Beaumont Basin Watermaster

Engineer's Report No. 3
2008 – 2011

FINAL

2011 Watermaster Board

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ALDA Inc. in Association with Thomas Harder & Company, **Engineering**

April 2013

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April 10, 2013

Duane Burk, Chairman
Beaumont Basin Watermaster
560 Magnolia Avenue
Beaumont, CA 92223

Subject: **Beaumont Basin Watermaster**
Engineer's Report No. 3 for 2008 - 2011

Dear Mr. Burk:

ALDA Inc., in association with Thomas Harder & Co. is pleased to submit to you, as Chairman of the Beaumont Basin Watermaster, the Beaumont Basin Watermaster Engineeer's Report No. 3 for Calendar Years 2008 through 2011. This final report documents all production, spreading, and groundwater quality conditions that took place during calendar years 2008 through 2011. Further, the report documents changes in water levels and storage conditions as well as an estimate of the Basin Operating Safe Yield for this four year period.

Should you have any questions on this matter, please contact us at 909-587-9916 during normal business hours.

Very truly yours

ALDA Inc.

F. Anibal Blandon, P.E.
Principal

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Abbreviations

ac-ft	acre-feet
ac-ft/yr	acre-feet per year
Amendment	Basin Plan Amendment
Banning	City of Banning
Basin	Beaumont Basin
BCVWD	Beaumont-Cherry Valley Water District
Beaumont	City of Beaumont
BMZ	Beaumont Management Zone
CDfM	Cumulative departure from mean
CVCOI	Cherry Valley Community of Interest
CDPH	California Department of Public Health
CY	calendar year
FY	fiscal year
IRWMP	Integrated Regional Water Management Program
MCL	Maximum contaminant level
mg/L	Milligrams per liter
NL	Notification level
OSWDS	On-site waste disposal systems
Pass Agency	San Gorgonio Pass Water Agency
PPCP	Pharmaceutical and personal care products
Regional Board	Santa Ana River Water Quality Control Board
SMWC	South Mesa Water Company
STMZ	San Timoteo Management Zone
STWMA	San Timoteo Watershed Management Authority
SWP	State Water Project
TDS	Total dissolved solids
ug/L	Micrograms per liter
USEPA	United States Environmental Protection Agency
Watermaster	Beaumont Basin Watermaster
WEI	Wildermuth Environmental, Inc.
YVWD	Yucaipa Valley Water District

Section 1
Background

In January 2001, the City of Beaumont (Beaumont), the Beaumont-Cherry Valley Water District (BCVWD), the South Mesa Water Company (SMWC), and the Yucaipa Valley Water District (YVWD) formed the San Timoteo Watershed Management Authority (STWMA). One of the initial tasks of STWMA was to develop a watershed-wide program to develop and implement a comprehensive management program for the San Timoteo watershed.

Phase I of the management program, documented in the San Timoteo Watershed Management Program, Phase I Report (WEI, 2002), included the following goals:

- Enhancing water supplies
- Protecting and enhancing water quality
- Optimizing the management of STWMA area groundwater basins
- Protecting riparian habitat in San Timoteo Creek and protecting/enhancing habitat in the STWMA area
- Equitably distributing the benefits and costs of developing the Integrated Regional Watershed Management Program for the San Timoteo Watershed

One of the elements identified in the management plan to achieve the listed goals consisted in the establishment of a groundwater management entity for the Beaumont Basin. As a result of this initiative, two groups representing overlying users and water agencies with interest in this basin began negotiations in May 2002.

Over the next 18 months of negotiations, a Stipulated Agreement was developed and submitted to the Court. Honorable Judge Gary Tranbarger of the Superior Court of the State of California for the County of Riverside signed the Judgment, titled “San Timoteo Watershed Management Authority, vs. City of Banning, et al.” (Case No. RIC 389197), on February 4, 2004.

Pursuant to the Judgment, the Court appointed a five-member Watermaster committee, consisting of representatives from each of the Appropriator parties: the Banning, Beaumont, BCVWD, SMWC, and YVWD. The effective date of the Judgment for accounting purposes was retroactively established to July 1, 2003.

The Court gave the responsibility of managing the Basin to the Watermaster by approving the Stipulated Agreement but retained continuing jurisdiction should there be any future need to resolve difficult questions among the Parties.

Under the Judgment, the Watermaster is granted discretionary powers to develop and implement a groundwater management plan for the Beaumont Basin, including water quality and quantity considerations and being reflective of the provisions of the Judgment.

In carrying out its duties, Watermaster is responsible for providing the legal and practical means of ensuring that the waters of the Basin are put to maximum beneficial use. Specific responsibilities of the Watermaster include:

- Administer the Beaumont Basin Judgment
- Approve Producer Activities
- Maintain and Improve Water Supply
- Monitor and Understand the Basin
- Maintain and Improve Water Quality
- Develop and Administer a Well Policy
- Develop Contracts for Beneficial Programs and Services
- Provide Cooperative Leadership

Part VI of the Judgment calls for the establishment of Rules and Regulations for the conduct of Watermaster affairs. The Rules and Regulations of the Watermaster were adopted on June 8, 2004. Section 2.13 of the Rules and Regulations requires, at least every two years, for the preparation of a Basin Condition Report, documenting the state of the groundwater basin. The Basin Condition Report, also known as Engineer's Report, should provide an update on the status of monitoring, storage and water quality.

This Third Biennial Engineer's Report summarizes changes in groundwater levels, storage, safe yield, water quality, and ground elevation for Calendar Year (CY) 2008 through CY 2011. During the September 21, 2011, committee meeting, the Board adopted Resolution 2011-01 which amended Rule 2.12 of the Beaumont Basin Watermaster Rules and Regulations to change the annual reporting of Watermaster activities from a fiscal year basis to a calendar year basis starting in CY 2011. This is the first biennial report that presents data on a calendar year basis.

Section 2
Climate, Hydrology, and Hydrogeology

2.1 Climate

The Beaumont Basin is located in a semi-arid region characterized by warm summers and mild winters with average summer high temperatures in the mid to upper 90s (Fahrenheit) and average winter low temperatures in the mid to low 40s. Precipitation in the region occurs as snowfall in the upper elevations of the San Bernardino Mountains to the north and rainfall in the Basin. Annual precipitation in the Beaumont Basin, as recorded at the County of Riverside's Beaumont Station 013 averaged 17.78 inches over the 100-year period between 1912 and 2011. On the average, 70 percent of precipitation falls during the winter between December and March.

Figure 2-1 illustrates annual precipitation at this station for the reporting period including a plot of the cumulative departure from the mean (CDFM) precipitation. This parameter is used to assess the occurrence, duration, and extent of wet and dry precipitation cycles. Upper trending periods in the graph represent periods with above average precipitation such as the 1913-46 period; average precipitation during this period was 20.5 inches or close to 16 percent above the long-term average. Other above average precipitation periods include the 1977-83 and 1990-98 periods. Conversely, down trending periods indicate periods of below average precipitation as in the 1947-77 period when average precipitation was only 15.2 inches. The 1984-90 period with seven consecutive years of below average precipitation was also characterized as a dry period.

Currently, the Basin is in a dry period that began in 1999. During this 12-year period two of the three years with the lowest precipitation ever recorded at Station 13 have occurred; 6.3 inches (lowest) in 1999 and 8.07 inches in 2009. It should be noted that the average precipitation during the base period (1997-2001) used to determine the safe yield of the Basin was 13.43 inches, close to 25 percent below the long-term average for the Basin.

2.2 Surface Water Hydrology

There are three significant drainage systems that overlie the Beaumont Basin: the San Timoteo Creek drainage system which is tributary to the Santa Ana River; the Potrero Creek drainage system in the San Jacinto watershed; and the Smith Creek drainage system tributary to the White Water River which is part of the Salton Sea drainage basin.

Surface water flows originate in the San Bernardino Mountains to the north of the Basin. The streams and creeks that flow into the Beaumont Basin are dry for most of the year with occasional runoff during rainfall events. There are no stream gages in the Basin that can be used to estimate surface water recharge to the Basin or discharge from the Basin.

2.3 Hydrogeology

2.3.1 Regional Geologic Context

The Beaumont Basin is located in the San Gorgonio Pass, a low-relief highland that is bordered on the north by the San Bernardino Mountains, on the southeast by the San Jacinto Mountains, and on the west by the San Timoteo Badlands. Surface sediments in the Beaumont Basin, and nearby lowlands, consist of unconsolidated to semi-consolidated Quaternary alluvium. Surrounding the alluvial sediments are semi-consolidated rocks of the San Timoteo Formation and igneous and metamorphic rocks that make up the San Jacinto and San Bernardino Mountains (see Figure 2-2). The San Timoteo Formation is composed primarily of sandstone, conglomerate, siltstone, and mudstone (Rewis, et al., 2007). The igneous and metamorphic rocks form the crystalline basement rocks in the area (Bloyd, 1971). The unconsolidated Quaternary alluvium, and the upper portion of the underlying San Timoteo Formation, constitutes the water-bearing aquifer of the Beaumont Basin (Rewis, et al., 2007).

2.3.2 Faults

The boundaries of the Beaumont Basin are based on faults that often form barriers to groundwater flow (Bloyd, 1971). Major faults in the area include the Banning and Cherry Valley faults, which form the northern boundary of the basin (see Figure 2-2). Groundwater levels within the Beaumont Basin are generally lower than groundwater levels in the surrounding areas. Along the Banning Fault, groundwater levels on the north side of the fault and outside the basin are as much as 400 feet higher than groundwater levels on the south side of the fault and inside the basin. The same condition has been observed along the southern Beaumont Basin boundary.

2.3.3 Groundwater Occurrence and Flow

Groundwater in the Beaumont Basin occurs at depth in the Quaternary alluvium and the underlying San Timoteo Formation. Groundwater flow within the Beaumont Basin generally depends on location with respect to a groundwater flow divide which occurs in the center of the basin, approximately coincident with the Noble Creek drainage (see Figure 2-2). West of the Noble Creek drainage, groundwater generally flows to the northwest and ultimately as underflow beneath San Timoteo Wash. East of the Noble Creek drainage, groundwater flows to the southeast towards the City of Banning.

2.3.4 Groundwater Recharge and Discharge

The groundwater system in the Beaumont Basin is replenished from multiple sources. These include:

- Infiltration of precipitation within the unlined portions of natural streams
- Subsurface seepage across fault boundaries
- Return flow from irrigation and individual septic systems
- Artificial recharge in man-made basins (e.g. Noble Creek Recharge Facility).

Groundwater discharges from the Beaumont Basin primarily occur from:

- Groundwater production
- Underflow out of the basin at the downgradient margins
- Rising water in San Timoteo Creek
- Evapotranspiration

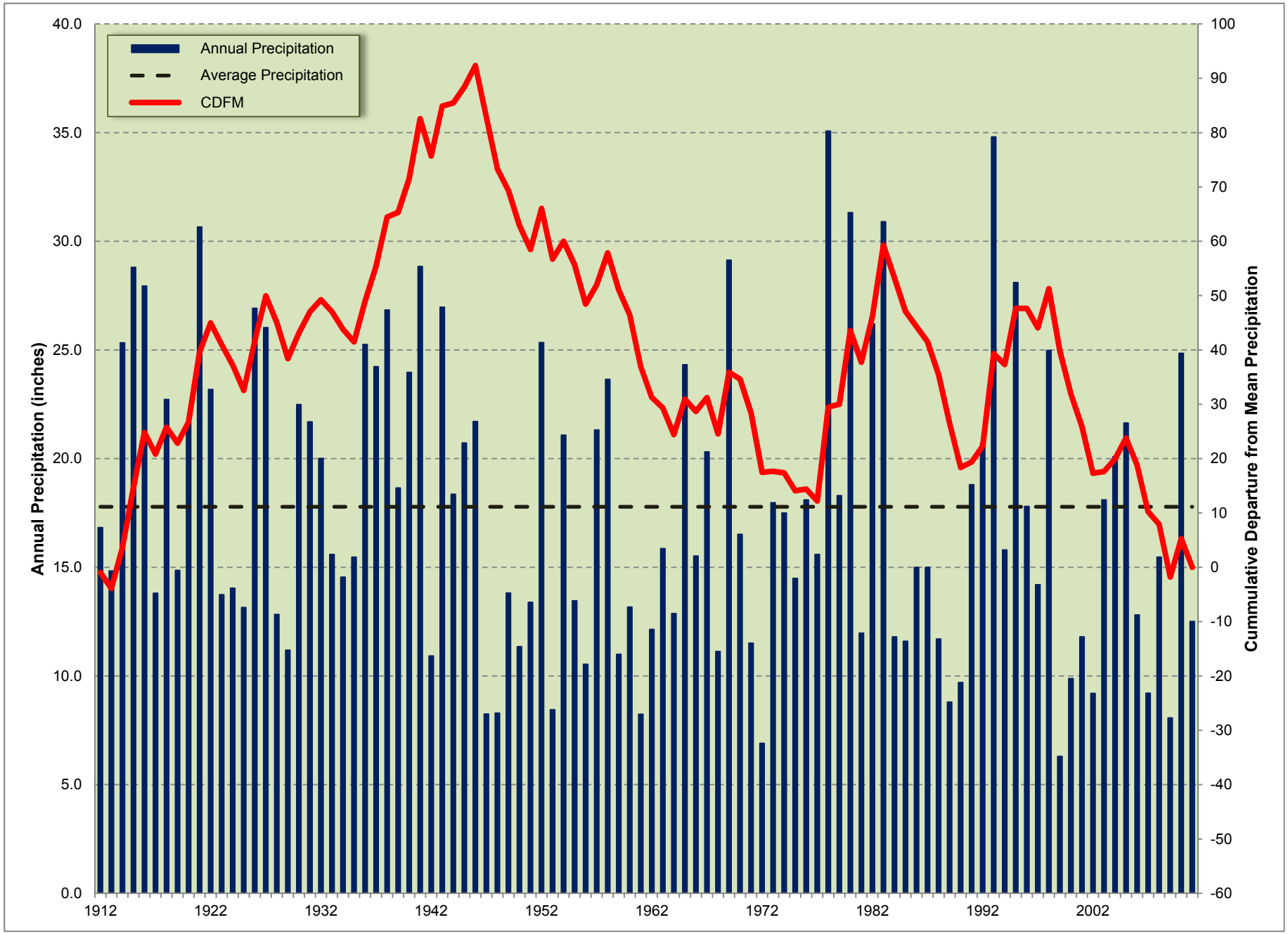
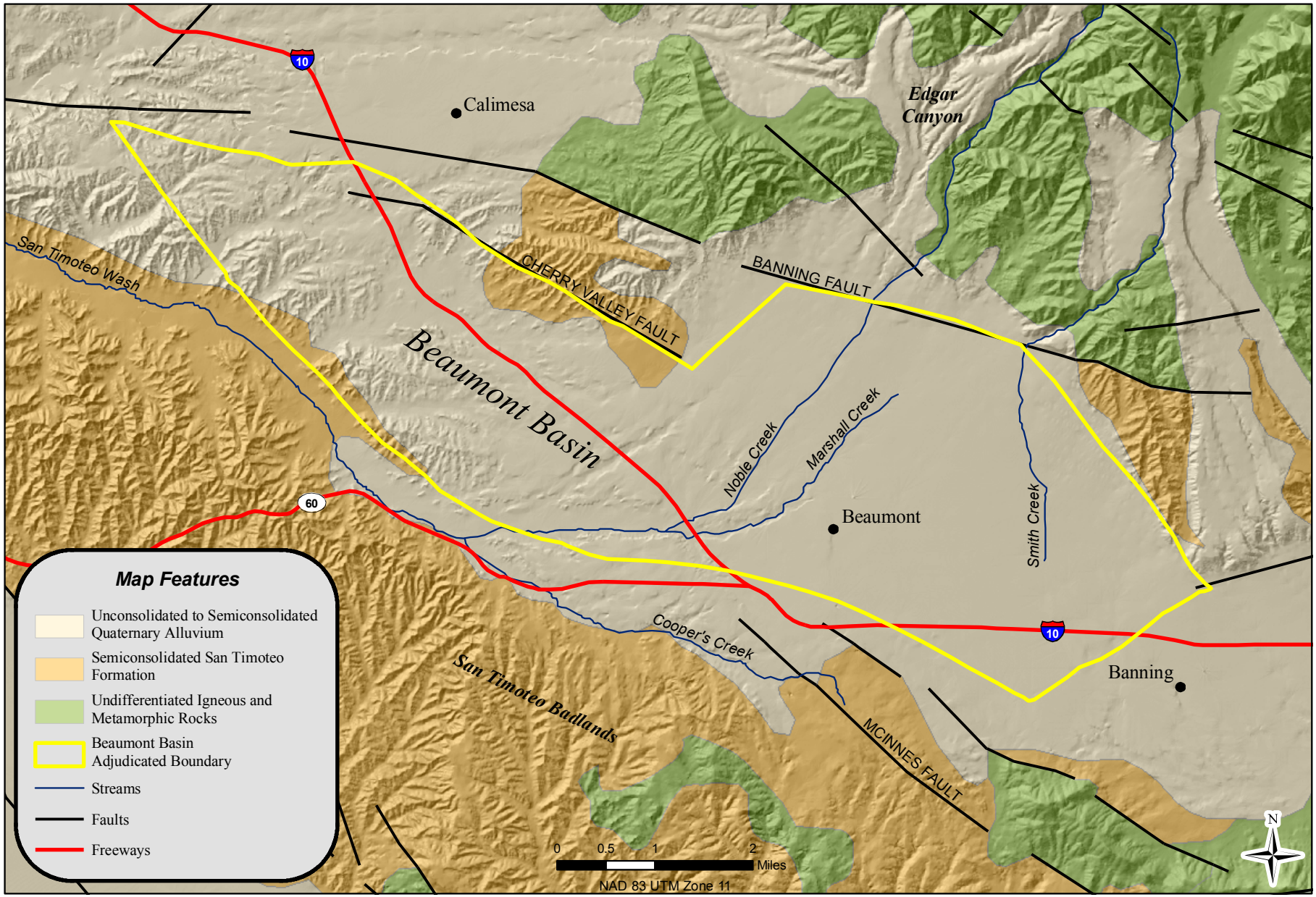


Figure 2-1
Annual Precipitation with Cummulative Departure from the Mean



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Geology of the Beaumont Basin

Figure 2-2

Section 3
Monitoring and Data Collection Programs

Part VI, Paragraph 5 of the Judgment outlines the Powers and Duties of the Watermaster. One of Watermaster's duties is the monitoring of groundwater levels, ground levels, storage, and water quality in the Basin, as outlined in Paragraph G. The collection of these data is essential to assess the state of the Basin and to assist Watermaster in fulfilling its responsibilities of maintaining or enhancing available supplies and the quality of those supplies.

Watermaster's database is supplemented by various monitoring programs and data collection efforts implemented by other agencies. Each monitoring and data collection program is discussed below.

3.1 Watermaster Programs

3.1.1 Groundwater Production and Recharge

According to Part III, Paragraph 4 of the Judgment, Watermaster is responsible for the collection of groundwater production from all Appropriator Parties and Overlying Users that are listed in the Judgment. Producers who pump less than 10 ac-ft/yr., also known as minimal producers, and are exempt from the provisions of the Judgment. The location of all wells owned by the Appropriators and Overlying Parties of the Judgment is depicted in Figure 3-1. Appropriator Parties include the City of Banning, the BCVWD, the YVWD, and the SMWC. Production and water level information from these parties is reported to the Watermaster on a monthly basis.

Currently, there are a total of 17 Overlying Producers in the Basin pumping from 22 groundwater wells. The majority of the larger wells are metered; the remaining wells do not have meters at this time and their production is estimated using the water duty method. This method was initially proposed by Wildermuth Environmental Inc. (WEI) during the preparation of the 2005-06 Annual Report. After being accepted by the Watermaster, an updated water duty method was developed by WEI and it has been used since.

In addition to collecting water production, the Watermaster is responsible for maintaining an annual account of all recharged water in the Beaumont Basin and any losses of water supplies or Safe Yield resulting from such recharge water. Sources of groundwater recharge include imported water from the State Water Project (SWP), recycled water, and new yield sources developed in the basin since the Judgment inception in July 2003. The Watermaster has maintained the accounting of groundwater recharge; however, losses from the basin, if any, have not been tracked.

BCVWD's Noble Creek spreading facility, located in the vicinity of Beaumont Avenue and Cherry Valley Boulevard, is the only facility in the Beaumont Basin where deliveries of imported water can be used to recharge the groundwater basin. The location of this spreading facility is depicted in Figure 3-1. Imported water is also delivered to the Little San Gorgonio Spreading Ponds. These spreading ponds are located outside the adjudicated boundary of the

Beaumont Basin and to the north of the Banning Fault, as shown in Figure 3-1. Spreading of imported water at these spreading ponds may be a source of subsurface recharge to the Beaumont Basin; however, Watermaster has not adopted this finding.

Another source of groundwater recharge in the Basin may be from Beaumont's Wastewater Treatment Plant No. 1 Discharge Point No. 7 located along an unnamed tributary of Marshall Creek, as shown in Figure 3-1. It is believed that a portion of the recycled water discharged at this location reaches and recharges the Beaumont Basin; however, additional engineering studies need to be conducted to better quantify the amount of recharge.

3.1.2 Groundwater Level Monitoring Program

In addition to water level information provided by Appropriator Producers, Watermaster also collects water level information from a series of dedicated monitoring wells equipped with pressure transducers that measure and record groundwater levels every 15 minutes. This monitoring network was first established during FY 2006-07 as part of a program to determine the location of subsurface groundwater barriers and to collect consistent and accurate long-term water level information.

Initially, 10 dedicated monitoring wells were equipped with pressure transducers. Since the program inception, wells have been added and/or removed from the program. Currently, there are 13 dedicated monitoring wells in the Basin as shown in Figure 3-2.

3.1.3 Land Subsidence

The Subsidence Monitoring Program was established in 2005. Initially, ground level information for the 1928 to 2000 period was analyzed. In mid to late 2006, 72 benchmark monuments were installed across the Basin and in nearby basins and an initial ground-level survey conducted to establish the initial elevations of all benchmarks. A second survey was conducted in 2007. A comparison analysis of the two surveying efforts reveals little vertical change; in addition, this minimum subsidence was fairly evenly distributed across the Basin. According to the program, the ground level survey of all benchmarks was to be conducted on a tri-annual basis with the next round of survey scheduled for the spring of 2009. The 2009 survey was not conducted by Watermaster since it was determined that the level of subsidence was minimal. No additional surveys are scheduled at this time.

The results of earlier land subsidence surveys have been reported in previous engineer's reports. Considering that there is no new information to report, the Land Subsidence section of the report, normally presented under Section 6, has not been included in this report.

3.2 Cooperative Data Collection Efforts

The Watermaster relies on various agencies in the region to maintain its basin-wide groundwater level and quality database. Watermaster collects water quality information from all producers required to comply with the California Department of Health Services (CDPH) requirements for Title 22 of the California Code of Regulations. Appropriators provide these data to Watermaster upon request; alternatively, Watermaster can download this information from CDPH's web site on a regular basis. The other primary source of groundwater data for

wells in the Basin is the Maximum Benefit Monitoring Program run by the STWMA and the City of Beaumont. Details of this program are presented below.

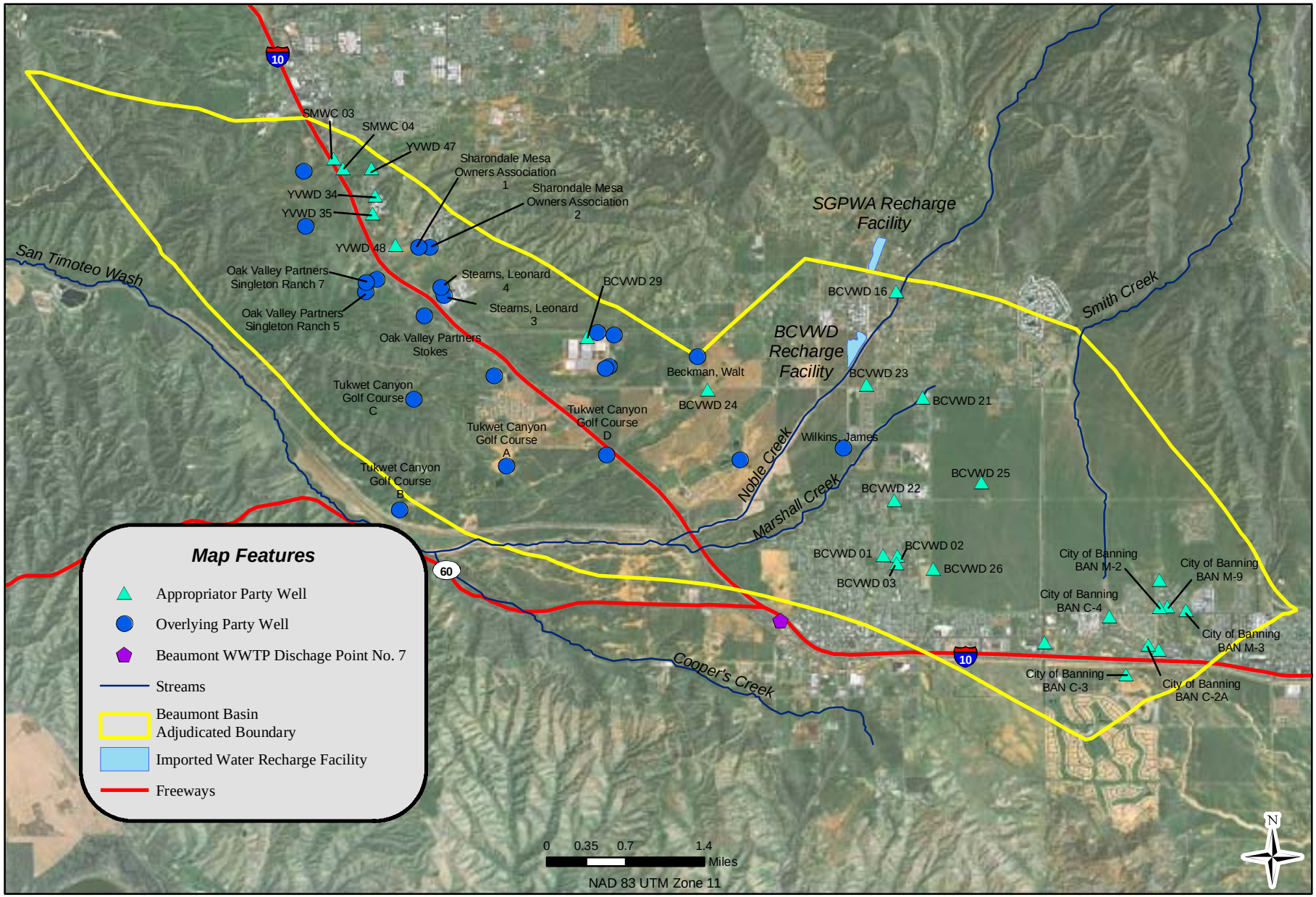
3.2.1 Maximum Benefit Monitoring Program

In January 2004, the Santa Ana Regional Water Quality Control Board (Regional Board) amended the Water Quality Control Plan for the Santa Ana River Basin to incorporate an updated TDS and Nitrogen management plan. The amended plan included the following revisions:

- Designation of sub-basins as management zones
- Sub-basins boundaries
- TDS and nitrate-nitrogen groundwater quality objectives
- TDS and nitrogen wasteload allocations
- Reach designations
- TDS and nitrogen objectives and beneficial uses for specific surface waters

In addition, alternative maximum benefit objectives were specified for a number of groundwater management zones including the Beaumont Management Zone (BMZ) and the San Timoteo Management Zone (STMZ). The adoption of the maximum benefit objectives for these two management zones by the Regional Board was based on demonstrations by the STWMA and the City of Beaumont that the beneficial uses of ground and surface waters were being protected and that water quality was being maintained.

As part of the demonstration that the maximum benefit objectives were being met, STWMA and Beaumont were required to develop a comprehensive groundwater monitoring program to collect groundwater level and quality information from a number of wells throughout the STMZ and BMZ. To implement this program, potential public and private wells were surveyed and a selected number of wells identified to be used for water level and water quality monitoring. From the survey, a Key Well Water Level Program and a Key Well Water Quality Program were created. Figure 3-2 illustrates the location of the wells identified as part of these programs.



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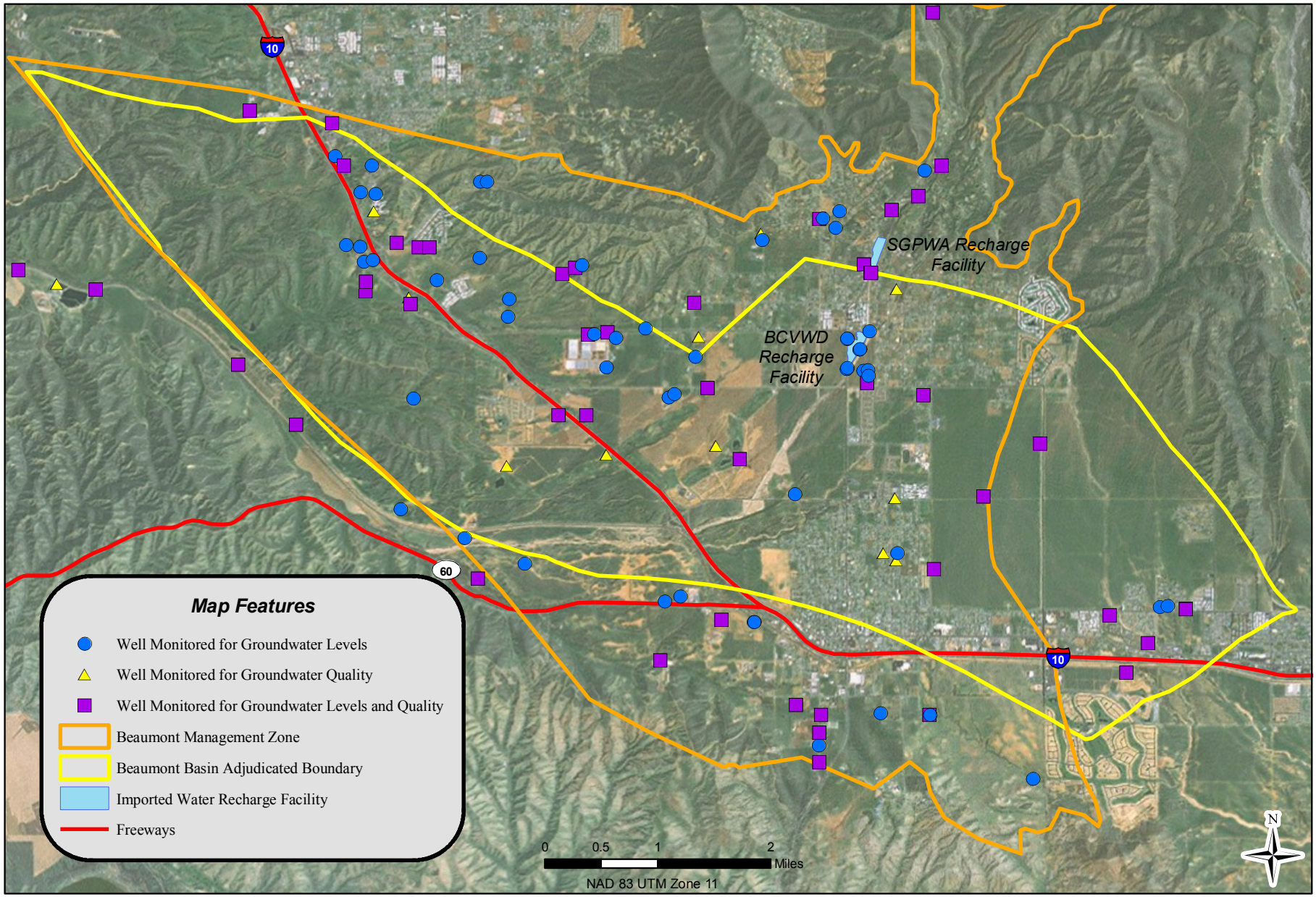
Appropriator and Overlyer Wells in the Beaumont Basin

Figure 3-1



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Wells Monitored for Water Level and Water Quality in the Beaumont Basin

Figure 3-2

Section 4
Groundwater Pumping, Recharge, Elevation, and Storage

Until now, groundwater production, recharge, and storage have been reported on a fiscal year basis; however, Watermaster approval of Resolution No. 2011-01 changed the reporting of the Annual Report to a calendar year basis. It should be noted that this resolution did not provide guidelines for the reporting of the Beaumont Basin Watermaster Biennial Engineer's Report; the previous two editions were reported on a fiscal year basis.

Consistent with the 2011 Annual Report, this Third Biennial Engineer's Report presents groundwater basin information on a calendar year basis for CY 2008 through CY 2011.

4.1 Groundwater Pumping

The safe yield of the Basin, as designated by the Judgment, was estimated at 8,650 ac-ft/yr based on groundwater conditions for the 1997-2001 period. In addition, a temporary surplus of 160,000 ac-ft of additional pumping was established for the Appropriative Members over the first ten years of Watermaster operations. The purpose of the temporary surplus was to establish a controlled overdraft to create enough additional storage capacity to prevent the waste of water outflowing from the basin. Therefore, the combined safe yield and temporary surplus bring the annual operating yield of the Basin to 24,650 ac-ft/yr through FY 2012-13. Section 4 of the Rules and Regulations indicates that the Safe Yield of the Beaumont Basin shall be redetermined at least every ten years beginning during FY 2013-14.

The annual production on a calendar year basis for all Appropriators and Overlying users is shown in Table 4-1. It should be noted that production in 2003 only includes the second half of the year. Since July 2003, a total of 138,216 ac-ft have been pumped from the Beaumont Basin; approximately 81 percent of this total has been pumped by Appropriators. The percentage of groundwater production from Appropriators has steadily increased since the Judgment inception from a low of 74 percent registered in CY 2003 to a high of 84 percent in CY 2008, 2010, and 2011.

Groundwater production peaked in 2007 when close to 20,000 ac-ft were pumped from the basin; since, it has declined steadily to approximately 14,000 ac-ft. and averaged 16,088 ac-ft/yr for the 2004-11 period. Production from 2003 was excluded as it only represents the second half of that year. Figure 4-1 illustrates the annual production since CY 2003 for individual Appropriator Parties and the combined Overlying Users.

During the CY 2008-11 reporting period, Appropriator Parties produced 51,172 ac-ft while Overlying Users pumped 10,338 ac-ft for a combined amount of 61,510 ac-ft. Average production over the reporting period was 15,378 ac-ft, which is approximately 700 ac-ft/yr lower than the 2004-11 average. Monthly groundwater production for calendar years 2003 through 2011 for both Overlying users and Appropriators is included in Appendix A.

4.2 Groundwater Recharge

The Watermaster is responsible for maintaining an annual account of all recharged water in the Beaumont Basin and any losses of water supplies or Safe Yield resulting from such recharge water. Sources of groundwater recharge include imported water from the State Water Project (SWP), recycled water, and new yield sources developed in the basin since the Judgment inception in July 2003. The Watermaster has maintained the accounting of groundwater recharge; however, losses from the basin, if any, have not been tracked. Table 4-2 presents a summary of the annual groundwater recharge in the Beaumont Basin since 2003 on a calendar year basis.

Since the inception of the Judgment, a total of 33,261 ac-ft of imported water have been recharged in the Beaumont Basin at the Noble Creek spreading facility by Banning and the BCVWD. The SGPWA has recharged 7,755 ac-ft at their Little San Gorgonio Spreading Ponds located just to the north of the basin boundary. It should be noted that spreading of imported water at these ponds may be a source of subsurface recharge to the Beaumont Basin; however, Watermaster has not adopted this finding. Consequently, imported water recharge at this location would not be considered as water in the Basin until a hydrogeologic investigation is conducted to evaluate whether a portion or all of this water recharges the Beaumont Basin.

During the CY 2008-11 reporting period, Banning recharged 6,413 ac-ft while BCVWD recharged 18,846 ac-ft for a combined amount of 25,259 ac-ft over the period.

4.3 Groundwater Elevation

Groundwater contour maps were generated for Fall 2008 and Fall 2011 in order to evaluate changes in groundwater flow patterns and basin-wide changes in the groundwater levels over this time period. Groundwater level data for the contour maps were obtained from Wildermuth Environmental, Inc. Groundwater levels were selected from wells with available data in the October to December period (i.e. Fall) of each year. For wells with available data, the groundwater level record for the target time period was evaluated to distinguish static groundwater levels from pumping groundwater levels. Only static groundwater levels were used for developing contour maps. The resulting groundwater contour maps for 2008 and 2011 are shown on Figures 4-2 and 4-3, respectively.

Basin-wide groundwater level change between 2008 and 2011 is shown on Figure 4-4. This map was developed by subtracting the 2008 groundwater elevation surface from the 2011 groundwater surface. Parts of the basin where groundwater levels have risen include the furthest northwestern portion, the northern part of the basin near the BCVWD Noble Creek Recharge Facility, and in the southern part of the basin southeast of Beaumont. A maximum groundwater elevation increase of approximately 45 feet was observed near the Noble Creek Recharge Facility. Areas of groundwater decline over the period of interest include the north-central and southeast portions of the basin. Maximum groundwater declines of as much as 35 feet were observed in these areas.

Groundwater flow within the Beaumont Basin generally depends on location with respect to a groundwater flow divide which occurs in the center of the basin approximately coincident with the Noble Creek drainage (see Figures 4-2 and 4-3). West of the Noble Creek drainage, groundwater generally flows to the northwest and ultimately towards San Timoteo Wash. East of the Noble Creek drainage, groundwater flows to the southeast towards the City of Banning. Aside from localized groundwater flow changes associated with changing pumping patterns, the general groundwater flow directions did not change significantly between 2008 and 2011.

4.4 Changes in Storage (2008 - 2011)

Groundwater storage in the Beaumont Basin fluctuates in response to changes in recharge (e.g. precipitation and artificial recharge) and discharge (e.g. pumping). Basin-wide change in groundwater storage between Fall 2008 and Fall 2011 was analyzed as a function of the difference in groundwater levels across the basin and the specific yield of the aquifer sediments. Groundwater level change across the basin was analyzed using the following procedure:

1. The Fall 2008 and Fall 2011 groundwater contour maps were each converted into three-dimensional raster surfaces.
2. The basin was discretized into 75-ft by 75-ft grid cells.
3. Attributes were assigned to each grid cell including groundwater level change and specific yield.
4. The resulting attribute table was processed in a Geographic Information System (GIS) for calculating the change in storage.

The specific yield distribution used for the analysis was based on Figure 3-6 of the Beaumont Basin 1st Biennial Report.

Results of the analysis show a basin-wide decrease in groundwater storage from 2008 to 2011 of approximately 60 ac-ft. It is noted that, as with previous estimates of change in storage, the northwest portion of the basin was not used in the analysis because there is little groundwater level data in this area.

4.5 Operating Safe Yield

For purposes of this report, the annual operating safe yield (OSY) describes the sustainable supply of groundwater in the basin for the period of 2008 through 2011. It is noted that the OSY is different than the Operating Yield, which is a function of the unused overlyer production (Appropriative Water) and Temporary Surplus, as described in the Beaumont Basin Judgments (San Timoteo Management Authority v. Banning et al., 2004).

Operating safe yield is estimated based on the following equation:

$$OSY = \frac{\Sigma P + \Delta S - \Sigma AR}{\Delta T}$$

where: ΣP = The sum of groundwater production (ac-ft)

ΔS = The change in groundwater storage (ac-ft)

ΣAR = The sum of artificial recharge (ac-ft)

ΔT = The time over which the OSY is estimated (years)

Total Beaumont Basin groundwater production from calendar years 2008 to 2011 was 61,521 ac-ft (see Table 4-1). Total artificial recharge from calendar years 2008 to 2011 was 25,521 ac-ft (see Table 4-2). It is noted that only the Noble Creek Recharge Facility recharge was used in the analysis of OSY. The change in groundwater storage estimate is based on the analysis of groundwater levels described Section 4.4. The period of time over which the OSY is evaluated is four years. The resulting OSY is estimated as:

$$OSY = \frac{61{,}510 + (-60) - 25{,}259}{4} = 9{,}048 \text{ ac-ft}$$

It is emphasized that the OSY, as presented herein, is based on four years of data. When evaluated on a long-term basis, this methodology can be used to estimate the long-term Safe Yield of the basin, as defined in the Beaumont Basin Judgment. As required by the Judgment, the Safe Yield of the basin will need to be reevaluated in 2013.

Table 4-1
Production Summary for Appropriator and Overlying Producers in the Beaumont Basin
Calendar Year Accounting (ac-ft)

	Annual Production (ac-ft)									Total Production
	2003[1]	2004	2005	2006	2007	2008	2009	2010	2011	
Appropriator Parties										
Banning, City of	2,174.2	3,397.3	1,808.6	1,827.5	2,772.6	2,933.6	2,095.0	1,143.6	1,341.7	19,494.1
Beaumont-Cherry Valley Water District	3,511.9	6,873.9	7,025.6	9,054.1	11,383.3	10,710.5	10,133.9	9,421.3	9,431.3	77,545.8
South Mesa Water Company	223.2	482.5	663.2	616.0	665.8	470.9	382.2	405.0	419.9	4,328.6
Yucaipa Valley Water District	1,162.4	1,804.7	1,274.3	2,027.3	1,682.9	573.4	504.4	671.5	534.1	10,234.9
Subtotal	**7,071.7**	**12,558.3**	**10,771.7**	**13,524.9**	**16,504.6**	**14,688.4**	**13,115.6**	**11,641.3**	**11,727.1**	**111,603.5**
Overlying Parties										
Beckman, Walter M	16.2	27.0	22.4	11.5	8.3	12.7	12.9	6.4	9.0	126.3
California Oak Valley Golf and Resort LLC	736.2	728.6	703.9	831.5	779.0	780.4	766.7	565.1	517.3	6,408.7
Merlin Properties	3.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.6	16.2
Oak Valley Partners, LP	301.2	440.7	350.2	312.1	312.1	310.5	310.5	311.1	310.0	2,958.4
Plantation on the Lake LLC	178.6	340.9	310.2	350.1	344.2	354.0	352.3	337.2	344.7	2,912.1
Rancho Calimesa Mobile Home Park	35.4	68.3	68.3	68.3	69.3	69.3	69.3	69.3	69.3	586.7
Roman Catholic Bishop of San Bernardino	46.8	59.1	55.6	59.0	0.7	0.7	0.7	0.0	0.0	222.5
Sharondale Mesa Owners Association	104.3	158.0	181.0	188.6	182.3	193.3	154.3	132.3	113.2	1,407.4
Tukwet Canyon Golf Club[2]	791.4	1,409.0	1,213.1	1,753.4	1,599.0	1,220.9	1,158.6	851.8	883.6	10,880.9
Stearns, Leonard M. and Dorothy D.	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.7	0.7	8.8
Sunny-Cal Egg and Poultry Company	226.0	404.4	385.4	2.6	2.7	4.2	4.2	3.8	4.2	1,037.5
Albor Properties III, LP[3]				13.2	2.3	2.3	2.3	2.1	2.3	24.6
Nikodinov, Nick				0.7	0.8	0.8	0.7	0.7	0.8	4.4
McAmis, Ronald L.				0.5	0.6	0.6	0.5	0.5	0.6	3.3
Aldama, Nicolas and Amalia				0.8	0.8	0.9	0.8	0.8	0.9	5.0
Gutierrez, Hector, et. al.				1.4	1.4	1.4	1.4	1.3	1.4	8.2
Darmont, Boris and Miriam				0.4	0.4	0.4	0.4	0.4	0.4	2.1
Subtotal	**2,440.8**	**3,638.6**	**3,292.6**	**3,596.7**	**3,306.5**	**2,954.9**	**2,838.2**	**2,285.0**	**2,259.8**	**26,613.2**
Total	**9,512.5**	**16,196.9**	**14,064.3**	**17,121.6**	**19,811.1**	**17,643.3**	**15,953.7**	**13,926.3**	**13,986.9**	**138,216.6**

1.- 2003 groundwater production only includes Jul-Dec time period.

2.- Formerly known as the East Valley Golf Course and the Southern California Section of the PGA of America.

3.- Formerly Known as Sunny Cal North - Manheim, Manheim & Berman.

Table 4-2
Annual Supplemental Recharge to the Beaumont Basin -- Calendar Year Accounting

Year	Supplemental Recharge (ac-ft)				
	Banning[1]	Beaumont[2]	BCVWD[1]	Pass Agency[3]	Total
2003	-	-	-	-	-
2004	-	-	-	813.8	813.8
2005	-	-	-	687.4	687.4
2006	-	-	3,501.0	777.7	4,278.7
2007	-	-	4,501.0	541.3	5,042.3
2008	1,534.0	-	2,399.0	1,047.4	4,980.4
2009	2,741.2	-	2,741.2	823.4	6,305.8
2010	1,338.0	-	5,727.0	1,222.3	8,287.3
2011	800.0	-	7,979.0	1,842.0	10,621.0
Totals	**6,413.2**	**-**	**26,848.2**	**7,755.3**	**41,016.7**

1.- SWP water recharged in the BCVWD Noble Creek Recharge Facility

2.- The City of Beaumont is seeking credit for recycled water recharge in the Beaumont Basin from DP-007 in an unnamed tributary to Marshall Creek. A technical demonstration of the estimated amount of recharge in the Beaumont Basin is pending.

3.- SWP water recharged in the Pass Agency's Little San Gorgonio Creek Spreading Ponds

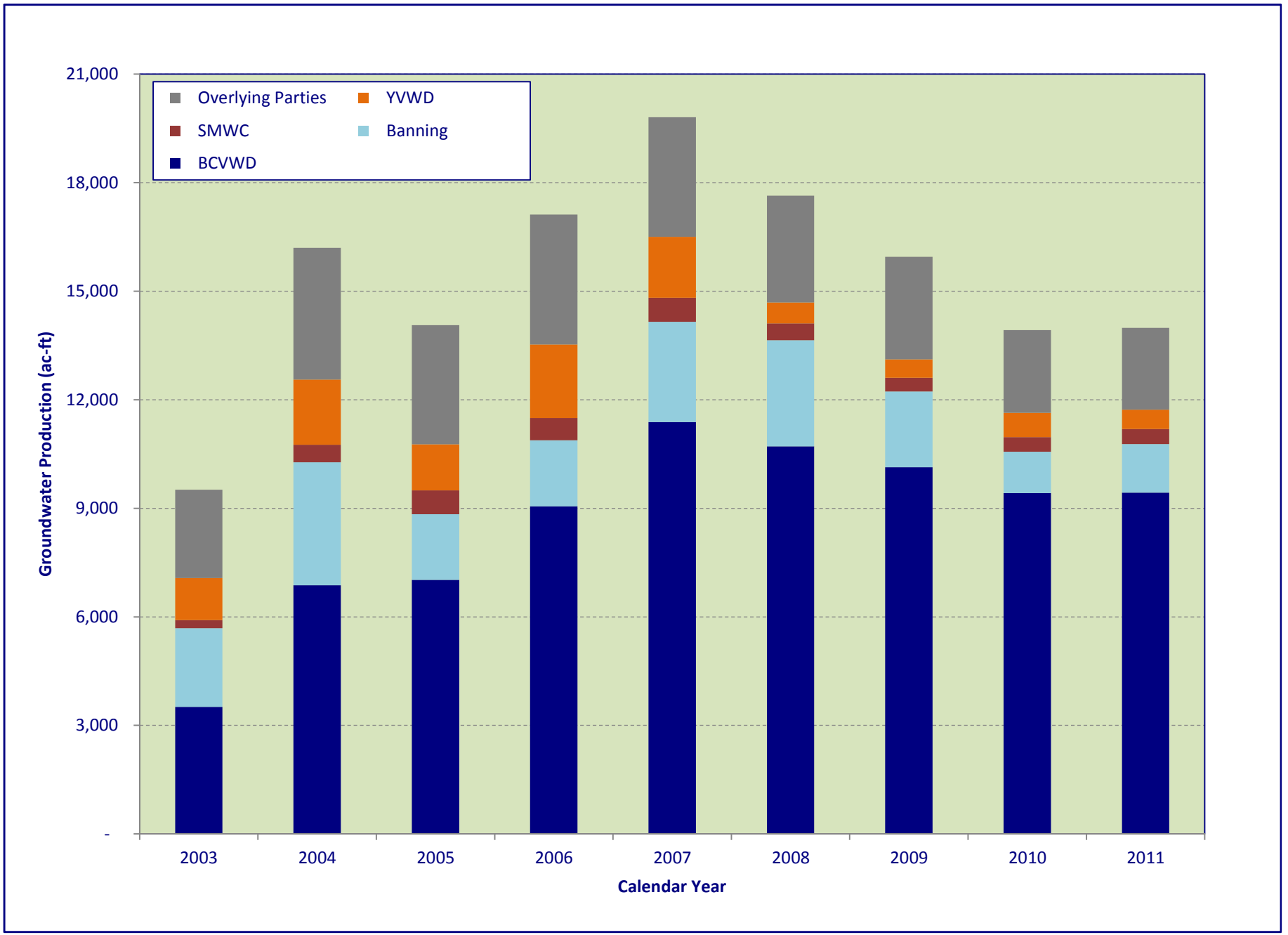
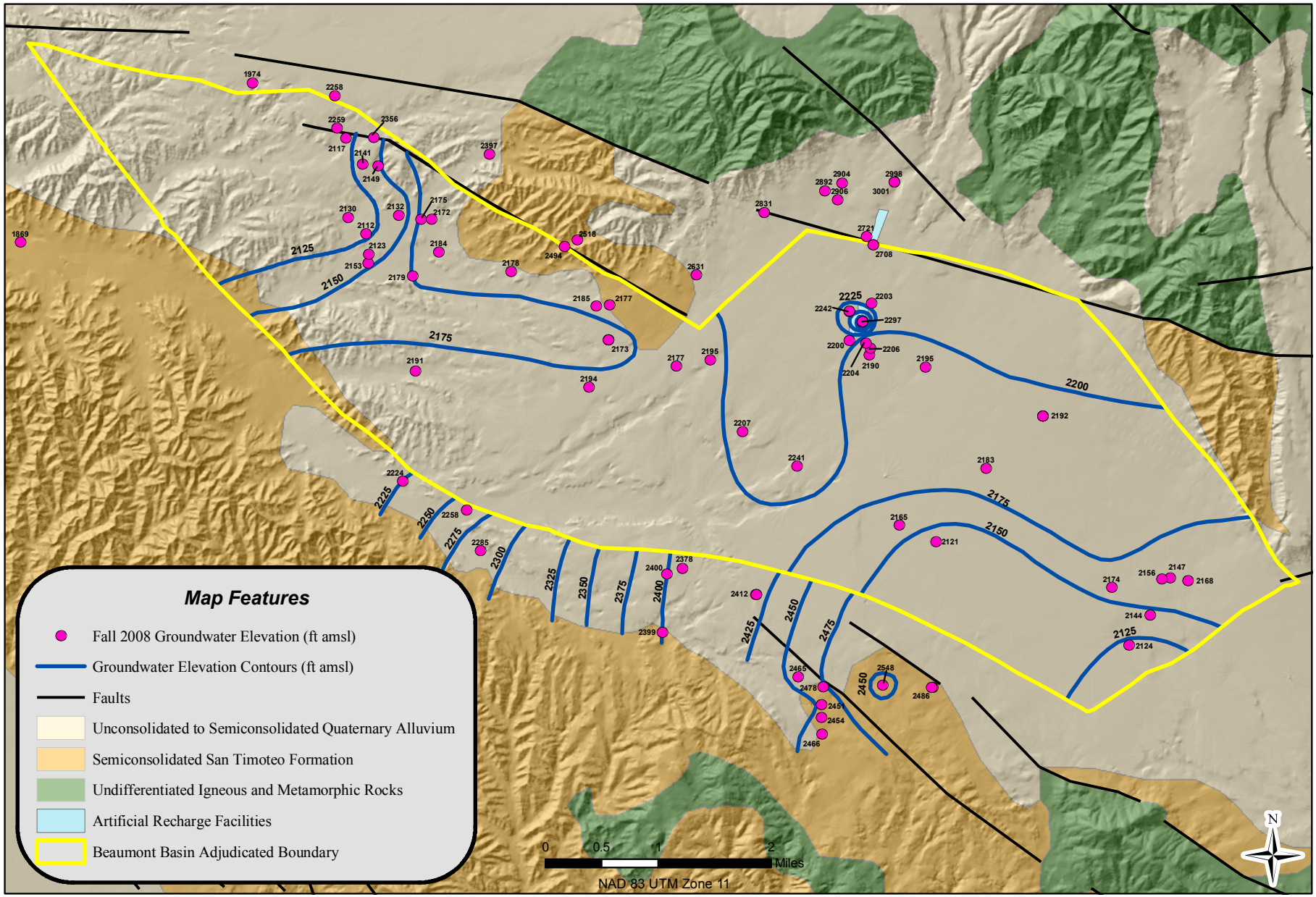


Figure 4-1
Annual Production by Appropriator and Overalying Users (2003-11)



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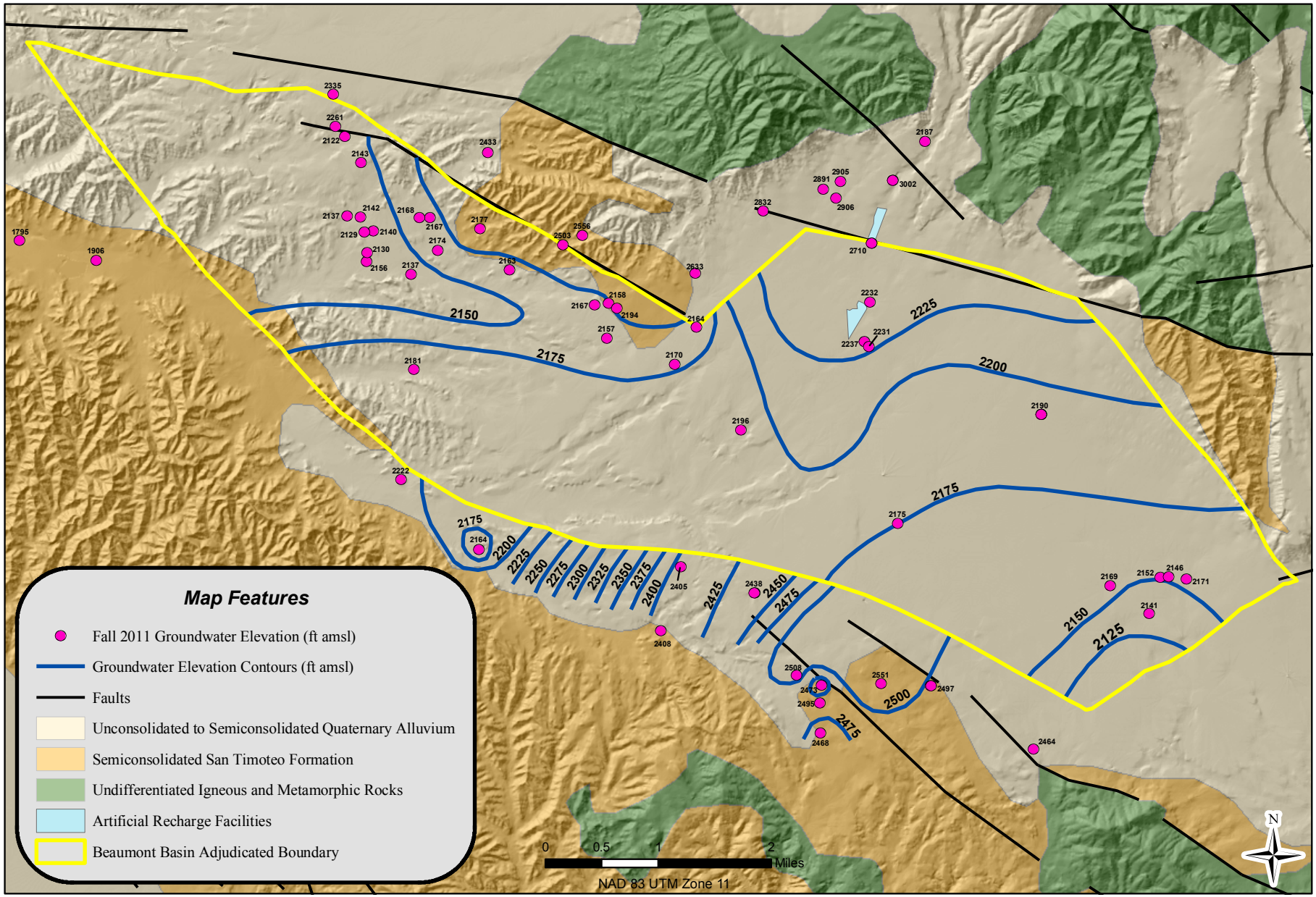
Groundwater Elevation Contours Fall 2008

Figure 4-2



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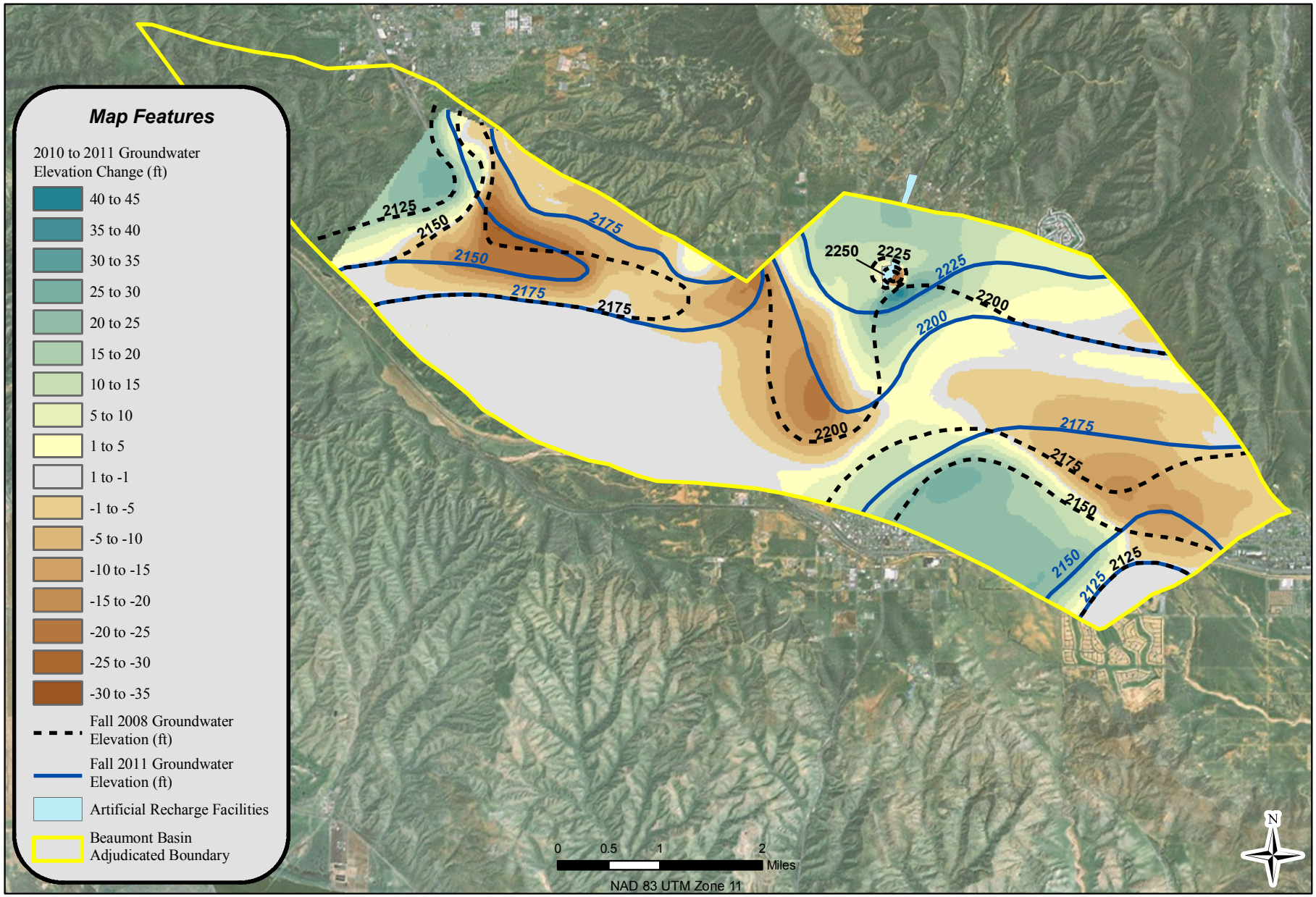
Groundwater Elevation Contours Fall 2011

Figure 4-3



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Change in Groundwater Elevation Fall 2008 - Fall 2011

Figure 4-4

Section 5
Water Quality Conditions

The purpose of this section is to document the water quality conditions in the Beaumont Basin during the 2008-11 reporting period. Figure 5-1 shows all of the wells that have groundwater quality data for the reporting period. This section discusses the Water Character Index of groundwater in the basin and compares reported water quality against management zone objectives and Federal and State regulatory standards. In addition, this section summarizes two nitrate studies conducted over the last five years in the Beaumont Management Zone.

5.1 Water Character Index

Water character index (WCI) is a concept introduced by WEI in the two previous Biennial Reports. Additional documentation of this concept is not widely used and its applications could not be substantiated; however, it is considered here as it was presented in previous reports. The findings are based strictly on WEI's interpretation of its usefulness.

According to WEI, the WCI is a unitless parameter that provides a numerical estimate of water character; it can be used to assess the ionic distribution of constituents in a water sample and it is defined by the following equation.

$$WCI = \left[\left\{ \frac{Ca + Mg}{Na + K} \right\} + \left\{ \frac{CO_3 + HCO_3}{Cl + SO_4} \right\} \right] \times 100$$

The utility of the WCI method is that time history and/or spatial distribution can be created and displayed. Further, this method can be used to provide a semi-quantitative estimate of the mixing of source of water. Figure 5-2 presents the 2008-11 average WCI for the 22 wells owned and operated by Appropriators. The values range from a low of 282 (SMWC No. 4) in the northwesterly portion of the Beaumont Basin, to a high of 1,655 for BCVWD Well No. 22. Higher values are associated with groundwater that has more of a calcium-magnesium-bicarbonate character such as those expected for this area as groundwater is directly influenced by drainage from the San Bernardino Mountains. Lower WCI values reflect a sodium-chloride-sulfate character that may be associated with groundwater that is influenced by on-site waste disposal system discharges, agricultural practices, and/or return flows from irrigation.

Of the 22 WCI values calculated, 12 of them exceeded 1,000. This finding is consistent with previous findings reported by WEI in the 1st and 2nd Biennial Reports.

5.2 Comparison with Management Zone Objectives

Groundwater quality objectives for antidegradation and maximum benefit have been established by the Regional Board for TDS and nitrate-nitrogen in the BMZ, which

encompasses portions of the Beaumont Basin, the Singleton and South Beaumont basins, and limited portions of Edgar Canyon above the Banning Fault as illustrated in Figure 5-2. The anti-degradation objectives are based on the historic ambient TDS and nitrate-nitrogen concentration of 230 mg/L and 1.5 mg/L respectively.

The maximum benefit objectives were adopted by the Regional Board in 2004 at the request of STWMA and Beaumont to allow for recharge of imported water and the reuse of recycled water. The maximum benefit objectives, set to 330 mg/L for TDS and 5.0 mg/L for nitrate-nitrogen, are relatively low compared to other basins and are protective of the beneficial uses of the Basin groundwater. According to the Basin Plan, salt mitigation will be required once the ambient TDS and nitrate-nitrogen concentration exceeds the BMZ maximum benefit objectives.

5.2.1 Total Dissolved Solids

Figure 5-3 shows the maximum TDS concentrations measured at Basin wells during the 2008-2011 reporting period for 22 production and 23 monitoring wells. The maximum TDS concentrations for production wells ranged from 180 to 380 mg/L and averaged 255 mg/L. Of the 22 production wells, 9 wells had a maximum concentration below the antidegradation objective, 10 wells had a maximum concentration between the antidegradation and maximum benefit objectives, and 3 wells had a maximum concentration exceeding the maximum benefit objective for the BMZ. None of the production wells samples exceeded the secondary federal or state drinking water standard for TDS (500 mg/L).

Of the 23 monitoring wells sampled, the maximum TDS concentrations ranged from 100 to 768 mg/L and averaged 322 mg/L, significantly higher than for production wells. Four of these wells had maximum concentrations below the antidegradation objective, 13 wells had a maximum concentration between the antidegradation and maximum benefit objectives, and six wells exceeded the maximum benefit objective for the BMZ. In addition, two of these six wells also exceeded the secondary federal or state drinking water standard for TDS. Most of the wells with the highest TDS concentrations, include the two wells that exceeded drinking water standards are located within the BMZ, but outside the Beaumont Basin.

5.2.2 Nitrate-Nitrogen

Figure 5-4 shows the maximum nitrate-nitrogen concentrations measured at Basin wells during the 2008-2011 period for 21 monitoring and 22 production wells. The maximum nitrate-nitrogen concentrations for production wells ranged from 0.96 to 8.89 mg/L and averaged 3.64 mg/L. Of the 22 production wells, six had a maximum concentration below the antidegradation objective, 10 wells had a maximum concentration between the antidegradation and maximum benefit objectives, and six wells had a maximum concentration exceeding the maximum benefit objective for the BMZ. None of the production wells sample exceeded the primary federal and state drinking water standard for nitrate-nitrogen of 10 mg/L.

Of the 21 monitoring wells sampled, the maximum nitrate-nitrogen concentrations ranged from 0.25 to 21.3 mg/L and averaged 5.44 mg/L, significantly higher than for production wells. Only one of these wells had maximum concentrations below the antidegradation objective, 13 wells

had a maximum concentration between the antidegradation and maximum benefit objectives, and the remaining seven wells exceeded the maximum benefit objective for the BMZ. In addition, four of these seven wells also exceeded the primary federal and state drinking water standard for nitrate.

Amongst production wells, there are six wells with nitrate-nitrogen concentrations often exceeding the BMZ maximum benefit objective of 330 mg/L; their location is identified in Figure 5-4. Figure 5-5 illustrates the nitrate-nitrogen concentration for these high nitrate wells since 1999. In addition to exceeding the BMZ maximum benefit objective, all of these wells have exceeded the 80 percent of MCL (10.0 mg/L) threshold level that the CDPH uses to begin considering potential blending and/or treatment alternatives to address high nitrate concentrations in drinking water.

5.3 Nitrate Studies in the Beaumont Management Zone

Rising nitrate concentrations observed in 2005 along the northern portion of the Basin prompted STWMA to launch an investigation in 2006 to determine the potential impact on groundwater quality from on-site waste disposal systems (OSWDS) commonly used in the Cherry Valley Community of Interest (CVCOI). STWMA retained the services of Wildermuth Environmental Inc. (WEI) to conduct this study.

The results of this study were disputed by the Beaumont Board of Supervisors' Groundwater Quality Evaluation Committee (Committee) as they identified potential shortcomings in sampling design and project execution. The Committee recommended that an independent assessment be conducted. They recommended that the second study should expand the study area, consider reasonable build-out projections and other sources of groundwater contamination. This independent study was conducted by scientist at the University of California, Riverside and funded as a Supplemental Environmental Project by the State Water Resources Control Board. The results of this study were published in early 2012.

While both of these reports were conducted outside of the reporting period (2008-11) for this report, a brief summary and their findings is presented below for information purposes only.

5.3.1 Summary of Wildermuth Environmental Inc. Study

This study is titled: "*Water Quality Impacts from On-Site Waste Disposal Systems in the Cherry Valley Community of Interest" (WEI, 2007).* The bases for this study include the following:

- A review of scientific literature,
- A field study to estimate nitrogen concentrations in soil water below selected OSWDS,
- A tracer study of nitrogen isotope and pharmaceutical and personal care products (PPCP) to confirm the presence of effluent from OSWDS,
- An estimation of current and future discharge from OSWDS to groundwater,

- A planning-level evaluation of basin impacts using the groundwater flow and nitrate transport model, and
- A review of the threshold used in California to compel sewering when OSWDS contaminate or threaten to contaminate groundwater

The results of the investigation are summarized as follows:

- Parcel density in the CVCOI violates the minimum half-acre parcel size requirement of the Regional Board to be on a septic system.
- Water produced from high nitrate wells in the area has a nitrogen isotopic signature and contain PPCPs consistent with discharge from OSWDS.
- Present contribution of OSWDS discharges is estimated at 665 ac-ft/yr. This represents about five percent of total recharge to the BMZ. At ultimate buildout, there will be between 4,900 to 8,800 OSWDS in the CVCOI. Discharge contribution from these OSWDS is estimated between 1,700 and 3,100 ac-ft/yr. representing 13 to 21 percent of total recharge to the BMZ.
- At 4,900 lots, the contributions from OSWDS will significantly impact water quality to the point that well head treatment will be required at certain well locations in order to meet drinking water standards. At 8,800 lots, the contributions from OSWDS will rendered the entire BMZ non-potable.
- Left unmitigated, OSWDS discharges will contribute enough nitrate to exceed the Basin Plan objectives for the BMZ.
- There is sufficient evidence of groundwater contamination by OSWDS to warrant the Regional Board to issue a prohibition on new OSWDS in the CVCOI.

According to WEI, as a result of this investigation, the County of Riverside issued a moratorium, followed by a permanent prohibition on the installation of septic systems in Cherry Valley unless the septic system is designed to remove at least 50 percent of the nitrogen in the wastewater. In 2009, the County passed a new ordinance that removed the prohibition on conventional OSWDS. WEI further indicates that the Regional Board initiated a process in 2009 that may lead to amending the Basin Plan prohibiting conventional OSWDS and regulating the discharges to meet antidegradation objectives.

5.3.2 Summary of University of California, Riverside Study

This study is titled: *"Water Quality Assessment of the Beaumont Management Zone: Identifying Sources of Groundwater Contamination Using Chemical and Isotopic Tracers" (UCR, 2012).*

The study divides the BMZ into four distinct zones; their location is depicted in Figure 2 of the UCR report (not included here). A brief description of the zones is as follows:

Zone 1 – Region Influenced by Wastewater Treatment Plant Effluent. This zone occupies the southernmost area of the BMZ. Water quality in this zone is influenced by effluent from the City of Beaumont wastewater treatment plant.

Zone 2 – Wildland and Low Density Septic Disposal Region. This zone is defined as the area uphill of Edgar Canyon to the north of Cherry Valley. Water quality in this area had low to moderate concentrations of TDS and nitrate.

Zone 3 – Urban Region with On-site Septic Disposal Systems. This zone overlies the Cherry Valley area including the area around the Noble Creek and Little San Gorgonio Spreading Ponds. Human waste from homes and business in this zone is primarily disposed of in on-site waste disposal systems.

Zone 4 – Urban Region with Consolidate Sewer System. Zone 4 comprises those portions of the City of Beaumont utilizing a municipal wastewater system.

The UCR report attempted to answer a series of questions; the questions and a summary of their response is provided below.

1.- Can different groundwater regions within the BMZ be defined using isotope, PPCP, and general chemical parameters?

According to the study,

- Zone 1 was characterized by relatively high levels of PPCPs and it has the highest likelihood for nitrate contamination from human waste.
- Zone 2 had detectable levels of some PPCP's. Septic contributions to groundwater are relatively minor.
- Zone 3 had several wells with clear signs of contamination by septic systems. Groundwater in the central portion of Cherry Valley appeared to be more strongly affected by septic systems than on the periphery of Cherry Valley.
- Zone 4 shows the fewest signs of human waste as most homes are served by consolidated sewer systems.

1A.- Do areas with septic systems have different chemistry than areas with sewers?

The report indicates that there are statistically significant differences between groundwater in areas with septic systems and groundwater where sewer service is available. The concentrations of PPCPs, TDS, Nitrate-Nitrogen, the sum of base cations, Boron, and Isotopes of Nitrate were all significantly higher in areas with septic systems than in areas with sewer service.

1B.- Do areas where groundwater recharge with water from the State Water Project or wastewater treatment plant effluent have different chemistry from other areas?

Strong evidence of nitrate deriving from human waste was detected in Zone 1 as well as strong biological attenuation of nitrate transported in groundwater.

2.- What sources contribute nitrate to groundwater of the BMZ?

The report indicates that in Zone 1 the isotopes of nitrate values overlap those expected for human or animal waste. Similarly, in Zone 3 the isotopic composition of water suggest a high

probability of inputs of nitrate from human or animal waste. The presence of PPCPs in most samples indicates the possibility that septic systems are contaminating groundwater within the central part of Cherry Valley.

3.- How much nitrate from human waste is making its way into the groundwater of the BMZ?

The report documents the following findings:

- Mixing models suggest that between 18 to 30 percent of the nitrate in central Cherry Valley groundwater is derived from septic systems.
- If septic systems were completely phased out, nitrate concentrations in central Cherry Valley groundwater could decline by 30 percent once a steady state condition is achieved. The time to reach a steady state is anticipated to be shorter than in other portions of the BMZ due to relatively high rates of recharge in Zone 3.
- Mass balance calculations show that nitrate-nitrogen inputs from septic systems is one of the largest inputs of nitrogen to groundwater in the BMZ.
- If the waste from septic tanks were to be conveyed to the City of Beaumont WWTP, about 30 percent of the current input of nitrate from human waste to groundwater would be removed.

5.4 Comparison with Federal and State Drinking Water Standards

The California Department of Health Services (CDPH) maintains an active water quality database of all public and private drinking water wells throughout the state. This database, available at CDPH's website, was assessed for the 2008-2011 reporting period to determine whether any of the 22 production wells in the Beaumont Basin had exceeded the Primary or Secondary Federal and State standards or the notification levels set by the state. Federal standards are set by the United States Environmental Protection Agency (USEPA) while state standards in California are set by CDPH. Primary standards at the federal and state level are enforceable criteria that have been established to protect the public against consumption of drinking water contaminants that present a risk to human health. Secondary standards are not enforceable standards; they have been established for aesthetic qualities of water, such as taste, color, and other. Contaminants with a secondary MCL are not considered to present a risk to human health at the established maximum level. Notification levels (NL) are not enforceable standards; however, they require that municipal water suppliers notify the public if the NL for a chemical has been exceeded.

A total of 2,729 water quality results were extracted from the CDPH database for the 22 production wells owned and operated by Appropriators and pumping from the Beaumont Basin. Results were obtained for 115 analytes sampled between 2008 and 2011. The results of the analysis indicate that not a single production well exceeds either the primary or secondary federal and state standards during the reporting period. Further, the California Notification Limit was also not exceeded by any well during the reporting period.

Additional water quality information from 2008 through 2011 was obtained from WEI as part of the Maximum Benefit Monitoring Program. This information was analyzed to determine if the water quality at the monitoring wells exceeded drinking water standards. Drinking standards were exceeded for a limited number of constituents as follows:

- Nitrate-nitrogen – Three monitoring wells exceeded this federal and state primary MCL of 10 mg/L – Total of 11 readings. One of the wells is located within the Beaumont Basin.
- pH – Two monitoring wells exceeded this secondary federal MCL of 8.5 – Total of two readings. Both wells located in the Beaumont Basin.
- Total Dissolved Solids – Two monitoring wells exceeded this federal and state secondary MCL of 500 mg/L – Total of six readings. Both wells located outside the Beaumont Basin.
- Turbidity – Two wells exceeded this secondary California MCL of 5 NTU – Total of two readings. One of these two wells is located within the Beaumont Basin.

Appendix B contains summary statistics of the analytical results for the 2008-2011 period for all chemicals that have a federal or state drinking water standard whether maximum contaminant levels were exceeded.

5.4.1 Trace Metals

As indicated earlier, not a single production well exceeds either the primary or secondary federal and state standards during the reporting period. This represents a significant improvement over previous reporting periods when several wells exceeded the MCL for trace metals. Trace metals are briefly discussed here and compared to previous reporting periods.

Aluminum. There were 30 water samples taken during the reporting period and tested for aluminum. Aluminum concentration at all wells was below 50 ug/L, significantly below the secondary MCL of 200 ug/L. Aluminum above the MCL can add color to water. One well exceeded the MCL during the FY 2004-08 reporting period.

Arsenic. There were 36 water samples collected and tested for arsenic during the reporting period. The highest arsenic concentration was at the City of Banning Well C-02A at 4.6 mg/L followed by SMWC's Well No. 4 at 4.2 mg/L. Both of these readings are below 50 percent of the current primary MCL of 10 mg/L. One well exceeded the MCL during the FY 2004-08 reporting period.

Iron. A total of 31 water samples were taken during the reporting period and tested for iron. Iron concentration in all cases was below 100 ug/L., significantly less than the current secondary MCL of 300 ug/L. Iron at a concentration above the MCL can impact color, odor, and taste in water. Five wells exceeded the MCL during the FY 2004-08 reporting period.

Lead. There were 30 water samples collected and tested for lead during the reporting period. The highest concentration reported was 0.006 mg/L**.** A total of 31 water samples were taken during the

reporting period and tested for iron. Iron concentration in all cases was below 100 ug/L., significantly less than the current secondary MCL of 300 ug/L. Iron at a concentration above the MCL can impact color, odor, and taste in water. Five wells exceeded the MCL during the FY 2004-08 reporting period.ch is significantly below the current primary MCL for Lead of 0.015 mg/L. Lead concentrations in water above the MCL can have significant impacts on human health. One well exceeded the MCL during the FY 2004-08 reporting period.

Manganese. There were 31 water samples taken during the reporting period and tested for Manganese. Manganese concentration at all wells was below 20 ug/L, significantly below the secondary MCL of 50 ug/L. Manganese can significantly impact color and taste in water at concentrations above the MCL. One monitoring well exceeded the MCL during the FY 2004-08 reporting period.

Total Chromium. A total of 30 water samples were taken during the reporting period and tested for total chromium. The highest reported concentration of total chromium was 0.02 ug/L, which is significant less that the current state primary MCL of 0.05 ug/L. One well exceeded the state primary MCL during the FY 2004-08 reporting period.

Vanadium. A single water sample was tested for vanadium during the reporting period from SMWC's Well 4. Vanadium at this well was 17 ug/L or approximately 30 percent of the state notification level of 50 ug/L. Two wells exceeded the state NL for vanadium during the FY 2004-08 reporting period.

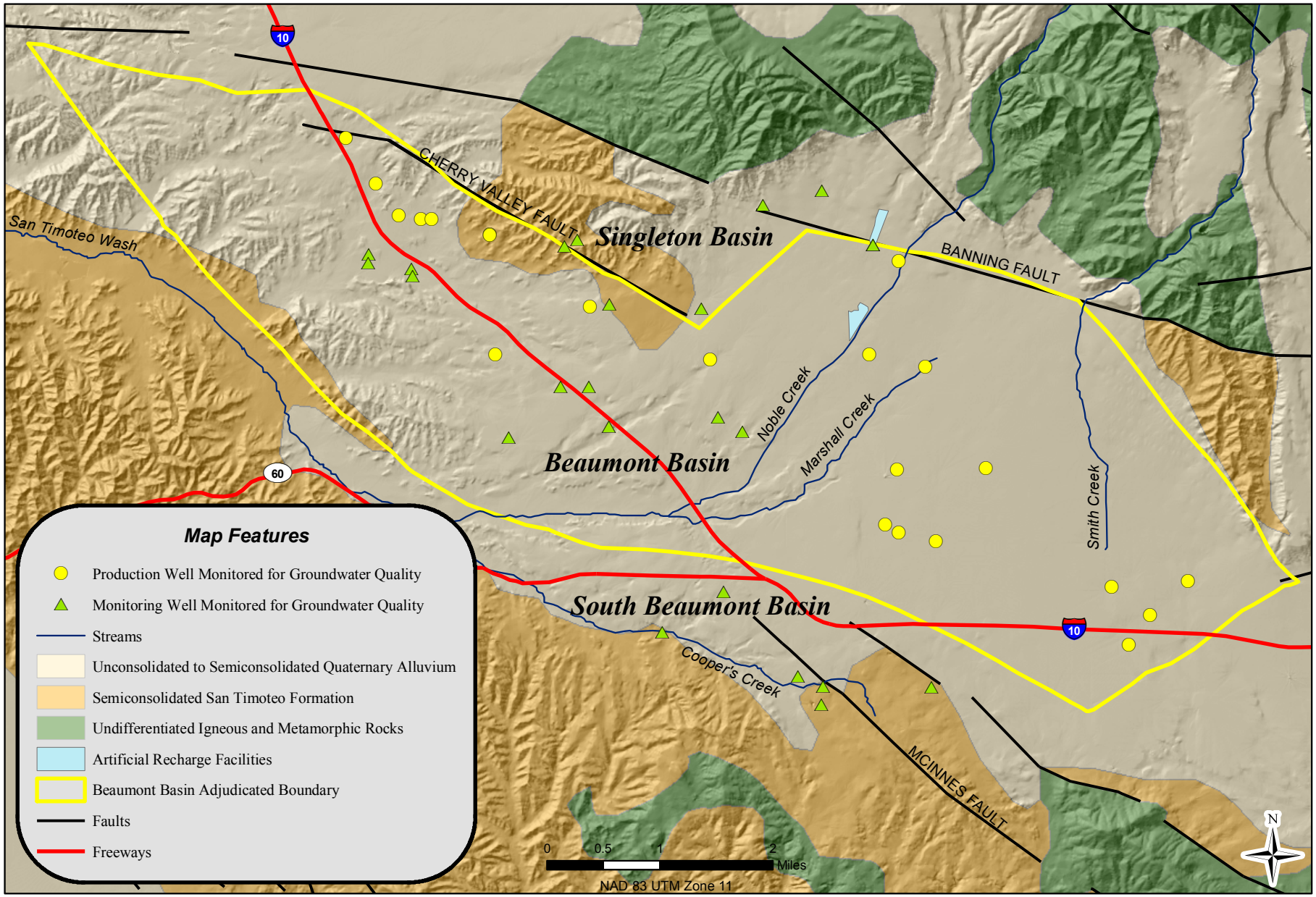
Copper. There were 31 water samples collected and tested for copper during the reporting period. Copper concentration in all of them were below 50 ug/L, significantly below the state primary MCL of 1,300 ug/L. This is consistent with previous reporting periods.

5.4.2 pH

There are two secondary standards for pH, a lower limit of 6.5 and an upper limit of 8.5. All production wells in the Basin were within these limits with pH concentrations ranging from a low of 7.6 to a high of 8.1. Four wells in the Basin exceeded the upper limit for pH during the FY 2004-08 reporting period.

5.4.3 Turbidity

Turbidity is a measure of the cloudiness of water, and is used to indicate water quality and filtration effectiveness. All production wells in the Basin were tested for turbidity and none exceeded the primary federal and state MCL.



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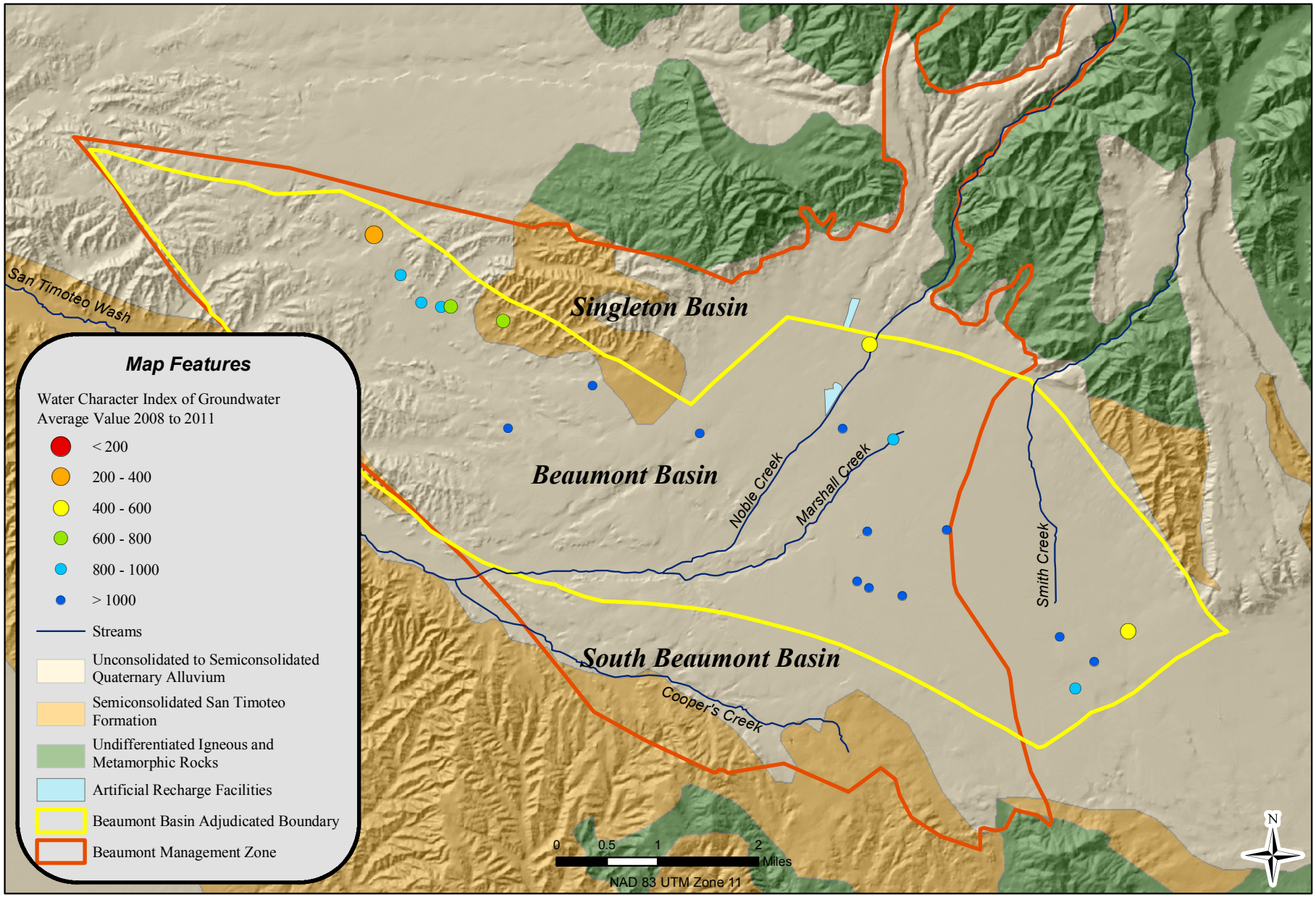
Wells with Groundwater Quality Data 2008 - 2011

Figure 5-1



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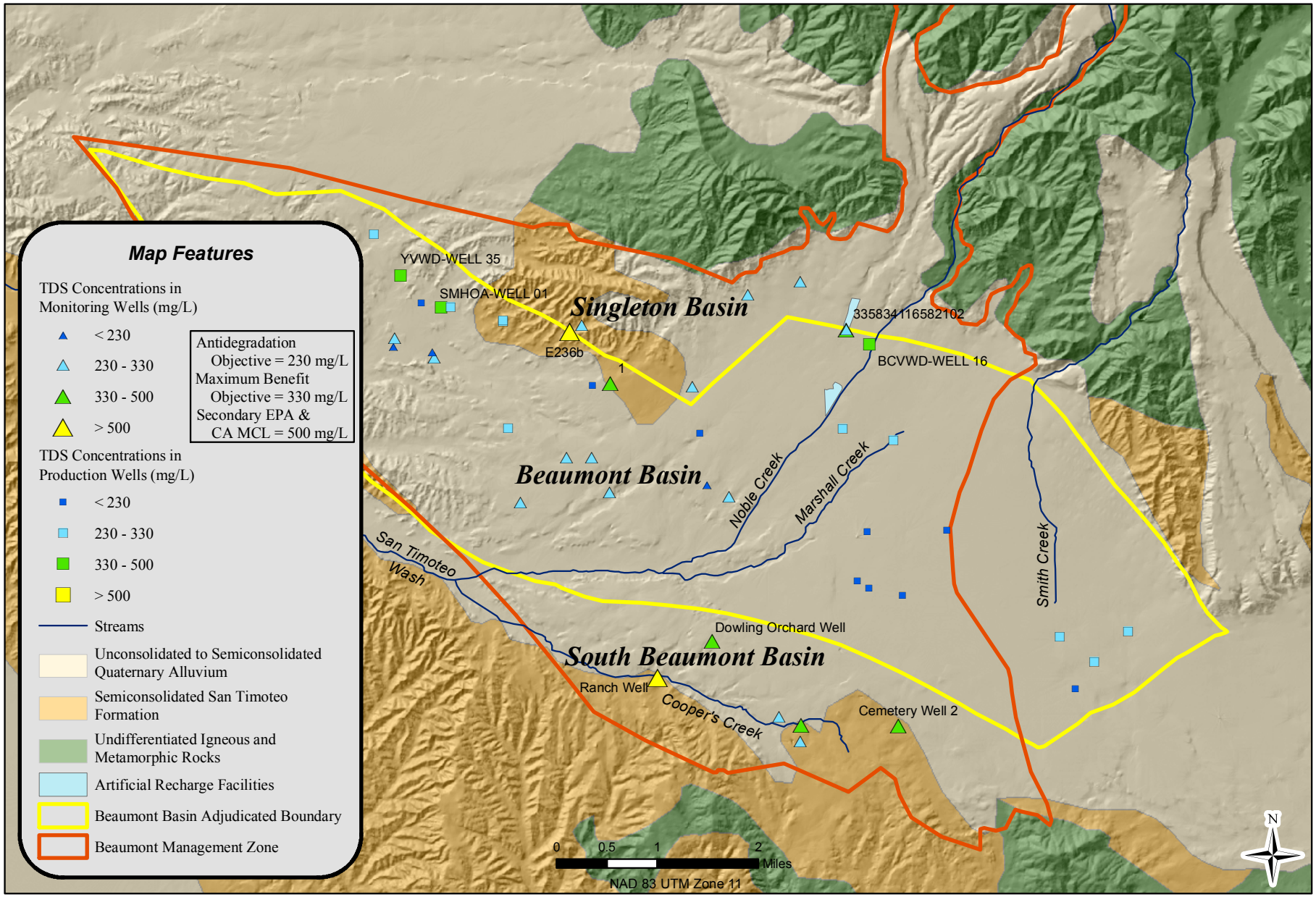
Water Character Index of Groundwater Average Value 2008 to 2011
Figure 5-2



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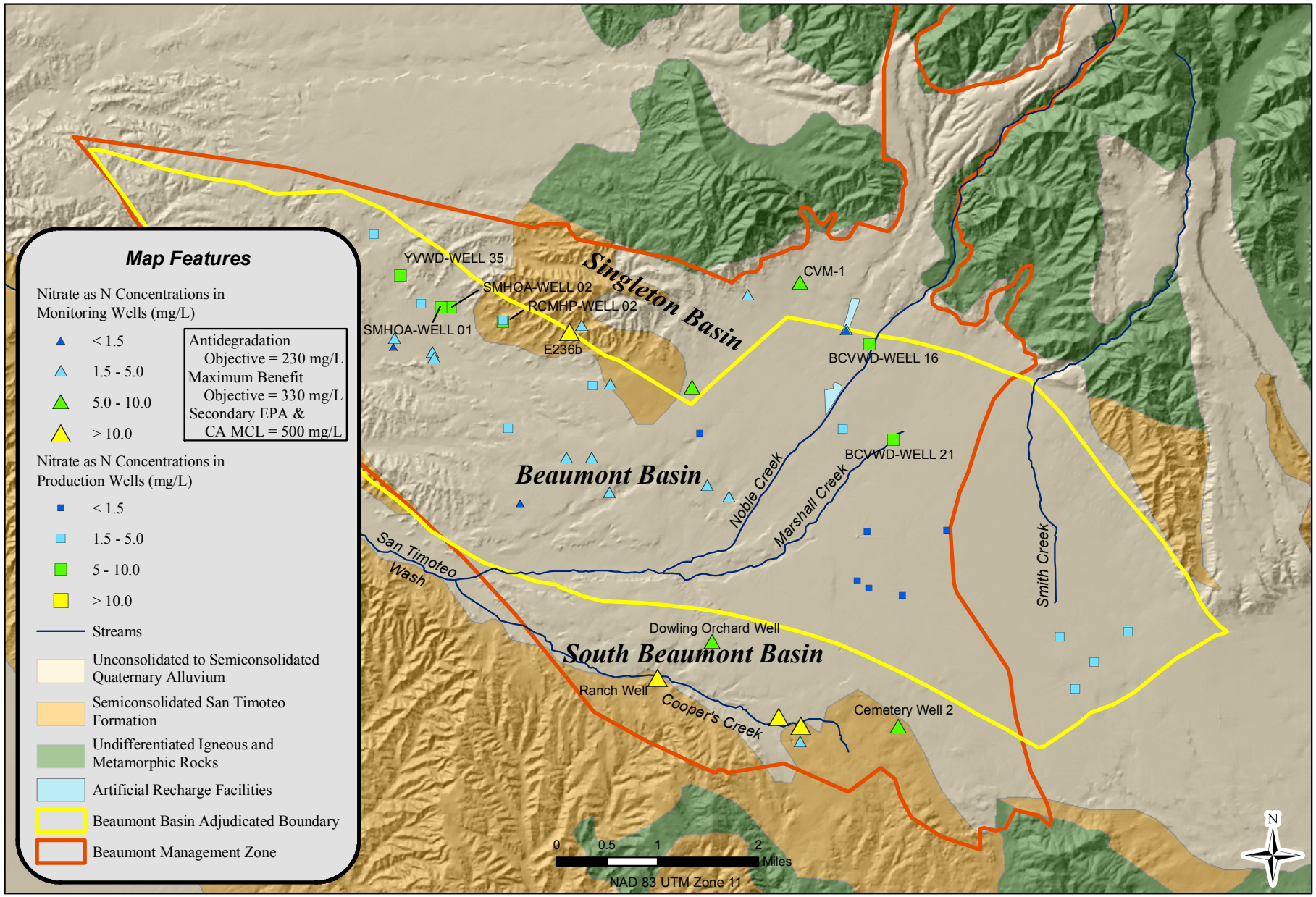
Total Dissolved Solids in Groundwater - Maximum Concentration 2008 to 2011

Figure 5-3



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Nitrate in Groundwater - Maximum Concentration 2008 to 2011

Figure 5-4

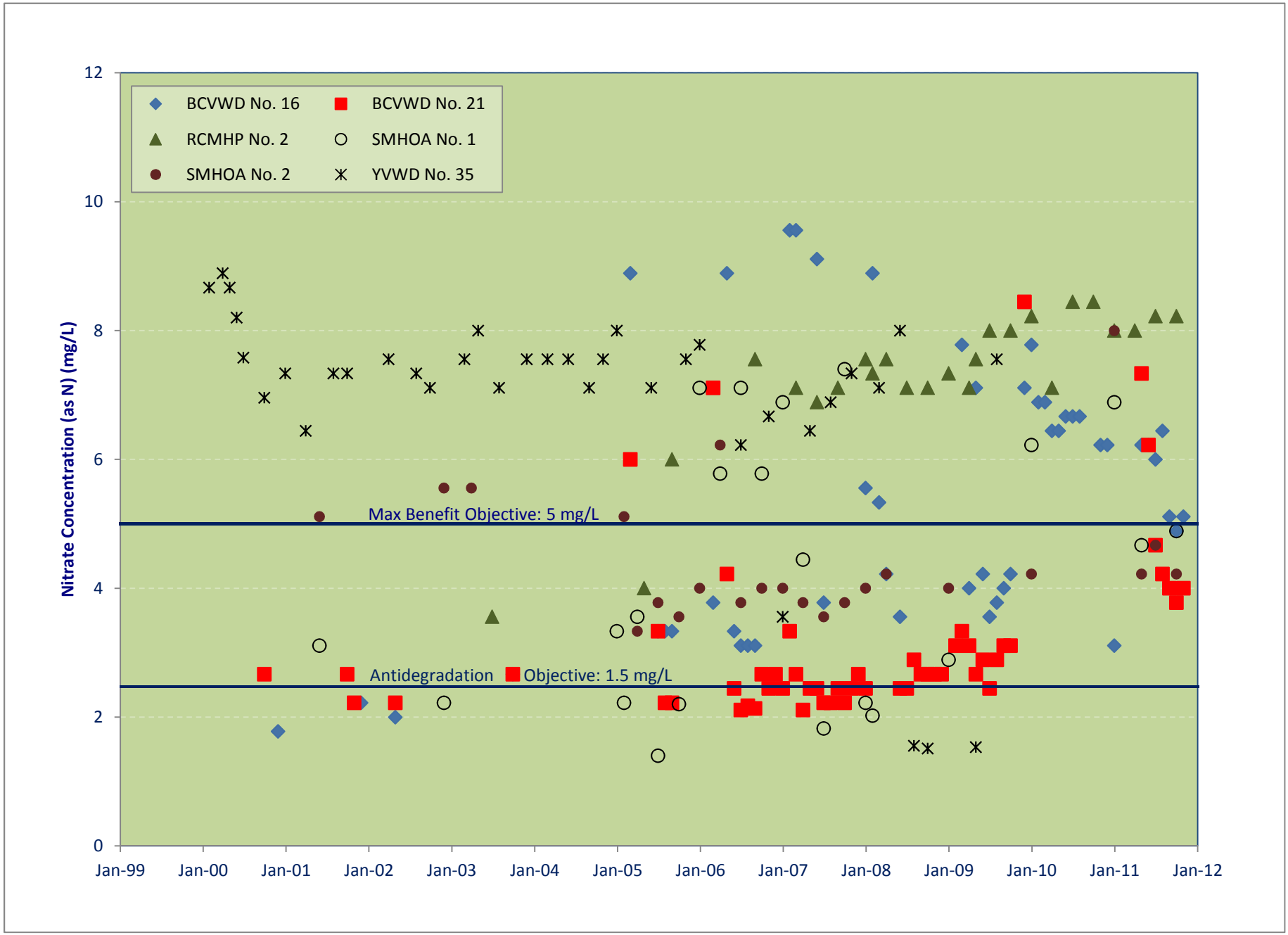

Figure 5-5
Historical Nitrate-Nitrogen Concentrations at Selected Wells

Section 6
Land Subsidence

In the first ten years of operations under the Judgment, a temporary surplus was established that allows up to 160,000 acre-ft of overdraft within the Basin. The purpose of the temporary surplus is to create room for the safe storage of supplemental water and to reduce losses from the basin. A major concern is that overdraft of the groundwater basin may lead to the lowering of groundwater levels and, subsequently, to land subsidence and ground fissuring. To proactively address this concern, the STWMA and the Watermaster developed a monitoring program specifically to assess the occurrence of subsidence from past groundwater pumping and future pumping. To implement this program, the STWMA, on behalf of the Watermaster, applied for an AB303 Grant from the California Department of Water Resources (DWR). The application was successful, and the subsidence monitoring program was initiated during fiscal 2005/06. The results of the initial subsidence monitoring program were used by the Watermaster to design an on-going monitoring effort (see Section 3.1.3); the results of which can be used by the major producers in the Basin to adapt their pumping and recharge activities to minimize subsidence.

Appendix A
Groundwater Production

Table A-1A
Appropriator Producer Summary of Production for Calendar Year 2003 (ac-ft)

Owner & Well Name	Water Production by Appropriator (ac-ft)						Total Production	Temp Surplus Allocation[3]	Eligible for Storage
	Jul	Aug	Sep	Oct	Nov	Dec			
Banning, City of									
Well C2-A	107.5	99.1	118.7	108.5	82.9	102.5	619.2		
Well C3	112.9	100.9	103.1	88.1	36.6	76.1	517.7		
Well C4	102.1	111.0	74.0	77.6	64.9	18.7	448.3		
Well M3	76.4	162.1	129.8	146.7	10.7	0.0	525.7		
Well M9	62.2	1.1	0.0	0.0	0.0	0.0	63.3		
From BCVWD[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Subtotal	**461.1**	**474.2**	**425.6**	**420.9**	**195.1**	**197.3**	**2,174.2**	**2,514.5**	**340.3**
Beaumont-Cherry Valley Water District									
Well 1	0.0	0.0	0.0	0.0	0.6	5.3	5.9		
Well 2	167.9	181.2	193.8	151.1	115.0	151.2	960.2		
Well 3	152.7	163.6	173.0	118.0	43.6	24.2	675.1		
Well 16	108.3	110.9	114.5	94.0	59.0	67.9	554.6		
Well 21	201.0	209.3	218.0	172.6	31.9	0.0	832.8		
Well 22	152.7	110.9	50.3	135.9	33.5	0.0	483.3		
To Banning[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Subtotal	**782.6**	**775.9**	**749.6**	**671.6**	**283.6**	**248.6**	**3,511.9**	**3,401.0**	**0.0**
South Mesa Water Company									
3rd No. 4 Well	65.2	47.0	51.3	25.5	18.0	16.2	223.2		
Subtotal	**65.2**	**47.0**	**51.3**	**25.5**	**18.0**	**16.2**	**223.2**	**998.0**	**774.8**
Yucaipa Valley Water District									
Well 35	25.3	18.8	10.4	1.9	0.7	1.8	58.9		
Well 48	234.5	239.1	220.9	164.3	123.8	120.9	1,103.5		
Subtotal	**259.8**	**257.9**	**231.3**	**166.2**	**124.5**	**122.7**	**1,162.4**	**1,086.5**	**0.0**
Total	**1,568.7**	**1,555.0**	**1,457.8**	**1,284.2**	**621.2**	**584.8**	**7,071.7**	**8,000.0**	**1,115.1**

1 - All values rounded and subject to revision based on receipt of more accurate information

2 - Pursuant to Part I, Paragraph 3 B of the Judgment, and a separate Agreement (a copy of which is on file with the Watermaster).

3.- Temporary surplus based on 8,000 ac-ft or half of the 16,000 ac-ft/yr allocated

Table A-1B
Appropriator Producer Summary of Production for Calendar Year 2004 (ac-ft)

Owner & Well Name	Water Production by Appropriator (ac-ft)[1]												Total Production	Temp Surplus Allocation[3]	Eligible for Storage
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Banning, City of															
Well C2-A	95.4	88.6	51.3	72.8	40.6	50.3	86.2	69.6	73.1	36.3	22.6	23.9	710.7		
Well C3	101.0	88.5	101.4	48.7	67.8	75.2	120.4	117.4	106.0	89.3	53.0	57.9	1,026.6		
Well C4	38.5	19.5	85.8	74.4	91.2	69.4	136.8	157.7	154.8	135.2	91.2	81.2	1,135.7		
Well M3	0.0	0.0	0.0	0.0	50.9	118.9	0.0	0.0	0.0	0.0	0.0	0.0	169.8		
Well M9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
From BCVWD[2]	0.0	0.0	67.7	102.6	127.4	49.0	0.0	0.0	7.8	0.0	0.0	0.0	354.5		
Subtotal	**234.9**	**196.6**	**306.3**	**298.5**	**377.9**	**362.8**	**343.4**	**344.6**	**341.7**	**260.7**	**166.7**	**163.1**	**3,397.3**	**5,029.0**	**1,631.7**
Beaumont-Cherry Valley Water District															
Well 1	0.0	0.0	33.5	118.1	180.0	175.7	156.6	134.4	130.7	9.3	0.0	40.0	978.3		
Well 2	143.0	135.1	203.1	192.1	183.4	124.5	144.6	138.1	141.8	101.1	57.4	64.1	1,628.2		
Well 3	0.0	0.0	0.0	0.0	153.6	189.4	145.8	164.1	117.0	84.1	47.6	34.4	936.0		
Well 16	64.2	49.7	88.2	112.3	137.0	132.9	133.8	113.5	86.2	54.3	54.5	77.0	1,103.7		
Well 21	0.0	0.0	0.1	0.0	0.4	2.9	211.7	259.9	268.0	195.6	163.8	150.0	1,252.5		
Well 22	64.3	54.0	101.9	111.5	140.8	147.4	151.3	151.1	126.9	69.0	4.2	2.8	1,125.3		
Well 23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.9	85.1	55.7	17.9	3.7	204.3		
To Banning[2]	0.0	0.0	-67.7	-102.6	-127.4	-49.0	0.0	0.0	-7.8	0.0	0.0	0.0	-354.5		
Subtotal	**271.5**	**238.9**	**359.2**	**431.4**	**667.8**	**723.8**	**943.9**	**1,003.0**	**948.0**	**569.1**	**345.4**	**372.0**	**6,873.9**	**6,802.0**	**0.0**
South Mesa Water Company															
3rd No. 4 Well	15.7	13.1	30.5	45.3	53.1	39.0	51.6	82.4	74.2	54.7	12.1	10.9	482.5		
Subtotal	**15.7**	**13.1**	**30.5**	**45.3**	**53.1**	**39.0**	**51.6**	**82.4**	**74.2**	**54.7**	**12.1**	**10.9**	**482.5**	**1,996.0**	**1,513.5**
Yucaipa Valley Water District															
Well 35	1.1	0.8	4.4	0.6	0.8	3.4	63.9	76.8	70.9	1.4	1.4	0.8	226.5		
Well 48	121.4	107.2	133.3	136.4	170.9	162.3	177.9	218.9	186.5	123.8	18.9	20.6	1,578.2		
Subtotal	**122.5**	**108.0**	**137.7**	**137.1**	**171.7**	**165.7**	**241.9**	**295.6**	**257.5**	**125.2**	**20.3**	**21.4**	**1,804.7**	**2,173.0**	**368.3**
Total	**644.5**	**556.6**	**833.7**	**912.2**	**1,270.5**	**1,291.3**	**1,580.7**	**1,725.7**	**1,621.4**	**1,009.8**	**544.5**	**567.4**	**12,558.3**	**16,000.0**	**3,513.6**

1 - All values rounded and subject to revision based on receipt of more accurate information

2 - Pursuant to Part I, Paragraph 3 B of the Judgment, and a separate Agreement (a copy of which is on file with the Watermaster).

3.- Temporary surplus based on 16,000 ac-ft/yr allocated

Table A-1C
Appropriator Producer Summary of Production for Calendar Year 2005 (ac-ft)

Owner & Well Name	Water Production by Appropriator (ac-ft)[1]												Total Production	Temp Surplus Allocation[3]	Eligible for Storage
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Banning, City of															
Well C2-A	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4		
Well C3	45.0	57.1	10.3	48.2	46.7	40.0	74.8	103.3	57.1	34.4	3.6	0.7	521.2		
Well C4	89.6	7.5	6.1	28.8	8.5	20.9	60.0	50.1	54.0	32.1	1.9	28.3	387.8		
Well M3	0.0	0.0	0.0	0.0	34.8	39.8	102.4	125.8	103.3	81.4	37.7	7.7	532.8		
Well M9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
From BCVWD[2]	0.0	0.0	0.0	0.0	37.8	87.6	55.4	34.9	0.0	0.0	33.0	117.7	366.4		
Subtotal	**135.0**	**64.6**	**16.4**	**76.9**	**127.8**	**188.3**	**292.6**	**314.1**	**214.3**	**147.8**	**76.2**	**154.5**	**1,808.6**	**5,029.0**	**3,220.4**
Beaumont-Cherry Valley Water District															
Well 1	15.2	10.1	19.3	67.9	122.2	164.2	165.6	144.7	100.8	103.7	157.1	173.4	1,244.2		
Well 2	44.6	36.1	36.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	117.6		
Well 3	37.3	30.7	40.7	79.7	30.7	135.0	168.0	141.5	97.5	37.0	43.5	0.0	841.6		
Well 16	9.9	0.0	0.0	40.2	60.2	110.8	91.3	98.1	92.5	64.8	80.8	87.0	735.6		
Well 21	78.0	104.1	106.8	181.5	154.7	224.7	291.8	278.2	214.1	160.4	240.8	264.5	2,299.5		
Well 22	0.0	5.8	13.7	57.9	73.0	69.0	47.4	0.0	0.0	0.0	14.7	124.1	405.7		
Well 23	56.5	25.0	29.5	63.9	58.5	126.6	337.0	350.7	331.6	269.0	66.0	33.5	1,747.9		
Well 24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
To Banning[2]	0.0	0.0	0.0	0.0	-37.8	-87.6	-55.4	-34.9	0.0	0.0	-33.0	-117.7	-366.4		
Subtotal	**241.5**	**211.8**	**247.0**	**491.2**	**461.4**	**742.8**	**1,045.7**	**978.3**	**836.5**	**634.8**	**569.8**	**564.8**	**7,025.6**	**6,802.0**	**0.0**
South Mesa Water Company															
3rd No. 4 Well	29.7	16.7	39.2	51.3	65.4	70.0	70.0	82.3	76.7	63.1	52.7	46.3	663.2		
Subtotal	**29.7**	**16.7**	**39.2**	**51.3**	**65.4**	**70.0**	**70.0**	**82.3**	**76.7**	**63.1**	**52.7**	**46.3**	**663.2**	**1,996.0**	**1,332.8**
Yucaipa Valley Water District															
Well 35	0.2	0.7	0.7	24.7	30.1	0.6	21.3	14.2	13.2	2.8	1.1	0.9	110.6		
Well 48	13.6	11.4	21.2	14.8	51.9	152.6	251.5	248.9	201.7	120.0	47.2	29.0	1,163.7		
Subtotal	**13.8**	**12.1**	**21.9**	**39.5**	**82.0**	**153.1**	**272.9**	**263.1**	**214.9**	**122.8**	**48.3**	**29.9**	**1,274.3**	**2,173.0**	**898.7**
Total	**420.0**	**305.1**	**324.5**	**659.0**	**736.6**	**1,154.2**	**1,681.1**	**1,637.8**	**1,342.4**	**968.5**	**747.0**	**795.5**	**10,771.7**	**16,000.0**	**5,451.9**

1 - All values rounded and subject to revision based on receipt of more accurate information

2 - Pursuant to Part I, Paragraph 3 B of the Judgment, and a separate Agreement (a copy of which is on file with the Watermaster).

3.- Temporary surplus based on 16,000 ac-ft/yr allocated

Table A-1D
Appropriator Producer Summary of Production for Calendar Year 2006 (ac-ft)

Owner & Well Name	Water Production by Appropriator (ac-ft)[1]												Total Production	Temp Surplus Allocation[3]	Eligible for Storage
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Banning, City of															
Well C2-A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6	0.0	0.0	2.1	6.8		
Well C3	2.0	0.1	0.9	2.6	34.8	10.5	36.4	44.7	61.1	26.5	6.1	9.7	235.3		
Well C4	6.6	40.4	1.4	19.1	11.4	12.6	61.4	32.3	50.5	11.2	19.9	10.0	276.8		
Well M3	43.8	9.9	20.4	34.1	65.8	65.5	84.8	82.2	88.2	74.9	69.7	32.6	671.9		
Well M9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
From BCVWD[2]	1.1	28.4	0.0	0.0	74.3	111.2	104.4	105.3	105.6	61.6	44.8	0.0	636.7		
Subtotal	**53.4**	**78.8**	**22.7**	**55.8**	**186.4**	**199.8**	**287.0**	**264.5**	**310.0**	**174.2**	**140.5**	**54.6**	**1,827.5**	**5,029.0**	**3,201.5**
Beaumont-Cherry Valley Water District															
Well 1	51.7	0.3	1.5	0.0	105.2	215.6	186.4	169.6	141.3	92.6	137.8	47.2	1,149.1		
Well 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Well 3	0.0	0.0	0.0	0.0	83.1	194.2	190.9	51.0	6.3	4.6	163.4	56.1	749.7		
Well 16	28.7	51.3	47.6	1.9	0.0	61.7	119.6	113.6	101.4	12.0	0.0	0.0	537.7		
Well 21	176.7	132.6	8.5	1.5	28.4	360.0	320.3	306.4	263.1	120.3	196.2	82.3	1,996.3		
Well 22	60.2	65.7	35.1	1.5	45.2	140.6	176.4	159.7	139.6	77.3	100.7	60.6	1,062.6		
Well 23	0.8	9.1	6.1	0.1	41.6	305.7	699.4	0.0	304.0	191.4	295.2	110.4	1,963.9		
Well 24	33.4	235.3	212.4	165.6	68.0	204.5	276.6	247.8	298.6	172.9	211.0	105.6	2,231.7		
To Banning[2]	-1.1	-28.4	0.0	0.0	-74.3	-111.2	-104.4	-105.3	-105.6	-61.6	-44.8	0.0	-636.7		
Subtotal	**350.4**	**465.9**	**311.3**	**170.5**	**297.2**	**1,371.0**	**1,865.2**	**942.7**	**1,148.7**	**609.4**	**1,059.5**	**462.2**	**9,054.1**	**6,802.0**	**0.0**
South Mesa Water Company															
3rd No. 4 Well	42.8	38.6	42.8	29.4	31.6	56.2	81.3	76.5	65.1	55.9	53.7	42.1	616.0		
Subtotal	**42.8**	**38.6**	**42.8**	**29.4**	**31.6**	**56.2**	**81.3**	**76.5**	**65.1**	**55.9**	**53.7**	**42.1**	**616.0**	**1,996.0**	**1,380.0**
Yucaipa Valley Water District															
Well 35	1.4	1.6	1.4	0.6	15.9	39.9	47.5	40.1	34.1	20.1	15.0	2.4	220.0		
Well 48	22.9	56.5	19.0	31.9	157.9	228.7	244.3	240.0	227.9	229.1	227.8	121.2	1,807.2		
Subtotal	**24.3**	**58.1**	**20.5**	**32.5**	**173.8**	**268.6**	**291.8**	**280.2**	**262.0**	**249.2**	**242.8**	**123.5**	**2,027.3**	**2,173.0**	**145.7**
Total	**471.0**	**641.4**	**397.2**	**288.2**	**689.1**	**1,895.6**	**2,525.3**	**1,563.9**	**1,785.8**	**1,088.7**	**1,496.4**	**682.3**	**13,524.9**	**16,000.0**	**4,727.2**

1 - All values rounded and subject to revision based on receipt of more accurate information

2 - Pursuant to Part I, Paragraph 3 B of the Judgment, and a separate Agreement (a copy of which is on file with the Watermaster).

3.- Temporary surplus based on 16,000 ac-ft/yr allocated

Table A-1E
Appropriator Producer Summary of Production for Calendar Year 2007 (ac-ft)

Owner & Well Name	Water Production by Appropriator (ac-ft)[1]												Total Production	Temp Surplus Allocation[3]	Eligible for Storage
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Banning, City of															
Well C2-A	0.6	0.4	0.7	0.5	0.0	30.3	86.2	87.9	58.6	20.3	0.4	2.2	288.1		
Well C3	3.7	0.1	9.2	17.9	48.1	59.3	80.6	74.3	47.8	100.2	59.0	11.4	511.6		
Well C4	13.2	5.1	2.0	10.8	61.3	156.3	100.8	98.7	106.3	99.9	17.5	2.1	673.9		
Well M3	40.3	12.8	23.8	23.7	23.8	42.7	115.2	113.9	104.1	64.8	108.9	52.0	726.0		
Well M9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
From BCVWD[2]	0.0	0.0	43.3	55.4	71.3	59.0	43.0	56.0	55.0	62.0	63.0	65.0	572.9		
Subtotal	**57.8**	**18.4**	**79.0**	**108.3**	**204.5**	**347.6**	**425.8**	**430.8**	**371.8**	**347.2**	**248.8**	**132.7**	**2,772.6**	**5,029.0**	**2,256.4**
Beaumont-Cherry Valley Water District															
Well 1	74.5	53.6	116.0	13.3	82.5	130.6	134.9	179.8	212.5	128.5	101.6	55.9	1,283.8		
Well 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Well 3	80.7	55.1	42.8	82.4	86.0	148.2	154.1	205.6	270.5	176.5	55.4	0.0	1,357.3		
Well 16	0.0	0.1	17.4	0.0	0.0	12.3	68.4	103.8	117.6	14.7	1.5	12.6	348.3		
Well 21	190.1	98.6	91.8	114.9	183.8	214.8	215.5	306.3	392.5	285.0	205.2	126.2	2,424.7		
Well 22	43.0	21.2	60.5	47.4	97.1	127.6	125.4	161.7	197.8	92.3	59.3	23.5	1,056.8		
Well 23	187.4	53.8	167.8	190.3	274.2	272.8	272.4	419.4	523.9	314.2	257.5	84.6	3,018.3		
Well 24	78.8	280.5	186.4	173.2	208.6	236.7	130.1	274.6	360.7	282.1	166.6	88.9	2,467.1		
To Banning[2]	0.0	0.0	-43.3	-55.4	-71.3	-59.0	-43.0	-56.0	-55.0	-62.0	-63.0	-65.0	-572.9		
Subtotal	**654.5**	**562.8**	**639.3**	**566.1**	**860.9**	**1,084.0**	**1,057.8**	**1,595.2**	**2,020.5**	**1,231.3**	**784.1**	**326.7**	**11,383.3**	**6,802.0**	**0.0**
South Mesa Water Company															
3rd No. 4 Well	42.5	32.6	48.6	53.1	69.4	70.7	82.1	76.6	60.1	58.7	55.3	16.1	665.8		
Subtotal	**42.5**	**32.6**	**48.6**	**53.1**	**69.4**	**70.7**	**82.1**	**76.6**	**60.1**	**58.7**	**55.3**	**16.1**	**665.8**	**1,996.0**	**1,330.2**
Yucaipa Valley Water District															
Well 35	1.4	0.0	4.4	1.5	27.7	46.9	39.0	28.0	5.5	8.3	0.5	0.7	163.8		
Well 48	53.2	18.3	130.5	122.1	222.4	230.9	232.4	183.3	126.7	132.5	47.4	19.4	1,519.1		
Subtotal	**54.6**	**18.3**	**134.9**	**123.6**	**250.1**	**277.8**	**271.4**	**211.3**	**132.2**	**140.8**	**47.9**	**20.1**	**1,682.9**	**2,173.0**	**490.1**
Total	**809.4**	**632.0**	**901.8**	**851.1**	**1,384.9**	**1,780.0**	**1,837.1**	**2,313.9**	**2,584.6**	**1,778.0**	**1,136.1**	**495.6**	**16,504.6**	**16,000.0**	**4,076.7**

1 - All values rounded and subject to revision based on receipt of more accurate information

2 - Pursuant to Part I, Paragraph 3 B of the Judgment, and a separate Agreement (a copy of which is on file with the Watermaster).

3.- Temporary surplus based on 16,000 ac-ft/yr allocated

Table A-1F
Appropriator Producer Summary of Production for Calendar Year 2008 (ac-ft)

Owner & Well Name	Water Production by Appropriator (ac-ft)[1]												Total Production	Temp Surplus Allocation[3]	Eligible for Storage
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Banning, City of															
Well C2-A	0.2	0.4	42.0	83.7	39.5	2.6	26.6	63.5	64.9	54.1	4.4	0.4	382.3		
Well C3	42.4	16.4	88.9	69.6	62.9	105.0	36.6	2.7	4.0	50.3	63.3	10.4	552.5		
Well C4	5.0	13.6	1.6	10.6	42.3	88.3	148.6	160.2	150.1	43.0	0.4	0.6	664.3		
Well M3	66.6	69.7	84.9	67.6	100.6	101.9	35.2	12.8	3.0	39.4	1.3	0.3	583.3		
Well M9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
From BCVWD[2]	64.0	59.0	62.0	59.0	60.0	57.0	69.2	72.2	65.9	63.0	59.0	61.0	751.3		
Subtotal	**178.2**	**159.1**	**279.4**	**290.5**	**305.3**	**354.8**	**316.2**	**311.3**	**287.9**	**249.7**	**128.4**	**72.8**	**2,933.6**	**5,029.0**	**2,095.4**
Beaumont-Cherry Valley Water District															
Well 1	53.7	17.0	40.6	78.3	102.5	111.7	123.3	80.8	113.9	95.1	98.9	61.1	976.9		
Well 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Well 3	41.6	26.6	69.0	117.7	117.6	161.2	94.3	177.8	156.9	133.2	136.0	78.3	1,310.2		
Well 16	8.6	25.7	18.2	24.1	27.4	71.9	78.5	80.4	58.2	15.2	2.6	4.2	414.9		
Well 21	197.9	154.5	212.6	216.0	212.4	204.6	287.5	266.5	221.9	177.9	196.9	97.4	2,446.1		
Well 22	2.4	49.8	83.2	94.0	111.8	133.1	128.2	119.0	111.7	94.2	113.4	64.4	1,105.3		
Well 23	51.1	3.1	142.7	200.2	260.7	277.9	415.0	367.0	305.2	224.4	141.5	103.0	2,491.7		
Well 24	143.3	121.3	140.4	207.9	214.5	226.1	241.4	243.3	226.2	195.8	70.1	62.8	2,093.1		
Well 25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.0	76.7	9.9	127.6		
Well 26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	143.1	139.5	138.2	75.1	495.9		
To Banning[2]	-64.0	-59.0	-62.0	-59.0	-60.0	-57.0	-69.2	-72.2	-65.9	-63.0	-59.0	-61.0	-751.3		
Subtotal	**434.6**	**339.0**	**644.7**	**879.2**	**986.9**	**1,129.5**	**1,298.9**	**1,262.7**	**1,271.3**	**1,053.2**	**915.2**	**495.2**	**10,710.5**	**6,802.0**	**0.0**
South Mesa Water Company															
3rd No. 4 Well	19.3	26.1	34.3	38.1	59.3	50.9	56.0	58.7	49.7	38.8	26.0	13.6	470.9		
Subtotal	**19.3**	**26.1**	**34.3**	**38.1**	**59.3**	**50.9**	**56.0**	**58.7**	**49.7**	**38.8**	**26.0**	**13.6**	**470.9**	**1,996.0**	**1,525.2**
Yucaipa Valley Water District															
Well 35	0.6	0.2	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	3.2		
Well 48	16.9	4.6	1.8	18.5	58.2	122.1	126.8	59.7	57.7	60.0	26.9	16.9	570.2		
Subtotal	**17.5**	**4.8**	**1.8**	**18.5**	**58.2**	**122.1**	**129.2**	**59.7**	**57.7**	**60.0**	**26.9**	**16.9**	**573.4**	**2,173.0**	**1,599.6**
Total	**649.6**	**529.0**	**960.2**	**1,226.3**	**1,409.7**	**1,657.3**	**1,800.4**	**1,692.4**	**1,666.6**	**1,401.7**	**1,096.6**	**598.6**	**14,688.4**	**16,000.0**	**5,220.1**

1 - All values rounded and subject to revision based on receipt of more accurate information

2 - Pursuant to Part I, Paragraph 3 B of the Judgment, and a separate Agreement (a copy of which is on file with the Watermaster).

3.- Temporary surplus based on 16,000 ac-ft/yr allocated

Table A-1G
Appropriator Producer Summary of Production for Calendar Year 2009 (ac-ft)

Owner & Well Name	Water Production by Appropriator (ac-ft)[1]												Total Production	Temp Surplus Allocation[3]	Eligible for Storage
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Banning, City of															
Well C2-A	0.5	0.7	0.7	1.0	24.2	18.7	31.3	3.0	36.8	0.5	0.7	1.7	119.8		
Well C3	30.6	4.0	31.1	69.1	106.3	73.5	107.4	90.7	66.0	51.8	61.0	41.6	733.0		
Well C4	1.0	1.1	1.0	1.2	1.6	41.0	156.1	156.2	96.4	9.3	1.5	6.4	472.6		
Well M3	0.3	0.9	1.0	0.9	90.4	32.4	10.5	73.5	77.0	2.0	2.7	3.3	294.8		
Well M9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
From BCVWD[2]	24.2	0.0	0.0	0.0	0.0	61.6	61.6	66.2	64.1	66.8	63.7	66.6	474.8		
Subtotal	**56.6**	**6.6**	**33.8**	**72.1**	**222.5**	**227.3**	**366.9**	**389.7**	**340.2**	**130.3**	**129.6**	**119.6**	**2,095.0**	**5,029.0**	**2,934.0**
Beaumont-Cherry Valley Water District															
Well 1	49.5	46.6	66.1	98.8	73.5	93.1	123.8	105.8	93.6	68.1	45.5	29.9	894.1		
Well 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Well 3	57.9	53.6	71.8	111.6	81.4	112.9	165.7	159.5	133.4	94.0	59.6	38.1	1,139.5		
Well 16	4.7	1.8	7.5	21.8	1.9	27.9	103.9	103.2	100.8	59.8	18.7	0.0	452.0		
Well 21	127.4	90.1	76.5	112.1	158.6	191.6	253.2	208.7	200.5	163.2	113.8	88.4	1,784.1		
Well 22	40.9	6.9	25.8	48.7	16.5	0.0	0.0	0.0	0.0	13.9	50.3	62.2	265.1		
Well 23	149.6	63.9	142.1	246.8	182.6	87.3	0.1	0.0	0.0	0.0	21.6	88.8	982.7		
Well 24	137.3	105.8	119.9	152.2	176.5	174.6	228.5	233.0	221.4	190.4	178.5	127.2	2,045.4		
Well 25	0.0	0.0	0.0	11.8	90.1	199.9	249.1	32.6	17.5	217.5	217.2	25.2	1,060.7		
Well 26	20.2	3.6	53.2	68.6	130.1	127.8	171.9	168.2	162.4	126.2	135.0	20.7	1,187.9		
Well 29	0.0	1.3	0.0	0.0	89.0	89.5	126.8	132.3	117.2	97.1	92.6	51.5	797.1		
To Banning[2]	-24.2	0.0	0.0	0.0	0.0	-61.6	-61.6	-66.2	-64.1	-66.8	-63.7	-66.6	-474.8		
Subtotal	**563.3**	**373.5**	**562.9**	**872.4**	**1,000.1**	**1,043.0**	**1,361.4**	**1,076.9**	**982.8**	**963.4**	**869.0**	**465.3**	**10,133.9**	**6,802.0**	**0.0**
South Mesa Water Company															
3rd No. 4 Well	9.7	11.3	34.8	51.8	40.6	19.8	36.8	39.2	46.4	42.6	28.8	20.4	382.2		
Subtotal	**9.7**	**11.3**	**34.8**	**51.8**	**40.6**	**19.8**	**36.8**	**39.2**	**46.4**	**42.6**	**28.8**	**20.4**	**382.2**	**1,996.0**	**1,613.8**
Yucaipa Valley Water District															
Well 35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Well 48	42.6	1.3	3.1	18.5	68.3	43.0	89.3	67.3	76.0	50.6	34.5	10.1	504.4		
Subtotal	**42.6**	**1.3**	**3.1**	**18.5**	**68.3**	**43.0**	**89.3**	**67.3**	**76.0**	**50.6**	**34.5**	**10.1**	**504.4**	**2,173.0**	**1,668.6**
Total	**672.1**	**392.8**	**634.5**	**1,014.8**	**1,331.4**	**1,333.0**	**1,854.3**	**1,573.1**	**1,445.4**	**1,186.9**	**1,061.9**	**615.4**	**13,115.6**	**16,000.0**	**6,216.4**

1 - All values rounded and subject to revision based on receipt of more accurate information

2 - Pursuant to Part I, Paragraph 3 B of the Judgment, and a separate Agreement (a copy of which is on file with the Watermaster).

3.- Temporary surplus based on 16,000 ac-ft/yr allocated

Table A-1H
Appropriator Producer Summary of Production for Calendar Year 2010 (ac-ft)

Owner & Well Name	Water Production by Appropriator (ac-ft)[1]												Total Production	Temp Surplus Allocation[3]	Eligible for Storage
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Banning, City of															
Well C2-A	0.5	0.0	2.6	0.3	0.4	0.3	1.6	1.3	9.6	8.4	0.9	1.0	26.8		
Well C3	35.4	12.7	8.9	49.4	119.2	107.0	113.8	120.6	114.8	47.1	76.1	38.1	843.0		
Well C4	3.4	0.4	2.9	0.6	0.5	0.6	3.5	22.3	14.3	0.3	1.6	1.1	51.4		
Well M3	1.1	0.2	7.3	0.3	0.2	11.4	30.5	21.4	1.9	3.5	0.4	1.8	80.0		
Well M9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
From BCVWD[2]	65.8	59.3	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	142.5		
Subtotal	**106.3**	**72.6**	**39.0**	**50.6**	**120.2**	**119.3**	**149.3**	**165.6**	**140.5**	**59.3**	**78.9**	**42.0**	**1,143.6**	**5,029.0**	**3,885.4**
Beaumont-Cherry Valley Water District															
Well 1	36.7	50.6	53.3	48.2	73.9	98.7	115.0	87.5	116.1	68.5	46.3	14.3	809.1		
Well 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Well 3	44.3	60.7	57.3	57.2	91.1	116.5	155.6	119.1	73.7	0.0	0.0	0.0	775.6		
Well 16	0.3	1.2	0.5	2.6	0.0	0.6	2.5	0.5	0.7	1.5	0.7	0.9	11.9		
Well 21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.0	1.5	0.0	8.7		
Well 22	52.4	43.0	41.6	20.0	6.4	11.3	69.1	42.5	80.4	9.0	4.6	1.4	381.7		
Well 23	96.5	45.7	106.0	156.3	182.2	203.0	271.3	217.3	296.4	146.1	101.6	108.1	1,930.4		
Well 24	110.2	293.4	148.8	166.2	226.2	219.2	243.5	178.7	255.7	88.3	128.1	141.4	2,199.6		
Well 25	12.5	0.0	25.2	44.1	155.0	191.8	250.0	209.1	196.7	138.3	66.8	11.0	1,300.4		
Well 26	85.9	59.3	69.7	97.2	150.6	144.3	159.9	124.0	167.1	66.6	96.8	90.8	1,312.2		
Well 29	39.1	0.0	0.0	0.0	0.5	89.6	165.8	131.7	177.9	92.7	86.9	50.2	834.4		
To Banning[2]	-65.8	-59.3	-17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-142.5		
Subtotal	**412.0**	**494.6**	**485.1**	**591.8**	**885.9**	**1,075.0**	**1,432.7**	**1,110.3**	**1,371.8**	**611.0**	**533.1**	**418.1**	**9,421.3**	**6,802.0**	**0.0**
South Mesa Water Company															
3rd No. 4 Well	18.1	14.9	16.6	23.0	32.1	52.4	53.8	58.2	56.5	32.5	32.4	14.5	405.0		
Subtotal	**18.1**	**14.9**	**16.6**	**23.0**	**32.1**	**52.4**	**53.8**	**58.2**	**56.5**	**32.5**	**32.4**	**14.5**	**405.0**	**1,996.0**	**1,591.1**
Yucaipa Valley Water District															
Well 35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Well 48	6.4	0.9	21.5	18.0	59.6	84.2	127.4	115.6	137.3	43.3	33.6	23.6	671.5		
Subtotal	**6.4**	**0.9**	**21.5**	**18.0**	**59.6**	**84.2**	**127.4**	**115.6**	**137.3**	**43.3**	**33.6**	**23.6**	**671.5**	**2,173.0**	**1,501.6**
Total	**542.7**	**583.0**	**562.1**	**683.3**	**1,097.9**	**1,331.0**	**1,763.2**	**1,449.8**	**1,706.1**	**746.1**	**678.0**	**498.2**	**11,641.3**	**16,000.0**	**6,978.0**

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2 - Pursuant to Part I, Paragraph 3 B of the Judgment, and a separate Agreement (a copy of which is on file with the Watermaster).

3.- Temporary surplus based on 16,000 ac-ft/yr allocated

Table A-1I
Appropriator Producer Summary of Production for Calendar Year 2011 (ac-ft)

Owner & Well Name	Water Production by Appropriator (ac-ft)[1]												Total Production	Temp Surplus Allocation[3]	Eligible for Storage
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Banning, City of															
Well C2-A	0.4	0.6	1.2	0.3	0.3	12.5	10.4	1.3	0.9	1.2	0.4	3.2	32.5		
Well C3	24.5	24.7	41.9	59.0	107.5	111.8	95.6	45.5	45.9	80.3	52.8	87.1	776.6		
Well C4	0.9	0.9	1.4	1.2	1.0	3.5	95.5	82.3	7.6	2.2	0.5	0.6	197.5		
Well M3	0.5	0.3	0.4	0.3	0.6	10.7	91.6	109.8	99.7	19.2	0.8	1.2	335.1		
Well M9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
From BCVWD[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Subtotal	**26.3**	**26.5**	**45.0**	**60.7**	**109.5**	**138.4**	**293.1**	**239.0**	**154.0**	**103.0**	**54.4**	**92.0**	**1,341.7**	**5,029.0**	**3,687.3**
Beaumont-Cherry Valley Water District															
Well 1	7.1	0.5	20.5	20.8	66.4	75.7	79.1	87.5	65.0	31.3	4.8	2.9	461.7		
Well 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Well 3	0.0	6.6	19.6	12.0	70.0	83.6	92.0	105.7	80.0	34.9	27.2	4.0	535.6		
Well 16	1.7	0.0	0.0	0.0	1.3	1.7	2.1	15.5	58.2	37.2	20.4	15.6	153.8		
Well 21	0.0	0.0	0.0	0.0	105.7	159.8	218.3	218.0	205.1	190.5	156.5	219.3	1,473.3		
Well 22	2.8	0.0	0.0	2.8	5.8	0.0	0.0	21.8	58.0	3.9	0.0	0.0	95.1		
Well 23	84.6	78.2	43.8	6.1	130.7	172.0	247.9	205.7	0.0	0.0	0.0	13.1	982.1		
Well 24	206.4	161.6	116.5	167.6	139.2	163.7	235.8	229.9	210.9	156.5	94.9	162.7	2,045.7		
Well 25	0.3	2.7	10.0	116.2	136.1	30.8	82.6	184.6	245.8	208.4	80.4	90.8	1,188.6		
Well 26	127.4	113.1	77.8	108.8	119.7	111.9	158.4	154.1	136.2	124.9	98.9	104.3	1,435.3		
Well 29	0.0	6.8	65.8	91.0	109.9	132.6	165.4	165.4	150.5	112.8	56.8	3.5	1,060.3		
To Banning[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Subtotal	**430.1**	**369.5**	**354.0**	**525.2**	**884.7**	**931.7**	**1,281.8**	**1,388.3**	**1,209.7**	**900.4**	**540.0**	**616.0**	**9,431.3**	**6,802.0**	**0.0**
South Mesa Water Company															
3rd No. 4 Well	18.3	16.8	19.9	20.7	30.2	50.9	52.9	56.8	52.3	45.2	30.3	25.5	419.9		
Subtotal	**18.3**	**16.8**	**19.9**	**20.7**	**30.2**	**50.9**	**52.9**	**56.8**	**52.3**	**45.2**	**30.3**	**25.5**	**419.9**	**1,996.0**	**1,576.1**
Yucaipa Valley Water District															
Well 35	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Well 48	27.37	23.43	22.25	33.71	50.16	67.00	84.85	82.47	76.06	46.97	12.18	7.69	534.1		
Subtotal	**27.4**	**23.4**	**22.3**	**33.7**	**50.2**	**67.0**	**84.9**	**82.5**	**76.1**	**47.0**	**12.2**	**7.7**	**534.1**	**2,173.0**	**1,638.9**
Total	**502.1**	**436.2**	**441.2**	**640.3**	**1,074.6**	**1,188.1**	**1,712.6**	**1,766.5**	**1,492.1**	**1,095.5**	**636.8**	**741.1**	**11,727.1**	**16,000.0**	**6,902.3**

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2 - Pursuant to Part I, Paragraph 3 B of the Judgment, and a separate Agreement (a copy of which is on file with the Watermaster).

3.- Temporary surplus based on 16,000 ac-ft/yr allocated

Table A-2A
Overlying Producer Summary of Production for Calendar Year 2003 (ac-ft)

Owner and Well Name	Metered	Monthly Water Production by Overlying Producers[1]						Total[2] Production (Jul-Dec)		Overlying Water Right FY 03/04	Overlying Water Right (Jul-Dec) 2003	Unused Overlying Allocation in 2003
		Jul	Aug	Sep	Oct	Nov	Dec					
Beckman, Walter M.	No							**16.20**	(6)	**75.00**	**37.50**	**21.30**
California Oak Valley Golf and Resort LLC[3]												
Oak Valley #1	Yes											
Oak Valley #2	Yes											
Subtotal								**736.20**	(6)	**950.00**	**475.00**	**0.00**
Merlin Properties	No							**3.60**	(6)	**550.00**	**275.00**	**271.40**
Oak Valley Partners, LP[4]												
Haskell Ranch-Main	N/A							29.40				
Singleton Ranch #5	No							180.00				
Singleton Ranch #7	Yes							85.80				
Irrigation Stokes	No							6.00				
Subtotal								**301.20**	(6)	**1,806.00**	**903.00**	**601.80**
Plantation on the Lake LLC	Yes	26.80	38.00	38.10	31.60	25.50	18.60	**178.60**		**581.00**	**290.50**	**111.90**
Rancho Calimesa Mobile Home Park	No							**35.40**	(6)	**150.00**	**75.00**	**39.60**
Roman Catholic Bishop of San Bernardino	No							**46.80**	(6)	**154.00**	**77.00**	**30.20**
Sharondale Mesa Owners Association												
Well No.1	Yes	24.20	20.90	27.30	15.60	5.10	5.50	98.60				
Well No.2	Yes	0.00	0.00	0.00	0.00	0.00	5.70	5.70				
Subtotal		**24.20**	**20.90**	**27.30**	**15.60**	**5.10**	**11.20**	**104.30**		**200.00**	**100.00**	**0.00**
So Calif Section of the PGA of America[5]												
Well A	Yes	35.79	38.59	25.89	18.33	7.65	4.56	130.80				
Well B	No	From 2006/07 Annual Report - Ammended Tables for 2003/04						0.00				
Well C	Yes							0.00				
Well D	Yes	174.71	158.81	133.75	115.29	43.79	34.27	660.63				
Subtotal		**210.50**	**197.40**	**159.64**	**133.62**	**51.44**	**38.83**	**791.43**		**2,200.00**	**1,100.00**	**308.57**
Stearns, Leonard M. and Dorothy D.	No							**1.05**		**200.00**	**100.00**	**98.95**
Sunny-Cal Egg and Poultry Company								**226.00**	(7)	**1,784.00**	**892.00**	**666.00**
TOTAL								**2,440.78**		**8,650.00**	**4,325.00**	**2,149.72**

1.- All values rounded and subject to revision based on receipt of more accurate information.

2.- Total production is estimated for Overlying parties with un-metered wells.

3.- Metering began in late 2004 and was not reported monthly. One total production value for each well was reported to Watermaster for FY 2003/04 . For the conversion to CY accounting, it was assumed that CY 2004 production for this entity was equal to FY 2003/04 production (1,227.4 acre-ft).

4.- Provided copies of state filing with annual calendar year totals for each well. Production values for Singleton Ranch #5 and Irrigation Stokes are estimated by Oak Valley Partners.

5.- Provided copies of state filing with annual calendar year totals for each well. The wells were metered, but PGA only provided meter reads for January through June 2004. Used state filing with annual calendar year totals for conversion from FY to CY accounting.

6.- Production for the Jul-Dec 2003 period estimated as 60 percent of the annual production. This is based on average production for the Jul-Dec period for similar users.

7.- Production for the Jul-Dec 2003 period was based on 1,200,000 chickens and 66.4 irrigated acres, similar to 2004 quantities.

Table A-2B
Overlying Producer Summary of Production for Calendar Year 2004 (ac-ft)

Owner and Well Name	Metered	Monthly Water Production by Overlying Producer[1]												Total[2] Production	Overlying Water Right	Unused Overlying Allocation in 2004
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Beckman, Walter M.	No													**27.00**	**75.00**	**48.00**
California Oak Valley Golf and Resort LLC[3]																
Oak Valley #1	Yes															
Oak Valley #2	Yes															
Subtotal														**728.64**	**950.00**	**221.36**
Merlin Properties	No	Water Duty Method Used to Estimate Annual Production												**1.58**	**550.00**	**548.42**
Oak Valley Partners, LP[4]																
Haskell Ranch-Main	N/A													19.60		
Singleton Ranch #5	No													300.00		
Singleton Ranch #7	Yes													111.08		
Irrigation Stokes	No													10.00		
Subtotal														**440.68**	**1,806.00**	**1,365.32**
Plantation on the Lake LLC	Yes	18.3	21.7	13.2	24.1	30.3	35.1	35.9	41.4	40.7	37.8	21.8	20.5	**340.88**	**581.00**	**240.12**
Rancho Calimesa Mobile Home Park	No	Water Duty Method Used to Estimate Annual Production												**68.25**	**150.00**	**81.75**
Roman Catholic Bishop of San Bernardino	No	Water Duty Method Used to Estimate Annual Production												**59.06**	**154.00**	**94.94**
Sharondale Mesa Owners Association																
Well No.1	Yes	5.0	3.4	5.9	7.4	10.0	14.4	19.4	12.0	9.2	8.0	8.5	7.9	111.00		
Well No.2	Yes				1.7	12.0	5.2	7.7	9.6	6.5	4.2	0.0	0.0	47.02		
Subtotal		**5.0**	**3.4**	**5.9**	**9.1**	**22.0**	**19.6**	**27.1**	**21.6**	**15.8**	**12.3**	**8.5**	**7.9**	**158.02**	**200.00**	**41.98**
So Calif Section of the PGA of America[5]																
Well A	Yes	6.41	13.66	35.85	25.60	43.13	45.27	24.64	5.59	16.98	28.90	5.14	16.88	268.03		
Well B	No															
Well C	Yes													62.38		
Well D	Yes	36.51	14.05	56.44	64.85	113.66	147.98	208.31	193.95	143.74	41.01	12.98	45.17	1,078.64		
Subtotal		**42.92**	**27.70**	**92.29**	**90.44**	**156.79**	**193.26**	**232.95**	**199.53**	**160.71**	**69.91**	**18.12**	**62.05**	**1,409.05**	**2,200.00**	**790.95**
Stearns, Leonard M. and Dorothy D.	No	Water Duty Method Used to Estimate Annual Production												**1.05**	**200.00**	**198.95**
Sunny-Cal Egg and Poultry Company	N/A	Water Duty Method Used to Estimate Annual Production												**404.42**	**1,784.00**	**1,379.58**
TOTAL														**3,638.63**	**8,650.00**	**5,011.37**

1.- All values rounded and subject to revision based on receipt of more accurate information.

2.- Total production is estimated for Overlying parties with un-metered wells.

3.- Metering began in late 2004 and was not reported monthly. One total production value for each well was reported to Watermaster for FY 2003/04 . For the conversion to CY accounting, it was assumed that CY 2004 production for this entity was equal to FY 2003/04 production (1,227.4 acre-ft).

4.- Provided copies of state filing with annual calendar year totals for each well. Production values for Singleton Ranch #5 and Irrigation Stokes are estimated by Oak Valley Partners.

5.- Provided copies of state filing with annual calendar year totals for each well. The wells were metered, but PGA only provided meter reads for January through June 2004. In Oct 2012 production information for wells A and B for the Jul-Dec period was provided by the Morongo Band of Mission Indians, who acquired the golf course and renamed as the "Tukwet Canyon Golf Course".

Table A-2C
Overlying Producer Summary of Production for Calendar Year 2005 (ac-ft)

Owner and Well Name	Metered	Monthly Water Production by Overlying Producer[1]												Total[2] Production	Overlying Water Right	Unused Overlying Allocation in 2005
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Beckman, Walter M.	No													**22.40**	**75.00**	**52.60**
California Oak Valley Golf and Resort LLC[3]																
Oak Valley #1	Yes	41.15		6.10			150.20	92.90		29.13	122.63	81.07		523.18		
Oak Valley #2	Yes			18.70			82.20	39.30		13.10	27.40	0.00	0.00	180.70		
Subtotal		**41.15**	**0.00**	**24.80**	**0.00**	**0.00**	**232.40**	**132.20**	**0.00**	**42.23**	**150.03**	**81.07**	**0.00**	**703.88**	**950.00**	**246.12**
Merlin Properties	No	Water Duty Method Used to Estimate Annual Production												**1.55**	**550.00**	**548.45**
Oak Valley Partners, LP[4]																
Singleton Ranch #5	No													300.00		
Singleton Ranch #7	Yes													40.22		
Irrigation Stokes	No													10.00		
Subtotal														**350.22**	**1,806.00**	**1,455.78**
Plantation on the Lake LLC	Yes	23.00	11.94	8.27	16.80	20.21	34.28	35.25	35.85	42.90	32.56	25.39	23.73	**310.19**	**581.00**	**270.81**
Rancho Calimesa Mobile Home Park	No	Water Duty Method Used to Estimate Annual Production												**68.25**	**150.00**	**81.75**
Roman Catholic Bishop of San Bernardino	No	Water Duty Method Used to Estimate Annual Production												**55.60**	**154.00**	**98.40**
Sharondale Mesa Owners Association																
Well No.1	Yes	5.24	5.90	2.54	8.75	9.20	13.28	7.00	12.81	13.87	9.56	4.43	5.81	98.39		
Well No.2	Yes	0.00	0.00	4.30	5.15	7.22	8.13	15.97	12.64	7.18	6.76	9.56	5.65	82.56		
Subtotal		**5.24**	**5.90**	**6.84**	**13.90**	**16.42**	**21.41**	**22.97**	**25.45**	**21.05**	**16.32**	**13.99**	**11.46**	**180.95**	**200.00**	**19.05**
So Calif Section of the PGA of America[5]																
Well A	Yes	2.76	1.88	6.42	0.00	41.77	0.00	69.33	31.90	34.27	12.59	8.15	8.11	217.17		
Well C	Yes															
Well D	Yes	8.84	18.53	18.90	184.94	0.00	144.73	124.14	127.72	145.20	67.85	79.35	75.72	995.94		
Subtotal		**11.59**	**20.41**	**25.32**	**184.94**	**41.77**	**144.73**	**193.48**	**159.62**	**179.48**	**80.44**	**87.50**	**83.83**	**1,213.11**	**2,200.00**	**986.89**
Stearns, Leonard M. and Dorothy D.	No	Water Duty Method Used to Estimate Annual Production												**1.05**	**200.00**	**198.95**
Sunny-Cal Egg and Poultry Company	No	Water Duty Method Used to Estimate Annual Production												**385.44**	**1,784.00**	**1,398.56**
TOTAL														**3,292.63**	**8,650.00**	**5,357.37**

1.- All values rounded and subject to revision based on receipt of more accurate information.

2.- Total production is estimated for Overlying parties with un-metered wells.

3.- Initially, production not reported monthly. Blank values indicate no report in that month. Production reported for January 2005 was 164.6 acre-ft, but represented four months of production (October 2004 through January 2005). To estimate January value of 41.15 acre-ft, the total production was assumed to be equal across all four months.

4.- Provided copies of state filing with annual calendar year totals for each well. Production values for Singleton Ranch #5 and Irrigation Stokes are estimated by Oak Valley Partners. Meter reads were provided to the Watermaster, but due to inconsitent reporting, annual state recordation data was used.

5.- In Oct 2012 production information for wells A and B for 2005 was provided by the Morongo Band of Mission Indians, who acquired the golf course and renamed as the "Tukwet Canyon Golf Course".

Table A-2D
Overlying Producer Summary of Production for Calendar Year 2006 (ac-ft)

Owner and Well Name	Metered	Monthly Water Production by Overlying Producer[1]												Total[2] Production	Overlying Water Right	Unused Overlying Allocation in 2006
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Beckman, Walter M.	Yes	0.73	0.33	0.62	0.06	0.41	2.01	1.88	1.99	1.51	0.71	1.06	0.18	**11.49**	**75.00**	**63.51**
California Oak Valley Golf and Resort LLC[3]																
Oak Valley #1	Yes	73.32	31.97	34.00	0.00	44.60	166.10	33.38	53.63	16.07	0.00	0.50	0.00	453.58		
Oak Valley #2	Yes	0.00	0.00	0.10	0.00	6.10	11.40	90.90	47.10	84.40	43.00	66.80	28.10	377.90		
Subtotal		**73.32**	**31.97**	**34.10**	**0.00**	**50.70**	**177.50**	**124.28**	**100.73**	**100.47**	**43.00**	**67.30**	**28.10**	**831.48**	**950.00**	**118.53**
Merlin Properties	No	Water Duty Method Used to Estimate Annual Production												**1.58**	**550.00**	**548.42**
Oak Valley Partners, LP[4]																
Singleton Ranch #5	No													300.00		
Singleton Ranch #7	Yes													2.14		
Irrigation Stokes	No													10.00		
Subtotal														**312.14**	**1,806.00**	**1,493.86**
Plantation on the Lake LLC	Yes	27.64	21.64	20.66	12.03	20.37	28.76	39.65	41.53	40.76	35.49	32.04	29.51	**350.09**	**581.00**	**230.91**
Rancho Calimesa Mobile Home Park	No	Water Duty Method Used to Estimate Annual Production												**68.25**	**150.00**	**81.75**
Roman Catholic Bishop of San Bernardino	No	Water Duty Method Used to Estimate Annual Production												**58.97**	**154.00**	**95.03**
Sharondale Mesa Owners Association																
Well No.1	Yes	5.07	6.63	2.10	4.31	8.67	14.21	5.54	11.63	12.56	10.24	9.08	6.98	97.02		
Well No.2	Yes	4.81	3.42	4.04	4.67	7.67	8.95	22.35	13.08	10.69	7.01	3.48	1.43	91.60		
Subtotal		**9.88**	**10.05**	**6.14**	**8.98**	**16.34**	**23.16**	**27.89**	**24.71**	**23.25**	**17.25**	**12.56**	**8.41**	**188.62**	**200.00**	**11.38**
So Calif Section of the PGA of America																
Well A	Yes	8.37	5.70	3.10	14.34	0.65	2.90	2.65	3.13	6.71	6.99	195.20	92.00	341.74		
Well C	Yes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Well D	Yes	75.58	15.00	10.00	147.17	169.91	218.21	196.21	163.49	212.94	92.11	29.12	81.90	1,411.64		
Subtotal		**83.95**	**20.70**	**13.10**	**161.51**	**170.56**	**221.11**	**198.86**	**166.62**	**219.65**	**99.10**	**224.32**	**173.90**	**1,753.38**	**2,200.00**	**446.63**
Stearns, Leonard M. and Dorothy D.	No	Water Duty Method Used to Estimate Annual Production												**1.05**	**200.00**	**198.95**
Sunny-Cal Egg and Poultry Company	No	Water Duty Method Used to Estimate Annual Production												**2.63**	**1,439.50**	**1,436.87**
Sunny-Cal North - Manheim, Manheim & Berman	No	Water Duty Method Used to Estimate Annual Production												**13.22**	**300.00**	**286.78**
Nikodinov, Nick	No	Water Duty Method Used to Estimate Annual Production												**0.74**	**20.00**	**19.26**
McAmis, Ronald L.	No	Water Duty Method Used to Estimate Annual Production												**0.54**	**5.00**	**4.46**
Aldama, Nicolas and Amalia	No	Water Duty Method Used to Estimate Annual Production												**0.83**	**7.00**	**6.17**
Gutierrez, Hector, et al.	No	Water Duty Method Used to Estimate Annual Production												**1.37**	**10.00**	**8.63**
Darmont, Boris and Miriam	No	Water Duty Method Used to Estimate Annual Production												**0.35**	**2.50**	**2.15**
TOTAL														**3,596.7**	**8,650.0**	**5,053.3**

1.- All values rounded and subject to revision based on receipt of more accurate information.

2.- Total production is estimated for Overlying parties with un-metered wells.

3.- Production reported for January 2006 includes production from December 2005.

4.- Provided copies of state filing with annual calendar year totals for each well. Production values for Singleton Ranch #5 and Irrigation Stokes are estimated by Oak Valley Partners. Meter reads were provided to the Watermaster, but due to inconsitent reporting, annual state recordation data was used.

Table A-2E
Overlying Producer Summary of Production for Calendar Year 2007 (ac-ft)

Owner and Well Name	Metered	Monthly Water Production by Overlying Producer[1]												Total[2] Production	Overlying Water Right	Unused Overlying Allocation in 2007
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Beckman, Walter M.	Yes	0.30	0.17	0.24	0.31	0.41	0.51	0.53	0.87	2.19	1.48	0.99	0.31	**8.31**	**75.00**	**66.69**
California Oak Valley Golf and Resort LLC																
Oak Valley #1	Yes	0.00	0.00	0.00	20.08	16.61	0.00	0.00	0.00	26.00	41.00	58.00	20.00	181.68		
Oak Valley #2	Yes	35.60	20.70	46.60	21.90	56.70	85.80	89.00	109.00	90.00	42.00	0.00	0.00	597.30		
Subtotal		**35.60**	**20.70**	**46.60**	**41.98**	**73.31**	**85.80**	**89.00**	**109.00**	**116.00**	**83.00**	**58.00**	**20.00**	**778.98**	**950.00**	**171.02**
Merlin Properties	No	Water Duty Method Used to Estimate Annual Production												**1.59**	**550.00**	**548.41**
Oak Valley Partners, LP[3]																
Singleton Ranch #5	No													300.00		
Singleton Ranch #7	Yes	0.16	0.10	0.10	0.12	0.03	0.00	0.55	0.27	0.30	0.17	0.18	0.12	2.10		
Irrigation Stokes	No													10.00		
Subtotal														**312.10**	**1,806.00**	**1,493.90**
Plantation on the Lake LLC	Yes	21.63	21.14	16.88	31.72	23.72	38.11	44.40	39.10	45.60	30.90	2.20	28.80	**344.19**	**581.00**	**236.81**
Rancho Calimesa Mobile Home Park	No	Water Duty Method Used to Estimate Annual Production												**69.30**	**150.00**	**80.70**
Roman Catholic Bishop of San Bernardino	No	Water Duty Method Used to Estimate Annual Production												**0.70**	**154.00**	**153.30**
Sharondale Mesa Owners Association																
Well No.1	Yes	5.05	7.25	12.44	13.70	2.87	14.15	15.00	26.80	12.40	2.90	13.20	4.30	130.06		
Well No.2	Yes	1.89	0.00	0.00	0.00	17.79	5.60	6.00	0.00	7.00	14.00	0.00	0.00	52.28		
Subtotal		**6.94**	**7.25**	**12.44**	**13.70**	**20.66**	**19.75**	**21.00**	**26.80**	**19.40**	**16.90**	**13.20**	**4.30**	**182.34**	**200.00**	**17.66**
So Calif Section of the PGA of America																
Well A	Yes	4.26	79.48	60.00	72.00	52.50	51.35	0.40	1.23	3.09	2.95	0.69	1.17	329.12		
Well C	Yes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Well D	Yes	79.48	36.97	95.76	106.54	112.17	189.49	163.17	148.82	132.93	98.87	72.73	33.02	1,269.93		
Subtotal		**83.74**	**116.45**	**155.76**	**178.54**	**164.67**	**240.84**	**163.57**	**150.05**	**136.02**	**101.82**	**73.42**	**34.19**	**1,599.05**	**2,200.00**	**600.95**
Stearns, Leonard M. and Dorothy D.	No	Water Duty Method Used to Estimate Annual Production												**1.05**	**200.00**	**198.95**
Sunny-Cal Egg and Poultry Company	No	Water Duty Method Used to Estimate Annual Production												**2.68**	**1,439.50**	**1,436.82**
Albor Properties III, LP[4]	No	Water Duty Method Used to Estimate Annual Production												**2.33**	**300.00**	**297.67**
Nikodinov, Nick	No	Water Duty Method Used to Estimate Annual Production												**0.75**	**20.00**	**19.25**
McAmis, Ronald L.	No	Water Duty Method Used to Estimate Annual Production												**0.55**	**5.00**	**4.45**
Aldama, Nicolas and Amalia	No	Water Duty Method Used to Estimate Annual Production												**0.84**	**7.00**	**6.16**
Gutierrez, Hector, et al.	No	Water Duty Method Used to Estimate Annual Production												**1.39**	**10.00**	**8.61**
Darmont, Boris and Miriam	No	Water Duty Method Used to Estimate Annual Production												**0.35**	**2.50**	**2.15**
TOTAL														**3,306.5**	**8,650.0**	**5,343.5**

1.- All values rounded and subject to revision based on receipt of more accurate information.

2.- Total production is estimated for Overlying parties with un-metered wells.

3.- As reported to state as annual totals. Production values for Singleton Ranch #5 and Irrigation Stokes are estimated by Oak Valley Partners.

4.- Formerly Sunny-Can North - Manheim, Manheim & Burman.

Table A-2F
Overlying Producer Summary of Production for Calendar Year 2008 (ac-ft)

Owner and Well Name	Metered	Monthly Water Production by Overlying Producer[1]												Total[2] Production	Overlying Water Right	Unused Overlying Allocation in 2008
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Beckman, Walter M.	Yes	0.21	0.31	0.43	1.43	0.72	1.66	1.9	1.7	1.7	0.9	1.3	0.4	**12.69**	**75.00**	**62.31**
California Oak Valley Golf and Resort LLC																
Oak Valley #1	Yes	8.00	15.00	45.00	87.00	52.00	96.00	117.5	68.4	77.0	31.1	0.0	0.0	596.93		
Oak Valley #2	Yes	0.00	0.00	0.00	0.00	0.00	0.00	0.2	30.3	27.0	58.8	54.5	12.7	183.50		
Subtotal		**8.00**	**15.00**	**45.00**	**87.00**	**52.00**	**96.00**	**117.7**	**98.7**	**104.0**	**89.9**	**54.5**	**12.7**	**780.43**	**950.00**	**169.57**
Merlin Properties	No	Water Duty Method Used to Estimate Annual Production												**1.60**	**550.00**	**548.40**
Oak Valley Partners, LP[3]																
Singleton Ranch #5	No													300.00		
Singleton Ranch #7	Yes	0.04	0.03	0.01	0.04	0.03	0.07	0.1	0.0	0.0	0.1	0.1	0.1	0.51		
Irrigation Stokes	No													10.00		
Subtotal														**310.51**	**1,806.00**	**1,495.49**
Plantation on the Lake LLC	Yes	15.80	18.20	17.70	23.50	30.70	35.40	38.7	43.5	40.8	34.9	32.1	22.8	**354.04**	**581.00**	**226.96**
Rancho Calimesa Mobile Home Park	No	Water Duty Method Used to Estimate Annual Production												**69.30**	**150.00**	**80.70**
Roman Catholic Bishop of San Bernardino	No	Water Duty Method Used to Estimate Annual Production												**0.70**	**154.00**	**153.30**
Sharondale Mesa Owners Association																
Well No.1	Yes	0.24	5.70	5.17	9.77	17.56	0.00	12.6	12.2	17.6	9.6	7.9	4.6	102.91		
Well No.2	Yes	3.00	0.00	4.00	3.00	0.00	21.00	14.4	10.3	15.0	7.9	7.4	4.3	90.39		
Subtotal		**3.24**	**5.70**	**9.17**	**12.77**	**17.56**	**21.00**	**27.0**	**22.5**	**32.6**	**17.6**	**15.3**	**8.9**	**193.30**	**200.00**	**6.70**
East Valley Golf Club[4]																
Well A	Yes	1.00	1.40	2.06	1.60	1.95	1.85	2.0	0.6	0.4	0.4	1.0	0.0	14.26		
Well C	Yes	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.00		
Well D	Yes	19.08	21.40	78.84	90.98	134.14	128.78	220.2	181.6	59.3	85.3	117.0	70.0	1,206.62		
Subtotal		**20.08**	**22.80**	**80.90**	**92.58**	**136.09**	**130.63**	**222.20**	**182.20**	**59.70**	**85.70**	**118.00**	**70.00**	**1,220.88**	**2,200.00**	**979.12**
Stearns, Leonard M. and Dorothy D.	No	Water Duty Method Used to Estimate Annual Production												**1.05**	**200.00**	**198.95**
Sunny-Cal Egg and Poultry Company	No	Water Duty Method Used to Estimate Annual Production												**4.19**	**1,439.50**	**1,435.31**
Albor Properties III, LP[5]	No	Water Duty Method Used to Estimate Annual Production												**2.34**	**300.00**	**297.66**
Nikodinov, Nick	No	Water Duty Method Used to Estimate Annual Production												**0.75**	**20.00**	**19.25**
McAmis, Ronald L.	No	Water Duty Method Used to Estimate Annual Production												**0.55**	**5.00**	**4.45**
Aldama, Nicolas and Amalia	No	Water Duty Method Used to Estimate Annual Production												**0.85**	**7.00**	**6.15**
Gutierrez, Hector, et al.	No	Water Duty Method Used to Estimate Annual Production												**1.40**	**10.00**	**8.60**
Darmont, Boris and Miriam	No	Water Duty Method Used to Estimate Annual Production												**0.35**	**2.50**	**2.15**
TOTAL														**2,954.9**	**8,650.0**	**5,695.1**

1.- All values rounded and subject to revision based on receipt of more accurate information.

2.- Total production is estimated for Overlying parties with un-metered wells.

3.- As reported to state as annual totals. Production values for Singleton Ranch #5 and Irrigation Stokes are estimated by Oak Valley Partners.

4.- Formerly the So Calif Section of the PGA of America.

5.- Formerly Sunny-Can North - Manheim, Manheim & Burman.

Table A-2G
Overlying Producer Summary of Production for Calendar Year 2009 (ac-ft)

Owner and Well Name	Metered	Monthly Water Production by Overlying Producer[1]												Total[2] Production	Overlying Water Right	Unused Overlying Allocation in 2009
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Beckman, Walter M.	Yes	0.66	0.29	0.34	1.28	1.28	1.37	1.79	2.21	1.93	0.75	0.84	0.14	**12.88**	**75.00**	**62.12**
California Oak Valley Golf and Resort LLC																
Oak Valley #1	Yes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	76.77	9.57	49.35	0.00	135.69		
Oak Valley #2	Yes	32.50	25.70	27.50	86.10	77.00	66.30	108.10	104.67	42.73	43.92	8.05	8.41	630.98		
Subtotal		**32.50**	**25.70**	**27.50**	**86.10**	**77.00**	**66.30**	**108.10**	**104.67**	**119.50**	**53.49**	**57.40**	**8.41**	**766.67**	**950.00**	**183.33**
Merlin Properties	No	Water Duty Method Used to Estimate Annual Production												**1.58**	**550.00**	**548.42**
Oak Valley Partners, LP[3]																
Singleton Ranch #5	No													300.00		
Singleton Ranch #7	Yes	0.01	0.02	0.03	0.02	0.04	0.10	0.11	0.08	0.06	0.04			0.51		
Irrigation Stokes	No													10.00		
Subtotal														**310.51**	**1,806.00**	**1,495.49**
Plantation on the Lake LLC	Yes	15.51	17.41	13.52	26.58	37.84	34.79	36.78	33.98	33.98	33.98	33.98	33.98	**352.31**	**581.00**	**228.70**
Rancho Calimesa Mobile Home Park	No	Water Duty Method Used to Estimate Annual Production												**69.30**	**150.00**	**80.70**
Roman Catholic Bishop of San Bernardino	No	Water Duty Method Used to Estimate Annual Production												**0.70**	**154.00**	**153.30**
Sharondale Mesa Owners Association																
Well No.1	Yes	4.46	2.73	5.04	6.76	7.75	7.73	8.79	10.23	9.70	8.35	7.02	1.74	80.30		
Well No.2	Yes	4.11	2.77	4.81	6.21	6.84	6.81	7.75	8.26	8.49	7.36	6.02	4.55	73.98		
Subtotal		**8.57**	**5.50**	**9.85**	**12.97**	**14.59**	**14.54**	**16.54**	**18.49**	**18.19**	**15.71**	**13.04**	**6.29**	**154.28**	**200.00**	**45.72**
East Valley Golf Club[4]																
Well A	Yes	10.05	12.52	14.06	12.13	8.41	14.32	40.86	45.10	13.27	14.00	10.65	9.00	204.37		
Well C	Yes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Well D	Yes	32.00	28.37	80.60	93.47	114.15	87.45	142.35	122.16	111.32	80.00	45.00	17.37	954.24		
Subtotal		**42.05**	**40.89**	**94.66**	**105.60**	**122.56**	**101.77**	**183.21**	**167.26**	**124.59**	**94.00**	**55.65**	**26.37**	**1,158.61**	**2,200.00**	**1,041.39**
Stearns, Leonard M. and Dorothy D.	No	Water Duty Method Used to Estimate Annual Production												**1.05**	**200.00**	**198.95**
Sunny-Cal Egg and Poultry Company	No	Water Duty Method Used to Estimate Annual Production												**4.19**	**1,439.50**	**1,435.31**
Albor Properties III, LP[5]	No	Water Duty Method Used to Estimate Annual Production												**2.27**	**300.00**	**297.73**
Nikodinov, Nick	No	Water Duty Method Used to Estimate Annual Production												**0.73**	**20.00**	**19.27**
McAmis, Ronald L.	No	Water Duty Method Used to Estimate Annual Production												**0.54**	**5.00**	**4.46**
Aldama, Nicolas and Amalia	No	Water Duty Method Used to Estimate Annual Production												**0.83**	**7.00**	**6.17**
Gutierrez, Hector, et al.	No	Water Duty Method Used to Estimate Annual Production												**1.37**	**10.00**	**8.63**
Darmont, Boris and Miriam	No	Water Duty Method Used to Estimate Annual Production												**0.35**	**2.50**	**2.15**
TOTAL														**2,838.17**	**8,650.0**	**5,811.8**

1.- All values rounded and subject to revision based on receipt of more accurate information.

2.- Total production is estimated for Overlying parties with un-metered wells.

3.- Oak Valley Partners has not submitted data to the Watermaster since October 2009. Assumed annual production for Singleton Ranch #5 and Irrigaition Stokes was the same as reported for 2004 through 2008.

4.- Formerly the So Calif Section of the PGA of America.

5.- Formerly Sunny-Can North - Manheim, Manheim & Burman.

Table A-2H
Overlying Producer Summary of Production for Calendar Year 2010 (ac-ft)

Owner and Well Name	Metered	Monthly Water Production by Overlying Producer[1]												Total[2] Production	Overlying Water Right	Unused Overlying Allocation in 2010
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Beckman, Walter M.	Yes	0.45	0.06	0.30	0.18	0.91	0.61	1.09	0.81	1.22	0.24	0.30	0.20	**6.37**	**75.00**	**68.63**
California Oak Valley Golf and Resort LLC																
Oak Valley #1	Yes	5.18	7.81	9.45	6.14	57.30	24.61	45.63	24.61	94.27	25.28	3.95	0.00	304.23		
Oak Valley #2	Yes	13.48	0.00	24.04	15.30	36.52	26.93	41.38	59.10	4.38	0.13	30.39	9.24	260.89		
Subtotal		**18.66**	**7.81**	**33.49**	**21.44**	**93.82**	**51.54**	**87.01**	**83.71**	**98.65**	**25.41**	**34.34**	**9.24**	**565.12**	**950.00**	**384.88**
Merlin Properties	No	Water Duty Method Used to Estimate Annual Production												**1.54**	**550.00**	**548.46**
Oak Valley Partners, LP[3]																
Singleton Ranch #5	No													300.00		
Singleton Ranch #7	Yes													1.05		
Irrigation Stokes	No													10.00		
Subtotal														**311.05**	**1,806.00**	**1,494.95**
Plantation on the Lake LLC	Yes	33.98	12.40	12.43	24.33	25.59	33.23	33.15	39.52	20.33	49.86	28.86	23.51	**337.19**	**581.00**	**243.82**
Rancho Calimesa Mobile Home Park	No	Water Duty Method Used to Estimate Annual Production												**69.30**	**150.00**	**80.70**
Roman Catholic Bishop of San Bernardino	No	Water Duty Method Used to Estimate Annual Production												**0.00**	**154.00**	**154.00**
Sharondale Mesa Owners Association																
Well No.1	Yes	0.14	1.52	2.96	3.10	7.36	9.80	9.11	10.37	9.70	5.22	4.81	3.60	67.69		
Well No.2	Yes	5.13	1.53	2.85	4.89	6.33	7.79	7.77	8.60	8.14	4.30	4.47	2.84	64.64		
Subtotal		**5.27**	**3.05**	**5.81**	**7.99**	**13.69**	**17.59**	**16.88**	**18.97**	**17.84**	**9.52**	**9.28**	**6.44**	**132.33**	**200.00**	**67.67**
Tukwet Canyon Golf Club[4]																
Well A	Yes	1.50	2.46	4.89	1.70	8.74	28.22	16.43	26.75	11.56	3.28	10.04	3.08	118.65		
Well C	Yes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Well D	Yes	19.49	24.93	30.37	65.07	99.82	119.82	84.15	16.75	192.74	31.99	21.93	26.10	733.16		
Subtotal		**20.99**	**27.39**	**35.26**	**66.77**	**108.56**	**148.04**	**100.58**	**43.50**	**204.30**	**35.27**	**31.97**	**29.18**	**851.81**	**2,200.00**	**1,348.19**
Stearns, Leonard M. and Dorothy D.	No	Water Duty Method Used to Estimate Annual Production												**0.70**	**200.00**	**199.30**
East Valley Golf Club[4]	No	Water Duty Method Used to Estimate Annual Production												**3.80**	**1,439.50**	**1,435.70**
Albor Properties III, LP[5]	No	Water Duty Method Used to Estimate Annual Production												**2.12**	**300.00**	**297.88**
Nikodinov, Nick	No	Water Duty Method Used to Estimate Annual Production												**0.70**	**20.00**	**19.30**
McAmis, Ronald L.	No	Water Duty Method Used to Estimate Annual Production												**0.53**	**5.00**	**4.47**
Aldama, Nicolas and Amalia	No	Water Duty Method Used to Estimate Annual Production												**0.79**	**7.00**	**6.21**
Gutierrez, Hector, et al.	No	Water Duty Method Used to Estimate Annual Production												**1.32**	**10.00**	**8.68**
Darmont, Boris and Miriam	No	Water Duty Method Used to Estimate Annual Production												**0.35**	**2.50**	**2.15**
TOTAL														**2,285.0**	**8,650.0**	**6,365.0**

1.- All values rounded and subject to revision based on receipt of more accurate information.

2.- Total production is estimated for Overlying parties with un-metered wells.

3.- Oak Valley Partners has not submitted data to the Watermaster since October 2009. Assumed annual production for Singleton Ranch #5 and Irrigaition Stokes was the same as reported for 2004 through 2008. Assumed production for Singleton Ranch #7 was equal to the average of the last four years of reported (2006-2009) production.

4.- Formerly known as the East Valley Golf Course; prior to that known as the Southern California Section of the PGA of America.

5.- Formerly Sunny-Can North - Manheim, Manheim & Burman.

Table A-2I
Overlying Producer Summary of Production for Calendar Year 2011 (ac-ft)

Owner and Well Name	Metered	Monthly Water Production by Overlying Producer[1]												Total[2] Production	Overlying Water Right	Unused Overlying Allocation in 2011
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
Beckman, Walter M.[3]	Yes	0.20	0.20	0.17	0.17	0.17	0.40	1.79	2.21	1.93	0.75	0.84	0.14	**8.98**	**75.00**	**66.02**
California Oak Valley Golf and Resort LLC[3]																
Oak Valley #1	Yes	10.65	1.00	0.23	0.00	0.00	0.00									
Oak Valley #2	Yes	0.30	9.55	0.56	15.36	72.15	12.58									
Subtotal		**10.95**	**10.55**	**0.79**	**15.36**	**72.15**	**12.58**	**97.56**	**94.19**	**109.08**	**39.45**	**45.87**	**8.83**	**517.35**	**950.00**	**432.66**
Merlin Properties	No	Water Duty Method Used to Estimate Annual Production												**1.59**	**550.00**	**548.41**
Oak Valley Partners, LP[4]																
Singleton Ranch #5	No													300.00		
Singleton Ranch #7	Yes													0.00		
Irrigation Stokes	No													10.00		
Subtotal														**310.00**	**1,806.00**	**1,496.00**
Plantation on the Lake LLC[3]	Yes	16.09	23.37	15.94	20.68	24.09	34.30	35.24	45.73	27.15	41.92	31.42	28.74	**344.67**	**581.00**	**236.33**
Rancho Calimesa Mobile Home Park	No	Water Duty Method Used to Estimate Annual Production												**69.30**	**150.00**	**80.70**
Roman Catholic Bishop of San Bernardino	No	Water Duty Method Used to Estimate Annual Production												**0.00**	**154.00**	**154.00**
Sharondale Mesa Owners Association[3]																
Well No.1	Yes	3.36	2.69	2.78	4.14	5.71	8.03	11.31	9.61							
Well No.2	Yes	3.25	2.58	2.54	4.12	6.16	6.45	6.60	8.81							
Subtotal		**6.61**	**5.27**	**5.32**	**8.26**	**11.87**	**14.48**	**17.91**	**18.42**	**9.70**	**6.79**	**5.92**	**2.67**	**113.21**	**200.00**	**86.79**
Tukwet Canyon Golf Club[5]																
Well A	Yes	2.26	2.06	14.74	2.81	22.57	18.12	33.91	15.57	3.78	1.35	0.76	0.47	118.40		
Well C	Yes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Well D	Yes	35.81	23.04	13.59	42.91	21.43	97.66	130.80	130.71	128.94	70.25	27.57	42.53	765.23		
Subtotal		**38.07**	**25.10**	**28.33**	**45.72**	**44.00**	**115.78**	**164.71**	**146.28**	**132.72**	**71.60**	**28.33**	**43.00**	**883.63**	**2,200.00**	**1,316.37**
Stearns, Leonard M. and Dorothy D.	No	Water Duty Method Used to Estimate Annual Production												**0.70**	**200.00**	**199.30**
Sunny-Cal Egg and Poultry Company	No	Water Duty Method Used to Estimate Annual Production												**4.17**	**1,439.50**	**1,435.33**
Albor Properties III, LP	No	Water Duty Method Used to Estimate Annual Production												**2.33**	**300.00**	**297.67**
Nikodinov, Nick	No	Water Duty Method Used to Estimate Annual Production												**0.75**	**20.00**	**19.25**
McAmis, Ronald L.	No	Water Duty Method Used to Estimate Annual Production												**0.55**	**5.00**	**4.45**
Aldama, Nicolas and Amalia	No	Water Duty Method Used to Estimate Annual Production												**0.85**	**7.00**	**6.15**
Gutierrez, Hector, et al.	No	Water Duty Method Used to Estimate Annual Production												**1.39**	**10.00**	**8.61**
Darmont, Boris and Miriam	No	Water Duty Method Used to Estimate Annual Production												**0.35**	**2.50**	**2.15**
TOTAL														**2,259.8**	**8,650.0**	**6,390.2**

1.- All values rounded and subject to revision based on receipt of more accurate information.

2.- Total production is estimated for Overlying parties with un-metered wells.

3.- Monthly production was estimated for a portion of the year based on 2009-10 monthly averages.

4.- Oak Valley Partners has not submitted data to the Watermaster since October 2009. Assumed annual production for Singleton Ranch #5 and Irrigaition Stokes was the same as reported for 2004 through 2008. Assumed production for Singleton Ranch #7 was equal to the average of the last four years of reported (2006-2009) production.

5.- Formerly known as the East Valley Golf Course; prior to that known as the Southern California Section of the PGA of America. Actual production documented.

Appendix B
Water Quality

Beaumont Basin Watermaster

Water Quality Analysis Summary (2008-2011) for Drinking Water Production Wells

Analyte	Units	Federal Primary MCL	Federal Secondary MCL	California Primary MCL	California Secondary MCL	Public Health Goal	DLR	Wells Sampled	Wells Exceeding MCL	Average Value	Maximum Value
Color, Apparent (Unfiltered)	UNITS		15		15			22	0	2.8	5
Odor Threshold @ 60 C	TON		3		3		1	22	0	1.0	1
Specific Conductance (E.C.)	umhos				900			22	0	421	730
pH, Laboratory	Std Units		8.5					22	0	7.8	8.1
Bicarbonate (as HCO3)	mg/L							22	0	200	280
Carbonate (as CO3)	mg/L							22	0	2.6	3
Nitrite as Nitrogen (N)	ug/L	1000		1000		1000	400	22	0	86.9	100
Calcium (Ca)	mg/L							22	0	38.0	55
Magnesium (Mg)	mg/L							22	0	12.2	23
Sodium (Na)	mg/L							22	0	28.3	57
Potassium (K)	mg/L							18	0	1.5	2.1
Chloride	mg/L		250		250			22	0	13.0	39
Sulfate (SO4)	mg/L		250		250		0.5	22	0	15.1	63
Fluoride (F) (Natural-Source)	mg/L	4	2	2			0.1	22	0	0.5	0.9
Arsenic	ug/L	10		10			2	22	0	2.0	4.2
Barium (Ba)	ug/L	2000		1000		2000	100	22	0	90.9	100
Beryllium	ug/L	4		4		4	1	22	0	0.9	1
Cadmium (Cd)	ug/L	5		5		5	1	22	0	0.9	1
Chromium (Total Cr)	ug/L	100		50		100	10	22	0	11.2	20
Copper (Cu)	ug/L		1000		1000	1300	50	22	0	45.5	50
Iron (Fe)	ug/L		300		300		100	22	0	90.9	100
Lead (Pb)	ug/L						5	22	0	4.6	5.8
Manganese (Mn)	ug/L		50		50		20	22	0	18.2	20
Thallium	ug/L	2		2		0.5	1	22	0	0.9	1
Nickel	ug/L			100			10	22	0	9.1	10
Silver (Ag)	ug/L		100		100		10	22	0	9.1	10
Vanadium	ug/L						3	1	1	17.0	17
Zinc (Zn)	ug/L		5000		5000		50	22	0	54.5	250
Antimony	ug/L	6		6		6	6	22	0	5.5	6

Beaumont Basin Watermaster

Water Quality Analysis Summary (2008-2011) for Drinking Water Production Wells

Analyte	Units	Federal Primary MCL	Federal Secondary MCL	California Primary MCL	California Secondary MCL	Public Health Goal	DLR	Wells Sampled	Wells Exceeding MCL	Average Value	Maximum Value
Aluminum (Al)	ug/L		200	1000	200		50	22	0	45.5	50
Selenium (Se)	ug/L	50		50		50	5	22	0	4.5	5
Cyanide	ug/L	200		150			100	18	0	94.4	100
Gross Alpha	pCi/L	15		15			3	17	0	1.3	8.55
Uranium	pCi/L	30		20			1	3	0	1.1	1.72
Carbon Tetrachloride	µg/L	5		0.5			0.5	19	0	< 0.5	< 0.5
Toluene	µg/L	1000		150		1000	0.5	19	0	< 0.5	< 0.5
Benzene	µg/L	5		1			0.5	19	0	< 0.5	< 0.5
Benzo(a)pyrene	µg/L	0.2		0.2			0.1	19	0	< 0.1	< 0.1
Monochlorobenzene (Chlorobenzene)	µg/L	100		70		100	0.5	19	0	< 0.5	< 0.5
Ethyl Benzene	µg/L	700		300			0.5	19	0	< 0.5	< 0.5
Hexachlorocyclopentadiene	µg/L	50		50		50	1	6	0	< 1	< 1
Dichloromethane (Methylene Chloride)	µg/L	5		5			0.5	19	0	< 0.5	< 0.5
Tetrachloroethylene (PCE)	µg/L	5		5			0.5	19	0	< 0.5	< 0.5
Trichlorofluoromethane (FREON 11)	µg/L			150			5	19	0	< 5	< 5
1,1-Dichloroethane (1,1-DCA)	µg/L			5			0.5	19	0	< 0.5	< 0.5
1,1-Dichloroethylene (1,1-DCE)	µg/L	7		6			0.5	19	0	< 0.5	< 0.5
1,1,1-Trichloroethane (1,1,1-TCA)	µg/L	200		200		200	0.5	19	0	< 0.5	< 0.5
1,1,2-Trichloroethane (1,1,2-TCA)	µg/L	5		5		3	0.5	19	0	< 0.5	< 0.5
1,1,2,2-Tetrachloroethane	µg/L			1			0.5	19	0	< 0.5	< 0.5
1,2-Dichloroethane (1,2-DCA)	µg/L	5		0.5			0.5	19	0	< 0.5	< 0.5
1,2-Dichlorobenzene (o-DCB)	µg/L	600		600			0.5	19	0	< 0.5	< 0.5
1,2-Dichloropropane	µg/L	5		5			0.5	19	0	< 0.5	< 0.5
trans-1,2-Dichloroethylene (t-1,2-DCE)	µg/L	100		10			0.5	19	0	< 0.5	< 0.5
1,2,4-Trichlorobenzene	µg/L	70		5		70	0.5	19	0	< 0.5	< 0.5
1,3-Dichloropropene, Total	µg/L			0.5			0.5	19	0	< 0.5	< 0.5
1,4-Dichlorobenzene (p-DCB)	µg/L	75		5			0.5	19	0	< 0.5	< 0.5
Dichlorodifluoromethane (Freon 12)	µg/L						0.5	19	0	< 0.5	< 0.5
2,3,7,8-TCDD (Dioxin)	pg/L	0.00003		30			5	5	0	0	0

Beaumont Basin Watermaster

Water Quality Analysis Summary (2008-2011) for Drinking Water Production Wells

Analyte	Units	Federal Primary MCL	Federal Secondary MCL	California Primary MCL	California Secondary MCL	Public Health Goal	DLR	Wells Sampled	Wells Exceeding MCL	Average Value	Maximum Value
Naphthalene	µg/L						0.5	19	0	< 0.5	< 0.5
Foaming Agents (MBAS)	mg/L		0.5		0.5			22	0	0.05	0.09
Dalapon	µg/L	200		200			10	6	0	< 10	< 10
Propachlor	µg/L						0.5	6	0	< 0.5	< 0.5
Bentazon (BASAGRAN)	µg/L			18			2	6	0	< 2	< 2
Dibromochloropropane (DBCP)	µg/L	0.2		0.2			0.01	16	0	< 0.01	< 0.01
Oxamyl (Vydate)	µg/L	200		50		200	20	5	0	< 5	< 5
Endothall	µg/L	100		100			45	5	0	< 45	< 45
Pentachlorophenol (PCP)	µg/L	1		1			0.2	6	0	< 0.2	< 0.2
Atrazine (AATREX)	µg/L	3		1		3	0.5	16	0	< 0.5	< 0.5
2,4,5-TP (SILVEX)	µg/L	50		50		50	1	6	0	< 1	< 1
Simazine (PRINCEP)	µg/L	4		4		4	1	16	0	< 1	< 1
Diethylhexylphthalate (DEHP)	µg/L	6		4			3	12	0	< 3	< 3
Vinyl Chloride (VC)	µg/L	2		0.5			0.5	19	0	< 0.5	< 0.5
Trichloroethylene (TCE)	µg/L	5		5			0.5	19	0	< 0.5	< 0.5
Lindane (gamma-BHC)	µg/L	0.2		0.2		0.2	0.2	6	0	< 0.2	< 0.2
Chlordane	µg/L	2		0.1			0.1	6	0	< 0.1	< 0.1
Endrin	µg/L	2		2			0.1	6	0	< 0.1	< 0.1
Toxaphene	µg/L	3		3			1	6	0	< 1	< 1
Heptachlor	µg/L	0.4		0.01			0.01	6	0	< 0.01	< 0.01
Heptachlor Epoxide	µg/L	0.2		0.01			0.01	6	0	< 0.01	< 0.01
Methoxychlor	µg/L	40		30		40	10	6	0	< 10	< 10
Polychlorinated Biphenyls, Total, as DCB	µg/L	0.5		0.5			0.5	6	0	< 0.5	< 0.5
Hexachlorobenzene	µg/L	1		1			0.5	6	0	< 0.5	< 0.5
Picloram	µg/L	500		500		500	1	6	0	< 1	< 1
2,4-D	µg/L	70		70			10	6	0	< 10	< 10
Methyl tert-Butyl Ether (MTBE)	µg/L			13	5		3	19	0	< 3	< 3
Total Filterable Residue @ 180 C (TDS)	mg/L		500		500			22	0	245	380
Nitrate as (N03)	mg/L	45		45				22	0	11.4	40

Beaumont Basin Watermaster

Water Quality Analysis Summary (2008-2011) for Drinking Water Production Wells

Analyte	Units	Federal Primary MCL	Federal Secondary MCL	California Primary MCL	California Secondary MCL	Public Health Goal	DLR	Wells Sampled	Wells Exceeding MCL	Average Value	Maximum Value
Mercury (Hg)	ug/L	2		2		2	1	22	0	0.9	< 1
tert-Butyl Alcohol (TBA)	µg/L						2	4	0	< 2	< 2
cis-1,2-Dichloroethylene (c-1,2-DCE)	µg/L	70		6			0.5	19	0	< 0.5	< 0.5
Styrene	µg/L	100		100		100	0.5	19	0	< 0.5	< 0.5
1,2,4-Trimethylbenzene	µg/L							19	0	< 0.5	< 0.5
Isopropylbenzene (Cumene)	µg/L						0.5	19	0	< 0.5	< 0.5
n-Propylbenzene	µg/L						0.5	19	0	< 0.5	< 0.5
1,3,5-Trimethylbenzene	µg/L						0.5	19	0	< 0.5	< 0.5
sec-Butylbenzene	µg/L						0.5	19	0	< 0.5	< 0.5
tert-Butylbenzene	µg/L						0.5	19	0	< 0.5	< 0.5
Ethylene Dibromide (EDB)	µg/L	0.05		0.05			0.02	16	0	< 0.02	< 0.02
Alachlor (ALANEX)	µg/L	2		2			1	9	0	< 1	< 1
Diquat	µg/L	20		20			4	5	0	0	0
Glyphosate	µg/L	700		700			25	5	0	0	0
Dinoseb (DNBP)	µg/L	7		7			2	6	0	< 2	< 2
Carbofuran (FURADAN)	µg/L	40		18		40	5	5	0	< 0.5	< 0.5
Total Xylenes (m,p, & o)	µg/L	10000		1750		10000		19	0	< 0.5	< 0.5
Methyl Isobutyl Ketone (MIBK)	µg/L						5	19	0	< 5	< 5
Trichlorotrifluoroethane (FREON 113)	µg/L			1200			10	19	0	< 10	< 10
Asbestos	MFL	7		7			0.2	4	0	< 0.2	< 0.2
Turbidity, Laboratory	NTU		5		5			22	0	0.2	0.58
Molinate (ORDRAM)	µg/L			20			2	8	0	< 2	< 2
Thiobencarb (BOLERO)	µg/L			70	1		1	8	0	< 1	< 1
2-Chlorotoluene	µg/L						0.5	19	0	< 0.5	< 0.5
4-Chlorotoluene	µg/L						0.5	19	0	< 0.5	< 0.5
n-Butylbenzene	µg/L						0.5	19	0	< 0.5	< 0.5
Di(2-ethylhexyl) Adipate	µg/L	400		400			5	12	0	< 5	< 5
Perchlorate	ug/L			6			4	22	0	3.8	< 4