

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATERMASTER REPORT
WATER YEAR 2002-03

UNITED STATES OF AMERICA
V.
FALLBROOK PUBLIC UTILITY DISTRICT, ET AL

CIVIL NO. 1247 - SD-T

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SECTION 1 - SUMMARY

Section 1 - A summary of the Santa Margarita River Watershed Annual Watermaster Report for the 2002-03 Water Year.

Section 2 - This Annual Watermaster Report is prepared pursuant to Section II of the U. S. District Court Order dated March 13, 1989. The Court has retained jurisdiction over all surface flows of the Santa Margarita River Watershed and all underground waters determined by the Court to be subsurface flow of streams or creeks or which is determined by the Court to add to, support or contribute to the Santa Margarita River stream system. Local vagrant groundwaters that do not support the Santa Margarita River stream system are outside Court jurisdiction.

Section 3 - Surface water flows were well above normal in 2002-03, with flows for long-term stations on Murrieta Creek at Temecula, the Santa Margarita River near Temecula, and the Santa Margarita River at Ysidora exceeding their long-term average by 58%, 58%, and 39% respectively. Direct surface diversions to use totaled 1,005 acre feet compared with 913 acre feet in 2001-02. The total quantity of water in storage in the Watershed on September 30, 2003, was 710,244 acre feet, of which 18,811 acre feet was Santa Margarita River water and 691,443 acre feet was imported water.

Section 4 - Groundwater extractions were 41,587 acre feet compared to 41,739 acre feet in 2001-02. Water purveyors pumped 34,780 acre feet and 6,807 acre feet were pumped by other substantial users. Total annual local production including surface diversions for use for the period 1994-2003 is shown on Figure 1.1.

Section 5 - During 2002-03, 78,200 acre feet of water were imported and distributed in the Santa Margarita River Watershed. This compares with 81,873 acre feet in 2001-02 and represents a 4.5 percent decrease. Net exports, including wastewater, were 11,914 acre feet, compared to 8,992 acre feet in 2002. Annual imports for the period 1994-2003 are shown on Figure 1.2.

Section 6 - Water rights during the 1950's and 1960's consisted primarily of riparian and overlying rights. Other rights included appropriative rights and federal reserved rights. More recently, water purveyors in the Watershed have begun exercising groundwater appropriative rights. Except for appropriative rights, water rights generally have not been quantified in the watershed. Perfected appropriative surface water rights on file with the State Water Resources Control Board (SWRCB) amount to 906,892 gallons per day which corresponds to 1.4 cfs or 2.78 acre feet per day of direct diversion rights and 44,315.5 acre feet of active storage rights.

Figure 1.1

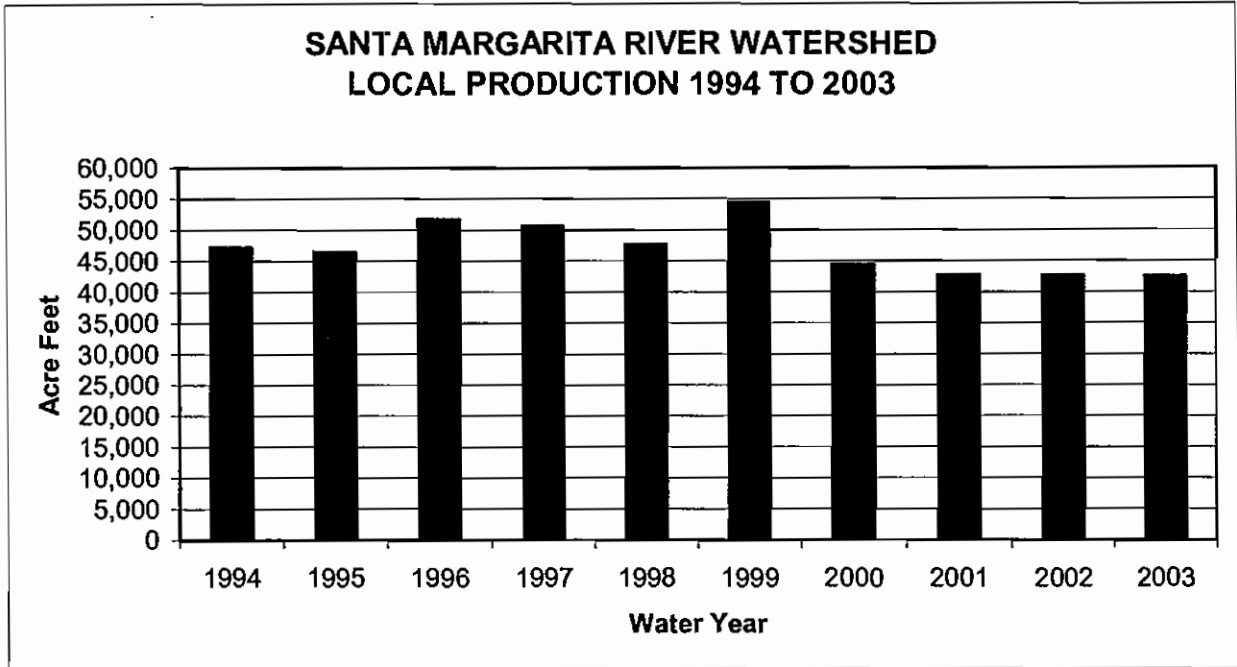
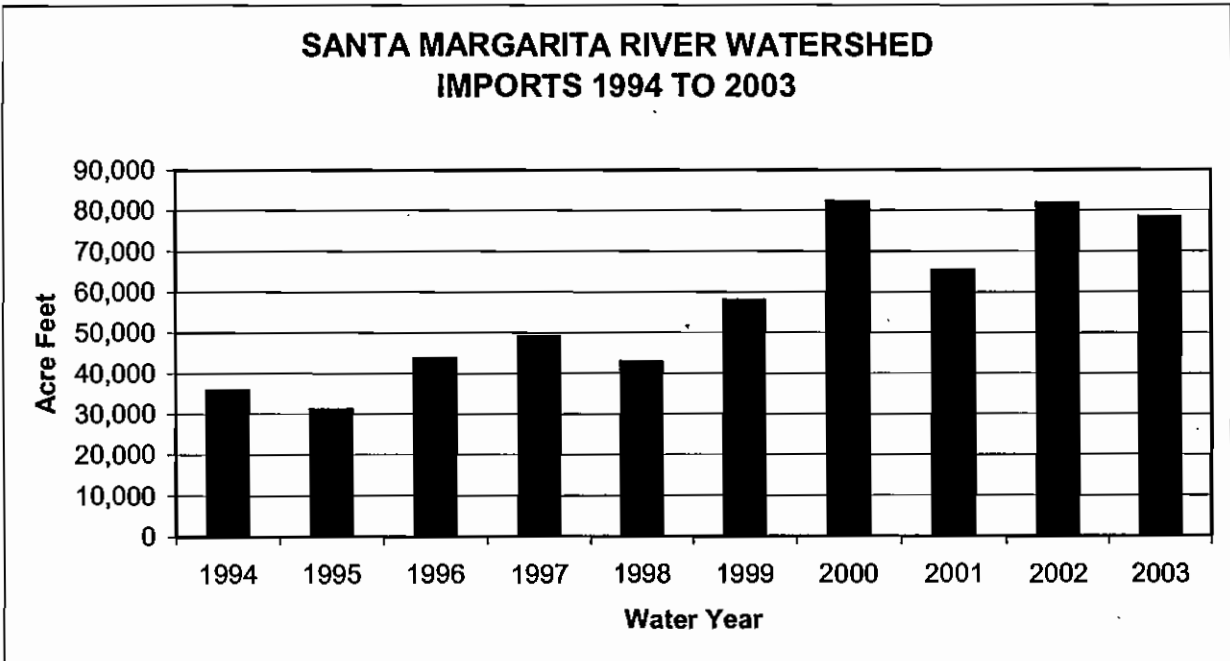


Figure 1.2



Section 7 - Total imported supplies plus local production totaled 120,792 acre feet compared to 124,525 reported in 2001-02. Of that quantity, 51,381 acre feet were used for agriculture; 5,933 acre feet were used for commercial purposes; and 48,847 acre feet were used for domestic purposes; 425 acre feet were discharged to Murrieta Creek; 4,471 acre feet were discharged to the Santa Margarita River from MWD WR-34 by Rancho California WD; 3,767 acre feet of fresh water were exported; and 2,750 acre feet were recharged by Rancho California WD to storage. The overall system loss was 3,218 acre feet. System gain or loss is the result of many factors including errors in measurement, differences between periods of use and periods of production, leakage and unmeasured uses.

Total annual production for the period 1994-2003 is shown on Figure 1.3

Section 8 – Issues involving potential unauthorized water use include small storage ponds, water use by Rancho California Water District, the status of the United States' Amended Complaint, and imported water jurisdiction.

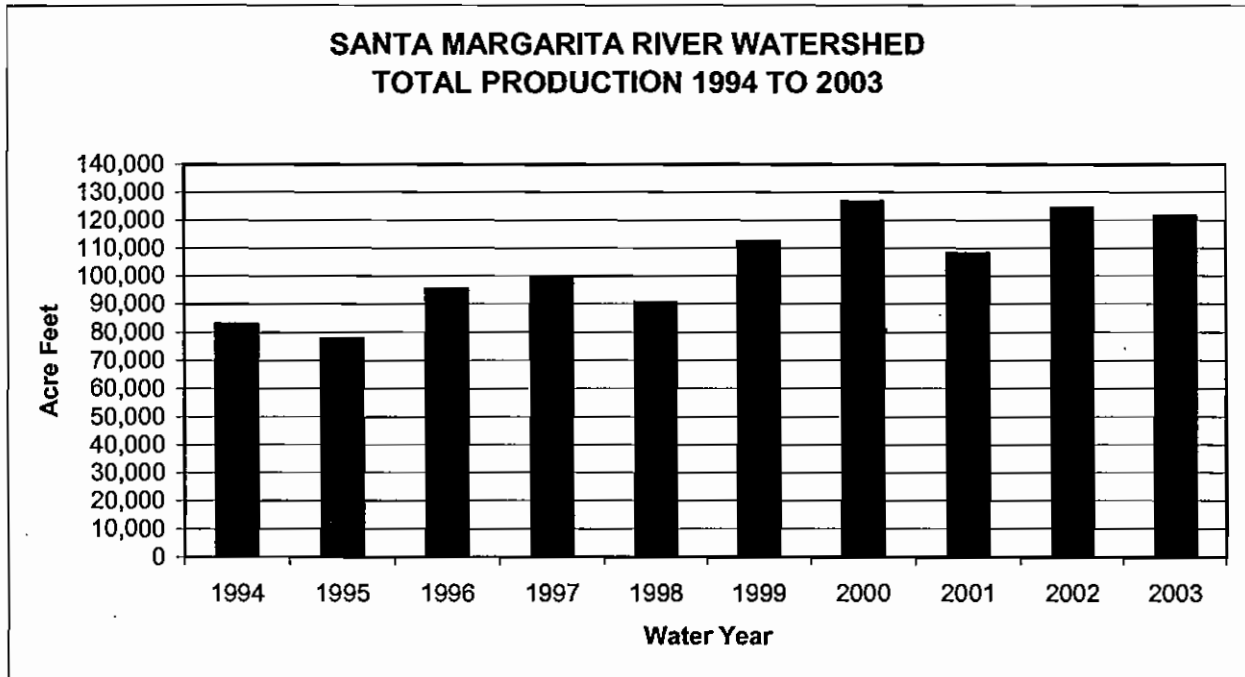
Section 9 - Threats to water supply include high nitrate levels in Rainbow Creek and Anza Valley in past years, potential overdraft conditions in the Murrieta-Temecula and Anza groundwater basins, and salt balance issues in the upper Watershed.

Section 10 – The U. S. Geological Survey (U.S.G.S.) conducted surface water quality monitoring at two stations on the Santa Margarita River. Total dissolved solids concentrations ranged from minimums of about 400 mg/l at the Temecula station to maximums of about 1000 mg/l at the Fallbrook station..

Groundwater from wells was sampled by Camp Pendleton, Murrieta County Water District, Rancho California WD, and the U.S.G.S. on Indian Reservations during 2002-03, with no nitrate concentrations exceeding the drinking water standard of 45 mg/l as nitrate (or 10 mg/l as N). The Basin Plan objective for total dissolved solids of 750 mg/l was exceeded in eight wells at Camp Pendleton.

Section 11 - The Cooperative Water Resource Management Agreement between Camp Pendleton and Rancho California Water District was approved by the District Court on August 20, 2002. During the 2003 calendar year, Rancho California WD discharged 5,429.4 acre feet to the Santa Margarita River. Also 2,088.2 acre feet were contributed to Camp Pendleton's groundwater account.

Figure 1.3



Section 12 - Projected Watermaster tasks for the next five years are listed.

Section 13 - A total Watermaster budget of \$323,375 is proposed for the 2004-05 Water Year. This budget includes \$174,500 for the Watermaster Office and \$148,875 for operation of gaging stations by the U.S.G.S.

SECTION 2 - INTRODUCTION

2.1 Background

On January 25, 1951, the United States of America filed Complaint No. 1247 in the United States District Court for the Southern District of California to seek a judicial determination of all respective water rights within the Santa Margarita River Watershed. The Final Judgment and Decree was entered on May 8, 1963, and appealed to the U. S. Court of Appeals. A Modified Final Judgment and Decree was entered on April 6, 1966. Among other things, the Decree provided that the Court:

. . . retains continuing jurisdiction of this cause as to the use of all surface waters within the watershed of the Santa Margarita River and all underground or sub-surface waters within the watershed of the Santa Margarita River, which are determined in any of the constituent parts of this Modified Final Judgment to be a part of the sub-surface flow of any specific river or creek, or which are determined in any of the constituent parts of this Modified Final Judgment to add to, contribute to, or support the Santa Margarita River stream system.

In March 1989, the Court appointed James S. Jenks as Watermaster to administer and enforce the provisions of the Modified Final Judgment and Decree and subsequent orders of the Court. The appointing Order described the Watermaster's powers and duties as well as procedures for funding and operating the Watermaster's office. Also in 1989, the Court appointed a Steering Committee that at the conclusion of 2002-03 was comprised of representatives from the United States, Eastern Municipal Water District, Fallbrook Public Utility District, Metropolitan Water District of Southern California, Pechanga Tribe, and Rancho California Water District. The purposes of the Steering Committee are to assist the Court, to facilitate litigation, and to assist the Watermaster.

2.2 Authority

Section II of the appointing Order requires that the Watermaster submit a written report containing his findings and conclusions to the Court promptly after the end of each water year.

2.3 Scope

The subjects addressed in this report are responsive to Section II of the appointing Order. Information and data contained in this report are based on information reported to the Watermaster by others. Therefore, the Watermaster does not guarantee the completeness and accuracy of the information presented in this report, although most of the data presented are based on measurements. Estimates by the Watermaster are so noted.

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SECTION 3 - SURFACE WATER AVAILABILITY AND USE

3.1 Surface Flow

Over the years, flows in the Santa Margarita River Watershed have been measured at the stations listed on Table 3.1. A number of these stations have been discontinued. During Water Year 2002-03 the U. S. Geological Survey (U.S.G.S.) operated 13 stations under an agreement with the Watermaster. These include three stations where Riverside County Flood Control District shares the local costs with the Watermaster. In addition to stream flows, the U.S.G.S. also measures water elevation at Vail Lake.

The U.S.G.S. also operates several stations in the watershed under contract with Camp Pendleton. These include stream gaging stations on DeLuz Creek, Fallbrook Creek and on the outlet channel and spillway for Lake O'Neill. The U.S.G.S. also operates a tidal water level recorder on the Santa Margarita River at its mouth.

Monthly flows for stations in Water Year 2002-03 are shown on Table 3.2. Those flows consist of U.S.G.S. discharge determinations available at the time this report is published. Official U.S.G.S. discharges for 2002-03 are published by the U.S.G.S. in its annual Water Resources Data report.

In considering the historical record of flow at these stations, it should be recognized that the long term averages include variations in watershed conditions such as level of development, groundwater production, return flows, impoundments and vegetative use as well as hydrologic conditions, changes in gaging station locations and other factors. Descriptions of the various historical locations of gaging stations may be found in the publication, *Water Resources Data - California*, which is published annually by the U.S.G.S. In addition, records of stream flow at the stations operated by the U.S.G.S. may be found on the Internet at <http://www.usgs.gov>.

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TABLE 3.1
SANTA MARGARITA RIVER WATERSHED
STREAM GAGING STATIONS
2002-03

STATION NAME	STATION NO.	AREA SQ MI	RECORDED BY	PERIOD OF RECORD											
				1920	1930	1940	1950	1960	1970	1980	1990	2000			
Temecula Creek Near Aguanga	11042400	131	USGS					8/57 ••	••••••••	••••••••	••••••••	••••••••	••••••••	••••	
Wilson Creek Above Vail Lake	11042490	122	USGS									10/89	10/94	•••••	
Temecula Creek At Vail Dam	11042520	320	USGS	2/23 ••••••••	••••••••	••••••••	••••••••	••••••••	••••••••	••••••••	10/77				
Vail Lake at Temecula (Reservoir Storage)	11042510	320	USGS			10/48	••	••••••••	••••••~•••	••••~•••••	••••••••	••••••••	••••••••	••••	
Pechanga Creek Near Temecula	11042631	13.8	USGS									10/87	••	••••••••	
Warm Springs Creek Near Murrieta	11042800	55.4	USGS									10/87	••	••••~•••••	
Santa Gertrudis Creek Near Temecula	11042900	90.1	USGS									10/87	••	••	
Murrieta Creek At Tenaja Road	11042700	30	USGS											10/97	
Murrieta Creek At Temecula	11043000	222	USGS	10/25	••••	••••~••••	••••~••••	••••~••••	••••~••••	••••~••••	••••~••••	••••~••••	••••~••••	••••~••••	
Santa Margarita River Near Temecula	11044000	588	USGS	2/23	••••~••••	••••~••••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	
Rainbow Creek Near Fallbrook	11044250	10.3	USGS											9/89	
Sandía Creek Near Fallbrook	11044350	21.1	USGS											9/89	
Santa Margarita River At FPUD Sump 1/	11044300	620	USGS	10/24	••••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	9/80	•	9/89	
Santa Margarita River Tributary Near Fallbrook	11044600	0.52	USGS						10/61	9/65	••••			10/92	
DeLuz Creek Near DeLuz	11044600	33	USGS											••••~••••	
DeLuz Creek Near Fallbrook 2/	11044900	47.5	USGS/ USMC				2/51	••••~••~••	••••~••~••	••••~••~••	77		•	9/89-9/90	
Santa Margarita River Near DeLuz Station	11045000	705	USGS	10/24 - 9/26	••										
Fallbrook Creek 3/ Near Fallbrook	11045300	6.97	USGS/ USMC						10/84	••••	9/76	••••~••~••	•	12/88	
Santa Margarita River At Ysidora 4/	11046000	723	USGS	3/23	••••~••~••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	••••~••~••	

WATER YEAR ENDING
1/ Period of record includes measurements for Santa Margarita near Fallbrook (#11044500) for period October 1924 to September 1980
2/ Recorded by USMC, Camp Pendleton October 1966 to 1977
3/ Recorded by USMC, Camp Pendleton prior to October 1993
4/ Station temporarily operated as SMR at USMC Diversion Dam near Ysidora #11045050 from February 26, 1999 to September 27, 2001

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TABLE 3.2
SANTA MARGARITA RIVER WATERSHED
MEASURED SURFACE WATER FLOW
2002-03
Quantities in Acre Feet

GAGING STATION	DRAINAGE AREA SQ MI	MONTH												WATER YEAR TOTAL	ANNUAL AVERAGE THRU 2002	YEARS OF RECORD THRU 2002
		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP			
Temecula Creek Near Aguanga	131	30	41	95	88	310	671	359	196	57	6	6	8	1,867	5,770	45
Pechanga Creek Near Temecula	13.8	0	0	37	1	89	232	23	0	0	1	0	0	383	610	15
Warm Springs Creek Near Murrieta	55.4	1	1	109	0	1,590	923	260	1	1	4	0	0	2,891	2,870	15
Santa Gertrudis Creek Near Temecula	90.2	0	7	215	0	1,160	480	182	0	0	11	0	0	2,055	2,700	15
Murrieta Creek At Tenaja Road	30	0	0	80	0	1,060	988	261	0	0	0	0	0	2,389		5
Murrieta Creek At Temecula	222	209	240	976	8	7,420	4,400	1,510	51	5	5	4	3	14,831	9,392	78
Santa Margarita River Near Temecula	588	192	271	1,360	732	8,900	5,410	2,350	676	549	517	497	477	21,931	13,915 20,390	54 (1949-2001) 26 (1923-48)
Rainbow Creek Near Fallbrook	10.3	2	26	107	15	279	453	213	47	11	4	3	2	1,161	2,620	13
Sandia Creek Near Fallbrook	21.1	186	275	583	286	1,340	1,710	1,170	701	521	347	230	230	7,561	6,810	13
Santa Margarita River At FPUD Sump	620	219	428	1,270	829	11,710	6,980	2,540	1,350	811	613	473	500	27,703	30,890	13
DeLuz Creek Near DeLuz	33	0	2	311	114	1,860	2,810	752	502	293	54	2	5	6,705	10,470	10 (1993-2002)
DeLuz Creek Near Fallbrook	47.5	0	0	0	0		Station Discontinued in February 2003							0	3,190	28 (1989-90) (1951-77)
Santa Margarita River At Ysidora	723	0	0	1,330	724	11,060	14,440	5,200	1,990	1,390	1,020	803	696	38,653	27,775 * 31,390	54 (1949-2002) 26 (1923-48)
Fallbrook Creek Near Fallbrook	6.97	0	13	112	22	351	225	169	35	26	12	1	0	966	1,361 1,462 **	14 (1989-2002) 12 (1965-76)

* Includes record of two years at Santa Margarita River at USMC Diversion Dam near Ysidora station

** Includes wastewater flows

N/A - Not Applicable

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Total flows at four long-term stations for Water Years 2001-02 and 2002-03 are compared with their averages in the tabulation below. Average flows for the Santa Margarita River stations near Temecula and near Ysidora are shown for two periods: before and after Vail Dam was constructed (1923 to 1948, and 1949 to 2001).

	<u>TOTAL FLOW</u>		<u>AVERAGE FLOW</u>
	<u>2001-02</u> <u>Acre Feet</u>	<u>2002-03</u> <u>Acre Feet</u>	<u>Through 2002</u> <u>Acre Feet</u>
Temecula Creek Near Aguanga	641	1,867	5,770 (1957-2002)
Murrieta Creek At Temecula	2,894	14,831	9,392 (1925-2002)
Santa Margarita River Near Temecula	3,350	21,931	13,915 (1949-2002) 20,390 (1923-1948)
Santa Margarita River Near Ysidora (various locations)	4,481	38,653	27,775 (1949-2002) 31,390 (1923-1948)

The foregoing tabulation indicates that 2002-03 was much wetter than the preceding year with flows for long-term stations on Murrieta Creek at Temecula, the Santa Margarita River near Temecula and the Santa Margarita River at Ysidora exceeding their long-term averages by 58%, 58% and 39% respectively. If the Santa Margarita River flows near Temecula and near Ysidora are adjusted for RCWD discharges, the two stations exceeded long-term averages by 25 and 23 percent respectively. Flows at the Temecula Creek near Aguanga were 68 percent less than the long-term average.

Monthly flows shown in Table 3.2 consist primarily of naturally occurring surface runoff, including return flows, except for Rancho California WD discharges into the Santa Margarita River and Murrieta Creek. Most of Rancho California WD discharges are pursuant to the Cooperative Water Resources Management Agreement between Camp Pendleton and Rancho California WD, as described in Section 11. During 2002-03 these discharges into the Santa Margarita River from Metropolitan Water District outlet WR-34 totaled 4,471 acre feet. The WR-34 outlet is located just upstream from the Santa Margarita River Gaging Station near Temecula.

During 2002-03, Rancho California WD also released 48 acre feet into Murrieta Creek from wells and 377 acre feet into Murrieta Creek from the System River Meter. The System River Meter refers to discharges directly from Rancho California WD's distribution system into Murrieta Creek at a location just upstream from the Murrieta Creek gaging station.

Rancho California WD also discharged 104 acre feet of treated wastewater into Murrieta Creek at a point about five miles upstream from the Murrieta Creek at Temecula gaging station. That quantity was released at a relatively uniform rate of 6AF/day (2MGD) during the month of October, after which the releases were discontinued.

3.2 Surface Water Diversions

Surface diversions to surface water storage and groundwater storage during 2001-02 and 2002-03 are shown in Table 3.3. In general, diversions to surface storage at Vail Lake and Lake O'Neill are computed as being equal to inflow less spill, however, diversion to surface storage at Vail Lake excludes inflow during the period from May 1 through October 31 when Permit 7032 does not allow such diversions. Inflow to Vail is calculated as the sum of evaporation, spill, releases and change of storage. Inflow into Vail Lake during the period when diversions are not permitted is released and not credited to groundwater storage. Representatives of the United States do not agree with this method of calculation.

Direct surface diversions for 2002-03 are shown in Table 3.4. The use is primarily irrigation although the diversions on the Pechanga Indian Reservation are into the domestic water system. Estimated consumptive uses, losses and returns are also shown.

TABLE 3.3

**SANTA MARGARITA RIVER WATERSHED
SURFACE WATER DIVERSIONS TO STORAGE
2002-03**

Quantities in Acre Feet

Surface Water Storage

	<u>Vail Lake</u>		<u>Lake O'Neill</u>	
	<u>2001-02</u>	<u>2002-03</u>	<u>2001-02</u>	<u>2002-03</u>
Storage end of prior year	20,200	18,130	918	135
Inflow - Total	1,215	3,057	248 ¹	2,937 ²
Inflow to be Bypassed	314	658	0	0
Spill	0	0	0	1,146
Diversions to Surface Storage	901 ³	2,399 ³	248 ⁴	1,791 ⁴
Annual Evaporation	3,285	3,206	225	353
Releases - Total	0	0	555	0
Release to GW Storage	(314) ⁵	0 ⁵	555	0
Apparent Seepage to GW	0	0	251 ⁶	743 ⁶
Change of Storage	(2,070)	(149)	(783)	695
Storage End of Year	18,130	17,981	135	830

Groundwater Storage

Recharge Release from Storage Facility	0	0	0	0
Direct Recharge	0	0	222	11,250

¹ 73 AF diverted from the Santa Margarita River and 175 AF estimated inflow from Fallbrook Creek

² 1,225 diverted from the Santa Margarita River and 1,712 estimated inflow from Fallbrook Creek

³ Inflow less Spill less Inflow (Oct 1 to Oct 31 and May 1 to Sept 30)

⁴ Inflow less Spill

⁵ Total Release less Inflow to be bypassed

⁶ Includes seepage losses, leakage through flashboards and unaccounted for water

TABLE 3.4

**SANTA MARGARITA RIVER WATERSHED
 SURFACE WATER DIVERSIONS TO USE
 2002-2003**

Quantities in Acre Feet

	<u>Surface Diversions</u>	<u>Consumptive Use¹</u>	<u>Losses²</u>	<u>Returns³</u>
Blue Bird Ranch	31	21	3	7
James Carter	52	35	5	12
Chambers	5	3.5	0.5	1
Cal June, Inc.	380	257	38	86
Strange	200	135	20	45
Agri-Empire, Inc. Kohler Canyon	148	100	15	33
Papac	38	25	4	9
Sage Ranch Nursery	100	68	10	22
Daily Family Trust	7	5	1	1
Pechanga Tribe	4	3	0.4	0.6
San Diego State University Foundation	<u>40</u>	<u>27</u>	<u>4</u>	<u>9</u>
TOTAL	1,005	679	100	226

¹ Consumptive use equals 75% of Diversions less Losses
² Losses equal 10% of Diversions
³ Returns equal 25% of Diversions less Losses

3.3 Water Storage

Major water storage facilities in the Santa Margarita River Watershed are listed on Table 3.5, together with the water in storage on September 30, 2002, and September 30, 2003. Total Santa Margarita River stream system water in storage at the end of Water Year 2002-03 totaled 18,811 acre feet, compared to 18,265 acre feet at the end of the previous year. Imported water in storage in Lake Skinner and Diamond Valley Lake, both operated by Metropolitan Water District of Southern California (MWD), is also shown on Table 3.5.

TABLE 3.5

SANTA MARGARITA RIVER WATERSHED
WATER IN STORAGE
2002-03
 Quantities in Acre Feet

<u>Santa Margarita River Storage</u>	<u>Total Capacity</u>	<u>Water in Storage</u>	
		<u>9/30/2002</u>	<u>9/30/2003</u>
Dunn Ranch Dam	90	0	0
Upper Chihuahua Creek Reservoir	± 47	0	0
Vail Lake	49,370	18,130	17,981
Lake O'Neill	<u>1,200</u>	<u>135</u>	<u>830</u>
Subtotal	50,707	18,265	18,811
 <u>Imported Water Storage</u>			
Lake Skinner	44,000	42,692	36,224
Diamond Valley Lake	800,000	729,388	655,209
 <u>TOTAL STORAGE</u>	 894,707	 790,345	 710,244

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SECTION 4 - SUBSURFACE WATER AVAILABILITY

4.1 General

Much of the water from the Santa Margarita River stream system is obtained by pumping subsurface water. The Court has identified two basic types of subsurface water in its interlocutory judgments. One type is vagrant, local, percolating waters that do not add to, support or contribute to the Santa Margarita River or its tributaries. Such waters have been determined to be outside the continuing jurisdiction of the Court. These waters are typically found in the basement complex and/or residuum deposits in the Watershed. Wells tapping these deposits typically have low yields.

Other subsurface waters were found by the Court to add to, contribute to and support the Santa Margarita River and/or its tributaries. Aquifers containing such waters have been designated by the Court as younger alluvium and older alluvium. Younger alluvial deposits are commonly exposed along streams and in valleys. Older alluvium may be found underneath younger alluvium and is not limited to areas along stream channels. Older alluvium may or may not be exposed at ground surface. The use of subsurface water found in younger and older alluvium is generally under the continuing jurisdiction of the Court and is reported upon in this report.

4.2 Extractions

Production of Santa Margarita River water by substantial water users in the Watershed from all sources is listed on Table 4.1 by hydrologic area along with estimated consumptive use and return flows. Recovery of imported water that has been directly recharged is not included in Table 4.1. Substantial water users include water purveyors as well as private irrigators who irrigate eight acres or more or use an equivalent quantity of water.

In 2002-03, production by purveyors totaled 34,780 acre feet, compared to 34,295 acre feet in 2001-02. Monthly quantities are shown in Appendix A and annual production for water years between 1966 and 2003 is shown in Appendix B.

The quantities of subsurface extractions by private irrigators are based on the irrigated acreage and the crop type. These quantities are reported in Appendix C to total 6,807 acre feet in 2002-03. Of the subsurface extractions, 75 percent is estimated to have been consumptively used and 25 percent to have been return flow. Return flow is that portion of the total deliveries that is not consumed. Although return flows average about 25 percent, such flows are affected with the type of use (domestic, commercial and irrigation), the type of irrigation application (drip, micro-sprinkler, furrow), and exports from watersheds.

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE 4.1

SANTA MARGARITA RIVER WATERSHED
SANTA MARGARITA RIVER WATER PRODUCTION BY SUBSTANTIAL USERS

2002-03

HYDROLOGIC AREA	WATER PURVEYOR PRODUCTION ACRE FEET	OTHER IRRIGATED ACRES	OTHER IRRIGATION PRODUCTION ACRE FEET	TOTAL GROUNDWATER PRODUCTION ACRE FEET	SURFACE WATER DIVERSIONS ACRE FEET	TOTAL PRODUCTION ACRE FEET	ESTIMATED CONSUMPTIVE USE ACRE FEET ^{1/}	ESTIMATED RETURN FLOW ACRE FEET
Wilson Creek Above Aguanga GWA Includes Anza Valley	342	1,264 ^{2/}	2,007	2,349	0	2,349	1,762	587
	<i>(Lake Riverside, Anza MWC, Cahulla)</i>							
Temecula Creek Above Aguanga GWA	11	540	1,184	1,195	186	1,381	1,022	359
	<i>(Butterfield Oaks MHP)</i>							
Aguanga GWA	277	341	1,239	1,516	200	1,716	1,272	444
	<i>(Outdoor Resorts) (Jojoba Hills)</i>							
Upper Murrieta Creek (Warm Springs Creek above 7S/3W-14)	0	0	0	0	0	0	0	0
Lower Murrieta Creek (Santa Gertrudis/Tucalota Creek above 7S/2W-18)	0	410	43	43	100	143	100	43
Murrieta-Temecula GWA	27,670	814	1,756	29,426	56	29,482	22,107	7,375
	<i>(RCWD, MCWD, EMWD, Pechanga and Hawthorn)</i>							
Santa Margarita River Below the Gorge								
Deluz Creek	0	243	558	558	43	601	448	153
Sandia Creek	0	65	0	0	380	380	257	124
Rainbow Creek	0	0	0	0	0	0	0	0
Santa Margarita River	6,480	20	20	6,500	40	6,540	1,462	2,999
	<i>(USMC)</i>							
TOTAL	34,780	3,697	6,807	41,587	1,005 ^{3/}	42,592	28,429	12,084

1/ Estimated consumptive use is equal to 75% of groundwater production plus 75% of surface diversions less 10%
except for Camp Pendleton where net export of 2,079 acre feet is excluded and return flows include measured wastewater returns

2/ Includes lands overlying deep aquifer in Anza Valley

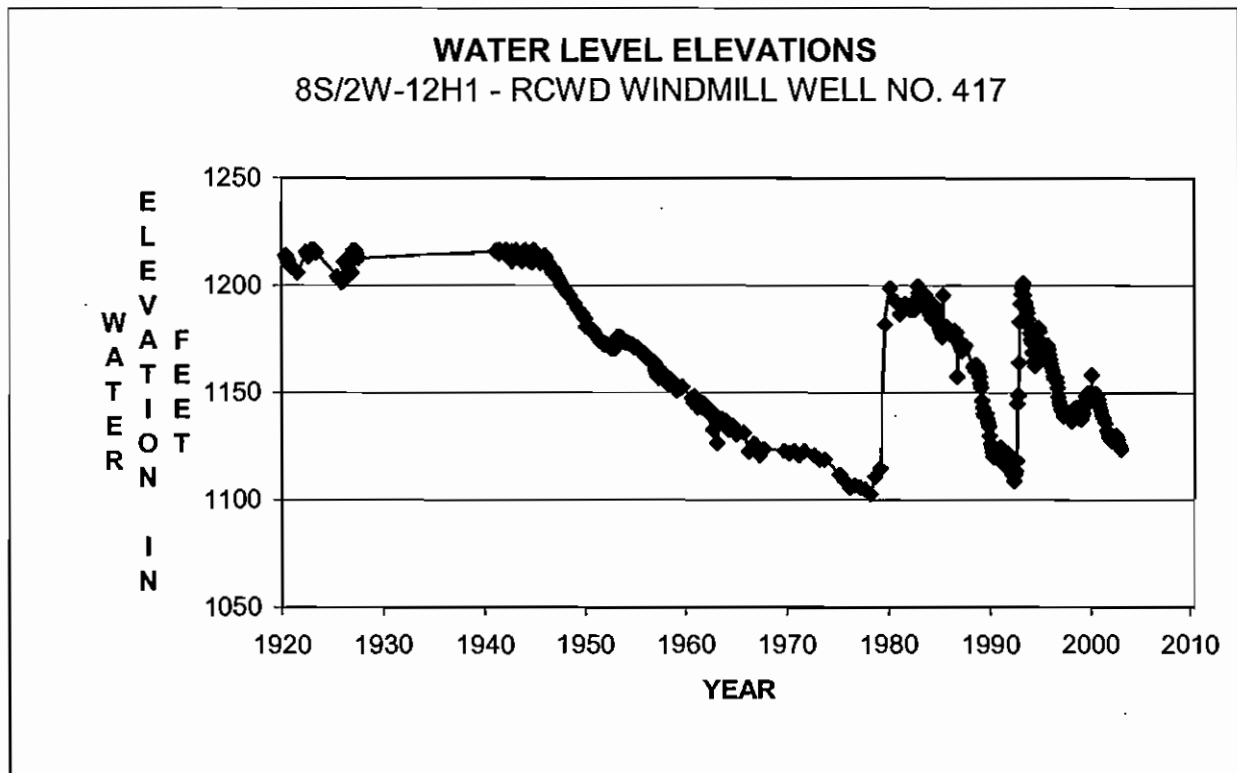
3/ Includes surface diversion for irrigation, commercial and domestic use.

Total production of Santa Margarita River water, surface diversions and groundwater production by water purveyors and private irrigators are listed on Table 4.1.

4.3 Water Levels

Water levels in selected wells in the Watershed are measured periodically by various entities. Historical water levels in five wells at various locations in the Watershed are shown in this report on Figures 4.1, 4.2, 4.3, 4.4 and 4.5. Following the recent series of dry years water levels in many wells are in the lower portion of the historical range. Figure 4.1 shows water levels in Well No. 8S/2W-12H1 (Windmill Well) located in the Rancho California WD service area downstream from Vail Lake. Note the extended drawdown from 1945 to 1978, the major recoveries during the wet years in 1980 and 1993, and the effect of relatively dry years after 1980 and after 1993. Water levels declined 3.9 feet in 2002-03. It should be noted that the Windmill Well is located in Pauba Valley about 1.5 miles downslope from the Valle de los Caballos (VDC) recharge area, where releases from Vail Lake as well as imported water are recharged. In 2002-03, 15,694 acre feet of imported water were recharged in the VDC of which 80 percent was recovered in the same year.

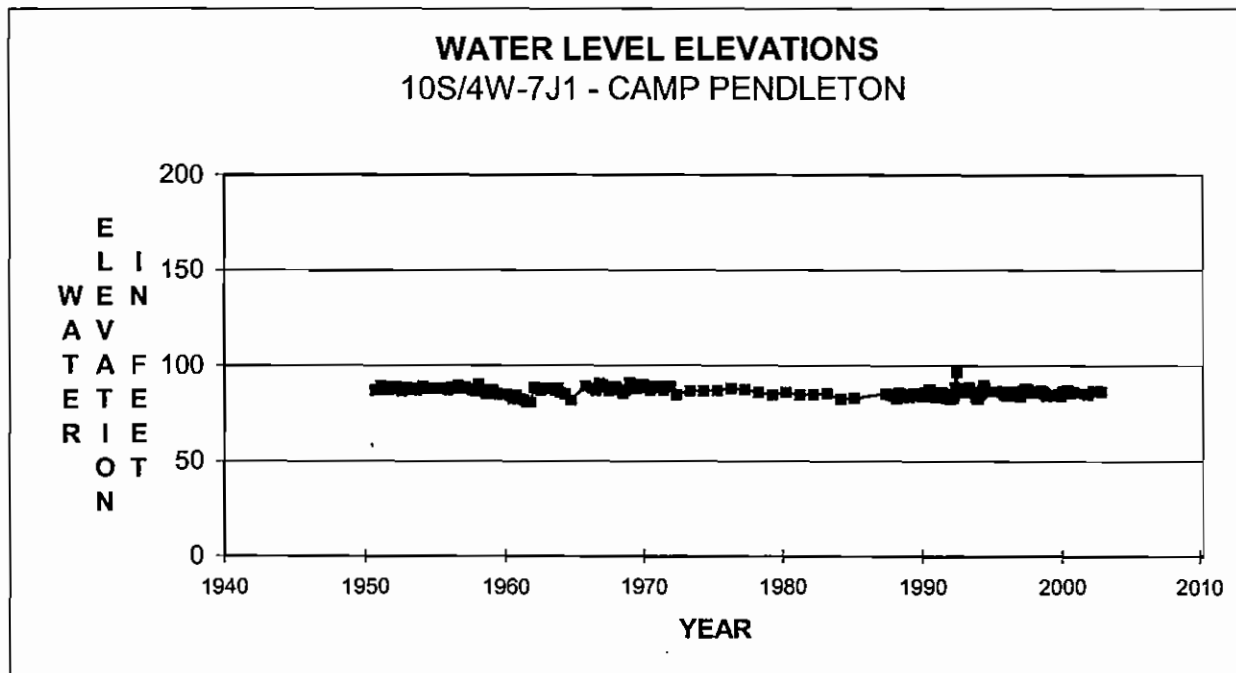
FIGURE 4.1



Collar El. 1216.7 Feet; Depth 515 Feet; Drilled in Alluvium
Ref: RCWD reports (1920-2003)

Figure 4.2 shows water levels at Camp Pendleton in Well No. 10S/4W-7J1, a monitoring well located in the Upper Sub-basin. Fluctuations in recent years illustrate recharge during the winter months and drawdown each summer, with the water levels generally between 82 and 90 feet in elevation. Water levels in Well 7J1 rose 1.4 feet between the fall of 2002 and the fall of 2003.

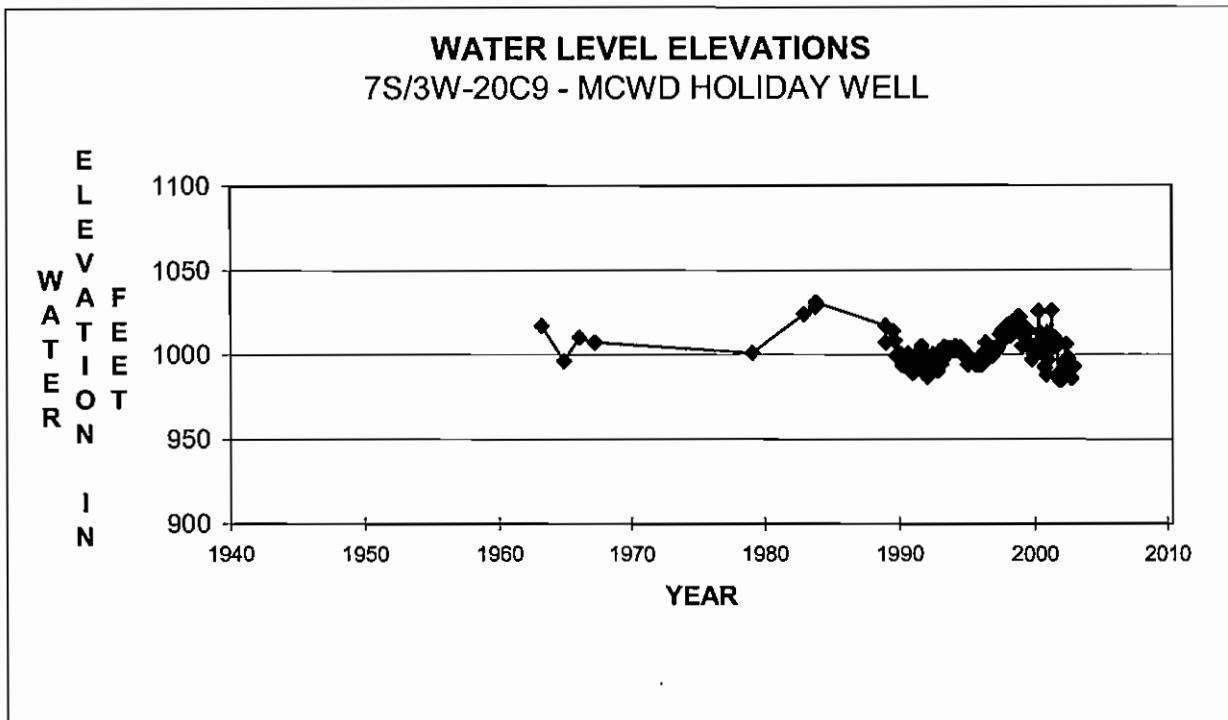
FIGURE 4.2



Ground El. 93 Feet; Depth 138.8 Feet; Perf. Unknown; Drilled in Alluvium
Camp Pendleton Records (1950-72) (1988-2003); Leeds Hill Study (1973-85) Dates Estimated

Figure 4.3 shows water levels from production Well No. 7S/3W-20C9 (Holiday Well) in the Murrieta County Water District service area. Water levels in this well rose 8 feet since the fall of 2002. Water levels in the Lynch Well, 7S/3W-17R2, which serves as a monitoring well and had no production in 2002-03, declined one foot.

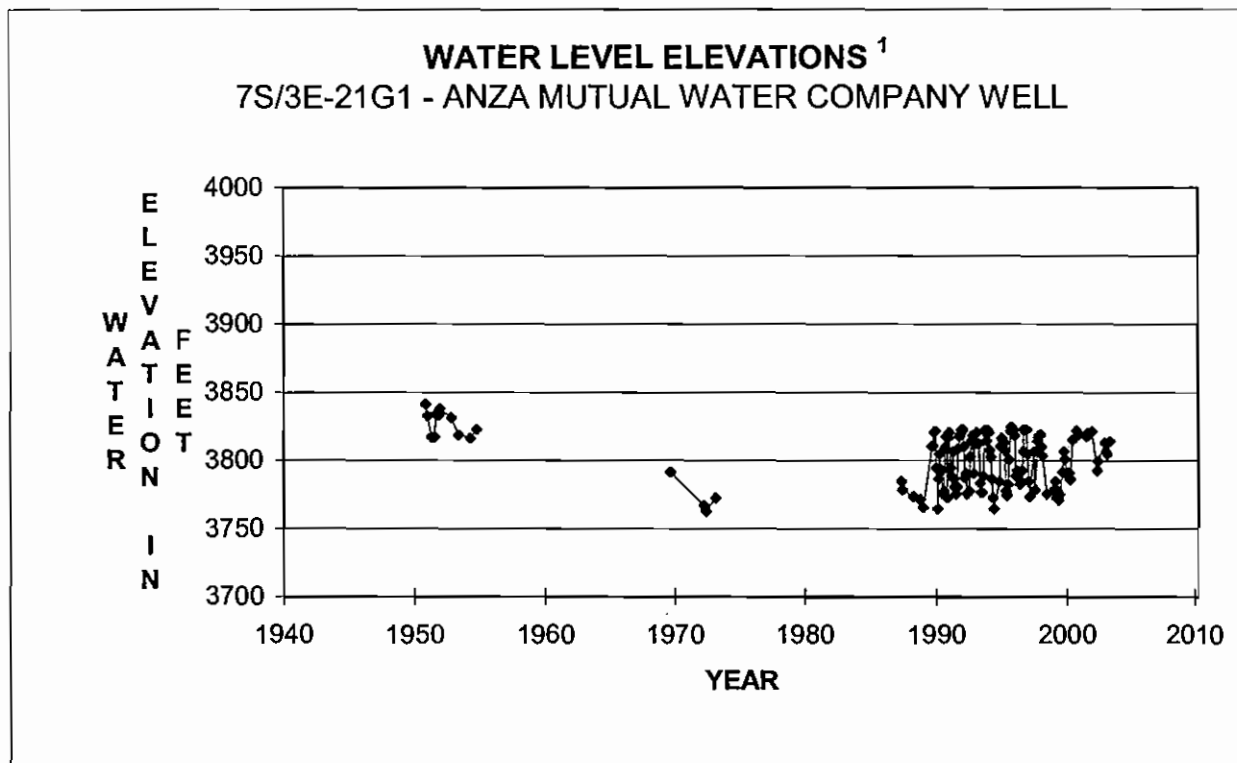
FIGURE 4.3



Ground El. 1090 Feet; Depth 307 Feet; Perf. 60 - 307 Feet
Murrieta County Water District Records

Figure 4.4 shows water levels for Well No. 7S/3E-21G1, Anza Mutual Water Company's Well No. 1, a production well located in the Anza Valley. Water levels in this well rose 21.5 feet this year. As may be noted from Figure 4.4, recent measurements show annual 50 foot fluctuations in groundwater levels at this well, partly in response to the operation of nearby irrigation wells. Current levels are within the historical range.

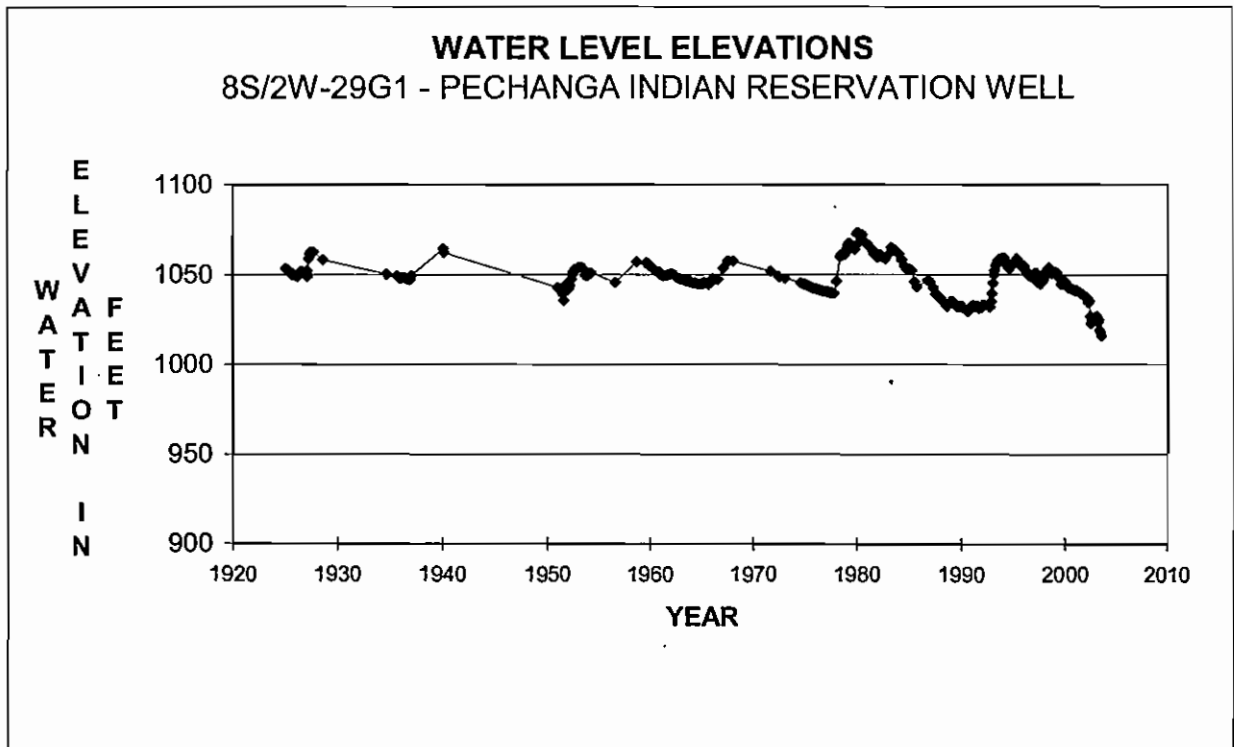
FIGURE 4.4



¹ Static water levels plotted after April 1999
Ground El. 3862.6 Feet; Depth 260 Feet; Perf. 20 - 260 Feet; Drilled in Alluvium
Anza Mutual Water Co. Well No. 1 (1987-2003); DWR Bulletin 91-22 (1950-73)

Figure 4.5 shows water levels at Well No. 8S/2W-29G1, located in Wolf Valley on the Kelsey Tract of the Pechanga Indian Reservation. The well is not used for water production and its depth as measured in 1972 was 159 feet. Water levels collected since 1925 reflect unconfined groundwater levels. As shown on Figure 4.5 the groundwater levels have fluctuated within a 44 foot range above and below elevation 1050 feet in response to wet years and dry periods. Water levels in this well fell 4.1 feet in 2002-03.

FIGURE 4.5



Ground El. 1091.1 Feet; Depth 159.1 Feet
U.S. Geological Survey Records

Changes in water levels in the above noted wells between the end of the previous water year and the end of the 2003 water year are shown below:

<u>Well</u>	<u>Water Elevation 2002 Feet</u>	<u>Water Elevation 2003 Feet</u>	<u>Change in Water Level Feet</u>	
RCWD 8S/2W-12H1	1127.4	1123.5	Down	3.9
USMC 10S/4W-7J1	85.0	86.4	Up	1.4
MCWD 7S/3W-20C9	985.0	993.0	Up	8.0
Anza MWC 7S/3E-21G1	3792.6	3814.1	Up	21.5
Pechanga IR 8S/2W-29G1	1022.9	1018.8	Down	4.1

4.4. Groundwater Storage

Bulletin 118 Update 2003 prepared by the State of California Department of Water Resources describes three groundwater basins in the Santa Margarita River Watershed: Santa Margarita Valley, Temecula Valley, and Coahuila Valley. These basins are also known as the Santa Margarita Groundwater Basin, the Murrieta-Temecula Groundwater Basin, and the Anza Groundwater Basin. Groundwater storage in each of these basins is described in this section.

Santa Margarita Groundwater Basin – The Santa Margarita Groundwater Basin is located along the Santa Margarita River at Camp Pendleton and includes three sub-basins: Upper, Chappo, and Ysidora. Useable groundwater storage in place at the end of water year 2002-03 is summarized in Table 4.2. Table 4.2 shows that the combined storage in the three sub-basins between the depths of 5 and 100 feet is 48,100 acre feet. However, much of that storage is below sea level and the useable storage capacity amounts to 28,700 acre feet.

Water levels in wells in each of the sub-basins were reported by Camp Pendleton during 2003. The unused storage below a depth of five feet is shown on the tabulation to be 1,059 acre feet, leaving a total useable quantity in storage of 27,641 acre feet. It may be noted that classification of that storage as useable is made without allowances for maintenance of riparian habitat.

TABLE 4.2

SANTA MARGARITA RIVER WATERSHED
GROUNDWATER STORAGE AT CAMP PENDLETON
2002-03
 Quantities in Acre Feet

	<u>Sub-basin</u>			
	<u>Upper</u>	<u>Chappo</u>	<u>Ysidora</u>	<u>Total</u>
I. Available Storage				
A. Total Storage ¹ AF	12,500	27,000	8,600	48,100
B. Useable Storage AF	12,500	15,000 ²	1,200 ³	28,700
II. Unused Storage				
A. Wells used for Depth	10S/4W-7J1	10S/4W-18L1	11S/5W-11D4	
B. Depth to Water - Feet	6.6	7.0	6.2	
C. Depth below 5 Feet	1.6	2.0	1.2	
D. Average Area - Acres	840	2,520	1,060	
E. Unused Storage below 5 Feet	290	655	114	1,059
III. Useable Storage in Place – AF ⁴	12,210	14,345	1,086	27,641
IV. Useable Storage in Place 2001-02	11,957	13,591	981	26,529
V. Change in Storage 2002-03	+ 253	+ 754	+ 105	+ 1,112

¹ Computed by U.S.G.S. as the storage between depths of 5 and 100 feet.

² Storage between 5 foot depth and sea level.

³ Storage between 5 foot depth and 10 feet above sea level.

⁴ Does not include stored water reserved for riparian habitat.

Note: Groundwater depths measured at the end of September 2003

Murrieta-Temecula Groundwater Basin – The Murrieta-Temecula Groundwater Basin is located along Murrieta and Temecula Creeks in the Upper Santa Margarita River Watershed. Total groundwater storage at the end of water year 2001 was computed for each of 22 hydrologic subareas that make up the Groundwater Basin. These computations were based on the areal extent of each subarea, the thickness of each of three aquifers, (younger alluvium, Pauba aquifer and Temecula aquifer), a specific yield for each aquifer, and the depth to water in each aquifer at the end of the water year. Specific yields were based on unconfined conditions for all aquifers. The total groundwater storage in the uppermost 500 feet as of September 30, 2001, was estimated at 1,340,556 acre feet.

Annual changes in groundwater storage have been computed for the years since 2001 using two methodologies – a water budget method and a groundwater level method. The water budget method determines the change in storage as the difference between the major elements of inflow and outflow to the groundwater area. Table 4.3 shows the changes for water years 2002 and 2003 to be minus 7,382 acre feet and minus 3,937 acre feet respectively.

The groundwater level method is based on the changes in water levels in key wells in each of the 22 hydrologic subareas as shown on Table 4.4. Unfortunately water levels were not available in 2003 for key wells in Subareas 5, 16 and 17. In Subarea 5 water levels for Well No. 102, a lightly used production well, are used instead. Subareas 16 and 17 overlie the Temecula aquifer that has a storativity of 0.0036 so water level changes in those subareas produce relatively minor storage changes compared to a similar change in the younger alluvium or Pauba aquifers. There was no groundwater production in Subarea 16 in 2002-03 and there are no other water levels available for Subarea 17. Changes in storage under the groundwater level method are shown to be minus 4,824 acre feet and minus 7,778 acre feet for water years 2002 and 2003 respectively.

The foregoing two methods are based on independent measurements and estimates, although the resulting approximations of the change of storage are generally comparable. However it will take testing over a number of years under varying hydrologic conditions to refine these approaches. At present it may be concluded that the general order of magnitude of the change in storage in water years 2002 and 2003 may be in the approximate range of minus 5,000 to minus 8,000 acre feet per year.

These values will be compared with those computed with the groundwater model when the model is updated.

TABLE 4.3

SANTA MARGARITA RIVER WATERSHED
CHANGES IN GROUNDWATER STORAGE
MURRIETA-TEMECULA GROUNDWATER AREA
Water Budget Method
Quantities in Acre Feet

<u>Elements of Inflow</u>	<u>Water Year Ending</u>	
	2002	2003
Releases from Vail ¹	0	0
Releases from Lake Skinner ²	146	67
Freshwater Releases to Stream ³	715	4,896
Reclaimed Water Released to Stream ⁴	2,180	104
Recharged Imported Water ⁵	16,265	15,694
Return Flow from RCWD Groundwater Production ⁶	9,132	8,782
Return Flow from Import Direct Use ⁷	3,607	3,745
Return Flow from Applied Wastewater ⁸	2,153	1,684
Underflow and Tributary Inflow ⁹	4,932	24,874
Subtotal	39,130	59,846
 <u>Elements of Outflow</u>		
Riparian Evapotranspiration and Underflow ¹⁰	508	508
Total RCWD Groundwater Production ¹¹	39,706	38,184
Net Pumping by Others ¹²	2,948	3,160
Surface Outflow ¹³	3,350	21,931
Subtotal	46,512	63,783
 <u>Change in Groundwater Storage</u>	 (7,382)	 (3,937)

1 - Table A-7, Vail Release and Recharge

2 - Section 5.4

3 - Table A-7, SMR Release

4 - Table A-7, Reclaimed Wastewater, Murrieta Creek Discharge

5 - Table A-7, Footnote 2

6 - Table 7.8, Total Production times 0.23

7 - Rancho Division Imports, Section 7.2 RCWD, Imported Return Flows, times 0.23

8 - Reclaimed Wastewater Table A-7, Reuse in SMRW plus Table A-1, Reuse in SMRW, times 0.23

9 - Murrieta Creek Flow times 1.6697 which is based on a correlation between Murrieta Creek flow and Tributary Inflow, Areal Recharge and Subsurface Inflow for the period 1977-1998 as shown in Table II-10, Vol. II, Geology and Hydrology, Surface and Ground Water Model of the Murrieta-Temecula Ground Water Basin, California, dated January 31, 2003.

10 - Table II-10, Vol. II, Geology and Hydrology, Surface and Ground Water Model of the Murrieta-Temecula Ground Water Basin, California, dated January 31, 2003.

11 - Table 7.8 Total Production

12 - The sum of Groundwater Production from Table A-5, A-1, Appendix C Murrieta-Temecula Groundwater Area, times .77

13 - Table 3.2 Santa Margarita near Temecula

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SANTA MARGARITA RIVER WATERSHED

TABLE 4.4

SANTA MARGARITA RIVER WATERSHED
CHANGES IN USEABLE GROUNDWATER STORAGE
MURRIETA-TEMECULA GROUNDWATER AREA
Groundwater Level Method

Subarea	Key Aquifer	Specific Yield/ Storativity	Key Well	Aquifer Area Acres	Water Depth at End of Water Year			Change in Depth Feet		Change in Storage in Water Year Acre Feet	
					2001	2002	2003	2001 - 2002	2002 - 2003	2002	2003
1	Temecula	0.0036	301	1371	141.36	131.68	182.82	9.68	(51.14)	48	(252)
2	Pauba	0.0398	439	479	36.12	40.97	35.92	(4.85)	5.05	(92)	96
3	Pauba	0.0309	146	802	29.02	33.95	28.51	(4.93)	5.44	(122)	135
4	Pauba	0.0350	401	694	40.61	77.35	97.21	(36.74)	(19.86)	(892)	(482)
5	Pauba	0.0319	402 ¹	1322	---	---	---	---	---	---	---
6	Pauba	0.0698	495	1562	65.47	73.07	77.00	(7.60)	(3.93)	(829)	(428)
7	Pauba	0.0012	211 ⁴	719	163.98	166.12	145.89	(2.14)	20.23	(2)	17
8	Qyal	0.20	492	339	30.60	30.48	28.32	0.12	2.16	8	146
	Pauba	0.0891	492	496	30.60	30.48	28.32	0.12	2.16	5	95
9	Temecula	0.0036	410	2066	307.75	286.85	289.46	20.90	(2.61)	155	(19)
10	Qyal	0.20	426	1438	42.42	44.95	41.46	(2.53)	3.49	(728)	1,004
	Pauba	0.0746	426	1165	42.42	44.95	41.46	(2.53)	3.49	(220)	303
11	Qyal	0.20	422	1405	57.74	53.55	57.86	4.19	(4.31)	1,177	(1,211)
	Pauba	0.0634	422	1413	57.74	53.55	57.86	4.19	(4.31)	375	(386)
12	Qyal	0.20	417	1769	77.00	89.33	93.17	(12.33)	(3.84)	(4,362)	(1,359)
	Pauba	0.0422	417	752	77.00	89.33	93.17	(12.33)	(3.84)	(391)	(122)
13	Qyal	0.20	414 ²	898	62.07	60.71	58.60	1.36	2.11	244	379
	Pauba	0.0198	414 ²	398	62.07	60.71	58.60	1.36	2.11	11	17
14	Temecula	0.0036	462	2084	390.62	400.18	423.76	(9.56)	(23.58)	(72)	(177)
15	Temecula	0.0036	464	1347	313.31	314.88	315.33	(1.57)	(0.45)	(8)	(2)
16	Temecula	0.0036	209	1967	---	---	---	---	---	---	---
17	Temecula	0.0036	139 ³	2008	451.31	451.40	---	(0.09)	---	(1)	---
18	Pauba	0.0967	129 ⁴	1546	198.02	197.33	199.00	0.69	(1.67)	103	(250)
19	Temecula	0.0036	466	1562	309.75	277.24	321.37	32.51	(44.13)	183	(248)
20	Pauba	0.0738	493	3231	258.24	254.00	275.35	4.24	(21.35)	1,011	(5,091)
21	Pauba	0.1392	463	2303	55.37	56.70	56.42	(1.33)	0.28	(426)	90
MCWD	Pauba	0.0325	Lynch	1008	44.00	44.00	45.00	0.00	(1.00)	0	(33)
TOTAL										(4,824)	(7,778)

1 - Well 402 not measured -little production in Subarea 5, subarea excluded

2 - For 2002 used reading on June 30, 2002; for 2003 used January 2003

3 - For 1999 used reading of September 1999; for 2002 used reading on April 7, 2002; subarea excluded in 2003

4 - For 2003 used reading of July 27, 2003

Anza Groundwater Basin – The Anza Groundwater Basin is located along Cahuilla Creek in the upper portion of the Santa Margarita River Watershed.

No recent groundwater levels are available for use in computing useable storage at the end of water year 2002-03.

The most recent study that determined storage volumes was conducted by Riverside County in 1990. That study concluded that the groundwater storage of about 182,200 acre feet in 1950 had decreased to about 165,000 acre feet in 1986. The study also concluded that “. . . basin hydrogeologic features, production facilities conditions, and locations/depths of storage . . .” limited the useable portion to 40% of the groundwater storage or about 56,200 acre feet in 1986.

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SECTION 5 - IMPORTS/EXPORTS

5.1 General

Court Orders require the Watermaster to determine the quantities of imported water used in the Watershed. Most of the water imported into the Santa Margarita River Watershed is delivered by Metropolitan Water District of Southern California (MWD) to local districts. MWD obtains its water from the State Water Project (SWP) and the Colorado River. Both the SWP and the Colorado River system have major storage reservoirs to provide long-term carryover storage. The quantities of water in storage at the end of the water year in the major reservoirs in each system are indicated on Table 5.1. Total storage in the SWP for the last ten years is shown graphically on Figure 5.1. Similarly, total storage for the Colorado River Reservoirs for the last ten years is shown on Figure 5.2. It may be seen from Table 5.1 that during Water Year 2002-03 water in storage in the SWP increased from 2.46 million acre feet on September 30, 2002 to 3.60 million acre feet on September 30, 2003. Storage on September 30, 2003 corresponds to about 68 percent of the total SWP storage capacity.

Water in storage in the Colorado River system declined 3.9 million acre feet from the prior year to 33.7 million acre feet on September 30, 2002. On September 30, 2003 those reservoirs contained 52 percent of their total combined capacity.

The State Department of Water Resources prepares projections of water availability in the SWP for the coming year (2004) on a monthly basis from February through May. The report dated May 1, 2004, indicates that statewide precipitation October 1 through April 30 was 90 percent of average. As of May 1, the SWP has approved delivery of 65 percent of the requests for deliveries in the year 2004.

The following entities imported water directly or indirectly from MWD into the Santa Margarita River Watershed:

- Eastern Municipal Water District
- Elsinore Valley Municipal Water District
- Fallbrook Public Utility District
- Murrieta County Water District
- Rainbow Municipal Water District
- Rancho California Water District
- U. S. Naval Weapons Station – Fallbrook Annex
- Western Municipal Water District

TABLE 5.1

**SANTA MARGARITA RIVER WATERSHED
STORAGE IN STATE WATER PROJECT
AND COLORADO RIVER RESERVOIRS**

Thousands of Acre Feet

STATE WATER PROJECT RESERVOIRS											
Reservoir	Total Capacity	Water in Storage - September 30									
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Oroville	3,540	1,683	2,897	2,736	2,140	2,832	2,427	1,920	1,488	1,400	2,284
San Luis (State Share)	1,060	394	1,067	740	462	900	592	388	516	394	653
Pyramid	171	160	168	158	163	161	155	164	162	165	165
Castaic	324	237	297	284	237	306	288	285	287	310	314
Silverwood	73	68	54	40	73	71	72	70	72	72	70
Perris	132	110	126	126	105	124	125	110	122	115	114
Total	5,300	2,652	4,609	4,084	3,180	4,394	3,659	2,937	2,647	2,456	3,600
Percent of Capacity		50%	87%	77%	60%	83%	69%	55%	50%	46%	68%

MAJOR COLORADO RIVER RESERVOIRS											
Reservoir	Total Capacity	Water in Storage - September 30									
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Flaming Gorge	3,789	2,887	3,488	3,364	3,599	3,580	3,425	3,010	2,982	2,675	2,635
Blue Mesa	941	615	782	686	761	624	740	560	597	275	387
Navajo	1,709	1,400	1,556	1,203	1,543	1,380	1,558	1,357	1,409	872	729
Powell	27,000	17,772	22,311	21,155	22,802	22,404	22,997	20,939	19,135	14,468	12,091
Mead	28,537	19,930	20,714	21,614	23,769	25,126	24,592	22,444	19,873	17,093	15,618
Mohave	1,818	1,467	1,635	1,578	1,674	1,729	1,515	1,523	1,610	1,577	1,643
Havasu	648	571	588	597	580	565	584	566	567	565	562
Total	64,442	44,642	51,074	50,197	54,728	55,408	55,411	50,399	46,173	37,525	33,665
Percent of Capacity		69%	79%	78%	85%	86%	86%	78%	72%	58%	52%

FIGURE 5.1

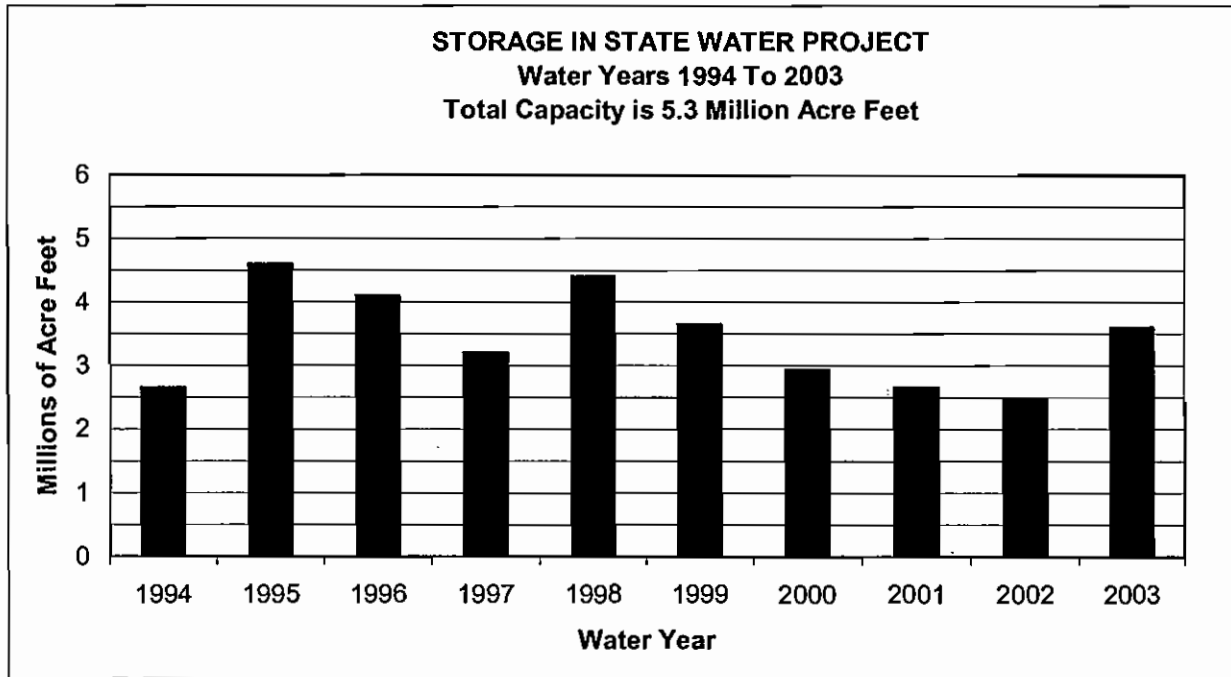
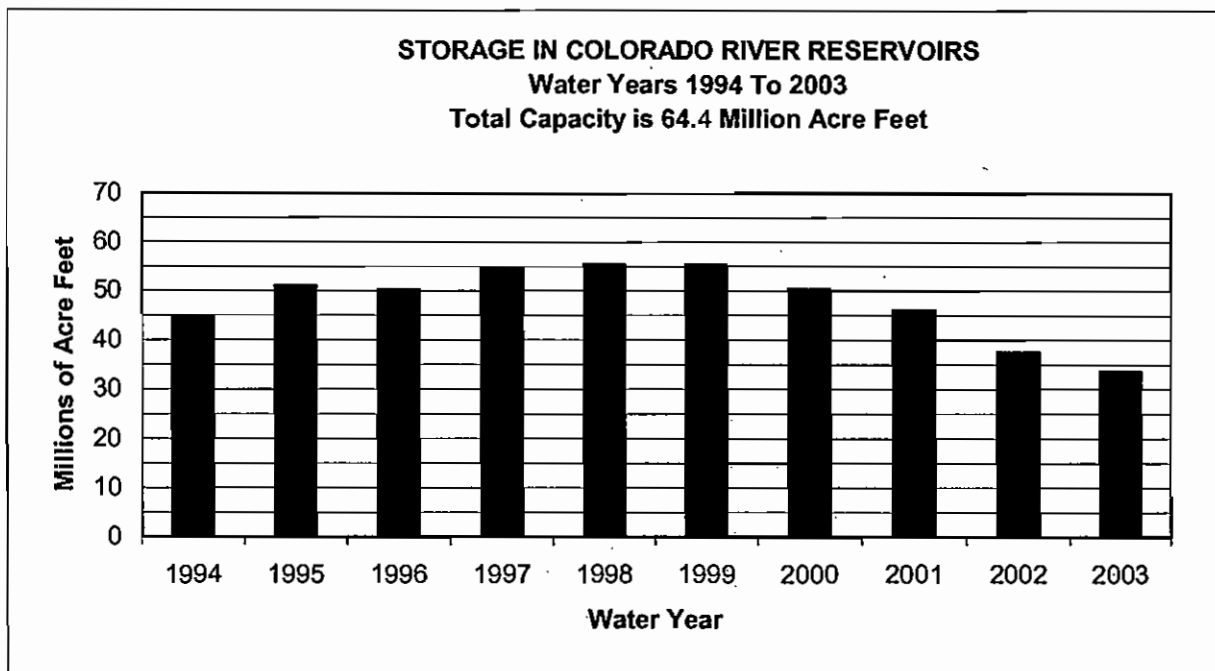


FIGURE 5.2



In addition to net deliveries through member agencies, MWD, pursuant to a Court Order, delivered 495 acre feet of water for irrigation of lands in Domenigoni Valley within the Santa Margarita Watershed during 2002-03. MWD did not import water for construction use or for groundwater recharge.

Water is also imported into the Santa Margarita River Watershed from adjacent watersheds. Such importation occurs from the Santa Ana Watershed where Elsinore Valley MWD pumps water from wells outside the Santa Margarita River Watershed or imports water through EMWD, but delivers water to a portion of its service area that is inside the Santa Margarita River Watershed.

At Camp Pendleton, there is a pipeline connection to wells located in the Las Flores Creek Watershed to the north of the Santa Margarita River Watershed. Water can be either imported or exported through that line, depending on relative water demands and pumping capacities.

Exportations from the Santa Margarita River Watershed include water pumped at Camp Pendleton that is used in the San Luis Rey River Watershed to the south or in the Las Flores Creek Watershed to the north. Some of the water exported at Camp Pendleton is returned to the Watershed as wastewater. Wastewater from the Fallbrook area and the Naval Weapons Station located on Camp Pendleton is exported by the Fallbrook Public Utility District and wastewater in the Elsinore Valley MWD is exported by that district. Rancho California WD exports water into the San Mateo Creek Watershed.

Eastern MWD uses a 24-inch pipeline along Winchester Road to transport wastewater from the Temecula Valley Regional Water Reclamation Facility to areas within the Watershed for reuse as well as for export of up to 10 MGD from the Watershed. A total of 7,636 acre feet of treated wastewater were exported by Eastern MWD in 2002-03.

The following paragraphs of this report describe imports and exports during Water Year 2002-03 and during the period 1966-2003. There is also discussion of MWD's Lake Skinner and Diamond Valley Lake operations.

5.2 Water Year 2002-03

During 2002-03 a total of 78,200 acre feet of water were imported and distributed in the Santa Margarita River Watershed. This compares with 81,873 acre feet in 2001-02 and represents a 4.5 percent decrease. Most of the decrease is related to a reduction in agricultural use in Rancho California Water District. Water quantities imported into and exported from the Santa Margarita River Watershed for months during Water Year 2002-03 are listed on Table 5.2

TABLE 5.2

SANTA MARGARITA RIVER WATERSHED
IMPORTS/EXPORTS

2002-03

Quantities in Acre Feet

YEAR MONTH	NET IMPORTS										EXPORTS									
	EASTERN MWD	EL SINORE VALLEY MWD	FALLBROOK PUD	MWD 1/	MURRIETA COUNTY WD	RAINBOW MWD	RANCHO CALWD	U.S. NAVAL WS	WESTERN MWD 2/	TOTAL IMPORTS	EXPORTS	RECHARGED	IMPORT	NET EXPORT	U.S. NAVAL WS	EASTERN MWD	EL SINORE VALLEY MWD	FALLBROOK PUD	TOTAL EXPORTS	
2002																				
OCT	489	638	889	30	0	168	5,119	7	4	7,344	422	162	154	260	0.8	568	41	127	997	
NOV	704	441	668	25	0	141	2,790	7	3	4,779	261	154	107	107	0.7	700	32	136	976	
DEC	381	408	399	3	0	107	1,778	3	3	3,082	213	153	60	60	0.7	666	52	142	921	
2003																				
JAN	453	412	688	102	0	59	2,629	4	3	4,350	206	133	144	73	0.8	705	43	139	961	
FEB	249	375	412	7	0	117	2,248	5	2	3,415	188	144	143	44	1.3	620	38	129	832	
MAR	643	343	337	2	0	47	2,198	7	3	3,580	234	143	143	91	1.3	743	46 A	163	1,044	
APR	749	416	588	0	0	98	2,689	7	2	4,549	246	128	128	118	1.0	636	46 A	150	951	
MAY	1,150	488	731	29	0	104	4,621	11	3	7,137	316	165	165	151	0.8	683	41	153	1,029	
JUNE	802	869	859	95	1	109	4,758	12	4	7,509	346	111	111	235	0.6	471	40	140	887	
JULY	1,274	815	1,175	94	24	114	7,386	9	5	10,896	442	115	115	327	0.6	555	34	147	1,064	
AUG	1,401	852	1,265	78	30	205	7,938	9	5	11,763	464	136	136	328	0.9	596	30	145	1,100	
SEPT	767	1,034	1,119	30	47	241	6,526	7	5	9,776	429	144	144	285	0.8	693	40	135	1,154	
TOTAL	9,062	7,091	9,130	495	102	1,510	50,680	88	42	78,200	3,767	1,688	2,079	2,079	10	7,636	483	1,706	11,914	

1/ Metropolitan Water District direct deliveries in Domingon Valley

2/ Improvement District A - Rainbow Canyon Only (WR-13)

A = Average

The quality of the water supplies imported through the MWD system in 2002-03 is indicated by the average monthly total dissolved solids at the Skinner Treatment Plant effluent line as shown on Table 5.3. The table also shows the percent of imported water obtained from the SWP. Water imported by Elsinore Valley MWD has the same quality as the MWD system.

5.3 Water Years 1966-2003

Water quantities imported by districts into the Santa Margarita River Watershed during Water Years 1966-2003 are shown on Table 5.4. Total imports to these districts are measured, however some districts serve lands outside the Watershed. For these districts, which include Eastern MWD, Elsinore Valley MWD, Fallbrook PUD and Rainbow MWD, the portion delivered in the Santa Margarita River Watershed must be estimated.

Review of the historical trend of total imports shown on Table 5.4 indicates significant year-to-year variations with relatively low imports in wet years and higher imports in dry years, combined with an underlying growth rate to serve increasing municipal water demands in the Murrieta-Temecula area.

Exports over the 1966-2003 period are also shown on Table 5.4. These include estimated water exports on Camp Pendleton less estimated wastewater returns, as well as an estimate of exports by the Fallbrook Public Utility District and the Naval Weapons Station after 1983, and Elsinore Valley MWD after 1986. Exports by Eastern MWD were initiated in 1992-1993 and Rancho California WD began exporting water in 2002-03. Exports do not include water that naturally flows from the Santa Margarita River into the Pacific Ocean.

5.4 Lake Skinner

Lake Skinner is a 44,000 acre foot reservoir constructed by MWD on Tocalota Creek, within the Santa Margarita River Watershed. The purpose of Lake Skinner is to provide regulatory and emergency storage capacity for water imported to southern California. A Memorandum of Understanding and Agreement on Operation of Lake Skinner (MOU), dated November 12, 1974, approved by the Court on January 16, 1975, contains provisions to protect Santa Margarita River Watershed water users from potential effects of Lake Skinner on either subsurface or surface flows.

Protection against a decrease in subsurface flows caused by the dam is afforded by a provision in the MOU that requires that MWD release water from Lake Skinner into Tocalota Creek if groundwater levels in Well AV-28B fall below an elevation of 1356.64 feet. Between June and September MWD released a total of 67 acre feet to maintain well levels above the minimum. At the end of September 30, 2003, the well level was 1358.30 feet.

TABLE 5.3

**SANTA MARGARITA RIVER WATERSHED
 TOTAL DISSOLVED SOLIDS
 CONCENTRATION OF IMPORTED WATER**

YEAR MONTH	TOTAL DISSOLVED SOLIDS MG/L /1		PERCENT STATE PROJECT WATER	
	<u>2001-02</u>	<u>2002-03</u>	<u>2001-02</u>	<u>2002-03</u>
OCT	502	495	27	32
NOV	513	524	24	26
DEC	521	543	25	22
JAN	517	543	26	19
FEB	498	532	30	*
MAR	511	513	26	28
APR	501	489	28	32
MAY	505	436	28	44
JUNE	516	447	25	46
JULY	512	455	26	39
AUG	503	480	25	33
SEPT	502	475	28	32

1/ As measured in the Skinner Treatment Plant Effluent line.

* - Skinner Plant treated a blend of Lake Perris
 and Diamond Valley Lake waters

TABLE 5.4

SANTA MARGARITA RIVER WATERSHED
IMPORTS/EXPORTS

Quantities in Acre Feet

YEAR	IMPORTS										EXPORTS									
	EASTERN MWD	ELSINORE VALLEY MWD	FALLBROOK PUD 1/	MWD 2/	MURRIETA COUNTY WD	RAINBOW MWD	RANCHO CAL WD	U.S. NAVAL WS	WESTERN MWD 3/	TOTAL IMPORTS	EXPORTS	WASTEWATER RETURNS	CAMP PENDLETON ***** NET EXPORT	U.S. NAVAL WS	EASTERN MWD	ELSINORE VALLEY MWD	FALLBROOK PUD	TOTAL EXPORTS		
1966	1,604	N/R	3,351	0	0	1,308	0	0	24	6,287	3,251	974	2,277	0	0	0	0	2,277		
1967	1,630	N/R	2,852	0	0	1,095	0	0	20	5,597	3,180	1,243	1,937	0	0	0	0	1,937		
1968	1,464	N/R	3,423	0	0	1,377	0	0	27	6,291	3,368	1,214	2,154	0	0	0	0	2,154		
1969	1,741	N/R	2,837	0	0	1,253	0	0	25	5,856	3,276	1,170	2,106	0	0	0	0	2,106		
1970	1,417	N/R	3,538	0	0	1,689	0	0	31	6,675	3,809	1,113	2,696	0	0	0	0	2,696		
1971	1,383	N/R	3,405	0	0	1,650	0	76 E	34	6,548	3,527	1,090	2,437	0	0	0	0	2,437		
1972	1,470	N/R	3,916	0	0	2,037	0	115 E	34	7,572	3,543	1,168	2,375	0	0	0	0	2,375		
1973	1,533	N/R	3,210	0	0	1,616	0	115 E	30	6,504	3,544	1,187	2,357	0	0	0	0	2,357		
1974	1,601	N/R	3,967	0	0	2,049	0	115 E	36	7,768	3,532	1,140	2,392	0	0	0	0	2,392		
1975	1,969	N/R	3,597	0	0	1,247	0	115 E	34	6,962	3,098	1,530	1,568	0	0	0	0	1,568		
1976	2,947	N/R	4,627	0	0	2,239	119	115 E	35	9,628	3,619	1,497	2,122	0	0	0	0	2,122		
1977	2,551	569	5,202	0	0	2,343	1,845	115 E	24	12,486	3,194	1,416	1,778	0	0	0	0	1,778		
1978	1,894	712	5,723	0	0	2,188	5,774	115 E	26	16,425	3,071	1,283	1,788	0	0	0	0	1,788		
1979	1,192	696	6,404	0	0	2,489	10,126	115 E	25	21,047	4,756	1,427	3,329	0	0	0	0	3,329		
1980	716	798	8,543	0	0	3,153	15,282	115 E	34	28,642	3,892	1,249	2,643	0	0	0	0	2,643		
1981	1,112	678	7,079	0	0	2,460	13,378	115 E	34	24,856	3,761	1,273	2,488	0	0	0	0	2,488		
1982	699	816	8,506	0	0	3,068	6,716	115 E	26	16,672	3,000	1,242	1,758	26 E	0	0	0	2,787		
1983	679	808	7,831	0	0	3,410	7,158	102	27	19,946	3,243	1,120	2,123	26 E	0	0	0	3,181		
1984	760	882	8,585	0	0	2,945	11,174	94	34	24,474	3,326	981	2,345	26 E	0	0	0	3,263		
1985	1,155	938	8,656	0	0	3,390	7,564	116	36	21,855	3,444	1,799	1,645	16 P	0	0	0	3,457		
1986	2,047	1,032	8,033	0	0	2,985	17,854	120	36	32,108	3,457	1,872	1,585	26	0	0	0	2,805		
1987	3,746	1,341	9,066	0	0	3,003	22,895	128	24	40,203	3,418	1,446	1,972	23	0	0	0	2,820		
1988	5,601	2,255	10,103	0	0	3,818	22,030	145	22	43,974	2,971	1,451	1,520	27	0	0	0	2,932		
1989	9,479	2,421	7,962	0	0	2,904	21,238	109	20	44,133	2,168	1,219	949	13	0	0	0	2,056		
1990	8,593	2,190	7,893	0	0	2,277	16,931	99	25	38,008	2,426	1,548	878	7	0	0	0	2,108		
1991	5,393	1,914	6,925	0	0	1,965	11,411	117	30	27,755	2,329	1,926	403	16	705	0	0	2,529		
1992	4,625	3,117	6,538	547	0	1,651	16,386	73	37	35,768	2,702	1,501	1,201	5	3,159	0	0	2,603		
1993	4,960	4,181	7,993	1,005	0	1,661	15,108	125	29	31,750	2,781	1,611	1,170	12	3,908	0	0	6,428		
1994	3,284	4,283	7,894	3,521	0	1,815	23,600	100	35	43,689	3,577	1,493	2,084	5	2,993	0	0	6,330		
1995	5,117	5,100	6,382	5,023	0	1,429	26,992	109	30	47,542	3,643	1,932	1,711	6	3,201	0	0	6,165		
1996	4,327	6,134	7,430	3,781	0	1,601	19,584	97	31	42,935	3,742	2,073	1,669	8	4,513	0	0	7,919		
1997	7,256	7,172	9,365	712	0	1,727	34,490	111	41	58,041	3,558	2,130	1,428	5	4,133	0	0	7,197		
1998	5,948	6,592	8,398	689	0	1,804	41,823	73	59	65,386	3,653	2,075	1,578	7	3,649	0	0	7,526		
1999	8,117	7,596	9,580	595	0	1,676	54,148	97	64	81,873	3,701	1,950	1,751	8	4,457	0	0	7,996		
2000	9,062	7,091	9,130	495	102	1,510	50,927	88	42	78,447	3,767	1,688	2,079	9	5,325	0	0	8,992		
2001														10	7,636	0	0	11,914		

E - Estimate
P - Partial year data

3/ Improvement District A - Rainbow Canyon Only (WR-13)
N/R - Not Reported

1/ Includes Deluz Heights MWD prior to 1991
2/ Metropolitan Water District direct deliveries in Domenigoni Valley

The MOU also provides that all local surface inflow that enters Lake Skinner will be released into Tocalota Creek. In its 1980 modification the MOU provides that local surface inflow is to be determined by using the hydrologic equation for Lake Skinner that is specified in the MOU. That equation is used to determine inflow and the related release for large flood events. However, in many years the local inflow is small compared to the large quantities of imported water inflow and outflow at Lake Skinner. The error of measurement for these large inflows and outflows is larger than the local inflow in many instances. Accordingly, MWD also monitors the flow in Tocalota Creek, Rawson Creek and Middle Creek during storms and uses those observations to supplement the hydrologic equation.

During 2002-03, there was no local runoff into Lake Skinner.

5.5 Diamond Valley Lake

Diamond Valley Lake is located in Diamond and Domenigoni Valleys within the Santa Margarita River Watershed. The Lake was created by three dams, one each at the east and west ends of Domenigoni/Diamond Valley and a saddle dam at the low point on the north rim. The East Dam diverts surface and groundwater flows from a 4.2 square mile drainage area in the Santa Margarita River Watershed, known as Goodhart Canyon, into the Santa Ana River Watershed. The West Dam intercepts existing westward surface and subsurface flows from an additional 13.19 square mile area. These intercepted flows may or may not be offset by seepage losses from the reservoir when filled.

MWD does not have a water right to store local waters in the reservoir, so a Memorandum of Understanding and Agreement on Operation of Domenigoni Valley Reservoir (now known as Diamond Valley Lake) (MOU) was developed and approved by the Court on January 19, 1995. Among other things, the MOU provides:

The quantity and quality of surface runoff that would flow past the West Dam in the absence of the Reservoir will be determined and a like quantity of water of similar quality will be released from the Reservoir or San Diego Canal (SDC) into Warm Springs Creek.

The MOU indicates that the required releases would be determined by measuring the surface inflows into Goodhart Canyon Detention Basin. A quantity equal to 4.1 times the measured flow will be released into Warm Springs Creek.

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

Total required releases into Warm Springs Creek during 2002-03 were 25.60 acre feet.

Although all surface waters within the Santa Margarita River Watershed in Domenigoni Valley and Diamond Valley are subject to the continuing jurisdiction of the Court, groundwater contained within the younger alluvium, north of the south line of Section 9, Township 6 South, Range 2 West, SBM is not considered by the Court to be a part of the Santa Margarita River system as long as groundwater levels are below an elevation of 1400 feet. During 2002-03 groundwater elevations in Well MO-6, which is located along the south line of Section 9, increased from 1359.00 feet at the beginning of the water year to 1359.01 feet on September 30, 2003.

During 2002-03, there were no injections into the Domenigoni Valley groundwater basin pursuant to Agreements for Mitigation of Groundwater. As previously noted the groundwater in the Domenigoni Valley groundwater basin is outside this Court's jurisdiction when groundwater levels are below 1400 feet.

SECTION 6 - WATER RIGHTS

6.1 General

Water is used in the Santa Margarita River Watershed under a variety of water rights. In the early 1960's, the U. S. District Court in its Interlocutory Judgments described water rights in the Watershed as primarily riparian rights and overlying rights. Riparian rights belong to owners of land parcels located adjacent to streams in the Watershed or overlying younger alluvium deposits generally along the stream channels. Overlying rights were divided by the Court into two categories based on the location where the water is obtained and used. Water extracted from lands where subsurface waters add to, contribute to and support the Santa Margarita River stream system was found to be subject to the continuing jurisdiction of the Court. Lands in this category were identified by the Court and listed in Interlocutory Judgments. In general, these parcels of land overlie younger or older alluvium deposits. The Court has stated that the issue of apportionment of water rights has not been presented to the Court, but the Court would litigate the apportionment if and when in the future it becomes necessary to do so.

The other category of overlying use applies to parcels of land where subsurface flows do not add to, contribute to or support the Santa Margarita River stream system. These parcels were also identified by the Court and found to be outside the continuing jurisdiction of the Court. In general, these lands overlie basement complex or residuum deposits.

The Court also described a number of other rights in the Watershed. These included surface water appropriative water rights that have been administered by the State of California since 1914. These rights are discussed in the following subsection of this report.

In Interlocutory Judgment No. 41, the Court found that the United States reserved rights to the use of the waters of the Santa Margarita River stream system which under natural conditions would be physically available on the Cahuilla, Pechanga and Ramona Indian Reservations, including rights to the use of groundwaters sufficient for the present and future needs of the Indians residing thereon. In Interlocutory Judgment No. 44, the Court recognized and reserved water rights for lands within the Cleveland and San Bernardino National Forests and for lands being administered pursuant to the Taylor Grazing Act.

Since the early 1960's there have been substantial changes in water use in the Watershed, especially in the Murrieta-Temecula Groundwater Area. During the 1950's and early 1960's when this case was under active litigation, most of the water use in the Murrieta-Temecula area consisted of individual property owners pumping water for use on their own properties. In 1965, the Rancho California WD was formed. The District developed Agency Agreements with most of the landowners within the District. In these Agency Agreements, the landowners "...without transferring any water rights and

privileges pertaining to said land...." designated the District as their exclusive agent for the development and management of their water supply.

Thus, many landowners within the Rancho California WD are not exercising their overlying rights. Instead, Rancho California WD pumps groundwater and uses it throughout the District area as agent on behalf of the landowners.

Rancho California WD also pumps water as a groundwater appropriator along with Murrieta CWD and Eastern MWD.

Another change from the early 1960's is the large scale importation of water into the Santa Margarita River Watershed by Rancho California WD. A portion of such importation finds its way into the groundwater aquifers. The legal status of return flows from imported supplies as well as direct recharge of imported water was clarified by the final judgment in *City of Los Angeles v. City of San Fernando, et al.*, 1975 14 Cal. 3rd 199. This decision in the Supreme Court of the State of California made two major findings with respect to imported water.

The first was that agencies have the right to recharge and store imported water in a groundwater basin and to extract the imported water for use, subject to applicable state and federal laws. In addition, agencies that import and deliver water to lands overlying a groundwater basin have a continuing right to extract the return flow from such water. The return flow is that portion of the imported supply that percolates into the groundwater basin. In the San Fernando case this portion was found to range from 20 percent to 35.7 percent of the imported supplies.

The Rancho Division of the Rancho California WD overlies the Murrieta-Temecula Groundwater Area. Thus a portion of the import supply delivered to the Rancho Division of Rancho California WD percolates into the underlying aquifers. The first water pumped by Rancho California WD in the ensuing year constitutes recapture of such return flows.

Imported water is also supplied to the Santa Rosa Division within Rancho California WD, however only a relatively small part of this division overlies the Murrieta-Temecula Groundwater Area. Thus there is less imported water return flow from the Santa Rosa Division.

Classification of Rancho California WD supplies into various water right categories is discussed in Section 7 of this Report.

6.2 Appropriative Surface Water Rights

Another broad category of water rights used in the Watershed is surface water appropriative rights. Since 1914, these rights have been administered by the SWRCB.

A list of current permits, licenses and other active rights obtained from the SWRCB is shown on Table 6.1. A permit by the SWRCB authorizes construction of a project, sets terms for the project's completion and development of water use and may impose other conditions. After the permittee demonstrates that construction is complete, water is being put to use and the permit conditions have been met, the SWRCB can issue a license. The license remains in effect as long as the license conditions are met and the water is put to beneficial use.

Perfected direct diversion rights and active storage rights from creeks in the Watershed are summarized below:

	<u>Direct Diversions</u> <u>Gallons Per Day</u>	<u>Storage</u> <u>Acre Feet</u>
Cahuilla Valley	720	5
Cottonwood Creek	485,000	60
Cutea Creek	5,825	---
DeLuz Creek	4,700	100
Fern Creek	213,000	100
Kohler Canyon	158,000	40
Long Canyon Spring	89	---
Rainbow Creek	---	0.5
Rattlesnake Canyon	12,000	---
Temecula Creek	25,820	40,000
Sandia Canyon	---	8
Sourdough Spring	55	---
Santa Margarita River	133	4,000
Nelson Creek	<u>1,550</u>	<u>---</u>
TOTAL	906,892	44,313.5

These direct diversion rights of 906,892 gallons per day correspond to 1.4 cfs or 2.78 acre feet per day.

TABLE 6.1
SANTA MARGARITA RIVER WATERSHED
APPROPRIATIVE WATER RIGHTS

PERMITS AND LICENSES

I.D. NO.	OWNER	FILING DATE	SOURCE OF WATER	POINT OF DIVERSION	AMOUNT	USE	STATUS
6629	William H. & Sandra J. Cyrus	4/9/30	Coahuila Valley	Sec. 4, 7S, 3E	DD-720 gpd	D	License
6893	Earl C. & Mamie LaBine	2/13/31	Temecula Creek	Sec. 20, 9S, 2E	DD-820 gpd	D/I	License
7035	Nyla Lawler	8/10/31	Cutca Creek	Sec. 29, 9S, 1E	DD-5725 gpd	D/I	License
7731	Earl C. & Mamie LaBine	11/02/33	Temecula Creek	Sec. 20, 9S, 2E	DD-7200 gpd	D/I	License
9137	Goodarz Irani	10/07/37	Temecula Creek	Sec. 12, 9S, 1E	DD-400 gpd	D	License
9291	Luis Olivos	5/13/38	Nelson Creek	Sec. 23, 8S, 5W	DD-1550 gpd	D	License
10806	James R., Phyllis & Bruce Grammer	4/22/44	Temecula Creek	Sec. 34, 9S, 2E	DD-2880 gpd	D	License
11161	Roy C. Pursche & J. Zink	9/26/45	Rattlesnake Canyon	Sec. 28, 9S, 2E	DD-12,000 gpd	D/I	License
11518	Rancho California Water District	8/16/46	Temecula Creek	Sec. 10, 8S, 1W	ST-40,000 AF	D/I/R	Permit
11587	U. S. Bureau of Reclamation	10/11/46	Santa Margarita River	Sec. 12, 9S, 4W	ST-10,000 AF	D/I/M	Permit
12178	Fallbrook Public Utility District	11/28/47	Santa Margarita River	Sec. 3, 7S, 4W	ST-10,000 AF	D/I/M	Permit
12179	U. S. Bureau of Reclamation	11/28/47	Santa Margarita River	Sec. 12, 9S, 4W	ST-10,000 AF	D/I/M	Permit
13505	David H. & Kathleen C. Lypps	12/12/49	Cottonwood Creek	Sec. 30, 8S, 4W	DD-0.75 cfs & ST-42 AF	R/S	License
17239	Ward Family Trust	8/15/56	Temecula Creek	Sec. 20, 9S, 2E	DD-120 gpd	D/E	License
20507	David H. & Kathleen C. Lypps	11/24/61	Cottonwood Creek	Sec. 19, 8S, 4W Sec. 30, 8S, 4W	ST-18 AF	I/R	License
20608	Pete and Dorothy Prestinanzi	2/13/62	DeLuz Creek	Sec. 20, 8S, 4W	ST-100 AF	D/I/R	License
20742	U. S. Cleveland National Forest	4/24/62	Sourdough Spring	Sec. 25, 9S, 1E	DD-55 gpd	E	License
21074	U. S. Cleveland National Forest	12/07/62	Cutca Spring	Sec. 17, 9S, 1E	DD-100 gpd	S/W	License
21471A	U. S. Department of Navy	9/23/63	Santa Margarita River	Sec. 5, 10S, 4W Sec. 2, 11S, 5W	ST-4,000 AF	D/I/M/Z	License
21471B	U. S. Bureau of Reclamation	9/23/63	Santa Margarita River	Sec. 32, 9S, 4W	ST-165,000 AF	D/I/M/Z	Permit
27756	James R. Grammer	5/23/83	Temecula Creek	Sec. 3, 10S, 2E	DD-14,400 gpd	I/S	Permit
28133	Charles F. Ruggles	5/14/84	Cahuilla Creek	Sec. 15, 8S, 2E	ST-5AF	E/H/I/R/S	Permit

OTHER RIGHTS

05751S/Federal	U. S. Cleveland National Forest	1/01/70	Long Canyon Spring	Sec. 16, 9S, 1E	DD-89 gpd	E/R/S/W
000024/State	Judge Dial Perkins	12/26/86	Santa Margarita River	Sec. 12, 9S, 4W	DD-133.3 gpd	D
000751/State	Lawrence Butler	5/31/67	Fern Creek	Sec. 31, 8S, 4W	DD-0.33 cfs ST-100 AF	I
011411/State	Agri Empire, Inc.	5/16/84	Kohler Canyon	Sec. 33, 9S, 2E	DD-0.245 cfs ST-40 AF	I/S
012235/State	William A. & Lois D. Cunningham	8/27/85	DeLuz Creek	Sec. 4, 9S, 4W	DD-4700 gpd	D/I
001583/Stock	George F. Yackey	12/27/77	Sandia Canyon	Sec. 25, 8S, 4W	ST-8.0 AF	S
002380/Stock	Chris R. & Jeanette L. Duarte	12/16/77	Rainbow Creek	Sec. 12, 9S, 3W	ST-0.5 AF	S

KEY TO USE: DD - Direct Diversion D - Domestic R - Recreation E - Fire Protection H - Fish Culture
ST - Diversion to Storage I - Irrigation M - Municipal S - Stockwatering Z - Other
W - Fish & Wildlife Protection and/or Enhancement

Storage rights shown in Table 6.1 include 185,000 acre feet of storage rights on the Santa Margarita River held by the U. S. Bureau of Reclamation (ID Nos. 11587, 12179, and 21471B) that have not been exercised. The time period during which these rights must be exercised has recently been extended by the SWRCB to December 31, 2008.

Table 6.1 also lists other rights recognized by the SWRCB. These rights generally are based on Statements of Water Diversion and Use that have been filed with the SWRCB. Such statements include one by the United States on behalf of the Cleveland National Forest, which states that the diversion and use of water from Long Canyon Spring is made pursuant to a withdrawal and reservation of the land and resources for National Forest System purposes as of February 14, 1907.

Besides the federal filing, there are also Statements of Water Diversion and Use filed by individuals. Three of these statements represent riparian or pre-1914 appropriative diversions from DeLuz Creek, Fern Creek and Santa Margarita River that have been reported to the SWRCB. The other statement represents a pre-1914 appropriative right to divert water from a spring in Kohler Canyon into a 40 acre foot reservoir.

The last two rights noted on Table 6.1 represent filings made in 1977 pursuant to Subchapter 2.5 to Chapter 3 of Title 23 of the California Code of Regulations. That subchapter deals with Water Rights for Stockponds.

In addition to appropriative rights under SWRCB jurisdiction, there are a number of nonstatutory appropriative rights that were established prior to 1914. These rights continue to be used to support diversions of water from the Santa Margarita River stream system. Such rights, which are listed in the various Interlocutory Orders developed in this litigation, are shown on Table 6.2.

In 1990-91, in Order No. 91-07, the SWRCB revised its Order No. 89-25 entitled, "Order Adopting Declaration of Fully Appropriated Stream Systems and Specifying Conditions for Acceptance of Applications and Registrations." These Orders list the Santa Margarita River stream system as fully appropriated "from the confluence of the Santa Margarita River and the Pacific Ocean upstream including all tributaries where hydraulic continuity exists."

The consequences of this Order are as follows:

1. The Board is precluded from accepting any application to appropriate water from the Santa Margarita River System except where the proposed appropriation is consistent with conditions contained in the Declaration.

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE 6.2

SANTA MARGARITA RIVER WATERSHED
PRE - 1914 APPROPRIATIVE WATER RIGHTS
Listed in Interlocutory Decrees

LISTED OWNER	CURRENT OWNER	DATE OF APPROPRIATION	SOURCE OF WATER	POINT OF DIVERSION	AMOUNT	USE
Anderson, Nina B.	Nezami, Mohammed	April 11, 1892	Fern Creek	NW 1/4 Of SE 1/4 Sec 31, T8S, R4W	32 gpm	Irrigation
Butler, Lawrence W. and Mary C.	Vanginkel, Norman Tr and Vanginkel, Deborah San Diego Gas & Electric	Sept. 23, 1896	Fern Creek	NW 1/4 Of SE 1/4 Sec 31, T8S, R4W	Capacity of 8 inch pipe	Irrigation
Wilson, Samuel M. and Hazel A.	Shirley, Robert G. and Bobbi J.	Aug. 3, 1911	DeLuz Creek	NW 1/4 Of SW 1/4 Sec 32, T8S, R4W	50 miner's inches 65 AF/Yr	Irrigation
United States	United States	1883	Santa Margarita River	Sec 5, T10S, R4W	20 cfs 1200 AF/Yr	Domestic Irrigation Stock Water

2. Initiation of a water right pursuant to the Water Rights Permitting Reform Act of 1988 (Water code Section 1228 et seq.) --that is, by registering small use domestic appropriations--is precluded, except where the proposed appropriation is consistent with conditions contained in the Declaration. Small use domestic appropriations refer to uses that do not exceed direct diversions of 4,500 gallons per day or diversion by storage of 10 acre feet per year for incidental aesthetic, recreational, or fish and wildlife purposes.
3. Pursuant to Water Code Section 1206(a) the Board is authorized, but not required, to cancel pending applications where inconsistent with conditions contained in the Declaration; previous Orders implement a procedure for disposition of such applications pending on the effective date of the Declaration.

The Order provides for reconsideration of the Order either upon petition of an interested party or upon the Board's own motion.

6.3 Fallbrook PUD Proposal to Change Point of Diversion and Place of Use

For some years, the Bureau of Reclamation has held Permit Nos. 8511, 11356, 11357, and 15000 (Application Nos. 11587, 12178, 12179, and 2147B) (see Table 6.1) for the benefit of Fallbrook PUD and the United States of America, the Department of the Navy, Marine Corps Base, Camp Pendleton, California. However in February 1999, Permit No. 11356 (Application No. 12178) was transferred back to Fallbrook PUD in order for Fallbrook to change the point of diversion to Lake Skinner. Lake Skinner is owned by Metropolitan Water District of Southern California and is presently used to store and regulate imported water.

On November 20, 2001, the Chief of the Division of Water Rights of the State Water Resources Control Board authorized an Order Approving Changes in Source Point of Diversion, Place of Use and Amending the Permit (No. 11356). During 2002-03 Fallbrook PUD and MWD continued to work together to amend the Memorandum of Understanding and Agreement on Operation of Lake Skinner. The permit provides for storage and diversion of up to 10,000 AF per year. Storage of local water in Lake Skinner and subsequent diversion will reduce the volume of local stormwater flow downstream of Lake Skinner during significant storm events.

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SECTION 7 - WATER PRODUCTION AND USE

7.1 General

Water production and use data were obtained from several types of substantial users including water purveyors, Indian Reservations, mobile home parks and private landowners. Private landowners who qualify as substantial water users are those who irrigate eight or more acres or who produce or use an equivalent quantity of water.

Major water purveyors who reported production and use data in 2002-03 Water Year are listed as follows:

- Anza Mutual Water Company
- Eastern Municipal Water District
- Elsinore Valley Municipal Water District
- Fallbrook Public Utility District
- Lake Riverside Estates
- Metropolitan Water District of Southern California
- Murrieta County Water District
- Rainbow Municipal Water District
- Rancho California Water District
- U. S. Marine Corps, Camp Pendleton including U.S. Naval Weapons Station, Fallbrook Annex
- Western Municipal Water District

Lake Riverside Estates is listed with major water purveyors although it does not deliver water to customers. However it does produce make-up water for losses from Lake Riverside.

In addition to the major purveyors, there are a number of smaller water systems in the Watershed. Of these, Butterfield Oaks Mobile Home Park, Jojoba Hills SKP Resort, Outdoor Resorts Rancho California, Inc. and Hawthorn Water System are substantial users.

Three Indian Reservations, the Cahuilla, Pechanga and Ramona, are noted in Interlocutory Judgment No. 41, the Judgment that deals with Water Rights on Indian Reservations in the Watershed. Estimates and/or measurements of water production and use are reported for the Cahuilla and Pechanga Indian Reservations; the Ramona Reservation has no reported water use.

A portion of a fourth Reservation, the Pauma Mission Reserve Tract of the Pauma Yuima Band of Mission Indians, is also located within the Watershed. However, these lands overlie basement complex, which waters have been found by the Court to not add to, support or contribute to the Santa Margarita River stream system.

The final category of water users are private landowners who use water primarily for irrigation.

The water use data collected for the 2002-03 Water Year are summarized on Table 7.1. Total imported supplies plus local production totaled 120,792 acre feet compared to 124,525 reported in 2001-02. Of that quantity, 51,381 acre feet were used for agriculture; 5,933 acre feet were used for commercial purposes; 48,847 acre feet were used for domestic purposes; 425 acre feet were discharged to Murrieta Creek; 4,471 acre feet were discharged to the Santa Margarita River from MWD WR-34 by Rancho California WD; 3,767 acre feet of fresh water were exported; and 2,750 acre feet were recharged by Rancho California WD to storage. The overall system loss was 3,218 acre feet. System gain or loss is the result of many factors including errors in measurement, differences between periods of use and periods of production, leakage and unmeasured uses.

Monthly production and use data for major water purveyors are attached to this report as Appendix A. Uses are listed under agricultural, ag/domestic, commercial and domestic categories. The definition of agricultural, ag/domestic, commercial and domestic uses varies for the different purveyors in the Watershed. Accordingly definitions of these uses for major water purveyors are shown on Table 7.2. It is noted that much of the non-agricultural water use in the Watershed can also be considered municipal use, which includes both the domestic and commercial uses shown in tables in this report. Similar data for Water Years 1966-2003 are summarized in tables presented in Appendix B. Appendix C presents information on substantial users outside purveyor service areas.

7.2 Water Purveyors

Anza Mutual Water Company

Anza Mutual Water Company's service area is in the eastern part of the Watershed in the Anza Valley. Production is from two wells: Well No. 1 drilled in 1951 and perforated from 20 feet to 260 feet; and Well No. 2 drilled later to a depth of 287 feet and perforated in the bottom 130 feet. Production for 2002-03 was 44.03 acre feet from Well No. 1 as shown in Appendix A, Table A-10. Well No. 2 was not in use for 2002-03. The depth of water in Well No. 1 ranged from 48.5 feet to 63 feet.

Interlocutory Judgment No. 33 divides aquifers in Anza Valley at this location into two categories: the shallow aquifer and the deep aquifer. Based on information available to the Court the shallow aquifer was determined to include the younger and older alluvial deposits in the Anza Groundwater Basin and extend to a maximum but variable depth of approximately 100 feet. The deep aquifer underlies the shallow aquifer in an area about one-half mile in width and two miles in length, within portions of Sections 16, 17, 21, 22, 27 and 28 of Township 7 South, Range 3 East, SBM. Anza Mutual Water Company's wells are within the area of the deep aquifer. From the perforated intervals in the wells, it

TABLE 7.1

SANTA MARGARITA RIVER WATERSHED
WATER PRODUCTION AND USE

2002-03
Quantities in Acre Feet

	PRODUCTION				USE					WATER RIGHT
	WELL/ SURFACE	IMPORT	TOTAL	AG	COMM	DOM	LOSS	TOTAL		
WATER PURVEYORS										
Anza Mutual Water Company	44	0	44	0	0	40	4 ^{1/}	44	Appropriative	
Eastern MWD	0	9,062	9,062	0	0	8,610	452	9,062	Appropriative	
Elsinore Valley MWD	0	7,091	7,091 ^{12/}	0	0	7,091	0	7,091	-----	
Fallbrook PUD	0	9,130	9,130	6,041	553	3,184	(648)	9,130	Appropriative	
Lake Riverside Estates	256	0	256	0	256 ^{2/}	0	0	256	Appropriative	
Metropolitan Water District	0	495	495	470	0 ^{3/}	0	25	495	-----	
Murrieta CWD	1,748	102	1,850	272	275	1,284	19	1,850	Appropriative	
Rainbow MWD	0	1,510	1,510	1,237	0	136	137	1,510	-----	
Rancho California WD	25,240 ^{4/}	50,680 ^{5/}	75,920	34,922 ^{6/}	4,457	26,044	10,497 ^{7/}	75,920	Various	
U.S.M.C. - Camp Pendleton	6,480	0	6,480	495	----- ^{8/}	1,996	3,989 ^{9/}	6,480	Appropriative/ Riparian	
U.S. Naval Weapons Station	0	88	88	0	----- ^{8/}	80	8 ^{1/}	88	-----	
Western MWD	0	42	42	0	38	0	4 ^{1/}	42	-----	
INDIAN RESERVATIONS										
Cahuilla	42	0	42	0	-----	42	0	42	Overlying/Reserved	
Pechanga	604	0	604	78	354	148	24	604	Overlying/Reserved	
SMALL WATER SYSTEMS										
Butterfield Oaks	11	0	11	0	0	10	1 ^{1/}	11	Riparian/Overlying	
Outdoor Resorts	202	0	202	158	0	40	4 ^{1/}	202	Overlying	
Jojoba Hills SKP Resort	75	0	75	0	0	68	7 ^{1/}	75	Overlying	
Hawthorn Water System	82	0	82	0	0	74	8 ^{1/}	82	Appropriative	
OTHER SUBSTANTIAL USERS	7,808 ^{10/}	0	7,808	7,708	0	0	100 ^{11/}	7,808		
TOTAL	42,592	78,200	120,792	51,381	5,933	48,847	14,631	120,792		

1/ Assumes 10% system loss

2/ Recreation Use

3/ Construction use at Diamond Valley Lake

4/ 24,147 AF production from Old Alluvium and 1,093 AF of Vail Recovery

5/ Includes 30,782 AF direct use; 15,694 AF direct recharge; and 4,471 AF from MWD WR-34

6/ 30,277 AF Ag, and 4,645 Ag/Domestic

7/ 425 AF discharged into Murrieta Creek; 4,471 AF discharged into Santa Margarita River from MWD WR-34; 2,750 AF of import remaining in storage; and a system loss of 2,851 AF

8/ Listed with Domestic uses

9/ Includes exports of 3,767 acre feet

10/ 1,005 AF for surface diversion plus 7,449 AF from groundwater as shown in Appendix C minus 42 AF on the Cahuilla Reservation and minus 604 AF on the Pechanga Reservation

11/ 10% of surface diversions

12/ Sales figures

TABLE 7.2

SANTA MARGARITA RIVER WATERSHED
DEFINITIONS OF WATER USE
BY MUNICIPAL WATER PURVEYORS
2002-03

DISTRICT	AGRICULTURAL	DOMESTIC	COMMERCIAL
EASTERN MUNICIPAL WATER DISTRICT	A commercial enterprise producing a crop/livestock on at least 5 acres and able to accept a delivery of at least 24 consecutive hours	Single family, multiple units and agricultural uses of less than 5 acres	Not reported
ELSINORE VALLEY MUNICIPAL WATER DISTRICT	Delivery of water for agricultural purposes in growing or raising for commerce, trade or industry or for use by public educational or correctional institutions	Delivery of water to single family residential customers in single, detached residential units	Delivery of water to multi-family residential units; commercial, industrial establishments; cities, political sub-divisions or quasi-governmental associations
FALLBROOK PUBLIC UTILITY DISTRICT	AG - A commercial enterprise producing a crop/livestock/fowl on at least 1 acre fully used for ag purposes; can include incidental domestic use related to residency AG/DOM - Water used for both ag and domestic purposes	Single family, multi-unit and large domestic residences and the first 20,000 gallons used by an ag/domestic meter	Offices, businesses, schools and hydrants
RAINBOW MUNICIPAL WATER DISTRICT	AG- 1 acre or more of plantable, resalable products DOM/AG - Same as Ag with a house on the parcel	DOMESTIC - Homes	Generally no commercial use in district
RANCHO CALIFORNIA WATER DISTRICT	AG - 1 acre or more of plantable, resalable products GOLF - Outside water use at golf courses VINEYARDS - Outside irrigation for vineyards LANDSCAPE - Landscaping around freeways, parking lots, office buildings, median strips, etc. AG/DOM - First 1600 c.f. for each user allotted to domestic, and the balance to agriculture	DOMESTIC - Homes MULTIPLE - Apartments and Condominiums	COMMERCIAL - Office buildings, industrial users other than agri-businesses FLOATING - Fire hydrants used during construction CONSTRUCTION - Other fire hydrants used for grading LAKE SKINNER - Recreational use at Lake Skinner MISCELLANEOUS - Schools, fire departments, parks, government agencies DETECTOR CK. METERS - Only used when there is a fire
MURRIETA COUNTY WATER DISTRICT	Agricultural uses and irrigation for crops	Homes and multiple units	Businesses, public agencies, schools and construction
USMC, CAMP PENDLETON	Irrigation - Water used for ag purposes, not landscaping, golf courses or parks	Camp Supply - Includes landscaping, golf courses parks and commercial use	Reported under Camp Supply

may be concluded that most of the production from Well No. 1 and all of the production from Well No. 2 are from the deep aquifer. Interlocutory Judgment No. 33 concluded that waters contained in the deep aquifer did not add to, support or contribute to the Santa Margarita River stream system and were, therefore, declared to be outside the Court's jurisdiction.

Thus, most of the water produced by the Anza Mutual Water Company is outside the Court's jurisdiction. The relatively small portion pumped from the shallow aquifer in Well No. 1 is pumped under a groundwater appropriative right.

Eastern Municipal Water District

Eastern MWD is a member agency of MWD and its service area includes a portion of the Rancho California WD. Within the Watershed, the District wholesales water to Rancho California WD and also sells water directly to consumers. Water sold to Rancho California WD is listed in this report as imported water to the Rancho California WD service area.

Eastern MWD's service area outside Rancho California WD is located in the northern part of the Watershed. Water for their service area is imported or produced locally from groundwater.

Imports, not including water wholesaled to Rancho California WD or delivered to Elsinore Valley MWD, totaled 14,175 acre feet. A portion of that import amounting to 5,113 acre feet was exported from the Santa Margarita River Watershed resulting in net import to the watershed of 9,062 acre feet. These data are shown in Appendix A.

Eastern MWD's groundwater production in the Santa Margarita River Watershed is provided by Well 7S/3W-15N which is 345 feet deep. There was no production in 2002-03. The well is generally perforated between the depths of 106 and 333 feet. Recent static water levels in Eastern MWD's well have varied from a depth of 102 feet in December 1987, to as low as 177 feet in January 2002. The well is located within the Murrieta-Temecula Groundwater Area where the older alluvium is at ground surface. Thus the well produces water from the older alluvium under groundwater appropriative rights.

In addition to producing fresh water, Eastern MWD also reclaims wastewater at its Temecula Valley Regional Water Reclamation Facility.

Disposition of wastewater from the Temecula Valley Regional Water Reclamation Facility (Facility) service area for Water Years 2001-02 and 2002-03 is shown below:

	<u>2001-02</u>		<u>2002-03</u>	
	<u>Quantity</u>	<u>Percent</u>	<u>Quantity</u>	<u>Percent</u>
	<u>AF</u>	<u>%</u>	<u>AF</u>	<u>%</u>
Used in Santa Margarita	4,843	48	3,542	32
Used outside Santa Margarita	<u>4,863</u>	<u>48</u>	<u>2,955</u>	<u>26</u>
Reuse	9,706	96	6,497	58
Unaccounted for Production	<u>462</u>	<u>4</u>	<u>4,681</u>	<u>42</u>
TOTAL PRODUCTION	10,168	100	11,178	100

It can be noted that the quantities of reclaimed wastewater used within the Santa Margarita River Watershed decreased from 4,843 acre feet in 2001-02 to 3,542 acre feet in 2002-03. During the same period reuse outside the Santa Margarita River Watershed also decreased from 4,863 acre feet to 2,955 acre feet. From the foregoing it may be concluded that 32 percent of the wastewater is reused in the watershed and 26 percent is used outside the watershed. Unaccounted for production increased from 462 acre feet to 4,681 acre feet. Unaccounted for production includes changes of storage in Winchester and Sun City storage ponds, evaporation and percolation losses, and discharges of 3,995 acre feet to the Santa Ana Watershed. In previous years much of the wastewater discharged to the Santa Ana Watershed would have been used in Rancho California WD's 2 MGD Demonstration Project. However that Project was discontinued on October 18, 2002.

Because of concerns about the potential export of native Santa Margarita water, the sources of water supply to the Facility service area were determined and are shown on Table 7.3. In 2002-03, 25 percent of the supply to the service area was groundwater. Thus, the percent of wastewater reused within the Santa Margarita Watershed exceeded the percent of groundwater in the supply, and on a proportional basis there was no export of native waters.

Estimates of water production and use for the period 1966-2003 are shown in Appendix B.

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE 7.3

SANTA MARGARITA RIVER WATERSHED
WATER DELIVERIES TO TEMECULA VALLEY
REGIONAL WATER RECLAMATION FACILITY SERVICE AREA

	1999		2000		2001		2002		2003	
	AF	%	AF	%	AF	%	AF	%	AF	%
Eastern MWD										
Deliveries to TVRWRF Service Area										
1. Groundwater	669		630		355		13		0	
2. Import 1/	4,327		7,256		5,948		8,117		9,062	
3. Total	4,996		7,886		6,303		8,130		9,062	
Rancho California WD										
Deliveries to TVRWRF Service Area										
1. Groundwater 2/	7,319		7,149		7,481		6,427		6,697	
2. Import 3/	5,941		8,643		8,076		11,791		11,231	
3. Total 4/	13,260		15,792		15,557		18,218		17,928	
Total Deliveries to TVRWRF Service Area										
1. Groundwater	7,988	43.8%	7,779	32.9%	7,836	35.8%	6,440	24.4%	6,697	24.8%
2. Import	10,268	56.2%	15,899	67.1%	14,024	64.2%	19,908	75.6%	20,293	75.2%
3. Total	18,256	100.0%	23,678	100.0%	21,860	100.0%	26,348	100.0%	26,990	100.0%

1/ EMWD imports are based on discharges from EM-17.

2/ Based on ratio of groundwater to total production in Rancho Division of RCWD

3/ Based on ratio of import to total production in Rancho Division of RCWD

4/ Total RCWD deliveries in TVRWRF Service Area

Elsinore Valley Municipal Water District

Elsinore Valley MWD provides water to its service area around Lake Elsinore, a portion of which is within the Santa Margarita River Watershed. Elsinore Valley MWD obtains its supply from ten wells, all located outside the Santa Margarita River Watershed, and also imports MWD water through Eastern MWD and Western MWD.

As shown in Appendix A, the District reports that 7,091 acre feet of imported water was delivered in the portion of their service area that is inside the Santa Margarita River Watershed in 2002-03. Also during 2002-03, approximately 483 acre feet of wastewater were exported from that same area.

Production and use during the period 1966 to 2003 are shown in Appendix B.

Fallbrook Public Utility District

In 2002-03, Fallbrook PUD imported 15,864 acre feet through its contract with the San Diego County Water Authority as shown in Appendix A. Of this quantity, 3,393 acre feet were delivered to the former DeLuz Heights Water District service area that is entirely within the Santa Margarita River Watershed. Of the remaining importations it is estimated that 46 percent, or 5,737 acre feet, were delivered to lands inside the Santa Margarita River Watershed. The remainder was delivered to lands in the adjacent San Luis Rey River Watershed. Thus, imports to the Watershed totaled 9,130 acre feet in 2002-03.

In addition to importations, the District has three wells; however, in 2002-03, there was no pumpage from these wells. In 2002-03 Fallbrook PUD reclaimed 1,737 acre feet of wastewater of which 21 acre feet were reused in the watershed.

Production during the period 1966 to 2003 included direct diversions from the Santa Margarita River for water years before 1972 as well as imported water and well production as shown in Appendix B.

Lake Riverside Estates

Lake Riverside Estates pumps water from Well No. 7S/2E-32C1, into Lake Riverside to replace evaporation losses. Production for 2002-03 was 256 acre feet as shown in Appendix A, Table A-10. The production well was drilled in 1962 and is located in an area of younger alluvium in the Cahuilla Groundwater Basin. The driller's log shows sand and clay for the entire well depth of 338 feet.

Interlocutory Judgment No. 33 indicates that the owners of lands in the Cahuilla Groundwater Basin have correlative overlying rights to the use of the groundwater that is the basis for this production.

Metropolitan Water District of Southern California

Pursuant to a Court Order, MWD delivered 495 acre feet of imported water for irrigation of lands in Domenigoni Valley. MWD did not import any water for groundwater recharge and there was no water used for construction purposes. As previously noted, the groundwater in the Dornenigoni Valley groundwater basin is outside this Court's jurisdiction when groundwater levels are below 1400 feet. This production is shown in Appendix A and production for the period 1966-2003 is shown in Appendix B.

Murrieta County Water District

Murrieta CWD serves an area in the vicinity of the town of Murrieta. In Water Year 2002-03, Murrieta CWD produced 1,748 acre feet of water from five wells as shown in the following tabulation and imported 102 acre feet as shown in Appendix A.

<u>Well Designation</u>	<u>Well Name</u>	<u>2002-03 Production Acre Feet</u>	<u>Casing Depth Feet</u>	<u>Water Depth Feet</u>	<u>Well Depth Feet</u>	<u>Perforated Interval Feet</u>
7S/3W-20C9	Holiday	242	25	84 - 105	307	60 - 307
7S/3W-20G5	House	115	50	140 - 190	298	120 - 252
7S/3W-17R2	Lynch	0	26	44 - 45	212	172 - 212
7S/3W-18J2	North	612	50	160 - 257	650	240 - 260 500 - 640
7S/3W-20D	South	465	50	170 - 185	446	120 - 446
7S/3W-7M	Alson	314	50	133 - 316	416	106 - 416
TOTAL		1,748				

All of these wells are located in the Murrieta-Temecula Groundwater Area. Interlocutory Judgment No. 30 indicates the younger alluvium deposits in Murrieta Valley extend in various depths to a maximum of approximately 30 feet from the ground surface.

The Court noted that it was impossible, based on evidence available in 1962, to determine with exactness the depth of the younger alluvial deposits throughout the Valley. However, it did decide to retain continuing jurisdiction and that subsequent findings could be made, if needed. Older alluvial deposits are found below the younger alluvium.

Five of the six Murrieta CWD wells are perforated at depths of 106 feet or more. One of the Murrieta CWD wells (Holiday) has perforations beginning at a depth of 60 feet. This depth is well below the maximum depth of younger alluvium found by the Court in 1962. In addition, water depths in the Holiday well ranged from 84 to 105 feet in 2002-03. Accordingly all of Murrieta CWD well production is from the older alluvium under a groundwater appropriative right.

Production for the period between 1966 and 2003 is shown in Appendix B.

Rainbow Municipal Water District

Rainbow MWD is located in San Diego County in the south-central part of the Watershed. In recent years about ten percent of the District's imported supply is delivered to the portion of the District's service area inside the Watershed. Most of the District is in the San Luis Rey River Watershed. As shown in Appendix A, total deliveries of imported water in the Watershed in 2002-03 amounted to 1,510 acre feet.

Total imports to the District for years between 1966 and 2003 as well as the estimated portion served inside the Santa Margarita River Watershed, are shown in Appendix B.

Rancho California Water District

Rancho California WD serves water to a 99,600 acre service area in the central portion of the Watershed. The District produced water from 45 wells in 2002-03 and also imported water, as shown in Appendix A. Use is shown in Appendix A under the categories of agriculture, ag/domestic, commercial and domestic. In Water Year 2002-03, well production of native water included 25,240 acre feet from the Murrieta-Temecula Groundwater Area. This quantity included 24,147 acre feet from the older alluvium, and 1,093 acre feet of recovered Vail recharge. Import supplies totaled 50,927 acre feet of which 30,762 acre feet were direct use, 15,694 acre feet were recharged, and 4,471 acre feet were released from MWD WR-34 into the Santa Margarita River. A portion of that import amounting to 247 acre feet was exported from the Santa Margarita River Watershed resulting in net import to the watershed of 50,680. During 2002-03, use totaled 75,920 acre feet including 30,277 acre feet by agriculture, 4,645 acre feet by ag/domestic, 4,457 acre feet by commercial, 26,044 acre feet by domestic, 4,896 acre feet were released into Murrieta Creek and the Santa Margarita River, 2,750 acre feet of import was recharged to storage, and 2,851 acre feet was system loss.

The District reclaimed and reused 3,780 acre feet of wastewater during the year, in addition to 1,044 acre feet obtained from Eastern MWD for reuse.

In addition the District treated and discharged 104 acre feet of reclaimed wastewater to Murrieta Creek as part of its 2 MGD Demonstration Project. The Project was discontinued on October 18, 2002.

Rancho California WD produces groundwater under a variety of rights as follows:

1. Recovery of water appropriated at Vail Lake
2. Recovery of import return flows and recharged imported water
3. Groundwater appropriative rights
4. As agent on behalf of overlying landowners

Vail Appropriation

Rancho California WD's Vail Dam appropriative rights are described in Application No. 11518 as amended on June 17, 1947, and in Permit 7032. That right provides that the District may store up to 40,000 acre feet in Vail Reservoir each year between November 1 and April 30, subject to applicable limitations, and that the water so stored may be used for irrigation and domestic uses incidental to farming operations on 3,797 acres of land between May 1 and October 31. Such use may be by direct diversion from Vail Lake or by recovery with wells of water released from Vail and spread downstream in Pauba Valley.

The place of use for irrigation and domestic use is described as follows:

Sections 5, 6, 7 and 18; T8S, R1W
Sections 1, 10 through 21, 28 and 29; T8S, R2W
Sections 13 and 24; T8S, R3W.

In 1971, the Permit was amended to add recreational use at Vail Reservoir within Section 10, T8S, R1W.

No water was released from Vail during 2002-03 for groundwater recharge. Releases from Vail for groundwater recharge for the period 1980 to 2003 are shown in Appendix B.

Water use in the Permit 7032 service area is shown on Table 7.4. This use will be compared with well production from the younger alluvium in a later section of this report.

Representatives of the United States contend that under the 1940 Stipulated Judgment storage of water in Vail Lake is limited to Rancho California Water District's share of the flood waters of the Santa Margarita River system. However, to date, the parties have not agreed on a definition of "flood waters." The Camp Pendleton/Rancho California Water District Technical Advisory Committee is considering the issue.

TABLE 7.4

**SANTA MARGARITA RIVER WATERSHED
 RANCHO CALIFORNIA WATER DISTRICT
 PERMIT 7032 AREA WATER USE
 2002-03**

Quantities in Acre Feet

MONTH YEAR	AG	COMM	AG/DOM	DOM	TOTAL
2002					
OCT	28	23	75	103	229
NOV	22	24	48	92	186
DEC	12	13	40	53	118
2003					
JAN	6	9	15	37	67
FEB	14	15	36	57	122
MAR	5	10	14	33	62
APR	15	10	19	37	81
MAY	22	23	43	63	151
JUNE	36	23	102	79	240
JULY	49	25	112	92	278
AUG	90	36	115	127	368
SEPT	60	33	115	120	328
TOTAL	359	244	734	893	2,230

Imported Water Return Flows

During 2002-03, Rancho California WD imported 30,762 acre feet of water for direct use compared to 37,883 acre feet in 2001-02. Quantities of imported water delivered to the Rancho Division and the Santa Rosa Division are shown below for Water Years 2001-02 and 2002-03.

<u>Month</u>	<u>Rancho Division Imports</u>		<u>Santa Rosa Division Imports</u>		<u>Total Imports</u>	
	<u>2002</u>	<u>2003</u>	<u>2002</u>	<u>2003</u>	<u>2002</u>	<u>2003</u>
October	1,074	2,372	2,098	993	3,172	3,365
November	370	818	749	803	1,119	1,621
December	0	380	96	287	96	667
January	122	387	501	533	623	920
February	394	351	732	325	1,123	676
March	799	218	1,493	164	2,292	382
April	953	538	1,688	512	2,641	1,050
May	1685	1,393	2,875	1,343	4,560	2,736
June	1765	1,736	2,963	1,509	4,728	3,245
July	2,216	2,788	3,590	2,631	5,806	5,419
August	3,230	2,957	2,725	2,982	5,955	5,939
September	<u>3,076</u>	<u>2,343</u>	<u>2,689</u>	<u>2,399</u>	<u>5,765</u>	<u>4,742</u>
Total	15,684	16,281	22,199	14,481	37,883	30,762

Return flows for 2002-03 based on imported water use in the Rancho Division and Santa Rosa Division are shown on Table 7.5 and on Table 7.6.

In those tables, imported water is allocated to agricultural, ag/domestic, commercial and domestic uses in each of eight hydrogeologic areas in the Rancho Division service area. This allocation is the proportion of the total deliveries to each use that is made up of imported water. In 2002-03, 63.03 percent of the supply to the Rancho Division was imported and 64.24 percent of the supply to the Santa Rosa Division was imported.

In general the Santa Rosa Division does not overlie the groundwater area. However there are several areas classified as being in the Santa Rosa Division that do overlie the groundwater area and generate return flows from imported supplies. Data from most of these lands have been reported since December 1991.

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE 7.5

SANTA MARGARITA RIVER WATERSHED
RANCHO CALIFORNIA WATER DISTRICT
RETURN FLOW CREDIT
2002-03
RANCHO DIVISION
Quantities in Acre Feet

HYDROGEOLOGIC AREAS

	0 NO HYDRO- GEO CODE	1 MURRIETA WOLF 1/2 QYAL 1/2 QTOAL	2 SANTA GERTRUDIS QYAL	3 LOWER MESA QTOAL	4 PAUBA QYAL	5 SOUTH MESA QTOAL	6 UPPER MESA QTOAL	7 PALOMAR QTOAL	TOTAL
AGRICULTURAL *									
Total Use	1,091.46	665.78	595.84	2,498.02	275.41	842.73	937.89	872.36	7,779.49
% Import	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	
Import Use	687.95	419.64	375.56	1,574.50	173.59	531.17	591.15	549.85	4,903.41
% Credit	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	
Credit	171.99	104.91	93.89	393.63	43.40	132.79	147.79	137.46	1,225.85
AG/DOMESTIC									
Total Use	573.30	44.84	0.00	19.28	561.35	32.12	418.85	128.88	1,778.62
% Import	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	
Import Use	361.35	28.27	0.00	12.15	353.82	20.24	264.00	81.24	1,121.06
% Credit	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	
Credit	90.34	7.07	0.00	3.04	88.45	5.06	66.00	20.31	280.27
COMMERCIAL									
Total Use	160.00	1,254.52	750.61	1,060.79	142.60	232.11	70.04	2.03	3,672.69
% Import	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	
Import Use	100.85	790.72	473.11	668.62	89.88	146.30	44.15	1.28	2,314.89
% Credit	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	
Credit	10.08	79.07	47.31	66.86	8.99	14.63	4.41	0.13	231.49
DOMESTIC									
Total Use	1,049.45	1,934.72	1,805.92	11,423.09	526.38	2,914.70	1,242.50	464.56	21,361.32
% Import	63.03	63.03	63.03	63.03	63.03	63.03	63.03	63.03	
Import Use	661.47	1,219.45	1,138.27	7,199.96	331.78	1,837.13	783.15	292.81	13,464.02
% Credit	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	
Credit	165.37	304.86	284.57	1,799.99	82.94	459.28	195.79	73.20	3,366.00
TOTAL USE	2,874.21	3,899.86	3,152.37	15,001.18	1,505.74	4,021.65	2,669.28	1,467.84	34,592.13
TOTAL									
Total Import Use	1,811.61	2,458.07	1,986.94	9,455.23	949.07	2,534.84	1,682.45	925.18	21,803.39
Total Credit	437.78 **	495.91	425.77	2,263.51	223.78	611.77	413.99	231.10	5,103.61
Total Credit Qyal		247.96	425.77		223.78				897.51
Total Credit Qtoal		247.96		2,263.51		611.77	413.99	231.10	3,768.33

* Includes golf course and landscape irrigation

** This credit not applied to either Qyal or Qtoal

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE 7.6

SANTA MARGARITA RIVER WATERSHED
RANCHO CALIFORNIA WATER DISTRICT
RETURN FLOW CREDIT
2002-03
SANTA ROSA DIVISION
Quantities in Acre Feet

HYDROGEOLOGIC AREAS				
	1 MURRIETA WOLF 1/2 QYAL 1/2 QTOAL	3 LOWER MESA QTOAL	8 RTS 279, 280 & 285 1/4 QYAL 3/4 QTOAL	TOTAL
AGRICULTURAL *				
Total Use	0.00	0.00	888.61	888.61
% Import	64.24	64.24	64.24	
Import Use	0.00	0.00	570.83	570.83
% Credit	25.00	25.00	25.00	
Credit	0.00	0.00	142.71	142.71
AG/DOMESTIC				
Total Use	0.00	0.00	0.00	0.00
% Import	64.24	64.24	64.24	
Import Use	0.00	0.00	0.00	0.00
% Credit	25.00	25.00	25.00	
Credit	0.00	0.00	0.00	0.00
COMMERCIAL				
Total Use	0.00	0.00	590.57	590.57
% Import	64.24	64.24	64.24	
Import Use	0.00	0.00	379.37	379.37
% Credit	10.00	10.00	10.00	
Credit	0.00	0.00	37.94	37.94
DOMESTIC				
Total Use	0.00	0.00	1,478.78	1,478.78
% Import	64.24	64.24	64.24	
Import Use	0.00	0.00	949.94	949.94
% Credit	25.00	25.00	25.00	
Credit	0.00	0.00	237.49	237.49
TOTAL USE				
	0.00	0.00	2,957.97	2,957.97
TOTAL				
Total Import Use	0.00	0.00	1,900.15	1,900.15
Total Credit	0.00	0.00	418.13	418.13
Total Credit Qyal	0.00		104.53	104.53
Total Credit Qtoal	0.00	0.00	313.60	313.60

* Includes golf course and landscape irrigation

The percentage of imported water that becomes return flow varies according to the use as follows:

Agricultural Use	25%
Ag/Domestic Use	25%
Commercial Use	10%
Domestic Use	25%

Based on the foregoing factors, the return flow credit for 2002-03 is computed to be 5,103.61 acre feet for the Rancho Division and 418.13 acre feet for the Santa Rosa Division, as shown on Tables 7.5 and 7.6 respectively.

Some of the hydrogeologic areas overlie older alluvium and some overlie younger alluvium. Comparison of exposures of younger alluvium with maps of the District's hydrogeologic areas indicates that the Santa Gertrudis, Pauba and half of the Murrieta-Wolf areas overlie younger alluvium. The area of the Santa Rosa Division that overlies the groundwater area is one-fourth in the younger alluvium and three-fourths in the older alluvium. Import return flows in these areas can be credited against pumping from the younger alluvium. These credits for 2002-03 are 897.51 acre feet for the Rancho Division and 104.53 acre feet for the Santa Rosa Division, as shown on Tables 7.5 and 7.6 respectively.

Rancho California WD imported an additional 15,694 acre feet of water for groundwater recharge in 2002-03, of which 12,944 acre feet were recovered.

Division of Local Water

During 2002-03, Rancho California WD pumped 38,184 acre feet of groundwater. Some of this water was pumped from the younger alluvium and some from the older alluvium. The Court determined that water in both the younger alluvium and older alluvium add to, contribute to and support the Santa Margarita River stream system. The primary reason for differentiating between younger alluvium and older alluvium production is that, in California, production from the younger alluvium is generally considered to be governed by water rights that apply to the regulation of surface waters. Production from the older alluvium is generally considered to be governed by regulations that apply to groundwater.

In 1995 well logs and geophysical logs of all Rancho California WD wells were reviewed by representatives of the United States and Rancho California WD to determine the depths of the younger alluvium. There was general agreement between the parties about the depth of the younger alluvium in production wells, except for ten wells shown on Table 7.7 of the 1994-95 report. The remaining disagreements relate to differences about the magnitude of the clay layer needed to define the base of the younger alluvium, the importance of neighboring well logs, and general concepts about the overall geologic setting.

During joint development of a groundwater model of the area it was necessary to develop estimates of the transmissivity for each aquifer. These estimates were based on pump tests. The resulting transmissivity values were then used to estimate the relative groundwater production from each aquifer. For Rancho California WD wells, the percent production estimated to originate in the younger alluvium is shown in Table 7.7.

Production from the younger alluvium and older alluvium for 2002-03 using the percentages noted in Table 7.7 is presented in Table 7.8. It may be noted that 14,037 acre feet were pumped from the younger alluvium and 24,147 acre feet were pumped from the older alluvium in 2002-03.

The production of 14,037 acre feet from the younger alluvium, as shown on Table 7.8 includes recovery of 1,093 acre feet of Vail recharge and 12,944 feet of import recharge. The recovered Vail recharge was used for authorized uses in the Permit 7032 service area as shown in Table 7.4. Although there were no Vail releases to groundwater storage in 2002-03 there is sufficient unrecovered recharge from prior years to offset the use of 1,093 acre feet in 2002-03. Rancho California WD imported 15,694 acre feet of water in 2002-03 for direct recharge of which 12,944 acre feet were recovered leaving 2,750 acre feet as unrecovered direct recharge.

Imported water carryover to 2003-04 includes the following:

	<u>AF</u>
1. Carryover from 2001-02	17,181
2. Unrecovered direct recharge in 2002-03	2,750
3. Import Return Flow Credit for 2002-03	<u>1,002</u>
4. Total Carryover to 2003-04	20,933

Thus, there was no unauthorized use under Permit 7032 in 2002-03 and 20,933 acre feet of imported supplies remain available to offset younger alluvium production in future years.

TABLE 7.7

SANTA MARGARITA RIVER WATERSHED
PERCENT PRODUCTION FROM YOUNGER ALLUVIUM IN
RANCHO CALIFORNIA WATER DISTRICT WELLS

RCWD WELL NO.	LOCATION TOWNSHIP/ RANGE/ SECTION	SEAL DEPTH FEET	PERFORATED INTERVAL FEET	DEPTH YOUNGER ALLUVIUM FEET	PERCENT YOUNGER ALLUVIUM %		REMARKS
106	7S/3W-26R1	55	130-210; 250-310; 340-440; 700-740; 780-980	0	0.0%	Murrieta	No. 108 Winchester, clay 0'-40'
107	7S/3W-26J1	55	60-120; 190-260; 280-300; 390-590	58	0.0%	Murrieta	No. 105 - gravel & clay 58'-64'
108	7S/3W-25E1		60-110; 190-280; 350-410; 430-450; 470-490; 530-590	55	0.0%	Murrieta	Formerly No. 109 gravel/sandy clay 55'-70'
109	8S/2W-17J1	52	70-150; 170-210	75	84.0%		Brown clay and gravel 75' to 105'
110	8S/1W-6K1	54	75-155	165	97.0%		Clay 165'-190'. Prior to 10/23/97 perf int. 70-150; 200-240; 320-380; 420-460
113	7S/2W-25H1	52	96-136; 275-462; 482-542	Shallow	0.0%		
116	8S/1W-6J	Unknown	60-120; 140-200; 220-260; 270-330; 370-390	150	94.0%		Clay 150'-170'
119	8S/2W-19J	55	170-260; 300-470		0.0%	Wolf Valley	Perforated below 170'
123	8S/1W-7B	55	100-260; 300-380; 420-500	135	65.0%		Brown Sand Clay 135'-210'
129	7S/2W-20L	Unknown	180-290; 416-480; 520-600	Shallow	0.0%	Santa Gertrudis Creek	Qyal very shallow along Santa Gertrudis Creek
132	8S/1W-7D	55	70-390; 430-500	135	82.0%		Brown Clay Streaks 135'-175'
135	7S/3W-27M10	55	70-170	50	0.0%	Murrieta Valley	Silty clay 50'-69'
141	8S/2W-11P	55	120-190; 215-235; 270-380; 430-510	104	0.0%		Silt & sand 104'-185'; Well 11L1 is 112'
144	7S/3W-27D	55	983-1123; 1143-1283; 1343-1483; 1503-1743	25	0.0%	Murrieta Valley	Sand with silty clay 25'-45'
146	7S/3W-28	50	50-190	42	0.0%	Murrieta	
152	8S/1W-5K	50	70-470; 490-540	130	90.8%		Forebay
153	8S/1W-5K3	50	50-220	170	99.0%		Forebay
157	8S/1W-5L	50	50-210	128	96.8%		Forebay
158	8S/1W-5K	50	50-210	100	96.5%		Forebay
205	7S/3W-35A	50	150-1000	10	0.0%	Santa Gertrudis/ Murrieta Valley	Sandy clay 10'-20'
210	8S/2W-12K	None	48-228	140	94.0%		Clay cobblestones 160'-167', 175'-227'
218	8S/2W-20B5	27	48-289	40	0.0%		Old 28; clay with sand layer 40'-60'; now monitoring wells 427, 428 and 429
466	8S/3W-1P2	Unknown	106-822	49	0.0%	Long Canyon	Old 219, Cantarini, hard clay 49'-60'
220	7S/3W-26Q1	34	114-450	58	0.0%		Clay 58' - 73'
467	8S/2W-12K1	Unknown	50-100; 100-140	140	100.0%		Old 221, JK, Exh. 16, Monitoring well since 1983
223	8S/2W-20C1	Unknown	48-250	60	94.0%	Wolf Valley	CAT Well; east of Wildomar Fault; nearby Exh 16 wells 17Q @62' & 17M @55' are also east of Wildomar Fault
224	8S/2W-15D	Unknown	48-250	108	68.0%		Old Well 50, clay 106'-138'
230	8S/2W-11J1	Unknown	24-31; 32.5-34; 35-40; 61-65; 70-76; 80-85; 86.5-91; 92.5-98.5	>119	100.0%		Old Well 30, depth of well is 119'
231	8S/2W-20B6	55	80-120; 150-270	35	0.0%		Old 104, P-34, Clay 20'-23'; 35'-41'; East of Wildomar Fault
232	8S/2W-11J3	51	95-135; 175-215; 235-295	135	92.0%		Old 111, 105, P-31; coarse sand & clay 135' - 155'
233	8S/2W-12K2	51	95-135; 175-215; 235-295	145	88.0%		Old 112, P32; sand and clay at 145'-220'
234	8S/2W-11P1	52	80-100; 120-140; 200-240; 280-320; 340-400	125	74.0%		Brown Clay at 125'; sand and clay at 125'-140'
235	8S/3W-1Q1	55	Unknown	Shallow	0.0%	Long Canyon	
240	8S/2W-11L1	Unknown	48-298	112	86.0%		Old Well No. 40; clay 112'-136'
301	7S/3W-18Q1	93	140-280; 280-520; 540-640	26	0.0%	Murrieta	Old JR1; blue clay 26'-32'

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE 7.8

SANTA MARGARITA RIVER WATERSHED
RANCHO CALIFORNIA WATER DISTRICT
WELL PRODUCTION FROM YOUNGER AND OLDER ALLUVIUM
2002-03
Quantities in Acre Feet

WELL NO.	QYAL	QTOAL	TOTAL
101	0.00	309.00	309.00
102	0.00	11.00	11.00
106	0.00	716.00	716.00
108	0.00	0.00	0.00
109	232.68	44.32	277.00
110	1,674.22	51.78	1,726.00
113	0.00	557.00	557.00
116	0.00	676.00	676.00
119	0.00	1,400.00	1,400.00
120	0.00	1,249.00	1,249.00
121	0.00	22.00	22.00
122	0.00	596.00	596.00
123	99.45	53.55	153.00
124	0.00	555.00	555.00
125	0.00	1,123.00	1,123.00
126	0.00	1,005.00	1,005.00
128	0.00	1,672.00	1,672.00
129	0.00	0.00	0.00
130	0.00	523.00	523.00
131	0.00	740.00	740.00
132	135.30	29.70	165.00
133	0.00	561.00	561.00
135	0.00	9.00	9.00
138	0.00	1,732.00	1,732.00
139	0.00	813.00	813.00
140	0.00	0.00	0.00
141	0.00	249.00	249.00
143	0.00	666.00	666.00
144	0.00	62.00	62.00
145	0.00	614.00	614.00
146	0.00	0.00	0.00
149	0.00	352.00	352.00
151	0.00	0.00	0.00
152	3,119.89	316.11	3,436.00
153	2,328.48	23.52	2,352.00
155	0.00	76.00	76.00
157	2,403.54	79.46	2,483.00
158	1,480.31	53.69	1,534.00
201	0.00	0.00	0.00
203	0.00	362.00	362.00
205	0.00	1,359.00	1,359.00
207	0.00	0.00	0.00
208	0.00	0.00	0.00
209	0.00	0.00	0.00
210	686.20	43.80	730.00
211	0.00	130.00	130.00
215	0.00	0.00	0.00
216	0.00	0.00	0.00
217	0.00	889.00	889.00
231	0.00	80.00	80.00
232	436.08	37.92	474.00
233	1,230.24	167.76	1,398.00
234	210.90	74.10	285.00
235	0.00	1,299.00	1,299.00
301	0.00	0.00	0.00
302	0.00	149.00	149.00
309	0.00	2,413.00	2,413.00
TOTAL	14,037.29	24,146.71	38,184.00

Western Municipal Water District

Western MWD wholesales imported water to Rancho California WD and also serves water to its Improvement District A near the southern boundary of Riverside County along I-15 freeway. Deliveries to Rancho California WD are included under Rancho California WD.

In Water Year 2002-03, imports to Improvement District A amounted to approximately 42 acre feet as shown in Appendix A, Table A-10.

Deliveries to Improvement District A through turnout WR-13 for the period 1966 to 2002 are shown in Table 5.4.

U. S. Marine Corps - Camp Pendleton

Camp Pendleton is located on the coastal side of the Santa Margarita River Watershed. Water is provided by 14 wells that produced 6,480 acre feet in Water Year 2002-03. This production is from the younger alluvium and is based on riparian and appropriative rights. Of this quantity, 3,767 acre feet were exported to areas of the Base outside the Watershed as shown in Appendix A.

A portion of the exported water amounting to 1,688 acre feet were returned to the Santa Margarita River Watershed as wastewater.

Production and estimated use inside and outside the Watershed, as well as wastewater returns, are shown in Appendix B for the period 1966-2003.

In addition to the operations at Camp Pendleton involving diversions from the Santa Margarita River, water is also imported by the Naval Weapons Station (NWS). The NWS occupies about 9,148 acres in the northeastern part of Camp Pendleton. Since 1969 the NWS has relied on imported water delivered via Fallbrook PUD for its supply. Wastewater is exported from the NWS and the Watershed via an outfall line also used by the Fallbrook Public Utility District. In 2002-03, 88 acre feet were imported of which 10 acre feet of wastewater were exported, as shown in Appendix A. Imports and use between 1966 and 2003 are shown in Appendix B.

7.3 Indian Reservations

Water use information about the Cahuilla, Pechanga and Ramona Indian Reservations in the Watershed is described in the following sections:

Cahuilla Indian Reservation

In general, domestic water use on the Cahuilla Indian Reservation is not measured, however reports indicate that 300 people reside on the Reservation. These residents use water primarily for domestic purposes as well as for livestock watering and grazing. Annual domestic water use, based on 125 gallons per capita per day, amounts to a total annual use of about 42 acre feet from wells listed in Appendix C.

The foregoing estimate is for total domestic water use on the Reservation. A portion of this use may not be under Court jurisdiction, but the estimate will be used until individual well production quantities are available to allow determination of the portion under Court jurisdiction. The estimated domestic use is included on Table 4.1 under water purveyor production.

An additional 5 acre feet was put to commercial use at a casino. This water was pumped from well 7S/2E-26B3 that overlies basement complex and is outside court jurisdiction.

Under federal law, production from groundwaters within the lands of the Cahuilla Indian Reservation in either the younger or older alluvial deposits which are a part of the shallow aquifer of the Anza Ground Water Area or which are part of the Cahuilla Ground Water Basin can be considered to be under a federal reserved right, in accordance with Interlocutory Judgment No. 41 which provides as follows in Order No. 3:

IT IS FURTHER ORDERED, ADJUDGED AND DECREED that the United States of America intended to reserve, and did reserve, rights to the use of the waters of the Santa Margarita River which under natural conditions would be physically available on the Cahuilla Indian Reservation, including rights to the use of ground waters, sufficient for the present and future needs of the Indians residing thereon with priority dates of December 27, 1875, for lands transferred by the Executive Order of that date; March 14, 1887, for lands transferred by the Executive Order of that date; December 29, 1891, for lands transferred by the Executive Order of that date.

Ramona Indian Reservation

The Ramona Indian Reservation occupies 560 acres of land of which 321 acres are inside the Watershed. The Ramona Reservation has no reported water use or residents.

Under federal law, production from groundwaters contained in shallow aquifer of the Anza Ground Water Basin overlain by lands of the Ramona Indian Reservation within the watershed of the Santa Margarita River can be considered to be under a federal reserved right, in accordance with Interlocutory Judgment No. 41 that provides as follows in Order No. 1:

IT IS ORDERED, ADJUDGED AND DECREED that the United States of America when it established the Ramona Indian Reservation intended to reserve and did reserve rights to the use of the waters of the Santa Margarita River stream system which under natural conditions would be physically available on the Ramona Reservation, including rights to the use of ground waters, sufficient for the present and future needs of the Indians residing thereon with a priority date of December 29, 1891.

7.4 Small Water Systems

There are a number of mobile home parks in the Watershed. These range from relatively permanent structures, to those catering to recreational vehicles and campgrounds. Water production from wells is shown in Appendix A, Table A-10 for Butterfield Oaks Mobile Home Park, Hawthorn Water System, Outdoor Resorts Rancho California, Inc., and Jojoba Hills SKP Resort.

7.5 Irrigation Water Use

Estimated water production reported by substantial users for irrigation in the Santa Margarita River Watershed is shown on Table 7.1 to be 7,808 acre feet. This quantity includes 6,807 acre feet of well production and 1,001 acre feet of surface diversion as shown in Appendix C.

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SECTION 8 - UNAUTHORIZED WATER USE

8.1 General

From time to time there are complaints of unauthorized water uses of various types in the Watershed. Such complaints are investigated when they are brought to the attention of the Watermaster. The status of the current list of unauthorized uses is described as follows:

8.2 Unauthorized Small Storage Ponds

Many small dams and reservoirs have been constructed on streams in the Watershed. The legal basis for these ponds is described in the 1988-89 Watermaster Report. Basically, the Court has held that storage of water in ponds less than 10 acre feet in capacity and used for stock watering is a valid use of riparian water. The Court has also held that:

The temporary or non-seasonal impoundment by riparian owners for the purpose of providing a head for irrigation or for the purpose of temporarily accumulating sufficient water to make possible efficient irrigation is a proper riparian use of water.

Criteria for determining non-seasonal storage of irrigation water have yet to be developed.

8.3 Rancho California Water District Water Use

A number of unauthorized water use issues raised by the United States were settled with the completion of a Cooperative Water Resource Management Agreement (Agreement) between the United States on behalf of Camp Pendleton, and Rancho California Water District.

Among other things, the parties have agreed to forbear enforcing rights and entitlements under the 1940 Stipulated Judgment ". . . for so long as this Agreement is in effect and being complied with." The Agreement provides that the United States will withdraw its protest of Rancho California WD's filing with the State Water Resources Control Board to change Permit 7032, although the protest was not withdrawn in 2002-03. That protest is subject to reinstatement if the Agreement is terminated. The Agreement also provides that the United States will seek dismissal of the case entitled *United States of America v. Rancho California Water District*, Riverside County Superior Court, Case No. EO 14837, Court of Appeal, Fourth Judicial District, Case No. 229096, although the case was not dismissed in 2002-03.

Thus, as long as the Agreement is in effect, issues raised by the United States regarding Rancho California WD water use, as described in this section in earlier Watermaster reports, may be considered to be settled.

8.4 United States' Amended Complaint

In July 2003 the United States filed a Motion for Leave to File an Amended Complaint with the Court in order to submit several new claims. These included a declaratory judgment of rights with respect to the export of treated wastewater, injunctive relief prohibiting the export of treated wastewater, breach of the Four Party Agreement and money damages, and a Writ of Mandate under the California Environmental Quality Act.

On November 19, 2003, the Court denied the motion to amend the Complaint.

8.5 Imported Water Jurisdiction

Camp Pendleton representatives contend that the Court has jurisdiction over imported water to the full extent that imported water, as well as its use, its returns and its products, affects in any significant manner the water rights within the Watershed over which the Court has traditionally asserted its jurisdiction. Other parties dispute the Court's jurisdiction over imported water.

SECTION 9 - THREATS TO WATER SUPPLY

9.1 General

General threats to the long-term water supply in the Santa Margarita River Watershed, which have been described in previous Watermaster Reports, are as follows:

1. High nitrate concentrations in Rainbow Creek and in Anza Valley.
2. Potential overdraft conditions at various locations in the Watershed.
3. Potentially adverse salt balance conditions in the upper Santa Margarita River area.

9.2 High Nitrate Concentrations

In past years, high concentrations of nitrate have been measured in Anza Valley and on Rainbow Creek. Conditions in Anza Valley were generally described in the 1993-94 report. Few measurements have been reported since then.

In 1999 the Regional Water Quality Control Board began preparation of a Total Maximum Daily Load (TMDL) plan for Rainbow Creek. In the draft TMDL the Regional Board concluded that the observed concentrations on nitrate were far in excess of 1.0 mg/l, a goal for nitrate that may be computed using a ratio of 10 parts nitrogen to one part phosphorous and the desired Basin Plan goal of 0.1 mg/l phosphorous. The draft TMDL further reports that the concentrations that exceed the Basin Plan goals for biostimulatory substances have caused excessive algae growth at various locations along Rainbow Creek.

The draft TMDL calls for a 28% reduction in nitrogen and phosphorous loads to meet drinking water standards for nitrate (10 mg/l as nitrogen) within four years after the TMDL is approved by the EPA. Thereafter the load allocations are to be reduced by 10% every four years until biostimulatory goals are met.

Meeting the initial 28% reduction will require loading reduction of 70 – 80% for commercial nurseries, irrigated agricultural lands, residential land uses and septic tanks.

The draft TMDL also requires the County of San Diego to develop and implement a watershed management plan for nutrients. This plan is to describe measures to achieve the necessary reductions. The County will also be responsible for investigating groundwater and septic tank conditions.

During 2002-03, the Regional Board staff continued to finalize the document in response to comments from EPA, the County of San Diego, Hines Nursery, and the Farm Bureau.

9.3 Potential Overdraft Conditions

Previous Watermaster reports have noted concerns about overdraft conditions in Anza Valley and in the Murrieta-Temecula area. The 1989-90 Watermaster Report described a water supply study, conducted by a consultant to Riverside County, which concluded that Anza Valley water use in 1986 was approximately equal to the perennial yield and that as of 1986 useable groundwater in storage approximated 56,000 acre feet. No further studies relative to groundwater use in Anza Valley are available. Historical measurements of groundwater levels for Anza Mutual Water Company's Well No. 1 (7S/3E-21G1) located in Anza Valley are plotted in this Report on Figure 4.4. It can be noted that the water level in October 2003 is within the general range observed since the early 1970's.

No recent published studies of safe yield are available for the Murrieta-Temecula area. Groundwater resources in much of the area are being managed by Rancho California WD. The District prepares an annual groundwater production program with the goal of developing the maximum perennial yield from the basin. The District monitors water levels and well production in each of several hydrogeologic subareas. Each year that data, combined with other information including water quality, natural and artificial recharge, pump settings, and well construction factors, are used to develop a recommended production program. Production rates are commonly lowered in subareas where water levels have declined over several years, and production rates are increased in areas where decline has not occurred. As a final check the recommended production rates are checked using the latest version of the Rancho California WD groundwater model.

In addition, Rancho California WD in cooperation with Camp Pendleton is in the process of refining a multi-level groundwater monitoring network, pursuant to the Cooperative Water Resource Management Agreement. The purpose of the network is to develop data for use in assessing safe yield operations.

Groundwater level data for three wells in the Murrieta-Temecula Groundwater Area are included in this report as Figures 4.1, 4.3 and 4.5. Water levels in the Windmill Well (8S/2W-12H1) located at the eastern part of Pauba Valley declined 3.9 feet in 2002-03. Water levels in Well 7S/3W-20C9 in the Murrieta CWD area rose 8 feet from last year, and those in Well 8S/2W-29G1 on the Pechanga Indian Reservation in Wolf Valley were down 4.1 feet from last year. As can be seen from the long-term hydrographs, the foregoing groundwater levels are at the low end of the broad range of groundwater levels experienced in recent years.

9.4 Salt Balance

A key issue in management of a groundwater basin is potential build up of salts from imported water supplies. Such a build-up could decrease the usability of waters in a basin. Consideration must be given to measures that allow export of salts from a basin to offset the salt load in water entering the groundwater basin.

A 2 MGD Demonstration Project involving discharge of treated wastewater into the Santa Margarita River system by Rancho California WD was discontinued in October 2002. This project was implemented in 1997. While it operated it provided cost-effective disposal of wastewater from the upper Santa Margarita River area, assisted in controlling salt balance in the Murrieta-Temecula Groundwater Area, and supplemented water supplies to the Santa Margarita River system downstream of Temecula. In 2001-02, Rancho California WD initiated an application to the Regional Board to extend the Demonstration Project for an additional five years and to increase the maximum discharge to 5 MGD between December and April. The maximum discharge would have been 3 MGD between May and November. Also, Rancho California WD requested that the first 2 MGD be made permanent and that discharges above 2 MGD be considered to be Demonstration Project flows. The Regional Board terms and conditions for extension of the program were unacceptable to Rancho California WD and the project was terminated.

In a separate project, Eastern MWD exported 2,955 acre feet of treated wastewater from the watershed for reuse. An additional 4,681 acre feet was exported for operational reasons. At an average total dissolved solids concentration of 650 mg/l there are approximately 1,768 pounds of salt in every acre foot of wastewater. Thus in 2002-03, approximately 6,750 tons of salt were exported by Eastern MWD.

In addition to export of treated wastewater, the salt balances of the Murrieta-Temecula groundwater area and the lower Santa Margarita River groundwater area are affected by discharges from wells into Murrieta Creek or Temecula Creek. In 2002-03 wells discharged 48 acre feet, as shown below, together with estimated total dissolved solids in the water.

Well No.	Release Acre Feet	TDS mg/l	Sample Date
101	34	500	8/14/02
118	14	580	11/08/02
Total	48		

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SECTION 10 - WATER QUALITY

10.1 Surface Water Quality

During 2002-03 Rancho California WD continued sampling of surface water quality as part of its 2 MGD Demonstration Program until October 18, 2002. Three samples were collected from the Santa Margarita River at the Temecula gaging station, Murrieta Creek gaging station and Temecula Creek at Highway 79. These samples were analyzed for total dissolved solids (TDS), nitrate, total nitrogen and total phosphorous. TDS concentrations at the Santa Margarita River station ranged from a low of 660 mg/l to 690 mg/l.

Nitrate concentrations as nitrogen at the Santa Margarita River gaging station ranged from 0.6 mg/l, to a high of 0.8 mg/l. All measurements of nitrate were well below the drinking water standard of 10 mg/l as N. These data are shown in Appendix Table D-2.1.

Rancho California WD collected samples at additional locations in the Santa Margarita River system including Santa Margarita River at Willow Glen, DeLuz Crossing and the Estuary. Among other things, these samples were analyzed for TDS and nitrate as N, as shown in Table D-2.1. TDS concentration at the DeLuz Crossing was 930 mg/l. Nitrate was 0.5 mg/l as N measured at the Willow Glen station. Samples of the water being discharged into Murrieta Creek from the system were also collected at a station called the Murrieta Creek at River Meter. Nitrate concentrations at the River Meter ranged from 1.9 to 2.6 mg/l as N.

Surface water quality data collected in prior years by Camp Pendleton and Eastern MWD are listed in earlier Watermaster reports.

The U.S.G.S. with funding provided by Camp Pendleton through February 6, 2003, collected continuous water quality measurements for dissolved oxygen, pH, specific conductance and temperature at two Santa Margarita River gaging stations; one near Temecula and the other near Fallbrook. After February 6 operation of the Temecula station continued with funding from the Watermaster office. The Fallbrook station is about nine miles downstream from the Temecula station, and the intervening drainage area is 32 square miles. Data collected at the two stations is published by the U.S.G.S. in its annual Water Resource Data report. The highest average daily high and the lowest average daily low for each parameter for each month are shown in Tables 10.1 and 10.2 for months in water year 2003.

TABLE 10.1

SANTA MARGARITA RIVER WATERSHED

**RANGES IN AVERAGE DAILY CONCENTRATION
 OF DISSOLVED OXYGEN, PH, SPECIFIC CONDUCTANCE AND TEMPERATURE
 AT SANTA MARGARITA RIVER NEAR TEMECULA**

Water Year 2002-03

COLLECTION MONTH/YEAR	DISSOLVED OXYGEN mg/l		pH		SPECIFIC CONDUCTANCE microsiemens/cm		TEMPERATURE Deg C	
	High	Low	High	Low	High	Low	High	Low
2002								
October	8.0	5.7	7.7	7.4	1160	817	21.4	16.0
November	7.7	4.8	7.8	7.1	1040	652	20.4	13.5
December	7.6	6.1	7.8	7.6	951	807	18.0	14.6
2003								
January	10.5	6.4	8.2	7.8	1210	862	15.3	12.5
February	10.6	6.4	8.1	7.4	1200	678	17.5	12.8
March	10.2	8.2	8.0	7.5	1040	540	24.3	11.6
April	9.3	7.7	8.0	7.6	963	805	18.2	14.2
May	8.9	7.1	8.1	7.4	956	677	20.9	16.4
June	8.6	7.4	8.2	7.6	785	681	22.5	20.0
July	8.1	7.0	8.3	7.8	826	718	26.4	21.2
August	7.9	5.2	8.2	7.7	917	734	27.3	25.9
September	7.8	5.5	8.2	7.7	852	722	27.8	25.1

TABLE 10.2

SANTA MARGARITA RIVER WATERSHED

**RANGES IN AVERAGE DAILY CONCENTRATION
 OF DISSOLVED OXYGEN, PH, SPECIFIC CONDUCTANCE AND TEMPERATURE
 AT FPUD SUMP NEAR FALLBROOK**

Water Year 2002-03

COLLECTION MONTH/YEAR	DISSOLVED OXYGEN mg/l		pH		SPECIFIC CONDUCTANCE microsiemens/cm		TEMPERATURE Deg C	
	High	Low	High	Low	High	Low	High	Low
2002								
October	9.1	6.4	7.9	7.6	1460	1400	19.4	13.4
November	9.7	6.5	8.0	7.2	1590	1160	17.1	10.8
December	10.5	7.5	7.7	7.2	1520	461	13.8	7.8
2003								
January	11.9	7.8	8.0	7.4	1600	1040	15.0	8.2
February - Partial	13.5	10.8	8.0	7.6	1040	969	14.9	8.1
March								
April								
May								
June								
July								
August								
September								

Note: Water quality station discontinued February 6, 2003

Measured values can only be compared for the months of October through January when both stations were in operation. Such values are similar for the two stations although the lower station has slightly higher dissolved oxygen and pH readings. Also the average high specific conductance values normally increase from 25 to 60 percent between the upper and lower station. The increase in the average lows is much greater, often approaching 100 percent.

It may be noted that after January 2003, Rancho California WD discharged relatively high quality water to the stream thereby significantly improving the relative quality of the water at the Temecula station. Also, inflows from the intervening 32 square mile drainage area include irrigation return flows that have high specific conductance.

10.2 Groundwater Quality

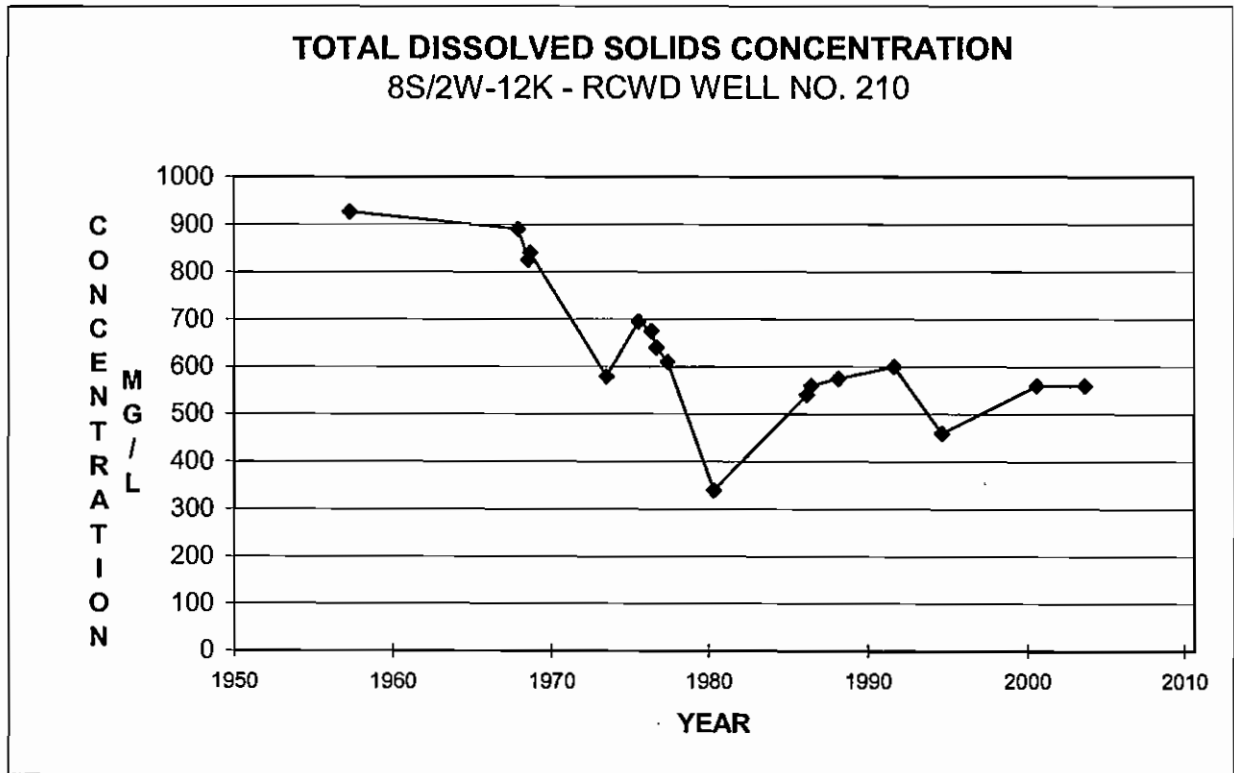
During 2002-03 water quality data were collected from wells by Rancho California WD, the U.S.G.S. for wells on Indian Reservations, and the U.S.M.C. at Camp Pendleton. The results from wells sampled by Murrieta County WD in July 2002 were also received.

Murrieta County WD sampled its wells for total dissolved solids in July 2002. These concentrations of ranged from 420 to 780 mg/l for the five wells sampled and are shown in Appendix Table D-3.

Water quality data for Rancho California WD wells are shown in Appendix Table D-4. Samples were collected from 37 wells during 2002-03. Of the 37 wells, 18 wells were analyzed for nitrates only. In these wells, nitrate concentrations ranged up to 26 mg/l as nitrate, with the drinking water standard being 45 mg/l as nitrate. Samples from most of the remaining wells were subjected to standard chemical analysis. TDS concentrations increased in eight wells, decreased in eight wells, one well both increased and decreased and two wells were unchanged.

Total dissolved solids concentrations for Rancho California WD Well 210 are shown on Figure 10.1 for samples collected since 1957 when the well was constructed. The figure shows a decline in TDS from approximately 900 mg/l for the samples collected during the 1960's to the 500-600 mg/l range in recent years.

FIGURE 10.1



Appendix Table D-5 shows water quality data collected by the U.S.G.S. from wells on Indian Reservations. In 2002-03 samples were collected from four wells on the Pechanga Indian Reservation and subjected to standard chemical analysis. Concentrations of the various constituents were consistent with historical results.

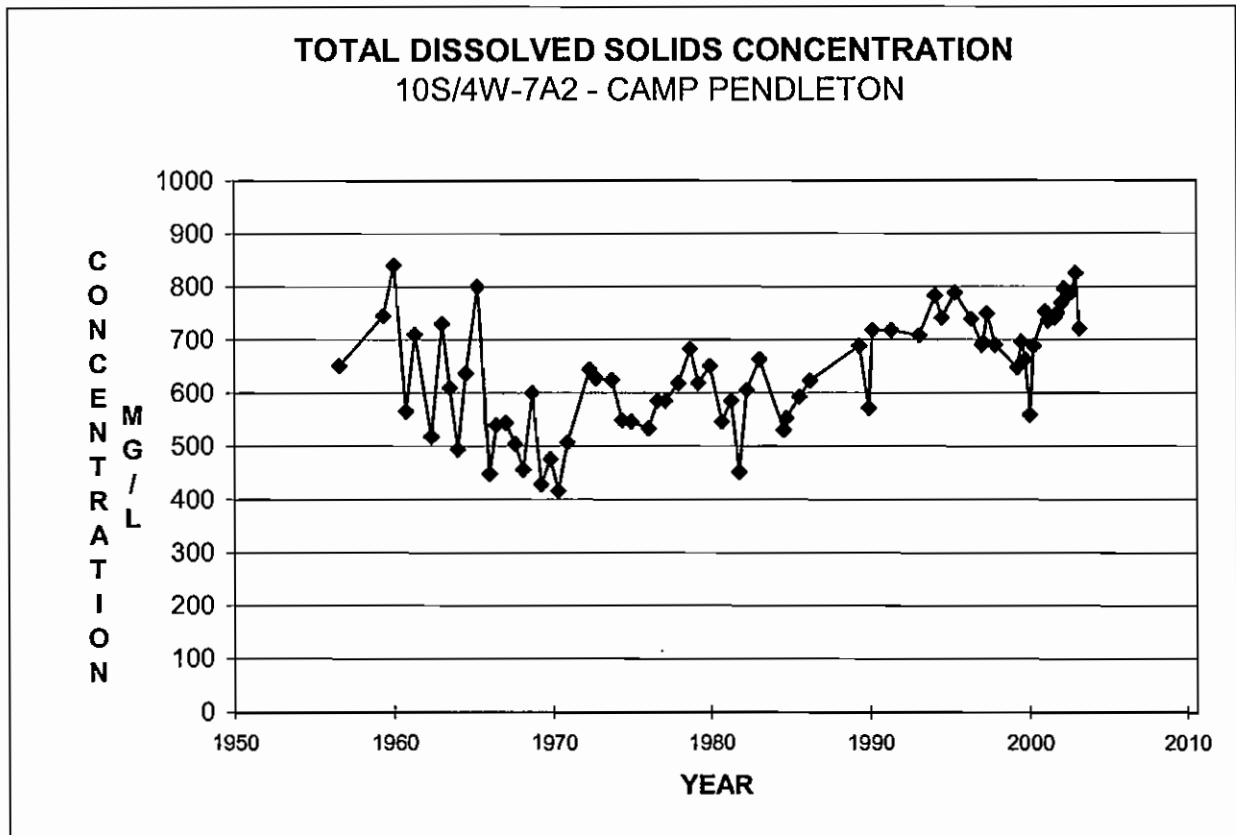
During 2002-03 samples of groundwater were collected from 12 wells at Camp Pendleton as shown on Appendix Table D-6. These wells were subjected to standard chemical analysis with results generally consistent with the historical results. Of the 12 wells sampled, eight provided one or more samples where total dissolved solids concentrations exceeded 750 mg/l, the Basin Plan Objective.

In eight of the 12 wells, one or more of the samples taken had total dissolved solids concentration that exceeded those in the prior year.

Nitrate in samples from three separate wells that showed concentrations of exactly 100 mg/l as N last year were listed as none detected (ND) this year.

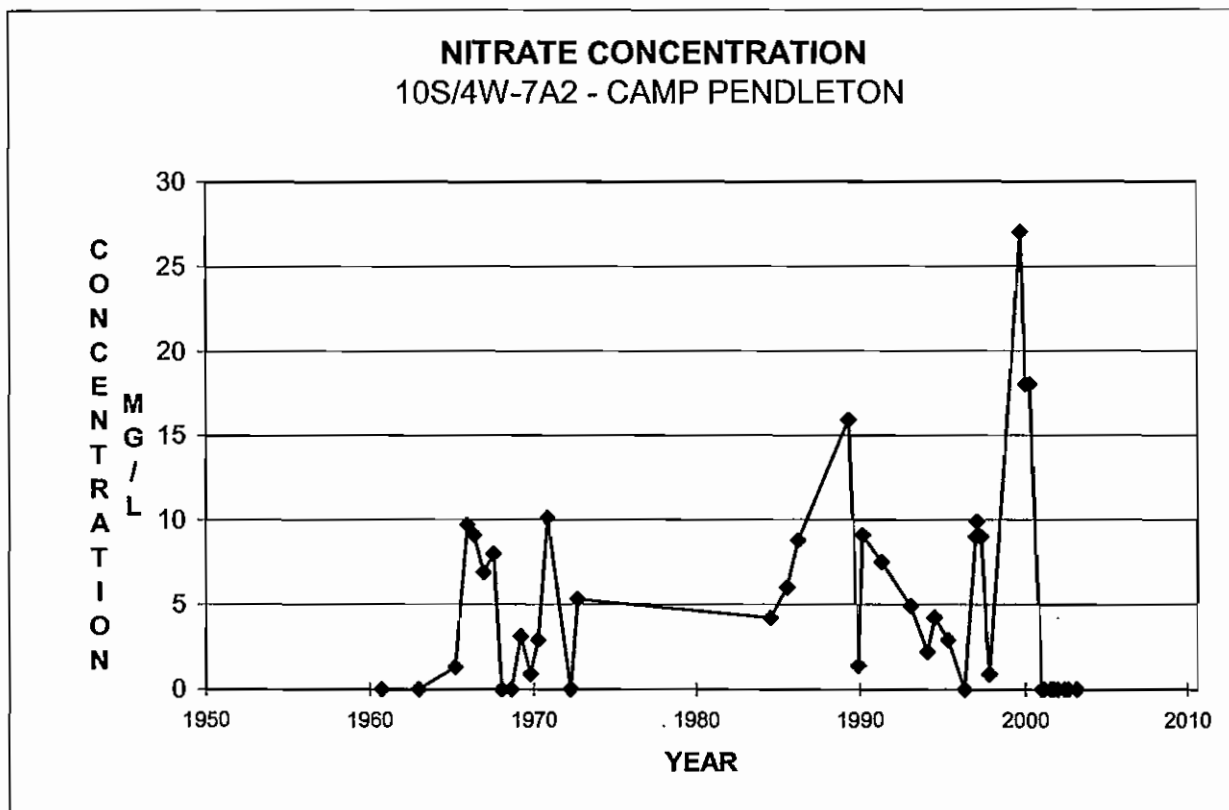
Historical total dissolved solids concentrations for Camp Pendleton Well 7A2 are shown on Figure 10.2 for samples collected since the mid-1950's. The figure shows a decline between the mid-1950's and 1970, then a period of increasing concentration to levels in the 550-800 mg/l range. Analysis of samples collected in 2002-03 indicated total dissolved solids concentrations of 721, 788, and 825 mg/l.

FIGURE 10.2



Historical nitrate concentrations for the same well (7A2) are shown on Figure 10.3. Two samples collected in 2002-03 indicated there were no detected concentrations of nitrate.

FIGURE 10.3



SECTION 11 – COOPERATIVE WATER RESOURCE MANAGEMENT AGREEMENT

11.1 General

On August 20, 2002, the Cooperative Water Resource Management Agreement (Agreement) between Camp Pendleton and Rancho California WD was approved by the District Court. Among other things, the Agreement provides that on May 1 of each year the Technical Advisory Committee is to compute a hydrologic index for the year based on streamflow and precipitation between January and April. In May 2003 it was determined that 2003 was an "Above Normal" year. The hydrologic index for the year establishes the required flows for the months of May through December of the calendar year. Required flows for an "Above Normal" year are shown on Table 11.1. On October 30, 2003, Camp Pendleton requested that the District reduce flow augmentation at the Gorge by changing the flow requirement from those related to "Above Normal" conditions to those related to "Below Normal" conditions. That request was for the purpose of reducing the quantity of make-up water in excess of 4,000 acre feet. The District reduced make-up flows on October 30, 2003.

11.2 Required Flows

Under the Agreement Rancho California WD guarantees that the ten-day moving average of the measured flows at the Santa Margarita River gaging station near Temecula shall meet the required flows for each month during the year. In order to meet the required flows, Rancho California WD discharges make-up water into the river immediately upstream from the U.S.G.S. gaging station. These discharges are measured at MWD's Outlet WR-34.

Flow requirements are based on two-thirds of the median natural flow of the Santa Margarita River at the Gorge for a given hydrologic condition. During the winter period (January through April) the District shall maintain a ten-day running average equal to 11.5 cfs less carry-over credits less requested Foregone Make-Up Water. The District may earn credits if it has provided Make-Up Water in excess of its actual requirement. During the non-winter period (May through December) the District shall maintain a ten-day running average equal to the flow requirements specified in the Agreement as determined on May 1st less requested Foregone Make-Up Water. When the District is required to provide Make-Up Water in any calendar year in excess of 4,000 acre feet, it may apply a credit for such excess during the following two winter periods. At no time is the District required to make up more than 11.5 cfs.

TABLE 11.1

SANTA MARGARITA RIVER WATERSHED

MONTHLY SUMMARY OF REQUIRED FLOWS,
DISCHARGES, CREDITS AND ACCOUNTS

2003 - ABOVE NORMAL YEAR

Month ****	USGS		USGS Website Discharge AF	Required Flows cfs	No. of Days 10- Day Moving Average is Less Than Required Flow	Discharge from WR-34 Per MWD Per RCWD		Excess Flow Credits	Camp Pendleton Groundwater Account	
	Provisional Discharge AF	Discharge AF				Per MWD	Per RCWD		Input AF	Cummulative Balance AF
Jan	750.9	805.5		17.8 *	0	509.8	670.4	0.0	387.4	387.4
Feb	9,828.7	9,856.7		17.8 *	0	459.2	333.0	0.0	349.3	736.7
Mar	5,408.7	5,485.7		17.8 *	0	508.4	491.3	0.0	387.4	1,124.0
Apr	2,350.0	2,449.6		17.8 *	0	480.7	510.1	0.0	374.9	1,498.9
May	676.7	760.9		11.7 *	0	563.5	564.8	0.0	12.3	1,511.2
June	548.8	603.8		9.4	1	512.4	513.4	0.0	0.0	1,511.2
July	502.2	579.2		7.8	0	498.2	498.7	0.0	0.0	1,511.2
Aug	492.5	473.7		7.6	0	484.4	485.0	0.0	0.0	1,511.2
Sept	477.0	465.5		7.4	0	454.4	454.9	0.0	0.0	1,511.2
Oct	494.7	482.8		7.7	0	461.6	465.6	0.0	7.5	1,518.7
Nov	452.8	399.9		8.8 **	1	226.2	226.2	0.0	255.9	1,774.6
Dec	870.2	870.2		10.4 ***	0	270.6	270.6	0.0	313.6	2,088.2
TOTAL		23,233.3			2	5,429.4	5,484.0	0.0	2,088.2	

* - Maximum make up water is 11.5 cfs

** - Revised to 4.5 cfs on 10/31/03

*** - Revised to 5.3 cfs on 10/31/03

**** - Monthly totals shown may not be equal to numbers shown in columns due to computer rounding.

The measured daily flows, the ten-day moving average, and the differences between the moving average and the required flows are shown in Appendix E. Two listings of daily discharges are shown in the tables in Appendix E: the U.S.G.S. provisional discharge and the U.S.G.S. website discharge. The discharges shown on the website are those that dictate daily decisions regarding the quantities of make-up water required and those discharges are used to compute the ten-day moving average. The provisional discharge is a more refined estimate developed later by the U.S.G.S. and published in their annual reports. The number of days each month when the ten-day moving average was less than the required flow is summarized on Table 11-1. It can be noted that the moving average was less than the required flow on two days during the year.

Rancho California WD discharges to the Santa Margarita River through MWD's Outlet WR-34 as measured by MWD totaled 5,429.4 acre feet for the 2003 calendar year. It should be noted that the meter on the MWD discharge from WR-34 was broken during the period January 2 through March 31, 2003. MWD used an overall average of about 8.3 cfs during that period.

Discharges of make-up water from WR-34 in excess of 4,000 acre feet or 1,429.4 acre feet may be applied against flow requirements during the two following winter periods (January – April) of 2004 and 2005.

Since flows are required to be maintained during the January – April period prior to learning the hydrologic index, the Agreement provides for a credit in the event the District provides Make-Up Water in excess of its actual requirement as determined on May 1st or the District is required to provide Make-Up Water in excess of 4,000 acre feet in a calendar year. The calendar year 2003 was determined to be an "Above Normal" year so no excess flows were discharged to the river.

The Agreement also provides that Camp Pendleton may acquire groundwater rights when Rancho California WD's actual flow maintenance requirements are less than the required flows. That condition occurred in 2003 during the January – April period when Rancho California WD's make-up requirement was 11.5 cfs and the required flow for that period was 17.8 cfs. Thus, during that period the difference of 6.3 cfs (12.5 AF/day) was added to Camp Pendleton's groundwater account. Similarly, in May 0.4 AF per day was added to the account. Water was also added to the account on October 31st, and during November and December based on the differences between required flows for "Above Normal" and "Below Normal" years.

A total of 2,088.2 acre feet were contributed to Camp Pendleton's groundwater account during the year.

11.3 Water Quality

The U. S. Geological Survey continuously monitors four parameters of water quality at the Santa Margarita River near Temecula gaging station, including dissolved oxygen, pH, specific conductance, and temperature. The daily averages for each of these parameters are reported annually. Monthly highs and lows for each parameter are listed in Table 10.1 for the water year ending September 30, 2003.

11.4 Monitoring Programs

The Agreement provides for the establishment of two monitoring programs: one to assess the impacts of operations on water supply, water quality and riparian habitat within Camp Pendleton, and; one to assess safe yield operations at Rancho California Water District.

During 2002-03, Camp Pendleton began development of a monitoring plan based on a similar monitoring plan for the Santa Margarita River developed by the Nature Conservancy. Also in 2002-03, the Technical Advisory Committee began identification of a multi-level groundwater network for the Murrieta-Temecula groundwater basin.

SECTION 12 - FIVE YEAR PROJECTION OF WATERMASTER OFFICE TASKS, EXPENDITURES AND REQUIREMENTS

12.1 General

Projected tasks over the next five years are listed below in two categories: normal tasks, which are part of the usual Watermaster office operation; and additional tasks, which are foreseen but are not part of the normal office operations.

12.2 Normal Tasks

Tasks that are normally part of the Watermaster Office operation are as follows:

1. Update List of Substantial Users
2. Collect Water Production, Use, Import and Availability Data
3. Collect Well Location, Construction and Water Level Data
4. Administer Water Rights
5. Collect Water Quality Data
6. Monitor Water Quality and Water Right Activities
7. Administer Lake Skinner and Diamond Valley Lake MOU's
8. Administer Steering Committee Matters
9. Prepare Court Reports/Budgets
10. Monitor Streamflow and Water Quality Measuring
11. Data Management
12. Administer Cooperative Water Resource Management Agreement

12.3 Additional Tasks

Tasks that have been identified but which are not part of normal operations are as follows:

1. Prepare List of All Water Users Under Court Jurisdiction
2. Prepare Inventory of Ponds and Reservoirs
3. Determine Salt Balance

12.4 Projected Expenditures

Projected expenditures for the current year and over the next five years are listed as follows:

		<u>Projected Expenditures</u>		
		<u>Watermaster Office</u>	<u>Gaging Station</u>	<u>Total</u>
Current Year	2003/2004	\$172,700	\$144,675	\$317,375
Projected Years	2004/2005	\$174,500	\$148,875	\$323,375
	2005/2006	\$183,200	\$156,300	\$339,500
	2006/2007	\$192,400	\$164,100	\$356,500
	2007/2008	\$202,000	\$172,300	\$374,300
	2008/2009	\$212,100	\$180,900	\$393,000

SECTION 13 - WATERMASTER OFFICE BUDGET 2004-2005

A total Watermaster Budget of \$323,375 for the Water Year ending September 30, 2005, is shown below.

This budget includes \$174,500 for the Watermaster Office and \$148,875 for U.S.G.S. gaging station operations. The budgeted cost for gaging station operation is based on the annual renewal of an agreement between the Watermaster and the U. S. Geological Survey.

	APPROVED BUDGET CURRENT YEAR 2003-04 \$	PROPOSED BUDGET 2004-05 \$
Watermaster Office		
Rent	9,600	9,600
Accounting Services	4,000	3,600
Supplies	700	700
General Liability & Professional Insurance	3,900	4,500
Printing	1,800	2,200
Audit	2,400	2,400
Publications	2,100	2,300
Clerical/Data Management	45,000	45,000
Telephone	1,600	2,000
Miscellaneous Operating/Maintenance	1,500	1,600
Mileage/Travel	500	500
Office Equipment and Software	2,000	1,500
Watermaster		
Consulting Services	82,000	83,000
Automobile Expense	3,600	3,600
Travel Reimbursement	12,000	12,000
SUBTOTAL WATERMASTER OFFICE	\$ 172,700	\$ 174,500
USGS Gaging Station Operation and Maintenance	\$ 121,425	\$ 124,950
USGS Water Quality Operation and Maintenance	<u>23,250</u>	<u>23,925</u>
TOTAL	\$ 317,375	\$ 323,375

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

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SANTA MARGARITA RIVER WATERSHED
ANNUAL WATERMASTER REPORT
WATER YEAR 2002-03

APPENDIX A
WATER PRODUCTION AND USE
WATER YEAR 2002-03

AUGUST 2004

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

**WATERMASTER
SANTA MARGARITA RIVER WATERSHED**

TABLE A-1

**SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE**

EASTERN MUNICIPAL WATER DISTRICT

2002-03

Quantities in Acre Feet

MONTH YEAR	PRODUCTION					USE						RECLAIMED WASTEWATER					
	WELLS	IMPORT	EXPORT	NET	TOTAL	AG	COMM	DOM	TOTAL	LOSS	TOTAL	REUSE	OUTSIDE SMRW	RELEASE	RECHARGE	TOTAL	
	1/	FROM	IMPORT			2/		3/			USE	IN	OTHER	TO			
		SMRW										SMRW 4/	REUSE	EXPORT 5/	RIVER		
2002																	
OCT	0	1,025	538	489	489	0	0	465	465	24	489	362	190	378	0	0	930
NOV	0	1,116	412	704	704	0	0	669	689	35	704	228	350	350	0	0	928
DEC	0	731	350	381	381	0	0	362	362	19	381	250	256	410	0	0	916
2003																	
JAN	0	968	513	453	453	0	0	430	430	23	453	182	62	643	0	0	887
FEB	0	624	375	249	249	0	0	236	236	13	249	228	297	323	0	0	848
MAR	0	694	51	643	843	0	0	611	611	32	643	180	10	733	0	0	903
APR	0	1,198	449	749	749	0	0	712	712	37	749	227	250	386	0	0	863
MAY	0	1,339	189	1,150	1,150	0	0	1,092	1,092	58	1,150	309	112	571	0	0	992
JUNE	0	1,232	430	802	802	0	0	782	782	40	802	503	285	206	0	0	974
JULY	0	1,921	647	1,274	1,274	0	0	1,211	1,211	63	1,274	463	336	219	0	0	1,018
AUG	0	1,823	422	1,401	1,401	0	0	1,331	1,331	70	1,401	349	366	230	0	0	945
SEPT	0	1,506	739	767	767	0	0	729	729	38	767	283	461	232	0	0	976
TOTAL	0	14,175	5,113	9,062	9,062	0	0	8,610	8,610	452	9,062	3,542	2,955	4,681	0	0	11,178

1/ Does not include deliveries to Rancho California Water District or Elsinore Valley Municipal Water District

2/ Figures are 95% of water pumped and imported to allow for 5% loss

3/ Figures are 95% of water pumped and imported to allow for 5% loss

4/ Includes 1,056 AF of sewage diverted to RCWD

5/ Unaccounted for Export

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE A-2

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

ELSINORE VALLEY MUNICIPAL WATER DISTRICT

2002-03

Quantities in Acre Feet

PRODUCTION				USE						WASTEWATER EXPORTED
MONTH YEAR	WELLS	IMPORT	TOTAL	AG	COMM	DOM	TOTAL DELIVERED	LOSS *	TOTAL USE	
2002										
OCT	0	638	638	7	250	381	638	0	638	41
NOV	0	441	441	5	152	284	441	0	441	32
DEC	0	407	407	6	145	256	407	0	407	52
2003										
JAN	0	412	412	4	129	279	412	0	412	43
FEB	0	375	375	4	134	237	375	0	375	38
MAR	0	344	344	3	110	231	344	0	344	46
APR	0	416	416	3	147	266	416	0	416	46
MAY	0	488	488	5	185	298	488	0	488	41
JUNE	0	870	870	10	326	534	870	0	870	40
JULY	0	815	815	6	334	475	815	0	815	34
AUG	0	851	851	4	337	510	851	0	851	30
SEPT	0	1,034	1,034	6	416	612	1,034	0	1,034	40
TOTAL	0	7,091	7,091	63	2,665	4,363	7,091	0	7,091	483

* Assumes no loss

TABLE A-3

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

FALLBROOK PUBLIC UTILITY DISTRICT

2002-03

Quantities in Acre Feet

MONTH YEAR	PRODUCTION						USE						WASTEWATER			
	TOTAL WELLS IMPORT	DELUZ AREA IMPORT	FALLBROOK AREA IMPORT	SMRW IMPORT 1/	TOTAL SMRW IMPORT	TOTAL PRODUCTION	AG	COMM	DOM	TOTAL IN SMRW	LOSS*	TOTAL USE IN SMRW	FROM SMRW	REUSE IN SMRW	FROM U. S. N.W.S.	EXPORTED FROM SMRW
2002																
OCT	0	1,566	312	1,253	577	889	521	55	383	959	(70)	889	130	1.80	0.80	127
NOV	0	1,145	263	881	405	668	433	49	246	728	(60)	668	138	1.40	0.70	136
DEC	0	685	155	531	244	399	236	33	244	513	(114)	399	144	0.90	0.70	142
2003																
JAN	0	1,239	219	1,020	469	688	1,827	29	162	2,018	(1,330)	688	141	1.50	0.80	139
FEB	0	692	174	518	238	412	305	36	239	580	(168)	412	131	1.10	1.30	129
MAR	0	650	70	580	267	337	91	26	128	245	92	337	165	0.30	1.30	163
APR	0	1,031	211	820	377	588	272	41	211	524	64	588	152	1.50	1.00	150
MAY	0	1,331	219	1,112	512	731	301	43	183	527	204	731	155	1.60	0.80	153
JUNE	0	1,491	320	1,171	539	859	467	48	314	829	30	859	143	2.30	0.60	140
JULY	0	2,000	472	1,529	703	1,175	638	59	274	971	204	1,175	150	2.90	0.60	147
AUG	0	2,116	540	1,576	725	1,265	473	62	436	971	294	1,265	149	2.70	0.90	145
SEPT	0	1,918	438	1,480	681	1,119	477	72	364	913	206	1,119	139	3.00	0.80	135
TOTAL	0	15,864	3,393	12,471	5,737	9,130	6,041	553	3,184	9,778	(648)	9,130	1,737	21	10	1,706

1/ Approximately 46% of the Fallbrook area is within the Santa Margarita River Watershed

*Loss = Total production less total use

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE A-4

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

METROPOLITAN WATER DISTRICT
DELIVERIES IN DOMENIGONI VALLEY

2002-03

Quantities in Acre Feet

MONTH YEAR	PRODUCTION			USE					
	WELLS	IMPORT TO SMRW	TOTAL IN SMRW	AG	COMM/ DOM *	GW RECHARGE	TOTAL DELIVERED	LOSS **	TOTAL USE
2002									
OCT	0	30	30	28	0	0	28	2	30
NOV	0	25	25	24	0	0	24	1	25
DEC	0	3	3	3	0	0	3	0	3
2003									
JAN	0	102	102	97	0	0	97	5	102
FEB	0	7	7	7	0	0	7	0	7
MAR	0	2	2	2	0	0	2	0	2
APR	0	0	0	0	0	0	0	0	0
MAY	0	28	28	27	0	0	27	1	28
JUNE	0	95	95	90	0	0	90	5	95
JULY	0	95	95	90	0	0	90	5	95
AUG	0	78	78	74	0	0	74	4	78
SEPT	0	30	30	28	0	0	28	2	30
TOTAL	0	495	495	470	0	0	470	25	495

* Construction water

** Loss = 5%

WATERMASTER
 SANTA MARGARITA RIVER WATERSHED

TABLE A-5

SANTA MARGARITA RIVER WATERSHED
 MONTHLY WATER PRODUCTION AND USE

MURRIETA COUNTY WATER DISTRICT

2002-03

Quantities in Acre Feet

MONTH YEAR	PRODUCTION			USE					
	WELLS	IMPORT	TOTAL	AG	COMM	DOM	TOTAL DELIVERED	LOSS *	TOTAL USE
2002									
OCT	193	0	193	39	32	114	185	8	193
NOV	130	0	130	17	15	181	213	(83)	130
DEC	114	0	114	16	18	67	101	13	114
2003									
JAN	99	0	99	13	15	71	99	0	99
FEB	111	0	111	15	17	12	44	67	111
MAR	69	0	69	6	15	43	64	5	69
APR	117	0	117	14	16	83	113	4	117
MAY	123	0	123	18	19	103	140	(17)	123
JUNE	190	1	191	32	19	137	188	3	191
JULY	192	24	216	27	51	132	210	6	216
AUG	209	30	239	40	25	174	239	0	239
SEPT	201	47	248	35	33	167	235	13	248
TOTAL	1,748	102	1,850	272	275	1,284	1,831	19	1,850

* Loss = Total production less total delivered

WATERMASTER
 SANTA MARGARITA RIVER WATERSHED

TABLE A-6

SANTA MARGARITA RIVER WATERSHED
 MONTHLY WATER PRODUCTION AND USE

RAINBOW MUNICIPAL WATER DISTRICT

2002-03

Quantities in Acre Feet

MONTH YEAR	PRODUCTION			USE				
	LOCAL	IMPORT TO WATERSHED	TOTAL IN WATERSHED	AG	COMMERCIAL/ DOMESTIC	TOTAL DELIVERIES	LOSS*	TOTAL USE
2002								
OCT	0	168	168	138	15	153	15	168
NOV	0	141	141	112	16	128	13	141
DEC	0	107	107	90	7	97	10	107
2003								
JAN	0	59	59	46	8	54	5	59
FEB	0	117	117	97	9	106	11	117
MAR	0	47	47	36	7	43	4	47
APR	0	98	98	83	6	89	9	98
MAY	0	104	104	85	10	95	9	104
JUNE	0	109	109	88	11	99	10	109
JULY	0	114	114	93	11	104	10	114
AUG	0	205	205	168	18	186	19	205
SEPT	0	241	241	201	18	219	22	241
TOTAL	0	1,510	1,510	1,237	136	1,373	137	1,510

*Loss = 10% of use

TABLE A-7

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE
RANCHO CALIFORNIA WATER DISTRICT
2002-2003
Quantities in Acre Feet

MONTH YEAR	PRODUCTION			USE							VAIL RELEASE AND RECHARGE 6/	RECLAIMED WASTEWATER		
	WELLS 1/	IMPORT 2/	NET IMPORT	AG DOM	AG/ DOM	COMM	DOM	SMR RELEASE 3/	IMPORT TO STORAGE 4/	TOTAL USE		LOSS 5/	TOTAL	REUSE IN SMRW 7/
2002														
OCT	2,490	5,119	0	3,525	540	494	2,654	154	219	7,586	23	7,609	378	104
NOV	1,713	2,790	0	2,550	395	438	2,409	145	4	5,941	(1,438)	4,503	321	0
DEC	1,148	1,778	0	1,958	302	310	1,650	91	161	4,472	(1,546)	2,926	280	0
2003														
JAN	2,208	2,629	0	920	140	245	1,249	512	57	3,123	1,714	4,837	331	0
FEB	1,245	2,248	0	2,184	330	272	1,722	460	264	5,232	(1,739)	3,493	324	0
MAR	1,382	2,198	0	423	83	233	1,087	510	323	2,659	921	3,580	383	0
APR	2,049	2,689	0	1,530	241	232	1,394	483	172	4,052	686	4,738	370	0
MAY	2,554	4,621	0	1,950	285	355	2,134	568	255	5,547	1,628	7,175	277	0
JUNE	2,429	4,758	0	2,976	465	375	2,361	516	125	6,818	369	7,187	283	0
JULY	2,778	7,386	0	3,542	571	425	2,746	506	393	8,183	1,981	10,164	291	0
AUG	2,826	8,066	128	4,689	668	576	3,530	492	424	10,379	385	10,764	289	0
SEPT	2,418	6,645	119	4,030	625	502	3,108	459	353	9,077	(133)	8,944	253	0
TOTAL	25,240	50,927	247	30,277	4,645	4,457	26,044	4,896	2,750	73,069	2,851	75,920	3,780	104

1/ Wells recovered 24,147 AF from older alluvium and 1,093 AF from Vail recharge

2/ Includes 30,762 AF direct use; 15,694 AF direct recharge; and 4,471 AF from MWD WR-34

3/ 48 AF into Murrieta Creek from Wells 101 and 118 ; 377 AF from System River Meter; 4,471 AF from MWD WR-34

4/ 15,694 AF of direct recharge less 12,944 AF of import recovery

5/ Loss = Total production less total use and includes 42 acre feet pumped from wells 102, 121, 135 and 146 directly into reclaimed water system

6/ Vail releases and the related Vail recharge are computed as Total Release less Inflow to be bypassed

7/ Does not include EMWD reclaimed wastewater production

8/ Discharge from 2 MGD Demonstration Project

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE A-8

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

U.S.M.C. - CAMP PENDLETON

2002-03

Quantities in Acre Feet

MONTH YEAR	PRODUCTION			USE					RECLAIMED WASTEWATER			
	AG LOCAL	CAMP SUPPLY	TOTAL	AGRICULTURE 1/ IN SMRW	OUT SMRW	CAMP SUPPLY 2/ IN SMRW	OUT SMRW	TOTAL EXPORT	TOTAL 3/ IN SMRW	RECHARGED IN SMRW 4/	IMPORT 5/ RECHARGED IN SMRW	TOTAL RECHARGED IN SMRW
2002												
OCT	268	456	724	104	164	198	258	422	302	84	162	246
NOV	67	385	452	26	41	165	220	261	191	83	154	237
DEC	12	361	373	5	7	155	206	213	160	82	153	235
2003												
JAN	10	349	359	4	6	149	200	206	153	84	133	217
FEB	0	327	327	0	0	139	188	188	139	83	144	227
MAR	3	406	409	1	2	174	232	234	175	83	143	226
APR	9	430	439	3	5	189	241	246	192	86	128	214
MAY	45	425	470	18	28	137	288	316	155	83	165	248
JUNE	135	472	607	53	82	208	264	346	261	62	111	193
JULY	236	532	768	92	144	234	298	442	326	85	115	200
AUG	252	554	806	98	154	244	310	464	342	82	136	218
SEPT	233	513	746	91	142	226	287	429	317	82	144	226
TOTAL	1,270	5,210	6,480	495	775	2,218	2,992	3,767	2,713	999	1,688	2,687

1/ Agricultural water use is divided with 39% used inside the SMRW and 61% used outside

2/ Camp Supply water use inside the SMRW equals 44% of sum of Camp Supply production plus Naval Weapons Station Import, minus the NWS Import (SMRW CS = .44 (CS+NWS Imp) - NWS Imp.)

3/ Assumes no losses

4/ Discharge from Plant Nos. 3 plus 8 plus 29.17 acre feet per month from Plant No. 13

5/ Discharge from Plant No. 1, plus discharge from Pond 2, plus excess of Plant No. 13 over 29.17 acre feet per month

WATERMASTER
 SANTA MARGARITA RIVER WATERSHED

TABLE A-9

SANTA MARGARITA RIVER WATERSHED
 MONTHLY WATER PRODUCTION AND USE

U. S. NAVAL WEAPONS STATION, FALLBROOK ANNEX

2002-03

Quantities in Acre Feet

MONTH YEAR	PRODUCTION			USE				WASTEWATER
	LOCAL	IMPORT TO WATERSHED 1/	TOTAL	AG	COMMERCIAL/ DOMESTIC	LOSS 2/	TOTAL USE	EXPORTED
2002								
OCT	0.0	7.4	7.4	0.0	6.7	0.7	7.4	0.8
NOV	0.0	7.4	7.4	0.0	6.7	0.7	7.4	0.7
DEC	0.0	3.3	3.3	0.0	3.0	0.3	3.3	0.7
2003								
JAN	0.0	4.0	4.0	0.0	3.6	0.4	4.0	0.8
FEB	0.0	5.0	5.0	0.0	4.5	0.5	5.0	1.3
MAR	0.0	6.8	6.8	0.0	6.2	0.6	6.8	1.3
APR	0.0	7.4	7.4	0.0	6.7	0.7	7.4	1.0
MAY	0.0	10.5	10.5	0.0	9.5	1.0	10.5	0.8
JUNE	0.0	11.8	11.8	0.0	10.7	1.1	11.8	0.6
JULY	0.0	8.6	8.6	0.0	7.8	0.8	8.6	0.6
AUG	0.0	8.8	8.8	0.0	8.0	0.8	8.8	0.9
SEPT	0.0	7.4	7.4	0.0	6.7	0.7	7.4	0.8
TOTAL	0.0	88.4	88.4	0.0	80.4	8.0	88.4	10.4

1/ - Import via Fallbrook Public Utility District

2/ - Loss = 10% of Use

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE A-10

SANTA MARGARITA RIVER WATERSHED
MISCELLANEOUS WATER PRODUCTION AND IMPORTS
2002-03
Quantities in Acre Feet

MONTH YEAR	IMPORT		PRODUCTION					
	WESTERN MWD IMPORTS TO IMPROVEMENT DISTRICT A	ANZA MUTUAL WATER COMPANY	OUTDOOR RESORTS RANCHO CALIFORNIA, INC.	BUTTERFIELD OAKS MOBILE HOME PARK	LAKE RIVERSIDE ESTATES	PECHANGA INDIAN RESERVATION	HAWTHORN WATER SYSTEM	JOJOBA HILLS SKP RESORT
2002								
OCT	4.20	2.30 A	1.85 A	0.11	17.66	34.30	7.45	7.26
NOV	3.30	2.30 A	1.85 A	0.12	24.91	46.90	4.41	6.09
DEC	2.70	2.30 A	1.85 A	0.16	7.03	33.80	3.51	5.15
2003								
JAN	2.90	2.30 A	2.52 A	0.16	1.81	43.30	3.57	5.80
FEB	2.30	2.30 A	2.11 A	0.16	0.74	41.60	3.95	4.98
MAR	3.20	2.30 A	2.11	0.32	1.10	34.10	4.72	4.91
APR	2.20	2.30 A	1.83	0.32	2.23	47.20	4.57	4.52
MAY	2.70	3.82	2.85	0.33	30.13	55.40	7.81	8.17
JUNE	3.50	6.12	5.36	0.48	52.65	60.70	9.71	6.02
JULY	5.00	6.00 A	7.13	0.46	53.43	74.30	11.55	8.03
AUG	5.20	6.00 A	5.67	0.49	20.63	59.80	12.65	7.23
SEPT	5.20	6.00 A	8.50	0.51	43.61	69.00	7.71	6.54
SUBTOTAL			43.63	3.62		600.40		
			158.00 *	7.50 *		4.00 **		
TOTAL	42.40	44.04	201.63	11.12	255.93	604.40	81.61	74.70

A - Average

* Estimated non-metered use

** Surface Diversion

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER WATERSHED

ANNUAL WATERMASTER REPORT

WATER YEAR 2002-03

APPENDIX B

WATER PRODUCTION AND USE

WATER YEAR 1965-66 TO WATER YEAR 2002-03

AUGUST 2004

**WATERMASTER
SANTA MARGARITA RIVER WATERSHED**

**WATERMASTER
SANTA MARGARITA RIVER WATERSHED**

TABLE B-1

**SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE**

EASTERN MUNICIPAL WATER DISTRICT
Quantities in Acre Feet

WATER YEAR	PRODUCTION				USE						RECLAIMED WASTEWATER						
	WELLS	IMPORT	EXPORT FROM SMRW	NET IMPORT	TOTAL	AG	COMM	DOM	TOTAL	LOSS	TOTAL USE	REUSE IN SMRW	OUTSIDE SMRW OTHER REUSE	SMRW EXPORT	RELEASE TO RIVER	RECHARGE	TOTAL
1966	0	1,604	0	1,604	1,604	1,520	0	4	1,524	80	1,604	0	0	0	0	100	100
1967	0	1,630	0	1,630	1,630	1,544	0	4	1,548	82	1,630	0	0	0	0	100	100
1968	0	1,464	0	1,464	1,464	1,386	0	5	1,391	73	1,464	0	0	0	0	100	100
1969	0	1,741	0	1,741	1,741	1,648	0	6	1,654	87	1,741	0	0	0	0	100	100
1970	0	1,417	0	1,417	1,417	1,340	0	7	1,346	71	1,417	0	0	0	0	101	101
1971	0	1,383	0	1,383	1,383	1,306	0	8	1,314	89	1,383	0	0	0	0	119	119
1972	0	1,470	0	1,470	1,470	1,388	0	8	1,396	74	1,470	0	0	0	0	242	242
1973	0	1,533	0	1,533	1,533	1,447	0	10	1,456	77	1,533	0	0	0	0	217	217
1974	0	1,601	0	1,601	1,601	1,511	0	10	1,521	80	1,601	0	0	0	0	193	193
1975	0	1,969	0	1,969	1,969	1,859	0	11	1,871	98	1,969	0	0	0	0	253	253
1976	145	2,493	0	2,493	2,638	2,356	0	150	2,508	132	2,638	134	0	0	0	155	289
1977	431	2,947	0	2,947	3,378	2,723	64	423	3,209	189	3,378	244	0	0	0	70	314
1978	375	2,551	0	2,551	2,926	2,409	0	371	2,780	146	2,926	300	0	0	0	75	375
1979	289	1,894	0	1,894	2,183	1,784	0	290	2,074	109	2,183	350	0	0	0	147	497
1980	281	1,192	0	1,192	1,473	1,116	0	283	1,399	74	1,473	375	0	0	0	220	595
1981	282	716	0	716	998	663	0	285	948	50	998	375	0	0	0	304	679
1982	321	1,112	0	1,112	1,433	1,038	0	323	1,361	72	1,433	375	0	0	0	386	761
1983	106	1,211	0	1,211	1,317	1,131	0	120	1,251	66	1,317	375	0	0	0	466	841
1984	236	699	0	699	935	644	0	244	888	47	935	400	0	0	0	525	925
1985	314	679	0	679	993	624	0	319	943	50	993	450	0	0	0	565	1,015
1986	229	760	0	760	989	700	0	239	940	49	989	600	0	0	0	509	1,109
1987	89	1,155	0	1,155	1,244	638	0	543	1,182	62	1,244	650	0	0	0	554	1,204
1988	4	2,047	0	2,047	2,051	524	0	1,424	1,948	103	2,051	650	0	0	0	650	1,300
1989	685	3,746	0	3,746	4,431	1,146	0	3,064	4,209	222	4,431	1,058	0	0	0	1,636	2,694
1990	492	8,578	2,977	5,601	6,093	978	0	4,610	5,788	305	6,093	1,567	0	0	0	2,160	3,727
1991	458	16,621	7,142	9,479	9,935	851	0	8,587	9,438	497	9,935	1,282	0	0	0	2,272	3,554
1992	527	13,486	4,893	8,593	9,120	29	0	8,635	8,864	456	9,120	1,323	0	245	0	2,385	3,953
1993	524	7,287	1,894	5,393	5,917	36	0	5,585	5,621	296	5,917	1,709	990	(285)	192	2,020	4,626
1994	232	10,082	2,932	7,150	7,382	0	0	7,013	7,013	369	7,382	2,687	2,465	694	0	0	5,646
1995	182	11,539	6,914	4,625	4,807	16	0	4,551	4,567	240	4,807	2,154	1,357	2,551	0	0	6,062
1996	299	11,730	6,770	4,960	5,259	0	0	4,998	4,996	263	5,259	2,979	2,473	520	0	0	5,972
1997	408	5,093	1,809	3,284	3,692	0	0	5,226	5,226	(1,534)	3,692	3,126	2,319	882	0	0	6,327
1998	240	6,609	1,492	5,117	5,357	0	0	5,090	5,090	267	5,357	2,949	5/ 2,139	2,374	0	0	7,462
1999	669	7,118	2,719	4,327	4,996	0	0	4,746	4,746	250	4,996	3,741	6/ 3,070	1,063	0	0	7,874
2000	630	9,179	1,923	7,256	7,886	0	0	7,493	7,493	393	7,886	4,669	7/ 3,664	(15)	0	0	8,318
2001	355	9,219	3,271	5,948	6,303	0	0	5,989	5,989	314	6,303	4,571	8/ 3,249	1,208	0	0	9,028
2002	13	12,777	4,954	8,117	8,130	0	0	7,724	7,724	406	8,130	4,843	9/ 4,863	462	0	0	10,168
2003	0	14,175	5,113	9,062	9,062	0	0	8,610	8,610	452	9,062	3,542	2,955	4,681	0	0	11,178

1/ Does not include deliveries to Rancho California Water District or Elsinore Valley Municipal Water District

2/ Figures are 95% of water pumped and imported to allow for 5% loss

3/ Figures are 95% of water pumped and imported to allow for 5% loss

4/ Unaccounted for Export

5/ Includes 905 AF of sewage diverted to RCWD

6/ Includes 1,159 AF of sewage diverted to RCWD

7/ Includes 1,162 AF of sewage diverted to RCWD

8/ Includes 1,201 AF of sewage diverted to RCWD

9/ Includes 1,219 AF of sewage diverted to RCWD

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE B-2

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

ELSINORE VALLEY MUNICIPAL WATER DISTRICT

Quantities in Acre Feet

PRODUCTION				USE						
WATER YEAR	WELLS	IMPORT	TOTAL	AG	COMM	DOM	TOTAL DELIVERED	LOSS *	TOTAL USE	WASTEWATER EXPORTED
1966										
1967										
1968										
1969										
1970										
1971										
1972										
1973										
1974										
1975										
1976										
1977										
1978										
1979										
1980										
1981										
1982										
1983										
1984										
1985										
1986										
1987										
1988										
1989	0	1,341	1,341				1,341	0	1,341	74
1990	0	2,255	2,255				2,255	0	2,255	114
1991	0	2,421	2,421				2,421	0	2,421	134
1992	0	2,190	2,190				2,190	0	2,190	140
1993	0	2,964	2,964	539	84	2,341	2,964	0	2,964 R	150
1994	0	3,232	3,232	687	93	2,452	3,232	0	3,232 R	170
1995	0	3,127	3,127	520	100	2,507	3,127	0	3,127 R	185
1996	0	4,197	4,197	871	109	3,217	4,197	0	4,197 R	213
1997	0	4,296	4,296	848	118	3,330	4,296	0	4,296 R	226
1998	0	5,100	5,100	667	1,396	3,037	5,100	0	5,100	247
1999	0	6,133	6,133	921	1,626	3,586	6,133	0	6,133 R	254
2000	0	7,174	7,174	1,089	1,971	4,114	7,174	0	7,174 R	279
2001	0	6,215	6,215	925	1,815	3,475	6,215	0	6,215 R	310
2002	0	7,596	7,596	1,173	1,902	4,521	7,596	0	7,596	412
2003	0	7,091	7,091	63	2,665	4,363	7,091	0	7,091	483

* Assumes no loss

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE B-3

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

FALLBROOK PUBLIC UTILITY DISTRICT

Quantities in Acre Feet

WATER YEAR	PRODUCTION							USE					
	WELLS	TOTAL DISTRICT IMPORT	DELUZ AREA IMPORT	FALLBROOK AREA IMPORT	SMRW IMPORT 1/	TOTAL SMRW IMPORT	TOTAL PRODUCTION	AG	COMM/ DOM	TOTAL IN SMRW	LOSS 2/	TOTAL USE IN SMRW	
1966	176	11,169	0	11,169	3,351	3,351	3,404		2,735	328	3,063	341	3,404
1967	16	9,508	0	9,508	2,852	2,852	2,857		2,253	319	2,572	285	2,857
1968	13	11,411	0	11,411	3,423	3,423	3,427		2,554	531	3,085	342	3,427
1969	178	9,458	0	9,458	2,837	2,837	2,891		1,787	814	2,601	290	2,891
1970	305	11,794	0	11,794	3,538	3,538	3,630		2,649	617	3,266	364	3,630
1971	7	11,350	0	11,350	3,405	3,405	3,407		2,386	681	3,067	340	3,407
1972	0	13,054	0	13,054	3,916	3,916	3,916		2,749	775	3,524	392	3,916
1973	0	10,610	38	10,572	3,172	3,210	3,210		2,156	732	2,888	322	3,210
1974	0	12,911	134	12,777	3,833	3,967	3,967		2,703	868	3,571	396	3,967
1975	0	11,492	213	11,279	3,384	3,597	3,597		2,420	816	3,236	361	3,597
1976	0	13,147	431	12,716	4,196	4,627	4,627		3,200	965	4,165	462	4,627
1977	20	13,435	587	12,848	4,625	5,212	5,232		3,536	1,174	4,710	522	5,232
1978	97	12,626	651	11,975	4,551	5,202	5,299		3,504	1,265	4,769	530	5,299
1979	187	12,865	961	11,904	4,762	5,723	5,910		3,820	1,498	5,318	592	5,910
1980	192	13,602	1,191	12,411	5,213	6,404	6,596		4,258	1,678	5,936	660	6,596
1981	87	16,878	1,994	14,884	6,549	8,543	8,630		5,688	2,144	7,832	798	8,630
1982	0	13,270	1,805	11,465	5,274	7,079	7,079		4,614	1,862	6,476	603	7,079
1983	0	12,298	1,969	10,329	4,751	6,720	6,720		4,320	1,871	6,191	529	6,720
1984	0	15,429	2,609	12,820	5,897	8,506	8,506		5,814	2,077	7,891	615	8,506
1985	0	14,256	2,358	11,898	5,473	7,831	7,831		5,187	2,135	7,322	509	7,831
1986	0	15,383	2,794	12,589	5,791	8,585	8,585		5,698	2,319	8,017	568	8,585
1987	0	15,313	2,986	12,327	5,670	8,656	8,656		5,793	2,281	8,074	582	8,656
1988	28	14,460	2,559	11,901	5,474	8,033	8,061		5,181	2,348	7,529	532	8,061
1989	94	16,179	3,007	13,172	6,059	9,066	9,160		5,620	2,706	8,326	834	9,160
1990	15	17,568	3,745	13,823	6,358	10,103	10,118		6,275	2,878	9,153	965	10,118
1991	46	13,939	2,871	11,068	5,091	7,962	8,008		5,146	2,314	7,460	548	8,008
1992	45	13,698	2,950	10,748	4,943	7,893	7,938		5,285	2,201	7,486	452	7,938
1993	86	12,695	2,010	10,685	4,915	6,925	7,011		4,329	2,349	6,678	333	7,011
1994	83	13,124	2,246	10,878	5,004	7,250	7,333		4,282	2,666	6,948	385	7,333
1995	3	11,620	2,208	9,412	4,330	6,538	6,541		3,818	2,798	6,316	225	6,541
1996	0	14,168	2,733	11,435	5,260	7,993	7,993		4,411	3,247	7,658	335	7,993
1997	0	14,005	2,688	11,317	5,206	7,894	7,894		4,351	3,249	7,600	294	7,894
1998	0	11,757	1,803	9,954	4,579	6,382	6,382		3,245	2,798	6,043	339	6,382
1999	0	14,307	1,572	12,735	5,858	7,430	7,430		3,748	3,271	7,019	411	7,430
2000	0	15,983	2,705	14,478	6,660	9,365	9,365		5,138	3,903	9,041	324	9,365
2001	0	15,249	2,562	12,687	5,836	8,398	8,398		4,413	3,537	7,950	448	8,398
2002	0	17,422	2,900	14,522	6,680	9,580	9,580		5,185	4,036	9,221	359	9,580
2003	0	15,864	3,393	12,471	5,737	9,130	9,130		6,041	3,737	9,778	(648)	9,130

1/ Total SMRW production equals SMRW Import plus 30% local (1966-1971)

2/ Loss = Total production less total use (Neglects change in Storage at Red Mtn After 1985)

**WATERMASTER
SANTA MARGARITA RIVER WATERSHED**

TABLE B-4

**SANTA MARGARITA RIVER WATERSHED
ANNUAL WASTEWATER PRODUCTION AND DISTRIBUTION
FALLBROOK PUBLIC UTILITY DISTRICT**
Quantities in Acre Feet

WATER YEAR	TOTAL WASTEWATER PRODUCTION	PERCENT WASTEWATER FROM SMRW	WASTEWATER FROM SMRW	WASTEWATER REUSED IN SMRW	WASTEWATER FROM U.S.N.W.S.	WASTEWATER EXPORTED FROM SMRW	PERCENT WASTEWATER FROM SLR WATERSHED 1/	WASTEWATER IMPORTED FROM SLR WATERSHED
1966	395	81	320		0	0	19	75
1967	460	80	368		0	0	20	92
1968	524	80	419		0	0	20	105
1969	588	79	465		0	0	21	123
1970	652	78	509		0	0	22	143
1971	717	78	559		0	0	22	158
1972	782	77	602		0	0	23	180
1973	847	76	644		0	0	24	203
1974	912	75	684		0	0	25	228
1975	976	75	732		0	0	25	244
1976	1,040	74	770		0	0	26	270
1977	1,105	73	807		0	0	27	298
1978	1,170	72	842		0	0	28	328
1979	1,234	72	888		0	0	28	346
1980	1,298	71	922		0	0	29	376
1981	1,363	70	954		0	0	30	409
1982	1,428	69	985		0	0	31	443
1983	1,492	69	1,029		26 E	1,003	0	0
1984	1,556	68	1,058		26 E	1,032	0	0
1985	1,621	67	1,086		26 E	1,060	0	0
1986	1,685	66	1,112		18 P	1,094	0	0
1987	1,750	66	1,155		27	1,128	0	0
1988	1,815	65	1,180		25	1,155	0	0
1989	1,881	64	1,204		22	1,182	0	0
1990	1,952	66	1,298		27	1,271	0	0
1991	1,622	60	973		11	962	0	0
1992	1,730	63	1,090		7	1,083	0	0
1993	2,051	62	1,271		16	1,255	0	0
1994	1,834	58	1,073		5	1,068	0	0
1995	1,941	60	1,165		12	1,153	0	0
1996	1,799	58	1,040		5	1,035	0	0
1997	1,780	58	1,027		6	1,021	0	0
1998	2,297	65	1,490		8	1,482	0	0
1999	2,175	64	1,382		5	1,377	0	0
2000	2,164	76	1,641		7	1,634	0	0
2001	2,191	76	1,675	24	8	1,643	0	0
2002	2,061	74	1,532	28	9	1,495	0	0
2003	2,276	76	1,737	21	10	1,706	0	0

NOTE: Measured quantities available for Total Wastewater in Water Year 1969 and July 1989
All other quantities are estimated (1966 - 1989). Prior to 1983, Wastewater was discharged into Fallbrook Creek. After 1983, Wastewater is discharged into an ocean outfall.

1/ - San Luis Rey Watershed
E - Estimated
P - Partial Year Data

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE B-5

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

METROPOLITAN WATER DISTRICT
DELIVERIES IN DOMENIGONI VALLEY

Quantities in Acre Feet

WATER YEAR	PRODUCTION			USE					
	WELLS	IMPORT TO SMRW	TOTAL IN SMRW	AG	COMM/ DOM *	GW RECHARGE	TOTAL DELIVERED	LOSS **	TOTAL USE
1966	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0
1995	0	547	547	337	183	0	520	27	547
1996	0	1,005	1,005	725	230	0	955	50	1,005
1997	0	3,521	3,521	561	2,747	37	3,345	176	3,521
1998	0	5,023	5,023	183	4,183	406	4,772	251	5,023
1999	0	3,781	3,781	384	2,829	379	3,592	189	3,781
2000	0	712	712	87	339	251	677	35	712
2001	0	689	689	480	0	175	655	34	689
2002	0	595	595	540	25	0	565	30	595
2003	0	496	495	470	0	0	470	25	495

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE B-6

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

MURRIETA COUNTY WATER DISTRICT

Quantities in Acre Feet

WATER YEAR	PRODUCTION			USE					
	WELLS	IMPORT	TOTAL	AG	COMM	DOM	TOTAL DELIVERED	LOSS *	TOTAL USE
1966	41	0	41	0	0	37	37	4	41
1967	45	0	45	0	0	41	41	4	45
1968	54	0	54	0	0	49	49	5	54
1969	54	0	54	0	0	49	49	5	54
1970	73	0	73	0	0	66	66	7	73
1971	83	0	83	3	0	72	75	8	83
1972	111	0	111	10	0	91	101	10	111
1973	92	0	92	11	0	72	84	8	92
1974	132	0	132	14	0	107	120	12	132
1975	153	0	153	18	0	121	139	14	153
1976	117	0	117	22	0	84	106	11	117
1977	170	0	170	21	0	134	155	15	170
1978	169	0	169	19	0	135	154	15	169
1979	197	0	197	19	0	160	179	18	197
1980	218	0	218	20	0	178	198	20	218
1981	265	0	265	30	0	211	241	24	265
1982	230	0	230	21	0	188	209	21	230
1983	216	0	216	14	0	182	196	20	216
1984	304	0	304	26	0	250	276	28	304
1985	308	0	308	19	0	261	280	28	308
1986	305	0	305	22	0	255	277	28	305
1987	326	0	326	23	0	273	296	30	326
1988	303	0	303	13	35	262	275	28	303
1989	286	0	286	11	72	262	344	(4)	286
1990	465	0	465	13	76	266	355	110	465
1991	459	0	459	15	88	250	353	106	459
1992	492	0	492	6	122	302	430	62	492
1993	508	0	508	4	105	323	432	76	508
1994	512	0	512	10	103	324	437	75	512
1995	521	0	521	12	86	312	420	101	521
1996	629	0	629	88	110	373	571	58	629
1997	638	0	638	76	96	379	551	87	638
1998	603	0	603	79	87	349	515	88	603
1999	827	0	827	79	125	548	752	75	827
2000	1,123	0	1,123	199	365	493	1,057	66	1,123
2001	1,389	0	1,389	163	414	713	1,290	99	1,389
2002	1,679	0	1,679	230	348	1,067	1,645	34	1,679
2003	1,748	102	1,850	272	275	1,284	1,831	19	1,850

* Loss = Total production less total delivered

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE B-7

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

RAINBOW MUNICIPAL WATER DISTRICT

Quantities in Acre Feet

WATER YEAR	PRODUCTION			USE				
	LOCAL	IMPORT TO DISTRICT	TOTAL IN WATERSHED 1/	AG 2/	COMMERCIAL/ DOMESTIC 3/	TOTAL DELIVERIES	LOSS 4/	TOTAL USE
1966	0	14,538	1,308	1,049	140	1,189	119	1,308
1967	0	12,167	1,095	878	117	995	100	1,095
1968	0	15,301	1,377	1,104	147	1,252	125	1,377
1969	0	13,917	1,253	1,005	134	1,139	114	1,252
1970	0	18,764	1,689	1,354	181	1,535	154	1,689
1971	0	18,338	1,650	1,324	177	1,500	150	1,650
1972	0	22,633	2,037	1,634	218	1,852	185	2,037
1973	0	17,955	1,616	1,296	173	1,469	147	1,616
1974	0	22,768	2,049	1,643	219	1,863	186	2,049
1975	0	13,856	1,247	1,000	133	1,134	113	1,247
1976	0	24,878	2,239	1,796	240	2,035	204	2,239
1977	0	26,038	2,343	1,879	251	2,130	213	2,343
1978	0	24,312	2,188	1,755	234	1,989	199	2,188
1979	0	26,084	2,348	1,883	251	2,134	213	2,347
1980	0	27,660	2,489	1,997	266	2,263	226	2,489
1981	0	35,036	3,153	2,529	337	2,866	287	3,153
1982	0	27,334	2,460	1,973	263	2,236	224	2,460
1983	0	24,957	2,190	1,735	256	1,991	199	2,190
1984	0	32,526	3,068	2,483	306	2,789	279	3,068
1985	0	28,612	3,410	2,798	302	3,100	310	3,410
1986	0	29,023	2,945	2,353	324	2,677	268	2,945
1987	0	29,449	3,390	2,765	317	3,082	308	3,390
1988	0	29,070	2,985	2,372	342	2,714	271	2,985
1989	0	32,034	3,003	2,385	345	2,730	273	3,003
1990	0	34,612	3,818	3,003	468	3,471	347	3,818
1991	0	27,754	2,904	2,276	364	2,640	264	2,904
1992	0	26,056	2,277	1,877	193	2,070	207	2,277
1993	0	23,766	1,965	1,655	132	1,787	178	1,965
1994	0	22,173	1,651	1,368	133	1,501	150	1,651
1995	0	20,935	1,661	1,398	112	1,510	151	1,661
1996	0	24,835	1,815	1,487	163	1,650	165	1,815
1997	0	24,638	1,429	1,139	160	1,299	130	1,429
1998	0	19,693	1,601	1,315	141	1,456	145	1,601
1999	0	24,961	1,727	1,411	159	1,570	157	1,727
2000	0	30,446	2,217	1,861	154	2,015	202	2,217
2001	0	27,214	1,804	1,439	202	1,641	163	1,804
2002	0	32,854	1,676	1,368	156	1,524	152	1,676
2003	0	29,156	1,510	1,237	136	1,373	137	1,510

1/ 1966 through 1982 estimated to be 9% of total district imports

2/ 1966 through 1982 estimated to be 80.2% of total deliveries to watershed

3/ 1966 through 1982 estimated to be 10.7% of total deliveries to watershed

4/ Loss = 10% of use

TABLE B-8

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

RANCHO CALIFORNIA WATER DISTRICT

Quantities in Acre Feet

YEAR	PRODUCTION			USE				VAIL		RECLAIMED WASTEWATER				
	WELLS	IMPORT	EXPORT	NET IMPORT	TOTAL	AG DOM	AG/ COMM DOM	SMR RELEASE	IMPORT TO STORAGE	TOTAL USE	LOSS	TOTAL	REUSE IN SMRW	MURRIETA CREEK DISCHARGE
1966		0	0	0	0			0	0	0	185	0	0	0
1967	4,288	0	0	0	4,288			0	0	0	1,136	0	0	0
1968	5,100	0	0	0	5,100			0	0	0	398	0	0	0
1969	3,617	0	0	0	3,617			0	0	0	697	0	0	0
1970	6,721	0	0	0	6,721			0	0	0	540	0	0	0
1971	7,960	0	0	0	7,960			0	0	0	1,541	0	0	0
1972	8,369	0	0	0	8,369			0	0	0	203	0	0	0
1973	7,726	0	0	0	7,726			0	0	0	524	0	0	0
1974	10,163	0	0	0	10,163			0	0	0	1,068	0	0	0
1975	10,357	0	0	0	10,357			0	0	0	369	0	0	0
1976	11,809	119	0	119	11,928			0	0	0	50	0	0	0
1977	10,522	1,845	0	1,845	12,367			0	0	0	0	0	0	0
1978	6,830	5,774	0	5,774	14,704			0	0	0	0	0	0	0
1979	11,371	7,009	0	7,009	18,380			0	0	0	0	0	0	0
1980	12,621	10,126	0	10,126	22,747			0	0	10,944	0	0	0	0
1981	15,282	15,282	0	15,282	30,564			0	0	6,602	0	0	0	0
1982	12,631	13,376	0	13,376	26,009			0	0	6,058	0	0	0	0
1983	16,876 ^{4/}	6,752	0	6,752	22,427			0	0	12,113	715	0	0	0
1984	26,660	6,716	0	6,716	32,376			0	0	6,612	1,144	0	0	0
1985	24,373	7,169	0	7,169	31,531			0	0	5,027	1,201	0	0	0
1986	28,987	11,174	0	11,174	36,171			0	0	6,722	1,053	0	0	0
1987	33,735	7,584	0	7,584	41,299			0	0	8,069	273	48	0	0
1988	21,367	17,654	0	17,654	39,221			0	0	4,844	0	82	0	0
1989	26,131	22,895	0	22,895	49,026	25,333	3,316	13,198	0	42,699	6,327	166	0	0
1990	33,241	22,030	0	22,030	55,271	27,643	3,940	14,916	902	47,401	7,870	133	0	0
1991	28,503	21,238	0	21,238	47,741	32,924	2,941	10,603	765	47,253	488	352	0	0
1992	29,668	16,931	0	16,931	46,699	30,651	2,406	9,672	683	43,412	3,487	374	0	0
1993	31,028	11,411	0	11,411	42,440	29,265	2,141	10,618	519	42,543	(103)	376	0	0
1994	32,726	16,386	0	16,386	49,111	32,534	2,322	12,370	467	47,893	1,418	1,936	0	0
1995	33,111	16,108	0	16,108	48,219	31,081	2,526	13,779	1,464	48,850	(631)	8,469	0	0
1996	36,086	23,600	0	23,600	59,686	35,912	2,752	16,330	2,149	57,143	2,543	1,753	0	0
1997	33,960	26,992	0	26,992	60,972	36,287	3,350	18,635	2,978	63,414	(2,442)	2,264	0	0
1998	26,851	19,594	0	19,594	48,435	26,307	2,805	16,273	459	47,844	(1,409)	583 ^{7/}	0	0
1999	30,598	34,490	0	34,490	65,098	37,157	3,674	19,810	1,044	63,771	1,317	1,376 ^{7/}	1,179	1,654
2000	27,938	56,409	0	56,409	83,347	40,872	2,162	23,763	2,266	79,031	4,316	1,524 ^{7/}	1,854	1,954
2001	26,421	41,823	0	41,823	68,244	30,363	4,525	22,666	8,008	84,715	3,529	3,550 ^{7/}	2,015	2,015
2002	24,695	54,148	0	54,148	79,043	35,747	5,345	26,573	1,454	75,119	3,924	4,519 ^{7/}	2,160	2,160
2003	25,240	50,927	247	50,927	75,920	30,277	4,645	26,044	2,750	73,069	2,851	3,780 ^{7/}	104	104

5/ Import recharge was 2,294 AF but portion remaining in storage was not computed due to lack of data
6/ Import recharge was 701 AF but portion remaining in storage was not computed due to lack of data
7/ Does not include EMWD reclaimed wastewater production

1/ Loss = Total production less total use
2/ Irrigation 1966 to 1976 by pumping from Vail Lake.
Figures from 1966 to 1972 supplied by USGS; 1972 to 2003 supplied by RCWD.
3/ Discharge from 2 MGD Demonstration project
4/ Includes 98 AF from wells out of groundwater area

**WATERMASTER
SANTA MARGARITA RIVER WATERSHED**

TABLE B-9

**SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE**

**U.S.M.C. - CAMP PENDLETON
EXCLUDING NAVAL WEAPONS STATION SHOWN ON B-10**

Quantities in Acre Feet

WATER YEAR	PRODUCTION			USE						RECLAIMED WASTEWATER		
	AG LOCAL	CAMP SUPPLY	TOTAL	AGRICULTURE 1/ IN SMRW	OUT SMRW	CAMP SUPPLY 2/ IN SMRW	OUT SMRW	TOTAL EXPORT	TOTAL 3/ IN SMRW	RECHARGED IN-SMR 4/	IMPORT 5/ RECHARGED IN SMRW	TOTAL RECHARGED IN SMRW
1966	1,101	4,605	5,706	429	672	2,028	2,579	3,251	2,455	919	974	1,893
1967	796	4,611	5,607	310	486	2,117	2,694	3,180	2,427	914	1,243	2,156
1968	986	4,939	5,925	385	601	2,172	2,767	3,368	2,557	866	1,214	2,080
1969	940	4,821	5,761	367	573	2,058	2,763	3,276	2,485	1,019	1,170	2,189
1970	1,106	5,481	6,587	431	675	2,347	3,134	3,809	2,778	1,032	1,113	2,145
1971	819	5,291	6,110	319	500	2,264	3,028	3,527	2,583	921	1,090	2,011
1972	817	5,323	6,140	319	498	2,276	3,045	3,543	2,597	900	1,168	2,068
1973	1,003	5,121	6,124	391	612	2,189	2,932	3,544	2,580	949	1,187	2,137
1974	909	5,202	6,111	355	554	2,224	2,978	3,532	2,579	915	1,140	2,055
1975	757	4,593	5,350	295	462	1,957	2,836	3,098	2,252	989	1,530	2,519
1976	885	5,364	6,269	345	540	2,305	3,079	3,619	2,650	949	1,497	2,447
1977	994	4,506	5,500	388	606	1,918	2,588	3,194	2,306	942	1,416	2,358
1978	176	5,177	5,353	69	107	2,213	2,964	3,071	2,262	1,164	1,283	2,446
1979	1,070	7,213	8,283	417	653	3,109	4,104	4,756	3,527	1,085	1,427	2,493
1980	835	5,495	6,330	326	509	2,353	3,142	3,651	2,679	1,101	1,405	2,508
1981	1,464	5,240	6,704	571	893	2,241	2,999	3,892	2,812	1,119	1,249	2,368
1982	1,447	5,024	6,471	584	683	2,146	2,878	3,761	2,710	982	1,273	2,254
1983	942	4,215	5,157	387	575	1,790	2,425	3,000	2,157	1,252	1,242	2,494
1984	1,078	4,501	5,579	420	658	1,918	2,585	3,243	2,336	1,323	1,120	2,443
1985	1,069	4,764	5,833	417	652	2,039	2,725	3,377	2,456	1,419	1,200	2,619
1986	953	4,807	5,760	372	581	2,062	2,745	3,326	2,434	1,259	961	2,240
1987	1,098	4,838	5,936	428	670	2,064	2,774	3,444	2,492	1,387	1,799	3,166
1988	1,223	4,721	5,944	477	746	2,010	2,711	3,457	2,487	1,523	1,872	3,396
1989	856	5,044	5,900	334	522	2,148	2,696	3,416	2,482	1,301	1,448	2,747
1990	855	4,228	5,083	333	522	1,779	2,449	2,971	2,112	1,277	1,451	2,726
1991	554	3,159	3,713	216	336	1,329	1,830	2,168	1,545	1,070	1,219	2,289
1992	698	3,254	4,152	350	548	1,376	1,878	2,426	1,728	933	1,548	2,481
1993	1,087	2,879	3,946	416	651	1,201	1,678	2,329	1,617	1,049	1,926	2,975
1994	1,471	3,150	4,621	574	897	1,345	1,805	2,702	1,919	1,034	1,501	2,535
1995	985	3,768	4,753	384	601	1,586	2,180	2,781	1,972	980	1,473	2,453
1996	1,000	5,199	6,199	390	610	2,232	2,967	3,577	2,622	951	1,493	2,444
1997	1,066	5,238	6,304	416	650	2,244	2,994	3,644	2,660	986	1,932	2,920
1998	1,026	5,468	6,494	400	628	2,352	3,116	3,742	2,752	935	2,073	3,008
1999	1,064	5,054	6,118	415	649	2,145	2,909	3,558	2,560	893	2,130	3,023
2000	1,298	5,785	7,081	508	790	2,483	3,282	4,072	2,989	1,038	2,116	3,152
2001	1,025	5,341	6,386	399	626	2,314	3,027	3,653	2,713	1,065	2,075	3,140
2002	1,184	5,269	6,453	462	722	2,290	2,979	3,701	2,752	950	1,950	2,900
2003	1,270	5,210	6,480	495	775	2,218	2,992	3,767	2,713	999	1,888	2,687

1/ Agricultural water use is divided with 39% used inside the SMRW and 61% used outside.
2/ Camp Supply water use inside the SMRW equals 44% of sum of Camp Supply production plus Naval Weapons Station Import, less the NWS Import for years beginning 1969. Prior to 1969 44% was used inside the SMRW and 56% was used outside.
3/ Assumes No Losses
4/ Wastewater Recharged in SMRW equals effluent from Plants 3, 8 and 13 (partial).
5/ Wastewater Import Recharged in SMRW equals effluent from Plant 1 plus the portion of the effluent from Plant 2 returned to the SMRW via Pond 2 plus the portion of the effluent from Plant 13 not included in 4/.
No record available for effluent from Plant 2 returned to SMRW for 1986-1974 and 1982 - June 1990.
Calculation of import recharged in Santa Margarita River from Plant 2 is based on zero when no record is available.

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE B-10

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

U. S. NAVAL WEAPONS STATION, FALLBROOK ANNEX

Quantities in Acre Feet

WATER YEAR	PRODUCTION			USE				WASTEWATER
	LOCAL	IMPORT TO WATERSHED 1/	TOTAL	AG	COMMERCIAL/ DOMESTIC	LOSS 2/	TOTAL USE	EXPORTS
1966	87	0	87	0	79	9	87	0
1967	92	0	92	0	83	9	92	0
1968	108	0	108	0	97	11	108	0
1969	138	0	138	0	113	25	138	0
1970	152	0	152	0	125	27	152	0
1971	39 P	76 E	115	0	100	15	115	0
1972	0	115 E	115	0	105	10	115	0
1973	0	115 E	115	0	105	10	115	0
1974	0	115 E	115	0	105	10	115	0
1975	0	115 E	115	0	105	10	115	0
1976	0	115 E	115	0	105	10	115	0
1977	0	115 E	115	0	105	10	115	0
1978	0	115 E	115	0	105	10	115	0
1979	0	115 E	115	0	105	10	115	0
1980	0	115 E	115	0	105	10	115	0
1981	0	115 E	115	0	105	10	115	0
1982	0	115 E	115	0	105	10	115	0
1983	0	115 E	115	0	105	10	115	26 E
1984	0	115 E	115	0	105	10	115	26 E
1985	0	102	102	0	93	9	102	26 E
1986	0	94	94	0	85	9	94	18 P
1987	0	116	116	0	105	11	116	27
1988	0	120	120	0	109	11	120	25
1989	0	128	128	0	116	12	128	22
1990	0	145	145	0	132	13	145	27
1991	0	109	109	0	99	10	109	11
1992	0	99	99	0	90	9	99	7
1993	0	117	117	0	106	11	117	16
1994	0	73	73	0	66	7	73	5
1995	0	125	125	0	114	11	125	12
1996	0	100	100	0	91	9	100	5
1997	0	109	109	0	99	10	109	6
1998	0	97	97	0	88	9	97	8
1999	0	111	111	0	101	10	111	5
2000	0	104	104	0	95	9	104	7
2001	0	73	73	0	66	7	73	8
2002	0	97	97	0	88	9	97	9
2003	0	88	88	0	80	8	88	10

1/ - Estimate 1969-1984 - Records not available

2/ - Loss = 10% of Use

E - Estimate

P - Partial year data

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SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER WATERSHED

ANNUAL WATERMASTER REPORT

WATER YEAR 2002-03

APPENDIX C

SUBSTANTIAL USERS OUTSIDE

ORGANIZED WATER SERVICE AREAS

AUGUST 2004

**WATERMASTER
SANTA MARGARITA RIVER WATERSHED**

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APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2002-2003	IRRIGATED CROP 2002-2003	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT	
AGUANGA GROUNDWATER AREA									
Clawson, Gary A.	43425 Sage Road Aguanga, Ca. 92536	917-050-009	309.74 [*]	Total					
		917-050-007	82.19						
		581-070-013	43.10	of					
		581-150-013	120.56						
		581-150-016	25.37						
		581-070-014	158.08	30.00	Alfalfa	8S/1E-7N(1)	Total		
					8S/1E-7N(2)	of			
					8S/1E-7Q(1)				
					8S/1E-7Q(2)	90.00			
Strange, Owen W. and Elizabeth G. Trustees, Strange Living Trust of 4-15-88	m/t P.O. Box 1974 Rancho Santa Fa, Ca. 92067 43023 Hwy 79 Aguanga, CA 92536	583-040-022	97.78	Total		8S/1E-19Q(1)	150.00		
		583-040-021	13.45				Domestic		
		583-130-001-3	80.00	of					
		583-120-001-2	120.00						
		583-060-003-9	41.60	10.00	Permanent pasture				
						8S/1E-29L Diversion	200.00		
Twin Creek Ranch/ Chestar M. Mason Family Trust	c/o Jim Holden P. O. Box 519 Corona, Ca. 91718 44201 Hwy 79 Aguanga 44735 Hwy 79 Aguanga	583-120-081	17.29	15.00	Row Crops				
		583-120-083	68.09	65.00	Row Crops	8S/1E-28N1	Total		
							8S/1E-28N(2)		
		583-120-084	179.39	30.00	Row Crops	8S/1E-29H	of		
		583-150-001	80.00	15.00	Row Crops				
				15.00	Row Crops				
		583-140-014	48.03	15.00	Row Crops	8S/1E-33F			
		583-140-015	40.00	35.00	Row Crops	8S/1E-33G1			
		583-140-016	40.00	38.00	Row Crops	8S/1E-33B	912.00		
		583-140-018	10.09	0.00					
583-140-020	10.15	0.00							
583-140-019	10.00	0.00							
Chavez, Francisco	45195 Hwy 371 Aguanga, CA 92536	583-240-022	10.00	9.00	Pistachios	8S/1E-23N	9.90		

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2002-2003	IRRIGATED CROP 2002-2003	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
AGUANGA GROUNDWATER AREA (Cont)								
Harris, Homer N. and Dolores G.	44444 Sage Road Aguanga, CA 92536	581-160-014	17.73	Total Of		8S/1E-18J(1)	0.20	
				15.00	Citrus	8S/1E-18J(2)	0.25	
		581-160-015	7.42	5.00	Fruit and			
		581-150-009	7.00	10.00	Walnuts	6S/1E-18H(1)	2.00	
						8S/1E-18H(2)	0.20	
Valeywide Recreation and Parks District	901 W. Esplanade Ave San Jacinto, CA 92582	581-180-022	30.00	0.00				
		581-180-004	20.00	0.00				
		581-180-020	20.00	0.00		8S/1E-17M		
		581-180-021	2.15			8S/1E-17E	15.00	
		581-170-009	7.82	7.82	Grass	Used 8S/1E-17E	owned by Harris	
Missionary Foundation, Inc.	44350 Sage Road Aguanga, CA 92536 m/t 5160 Acadia Drive Riverside, CA 92505	581-170-011	290.03	20.00	Row Crops	8S/1E-17B	35.00	
		581-180-009	120.00	0.00		8S/1E-17H	Domestic	
		581-190-001	320.00	0.00				
California Golf Academy	43590 Sage Road Aguanga, CA 92536 m/t 8762 Garden Grove Blvd. Suite #204 Garden Grove, CA 92844	581-120-006	200.00	6.00	Grapes	8S/1E-8K2	24.00	
TOTAL AGUANGA GROUNDWATER AREA				340.82			1,238.55	200.00

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2002-2003	IRRIGATED CROP 2002-2003	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT	
TEMECULA CREEK ABOVE AGUANGA GROUNDWATER AREA									
Agri-Empire, Inc.	m/t P. O. Box 490 San Jacinto, CA 92383	113-090-01	377.07	160.00	Potatoes				
		113-090-03	21.46						
		113-090-05	541.22	40.00	Barley				
		113-100-01	389.81	85.00	Oats	9S/2E-11B - Diversion		0.00	
		113-130-01	150.09			9S/2E-17D - Spring		52.00	
		113-140-03	196.54			9S/2E-16N2	580.00		
							9S/2E-16M	150.00	
							9S/2E-16F1	105.00	
							9S/2E-16N1	100.00	
							9S/2E-16F2	0.00	
							9S/2E-16K - Diversion		96.00
				113-140-04	503.24				
				113-140-05	45.09				
				113-140-06	93.94				
		114-020-09	37.16						
		114-030-08	331.79	50.00	Barley	9S/2E-22	50.00		
		114-030-26	42.67						
* Land leased from Arie W. and Coral R. Bergman	37126 Hwy 79 Wamer Springs, CA 92086	113-140-01 *	358.62	Total Of 180.00		9S/2E-16B(1) 9S/2E-16B(2) 9S/2E-16G	Total Of 160.00		
		113-140-02 *	38.75	180.00	Potatoes				
Ward, Donald F.	38790 Highway 79 Wamer Springs, CA 9208	112-030-58	69.83	0.00		9S/1E-1Q(1)	1.00		
		112-030-22	24.77	0.00					
		112-030-38	40	0		9S/1E-12A Domestic			
		112-030-67	67.41	5.00	Bermuda	Used 9S/1E-1Q(1)			
		112-030-59	160.00	0.00		9S/1E-1M - Diversion		0.00	
Papac, Andrew and Olga	m/t 2030 Santa Anita Ave South El Monte, CA 91733 38642 Highway 79 Wamer Springs, CA 92086	113-060-012	63.21	20.00	Bermuda Grass	9S/2E-7D	38.00		
						9S/2E-7E - Diversion		38.00	
TOTAL TEMECULA CREEK ABOVE AGUANGA GROUNDWATER AREA				540.00			1,184.00	186.00	

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2002-2003	IRRIGATED CROP 2002-2003	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
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WILSON CREEK ABOVE AGUANGA GROUNDWATER AREA
ANZA VALLEY

Greenwald, Alvin G.	6010 Wilshire Blvd #500 Los Angeles, CA 90036	573-180-001	156.38	156.38	Row Crops	7S/3E-17E	625.52	
		576-070-001	70.00	70.00	Pasture	7S/3E-20N	266.00	
Agri-Empire, Inc.	P.O. Box 490 San Jacinto, CA 92383	Section 8	573-090-005	40.00	0.00			
			573-100-002	27.79	70.00	Potatoes		
		Section 10	575-050-044	14.36	0.00			
			575-080-002	133.93	0.00		7S/3E-11N4	203.00
							7S/3E-11P3	214.00
		Section 13	575-100-037	57.80	0.00			
		Section 14	575-110-021	143.75	0.00		7S/3E-14D1	57.00
			575-110-027	54.45	0.00			
			575-310-002	39.09	0.00		7S/3E-14C2	353.00
			575-310-011	80.00	0.00			
			575-310-012	80.00	0.00			
			575-310-013	17.46	0.00			
			575-310-014	0.75	0.00			
			575-310-027	17.46	0.00			
			575-310-028	0.92	0.00			
		Section 15	575-080-014	9.92	Total			
			575-080-015	4.35				
			575-080-017	9.75	of			
			575-080-016	10.13				
			575-080-019	31.29	65.00	4 Way		
			575-080-021	20.00	Total			
			575-080-022	20.00	of			
			575-080-024	20.00	80.00	Potatoes		
	575-080-027	20.00	75.00	Barley				
	575-090-010	38.80	38.00	Potatoes				
Section 17	573-180-011	39.74	30.00	Potatoes				

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2002-2003	IRRIGATED CROP 2002-2003	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
WILSON CREEK ABOVE AGUANGA GROUNDWATER AREA								
ANZA VALLEY (Cont)								
Agri-Empire, Inc. (Cont)								
	Section 20	576-060-009	8.26	Total				
		576-060-031	16.09	of				
		576-060-033	79.45					
		576-060-037	41.41					
		576-060-038	5.41	80.00	4 Way			
		576-070-003	80.00	15.00	Barley			
		576-070-005	116.57	150.00	Potatoes			
	Section 21	576-080-003	133.72	Total of				
		576-100-061	37.71	40.00	Oats			
		576-110-001	160.00	Total				
		576-110-002	28.00	of				
		576-110-004	50.00					
		576-110-006	19.29			7S/3E-21R3	233.00	
		576-110-007	17.85	45.00	4 Way			
		576-110-008	17.00					
		576-110-009	18.41	75.00	Potatoes			
	Section 22	575-120-012	88.03	70.00	Potatoes			
		575-130-003	19.55	0.00				
		575-130-006	40.89	Total				
		575-130-008	18.56					
		575-130-009	20.06					
		575-130-010	20.07					
		575-130-011	19.19	of				
		575-130-012	18.18					
		575-130-013	19.02					
		575-130-014	19.00					
		575-130-015	17.58	85.00	Barley			
		575-120-018	20.45	0.00				
		575-120-019	20.45	0.00				
		575-120-032	4.69	0.00				
		575-120-033	4.68	0.00				
		575-120-034	4.68	0.00				
		575-120-035	4.28	0.00				
		Leased from Dionisios & Irini Argyros 2813 Monogram Ave, Long Beach, CA 90815	575-120-028	4.68	0.00			
			575-120-029*	4.68	0.00			
			575-120-030*	4.68	0.00			
			575-120-031*	4.23	0.00			
	Section 23	575-140-019	105.04	70.00	Potatoes			

**WATERMASTER
SANTA MARGARITA RIVER WATERSHED**

APPENDIX C

**SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS**

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2002-2003	IRRIGATED CROP 2002-2003	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
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**WILSON CREEK ABOVE AGUANGA GROUNDWATER AREA
ANZA VALLEY (Cont)**

Cahuilla Indian
Reservation

Domestic and Commercial Wells Reported by Bureau of Indian Affairs						Total
Wells in Basement Complex	Wells out of Watershed	Wells with QYAL and/or QTOAL				
7S/2E-14L1	8S/3E-2A1	7S/2E-14J1	7S/2E-28Q1	7S/3E-31L2		
7S/2E-25D1	8S/3E-2B1	7S/2E-14M1	7S/2E-33C1	7S/3E-34E1		
7S/2E-26B1	8S/3E-2D1	7S/2E-14M2	7S/2E-33E1	7S/3E-34N1		
7S/2E-26B2	8S/3E-2E1	7S/2E-14R1	7S/2E-33N1	7S/3E-34Q1		
7S/2E-26B3	8S/3E-2G1	7S/2E-23A1	7S/3E-27C1	8S/2E-4D1		
7S/2E-34E1	8S/3E-2H1	7S/2E-23D1	7S/3E-27C2	8S/2E-4N1		
7S/2E-36A1	8S/3E-2K1	7S/2E-23F1	7S/3E-27H1	8S/2E-4N2		
7S/2E-36J1		7S/2E-23G1	7S/3E-27M1	8S/2E-4P1		
7S/2E-36R1		7S/2E-23H1	7S/3E-28A1	8S/2E-4R1		
7S/3E-28A1		7S/2E-23K1	7S/3E-28A2	8S/2E-4R2		
7S/3E-29Q1		7S/2E-23M1	7S/3E-28D1	8S/3E-5Q1		of
7S/3E-30H1		7S/2E-23P1	7S/3E-29C1	8S/3E-6J1		
7S/3E-31A1		7S/2E-23Q1	7S/3E-29M1			
7S/3E-31N1		7S/2E-25C1	7S/3E-30P1			
7S/3E-31Q1		7S/2E-25F1	7S/3E-30Q1			
7S/3E-32D1		7S/2E-25R1	7S/3E-30R1			
7S/3E-32D2		7S/2E-26E1	7S/3E-30R2			
8S/3E-6B1		7S/2E-26L1	7S/3E-30R3			
8S/3E-6B2		7S/2E-27A1	7S/3E-31C1			
8S/3E-6G1		7S/2E-27H1	7S/3E-31F1			
8S/3E-6R1		7S/2E-28N1	7S/3E-31L1			
						42.00

SUBTOTAL ANZA VALLEY 1,214.38 1,993.52 0.00

**WILSON CREEK ABOVE AGUANGA GROUNDWATER AREA
LEWIS VALLEY**

Green Shell Company	39850 Sage Road Hemet, CA 92343	571-080-012	80.00	50.00	Olive Trees	7S/1E-20Q	55.00	
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SUBTOTAL LEWIS VALLEY 50.00 55.00 0.00

**TOTAL WILSON CREEK
ABOVE AGUANGA GROUNDWATER AREA** 1,264.38 2,048.52 0.00

**WATERMASTER
SANTA MARGARITA RIVER WATERSHED**

APPENDIX C

**SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS**

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2002-2003	IRRIGATED CROP 2002-2003	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
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MURRIETA-TEMECULA GROUNDWATER AREA

Temecula Ranchos	c/o McMillan Fam Mgt.	943-040-011	20.00	18.00	Citrus	7S/2W-28L	258.00		
	29379 Rancho Cal. Rd	943-060-010	94.49	89.00	Citrus				
	#201	943-060-011	26.50	29.00	Citrus				
	Temecula, CA 92390								
Anza Grove	c/o McMillan Fam Mgt.	942-180-002	40.28	Total		7S/2W-26B1	429.00		
	29379 Rancho Cal. Rd	942-240-003	40.83	of					
	#201	942-240-004	40.83						
	Temecula, CA 92390	942-240-005	39.31	155.00	Citrus				
Stage Ranch Farm Managment	P. O. Box 1371 Temecula, CA 92593	927-620-004	17.84	18.00	Wine Grapes	7S/3W-31G(1)	50.00		
A Peel Citrus Giddings, Richard W. Mendoza, Bertha	c/o Stage Ranch Farm Mgmt.	917-240-015-7	20.00	Total		8S/1W-21K(1) 8S/1W-21K(2) 8S/1W-21P(1) 8S/1W-21P(2)	Total of 350.00		
	P. O. Box 1371	917-240-014-6	60.00	of					
	Temecula, CA 92593	917-150-006-1	120.00						
	38695 Highway 79 Warner Springs, CA 92086	917-150-002-7	117.76	110.00	Citrus				
Boots, Clydene	P. O. Box 321 Murrieta, CA 92362 25555 Washington Ave Murrieta, Ca. 92564	909-090-019	16.66	14.00	Pasture	7S/3W-21P	60.00		
		909-100-017							
James A. and Maggie Carter Living Trust	Highway 79 S Temecula, CA m/t P. O. Box 507 Santa Ana, CA 92702-0507	917-250-004	80.00	Total		8S/1W-25Q	0.00		
		917-250-005	80.00	of		8S/1W-25P	24.00		
							8S/1W-25N(1)Spring 3		0.00
							8S/1W-36K Spring 4		0.00
							8S/1W-36H Spring 6		0.00
							8S/1W-36K(1)	50.00	
							8S/1W-36K(2)	60.00	
			220.00	Grapes	8S/1W-38K(3)	100.00			
						8S/1W-36L - Stream Diversion		52.00	

**WATERMASTER
SANTA MARGARITA RIVER WATERSHED**

APPENDIX C

**SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS**

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2002-2003	IRRIGATED CROP 2002-2003	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
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MURRIETA-TEMECULA GROUNDWATER AREA (Cont)

Regency Properties	44051 Rainbow Cyn Rd. Temecula, CA 92592	922-220-002	86.11	Total		8S/2W-19(D)	335.16	
		922-220-003	5.75					
		922-220-004	52.18					
		922-220-007	14.36					
		922-220-008	3.99	of				
		922-230-002	59.29					
		922-230-003	1.00					
		922-230-004	40.00					
		922-230-007	25.00					
		922-230-008	16.11	150.00	Grass			
Carson, David M. and Carol J.	25471 Hayes Ave Murrieta, CA 92362	909-260-036	6.87	7.00	Pasture	7S/3W-28G	39.80	
		909-260-042	4.31	3.50	Pasture			

Pechanga Indian Reservation

Domestic and Commercial Wells Reported by Bureau of Indian Affairs

Wells In <u>Basement Complex</u>	Wells out of <u>Watershed</u>	Wells with <u>QYAL and/or QTOAL</u>	Total
		8S/2W-28J1	 of
		8S/2W-28J2	
		8S/2W-28P1	
		8S/2W-28Q1	
		8S/2W-28Q2	
		8S/2W-28Q4	
		8S/2W-28Q6	
		8S/2W-28Q7	
		8S/2W-28R1	
		8S/2W-29A1	
		8S/2W-29B10	
		8S/2W-34B3	
		8S/2W-34B4	
		8S/2W-34C1	
		8S/2W-34D1	
		8S/2W-34E1	
		8S/2W-34F1	
		8S/2W-34F2	
		8S/2W-34F3	
		8S/2W-34F4	
		8S/2W-34F7	
		8S/2W-35D1	
		Domestic Use	144.00
		Commercial Use	354.00
		Irrigation	78.00
		Loss	24.00
		TOTAL USE	600.00

TOTAL MURRIETA-TEMECULA GROUNDWATER AREA 813.50 2,356.06 56.00

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

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SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2002-2003	IRRIGATED CROP 2002-2003	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
SANTA MARGARITA RIVER BELOW GORGE								
DE LUZ CREEK								
Ezor, Albert E.	40922 DeLuz Road Fallbrook, CA 92028	101-271-17	47.79	12.00	Avocados	8S/4W-29D(1)	36.80	
				2.00	Vegetables	8S/4W-29D(2)	Total	
Bryant, Warren and Lori	40724 DeLuz Rd Fallbrook, CA 92028	101-271-19 101-271-20 101-271-21 101-271-22	19.08 5.02 11.86 6.41	Total		8S/4W-29E(1)	30.40	
				of				
				8.00	Pasture	8S/4W-29E(2)	Total	
Prestininzi, Pete and Dorothy N.	2525 E. Mission Road Fallbrook, CA 92028 Richmond Truck Trail and DeLuz Murrieta Road	101-220-12 101-210-53	31.63 50.44	6.00	Pasture & Flowers			
				12.00	Avocados	8S/4W-20A(1)	16.00	
					and Citrus	8S/4W-20H(1)	16.00	
						8S/4W-20H(2)	14.00	
						8S/4W-20A(2) 8S/4W-20H(3) 8S/4W-20A - Diversion		0.00
Varela, Alfred	41125 DeLuz Rd Fallbrook, CA 92028	101-210-11	15.23	8.50	Avocados	8S/4W-20Q(1)	21.60	
				0.50	Citrus	8S/4W-20Q(2)	Total	
Kreidler, Erich Detacruz, Rodrigo and Monica	41257 DeLuz Rd Fallbrook, CA 92028	101-210-12	30.28	10.00	Avocados	8S/4W-20Q(1)	Total	
				18.00	Citrus	8S/4W-20Q(2)	of	
				2.00	Row crops	8S/4W-20Q(3)	66.20	
Wagner, Wilbur A.	41128 DeLuz	101-210-23	17.19	11.00	Avocados			
				3.00	Persimmons			
		101-210-22	4.55	3.00	Persimmons	8S/4W-20P(1) 8S/4W-20P(2) 8S/4W-20P(3)	0.00 0.00 33.00	
Chambers, Robert R. and Clytia M.	m/t 11439 Laurelcrest Dr. Studio City, CA 91604 40888 DeLuz-Murrieta Road	101-571-03	41.72	20.00	Flowers	8S/4W-28A 8S/4W-28A - Diversion	30.00	5.00
		102-130-42	73.14	5.00	Fruit	9S/4W-9B(1)	5.00	
				20.00	Flowers	9S/4W-9B(2) 9S/4W-9B(3)	1.00 30.00	
Welburn, Douglas J. and Sue	40787 DeLuz Murrieta Rd. Fallbrook, CA 92028 40751 DeLuz Murrieta Rd	101-571-08	26.98	8.50	Row Crops	8S/4W-28G1	35.00	
				1.50	Trees			
Nezami, Mohammed Bluebird Ranch	2193 Calle Rociada Fallbrook, CA m/t P. O. Box 1089 Fallbrook, CA 92088	101-312-02	58.17	45.00	Flowers	8S/4W-31K(1)	Total	
				5.00	Avocados	8S/4W-31K(2)	of	
		101-312-01	82.29	42.00	Flowers	8S/4W-31K(3)		
						8S/4W-31L 8S/4W-31L - Diversion	162.18	31.48

**WATERMASTER
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SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS**

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2002-2003	IRRIGATED CROP 2002-2003	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
SANTA MARGARITA RIVER BELOW GORGE (Cont)								
DE LUZ CREEK (Cont)								
Vanginkel, Norman and Deborah	39452 DeLuz Road Fallbrook, CA 92028 m/l 20664 Calle De La Ladera Yorba Linda, CA 92887	101-312-03	80.00	25.00	Nursery Stock	8S/4W-31J(1)	0.00	
						6S/4W-31J(2)	18.00	
						8S/4W-31J(3)	5.00	
						8S/4W-31J(4)	36.00	
						8S/4W-31J(5)	0.00	
		102-052-04	22.04			8S/4W-6A	0.00	
		102-731-02	4.26					
Daily Family Trust	40555 Ross Road Fallbrook, CA 92028	101-430-27	2.73	Total of				
		101-430-30	16.39	7.00	Avocados			
		101-500-01	16.62	7.00	Limes			
		101-480-14	13.20	6.00	Persimmons	8S/4W-34- Lake Diversion		7.00
SUBTOTAL DELUZ CREEK				243.00			558.18	43.48
SANDIA CREEK								
Cal June, Inc.	P. O. Box 9551 No. Hollywood, CA 91609 40376 Sandia Creek Fallbrook, CA 92028	101-360-40	126.32	65.00	Avocados	8S/4W-25P(1)		
						8S/4W-25P(2)		
						8S/4W-25P(3)		
						8S/4W-25P(4)		
						8S/4W-25P(5)		
						8S/4W-25P - Diversion		380.00
SUBTOTAL SANDIA CREEK				65.00			0.00	380.00
SANTA MARGARITA RIVER								
San Diego State University Foundation	47981 Willow Glen Rd. Temecula, CA m/l Louis Haberkern, Director SDSU Foundation 5250 Campanile Dr., 4th Flr. San Diego, CA 92182-1999	918-040-10	120.00	Total of	Citrus and	8S/3W-33Q1	0.00	
		918-060-17	40.00	20.00	Avocados	8S/3W-33Q(2)	20.00	
						8S/3W-33Q - Diversion		40.00
SUBTOTAL SANTA MARGARITA RIVER				20.00			20.00	40.00
TOTAL SANTA MARGARITA RIVER BELOW GORGE				328.00			578.18	463.48

**WATERMASTER
SANTA MARGARITA RIVER WATERSHED**

APPENDIX C

**SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS**

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 2002-2003	IRRIGATED CROP 2002-2003	WELL/ DIVERSION LOCATION TWP/RNG/SEC	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
LOWER MURRIETA								
Northwind Fams, Inc.	c/o Cliff Ronnenberg	571-020-046	81.09	0.00				
	11292 Western Avenue	571-020-047	40.80	0.00				
	Stanton, CA 90680	571-020-048	36.75	0.00				
(Sage Ranch Nursery)	42522 E. Benton Rd.	571-020-049	148.86	0.00		7S/1E-7D	5.50	
	Aguanga, CA	571-020-004	1.50	0.00				
		571-520-007	109.50	Total				
		571-520-008	99.43					
		571-520-009	80.23	of				
		571-520-010	78.20					
		915-140-003	101.65					
		915-140-008	21.39					
		470-210-007	53.62					
		470-220-004	121.00	400.00	Olive trees	7S/1E-7E - Diversion		100.00
Gonzalez, Enrique and Maria M.	39800 E. Benton Rd. Temecula, CA 92390	915-120-18	37.74	10.00	Pasture	7S/1W-10R(1) 7S/1W-10R(2) 7S/1W-10R(3) 7S/1W-10R(4) 7S/1W-10R(5) 7S/1W-10R(6)	Total of 38.00 Domestic	
TOTAL LOWER MURRIETA				410.00			43.50	100.00
GRAND TOTAL				3,696.70			7,448.81	1,005.48
GRAND TOTAL Not including Pechanga Indian Reservation (604 AF) and Cahuilla Indian Reservation (42 AF)				3,696.70			6,806.81	1,001.48

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SANTAMARGARITA RIVER WATERSHED

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SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATERMASTER REPORT
WATER YEAR 2002-03

APPENDIX D
WATER QUALITY DATA

AUGUST 2004

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-2.1

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

NUTRIENT SAMPLING BY RANCHO CALIFORNIA WATER DISTRICT

2002-03

Site Location	Date Tested	Total Dissolved Solids (mg/l)	Nitrate as N (mg/l)	Total N (mg/l)	Total P (mg/l)
Murrieta Creek at Gaging Station	10/02/02	620	1.1	1.40	0.13
	10/09/02	690	1.2	1.70	0.12
	10/16/02	640	1.3	2.10	0.16
Temecula Creek	10/02/02	890	ND	1.00	1.20
	10/09/02	900	ND	1.40	0.37
	10/16/02	870	ND	1.20	1.20
Santa Margarita River at Gaging Station	10/02/02	660	0.7	1.20	0.34
	10/09/02	690	0.6	1.20	0.13
	10/16/02	670	0.8	1.70	0.18
System Discharge to Murrieta Creek at River Meter	10/02/02	500	2.6	2.70	0.10
	10/09/02	620	1.9	1.90	ND
	10/16/02	500	2.6	2.70	0.05
Santa Margarita River at Willow Glen	10/01/02	850	0.5	0.55	0.11
Santa Margarita River at DeLuz Crossing	10/01/02	930	ND	0.35	0.09
Santa Margarita River at Estuary	10/01/02	15000	4.1	5.60	1.20

ND - None Detected

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-3

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

WELLS SAMPLED BY MURRIETA COUNTY WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
Holiday Well 7S/3W-20C09	06/16/89	1300	775	122	39	100	2	178	66	372	40
	10/18/91	--	--	--	--	--	--	--	--	--	25
	11/15/91	--	--	--	--	--	--	--	--	--	26
	12/13/91	--	--	--	--	--	--	--	--	--	28
	01/10/92	--	--	--	--	--	--	--	--	--	27
	02/07/92	--	--	--	--	--	--	--	--	--	27
	05/01/92	--	--	--	--	--	--	--	--	--	32
	05/29/92	--	--	--	--	--	--	--	--	--	28
	08/21/92	--	--	--	--	--	--	--	--	--	27
	01/22/93	960	605	83	29	83	2	130	84	278	33
	10/15/93	--	--	--	--	--	--	--	--	--	32
	03/30/94	--	--	--	--	--	--	--	--	--	44
	06/22/94	--	--	--	--	--	--	--	--	--	35
	09/14/94	--	--	--	--	--	--	--	--	--	31
	12/07/94	--	--	--	--	--	--	--	--	--	30
	03/01/95	--	--	--	--	--	--	--	--	--	32
	06/21/95	--	--	--	--	--	--	--	--	--	11
	09/13/95	--	--	--	--	--	--	--	--	--	27
	12/06/95	--	--	--	--	--	--	--	--	--	26
	03/27/96	--	--	--	--	--	--	--	--	--	15
	06/06/96	--	--	--	--	--	--	--	--	--	24
	09/11/96	--	--	--	--	--	--	--	--	--	22
	11/08/96	--	--	--	--	--	--	--	--	--	55
	11/14/96	--	--	--	--	--	--	--	--	--	25
	12/05/96	--	--	--	--	--	--	--	--	--	24
	03/27/97	--	--	--	--	--	--	--	--	--	20
	06/18/97	--	--	--	--	--	--	--	--	--	21
	12/03/97	--	--	--	--	--	--	--	--	--	18
	03/25/98	--	--	--	--	--	--	--	--	--	21
	04/22/98	1090	680	89	29	85	1	150	76	290	22
	06/17/98	--	--	--	--	--	--	--	--	--	23
	10/01/98	--	--	--	--	--	--	--	--	--	25
	12/02/98	--	--	--	--	--	--	--	--	--	28
	02/24/99	--	--	--	--	--	--	--	--	--	33
	03/24/99	--	--	--	--	--	--	--	--	--	26
	09/09/99	--	--	--	--	--	--	--	--	--	36
12/03/99	--	--	--	--	--	--	--	--	--	32	
07/12/00	--	--	--	--	--	--	--	--	--	21	
08/04/00	1290	790	110	36	99	--	180	110	320	21	
10/24/01	--	--	--	--	--	--	--	--	--	17	
03/06/02	--	--	--	--	--	--	--	--	--	15	
07/11/02	--	780	--	--	--	--	--	--	310	--	

TABLE D-3 (cont'd)

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

WELLS SAMPLED BY MURRIETA COUNTY WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
House Well 7S/3W-20G06	06/16/89	660	345	34	3	95	2	87	60	153	<1
	02/27/91	770	--	--	--	--	--	110	65	168	<1
	03/01/91	730	--	--	--	--	--	110	--	--	<1
	03/08/91	680	420	42	5	90	2	110	68	122	<1
	05/10/91	750	--	--	--	--	--	--	--	--	<1
	10/11/91	--	--	--	--	--	--	--	--	--	<1
	11/08/91	--	--	--	--	--	--	--	--	--	<1
	05/22/92	--	--	--	--	--	--	--	--	--	<1
	08/14/92	--	--	--	--	--	--	--	--	--	<1
	01/22/93	720	415	40	5	106	2	100	68	168	<1
	09/07/94	--	--	--	--	--	--	--	--	--	<1
	12/27/95	--	--	--	--	--	--	--	--	--	<1
	03/22/95	--	--	--	--	--	--	--	--	--	<1
	06/14/95	--	--	--	--	--	--	--	--	--	<1
	09/06/95	--	--	--	--	--	--	--	--	--	<1
	12/27/95	--	--	--	--	--	--	--	--	--	<1
	03/20/96	--	--	--	--	--	--	--	--	--	<2
	06/12/96	--	--	--	--	--	--	--	--	--	<2
	09/04/96	--	--	--	--	--	--	--	--	--	<2
	12/26/96	--	--	--	--	--	--	--	--	--	<2
	03/19/97	--	--	--	--	--	--	--	--	--	<2
	06/12/97	--	--	--	--	--	--	--	--	--	<2
	12/30/97	--	--	--	--	--	--	--	--	--	<2
	03/18/98	--	--	--	--	--	--	--	--	--	<2
	04/15/98	660	360	30	3	94	1	91	62	130	<2
	06/10/98	--	--	--	--	--	--	--	--	--	<2
	10/01/98	--	--	--	--	--	--	--	--	--	<2
	12/23/98	--	--	--	--	--	--	--	--	--	<2
	02/17/99	--	--	--	--	--	--	--	--	--	<2
	03/17/99	--	--	--	--	--	--	--	--	--	<2
	06/09/99	--	--	--	--	--	--	--	--	--	<2
	09/01/99	--	--	--	--	--	--	--	--	--	<2
	12/22/99	--	--	--	--	--	--	--	--	--	ND
03/15/00	640	370	29	3	92	2	82	61	130	<2	
06/07/00	--	--	--	--	--	--	--	--	--	<2	
09/27/00	--	--	--	--	--	--	--	--	--	<2	
10/24/01	--	--	--	--	--	--	--	--	--	<2	
03/06/02	--	--	--	--	--	--	--	--	--	<2	
07/11/02	--	440	--	--	--	--	--	--	--	170	

ND - None Detected

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-3 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY MURRIETA COUNTY WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
South Well 7S/3W-20D	09/07/90	690	405	62	17	68	2	83	56	229	4
	10/04/91	---	---	---	---	---	---	---	---	---	2
	11/01/91	---	---	---	---	---	---	---	---	---	3
	11/26/91	---	---	---	---	---	---	---	---	---	2
	05/15/92	---	---	---	---	---	---	---	---	---	<1
	10/01/93	---	---	---	---	---	---	---	---	---	2
	09/28/94	---	---	---	---	---	---	---	---	---	1
	12/21/94	---	---	---	---	---	---	---	---	---	3
	03/15/95	---	---	---	---	---	---	---	---	---	2
	06/07/95	---	---	---	---	---	---	---	---	---	2
	09/27/95	---	---	---	---	---	---	---	---	---	2
	12/20/95	---	---	---	---	---	---	---	---	---	3
	03/13/96	---	---	---	---	---	---	---	---	---	2
	06/15/96	---	---	---	---	---	---	---	---	---	3
	09/25/96	---	---	---	---	---	---	---	---	---	3
	12/18/96	---	---	---	---	---	---	---	---	---	3
	04/09/97	---	---	---	---	---	---	---	---	---	2
	06/04/97	---	---	---	---	---	---	---	---	---	2
	03/11/98	---	---	---	---	---	---	---	---	---	<2
	04/08/98	820	500	73	18	67	2	92	73	250	3
	06/03/98	---	---	---	---	---	---	---	---	---	3
	10/01/98	---	---	---	---	---	---	---	---	---	3
	12/16/98	---	---	---	---	---	---	---	---	---	2
	03/10/98	---	---	---	---	---	---	---	---	---	2
	06/09/99	---	---	---	---	---	---	---	---	---	2
	09/22/99	---	---	---	---	---	---	---	---	---	<2
	12/15/99	---	---	---	---	---	---	---	---	---	ND
	02/09/00	810	460	55	14	84	1	99	63	210	<2
	05/03/00	---	---	---	---	---	---	---	---	---	<2
	08/04/00	780	440	47	9	100	---	99	48	210	<2
08/23/00	---	---	---	---	---	---	---	---	---	<2	
10/24/01	---	---	---	---	---	---	---	---	---	<2	
03/20/02	---	---	---	---	---	---	---	---	---	4	
07/11/02	---	460	---	---	---	---	---	---	180	---	
Alson Well 7S/3W-7M	06/06/90	1520	915	138	46	110	1	250	81	433	31
	07/21/98	1260	880	100	37	120	<1	180	92	330	23
	09/09/98	1200	850	110	39	120	<1	180	100	320	23
	05/03/00	---	---	---	---	---	---	---	---	---	20
	05/19/00	1290	800	97	36	110	<1	180	96	330	19
	11/28/01	1290	750	93	33	110	<1	180	96	310	17
	03/06/02	---	---	---	---	---	---	---	---	---	20
07/01/02	---	650	---	---	---	---	---	---	270	---	

ND - None Detected

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-3 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY MURRIETA COUNTY WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
North Well 7S/3W-18J02	06/16/89	730	390	40	7	98	2	98	45	201	<1
	10/25/91	---	---	---	---	---	---	---	---	---	<1
	11/22/91	---	---	---	---	---	---	---	---	---	<1
	05/08/92	---	---	---	---	---	---	---	---	---	<1
	08/28/92	---	---	---	---	---	---	---	---	---	<1
	01/22/93	680	405	39	8	99	2	100	51	183	<1
	10/22/93	---	---	---	---	---	---	---	---	---	<1
	07/08/94	810	520	---	---	87	---	130	53	---	<1
	09/21/94	---	---	---	---	---	---	---	---	---	<1
	12/14/94	---	---	---	---	---	---	---	---	---	<1
	03/08/95	---	---	---	---	---	---	---	---	---	<1
	06/28/95	---	---	---	---	---	---	---	---	---	<1
	09/20/95	---	---	---	---	---	---	---	---	---	<1
	12/13/95	---	---	---	---	---	---	---	---	---	<1
	03/06/96	---	---	---	---	---	---	---	---	---	<2
	06/26/96	---	---	---	---	---	---	---	---	---	<2
	09/18/96	---	---	---	---	---	---	---	---	---	<2
	12/11/96	---	---	---	---	---	---	---	---	---	<2
	06/25/97	---	---	---	---	---	---	---	---	---	<2
	07/08/98	760	460	49	9	100	2	110	51	220	<2
	10/01/98	---	---	---	---	---	---	---	---	---	<2
	12/09/98	---	---	---	---	---	---	---	---	---	<2
	02/03/99	---	---	---	---	---	---	---	---	---	<2
	03/03/99	---	---	---	---	---	---	---	---	---	<2
	06/23/99	---	---	---	---	---	---	---	---	---	<2
	09/22/99	---	---	---	---	---	---	---	---	---	<2
	12/08/99	---	---	---	---	---	---	---	---	---	<2
	01/05/00	780	440	47	9	100	---	99	48	210	<2
	05/03/00	---	---	---	---	---	---	---	---	---	<2
	07/19/00	---	---	---	---	---	---	---	---	---	<2
	10/24/01	---	---	---	---	---	---	---	---	---	<2
03/06/02	---	---	---	---	---	---	---	---	---	<2	
07/11/02	---	420	---	---	---	---	---	---	180	---	
Lynch Well 7S/3W-17R02	06/16/89	760	410	70	17	55	1	86	30	262	8
Morris Well 7S/3W-19R	09/07/90	530	280	38	7	68	3	50	49	168	3

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-4

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 101 7S/3W-34G1	06/01/88	810	495	76	15	79	8	116	16	314	—
	08/05/88	—	—	—	—	—	—	—	—	—	<1
	05/23/90	630	365	30	6	91	2	101	35	107	3
	08/04/93	860	465	76	14	78	2	120	22	275	<1
	08/09/96	820	480	69	14	83	2	110	15	310	<2
	10/16/97	—	—	—	—	—	—	—	—	—	<2
	08/11/99	840	510	70	14	85	2	110	17	300	<2
	06/25/02	—	—	—	—	—	—	—	—	—	<2
	08/14/02	870	500	66	14	85	2.5	120	15	250	<2
	06/11/03	—	—	—	—	—	—	—	—	—	<2
No. 102 8S/3W-2Q1	01/04/89	695	370	9	2	134	1	101	25	195	<1
	01/15/92	930	615	38	4	160	3	160	55	250	<1
	05/17/95	850	475	21	1	144	1	120	130	98	<1
	06/20/95	1190	700	26	2	207	2	150	220	131	<1
	06/09/97	—	—	—	—	—	—	—	—	—	<2
No. 105 7S/3W-25M1	07/06/89	500	280	30	6	66	2	71	22	134	14
	03/17/93	480	310	17	2	80	2	67	22	110	14
No. 106 7S/3W-26R1	06/29/88	920	485	38	5	143	3	182	66	70	16
	05/13/92	880	515	35	4	142	2	180	72	110	17
	05/16/95	870	495	32	3	138	2	160	57	116	14
	07/07/97	—	—	—	—	—	—	—	—	—	8
	07/20/98	—	—	—	—	—	—	—	—	—	9
	07/20/99	—	—	—	—	—	—	—	—	—	9
	07/06/00	—	—	—	—	—	—	—	—	—	8
	05/01/01	490	300	7	<1	96	<1	70	23	100	8
	07/10/01	—	—	—	—	—	—	—	—	—	12
	07/03/02	—	—	—	—	—	—	—	—	—	8
07/07/03	—	—	—	—	—	—	—	—	—	6.8	
No. 107 7S/3W-26J1	04/11/88	490	365	19	4	73	2	69	22	116	15
	05/29/91	950	535	63	15	104	3	130	120	171	11
No. 108 7S/3W-25E1	05/25/88	780	455	51	11	96	2	120	68	153	14
	05/29/91	930	500	59	14	104	3	130	110	153	10
	05/13/94	640	395	23	5	100	2	120	51	104	7
	05/16/95	—	—	—	—	—	—	—	—	—	5
	05/13/97	540	300	7	<1	110	<1	110	15	85	4
	05/05/99	—	—	—	—	—	—	—	—	—	8
	05/16/00	630	350	7	<1	110	<1	130	12	65	3
	05/02/01	—	—	—	—	—	—	—	—	—	2
	11/19/02	—	—	—	—	—	—	—	—	—	2

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 109 8S/2W-17J1	06/01/88	1400	920	136	35	120	4	100	300	296	—
	08/05/88	—	—	—	—	—	—	—	—	—	10
	06/12/91	1330	800	110	26	120	5	120	270	275	9
	06/22/94	1370	1010	138	32	124	5	140	320	287	7
	06/06/95	—	—	—	—	—	—	—	—	—	8
	06/13/97	1440	1010	130	31	140	4	140	330	280	10
	07/16/97	—	—	—	—	—	—	—	—	—	2.2 @N
	04/14/99	—	—	—	—	—	—	—	—	—	12
	04/11/00	—	—	—	—	—	—	—	—	—	13
	06/21/00	1330	870	120	28	130	4	120	280	270	3.2
	04/10/01	—	—	—	—	—	—	—	—	—	13
	06/11/03	1400	970	140	32	130	4	130	340	290	12
	06/19/03	1400	970	150	32	120	4.2	130	340	290	12
	No. 110 8S/1W-06K1	03/31/88	1100	630	70	23	132	6	115	163	268
03/11/93		1010	610	60	21	124	5	110	200	201	3
04/27/95		—	—	—	—	—	—	—	—	—	1
07/20/99		—	—	—	—	—	—	—	—	—	<2
07/06/00		—	—	—	—	—	—	—	—	—	2
07/10/01		—	—	—	—	—	—	—	—	—	2
03/11/02		850	500	58	20	81	5	74	190	160	<2
07/03/02		—	—	—	—	—	—	—	—	—	<2
09/16/03	—	—	—	—	—	—	—	—	—	2	
No. 113 7S/2W-25H01	03/28/88	700	400	41	12	87	2	11	20	192	18
	03/21/91	570	290	21	5	79	2	88	17	119	11
	03/03/94	700	410	46	13	86	2	120	25	189	19
	04/27/95	—	—	—	—	—	—	—	—	—	24
	03/20/97	880	500	53	15	96	2	140	33	200	22
	07/20/98	—	—	—	—	—	—	—	—	—	23
	09/16/98	—	—	—	—	—	—	—	—	—	22
	02/25/99	—	—	—	—	—	—	—	—	—	19
	04/14/99	—	—	—	—	—	—	—	—	—	17
	06/03/99	—	—	—	—	—	—	—	—	—	21
	09/14/99	—	—	—	—	—	—	—	—	—	22
	10/21/99	—	—	—	—	—	—	—	—	—	25
	11/02/99	—	—	—	—	—	—	—	—	—	22
	12/14/99	—	—	—	—	—	—	—	—	—	23
	01/11/00	—	—	—	—	—	—	—	—	—	18
	03/07/00	810	470	75	16	59	2	70	94	200	11
	04/11/00	—	—	—	—	—	—	—	—	—	—
05/03/00	—	—	—	—	—	—	—	—	—	—	24
06/21/00	—	—	—	—	—	—	—	—	—	—	23
09/13/00	—	—	—	—	—	—	—	—	—	—	23

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l								
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3	
No. 113 (cont'd) 7S/2W-25H01	10/06/00	---	---	---	---	---	---	---	---	---	---	21
	02/14/01	---	---	---	---	---	---	---	---	---	---	16
	05/30/01	---	---	---	---	---	---	---	---	---	---	23
	06/12/01	---	---	---	---	---	---	---	---	---	---	22
	08/01/01	---	---	---	---	---	---	---	---	---	---	22
	11/13/01	---	---	---	---	---	---	---	---	---	---	22
	05/01/02	---	---	---	---	---	---	---	---	---	---	19
	08/06/02	---	---	---	---	---	---	---	---	---	---	20
	11/05/02	---	---	---	---	---	---	---	---	---	---	21
	02/07/03	---	---	---	---	---	---	---	---	---	---	22
	03/05/03	1000	610	65	19	110	2.5	160	41	260	26	26
	08/05/03	---	---	---	---	---	---	---	---	---	---	21
	No. 118 8S/3W-11B	08/08/90	715	480	14	1	162	1	120	79	101	1
09/26/90		---	---	---	---	---	---	---	---	---	---	1
09/10/93		860	525	19	1	178	1	130	94	198	<1	<1
06/20/95		---	---	---	---	---	---	---	---	---	---	<1
09/16/96		970	560	33	2	180	2	120	120	230	<2	<2
07/23/97		---	---	---	---	---	---	---	---	---	---	0.2 @N
09/16/98		---	---	---	---	---	---	---	---	---	---	2
11/02/99		1040	580	46	4	170	2	130	100	240	<2	<2
09/20/00		---	---	---	---	---	---	---	---	---	---	<2
08/18/02		---	---	---	---	---	---	---	---	---	---	<2
11/08/02		1100	590	46	4.5	160	1.3	140	94	240	<2	<2
09/23/03	---	---	---	---	---	---	---	---	---	---	<2	
No. 119 8S/2W-19J	07/16/96	450	280	44	9	35	<1	39	18	180	15	15
	08/14/97	---	---	---	---	---	---	---	---	---	---	12
	12/24/97	---	320	---	---	---	---	---	---	---	---	3.1@N
	03/04/98	---	380	---	---	---	---	---	---	---	---	3.3@N
	06/04/98	---	---	---	---	---	---	---	---	---	---	3.8@N
	06/12/98	---	400	---	---	---	---	---	---	---	---	---
	09/16/98	---	---	---	---	---	---	---	---	---	---	3.7@N
	01/08/99	---	430	---	---	---	---	---	---	---	---	---
	04/13/99	---	---	---	---	---	---	---	---	---	---	28
	06/02/99	---	560	---	---	---	---	---	---	---	---	4.8@N
	07/27/99	940	640	103	21	58	1	70	150	264	30	30
	09/14/99	---	---	---	---	---	---	---	---	---	---	22
	09/14/99	---	---	---	---	---	---	---	---	---	---	4.8@N

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l								
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3	
No. 119 (cont'd) 8S/2W-19J	10/26/99	---	---	---	---	---	---	---	---	---	---	24
	11/02/99	---	---	---	---	---	---	---	---	---	---	22
	12/14/99	---	560	---	---	---	---	---	---	---	---	22
	04/04/00	---	---	---	---	---	---	---	---	---	---	20
	12/14/00	---	---	---	---	---	---	---	---	---	---	4.6@N
	03/29/01	---	---	---	---	---	---	---	---	---	---	20
	06/20/01	---	---	---	---	---	---	---	---	---	---	4.2@N
	09/14/01	---	---	---	---	---	---	---	---	---	---	4.2@N
	09/28/01	---	---	---	---	---	---	---	---	---	---	18
	11/16/01	---	---	---	---	---	---	---	---	---	---	16
	07/24/02	770	490	81	15	49	1.1	51	90	240	19	
	05/23/02	---	480	---	---	---	---	---	---	---	---	18
	11/08/02	---	---	---	---	---	---	---	---	---	---	15
	02/19/03	---	---	---	---	---	---	---	---	---	---	17
No. 120 8S/2W-17G	06/20/90	570	330	6	1	116	1	82	31	113	11	
	06/10/93	590	340	6	<1	122	1	85	35	104	12	
	07/19/96	630	360	6	<1	120	1	88	42	120	14	
	06/16/97	---	---	---	---	---	---	---	---	---	10	
	08/14/97	---	---	---	---	---	---	---	---	---	9	
	06/02/99	620	360	6	<1	122	<1	84	45	120	10	
	06/06/00	---	---	---	---	---	---	---	---	---	11	
	06/13/01	---	---	---	---	---	---	---	---	---	12	
	06/01/02	670	370	8.1	<1	130	1	86	46	130	11	
	06/11/03	---	---	---	---	---	---	---	---	---	12	
No. 121 7S/3W-34J	10/27/89	900	475	63	14	99	2	109	28	290	<1	
	05/19/92	1000	560	72	17	120	3	170	56	270	<1	
	07/18/97	---	---	---	---	---	---	---	---	---	ND	
	07/24/97	---	640	---	---	---	---	---	---	---	ND	
	08/20/97	---	---	---	---	---	---	---	---	---	ND	
	09/03/97	---	---	---	---	---	---	---	---	---	ND	
	06/19/02	---	---	---	---	---	---	---	---	---	ND	

ND - None Detected

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l									
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3		
No. 122	06/23/97	---	---	---	---	---	---	---	---	---	---	6	
8S/2W-20P1	07/25/97	660	460	64	13	44	1	61	65	190	---	8	
	10/10/97	---	---	---	---	---	---	---	---	---	---	9	
	12/23/97	---	400	---	---	---	---	---	---	---	---	1.8@N	
	03/25/98	---	450	---	---	---	---	---	---	---	---	2.2@N	
	06/03/98	---	---	---	---	---	---	---	---	---	---	2.4@N	
	06/05/98	---	460	---	---	---	---	---	---	---	---	---	
	09/17/98	---	---	---	---	---	---	---	---	---	---	2.2@N	
	01/08/99	---	450	---	---	---	---	---	---	---	---	---	
	06/03/99	---	470	---	---	---	---	---	---	---	---	2.1@N	
	04/13/99	---	---	---	---	---	---	---	---	---	---	9	
	09/21/99	---	---	---	---	---	---	---	---	---	---	2.1@N	
	03/07/00	---	---	---	---	---	---	---	---	---	---	16	
	04/04/00	---	---	---	---	---	---	---	---	---	---	9	
	06/28/00	780	470	79	16	62	1	73	100	210	---	11	
	12/13/00	---	---	---	---	---	---	---	---	---	---	---	2.5@N
	03/27/01	---	---	---	---	---	---	---	---	---	---	---	2.5@N
	04/18/01	---	---	---	---	---	---	---	---	---	---	---	10
	06/20/01	---	---	---	---	---	---	---	---	---	---	---	2.4@N
	09/13/01	---	---	---	---	---	---	---	---	---	---	---	2.7@N
	12/13/01	---	550	---	---	---	---	---	---	---	---	---	---
05/14/02	---	570	---	---	---	---	---	---	---	---	---	9	
03/05/03	---	---	---	---	---	---	---	---	---	---	---	10	
No. 123 8S/1W-7B	06/06/90	1100	690	69	27	132	6	130	170	281	---	4	
	06/10/93	1120	690	74	25	136	6	120	190	250	---	5	
	02/05/97	930	550	55	18	110	5	83	130	250	---	1.3	
	04/27/99	---	---	---	---	---	---	---	---	---	---	3	
	06/02/99	---	---	---	---	---	---	---	---	---	---	3	
	07/20/99	---	---	---	---	---	---	---	---	---	---	2	
	08/11/99	---	---	---	---	---	---	---	---	---	---	2	
	09/14/99	---	---	---	---	---	---	---	---	---	---	2	
	10/21/99	---	---	---	---	---	---	---	---	---	---	2	
	11/02/99	---	---	---	---	---	---	---	---	---	---	2	
	02/09/00	1150	610	59	20	100	5	83	150	240	---	3	
	02/09/01	---	---	---	---	---	---	---	---	---	---	3	
	03/10/03	880	550	59	20	87	4.5	80	180	170	---	<2	

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 124 8S/2W-11R1	06/20/90	660	380	38	4	92	3	97	48	153	13
	07/22/93	690	430	42	5	89	3	90	57	159	17
	07/18/95	---	---	---	---	---	---	---	---	---	11
	10/26/99	700	420	45	4	94	3	97	61	160	16
	07/06/00	---	---	---	---	---	---	---	---	---	17
	07/10/01	---	---	---	---	---	---	---	---	---	16
	07/03/02	---	---	---	---	---	---	---	---	---	10
	10/02/02	600	330	24	2.4	92	1.9	75	38	150	10
	01/08/03	---	---	---	---	---	---	---	---	---	2.3@N
	07/01/03	---	---	---	---	---	---	---	---	---	8.3
No. 125 8S/2W-12H	06/20/90	740	425	17	5	132	3	99	54	186	4
	06/10/93	770	450	18	5	140	3	150	60	131	3
	06/20/95	---	---	---	---	---	---	---	---	---	2
	06/09/97	---	---	---	---	---	---	---	---	---	2
	09/17/98	---	---	---	---	---	---	---	---	---	3
	06/03/99	720	440	10	3	135	2	89	76	170	<2
	11/02/99	---	---	---	---	---	---	---	---	---	3
	11/15/00	---	---	---	---	---	---	---	---	---	2
	07/24/01	---	---	---	---	---	---	---	---	---	4
	06/19/02	700	400	8.8	2.3	130	1.8	87	54	170	<2
	07/03/02	---	---	---	---	---	---	---	---	---	2
	01/13/03	---	---	---	---	---	---	---	---	---	.38@N
	07/01/03	---	---	---	---	---	---	---	---	---	<2
No. 126 8S/2W-15H	05/04/88	480	290	4	<1	106	<1	53	14	64	<1
	07/06/89	500	270	2	1	108	<1	55	11	98	<1
	07/18/95	540	315	1	<1	122	<1	72	11	122	<1
	07/07/97	---	---	---	---	---	---	---	---	---	<2
	07/16/97	---	---	---	---	---	---	---	---	---	0.2@N
	07/23/97	---	---	---	---	---	---	---	---	---	0.2@N
	08/20/97	---	---	---	---	---	---	---	---	---	0.4@N
	09/03/97	---	---	---	---	---	---	---	---	---	0.2@N
	09/17/97	---	---	---	---	---	---	---	---	---	0.2@N

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 126 (cont'd) 8S/2W-15H	07/20/98	520	330	2	<1	120	<1	56	11	130	<2
	09/16/98	---	300	---	---	---	---	---	---	---	0.4@N
	04/14/99	---	---	---	---	---	---	---	---	---	2
	04/11/00	---	---	---	---	---	---	---	---	---	<2
	04/11/01	---	---	---	---	---	---	---	---	---	2
	07/12/01	530	300	2	<1	100	<1	53	12	140	<2
	06/20/02	---	---	---	---	---	---	---	---	---	<2
	08/06/02	---	---	---	---	---	---	---	---	---	<2
	01/08/03	---	---	---	---	---	---	---	---	---	0.25@N
	No. 128 7/3W-36M	07/06/89	400	230	27	3	54	2	59	7	101
07/08/92		390	230	21	2	59	2	55	1	110	24
07/20/95		380	275	16	2	66	1	65	10	101	19
07/07/97		---	---	---	---	---	---	---	---	---	15
07/20/98		370	260	12	<1	71	1	48	11	110	14
06/02/99		---	---	---	---	---	---	---	---	---	13
06/08/01		---	---	---	---	---	---	---	---	---	14
07/10/01		400	230	10	<1	68	<1	44	12	100	12
06/20/02		---	---	---	---	---	---	---	---	---	12
01/08/03		---	---	---	---	---	---	---	---	---	12
No. 129 7S/2W-20L	11/29/89	430	260	16	3	66	2	71	16	92	9
	08/08/90	440	280	20	5	64	2	72	14	119	10
	04/01/92	---	---	---	---	---	---	---	---	---	12
	09/10/93	470	275	24	6	60	2	74	16	110	13
	08/09/96	460	270	19	3	67	2	70	15	100	11
	02/04/97	---	---	---	---	---	---	---	---	---	53
	12/20/00	550	330	44	13	47	2	81	14	130	20
	03/22/01	---	---	---	---	---	---	---	---	---	20
	04/17/01	---	---	---	---	---	---	---	---	---	20
	05/02/01	---	---	---	---	---	---	---	---	---	18
	06/08/01	---	---	---	---	---	---	---	---	---	20
	10/16/01	---	---	---	---	---	---	---	---	---	19
	11/13/01	---	---	---	---	---	---	---	---	---	18
	02/26/02	---	---	---	---	---	---	---	---	---	16
	05/23/02	---	---	---	---	---	---	---	---	---	14
09/18/02	---	---	---	---	---	---	---	---	---	15	

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 130 8S/2W-11R	02/17/88	650	365	16	1	132	1	69	64	0	4
	02/14/91	640	365	4	<1	132	1	68	56	122	---
	04/24/91	---	---	---	---	---	---	---	---	---	3
	02/09/94	650	410	3	<1	148	1	81	72	146	4
	05/16/95	---	---	---	---	---	---	---	---	---	4
	02/05/97	780	450	4	<1	170	<1	78	82	150	5
	05/14/97	---	---	---	---	---	---	---	---	---	4
	04/14/99	---	---	---	---	---	---	---	---	---	5
	02/10/00	750	440	4	<1	170	<1	76	77	170	5
	04/12/00	---	---	---	---	---	---	---	---	---	5
	05/25/00	---	---	---	---	---	---	---	---	---	6
	05/24/01	---	---	---	---	---	---	---	---	---	6
	05/24/02	---	---	---	---	---	---	---	---	---	5
	02/19/03	820	460	4.1	<1	170	<1	87	96	180	5
No. 131 8S/1W-12J	03/10/88	530	270	4	<1	108	1	57	52	31	1
	03/21/91	630	335	7	<1	120	1	74	65	98	3
	03/03/94	660	345	9	<1	124	2	86	73	119	2
	03/30/95	---	---	---	---	---	---	---	---	---	2
	03/20/97	660	370	6	<1	125	1	81	73	100	2
	07/07/97	---	---	---	---	---	---	---	---	---	<2
	07/27/98	---	---	---	---	---	---	---	---	---	2
	06/03/99	---	---	---	---	---	---	---	---	---	<2
	03/07/00	720	380	9	<1	140	2	81	80	130	3
	06/21/00	---	---	---	---	---	---	---	---	---	2
	06/27/01	---	---	---	---	---	---	---	---	---	2
	06/05/02	---	---	---	---	---	---	---	---	---	<2
	03/13/03	700	390	8	<1	130	1.4	88	88	130	3
	06/11/03	---	---	---	---	---	---	---	---	---	<2

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l								
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3	
No. 132	04/18/88	1000	620	94	13	103	6	109	153	235	2	
8S/1W-07D	05/08/91	920	590	64	19	110	5	100	160	201	<1	
	05/13/94	730	460	50	15	78	5	73	110	195	1	
	05/16/95	---	---	---	---	---	---	---	---	---	<1	
	07/18/95	860	520	59	17	100	4	90	130	223	1	
	07/20/98	900	590	69	20	110	5	89	150	230	2	
	01/06/99	---	---	---	---	---	---	---	---	---	2	
	02/03/99	---	---	---	---	---	---	---	---	---	2	
	04/14/99	---	---	---	---	---	---	---	---	---	3	
	06/03/99	---	---	---	---	---	---	---	---	---	3	
	07/27/99	---	---	---	---	---	---	---	---	---	5	
	08/11/99	---	---	---	---	---	---	---	---	---	4	
	09/15/99	---	---	---	---	---	---	---	---	---	4	
	10/21/99	---	---	---	---	---	---	---	---	---	4	
	11/02/99	---	---	---	---	---	---	---	---	---	3	
	12/15/99	---	---	---	---	---	---	---	---	---	3	
	05/03/00	---	---	---	---	---	---	---	---	---	2	
	05/16/01	800	500	57	17	74	5	63	180	150	3	
	05/01/02	---	---	---	---	---	---	---	---	---	---	2
	No. 133 8S/1W-7C	03/28/90	970	605	50	20	112	5	120	131	235	3
		03/11/93	970	580	48	19	120	4	110	140	204	3
06/06/95		---	---	---	---	---	---	---	---	---	2	
07/18/95		850	680	26	10	142	2	120	100	174	2	
06/23/97		---	---	---	---	---	---	---	---	---	3	
07/20/98		790	500	24	9	140	2	96	93	170	2	
08/02/00		---	---	---	---	---	---	---	---	---	3	
03/28/01		800	460	22	10	130	2	98	100	170	<2	
08/02/01		---	---	---	---	---	---	---	---	---	<2	
09/18/02		---	---	---	---	---	---	---	---	---	2	
09/16/03		---	---	---	---	---	---	---	---	---	2	

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 135 7S/3W-27M	05/24/89	2450	1390	122	65	300	2	410	225	464	33
	06/06/90	1540	945	73	36	215	1	250	150	323	13
	12/11/90	4400	2670	270	109	480	4	1030	380	314	<1
	08/06/92	1800	810	63	33	170	1	200	160	281	--
	01/16/97	--	--	--	--	--	--	--	--	--	3.7 @N
	02/04/97	--	--	--	--	--	--	--	--	--	3.5 @N
	02/12/97	--	--	--	--	--	--	--	--	--	4.0 @N
	02/20/97	--	--	--	--	--	--	--	--	--	3.4 @N
	02/25/97	--	--	--	--	--	--	--	--	--	3.4 @N
	03/04/97	--	--	--	--	--	--	--	--	--	3.7 @N
	03/18/97	--	--	--	--	--	--	--	--	--	3.3 @N
	03/25/97	--	--	--	--	--	--	--	--	--	3.5 @N
	04/08/97	--	--	--	--	--	--	--	--	--	3.4 @N
	04/15/97	--	--	--	--	--	--	--	--	--	3.4 @N
	04/22/97	--	--	--	--	--	--	--	--	--	3.5 @N
	05/06/97	1930	1050	97	48	220	2	340	190	360	3.3 @N
	05/14/97	--	--	--	--	--	--	--	--	--	3.4 @N
	05/21/97	--	--	--	--	--	--	--	--	--	3.3 @N
	06/04/97	--	--	--	--	--	--	--	--	--	3.3 @N
	06/11/97	--	--	--	--	--	--	--	--	--	3.3 @N
	06/18/97	--	--	--	--	--	--	--	--	--	3.3 @N
	06/25/97	--	--	--	--	--	--	--	--	--	3.3 @N
	07/02/97	--	--	--	--	--	--	--	--	--	3.3 @N
09/17/97	1960	1260	--	--	--	--	--	430	220	--	13
No. 138 8S/2W-6F	10/30/90	460	240	19	2	74	2	71	13	113	18
	10/06/93	420	240	11	<1	70	1	56	10	92	14
	10/11/96	430	270	9	<1	78	1	55	8.9	100	15
	04/14/99	--	--	--	--	--	--	--	--	--	5
	06/03/99	--	--	--	--	--	--	--	--	--	3
	10/26/99	430	240	10	<1	76	1	60	11	100	19
	03/13/00	--	--	--	--	--	--	--	--	--	5
	03/22/01	--	--	--	--	--	--	--	--	--	17
	03/13/02	--	--	--	--	--	--	--	--	--	21
	06/20/02	--	--	--	--	--	--	--	--	--	16
	10/02/02	440	220	10	<1	75	1.2	58	7.8	96	17
06/12/03	--	--	--	--	--	--	--	--	--	16	

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 139 7S/2W-32G	12/29/87	460	295	24	7	65	1	60	11	104	7
	11/23/92	450	275	32	9	46	2	60	13	134	20
	12/19/95	500	298	36	12	50	2	72	12	156	2.8
	03/25/97	---	---	---	---	---	---	---	---	---	10
	03/13/00	---	---	---	---	---	---	---	---	---	9
	03/28/01	---	---	---	---	---	---	---	---	---	8
	03/11/02	530	280	29	10	57	2	73	13	140	9
No. 140 7S/2W-33F	02/18/88	560	325	33	10	65	2	77	14	153	13
	01/15/92	450	235	11	2	88	1	68	18	107	2
	02/28/95	560	325	36	11	58	2	94	14	140	12
	03/25/97	---	---	---	---	---	---	---	---	---	8
	02/27/98	650	360	31	11	76	2	95	16	130	5
	09/17/98	---	---	---	---	---	---	---	---	---	8
	05/16/01	---	---	---	---	---	---	---	---	---	11
	02/01/01	650	370	31	12	72	2	110	21	150	4
05/24/02	---	---	---	---	---	---	---	---	---	7	
No. 141 8S/2W-11P	01/06/88	780	440	64	11	82	3	65	91	217	13
	01/30/92	820	500	63	13	95	3	79	110	238	19
	03/30/95	840	490	58	11	100	3	70	97	241	14
	03/25/97	---	---	---	---	---	---	---	---	---	15
	03/26/98	760	480	62	12	90	3	69	86	230	16
	01/04/99	---	---	---	---	---	---	---	---	---	14
	02/12/99	---	---	---	---	---	---	---	---	---	19
	10/21/99	---	---	---	---	---	---	---	---	---	17
	11/03/99	---	---	---	---	---	---	---	---	---	14
	12/14/99	---	---	---	---	---	---	---	---	---	14
	06/20/00	---	---	---	---	---	---	---	---	---	15
	01/04/01	700	450	52	6	84	3	75	70	190	15
	09/28/01	---	---	---	---	---	---	---	---	---	18
	11/08/02	---	---	---	---	---	---	---	---	---	15
	09/16/03	---	---	---	---	---	---	---	---	---	19

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 143 8S/2W-17J	01/15/88	670	345	8	2	134	1	91	57	95	11
	10/17/90	660	345	25	4	112	2	89	62	140	12
	03/03/94	690	370	24	3	114	2	93	68	131	11
	03/30/95	---	---	---	---	---	---	---	---	---	11
	03/25/97	600	330	15	2	110	1	87	44	89	9
	07/18/97	---	---	---	---	---	---	---	---	---	2.0 @N
	07/23/97	---	---	---	---	---	---	---	---	---	2.0 @N
	08/20/97	---	---	---	---	---	---	---	---	---	2.3 @N
	09/03/97	---	---	---	---	---	---	---	---	---	2.2 @N
	09/17/97	---	---	---	---	---	---	---	---	---	2.0 @N
	09/17/98	---	350	---	---	---	---	---	---	---	2.3 @N
	10/21/99	---	---	---	---	---	---	---	---	---	13
	03/07/00	730	400	21	3	120	2	84	68	140	12
	10/13/00	---	---	---	---	---	---	---	---	---	8
	10/10/01	---	---	---	---	---	---	---	---	---	8
	01/13/03	---	---	---	---	---	---	---	---	---	2.1@N
	11/19/02	---	---	---	---	---	---	---	---	---	10
03/10/03	650	370	14	1.9	110	1	92	52	130	10	
No. 144 7S/3W-27D3	09/14/88	610	335	8	<1	114	1	95	33	92	<1
	12/19/95	730	420	34	1	124	1	120	33	186	<1
	12/20/00	690	400	28	1	120	<1	120	35	170	<2
	05/22/01	---	---	---	---	---	---	---	---	---	<2
	08/20/02	---	---	---	---	---	---	---	---	---	<2
	08/27/03	---	---	---	---	---	---	---	---	---	<2
No. 145 7S/3W-28C	10/04/90	800	490	43	8	110	2	110	78	171	<1
	10/06/93	650	375	23	3	106	1	85	58	146	<1
	11/27/96	650	340	26	2	110	1	87	48	150	<2
	02/04/97	670	370	24	2	110	1	87	55	160	<2
	01/28/98	---	---	---	---	---	---	---	---	---	<2
	01/04/99	---	---	---	---	---	---	---	---	---	<2
	10/26/99	690	400	29	3	110	1	96	61	170	<2
	01/06/00	---	---	---	---	---	---	---	---	---	<2
	01/25/01	---	---	---	---	---	---	---	---	---	<2
	01/18/02	---	---	---	---	---	---	---	---	---	<2
	10/09/02	690	390	26	2.3	110	1.2	94	52	160	<2
01/15/03	---	---	---	---	---	---	---	---	---	<2	

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 146 7S/3W-28	12/10/96	900	500	57	23	98	<1	100	64	280	15
	03/02/00	--	--	--	--	--	--	--	--	--	4
No. 149 8S/1W-2C	06/15/93	--	--	--	--	--	--	--	--	--	5
	10/10/01	--	--	--	--	--	--	--	--	--	4
	03/11/02	1040	610	61	23	120	4	100	170	250	4
	12/11/02	--	--	--	--	--	--	--	--	--	3.2
	01/23/03	--	--	--	--	--	--	--	--	--	4
	03/12/03	1000	600	59	22	120	3.7	100	170	230	3
No. 149A 7S/3W-28A	08/26/88	950	540	71	211	96	1	115	47	302	18
	10/31/91	800	480	36	13	122	3	93	110	195	--
No. 150 7S/3W-27P	09/29/88	1950	1235	134	29	225	2	290	220	390	15
	12/21/91	1000	590	74	17	108	4	130	110	207	--
No. 151 7S/3W-34B	09/20/88 Abandoned	5780	3410	280	114	840	5	1660	670	369	<1
No. 151 8S/2W-2G	07/25/91	860	485	53	16	103	4	90	130	183	--
	07/28/91	730	400	39	12	100	3	91	58	177	--
	07/29/91	600	340	9	2	122	5	63	34	204	--
	10/17/91	510	295	3	<1	118	1	45	10	137	--
	08/10/94	550	340	3	<1	110	1	59	22	119	<1
	06/16/97	--	--	--	--	--	--	--	--	--	<2
	08/14/97	540	300	2	<1	110	<1	44	10	160	<2
	09/16/98	--	--	--	--	--	--	--	--	--	<2
	01/06/00	510	300	1	<1	110	<1	33	4.6	180	<2
	No. 152 8S/1W-5K2	01/11/02	860	550	64	20	77	6	75	190	160
01/08/03		--	--	--	--	--	--	--	--	--	<2
No. 153 8S/1W-5K3	12/29/93	804	485	53	18	92	5	86	120	214	<1
	04/13/99	880	540	63	23	79	5	68	220	150	<2
	04/11/00	--	--	--	--	--	--	--	--	--	2
	06/14/01	--	--	--	--	--	--	--	--	--	<2
	04/02/02	820	500	63	22	75	4.2	80	190	140	<2

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 154 8S/1W-5L2	01/28/94	930	530	46	20	106	6	89	130	214	3
No. 155 7S/3W-28C	09/16/93	680	355	22	2	108	1	90	64	104	<1
	02/23/95	760	445	30	3	126	1	120	82	140	4
	06/06/95	---	---	---	---	---	---	---	---	---	5
	08/14/97	---	---	---	---	---	---	---	---	---	4
	02/25/98	880	540	43	5	130	1	100	100	190	5
	07/27/98	---	---	---	---	---	---	---	---	---	3
	02/09/00	---	---	---	---	---	---	---	---	---	2
	09/13/00	690	410	23	2	120	<1	100	72	130	2
	02/14/01	---	---	---	---	---	---	---	---	---	5
	02/21/02	---	---	---	---	---	---	---	---	---	2
02/28/03	---	---	---	---	---	---	---	---	---	<2	
No. 157 8S/1W-5L	04/13/99	930	600	59	21	110	7	95	150	240	<2
	04/11/00	---	---	---	---	---	---	---	---	---	2
	06/14/01	---	---	---	---	---	---	---	---	---	<2
	04/02/02	830	520	60	22	78	4.1	78	190	150	<2
No. 158 8S/1W-5K	06/21/94	1090	620	67	23	124	7	120	170	259	---
	04/14/99	1050	660	63	24	120	7	110	160	270	<2
	04/11/00	---	---	---	---	---	---	---	---	---	2
	06/14/01	---	---	---	---	---	---	---	---	---	2
	04/02/02	900	550	61	22	92	5.7	93	190	180	<2
No. 201 7S/2W-27J	03/28/91	530	315	19	6	83	2	83	16	110	2
	03/11/93	460	300	8	2	87	1	51	20	146	<1
No. 202 7S/2W-36J1	12/11/88	740	440	47	18	84	3	97	48	223	17

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 203 8S/1W-6P1	05/18/88	960	580	50	39	110	4	96	115	275	---
	06/29/88	970	530	44	36	112	4	120	123	250	5
	06/12/91	800	415	21	17	108	3	91	90	174	2
	06/22/94	980	645	59	38	99	4	130	130	256	4
	06/07/95	---	---	---	---	---	---	---	---	---	5
	06/23/97	880	530	31	26	120	3	100	110	230	4
	08/14/97	---	---	---	---	---	---	---	---	---	3
	11/02/99	---	---	---	---	---	---	---	---	---	5
	06/22/00	820	580	94	18	58	<1	63	110	250	22
	07/12/00	880	570	43	33	120	3	100	130	240	7
	08/08/00	---	---	---	---	---	---	---	---	---	6
	11/22/00	---	---	---	---	---	---	---	---	---	5
	11/20/01	---	---	---	---	---	---	---	---	---	5
	11/08/02	---	---	---	---	---	---	---	---	---	4
	01/08/03	---	---	---	---	---	---	---	---	---	.90@N
06/10/03	850	460	31	23	100	2.2	92	100	220	5	
No. 204 7S/2W-26G	05/22/91	740	425	50	12	85	3	120	18	198	19
	05/13/94	690	375	37	7	85	3	130	19	125	19
No. 205 7S/3W-35A	03/28/88	500	290	23	3	81	2	83	27	107	21
	03/13/91	490	275	22	3	75	2	62	23	113	21
	03/03/94	510	275	20	2	72	2	72	24	104	20
	04/26/95	---	---	---	---	---	---	---	---	---	22
	03/25/97	480	270	20	2	75	2	66	18	110	21
	05/09/01	410	270	21	3	67	.1	60	17	120	23
	11/13/01	---	---	---	---	---	---	---	---	---	21
	02/19/02	---	---	---	---	---	---	---	---	---	20
	05/14/02	---	---	---	---	---	---	---	---	---	18
	08/27/02	---	---	---	---	---	---	---	---	---	20
	11/20/02	---	---	---	---	---	---	---	---	---	18
	01/08/03	---	---	---	---	---	---	---	---	---	4.5@N
	03/31/03	---	---	---	---	---	---	---	---	---	18
06/11/03	---	---	---	---	---	---	---	---	---	18	
09/16/03	---	---	---	---	---	---	---	---	---	21	

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 207 8S/2W-14B	09/01/88	510	245	1	<1	108	<1	54	26	82	<1
	09/14/88	480	305	3	<1	106	<1	58	23	24	1
	08/14/91	480	245	1	<1	100	<1	52	28	55	<1
	08/10/94	440	285	2	<1	91	1	56	29	76	2
	08/15/97	510	280	2	<1	97	<1	52	25	98	<2
	07/27/98	---	---	---	---	---	---	---	---	---	2
	12/27/00	480	280	2	<1	100	<1	53	30	120	2
	No. 208 7S/2W-35M	09/01/88	680	415	44	15	77	3	119	14	186
09/14/88		690	440	44	14	77	3	129	14	183	16
08/14/91		600	340	23	7	89	2	85	18	162	4
08/10/94		560	370	22	6	89	2	93	20	156	5
06/06/95		---	---	---	---	---	---	---	---	---	4
08/12/96		---	---	---	---	---	---	---	---	---	2
07/27/99		---	---	---	---	---	---	---	---	---	15
08/18/99		---	---	---	---	---	---	---	---	---	20
No. 209 7S/2W-28J	05/22/91	790	435	40	14	105	2	150	35	162	8
	05/13/94	760	525	64	22	48	3	150	15	153	25
	06/20/95	---	---	---	---	---	---	---	---	---	5
	05/15/97	690	390	10	3	130	<1	110	56	130	1.3
No. 210 8S/2W-12K	04/15/59	1366	---	101	23	150	10	149	200	275	3
	01/18/63	400	926	99	30	17.5	4.5	145	255	329	4
	11/30/67	1415	890	136	5	152	10	146	230	305	3
	07/26/68	1250	825	96	22	144	8	130	190	290	5
	09/06/68	1310	840	82	26	132	5	142	222	276	12
	07/19/73	1200	579	84	21.4	149	6.8	121.9	237	301.1	19.7
	08/08/75	1140	695	84	14	150	6	101	190	287	15
	06/22/76	1240	675	76	26	142	7	101	205	278	36
	10/13/76	1120	640	92	22	100	6	110	170	262	5
	06/16/77	1130	610	84	18	114	6	110	170	259	11
	05/20/80	580	340	30	8	75	4	51	67	152	9
	04/03/86	800	540	65	17	86	4.5	75	112	235	3.5
	07/15/86	830	560	72	19	86	4	87	118	250	4
	03/28/88	1030	575	76	22	93	5	99	143	247	4
	09/25/91	1040	600	74	20	120	5	120	160	238	5
09/19/94	645	460	52	14	79	4	70	100	198	2	

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l									
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3		
No. 210 (Cont'd) 8S/2W-12K	09/16/96	---	---	---	---	---	---	---	---	---	---	3	
	09/16/98	---	---	---	---	---	---	---	---	---	---	3	
	12/15/98	---	---	---	---	---	---	---	---	---	---	2	
	01/04/99	---	---	---	---	---	---	---	---	---	---	2	
	02/03/99	---	---	---	---	---	---	---	---	---	---	2	
	04/08/99	---	---	---	---	---	---	---	---	---	---	3	
	06/02/99	---	---	---	---	---	---	---	---	---	---	3	
	09/07/99	---	---	---	---	---	---	---	---	---	---	4	
	10/21/99	---	---	---	---	---	---	---	---	---	---	5	
	12/15/99	---	---	---	---	---	---	---	---	---	---	5	
	05/03/00	---	---	---	---	---	---	---	---	---	---	5	
	09/13/00	830	560	64	17	100	4	74	190	180	---	4	
	05/08/01	---	---	---	---	---	---	---	---	---	---	---	4
	05/13/02	---	---	---	---	---	---	---	---	---	---	---	3
	01/08/03	---	---	---	---	---	---	---	---	---	---	---	.52@N
	08/20/03	---	---	---	---	---	---	---	---	---	---	---	2.2
09/16/03	830	560	65	18	78	4.5	76	180	160	---	2		
No. 211 8S/2W-20R1	04/08/97	720	400	67	14	54	1	59	65	220	---	13	
	12/23/97	---	410	---	---	---	---	---	---	---	---	3.1@N	
	03/25/98	---	620	---	---	---	---	---	---	---	---	3.6@N	
	06/03/98	---	---	---	---	---	---	---	---	---	---	3.4@N	
	06/05/98	---	480	---	---	---	---	---	---	---	---	---	
	09/17/98	---	---	---	---	---	---	---	---	---	---	3.3@N	
	12/17/98	---	430	---	---	---	---	56	66	---	---	16	
	06/03/99	---	430	---	---	---	---	---	---	---	---	3.4@N	
	12/14/99	---	310	---	---	---	---	---	---	---	---	10	
	04/04/00	700	430	71	14	52	1	57	66	220	---	17	
	06/22/00	---	400	---	---	---	---	---	---	---	---	---	15
	12/13/00	---	---	---	---	---	---	---	---	---	---	---	4.5@N
	03/27/01	---	---	---	---	---	---	---	---	---	---	---	4.5@N
	06/20/01	---	---	---	---	---	---	---	---	---	---	---	2.7@N
	09/13/01	---	---	---	---	---	---	---	---	---	---	---	4.7@N
11/13/01	---	450	---	---	---	---	---	---	---	---	---	---	
05/14/02	---	370	---	---	---	---	---	---	---	---	---	12	
07/15/03	630	370	61	11	46	1.2	46	51	220	---	11		
No. 212 8S/2W-11N	03/28/88	640	330	42	2	74	3	81	33	146	---	14	
	09/25/91	600	320	41	2	82	4	86	35	146	---	14	

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 215 7S/2W-34M	08/15/90	650	380	40	13	71	3	100	14	162	11
	09/26/90	---	---	---	---	---	---	---	---	---	13
	06/22/94	630	400	41	13	67	2	110	16	159	11
	06/16/97	630	370	29	9	81	2	110	16	160	6
	08/15/97	---	---	---	---	---	---	---	---	---	7
No. 216 8S/2W-7W	06/01/88	480	280	25	4	65	2	71	11	134	---
	06/29/88	480	275	29	5	59	3	81	7	110	26
	06/12/91	500	285	30	5	59	2	76	9	113	23
	05/27/92	470	285	33	6	53	2	72	10	119	20
	04/25/01	490	300	28	4	55	2	74	13	120	12
No. 217 8S/2W-17M1	03/28/88	580	285	8	1	108	1	81	20	113	15
	08/10/88	570	280	8	1	105	1	82	20	55	13
	08/14/91	570	305	17	2	99	2	74	28	134	16
	08/10/94	610	365	20	3	97	2	82	38	134	16
	08/15/97	660	370	20	3	107	1	80	41	130	13
	05/09/00	---	---	---	---	---	---	---	---	---	15
	10/12/00	650	380	19	2	110	1	81	49	150	16
	05/14/01	---	---	---	---	---	---	---	---	---	17
	05/14/02	---	---	---	---	---	---	---	---	---	12
No. 231 8S/2W-20B6	08/15/90	1280	805	126	18	120	5	100	310	244	9
	09/26/90	---	---	---	---	---	---	---	---	---	6
	03/04/92	1700	1270	180	51	160	6	140	510	332	5
	06/20/95	1640	1300	171	44	124	6	75	520	287	5.3
	02/27/98	---	---	---	---	---	---	---	---	---	3
	05/16/00	---	---	---	---	---	---	---	---	---	5
	05/24/01	1490	1080	140	35	120	5	120	340	330	3
	05/13/02	---	---	---	---	---	---	---	---	---	2
No. 232 8S/2W-11J3	08/15/90	960	590	71	19	110	5	98	130	235	30
	09/26/90	---	---	---	---	---	---	---	---	---	35
	09/25/91	980	565	74	19	106	5	98	120	244	37
	09/19/94	805	495	54	14	92	4	80	110	207	15
	09/13/96	---	---	---	---	---	---	---	---	---	22

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l								
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3	
No. 232 (cont'd) 8S/2W-11J3	11/04/97	1000	660	76	20	110	4	97	130	230	29	
	07/27/98	---	---	---	---	---	---	---	---	---	38	
	12/10/98	---	---	---	---	---	---	---	---	---	22	
	01/06/98	---	---	---	---	---	---	---	---	---	30	
	01/29/99	---	---	---	---	---	---	---	---	---	10	
	02/03/99	---	---	---	---	---	---	---	---	---	26	
	02/24/99	---	---	---	---	---	---	---	---	---	37	
	04/08/99	---	---	---	---	---	---	---	---	---	33	
	04/21/99	---	---	---	---	---	---	---	---	---	34	
	06/23/99	---	---	---	---	---	---	---	---	---	33	
	07/08/99	---	---	---	---	---	---	---	---	---	36	
	08/25/99	---	---	---	---	---	---	---	---	---	33	
	09/21/99	---	---	---	---	---	---	---	---	---	31	
	10/06/99	---	---	---	---	---	---	---	---	---	30	
	11/17/99	---	---	---	---	---	---	---	---	---	32	
	12/14/99	---	---	---	---	---	---	---	---	---	32	
	01/18/00	---	---	---	---	---	---	---	---	---	31	
	02/29/00	---	---	---	---	---	---	---	---	---	10	
	03/21/00	---	---	---	---	---	---	---	---	---	25	
	04/11/00	---	---	---	---	---	---	---	---	---	29	
	05/25/00	---	---	---	---	---	---	---	---	---	26	
	06/21/00	---	---	---	---	---	---	---	---	---	26	
	07/11/00	---	---	---	---	---	---	---	---	---	25	
	09/13/00	920	590	65	17	105	4	91	150	210	21	
	10/06/00	---	---	---	---	---	---	---	---	---	---	18
	11/08/00	---	---	---	---	---	---	---	---	---	---	17
	12/13/00	---	---	---	---	---	---	---	---	---	---	20
	01/04/01	---	---	---	---	---	---	---	---	---	---	19
	02/28/01	---	---	---	---	---	---	---	---	---	---	10
	04/10/01	---	---	---	---	---	---	---	---	---	---	20
	10/10/01	---	---	---	---	---	---	---	---	---	---	26
	05/14/02	---	---	---	---	---	---	---	---	---	---	22
	08/06/02	---	---	---	---	---	---	---	---	---	---	4*
01/08/03	---	---	---	---	---	---	---	---	---	---	6.0@N	
03/31/03	---	---	---	---	---	---	---	---	---	---	11	
06/10/03	---	---	---	---	---	---	---	---	---	---	31	
07/08/03	---	---	---	---	---	---	---	---	---	---	30	
08/20/03	---	---	---	---	---	---	---	---	---	---	28	
09/16/03	1100	680	67	18	110	4.3	100	150	240	33		

* Sample may have been switched with Well 233

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
No. 233 (Old 112) 8S/2W-12K2	06/15/88	900	535	71	21	100	5	96	136	247	4
	03/27/91	1020	580	66	19	114	5	95	140	247	12
	03/03/94	740	425	50	14	75	4	71	100	186	2
	04/27/95	--	--	--	--	--	--	--	--	--	6
	03/27/97	880	510	57	15	100	4	81	120	220	4
	01/04/99	--	--	--	--	--	--	--	--	--	5
	02/03/99	--	--	--	--	--	--	--	--	--	4
	04/08/99	--	--	--	--	--	--	--	--	--	4
	06/03/99	--	--	--	--	--	--	--	--	--	4
	07/20/99	--	--	--	--	--	--	--	--	--	5
	08/11/99	--	--	--	--	--	--	--	--	--	4
	09/07/99	--	--	--	--	--	--	--	--	--	4
	10/21/99	--	--	--	--	--	--	--	--	--	5
	11/03/99	--	--	--	--	--	--	--	--	--	4
	04/11/00	970	570	64	18	110	4	85	150	230	4
	10/06/00	--	--	--	--	--	--	--	--	--	3
	10/10/01	--	--	--	--	--	--	--	--	--	4
	08/06/02	--	--	--	--	--	--	--	--	--	26*
	01/13/03	--	--	--	--	--	--	--	--	--	1@N
	07/07/03	--	--	--	--	--	--	--	--	--	2.7
No. 234 (Old 114) 8S/2W-11P	03/31/88	840	480	54	15	100	4	61	109	241	18
	03/27/91	1020	605	69	19	114	5	77	138	256	37
	06/20/95	--	--	--	--	--	--	--	--	--	11
	09/26/96	--	--	--	--	--	--	--	--	--	9
	02/04/97	--	--	--	--	--	--	--	--	--	12
	04/25/97	840	500	56	15	95	4	77	120	230	8
	01/19/99	--	--	--	--	--	--	--	--	--	12
	02/12/99	--	--	--	--	--	--	--	--	--	16
	04/21/99	--	--	--	--	--	--	--	--	--	15
	06/03/99	--	--	--	--	--	--	--	--	--	16
	07/27/99	--	--	--	--	--	--	--	--	--	18
08/19/99	--	--	--	--	--	--	--	--	--	17	
09/21/99	--	--	--	--	--	--	--	--	--	16	

* Sample may have been switched with Well 232

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l								
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3	
No. 234 (cont'd)	10/26/99	---	---	---	---	---	---	---	---	---	---	13
(Old 114)	04/13/00	900	550	64	18	10	4	70	150	220	---	13
8S/2W-11P	07/06/00	---	---	---	---	---	---	---	---	---	---	12
	07/12/01	---	---	---	---	---	---	---	---	---	---	7
	08/02/01	---	---	---	---	---	---	---	---	---	---	<2
	11/20/02	---	---	---	---	---	---	---	---	---	---	3
	12/11/02	850	520	62	17	80	3.7	74	170	170	---	4
No. 235 (Old 137)	06/24/88	460	310	40	10	41	2	58	10	140	---	15
8S/3W-1Q1	06/20/90	420	230	22	4	56	2	50	6	128	---	18
	06/10/93	370	235	15	2	65	2	51	9	113	---	17
	07/16/96	410	230	16	2	60	1	48	8.9	110	---	20
	06/09/97	---	---	---	---	---	---	---	---	---	---	17
	06/03/99	390	240	13	1	63	1	46	6.7	98	---	17
	11/03/99	---	---	---	---	---	---	---	---	---	---	16
	11/09/00	---	---	---	---	---	---	---	---	---	---	15
	11/20/01	---	---	---	---	---	---	---	---	---	---	13
	06/11/02	380	210	10	<1	62	1.2	48	7.2	100	---	16
	11/05/02	---	---	---	---	---	---	---	---	---	---	17
No. 301	07/29/92	500	290	20	6	80	1	45	56	143	---	<1
7S/3W-18Q1	02/27/97	580	350	45	16	48	2	49	54	200	---	4
	08/15/97	---	---	---	---	---	---	---	---	---	---	6
	12/27/00	570	360	49	15	53	2	55	57	180	---	7
	02/22/02	---	---	---	---	---	---	---	---	---	---	<2
	05/14/02	550	340	---	---	---	---	57	50	---	---	3
	12/11/02	580	350	---	---	---	---	---	---	---	---	2.5
No. 302	04/11/88	690	360	36	6	100	1	77	65	192	---	<1
7S/3W-18H	05/15/91	760	425	58	9	87	2	83	72	220	---	<1
	05/14/92	---	270	12	2	90	<1	48	48	---	---	---
	05/05/94	870	530	69	16	84	2	110	88	238	---	<1
	05/16/95	---	---	---	---	---	---	---	---	---	---	<1
	07/16/96	530	320	---	---	---	---	60	54	---	---	2
	05/13/97	560	500	73	14	94	2	110	86	240	---	<2

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS SAMPLED BY RANCHO CALIFORNIA WATER DISTRICT

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l								
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3	
No. 302 (cont'd)	07/27/99	--	--	--	--	--	--	--	--	--	--	<2
7S/3W-18H	05/17/00	520	320	11	1	99	<1	51	50	130	--	<2
	06/13/00	520	310	--	--	--	--	--	--	--	--	<2
	07/11/00	--	--	--	--	--	--	--	--	--	--	<2
	12/20/01	790	500	--	--	--	--	110	140	--	--	<2
	12/11/02	870	510	--	--	--	--	--	--	--	--	ND
	06/19/03	620	370	22	3.8	95	<1	77	63	140	--	<2
No. 309	08/15/90	690	370	19	3	119	2	140	25	73	--	5
7S/3W-27H	04/11/91	--	--	--	--	--	--	--	--	--	--	<.001
	09/25/91	730	365	19	2	122	2	150	27	82	--	5
	08/11/94	730	430	20	2	120	2	160	30	73	--	5
	02/16/95	--	--	--	--	--	--	--	--	--	--	18
	07/16/97	--	--	--	--	--	--	--	--	--	--	1.1@N
	07/23/97	--	--	--	--	--	--	--	--	--	--	1.2@N
	08/20/97	--	--	--	--	--	--	--	--	--	--	1.1@N
	09/03/97	--	--	--	--	--	--	--	--	--	--	1.1@N
	09/18/97	--	--	--	--	--	--	--	--	--	--	1.1@N
	10/03/97	790	520	21	2	130	2	170	33	85	--	6
	08/06/98	--	--	--	--	--	--	--	--	--	--	6
	09/16/98	--	460	--	--	--	--	--	--	--	--	1.4@N
	07/20/99	--	--	--	--	--	--	--	--	--	--	6
	05/10/00	--	450	20	2	130	<1	--	--	85	--	6
	07/06/00	--	--	--	--	--	--	--	--	--	--	6
	08/02/00	740	450	21	2	140	1	180	38	87	--	7
	07/19/01	--	--	--	--	--	--	--	--	--	--	7
	11/19/02	--	--	--	--	--	--	--	--	--	--	5
	01/13/03	--	--	--	--	--	--	--	--	--	--	1.1@N
	08/20/03	880	490	21	2.1	140	1.5	190	33	83	--	5

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-6

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/5W-26C3	10/60	1060	639	66.5	24.0	116.0	4.5	160	110.0	264.0	trace
(Bldg 2201)	06/62	1190	718	60.0	33.2	123.0	3.8	190	124.0	232.0	1.4
(Previously reported as	07/64	1217	734	79.2	27.8	144.0	1.6	180	150.0	248.9	---
10S/5W-26C1)	05/65	1485	896	75.2	30.3	158.0	2.4	180	120.0	253.8	0
	01/66	---	808	76.8	33.2	157.0	3.4	170	180.0	292.8	0.62
	06/66	---	684	75.2	26.8	112.0	2.4	128	148.0	263.5	3.9
	01/67	---	856	81.6	26.3	138.0	3.5	162	140.0	310.0	3
	08/67	---	880	99.2	38.1	156.0	3.6	160	230.0	322.1	5.3
	02/68	---	768	65.6	25.4	156.0	3.4	160	164.0	236.7	0
	04/69	---	852	66.0	32.0	162.0	3.2	166	210.0	249.0	0
	11/69	---	844	87.0	31.0	140.0	3.6	164	180.0	262.0	0
	07/70	---	672	99.0	32.0	139.0	3	158	205.0	259.0	2.7
	12/70	1180	712	83.0	28.0	138.0	3	166	170.0	266.0	0
	09/71	1062	640	83.0	27.0	128.0	2.8	136	175.0	278.0	0.4
	05/72	1130	681	56.0	24.0	140.0	2.8	136	165.0	220.0	0
	10/72	1165	703	64.0	27.0	159.0	3.6	132	180.0	293.0	1.8
	10/73	1140	688	72.0	27.0	131.0	3.8	144	190.0	200.0	0.3@N
	02/76	1140	688	70.4	28.3	143.0	3.1	132	182.0	273.3	1.8@N
	09/76	1100	663	67.0	25.0	152.0	2.5	152	131.0	327.0	2.8@N
	03/77	1080	651	67.0	28.0	173.0	3.1	128	160.0	254.0	4.4@N
	10/78	1150	694	70.0	25.0	120.0	3.5	139	145.0	253.8	<1@N
	06/79	1100	663	72.0	27.3	125.0	3	134	142.0	258.6	<1@N
	10/80	1200	693	78.8	23.7	136.0	3.3	172	136.0	273.3	0.2@N
	04/81	1160	737	82.4	22.4	126.0	3.6	140	134.0	268.4	<0.5@N
	11/81	1300	863	97.6	31.5	169.0	2.2	204	209.0	248.9	0.8@N
	11/81	950	573	74.0	18.3	120.0	2.1	144	130.0	224.5	0.3@N
	05/82	1100	663	80.8	26.6	140.0	1.5	181	138.0	268.4	<0.5@N
	03/83	1000	603	84.0	20.5	144.0	3.2	152	143.0	273.3	<0.5@N
	05/84	1150	694	80.0	27.6	126.0	3.1	133	150.0	283.0	0.2@N
	06/85	1100	680	89.0	26.0	140.0	3	150	64.0	440.0	<0.4
	09/85	1242	724	78.0	28.0	122.0	6	154	149.1	244.4	<0.4
	05/86	1387	750	85.2	29.1	130.7	4.3	166	130.8	242.6	<1
	06/89	1302	734	78.1	23.0	85.9	---	136	145.0	212.0	<0.4
	01/91	1271	---	81.0	36.1	152.0	---	166	---	---	<0.04
	06/91	1290	752	99.0	32.4	133.0	---	167	136.0	237.0	<0.4
	03/92	1210	792	91.0	29.8	146.0	---	159	135.0	279.0	<0.4
	06/93	1290	764	68.3	27.5	149.0	---	168	130.0	265.0	<0.4
	03/94	1210	783	100.0	37.1	100.0	---	145	167.0	---	2.2
	08/94	1160	741	87.5	35.5	96.1	---	141	187.0	---	4.23

TABLE D-6 (cont'd)

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/5W-26C3 (Bldg 2201) (Continued)	06/95	1330	806	97.7	37.4	142.0	---	207	166.0	---	<0.04
	01/96	1300	764	91.0	33.0	140.0	---	177	142.0	363.0	<0.0
	06/96	1300	751	93.0	30.0	130.0	---	164	156.0	252.0	<0.0
	06/97	1215	758	88.0	29.0	130.0	<2	151	148.0	292.0	<2@N
	12/97	1200	690	81.0	29.0	140.0	3	155	150.0	250.0	ND
	04/98	1200	790	83.0	31.0	101.0	3	170	156.0	240.0	ND
	06/98	1230	714	85.0	30.0	136.0	3	163	ND	293.0	ND
	02/99	1250	731	84.0	29.0	127.0	3	160	140.0	281.0	ND
	04/99	1220	769	88.0	30.0	127.0	3	138	160.0	317.0	ND
	05/01	1300	794	98.0	36.0	130.0	3	173	179.0	317.0	ND
10S/4W-18M5 (Bldg 2373) (Previously reported as 10S/4W-18M4)	06/89	1156	688	74.6	24.4	67.9	---	130	138.0	197.0	8.9
	01/90	1120	630	86.4	32.3	101.0	---	156	166.0	210.0	<0.05
	04/90	1160	720	98.8	34.8	107.0	---	152	146.0	218.0	1.4
	01/91	1202	---	84.1	40.5	117.0	---	162	153.0	---	<0.04
	06/91	1180	736	102.0	37.1	106.0	---	163	138.0	197.0	<0.4
	03/94	1020	658	69.6	27.8	104.0	---	135	140.0	---	0.89
	08/94	1110	684	81.4	32.2	178.0	---	144	157.0	---	<0.44
	06/95	1170	679	95.3	35.2	113.0	---	145	116.0	---	13.8
	06/96	1100	682	86.0	32.0	95.0	---	155	261.0	210.0	<0.0
	02/97	1180	640	79.0	32.0	110.0	---	142	162.0	190.0	<2@N
	06/97	1117	709	85.0	33.0	110.0	<5	150	164.0	223.0	<2@N
	12/97	1100	700	82.0	33.0	110.0	3	141	157.0	220.0	ND
	03/98	1100	710	83.0	33.0	100.0	3	182	158.0	150.0	ND
	06/98	1200	720	85.0	34.0	119.0	4	159	154.0	281.0	ND
	02/99	1020	613	70.0	30.0	85.0	4	130	85.0	179.0	8
	05/00	1020	709	91.0	33.0	94.0	4	146	149.0	220.0	ND
	08/00	1160	707	81.0	39.0	79.0	4	149	153.0	177.0	ND
	02/01	1200	736	85.0	35.0	116.0	4	164	180.0	244.0	ND
	04/01	1200	606	85.0	34.0	112.0	4	154	177.0	232.0	ND
	09/01	1250	761	90.0	37.0	115.0	4	166	188.0	232.0	ND
11/01	1290	737	91.0	37.0	118.0	3	181	207.0	256.0	ND	
02/02	1260	781	89.0	36.0	123.0	4.6	170	189.0	255.0	ND	
04/02	1250	755	90.0	37.0	116.0	4.1	175	195.0	200.0	ND	
05/02	1290	750	92.0	38.0	110.0	4	157	194.0	180.0	100@N	
07/02	1260	753	90.0	37.0	114.0	4	171	196.0	200.0	ND	
01/03	1350	816	---	---	---	---	160	201.0	---	ND	
02/03	---	---	96.0	40.0	---	4.6	---	---	---	---	
04/03	1210	738	95.0	27.0	---	3.9	175	210.0	192.0	ND	

ND - None Detected

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-6 (cont'd)
SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/5W-23J1 (Bldg 2301)	05/56	1090	685	61.5	24.3	142.0	—	142	110.0	293.0	0.06
	12/56	1060	666	67.0	27.0	96.0	—	124	85.0	274.0	—
	12/57	—	780	66.3	23.9	159.0	—	138	155.0	308.0	10.6
	05/59	1100	691	75.2	25.3	112.0	—	136	152.0	297.7	—
	01/60	1120	704	72.7	27.3	116.5	—	112	144.0	291.0	—
	10/60	1045	657	63.2	21.4	99.0	3.6	140	112.0	242.0	0
	05/61	1280	770	76.0	36.5	136.0	3	124	195.0	299.6	0
	05/62	1133	712	68.8	30.3	136.0	2	128	175.0	275.7	—
	01/63	1111	698	72.0	35.1	127.0	2.8	128	199.0	268.4	—
	06/63	1108	696	78.4	25.4	118.0	2.9	148	130.0	258.6	0@N
	07/64	1165	732	74.4	27.8	128.0	1.2	139	160.0	268.4	—
	05/65	1130	710	80.0	26.4	145.0	2.1	148	120.0	268.4	0.14
	01/66	—	736	88.0	18.1	142.0	2.8	124	155.0	263.5	1.8
	06/66	—	736	75.2	29.3	138.0	2.7	145	175.0	295.2	4.8
	01/67	—	744	76.8	25.9	118.0	3	136	125.0	287.9	2.2
	08/67	—	680	70.4	28.3	128.0	2.3	140	100.0	292.8	8.4
	02/68	—	660	48.0	19.5	130.0	2.8	124	119.0	234.0	6.1
	04/69	—	708	70.0	28.0	126.0	2.5	128	170.0	278.0	0
	11/69	—	684	73.0	28.0	126.0	2.8	138	165.0	273.0	0
	05/70	—	716	74.0	25.0	122.0	0.1	134	170.0	210.0	4.4
	12/70	1090	385	78.0	25.0	126.0	2.6	142	170.0	250.0	3.1
	09/71	1025	644	75.0	38.0	120.0	2.7	124	190.0	229.0	0.9
	05/72	1050	660	75.0	21.0	124.0	2.3	124	155.0	244.0	2.2
	10/73	1140	716	74.0	22.0	128.0	2.8	136	160.0	220.0	0.5@N
	06/74	1060	680	74.0	13.0	131.0	2.9	158	138.0	220.0	0.01@N
	02/76	1050	660	73.6	25.4	136.0	2.9	119	170.0	248.9	2.0@N
	09/76	1100	691	58.0	32.0	146.0	2.6	140	148.0	321.8	2.6@N
	03/77	1080	679	69.0	29.0	110.0	3	128	155.0	259.0	4.3@N
	01/78	1100	691	70.0	23.0	147.0	3	140	135.0	259.0	4.4@N
	10/78	1150	723	74.0	22.0	120.0	2.9	134	149.0	248.9	<1@N
	04/79	1000	628	70.4	22.4	118.0	2.6	122	138.0	239.1	<1@N
	10/80	1150	745	74.0	22.5	128.0	3	152	138.0	239.1	0.2@N
	05/81	1020	580	67.2	17.3	116.0	3.1	132	111.0	205.0	<0.5@N
	03/83	900	599	65.6	19.5	129.0	2.8	136	129.0	234.2	<0.5@N
12/83	1000	628	72.4	22.4	127.0	2.6	140	150.0	249.0	<0.1@N	
05/84	1100	691	78.8	25.9	120.0	2.8	130	150.0	254.0	0.2@N	
06/85	1100	691	59.0	26.0	130.0	3	140	70.0	440.0	3.5	
09/85	1203	705	66.0	26.0	110.0	6	150	144.0	226.6	<0.4	
06/89	1139	662	71.5	21.7	80.8	—	117	128.0	209.0	<0.4	

ND - None Detected

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-6 (cont'd)
SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/5W-23J1 (Bldg 2301) (Continued)	01/90	1150	632	90.6	32.4	102.0	--	160	170.0	214.0	<0.5
	01/91	1112	---	73.7	32.0	128.0	--	136	136.0	--	<0.04
	06/91	1090	662	87.4	29.7	117.0	--	140	121.0	204.0	<0.4
	03/92	1080	644	74.2	25.8	133.0	--	127	118.0	282.0	1.3
	03/93	1210	674	72.8	24.5	117.0	--	127	124.0	261.0	<0.4
	06/93	1090	670	63.9	25.7	119.0	--	117	128.0	237.0	<0.4
	03/94	1120	683	73.9	27.0	121.0	--	141	130.0	--	<0.4
	08/94	1160	707	78.9	28.2	129.0	--	139	153.0	--	<0.44
	06/95	1160	742	88.2	28.8	131.0	--	165	147.0	--	<0.04
	01/96	1300	690	79.0	29.0	140.0	--	147	131.0	292.0	<0.0
	06/96	1020	674	82.0	29.0	120.0	--	134	129.0	204.0	<0.0
	02/97	1100	650	74.0	27.0	150.0	--	126	172.0	245.0	<2@N
	03/97	1073	630	77.0	28.0	130.0	--	142	134.0	254.0	<2@N
	02/99	1180	647	75.0	27.0	125.0	3	150	130.0	272.0	ND
	04/99	1240	722	81.0	30.0	124.0	3	157	150.0	293.0	ND
	08/99	1180	735	79.0	29.0	120.0	3	190	183.0	281.0	ND
	12/99	1190	699	83.0	30.0	118.0	3	100	158.0	278.0	ND
	02/00	1110	723	81.0	30.0	116.0	3	90	163.0	293.0	ND
	05/00	1070	714	81.0	29.0	115.0	3	170	152.0	273.0	ND
	08/00	1200	735	80.0	29.0	117.0	3	150	118.0	275.0	ND
	02/01	1230	730	84.0	31.0	132.0	ND	158	158.0	293.0	ND
	04/01	1190	636	81.0	30.0	123.0	3	146	148.0	287.0	ND
	09/01	1300	751	88.0	32.0	132.0	3	155	160.0	293.0	ND
	10/01	1380	757	88.0	33.0	133.0	3	152	159.0	311.0	ND
	02/02	1220	724	86.0	31.0	124.0	2	146	156.0	293.0	ND
	04/02	1210	726	89.0	32.0	124.0	2.8	ND	162.0	240.0	100@N
	07/02	1280	735	85.0	31.0	129.0	3.1	155	165.0	236.0	ND
10/02	---	701	87.0	--	141.0	2.9	157	170.0	257.0	ND	
11/02	---	---	87.0	31.0	--	--	--	--	--	--	
01/03	1260	760	---	--	--	--	146	162.0	--	ND	
02/03	---	---	68.0	32.0	139.0	3.5	--	--	--	--	
04/03	1200	708	87.0	32.0	127.0	2.8	158	175.0	245.0	ND	
10S/4W-18E3 (Bldg 2393)	06/89	1166	758	80.5	28.1	67.4	--	132	157	198.0	9.5
	01/90	1230	748	97.4	39.7	106.0	--	178	179	226.0	<0.05
	04/90	1190	733	99.6	37.5	112.0	--	159	156	207.0	2.5
	06/91	1130	680	97.6	37.6	100.0	--	139	142	166.0	2.7
	02/94	1180	731	83.3	35.5	104.0	--	142	159	--	11.1
	08/94	1150	725	84.3	35.2	102.0	--	147	164	--	1

ND - None Detected

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-6 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/4W-18E3 (Bldg 2393) (Continued)	06/95	932	636	75.4	29.1	86.6	---	102	140	---	14
	06/96	1117	710	92.0	36.0	93.0	---	180	297	206.0	<0.0
	02/97	1100	686	89.0	38.0	110.0	---	157	166	220.0	<2@N
	03/97	1116	673	87.0	36.0	110.0	---	147	113	213.0	<2@N
	06/97	1131	779	90.0	37.0	99.0	<5	151	177	199.0	<2@N
	09/98	1160	727	83.0	36.0	90.0	3	160	181	232.0	ND
	10/99	1200	325	88.0	39.0	117.0	4	130	180	268.0	ND
	02/00	1100	739	84.0	37.0	100.0	4	130	180	281.0	ND
	05/00	1030	717	80.0	35.0	96.0	4	168	183	229.0	2
	02/01	1360	798	97.0	44.0	111.0	4	184	212	244.0	ND
	04/01	1310	728	94.0	42.0	114.0	4	168	208	232.0	ND
	09/01	1330	791	96.0	42.0	115.0	4	173	209	224.0	ND
	03/02	1320	778	102.0	44.0	123.0	4.4	196	229	242.0	ND
	04/02	1300	808	101.0	44.0	117.0	4	183	220	200.0	ND
	07/02	1390	778	96.0	42.0	114.0	3.7	180	214	209.0	ND
	10/02	1360	763	97.0	41.0	126.0	4	180	207	214.0	ND
	01/03	1290	749	96.0	40.0	116.0	3.7	172	200	200.0	ND
	02/03	---	---	---	---	131.0	---	---	---	---	---
	04/03	1210	783	99.0	42.0	129.0	3.9	176	201	191.0	ND
	10S/4W-7R2 (Bldg 2603)	06/89	1281	765	76.5	25.1	82.4	---	149	153	209.0
04/89		1270	788	104.0	36.5	126.0	---	173	161	215.0	2.6
06/91		1400	836	111.0	41.1	130.0	---	195	155	215.0	0.04
02/94		1260	738	83.3	32.0	131.0	---	169	155	---	<0.04
08/94		1260	738	84.3	33.7	129.0	---	166	149	---	<0.44
06/95		1290	897	93.6	35.2	129.0	---	202	164	---	0.69
02/97		1200	720	84.0	36.0	130.0	---	150	152	240.0	<1@N
03/97		1143	708	83.0	35.0	130.0	---	152	137	240.0	<2@N
06/97		1227	831	94.0	34.0	120.0	<5	185	147	247.0	<2@N
12/97		1200	700	84.0	36.0	120.0	3	150	173	240.0	ND
03/98		1200	780	85.0	36.0	110.0	3	187	162	180.0	ND
06/98		1190	734	ND	ND	ND	ND	ND	ND	ND	ND
12/97		1200	700	84.0	36.0	120.0	3	150	173	240.0	ND
03/98		1200	780	85.0	36.0	110.0	3	187	162	180.0	ND
06/98		1190	734	ND	ND	ND	ND	ND	ND	ND	ND
02/99		1160	663	76.0	32.0	102.0	3.0	150.0	150.0	214.0	ND
08/99		1120	727	76.0	33.0	99.0	3.0	156.0	230.0	281.0	ND

ND - None Detected

TABLE D-6 (cont'd)

SANTA MARGARITA RIVER WATERSHED
 WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l								
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3	
10S/4W-7R2 (Bldg 2603) (Continued)	10/99	1130	660	78.0	33.0	120.0	3.0	110.0	160.0	262.0	ND	
	02/00	1030	592	79.0	35.0	95.0	3.0	120.0	160.0	244.0	ND	
	05/00	1010	699	76.0	33.0	96.0	3.0	129.0	127.0	229.0	ND	
	08/00	1140	720	77.0	33.0	87.0	3.0	ND	157.0	232.0	ND	
	10/02	1120	617	--	--	102.0	--	--	--	--	--	
	12/02	--	--	73.0	32.0	--	--	132.0	164.0	--	ND	
	01/03	1150	680	--	--	113.0	3.6	135.0	165.0	174.0	ND	
	02/03	--	--	76.0	34.0	--	4.5	--	--	--	--	
	04/03	--	717	62.0	34.0	122.0	4.0	164.0	--	209.0	ND	
	05/03	1190	--	--	--	--	--	156.0	182.0	--	--	
	10S/4W-7H2 (Bldg 2671)	08/56	1060	882	78.0	30.0	112	--	150	82	326.0	--
		01/60	820	500	55.2	14.7	85.0	--	76	98	224.0	--
		10/60	1300	793	74.5	20.5	126.0	4.3	182	116	320.0	--
05/61		1390	840	100.0	29.2	170.0	3.3	170	135	362.0	--	
05/62		1220	744	70.4	39.0	142.0	2.4	184	86	312.3	--	
01/63		1300	740	65.6	26.4	162.0	2.4	166	153	259.0	0.7	
07/63		1100	671	64.0	25.4	118.0	2.7	148	97	280.6	0.0@N	
01/64		1020	622	70.4	33.2	117.0	2.7	172	98	302.6	3.3	
07/64		1400	854	83.2	27.3	134.0	1.4	164	98	322.1	--	
04/65		1490	909	97.6	23.4	152.0	4.7	196	110	346.5	0.9	
01/66		--	832	102.0	28.0	166.0	3.1	194	88	414.8	6.6	
06/66		--	768	86.4	26.3	150.0	3.1	184	110	331.8	6.9	
01/67		--	768	72.0	29.3	128.0	3.1	174	72	324.5	6.9	
08/67		--	608	57.6	24.4	116.0	2.4	132	70	251.3	10.2	
02/68		--	572	67.2	17.6	105.0	2.4	118	94	251.0	0	
09/68		--	636	74.0	19.0	112.0	3	144	96	268.0	0.4	
04/69		--	820	72.0	33.0	138.0	2.8	180	140	285.0	0.9	
11/69		--	604	66.0	24.0	116.0	2.8	140	110	259.0	1.8	
05/70		--	640	65.0	26.0	115.0	2.4	142	120	183.0	3.1	
09/71		1075	656	77.0	24.0	120.0	2.8	144	125	273.0	1.3	
05/72		1000	610	46.0	24.0	117.0	2.4	140	130	141.0	0	
10/72	1110	677	88.0	26.0	105.0	3.6	144	126	283.0	3.5		
10/73	1120	683	75.0	23.0	118.0	2.7*	132	130	200.0	0.6@N		
06/74	1210	712	72.0	19.0	150.0	3.1	208	112	195.0	0.01@N		
01/75	850	519	61.0	21.0	93.0	2.4	102	95	212.0	2.3@N		

* Reported as 27
 ND - None Detected

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-6 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/4W-7H2	02/76	1200	732	91.2	20.5	126.0	3.2	176	130	244.0	2.6@N
(Bldg 2671)	09/76	1200	732	48.0	29.0	180.0	2.4	192	123	336.7	4.2@N
(Continued)	03/77	1400	854	94.0	33.0	158.0	2.8	216	140	342.0	2.8@N
	01/78	1000	610	66.0	23.0	100.0	2.7	128	123	205.0	4.4@N
	10/78	1300	793	82.0	31.0	134.0	2.7	160	157	258.6	<1@N
	04/79	1200	732	84.8	28.3	144.0	3.1	164	116	312.3	<1@N
	01/80	1450	885	93.0	30.0	163.0	3	196	200	273.0	<1@N
	10/80	1050	591	70.4	21.7	104.0	3.7	140	125	219.6	2.0@N
	05/81	1000	645	72.4	21.7	105.0	3.5	128	123	209.8	<0.5@N
	05/82	1330	811	100.8	35.9	176.0	1.6	269	198	263.5	<0.5@N
	03/83	890	669	77.2	23.7	95.0	3.4	132	136	209.8	0.65@N
	12/83	1000	610	70.4	23.7	123.0	2.6	136	150	224.0	0.5@N
	05/84	1100	671	77.2	24.6	116.0	2.7	133	155	244.0	0.2@N
	09/84	1300	650	6.6	29.0	120.0	2.6	200	170	250.0	12
	11/84	1100	671	81.6	23.4	124.0	2.7	149	175	249.0	1.2@N
	05/86	1592	994	104.7	39.7	167.3	4.4	232	167	301.8	<1@N
	06/89	1137	826	79.1	28.5	85.5	---	157	158	246.0	12.6
	01/90	1290	772	96.3	38.6	116.0	---	184	179	252.0	0.9/1.2
	04/90	1320	817	109.0	42.1	128.0	---	177	167	249.0	5.4
	01/91	401	---	87.3	44.4	103.1	---	205	179	---	1.07
	03/93	1500	824	92.6	33.1	136.0	---	194	154	277.0	1.8
	03/94	1370	827	103.0	36.4	135.0	---	163	145	---	0.9
	08/94	1270	762	91.1	35.5	129.0	---	162	172	---	5.64
	06/95	1260	771	100.0	35.8	127.0	---	197	178	---	2.8
	06/96	1300	751	96.0	36.0	120.0	---	162	174	247.0	1.1
	02/97	1300	830	100.0	41.0	150.0	---	186	161	186.0	<2@N
	06/97	1323	831	94.0	36.0	140.0	<5	158	149	271.0	2@N
	12/97	1200	670	91.0	36.0	120.0	3	150	169	220.0	ND
	12/97	1200	710	87.0	35.0	120.0	2	152	182	220.0	1.5
	03/98	1200	810	89.0	36.0	120.0	3	201	168	240.0	ND
	06/98	1390	830	ND	ND	ND	ND	ND	ND	ND	ND
	09/98	1290	748	87.0	32.0	110.0	2.0	158	160	299	ND
	02/99	1130	663	75.0	31.0	106.0	3.0	150	150	238	5
	05/99	1170	711	75.0	32.0	85.0	4.0	ND	180	268	ND
	08/99	1040	310	74.0	30.0	94.0	2.0	100	400	207	ND

ND - None Detected

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-6 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/4W-7H2 (Bldg 2671) (Continued)	10/99	1210	757	86.0	35.0	120.0	3.0	154	100	295	3
	08/00	1290	766	83.0	33.0	89.0	2.0	184	150	323	ND
	02/01	1140	707	85.0	35.0	107.0	2.0	152	179	232	ND
	04/01	1190	718	88.0	37.0	112.0	3.0	153	193	210	ND
	09/01	1200	729	89.0	38.0	106.0	3.0	158	192	201	ND
	11/01	1210	693	90.0	38.0	106.0	3.0	168	209	214	ND
	02/02	1190	726	94.0	39.0	106.0	2.7	147	198	208	ND
	04/02	1190	724	91.0	38.0	107.0	2.9	153	204	173	ND
	07/02	1200	755	88.0	37.0	107.0	3.1	162	201	180	ND
	10/02	1250	722	91.0	38.0	99.0	2.6	150	197	177	ND
	01/03	1260	781	--	--	--	--	144	204	--	ND
	02/03	--	--	95.0	39.0	119.0	3.2	--	--	--	--
	04/03	1310	776	93.0	38.0	123.0	3.0	178	217	185	ND
	10S/4W-7A2 (Bldg 2673)	05/56	920	651	59.0	22.0	100	--	104	94	213.0
05/59		--	745	52.8	16.54	60.26	--	84	41	207.4	--
01/60		--	840	51.2	17.6	95.0	--	98	92	210.0	--
10/60		870	566	62.0	23.0	80.0	4.2	110	104	234.0	0
05/61		1180	710	72.0	34.0	114.0	3.3	104	150	227.0	--
05/62		797	518	63.2	23.4	75.0	2	100	96	214.7	--
01/63		1195	730	64.0	24.9	157.0	3.1	162	183	220.0	0
07/63		574	610	57.6	19.5	85.0	2.7	102	100	244.0	0.3@N
01/64		760	494	59.2	19.3	82.0	3.3	100	85	253.7	0.5@N
07/64		980	637	64.0	21.5	94.0	1.4	100	95	241.6	--
04/65		1230	800	73.3	22.5	106.0	4.5	120	110	248.9	1.3
01/66		--	448	--	--	86.0	2.5	82	75	190.3	9.7
06/66		--	540	60.8	21.0	81.0	2.5	102	95	222.0	9.1
01/67		--	544	60.8	19.5	88.0	2.9	106	69	229.4	6.9
08/67		--	504	54.4	20.0	79.0	2.1	96	58	214.7	8
02/68		--	456	60.8	17.6	86.0	2.7	94	78	222.0	0
09/68		--	600	67.0	18.0	90.0	3	110	96	232.0	0
04/69		--	428	46.0	18.0	73.0	20	76	90	183.0	3.1
11/69		--	476	59.0	18.0	88.0	2.7	98	110	198.0	0.9
05/70		--	416	54.0	18.0	79.0	2.6	92	90	151.0	2.9
12/70	780	507	64.0	16.0	89.0	2.7	100	90	222.0	10.1	
05/72	990	644	77.0	24.0	86.0	2.8	116	135	207.0	0	
10/72	965	627	77.0	27.0	94.0	2.9	104	145	239.0	5.3	
10/73	960	624	72.0	19.0	105.0	2.8	112	140	195.0	0.9@N	

ND - None Detected

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-6 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/4W-7A2	06/74	950	548	68.0	19.0	101.0	3.1	138	102	207.0	0.35@N
(Bldg 2673)	01/75	840	546	58.0	22.0	87.0	2.7	98	95	217.0	2.2@N
(Continued)	02/76	820	533	68.8	20.5	76.0	3	106	88	214.7	2.2@N
	09/76	900	585	48.0	45.0	98.0	2.3	116	112	258.6	3.0@N
	03/77	900	585	70.0	23.0	76.0	2.8	123	113	195.0	2.6@N
	01/78	950	618	64.0	24.0	100.0	2.7	124	108	200.0	4.3@N
	10/78	1050	683	74.0	20.0	80.0	3	113	128	205.0	<1@N
	04/79	950	618	65.6	19.5	98.0	3.1	109	118	190.3	<1@N
	01/80	1000	650	67.0	23.0	99.0	3.1	128	111	187.0	<1@N
	10/80	900	546	67.2	20.5	86.0	3.4	108	86	205.0	2.3@N
	05/81	810	585	57.2	14.4	83.0	3.4	92	84	180.6	0.7@N
	11/81	800	451	57.2	16.3	85.0	2	92	110	185.4	0.5@N
	05/82	930	605	68.8	21.5	97.0	1.6	115	96	205.0	<0.5@N
	03/83	900	663	78.8	23.7	95.0	3.4	132	135	209.8	0.7@N
	09/84	1000	530	51.0	23.0	80.0	2.9	110	110	200.0	4.2
	11/84	850	553	67.2	28.3	73.0	2.9	111	137	190.0	1.7@N
	09/85	1007	593	66.0	26.0	64.0	5.8	124	139	180.6	6
	05/86	1051	623	72.6	26.5	79.5	3.5	131	124	153.6	8.8
	06/89	1073	688	72.1	23.9	59.6	--	120	140	184	15.9
	01/89	1080	572	91.2	34.2	80.2	--	151	178	174	1.4
	04/90	1130	718	111.0	42.1	91.0	--	148	167	175	9.1
	06/91	1190	718	113.0	40.3	93.8	--	173	180	160	7.5
	03/93	1370	708	86.9	32.8	93.3	--	147	93.3	200	4.9
	03/94	1210	783	100.0	37.1	100.0	--	145	167	--	2.2
	08/94	1160	741	87.5	35.5	96.1	--	141	184	--	4.23
	06/95	1200	788	99.4	37.5	101.0	--	173	200	--	2.9
	06/96	1129	739	91.0	37.0	90.0	--	188	312	206	<0.0
	02/97	1100	690	82.0	35.0	140.0	--	127	131	180	<2@N
	03/97	1109	695	91.0	39.0	93.0	--	137	191	166	2.2@N
	06/97	1096	749	89.0	36.0	90.0	<5	138	178	187	2@N
	12/97	1100	690	84.0	36.0	83.0	4	140	181	160	<.2@N
	05/99	1050	648	78.0	32.0	111.0	3	171	192	207	ND
	08/99	1040	696	78.0	33.0	84.0	4	120	390	146	ND
	10/99	1070	663	78.0	34.0	90.0	4	132	120	195	6@N

ND - None Detected

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-6 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/4W-7A2 (Bldg 2673) (Continued)	02/00	1010	559	83.0	35.0	82.0	4	140	190	220	4@N
	05/00	972	688	80.0	34.0	79.0	4	144	167	190	4@N
	02/01	1200	753	92.0	40.0	100.0	3	164	212	195	ND
	04/01	1210	736	91.0	40.0	103.0	5	159	217	183	ND
	09/01	1200	741	93.0	41.0	98.0	4	153	228	183	ND
	11/01	1220	750	92.0	41.0	106.0	4	170	228	189	ND
	02/02	1230	769	99.0	43.0	101.0	4.2	173	218	195	ND
	04/02	1260	796	101.0	45.0	102.0	4.5	170	229	160	100@N
	07/02	1350	784	98.0	43.0	103.0	4.3	183	239	159	ND
	10/02	1370	788	102.0	45.0	104.0	4.3	175	241	167	ND
	01/03	1330	825	104.0	---	---	---	---	---	---	---
	02/03	---	---	105.0	45.0	---	---	---	---	---	---
	04/03	1260	721	90.0	40.0	102.0	4.6	170	228	153	ND
	10S/5W-23G3 (Bldg 33926)	06/91	1160	684	83.4	28.3	125.0	---	145	124	223
03/92		1060	674	75.9	24.1	127.0	---	139	111	269	<0.4
03/93		1182	584	67.8	21.1	110.0	---	135	101	274	<0.4
06/93		1020	623	60.5	22.4	116.0	---	125	107	225	<0.4
03/94		1120	665	80.0	25.0	122.0	---	129	117	---	1.8
08/94		1150	699	78.7	26.4	125.0	---	141	118	---	<0.44
06/95		1060	673	75.9	23.1	118.0	---	158	114	---	<0.04
01/96		1200	619	71.0	24.0	120.0	---	139	107	262	<0.0
07/96		---	---	---	---	---	---	---	---	---	<0.0
10S/5W-23K2 (Bldg 33924)		06/89	1207	698	75.6	22.8	84.0	---	138	137	231
	04/89	1240	728	100.0	32.9	129.0	---	158	148	245	1.3
	01/91	1193	---	80.6	35.2	131.0	---	21.3	146	---	<0.04
	06/91	1160	676	88.1	29.6	118.0	---	141	129	224	<0.04
	03/92	1130	705	76.7	26.0	126.0	---	149	125	279	<0.4
	06/92	1130	717	66.8	26.7	124.0	---	146	140	232	<0.4
	03/93	1285	331	72.1	23.8	115.0	---	131	122	273	<0.4
	02/97	1200	780	89.0	32.0	130.0	---	166	165	250	<2@N
	03/97	1230	700	94.0	34.0	140.0	---	187	162	264	<2@N
	06/97	1231	778	91.0	31.0	130.0	<2	171	165	264	<2@N
	12/97	1200	710	82.0	30.0	130.0	2	156	162	230	ND
	03/98	1200	710	82.0	30.0	110.0	2	191	146	240	ND
	06/98	1170	658	79.0	28.0	123.0	2	157	ND	293	ND
	02/99	1170	696	75.0	27.0	123.0	3	160	130	259	ND
	04/99	1210	667	76.0	27.0	118.0	3	148	140	268	ND
	08/99	1140	714	79.0	27.0	116.0	3	180	165	268	ND

ND - None Detected

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

TABLE D-6 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/5W-23K2 (Bldg 33924) (Continued)	10/99	1150	721	80.0	28.0	131.0	3	110	150	281	ND
	02/00	1050	619	82.0	28.0	108.0	3	100	140	293	ND
	05/00	1060	716	80.0	29.0	112.0	3	173	141	268	ND
	08/00	1210	722	82.0	29.0	105.0	3	162	156	268	ND
	04/01	1210	705	85.0	30.0	130.0	3	163	157	281	ND
	09/01	1210	672	85.0	30.0	125.0	3	163	149	281	ND
	10/01	1200	680	81.0	29.0	143.0	3	162	159	281	ND
	02/02	1160	675	80.0	29.0	129.0	3.5	143	152	268	ND
	04/02	1180	682	84.0	31.0	124.0	2.9	151	ND	230	ND
	04/02	1210	706	80.0	29.0	127.0	2.9	156	156	221	ND
	10/02	1210	669	83.0	30.0	120.0	2.9	150	162	206	ND
	01/03	1320	801	---	---	140.0	2.8	---	180	245	ND
	02/03	---	---	97.0	34.0	---	---	---	---	---	---
	04/03	1330	743	89.0	32.0	133.0	2.8	162	164	234	ND
	10S/5W-13R2 (Bldg 2363)	01/90	1030	540	*96	26.6	94.8	---	141	130	200
06/91		1150	702	98.7	32.0	109.0	---	149	125	288	1.3
06/93		1130	705	72.0	28.4	107.0	---	140	139	262	0.9
03/94		1020	658	69.6	27.8	104.0	---	135	140	---	0.89
06/95		1140	636	92.5	30.7	115.0	---	149	151	---	14.2
06/96		1103	680	91.0	31.0	100.0	---	148	251	233	<0.0
06/97		1082	708	85.0	29.0	110.0	<5	135	145	244	<2@N
12/97		1000	640	81.0	28.0	100.0	2	119	128	250	ND
03/98		1100	620	85.0	31.0	110.0	2	161	144	220	ND
06/98		1100	680	83.0	30.0	109.0	3	137	140	275	0.68
09/98		1160	662	81.0	28.0	90.0	3	144	90	256	ND
04/01		1100	612	83.0	29.0	106.0	3	131	146	238	ND
09/01		1150	679	89.0	31.0	156.0	2	142	156	241	ND
11/01		1130	658	87.0	30.0	104.0	2	148	169	262	ND
02/02		1120	674	85.0	30.0	112.0	3.2	140	160	257	ND
04/02		1130	673	79.0	36.0	113.0	3.9	145	176	200	ND
04/02		1120	682	89.0	32.0	106.0	2.7	142	167	205	ND
07/02		1150	676	83.0	30.0	111.0	2.7	145	64	205	ND
10/02		1220	711	---	---	110.0	2.7	149	175	203	ND
11/02		---	---	87.0	31.0	---	---	---	---	---	ND
01/03	1210	713	---	---	---	---	138	165	---	ND	
02/03	---	---	88.0	33.0	106.0	2.7	---	---	---	---	
04/03	---	---	87.0	---	---	---	---	---	---	---	
05/03	1230	728	---	33.0	112.0	2.9	155	183	181	ND	

* - Reported as .96
ND - None Detected

TABLE D-6 (cont'd)
SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/4W-7D1 (Previously reported as 10S/4W-7A3)	03/99	1280	765	91.0	34.0	127.0	2	190	160	272	ND
	06/99	1080	706	76.0	31.0	88.0	2.2	163	118	220	ND
	08/99	1080	690	76.0	32.0	93.0	3	160	191	244	ND
	10/99	1070	660	76.0	32.0	100.0	3	131	120	232	4
	05/00	1010	702	79.0	34.0	94.0	3	177	164	254	4
	08/00	1170	732	84.0	36.0	89.0	3	155	188	201	5
	02/01	1230	753	89.0	39.0	113.0	2	170	198	220	ND
	04/01	1230	726	89.0	39.0	115.0	4	160	191	243	ND
	09/01	1210	735	89.0	39.0	107.0	4	163	185	217	ND
	11/01	1240	725	89.0	39.0	117.0	3	168	205	220	ND
	02/02	1250	765	97.0	43.0	109.0	3.4	155	184	234	ND
	04/02	1290	790	98.0	44.0	109.0	3.4	158	208	200	ND
	07/02	1320	809	96.0	43.0	117.0	3.7	182	217	200	ND
	10/02	1380	787	99.0	43.0	113.0	3.7	170	216	203	ND
	01/03	1370	810	--	--	--	--	155	194	--	ND
	02/03	--	--	101.0	44.0	134.0	4	--	--	--	--
	04/03	1440	789	93.0	40.0	125.0	3.6	177	205	216	ND
10S/5W-23G4	06/99	1070	668	69.0	23.0	106.0	1.7	163	144	305	ND
	08/99	1090	657	72.0	25.0	115.0	2	180	153	317	ND
	10/99	1150	716	79.0	27.0	140.0	2	120	140	305	ND
	02/00	956	622	78.0	23.0	117.0	2	90	120	268	ND
	05/00	1040	686	77.0	27.0	116.0	2	181	141	307	ND
	08/00	1180	722	80.0	28.0	105.0	2	155	143	232	ND
	02/01	1100	706	73.0	25.0	125.0	2	149	164	268	ND
	04/01	1170	701	61.0	29.0	126.0	2	154	149	282	ND
	09/01	1180	671	80.0	28.0	125.0	2	149	142	271	ND
	10/01	1180	678	81.0	28.0	132.0	2	161	156	281	ND
	02/02	1170	685	80.0	28.0	134.0	2.8	143	144	279	ND
	04/02	1200	711	87.0	31.0	127.0	2.3	150	204	235	ND
	07/02	1180	730	83.0	29.0	130.0	2.5	158	151	230	ND
	10/02	1180	649	78.0	27.0	115.0	2.1	135	138	214	ND
	01/03	1210	740	--	--	129.0	2.2	145	154	225	ND
02/03	--	--	--	30.0	--	--	--	--	--	--	
04/03	1200	681	79.0	27.0	128.0	2.5	150	152	215	ND	

ND - None Detected

TABLE D-6 (cont'd)
SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON CAMP PENDLETON

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3	NO3
10S/5W-23K3 (Bldg 330923)	06/99	1150	700	75.0	27.0	106.0	2.2	163	155	317	ND
	08/99	1170	722	79.0	28.0	114.0	3	120	140	293	ND
	10/99	1170	723	78.0	28.0	140.0	3	120	140	293	ND
	02/00	1120	712	83.0	30.0	117.0	3	120	157	293	ND
	02/01	1240	758	85.0	61.0	136.0	3	167	152	305	ND
	04/01	1220	726	85.0	61.0	135.0	3	162	154	293	ND
	09/01	1240	682	81.0	29.0	132.0	3	162	144	281	ND
	10/01	1330	746	87.0	32.0	134.0	3	166	156	293	ND
	02/02	1190	720	83.0	29.0	140.0	3.5	150	155	280	ND
	04/02	1210	691	82.0	29.0	127.0	2.7	145	142	231	ND
	07/02	1230	738	81.0	29.0	134.0	3.1	167	151	240	ND
	10/02	1270	716	85.0	30.0	137.0	2.9	---	182	221	ND
	01/03	1340	626	---	---	141.0	2.6	---	185	252	ND
	02/03	---	---	100.0	35.0	---	---	---	---	---	---
	04/03	1350	733	---	---	---	2.6	---	171	---	ND
	05/03	---	---	85.0	30.0	129.0	---	---	---	225	---
10S/5W-26C3 (Bldg 2202)	09/01	1410	804	101.0	38.0	138.0	3	173	175	296	ND
	10/01	1370	814	104.0	38.0	131.0	3	199	198	317	ND
	02/02	1380	834	99.0	36.0	128.0	3	172	183	318	ND
	04/02	1370	808	104.0	39.0	124.0	3.2	180	184	258	ND
	07/02	1450	829	187.0	37.0	137.0	3.3	187	193	260	ND
	10/02	1400	793	98.0	---	ND	3.4	179	195	248	ND
	11/02	---	---	98.0	36.0	---	---	---	---	---	---
	12/02	---	---	---	---	---	---	---	---	---	ND
	01/03	1300	608	---	---	144.0	2	161	180	235	ND
	02/03	---	---	94.0	33.0	---	---	---	---	---	---
04/03	1290	759	94.0	32.0	137.0	3.1	162	198	230	ND	

ND - None Detected

**WATERMASTER
SANTA MARGARITA RIVER WATERSHED**

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATERMASTER REPORT
WATER YEAR 2002-03

APPENDIX E
COOPERATIVE WATER RESOURCE
MANAGEMENT AGREEMENT
REQUIRED FLOWS AND ACCOUNTS
CALENDAR YEAR 2003

AUGUST 2004

**WATERMASTER
SANTA MARGARITA RIVER WATERSHED**

APPENDIX E

SANTA MARGARITA RIVER WATERSHED
 COOPERATIVE WATER RESOURCE MANAGEMENT AGREEMENT REQUIRED FLOWS AND ACCOUNTS
 SANTA MARGARITA RIVER NEAR TEMECULA

JANUARY 2003 - ABOVE NORMAL YEAR

DAY	GROUNDWATER ACCOUNT BALANCE												
	USGS Provisional Discharge	USGS Website Discharge	10-Day Moving Average of Website Discharge	Moving Average Less Required Flow of 11.5 cfs	WR-34 Make-Up MWD	MWD	RCWD	Water in Excess of Required Flow	Input cfs	Input AF	Output cfs	Output AF	Cumulative GW Account Balance AF
1	15.0	15.0			9.0	17.8	21.8	0.0	6.3	12.5	0.0	0.0	12.5
2	11.0	11.0			8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	0.0
3	8.9	8.6			8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	37.5
4	13.0	13.0			8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	50.0
5	13.0	13.0			8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	62.5
6	12.0	12.0			8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	75.0
7	11.0	12.0			8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	87.5
8	18.0	19.0			8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	100.0
9	14.0	15.0			8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	112.5
10	12.0	13.0			8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	125.0
11	17.0	18.0	13.2	1.7	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	137.5
12	24.0	25.0	13.5	2.0	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	150.0
13	15.0	17.0	14.9	3.4	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	162.4
14	11.0	12.0	15.7	4.2	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	174.9
15	11.0	12.0	15.6	4.1	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	187.4
16	11.0	12.0	15.5	4.0	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	199.9
17	11.0	12.0	15.5	4.0	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	212.4
18	11.0	12.0	15.5	4.0	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	224.9
19	11.0	12.0	14.8	3.3	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	237.4
20	11.0	12.0	14.5	3.0	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	249.9
21	11.0	12.0	14.4	2.9	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	262.4
22	11.0	12.0	13.8	2.3	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	274.9
23	11.0	12.0	12.5	1.0	8.3	16.4	21.6	0.0	6.3	12.5	0.0	0.0	287.4
24	11.0	12.0	12.0	0.5	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	299.9
25	11.0	13.0	12.0	0.5	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	312.4
26	11.0	13.0	12.1	0.6	8.3	16.4	21.6	0.0	6.3	12.5	0.0	0.0	324.9
27	11.0	12.0	12.2	0.7	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	337.4
28	7.7	8.5	12.2	0.7	8.3	16.4	16.4	0.0	6.3	12.5	0.0	0.0	349.9
29	11.0	12.0	11.9	0.4	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	362.4
30	11.0	12.0	11.9	0.4	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	374.9
31	11.0	12.0	11.9	0.4	8.3	16.4	21.8	0.0	6.3	12.5	0.0	0.0	387.4
TOTAL SFD	378.6	406.1	285.3	43.8	257.0			0.0	195.3		0.0		
TOTAL AF	750.9	805.5	565.9	66.9	509.8	509.8	670.4	0.0	387.4		0.0		

1 - Art. 7(b) - Winter Period January - April Excess equals 11.5 cfs less actual requirement of 11.5 cfs.
 2 - Art. 17 - January - April Camp Pendleton rights to groundwater equal 17.8 cfs less 11.5 cfs = 6.3 cfs

APPENDIX E

SANTA MARGARITA RIVER WATERSHED
 COOPERATIVE WATER RESOURCE MANAGEMENT AGREEMENT REQUIRED FLOWS AND ACCOUNTS
 SANTA MARGARITA RIVER NEAR TEMECULA

FEBRUARY 2003 - ABOVE NORMAL YEAR

DAY	GROUNDWATER ACCOUNT BALANCE													
	USGS Provisional Discharge cfs	USGS Website Discharge cfs	10-Day Moving Average of Website Discharge cfs	Moving Average Less Required Flow of 11.5 cfs	WR-34 MWD cfs	MWD cfs	AF cfs	RCWD cfs	Water in Excess of Required Flow cfs	AF cfs	Input cfs	Output cfs	Output AF	Cumulative GW Account Balance AF
1	12.0	13.0	11.9	0.4	8.3	16.4	21.8	0.0	0.0	6.3	12.5	0.0	0.0	399.9
2	14.0	14.0	12.0	0.4	6.3	16.4	21.8	0.0	0.0	6.3	12.5	0.0	0.0	412.3
3	12.0	13.0	12.2	0.7	8.3	16.4	21.8	0.0	0.0	6.3	12.5	0.0	0.0	424.8
4	11.0	12.0	12.3	0.8	8.3	16.4	21.8	0.0	0.0	6.3	12.5	0.0	0.0	437.3
5	11.0	12.0	12.2	0.7	8.3	16.4	21.8	0.0	0.0	6.3	12.5	0.0	0.0	449.8
6	11.0	12.0	12.1	0.6	8.3	16.4	21.8	0.0	0.0	6.3	12.5	0.0	0.0	462.2
7	11.0	12.0	12.1	0.6	8.3	16.4	21.8	0.0	0.0	6.3	12.5	0.0	0.0	474.7
8	11.0	12.0	12.4	0.9	8.3	16.4	21.8	0.0	0.0	6.3	12.5	0.0	0.0	487.2
9	11.0	12.0	12.4	0.9	8.3	16.4	21.8	0.0	0.0	6.3	12.5	0.0	0.0	499.7
10	11.0	12.0	12.4	0.9	8.3	16.4	21.8	0.0	0.0	6.3	12.5	0.0	0.0	512.1
11	459.0	459.0	12.4	0.9	8.3	16.4	7.7	0.0	0.0	6.3	12.5	0.0	0.0	524.6
12	962.0	962.0	57.0	45.5	8.3	16.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	537.1
13	325.0	325.0	153.8	142.3	8.3	16.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	549.6
14	75.0	75.0	185.0	173.5	8.3	16.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	562.0
15	30.0	30.0	191.3	179.8	8.3	16.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	574.5
16	11.0	12.0	193.1	181.6	8.3	16.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	587.0
17	4.0	4.0	193.1	161.6	8.3	16.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	599.5
18	1.9	1.9	192.3	180.6	6.3	16.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	611.9
19	1.4	1.5	191.3	179.6	6.3	16.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	624.4
20	25.0	26.0	190.2	176.7	8.3	16.4	14.1	0.0	0.0	6.3	12.5	0.0	0.0	636.9
21	22.0	23.0	191.6	180.1	8.3	16.4	21.8	0.0	0.0	6.3	12.5	0.0	0.0	649.3
22	14.0	15.0	146.0	136.5	6.3	16.4	21.8	0.0	0.0	6.3	12.5	0.0	0.0	661.8
23	13.0	14.0	51.3	39.6	6.3	16.4	21.8	0.0	0.0	6.3	12.5	0.0	0.0	674.3
24	12.0	12.0	20.2	6.7	6.3	16.4	20.5	0.0	0.0	6.3	12.5	0.0	0.0	686.8
25	2030.0	2030.0	13.9	2.4	6.3	16.4	7.0	0.0	0.0	6.3	12.5	0.0	0.0	699.2
26	529.0	529.0	213.9	202.4	8.3	16.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	711.7
27	232.0	232.0	265.6	254.1	8.3	16.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	724.2
28	74.0	74.0	286.4	276.9	8.3	16.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	736.7
29	--	--	--	--	--	--	--	--	--	--	--	--	--	--
30	--	--	--	--	--	--	--	--	--	--	--	--	--	--
31	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL SFD	4955.3	4969.4	2874.4	2552.4	231.5	459.2	333.0	0.0	0.0	176.4	349.3	0.0	0.0	
TOTAL AF	9828.7	9856.7	5701.3	5062.6	459.2	459.2	333.0	0.0	0.0					

1 - Art. 7(b) - Winter Period January - April Excess equals 11.5 cfs less actual requirement of 11.5 cfs.

2 - Art. 17 - January - April Camp Pendleton rights to groundwater equal 17.8 cfs less 11.5 cfs = 6.3 cfs

APPENDIX E

SANTA MARGARITA RIVER WATERSHED
 COOPERATIVE WATER RESOURCE MANAGEMENT AGREEMENT REQUIRED FLOWS AND ACCOUNTS
 SANTA MARGARITA RIVER NEAR TEMECULA

MARCH 2003 - ABOVE NORMAL YEAR

DAY	USGS				10-Day Moving Average of Website Discharge		Moving Average Less Required Flow of 11.5 cfs		WR-34 Make-Up Discharge		Water in Excess of Required Flow		GROUNDWATER ACCOUNT BALANCE				
	Provisional Discharge	USGS Website Discharge	USGS Website Discharge	cfs	Discharge	cfs	Required Flow	cfs	MWD	AF	MWD	AF	Input cfs	Input AF	Output cfs	Output AF	Cumulative GW Account Balance AF
													2				
1	24.0	25.0	25.0	295.7	284.2	8.3	16.4	0.0	0.0	0.0	0.0	6.3	12.5	0.0	0.0	749.2	
2	10.0	11.0	11.0	298.0	286.5	8.3	16.4	0.0	0.0	0.0	0.0	6.3	12.5	0.0	0.0	761.7	
3	13.0	14.0	14.0	296.5	285.0	8.3	16.4	12.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	774.2	
4	17.0	18.0	18.0	295.6	284.1	8.3	16.4	17.5	0.0	0.0	0.0	6.3	12.5	0.0	0.0	786.6	
5	13.0	14.0	14.0	295.9	284.4	8.3	16.4	13.9	0.0	0.0	0.0	6.3	12.5	0.0	0.0	799.1	
6	9.5	10.0	10.0	295.9	284.4	8.3	16.4	13.9	0.0	0.0	0.0	6.3	12.5	0.0	0.0	811.6	
7	9.6	11.0	11.0	295.7	284.2	8.3	16.4	16.2	0.0	0.0	0.0	6.3	12.5	0.0	0.0	824.1	
8	9.9	11.0	11.0	93.8	82.3	8.3	16.4	19.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	836.6	
9	9.6	11.0	11.0	42.0	30.5	8.3	16.4	19.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	849.1	
10	10.0	11.0	11.0	19.9	8.4	8.3	16.4	22.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	861.6	
11	11.0	12.0	12.0	13.6	2.1	8.3	16.4	25.1	0.0	0.0	0.0	6.3	12.5	0.0	0.0	874.1	
12	11.0	13.0	13.0	12.3	0.8	8.3	16.4	25.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	886.6	
13	11.0	13.0	13.0	12.5	1.0	8.3	16.4	25.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	899.1	
14	11.0	13.0	13.0	12.4	0.9	8.3	16.4	25.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	911.6	
15	1050.0	1050.0	1050.0	11.9	0.4	8.3	16.4	25.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	924.1	
16	1130.0	1130.0	1130.0	115.5	104.0	8.3	16.4	9.1	0.0	0.0	0.0	6.3	12.5	0.0	0.0	936.6	
17	187.0	190.0	190.0	227.5	216.0	8.3	16.4	0.0	0.0	0.0	0.0	6.3	12.5	0.0	0.0	949.1	
18	43.0	45.0	45.0	245.4	233.9	8.3	16.4	0.0	0.0	0.0	0.0	6.3	12.5	0.0	0.0	961.6	
19	20.0	21.0	21.0	248.8	237.3	8.3	16.4	0.0	0.0	0.0	0.0	6.3	12.5	0.0	0.0	974.1	
20	9.6	11.0	11.0	249.6	238.3	8.3	16.4	0.0	0.0	0.0	0.0	6.3	12.5	0.0	0.0	986.6	
21	12.0	13.0	13.0	249.8	238.3	8.3	16.4	12.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	999.1	
22	12.0	14.0	14.0	249.9	238.4	8.3	16.4	19.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	1011.6	
23	10.0	12.0	12.0	250.0	238.5	8.3	16.4	19.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	1024.1	
24	9.4	11.0	11.0	249.9	238.4	8.3	16.4	19.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	1036.6	
25	9.7	11.0	11.0	249.7	238.2	8.3	16.4	21.1	0.0	0.0	0.0	6.3	12.5	0.0	0.0	1049.1	
26	7.6	8.7	8.7	145.8	134.3	8.3	16.4	16.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	1061.6	
27	11.0	12.0	12.0	33.7	22.2	8.3	16.4	16.4	0.0	0.0	0.0	6.3	12.5	0.0	0.0	1074.1	
28	12.0	13.0	13.0	15.9	4.4	8.3	16.4	21.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	1086.6	
29	12.0	13.0	13.0	12.7	1.2	8.3	16.4	21.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	1099.0	
30	12.0	13.0	13.0	11.9	0.4	8.3	16.4	21.8	0.0	0.0	0.0	6.3	12.5	0.0	0.0	1111.5	
31	10.0	11.0	11.0	12.1	0.6	8.3	16.4	20.5	0.0	0.0	0.0	6.3	12.5	0.0	0.0	1124.0	
TOTAL SFD	2726.9	2785.7	2785.7	4859.9	4503.4	256.3	508.4	491.3	0.0	0.0	0.0	195.3	387.4	0.0	0.0	0.0	
TOTAL AF	5406.7	5485.7	5485.7	9639.5	8932.4	508.4	508.4	491.3	0.0	0.0	0.0	387.4	387.4	0.0	0.0	0.0	

1 - Art. 7(b) - Winter Period January - April Excess equals 11.5 cfs less actual requirement of 11.5 cfs.

2 - Art. 17 - January - April Camp Pendleton rights to groundwater equal 17.8 cfs less 11.5 cfs = 6.3 cfs

APPENDIX E

SANTA MARGARITA RIVER WATERSHED
 COOPERATIVE WATER RESOURCE MANAGEMENT AGREEMENT REQUIRED FLOWS AND ACCOUNTS
 SANTA MARGARITA RIVER NEAR TEMECULA

APRIL 2003 - ABOVE NORMAL YEAR

DAY	10-Day Moving										GROUNDWATER ACCOUNT BALANCE				Cumulative GW Account Balance AF
	USGS Provisional Discharge cfs	USGS Website Discharge cfs	Average of Website Discharge cfs	Moving Average Less Required Flow of 11.5 cfs	MWD cfs	MWD AF	WR-34 Make-Up Discharge AF	RCWD AF	Water in Excess of Required Flow cfs	AF	Input cfs	2	Input AF	Output cfs	
1	11.0	12.0	11.9	0.4	9.2	18.2	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1136.5
2	9.9	11.0	11.7	0.2	9.0	17.9	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1149.0
3	12.0	13.0	11.6	0.1	10.4	20.7	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1161.5
4	11.0	12.0	11.8	0.3	10.1	20.0	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1174.0
5	10.0	12.0	11.9	0.4	9.3	18.5	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1186.5
6	9.7	11.0	12.2	0.7	9.0	17.9	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1199.0
7	10.0	12.0	12.1	0.6	9.7	19.2	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1211.5
8	11.0	12.0	12.0	0.5	9.9	19.7	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1224.0
9	10.0	12.0	11.9	0.4	9.6	19.1	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1236.5
10	9.3	11.0	11.8	0.3	8.7	17.3	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1249.0
11	9.8	11.0	11.8	0.3	8.9	17.7	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1261.5
12	9.2	11.0	11.7	0.2	8.6	17.0	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1274.0
13	9.3	11.0	11.7	0.2	8.2	16.2	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1286.5
14	543.0	547.0	11.5	53.0	5.3	10.5	12.0	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1299.0
15	306.0	309.0	65.0	53.5	0.0	0.0	0.0	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1311.5
16	43.0	45.0	94.7	83.2	0.2	0.3	0.0	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1324.0
17	14.0	16.0	98.1	86.6	0.1	0.1	0.0	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1336.5
18	11.0	13.0	98.5	87.0	4.6	9.1	7.9	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1349.0
19	14.0	15.0	98.6	87.1	9.1	18.0	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1361.5
20	13.0	14.0	98.9	87.4	9.0	17.9	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1374.0
21	12.0	13.0	99.2	87.7	9.0	17.9	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1386.5
22	11.0	13.0	99.4	87.9	9.0	17.9	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1398.9
23	11.0	13.0	99.6	88.1	9.0	17.8	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1411.4
24	11.0	13.0	99.8	88.3	9.6	19.0	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1423.9
25	12.0	13.0	46.4	34.9	9.9	19.7	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1436.4
26	11.0	13.0	16.8	5.3	9.9	19.7	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1448.9
27	11.0	13.0	13.6	2.1	9.9	19.7	19.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1461.4
28	10.0	12.0	13.3	1.8	9.2	18.3	18.5	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1473.9
29	9.8	11.0	13.2	1.7	8.9	17.7	17.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1486.4
30	9.8	11.0	12.8	1.3	8.9	17.7	17.8	0.0	0.0	6.3	12.5	12.5	0.0	0.0	1498.9
31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL SFD	1184.8	1235.0	1233.4	888.4	242.4	480.7	510.1	0.0	0.0	189.0	374.9	374.9	0.0	0.0	---
TOTAL AF	2350.0	2449.6	2446.3	1762.0	480.7	480.7	480.7	0.0	0.0	---	---	---	---	---	---

1 - Art. 7(b) - Winter Period January - April Excess equals 11.5 cfs less actual requirement of 11.5 cfs.
 2 - Art. 17 - January - April Camp Pendleton rights to groundwater equal 17.8 cfs less 11.5 cfs = 6.3 cfs

APPENDIX E

SANTA MARGARITA RIVER WATERSHED
 COOPERATIVE WATER RESOURCE MANAGEMENT AGREEMENT REQUIRED FLOWS AND ACCOUNTS
 SANTA MARGARITA RIVER NEAR TEMECULA

MAY 2003 - ABOVE NORMAL YEAR

DAY	USGS				10-Day Moving Average of		Moving Average		WR-34 Make-Up Discharge		Water in Excess of		GROUNDWATER ACCOUNT BALANCE				Cumulative GW Account Balance AF
	Provisional Discharge cfs	USGS Website Discharge cfs	Website Discharge cfs	Less Required Flow of 11.5 cfs	MWD cfs	MWD AF	RCWD AF	Required Flow cfs	AF	AF	Input cfs	Output cfs	Input AF	Output AF	Output AF		
1	11.0	12.0			9.7	19.2	19.2	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1499.3		
2	11.0	12.0			9.9	19.7	19.8	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1499.7		
3	18.0	19.0			9.9	19.7	19.8	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1500.1		
4	21.0	22.0			9.9	19.7	19.8	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1500.5		
5	9.8	11.0			7.8	15.5	15.7	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1500.9		
6	7.1	8.2			5.7	11.4	11.7	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1501.3		
7	8.4	9.4			6.5	12.8	12.4	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1501.7		
8	12.0	13.0			9.9	19.7	19.8	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1502.1		
9	11.0	13.0			9.9	19.7	19.8	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1502.5		
10	11.0	12.0			9.9	19.7	19.8	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1502.9		
11	11.0	12.0		13.2	9.9	19.7	19.8	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1503.3		
12	11.0	12.0		13.2	9.9	19.7	19.8	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1503.7		
13	15.0	17.0		13.2	9.9	19.7	19.8	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1504.1		
14	11.0	12.0		13.0	8.9	17.6	17.8	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1504.5		
15	10.0	11.0		12.0	8.9	17.7	17.6	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1504.9		
16	10.0	12.0		12.0	9.4	18.7	18.8	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1505.3		
17	10.0	12.0		12.3	9.4	18.7	18.8	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1505.7		
18	10.0	12.0		12.6	9.4	18.7	18.7	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1506.1		
19	10.0	12.0		12.5	9.2	18.3	18.3	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1506.5		
20	10.0	12.0		12.4	9.2	18.2	18.2	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1506.8		
21	10.0	12.0		12.4	9.1	18.1	18.2	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1507.2		
22	11.0	12.0		12.4	9.5	18.8	18.8	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1507.6		
23	10.0	11.0		11.8	9.0	17.9	18.0	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1508.0		
24	10.0	11.0		11.7	9.0	18.0	18.0	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1508.4		
25	10.0	11.0		11.7	9.0	17.9	18.0	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1508.8		
26	9.9	11.0		11.7	9.0	17.9	18.0	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1509.2		
27	10.0	12.0		11.6	9.1	18.1	18.1	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1509.6		
28	11.0	13.0		11.7	9.2	18.2	18.2	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1510.0		
29	10.0	12.0		11.7	9.2	18.2	18.2	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1510.4		
30	11.0	12.0		11.7	9.2	18.2	18.2	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1510.8		
31	10.0	11.0		11.7	9.1	18.1	18.1	N/A	N/A	0.2	0.4	0.0	0.4	0.0	1511.2		
TOTAL SFD	341.2	383.6	256.9	15.4	284.1	563.5	564.8	0.0	0.0	6.2	12.3	0.0	12.3	0.0			
TOTAL AF	676.7	760.9	509.6	30.5	563.5	563.5	564.8	0.0	0.0								

1 - Art. 7(b) not applicable for months of May through December
 2 - Art. 17 - Camp Pendleton rights to groundwater 11.7 cfs less 11.5 cfs = 0.2 cfs

APPENDIX E

SANTA MARGARITA RIVER WATERSHED
 COOPERATIVE WATER RESOURCE MANAGEMENT AGREEMENT REQUIRED FLOWS AND ACCOUNTS
 SANTA MARGARITA RIVER NEAR TEMECULA

JUNE 2003 - ABOVE NORMAL YEAR

DAY	10-Day Moving Average of										GROUNDWATER ACCOUNT BALANCE									
	USGS Provisional Discharge		USGS Website Discharge		Moving Average Less Required Flow of 9.4		WR-34 Make-Up Discharge		Water in Excess of Required Flow		Input cfs		Output cfs		Input AF		Output AF		Cumulative Account Balance AF	
	cfs	cfs	cfs	cfs	cfs	cfs	MWD	MWD	AF	AF	cfs	cfs	AF	AF	cfs	cfs	AF	AF	AF	AF
1	10.0	22.0	9.1	18.1	18.2	N/A	N/A	18.2	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
2	6.3	17.0	5.5	10.9	11.0	N/A	N/A	11.0	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
3	8.0	8.7	7.7	15.2	15.2	N/A	N/A	15.2	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
4	8.7	9.5	8.2	16.2	16.2	N/A	N/A	16.2	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
5	8.8	9.6	8.3	16.4	16.4	N/A	N/A	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
6	8.8	9.7	8.2	16.3	16.4	N/A	N/A	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
7	8.8	9.6	8.3	16.4	16.4	N/A	N/A	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
8	8.8	9.6	8.3	16.4	16.4	N/A	N/A	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
9	8.8	9.6	8.3	16.4	16.4	N/A	N/A	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
10	8.8	8.8	8.3	16.4	16.4	N/A	N/A	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
11	9.2	8.8	8.6	17.0	17.0	N/A	N/A	17.0	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
12	9.6	9.5	9.0	17.8	17.8	N/A	N/A	17.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
13	9.6	9.7	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
14	9.6	9.6	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
15	9.6	9.6	9.0	17.8	17.8	N/A	N/A	17.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
16	9.7	9.7	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
17	9.7	9.7	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
18	9.7	9.7	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
19	9.6	9.6	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
20	9.7	9.7	9.0	17.8	17.8	N/A	N/A	17.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
21	9.7	9.7	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
22	9.6	9.6	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
23	9.5	9.5	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
24	9.5	9.5	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
25	9.6	9.6	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
26	9.4	9.4	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
27	9.3	9.3	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
28	9.3	9.3	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
29	9.5	9.5	9.0	17.8	17.8	N/A	N/A	17.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
30	9.5	9.5	8.9	17.7	17.7	N/A	N/A	17.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
31	--	--	--	--	--	--	--	--	--	--	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
TOTAL SFD	276.7	304.4	192.8	4.8	258.3	0.0	0.0	513.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
TOTAL AF	548.8	603.8	382.5	9.6	512.4	512.4	513.4	513.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2

1 - Art. 7(b) not applicable for months of May through December
 2 - Art. 17 - Camp Pendleton rights to groundwater = 9.4 cfs less 9.4 cfs = 0 cfs

APPENDIX E

SANTA MARGARITA RIVER WATERSHED
 COOPERATIVE WATER RESOURCE MANAGEMENT AGREEMENT REQUIRED FLOWS AND ACCOUNTS
 SANTA MARGARITA RIVER NEAR TEMECULA

JULY 2003 - ABOVE NORMAL YEAR

DAY	10-Day Moving										GROUNDWATER ACCOUNT BALANCE				Cumulative GW Account Balance AF		
	USGS Provisional Discharge		USGS Website Discharge		Average of Website Discharge		Moving Average Less Required Flow of 7.8		WR-34 Make-Up Discharge		Water in Excess of Required Flow		Input			Output	
	cfs	cfs	cfs	cfs	cfs	cfs	cfs	cfs	MWD	MWD	AF	AF	cfs	cfs		AF	AF
1	8.1	8.1	8.1	8.1	7.8	15.5	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
2	7.6	7.8	7.8	7.6	7.6	15.1	15.1	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
3	8.0	8.0	8.0	8.0	8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
4	8.1	8.1	8.1	8.0	8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
5	8.2	8.2	8.2	8.0	8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
6	8.3	8.3	8.3	8.0	8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
7	8.2	8.2	8.2	8.0	8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
8	8.2	8.2	8.2	8.0	8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
9	8.2	8.2	8.2	8.0	8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
10	8.2	8.2	8.2	8.0	8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
11	8.2	8.2	8.2	8.0	8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
12	8.1	21.0	8.1	8.1	8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
13	8.1	34.0	8.1	9.5	8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
14	7.9	7.9	12.1	12.1	8.2	16.2	16.2	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
15	8.2	8.2	12.0	12.0	8.3	16.4	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
16	8.3	8.3	12.0	12.0	8.3	16.4	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
17	8.2	8.2	12.0	12.0	8.3	16.4	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
18	8.2	8.2	12.0	12.0	8.3	16.4	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
19	8.4	8.4	12.0	12.0	8.3	16.4	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
20	8.4	8.4	12.1	12.1	8.3	16.4	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
21	8.3	8.3	12.1	12.1	8.3	16.4	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
22	8.1	8.1	12.1	12.1	8.3	16.4	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
23	8.3	8.3	10.8	10.8	8.3	16.4	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
24	8.2	8.2	8.2	8.2	8.3	16.4	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
25	8.2	8.2	8.3	8.3	8.3	16.4	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
26	8.1	8.1	8.3	8.3	8.3	16.4	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
27	8.2	8.2	8.2	8.2	8.3	16.4	16.4	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
28	8.0	8.0	8.2	8.2	8.2	16.2	16.2	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
29	8.0	8.0	8.2	8.2	8.2	16.2	16.2	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
30	8.7	8.7	8.2	8.2	8.2	16.2	16.2	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
31	8.0	8.0	8.2	8.2	8.0	15.8	15.9	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	1511.2	
TOTAL SFD	253.2	292.0	210.8	47.0	251.2	498.2	498.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
TOTAL AF	502.2	579.2	418.2	93.3	498.2	498.7	498.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

1 - Art. 7(b) not applicable for months of May through December
 2 - Art. 17 - Camp Pendleton rights to groundwater = 7.8 cfs less 7.8 cfs = 0 cfs

APPENDIX E

**SANTA MARGARITA RIVER WATERSHED
COOPERATIVE WATER RESOURCE MANAGEMENT AGREEMENT REQUIRED FLOWS AND ACCOUNTS
SANTA MARGARITA RIVER NEAR TEMECULA**

AUGUST 2003 - ABOVE NORMAL YEAR

DAY	USGS				10-Day Moving		Moving Average		WR-34 Make-Up Discharge		Water in Excess of		GROUNDWATER ACCOUNT BALANCE					
	Provisional Discharge cfs	USGS Website Discharge cfs	Average of Website Discharge cfs	Less Required Flow of 7.6 cfs	MWD cfs	MWD AF	RCWD AF	Required Flow cfs	AF	Input cfs	Input AF	Output cfs	Output AF	Input cfs	Input AF	Output cfs	Output AF	Cumulative Account Balance AF
1	7.8	7.8	7.8		7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
2	7.8	7.8	7.8		7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
3	7.8	7.8	7.8		7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
4	7.8	7.8	7.8		7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
5	7.7	7.7	7.7		7.8	15.5	15.5	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
6	7.8	7.6	7.7		7.8	15.5	15.5	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
7	8.1	7.7	7.7		7.9	15.7	15.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
8	8.2	7.8	7.8		8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
9	8.1	7.8	7.8		8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
10	8.1	7.7	7.7		8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
11	8.3	7.9	7.9		8.0	15.8	15.8	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
12	8.2	7.8	7.8	0.2	7.9	15.7	15.7	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
13	8.0	7.7	7.7	0.2	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
14	8.1	7.7	7.7	0.2	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
15	8.1	7.7	7.7	0.1	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
16	8.0	7.7	7.7	0.1	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
17	8.2	7.8	7.8	0.2	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
18	8.3	7.9	7.9	0.2	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
19	8.1	7.7	7.7	0.2	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
20	8.2	7.9	7.9	0.2	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
21	8.3	7.9	7.9	0.2	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
22	8.0	7.6	7.6	0.2	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
23	7.9	7.6	7.6	0.2	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
24	8.0	7.6	7.6	0.2	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
25	8.0	7.6	7.7	0.1	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
26	7.9	7.6	7.7	0.1	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
27	7.9	7.5	7.7	0.1	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
28	7.9	7.6	7.7	0.1	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
29	7.9	7.5	7.7	0.1	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
30	7.9	7.5	7.6	0.0	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
31	7.9	7.5	7.6	0.0	7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1511.2
TOTAL SFD	248.3	238.8	162.4	2.8	244.2			0.0		0.0		0.0		0.0		0.0		
TOTAL AF	492.5	473.7	322.1	5.5	484.4	484.4	485.0	0.0		0.0		0.0		0.0		0.0		

1 - Art. 7(b) not applicable for months of May through December
 2 - Art. 17 - Camp Pendleton rights to groundwater = 7.6 cfs less 7.6 cfs = 0 cfs

APPENDIX E

SANTA MARGARITA RIVER WATERSHED
 COOPERATIVE WATER RESOURCE MANAGEMENT AGREEMENT REQUIRED FLOWS AND ACCOUNTS
 SANTA MARGARITA RIVER NEAR TEMECULA

SEPTEMBER 2003 - ABOVE NORMAL YEAR

DAY	10-Day Moving Average of										GROUNDWATER ACCOUNT BALANCE				
	USGS Provisional Discharge		USGS Website Discharge		Moving Average Less Required Flow of 7.4		WR-34 Make-Up Discharge		Water in Excess of Required Flow		Input		Output		Cumulative GW Account Balance AF
	cfs	cfs	cfs	cfs	cfs	cfs	AF	RCWD	AF	cfs	AF	cfs	AF		
1	7.9	7.5	7.9	7.5	7.9	7.5	15.6	15.6	N/A	N/A	0.0	0.0	0.0	1511.2	
2	7.9	7.5	7.8	7.5	7.8	7.5	15.5	15.5	N/A	N/A	0.0	0.0	0.0	1511.2	
3	7.8	7.5	7.8	7.5	7.8	7.5	15.4	15.4	N/A	N/A	0.0	0.0	0.0	1511.2	
4	7.8	7.5	7.8	7.5	7.8	7.5	15.4	15.4	N/A	N/A	0.0	0.0	0.0	1511.2	
5	7.9	7.5	7.8	7.5	7.8	7.5	15.5	15.5	N/A	N/A	0.0	0.0	0.0	1511.2	
6	8.2	7.4	7.8	7.4	7.8	7.4	15.4	15.4	N/A	N/A	0.0	0.0	0.0	1511.2	
7	8.2	7.5	7.8	7.5	7.8	7.5	15.4	15.4	N/A	N/A	0.0	0.0	0.0	1511.2	
8	8.2	7.8	7.8	7.8	7.8	7.8	15.4	15.4	N/A	N/A	0.0	0.0	0.0	1511.2	
9	8.1	7.8	7.8	7.8	7.8	7.8	15.4	15.4	N/A	N/A	0.0	0.0	0.0	1511.2	
10	8.1	7.8	7.8	7.8	7.8	7.8	15.4	15.4	N/A	N/A	0.0	0.0	0.0	1511.2	
11	8.0	7.8	7.8	7.8	7.8	7.8	15.4	15.4	N/A	N/A	0.0	0.0	0.0	1511.2	
12	7.9	7.6	7.8	7.6	7.8	7.6	15.4	15.4	N/A	N/A	0.0	0.0	0.0	1511.2	
13	8.0	7.7	7.8	7.7	7.8	7.7	15.4	15.4	N/A	N/A	0.0	0.0	0.0	1511.2	
14	8.0	7.7	7.8	7.7	7.8	7.7	15.4	15.4	N/A	N/A	0.0	0.0	0.0	1511.2	
15	8.1	7.7	7.9	7.7	7.9	7.7	15.1	15.1	N/A	N/A	0.0	0.0	0.0	1511.2	
16	7.9	7.9	7.9	7.9	7.9	7.9	15.0	15.0	N/A	N/A	0.0	0.0	0.0	1511.2	
17	7.9	7.9	7.9	7.9	7.9	7.9	15.0	15.0	N/A	N/A	0.0	0.0	0.0	1511.2	
18	7.9	7.9	7.9	7.9	7.9	7.9	15.0	15.0	N/A	N/A	0.0	0.0	0.0	1511.2	
19	7.9	7.9	7.9	7.9	7.9	7.9	15.0	15.0	N/A	N/A	0.0	0.0	0.0	1511.2	
20	8.0	8.0	8.0	8.0	8.0	8.0	15.0	15.0	N/A	N/A	0.0	0.0	0.0	1511.2	
21	8.2	8.2	8.2	8.2	8.2	8.2	15.1	15.1	N/A	N/A	0.0	0.0	0.0	1511.2	
22	8.2	8.2	8.2	8.2	8.2	8.2	15.0	15.0	N/A	N/A	0.0	0.0	0.0	1511.2	
23	8.2	8.2	8.2	8.2	8.2	8.2	14.7	14.7	N/A	N/A	0.0	0.0	0.0	1511.2	
24	8.2	8.2	8.0	8.0	8.0	8.0	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2	
25	8.0	8.0	8.0	8.0	8.0	8.0	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2	
26	8.0	8.0	8.0	8.0	8.0	8.0	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2	
27	8.0	8.0	8.1	8.1	8.1	8.1	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2	
28	7.8	7.8	8.1	8.1	8.1	8.1	14.4	14.4	N/A	N/A	0.0	0.0	0.0	1511.2	
29	8.0	8.0	8.1	8.1	8.1	8.1	14.9	14.9	N/A	N/A	0.0	0.0	0.0	1511.2	
30	8.2	8.0	8.1	8.1	8.1	8.1	15.2	15.2	N/A	N/A	0.0	0.0	0.0	1511.2	
31	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
TOTAL SFD	240.5	234.7	156.7	156.7	8.7	229.1	0.0	454.4	454.9	0.0	0.0	0.0	0.0	0.0	
TOTAL AF	477.0	465.5	310.7	310.7	17.2	454.4	0.0	454.4	454.9	0.0	0.0	0.0	0.0	0.0	

1 - Art. 7(b) not applicable for months of May through December
 2 - Art. 17 - Camp Pendleton rights to groundwater = 7.4 cfs less 7.4 cfs = 0 cfs

APPENDIX E

SANTA MARGARITA RIVER WATERSHED
 COOPERATIVE WATER RESOURCE MANAGEMENT AGREEMENT REQUIRED FLOWS AND ACCOUNTS
 SANTA MARGARITA RIVER NEAR TEMECULA

OCTOBER 2003 - ABOVE NORMAL YEAR

DAY	USGS Provisional Discharge		USGS Website Discharge		10-Day Moving Average of Website Discharge		Moving Average Less Required Flow of 7.7 *		WR-34 Make-Up Discharge		Water in Excess of Required Flow		GROUNDWATER ACCOUNT BALANCE		Cumulative GW Account Balance AF		
	cfs	cfs	cfs	cfs	cfs	cfs	cfs	cfs	MWD cfs	MWD AF	RCWD AF	cfs	AF	Input cfs		Output cfs	Output AF
1	8.4	7.6							7.8	15.4	15.4	N/A	N/A	0.0	0.0	0.0	1511.2
2	8.5	7.7							7.8	15.5	15.5	N/A	N/A	0.0	0.0	0.0	1511.2
3	8.5	7.8							7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	1511.2
4	8.6	7.8							7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	1511.2
5	8.6	7.8							7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	1511.2
6	8.6	7.9							7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	1511.2
7	8.6	7.9							7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	1511.2
8	8.6	7.8							7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	1511.2
9	8.6	8.6							7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	1511.2
10	8.6	8.7							7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	1511.2
11	8.7	8.7			8.0		0.3		7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	1511.2
12	8.6	8.6			8.1		0.4		7.9	15.6	15.6	N/A	N/A	0.0	0.0	0.0	1511.2
13	8.1	8.1			8.2		0.5		7.5	14.9	14.9	N/A	N/A	0.0	0.0	0.0	1511.2
14	7.8	7.8			8.2		0.5		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
15	7.8	7.8			8.2		0.5		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
16	7.8	7.8			8.2		0.5		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
17	7.8	7.8			8.2		0.5		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
18	7.9	7.9			8.2		0.5		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
19	7.9	7.9			8.2		0.5		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
20	7.9	7.9			8.1		0.4		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
21	7.8	7.8			8.0		0.3		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
22	7.8	7.8			7.9		0.2		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
23	7.8	7.8			7.9		0.2		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
24	7.8	7.8			7.8		0.1		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
25	7.7	7.7			7.8		0.1		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
26	7.7	7.7			7.8		0.1		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
27	7.6	7.6			7.8		0.1		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
28	7.7	7.7			7.8		0.1		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
29	7.7	7.7			7.8		0.1		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
30	7.8	7.8			7.8		0.1		7.4	14.6	14.6	N/A	N/A	0.0	0.0	0.0	1511.2
31	6.1	6.1			7.7		3.8		5.8	11.6	15.6	N/A	N/A	3.8	7.5	0.0	1518.7
TOTAL SFD	249.4	243.4			167.6		9.7		232.7		0.0			3.8		0.0	
TOTAL AF	494.7	482.8			332.4		19.2		461.6	461.6	465.6	0.0		7.5		0.0	

1 - Art. 7(b) not applicable for months of May through December

2 - Art. 17 - Camp Pendleton rights to groundwater = 7.7 cfs less 7.7 cfs = 0 cfs, except 10/31/03 when rights = 7.7 cfs less 3.9 cfs = 3.8 cfs

* - Required Flow changed to 3.9 cfs for 10/31/03

APPENDIX E

SANTA MARGARITA RIVER WATERSHED
COOPERATIVE WATER RESOURCE MANAGEMENT AGREEMENT REQUIRED FLOWS AND ACCOUNTS
SANTA MARGARITA RIVER NEAR TEMECULA

NOVEMBER 2003 - ABOVE NORMAL YEAR

DAY	GROUNDWATER ACCOUNT BALANCE											
	USGS Provisional Discharge cfs	USGS Website Discharge cfs	10-Day Moving Average of Website Discharge cfs	Moving Average Less Required Flow of 4.5 * cfs	WR-34 MWD cfs	MWD Make-Up MWD AF	Discharge RCWD AF	Water in Excess of Required Flow cfs	Input cfs	Output cfs	Output AF	Cumulative GW Account Balance AF
1	4.9	4.9	4.9		4.5	8.9	8.9	N/A	4.3	8.5	0.0	1527.3
2	4.6	4.6	4.6		4.5	8.9	8.9	N/A	4.3	8.5	0.0	1535.8
3	4.6	4.6	4.6		4.5	8.9	8.9	N/A	4.3	8.5	0.0	1544.3
4	4.6	4.6	4.6		4.4	8.7	8.7	N/A	4.3	8.5	0.0	1552.9
5	4.6	4.6	4.6		4.5	9.0	9.0	N/A	4.3	8.5	0.0	1561.4
6	4.4	4.9	4.9		4.2	8.4	8.4	N/A	4.3	8.5	0.0	1569.9
7	4.1	4.6	4.6		4.0	7.9	7.9	N/A	4.3	8.5	0.0	1578.5
8	4.1	4.6	4.6		4.0	7.9	7.9	N/A	4.3	8.5	0.0	1587.0
9	4.1	4.6	4.6		4.0	7.9	7.9	N/A	4.3	8.5	0.0	1595.5
10	4.2	4.7	4.7		4.0	7.9	7.9	N/A	4.3	8.5	0.0	1604.0
11	4.2	4.8	4.7	0.2	4.0	7.9	7.9	N/A	4.3	8.5	0.0	1612.6
12	31.0	31.0	4.7	0.2	1.4	2.8	2.8	N/A	4.3	8.5	0.0	1621.1
13	68.0	38.0	7.3	2.8	0.0	0.0	0.0	N/A	4.3	8.5	0.0	1629.6
14	7.3	7.3	10.7	6.2	0.0	0.0	0.0	N/A	4.3	8.5	0.0	1638.2
15	2.1	2.1	10.9	6.4	1.1	2.2	2.2	N/A	4.3	8.5	0.0	1646.7
16	6.7	6.7	10.7	6.2	4.0	7.9	7.9	N/A	4.3	8.5	0.0	1655.2
17	4.1	4.1	10.8	6.3	3.5	6.9	6.9	N/A	4.3	8.5	0.0	1663.7
18	4.6	4.6	10.6	6.3	4.3	8.6	8.6	N/A	4.3	8.5	0.0	1672.3
19	4.7	4.7	10.8	6.3	4.4	8.8	8.8	N/A	4.3	8.5	0.0	1680.8
20	4.5	4.5	10.8	6.3	4.2	8.4	8.4	N/A	4.3	8.5	0.0	1689.3
21	4.4	4.4	10.8	6.3	4.2	8.4	8.4	N/A	4.3	8.5	0.0	1697.9
22	4.3	4.3	10.7	6.2	4.2	8.4	8.4	N/A	4.3	8.5	0.0	1706.4
23	4.3	4.3	8.1	3.6	4.2	8.4	8.4	N/A	4.3	8.5	0.0	1714.9
24	4.6	4.6	4.7	0.2	4.2	8.4	8.4	N/A	4.3	8.5	0.0	1723.4
25	4.9	4.9	4.4	-0.1	4.4	8.8	8.8	N/A	4.3	8.5	0.0	1732.0
26	4.6	4.8	4.7	0.2	4.6	9.1	9.1	N/A	4.3	8.5	0.0	1740.5
27	4.9	4.9	4.5	0.0	4.6	9.1	9.1	N/A	4.3	8.5	0.0	1749.0
28	4.9	4.9	4.6	0.1	4.7	9.3	9.3	N/A	4.3	8.5	0.0	1757.6
29	4.9	4.9	4.6	0.1	4.6	9.2	9.2	N/A	4.3	8.5	0.0	1766.1
30	4.9	4.9	4.7	0.2	4.6	9.2	9.2	N/A	4.3	8.5	0.0	1774.6
31	---	---	---	---	---	---	---	N/A	---	---	---	---
TOTAL SFD	228.3	201.6	154.0	64.0	114.0	226.2	226.2	0.0	129.0	0.0	0.0	---
TOTAL AF	452.8	399.9	305.4	126.9	226.2	226.2	226.2	0.0	255.9	0.0	0.0	---

1 - Art. 7(b) not applicable for months of May through December
 2 - Art. 17 - Camp Pendleton rights to groundwater = 8.8 cfs less 4.5 cfs = 4.3 cfs
 * - Required Flow changed to 4.5 cfs on 10/31/03

**APPENDIX E
SANTA MARGARITA RIVER WATERSHED**

**COOPERATIVE WATER RESOURCE MANAGEMENT AGREEMENT REQUIRED FLOWS AND ACCOUNTS
SANTA MARGARITA RIVER NEAR TEMECULA**

DECEMBER 2003, ABOVE NORMAL YEAR

DAY	USGS Provisional Discharge		USGS Website Discharge		10-Day Moving Average of Website Discharge		Moving Average Less Required Flow of 5.3		WR-34 Make-Up Discharge		Water in Excess of Required Flow		GROUNDWATER ACCOUNT BALANCE				
	cfs	cfs	cfs	cfs	cfs	cfs	cfs	cfs	MWD	MWD	AF	AF	Input cfs	Output cfs	Input AF	Output AF	Cumulative GW Account Balance AF
1	5.1	5.1	5.1	5.1	5.1	5.1	4.9	9.7	9.7	9.7	N/A	N/A	5.1	10.1	10.1	0.0	1784.7
2	5.4	5.4	5.4	5.4	5.1	5.1	5.1	10.2	10.2	10.2	N/A	N/A	5.1	10.1	10.1	0.0	1794.8
3	5.6	5.6	5.6	5.6	5.3	5.3	5.3	10.5	10.5	10.5	N/A	N/A	5.1	10.1	10.1	0.0	1805.0
4	5.7	5.7	5.7	5.7	5.3	5.3	5.3	10.6	10.6	10.6	N/A	N/A	5.1	10.1	10.1	0.0	1815.1
5	5.8	5.8	5.8	5.8	5.5	5.5	5.5	11.0	11.0	11.0	N/A	N/A	5.1	10.1	10.1	0.0	1825.2
6	5.9	5.9	5.9	5.9	5.5	5.5	5.5	11.0	11.0	11.0	N/A	N/A	5.1	10.1	10.1	0.0	1835.3
7	6.1	6.1	6.1	6.1	5.7	5.7	5.7	11.3	11.3	11.3	N/A	N/A	5.1	10.1	10.1	0.0	1845.4
8	6.1	6.1	6.1	6.1	5.7	5.7	5.7	11.3	11.3	11.3	N/A	N/A	5.1	10.1	10.1	0.0	1855.5
9	5.7	5.7	5.7	5.7	5.4	5.4	5.4	10.7	10.7	10.7	N/A	N/A	5.1	10.1	10.1	0.0	1865.7
10	5.5	5.5	5.5	5.5	5.2	5.2	5.2	10.4	10.4	10.4	N/A	N/A	5.1	10.1	10.1	0.0	1875.8
11	5.6	5.6	5.6	5.6	5.2	5.2	5.2	10.4	10.4	10.4	N/A	N/A	5.1	10.1	10.1	0.0	1885.9
12	5.5	5.5	5.5	5.5	5.2	5.2	5.2	10.4	10.4	10.4	N/A	N/A	5.1	10.1	10.1	0.0	1896.0
13	5.5	5.5	5.5	5.5	5.2	5.2	5.2	10.4	10.4	10.4	N/A	N/A	5.1	10.1	10.1	0.0	1906.1
14	5.6	5.6	5.6	5.6	5.3	5.3	5.3	10.5	10.5	10.5	N/A	N/A	5.1	10.1	10.1	0.0	1916.2
15	5.6	5.6	5.6	5.6	5.2	5.2	5.2	10.4	10.4	10.4	N/A	N/A	5.1	10.1	10.1	0.0	1926.4
16	5.6	5.6	5.6	5.6	5.2	5.2	5.2	10.4	10.4	10.4	N/A	N/A	5.1	10.1	10.1	0.0	1936.5
17	5.3	5.3	5.3	5.3	5.2	5.2	5.0	10.0	10.0	10.0	N/A	N/A	5.1	10.1	10.1	0.0	1946.8
18	5.2	5.2	5.2	5.2	5.6	5.6	4.9	9.7	9.7	9.7	N/A	N/A	5.1	10.1	10.1	0.0	1956.7
19	5.1	5.1	5.1	5.1	5.5	5.5	4.9	9.7	9.7	9.7	N/A	N/A	5.1	10.1	10.1	0.0	1966.8
20	5.3	5.3	5.3	5.3	5.5	5.5	4.9	9.8	9.8	9.8	N/A	N/A	5.1	10.1	10.1	0.0	1976.9
21	5.5	5.5	5.5	5.5	5.4	5.4	5.0	10.0	10.0	10.0	N/A	N/A	5.1	10.1	10.1	0.0	1987.0
22	5.3	5.3	5.3	5.3	5.4	5.4	4.9	9.8	9.8	9.8	N/A	N/A	5.1	10.1	10.1	0.0	1997.2
23	5.3	5.3	5.3	5.3	5.4	5.4	4.9	9.8	9.8	9.8	N/A	N/A	5.1	10.1	10.1	0.0	2007.3
24	5.1	5.1	5.1	5.1	5.4	5.4	4.9	9.7	9.7	9.7	N/A	N/A	5.1	10.1	10.1	0.0	2017.4
25	1650	1650	1650	1650	5.3	5.3	5.0	10.0	10.0	10.0	N/A	N/A	5.1	10.1	10.1	0.0	2027.5
26	126.0	126.0	126.0	126.0	21.3	21.3	1.8	3.6	3.6	3.6	N/A	N/A	5.1	10.1	10.1	0.0	2037.6
27	7.5	7.5	7.5	7.5	33.3	33.3	0.0	0.0	0.0	0.0	N/A	N/A	5.1	10.1	10.1	0.0	2047.7
28	1.2	1.2	1.2	1.2	33.5	33.5	0.0	0.0	0.0	0.0	N/A	N/A	5.1	10.1	10.1	0.0	2057.9
29	0.7	0.7	0.7	0.7	33.1	33.1	0.0	0.0	0.0	0.0	N/A	N/A	5.1	10.1	10.1	0.0	2068.0
30	0.6	0.6	0.6	0.6	32.7	32.7	0.0	0.0	0.0	0.0	N/A	N/A	5.1	10.1	10.1	0.0	2078.1
31	5.4	5.4	5.4	5.4	32.2	32.2	4.7	9.3	9.3	9.3	N/A	N/A	5.1	10.1	10.1	0.0	2088.2
TOTAL SFD	438.7	438.7	269.7	269.7	156.4	156.4	136.4	270.6	270.6	270.6	270.6	270.6	158.1	313.6	313.6	0.0	2088.2
TOTAL AF	870.2	870.2	534.9	534.9	314.2	314.2	270.6	270.6	270.6	270.6	270.6	270.6	158.1	313.6	313.6	0.0	2088.2

1 - Art. 7(b) not applicable for months of May through December

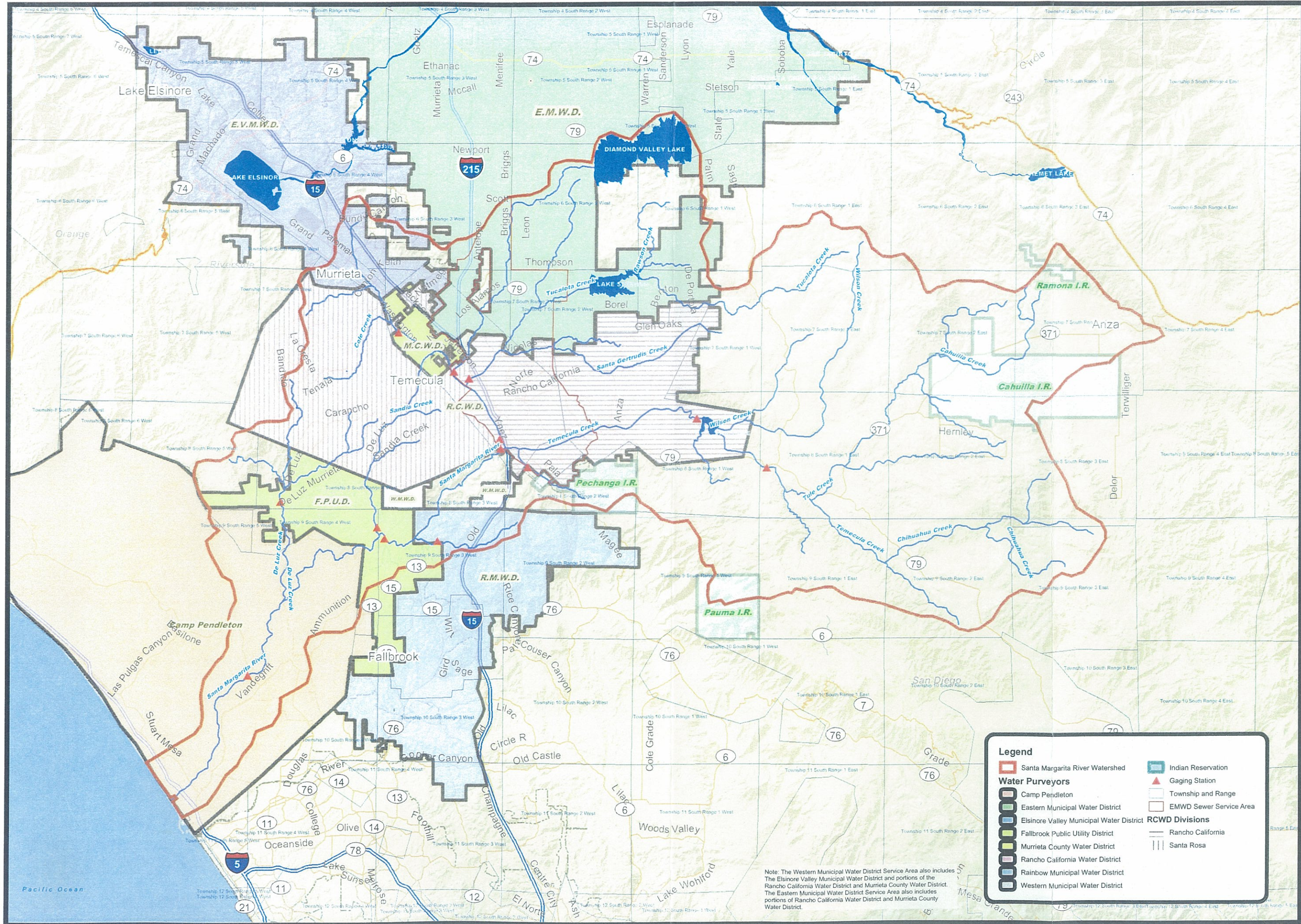
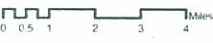
2 - Art. 17 - Camp Pendleton rights to groundwater = 10.4 cfs less 5.3 cfs = 5.1 cfs



Map Produced by:
 Rancho California Water District
 Planning and Capital Projects
 Geographic Information Services
 August 2004



1 inch equals 4 miles



Legend

Santa Margarita River Watershed	Indian Reservation
Water Purveyors	Gaging Station
Camp Pendleton	Township and Range
Eastern Municipal Water District	EMWD Sewer Service Area
Elsinore Valley Municipal Water District	RCWD Divisions
Fallbrook Public Utility District	Rancho California
Murrieta County Water District	Santa Rosa
Rancho California Water District	
Rainbow Municipal Water District	
Western Municipal Water District	

Note: The Western Municipal Water District Service Area also includes The Elsinore Valley Municipal Water District and portions of the Rancho California Water District and Murrieta County Water District. The Eastern Municipal Water District Service Area also includes portions of Rancho California Water District and Murrieta County Water District.

Major Water Purveyors

Santa Margarita River Watershed Watermaster