

# BUNKER HILL BASIN

## 2004-2005

# Groundwater Conditions in the San Bernardino Valley Water Conservation District



# **ENGINEERING INVESTIGATION Bunker Hill Basin**

2004-2005

February 2005

Groundwater Conditions in the San Bernardino Valley Water Conservation District



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### ACKNOWLEDGMENTS

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**City of Rialto City Of Colton City of Riverside City of Redlands** City of Loma Linda **Geologic Associates Gage Canal Company Patton State Hospital Redlands Farming, Inc.** Loma Linda University **City of San Bernardino** East Valley Water District West Valley Water District Western Municipal Water District **Riverside Highland Water Company** San Bernardino Valley Municipal Water District United States Geological Survey, Santee, CA Office San Bernardino County Department of Transportation and Flood Control Elsinore Valley Municipal Water District/Meeks and Daley Water Company



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**Executive Summary** 

Engineering Investigation of the Bunker Hill Basin 2004 - 2005

### **Executive Summary**





### 1.0 Executive Summary

Article 1, Section 75560 of the California Water Code requires that a Water Conservation District that proposes to levy a groundwater charge "... shall annually cause to be made an engineering investigation and report upon groundwater conditions of the District". In accordance with these requirements, the San Bernardino Valley Water Conservation District (District) must make the following findings and determinations as they relate to the ground and surface water conditions of the Bunker Hill Basin and those areas within the District boundary. Refer to **Figure 1** for locations

- *Task 1.* Annual change in storage for the Bunker Hill Basin for the preceding water year (Fall 2004 groundwater levels);
- *Task 2.* Accumulated change in storage of the Bunker Hill Basin as of the last day of the preceding water year (June 30, 2004);
- *Task 3.* Total groundwater production from the Bunker Hill Basin for the preceding water year (July 1, 2003 June 30, 2004);
- *Task 4.* Estimate of the annual change in the Bunker Hill Basin storage for the current water year (July 1, 2004 June 30, 2005);
- *Task 5.* Estimate of the annual change in the Bunker Hill Basin storage for the ensuing water year (July 1, 2005 June 30, 2006);
- *Task 6.* Average annual change in Bunker Hill Basin storage for the immediate past 10 water years (1994 2004);
- Task 7. Estimated amount of agricultural water and other than agricultural water to be withdrawn from the groundwater supplies of the District for the ensuing water year (July 1, 2005 - June 30, 2006);
- Task 8. Estimated amount of water necessary for surface distribution for the ensuing water year for the Bunker Hill Basin and the District (July 1, 2005 - June 30, 2006); and



*Task 9.* The amount of water that is necessary for the replenishment of the groundwater supplies of the Bunker Hill Basin and the District for the ensuing water year (July 1, 2005 - June 30, 2006).

To make the findings and determinations listed above, District staff researched available geohydrologic and engineering data for the Bunker Hill Basin. These data were compiled and analyzed and a predictive relationship between precipitation, production, and change in basin storage was developed. This relationship was based on empirical data covering the last 13 years and enables the prediction of change in storage, given certain annual production and precipitation levels. In addition, annual and accumulated change in storage values were calculated based on historic water level changes throughout the Bunker Hill Basin.

Based on 9 measuring stations, precipitation throughout the contributing watershed was 61% of normal for the period July 1, 2003 to June 30, 2004. As a result of this below normal rainfall, the amount of groundwater storage in the Bunker Hill Basin decreased by 68,100 acre-feet. As would be expected, groundwater levels tended to be lower in many parts of the basin for the current water year with the largest decreases occurring in the Bunker Hill I – Southwest of Barstow Freeway.

The required findings for the 2005 Engineering Investigation are provided below. Each of the tasks is further explained in the main body of the report. Throughout this document a positive sign (+) denotes an increase in groundwater storage or groundwater level elevation while a negative sign (-) denotes a decrease in groundwater storage or groundwater level or groundwater level elevation.

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### Summary of Findings for the 2005 Engineering Investigation

- *Task 1.* Annual change in storage for the Bunker Hill Basin for the preceding water year (Fall 2004 groundwater levels)
  - Change in storage between Fall 2003 and Fall 2004

-68,100 acre-ft (decrease)

The amount of water stored in the Basin decreased by 68,100 acre-ft between 2003 and 2004.

- *Task 2.* Accumulated change in storage of the Bunker Hill Basin as of the last day of the preceding water year (June 30, 2004)
  - Accumulated change in storage between Fall 1993 and Fall 2004<sup>1</sup>

### -406,900 acre-ft (decrease)

# The amount in storage in the Fall of 2004 is 406,900 acre-ft less than in the Fall of 1993.

*Task 3.* Total groundwater production from the Bunker Hill Basin for the preceding water year (July 1, 2003 - June 30, 2004)

### 222,456 acre-ft

<sup>&</sup>lt;sup>1</sup> In the District's Engineering Investigation (EI) prior to 1993-94, the accumulated change in storage was based on the basin storage in 1984 as considered full. A concern arose regarding the flooding of basements due to high groundwater levels in the Pressure Zone of the Bunker Hill Basin. Therefore, in response to the City of San Bernardino's comments on accumulated change in storage, all EI's since that time are based on 1993 basin storage levels considered as full.



*Task 4.* Estimate of the annual change in the Bunker Hill Basin storage for the current water year (July 1, 2004 - June 30, 2005)

### 32,200 acre-ft (increase)

# The amount of water in the Basin is estimated to increase by 32,200 acre-ft during the current water year.

*Task 5.* Estimate of the annual change in the Bunker Hill Basin storage for the ensuing water year (July 1, 2005 - June 30, 2006)

### -10,400 acre-ft (decrease)

# The amount of water in the Basin is estimated to decrease by 10,400 acre-ft during the ensuing water year.

*Task 6.* Average annual change in Bunker Hill Basin storage for the immediate past 10 water years (1994 - 2004)

### -46,500 acre-ft (decrease)

- *Task 7.* Estimated amount of agricultural water and other than agricultural water to be withdrawn from the groundwater supplies of the District for the ensuing water year (July 1, 2005 June 30, 2006)
  - Estimated amount of agricultural water withdrawn from the groundwater supplies within the District boundary for the ensuing water year (July 1, 2005 June 30, 2006)

11,900 acre-ft



•

Estimated amount of other than agricultural water withdrawn from the groundwater supplies of the District for the ensuing water year (July 1, 2005 - June 30, 2006)

#### 85,400 acre-ft

- Task 8. Estimated amount of water necessary for surface distribution for the ensuing water year for the Bunker Hill Basin and the District (July 1, 2005 June 30, 2006)
  - Estimated amount of water necessary for surface distribution for the ensuing water year (July 1, 2005 - June 30,2006) for the Bunker Hill Basin

#### 44,900 acre-ft

• Estimated amount of water necessary for surface distribution for the ensuing water year (July 1, 2005 - June 30, 2006) within the District boundary

#### 35,900 acre-ft

- *Task 9.* The amount of water which is necessary for the replenishment of the groundwater supplies of the Bunker Hill Basin and the District for the ensuing water year (July 1, 2005 June 30, 2006)
  - The amount of water which is necessary for the replenishment of the groundwater supplies of the Bunker Hill Basin for the ensuing water year (July 1, 2005 June 30, 2006)

#### 203,800 acre-ft



The amount of water which is necessary for the replenishment of the groundwater supplies within the District boundary for the ensuing water year (July 1, 2005 - June 30, 2006)

#### 102,500 acre-ft

In the past there has been confusion regarding the use of the term "replenishment" in Task 9. The confusion appears to come from an interpretation of this term as the amount of water the District plans to "spread" for the ensuing water year. In fact, the term "replenishment" and its associated value determined in Task 9 is meant to provide an estimate of the amount of aquifer replenishment that must occur from all sources, including natural recharge, during the ensuing water year to keep the Bunker Hill Basin at the same storage level as the beginning of the ensuing water year (July 1, 2005).

In addition to the above findings, Section 75505 of the California Water Code requires that a finding be made as to the amount of water necessary to be replaced in the intake areas of the groundwater basins within the District to prevent the landward movement of salt water into the fresh groundwater body, or to prevent subsidence of the land within the District. Because of its location and the elevations of its water table, the Bunker Hill Basin is not subject to salt-water intrusion and the current groundwater levels will not result in any significant land subsidence.

Section 75540 of the California Water Code requires that the District Board establish a zone or zones where a groundwater charge is to be implemented. The Code specifically states that a single zone may include the entire District and in May 1993 the Board established the entire District as one zone. This determination may be amended in the future, but lacking any evidence to the contrary, in the 2005-06 year the entire District will remain as a single zone in regard to any groundwater charge.

Section 75561 of the California Water Code further requires the Engineering Investigation to include a finding related to the amount of water the District is obligated by contract to purchase. At this time the District has no contractual obligation to purchase water for the replenishment of the groundwater supplies.



Based on the results of the 2005 Engineering Investigation, the San Bernardino Valley Water Conservation District finds that:

- Due to the below average precipitation and the resulting decreased natural and artificial recharge since 1992, the Bunker Hill Basin's storage is 406,900 acre-feet below that which is considered full for purposes of this Investigation.
- During the ensuing water year (July 1, 2005 to June 30, 2006), the Bunker Hill Basin can be recharged, from all sources, with 610,700 (203,800 + 406,900) acre-feet of water. This recharge quantity is needed to maintain the 1993 storage level considered full.
- The District should continue to take the necessary steps to enhance its capability to conduct recharge operations, which includes construction of new, or maintenance and repair of existing, diversion facilities, canals, dikes, basins, roads, and other water recharge facilities. These improvements are required to ensure the increasing demands on the Basin, especially during drought periods, can be met.

Engineering Investigation of the Bunker Hill Basin 2004-2005

> Engineering Investigation

### Engineering Investigation





### 2.0 Introduction

### 2.1 Purpose and Scope

The San Bernardino Valley Water Conservation District (District) was created by a vote of the people in 1931 for the purpose of managing the recharge activities that were previously conducted by the Water Conservation Association. The Water Conservation Association was incorporated in 1909 and had been diverting flows from the Santa Ana River for groundwater recharge since 1911. Currently the District has ownership, as well as easements and/or use of properties owned by the Bureau of Land Management (BLM), on a total of 3,735 acres within the Santa Ana River and Mill Creek Wash areas. The District boundary covers an area of approximately 50,000 acres, which represents about 60% of the Bunker Hill Basin. **Figure 1** displays the project area map for the Engineering Investigation. It includes the District boundary along with its location relative to the County and State boundaries.

Article 1, Section 75560 of the California Water Code requires that a Water Conservation District that proposes to levy a groundwater charge "... shall annually cause to be made an engineering investigation and report upon groundwater conditions of the District". In accordance with these requirements, the San Bernardino Valley Water Conservation District (District) must make the following findings and determinations as they relate to the ground and surface water conditions of the Bunker Hill Basin and those areas within the District boundary.

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- *Task 1.* Annual change in storage for the Bunker Hill Basin for the preceding water year (Fall 2004 groundwater levels);
- *Task 2.* Accumulated change in storage of the Bunker Hill Basin as of the last day of the preceding water year (June 30, 2004);
- *Task 3.* Total groundwater production from the Bunker Hill Basin for the preceding water year (July 1, 2003 June 30, 2004);
- *Task 4.* Estimate of the annual change in the Bunker Hill Basin storage for the current water year (July 1, 2004 June 30, 2005);
- *Task 5.* Estimate of the annual change in the Bunker Hill Basin storage for the ensuing water year (July 1, 2005 June 30, 2006);
- *Task 6.* Average annual change in Bunker Hill Basin storage for the immediate past 10 water years (1994 2004);
- Task 7. Estimated amount of agricultural water and other than agricultural water to be withdrawn from the groundwater supplies of the District for the ensuing water year (July 1, 2005 - June 30, 2006);
- Task 8. Estimated amount of water necessary for surface distribution for the ensuing water year for the Bunker Hill Basin and the District (July 1, 2005 June 30, 2006); and
- Task 9. The amount of water that is necessary for the replenishment of the groundwater supplies of the Bunker Hill Basin and the District for the ensuing water year (July 1, 2005 June 30, 2006).

To make the findings and determinations listed above, District staff researched available geohydrologic, precipitation, and engineering data for the Bunker Hill Basin and surrounding areas. These data were compiled and analyzed and a predictive relationship between precipitation, production, and change in basin storage was adapted from similar relationships developed by Geoscience Support Services in the preparation of previous Engineering Investigations. This relationship was based on empirical data covering the last 13 years and enables the prediction of change in storage, given certain annual production and precipitation levels. In addition, annual and accumulated change



in storage was calculated based on historic water level changes throughout the Bunker Hill Basin.

### 2.2 Location, Topography and Climate

The Bunker Hill basin is located at the top of the Santa Ana River Watershed and receives all the surface water runoff from the headwaters of the Santa Ana River, Mill Creek, and a portion of that from the Lytle Creek area. It is part of the inland valley called the San Bernardino Valley located in San Bernardino County, California and encompasses approximately 89,600 acres. Once past the Bunker Hill Basin, the Santa Ana River continues to flow southwesterly for approximately 60 miles until it reaches the Pacific Ocean.

The Bunker Hill Basin is bounded on the northwest by the San Gabriel Mountains, on the northeast by the San Bernardino Mountains, on the south by the Crafton Hills and the Badlands, and on the southwest by a low east-facing escarpment produced by the San Jacinto fault. These geologic features are easily identified on **Figure 2**.

The major streams providing inflows and outflows for the Bunker Hill Basin are also provided on **Figure 2**. The United States Geological Survey (USGS) administers stream flow gauging stations on all of these waterways except Mill Creek. Mill Creek flow is assumed to be 56% of the Santa Ana River flow based on historic data. A summary of these flows as measured by the USGS for the 2002-03 and 2003-04 water years is provided in **Table 1**. Total diversions for direct use and recharge on the Santa Ana River may exceed the stream flows due to measurements by different agencies.

The climate in the region is a semi-arid Mediterranean-type characterized by long dry summers and relatively short mild winters. The annual average temperature in the valley is 62° F, with extremes ranging from as low as 18° F to as high as 116° F (Burnham and Dutcher, 1960). Precipitation in the region is highly variable depending on location and elevation. Historical annual averages range from 10.6 inches near Loma Linda Fire Department located at the southwest end of the basin to over 36.2 inches at the Big Bear

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Lake Dam located at the upper end of the mountain watershed contributing flow to the basin. Precipitation data provided by the San Bernardino County Department of Transportation and Flood Control for 21 stations along with data from the Redlands and Big Bear newspapers are summarized by water year in **Table 2**. Twenty- one of these twenty-three stations is displayed in **Figure 3**. The symbols for the stations compare the 2002-04 annual precipitation totals with the historic annual average for each station.

### 2.3 Definition of Terms

For the purposes of this report, the following terms are defined:

- Bunker Hill Basin The Bunker Hill Basin is the groundwater basin that underlies the San Bernardino Valley. By strict definition according to (Dutcher and Garrett, 1963), the Bunker Hill Basin is separate from the Lytle Groundwater Basin, but receives groundwater underflow from the Lytle Basin. However, for completeness, the definition of the Bunker Hill Basin is extended to include the Lytle Basin for the purposes of this report.
- <u>Production</u> The term production includes extraction of water by groundwater pumping from wells and surface diversions from the Santa Ana River, Mill Creek, City Creek, Devil Canyon Creek, Cajon Creek, Plunge Creek, and Lytle Creek.
- <u>Preceding Water Year</u> As per the California Water Code, the preceding water year is the period July 1, 2003 through June 30, 2004.
- <u>Current Water Year</u> As per the California Water Code, the current water year is the period July 1, 2004 through June 30, 2005.
- <u>Ensuing Water Year</u> As per the California Water Code, the ensuing water year is the period July 1, 2005 through June 30, 2006.



### 2.4 Sources of Data

Data used in the development of this engineering investigation were obtained from a variety of sources including public and private agencies. The data analysis tasks involved tabulating and summarizing information from documented and undocumented reports, public and private files, and personal communication with local, State, and Federal agencies. Some of the more important data sources are listed below.

Data for Fall 2004 groundwater elevations and preceding water year (July 2003 to June 2004) production were obtained from the primary water purveyors in the Bunker Hill Basin including:

- City of Colton
- City of Loma Linda
- City of Redlands
- City of Rialto
- City of Riverside
- City of San Bernardino
- East Valley Water District
- Elsinore Valley Municipal Water District/Meeks and Daley Water Company
- Gage Canal Company
- Geologic Associates
- Loma Linda University
- Patton State Hospital
- Redlands Farming, Inc.
- Riverside Highland Water Company
- San Bernardino County Department of Transportation and Flood Control
- San Bernardino Valley Municipal Water District
- West Valley Water District
- Western Municipal Water District
- United States Geological Survey, Santee, CA Office



Data regarding historic diversions from the Santa Ana River, Mill Creek, Plunge Creek, City Creek, Devil Canyon Creek, Cajon Creek, and Lytle Creek were obtained from the following sources:

- San Bernardino Valley Water Conservation District (acting as Project Manager for the Cooperative Water Project - Exchange Plan)
- Western Municipal Water District
- City of San Bernardino

Historic precipitation data were obtained from the following sources:

- San Bernardino County Department of Transportation and Flood Control
- Redlands Daily Facts
- Big Bear Grizzly

### 3.0 Fall 2004 Groundwater Elevation Contours

The District, the Western Municipal Water District, and the primary water purveyors in the Bunker Hill Basin provided Fall 2004 water level data. Static groundwater elevations for Fall 2004 for 307 wells throughout the Bunker Hill Basin are compiled in **Appendix A**. These elevations were plotted for 239 wells using a Geographic Information System (GIS) and groundwater elevation contours for the Bunker Hill Basin were interpreted. See **Figure 4**. For purposes of comparison, Fall 2003 static groundwater elevation contours are provided in **Figure 5**.

**Figure 6** shows the delineation of the Bunker Hill Basin into the eight sub-areas used in this report. Based on Fall 2004 groundwater elevations, hydraulic gradients for the Bunker Hill I, Bunker Hill II, and Lytle Basin (Upper and Lower) were calculated. The Bunker Hill I sub-area is located in the northwest portion of the basin and is separated from the Lytle Basin by the Loma Linda Fault. Groundwater flow direction in the Bunker Hill I sub-area is northwest to southeast towards the Pressure Zone with an average hydraulic gradient of approximately 116 ft/mi (0.022). The Bunker Hill II sub-area is

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located in the eastern portion of the basin. In this groundwater unit, water flows west towards the Pressure Zone with an average hydraulic gradient of approximately 121 ft/mi (0.023). The Lytle Basin sub-area is located southwest of the Loma Linda fault and northwest of Barrier G. Hydraulic gradients within the Upper and Lower Lytle Basins are highly variable, apparently due to the influence of the many groundwater barriers in the area. West of Barrier J, groundwater flows across Barrier J into the Upper Lytle Basin. East of Barrier J groundwater flows southeast at an approximate hydraulic gradient of 157 ft/mi (0.030).

### 3.1 Hydrographs for Key Wells in the Bunker Hill Basin

To provide an historical perspective of groundwater levels for the Bunker Hill Basin, hydrographs for 21 wells located throughout the basin are shown in **Appendix B**. The locations of these wells are shown in **Figure 7** and the annual changes in water level from Fall 2003 to Fall 2004 are shown in **Table 3**.

### 4.0 <u>Task 1</u> - Annual Change in Storage (Fall 2003 to Fall 2004)

### 4.1 Hydrologic Sub-areas

Using a Geographic Information System, the average groundwater elevation changes were determined for each of the eight hydrologic sub-areas shown in **Figure 6** and listed below.

- Bunker Hill I Southwest of Barstow Freeway
- Bunker Hill I Northeast of Barstow Freeway
- Bunker Hill II West of Mentone Fault
- Bunker Hill II East of Mentone Fault
- Lytle Basin Southeast of Barrier J
- Lytle Basin Northwest of Barrier J



- Pressure Zone North of Santa Ana Wash
- Pressure Zone Santa Ana Wash

Due to variations of changes in groundwater level elevation, the Bunker Hill II - East of Mentone Fault was further subdivided into Storage Units North of Redlands Fault and Southeast of Redlands Fault. These Storage Units are also shown in **Figure 6**.

### 4.2 Area and Storativity

Digitizing each polygon made estimates of the area extent of the sub-areas and storage. Average storativity for each sub-area was determined based on data from Hardt and Hutchinson, 1980. Both of these values are shown in **Table 4**. Storativity values ranged from 0.02 for the Pressure Zone - North of the Santa Ana Wash to 0.13 for the Lytle Basin - Northwest of Barrier J and Bunker Hill II - East of the Mentone Fault.

### 4.3 Groundwater Level Elevation Changes

In order to determine the annual change in storage for the Bunker Hill Basin, Fall 2004 groundwater level elevation data were compared with the same from Fall 2003. Measurements for 296 wells were available for both periods and the differences are provided in **Appendix A**. These differences are plotted in **Figure 8** using a graduated symbol color. Those wells with the largest decline in groundwater elevation are shown in red, while those recorded with the largest increase are displayed in blue. In general, the Bunker Hill I Southwest and Northeast of Barstow Freeway, Bunker Hill II West and East of Mentone Fault, Pressure Zone in the Santa Ana Wash and North of Santa Ana Wash, and Lytle Basin Southeast of Barrier J, saw the largest decrease in groundwater levels while the Lytle Basins Northwest of Barrier J show mostly stable or rising groundwater levels.

Average changes in groundwater were determined by averaging the changes for all wells in each of the eight sub-areas and storage units. As shown in **Table 4**, average changes

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in groundwater level elevations between Fall 2003 and Fall 2004 ranged from an increase of 1.16 in the Lytle Basin – Northwest of Barriers J sub-area to a decrease of 15.83 feet in Bunker Hill I – Southwest of Barstow Freeway sub-area.

### 4.4 Change in Groundwater Storage

The total annual change in storage for the Bunker Hill Basin was determined by summing the changes from each sub-area. Changes in groundwater storage for the period Fall 2003 to Fall 2004 for the Bunker Hill Basin were calculated using the following formula:

$$\label{eq:Qchange in storage} = \Sigma \ A_i \times S_i \times \Delta h_i$$
 where:  

$$\ Q_{change in \, storage} = \text{Annual change in storage for the Bunker Hill Basin, (acre-feet)}$$

$$\ A_i = \text{Area of sub-area and storage unit } i, (acres)$$

$$\ S_i = \text{Storativity of sub-area and storage unit } i$$

$$\ \Delta h_i = \text{Average water level change of sub-area and storage unit } i, (feet)$$

As shown in **Table 4**, the change in groundwater storage for the Bunker Hill Basin between Fall 2003 and Fall 2004 was a decrease of 68,100 acre-ft. This decrease was due primarily to the lower than normal rainfall and increased annual production that occurred during the period July 2003 to June 2004 (56% of normal) and resulted in decreased groundwater recharge.



### 5.0 <u>*Task 2*</u> - Accumulated Change in Storage from Fall 1994 to Fall 2004

For purposes of this report, the accumulated change in storage as of the last day of the preceding water year (June 30, 2004) was based on the changes in water levels between Fall 1993, when the accumulated basin change in storage was considered "zero", and the Fall of 2004.<sup>2</sup> The accumulated change in storage as of June 30, 2004 was determined by adding the change in storage for the preceding water year (July 1, 2003 to June 30, 2004) of (-68,100), determined in Section 4.4, to the accumulated change in storage as of June 30, 2003 (-338,800). The result of this calculation is an accumulated decrease in storage for the Bunker Hill Basin of 406,900 acre-ft.

**Table 5** summarizes the accumulated change in storage of the Bunker Hill Basin for the period 1987 to 2004 based on 1993 as the "zero accumulated storage year". The accumulated storage data is also displayed in **Figure 9** with the percent of normal precipitation for the San Bernardino County Hospital station. As would be expected, storage generally increases with above average rainfall and decreases with normal and below average rainfall.

As a check to the above method of accumulated change in storage on an annual basis, the report looked at the change in storage utilizing the method of **Task 1**. Using water levels from Fall 1993 to Fall 2004, the total change in storage for the Bunker Hill Basin was determined by summing the changes from each sub-area. As shown in **Table 5(a)**, the change in groundwater storage for the period Fall 1993 to Fall 2004 for the Bunker Hill Basin was a decrease of 405,600 acre-feet. Compared to the accumulated change in storage determined in this task, there is a difference of 1,300 acre-feet, less than 0.32% difference over a eleven-year period.

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<sup>&</sup>lt;sup>2</sup> In the District's Engineering Investigation (EI) prior to 1993-94, the accumulated change in storage was based on the basin storage in 1984 as considered full. A concern arose regarding the flooding of basements due to high groundwater levels in the Pressure Zone of the Bunker Hill Basin. Therefore, in response to the City of San Bernardino's comments on accumulated change in storage, all EI's since that time are based on 1993 basin storage levels considered as full.



# 6.0 <u>*Task 3*</u> - Total Groundwater Production for the Preceding Water Year (July 1, 2003 to June 30, 2004)

Production data for the preceding water year (July 1, 2003 to June 30, 2004) for the Bunker Hill Basin were obtained from the primary water purveyors as listed in Section 2.4. Production data for wells owned by some smaller water agencies were not available and were estimated using previous year and calendar year 2003 data published by the Western - San Bernardino Watermaster and Western Municipal Water District, respectively.

**Appendix C** shows the production for each groundwater well in the Bunker Hill Basin for the period July 2003 through June 2004. As summarized on the last page of the Appendix, groundwater production from the Bunker Hill Basin for the preceding water year was approximately 222,456 acre-ft. **Table 6** summarizes the Bunker Hill Basin groundwater production for each of the sub-areas defined in Section 4.1.

**Figure 10** shows the locations of all wells capable of producing groundwater within the Bunker Hill Basin. A subset of those wells that actually produced water during the period July 2003 through June 2004 is shown in **Figure 10**. Each well is displayed with a graduated size symbol based on its annual production. The Pressure Zone has the greatest density of higher producing facilities with pockets of substantial production scattered throughout the rest of the basin.

# 7.0 <u>*Task 4*</u> - Estimate of the Annual Change in Storage for the Current Water Year (July 1, 2004 to June 30, 2005)

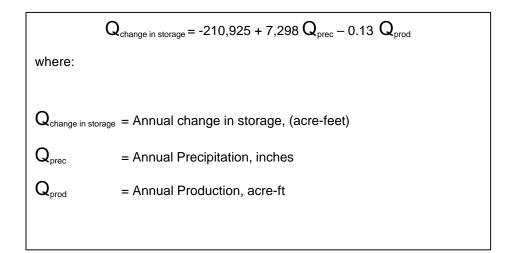
To estimate annual change in storage for the current water year, a multiple regression analysis was performed for the period between 1991-92 and 2003-04 for three parameters.

- Annual Change in Storage
- Precipitation
- Production



In Engineering Investigations (EI) prior to 1998, data for the period 1982 calendar year through 1991 calendar year were also utilized in the regression analysis. The only production data available for this time frame was based on a calendar year period instead of the June to July period required in the EI. This caused the production from more wells to be estimated from previous calendar year data. Since the 1991-92 period, more accurate and more complete production data for the July to June period has become available, as the District has compiled detailed information for its EI. It is now believed, based on this new production and precipitation data, that only the period from 1991-92 through 2003-04 should be used in the regression analysis. This change in time period maintained the correlation coefficient of .93.

Annual change in storage for the current water year is estimated using the following relationship between change in storage, precipitation, production, and the calculated regression coefficients.



A nomograph was constructed based on the above equation and is shown in **Figure 11**. Through the use of this chart, annual change in storage can be estimated for a given set of annual precipitation and production values.



The precipitation value used in the nomograph is based on the average of nine stations in the Bunker Hill Basin drainage area. The average annual precipitation for the nine stations chosen for this analysis is approximately 23.2 in. See **Table 7**. Historic annual precipitation values are plotted in **Appendix D** for these nine stations and the other fifteen stations shown in **Table 2**.

**Table 8** shows that for the period between July 2004 and December 2004 precipitation was 183% of normal for the nine stations. For purposes of this report, it was assumed that precipitation for the rest of the current water year (January 2005 to June 2005) would be average. Therefore, precipitation for the current water year (July 2004 to June 2005) was estimated to be 126% of normal or 29.2 in. of rainfall.

Based on these assumptions, the estimated production for the current water year will be approximately 231,000 acre-ft as shown in **Figure 12**. Using this result in **Figure 11** an estimated change in storage for the current water year (July 2004 to June 2005) of 32,200 acre-ft was determined.

# 8.0 <u>*Task 5*</u> - Estimate of the Annual Change in Storage for the Ensuing Water Year (July 1, 2005 to June 30, 2006)

The annual change in storage for the ensuing water year (July 1, 2005 to June 30, 2006) was estimated using the same method as described in Section 7.0. It was assumed that precipitation for the ensuing water year would be 100% of normal or 23.2 inches. Based on this assumption, the estimated production for the ensuing water year will be approximately 238,300 acre-ft as shown in **Figure 13**. Again, using this result in the nomograph shown in **Figure 11**, the estimated annual change in storage for the ensuing water year (July 1, 2005 to June 30, 2006) is -10,400 acre-ft.

SBV Water Conservation District



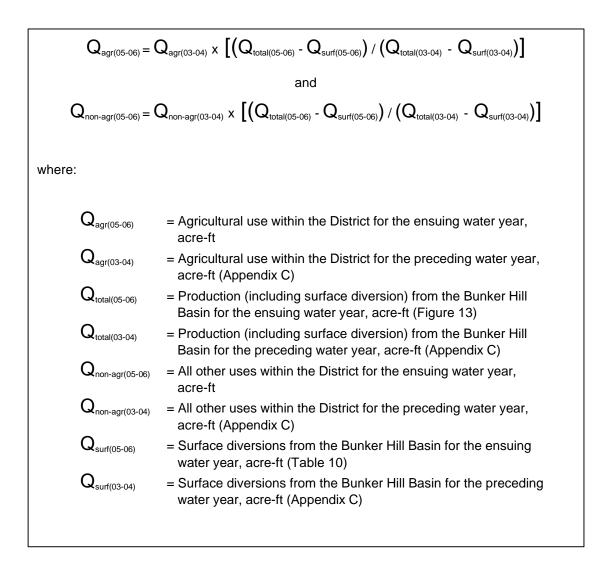
# 9.0 <u>*Task 6*</u> - Average Annual Change in Storage for the Immediate Past 10 Water Years

The average annual change in storage for the immediate past 10 water years (Fall 1994 to Fall 2004) was determined using the same method as described in Section 4.0. Average annual change in water levels ranged from an annual decrease of 22.02 feet in the Lytle Basin – Southeast of Barrier J sub-area to an annual increase of 0.57 feet in the Lytle Basin – Northwest of Barrier J sub-area. See **Table 9**. By summing the average annual change in storage for each sub-area, a total average annual change in storage for the Bunker Hill Basin for the immediate past 10 water years was determined to be – 46,500 acre-ft.

### 10.0 <u>Task 7</u> - Estimated Amount of Agricultural Water and Other Than Agricultural Water to be Withdrawn for the Ensuing Water Year (July 1, 2005 to June 30, 2006)

The estimated amount of agricultural water and other than agricultural water to be withdrawn within the District for the ensuing water year (July 1, 2005 to June 30, 2006) was based on the following equations:





Data on agricultural use and all other uses within the District for the preceding water year (July 1, 2003 to June 30, 2004) are provided in **Appendix C**. For the period July 1, 2003 through June 30, 2004 approximately 11,900 acre-ft of groundwater was produced for agricultural applications within the District boundary. For the same period, approximately 85,200 acre-ft of groundwater was produced for all other uses within the District boundary. Using the equations presented above with the following values inserted:



<b></b>					
	Q <sub>agr(03-04)</sub>	= 11,900 acre-ft			
	Q <sub>total(05-06)</sub>	= 238,300 acre-ft			
	Q <sub>total(03-04)</sub>	= 222,500 acre-ft			
	Q <sub>non-agr(03-04)</sub>	= 85,200 acre-ft			
	$Q_{surf(05-06)}$	= 44,900 acre-ft			
	$Q_{\text{surf}(03-04)}$	= 29,600 acre-ft			
The estimated production within the District for the ensuing water year for agricultural uses and other than agricultural uses is:					
<b>Q</b> <sub>agr(05-06)</sub>	$Q_{agr(05-06)} = 11,900 \times [(238,300 - 44,900) / (222,500 - 29,600)]$				
	= 11,900 acre-ft				
Q <sub>non-agr(05-06)</sub>	$g_{r(05-06)} = 85,200 \text{ x} [(238,300 - 44,900) / (222,500 - 29,600)]$				
	= 85,400 acre-ft				

By summing these two results, it is estimated that 97,300 acre-ft of groundwater will be withdrawn within the District for the ensuing water year (July 1, 2005 to June 30, 2006).



### 11.0 <u>Task 8</u> - Estimated Amount of Water for Surface Distribution for the Ensuing Water Year (July 1, 2005 to June 30, 2006)

The amount of water for surface distribution for the ensuing water year (July 1, 2005 to June 30, 2006) was estimated based on the average surface diversions for the Santa Ana River, Mill Creek, and Lytle Creek for the period 1983 to 2003. These data are documented in "Water Extractions for Calendar Year 2003" (Western Municipal Water District, November 2004)

As shown in **Table 10**, average surface diversions for the Santa Ana River, Mill Creek, and Lytle Creek between 1983 and 2003 were 24,700, 11,200 and 9,000, respectively. Therefore, the total estimated amount of water for surface distribution from the Bunker Hill Basin for the ensuing water year (July 1, 2005 to June 30, 2006) is found by summing the diversions as follows:

Bunker Hill Surface Distribution = 24,700 + 11,200 + 9,000 = 44,900 acre-ft

As Lytle Creek is not within the District, the estimated amount of surface distribution from the District for the ensuing water year (July 1, 2005 to June 30, 2006) is the sum of the Santa Ana River and Mill Creek distributions.

District Surface Distribution = 24,700 + 11,200 = 35,900 acre-ft

### 12.0 <u>Task 9</u> - Estimated Amount of Water for Replenishment of the Groundwater Supplies for the Ensuing Water Year (July 1, 2005 to June 30, 2006)

The amount of water necessary for replenishment of the groundwater supplies of the Bunker Hill Basin for the ensuing water year (July 1, 2005 to June 30, 2006) was estimated based on:



Replenishment = Total Production - Surface Diversions - Change in Storage

This estimate assumes the accumulated change in storage to remain the same as that of the preceding water year (i.e. -406,900 acre-ft). The estimated production and surface diversions from the Bunker Hill Basin for the ensuing water year (July 1, 2005 to June 30, 2006) were estimated as approximately 238,300 acre-ft (from **Figure 13**) and 44,900 acre-ft (from **Table 10**), respectively. The estimated change in storage determined in Section 8.0 and shown in **Figure 11** is a decrease of 10,400 acre-feet. Therefore, the amount of water necessary for replenishment of the groundwater supplies of the Bunker Hill Basin was estimated as follows:

Replenishment = 238,300 - 44,900 + 10,400 = 203,800 acre-ft

The amount of water necessary for replenishment of the District's groundwater supplies for the ensuing water year (July 1, 2005 to June 30, 2006) was estimated using the same equation as shown above and substituting values for the District area. The estimated production within the District for the ensuing water year was estimated as approximately 97,300 acre-ft (from Section 10.0) and 35,900 acre-ft (from Section 11.0), respectively. The change in storage for the ensuing water year for the District was estimated as a decrease of 5,200 acre-ft (assumed to be half of the Bunker Hill Basin). Therefore, the amount of water necessary for replenishment of the District's groundwater supplies for the ensuing water year (July 1, 2005 to June 30, 2006) is:

Replenishment = Total Production - Surface Diversions - Change in Storage Replenishment = (97,300 + 35,900) - 35,900 + 5,200 = 102,500 acre-ft

In the past there has been confusion regarding the use of the term "replenishment" in Task 9. The confusion appears to come from an interpretation of this term as the amount of water the District plans to "spread" for the ensuing water year. In fact, the term "replenishment" and its associated value determined in Task 9 is meant to provide an estimate of the amount of aquifer replenishment that must occur from all sources, including natural recharge, during the ensuing water year to keep the Bunker Hill Basin at the same storage level as the beginning of the ensuing water year (July 1, 2005).



#### 13.0 General Findings

In addition to the above findings, Section 75505 of the California Water Code requires that a finding be made as to the amount of water necessary to be replaced in the intake areas of the groundwater basins within the District to prevent the landward movement of salt water into the fresh groundwater body, or to prevent subsidence of the land within the District. Because of its location and the elevations of its water table, the Bunker Hill Basin is not subject to salt-water intrusion and the current groundwater levels will not result in any significant land subsidence.

Section 75540 of the California Water Code requires that the District Board establish a zone or zones where a groundwater charge is to be implemented. The Code specifically states that a single zone may include the entire District and in May 1993 the Board established the entire District as one zone. This determination may be amended in the future, but lacking any evidence to the contrary, in the 2005-06 year the entire District will remain as a single zone in regard to any groundwater charge.

Section 75561 of the California Water Code further requires the Engineering Investigation to include a finding related to the amount of water the District is obligated by contract to purchase. At this time the District has no contractual obligation to purchase water for the replenishment of the groundwater supplies.



#### 14.0 Conclusions

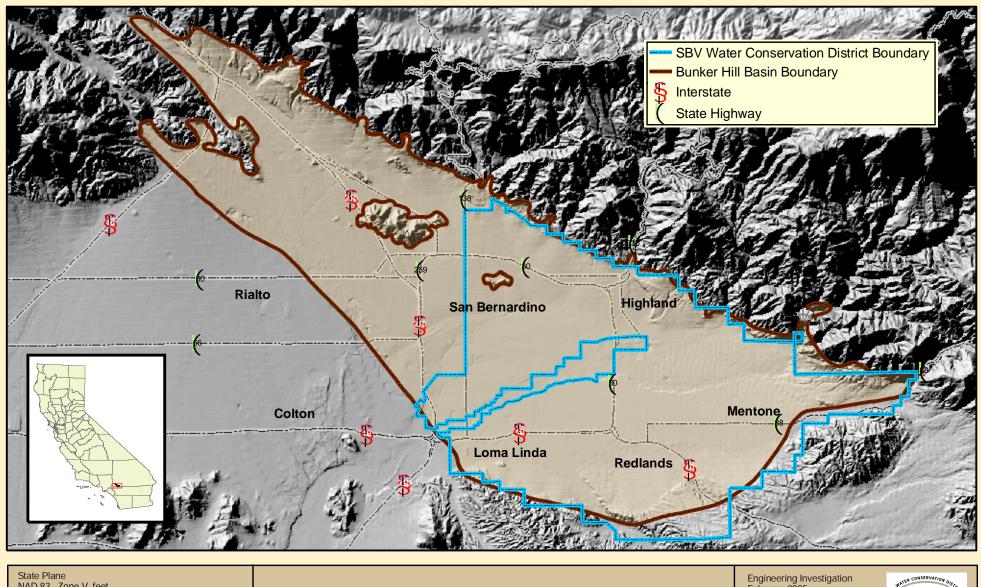
Based on the results of the 2005 Engineering Investigation, the San Bernardino Valley Water Conservation District finds that:

- Due to the below average precipitation and the resulting decreased natural and artificial recharge since 1992, the Bunker Hill Basin's storage is 406,900 acre-feet below that which is considered full for purposes of this Investigation.
- During the ensuing water year (July 1, 2005 to June 30, 2006), the Bunker Hill Basin can be recharged, from all sources, with 610,700 (203,800 + 406,900) acre-feet of water. This recharge quantity is needed to maintain the 1993 storage level considered full.
- The District should continue to take the necessary steps to enhance its capability to conduct recharge operations, which includes construction of new, or maintenance and repair of existing, diversion facilities, canals, dikes, basins, roads, and other water recharge facilities. These improvements are required to ensure the increasing demands on the Basin, especially during drought periods, can be met.

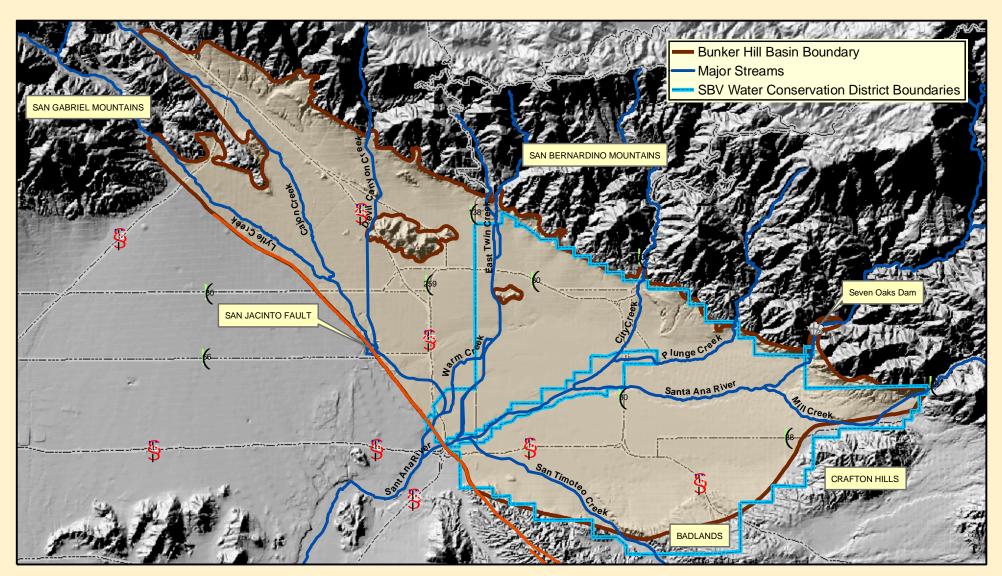
Engineering Investigation of the Bunker Hill Basin 2004-2005

**Figures** 

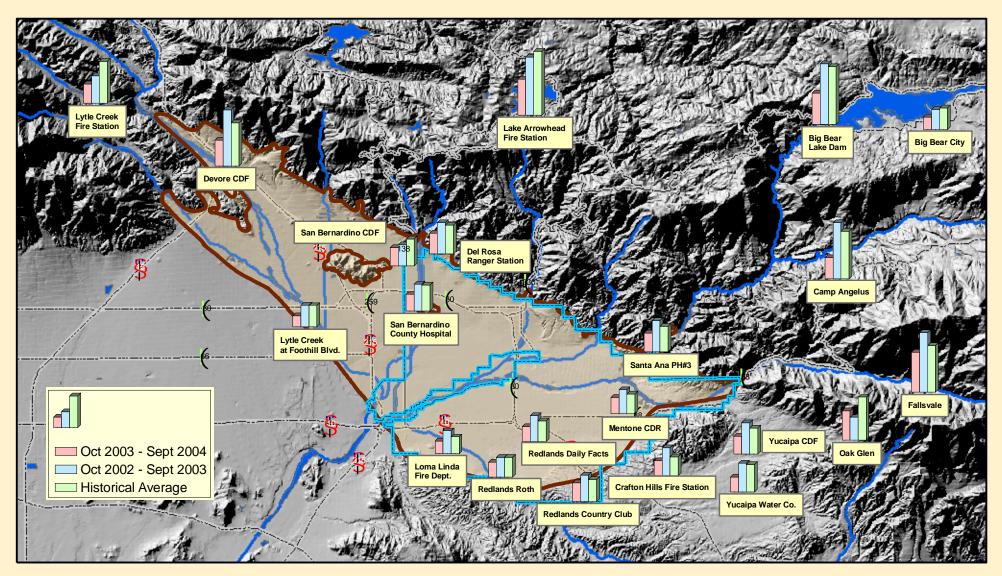




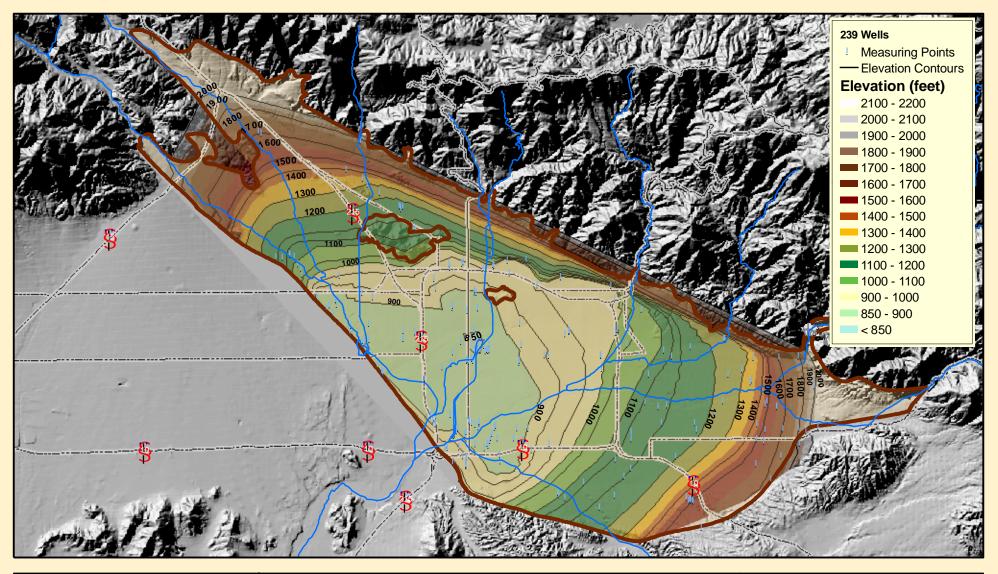
State Plane NAD 83, Zone V, feet 30M DEM O	Project Area Map	Engineering Investigation February 2005	OUR NAME IS OUR MISSION
0 0.5 1 2 3		Source: SBVWCD GIS	Figure 1

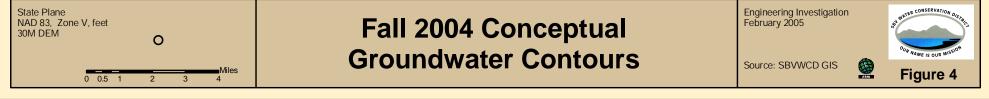


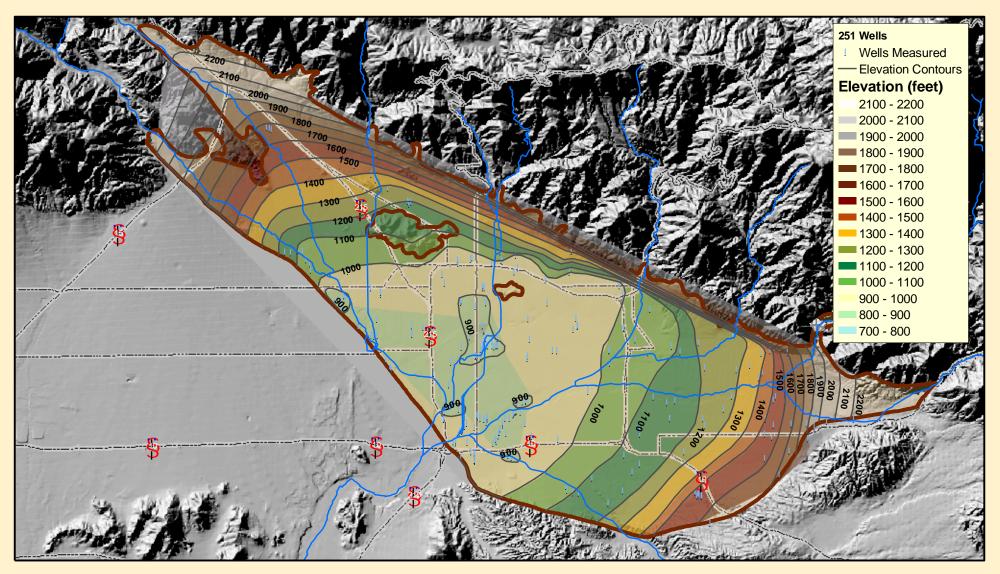


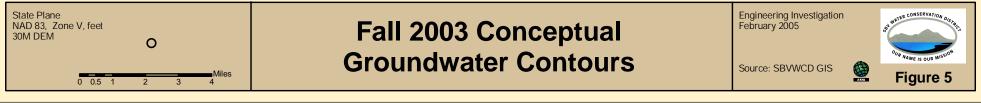


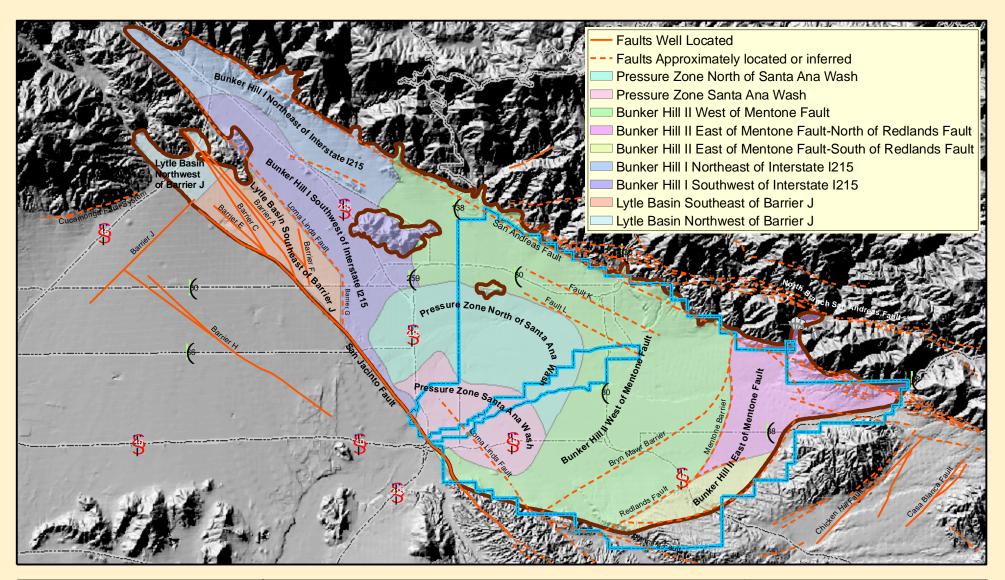




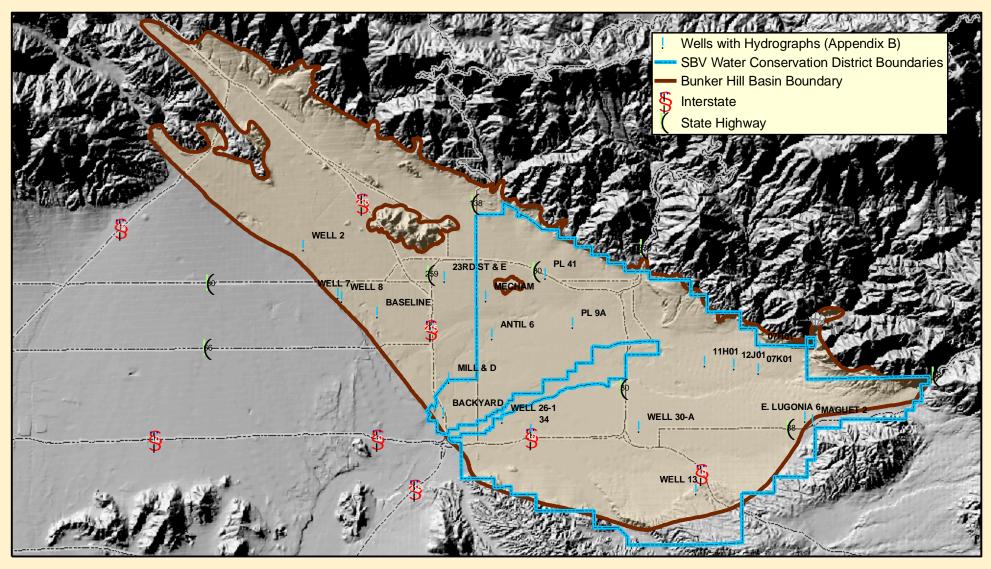




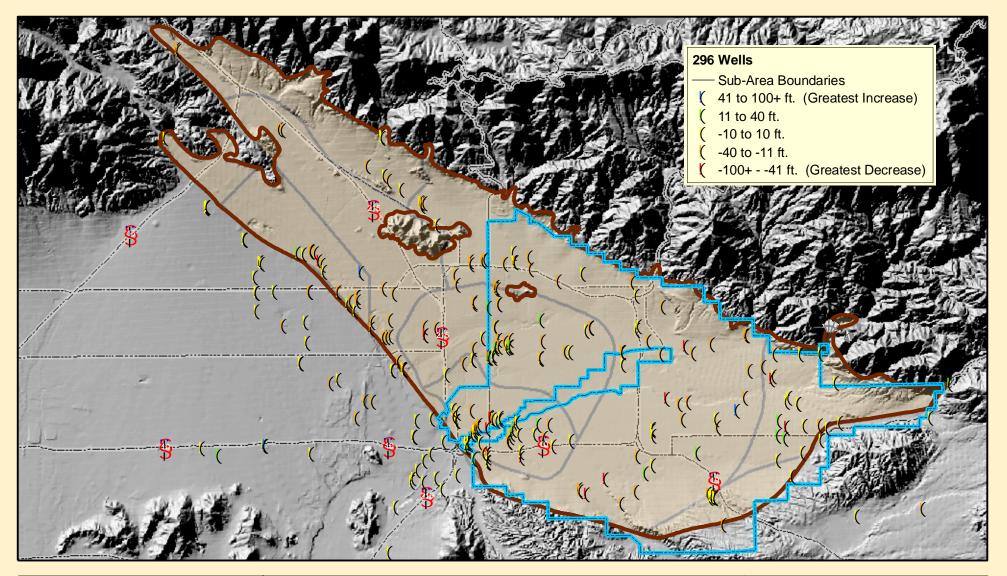








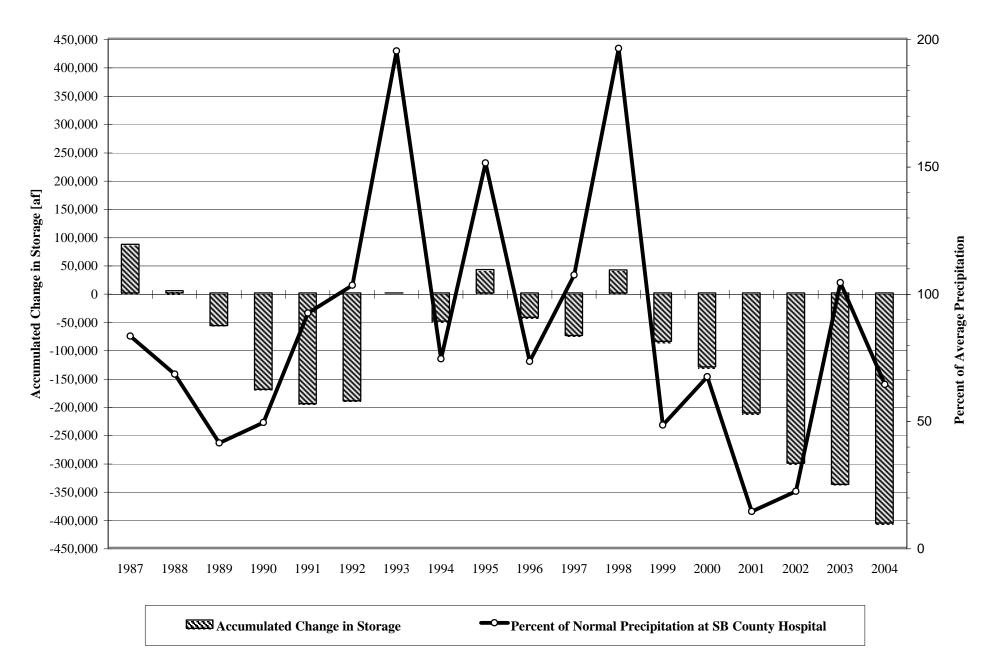


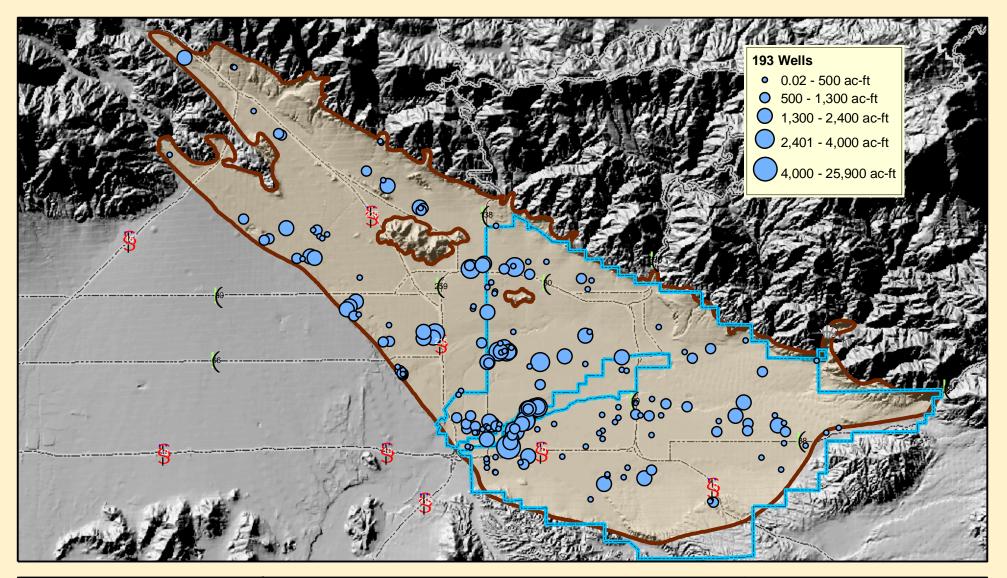




### **Accumulated Change in Storage for Bunker Hill Basin**

 $1987 \text{ to } 2004 \ (1993 \text{ assumed} = 0)$ 

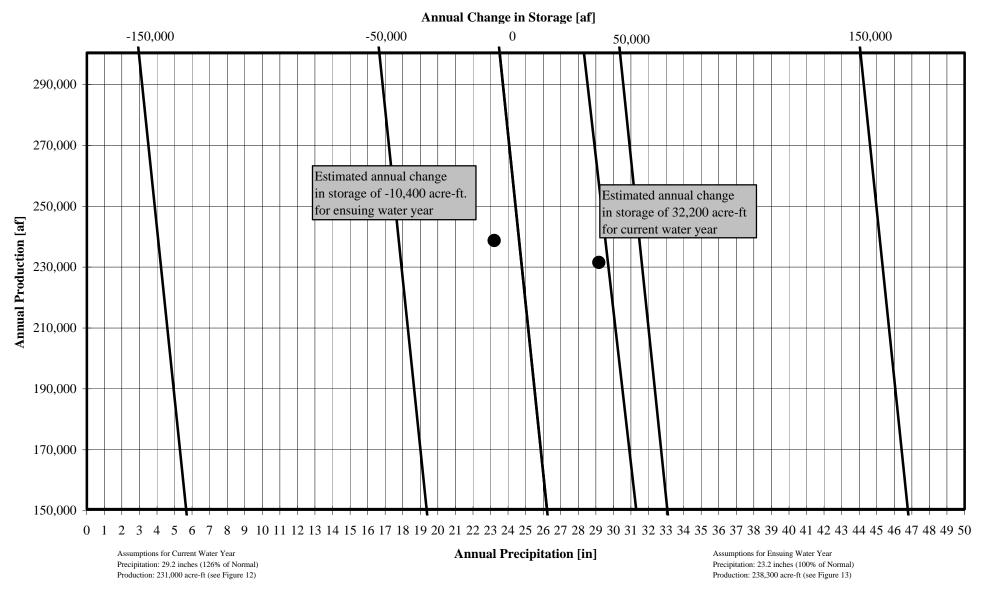




State Plane NAD 83, Zone V, feet 30M DEM	Groundwater Production	Engineering Investigation February 2005	St WATER CONSERVATION DISTRIC
Miles 0 0.5 1 2 3 4	in Bunker Hill Basin	Source: SBVWCD GIS	Figure 10

### **Prediction Chart for Annual Change in Storage**

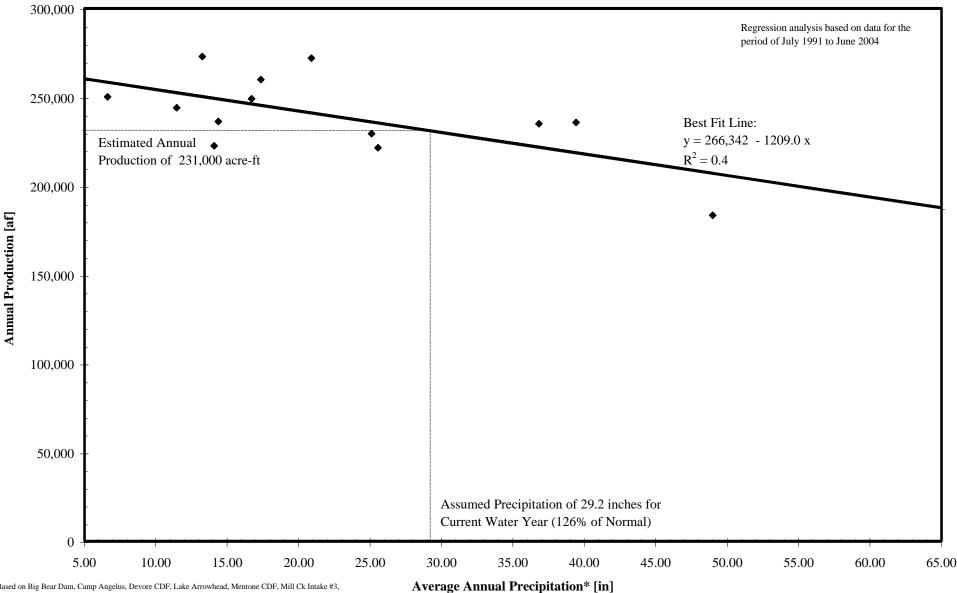
Current and Ensuing Water Years



\* Based on Big Bear Dam, Camp Angelus, Devore CDF, Lake Arrowhead, Mentone CDF, Mill Ck Intake #3, Redlands Country Club, San Bernardino County Hospital, Santa Ana Powerhouse #3, and Yucaipa CDF. Change in Storage = -210,925 + 7,298 Precipitation - 0.13 Production (R<sup>2</sup> = 0.93)

### **Estimate of Production for Current Water Year**

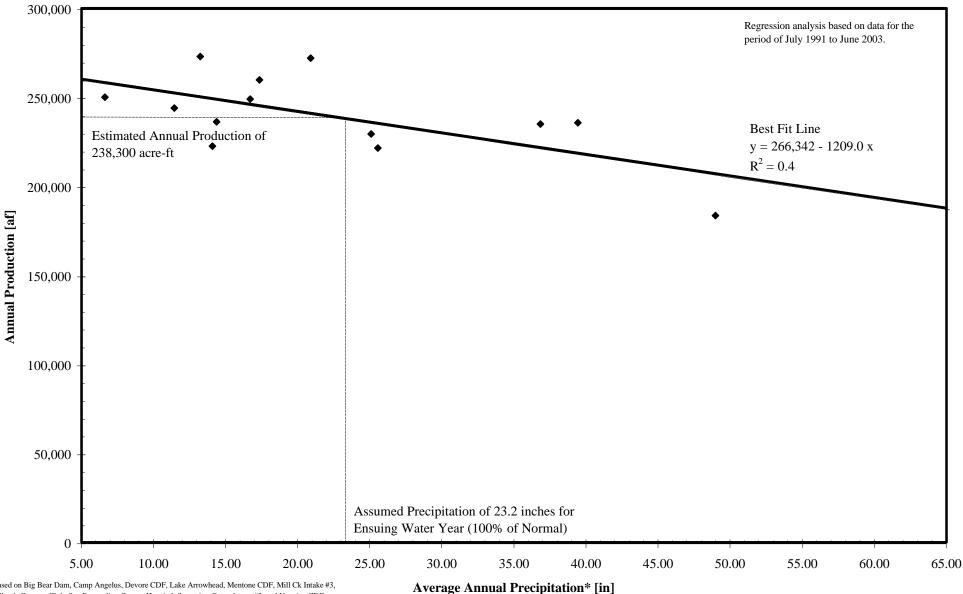
(July 2004 To June 2005)



\*Based on Big Bear Dam, Camp Angelus, Devore CDF, Lake Arrowhead, Mentone CDF, Mill Ck Intake #3, Redlands Country Club, San Bernardino County Hospital, Santa Ana Powerhouse #3, and Yucaipa CDF.

## **Estimate of Production for Ensuing Water Year**

(July 2005 To June 2006)



\*Based on Big Bear Dam, Camp Angelus, Devore CDF, Lake Arrowhead, Mentone CDF, Mill Ck Intake #3, Redlands Country Club, San Bernardino County Hospital, Santa Ana Powerhouse #3, and Yucaipa CDF.

Engineering Investigation of the Bunker Hill Basin 2004-2005

**Tables** 



## **Major Stream Flows for Bunker Hill Basin**

2002-2003 and 2003-2004 (Oct. - Sep.)

		20	03 -2004 Water Y	ear	200	02-2003 Water Y	'ear
<u>Inflows</u>	Drainage Area (sq. miles)	Streamflow (acre-ft)*	Diverted for Direct Use (acre-ft)	Diverted for Recharge (acre-ft)	Streamflow (acre-ft)*	Diverted for Direct Use (acre-ft)	Diverted for Recharge (acre-ft)
San Timoteo Creek	125.0	2,040	-		3,140	-	-
Lytle Creek	46.6	7,890	-		12,450	-	-
Cajon Creek	56.5	4,580	-		5,420	-	-
Devil Canyon Creek	5.5	3,730	-		1,700	-	-
East Twin Creek	8.8	NA	-		30	-	-
City Creek	19.6	4,380	-		4,090	-	-
Plunge Creek	16.9	1,590	-		3,700	-	-
Santa Ana River	210.0	14,900	11,690	2,940	23,450	12,210	10,707
Mill Creek**	42.4	8,340	-	3,090	13,130	-	4,890

Outflows	Drainage Area	Streamflow			Streamflow		
ounows	(sq. miles)	(acre-ft)*			(acre-ft)*		
Santa Ana River @ E Street	541.0	NA	Х	Х	18,640	Х	Х
Lytle Creek @ Colton	186.0	4,350	Х	Х	3,550	Х	Х
Warm Creek @ San Bernardino	11.0	1,900	Х	X	3,970	X	X

\*Note = Data is classified as provisional by the USGS.

\*\*Note = Mill Creek flow estimated to be 56% of Santa Ana River flow. See report text for details.

### **Summary of Percentage of Normal Precipitation**

1983 to 2004 (Water Year - Oct. to Sept.)

Station	Historic Annual Avg. [in]	1982 -1983 [in]	1983 -1984 [in]	1984 -1985 [in]	1985 -1986 [in]	1986 -1987 [in]	1987 -1988 [in]	1988 -1989 [in]	1989 -1990 [in]	1990 -1991 [in]	1991 -1992 [in]	1992 -1993 [in]	1993 -1994 [in]	1994 -1995 [in]	1995 -1996 [in]	1996 -1997 [in]	1997 -1998 [in]	1998 -1999 [in]	1999 -2000 [in]	2000 -2001 [in]	2001 -2002 [in]	2002 -2003 [in]	2003 -2004 [in]
Big Bear Dam	36.2	41.7	19.3	NA	40.3	19.2	28.9	20.8	17.6	34.8	38.9	81.9	28.7	52.7	24.4	30.0	51.7	14.2	20.6	21.4	9.2	38.1	19.6
Camp Angelus	30.0	51.4	23.6	26.6	30.1	20.5	5.0	17.2	17.9	26.4	28.2	61.1	17.2	46.7	26.0	29.0	49.5	16.1	21.1	21.5	7.7	35.4	13.2
City Creek Ranger Station	20.4	NA	NA	NA	28.1	11.7	23.6	20.7	18.0	26.4	30.2	55.9	19.1	47.6	19.4	25.2	40.7	9.8	18.1	12.7	0.0	0.0	0.0
Crafton Hills	11.8	18.4	NA	5.9	12.6	9.0	12.1	10.0	6.3	12.3	10.7	23.0	5.5	27.1	7.8	16.7	25.6	7.3	6.4	10.5	2.5	17.6	9.5
Del Rosa Ranger Station	18.1	37.9	11.3	15.4	20.1	9.5	18.9	13.2	12.9	8.8	24.2	41.4	12.3	27.7	14.2	17.3	37.3	8.3	12.7	16.6	6.1	19.7	13.0
Devore CDF	27.3	54.9	21.5	24.0	36.8	12.4	17.9	NA	15.0	20.4	31.3	64.0	15.4	45.4	20.6	33.1	45.1	13.6	8.0	15.5	10.9	35.4	16.4
Fallsvale	29.3	43.9	19.0	16.9	29.6	23.0	20.3	3.5	16.0	22.5	36.0	71.9	24.7	54.9	22.1	33.8	53.0	16.3	21.2	15.3	6.5	37.5	25.2
Lake Arrowhead	40.2	73.9	27.1	30.8	50.6	23.7	40.4	28.5	26.6	23.7	45.2	85.0	28.2	74.5	30.8	36.5	72.8	18.1	25.8	28.6	10.7	36.5	22.7
Loma Linda FD	10.6	NA	6.1	9.2	13.2	7.4	10.5	8.8	7.7	7.2	13.4	25.6	11.0	19.0	7.2	9.8	22.7	5.1	7.7	6.4	2.5	14.5	8.1
Lytle Creek at Foothill	13.5	34.8	8.9	10.2	16.0	7.0	13.0	3.9	8.5	15.5	14.9	31.6	9.2	25.5	12.2	13.8	25.8	6.3	9.8	12.1	4.0	13.6	7.2
Lytle Creek Fire Station	25.6	50.0	12.6	19.0	27.6	11.2	22.4	12.8	17.9	32.1	49.1	87.7	20.5	47.6	24.5	23.1	52.2	11.8	20.4	18.3	4.5	4.5	12.1
Mentone CDF	12.4	21.6	5.1	7.7	12.0	9.2	8.9	8.6	6.1	12.6	15.9	23.9	8.4	17.1	9.4	15.7	27.1	4.3	9.1	10.2	4.1	15.0	10.4
Mill Creek Intake #3	NA	33.9	19.4	21.0	26.5	16.3	8.5	15.8	14.0	24.9	29.1	16.8	15.1	44.8	20.0	22.6	42.6	NA	NA	NA	NA	NA	NA
Oak Glen	26.9	50.4	18.8	22.0	26.0	19.3	21.5	17.8	17.7	26.9	30.8	58.0	18.8	57.9	20.0	30.4	49.5	11.3	17.1	12.3	6.7	14.3	18.4
Oak Glen Conservation Camp	26.8	44.8	18.9	NA	27.9	13.1	16.5	NA	NA	22.9	14.4	61.8	18.9	43.0	22.5	35.5	55.2	19.6	19.2	22.5	5.6	15.4	0.0
Redlands - Roth	12.2	24.2	5.0	8.7	9.3	7.8	11.2	8.1	7.2	13.3	15.0	25.6	10.1	20.5	8.1	10.8	22.2	6.5	7.4	10.4	3.4	12.2	9.2
Redlands Country Club	13.8	27.8	8.2	10.7	13.4	8.8	14.2	10.7	8.6	14.5	16.1	29.4	12.6	19.8	8.5	9.0	17.2	6.3	5.7	10.0	4.0	16.5	11.6
San Bernardino CDF	16.9	39.9	11.1	16.1	20.1	9.3	18.3	12.9	10.6	15.5	21.9	37.4	4.5	20.3	15.8	16.2	34.3	9.3	13.6	16.6	5.3	5.3	5.3
San Bernardino Co. Hospital	16.3	32.4	10.8	12.9	17.9	8.1	13.5	12.6	8.1	15.5	16.5	30.8	11.7	24.1	11.9	18.6	32.7	8.0	11.1	2.3	3.6	17.1	10.5
Santa Ana Pumphouse #3	17.2	33.9	14.2	11.9	15.9	12.3	14.7	NA	10.3	15.8	18.4	23.0	15.9	24.9	11.1	16.6	28.0	7.0	6.8	8.6	3.2	18.2	9.4
Yucaipa CDF	15.9	33.7	9.8	10.7	13.0	11.0	11.3	9.7	NA	11.2	17.9	34.2	11.4	30.2	10.5	15.6	24.7	7.6	11.1	9.9	5.7	19.5	11.8
Yucaipa Valley Water District	16.2	30.8	9.7	12.3	15.2	10.6	NA	NA	NA	17.0	18.7	18.1	12.5	25.2	10.9	16.9	28.6	9.9	9.6	9.7	5.3	19.5	11.1
<b>Redlands Daily Facts</b>	12.8	28.1	8.0	10.4	11.3	9.1	12.7	8.9	7.7	13.8	16.0	28.0	12.1	21.3	8.2	12.6	27.2	6.1	7.9	10.3	3.6	16.0	9.2
Big Bear City	13.6	26.7	17.6	13.2	19.1	10.2	10.6	9.4	10.2	17.8	14.0	22.9	11.5	18.6	11.2	12.1	16.8	6.5	4.8	20.1	3.3	12.6	7.7
Percent of Normal	100%	188%	69%	74%	110%	62%	81%	63%	63%	93%	117%	214%	73%	173%	78%	103%	182%	49%	64%	69%	25%	94%	56%
Average	20.18																						

Source: San Bernardino County Department of Transportation/Flood Control

# Change in Ground Water Levels in Key Wells

Fall 2003 to Fall 2004

			Fall 2003	Fall 2004	
State Well Number	Well Name	Owner Or Measuring Agency	Depth To Water [ft]	Depth To Water [ft]	Difference
1S3W06H04S	9A	East Valley Water District	185.6	193.2	-7.6
1N3W30N01S	41	East Valley Water District	272.1	288.8	-16.7
1S2W21E01S	Maguet #2	Redlands, City of	47.0	55.0	-8.0
1S2W21D01S	E. Lugonia #6	Redlands, City of	39.0	56.0	-17.0
1S3W35G09S	Well #13	Redlands, City of	63.0	62.0	1.0
1S3W21H06S	Well #30A	Redlands, City of	196.0	200.0	-4.0
1S4W24K01S	Well #34	Redlands, City of	138.0	151.0	-13.0
1S4W23A02S	26-1	Riverside, City of - Gage Canal Company	105.8	-	NA
1N4W10N06S	Mill & D Street Well	San Bernardino, City of	48.6	-	NA
1N4W35K	#26, Mecham Well	San Bernardino, City of	209.0	231.4	-22.4
1N4W27N01S	23rd Street Well	San Bernardino, City of	265.0	283.1	-18.1
1S4W02K08S	Antil Well #6	San Bernardino, City of	156.1	190.6	-34.5
1N4W32N01S	Baseline Well	San Bernardino, City of	219.1	247.2	-28.1
1S4W22D	Backyard Well	San Bernardino Valley MWD	32.6	41.8	-9.1
1S2W07B01S	SBVWCD #1	San Bernardino Valley WCD	283.5	297.0	-13.5
1S2W07K01S	SBVWCD #2	San Bernardino Valley WCD	166.1	155.7	10.4
1S3W12J01S	SBVWCD #3	San Bernardino Valley WCD	243.3	276.6	-33.2
1S3W11H01S	SBVWCD #4	San Bernardino Valley WCD	200.0	-	NA
1N5W23Q03S	2/Lower 7	West Valley Water District	328.0	366.0	-38.0
1N5W36H04S	7/Lord 7	West Valley Water District	402.0	414.0	-12.0
1N5W36J03S	8/Lord 1	West Valley Water District	383.0	-	NA

## **Annual Change in Storage for Bunker Hill Basin**

Fall 2003 to Fall 2004

Sub-area	[1] Annual Change in Water Level* [ft]	[2] Area [acres]	[3] Storativity (S )	[4] Annual Change in Storage** [af]
Bunker Hill I - Southwest of Barstow Freeway	-15.83	11,714	0.09	-16,692
Bunker Hill I - Northeast of Barstow Freeway	-8.74	7,795	0.11	-7,492
Bunker Hill II - West of Mentone Fault	-14.06	35,206	0.06	-29,697
Bunker Hill II - East of Mentone Fault				
North of Redlands Fault	-4.62	8,584	0.13	-5,156
Southeast of Redlands Fault	-1.30	2,507	0.13	-423
Subtotal				-5,579
Lytle Basin - Southeast of Barrier J	-12.04	5,237	0.07	-4,413
Lytle Basin - Northwest of Barrier J	1.16	1,924	0.13	290
Pressure Zone - North of Santa Ana Wash	-12.69	11,920	0.02	-3,026
Pressure Zone - Santa Ana Wash	-11.52	6,686	0.02	-1,540

Total = -68,100

[1] Based on average changes in water level within each Sub-area

[2] Estimated using GIS

[3] Based on data from Hardt and Hutchinson (1980). S, storativity: The amount of water stored or released per unit area of aquifer given unit head change.

[4] = [1] x [2] x [3]

\*A positive sign denotes an increase in water level and a negative sign represents a decline in water level.

\*\* A positive sign denotes an increase in storage and a negative sign represents a decline of storage.

## **Accumulated Change in Storage for Bunker Hill Basin**

1987 to 2004 (Based on "Zero Year" of 1993)

Year	Accumulated Storage [af]
1987	85,500
1988	3,600
1989	-58,000
1990	-170,700
1991	-196,000
1992	-191,000
1993	0
1994	-50,000
1995	41,100
1996	-43,100
1997	-75,500
1998	40,400
1999	-85,700
2000	-131,100
2001	-212,200
2002	-301,500
2003	-338,800
2004	-406,900

Note: A negative sign indicates a decline in storage and a positive sign represents an increase in storage.

## Accumulated Change in Storage for Bunker Hill Basin

for the Period Fall 1993 to Fall 2004

Sub-area	[1] Change in Water Level* [ft]	[2] Area [acres]	[3] Storativity (S )	[4] Change in Storage** [af]
Bunker Hill I - Southwest of Barstow Freeway	-81.87	11,714	0.09	-86,316
Bunker Hill I - Northeast of Barstow Freeway	-38.53	7,795	0.11	-33,033
Bunker Hill II - West of Mentone Fault	-48.68	35,206	0.06	-102,827
Bunker Hill II - East of Mentone Fault				
North of Redlands Fault	-72.32	8,584	0.13	-80,699
Southeast of Redlands Fault	9.51	2,507	0.13	3,099
Subtotal				-77,601
Lytle Basin - Southeast of Barrier J	-233.98	5,237	0.07	-85,775
Lytle Basin - Northwest of Barrier J	-9.28	1,924	0.13	-2,321
Pressure Zone - North of Santa Ana Wash	-59.89	11,920	0.02	-14,277
Pressure Zone - Santa Ana Wash	-26.07	6,686	0.02	-3,486

Total = -405,600

[1] Based on average changes in water level within each Sub-area

[2] Estimated using GIS

[3] Based on data from Hardt and Hutchinson (1980). S storativity: The amount of water stored or released per unit area of aquifer given unit head change.

[4] = [1] x [2] x [3]

\*A positive sign denotes an increase in water level and a negative sign represents a decline in water level.

\*\* A positive sign denotes an increase in storage and a negative sign represents a decline of storage.

## **Production from Sub-basins of Bunker Hill Basin**

Preceding Water Year (July 2003 to June 2004)

Sub-area	Production July 2002 to June 2003 [af]
Bunker Hill I - Southwest of Barstow Freeway	16,514
Bunker Hill I - Northeast of Barstow Freeway	6,644
Bunker Hill II - West of Mentone Fault	45,714
Bunker Hill II - East of Mentone Fault	31,165
Lytle Basin - Southeast of Barrier J	17,184
Lytle Basin - Northwest of Barrier J	31
Pressure Zone - North of Santa Ana Wash	44,436
Pressure Zone - Santa Ana Wash	57,889
Unknown	2,880
Total	222,456

# **Summary of Percentage of Normal Precipitation**

1982 to 2004

Station	Historic Annual Average [in]	1982 [in]	1983 [in]	1984 [in]	1985 [in]	1986 [in]	1987 [in]	1988 [in]	1989 [in]	1990 [in]	1991 [in]	1991 -1992 [in]	1992 -1993 [in]	1993 -1994 [in]	1994 -1995 [in]	1995 -1996 [in]	1996 -1997 [in]	1997 -1998 [in]	1998 -1999 [in]	1999 -2000 [in]	2000 -2001 [in]	2001 -2002 [in]	2002 -2003 [in]	2003 -2004 [in]
Big Bear Dam	36.2	34.4	56.9	18.0	16.8	21.9	29.3	24.2	14.1	17.8	38.5	38.4	84.5	29.6	51.2	25.6	27.3	52.3	15.7	20.4	22.4	8.6	38.3	19.6
Camp Angelus	30.0	42.5	40.6	0.2	9.3	28.2	15.1	14.3	9.1	18.7	28.9	29.4	61.7	17.0	45.1	27.6	28.2	46.6	18.8	21.8	20.7	8.8	34.8	13.6
Devore CDF	27.3	31.0	67.0	16.9	16.3	33.5	22.0	7.9	11.7	12.8	24.4	31.1	64.2	15.5	45.4	20.6	32.4	45.6	13.9	7.7	15.7	11.1	35.1	16.7
Lake Arrowhead	40.2	61.7	74.1	26.4	25.2	39.2	40.4	32.2	20.6	24.1	30.0	44.8	85.7	28.2	74.3	30.9	35.4	72.7	19.4	25.5	29.0	10.7	36.1	22.9
Mentone CDF	12.4	16.7	21.4	5.1	7.4	11.9	8.7	8.6	6.4	6.2	13.6	15.3	24.6	8.4	17.1	9.2	13.8	28.3	5.2	9.0	10.3	4.0	4.0	4.0
Mill Creek Intake #3	NA	10.1	42.1	19.4	19.0	21.7	10.6	16.6	7.7	13.9	4.1	29.0	16.8	15.0	43.8	21.0	21.0	44.3	NA	NA	NA	NA	NA	NA
Redlands Country Club	13.8	20.2	28.9	8.5	7.9	12.0	13.5	11.0	7.2	8.5	16.0	15.6	30.1	12.6	19.8	8.3	7.2	19.0	6.6	5.6	10.1	3.9	16.3	11.8
San Bernardino Co. Hospital	16.3	23.1	34.4	8.9	10.9	15.5	12.3	12.7	7.2	7.7	17.8	16.4	31.0	11.6	23.9	12.2	16.8	33.6	8.2	11.0	2.4	3.6	17.1	10.5
Santa Ana Pumphouse #3	17.2	20.9	35.8	12.4	9.4	15.4	14.5	9.7	8.8	10.8	16.8	17.5	24.0	15.9	24.8	10.9	14.1	29.5	8.1	6.8	8.6	3.3	18.0	9.3
Yucaipa CDF	15.9	25.5	33.2	9.5	8.5	13.3	9.3	11.8	7.2	6.7	13.1	17.4	35.0	11.4	30.0	10.8	12.9	27.4	7.2	11.4	10.1	5.6	19.5	19.5
Average	23.2	28.6	43.5	12.5	13.1	21.2	17.6	14.9	10.0	12.7	20.3	25.5	45.8	16.5	37.5	17.7	20.9	39.9	11.4	13.2	14.4	6.6	24.3	14.2
Percent of Normal	100%	123%	187%	54%	56%	92%	76%	64%	43%	55%	88%	110%	197%	71%	162%	76%	90%	172%	49%	57%	62%	29%	105%	61%

Note: Data from 1991 to present totaled from July to June.

Source: San Bernardino County Department of Transportation/Flood Control

### Estimates of Percentage of Normal Precipitation for Current Water Year (July 2004 - June 2005)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Sea	son - July To Dece	mber	Sea	son - January To	June	July 2004 To June 2005
Station	Historic Average	July 2004 To December 2004	% Of Normal	Historic Average	January 2005 To June 2005	% Of Normal	% Of Normal
	[in]	[in]	[%]	[in]	[in]	[%]	[%]
Big Bear Dam	11.88	17.30	146%	24.97	24.97	100%	115%
Camp Angelus	10.41	15.40	148%	19.90	19.90	100%	116%
Devore CDF	8.41	21.31	253%	19.13	19.13	100%	147%
Lake Arrowhead	13.28	22.60	170%	27.86	27.86	100%	123%
Mentone CDF	3.83	7.87	205%	8.98	8.98	100%	131%
Mill Creek Intake #3	NA	NA	NA	NA	NA	NA	NA
Redlands Country Club	4.24	8.46	200%	10.04	10.04	100%	130%
San Bernardino County Hospital	5.16	10.07	195%	11.36	11.36	100%	130%
Santa Ana Pumphouse #3	5.58	8.43	151%	11.80	11.80	100%	116%
Yucaipa CDF	5.01	8.81	176%	11.19	11.19	100%	123%

Average 183%

Average 126%

[1], [2], [4]: Based on data provided by San Bernardino County Department of Transportation/Flood Control

 $[3] = ([2] / [1]) \times 100$ 

[5] Assumed equal to season average (January to June)

[6] = ([5] / [4]) x 100

 $[7] = (([2] + [5]) / ([1] + [4])) \ge 100$ 

## **Average Annual Change in Storage for Bunker Hill Basin**

Fall 1994 to Fall 2004 (The Immediate Past 10 Water Years)

Sub-area	[1] Average Change in Water Level* [ft]	[2] Area [acres]	[3] Storativity (S )	[4] Average Annual Change in Storage** [af]
Bunker Hill I - Southwest of Barstow Freeway	-9.70	11,714	0.09	-9,999
Bunker Hill I - Northeast of Barstow Freeway	-4.00	7,795	0.11	-3,433
Bunker Hill II - West of Mentone Fault	-6.97	35,206	0.06	-14,484
Bunker Hill II - East of Mentone Fault	-5.97	11,091	0.13	-8,611
Lytle Basin - Southeast of Barrier J	-22.02	5,237	0.07	-8,071
Lytle Basin - Northwest of Barrier J	0.57	1,924	0.13	143
Pressure Zone - North of Santa Ana Wash	-6.31	11,920	0.02	-1,504
Pressure Zone - Santa Ana Wash	-4.22	6,686	0.02	-564

[1] Based on average changes in water level within each Sub-area over last 10 years.

[2] Estimated using GIS.

[3] Based on data from Hardt and Hutchinson (1980). S storativity: The amount of water stored or released per unit area of aquifer given unit head change.

[4] = [1] x [2] x [3]

\* A positive sign denotes an increase in water level and a negative sign represents a decline in water level.

\*\* A positive sign denotes an increase in storage and a negative sign represents a decline in storage.

-46,500

Total =

### Summary of Surface Distribution Water for Bunker Hill Basin 1983 to 2003

Stucomflow Diversions	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Avg.
Streamflow Diversions	[af]																					
Lytle Creek																						
Fontana Union WC	3,753	2,446	2,743	1,798	2,725	2,991	2,245	204	1,633	12,980	7,860	12,270	10,000	10,100	NA							
Mount Vernon WC	724	724	724	724	724	724	724	724	724	724	1,143	102	0	0	0	0	NA	NA	NA	NA	NA	
Rialto, City of	1,006	1,654	1,075	1,325	539	1,111	1,005	792	1,014	743	193	843	44	1,070	393	896	1,461	NA	NA	NA	726	
San Bernardino, City of	1,448	1,448	1,448	1,448	1,448	1,448	1,448	1,448	1,448	1,448	520	NA	2,400	2,400	0	0	0	0	0	0	0	
WSBCWD	3,602	3,696	3,340	3,686	3,686	3,696	3,696	2,554	3,701	3,696	3,696	3,697	3,696	3,686	4,079	3,696	3,408	3,047	3,175	1,868	2,380	
Subtotal	10,533	9,968	9,330	8,981	9,122	9,970	9,118	5,722	8,520	19,591	13,412	16,912	16,140	17,256	4,472	4,592	4,869	3,047	3,175	1,868	3,106	9,034
Mill Creek																				 		
Redlands, City of	19,363	4,617	12,932	11,676	11,178	7,731	8,285	6,794	11,109	14,559	19,086	14,505	9,786	12,250	10,250	11,224	11,951	8,852	9,496	5,867	12,541	
Subtotal	19,363	4,617	12,932	11,676	11,178	7,731	8,285	6,794	11,109	14,559	19,086	14,505	9,786	12,250	10,250	11,224	11,951	8,852	9,496	5,867	12,541	11,145
Santa Ana River																						
Bear Valley Mutual WC	19,209	23,392	19,837	23,160	16,373	14,170	14,785	11,244	20,651	26,014	42,079	23,812	30,794	38,252	31,479	36,632	30,245	29,498	26,301	23,458	12,633	
Redlands WC	NA	NA	NA	1,122	961	963	890	577	NA	NA	NA	NA	NA	NA	760	NA	NA	NA	NA	NA	NA	
Subtotal	19,209	23,392	19,837	24,282	17,334	15,133	15,675	11,821	20,651	26,014	42,079	23,812	30,794	38,252	32,239	36,632	30,245	29,498	26,301	23,458	12,633	24,728

NA = Data Not Available Source: Western Municipal Water District Total =

44,900

Engineering Investigation of the Bunker Hill Basin 2004-2005

Appendices



		Owner Or Measuring Agency	2003				2004				
State Well Number	Well Name		Measuring Point Elevation	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Elevation	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Difference Fall 2003 to Fall 2004
1S4W08R05S	5	Colton, City of	1076.0	FC	FC	FC	1076.0	FC	FC	FC	
1S4W05R	6B	Colton, City of	1075.0	FC	FC	FC	1075.0	FC	FC	FC	
1S4W08Q01S	7	Colton, City of	1075.8	-	FC	-	1075.8	-	0.0	-	
1S4W08F	8	Colton, City of	1096.5	190.0	906.5	Jun-03	1096.5	189.0	907.5	Nov-04	1.0
1S4W08F07S	13	Colton, City of	1095.1	170.0	925.1	Dec-03	1095.1	190.0	905.1	Nov-04	-20.0
1S4W08R04S	14	Colton, City of	1075.7	FC	FC	FC	FC	FC	FC	FC	
1S4W18G01S	15	Colton, City of	1093.5	197.0	896.5	Sep-03	1093.5	210.0	883.5	Nov-04	-13.0
1S4W08F01S	16	Colton, City of	1096.2	188.0	908.2	Dec-03	1096.2	194.0	902.2	Nov-04	-6.0
1S4W18F	17	Colton, City of	1099.4	196.0	903.4	Sep-03	1099.4	213.0	886.4	Nov-04	-17.0
1S4W08F	19	Colton, City of	1096.5	173.0	923.5	Dec-03	1096.5	189.0	907.5	Nov-04	-16.0
1S4W08F15S	21	Colton, City of	1093.7	193.0	900.7	May-04	1093.7	197.0	896.7	Nov-04	-4.0
1S4W27M01S	22	Colton, City of	1001.9	162.0	839.9	Dec-03	1001.9	160.0	841.9	Nov-04	2.0
1S4W21K01S	23	Colton, City of	975.0	90.0	885.0	Dec-03	975.0	99.0	876.0	Nov-04	-9.0
1S4W18N	24	Colton, City of	1100.8	206.0	894.8	Jun-03	1100.8	218.0	882.8	Nov-04	-12.0
1S4W08J02S	26	Colton, City of	1025.0	-	-	-	1025.0	198.0	827.0	Nov-04	
1S4W27L01S	Katz Well	Colton, City of	987.0	-	-	-	987.0	-	-	-	
1N3W27N02S	City Creek #3	East Valley Water District	1490.0	-	-	-	1490.0	-	-	-	
1N3W28P01S	54	East Valley Water District	1520.0	456.9	1063.1	Nov-03	1520.0	468.4	1051.6	Oct-04	-11.5
1N3W30J05S	39	East Valley Water District	1350.3	354.4	995.9	Nov-03	1350.3	344.9	1005.4	Oct-04	9.5
1N3W30N01S	41	East Valley Water District	1232.3	272.1	960.2	Nov-03	1232.3	288.8	943.5	Dec-04	-16.7
1N3W31L01S	68 Morley	East Valley Water District	1147.1	182.2	964.9	Nov-03	1147.1	FC	FC	FC	
1N3W33C01S	113	East Valley Water District	1270.0	421.0	849.0	Nov-03	1270.0	FC	FC	FC	
1N3W33F01S	94 Corwin	East Valley Water District	1413.2	358.8	1054.4	Nov-03	1413.2	368.3	1044.9	Oct-04	-9.5
1N4W25A01S	27	East Valley Water District	1295.6	-	-	-	1295.6	211.7	1083.9	Dec-04	
1N4W25C02S	25A	East Valley Water District	1246.4	276.0	970.4	Nov-03	1246.4	311.0	935.4	Dec-04	-35.0
1N4W25F04S	107	East Valley Water District	1217.3	266.0	951.3	Nov-03	1217.3	277.5	939.8	Dec-04	-11.5
1N4W26A02S	24A	East Valley Water District	1243.0	317.0	926.0	Nov-03	1243.0	324.2	918.8	Oct-04	-7.2
1N4W26A03S	24B	East Valley Water District	1244.6	292.3	952.3	Nov-03	1244.6	318.0	926.6	Oct-04	-25.7
1N4W36Q01S	6	East Valley Water District	1098.9	120.6	978.3	Nov-03	1098.9	92.9	1006.0	Nov-04	27.7
1S2W07F01S	Well 125	East Valley Water District	1600.0	269.5	1330.5	Nov-03	1600.0	304.5	1295.5	Oct-04	-35.0
1S3W01H01S	Mt. Harrison #142	East Valley Water District	1520.0	268.1	1251.9	Nov-03	1520.0	300.7	1219.3	Nov-04	-32.6
1S3W02J02S	Cram Well # 120	East Valley Water District	1410.0	183.0	1227.0	Nov-03	1410.0	212.8	1197.2	Nov-04	-29.8
1S3W02N02S	143 Abbey Way	East Valley Water District	1339.0	181.7	1157.3	Dec-03	1339.0	207.0	1132.0	Oct-04	-25.3
1S3W03P04S	Duda	East Valley Water District	1260.0	226.8	1033.2	Nov-03	1260.0	247.0	1013.0	Nov-04	-20.2
1S3W03Q01S	121	East Valley Water District	1300.0	-	-	-	1300.0	FC	FC	FC	
1S3W03R01S	146 EHR Well	East Valley Water District	1327.3	275.0	1052.3	Nov-03	1327.3	324.3	1003.0	Oct-04	-49.3
1S3W04G02S	Dunkirk #1	East Valley Water District	1245.9	234.5	1011.4	Nov-03	1245.9	241.3	1004.6	Nov-04	-6.8
1S3W04G03S	136, Dunkirk #2	East Valley Water District	1240.0	234.0	1006.0	Nov-03	1240.0	240.9	999.1	Nov-04	-6.9
1S3W04J	128, Hot Water	East Valley Water District	1242.5	-	-	-	1242.5	-	-	-	1
1S3W04J01S	102	East Valley Water District	1242.5	206.5	1036.0	Nov-03	1242.5	217.6	1024.9	Nov-04	-11.1
1S3W04N01S	40	East Valley Water District	1195.1	186.2	1008.9	Nov-03	1195.1	203.4	991.7	Nov-04	-17.2
1S3W04N03S	40-A	East Valley Water District	1198.6	196.8	1001.8	Nov-03	1198.6	210.9	987.7	Nov-04	-14.1
1S3W05D03S	Cull #2 / 132-2	East Valley Water District	1155.0	187.2	967.8	Nov-03	1155.0	214.7	940.3	Nov-04	-27.5
1S3W05D07S	Cull #4	East Valley Water District	1155.0	185.5	969.5	Nov-03	1155.0	199.7	955.3	Nov-04	-14.2
1S3W05D06S	Cull #3	East Valley Water District	1155.0	185.8	969.2	Nov-03	1155.0	199.1	955.9	Nov-04	-13.3
1S3W06H04S	9A	East Valley Water District	1151.5	185.6	965.9	Nov-03	1151.5	193.2	958.3	Nov-04	-7.6
1S3W06P01S	Stout	East Valley Water District	1120.0	140.8	979.2	Nov-03	1120.0	147.9	972.1	Nov-04	-7.1

		Owner Or Measuring Agency	2003				2004		]		
State Well Number	Well Name		Measuring Point Elevation	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Measuring Point Elevation	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Difference Fall 2003 to Fall 2004
1S3W06P18S	141, McDaniel	East Valley Water District	1120.0	180.8	939.2	Nov-03	1120.0	216.0	904.0	Nov-04	-35.2
1S3W09E02S	Tri-City Concrete	East Valley Water District	1195.4	189.0	1006.4	Nov-03	1195.4	193.6	1001.8	Nov-04	-4.6
1S4W01K04S	14	East Valley Water District	1092.8	84.8	1008.0	Nov-03	1092.8	95.1	997.7	Nov-04	-10.3
1S4W02N02S	5th & Cooley	East Valley Water District	1040.1	129.3	910.8	Nov-03	1040.1	FC	FC	FC	
1S4W02P02S	Cooley D	East Valley Water District	1037.6	140.0	897.6	Nov-03	1037.6	157.3	880.3	Nov-04	-17.3
1S4W02Q04S	12	East Valley Water District	1058.9	185.9	873.0	Nov-03	1058.9	153.3	905.6	Nov-04	32.6
1S4W02Q08S	12A	East Valley Water District	1057.0	177.0	880.0	Nov-03	1057.0	152.5	904.5	Nov-04	24.5
1S4W02Q09S	11A	East Valley Water District	1056.9	150.2	906.7	Nov-03	1056.9	172.0	884.9	Nov-04	-21.8
1S4W12B06S	28A	East Valley Water District	1090.1	159.8	930.3	Nov-03	1090.1	183.3	906.8	Nov-04	-23.5
1S4W25M03S	Fairfax Well	East Valley Water District	1210.0	215.8	994.2	Nov-03	1210.0	FC	FC	FC	
1S4W25D06S	Anderson II	Loma Linda University	1075.0	202.0	873.0	Dec-03	1075.0	-	-	Nov-04	
1S3W32D	Nick's Well	Loma Linda, City of	1216.0	-	-	-	1216.0	-	-	Nov-04	
1S4W23C02S	Richardson I	Loma Linda, City of	1077.0	192.0	885.0	Jan-04	1077.0	180.0	897.0	Nov-04	12.0
1S4W24C03S	Richardson II	Loma Linda, City of	1078.0	FC	FC	FC	1078.0	FC	FC	FC	
1S4W24C04S	Richardson III	Loma Linda, City of	1080.0	185.0	895.0	Nov-03	1080.0	185.0	895.0	Nov-04	0.0
1S4W24F11S	Richardson IV	Loma Linda, City of	1070.0	191.0	879.0	Nov-03	1070.0	190.0	880.0	Nov-04	1.0
1S4W24A	Mt. View Well I	Loma Linda, City of	1095.0	FC	FC	FC	1095.0	FC	FC	FC	
1S4W24B01S	Mt. View Well II	Loma Linda, City of	1085.0	-	-	-	1085.0	-	-	-	
1S4W24A	Mt. View Well III	Loma Linda, City of	1095.0	164.0	931.0	Nov-03	1095.0	187.0	908.0	Nov-04	-23.0
1S4W24D08S	Mt. View Well IV	Loma Linda, City of	1106.0	163.0	943.0	Nov-03	1106.0	164.0	942.0	Nov-04	-1.0
1S4W21N01S	#36	Meeks & Daley Water Co	964.8	86.0	878.8	Dec-03	964.8	86.0	878.8	Nov-04	0.0
1S4W15L03S	#59	Meeks & Daley Water Co	984.0	91.0	893.0	Dec-03	984.0	101.0	883.0	Nov-04	-10.0
1S4W15M11S	Station 91	Meeks & Daley Water Co	980.0	82.0	898.0	Dec-03	980.0	79.0	901.0	Nov-04	3.0
1S4W16J09S	Coburn	Meeks & Daley Water Co	979.0	36.0	943.0	Nov-03	979.0	38.0	941.0	Nov-04	-2.0
1S4W16R04S	Station 69	Meeks & Daley Water Co	978.0	27.0	951.0	Nov-03	978.0	52.0	926.0	Nov-04	-25.0
1N4W35L01S	San Berdo	Redlands, City of	1480.0	272.0	1208.0	Nov-03	1129.9	-	-	-	
1S1W08H01S	Mill Creek #1	Redlands, City of	3570.0	-	-	-	3570.0	-	-	-	
1S1W09J01S	Mill Creek #2A	Redlands, City of	3950.0	163.0	3787.0	Nov-03	3950.0	94.0	3856.0	Nov-04	69.0
1S1W10L01S	Mill Creek #2	Redlands, City of	4140.0	92.0	4048.0	Nov-03	4140.0	138.0	4002.0	Nov-04	-46.0
1S1W11Q01S	Mill Creek #4	Redlands, City of	4575.0	80.0	4495.0	Nov-03	4575.0	86.0	4489.0	Oct-04	-6.0
1S2W13A01S	Mill Creek #0A	Redlands, City of	2960.0	38.0	2922.0	Nov-03	2960.0	14.0	2946.0	Nov-04	24.0
1S2W19A01S	Agate #2	Redlands, City of	1720.0	213.0	1507.0	Nov-03	1720.0	198.0	1522.0	Nov-04	15.0
1S2W19G01S	E. Lugonia #5	Redlands, City of	1689.0	-	-	-	1689.0	-	-	-	
1S2W19J02S	Crafton	Redlands, City of	1780.0	183.0	1597.0	Nov-03	1780.0	162.0	1618.0	Nov-04	21.0
1S2W19K01S	Agate #1	Redlands, City of	1723.0	180.0	1543.0	Nov-03	1723.0	148.0	1575.0	Nov-04	32.0
1S2W20B01S	E. Lugonia #4	Redlands, City of	1831.6	129.0	1702.6	Nov-03	1831.6	137.0	1694.6	Nov-04	-8.0
1S2W20D01S	Madeira	Redlands, City of	1770.0	218.0	1552.0	Nov-03	1770.0	274.0	1496.0	Nov-04	-56.0
1S2W21B02S	E. Lugonia #3	Redlands, City of	2091.0	29.0	2062.0	Nov-03	2091.0	34.0	2057.0	Sep-04	-5.0
1S2W21D01S	E. Lugonia #6	Redlands, City of	1970.0	39.0	1931.0	Nov-03	1970.0	56.0	1914.0	Nov-04	-17.0
1S2W21E01S	Maguet #2	Redlands, City of	2016.9	47.0	1969.9	Nov-03	2016.9	55.0	1961.9	Sep-04	-8.0
1S2W22C02S	E. Lugonia #2	Redlands, City of	2260.0	39.0	2221.0	May-03	2260.0	-	-	-	
1S2W34P01S	Yucaipa Blvd.	Redlands, City of	2157.5	370.0	1787.5	Nov-03	2157.5	363.0	1794.5	Nov-04	7.0
1S2W36F01S	Maguet #1	Redlands, City of	1955.0	21.0	1934.0	Nov-03	1955.0	23.0	1932.0	Nov-04	-2.0
1S3W13H02S	Airport	Redlands, City of	1530.0	244.0	1286.0	Nov-03	1530.0	257.0	1273.0	Sep-04	-13.0
1S3W13P01S	Mentone Acres	Redlands, City of	1520.0	261.0	1259.0	Nov-03	1520.0	207.0	1313.0	Nov-04	54.0
1S3W14E01S	Church Street	Redlands, City of	1340.0	174.0	1166.0	Nov-03	1340.0	189.0	1151.0	Nov-04	-15.0
1S3W15F01S	Orange Street	Redlands, City of	1290.0	102.0	1188.0	Nov-03	1290.0	153.0	1137.0	Nov-04	-51.0

			2003				2004	1			
State Well Number	Well Name	Owner Or Measuring Agency	Measuring Point Elevation	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Measuring Point Elevation	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Difference Fall 2003 to Fall 2004
1S3W19L01S	Mission #1	Redlands, City of	1130.0	160.0	970.0	Nov-03	1130.0	156.0	974.0	Nov-04	4.0
1S3W19L01S	Well #32	Redlands, City of	1318.1	193.0	1125.1	Nov-03	1318.1	199.0	1119.1	Nov-04	-6.0
1S3W21H0fS	Well #30A	Redlands, City of	1314.8	196.0	11125.1	Nov-03	1314.8	200.0	1119.1	Nov-04	-0.0
1S3W21H00S	Well #31A	Redlands, City of	1314.8	196.0	1113.0	Nov-03	1314.8	208.0	1114.8	Nov-04	-12.0
1S3W22A02S	Well #35	Redlands, City of	1395.0	228.0	1123.0	Nov-03	1395.0	243.0	1152.0	Nov-04	-12.0
1S3W22A02S	Rees Well	Redlands, City of	1490.0	278.0	1212.0	Nov-03	1490.0	317.0	1173.0	Nov-04	-39.0
1S3W25R05S	Well #37	Redlands, City of	1435.0	191.0	1212.0	Nov-03	1435.0	177.0	1258.0	Nov-04	14.0
1S3W28H01S	Well #41	Redlands, City of	1312.0	191.0	1128.0	Nov-03	1312.0	177.0	1138.0	Nov-04	10.0
1S3W28J02S	New York Street	Redlands, City of	1310.0	214.0	1096.0	Nov-03	1310.0	181.0	1129.0	Nov-04	33.0
1S3W28J02S	Bryn Mawr #1	Redlands, City of	1220.0	105.0	1115.0	Nov-03	1215.0	179.0	1036.0	Nov-04	-74.0
1S3W29Q01S	Well #38	Redlands, City of	1220.0	105.0	1115.0	Nov-03	1215.0	179.0	1036.0	Nov-04	-74.0
1S3W31B	Bryn Mawr #4	Redlands, City of	1190.0	117.0	1073.0	Nov-03	1190.0	129.0	1050.0	Nov-04	-12.0
1S3W32J02S	Lee Well	Redlands, City of	1357.0	200.0	1157.0	Nov-03	1357.0	210.0	1147.0	Nov-04	-12.0
1\$3W35G07\$	Well #11	Redlands, City of	1565.5	39.0	1526.5	Nov-03	1565.5	44.0	1521.5	Nov-04 Nov-04	-10.0
1S3W35G08S	Well #10	Redlands, City of	1565.8	34.0	1520.5	Nov-03	1565.8	44.0	1523.8	Nov-04	-5.0
1S3W35G09S	Well #13	Redlands, City of	1505.8	63.0	1514.2	Nov-03	1505.8	62.0	1515.2	Nov-04	-8.0
183W35G11S	Well #17	Redlands, City of	1577.2	21.0	1529.0	Nov-03	1550.0	39.0	1511.0	Nov-04	-18.0
1S3W35H02S	Well #12	Redlands, City of	1568.0	39.0	1529.0	Nov-03	1568.0	40.0	1528.0	Nov-04	-18.0
1S3W35H02S	Well #16	Redlands, City of	1508.0	49.0	1523.2	Nov-03	1572.2	47.0	1525.2	Nov-04	2.0
1S3W35H04S	Well #14	Redlands, City of	1585.3	53.0	1532.3	Nov-03	1585.3	55.0	1530.3	Nov-04	-2.0
1S4W24K01S	Well #14 Well #34	Redlands, City of	1090.0	138.0	952.0	Nov-03	1090.0	151.0	939.0	Nov-04 Nov-04	-2.0
2S3W01E01S	Redlands Heights	Redlands, City of	1790.0	138.0	1650.0	Nov-03	1790.0	157.0	1633.0	Nov-04 Nov-04	-13.0
2S3W01E01S	Well #36	Redlands, City of	1675.2	-	-	-	1675.2	-	-	-	-17.0
1N5W23Q01S	City 1	Rialto, City of	1430.0	328.0	1102.0	- Nov-03	1430.0	- 366.0	1064.0	- Oct-04	-38.0
1N5W23Q02S	City 2	Rialto, City of	1430.0	328.0	1078.0	Nov-03	1430.0	375.0	1055.0	Oct-04	-23.0
1N5W36B01S	City 3	Rialto, City of	1300.0	417.0	883.0	Nov-03	1300.0	452.0	848.0	Oct-04 Oct-04	-23.0
1S4W06H03S	City 4	Rialto, City of	1158.0	194.0	964.0	Nov-03	1158.0	210.0	948.0	Oct-04 Oct-04	-16.0
1S4W06B01S	City 5	Rialto, City of	1138.0	271.0	940.0	Nov-03	1211.0	296.0	948.0	Oct-04 Oct-04	-10.0
1S4W06C04S	City 6	Rialto, City of	1211.0	240.0	940.0	Nov-03	1211.0	255.0	915.0	Oct-04 Oct-04	-15.0
1N5W27D01S	Rialto 1 (Cedar)	Rialto, City of	1535.0	516.0	1019.0	Nov-03	1535.0	523.0	1012.0	Oct-04 Oct-04	-7.0
1N5W34B01S	Rialto 2 (Highland)	Rialto, City of	1445.0	441.0	1019.0	Nov-03	1333.0	442.0	1012.0	Oct-04 Oct-04	-1.0
1N5W34B01S	Rialto 3 (Airport)	Rialto, City of	1445.0	418.0	999.0	Nov-03	1443.0	442.0	1003.0	Oct-04 Oct-04	2.0
185W14B01S	Chino #2	Rialto, City of	1117.0	337.0	800.0	Nov-03	11137.0	333.0	804.0	Oct-04 Oct-04	4.0
1N4W31D02S	LC#1	Riverside Highland Water Company	1269.2	395.0	874.2	Dec-03	1269.2	425.0	844.2	Dec-04	-30.0
1N4W31E03S	LC#10	Riverside Highland Water Company	1266.0	393.0	876.0	Dec-03 Dec-03	1266.0	425.0	840.0	Dec-04 Dec-04	-36.0
1N4W31E033	LC#8	Riverside Highland Water Company	1258.0	390.0	878.0	Dec-03	1258.0	410.0	848.0	Dec-04 Dec-04	-30.0
1S4W22L08S	FW #12	Riverside Highland Water Company	985.4	48.0	937.4	Dec-03	985.4	54.0	931.4	Dec-04 Dec-04	-6.0
1S4W22L08S	Flowing Well #5	Riverside Highland Water Company	989.0	54.0	937.4	Dec-03	985.4	59.0	930.0	Dec-04 Dec-04	-0.0
1S4W28K02S	CR #4A	Riverside Highland Water Company	948.0	76.0	872.0	Dec-03 Dec-03	989.0 948.0		-	- Dec-04	-5.0
1S4W28K02S	RN #20	Riverside Highland Water Company	948.0	82.0	872.0	Dec-03	948.0	- 90.0	850.3	- Dec-04	-8.0
1S4W28L02S	RN #20 RN #17	Riverside Highland Water Company	930.2	77.0	858.5	Dec-03 Dec-03	940.3	90.0 76.0	854.2	Dec-04 Dec-04	-8.0
184W28IN05S 184W32M04S	LV #3	Riverside Highland Water Company	930.2	86.0	855.2 839.0	Dec-03 Dec-03	930.2 925.0	92.0	833.0	Dec-04 Dec-04	-6.0
1S4W32M04S 1S4W33B05S	LV #5 RN #16	Riverside Highland Water Company	925.0	78.0	839.0	Dec-03 Dec-03	925.0 945.5	92.0 85.0	833.0	Dec-04 Dec-04	-6.0 -7.0
2S4W06R01S		0	945.5	133.0			945.5 946.9	136.0			
	RN #7	Riverside Highland Water Company			813.9	Dec-03	946.9 1001.0		810.9	Dec-04	-3.0
2S4W08M01S	RN #21	Riverside Highland Water Company	1001.0	185.0	816.0	Dec-03	984.2	189.0	812.0	Dec-04	-4.0
2S4W08M02S	RN #22	Riverside Highland Water Company	984.2	169.0	815.2	Dec-03		172.0	812.2	Dec-04	-3.0
1S4W01E01S	Poole	Riverside, City of	1061.0	-	-	-	1061.0	-	-	-	

			2003				2004	1			
				_	Groundwate				Groundwate		D:66
State Well		<b>Owner Or Measuring</b>	Measuring		r	Date	Measuring		r	Date	Difference
Number	Well Name	Agency	Point	Water	Elevation	Measured	Point	Water	Elevation	Measured	Fall 2003
			Elevation	(ft)	(ft, AMSL)		Elevation	( <b>ft</b> )	(ft, AMSL)		to Fall 2004
1S4W02L02S	Cooley F	Riverside, City of	1050.0	154.8	895.2	Nov-03	1050.0	171.7	878.3	Dec-04	-16.9
1S4W02P01S	Garner 5	Riverside, City of	1046.0	-	-	-	1046.0	168.5	877.5	Dec-04	
1S4W02P03S	Cooley C	Riverside, City of	1040.5	149.2	891.3	Nov-03	1040.5	126.2	914.3	Dec-04	23.0
1S4W02P04S	Cooley E	Riverside, City of	1040.0	158.3	881.7	Dec-03	1040.0	-	-	-	
1S4W02Q06S	Garner 4	Riverside, City of	1057.1	-	-	-	1057.1	155.5	901.6	Nov-04	
1S4W02Q07S	Garner 3	Riverside, City of	1053.0	159.7	893.3	Dec-03	1053.0	161.3	891.7	Dec-04	-1.6
1S4W11D01S	Cooley B	Riverside, City of	1034.4	144.8	889.6	Nov-03	1034.4	262.1	772.3	Dec-04	-117.3
1S4W11D02S	Cooley H	Riverside, City of	1035.3	155.5	879.8	Nov-03	1035.3	137.0	898.3	Nov-04	18.5
1S4W11D03S	Cooley I	Riverside, City of	1033.2	142.7	890.5	Nov-03	1033.2	142.4	890.8	Dec-04	0.3
1S4W11D04S	Cooley A	Riverside, City of	1020.8	141.8	879.0	Nov-03	1020.8	214.0	806.8	Dec-04	-72.2
1S4W14N09S	Raub 5	Riverside, City of	1016.5	104.9	911.6	Nov-03	1016.5	125.7	890.8	Nov-04	-20.8
1S4W14N10S	Raub 6	Riverside, City of	1015.0	88.1	926.9	Nov-03	1015.0	150.0	865.0	Nov-04	-61.9
1S4W14P02S	Raub 1	Riverside, City of	1026.8	106.9	919.9	Nov-03	1026.8	109.0	917.8	Nov-04	-2.1
1S4W14P06S	Raub 3	Riverside, City of	1027.1	105.7	921.4	Nov-03	1027.1	110.4	916.7	Nov-04	-4.7
1S4W22B01S	Thorne 9	Riverside, City of	1002.9	59.0	943.9	Nov-03	1002.9	70.2	932.7	Dec-04	-11.2
1S4W22B03S	Thorn 10	Riverside, City of	999.1	55.7	943.4	Nov-03	999.1	68.4	930.7	Dec-04	-12.7
1S4W22B05S	Thorne 11	Riverside, City of	996.9	53.5	943.4	Nov-03	996.9	69.9	927.0	Dec-04	-16.4
1S4W22G14S	Thorne 3	Riverside, City of	994.9	54.0	940.9	Nov-03	994.9	64.5	930.4	Dec-04	-10.5
1S4W22G16S	Thorne 5	Riverside, City of	994.3	52.7	941.6	Nov-03	994.3	60.4	933.9	Dec-04	-7.7
1S4W22G17S	Thorne 7	Riverside, City of	994.4	48.6	945.8	Nov-03	994.4	63.7	930.7	Dec-04	-15.1
1S4W22G18S	Thorne 6	Riverside, City of	995.0		-	-	995.0	-	-	-	-15.1
1S4W22G19S	Thorne 8	Riverside, City of	995.6	53.7	941.9	Nov-03	995.6	62.9	932.7	Dec-04	-9.2
1S4W22H01S	Warren 2	Riverside, City of	1004.8	59.1	945.7	Dec-03	1004.8	100.4	904.4	Dec-04	-41.3
1S4W22H01S	Warren 4	Riverside, City of	1004.8	-	-	-	1004.8	-	904.4	Dec=04	-41.5
1S4W22H03S	Warren 3	Riverside, City of	998.0	-	-	-	998.0	96.3	901.7	Dec-04	
1S4W22H03S	Warren 1	Riverside, City of	998.6	-	-	-	998.0 998.6	90.3	901.7		-
1S4W23C02S	Raub 2	Riverside, City of	1077.0	0.0	1077.0	- Jan-04	1077.0	180.0	- 897.0	- Nov-04	
184W23C03S	Raub 2 Raub 4	Riverside, City of	1077.0	101.5	921.3	Nov-03	1077.0	180.0	918.1	Nov-04 Nov-04	-3.2
1S4W27A08S	Hunt 9		1022.8	101.5		100-03	1022.8	104.7	916.1	100-04	-3.2
		Riverside, City of		-	-	-		-	- 919.0	- Nov-04	10.4
1S4W27A09S	Hunt 10	Riverside, City of	1017.7	80.3	937.4	Nov-03	1017.7	98.7			-18.4
1S4W27A10S	Hunt 11	Riverside, City of	1015.7	90.5	925.2	Nov-03	1015.7	165.5	850.2	Nov-04	-75.0
1S4W27A11S	Hunt 6	Riverside, City of	1015.5	89.3	926.2	Nov-03	1015.5	110.0	905.5	Nov-04	-20.7
1S4W27A13S	Stewart 21	Riverside, City of	1017.3	73.7	943.6	Dec-03	1017.3	62.8	954.5	Dec-04	10.9
1S4W27A19S	Stewart 19	Riverside, City of	1020.0	119.8	900.2	Nov-03	1020.0	89.1	930.9	Nov-04	30.7
1S4W27H01S	Stewart 20	Riverside, City of	1020.0	115.4	904.6	Dec-03	1020.0	119.9	900.1	Nov-04	-4.5
1S4W28C01S	Meeks	Riverside, City of	948.6	74.5	874.1	Nov-03	948.6	69.1	879.5	Dec-04	5.4
1S4W28D01S	Mill	Riverside, City of	943.0	69.9	873.1	Nov-03	943.0	68.7	874.3	Dec-04	1.2
1S4W02Q10S	Garner 6	Riverside, City of	1048.0	164.7	883.3	Nov-03	1048.0	192.1	855.9	Nov-04	-27.4
1S4W02Q11S	Garner 7	Riverside, City of	1050.7	137.5	913.2	Dec-03	1050.7	-	-	Jan-04	
1S4W14N	Raub 8	Riverside, City of	1016.4	88.6	927.8	Nov-03	1016.4	123.8	892.6	Nov-04	-35.2
1S3W17C03S	Daniel's Well	Riverside, City Of-Gage Canal	1176.1	182.9	993.2	Nov-03	1180.8	-	-	-	
1S4W13F02S	31-1	Riverside, City Of-Gage Canal	1054.6	110.0	944.6	Nov-03	1054.6	-	-	-	
1S4W13G02S	46-1	Riverside, City Of-Gage Canal	1065.5	114.4	951.1	Nov-03	1065.5	-	-	-	
1S4W13G03S	56-1	Riverside, City Of-Gage Canal	1065.5	170.0	895.5	Nov-03	1065.5	-	-	-	
1S4W13L07S	92-2	Riverside, City Of-Gage Canal	1053.4	166.8	886.6	Dec-03	1053.4	-	-	-	
1S4W13L08S	92-3	Riverside, City Of-Gage Canal	1058.8	170.0	888.8	Dec-03	1058.8	-	-	-	
1S4W13M02S	30-1	Riverside, City Of-Gage Canal	1054.2	155.4	898.8	Oct-03	1054.2	-	-	-	
1S4W13N01S	29-2	Riverside, City Of-Gage Canal	1046.3	102.9	943.4	Nov-03	1046.3	-	-	-	

			2003				2004				1	
State Well Number	Well Name	Owner Or Measuring Agency	Measuring Point Elevation	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Measuring Point Elevation	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Difference Fall 2003 to Fall 2004	
1S4W13N02S	29-3	Riverside, City Of-Gage Canal	1048.8	105.7	943.1	Oct-03	1048.8	-	-	-		
1S4W13N07S	92-1	Riverside, City Of-Gage Canal	1047.8	157.9	889.9	Nov-03	1047.8	-	-	-		
1S4W13P	Gage Dom.#6	Riverside, City Of-Gage Canal	1067.7	125.1	942.6	Nov-03	1067.7	-	-	-		
1S4W14R	17	Riverside, City Of-Gage Canal	1036.5	87.3	949.2	Nov-03	1036.5	-	-	-		
1S4W23A02S	26-1	Riverside, City Of-Gage Canal	1045.3	105.8	939.5	Nov-03	1045.3	-	-	-	i	
1S4W23A05S	51-1	Riverside, City Of-Gage Canal	1044.6	110.9	933.7	Nov-03	1044.6	126.2	918.4	Dec-04	-15.3	
1S4W23G01S	Cowlane	Riverside, City Of-Gage Canal	1046.7	112.0	934.7	Nov-03	1046.7	-	-	_		
1S4W23G03S	66-1	Riverside, City Of-Gage Canal	1044.9	129.0	915.9	Oct-03	1044.9	114.2	930.6	Dec-04	14.8	
1S4W23H01S	27-1	Riverside, City Of-Gage Canal	1044.6	104.8	939.8	Nov-03	1044.6	117.5	927.2	Dec-04	-12.7	
1S4W23K01S	27-2	Riverside, City Of-Gage Canal	1044.6	102.2	942.4	Nov-03	1044.6	117.5	930.9	Dec-04	-11.5	
1S4W23K02S	29-1	Riverside, City Of-Gage Canal	1044.4	99.3	945.1	Nov-03	1044.4	114.5	930.0	Dec-04	-15.2	
1S2W07B01S	SBVWCD #1	San Bernardino Valley Water Cons. Dist.	1650.5	283.5	1367.0	Dec-03	1650.5	297.0	1353.5	Dec-04	-13.5	
1S2W07K01S	SBVWCD #2	San Bernardino Valley Water Cons. Dist.	1646.4	166.1	1480.3	Dec-03	1646.4	155.7	1490.7	Dec-04 Dec-04	10.4	
1S3W12J01S	SBVWCD #3	San Bernardino Valley Water Cons. Dist.	1541.7	243.3	1298.4	Dec-03	1541.7	276.6	1265.2	Dec-04 Dec-04	-33.2	
1S3W11H01S	SBVWCD #4	San Bernardino Valley Water Cons. Dist.	1411.2	200.0	12)0.4	Dec-03	1411.2	270.0	1205.2	-	-33.2	
1S2W17E01S	Mill Ck Monitoring #4	San Bernardino Valley Water Cons. Dist.	1760.0	239.6	1520.5	Dec-03	1760.0	232.2	1527.8	Dec-04	7.4	
1S2W17E02S	Mill Ck Monitoring #5	San Bernardino Valley Water Cons. Dist.	1760.0	254.3	1505.7	Dec-03	1760.0	255.9	1504.1	Dec-04 Dec-04	-1.6	
1S2W17L01S	Mill Ck Monitoring #1	San Bernardino Valley Water Cons. Dist.	1800.0	148.0	1652.0	Dec-03	1800.0	150.9	1649.1	Dec-04 Dec-04	-1.0	
1S2W17L01S	Mill Ck Monitoring #2	San Bernardino Valley Water Cons. Dist.	1800.0	148.0	1615.1	Dec-03	1800.0	130.9	1615.0	Dec-04 Dec-04	-0.1	
1S4W10N06S	Mill & D	San Bernardino, City of	1001.0	48.6	952.4	Dec-03	1800.0	-	1013.0	Dec-04	-0.1	
1N4W06H01S	Devil Canyon #4	San Bernardino, City of	1903.4	48.0	932.4 1860.4	Oct-03	- 1903.4	41.6	1861.8	- Oct-04	1.4	
		, , ,		43.0 34.0				27.5				
1N4W06H02S 1N4W07F01S	Devil Canyon #3	San Bernardino, City of	1888.5 1622.0	34.0 159.7	1854.5 1462.3	Oct-03	1888.5 1622.0	27.5	1861.0 1452.3	Oct-04 Oct-04	6.5 -10.0	
	Devil Canyon #2	San Bernardino, City of				Nov-03						
1N4W08M01S	Devil Canyon #1	San Bernardino, City of	1530.0	172.8	1357.2	Nov-03	1530.0	188.2	1341.8	Oct-04	-15.4	
1N4W08P01S	Ellena Bros.	San Bernardino, City of	1478.0	195.0	1283.0	Oct-03	1478.0	200.1	1277.9	Oct-04	-5.1	
1N4W16E01S	Newmark #1	San Bernardino, City of	1413.0	219.2	1193.8	Nov-03	1413.0	231.3	1181.7	Oct-04	-12.1	
1N4W16E02S	Newmark #2	San Bernardino, City of	1405.3	206.9	1198.4	Nov-03	1405.3	225.7	1179.6	Oct-04	-18.8	
1N4W16E03S	Newmark #3	San Bernardino, City of	1407.9	227.0	1180.9	Nov-03	1407.9	237.1	1170.8	Oct-04	-10.1	
1N4W16E04S	Newmark #4	San Bernardino, City of	1413.6	216.4	1197.2	Nov-03	1413.6	225.0	1188.6	Oct-04	-8.6	
1N4W26E02S	Lynwood Well	San Bernardino, City of	1236.2	303.0	933.2	Nov-03	1236.2	320.3	915.9	Oct-04	-17.3	
1N4W26E02S	Waterman Well	San Bernardino, City of	1236.2	303.0	933.2	Nov-03	1236.2	320.3	915.9	Oct-04	-17.3	
1N4W26P03S	Perris Hill #5	San Bernardino, City of	1173.5	257.2	916.3	Nov-03	1173.5	274.7	898.8	Oct-04	-17.5	
1N4W27A02S	Leroy Street Well	San Bernardino, City of	1239.7	319.0	920.7	Nov-03	1239.7	336.3	903.4	Oct-04	-17.3	
1N4W27B01S	31st & Mtn. View	San Bernardino, City of	1233.0	317.0	916.0	Nov-03	1233.0	336.0	897.0	Oct-04	-19.0	
1N4W27G01S	30th & Mtn. View	San Bernardino, City of	1227.4	309.0	918.4	Nov-03	1227.4	328.2	899.2	Oct-04	-19.2	
1N4W27M02S	27th Street Well	San Bernardino, City of	1184.1	271.0	913.1	Nov-03	1184.1	288.3	895.8	Oct-04	-17.3	
1N4W27N01S	23rd Street Well	San Bernardino, City of	1174.8	265.0	909.8	Nov-03	1174.8	283.1	891.7	Oct-04	-18.1	
1N4W30M01S	Mallory Well	San Bernardino, City of	1319.8	325.0	994.8	Nov-03	1319.8	228.2	1091.6	Oct-04	96.8	
1N4W31A01S	Mt. Vernon	San Bernardino, City of	1258.8	272.8	986.0	Nov-03	1258.8	295.5	963.3	Oct-04	-22.7	
1N4W32D03S	19th Street #1	San Bernardino, City of	1231.0	267.0	964.0	Nov-03	1231.0	-	-	-	<b> </b>	
1N4W32D04	19th St. No. 2	San Bernardino, City of	1236.3	258.4	977.9	Nov-03	1236.3	277.4	958.9	Oct-04	-19.0	
1N4W32N01S	Baseline Well	San Bernardino, City of	1185.6	219.1	966.5	Nov-03	1185.6	247.2	938.4	Oct-04	-28.1	
1N4W34G01S	17th & Sierra Way #2	San Bernardino, City of	1137.2	240.6	896.6	Nov-03	1137.2	250.7	886.5	Oct-04	-10.1	
1N4W34G03S	16th & Sierra Way	San Bernardino, City of	1135.1	238.0	897.1	Nov-03	1135.1	249.2	885.9	Oct-04	-11.2	
1N4W35C02S	Perris Hill #3	San Bernardino, City of	1167.4	247.6	919.8	Nov-03	1167.4	262.0	905.4	Oct-04	-14.4	
1N4W35C03S	Perris Hill #4	San Bernardino, City of	1168.3	253.9	914.4	Nov-03	1168.3	273.1	895.2	Oct-04	-19.2	
1N4W35M03S	Gilbert Street Well	San Bernardino, City of	1123.5	277.8	845.7	Nov-03	1123.5	244.0	879.5	Oct-04	33.8	

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State Well Number	Well Name	Owner Or Measuring Agency	Measuring Point Elevation	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Measuring	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Difference Fall 2003 to Fall 2004	
1N5W03A02S	Cajon Well #3	San Bernardino, City of	1894.0	221.0	1673.0	Oct-03	1894.0	232.4	1661.6	Oct-04	-11.4	
1N5W03H01S	Cajon Well #1	San Bernardino, City of	1889.4	220.0	1669.4	Oct-03	1889.4	-	-	-		
1N5W03H02S	Cajon Well #2	San Bernardino, City of	1897.2	222.0	1675.2	Oct-03	1897.2	249.3	1647.9	Oct-04	-27.3	
1N5W36J04S	Lytle Creek #2	San Bernardino, City of	1252.3	371.6	880.7	Nov-03	1252.3	374.0	878.3	Oct-04	-2.4	
1N5W36R01S	Lytle Creek #3	San Bernardino, City of	1247.8	-	-	-	1247.8	-	-	-		
1S4W02K02	Antil No. 5	San Bernardino, City of	1059.0	142.6	916.4	Nov-03	1059.0	170.5	888.5	Oct-04	-27.9	
1S4W02K03	Antil No. 4	San Bernardino, City of	1058.5	-	-	-	1058.5	-	-	-		
1S4W02K08S	Antil Well #6	San Bernardino, City of	1053.8	156.1	897.7	Nov-03	1053.8	190.6	863.2	Oct-04	-34.5	
1S4W03J05S	7th Street Well	San Bernardino, City of	1057.4	189.6	867.8	Nov-03	1057.4	185.1	872.3	Oct-04	4.5	
1S4W04B04S	10th & "J" Street	San Bernardino, City of	1113.8	232.0	881.8	Nov-03	1113.8	243.0	870.8	Oct-04	-11.0	
1S4W04D02S	Olive & Garner	San Bernardino, City of	1132.5	221.0	911.5	Nov-03	1,132.52	257.7	874.8	Oct-04	-36.7	
2N4W08M01S	Devil Canyon #5	San Bernardino, City of	1549.0	157.6	1391.4	Nov-03	1549.0	154.9	1394.1	Oct-04	2.7	
2N5W19K02S	Cajon Canyon Well	San Bernardino, City of	2331.9	61.0	2270.9	Oct-03	2331.9	81.9	2250.0	Oct-04	-20.9	
2N5W19Q01	Vincent Well	San Bernardino, City of	2314.3	73.0	2241.3	Oct-02	2314.3	102.1	2212.2	Oct-04	-29.1	
1N4W20M	#50, Paperboard	San Bernardino, City of / shallow wells	1365.0	FC	FC	FC	1365.0	FC	FC	FC		
1N4W35K	#26, Mecham Well	San Bernardino, City of / shallow wells	1105.0	209.0	896.0	Oct-03	1105.0	231.4	873.6	Oct-04	-22.4	
1S4W10F	#40, Handford #1, SCE	San Bernardino, City of / shallow wells	1030.0	67.1	962.9	Oct-03	1030.0	78.7	951.3	Oct-04	-11.6	
1S4W15C	#3 Mill & Arrowhead	San Bernardino, City of / shallow wells	997.0	-	-	-	997.0	-	-	-		
1S4W16J	#5 Inland Center	San Bernardino, City of / shallow wells	1020.0	-	-	-	1020.0	20.9	999.2	Oct-04		
1S4W22J	#58 Airport/Commercenter E	San Bernardino, City of / shallow wells	1005.0	20.1	984.9	Oct-03	1005.0	20.4	984.6	Oct-04	-0.3	
1S4W22M	#51, McKay & S "E" St	San Bernardino, City of / shallow wells	978.0	-	-	-	978.0	-	-	-		
1S4W22P	#8 Hospitality & Sunwest	San Bernardino, City of / shallow wells	982.0	18.5	963.5	Jan-04	982.0	23.9	958.2	Oct-04	-5.4	
1S4W23H	#52 Brier/Gould/Tippecanoe	San Bernardino, City of / shallow wells	1055.0	21.0	1034.0	Oct-03	1055.0	30.2	1024.8	Oct-04	-9.2	
1S4W23L	#53 Brier/Carnegie #2	San Bernardino, City of / shallow wells	1035.0	-	-	-	1035.0	-	-	-		
1S4W23L	#56 Vanderbilt/Carnegie	San Bernardino, City of / shallow wells	1035.0	-	-	-	1035.0	5.0	1030.0	Oct-04		
1S4W23N	#59 Hospitality/E Carnegie	San Bernardino, City of / shallow wells	1020.0	36.0	984.0	Oct-03	1020.0	47.6	972.4	Oct-04	-11.6	
1S4W23Q	#58 Hospitality/Harriman	San Bernardino, City of / shallow wells	1040.8	108.6	932.2	Nov-03	1040.8	0.0	1040.8	Jan-04		
1S4W27B	#54, Caroline/Hunts Ln	San Bernardino, City of / shallow wells	990.0	17.9	972.2	Oct-03	990.0	18.2	971.8	Oct-04	-0.3	
1N3W19R02S	Del Rosa	U.S. Geological Survey/SBVMWD	1447.0	20.3	1426.7	Oct-03	1477.0	-	-	-		
1N3W29M02S	Patton Hospital	U.S. Geological Survey/SBVMWD	1344.0	FC	FC	FC	1344.0	FC	FC	FC		
1N3W32N01S	Near Victoria & Baseline	U.S. Geological Survey/SBVMWD	1143.0	180.5	962.5	Oct-03	1143.0	-	-	-		
1N3W33M01S	PL 138 Palm/Baseline	U.S. Geological Survey/SBVMWD	1285.0	-	#VALUE!	-	1285.0	FC	FC	FC		
1N3W34L01S	NE of Boulder/Baseline	U.S. Geological Survey/SBVMWD	1346.0	296.2	1049.8	Oct-03	1346.0	306.9	1039.1	Oct-04	-10.6	
1N4W21B02S	Kendall	U.S. Geological Survey/SBVMWD	1322.4	174.6	1147.9	Oct-03	1322.4	182.4	1140.0	Oct-04	-7.9	
1N4W23G02S	40th St on Levee	U.S. Geological Survey/SBVMWD	1345.0	-	-	-	1345.0	-	-	-		
1N4W23Q04S	40th St on Levee	U.S. Geological Survey/SBVMWD	1284.4	-	-	-	1284.4	-	-	-		
1N4W23R04S	40st St on levee	U.S. Geological Survey/SBVMWD	1268.0	125.9	1142.1	Oct-03	1268.0	126.0	1142.0	Oct-04	-0.2	
1N4W31P03S	Baseline/Lassen WSBCWD #9	U.S. Geological Survey/SBVMWD	1210.0	-	-	-	1210.0	-	-	-		
1N4W35L01S	16th & Crestview	U.S. Geological Survey/SBVMWD	1128.0	230.6	897.4	Oct-03	1128.0	238.6	889.4	Oct-04	-8.0	
1N5W06F01S	Lytle Creek Wash	U.S. Geological Survey/SBVMWD	2242.4	78.1	2164.3	Oct-03	2242.5	76.9	2165.6	Oct-04	1.2	
1N5W17K03S	Rialto-Riverside Ave	U.S. Geological Survey/SBVMWD	1860.0	75.6	1784.4	Oct-03	1860.0	76.4	1783.6	Oct-04	-0.8	
1N5W21K01S	El Verde	U.S. Geological Survey/SBVMWD	1645.0	416.7	1228.3	Oct-03	1645.0	420.2	1224.9	Nov-04	-3.4	
1N5W21K02S	El Verde	U.S. Geological Survey/SBVMWD	1645.0	416.8	1228.3	Oct-03	1645.0	420.2	1224.8	Nov-04	-3.4	
1N5W21K03S	El Verde	U.S. Geological Survey/SBVMWD	1645.0	408.8	1236.2	Oct-03	1645.0	409.2	1235.8	Nov-04	-0.4	
1N5W21K04S	El Verde	U.S. Geological Survey/SBVMWD	1645.0	422.7	1222.3	Oct-03	1645.0	424.6	1220.4	Nov-04	-1.9	
1N5W22N01S	Lower Linden Ponds	U.S. Geological Survey/SBVMWD	1580.0	344.1	1235.9	Oct-03	1580.0	FC	FC	FC		
1N5W22N02S	Lower Linden Ponds	U.S. Geological Survey/SBVMWD	1580.0	343.7	1236.3	Oct-03	1580.0	FC	FC	FC		

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State Well Number	Well Name	Owner Or Measuring Agency	Measuring Point Elevation	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured		Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Difference Fall 2003 to Fall 2004
1N5W22N03S	Lower Linden Ponds	U.S. Geological Survey/SBVMWD	1580.0	343.5	1236.5	Oct-03	1580.0	FC	FC	FC	
1N5W22N04S	Lower Linden Ponds	U.S. Geological Survey/SBVMWD	1580.0	343.5	1236.5	Oct-03	1580.0	FC	FC	FC	
1N5W22N05S	Lower Linden Ponds	U.S. Geological Survey/SBVMWD	1580.0	344.5	1235.5	Oct-03	1580.0	FC	FC	FC	
1N5W22N06S	Lower Linden Ponds	U.S. Geological Survey/SBVMWD	1580.0	137.9	1442.1	Oct-03	1580.0	FC	FC	FC	
1N5W26L01S	Apple St.	U.S. Geological Survey/SBVMWD	1455.0	346.7	1108.4	Oct-03	1455.0	-	-	-	
1N5W27D02S	Cedar Avenue	U.S. Geological Survey/SBVMWD	1543.0	420.1	1123.0	Oct-03	1543.0	424.3	1118.7	Nov-04	-4.3
1N5W27D04S	Cedar Avenue	U.S. Geological Survey/SBVMWD	1543.0	246.2	1296.8	Oct-03	1543.0	246.2	1296.8	Nov-04	0.1
1N5W28J02S	Bohnert/Vineyard	U.S. Geological Survey/SBVMWD	1512.0	408.7	1103.4	Oct-03	1512.0	413.0	1099.0	Nov-04	-4.3
1N5W28J03S	Bohnert/Vinvard	U.S. Geological Survey/SBVMWD	1512.0	-	-	-	1512.0	-	-	-	
1N5W29Q01S	County Landfill	U.S. Geological Survey/SBVMWD	1540.0	-	-	-	1540.0	-	-	-	
1N5W29Q02S	County Landfill	U.S. Geological Survey/SBVMWD	1540.0	_	_	_	1540.0	_	-	_	
1N5W29Q03S	County Landfill	U.S. Geological Survey/SBVMWD	1540.0	-	-	_	1540.0	_	-	-	
1N5W29Q03S	County Landfill	U.S. Geological Survey/SBVMWD	1540.0	-	-	-	1540.0	-	-	-	ł
1N5W29Q043	County Landfill	U.S. Geological Survey/SBVMWD	1540.0	-	-	-	1540.0	-	-	-	l
1N5W29Q03S	Rialto Airport	U.S. Geological Survey/SBVMWD	1340.0	- 453.5	1006.5	- Oct-03	1340.0	- 461.1	- 998.9	- Nov-04	-7.6
		6									
1N5W34D02S	Rialto Airport	U.S. Geological Survey/SBVMWD	1460.0	452.9 452.9	1007.2	Oct-03	1460.0	460.0	1000.0	Nov-04	-7.1
1N5W34D03S	Rialto Airport	U.S. Geological Survey/SBVMWD	1460.0		1007.2	Oct-03	1460.0	460.2	999.8	Nov-04	-7.3
1N5W34D04S	Rialto Airport	U.S. Geological Survey/SBVMWD	1460.0	452.7	1007.3	Oct-03	1460.0	460.0	1000.0	Nov-04	-7.3
1N5W35B01S	Easton Reservoir	U.S. Geological Survey/SBVMWD	1405.0	317.0	1088.0	Oct-03	1405.0	332.5	1072.5	Nov-04	-15.5
1N5W35B02S	Easton Reservoir	U.S. Geological Survey/SBVMWD	1405.0	317.0	1088.0	Oct-03	1405.0	332.6	1072.4	Nov-04	-15.6
1N5W35B03S	Easton Reservoir	U.S. Geological Survey/SBVMWD	1405.0	307.2	1097.8	Oct-03	1405.0	323.3	1081.7	Nov-04	-16.1
1N5W35B04S	Easton Reservoir	U.S. Geological Survey/SBVMWD	1405.0	306.4	1098.6	Oct-03	1405.0	322.1	1083.0	Nov-04	-15.7
1S2W07R01S	Cone Camp	U.S. Geological Survey/SBVMWD	1680.0	278.2	1401.8	Oct-03	1680.0	318.7	1361.3	Oct-04	-40.5
1S2W08C02S	N. of Greenspot	U.S. Geological Survey/SBVMWD	1806.7	74.9	1731.8	Oct-03	1806.7	68.3	1738.4	Oct-04	6.6
1S2W09P01S	W. of Emerald Rd	U.S. Geological Survey/SBVMWD	2130.0	136.0	1994.0	Oct-03	2130.0	142.6	1987.4	Oct-04	-6.6
1S2W14L01S	East of Garnet St.	U.S. Geological Survey/SBVMWD	2565.0	-	-	-	2565.0	-	-	-	
1S2W24C01S	N. Juniper Ave. (YVWD 51)	U.S. Geological Survey/SBVMWD	2735.0	159.9	2575.1	Oct-03	2735.0	167.2	2567.8	Oct-04	-7.3
1S2W29C01S	Sapphire St. (Finch)	U.S. Geological Survey/SBVMWD	1835.0	94.5	1740.5	Oct-03	1835.0	93.5	1741.5	Oct-04	1.0
1S2W29M01S	Crafton/Highland	U.S. Geological Survey/SBVMWD	1852.0	243.0	1609.0	Oct-03	1851.8	239.1	1612.7	Oct-04	3.9
1S2W30B03S	King St.	U.S. Geological Survey/SBVMWD	1709.2	109.4	1599.8	Oct-03	1709.2	101.2	1607.9	Oct-04	8.1
1S2W36N01S	Cedar Ave. (YVWD 5)	U.S. Geological Survey/SBVMWD	2559.0	255.0	2304.0	Oct-03	2559.0	268.4	2290.6	Oct-04	-13.4
1S3W01H01S	PL 142	U.S. Geological Survey/SBVMWD	1520.0	265.2	1254.8	Oct-03	1520.0	300.7	1219.3	Nov-04	-35.5
1S3W10J02S	E. Orange St. (Sunwest Materials)	U.S. Geological Survey/SBVMWD	1308.0	-	-	-	1308.0	170.7	1137.3	Oct-04	
1S3W13R01S	San Bernardino Street	U.S. Geological Survey/SBVMWD	1175.0	-	-	-	1175.0	-	-	-	
1S3W15K01S	Church St.(Riverview)	U.S. Geological Survey/SBVMWD	1368.8	211.3	1157.4	Oct-03	1378.8	228.0	1150.8	Oct-04	-16.7
1S3W17H01S	Langford Ranches, W. of Alabama	U.S. Geological Survey/SBVMWD	1222.7	-	-	-	1222.7	-	-	-	
1S3W19G02S	Calif/Lugonia	U.S. Geological Survey/SBVMWD	1135.0	FC	FC	FC	1135.0	FC	FC	FC	
1S3W23A03S	San Bernardino Ave./Nelson	U.S. Geological Survey/SBVMWD	1475.0	275.3	1199.7	Oct-03	1480.4	284.0	1196.4	Oct-04	-8.7
1S3W28C01S	Grant Water Company	U.S. Geological Survey/SBVMWD	1270.0	154.7	1115.3	Oct-03	1270.0	165.7	1104.3	Oct-04	-11.1
1S3W31A03S	Whittier Ave.	U.S. Geological Survey/SBVMWD	1203.0	153.7	1049.3	Oct-03	1209.0	170.0	1039.0	Nov-04	-16.3
1S3W33C01S	Redlands	U.S. Geological Survey/SBVMWD	1310.0	144.0	1166.0	Oct-03	1309.8	154.5	1155.4	Oct-04	-10.5
1S3W35G05S	Highland/Roosevelt	U.S. Geological Survey/SBVMWD	1534.9	24.3	1510.6	Oct-03	1534.9	26.9	1508.0	Oct-04	-2.6
1S4W02D06S	Sierra High School	U.S. Geological Survey/SBVMWD	1078.8	189.1	889.7	Oct-03	1078.9	182.3	896.6	Nov-04	6.8
1S4W02D07S	Sierra High School	U.S. Geological Survey/SBVMWD	1078.8	185.0	893.8	Oct-03	1078.9	179.8	899.1	Nov-04	5.2
1S4W02D08S	Sierra High School	U.S. Geological Survey/SBVMWD	1078.8	117.8	961.0	Oct-03	1078.9	128.7	950.2	Nov-04	-11.0
1S4W02D005	5th/Sierra Way	U.S. Geological Survey/SBVMWD	1042.0	82.0	960.1	Oct-03	1041.8	91.9	949.9	Oct-04	-10.0
1S4W04E04S	Garner Park	U.S. Geological Survey/SBVMWD	1121.3	141.6	979.7	Oct-03	1121.3	-	-	-	- 210
10-110-0-0-0-0	Gunor i aik	0.5. Geological bar (cy/bb (1010)	1121.5	171.0	717.1	001-03	1121.5	-	-	-	I

#### Water Level Elevations For Bunker Hill Basin

(Fall 2003 and Fall 2004)

			2003				2004				l
State Well Number	Well Name	Owner Or Measuring Agency	Measuring Point Elevation	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Measuring Point	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Difference Fall 2003 to Fall 2004
1S4W04E05S	Garner Park	U.S. Geological Survey/SBVMWD	1121.3	152.6	968.7	Oct-03	1121.3	165.0	956.2	Nov-04	-12.4
1S4W04E06S	Garner Park	U.S. Geological Survey/SBVMWD	1121.3	152.5	968.8	Oct-03	1121.3	196.0	925.3	Nov-04	-43.5
1S4W08E01S	Rialto Avenue	U.S. Geological Survey/SBVMWD	1110.0	211.8	898.2	Oct-03	1110.0	217.4	892.6	Nov-04	-5.7
1S4W08E02S	Rialto Avenue	U.S. Geological Survey/SBVMWD	1110.0	212.4	897.6	Oct-03	1110.0	216.8	893.2	Nov-04	-4.3
1S4W08E03S	Rialto Avenue	U.S. Geological Survey/SBVMWD	1110.0	212.4	897.6	Oct-03	1110.0	216.4	893.7	Nov-04	-4.0
1S4W08E04S	Rialto Avenue	U.S. Geological Survey/SBVMWD	1110.0	213.2	896.8	Oct-03	1110.0	218.2	891.8	Nov-04	-5.0
1S4W09J01S	City of SB, S. 'G' St	U.S. Geological Survey/SBVMWD	1030.0	139.9	890.1	Oct-03	1030.0	145.9	884.1	Oct-04	-6.0
1S4W10B02S	Meadowbrook Park	U.S. Geological Survey/SBVMWD	1017.6	134.4	883.2	Oct-03	1017.6	121.2	896.4	Nov-04	13.2
1S4W10B03S	Meadowbrook Park	U.S. Geological Survey/SBVMWD	1017.6	69.7	947.9	Oct-03	1017.6	77.2	940.4	Nov-04	-7.5
1S4W10B04S	Meadowbrook Park	U.S. Geological Survey/SBVMWD	1017.6	45.0	972.6	Oct-03	1017.7	50.1	967.6	Nov-04	-5.1
1S4W12B04S	Norton AFB	U.S. Geological Survey/SBVMWD	1087.0	171.2	915.8	Oct-03	1087.0	171.6	915.4	Oct-04	-0.4
1S4W16P04S	Colton Ave	U.S. Geological Survey/SBVMWD	1016.8	130.5	886.3	Oct-03	1016.8	138.2	878.6	Dec-04	-7.7
1S4W17R01S	Olive Street	U.S. Geological Survey/SBVMWD	1012.9	131.3	881.6	Oct-03	1012.9	135.4	877.5	Dec-04	-4.1
1S4W19E01S	Meridian/Valley	U.S. Geological Survey/SBVMWD	1041.0	FC	FC	FC	1041.0	FC	FC	FC	
1S4W20H01S	Colton Plunge Park	U.S. Geological Survey/SBVMWD	990.0	114.8	875.2	Oct-03	990.0	116.3	873.8	Oct-04	-1.5
1S4W20H02S	Colton Plunge Park	U.S. Geological Survey/SBVMWD	990.0	122.6	867.4	Oct-03	990.0	120.4	869.6	Oct-04	2.2
1S4W20H03S	Colton Plunge Park	U.S. Geological Survey/SBVMWD	990.0	113.8	876.2	Oct-03	990.0	116.3	873.7	Oct-04	-2.5
1S4W20H04S	Colton Plunge Park	U.S. Geological Survey/SBVMWD	990.0	113.3	876.7	Oct-03	990.0	115.0	875.1	Oct-04	-1.7
1S4W20H05S	Colton Plunge Park	U.S. Geological Survey/SBVMWD	990.0	111.4	878.6	Oct-03	990.0	114.7	875.3	Oct-04	-3.3
1S4W21K11S	Vacera	U.S. Geological Survey/SBVMWD	961.0	61.3	899.7	Oct-03	961.0	FC	FC	FC	5.5
1S4W22D02S	Backyard	U.S. Geological Survey/SBVMWD	977.4	60.3	917.1	Oct-03	977.4	50.1	927.3	Nov-04	10.2
1S4W22D04S	Backyard	U.S. Geological Survey/SBVMWD	977.4	60.4	917.0	Oct-03	977.4	53.5	923.9	Nov-04	6.9
1S4W22D05S	Backyard	U.S. Geological Survey/SBVMWD	977.4	49.1	928.3	Oct-03	977.4	46.4	931.0	Nov-04	2.7
1S4W22D06S	Backyard	U.S. Geological Survey/SBVMWD	977.4	52.9	924.5	Oct-03	977.5	87.7	889.8	Nov-04	-34.8
1S4W22D07S	Backyard	U.S. Geological Survey/SBVMWD	977.4	32.6	944.8	Oct-03	977.5	41.8	935.7	Nov-04	-9.1
1S4W22J01S	Commerce Center	U.S. Geological Survey/SBVMWD	1000.0	78.9	921.1	Oct-03	997.7	72.3	925.4	Nov-04	6.5
1S4W22R07S	Redlands Blvd.	U.S. Geological Survey/SBVMWD	1010.0	66.6	943.4	Oct-03	1010.0	76.7	933.3	Oct-04	-10.1
1S4W29H01S	SAR in Colton (Flume 2)	U.S. Geological Survey/SBVMWD	923.3	72.2	851.1	Oct-03	932.2	72.7	859.5	Dec-04	-0.5
1S4W29Q03S	SAR in Colton (Flume 2)	U.S. Geological Survey/SBVMWD	928.1	72.2	857.7	Oct-03	932.2	71.9	856.2	Dec-04 Dec-04	-0.5
1S4W29R01S	SAR in Colton	U.S. Geological Survey/SBVMWD	931.2	71.4	859.8	Oct-03	931.2	74.2	857.0	Dec-04	-2.8
185W11F01S	Lilac Park	U.S. Geological Survey/SBVMWD	1244.0	275.0	969.0	Oct-03	1244.0	280.6	963.4	Nov-04	-5.6
1S5W11F01S	Lilac Park	U.S. Geological Survey/SBVMWD	1244.0	245.4	998.6	Oct-03	1244.0	252.9	903.4	Nov-04 Nov-04	-7.5
1S5W11F03S	Lilac Park	U.S. Geological Survey/SBVMWD	1244.0	251.4	992.6	Oct-03	1244.0	259.3	984.7	Nov-04	-7.9
1S5W11F04S	Lilac Park	U.S. Geological Survey/SBVMWD	1244.0	251.4	992.4	Oct-03	1244.0	259.5	984.5	Nov-04	-7.9
1S5W22M03S	Cedar	U.S. Geological Survey/SBVMWD	1090.0	254.8	835.2	Oct-03	1090.0	257.2	832.8	Oct-04	-2.4
2N5W33J04S	Cajon Wash	U.S. Geological Survey/SBVMWD	2010.0	-	-	-	2010.0	-	-	-	=2.4
2S2W18N01S	Redland Blvd/San Tim Rd	U.S. Geological Survey/SBVMWD	1805.0	-	-	-	1805.0	104.4	1700.6	Oct-04	
1N5W17G01S	23/Fontana RNCHS 3	West Valley Water District	1803.0	- 67.0	1783.0	- Oct-03	1803.0	66.0	1700.8	Nov-04	1.0
1N5W17G01S 1N5W17K01S	23/Fontana RNCHS 3 21B/Fontana RNCHS 1	West Valley Water District	1850.0	- 67.0			1850.0	- 00.0	-	- NOV-04	1.0
1N5W17K01S 1N5W17K02S	21B/Fontana RNCHS 1 24/Fontana RNCHS 4	West Valley Water District	1851.0	- 84.0	- 1770.1	- Oct-03	1851.0	- 86.0	- 1768.1	- Nov-04	-2.0
1N5W17K02S 1N5W23P02S	#34		1854.1	288.0			1854.1	291.0		Nov-04 Nov-04	-2.0
		West Valley Water District		288.0 327.0	1162.0 1143.0	Oct-03	1450.0	291.0 301.0	1159.0 1169.0	Nov-04 Nov-04	-3.0
1N5W23P04S	1/Upper 4	West Valley Water District	1470.0 1430.0	327.0	1143.0	Oct-03	1470.0		1169.0		-38.0
1N5W23Q01S	2/Lower 7	West Valley Water District				Nov-03		366.0		Oct-04	
1N5W25E01S	5A/Lower 6	West Valley Water District	1383.4	330.0	1053.4	Oct-03	1383.4	350.0	1033.4	Nov-04	-20.0
1N5W25E03S	#35	West Valley Water District	1365.0	288.0	1077.0	Oct-03	1365.0	296.0	1069.0	Nov-04	-8.0
1N5W26A03S	4/Lower 5	West Valley Water District	1398.0	302.0	1096.0	Oct-03	1398.0	348.0	1050.0	Nov-04	-46.0
1N5W28J01S	22/Fontana RNCHS 2	West Valley Water District	1514.2	FC	FC	FC	1514.2	FC	FC	FC	

#### Water Level Elevations For Bunker Hill Basin

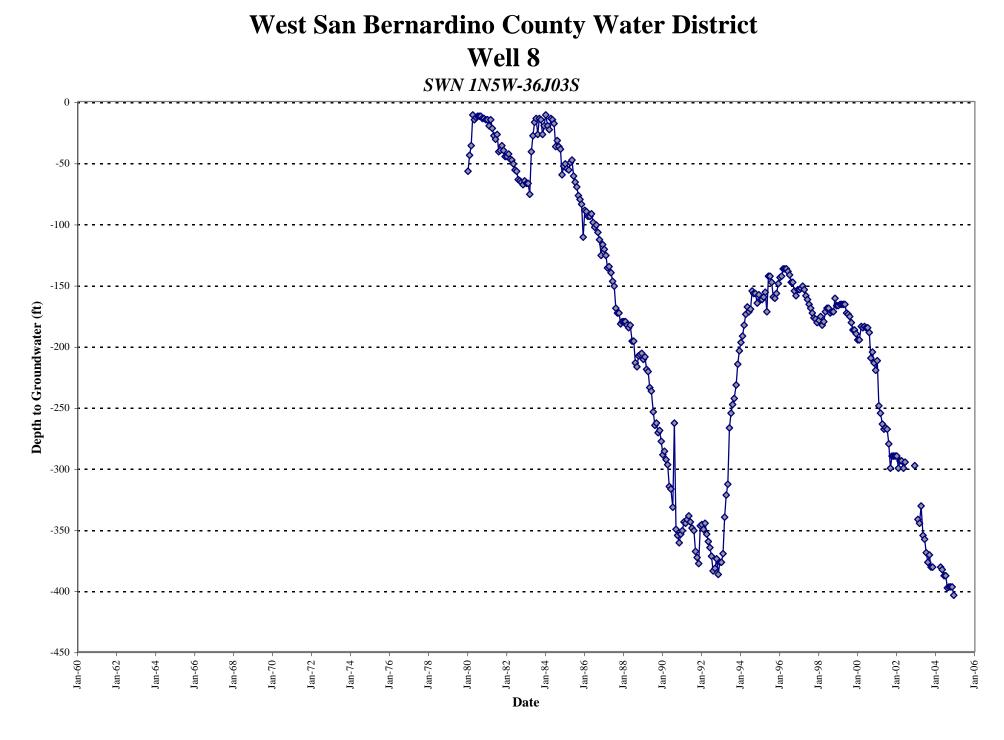
(Fall 2003 and Fall 2004)

			2003				2004				
State Well Number	Well Name	Owner Or Measuring Agency	Measuring Point Elevation	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Measuring Point Elevation	Depth To Water (ft)	Groundwate r Elevation (ft, AMSL)	Date Measured	Difference Fall 2003 to Fall 2004
1N5W36H04S	7/Lord 7	West Valley Water District	1273.8	402.0	871.8	Oct-03	1273.8	414.0	859.8	Nov-04	-12.0
1N5W36H05S	#36 Lord	West Valley Water District	1270.0	411.0	859.0	Oct-03	1270.0	405.0	865.0	Nov-04	6.0
1N5W36J03S	8/Lord 1	West Valley Water District	1262.4	383.0	879.4	Oct-03	1262.4	FC	FC	FC	
1S4W05E05S	15/Raynor 5	West Valley Water District	1170.0	197.0	973.0	Oct-03	1170.0	210.0	960.0	Nov-04	-13.0
1S4W06H01S	13/Raynor 4	West Valley Water District	1160.0	FC	FC	FC	1160.0	FC	FC	FC	
1S4W06H02S	30/New Raynor 4	West Valley Water District	1159.8	201.0	958.8	Oct-03	1159.8	216.0	943.8	Nov-04	-15.0
1S5W02C01S	10/Brill	West Valley Water District	1346.7	349.0	997.7	Oct-03	1346.7	355.0	991.7	Nov-04	-6.0
1S5W02K01S	11/Willow	West Valley Water District	1287.0	298.0	989.0	Oct-03	1287.0	306.0	981.0	Nov-04	-8.0
1S5W03A02S	#33 Shop	West Valley Water District	1360.0	358.0	1002.0	Oct-03	1360.0	379.0	981.0	Nov-04	-21.0
1S5W12L01S	16/Boyd	West Valley Water District	1177.2	249.0	928.2	Oct-03	1177.2	240.0	937.2	Nov-04	9.0
1S5W12N01S	17/Acacia	West Valley Water District	1173.7	217.0	956.7	Oct-03	1173.7	234.0	939.7	Nov-04	-17.0
1S5W20N	#37 Palmetto	West Valley Water District	1101.0	359.0	742.0	Oct-03	1101.0	355.0	746.0	Nov-04	4.0
1S5W22M02S	#39 Cedar	West Valley Water District	1085.0	256.0	829.0	Oct-03	1085.0	102.0	983.0	Nov-04	154.0
1S5W23Q01S	29/Cram-Wright	West Valley Water District	1020.0	174.0	846.0	Oct-03	1020.0	175.0	845.0	Nov-04	-1.0
1S5W24M01S	18/Slover-Mutual	West Valley Water District	1260.0	FC	FC	FC	1260.0	FC	FC	FC	
1S5W29A01S	20/Slover 2	West Valley Water District	1082.4	292.0	790.4	Oct-03	1082.4	276.0	806.4	Nov-04	16.0
1S5W34D01S	25/Park 44A	West Valley Water District	998.2	FC	FC	FC	998.2	FC	FC	FC	
1S4W25D07S	Anderson III	Western Municipal Water District	1070.0	155.0	915.0	Dec-03	1070.0	200.0	870.0	Nov-04	-45.0

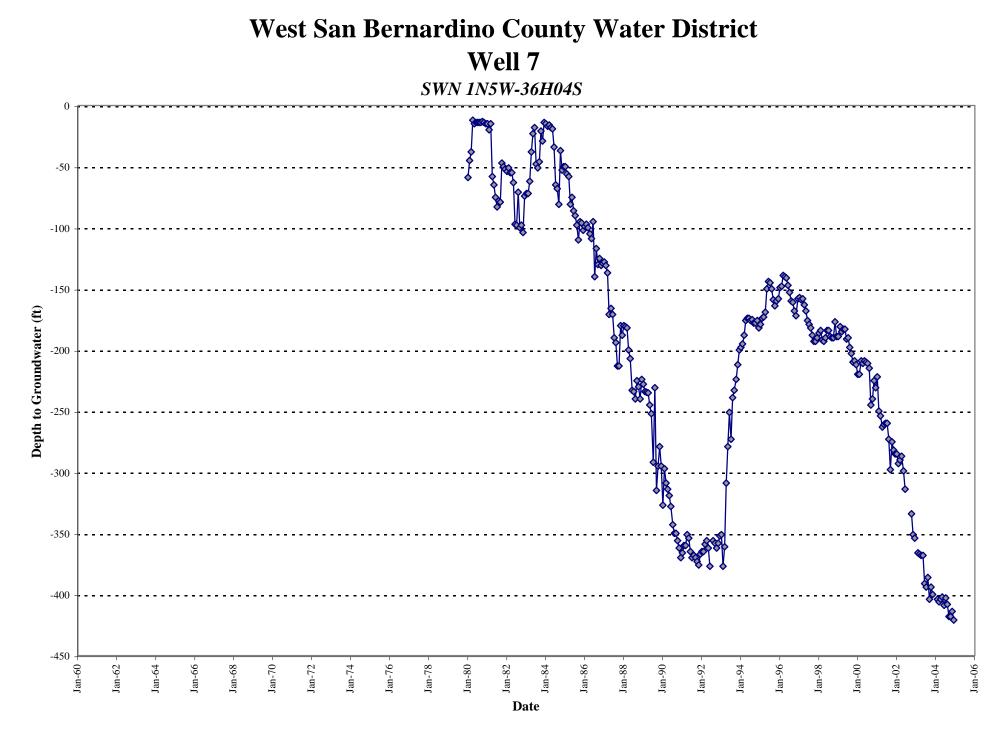
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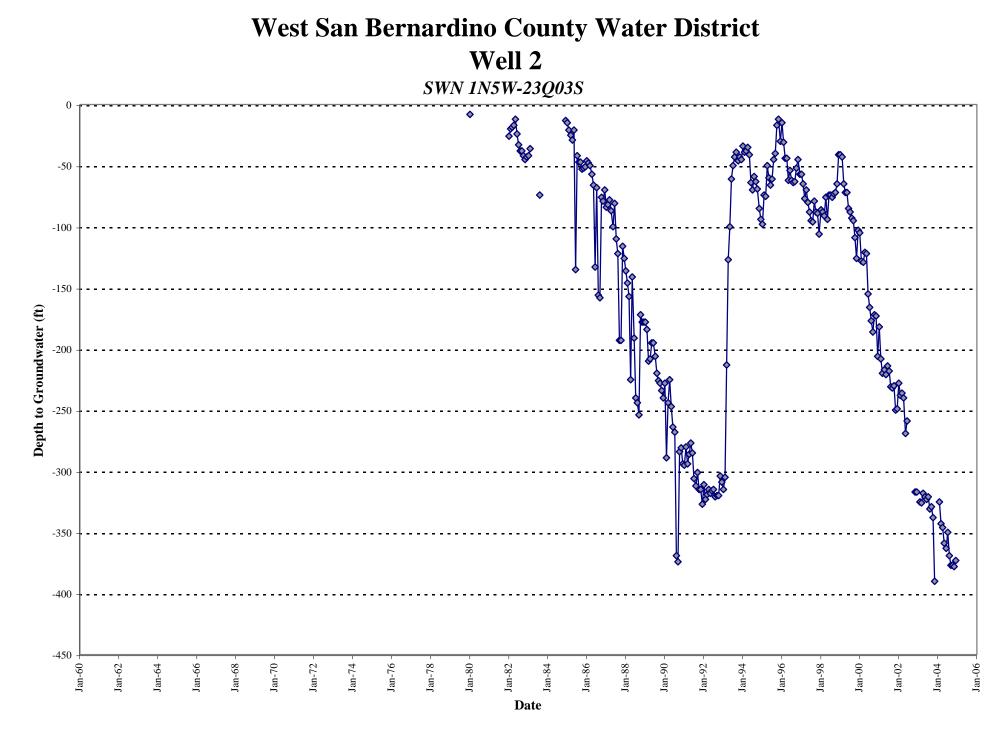
Sources: Cooperative Well Measuring Program, San Bernardino Valley Water Conservation District, and primary water purveyors in the Bunker Hill Basin.

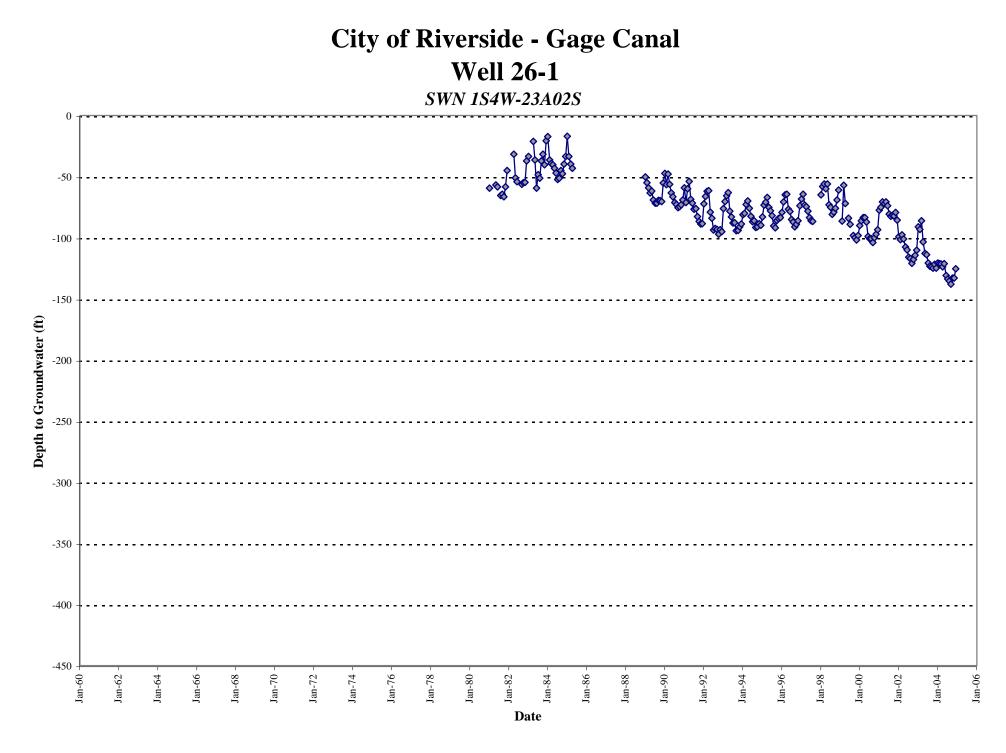
# **Hydrographs for Key Wells**

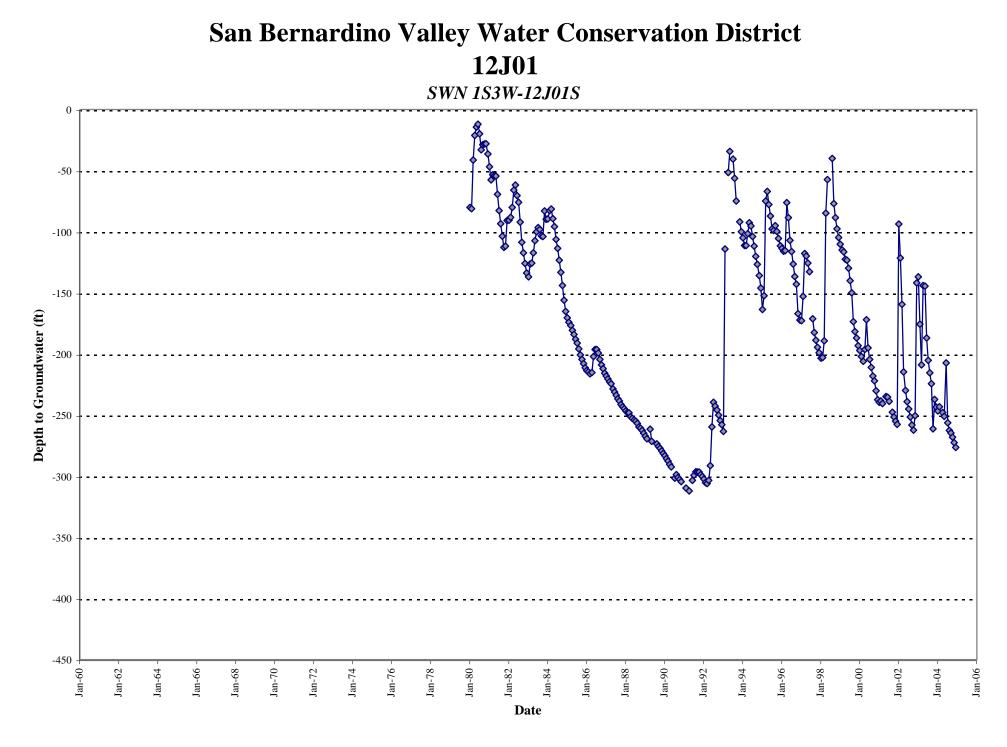


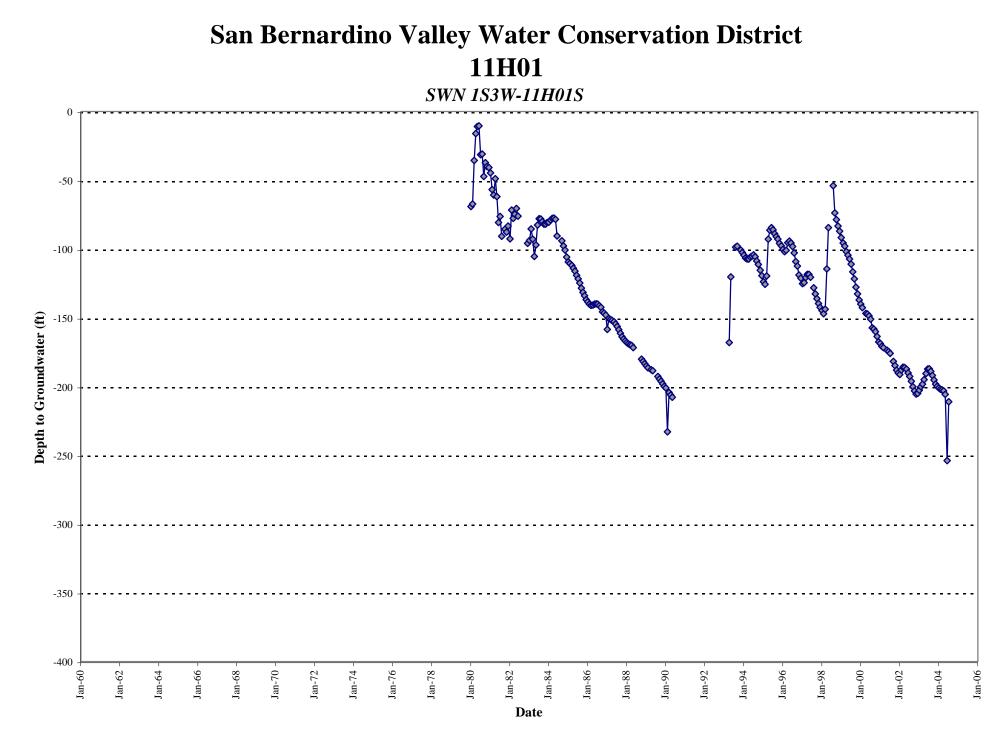
#### SBVWCD 2005 Engineering Investigation



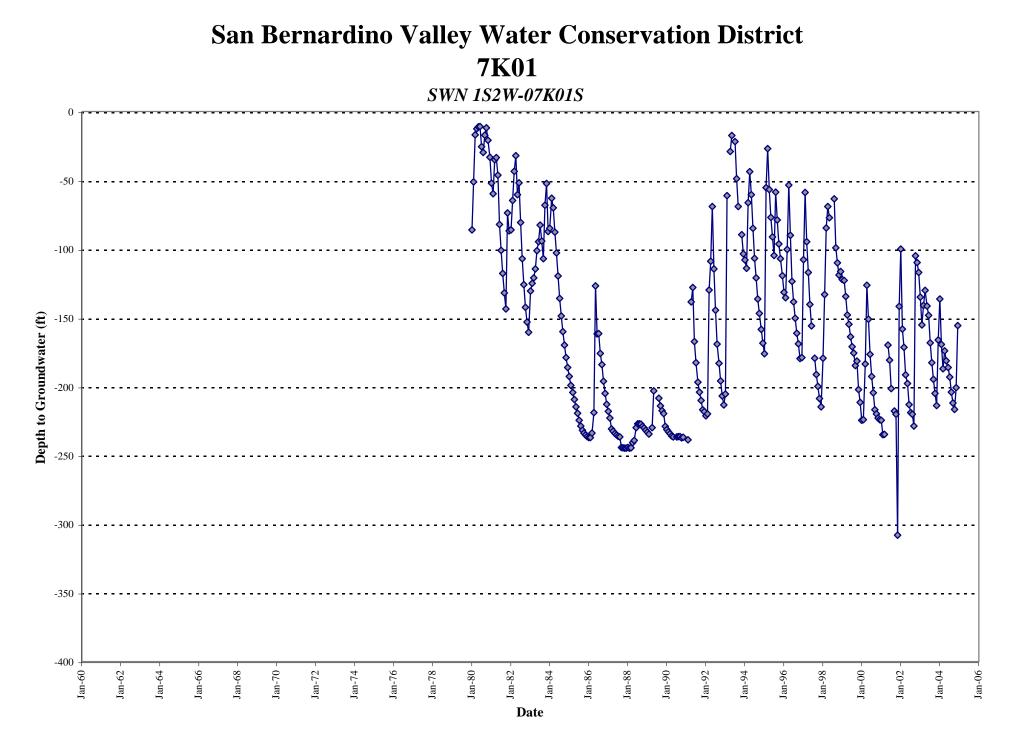


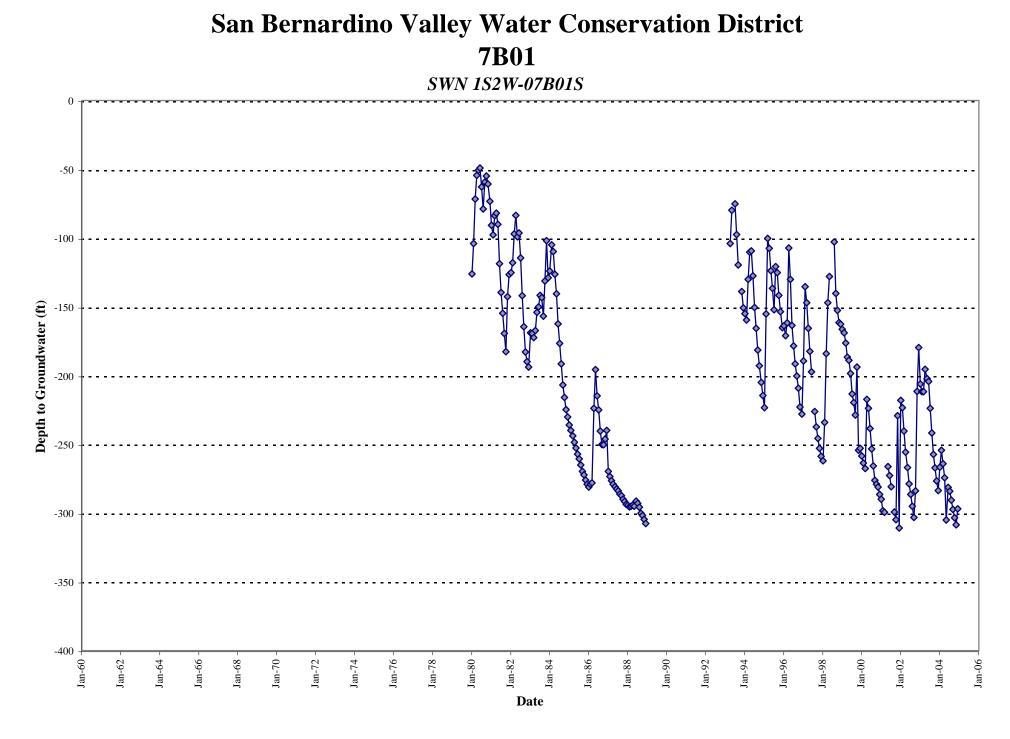






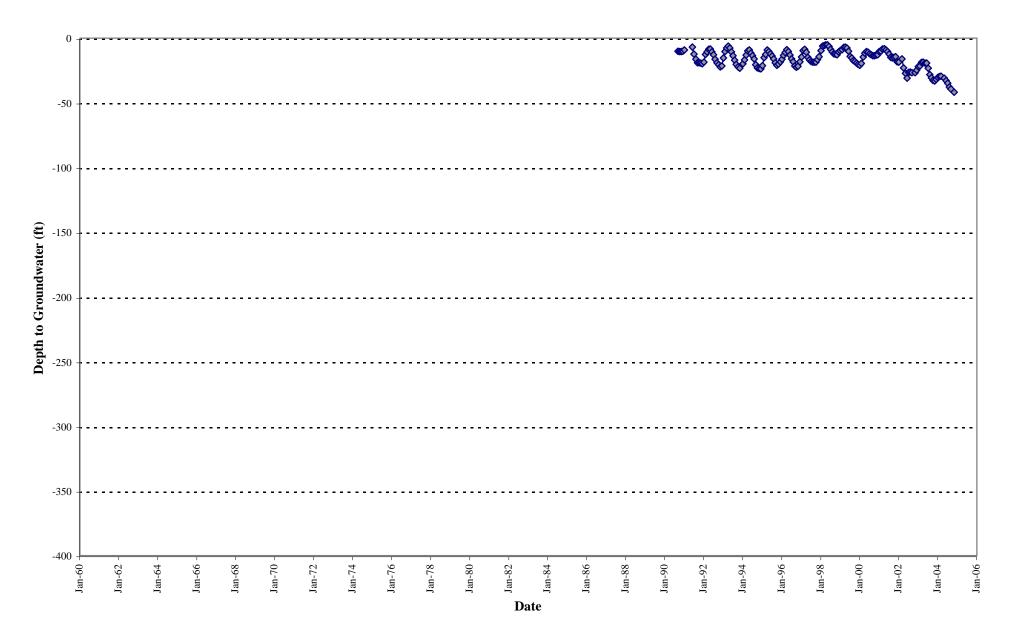
SBVWCD 2005 Engineering Investigation

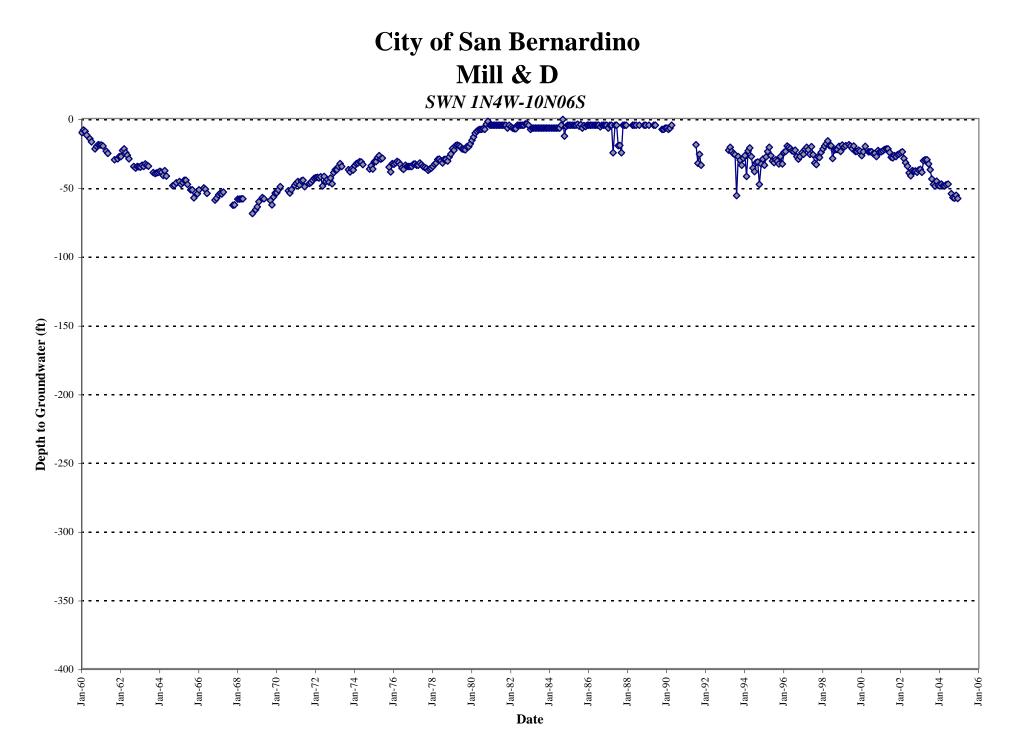


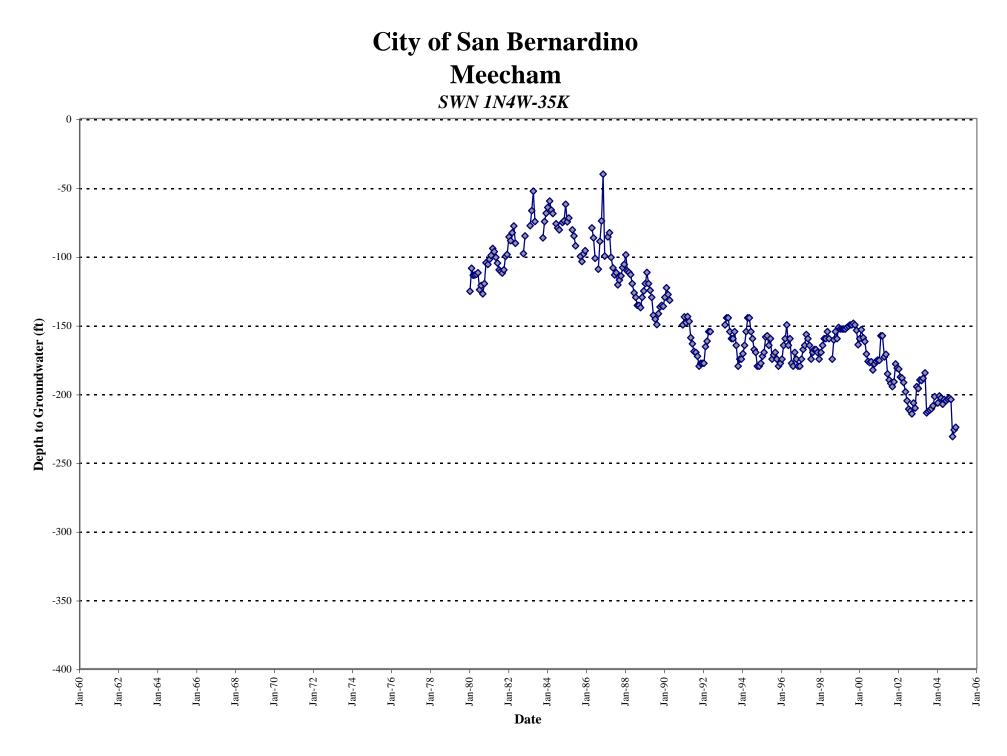


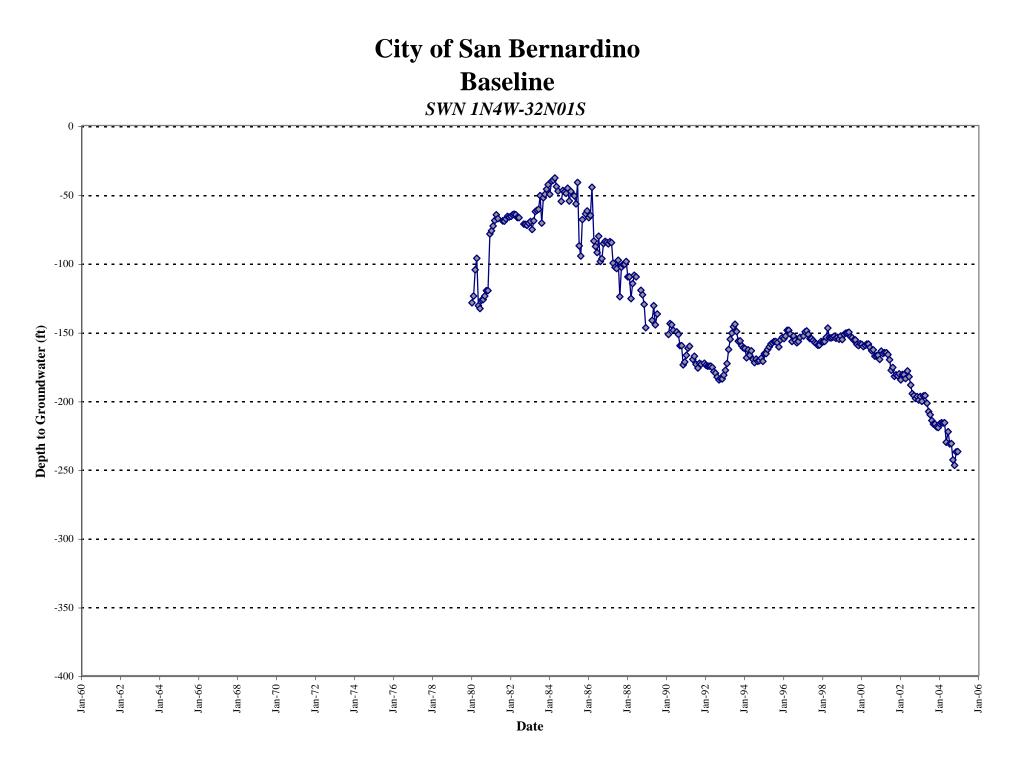
#### SBVWCD 2005 Engineering Investigation

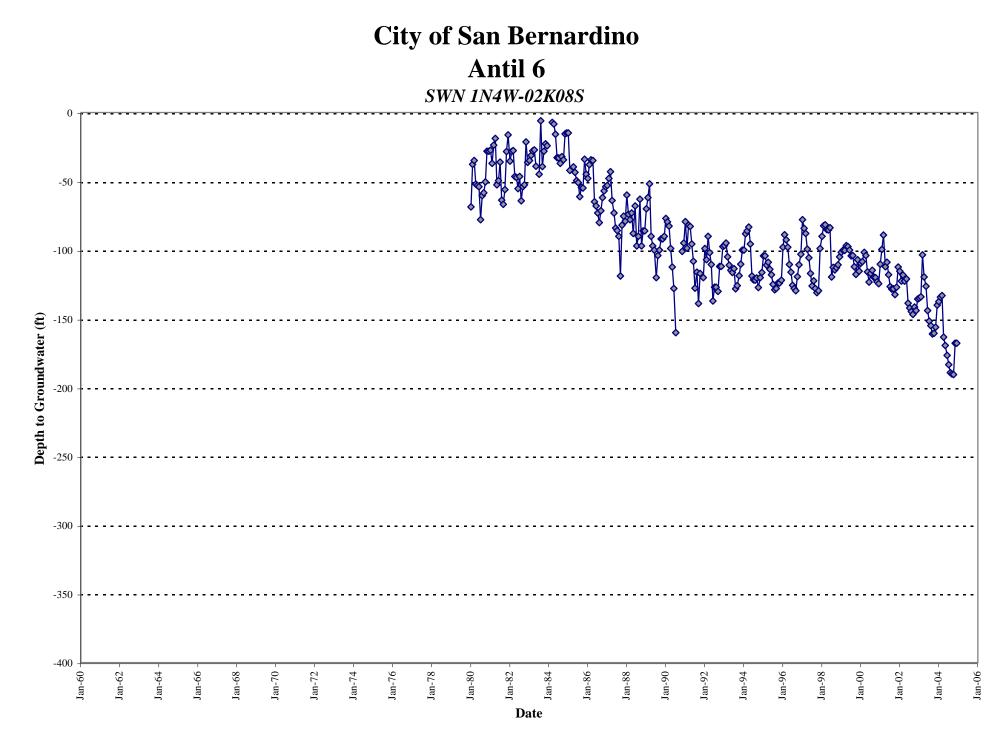
#### San Bernardino Valley Municipal Water District Backyard Well SWN 154W-22D075

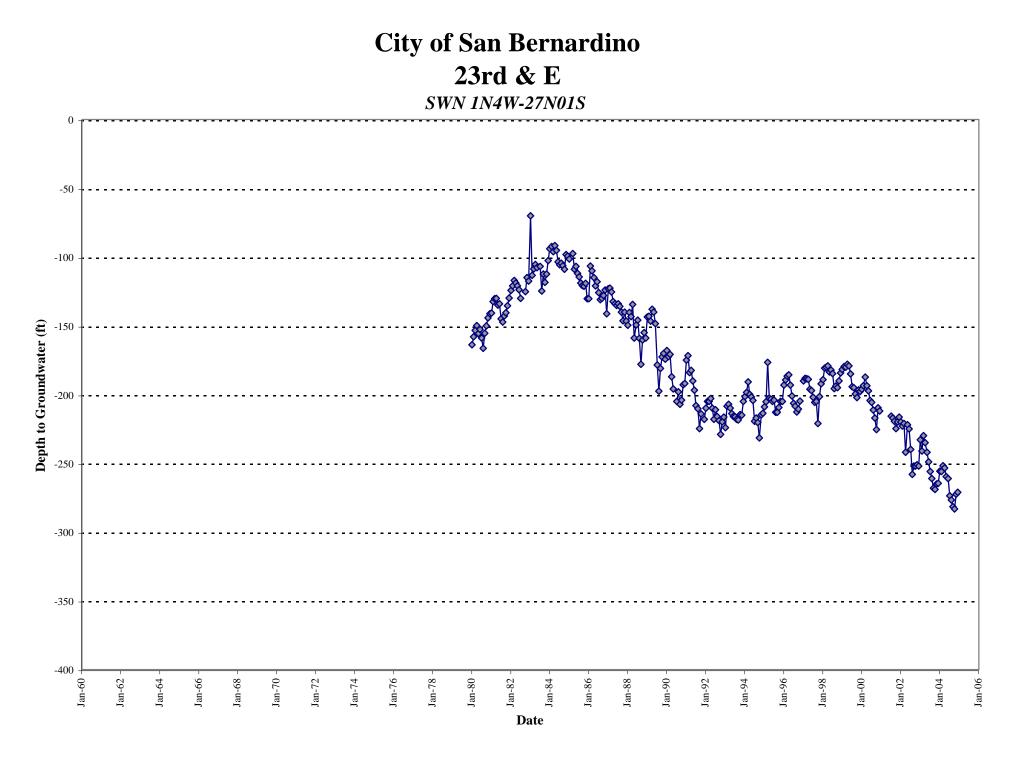


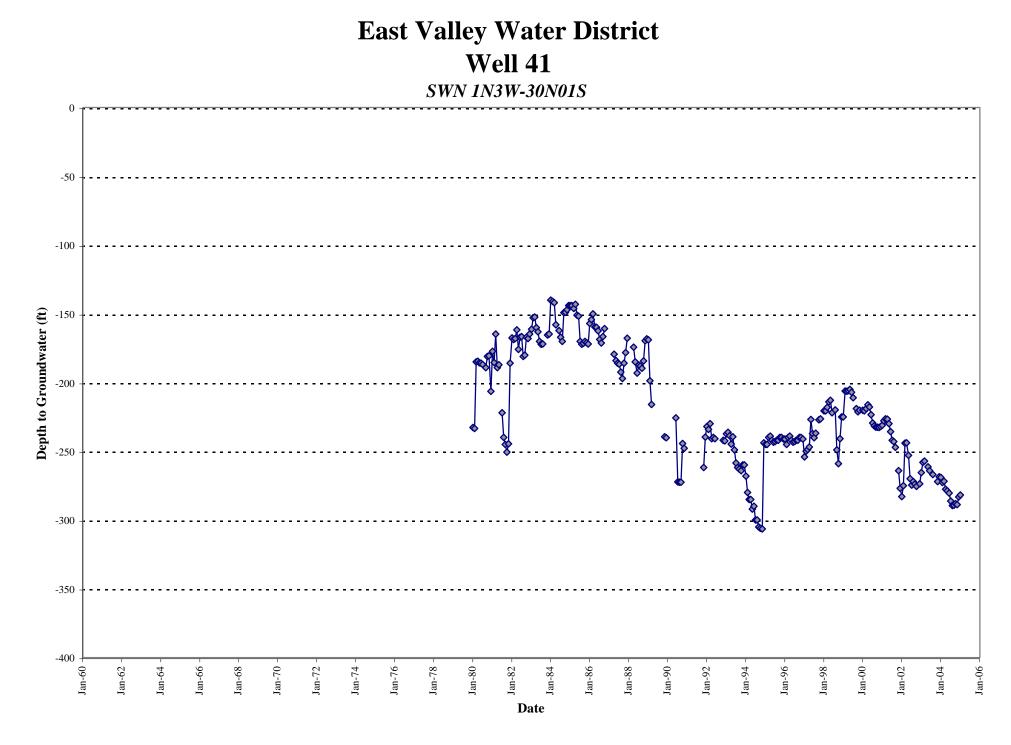


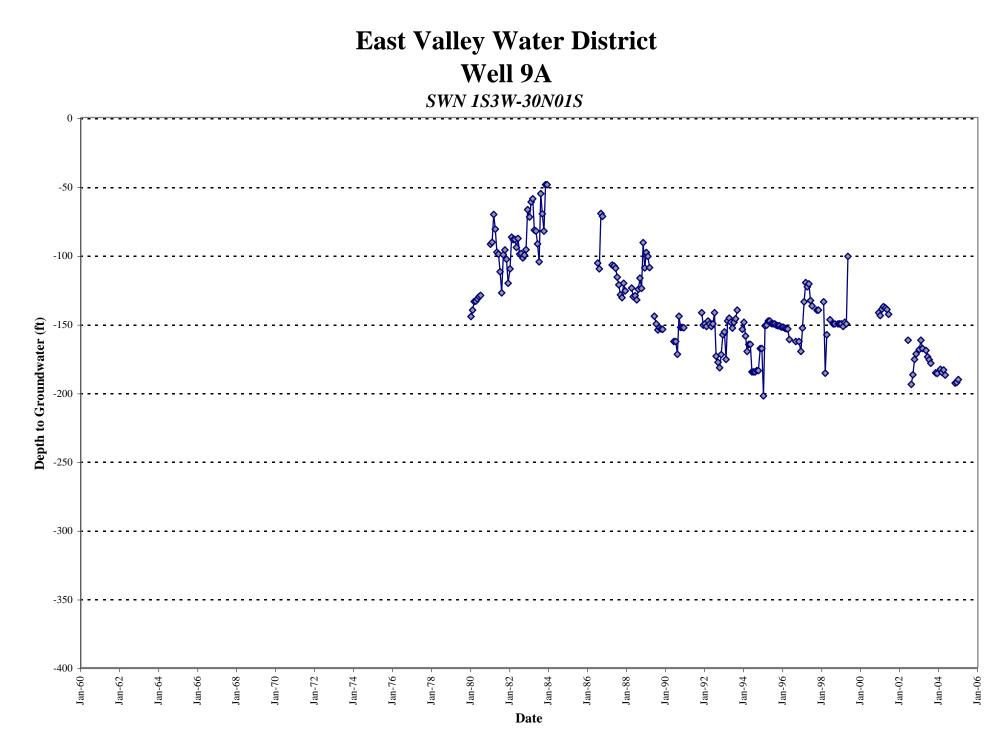


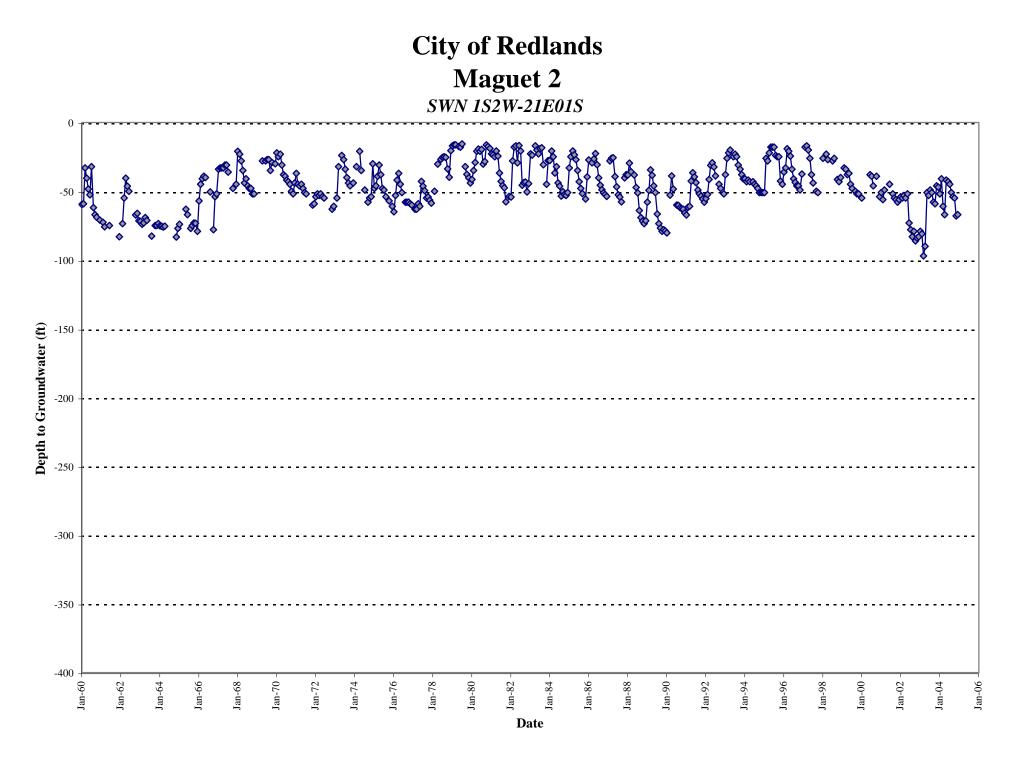


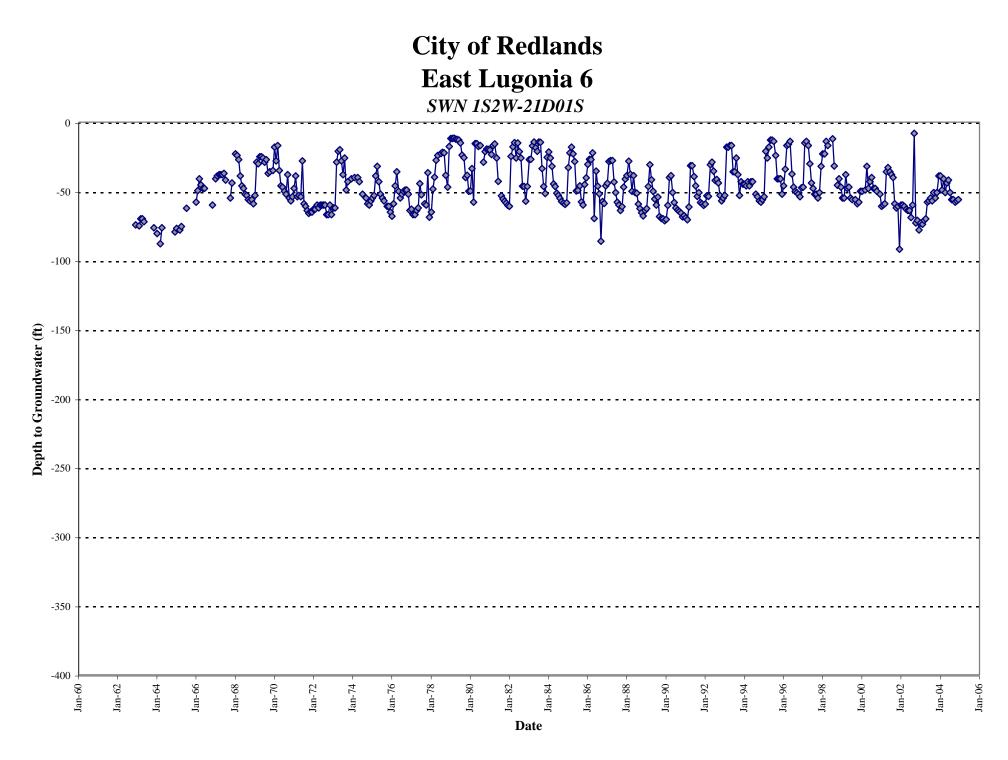


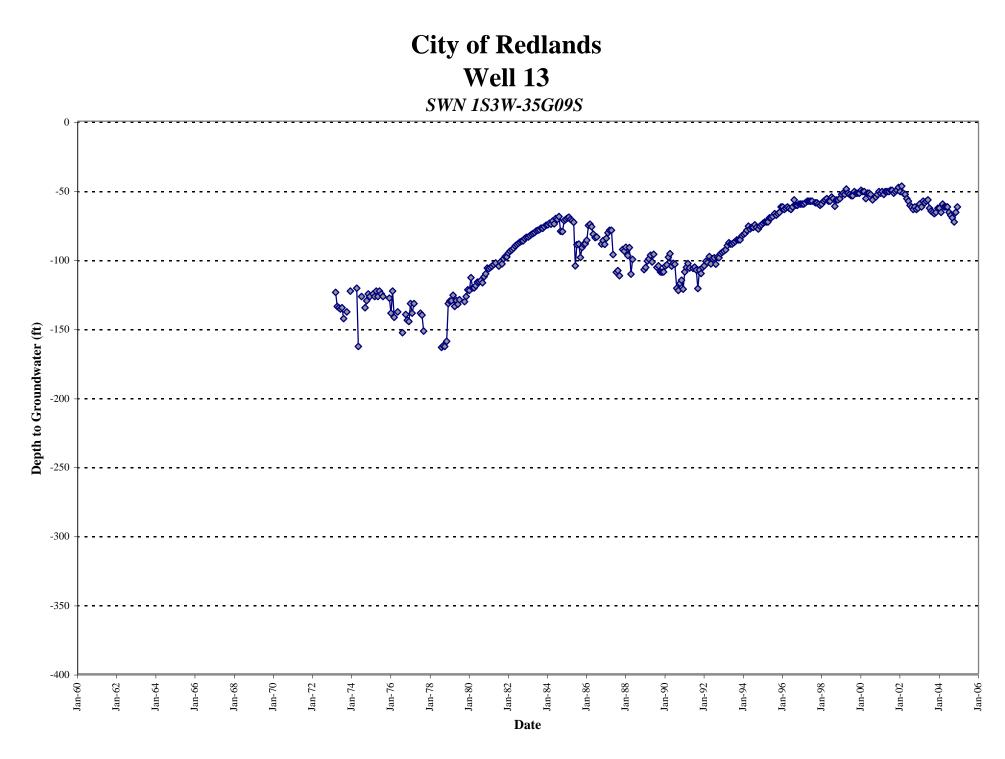


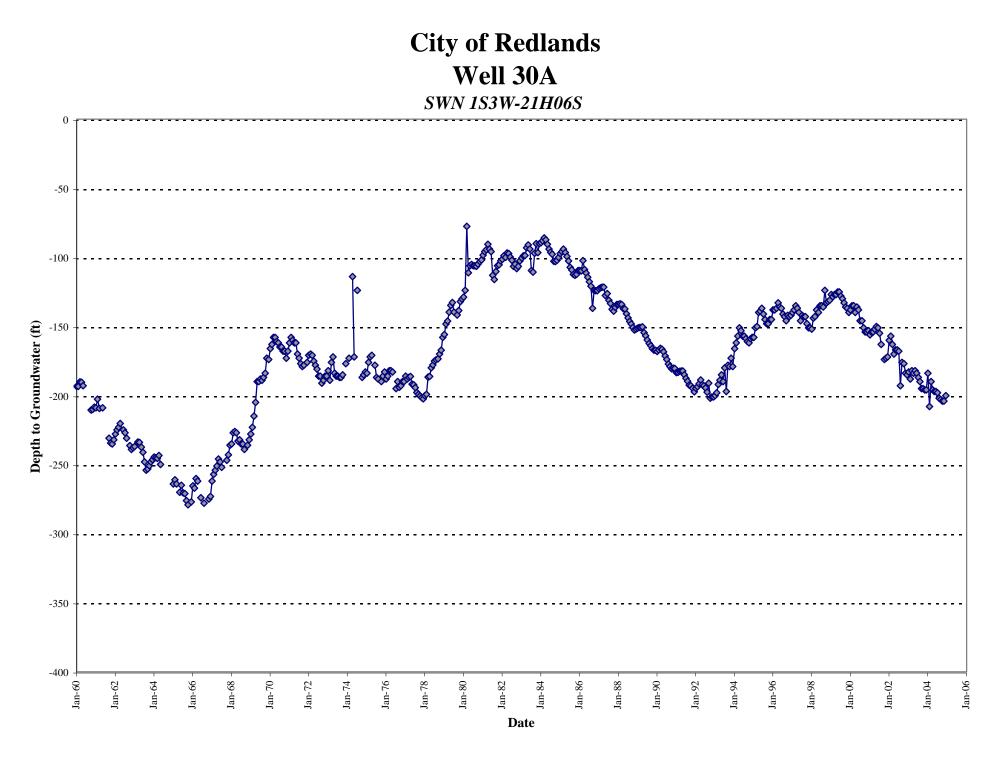


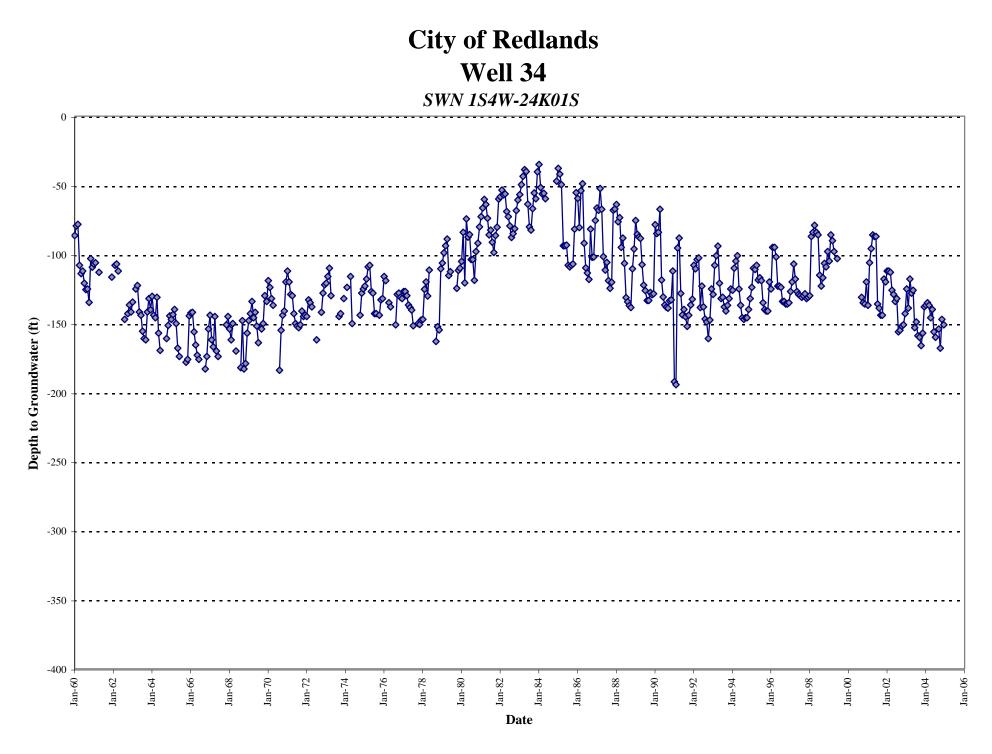












SBVWCD 2005 Engineering Investigation

Owner	Recordation Number	Local Name	Basin	Diversion (acre-ft)	Agricultural Production (acre-ft)	Non-agricultural Production (acre-ft)	Sum of Groundwater Production (acre-ft)	Within SBVWCD Boundary	Notes
Arrowhead County Club	3601925	1	Bunker Hill		0.0	537.8	537.8	Yes	3
Arroyo Verde Mutual Water Company	3602068	1	Bunker Hill		-	-	-	Yes	
Arroyo Verde Mutual Water Company	3602069	2	Bunker Hill		-	-	-	Yes	
Baseline Gardens Mutual Water Co.	3600457	1 (Standby)	Bunker Hill		-	-	-	Yes	
Baseline Gardens Mutual Water Co.	3600458	2	Bunker Hill		0.0	0.0	0.0	Yes	3
Baseline Gardens Mutual Water Co.	3602528	3	Bunker Hill		0.0	0.0	0.0	Yes	3
Bear Valley Mutual Water Company	3600023	Judson 1	Bunker Hill		0.0	0.0	0.0	Yes	2
Bear Valley Mutual Water Company	3601585	San Bernardino Ave. 1	Bunker Hill		0.0	0.0	0.0	Yes	2
Bear Valley Mutual Water Company	3600028	Sar Div - Red Tunnel	Bunker Hill	12,533.0	-	-	-		2
Bell, H. Eugene	3600449	Bell Well	Bunker Hill		FC	FC	FC	Yes	2
Berman, Jerry & Sons	3602007	2	Bunker Hill		10.0	0.0	10.0	Yes	3
Blue Banner Co.	3602531	Tunnel Div.	Bunker Hill		-	-	-		
Bryn Mawr Mutual Water Co.	3600053	1	Bunker Hill		-	-	-	Yes	
Bryn Mawr Mutual Water Co.	3600054	2	Bunker Hill		FC	FC	FC	Yes	2
Bryn Mawr Mutual Water Co.	3600055	3	Bunker Hill		FC	FC	FC	Yes	2
Bryn Mawr Mutual Water Co.	3602109	4	Bunker Hill		0.0	0.0	0.0	Yes	1
Canyon Knolls Ranch Co Royal Citrus	3601632	Clock Canyon/Marcum	San Timoteo		0.0	0.0	0.0	Yes	2
Cardiff Farms Mutual Water Company	3600973	1	Bunker Hill		FC	FC	FC	Yes	2
Cardiff Farms Mutual Water Company	3601619	2	Bunker Hill		FC	FC	FC	Yes	2
Carter, James E., M.D.	3602241	Almond	Bunker Hill		10.0	0.0	10.0	Yes	3
City Creek Water Company	3600681	City Creek	Bunker Hill	FC					2
Cogbill, Clinton L.	3601628	2	Bunker Hill		FC	FC	FC		2
Colton, City of	3601257	13	Bunker Hill		0.0	556.5	556.5		
Colton, City of	3601258	14	Bunker Hill		FC	FC	FC		2
Colton, City of	3601259	15	Bunker Hill		0.0	315.0	315.0		
Colton, City of	3601260	16	Bunker Hill		0.0	509.4	509.4		
Colton, City of	3601261	17	Bunker Hill		0.0	1151.7	1,151.7		
Colton, City of	3602405	19	Bunker Hill		0.0	134.0	134.0		
Colton, City of	3601251	5	Bunker Hill		FC	FC	FC		2
Colton, City of	3601253	7	Bunker Hill		0.0	0.0	0.0		2
Colton, City of	3601254	8	Bunker Hill		0.0	240.0	240.0		
Colton, City of	3602793	21	Bunker Hill		0.0	1107.0	1,107.0		
Colton, City of	3602881	22	Bunker Hill		0.0	560.5	560.5		
Colton, City of	3603357	23	Bunker Hill		0.0	2192.8	2,192.8		
Colton, City of	3603598	24	Bunker Hill		0.0	1014.4	1,014.4		
Colton, City of	3603704	26W	Bunker Hill		0.0	1552.4	1,552.4		

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Colton, City of		27	Bunker Hill		0.0	1380.5	1,380.5		
Colton, City of		28	Bunker Hill		0.0	807.7	807.7		
Colton, City of		29W	Bunker Hill		0.0	314.1	314.1		
Colton, City of		29C	Bunker Hill		0.0	0.0	0.0		
Crafton Water Company	3602186	2	Bunker Hill		0.0	0.0	0.0	Yes	2
Crafton Water Company	3600272	Fifth Ave. 1	Bunker Hill		0.0	0.0	0.0	Yes	2
Cram Ranch Associates	3600241	1 Home	Bunker Hill		FC	FC	FC	Yes	2
Daniels and Best Ranch	3602550	Alabama St.	Bunker Hill		75.0	0.0	75.0	Yes	3
Daniels and Best Ranch	3602549	California St.	Bunker Hill		212.1	0.0	212.1	Yes	3
Devore Water Co.	3602428	#4	Lower Cajon		0.0	30.0	30.0		2
Devore Water Co.	3602383	2	Lower Cajon		0.0	177.0	177.0		2
Devore Water Co.	3602384	3	Lower Cajon		0.0	84.0	84.0		2
Devore Water Co.	3602387	E. Kimbark	Lower Cajon	44.0					2
Devore Water Co.	3602388	Kimbark	Lower Cajon	150.0					2
Devore Water Co.	3602386	Lethin Sp.	Lower Cajon	23.0					2
Devore Water Co.	3602385	Medlin Cr.	Lower Cajon	6.0					2
E.D. Patterson, Jr.	3600188	Cram-Patterson 2	Bunker Hill		0.0	0.0	0.0	Yes	3
E.D. Patterson, Jr.	3602003	Solano 3	Bunker Hill		0.0	0.0	0.0	Yes	3
East Highlands Ranch, Inc.	3602474	Div/Plunge Crk	Plunge	0.0					2
East Highlands Ranch, Inc.	3600605	Plunge Ck	Plunge	500.0					2
East Valley Water District	9900025	102 Hot	Bunker Hill		-	-	-	Yes	
East Valley Water District	3601987	Dunkirk 1 / Highland 1	Bunker Hill		-	-	-	Yes	
East Valley Water District	9900001	Fairfax	Bunker Hill		-	-	-	Yes	
East Valley Water District	9900018	Greenspot Well	Bunker Hill		-	-	-	Yes	
East Valley Water District	3601653	PL 1	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3601661	PL 10	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600925	PL 100	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600026	PL 102 / Bear Valley	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3692174	PL 105 / Myers	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	0000059	PL 106	Bunker Hill		-	-	-	Yes	
East Valley Water District	3602370	PL 107	Bunker Hill		0.0	897.0	897.0	Yes	3
East Valley Water District	3600765	PL 113	Bunker Hill		-	-	-	Yes	
East Valley Water District	3600926	PL 115	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600927	PL 116	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600928	PL 117	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600930	PL 118	Bunker Hill		0.0	0.0	0.0	Yes	2

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East Valley Water District	3601582	PL 119	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3602563	PL 11A	Bunker Hill		0.0	1687.2	1,687.2	Yes	3
East Valley Water District	3601663	PL 12	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600680	PL 120/Cram	Bunker Hill		0.0	940.0	940.0	Yes	3
East Valley Water District	3601643	PL 121	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3602571	PL 122	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3602799	PL 125	Bunker Hill		0.0	827.8	827.8	Yes	3
East Valley Water District	3602034	PL 12A	Bunker Hill		0.0	1799.2	1,799.2	Yes	3
East Valley Water District	3601664	PL 13	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600376	PL 132 / Cull 2	Bunker Hill		0.0	428.2	428.2	Yes	3
East Valley Water District	3602260	PL 132 / Cull 3	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3602417	PL 132 / Cull 4	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600375	PL 132/Cull 1	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3600377	PL 134 / City Creek 1	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600378	PL 134 / City Creek 3	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3601069	PL 135 / Church	Bunker Hill		0.0	0.0	0.0	Yes	1
East Valley Water District	3602560	PL 136 / Dunkirk 2	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600374	PL 138 / Palm 1	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3601665	PL 14	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3603247	PL 141 / McDaniel	Bunker Hill		0.0	1961.8	1,961.8	Yes	3
East Valley Water District	3600220	PL 142	Bunker Hill		0.0	388.3	388.3	Yes	3
East Valley Water District	3603583	PL 143 / Abbey Way	Bunker Hill		0.0	873.9	873.9	Yes	3
East Valley Water District	3601639	PL 146	Bunker Hill		0.0	0.0	0.0	Yes	3
East Valley Water District	3603774	PL 146A	Bunker Hill		0.0	1305.0	1,305.0	Yes	3
East Valley Water District	3603734	PL 147	Bunker Hill		0.0	1550.0	1,550.0	Yes	3
East Valley Water District	3601666	PL 16	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3601654	PL 1A	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3601655	PL 2	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3601667	PL 21	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3601668	PL 22	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3601669	PL 23	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3601670	PL 24	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3601671	PL 24A	Bunker Hill		0.0	253.4	253.4	Yes	3
East Valley Water District	3602337	PL 24B	Bunker Hill		0.0	2407.0	2,407.0	Yes	3
East Valley Water District	3601672	PL 25	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3601673	PL 25A	Bunker Hill		0.0	180.9	180.9	Yes	3

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East Valley Water District	3601675	PL 27	Bunker Hill		0.0	0.8	0.8	Yes	3
East Valley Water District	3601676	PL 28	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3602564	PL 28A	Bunker Hill		0.0	2981.4	2,981.4	Yes	3
East Valley Water District	3601884	PL 30	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3601677	PL 31	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3601678	PL 32	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3601781	PL 35/Baseline Mutual	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	0000030	PL 36	Bunker Hill		-	-	-	Yes	
East Valley Water District	3602274	PL 39	Bunker Hill		0.0	1117.9	1,117.9	Yes	3
East Valley Water District	3601978	PL 40	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3602338	PL 40A	Bunker Hill		0.0	1976.2	1,976.2	Yes	3
East Valley Water District	3602113	PL 41	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	0000032	PL 43	Bunker Hill		-	_	-	Yes	
East Valley Water District	0000033	PL 44	Bunker Hill		-	-	-	Yes	
East Valley Water District	0000034	PL 45	Bunker Hill		-	-	-	Yes	
East Valley Water District	0000035	PL 46	Bunker Hill		-	-	-	Yes	
East Valley Water District	3601584	PL 47	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600466	PL 48	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	0000036	PL 52	Bunker Hill		-	-	-	Yes	
East Valley Water District	3600058	PL 53	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3600855	PL 54 / Seeley	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600970	PL 57	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3600971	PL 58	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3601656	PL 6	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600183	PL 60	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600545	PL 62	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600221	PL 63	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	3600275	PL 64	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600643	PL 66	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3600269	PL 68 / Morley	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3601657	PL 7	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	0000038	PL 70	Bunker Hill		-	-	-	Yes	
East Valley Water District	0000039	PL 71	Bunker Hill		FC	FC	FC	Yes	2
East Valley Water District	0000040	PL 72	Bunker Hill		-	-	-	Yes	
East Valley Water District	0000041	PL 74	Bunker Hill		-	-	-	Yes	
East Valley Water District	0000042	PL 75	Bunker Hill		-	-	-	Yes	

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East Valley Water District	0000043	PL 78	Bunker Hill		-	-	-	Yes	
East Valley Water District	3600864	PL 79	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3601658	PL 8	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	0000048	PL 80	Bunker Hill		-	_	-	Yes	
East Valley Water District	0000045	PL 81	Bunker Hill		-	-	-	Yes	
East Valley Water District	0000046	PL 83	Bunker Hill		-	-	-	Yes	
East Valley Water District	0000047	PL 84	Bunker Hill		-	-	-	Yes	
East Valley Water District	9900016	PL 85	Bunker Hill		-	-	-	Yes	
East Valley Water District	0000049	PL 93	Bunker Hill		-	-	-	Yes	
East Valley Water District	3601184	PL 94 / Corwin	Bunker Hill		0.0	0.0	0.0	Yes	1
East Valley Water District	0000050	PL 95	Bunker Hill		-	-	-	Yes	
East Valley Water District	0000051	PL 96	Bunker Hill		-	-	-	Yes	
East Valley Water District	0000052	PL 97	Bunker Hill		-	-	-	Yes	
East Valley Water District	3600444	PL 98	Bunker Hill		0.0	0.0	0.0	Yes	2
East Valley Water District	3601660	PL 9A	Bunker Hill		0.0	1371.0	1,371.0	Yes	3
East Valley Water District	9900004	Stout	Bunker Hill		0.0	0.0	0.0	Yes	1
East Valley Water District	9900021	Tri-City	Bunker Hill		0.0	365.2	365.2	Yes	1
Eastwood Farms Community Water Users	3602130	1	Bunker Hill		FC	FC	FC	Yes	2
Eastwood Farms Community Water Users	3602131	2	Bunker Hill		FC	FC	FC	Yes	2
Fairview Water Company	3600554	Fairview 1	Bunker Hill		302.0	0.0	302.0	Yes	3
Fontana Union Water Company	3600569	FU 13	Lytle		0.0	1364.0	1,364.0		2
Fontana Union Water Company	3600579	FU 24	Lytle		0.0	0.0	0.0		2
Fontana Union Water Company	3600580	FU 25	Lytle		0.0	855.0	855.0		2
Fontana Union Water Company	3600562	FU 3	Lytle		0.0	1084.0	1,084.0		2
Fontana Union Water Company	3600585	FU 32	Lytle		0.0	618.0	618.0		2
Fontana Union Water Company	3600563	FU 4	Lytle		0.0	0.0	0.0		2
Fontana Union Water Company	3602727	FU 8	Lytle		FC	FC	FC		2
General American Life Insurance Co.	3601352	Langford	Bunker Hill		108.7	0.0	108.7	Yes	3
Gladysta Well & Water Company	3600182	1	Bunker Hill		FC	FC	FC	Yes	2
Greenspot Mutual Well Company	3600266	Greenspot Mutual	Bunker Hill		0.0	0.0	0.0	Yes	3
Happe Mutual Well Company	3600238	1	Bunker Hill		FC	FC	FC	Yes	2
Highland Acres Ranch	3600323	Elec 1	Bunker Hill		-	-	-	Yes	
Highland Harvest Barn	0000129		Bunker Hill		-	-	-	Yes	
Highland Harvest Barn	0000130	Destroyed/Abandoned	Bunker Hill		-	-	-	Yes	
Holliday Trucking	3603262	SB #1	Bunker Hill		0.0	64.0	64.0		2
Horton	0000070		Bunker Hill		-	-	-	Yes	

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Inland Valley Development Agency	0000090	Local 11	Bunker Hill		0.0	239.8	239.8	Yes	3
Inland Valley Development Agency	0000086	Local 2	Bunker Hill		-	-	-	Yes	
Inland Valley Development Agency	0000087	Local 3	Bunker Hill		0.0	5.9	5.9	Yes	3
Inland Valley Development Agency	0000093	Local 347	Bunker Hill		-	-	-	Yes	
Inland Valley Development Agency	0000088	Local 4	Bunker Hill		-	-	-	Yes	
Inland Valley Development Agency	0000092	Local 44	Bunker Hill		-	-	-	Yes	
Inland Valley Development Agency	3603648	Norton 5	Bunker Hill		-	-	-	Yes	
Inland Valley Development Agency	0000094	Local 865	Bunker Hill		-	-	-	Yes	
Inland Valley Development Agency	0000091	Palm Meadows	Bunker Hill		256.9	328.1	585.0	Yes	3
J.G. Golfing Enterprises, Inc.	3602846	Kline	Bunker Hill		0.0	390.0	390.0	Yes	2
J.G. Golfing Enterprises, Inc.	3602499	Paine	Bunker Hill		0.0	120.4	120.4	Yes	3
J.G. Golfing Enterprises, Inc.	3601478	Thorn 10 & 11	Bunker Hill		0.0	473.7	473.7	Yes	3
Jacinto, Larry	3601126	1	Bunker Hill		72.0	0.0	72.0	Yes	3
Jacinto, Larry	3602020	FAR	Bunker Hill		58.0	0.0	58.0	Yes	3
K Inv./Trutanic/Y Un Well	3601172	Kinv(Crimnorth)	Bunker Hill		459.6	0.0	459.6	Yes	3
Kansas Street Mutual Water Co.	3601092	Kansas	Bunker Hill		0.0	36.0	36.0	Yes	2
King Street Mutual Well Company	3600530-	2	Bunker Hill		FC	FC	FC	Yes	2
Langford Ranches c/o Redlands Farming Co.	3600525	Alabama Ave.	Bunker Hill		133.2	0.0	133.2	Yes	3
Langford Ranches c/o Redlands Farming Co.	3600526	Lugonia Ave.	Bunker Hill		FC	FC	FC	Yes	2
Langford Ranches c/o Redlands Farming Co.	3600524	Nevada St.	Bunker Hill		414.7	0.0	414.7	Yes	3
Laranni Gunter Well	3600160	Gunter	Bunker Hill		FC	FC	FC	Yes	2
Loma Linda University	3602012	6	Bunker Hill		FC	FC	FC	Yes	2
Loma Linda University	3602249	Anderson	Bunker Hill		FC	FC	FC	Yes	2
Loma Linda University	3602781	Anderson 2	Bunker Hill		242.0	725.0	967.0	Yes	3
Loma Linda University	3602855	Anderson 3	Bunker Hill		77.0	227.0	304.0	Yes	3
Loma Linda, City of	3601388	Court St.	Bunker Hill		FC	FC	FC	Yes	2
Loma Linda, City of	3602759	Mt. View 1	Bunker Hill		FC	FC	FC	Yes	2
Loma Linda, City of	3602760	Mt. View 2	Bunker Hill		FC	FC	FC	Yes	2
Loma Linda, City of	3603719	Mt. View 3	Bunker Hill		0.0	587.8	587.8	Yes	3
Loma Linda, City of	3603721	Mt. View 4	Bunker Hill		0.0	0.0	0.0	Yes	2
Loma Linda, City of	3603776	Mt. View 5	Bunker Hill		0.0	2063.1	2,063.1	Yes	3
Loma Linda, City of	3601130	Nicks	Bunker Hill		0.0	44.0	44.0	Yes	2
Loma Linda, City of	3603057	Richardson 1	Bunker Hill		0.0	429.8	429.8	Yes	3
Loma Linda, City of	3603058	Richardson 2	Bunker Hill		FC	FC	FC	Yes	2
Loma Linda, City of	3603523	Richardson 3	Bunker Hill		0.0	1579.1	1,579.1	Yes	3
Loma Linda, City of	3603720	Richardson 4	Bunker Hill		0.0	1018.4	1,018.4	Yes	3

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LPR Ice Company	3602525	LPR Ice Co.	Bunker Hill		FC	FC	FC	Yes	2
Lucky Farms, Inc.	3603554	California St.	Bunker Hill		0.0	0.0	0.0	Yes	3
Lucky Farms, Inc.	3600418	Lugonia	Bunker Hill		0.0	0.0	0.0	Yes	3
Lucky Farms, Inc. formerly Marigold Farms	3600757	Mission	Bunker Hill		0.0	0.0	0.0	Yes	3
Lucky Farms, Inc. formerly Marigold Farms	3601750	Acquillan	Bunker Hill		0.0	0.0	0.0	Yes	3
Lucky Farms, Inc. formerly Marigold Farms	3601751	Alabama	Bunker Hill		0.0	0.0	0.0	Yes	3
Lucky Farms, Inc. formerly Marigold Farms	3601748	California	Bunker Hill		FC	FC	FC	Yes	2
Lucky Farms, Inc. formerly Marigold Farms	3601749	Jap	Bunker Hill		0.0	0.0	0.0	Yes	3
Lugo Water Company	3600510	1	Bunker Hill		FC	FC	FC	Yes	2
Majestic Realty / Mascart Water Company	3601102	2	Bunker Hill		0.0	0.0	0.0	Yes	3
Marshburn, Doris E. Trustee	0000081		Bunker Hill		-	-	-	Yes	
McCalla, Robert	9900020	Duda	Bunker Hill		-	-	-		
Meadowbrook Dairy	3600037	Domestic 1	Bunker Hill		53.0	0.0	53.0	Yes	3
Meadowbrook Dairy	3600030	Irrigation 2	Bunker Hill		0.0	0.0	0.0	Yes	2
Meeks & Daley Water Co.	3601737	Coburn	Bunker Hill		0.0	0.0	0.0	Yes	
Meeks & Daley Water Co.	3602864	Raub 6	Bunker Hill		0.0	2556.7	2,556.7	Yes	3
Meeks & Daley Water Co.	3601887	Station 59	Bunker Hill		861.2	68.5	929.7	Yes	3
Meeks & Daley Water Co.	3603214	Station 69	Bunker Hill		0.0	0.0	0.0	Yes	
Meeks & Daley Water Co.	3603215	Station 91	Bunker Hill		815.7	0.0	815.7	Yes	3
Meeks & Daley Water Co.	3602863	Warren 4	Bunker Hill		0.0	685.4	685.4	Yes	3
Mentone Citrus Growers	3602280	1	Bunker Hill		1.0	0.0	1.0	Yes	2
Mentone Citrus Growers	3600139	2	Bunker Hill		200.0	0.0	200.0	Yes	2
Miller Mutual Well Company	3600630-		Bunker Hill		FC	FC	FC	Yes	2
Montecito Mutual Water Co.	3600119	1	Bunker Hill		0.0	155.0	155.0	Yes	2
Montecito Mutual Water Co.	9900002	2	Bunker Hill		0.0	3.9	3.9	Yes	3
Mountain View Cemetery	3600743	1	Bunker Hill		126.0	0.0	126.0	Yes	3
Mountain View Cemetery	3600742-	2	Bunker Hill		0.0	79.0	79.0	Yes	3
Mountainview Power Co	3601015	SB Stmp2 67	Bunker Hill	1	-	-	-	Yes	
Mountainview Power Co	3601014	SB Stpm 66	Bunker Hill	1	-	-	-	Yes	
Mountainview Power Co	3601014a	SB Stpm 66 Aux.	Bunker Hill	1	0.0	6.6	6.6	Yes	3
Muscoy Mutual Water Company, No. 1	3601497	Muscoy 1	Lytle		0.0	447.0	447.0		2
Muscoy Mutual Water Company, No. 1	3601499	Muscoy 2	Lytle	I	0.0	495.0	495.0		2
Muscoy Mutual Water Company, No. 1	3601500	Muscoy 3	Lytle		0.0	947.0	947.0		2
Muscoy Mutual Water Company, No. 1	3601498	No. 5	Lytle		0.0	65.0	65.0		2
Muscoy Mutual Water Company, No. 1	3602345	Well No 4	Lytle		0.0	155.0	155.0		2
National Orange Show	3601924		Bunker Hill		0.0	74.4	74.4	Yes	3

Owner	Recordation Number	Local Name	Basin	Diversion (acre-ft)	Agricultural Production (acre-ft)	Non-agricultural Production (acre-ft)	Sum of Groundwater Production (acre-ft)	Within SBVWCD Boundary	Notes
New England Water Company	3602320		Bunker Hill		468.0	0.0	468.0	Yes	3
Odebrecht Contractors of California, Inc.	9900003	Dam Well	Bunker Hill		0.0	5.9	5.9	Yes	3
Old Town Well Co.	3600493	New Well 2	Bunker Hill		55.4	0.0	55.4	Yes	3
Old Town Well Co.	3600494	Old Well 1	Bunker Hill		0.0	48.0	48.0	Yes	2
Paine, Robert T.	3601642	King St.	Bunker Hill		-	-	-	Yes	
Patton State Hospital	3602381	14	Bunker Hill		0.0	105.6	105.6	Yes	3
Patton State Hospital	3600924	2A	Bunker Hill		-	-	-	Yes	
Patton State Hospital	3600931	Patton 10	Bunker Hill		0.0	173.2	173.2	Yes	3
Pharaoh-Powell Water Company	3600415		Bunker Hill		0.0	0.0	0.0	Yes	3
Pioneer Mutual Water Company	3600642	San Bernardino 1	Bunker Hill		0.0	0.0	0.0	Yes	3
Ramirez, Stephen	3601649-	Hoover	Bunker Hill		86.3	0.0	86.3	Yes	3
Ramirez, J.J.	3600484	Buckeye 2	Bunker Hill		13.1	0.0	13.1	Yes	3
Ramirez, J.J.	3601171	Crim 1	Bunker Hill		32.0	0.0	32.0	Yes	3
Ramirez, J.J.	3601728	Frink's #1	Bunker Hill		0.0	0.0	0.0	Yes	2
Ramirez, J.J.	3600527	Midas	Bunker Hill		106.7	0.0	106.7	Yes	3
Ramirez, J.J. Stowe Water Company	3601046	Stowe	Bunker Hill		13.0	0.0	13.0	Yes	2
Rancho Ladera / F Jacinto	3602188	Rancho Ladera	Bunker Hill		-	-	-	Yes	
Raught Mutual Well Company	3602193	Raught	Bunker Hill		206.6	0.0	206.6	Yes	3
Redlands Country Club	3600049-	Morrison/Hobbs	Bunker Hill		0.0	0.0	0.0	Yes	2
Redlands Unified School District	3601641	Opal St.	Bunker Hill		0.0	96.0	96.0	Yes	2
Redlands, City of	3603655	38	Bunker Hill		0.0	1653.7	1,653.7	Yes	3
Redlands, City of	3601291	10	Bunker Hill		0.0	65.7	65.7	Yes	3
Redlands, City of	3601292	11	Bunker Hill		100.9	0.0	100.9	Yes	3
Redlands, City of	3601293	12	Bunker Hill		0.0	0.0	0.0	Yes	
Redlands, City of	3601294	13	Bunker Hill		0.0	0.0	0.0	Yes	
Redlands, City of	3601295	14	Bunker Hill		0.0	0.0	0.0	Yes	
Redlands, City of	3601296	16	Bunker Hill		1228.6	0.0	1,228.6	Yes	3
Redlands, City of	3601297	17	Bunker Hill		0.0	0.0	0.0	Yes	2
Redlands, City of	3602653	2	Bunker Hill		FC	FC	FC	Yes	2
Redlands, City of	3602031	30-A	Bunker Hill		0.0	0.0	0.0	Yes	2
Redlands, City of	3602036	31-A	Bunker Hill		0.0	0.0	0.0	Yes	
Redlands, City of	3601298	32	Bunker Hill		35.7	0.0	35.7	Yes	3
Redlands, City of	3601299	34	Bunker Hill		0.0	0.0	0.0	Yes	
Redlands, City of	3602032	35	Bunker Hill		0.0	0.0	0.0	Yes	
Redlands, City of	3602082	36	San Timoteo		0.0	0.0	0.0	Yes	
Redlands, City of	3602211	37 Sylvyn	Bunker Hill		0.0	0.0	0.0	Yes	

Owner	Recordation Number	Local Name	Basin	Diversion (acre-ft)	Agricultural Production (acre-ft)	Non-agricultural Production (acre-ft)	Sum of Groundwater Production (acre-ft)	Within SBVWCD Boundary	Notes
Redlands, City of	3601301	41	Bunker Hill		701.0	0.0	701.0	Yes	3
Redlands, City of	3601308	Agate 1	Bunker Hill		0.0	0.0	0.0	Yes	2
Redlands, City of	3602792	Agate 2	Bunker Hill		0.0	2150.4	2,150.4	Yes	3
Redlands, City of	3602895	Airport 1	Bunker Hill		0.0	1454.8	1,454.8	Yes	3
Redlands, City of	3603762	Airport 2	Bunker Hill		0.0	353.5	353.5	Yes	3
Redlands, City of	3604001	Church St	Bunker Hill		0.0	1025.1	1,025.1	Yes	
Redlands, City of	3602654	Crafton	Bunker Hill		136.4	0.0	136.4	Yes	3
Redlands, City of	3601283	East Lugonia 2	Bunker Hill		0.0	0.0	0.0	Yes	2
Redlands, City of	3601287	East Lugonia 3	Bunker Hill		0.0	184.6	184.6	Yes	3
Redlands, City of	3602791	East Lugonia 4	Bunker Hill		0.0	0.0	0.0	Yes	
Redlands, City of	3600006	East Lugonia 5	Bunker Hill		0.0	0.0	0.0	Yes	2
Redlands, City of	3601290	East Lugonia 6	Bunker Hill		0.0	0.0	0.0	Yes	
Redlands, City of	3601636	Langford	Bunker Hill		FC	FC	FC	Yes	2
Redlands, City of	3602065	Lee Well	Bunker Hill		0.0	0.0	0.0	Yes	2
Redlands, City of	3602896	Madeira	Bunker Hill		0.0	771.3	771.3	Yes	3
Redlands, City of	3601281	Maguet 1	Bunker Hill		0.0	0.0	0.0	Yes	2
Redlands, City of	3601284	Maguet 2	Bunker Hill		0.0	192.0	192.0	Yes	3
Redlands, City of	3600749	Mentone Acre	Bunker Hill		0.0	1854.0	1,854.0	Yes	2
Redlands, City of formerly Mentone Acres	3600748	Mentone Acres	Bunker Hill		0.0	631.3	631.3	Yes	3
Redlands, City of	3601302	Mill Cr	Mill Creek	12,541.0			0.0		2
Redlands, City of	3600756	Mission 1	Bunker Hill		0.0	0.0	0.0	Yes	2
Redlands, City of	3602346	New York St.	Bunker Hill		1536.9	0.0	1,536.9	Yes	3
Redlands, City of	3600085	NY St. 1	Bunker Hill		FC	FC	FC	Yes	2
Redlands, City of	3601586	Orange St.	Bunker Hill		0.0	1176.6	1,176.6	Yes	3
Redlands, City of	3601637	PetersonWell	Bunker Hill		FC	FC	FC	Yes	2
Redlands, City of	3600918	Redlands Heights 1	Bunker Hill		0.0	0.0	0.0	Yes	
Redlands, City of	3600628	Redlands Trap & Skeet	Bunker Hill		-	-	-	Yes	
Redlands, City of	3600019	Rees Well 1	Bunker Hill		0.0	814.1	814.1	Yes	3
Redlands, City of	3602106		Bunker Hill		FC	FC	FC	Yes	2
Rialto, City of	3602080	City #2	Lytle		0.0	2059.0	2,059.0		2
Rialto, City of	3603538	City #4	Bunker Hill		FC	FC	FC		
Riverside Highland Water Company	3601530	FW 12	Bunker Hill		0.0	0.0	0.0		2
Riverside Highland Water Company	3601533	FW 18	Bunker Hill		0.0	1.0	1.0		
Riverside Highland Water Company	3603514	FW 5	Bunker Hill		0.0	0.5	0.5		
Riverside Highland Water Company	3601535	LC #1	Lytle		0.0	0.0	0.0		
Riverside Highland Water Company	3603470	LC #10	Lytle		0.0	2061.7	2,061.7		

Owner	Recordation Number	Local Name	Basin	Diversion (acre-ft)	Agricultural Production (acre-ft)	Non-agricultural Production (acre-ft)	Sum of Groundwater Production (acre-ft)	Within SBVWCD Boundary	Notes
Riverside Highland Water Company	3602840	LC #8	Lytle		0.0	0.0	0.0		
Riverside, City of	3601228	Cooley H	Bunker Hill		0.0	570.2	570.2	Yes	3
Riverside, City of	3601229	Cooley I	Bunker Hill		0.0	2175.4	2,175.4	Yes	3
Riverside, City of	3601464	Garner 1	Bunker Hill		0.0	440.3	440.3	Yes	3
Riverside, City of	3601465	Garner 2	Bunker Hill		0.0	112.6	112.6	Yes	3
Riverside, City of	3601467	Garner 4	Bunker Hill		0.0	0.0	0.0	Yes	2
Riverside, City of	3601468	Garner 5	Bunker Hill		0.0	1509.8	1,509.8	Yes	3
Riverside, City of	3603254	Garner 6	Bunker Hill		0.0	3130.0	3,130.0	Yes	3
Riverside, City of	9900015	Garner 7	Bunker Hill		0.0	3258.0	3,258.0	Yes	2
Riverside, City of	3602772	Hunt 10	Bunker Hill		0.0	400.4	400.4	Yes	3
Riverside, City of	3602773	Hunt 11	Bunker Hill		0.0	298.9	298.9	Yes	3
Riverside, City of	3602771	Hunt 6	Bunker Hill		0.0	249.3	249.3	Yes	3
Riverside, City of	3601462	Poole	Bunker Hill		0.0	0.0	0.0	Yes	2
Riverside, City of	3601219	Raub 2	Bunker Hill		0.0	104.6	104.6	Yes	3
Riverside, City of	3601239	Raub 3	Bunker Hill		0.0	122.3	122.3	Yes	3
Riverside, City of	3601238	Raub 4	Bunker Hill		0.0	927.5	927.5	Yes	3
Riverside, City of	3602484	Raub 5	Bunker Hill		0.0	2117.3	2,117.3	Yes	3
Riverside, City of	3602778	Raub 6	Bunker Hill		0.0	0.0	0.0	Yes	2
Riverside, City of	3603555	Raub 8	Bunker Hill		0.0	2092.3	2,092.3	Yes	3
Riverside, City of	3601489	Scheuer	Bunker Hill		0.0	5.7	5.7	Yes	3
Riverside, City of	3601431	Stewart 20	Bunker Hill		1.2	0.0	1.2	Yes	3
Riverside, City of	3601463	Stiles	Bunker Hill		0.0	348.6	348.6	Yes	3
Riverside, City of	3601479	Thorn 11	Bunker Hill		0.4	0.0	0.4	Yes	3
Riverside, City of	3601470	Thorn 12	Bunker Hill		0.0	845.2	845.2	Yes	3
Riverside, City of	3601473	Thorn 5	Bunker Hill		0.0	0.0	0.0	Yes	2
Riverside, City of	3601474	Thorn 6	Bunker Hill		0.0	0.0	0.0	Yes	2
Riverside, City of	3601475	Thorn 7	Bunker Hill		0.0	0.0	0.0	Yes	2
Riverside, City of	3601476	Thorn 8	Bunker Hill		0.0	0.0	0.0	Yes	2
Riverside, City of	3601240	Warren 1	Bunker Hill		0.0	1548.8	1,548.8		3
Riverside, City of	3601231	Warren 2	Bunker Hill		0.0	0.0	0.0	Yes	2
Riverside, City of	3601230	Warren 3	Bunker Hill		0.0	0.0	0.0	Yes	2
Riverside, City of	3601243	Warren 4	Bunker Hill		0.0	0.0	0.0	Yes	2
Riverside, City of - Gage Canal Company	3602423	6	Bunker Hill		FC	FC	FC		2
Riverside, City of - Gage Canal Company	3600786	21	Bunker Hill		FC	FC	FC		2
Riverside, City of - Gage Canal Company	3600787	26-1	Bunker Hill		0.0	3569.0	3,569.0	Yes	
Riverside, City of - Gage Canal Company	3600788	27-1	Bunker Hill		0.0	1156.0	1,156.0	Yes	

Owner	Recordation Number	Local Name	Basin	Diversion (acre-ft)	Agricultural Production (acre-ft)	Non-agricultural Production (acre-ft)	Sum of Groundwater Production (acre-ft)	Within SBVWCD Boundary	Notes
Riverside, City of - Gage Canal Company	3600789	27-2	Bunker Hill		0.0	1322.0	1,322.0	Yes	
Riverside, City of - Gage Canal Company	3600790	29-1	Bunker Hill		0.0	1035.0	1,035.0	Yes	
Riverside, City of - Gage Canal Company	3600791	29-2	Bunker Hill		0.0	1876.0	1,876.0		2
Riverside, City of - Gage Canal Company	3600792	29-3	Bunker Hill		0.0	3894.0	3,894.0		2
Riverside, City of - Gage Canal Company	3600793	30-1	Bunker Hill		0.0	916.0	916.0		2
Riverside, City of - Gage Canal Company	3600794	31-1	Bunker Hill		0.0	1913.0	1,913.0		2
Riverside, City of - Gage Canal Company	3600795	46-1	Bunker Hill		0.0	2711.0	2,711.0		2
Riverside, City of - Gage Canal Company	3600796	51-1	Bunker Hill		360.0	593.0	953.0	Yes	
Riverside, City of - Gage Canal Company	3600797	56-1	Bunker Hill		0.0	2131.0	2,131.0		2
Riverside, City of - Gage Canal Company	3602331	66-1	Bunker Hill		799.0	603.0	1,402.0	Yes	
Riverside, City of - Gage Canal Company	3603558	92-1	Bunker Hill		0.0	2910.0	2,910.0		1
Riverside, City of - Gage Canal Company	3603557	92-2	Bunker Hill		0.0	3269.0	3,269.0		1
Riverside, City of - Gage Canal Company	3603556	92-3	Bunker Hill		0.0	3447.0	3,447.0		1
Riverside, City of - Gage Canal Company	3600798	Cowlane	Bunker Hill		FC	FC	FC	Yes	2
San Bernardino Avenue Water Company	3600125	1	Bunker Hill		FC	FC	FC	Yes	2
San Bernardino Valley Municipal Water District	3603141	9Th Street	Bunker Hill		0.0	1824.0	1,824.0		2
San Bernardino Valley Municipal Water District	3603174	Perris Street	Bunker Hill			2074.0	2,074.0		2
San Bernardino Valley Municipal Water District	3603116	San Bernardino Ave. 1	Bunker Hill		56.7	937.0	993.7	Yes	3
San Bernardino, City of	9900032		Bunker Hill		-	-	-	Yes	
San Bernardino, City of	3603207	10Th/J Street	Bunker Hill		0.0	2644.0	2,644.0		2
San Bernardino, City of	9900030	11Th/E Street	Bunker Hill		-	-	-		
San Bernardino, City of	3600726	16Th Street	Bunker Hill		0.0	9.0	9.0		2
San Bernardino, City of	9900027	17Th Street #1	Bunker Hill		-	-	-		
San Bernardino, City of	3603208	17Th Street #2	Bunker Hill		0.0	1.0	1.0		2
San Bernardino, City of	3600717	19Th Street 1	Bunker Hill		-	-	-		
San Bernardino, City of	3600718	19Th Street 2	Bunker Hill		-	-	-		
San Bernardino, City of	3602264	23rd Street	Bunker Hill		-	-	-		
San Bernardino, City of		25th Street	Bunker Hill		-	-	-		
San Bernardino, City of	3600720	27Th Street	Bunker Hill		-	-	-		
San Bernardino, City of	3600719	30Th Street	Bunker Hill		0.0	2702.0	2,702.0		2
San Bernardino, City of	3602081	31 Street	Bunker Hill		0.0	1033.0	1,033.0		2
San Bernardino, City of	3603472	40Th/Valencia	Bunker Hill		0.0	55.0	55.0		2
San Bernardino, City of	3602265	7Th Street	Bunker Hill		0.0	701.0	701.0		2
San Bernardino, City of	3600722	Acacia	Bunker Hill		FC	FC	FC		2
San Bernardino, City of	3600733	Antil 1	Bunker Hill		FC	FC	FC	Yes	2
San Bernardino, City of	3600732	Antil 2	Bunker Hill		FC	FC	FC	Yes	2

Owner	Recordation Number	Local Name	Basin	Diversion (acre-ft)	Agricultural Production (acre-ft)	Non-agricultural Production (acre-ft)	Sum of Groundwater Production (acre-ft)	Within SBVWCD Boundary	Notes
San Bernardino, City of	3600730	Antil 3	Bunker Hill		FC	FC	FC	Yes	2
San Bernardino, City of	3600734	Antil 4	Bunker Hill		0.0	0.0	0.0	Yes	2
San Bernardino, City of	3600731	Antil 5	Bunker Hill		0.0	0.0	0.0	Yes	2
San Bernardino, City of	3602422	Antil 6	Bunker Hill		0.0	1895.6	1,895.6	Yes	3
San Bernardino, City of	3602400	Baseline	Bunker Hill		0.0	416.0	416.0		2
San Bernardino, City of	9900035	Bennett Well	Bunker Hill		-	-	-	Yes	
San Bernardino, City of	3600735	Birch Street	Bunker Hill		FC	FC	FC		2
San Bernardino, City of	9900033	Bloodbank	Bunker Hill		-	-	-	Yes	
San Bernardino, City of	3602426	C.C. Diversion	Lower Cajon	1,430.0	0.0	0.0	0.0		2
San Bernardino, City of	3600710	Cajon Cyn	Lower Cajon		0.0	0.0	0.0		2
San Bernardino, City of	3601843	Cajon No 1	Lower Cajon		0.0	0.0	0.0		2
San Bernardino, City of	3601844	Cajon No 2	Lower Cajon		0.0	1017.0	1,017.0		2
San Bernardino, City of	3602821	Cajon No 3	Lower Cajon		0.0	880.0	880.0		2
San Bernardino, City of	3602124	Central Ave.	Bunker Hill		FC	FC	FC	Yes	2
San Bernardino, City of	9900034	Centry Well	Bunker Hill		-	-	-	Yes	
San Bernardino, City of	3603581	Century	Bunker Hill		0.0	1011.9	1,011.9	Yes	3
San Bernardino, City of	3603582	Chandler	Bunker Hill		0.0	1186.0	1,186.0	Yes	3
San Bernardino, City of	3301626	City Lots	Bunker Hill		FC	FC	FC		2
San Bernardino, City of	3601880	Colima	Bunker Hill		0.0	0.0	0.0		2
San Bernardino, City of	3601878	Darby	Bunker Hill		0.0	0.0	0.0		2
San Bernardino, City of	3600738	DC Diversion	Devil Canyon	0.0					2
San Bernardino, City of	3600712	Devil Canyon 1	Devil Canyon		0.0	1555.0	1,555.0		2
San Bernardino, City of	3600711	Devil Canyon 2	Devil Canyon		0.0	1280.0	1,280.0		2
San Bernardino, City of	3602206	Devil Canyon 3	Devil Canyon		0.0	23.0	23.0		2
San Bernardino, City of	3602205	Devil Canyon 4	Devil Canyon		0.0	2.0	2.0		2
San Bernardino, City of	3602844	Devil Canyon 5	Devil Canyon		0.0	309.0	309.0		2
San Bernardino, City of	9900038	Devil Canyon 6	Devil Canyon		-	-	-		
San Bernardino, City of	9900037	Devil Canyon 7	Devil Canyon		-	-	-		
San Bernardino, City of	3602712	Ellena	Bunker Hill		-	-	-		
San Bernardino, City of	3603688	EPA #1	Bunker Hill		0.0	1690.0	1,690.0		2
San Bernardino, City of	3603689	EPA #2	Bunker Hill		0.0	1776.0	1,776.0		2
San Bernardino, City of	3603690	EPA #3	Bunker Hill		0.0	2043.0	2,043.0		2
San Bernardino, City of	3603691	EPA #4	Bunker Hill		0.0	1871.0	1,871.0		2
San Bernardino, City of	3603692	EPA #5	Bunker Hill		0.0	1695.0	1,695.0		2
San Bernardino, City of	3603693	EPA #6	Bunker Hill		0.0	480.0	480.0		2
San Bernardino, City of	3603694	EPA #7	Bunker Hill		0.0	1583.0	1,583.0		2

## **Production Data for the Preceding Water Year**

(July 1, 2003 - June 30, 2004)

Owner	Recordation Number	Local Name	Basin	Diversion (acre-ft)	Agricultural Production (acre-ft)	Non-agricultural Production (acre-ft)	Sum of Groundwater Production (acre-ft)	Within SBVWCD Boundary	Notes
San Bernardino, City of	3601879	Gardena	Bunker Hill		0.0	0.0	0.0		2
San Bernardino, City of	3602128	Gifford Park	Bunker Hill		FC	FC	FC	Yes	2
San Bernardino, City of	3602067	Gilbert 2	Bunker Hill		0.0	0.0	0.0		2
San Bernardino, City of	3600729	Gilbert St.	Bunker Hill		0.0	1862.4	1,862.4	Yes	3
San Bernardino, City of	3602125	Gould 1 Old	Bunker Hill		0.0	0.0	0.0	Yes	2
San Bernardino, City of	3602126	Gould 2 New	Bunker Hill		0.0	0.0	0.0	Yes	2
San Bernardino, City of	3600723	Hanford 1	Bunker Hill		FC	FC	FC		2
San Bernardino, City of	3600724	Hanford 2	Bunker Hill		FC	FC	FC		2
San Bernardino, City of	3601316	Inter City	Bunker Hill		0.0	16.0	16.0	Yes	2
San Bernardino, City of	3603471	Kenwood	Lower Cajon		0.0	1561.0	1,561.0		2
San Bernardino, City of	3602401	Leroy	Bunker Hill		0.0	1969.0	1,969.0		2
San Bernardino, City of	3600727	Lynwood	Bunker Hill		0.0	1225.8	1,225.8	Yes	3
San Bernardino, City of	3600739	Lytle Ck Div	Lytle	0.0	-	-	-		2
San Bernardino, City of	3600713	Lytle Crk 1/3	Lytle		0.0	0.0	0.0		2
San Bernardino, City of	3603027	Lytle Crk 2	Lytle Creek		0.0	954.0	954.0		2
San Bernardino, City of	3601845	Mallory	Lytle		0.0	146.0	146.0		2
San Bernardino, City of	3600222	Mcfarland Jo	Bunker Hill		FC	FC	FC	Yes	2
San Bernardino, City of	9900028	Mecham	Bunker Hill		-	-	-	Yes	
San Bernardino, City of	9900029	Meeks Daley	Bunker Hill		-	-	-	Yes	
San Bernardino, City of	3600737	Mill & D	Bunker Hill		0.0	350.0	350.0		2
San Bernardino, City of	9900031	Mill & G Geo	Bunker Hill		-	-	-		
San Bernardino, City of	3600320	Mt Vernon	Lytle	0.0	-	-	-		
San Bernardino, City of	3600714	Newmark 1	Devil Canyon		0.0	319.0	319.0		2
San Bernardino, City of	3600715	Newmark 2	Devil Canyon		0.0	1280.0	1,280.0		2
San Bernardino, City of	3600716	Newmark 3	Devil Canyon		0.0	827.0	827.0		2
San Bernardino, City of	3602399	Newmark 4	Bunker Hill		0.0	1919.0	1,919.0		2
San Bernardino, City of	3600721	North E Street	Bunker Hill		0.0	0.0	0.0		2
San Bernardino, City of	3602123	Norman Road	Bunker Hill		0.0	0.0	0.0	Yes	2
San Bernardino, City of	3603206	Olive/Garner	Bunker Hill		0.0	1533.0	1,533.0		2
San Bernardino, City of	9900026	Paperboard	Bunker Hill		-	-	-		
San Bernardino, City of	3601114	Perris Hill 2	Bunker Hill		FC	FC	FC	Yes	
San Bernardino, City of	3601116	Perris Hill 3	Bunker Hill		0.0	0.0	0.0	Yes	2
San Bernardino, City of	3601117	Perris Hill 4	Bunker Hill		0.0	196.7	196.7	Yes	3
San Bernardino, City of	3601115	Perris Hill 5	Bunker Hill		0.0	200.0	200.0	Yes	3
San Bernardino, City of	3602122	Rosewood	Bunker Hill		FC	FC	FC	Yes	2
San Bernardino, City of	3600034	Smith 1	Bunker Hill		FC	FC	FC	Yes	2

## **Production Data for the Preceding Water Year**

(July 1, 2003 - June 30, 2004)

Owner	Recordation Number	Local Name	Basin	Diversion (acre-ft)	Agricultural Production (acre-ft)	Non-agricultural Production (acre-ft)	Sum of Groundwater Production (acre-ft)	Within SBVWCD Boundary	Notes
San Bernardino, City of	3600736	So G Street	Bunker Hill		FC	FC	FC		2
San Bernardino, City of	3601588	State 1	Bunker Hill		0.0	0.0	0.0		2
San Bernardino, City of	3602066	Van Loon 1	Bunker Hill		0.0	0.0	0.0	Yes	2
San Bernardino, City of	3600709	Vincent	Lower Cajon		FC	FC	FC		2
San Bernardino, City of	3600728	Waterman Ave.	Bunker Hill		0.0	2041.0	2,041.0		2
San Bernardino, County of	0000001	Aerospace	Bunker Hill		-	-	-	Yes	
San Bernardino, County of	0000019	County Hospital	Bunker Hill		-	-	-	Yes	
San Bernardino, County of	0000117	· · ·	Bunker Hill		-	-	-		
San Bernardino, County of	0000118		Bunker Hill		-	-	-	Yes	
Selby, Dr. & Mrs. Arthur	3600018	Grrees 2	Bunker Hill		FC	FC	FC	Yes	2
Selby, Dr. & Mrs. Arthur	3600017	Grrees 3	Bunker Hill		FC	FC	FC	Yes	2
Solano Well No 3	3602003	3	Bunker Hill		0.0	0.0	0.0	Yes	3
Stater Bros	3602917		Bunker Hill		0.0	6.6	6.6	Yes	3
Storkson, William F.	3602664		Lytle Creek		0.0	31.0	31.0		2
Sunwest Materials	3601420	Alabama Street 2	Bunker Hill		0.0	181.0	181.0	Yes	3
Sunwest Materials	9900005	Orange Street	Bunker Hill		-	-	-	Yes	
Tennessee Mutual Well Company	3601161	Pioneer 1	Bunker Hill		331.5	0.0	331.5	Yes	3
Tennessee Water Company	3600474	1	Bunker Hill		593.7	0.0	593.7	Yes	3
Terrace Water Company	3601686	3, #2 Small	Bunker Hill		0.0	609.0	609.0		2
Terrace Water Company	3601684-	4 #1 Large	Bunker Hill		0.0	304.0	304.0		2
Trojan Groves	3600451		Bunker Hill		13.0	0.0	13.0	Yes	2
University of California, Riverside	3602772	Hunt 10	Bunker Hill		0.0	400.4	400.4	Yes	3
University of California, Riverside	3602773	Hunt 11	Bunker Hill		0.0	298.9	298.9	Yes	3
University of California, Riverside	3602771	Hunt 6	Bunker Hill		0.0	249.3	249.3	Yes	3
Victoria Farms Mutual Water Co.	3602714	1	Bunker Hill		FC	FC	FC	Yes	2
Victoria Farms Mutual Water Co.	3602574	1	Bunker Hill		FC	FC	FC	Yes	2
Victoria Farms Mutual Water Co.	3602247	2	Bunker Hill		FC	FC	FC	Yes	2
West Valley Water Dist.	3602897	#34	Lytle		0.0	324.0	324.0		2
West Valley Water Dist.	3603055	#36	Lytle		0.0	1486.0	1,486.0		2
West Valley Water Dist.	3601944	2	Lytle		0.0	1774.0	1,774.0		2
West Valley Water Dist.	3602766	30	Bunker Hill		0.0	603.0	603.0		2
West Valley Water Dist.	3603054	35	Bunker Hill		0.0	0.0	0.0		2
West Valley Water Dist.	3600312	Diversion Box - Cities Ria	Lytle	2,380.0	-	-	-		2
West Valley Water Dist.	3600996	No 8/LORD 1	Lytle		0.0	0.0	0.0		2
West Valley Water Dist.	3600307	No 1 / UPPER	Lytle		0.0	628.0	628.0		2
West Valley Water Dist.	3601848	Plant No 15	Bunker Hill		0.0	819.0	819.0		2

#### **Production Data for the Preceding Water Year**

(July 1, 2003 - June 30, 2004)

Owner	Recordation Number	Local Name	Basin	Diversion (acre-ft)	Agricultural Production (acre-ft)	Non-agricultural Production (acre-ft)	l -roundwater	Within SBVWCD Boundary	
West Valley Water Dist.	3600304	Plant No 4	Lytle		0.0	0.0	0.0		2
West Valley Water Dist.	3600305	Plant No 5	Lytle		FC	FC	FC		2
West Valley Water Dist.	3600997	Plant No 7	Lytle		0.0	1657.0	1,657.0		2
Williams Well Corporation, LTD	3600828		Bunker Hill		571.3	0.0	571.3	Yes	3
York	0000161		Bunker Hill		-	-	-	Yes	

Total Diversions Contributing to Bunker Hill Basin Total Bunker Hill Groundwater Production	11,935.5	180,913.4	29,607 192,849	(acre-ft) * (acre-ft)
Total for Bunker Hill			222,456	(acre-ft)
Total Agricultural Groundwater Production Within SBVWCD			11,935	(acre-ft)
Total Agricultural Groundwater Production Within SBVWCD Total Non-Agricultural Groundwater Production Within SBVWCD			11,935 85,157	(acre-ft) (acre-ft)

Notes:

FC - File Closed by Water Resources Control Board due to either minimal water use, abandonment or lack of correspondance.

1 - Estimated from prior water year (July 2002-June 2003) production.

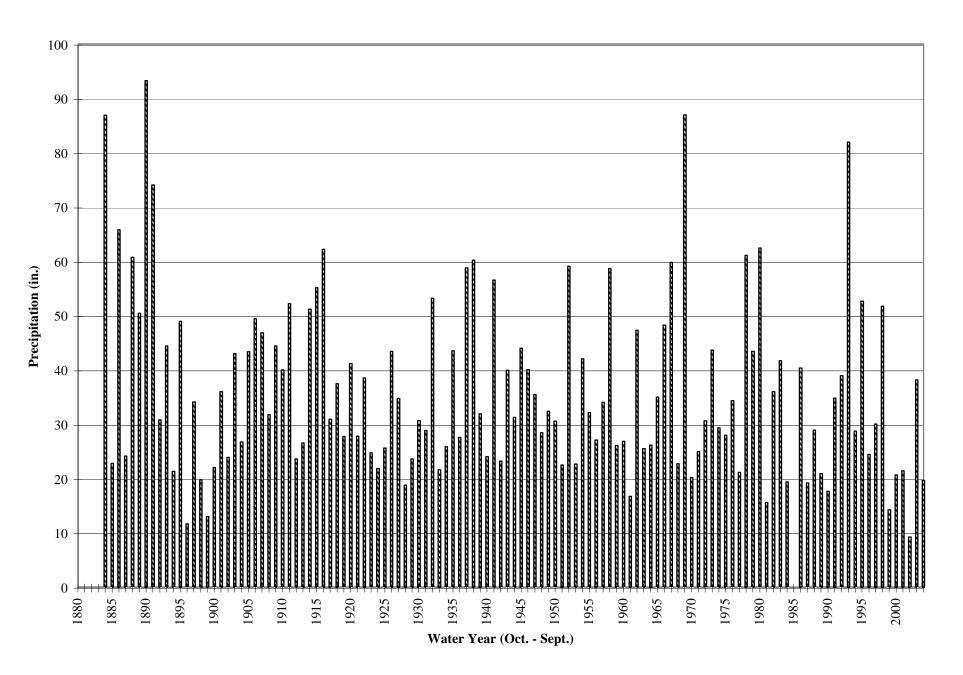
2 - Estimated from calendar year 2003 Production.

3 - Reported in SBVWCD Groundwater Assessments July 1, 2003 - June30, 2004

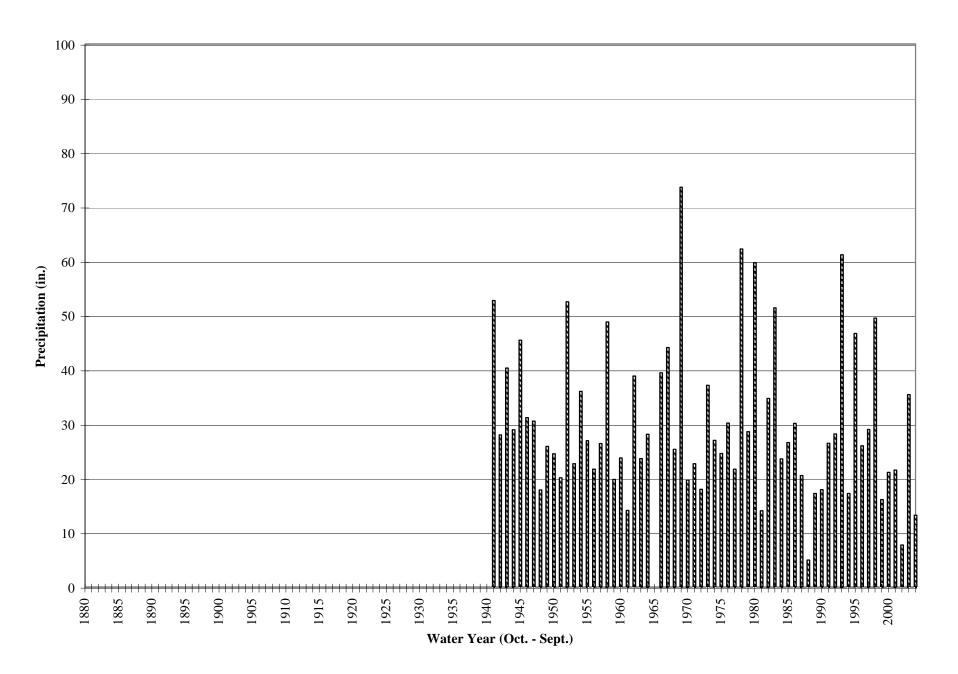
\* Not all production data differentiated between agricultural or non-agricultural use.

Data Sources: Primary Water Purveyors, Western - San Bernardino Watermaster, and Western Municipal Water District

Big Bear Lake Dam

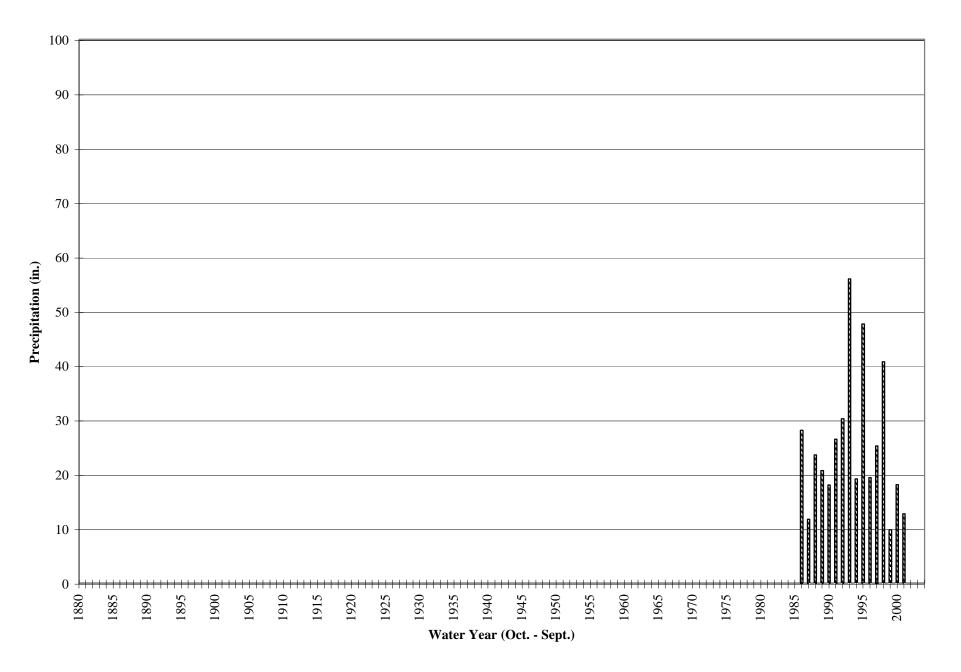


Camp Angelus



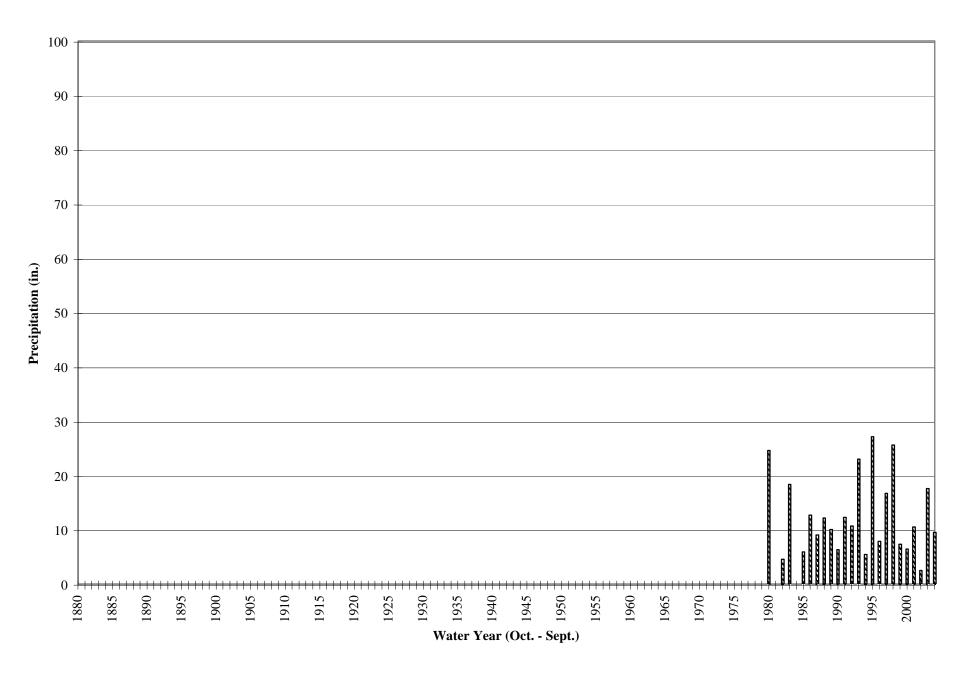
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City Creek Ranger Station

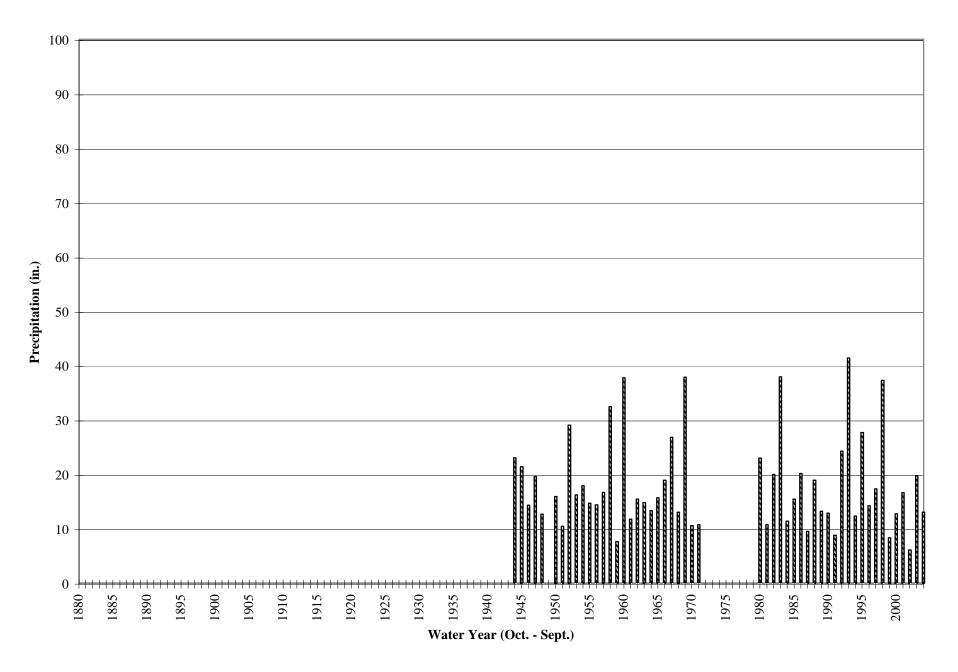


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Crafton Hills

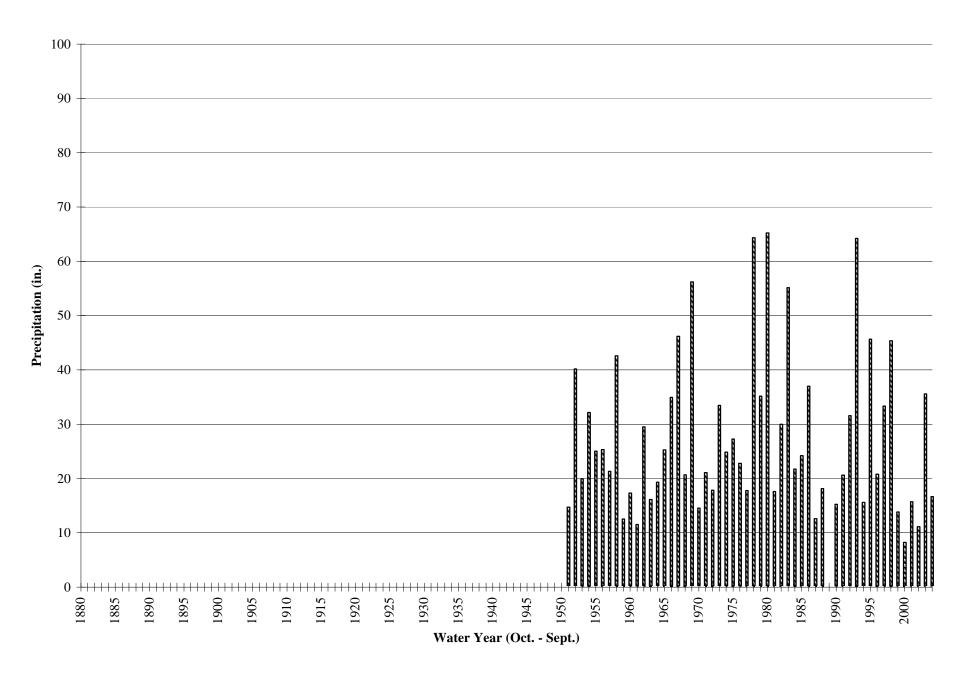


Del Rosa Ranger Station

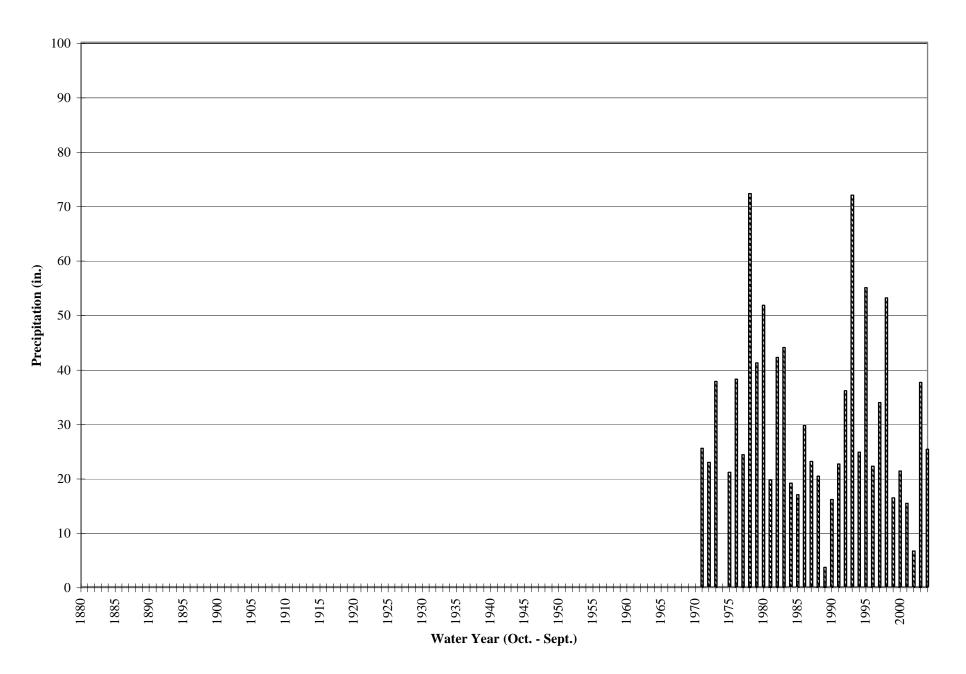


SBVWCD 2005 Engineering Investigation

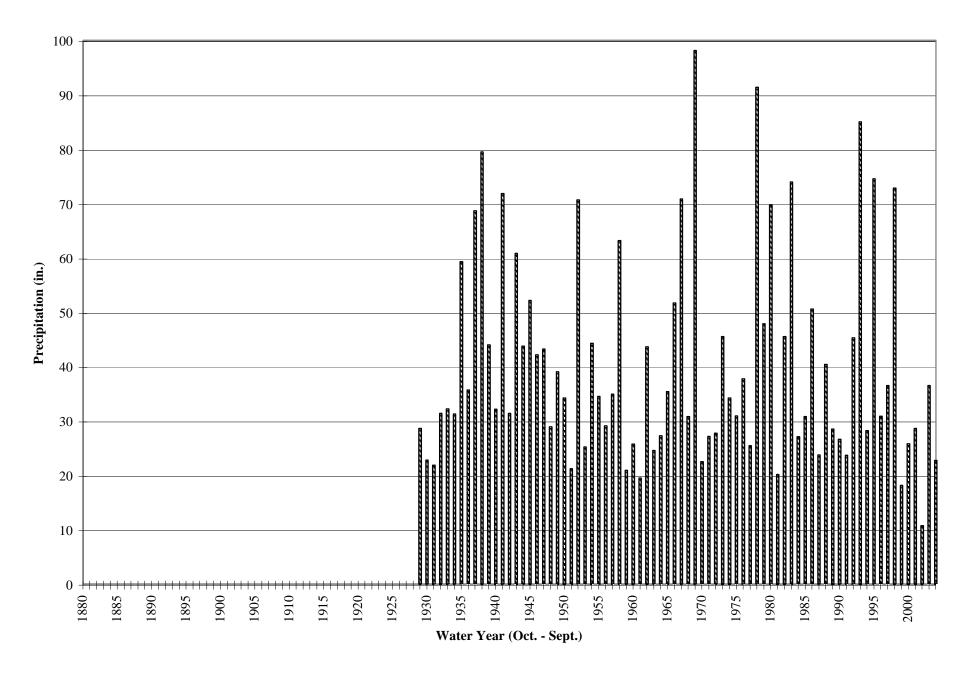
**Devore** CDF



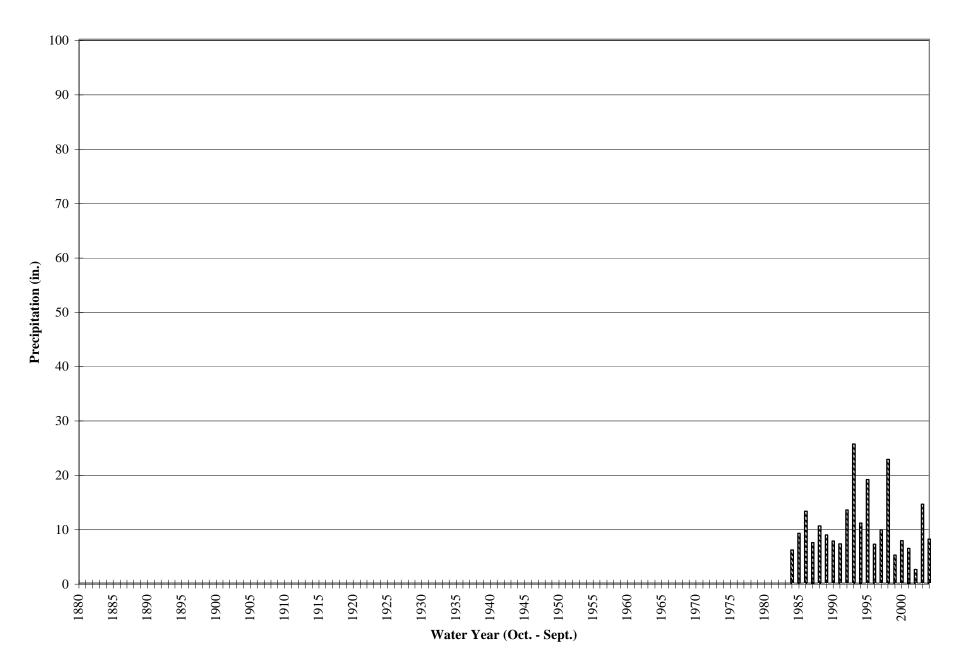
Fallsvale



Lake Arrowhead

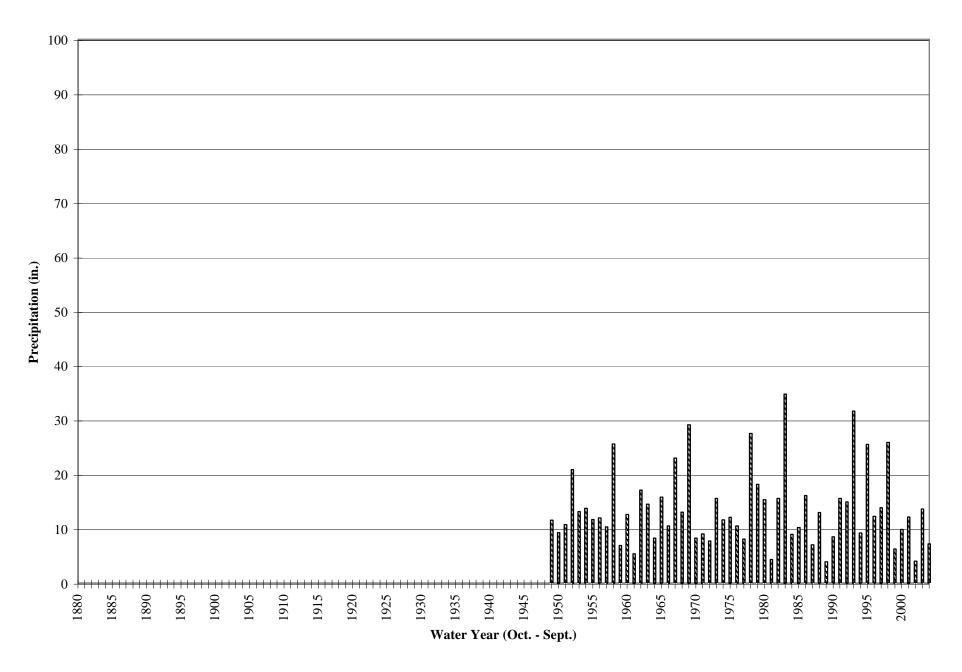


Loma Linda Fire Department



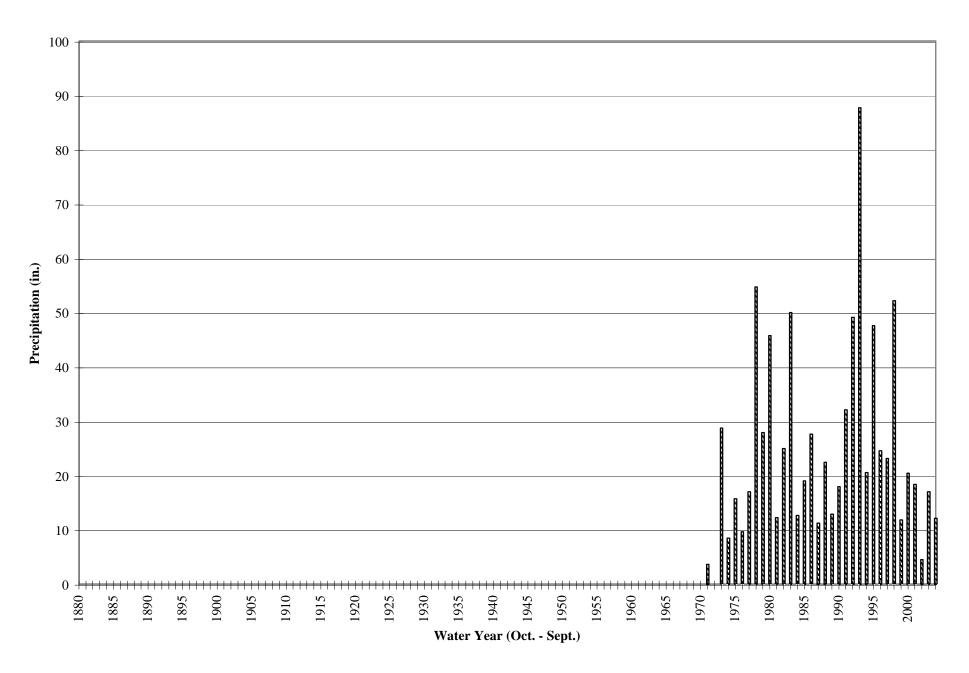
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Lytle Creek at Foothill Blvd.

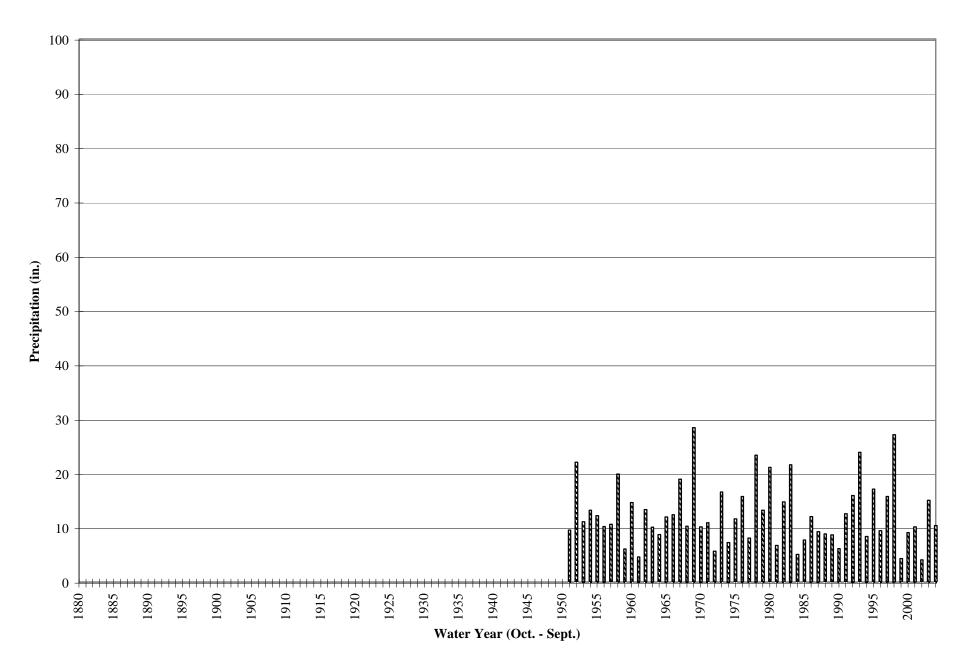


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Lytle Creek Fire Station

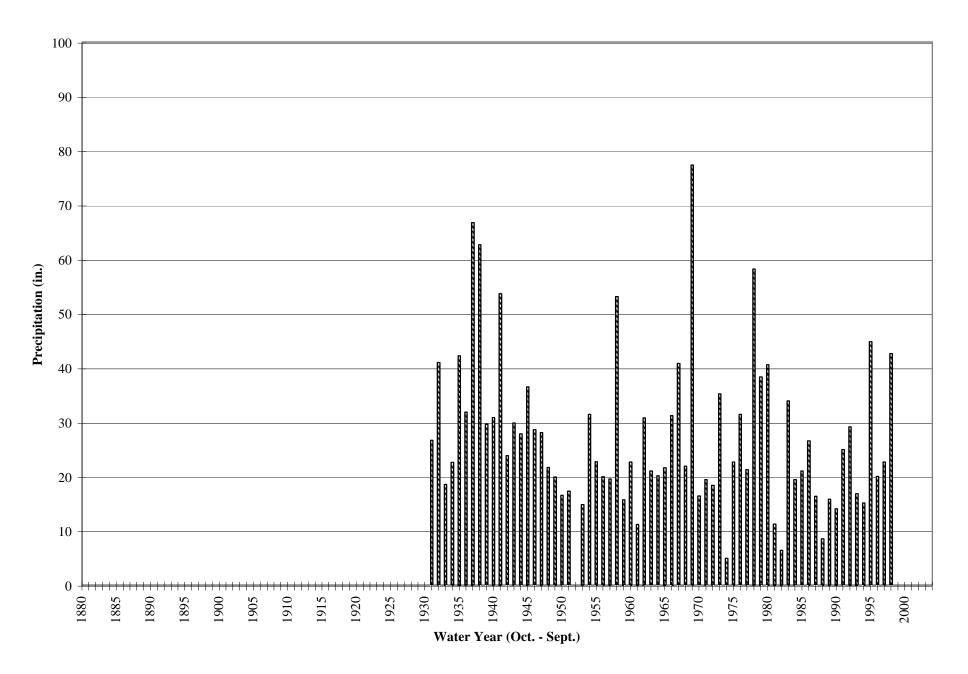


Mentone CDF

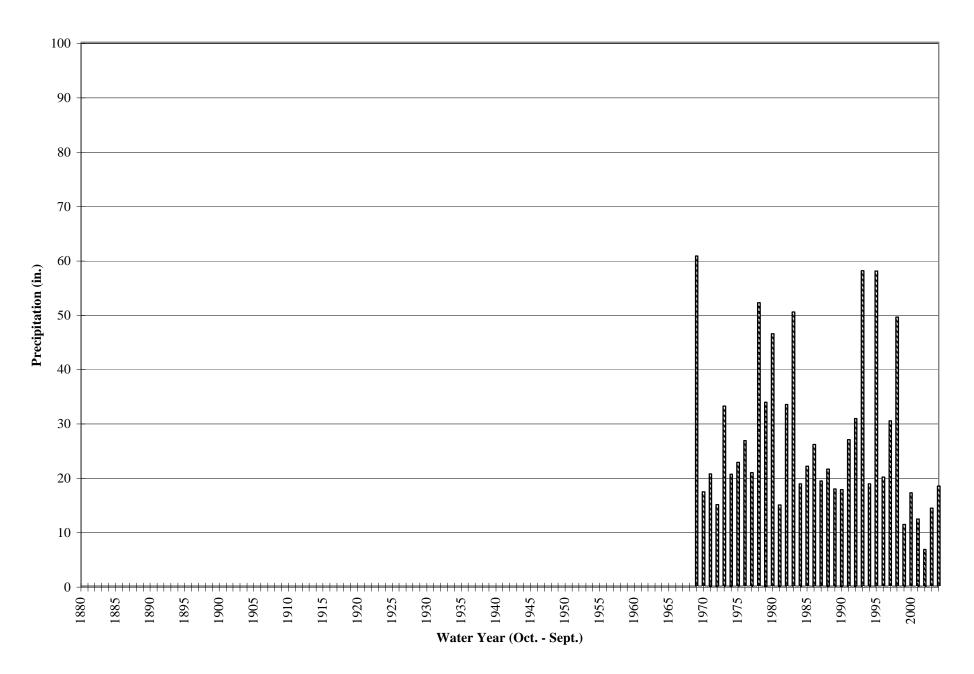


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Mill Creek Intake #3

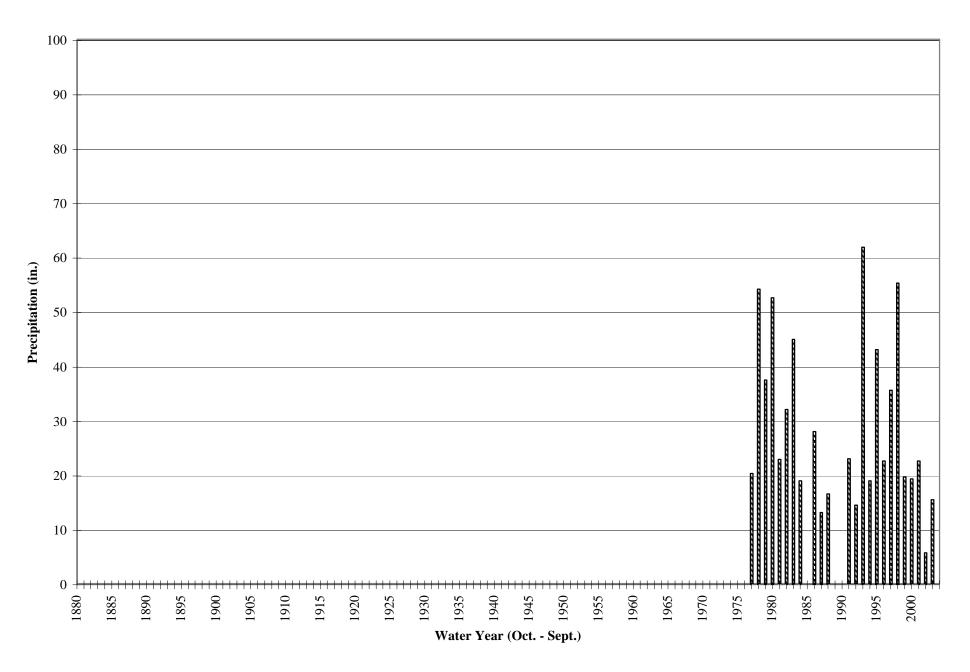


Oak Glen

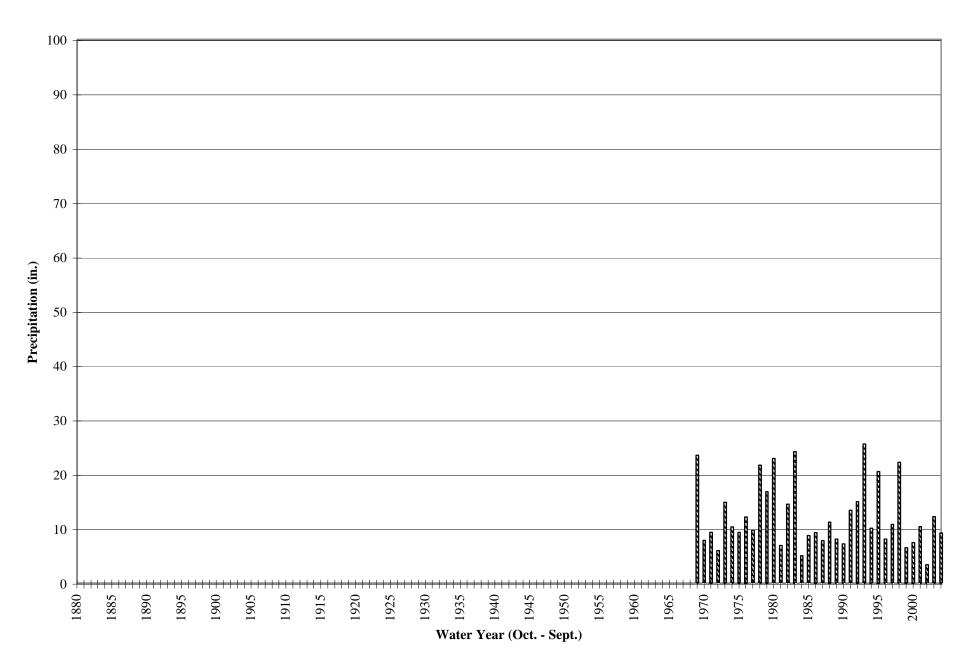


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Oak Glen Conservation Camp

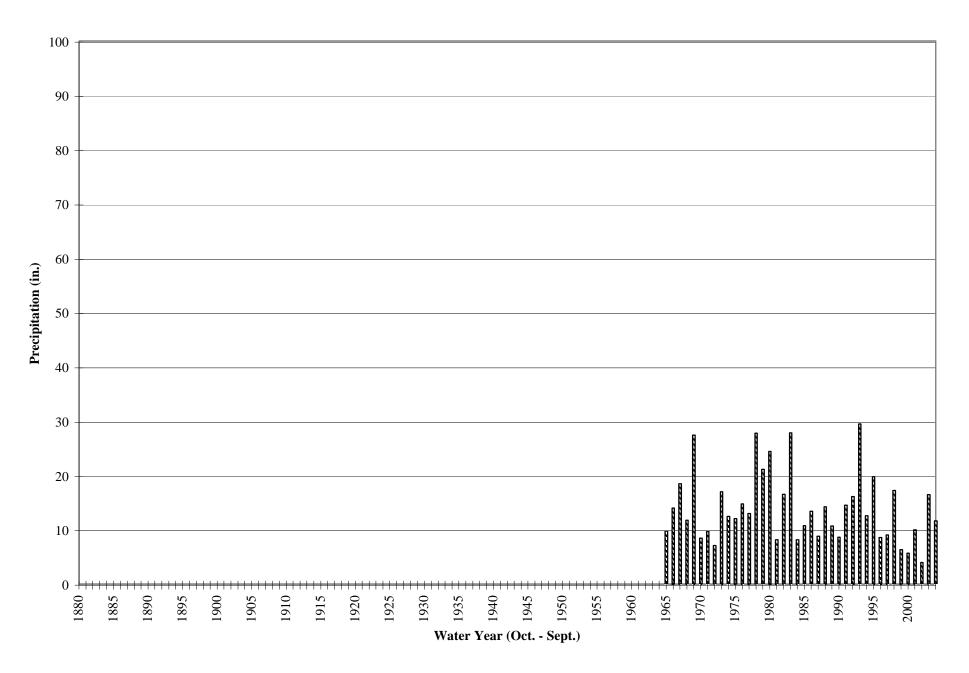


**Redlands** - Roth



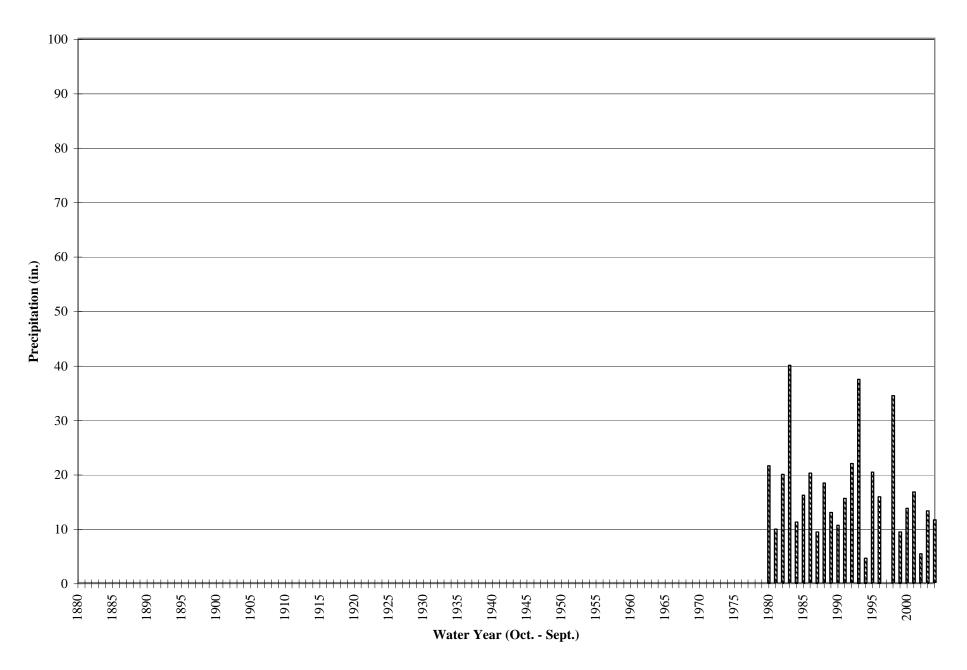
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**Redlands Country Club** 



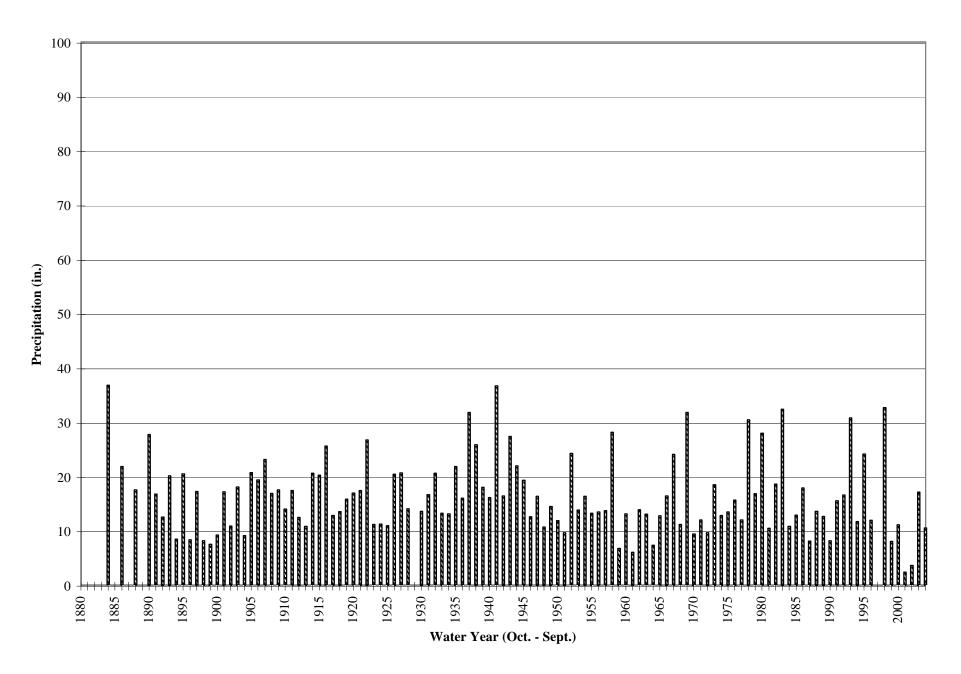
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San Bernardino CDF

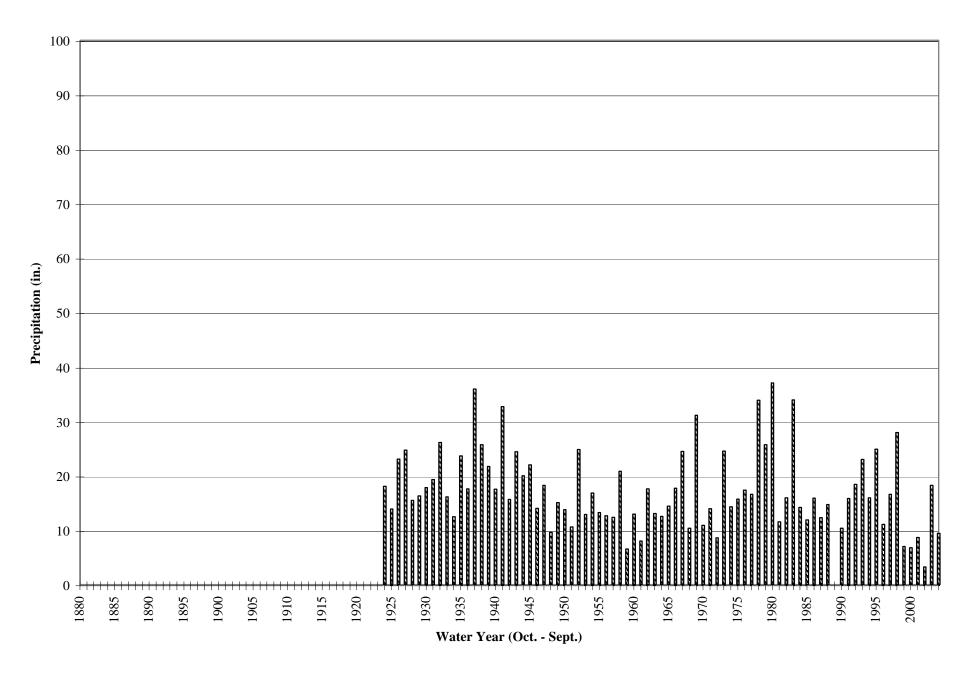


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San Bernardino County Hospital

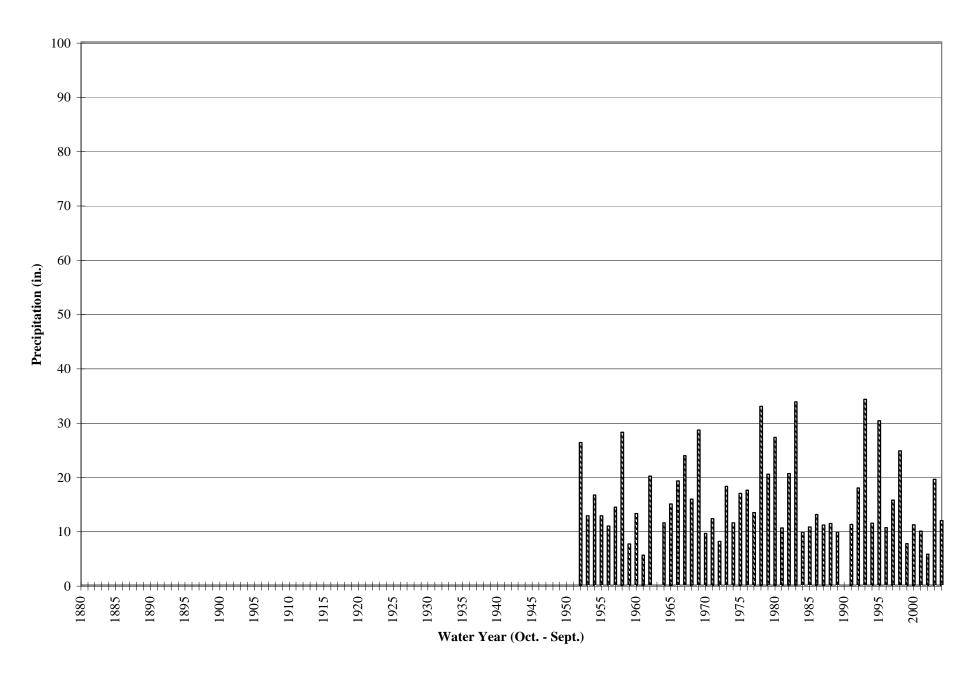


Santa Ana Powerhouse #3

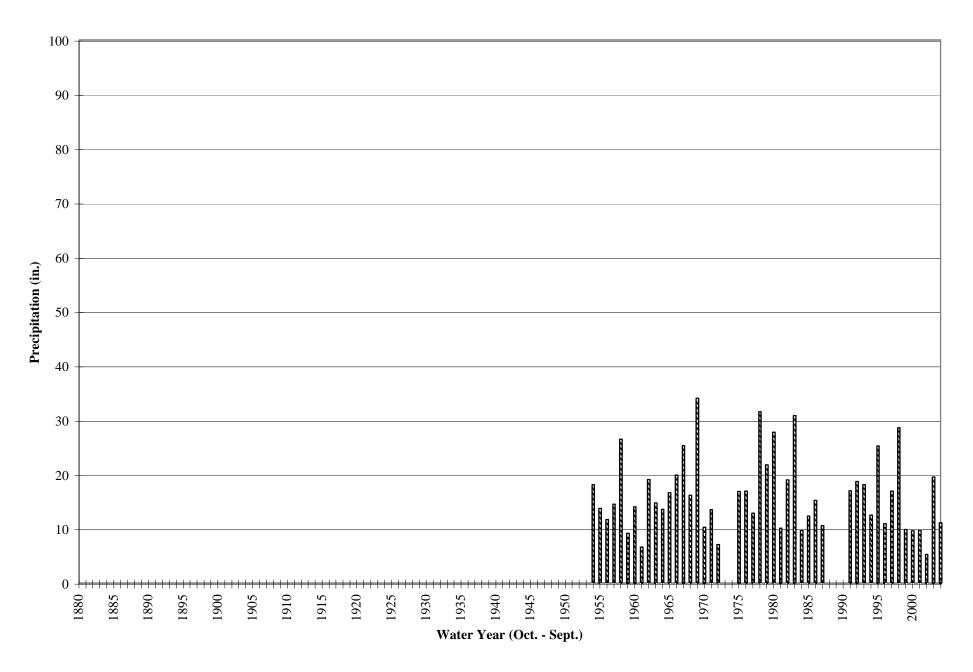


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Yucaipa CDF

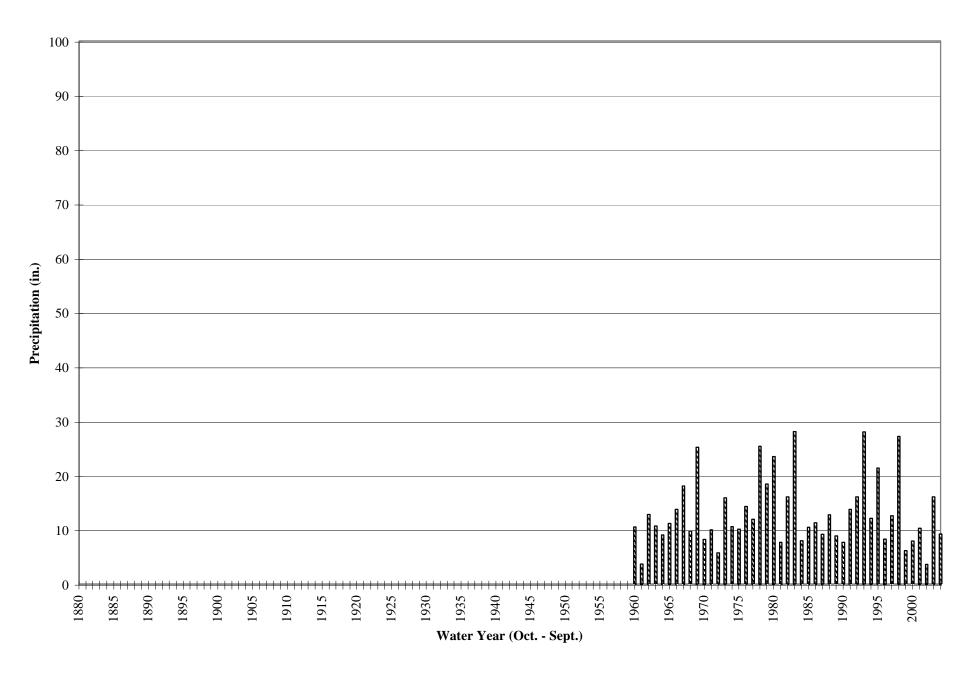


Yucaipa Valley Water District



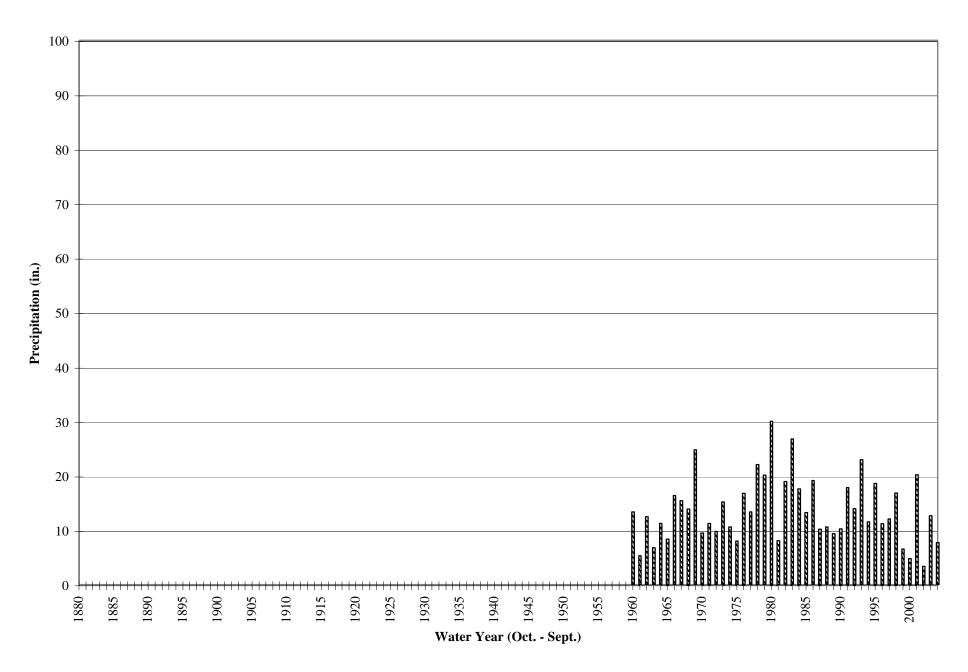
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**Redlands Daily Facts** 



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Big Bear City





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