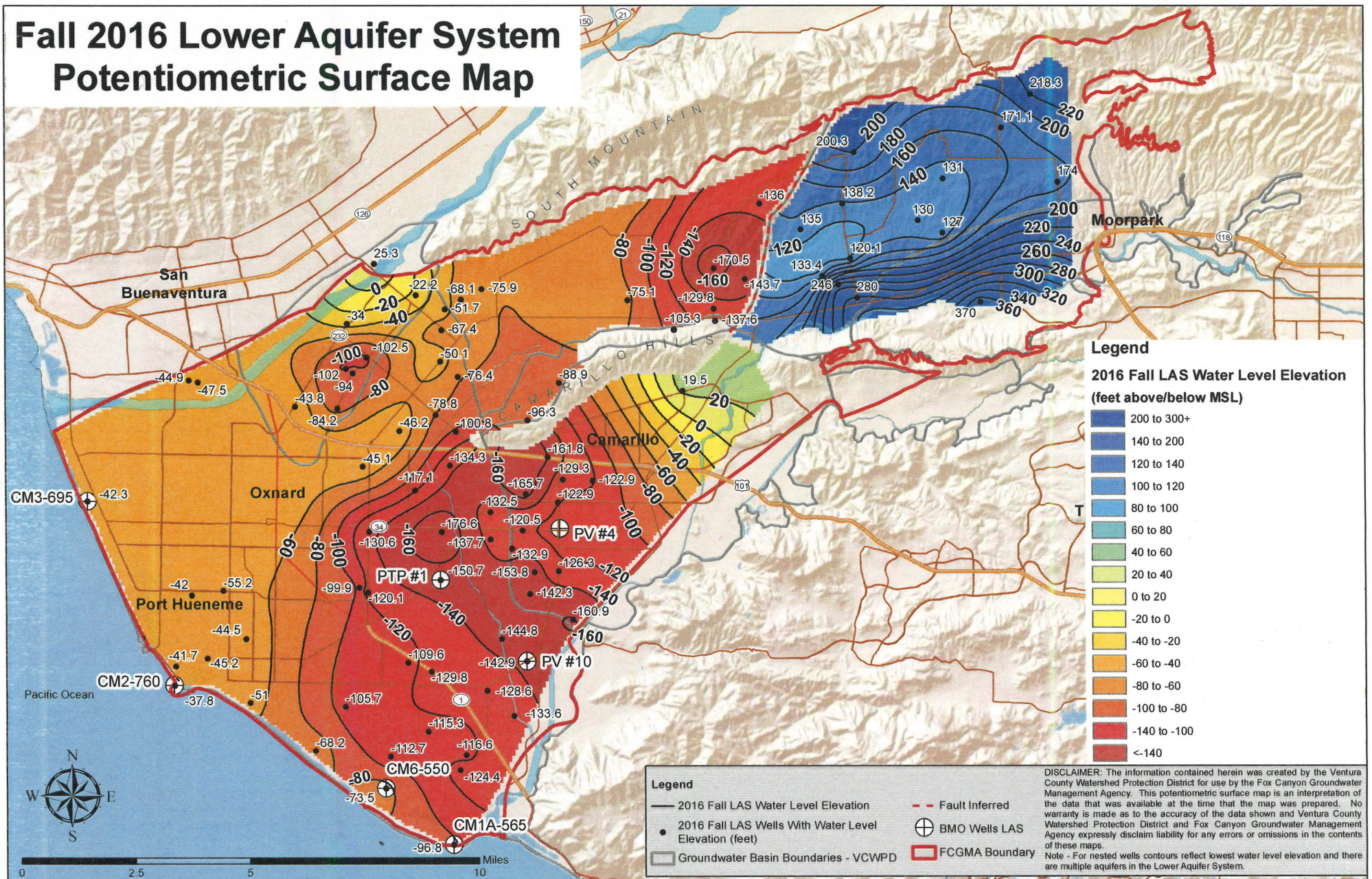
APPENDIX C

- Fall 2016 Upper Aquifer System Potentiometric Surface Maps
- Fall 2016 Lower Aquifer System Potentiometric Surface Maps



Fall 2016 Upper Aquifer System
Potentiometric Surface Map

Fall 2016 Lower Aquifer System Potentiometric Surface Map



APPENDIX D

Resolutions adopted by the Fox Canyon Groundwater Management Agency Board of Directors
during Calendar Year 2016

- Resolution No. 2016-01
- Resolution No. 2016-02
- Resolution No. 2016-03
- Resolution No. 2016-04
- Resolution No. 2016-05

Resolution No. 2016-01
of the
Fox Canyon Groundwater Management Agency

**DELEGATING AUTHORITY TO THE EXECUTIVE OFFICER TO INITIATE AND
COMPROMISE LEGAL ACTION FOR ENFORCEMENT OF THE AGENCY ORDINANCE
CODE**

WHEREAS, the Agency Ordinance Code requires the registration of groundwater extraction facilities, timely reporting of extractions, payment of extraction charges and changes in ownership and operation of extraction facilities, installation and proof of calibration of flowmeters and authorizes imposition of extraction surcharges for extractions in excess of an operator's allocation and late penalties for non-payment; and

WHEREAS, persons in violation of the Agency Ordinance Code may be civilly liable to the Agency for up to \$1,000 per day; and

WHEREAS, the Agency is authorized to file legal action to recover any sums due the Agency and seek injunctive relief prohibiting the operation of a groundwater extraction facility under certain circumstances; and

WHEREAS, the Board may delegate to the Executive Officer the authority to decide when and whether to initiate legal action for recovery of sums due the Agency.

NOW, THEREFORE, IT IS HEREBY PROCLAIMED AND RESOLVED by the Fox Canyon Groundwater Management Agency Board of Directors as follows:

The Executive Officer may, in consultation with Agency Counsel, authorize the filing of an action in superior court for the recovery of extraction charges, extraction surcharges, late penalties and civil penalties, and for appropriate injunctive relief, where the amount due the Agency is less than \$100,000. This delegation of authority includes the ability to compromise any such claim.

On motion by Director Craven, seconded by Director Borchard, the foregoing resolution was passed and adopted on this 27th day of January 2016.

AYES – Maulhardt, Craven, Bennett, West, and Borchard


NOES – None

ABSTAINS – None

ABSENT – None

By: 
Lynn Maulhardt, Chair, Board of Directors
Fox Canyon Groundwater Management Agency

ATTEST: I hereby certify that the above is a true and correct copy of Resolution No. 2016-01.

By: 
Jessica Kam, Clerk of the Board

Resolution No. 2016-02
of the
Fox Canyon Groundwater Management Agency

**INITIATING A REQUEST TO THE CALIFORNIA DEPARTMENT OF WATER
RESOURCES TO MODIFY THE BULLETIN 118 GROUNDWATER BASIN
BOUNDARIES FOR THE LAS POSAS BASIN, PLEASANT VALLEY BASIN
AND OXNARD SUBBASIN**

WHEREAS, Fox Canyon Groundwater Management Agency (Agency) was formed for the purpose of preserving the groundwater resources within its statutory boundaries and has such powers granted by its enabling legislation and such other powers as are reasonably implied and necessary and proper to carry out its objectives and purposes; and

WHEREAS, the Sustainable Groundwater Management Act (SGMA) requires that groundwater basins within California be sustainably managed; and

WHEREAS, the Agency's statutory boundaries overlie the following groundwater basins identified and defined in the Department of Water Resources (DWR) report entitled "California's Groundwater: Bulletin 118" updated in 2003 (Bulletin 118): the Arroyo Santa Rosa Valley Basin, the Las Posas Valley Basin, the Oxnard Subbasin of the Santa Clara River Valley Basin, and the Pleasant Valley Basin; and

WHEREAS, SGMA provides that unless other basin boundaries are established, a basin's boundaries shall be as identified in Bulletin 118; and

WHEREAS, SGMA allows a local agency to request that DWR modify the boundaries of a basin; and

WHEREAS, the Agency is aware of scientific evidence supporting a modification of the shared boundary between the Las Posas Valley Basin (DWR Basin No. 4-08) and the Pleasant Valley Basin (DWR Basin No. 4-06), and

WHEREAS, a jurisdictional modification of the shared boundary between the Las Posas Valley Basin (DWR Basin No. 4-08) and the Oxnard Subbasin (DWR Subbasin No. 4-4.02) as shown in Exhibits A and B will promote sustainable groundwater management in each basin; and

WHEREAS, the development and implementation of the Groundwater Sustainability Plan for each of the basins described in this Resolution will be coordinated so that each Plan does not adversely affect the ability of an adjacent basin to implement their Plan or impede achievement of sustainability goals in an adjacent basin.

WHEREAS, a request that DWR revise the boundaries of a basin is exempt from the California Environmental Quality Act (CEQA) pursuant to Water Code § 10728.6, and CEQA Guidelines §§ 15061(b)(3), 15307 and 15308; and

NOW, THEREFORE, BE IT RESOLVED that the FCGMA Board of Directors finds, determines and declares that:

1. The western portion of the southern boundary of the Las Posas Valley Basin (Bulletin 118, DWR Basin No. 4-08) shared with the Pleasant Valley Basin (DWR Basin No. 4-06), should be modified to align with the Springville fault as mapped by the United States Geological Survey, as shown in Exhibits A and B;
2. The western boundary of the Las Posas Valley Basin (Bulletin 118, DWR Basin No. 4-08) shared with the Oxnard Basin (DWR Subbasin No. 4-4.02), should be modified to extend northward from the western end of the Springville fault to generally follow the topographic change in slope associated with the Wright Road fault while also respecting the integrity of property lines and a property's groundwater source until it connects with the northern boundary of the Las Posas Valley Basin as shown in Exhibits A and B;
3. The Executive Officer is authorized to submit on behalf of the Agency a request for DWR to modify basin boundaries as shown in the attached maps (Exhibits A and B) in accordance with this Resolution; and
4. The Executive Officer is authorized to file a Notice of Exemption from CEQA.

On motion by Director Craven, and seconded by Director Bennett, the foregoing resolution was passed and adopted on March 23, 2016 by the following vote.

AYES - Chair Maulhardt, Craven, Bennett, West, and Borchardt

NOES - 0

ABSTAINS - 0

ABSENT - 0

By: 
Lynn E. Maulhardt, Chair, Board of Directors
Fox Canyon Groundwater Management Agency

ATTEST: I hereby certify that the above is a true and correct copy of Resolution No. 2016-02.

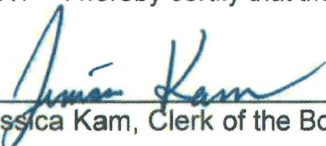
By: 
Jessica Kam, Clerk of the Board

Exhibit A - Map of Proposed Jurisdictional and Scientific Las Posas Valley Basin Boundary Modifications, with Topographic Base

Exhibit B - Map of Proposed Jurisdictional and Scientific Las Posas Valley Basin Boundary Modifications, with Aerial Photo Base

Resolution No. 2016-03
of the
Fox Canyon Groundwater Management Agency

**A RESOLUTION INCREASING FEE ON GROUNDWATER
EXTRACTIONS TO FUND THE COSTS OF A GROUNDWATER
SUSTAINABILITY PROGRAM**

WHEREAS, the Fox Canyon Groundwater Management Agency (the Agency) is a groundwater sustainability agency under the Sustainable Groundwater Management Act (the Act) for all of the basins within the Agency's statutory boundaries; and

WHEREAS, the Act authorizes a groundwater sustainability agency to impose a fee on groundwater extractions to fund the costs of a groundwater sustainability program; and

WHEREAS, the Agency currently collects a groundwater extraction charge of \$6.00 per acre-foot pursuant to authority granted by the Agency's enabling legislation, revenues from which fund groundwater management programs throughout the Agency; and

WHEREAS, the Agency Board of Directors approved a Fiscal Year 2016-17 Work Plan and Budget, of which are attached to this Resolution, which projects annual revenue from these charges of \$750,000 based on the 10 year average amount of groundwater pumped within the Agency of approximately 125,000 acre-feet per year; and

WHEREAS, the Agency's Fiscal Year 2016-17 Budget projects total annual operating expenditures of \$2,528,813, which amount includes costs of \$870,000 associated with development of a groundwater sustainability plan and other work related to the Agency's role as a groundwater sustainability agency; and

WHEREAS, the Agency anticipates incurring ongoing additional costs related to the development and implementation of its groundwater sustainability plan, including periodic evaluation of the plan, assessment of changing conditions that may warrant modification of the plan or the Agency's sustainable groundwater management objectives, additional enforcement activity, compliance assistance, public outreach, coordination with the Department of Water Resources and overall program administration; and

WHEREAS, the revenue generated from the Agency's current pump charge is not adequate to allow the Agency to carry out its responsibilities as a groundwater sustainability agency or fully exercise the powers and authorities granted under the Act; and

WHEREAS, a sustainability fee of \$4.00 per acre-foot on groundwater extractions was approved on September 23, 2015 and generates additional annual revenue of \$500,000 based on a 10-year average amount of pumping; and

WHEREAS, a sustainability fee increase of \$2.50 per acre-foot on groundwater extractions will generate additional annual revenue of \$312,500 based on 10-year average pumping, to partially fund the costs of the Agency's groundwater sustainability program; and

WHEREAS, the Agency's groundwater sustainability program will provide benefits to all water users within the territory of the Agency; and

WHEREAS, in order to adequately fund investigations and other activities necessary for preparation of the Agency's groundwater sustainability plan and allow for accurate calculation of groundwater charges, it is necessary to make this Resolution effective July 1, 2016, for Municipal and Industrial Operators, and August 1, 2016, for Agricultural Operators; and

WHEREAS, the data upon which the proposed fee is based was presented at a regular meeting of the Agency Board of Directors on June 22, 2016, and has been made available to the public for at least 10 days prior to adoption of this Resolution; and

WHEREAS, prior to adoption of this Resolution, the Agency held the public meeting required under Section 10730, subdivision (b), of the Act, notice of which was given as required by law.

NOW, THEREFORE, IT IS HEREBY PROCLAIMED AND ORDERED that effective July 1, 2016, for Municipal and Industrial Operators, and August 1, 2016, for Agricultural Operators, a groundwater sustainability fee of six dollars and fifty cents (\$6.50) per acre-foot shall be imposed on groundwater extractions from facilities within the boundaries of the Fox Canyon Groundwater Management Agency. This fee shall not be imposed on any person who extracts, for domestic purposes, two (2) acre-feet per year or less.

On motion by Borchard, and seconded by Bennett, the foregoing resolution was passed and adopted on July 20, 2016 by the following vote.

AYES – Chair Craven, Director Eranio, Director Bennett, Director West, Director Borchard

NOES – \emptyset

ABSTAINS – \emptyset

ABSENT – \emptyset

By: Charlotte Craven
Charlotte Craven, Vice Chair, Board of Directors
Fox Canyon Groundwater Management Agency

ATTEST: I hereby certify that the above is a true and correct copy of Resolution No. 2016-03.

By: Erin Rodgers
Erin Rodgers, Clerk of the Board

Exhibit No. 1 – Adopted FCGMA Annual Work Plan Fiscal Year 2016-17

Exhibit No. 2 – Adopted Budget Fiscal Year 2016-17

Resolution 2016-04
of the
Fox Canyon Groundwater Management Agency

CONCERNING
ADJUSTMENTS TO EXTRACTION ALLOCATION FOR THE CITY OF CAMARILLO
REGARDING SPECIAL USE OF MOUNDED, DEGRADED WATER IN THE NORTH EASTERN
PORTION OF THE PLEASANT VALLEY BASIN

WHEREAS, the Fox Canyon Groundwater Management Agency ("Agency") was established to preserve the integrity of the quality and quantity of groundwater resources within its boundaries and manage the groundwater resources for the common benefit of the public and all agricultural, municipal and industrial users; and

WHEREAS, the Agency exercises its regulatory authority through ordinances, resolutions, and implementation of its adopted groundwater management plan; and

WHEREAS, the Sustainability Groundwater Management Act (SGMA) requires groundwater basins within California be sustainably managed; and

WHEREAS, the Agency is a groundwater sustainability agency (GSA) under SGMA for the portion of all groundwater basins within the Agency's boundary; and

WHEREAS, the current groundwater management plan ("Management Plan") was updated and adopted in May 2007. The Management Plan provides an extensive evaluation of the varying conditions in aquifers within the Agency and an assessment of the water management strategies that various entities propose for implementation within the Agency; and

WHEREAS, the Management Plan finds that the South and East Las Posas Basins and northern Pleasant Valley Basin are subject to continuing groundwater quality degradation and rising groundwater levels as a result of the large volume of poor quality water originating outside Agency boundaries and flowing into and recharging these basins; and

WHEREAS, the Management Plan identifies the development of a brackish groundwater desalination project as a strategy for improving groundwater quality in the Pleasant Valley Basin; and

WHEREAS, the Management Plan also finds that the area south of Highway 101 in the Pleasant Valley Basin is subject to significant water level decline and degraded water quality because of continued over-pumping and saline intrusion from surrounding sediments; and

WHEREAS, the City of Camarillo ("City") proposes to construct a groundwater desalter in the north eastern portion of the Pleasant Valley Basin in an area of significant groundwater quality degradation ("Desalter Project") as a groundwater remediation project; and

WHEREAS, the Desalter Project will have a 25-year life expectancy, after which it is anticipated that groundwater levels in the Pleasant Valley groundwater basin will be at conditions prior to the brackish water entering the basin, and will be allowed to recover to sustainable conditions; and

WHEREAS, the City on June 10, 2015, adopted a Final Environmental Impact Report (FEIR) for the Desalter Project; and

WHEREAS, the City on June 20, 2016, adopted a Supplemental Environmental Impact Report (SEIR), for the Desalter Project, and

WHEREAS, pursuant to the Agency Ordinance Code, the Agency Board of Directors has the authority to approve adjustment to the City's groundwater pumping allocation to support the operation of the Desalter Project and may impose conditions on the approval as may be appropriate to ensure that there is no net detriment to the aquifer systems; and

WHEREAS, the Agency has considered the environmental effects of the Desalter Project as shown in the FEIR (June 2015) and SEIR (June 2016) and made the findings required by California Environmental Quality Act Guidelines section 15091.

NOW, THEREFORE, IT IS HEREBY PROCLAIMED AND RESOLVED AS FOLLOWS:

The Agency authorizes the Desalter Project as proposed by the City subject to the conditions described below.

1. The City is authorized to extract a maximum of 4,500 acre-feet per year (AFY) for operation of the Desalter Project, without incurring surcharges or penalties for exceeding its groundwater allocation.
2. The City will report all groundwater extractions to the Agency on semi-annual extraction reports, along with a summary of the volume of groundwater extracted by well and water classification (as project-related or other).
3. Groundwater extracted and treated by the Desalter Project shall not be exported outside of the Agency either directly or indirectly, and shall be provided exclusively to City water customers within its service area which is located within the Pleasant Valley Basin.
4. The City has provided a Monitoring and Contingency Plan (included as Attachment No. 1) for the proposed groundwater pumping allowed pursuant to this Resolution. The Monitoring and Contingency Plan shall be revised by the City in accordance with Sections 5 of this Resolution, and approved by the Agency no later than six (6) months from the date of adoption of this Resolution.
5. The Monitoring and Contingency Plan shall be revised (Revised Plan) to add the following:
 - a. The State Well Numbers for all wells that are included in the groundwater level and water quality monitoring programs along with depth of well, screened interval(s) and name of aquifer being monitored.
 - b. Surface water monitoring and measuring station(s) locations and station number (or identification name), for water leaving the East Las Posas Basin and entering the Pleasant Valley Basin.
 - c. The quantity of subsurface inflow entering the Pleasant Valley Basin.
 - d. A description of groundwater monitoring program consisting of water level and water quality monitoring that is designed to detect ongoing conditions and delineate the vertical and lateral extent of the brackish groundwater plume within the Pleasant Valley Basin. Water level and quality data shall be collected on an ongoing basis for use to assess basin conditions and provide for the ongoing use for any future regional groundwater model in evaluating basin conditions.

- e. Identification of the lateral monitoring well, to the east of the City's extraction well field in the vicinity of the Arroyo Las Posas, to be included in the monitoring program.
6. Prior to operation of the Desalter Project, the City will drill and complete all monitoring wells associated with this project, implement the Revised Plan, and submit baseline monitoring data to the Agency.
7. Operational Triggers
 - a. Water Level: The City shall reduce Desalter Project extractions when static water levels reach the depth in feet below sea level at well State Well No. 02N20W19M06S, or 02N20W19E01S as indicated in the Table below.

Measured Static Groundwater Elevation (ft msl) at 19E01 or 19M06	Pumping Reduction (%)
-126	10
-140	20
-150	30
-153	40
-157	50
-160	75
-168	100

- b. Water Quality: As more fully discussed in the Monitoring and Contingency Plan, if groundwater quality monitoring discloses extended pumping of non-brackish groundwater then the City's operations of the Desalter would no longer be eligible for the pumping authorization granted by this Resolution.

For purposes of defining non-brackish groundwater manganese is considered the most reliable constituent to use as an index of fresh and brackish water, at a threshold of 50 ug/L. Using this threshold, pumped groundwater with manganese concentrations above 50 ug/L¹ would be considered brackish water and its removal beneficial to the aquifers. Concentrations below that level would be considered fresh water pumping and debited against the City's extraction allocation. Water quality triggers for the project as groundwater quality improves will be as follows:

¹ Combined monthly weighted average based on analytical results for groundwater samples collected from project extraction facilities during subject month and quantity of groundwater extracted from each well sampled during subject month.

Contingency	Project well pumping brackish water has Manganese drop below 50 ug/L¹	Project well pumping fresh water has Manganese increase to above 50 ug/L¹
Action	Begin one year verification period	Begin one year verification period
Considered Fresh Water	Monthly testing remains 50 ug/L for Manganese during verification period	Any monthly test is below 50 ug/L Manganese
Add'l Evaluation	Evaluate whether regional conditions contributed to drop	Evaluate whether regional conditions contributed to increase
Considered Brackish Water	Any monthly test exceeds 50 ug/L Manganese	Monthly tests remain above 50 ug/L Manganese for verification period
Termination of Action	One year of pumping below 50 ug/L Manganese (reverts to fresh water) or any monthly test greater than 50 ug/L Manganese (remains brackish water)	One year of pumping above 50 ug/L Manganese (reverts to brackish water) or any test less than 50 ug/L Manganese (remains fresh water)
FCGMA Allocation	Project specific allocation	Prorated use of City's allocation*
Sunset Provision	If well pumps fresh water for 24 consecutive months, well permanently reverts to fresh water status	

c. Subsidence: In order to minimize subsidence caused by the project, the City will monitor for impacts related to subsidence in the following manner.

- (1) The subsidence monitoring will occur in the project area by survey (traditional survey or LIDAR) every five (5) years to detect possible changes in elevation related to subsidence.
- (2) Subsidence will be measured at the project extraction well sites.
- (3) If the subsidence is five inches or more in elevation (as part of routine five year monitoring program) from that detected prior to project operation, then the City will implement the following actions:
 - (a) Annual survey monitoring; and
 - (b) Reduce pumping by 10%
- (4) The procedures during the annual survey monitoring will be as follows;
 - (a) For each year that the subsidence is greater than one inch the City will reduce pumping by 5%.
 - (b) If subsidence is less than one inch per year for two consecutive years, then the City may increase pumping up to the maximum pumping level as originally authorized by this Resolution.

d. Seawater Intrusion Gradient Reversal: The following contingency measure is designed to maintain the seaward groundwater gradient between the project and the pumping depression located along the southern and western edge of the basin. To calculate the gradient, two sets of nested monitoring wells were selected – one an existing USGS monitoring well (02N21W34G02S through 05S) and the other a new nested monitoring well to be constructed as part of this project (project Monitoring Well at location B, near City Hall, with one nested well screened in the Hueneme Aquifer and the other nested well screened in the Fox Canyon Aquifer). The aquifer zones being monitored at each nested monitoring

well site are to be in hydraulic communication. The gradient between the two nested monitoring well sites in fall 2013² was southwestward with a hydraulic head difference of 85 feet over a distance of approximately one (1) mile. When static (non-pumping) groundwater elevations decrease to 15 feet or less between the two wells (elevation in Monitoring Well B minus elevation in 34G equivalent nested monitoring well), automatic cutbacks in project pumping would be implemented and the FCGMA would be informed of the trigger exceedance. The mitigation would be that project pumping would be reduced by 10%. If this action does not mitigate the problem, then pumping would be reduced an additional percentage based on the following table. This step-wise reduction would continue as shown in the table below until either the difference in groundwater elevations stabilizes or project production has been eliminated.

Groundwater Elevation Difference Between Monitoring Wells B (ft) and 34G02 through 05 (ft) (Elev B minus Elev of correlative unit in monitoring wells 34G02 through 05)	Percent Pumping Reduction (%)
15	10%
10	20%
7	30%
4	40%
2	50%
0 or negative	100%

The opposite would occur if the difference in groundwater elevations between the two wells increases. For each step-wise increase in the difference, a corresponding increase in project pumping would occur. When the difference in groundwater elevations returns to above 15 feet, full project production would resume.

8. Annual Report: An Annual Report shall be prepared summarizing data collected each calendar year and submitted to FCGMA and interested parties by April 1. The Annual Report shall include the following information:
 - a. A summary of project monthly groundwater extraction by well, treatment, and disposal (brineline) volumes, as well as volume of treated water delivered to City of Camarillo customers.

² Per report prepared by Bachman in May 2016, titled "Northern Pleasant Valley Desalter Groundwater Analysis and Modeling".

- b. Groundwater elevation³ and water quality data⁴ obtained from extraction wells, monitoring wells, wells near project area, the regional monitoring well, as well as analyses and conclusions formed from the analyses. A discussion regarding the health of the basin and region, and regional water quality and water quality trends will be included, and recommendations for future operations and monitoring.
- c. Vertical and lateral delineation of the brackish water plume as well as a summary of observed changes in the location and elevation of the brackish water plume, using information obtained from the extraction wells and monitoring wells.
- d. Summary of basin recharge from the East Las Posas Basin including results and supporting documentation for surface water and baseflow monitoring programs, along with calculated surface flow and groundwater inflow from the East Las Posas Basin.
- e. Subsidence monitoring including results of any regional land survey program.
- f. Regional maps of groundwater elevation contours to document any effects of the project on the wider Pleasant Valley Basin.
- g. Summary of any contingency measures implemented and observed effect on groundwater elevations.

In addition to the annual reporting, the FCGMA shall be notified within one month of any unexpected or critical results from project monitoring. Examples of such results include rapidly dropping water levels, approach of target groundwater elevations, and unexpected water quality analyses.

- 9. For the purpose of determining net impacts to the basin as a result of Desalter Project operation, the Agency and City shall meet during the first week of May annually to review the contents of the Annual Report and its conclusion.
- 10. The City shall implement conservation and best management practices consistent with those required of member agencies of the Metropolitan Water District of Southern California and the California Urban Water Conservation Council, and its Urban Water Management Plan.
- 11. All reports shall be signed by California Licensed Professional Geologist(s) or Engineer(s).
- 12. All water quality testing shall be performed by an analytical laboratory certified by the State of California to perform such tests.
- 13. [This paragraph is effective through at least September 28, 2018] The Agency Board may reconsider and modify this Resolution and/or the Revised Plan only under the following circumstances:
 - a. to make this Resolution consistent with provisions of a Groundwater Sustainability Plan or update thereof that has been approved by the Agency Board; or

³ Including monitoring point, date measured, depth to water level and elevation of reference point, and method used to measure water level.

⁴ Including State Well Number of well sampled, date of sample collection, date of sample analyses, Lab that conducted analyses, analytical test results presented in table format with laboratory test reports appended.

- b. upon a finding by the Agency Board after a public hearing that the implementation of this Resolution is having a detrimental impact on water resources in the Pleasant Valley Basin.

The Agency shall provide a minimum of six months advance notice before implementing any material modification to this Resolution or any change resulting in the permanent reduction in the permitted rate, or cessation, of brackish groundwater pumping in the operation of the Desalter Project. For purposes of this Section 13, a "material modification" is defined to mean a change in Section 1 of this Resolution to decrease the maximum allowed pumping for operation of the Desalter Project or a change in Section 14 to reduce the term of this Resolution below twenty-five (25) years.

If a Groundwater Sustainability Plan ("GSP") has not been adopted by the Agency by September 28, 2018, then the provisions of this paragraph, as set forth above, shall become null and void and shall be replaced by the following:

The Agency Board may reconsider and modify this Resolution and/or the Revised Plan only under one or more of the following circumstances:

- a. When a material modification is required due to a change in state and/or federal law. The Agency shall provide a minimum of 45 days advance written notice to the City, or such other notice period as may be required by law, whichever is less, before approving any material modification to this Resolution based upon a change in state and or federal law, or
- b. Upon a finding by the Agency Board after a public hearing ("Public Hearing") that (i) the implementation of this Resolution is having a detrimental impact on water resources in the Pleasant Valley Basin ("Detrimental Impact") absent a reasonable mitigation measure as provided in this Section 13, or (ii) that the Agency is unable to sustainably manage the Pleasant Valley Basin without modifying this Resolution.
 - (1) For purposes of this provision: (a) a Detrimental Impact means a significant degradation of groundwater resources substantially caused by the Desalter Project and is an unforeseen impact that is not addressed in the Revised Plan, and (b) "unable to sustainably manage" means that continued operation of the Desalter Project will prevent the Agency from achieving the sustainability goal within 20 years of the implementation of a groundwater sustainability plan.
 - (2) The Agency shall provide a minimum of six months advance written notice ("Notice") to the City before approving any material modification to this Resolution due to a Detrimental Impact. Any material modification based on groundwater sustainability shall comply with the notice and consultation process specified in California Water Code section 10728.4.
 - (3) If the City does not present to the Agency a reasonable mitigation measure to adequately address the Detrimental Impact identified in the Notice within 120 days of receipt by the City of the Notice, then the Agency may approve a material modification of this Resolution at the Public Hearing to mitigate the identified Detrimental Impact.
 - (4) At the Public Hearing, the City will have the reasonable opportunity to present evidence in support of the mitigation measure proposed by the City to address the Detrimental Impact.

For purposes of this Section 13, a "material modification" is defined to mean either a change in this Resolution to temporarily or permanently decrease the maximum allowed pumping for operation of the Desalter Project or a change to reduce the term of this Resolution below twenty-five (25) years or any change in the operational triggers set forth in the Revised Plan.

14. This Resolution and authorization will terminate twenty five (25) years from the 1st day of operation of the Desalter Project. Prior to the termination date, and upon written application by the City, the Agency may extend the term of this Resolution in five (5) year increments, provided that all conditions of this Resolution have been complied with and the operation of the Desalter Project remains consistent with the provisions of a Groundwater Sustainability Plan and any update thereof that has been approved by the Agency Board.

On motion by Director Bennett, seconded by Director West, the foregoing resolution was passed and adopted on the 28th day of September 2016.

By: 
Lynn Maulhardt, Chair, Board of Directors
Fox Canyon Groundwater Management Agency

ATTEST: I hereby certify that the above is a true and correct copy of Resolution No. 2016-04.

By: 
Tammy Butterworth, Deputy Clerk of the Board

Attachment No. 1 – Monitoring and Contingency Plan

Resolution No. 2016-05
of the
Fox Canyon Groundwater Management Agency

**A RESOLUTION ADOPTING A POLICY FOR EVALUATING AND
AUTHORIZING PROPOSALS FOR GROUNDWATER SUPPLY
PROJECTS**

WHEREAS, the Fox Canyon Groundwater Management Agency (the Agency) was established in 1982 and charged with responsibility for the preservation and management of groundwater resources within the areas or lands overlying the Fox Canyon aquifer for the common benefit of the public and all agricultural, domestic, and municipal and industrial water users; and

WHEREAS, the Agency is a groundwater sustainability agency under the Sustainable Groundwater Management Act of 2014 (the Act) for all of the basins within the Agency's statutory boundaries; and

WHEREAS, the Agency in 2007 adopted an update to its Groundwater Management Plan which identified various management strategies for improving water quality and increasing safe yield; and

WHEREAS, among those strategies were certain projects for the development of groundwater supply projects; and

WHEREAS, these groundwater supply projects are in various stages of development and would benefit from a policy that establishes a framework for obtaining authorization to pump groundwater at levels needed to make the projects viable; and

WHEREAS, the Agency is in the process of developing a groundwater sustainability plan in accordance with the requirements of the Act that will include measurable objectives to achieve the sustainability goal established in the plan; and

WHEREAS, upon adoption of a groundwater sustainability plan, the Agency will acquire additional groundwater management authority, including the power to impose fees on the extraction of groundwater to fund the costs of acquiring replenishment water and other costs of groundwater management as specified in the Act; and

WHEREAS, the groundwater sustainability plan adopted by the Agency must be submitted to the Department of Water Resources (DWR) for review to evaluate whether it conforms to the requirements of the Act; and

WHEREAS, the Act authorizes DWR to intervene in local groundwater management if it determines that a groundwater management plan is inadequate or is not being implemented in a manner that will likely achieve the sustainability goal; and

WHEREAS, the Agency wishes to encourage the development of groundwater supply projects and will consider approval of such projects in advance of adopting a groundwater sustainability plan, provided certain safeguards are in place to ensure that the projects do not impair the Agency's ability to develop and implement a groundwater sustainability plan or otherwise meet its obligations under the Act.

NOW, THEREFORE, IT IS HEREBY PROCLAIMED AND ORDERED that the Agency adopts the Groundwater Supply Project Policy attached to this Resolution.

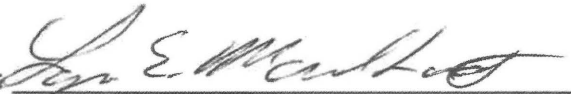
On motion by Chair Lynn Maulhardt, and seconded by Director Steve Bennett, the foregoing resolution was passed and adopted on September 28, 2016 by the following vote.

AYES – Chair Lynn Maulhardt, Director Charlotte Craven, Director Steve Bennett

NOES – Director Eugene F. West, Director David Borchard

ABSTAINS – None

ABSENT – None

By: 
Lynn E. Maulhardt, Chair, Board of Directors
Fox Canyon Groundwater Management Agency

ATTEST: I hereby certify that the above is a true and correct copy of Resolution No. 2016-05.

By: 
Keely Royas, Clerk of the Board

GROUNDWATER SUPPLY PROJECT POLICY

Policy Statement

The Fox Canyon Groundwater Management Agency (FCGMA) Board may authorize groundwater pumping for supply projects subject to the constraints and restrictions of an approved monitoring and contingency plan and the requirements under the Sustainable Groundwater Management Act (SGMA).

Reason for the Policy

A policy for the development of groundwater supply projects provides a framework for project proponents to follow to ensure conformance with FCGMA ordinances, resolutions, and practices and conformance with requirements under the SGMA. It also provides stakeholders with a better understanding of FCGMA requirements for project approval. The policy should provide access to the groundwater resource for the project, as long as pumping does not result in undesirable results.

Procedure Overview

In order to have a groundwater supply project considered by the FCGMA Board, the project proponent must prepare a proposal complete with a proposed pumping quantity, project life, and a monitoring and contingency plan associated with the pumping. To maintain the integrity of the groundwater basin, there needs to be specific constraints and conditions placed on the groundwater project to ensure adequate resources are available for the beneficial uses and users of the groundwater, without undesirable results. Preference will be given to projects with a regional purpose/benefit.

The monitoring and contingency plan must include action triggers that essentially ramp down pumping until conditions have returned to an acceptable level. Action triggers should be consistent with, but not limited to, the sustainability indicators in the SGMA regulations. This should enable the allocations to work seamlessly with the sustainability goal(s) and allocation systems identified through the Groundwater Sustainability Plan.

Once all technical analyses have been completed and an acceptable monitoring and contingency plan has been developed, staff will prepare a report to the Board requesting the pumping authorization for the groundwater supply project. The monitoring and contingency plan is subject to review and revision every five years, consistent with requirements under the SGMA.

Project proponents not meeting the requirements of the monitoring and contingency plan will have their pumping authorization cancelled by the FCGMA Executive Officer and reported to the Board. If pumping continues, it will be subject to extraction surcharges immediately. Project proponents will have the opportunity to address the Board regarding this matter.

Project proponents requesting an extension of the project life must undertake an analysis of the underlying groundwater conditions supporting the project, update the monitoring and contingency plan, suggest the desired groundwater extraction, and request a specific time extension from the Board.

The policy is not intended to allow project proponents to circumvent the requirements of SGMA. Any pumping authorized under this program must be in compliance with SGMA and will be subject to regular review to determine whether it is impairing FCGMA's ability to achieve the sustainability goal for the basin in which the project is located.

Projects approved pursuant to this policy may be subject to replenishment fees depending on the purpose/purposes of the project and impacts to the groundwater basin. This fee may be levied on all extractions authorized under this policy.

Replenishment fees are less likely for projects associated with the following:

- Providing emergency water source;
- Improving water quality; or
- Regulatory compliance;

The decreased likelihood of replenishment fees for the above situations may be restricted in duration until such time as viable alternatives exist.

Replenishment fees are more likely for projects associated with:

- Risk reduction (reliability);
- Economics (cost savings, rate stabilization, etc.);
- Supply export/profit;
- Water market;
- Offsetting other water source such as State Water;
- Expansion of use; or
- New use.

Responsibilities

Project Proponent

The project proponent must complete a project proposal which includes:

- Project description;
- Proposed project groundwater extractions;
- Substantiation/definition of groundwater source and origin;
- Project life;
- Water use analysis (all users and uses);
- Description of proposed water distribution;
- Preparation of a groundwater study to demonstrate no undesirable results to the groundwater basin due to groundwater extractions associated with the project;
- Preparation of a monitoring and contingency plan associated with the groundwater extractions;
- Compliance with the requirements under the California Environmental Quality Act (CEQA);
- All agreements associated with the proposal. This may include conceptual agreements that may not be finalized until after project pumping authorization by the FCGMA Board;
- Detailed review of project compliance with the requirements under the SGMA; and
- Stakeholder outreach plan.

The above mentioned monitoring and contingency plan must:

- Identify undesirable results as defined below, per the SGMA;
- Identify minimum thresholds with respect to undesirable results;
- Identify measurable objectives (action triggers) and associated mitigation with respect to undesirable results;
- Specify monitoring and reporting program; and
- Be reviewed and resubmitted every five years, or sooner if directed by the Board

FCGMA Staff

FCGMA staff will review all submissions for completeness and compliance with this policy. The FCGMA Executive Officer recommends approval of an acceptable project monitoring and contingency plan and subsequent resubmissions of the plan.

FCGMA Board

The FCGMA Board may authorize pumping for groundwater supply projects, subject to the constraints and restrictions of an approved monitoring and contingency plan, any conditions consistent with the purpose of this policy, and compliance with the SGMA.

Definition of Terms

Monitoring and Contingency Plan – The plan prepared to identify and mitigate the undesirable results associated with the groundwater extractions of the brackish groundwater project. The components of the monitoring and contingency plan must be measurable, with associated actions identified. For example, the plan may include measurable objectives, such as groundwater levels, and the associated action, such as stepped pumping reductions when a trigger/action level is reached.

Project Proponent – The local agency or organization responsible for the design, funding, and implementation of the proposed brackish groundwater supply project.

Supplemental Pumping Allocation/Authorization – Allocations which are approved by the FCGMA Board under this policy.

Replenishment Fees – Fees, set by the FCGMA Board, associated with supplemental pumping allocations/authorization.

Undesirable Results – One or more of the following effects caused by groundwater conditions occurring throughout the basin or within critical portions of the basin:

- 1) Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon.
- 2) Significant and unreasonable reduction of groundwater storage.
- 3) Significant and unreasonable seawater intrusion.
- 4) Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies.

- 5) Significant and unreasonable land subsidence that substantially interferes with surface land uses.
- 6) Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.
- 7) Significant and unreasonable impact on recharge to other downgradient basins or areas.
- 8) Significant and unreasonable impact on production of adjacent wells.