SANTA MARGARITA RIVER WATERSHED

ANNUAL WATERMASTER REPORT

WATER YEAR 1989 – 90

UNITED STATES OF AMERICA
VS.
FALLBROOK PUBLIC UTILITY DISTRICT, ET AL
CIVIL NO. 1247 - SD-T

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

MAP

SECTION 1 - SUMMARY

Section 1 - A summary of the Santa Margarita River Watershed Annual Watermaster Report for the 1989-90 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 which add to, support or contribute to the Santa Margarita stream system. Thus, imported waters, whether in storage in Lake Skinner or being transported through the Watershed are outside Court jurisdiction, along with local vagrant groundwaters which do not support the Santa Margarita stream system.

Section 3 - Surface water flows were much lower than normal in 1989-90, ranging from 14 to 29 percent of normal at gaging stations with recent long flow records. Surface diversions totaled 763 acre feet. The total quantity of water in storage in the Watershed on September 30, 1990, was 18,414 acre feet of Santa Margarita River water and 42,370 acre feet of imported water.

Section 4 - Groundwater extractions were 48,450 of which 39,655 acre feet were pumped by water purveyors and 8,795 acre feet by other substantial users.

Section 5 - During 1989-90, 46,806 acre feet of water were imported and distributed in the Santa Margarita River Watershed by seven water purveyors. Net exports, including wastewater, were 2,851 acre feet. Imports for 1991 are anticipated to be reduced by approximately 20 percent because of drought conditions throughout the State of California.

Section 6 - Water rights during the 1950's and 1960's consisted primarily of riparian and overlying rights. More recently, water purveyors in the Watershed have begun exercising groundwater appropriative rights. Appropriative surface water rights on file with the State Water Resources Control Board amount to 906,892 gallons per day of direct diversion rights and 44,315.5 acre feet of active storage rights.

Section 7 - Total imported supplies plus local production totaled 96,019 acre feet of which 48,192 acre feet were used for agriculture, 4,587 acre feet were used for commercial purposes, 29,169 acre feet were used for domestic purposes, 902 acre feet were discharged to Murrieta Creek, 2,890 acre feet of fresh water were exported and 10,279 acre feet were unaccounted for. Unaccounted for water is the result of many factors including errors in measurement, differences between periods of use and periods of production, losses from conveyance lines and unmeasured uses.

Section 8 - Unauthorized water use issues involve storage of surface water without an appropriative water right.

Section 9 - Threats to water supply include high nitrate levels in Rainbow Creek and potential overdraft conditions and salt balance issues in the upper Watershed.

Section 10 - Water quality data collected by organizations in the Watershed for 1988-89 and 1989-90 are presented in Appendix D.

Section 11 - Projected time requirements to provide for the primary Watermaster tasks are presented for the next five water years.

Section 12 - A Watermaster Office budget of $196,221 is proposed for the 1991-92 Water Year.

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. The decision of the Appeals Court was entered on December 1, 1965, and the 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 instructions and orders of the Court. The March, 1989, Order also described the Watermaster's Powers and Duties as well as procedures for funding and operating the Watermaster's Office.

2.2 Authority

Section II of the Order for the Appointment of a Watermaster 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 this office by others.

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 17 stations which are listed with their periods of record on Table 3.1. Measurements at a number of these stations have been discontinued and measurements at others are just being initiated so that measurements were available from 12 stations during Water Year 1989-90.

Provisional monthly flows for these stations are shown on Table 3.2. Of these stations, only the five stations shown below have long periods of record. Total flow for Water Years 1988-89 and 1989-90 at these stations, together with the average discharge for the station for the period of record through Water Year 1989, are listed below:

	TOTAL FLOW		AVERAGE FLOW
	1988-89 Acre Feet	1989-90 Acre Feet	Through 1989 Acre Feet
Temecula Creek Near Aguanga	1,134	1,113	4,920 (1957-89)
Murrieta Creek At Temecula	1,300	1,850	7,820 (1924-89)
DeLuz Creek Near Fallbrook	N/A	148	3,915 (1951-77) Except 1968
Santa Margarita River Near Temecula	1,790	3,094	10,650 (1949-89) 20,420 (1924-48)
Santa Margarita River Near Ysidora	3,326	3,340	23,110 (1923-89)

Comparisons of flows indicate that 1989-90 was considerably drier than normal. At the four foregoing stations with recent long records, flows ranged from 14 to 29 percent of the long-term average. On DeLuz Creek flows were only 4 percent of the 1951-1977 average.

Monthly flows shown in Table 3.2 consist primarily of naturally occurring surface runoff except for flows downstream of Murrieta Creek. Flows at those stations include water discharged by Rancho California Water District into Murrieta Creek just

TABLE 3.1

SANTA MARGARITA RIVER WATERSHED STREAM GAGING STATIONS

STATION NAME	STATION NO.	AREA SQ. MILES	RECORDED BY	PERIOD OF RECORD
Temecula Creek Near Aguanga	11042400	131	USGS	8/57 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Wilson Creek Above Vail Lake	11042490	122	USGS	10/89 X
Temecula Creek At Vail Dam	11042520	320	USGS	2/23 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX 10/77
Vail Lake at Temecula (Reservoir Storage)	11042510	320	USGS	10/60 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Pechanga Creek Near Temecula	11042631	14	USGS	10/87 XXX
Warm Springs Creek Near Murrieta	11042800	55	USGS	10/87 XXX
Santa Gertrudis Creek Near Temecula	11042900	93	USGS	10/87 XXX
Murrieta Creek At Temecula	11043000	222	USGS	10/25 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Santa Margarita River Near Temecula	11044000	588	USGS	2/23 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Rainbow Creek Near Fallbrook	11044250	10.3	USGS	9/89 X
Sandia Creek Near Fallbrook	11044350	21.4	USGS	9/89 X
Santa Margarita River Near Fallbrook	11044300	644	USGS	10/24 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX 80 9/89 X
Santa Margarita River Tributary Near Fallbrook	11044600	0.52	USGS	10/61 XXXX 9/65
DeLuz Creek Near Fallbrook	11044900	47.5	USGS/NRO	2/51 XXXXXXXXXXXXXXXX 67 68 XXXXXXXXXX 77 9/89 X
Santa Margarita River Near DeLuz Station	11045000	705	USGS	10/24 XX 9/26
Fallbrook Creek Near Lake O'Neill	NA	---	USGS/NRO	68 XXXXXXXXXXXXXXXXXXXXXXX
Santa Margarita River At Ysidora	11046000	723	USGS	3/23 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
			WATER YEAR ENDING	1920 1930 1940 1950 1960 1970 1980 1990

TABLE 3.2

SANTA MARGARITA RIVER WATERSHED
MEASURED SURFACE WATER FLOW 1989-90
Quantities in Acre Feet

GAGING STATION	DRAINAGE AREA SQ. MILES	MONTH OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	1989-90 WATER YEAR TOTAL	ANNUAL AVERAGE THRU 1989	YEARS OF RECORD
Temecula Creek Near Aguanga	131	55	72	84	153	328	131	103	87	39	18	27	16	1,113	4,920	32
Wilson Creek Above Vail Lake	122	N/R	N/R	N/R	N/R	0	0	0	0	0	0	0	0	0	N/A	1
Pechanga Creek Near Temecula	13.8	0	0	0	2	1	0	0	0	0	0	0	0	3	N/A	2
Warm Springs Creek Near Murrieta	55.4	0	0	0	34	31	0	7	4	0	0	0	0	76	N/A	2
Santa Gertrudis Creek Near Temecula	92.8	t	0	0	3	t	0	1	0	0	0	0	0	4	N/A	2
Murrieta Creek At Temecula	222	172	0	0	357	497	6	102	191	169	83	100	173	1,850	7,820	65
Santa Margarita River Near Temecula	588	273	30	31	599	966	63	165	286	223	109	131	218	3,094	10,650 20,420	41 (1949-89) 25 (1924-48)
Rainbow Creek Near Fallbrook	10.3	N/R	41	56	158	120	83	88	86	91	56	25	31	835	N/A	1
Sandia Creek Near Fallbrook	21.4	67	87	116	244	456	263	293	178	124	33	31	26	1,918	N/A	1
Santa Margarita River Near Fallbrook	644	413	149	102	992	1,260	154	268	386	346	130	61	73	4,334	N/A	1
DeLuz Creek Near Fallbrook	47.5	0	0	0	0	50	75	23	0	0	0	0	0	148	3,915	25 (1951-77) (Except 1968)
Santa Margarita River At Ysidora	723	0	291	1	443	946	357	525	346	380	51	0	0	3,340	23,110	66

t = trace

N/R - No Record

N/A - Not Applicable

upstream from the gaging station. These discharges are pursuant to Section Eleventh of the 1940 Stipulated Judgment which requires maintenance of a flow of three cubic feet per second (cfs) at the Santa Margarita River station near Temecula between May 1 and October 31 of each year. Provisional discharges at that station for the months of May through October are shown on the following tabulation:

	MONTHLY DISCHARGE		
	Acre Feet	No. Days	Average Daily cfs
October 1989	273	31	4.4
May 1990	286	31	4.7
June 1990	223	30	3.7
July 1990	109	31	1.8
August 1990	131	31	2.1
September 1990	218	30	3.8
TOTAL	1,240	184	3.4

Release of 902 acre feet by Rancho California Water District constituted most of the measured 1,240 acre feet of water flowing past the Santa Margarita River gage during the six-month period.

3.2 Surface Water Diversions

During 1989-90 surface water diversions were made to storage and for irrigation use as shown in Table 3.3.

In addition to reported diversions, estimated consumptive use, losses and returns are also shown in Table 3.3 for irrigation diversions.

3.3 Water Storage

Major water storage facilities in the Santa Margarita River Watershed are listed on Table 3.4, together with the water in storage on September 30, 1989, and September 30, 1990. Total Santa Margarita system water in storage totaled 18,414 acre feet, compared to 19,324 acre feet last year. Imported water in storage in Lake Skinner operated by Metropolitan Water District of Southern California (MWD) is also shown. Imported water is not under Court jurisdiction.

TABLE 3.3

SANTA MARGARITA RIVER WATERSHED
SURFACE WATER DIVERSIONS 1989-90
Quantities in Acre Feet

Diversions to Storage

	Diversions	Evaporation	Releases
Diversions to Storage			
Vail Lake	1,310	3,158	0
Lake O'Neill	867	380	900 [1]
Camp Pendleton Direct Recharge	2,755		

Diversions to Irrigation

	Surface Diversions	Consumptive Use [2]	Losses [3]	Returns [4]
Cal June, Inc.	100	67	10	23
Cottle/Strange	250	169	25	56
Agri-Empire, Inc.				
Wilson Creek	183	124	18	41
Chihuahua Creek	80	54	8	18
Twin Creeks Ranch	68	46	7	15
Sage Ranch Nursery	30	20	3	7
Margarita Land and Development Co.	52	35	5	12
TOTAL	763	515	76	172

[1] Release made in November, 1989; diversion to storage made in 1990
[2] Consumptive use equals 75% of diversions less losses
[3] Losses equal 10% of diversion
[4] Returns equal 25% of diversion less losses

TABLE 3.4

SANTA MARGARITA RIVER WATERSHED
WATER IN STORAGE
Quantities in Acre Feet

Santa Margarita River Storage	Total Capacity	Water in Storage 9/30/89	Water in Storage 9/30/90
Dunn Ranch Dam	90	0	0
Chihuahua Creek Reservoirs			
Upper	190	0	0
Middle	8	0	0
Lower	10	0	0
Vail Lake	49,370	18,424	17,454
Lake O'Neill	1,200	900	960 (Est)
Subtotal	50,868	19,324	18,414
Imported Water Storage			
Lake Skinner	44,000	41,565	42,370
TOTAL STORAGE	94,868	60,889	60,784

SECTION 4 - SUBSURFACE WATER AVAILABILITY

4.1 General

Much of the water from the Santa Margarita River system is obtained by pumping subsurface water. The Court generally has identified two basic types of subsurface water in its interlocutory judgments. One type is vagrant, local, percolating waters which 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. When such wells are widely spaced there may be sufficient water for individual domestic uses.

The other subsurface waters are those which were found by the Court to add to, contribute to and support the Santa Margarita River and/or its tributaries. The use of such waters is under the continuing jurisdiction of the Court. Aquifers containing such waters include alluvial deposits located along streams as well as older alluvial deposits. Use of such water is reported in this report.

4.2 Extractions

Production from subsurface sources is listed on Table 4.1 by hydrologic area along with estimated consumptive use and return flows.

Production by purveyors totaled 39,655 acre feet in 1989-90. Monthly quantities are shown in Appendix A and annual production for water years between 1966 and 1990 is shown in Appendix B.

Extractions by other substantial users are based on the irrigated acreage and reported in Appendix C. These groundwater extractions were 8,795 acre feet in 1989-90. Of the subsurface extractions, 75 percent is estimated to have been consumed and 25 percent to have been return flow. Surface diversions are treated similarly in Table 4.1 except that 10 percent is estimated to have been lost during delivery of the water. Return flow is that portion of the total production which is not consumed.

The foregoing percentages were applied to all users except Camp Pendleton, where consumptive use was estimated to have been 75 percent of the portion of production which is not exported or recharged as wastewater. In addition, 5 percent of the wastewater recharged was estimated to have been lost as consumptive use.

TABLE 4.1

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

HYDROLOGIC AREA	WATER PURVEYOR PRODUCTION ACRE FEET	OTHER IRRIGATED ACRES	IRRIGATION PRODUCTION ACRE FEET	TOTAL GROUNDWATER PRODUCTION ACRE FEET	SURFACE WATER DIVERSIONS ACRE FEET	TOTAL PRODUCTION ACRE FEET	ESTIMATED CONSUMPTIVE USE ACRE FEET 2/	ESTIMATED RETURN FLOW ACRE FEET
1. Wilson Creek Above Aguanga GWA Includes Anza Valley	284 (Anza MWC, Lk Rvside)	2,247 1/	3,004	3,288	0	3,288	2,466	822
2. Temecula Creek Above Aguanga GWA	24 (Butterfield Oaks MHP)	524	1,500	1,524	80	1,604	1,197	407
3. Aguanga GWA	51 (Thousand Trails)	536	1,127	1,178	501	1,679	1,222	457
4. Upper Murrieta Creek	-----	-----	-----	-----	-----	-----	-----	-----
5. Lower Murrieta Creek	-----	865	76	76	30	106	79	27
6. Temecula-Murrieta GWA	34,198 (RCWD,MCWD,EMWD)	1,215	2,296	36,494	0	36,494	27,370	9,124
7. Santa Margarita River Below Gorge								
DeLuz Creek	15 (DHMWD)	206	653	668	0	668	501	167
Sandia Creek	-----	126	100	100	100	200	143	57
Rainbow Creek	-----	-----	-----	0	0	-----	-----	-----
Santa Margarita River	5,083 (USMC)	20	39	5,122	52	5,174	888	2,947
TOTAL	39,655	5,739	8,795	48,450	763	49,213	33,866	13,908

1/ Includes lands overlying deep aquifer in Anza Valley

2/ 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 1439 acre feet is excluded and return flows include measured wastewater returns

4.3 Subsurface Storage

Quantification of the volumes of water in subsurface storage requires definition of four factors which include:

1. Surface area
2. Depth of subsurface source
3. Specific yield of aquifer
4. Depth of water.

Subsurface sources have previously been identified in the Court documents. They have also been classified by the Department of Water Resources. In Table 4.2 subsurface storage areas are listed under Court headings and categorized using the same hydrologic subunits (HSU's) and subareas (HSA's) used by the State. The surface areas of the subsurface sources within each HSA were measured from Court Exhibits which show the surface exposure of younger alluvium (Qyal) and older alluvium (Qtoal). These areas are shown on Table 4.2 and compared with previous results by the Department of Water Resources in its Bulletin No. 57 published in 1956, and by The Joint Administration Committee of the Santa Margarita and San Luis Rey Watershed Planning Agency in 1973.

The depths of subsurface sources are generally determined by using drillers' well logs. About 8,500 drillers' logs have been collected from the State Department of Water Resources, Riverside County Flood Control District and San Diego County. These logs are being used to define the depth of younger and older alluvium in each subsurface source.

After the surface areas and depths are defined, the total capacity of the subsurface source can be computed by multiplying the total volume by the specific yield. Specific yields may be estimated from data developed in well pumping tests, however few such tests have been conducted in the Santa Margarita River Watershed. The only tests in recent years are those by the Rancho California Water District. In the absence of pump tests, specific yields can be estimated from drillers' logs, and this approach will be used in areas where no well tests are available.

The last component which needs to be identified to determine the quantity of water in subsurface storage is the depth of water. Well water level measurements are readily available within major purveyors' service areas such as Rancho California, Camp Pendleton, and Murrieta County Water District. However, outside major service areas, groundwater level measurements are sparse. Therefore, there is a need to develop a system of water level measurements in areas outside these major service areas.

TABLE 4.2

SANTA MARGARITA RIVER WATERSHED
SURFACE AREAS OF SUBSURFACE STORAGE AREAS

HYDROLOGIC AREA	HYDROLOGIC SUB AREA	DWR 1/ 1956	JAC 2/ 1973	WATERMASTER OFFICE QYAL	QTOAL	TOTAL	
1. Wilson Creek above Aguanga GWA							
a. Burnt Valley	2.74	---	---	277	313	590	
b. Anza Valley	2.73	5,700	9,600	7,286	4,131	11,417	
c. Upper Cahuilla Valley	2.72	710	1,100	959	400	1,359	
d. Lower Cahuilla Valley	2.71	1,300	1,200	1,643	420	2,063	
e. Reed Valley	2.63	---	---	686	172	858	
f. Lewis Valley	2.62	---	---	730	376	1,106	
g. Subtotal		7,710	11,900	11,581	5,812	17,393	
2. Temecula Creek above Aguanga GWA							
a. Chihuahua Valley	2.94			938	157	1,095	
b. Dodge Valley	2.93	1,000	---	908	0	908	
c. Oak Grove Valley	2.92	2,000	2,500	2,251	0	2,251	
d. Lower Culp	2.91	610	1,100	692	296	988	
e. Subtotal		3,610	3,600	4,789	453	5,242	
3. Aguanga GWA (u/s Vail Dam)							
a. Tule Creek /Aguanga (outside GWA)	2.84 P			694	25	719	
b. Tule Creek/Aguanga (inside GWA)	2.84 P	1,200	2,000	1,537	1,837	3,374	
c. Radec	2.83	---	---	169	635	804	
d. Devils Hole	2.82		---	94	0	94	
e. Vail (inside GWA)	2.81 P	310	---	1,444	4,794	6,238	(Excludes Vail Lake)
f. Vail (outside GWA)	2.81 P		---	128	618	746	
g. Lancaster Valley (inside GWA)	2.61 P	940	8,000	1,161	1,763	2,924	
h. Lancaster Valley (outside GWA)	2.61 P			74	292	366	
i. Subtotal		2,450	10,000	5,301	9,964	15,265	
4. Upper Murrieta							
a. Diamond	2.36	2,600	2,800	2,483	0	2,483	
b. Domenigoni	2.35	3,000	3,300	3,061	4	3,065	
c. Lower Domenigoni	2.34	---	---	719	7	726	
d. French (outside GWA)	2.33 P	3,000	3,500	210	669	879	
e. French (inside GWA)	2.33 P	---	---	277	1,404	1,681	
f. Murrieta (outside GWA)	2.32 P	---	---	513	1,230	1,743	
g. Wildomar (outside GWA)	2.31 P	590	---	7	1,124	1,131	
h. Subtotal		9,190	9,600	7,270	4,438	11,708	
5. Lower Murrieta (u/s GWA)							
a. Tucalota (above Sage)	2.44	260	---	323	0	323	
b. Tucalota (above Lk Skinner)	2.43	1,700	---	230	0	230	
c. Bachelor Mtn (below Lk Skinner)	2.41	---	---	272	0	272	(Excludes Lake Skinner)
d. Subtotal		1,960	2,800	825	0	825	
6. Murrieta/Temecula GWA							
a. Pechanga (inside GWA)	2.52 P	2,200	---	2,259	3,375	5,634	
b. Pechanga (outside GWA)	2.52 P			28	802	830	
c. Pauba (inside GWA)	2.51 P	3,000	---	4,071	8,257	12,328	
d. Pauba (outside GWA)	2.51 P			245	395	640	
e. Santa Gertrudis (inside GWA)	2.42 P	580	---	1,744	8,483	10,227	
f. Santa Gertrudis (outside GWA)	2.42 P	---	---	78	1,253	1,331	
g. Murrieta (inside GWA)	2.32 P	4,400	---	5,264	11,043	16,307	
h. Wildomar (inside GWA)	2.31 P		---	803	2,652	3,455	
i. Subtotal		10,180	60,000	14,492	36,260	50,752	
7. DeLuz							
a. Vallecitos (Rainbow)	2.23	450	---	528	0	528	
b. Gavilan (Sandia inside GWA)	2.22 P			7	0	7	
c. Gavilan (Sandia)	2.22 P		---	564	0	564	
d. DeLuz Creek	2.21	---	---	956	0	956	
e. Subtotal		450		2,055	0	2,055	
8. Ysidora							
a. Upper	2.13	1,100	---	1,201	0	1,201	
b. Chappo	2.12	2,240	---	2,431	0	2,431	
c. Ysidora	2.11	860	---	1,246	0	1,246	
d. Subtotal		4,200	4,030	4,878	0	4,878	
9. TOTAL		39,750	101,930	51,191	56,927	108,118	

P Partial
1/ State Department of Water Resources Bulletin 57, "Santa Margarita River Investigation," June, 1956
2/ Joint Administration Committee of the SM & SLR WPA, "Comprehensive Water Quality Management Study," Vol 1, Dec, 1973

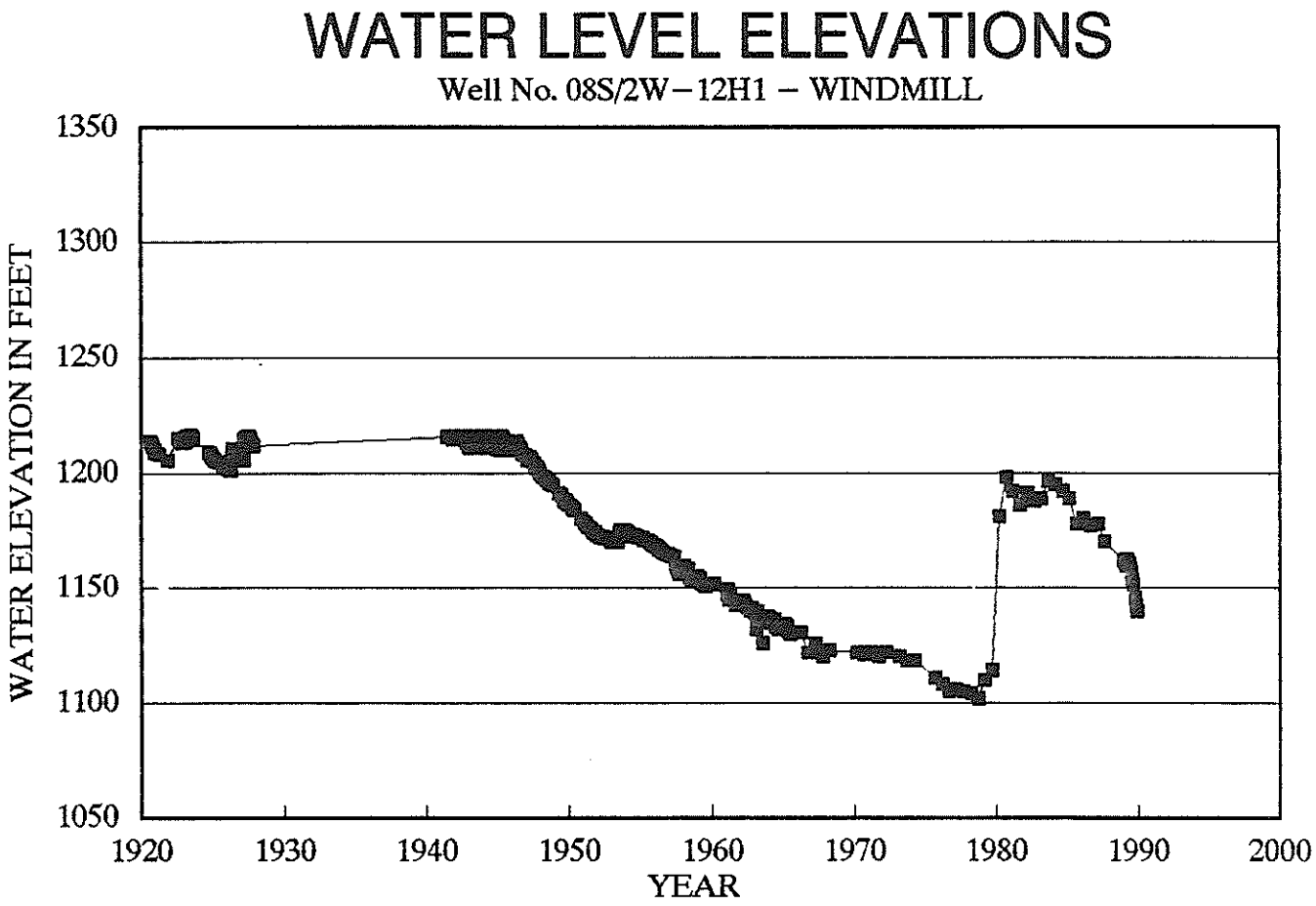
Historic water levels from four wells are shown on Figures 4.1, 4.2, 4.3 and 4.4. Figure 4.1 shows water levels in Well No. 8S/2W-12H1 (Windmill Well) located in the Rancho California Water District Service Area downstream from Vail Lake. Note the extended drawdown from 1945 to 1978 and the major recovery during the wet years in 1978-1980.

Figure 4.2 shows water levels at Well No. 11S/5W-2E1 at Camp Pendleton. Note the lowered water levels in the late 1940's which led to seawater intrusion of the Ysidora sub-basin. The seawater intrusion has been prevented since then by maintaining water levels above sea level.

Figure 4.3 shows water levels from Well No. 7S/3W-20C9 (Holiday Well) in the Murrieta County Water District Service Area. Overall, this well's levels show no signs of long-term overdraft.

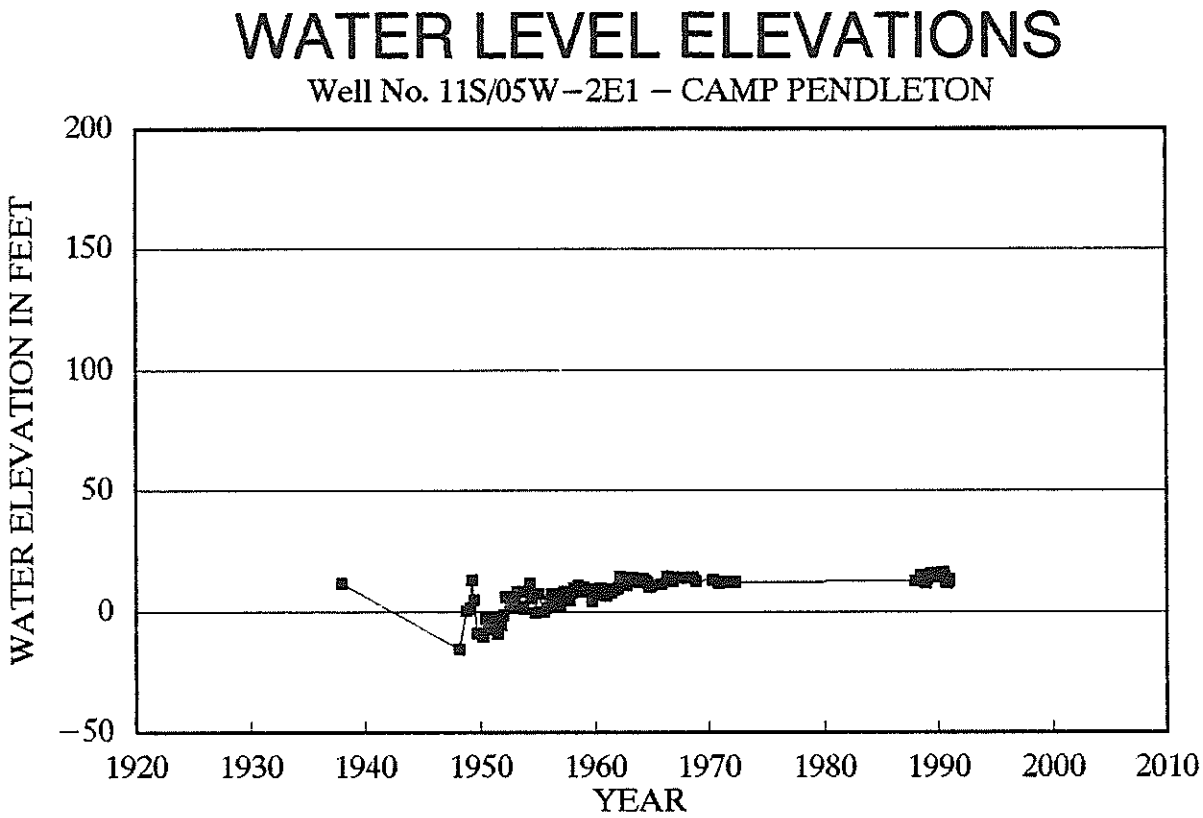
Figure 4.4 shows water levels for Well No. 7S/3E-21G1, Anza Mutual Water Company's Well No. 1 located in the Anza Valley. Note there is little overall trend in water levels since 1973.

FIGURE 4.1



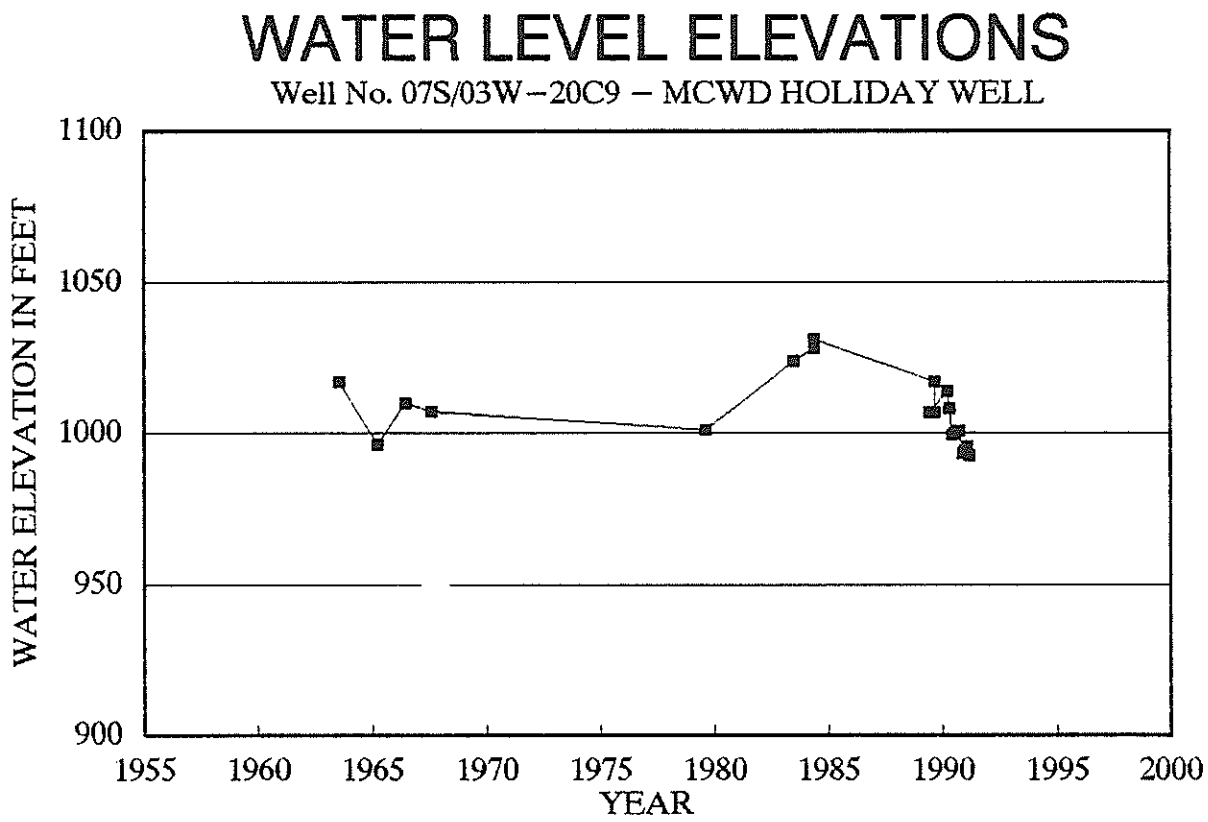
Ground El. 1216 Ft. Depth 515 Ft. Drilled in Alluvium Ref: DWR Bul. 91–20 (1920–67) RCWD Master Plan (1970–83) LH Rpt (1983–87); RCWD Reports 1989

FIGURE 4.2



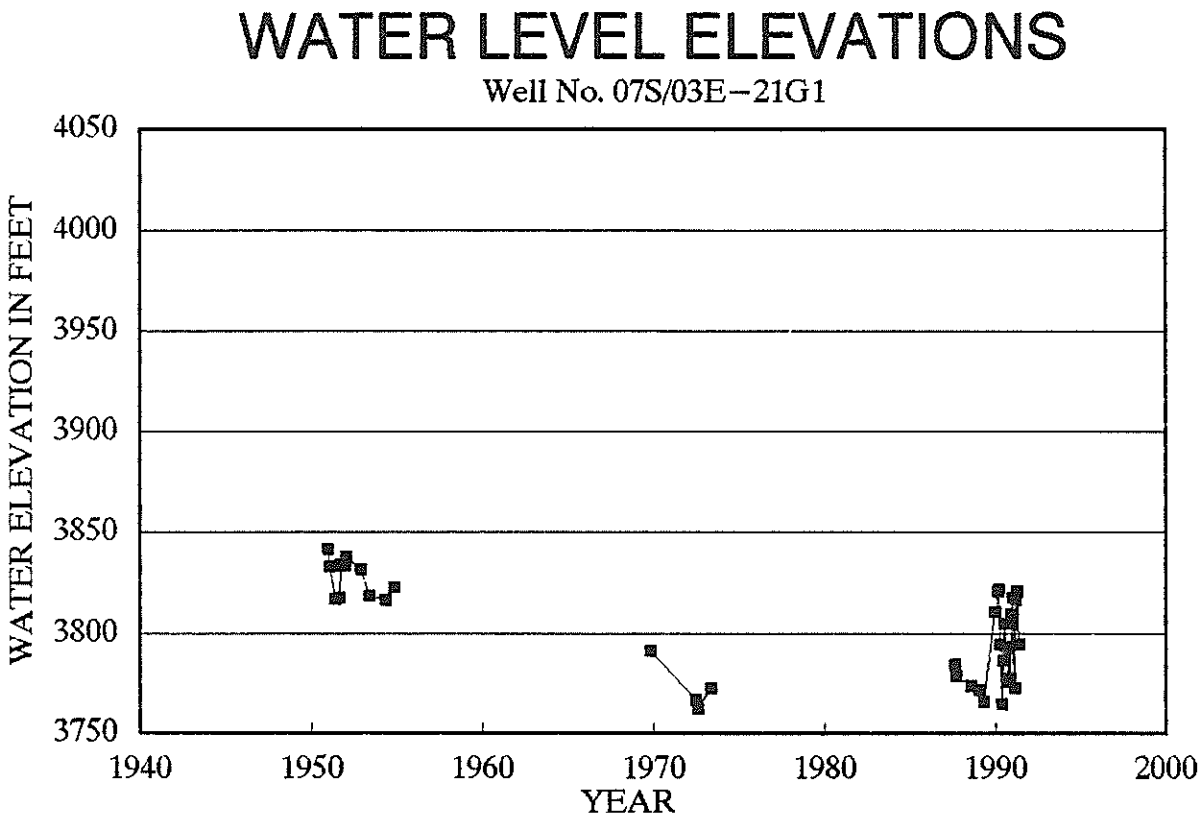
Ground El. 20.06 Ft Depth 83.3 Ft Perf 112-137 Ft. Drilled in Alluvium
Camp Pendleton Records (1937-1972) (1988-1990 dates estimated)

FIGURE 4.3



Ground El. 1080 Ft Depth 307 Ft Perf 60 – 307 Ft
Murrieta County Water District Records

FIGURE 4.4



Ground El. 3863 Ft Depth 260 Ft Perf 20--260 Ft Drilled in Old Alluvium
Anza Mutual Water Co. Well No. 1 (1987-1991); DWR Bulletin 91-22 (1950-1973)

SECTION 5 - IMPORTS/EXPORTS

5.1 General

Although imported water is outside the jurisdiction of the Court, Court Orders do require that data be collected to determine the quantities of imported water used in the Watershed. Water is imported into the Santa Margarita River Watershed by Metropolitan Water District of Southern California (MWD) for sale to local districts. MWD obtains its water from the State Water Project (SWP) and the Colorado River. Both the State Water Project and the Colorado River system have major storage reservoirs to provide long-term carryover storage. The quantities of water in storage in the major reservoirs in each system is shown on Table 5.1 It may be seen that water in storage in major reservoirs in the SWP decreased from 2.9 million acre feet on September 30, 1989, to 1.9 million acre feet on September 30, 1990. Storage on September 30, 1990, corresponds to 35 percent of the total SWP storage capacity.

Similarly, water in storage in the Colorado River system decreased from 48.1 million acre feet on September 30, 1989, to 43.5 million acre feet on September 30, 1990. On September 30, 1990, those reservoirs contained 68 percent of their total capacity.

Projections of water availability on the State Water Project for the coming year are prepared by the State Department of Water Resources on a monthly basis from February through May. The May 1, 1991, report indicates that projected April through July runoff from rivers in the State ranges from 50 to 70 percent of average. Thus 1991 is categorized as a critical year. The SWP has indicated that none of the requests for agricultural entitlement water will be delivered this year and only 20 percent of the municipal and industrial water requests will be delivered.

The May report also noted that storage levels in the Colorado River Project are about 100 percent of average. Thus with the Secretary of Interior's approval, water users in southern California are obtaining more water than normal from the Colorado River.

The following districts imported water directly or indirectly from MWD into the Santa Margarita River Watershed during 1989-90:

DeLuz Heights Municipal Water District
Eastern Municipal Water District
Elsinore Valley Municipal Water District
Fallbrook Public Utility District
Rainbow Municipal Water District
Rancho California Water District
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

	Total Capacity	Water in Storage 9/30/89	9/30/90
Oroville	3,540	2,150	1,163
San Luis (State Share)	1,068	216	100
Pyramid	171	160	163
Castaic	324	184	268
Silverwood	75	62	67
Perris	132	104	116
Total	5,310	2,876	1,877
Percent of Capacity		54%	35%

MAJOR COLORADO RIVER RESERVOIRS

	Total Capacity	Water in Storage 9/30/89	9/30/90
Flaming Gorge	3,789	2,960	3,082
Blue Mesa	941	585	618
Navajo	1,709	1,310	1,361
Powell	27,000	19,805	16,252
Mead	28,537	21,528	20,144
Mohave	1,818	1,388	1,488
Havasu	648	563	562
Total	64,442	48,139	43,507
Percent of Capacity		75%	68%

In addition to MWD imports, 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 but delivers water to a portion of its service area which 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 which is used in the San Luis Rey River Watershed to the south or in the Las Flores Creek Watershed to the north. Wastewater from the Fallbrook area is exported by the Fallbrook Sanitary District and wastewater in the Elsinore Valley MWD is exported by that district. Some of the water exported at Camp Pendleton is returned to the Watershed as wastewater.

The following paragraphs of this report describe imports during the 1966-1990 period and during 1989-90. There is also discussion of MWD's Lake Skinner operations which are located on Tucalota Creek.

5.2 Water Years 1966-1990

Water quantities imported into the Santa Margarita River Watershed during Water Years 1966-1990 are shown on Table 5.2. In general these quantities are measured, however imports into the Santa Margarita River Watershed were estimated for Eastern MWD, Elsinore Valley MWD, Fallbrook PUD and Rainbow MWD because portions of those districts' service areas are outside the Santa Margarita and meters are not available to allow a direct measurement of water imports into the Watershed.

Exports over the 1966-1990 period are also shown on Table 5.2. These include estimated water exports on Camp Pendleton less estimated wastewater returns, as well as an estimate of exports by the Fallbrook Sanitary District after 1983, and Elsinore Valley MWD after 1986. Exports do not include water which naturally flows from the Santa Margarita River into the Pacific Ocean.

TABLE 5.2

SANTA MARGARITA RIVER WATERSHED
IMPORTS/EXPORTS 1966-1990
Quantities in Acre Feet

	IMPORTS								EXPORTS					
									CAMP PENDLETON			ELSINORE		
WATER YEAR	DELUZ HEIGHTS MWD	EASTERN MWD	ELSINORE VALLEY MWD	FALLBROOK PUD	RAINBOW MWD	RANCHO CAL WD	WESTERN MWD 1/	TOTAL IMPORTS	EXPORTS	IMPORTS	NET EXPORT	VALLEY MWD	FALLBROOK SD	TOTAL EXPORTS
1966	0	1,604	N/R	3,404	1,308	0	24	6,339	3,299	974	2,325	0	0	2,325
1967	0	1,630	N/R	2,857	1,095	0	20	5,603	3,231	1,243	1,989	0	0	1,989
1968	0	1,464	N/R	3,427	1,377	0	27	6,295	3,427	1,214	2,213	0	0	2,213
1969	0	1,741	N/R	2,891	1,253	0	25	5,909	3,350	1,170	2,181	0	0	2,181
1970	0	1,417	N/R	3,630	1,689	0	31	6,766	3,829	1,113	2,716	0	0	2,716
1971	0	1,383	N/R	3,407	1,650	0	34	6,475	3,484	1,090	2,395	0	0	2,395
1972	0	1,470	N/R	3,916	2,037	0	34	7,457	3,479	1,168	2,311	0	0	2,311
1973	38	1,533	N/R	3,172	1,616	0	30	6,389	3,480	1,187	2,292	0	0	2,292
1974	134	1,601	N/R	3,833	2,049	0	36	7,654	3,468	1,140	2,327	0	0	2,327
1975	213	1,969	N/R	3,384	1,247	0	34	6,847	3,034	1,530	1,504	0	0	1,504
1976	431	2,493	N/R	4,196	2,239	0	35	9,394	3,555	1,497	2,057	0	0	2,057
1977	587	2,947	N/R	4,625	2,343	1,983	24	12,510	3,130	1,416	1,714	0	0	1,714
1978	651	2,551	569	4,551	2,188	5,397	26	15,933	3,006	1,283	1,724	0	0	1,724
1979	961	1,894	712	4,762	2,348	6,940	24	17,640	4,692	1,427	3,265	0	0	3,265
1980	1,191	1,192	696	5,213	2,489	10,128	25	20,934	3,587	1,405	2,182	0	0	2,182
1981	1,994	716	798	6,549	3,153	15,442	34	28,687	3,827	1,249	2,579	0	0	2,579
1982	1,805	1,112	678	5,274	2,460	13,375	34	24,738	3,696	1,273	2,424	0	0	2,424
1983	1,969	1,211	658	4,751	2,190	5,752	26	16,557	2,935	1,242	1,693	0	1029	2,722
1984	2,609	699	816	5,897	3,068	6,716	26	19,831	3,178	1,120	2,058	0	1058	3,116
1985	2,358	679	808	5,473	3,410	7,158	27	19,913	3,320	1,200	2,120	0	1086	3,206
1986	2,794	760	882	5,791	2,945	11,174	34	24,380	3,273	981	2,293	0	1112	3,405
1987	2,986	1,155	938	5,670	3,390	7,564	36	21,739	3,379	1,799	1,581	4	1155	2,740
1988	2,559	2,047	1,032	5,474	2,985	17,854	36	31,988	4,075	1,872	2,203	55	1180	3,438
1989	3,007	3,746	1,341	6,060	3,003	22,720	24	39,901	3,347	1,446	1,901	74	1,204 *	3,179
1990	3,745	8,578	2,255	6,358	3,818	22,030	22	46,806	2,890	1,451	1,439	114	1,298	2,851

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

NR - Not Reported

* - Modified from 1988-89 Report

5.3 Water Year 1989-90

Water quantities imported into and exported from the Santa Margarita River Watershed for months during Water Year 1989-90 are listed on Table 5.3.

5.4 Lake Skinner

Lake Skinner is a 44,000 acre foot reservoir constructed by MWD on Tucalota 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.

It was recognized that the construction and operation of Lake Skinner would affect surface and subsurface flows on Tucalota Creek; so, on November 12, 1974, a Memorandum of Understanding and Agreement on Operation of Lake Skinner (MOU) was adopted. That MOU was approved by the Court on January 16, 1975.

The MOU 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 which requires that MWD release water from Lake Skinner into Tucalota Creek if groundwater levels in Well AV-28 fall below a depth of 22.76 feet.

In 1989-90, MWD continued the release of water into Tucalota Creek begun in August, 1989. These releases were terminated by the Watermaster on March 29, 1990, when groundwater levels downstream of Lake Skinner rose sufficiently to create three pools of water in Tucalota Creek about 1,000 feet upstream from a rock constriction.

MWD released a total of 293 acre feet between August, 1989, and March 29, 1990. Of that quantity, 111 acre feet were released in Water Year 1988-89 and 182 acre feet were released in Water Year 1989-90. MWD resumed releases on August 2, 1990. These releases continued until September 21, 1990, and totaled 51.2 acre feet. These releases were made to raise the water table downstream of Lake Skinner so as to avoid having to release water during scheduled construction activities downstream of Lake Skinner.

TABLE 5.3

SANTA MARGARITA RIVER WATERSHED
IMPORTS/EXPORTS 1989-90
Quantities in Acre Feet

	IMPORTS								EXPORTS					
	DELUZ	ELSINORE				RANCHO			CAMP PENDLETON			ELSINORE		
YEAR MONTH	HEIGHTS MWD	EASTERN MWD	VALLEY MWD	FALLBROOK PUD	RAINBOW MWD	CAL WD	WESTERN MWD 1/	TOTAL IMPORTS	EXPORTS	IMPORTS	NET EXPORT	VALLEY MWD	FALLBROOK SD	TOTAL EXPORTS
1989														
OCT	288	454	148	591	421	1,698	2	3,602	289	145	144	9	111	264
NOV	293	370	148	543	383	934	1	2,672	233	146	87	8	104	199
DEC	301	278	115	540	246	1,395	2	2,877	232	134	98	9	109	216
1990														
JAN	118	76	117	259	196	286	1	1,053	204	148	56	9	107	172
FEB	76	4[illegible]	111	227	106	213	1	782	167	106	61	9	95	165
MAR	172	13[illegible]	111	385	219	658	1	1,676	216	106	110	[illegible]0	104	224
APR	213	220	165	352	213	696	1	1,860	201	107	94	9	105	208
MAY	338	727	166	595	359	1,730	2	3,917	239	113	126	9	125	260
JUNE	353	855	281	579	315	2,404	2	4,789	241	118	123	12	120	255
JULY	546	1,556	282	707	463	4,004	3	7,561	300	115	185	10	108	303
AUG	525	2,036	305	846	430	4,158	3	8,303	329	110	219	10	112	341
SEPT	522	1,828	306	734	467	3,854	3	7,714	239	103	136	10	98	244
TOTAL	3,745	8,578	2,255	6,358	3,818	22,030	22	46,806	2,890	1,451	1,439	114	1,298	2,851

Camp Pendleton Imports are Estimated

The MOU also provides that local surface inflow which enters Lake Skinner will be released into Tucalota Creek. The MOU provides in its 1980 modification that local surface inflow is to be determined by using the hydrologic equation for Lake Skinner which is specified in the MOU. However, the local inflow is small compared to the large quantities of imported water inflow and outflow from Lake Skinner. The error of measurement for these large flows is larger than the local inflow in many instances. Accordingly, MWD measures the flow in Tucalota Creek and Rawson Creek during storms and uses those estimates to reflect local inflow to Lake Skinner. Since 1986, an unmeasured bypass pipeline has been used with increasing frequency in the MWD operations. Use of this pipeline reduces the accuracy of the calculated flows using the hydrologic equation. The current procedures for estimating local inflow into Lake Skinner are under review.

In addition to releases of water mandated by the MOU, MWD also makes releases of water for maintenance or operational purposes from time to time. MWD released 17.4 acre feet from Pipeline No. 2 into various creeks within the Watershed during a shutdown of the pipeline between March 12 - 14, 1990.

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, Interlocutory Judgments described water rights in the Watershed as primarily riparian rights and overlying rights. Riparian rights belong to those parcels adjacent to streams in the Watershed or overlying younger alluvium deposits generally along the stream channels. Overlying rights have been 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 system was found to be subject to the continuing jurisdiction of the Court. Parcels in this category were identified by the Court and listed in Interlocutory Judgments. In general, these parcels overlie younger or older alluvium deposits.

The other category of overlying use is parcels where subsurface flows do not add to, contribute to or support the Santa Margarita River 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.

Since the early 1960's there have been substantial changes in water use in the Watershed, especially in the Murrieta-Temecula groundwater area. Except for approving the Memorandum of Understanding and Agreement on Operation of Lake Skinner in January 1975, the Court has not ruled on any substantial water right matters since 1966. Thus, these changes in water use have not been reviewed by the Court.

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. However, in 1966 the Rancho California Water District 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 its exclusive agent for the development and management of their water supply.

Thus, many landowners within the Rancho California Water District are not now exercising their overlying rights. Instead, Rancho California Water District pumps groundwater and uses it throughout the District area under a claimed appropriative ground water right, with the consent of most of the overlying landowners.

A number of other water purveyors, including Murrieta County Water District and Eastern Municipal Water District, also pump under groundwater appropriative rights.

Another change from the early 1960's is the large scale importation of water into the Santa Margarita River Watershed by Rancho California Water District. 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 Los Angeles v. San Fernando, et al on January 26, 1979. This decision in the Superior Court of the State of California for the County of Los Angeles made two major findings with respect to imported water.

The first is 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 which 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 Water District overlies the Murrieta-Temecula groundwater area. Thus a portion of the import supply delivered to the Rancho Division of Rancho California Water District percolates into the underlying aquifers. The first water pumped by Rancho California Water District in the ensuing year constitutes recapture of such return flows.

Imported water is also supplied to the Santa Rosa Division within Rancho California Water District, however only a small part of this diversion overlies the Murrieta-Temecula groundwater area. Thus there is relatively little imported water return flows from imported supplies delivered to the Santa Rosa Division.

Classification of Rancho California Water District supplies into various water right categories is discussed in Section 7.

6.2 Appropriative Surface Water Rights

Another broad category of water rights used in the Watershed is surface water appropriative rights. In general, these rights are licensed by the State Water Resources Control Board (SWRCB).

A list of current permits, licenses and other active rights obtained from the SWRCB is shown on Table 6.1.

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	U. S. Bureau of Reclamation	11/28/47	Santa Margarita River	Sec. 12, 9S, 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	D/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	Richard F. & Rosabel L. Matthews	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

APPLICATIONS

28923	Thousand Trails, Inc.	10/20/86	Temecula Creek	Sec. 35, 8S, 1E	DD-0.6 cfs ST-20 AF	E R	
28930	Agri-Empire, Inc.	10/22/86	Chihuahua Creek	Sec. 1, 9S, 2E Sec. 2, 9S, 2E Sec. 11, 9S, 2E	ST-70 AF*	I	

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	Pern 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; ST - Diversion to Storage; D - Domestic; I - Irrigation; R - Recreation; M - Municipal; E - Fire Protection; S - Stockwatering; H - Fish Culture; Z - Other

* - Storage capacities in existing reservoirs are 172 AF (Sec. 1), 8 AF (Sec. 2) and 10 AF (Sec. 11)

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

	Direct Diversions Gallons Per Day	Storage Acre Feet
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	1,550	-----
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.

In addition to the active storage rights shown in the previous tabulation, the SWRCB also lists 195,000 acre feet in storage rights on the Santa Margarita River held by the U. S. Bureau of Reclamation for the Santa Margarita Project.

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 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 which 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 other rights 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.

SECTION 7 - WATER PRODUCTION AND USE

7.1 General

Water production and use data were obtained from several types of substantial water users including water purveyors, Indian Reservations, mobile home parks and individual irrigation users.

Major water purveyors who reported production and use data for the 1989-90 Water Year are listed as follows:

Anza Mutual Water Company
DeLuz Heights Municipal Water District
Eastern Municipal Water District
Elsinore Valley Municipal Water District
Fallbrook Public Utility District
Lake Riverside Estates
Murrieta County Water District
Rainbow Municipal Water District
Rancho California Water District
U. S. Marine Corps, Camp Pendleton
Western Municipal Water District

Lake Riverside Estates is listed with major water purveyors although it does not deliver water to customers in its area. Instead it produces make-up water for losses in Lake Riverside.

In addition to the above major purveyors, there are a number of smaller water systems in the Watershed. Of these, Butterfield Oaks Mobile Home Park, and Thousand Trails Resorts are substantial users.

There are three Indian Reservations in the Watershed, however only the Cahuilla and Pechanga Reservations use significant quantities of water.

The final category of water users are those private or individual water users in the Watershed who use water primarily for irrigation use.

The data collected for the 1989-90 Water Year are summarized on Table 7.1. Monthly production and use data for major water purveyors are attached to this report as Appendix A. Uses are listed under agricultural, commercial and domestic categories. Similar data for the period 1966-1990 Water Years are summarized in tables presented in Appendix B. Appendix C presents information on substantial users outside of purveyor service areas.

The status of data availability from each of the water users is summarized in the following sections.

TABLE 7.1

SANTA MARGARITA RIVER WATERSHED
WATER PRODUCTION AND USE
Quantities in Acre Feet
1989-90

	PRODUCTION			USE					
	GROUNDWATER	IMPORT	TOTAL	AG	COMM	DOM	LOSS	TOTAL	WATER RIGHT
WATER PURVEYORS									
Anza Mutual Water Company	37	0	37	0	0	33	4	37	Appropriative
DeLuz Heights MWD	15	3,745	3,760	3,200	3	80	477	3,760	Appropriative
Eastern MWD	492	8,578	9,070	1,476	0	7,140	454	9,070	Appropriative
Elsinore Valley MWD	0	2,255	2,255	0	0	2,030	225 2/	2,255	----
Fallbrook PUD	0	6,358	6,358	3,075	301	2,494	488	6,358	----
Lake Riverside Estates	247	0	247	0	247 6/	0	0	247	Appropriative
Murrieta CWD	465	0	465	13	76	266	110	465	Appropriative
Rainbow MWD	0	3,818	3,818	3,003		468	347	3,818	----
Rancho California WD	33,241	22,030	55,271	27,643	3,940	14,916	8,772 1/	55,271	Various
U.S.M.C. - Camp Pendleton	5,083	0	5,083	300	--- 3/	1,674	3,109 2/ 4/	5,083	Appropriative/ Riparian
Western MWD	0	22	22	0	20	0	2 2/	22	----
INDIAN RESERVATIONS									
Cahuilla	909	0	909	909	0	0	0	909	Overlying
Pechanga	N/R	N/R	N/R	N/R	N/R	N/R	N/R	N/R	----
MOBILE HOME PARKS/CAMPGROUNDS									
Butterfield Oaks Mobile Home Park	24	0	24	0	0	22	2 2/	24	Riparian/ Overlying
Thousand Trails Resorts	51	0	51	0	0	46	5 2/	51	Overlying
SUBSTANTIAL USERS	8,649 5/	0	8,649	8,573	0	0	76 7/	8,649	
TOTAL	49,213	46,806	96,019	48,192	4,587	29,169	14,071	96,019	

1/ Includes 902 acre feet released into Murrieta Creek
2/ Assumes 10% loss
3/ Listed with Domestic uses
4/ Includes exports of 2890 acre feet
5/ 763 acre feet for surface diversion, 8795 acre feet from groundwater minus 909 acre feet on the Cahuilla Reservation
6/ Recreation Use
7/ 10% of surface diversions
N/R - Not Reported

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 which is perforated in the bottom 130 feet. Production for 1989-90 was 2 acre feet from Well No. 1 and 35 acre feet from Well No. 2 for a total production of 37 acre feet. The depth of water in Well No. 1 ranged from 40 feet to 98 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, SBBM. Anza Mutual Water Company's wells are within the area of the deep aquifer. From the perforated intervals in the wells, it 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 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.

DeLuz Heights Municipal Water District

In 1989-90 Deluz Heights MWD supplied primarily imported water but the District does have three wells which have supplied water since 1977. Imports were 3,745 acre feet for 1989-90 and 15 acre feet were pumped from local wells as shown in Appendix A. DeLuz Heights MWD has been dissolved and operations have been assumed by Fallbrook Public Utility District.

All three of the DeLuz Heights wells are drilled along the East Fork of DeLuz Creek in an area which has younger alluvium at the ground surface. Interlocutory Judgment No. 32 indicates that this stringer of alluvium varies in width from 100 feet to one-fourth mile and at no place is greater than 50 feet in depth. The well

logs for these wells indicate depths of alluvium of 32 feet, 31 feet and 32 feet respectively. Below these depths the wells penetrate fractured granite. These wells are cased to depths of 50, 51 and 51.5 feet respectively. Thus it may be concluded that all of the water from these wells originates in the granite fractures. Interlocutory Judgment No. 32 declares that waters found in the basement complex (fractured granite) are vagrant, local, percolating waters not part of the Santa Margarita River system and outside the Court's jurisdiction.

Eastern Municipal Water District

Eastern MWD is a member agency of Metropolitan Water District. In that capacity the District wholesales water to Rancho California Water District 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 of Rancho California Water District is located in the northern part of the Watershed. Water for their service area is imported or produced locally from Well 7S/3W-15N which is 345 feet deep.

Groundwater production for the 1989-90 Water Year in the Santa Margarita River Watershed totaled 492 acre feet and imports totaled 8,578 acre feet as shown in Appendix A.

Recent static water levels in Eastern MWD's well have varied from a depth of 103 feet in August, 1988, to 129 feet in July, 1989. The well is generally perforated between the depths of 106 and 333 feet.

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 and pumping is under groundwater appropriative rights.

In addition during 1989-90, Eastern MWD reclaimed 3,727 acre feet of wastewater, of which 1,567 acre feet were reused and 2,160 acre feet were recharged into the groundwater basin.

Estimates of water production and use for the period 1966-1990 are shown in Appendix B.

Elsinore Valley Municipal Water District

Elsinore Valley MWD provides water to its service area around Lake Elsinore. A portion of that service area 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 Western MWD.

The district reports that 2,255 acre feet were imported into the portion of their service area which is inside the Santa Margarita River Watershed in 1989-90. Also during 1989-90, approximately 114 acre feet of wastewater were exported from that same area.

Fallbrook Public Utility District

In 1989-90, Fallbrook PUD imported 13,823 acre feet through its contract with the San Diego County Water Authority as shown in Appendix A. Of this quantity, it is estimated that 46 percent, or 6,358 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.

Production during the period 1966 to 1990 included direct diversions from the Santa Margarita River for water years before 1972 as well as imported water as shown in Appendix B.

Lake Riverside Estates

Lake Riverside Estates pumps water from Well No. 7S/2E-32C1, into Lake Riverside to make up evaporation losses. Production for 1989-90 was 247 acre feet. The production well was drilled in 1962 and is located in an area of younger alluvium in the Cahuilla Ground Water 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 Ground Water Basin have correlative overlying rights to the use of the groundwater which is the basis for this production.

Murrieta County Water District

Murrieta County Water District serves the area in the vicinity of the town of Murrieta in Riverside County. In Water Year 1989-90, Murrieta CWD produced water from five wells. Total production was 465 acre feet, as shown in Appendix A.

Information about these five wells is provided in the following tabulation.

Well Designation	Well Name	1989-90 Production Acre Feet	Casing Depth Feet	Water Depth Feet	Well Depth Feet	Perforated Interval Feet
7S/3W-20C9	Holiday	91	25	76 - 91	307	60 - 307
7S/3W-20G5	House	61	50	99 - 110	298	120 - 252
7S/3W-17R2	Lynch	61	26	64 - 86	212	172 - 212
7S/3W-18J2	North	146	50	123 - 132	650	240 - 260
						500 - 640
7S/3W-20D	South	106	50	104 - 118	446	120 - 446

All of these wells are located in the Murrieta-Temecula Groundwater area. Interlocutory Judgment No. 30 indicates that in Murrieta Valley the younger alluvium deposits extend in various depths to a maximum of approximately 30 feet from the ground surface. This finding was based on evidence available to the Court prior to the Judgment date of March 8, 1962. The Court also noted that it was impossible based on evidence available at that time to determine the depth of the younger alluvial deposits throughout the Valley with exactness but that subsequent findings could be made if needed because the Courts would retain continuing jurisdiction. Older alluvial deposits are found below the younger alluvium.

The uppermost perforation of 60 feet is well below the maximum depth of younger alluvium found by the Court in 1962. Accordingly the production water for all of Murrieta County Water District wells is from the older alluvium under a groundwater appropriative right.

Production for the period between 1966 and 1990 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. About ten percent of the district's service area is inside the Watershed. Most of the district is in the San Luis Rey River Watershed. As shown in Appendix A, total deliveries in the Watershed, which are all imported water, amounted to 3,818 acre feet.

Total imports to the district, for years between 1966 and 1990, as well as the estimated portion served inside the Santa Margarita River Watershed, are shown in Appendix B.

Rancho California Water District

Rancho California Water District serves water to lands in the central portion of the Watershed. The District produces water from approximately 59 wells and also imports water, as shown in Appendix A. Use is also shown in Appendix A under the categories of agriculture, commercial and domestic. Water used for landscaping is included under agricultural use and water used for golf courses is included under commercial. In Water Year 1989-90, 33,241 acre feet of local supplies were pumped from the Murrieta-Temecula groundwater area and 22,030 acre feet were imported for total production of 55,271 acre feet. Of this quantity, 902 acre feet were released into the Santa Margarita River to maintain flows between May 1 and October 31.

The district reclaimed 133 acre feet of wastewater during the year which were all reused within the Watershed.

Rancho California Water District 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

Vail Appropriation

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

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.

During 1989-90 no water was released from Vail.

Imported Water Return Flows

During 1989-90, Rancho California imported 22,030 acre feet of water. According to the monthly General Manager reports, 5,302 acre feet of imported water were served to the Rancho Division and 16,728 acre feet of imported water were delivered to the Santa Rosa Division as shown below for water year 1989-90.

Month	Imported Deliveries Rancho Div.	Imported Deliveries Santa Rosa Div.	Total Imported Deliveries
October	486	1,212	1,698
November	0	934	934
December	60	1,335	1,395
January	0	286	286
February	90	123	213
March	226	432	658
April	108	588	696
May	262	1,468	1,730
June	542	1,862	2,404
July	1,179	2,825	4,004
August	1,169	2,989	4,158
September	1,180	2,674	3,854
Total	5,302	16,728	22,030

The Santa Rosa Division does not overlie the groundwater area except for 342 acres south of Murrieta, 766 acres northwest of Murrieta and 1,072 acres in the California Oaks area. Unfortunately, data on water use on these lands is not yet available.

However return flows from imported water delivered to the Rancho Division can be computed.

These return flows vary according to the use as shown in the tabulation below:

	Ag	Comm	Dom	SMR Release	Total
Imported Water Deliveries to Rancho Div	1,641	782	2,671	208	5,302
Adjustment for Golf Course Usage from Commercial to Agricultural	114	(114)			
Total	1,755	668	2,670	208	5,302
Percent Return Flow	33	10	25	0	
Imported Return Flow Credit 1989-90	579	67	668	0	1,314

Thus return flows from imported water delivered to the Rancho Division in 1989-90 created an imported water credit of 1,314 acre feet for pumping in 1990-91. Return flow credits for the Santa Rosa Division as well as for prior years will be computed for next year's report.

During 1989-90 no imported water was directly recharged into the groundwater.

Division of Local Water

During 1989-90 Rancho California pumped 33,241 acre feet of groundwater. The source of this water was divided among water pumped from wells which tap the Pauba Aquifer, the Temecula Aquifer or both aquifers as shown below.

	Groundwater Pumped 1989-90 Acre Feet
Pauba Aquifer Only	6,676
Temecula Aquifer Only	21,666
Combined Aquifers	4,899

Rancho California Water District identifies these aquifers on the basis of California Division of Mines and Geology Special Report No. 131, completed by M. P. Kennedy in 1975. This report is entitled, "Recency and Character of Faulting Along the Elsinore Fault Zone in Southern Riverside County."

Kennedy maps the Pauba formation as the same as the older alluvium in Court Exhibit 15L. In general the Temecula Arkose underlies the Pauba formation. However RCWD does not include alluvium in its categories of aquifers. Thus as currently defined by RCWD the Pauba aquifer includes the younger alluvium.

Interlocutory Judgment No. 30 describes the Court's findings with respect to the Murrieta-Temecula Ground Water Area. The Murrieta-Temecula Ground Water Area is depicted on maps presented as exhibits during the litigation. The exhibits show that the ground water area is generally underlain by younger and older alluvial deposits.

The younger alluvial deposits were determined by the Court to be those deposits laid down by stream action after the course of the Santa Margarita River shifted to its present westerly flow through the Temecula Gorge to the Pacific Ocean. The areal extent of the younger alluvium is shown on maps developed in the 1960's during the litigation. The depth of the younger alluvial deposits throughout the Murrieta Valley could not be determined by the Court with exactness. However the Court did indicate that based on evidence available to the Court in 1962, the maximum depth of the younger alluvium was approximately 30 feet. Similarly in Pauba Valley, the Court stated that the evidence indicated a maximum depth of 130 feet. The Court also noted that it would retain continuing jurisdiction in the case so that subsequent findings could be made if required. Thus the younger alluvium is included in the Pauba aquifer as defined by RCWD but there are portions of the Pauba aquifer that are deeper than 130 feet and therefore are part of the older alluvium.

The older alluvial deposits were determined by the Court to be those deposits laid down while the course of the Santa Margarita River ran northerly into the Elsinore area. The areal extent of the older alluvium is also shown on maps developed during the litigation. The older alluvium deposits are of considerable depth in excess of 1,000 feet in some locations. From the foregoing it can be concluded that the older alluvium described in Interlocutory Judgment No. 30 includes portions of the Pauba formation as well as the Temecula Arkose.

Accordingly, the 1989-90 Rancho California Water District production of 21,666 acre feet from the Temecula aquifer primarily is based on groundwater appropriative rights.

Production of 6,676 acre feet from the Pauba aquifer may be separated into four categories as follows:

a. Recovery of water from Vail Lake released and recharged
b. Recovery of imported water return flow
c. Production from the younger alluvium portion of the RCWD Pauba aquifer (depths less than approximately 130 feet)
d. Production from the older alluvium portion of the RCWD Pauba aquifer (depths greater than approximately 130 feet)

Since 1977, 98,052 acre feet of water have been released from Vail Lake for recharge. However, the quantity of water remaining in that account in 1989-90 has not been determined.

Imported water returned to the groundwater area within the Rancho Division in 1988-89 amounted to 1,314 acre feet. A portion of this quantity returned to the younger alluvium and a portion returned to areas overlying older alluvium. This allocation has not yet been calculated.

Similarly, the quantities of water which were produced from the younger alluvium portion of the Pauba aquifer as defined by RCWD and from the older alluvium portion of the Pauba aquifer as defined by RCWD have not been determined.

The quantities of water in the Vail account, the imported water account (including the Santa Rosa Division) and the remaining categories of production from the Pauba aquifer will be quantified in the 1990-91 report.

Similarly, the separation of the production of 4,899 acre feet from wells which pump from both aquifers will be completed for the 1990-91 report.

Production for the period 1967 through 1990 is shown in Appendix B.

Western Municipal Water District

Western MWD wholesales imported water to Rancho California WD as well as 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 1989-90, imports to Improvement District A amounted to approximately 22 acre feet.

Deliveries to Improvement District A through turnout WR-13 for the period 1969 to 1990 are shown in Table 5.2.

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 which produced 5,083 acre feet in Water Year 1989-90. This production is from the younger alluvium and is based on riparian and appropriative rights. Of this quantity, 2,890 acre feet were exported out of the Watershed as shown in Appendix A.

A portion of the exported water amounting to 1,451 acre feet was 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 1966-1990.

7.3 Indian Reservations

Despite requests, neither the Bureau of Indian Affairs nor individual Indian Reservations have filed written reports describing current water production and use on Indian Reservations.

Available water use information about the three Indian Reservations in the Watershed is described in the following sections:

Cahuilla Indian Reservation

Precise water use data are not available, however Cahuilla Indian Reservation representatives report that approximately 200 people reside on the Reservation. These residents use water primarily for domestic purposes as well as for livestock watering and grazing. In 1989-90, 420 acres were leased for irrigation use. Crops included 285 acres of potatoes which are estimated to have used 909 acre feet of water. Water was supplied from the Agri-Empire, Inc. water system which includes six wells at various locations in the Anza Valley based on overlying rights.

Pechanga Indian Reservation

It is understood that approximately 421 people reside on the Pechanga Indian Reservation. Reservation representatives have declined to provide any data regarding water production and use.

Ramona Indian Reservation

The Ramona Indian Reservation occupies 560 acres of land of which 321 acres are inside the Watershed. There are no residents on the Reservation and no known irrigation water use.

7.4 Mobile Homes/Campgrounds

There are a number of mobile home parks (MHP) in the Watershed. These range from relatively permanent structures, to those catering to recreational vehicles and campgrounds. Water production from wells is shown on Table 7.1 for Butterfield Oaks Mobile Home Park, and Thousand Trails Resorts.

7.5 Irrigation Water Use

Estimated water use reported by other substantial users in the Santa Margarita River Watershed is shown on Table 7.1 to be 8,649 acre feet. This estimate was based on reported irrigated acreage and includes 763 acre feet of surface diversions as shown in Appendix C.

SECTION 8 - UNAUTHORIZED WATER USE

8.1 General

There are unauthorized water uses of various types in the Watershed. These violations are investigated and resolved when they are brought to the attention of the Watermaster office. The status of the current list of unauthorized uses are described as follows:

8.2 Dunn Ranch Dam

Dunn Ranch Dam has a capacity to store 90 acre feet of water and is located on an unnamed tributary to Hamilton Creek in Riverside County. The Dam was constructed by Agri-Empire, Inc. to impound groundwater pumped by wells in the Anza Valley in the winter to meet summertime peak irrigation water demands. All surface runoff in the stream runs into the reservoir. Agri-Empire has no water right from the State Water Resources Control Board (SWRCB) to store the surface inflow for use, and therefore, must release the surface inflow.

In November, 1990, Agri-Empire signed a Memorandum of Understanding (MOU) with the Watermaster to provide for these releases. The MOU provides that Agri-Empire will initiate a ten-year program of collecting precipitation and reservoir water level data. During the period, releases will be based on measured surface flow in Bautista Creek at a gaging station maintained by the U.S. Geological Survey. At the end of the ten-year period, the basis for releases of surface water inflow will be reviewed, based on the collected data, and revised as required.

8.3 Dams on Chihuahua Creek

In 1986, Agri-Empire, Inc. filed Application No. 28930 with the SWRCB for water rights to store water at three dams previously built on Chihuahua Creek. These dams have capacities to store 172, 8 and 10 acre feet respectively. The application was protested by downstream interests.

The SWRCB presently plans to process the application under Section 1345 of the Water Code, which applies to minor protested applications. However, SWRCB representatives have not yet set a schedule for resolving this issue. Accordingly, the Watermaster is seeking an interim procedure for the operation of these dams and reservoirs on Chihuahua Creek.

8.4 Unauthorized Small Storage Ponds

In addition to the foregoing dams, many other 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 ponds less than 10 acre feet in capacity and used for stock watering are 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.

SECTION 9 - THREATS TO WATER SUPPLY

9.1 General

Three general threats to the long-term water supply in the Santa Margarita River Watershed were described in the 1988-89 Watermaster Report. These included:

1. High nitrate concentrations in Rainbow Creek and in Anza Valley.

2. Potential overdraft conditions at various locations in the Santa Margarita River Watershed.

3. Potentially adverse salt balance conditions in the upper Santa Margarita River area.

In addition to the foregoing, San Diego County continues to seek approvals for a landfill at a site upstream from groundwater basins in the lower Santa Margarita River.

9.2 High Nitrate Concentrations

Water samples continue to be collected from Rainbow Creek at Willow Glen Road by the Natural Resources Office at Camp Pendleton as part of their surface water quality monitoring program. In 1989-90, this site was sampled three times. Analysis of the water quality samples indicated nitrate concentrations below the drinking water limit of 45 mg/l as shown below:

Nitrate Concentrations in Rainbow Creek
At Willow Glen Road

	Mg/l as NO3
January 1990	40
April 1990	36
May 1990	21.4

9.3 Potential Overdraft Conditions

Two areas where there are major concerns about overdraft are in the Anza Valley and in the Temecula-Murrieta area.

In 1990, Riverside County retained a consultant to evaluate water supply conditions in the Anza Valley area. The consultant divided the area into five unit areas which are listed on Table 9.1. The Table summarizes the conclusions of the consultant with respect to perennial yield, water use in 1986, the estimated available yield and quantities of water in storage.

TABLE 9.1

SANTA MARGARITA RIVER WATERSHED
GROUNDWATER CHARACTERISTICS
IN ANZA - CAHUILLA AREA
Quantities in Acre Feet

UNIT AREA	PERENNIAL 1/ YIELD +/- 20%	1986 1/ WATER USE	AVAILABLE YIELD (1986)	VOLUME IN STORAGE - 1986 1/ TOTAL	USEABLE
Anza Valley - Valley Fill	4,350 - 4,900	4,900	(550) - 0	165,500	56,200
- Basement Complex	300 - 500	100	200 - 400	16,100	**
Burnt Valley - Valley Fill	70 - 215	470	(255) - (400)	9,700	5,800
- Basement Complex	75 - 100	25	50 - 75	3,300	**
*Terwilliger Valley - Valley Fill	300 - 500	1,300	(800) - (1,000)	76,800	8,900
- Basement Complex	150 - 150	50	100 - 100	9,100	**
Durasno Cahuilla - Valley Fill	4,000 - 6,000	3,970	30 - 2,030	17,600	5,800
- Basement Complex	280 - 430	30	250 - 400	29,000	**
Cahuilla Valley - Valley Fill	3,000 - 4,000	2,689	311 - 1,311	32,600	22,800
- Basement Complex	175 - 225	25	150 - 200	21,000	**
Total - Valley Fill	11,720 - 15,615	13,329	(1,264) - 1,941	302,200	99,500
Total - Basement Complex	980 - 1,405	230	750 - 1,175	78,500	**

1/ From "Hydrogeologic Evaluation and Water Resources Analysis of the Anza-Terwilliger Area, Riverside County, Ca." October 1990, by Groundwater Systems Inc.

* Not in Santa Margarita River Watershed

** Not estimated

Basically the analysis concluded that there is no undeveloped perennial yield available in Anza Valley, Burnt Valley and Terwilliger Valley while there is some undeveloped yield in Durasno Cahuilla area and the Cahuilla Valley. Terwilliger Valley is outside the Santa Margarita River Watershed.

Consultant recommendations to Riverside County included the following with respect to the Anza Valley Fill basin:

> No. 1. Additional development of the ground-water resources in the Valley Fill basin should not be encouraged, in fact, an attempt to reduce consumptive use between 450 and 500 acre feet should be made.
>
> No. 2. If increases of population (dwelling units) are promoted in the (Anza) Valley Fill Basin area, the increased water supply required for such should be supplanted by an equal reduction in agricultural water use.
>
> No. 6. The existing data collection program in this Unit Area should be significantly expanded....

Riverside County contracted the study to assist with development of appropriate zoning for the area. While Riverside County does have the authority to affect water use through the zoning process, the County does not have authority to curtail or restrict agricultural water use in the Anza Valley.

No recent studies of safe yield have been conducted for the Temecula-Murrieta area. Groundwater resources in much of the area are being managed by Rancho California Water District. The District has indicated that it operates the basin so as to develop its maximum perennial yield. If the District is successful in its approach there should be no net lowering of groundwater levels over an extended period of time.

Accordingly, groundwater levels throughout the basin area are being monitored by the District and the Watermaster office. The District uses the record of well production and the related water levels to prepare and implement its annual groundwater production program so as to avoid continual declines in groundwater levels. If there is no continual decline in water levels or other adverse impact, then overdraft conditions do not exist.

9.4 Salt Balance

During 1990, the Regional Water Quality Control Board approved a resolution modifying the water quality objectives of the Santa Margarita Hydrologic Unit as set forth in the Comprehensive Water Quality Control Plan Report, San Diego Region (9) (Basin Plan). This modification cleared the way for implementation of a plan to discharge treated wastewaters from plants operated by Eastern Municipal Water District and Rancho California Water District into Murrieta Creek.

In brief, the plan provides that a portion of the treated wastewaters discharged from the two treatment plants will be reused in the upper Santa Margarita River Watershed. Another portion will flow down Murrieta Creek and the Santa Margarita River to be recharged in the coastal basins at Camp Pendleton, or discharged to the Pacific Ocean.

Quantities recharged at Camp Pendleton would be extracted later, blended with less saline water produced by a reverse osmosis plant at Camp Pendleton, if required, and reused by Fallbrook PUD and Camp Pendleton.

Besides providing a cost-effective solution to the issue of wastewater disposal in the upper Santa Margarita River area, this project also provides the potential for controlling salt balance in the Watershed.

9.5 Proposed Landfill

During 1989-90, San Diego County continued to seek approvals for three Class III landfill sites in the northern part of San Diego County. One of these sites, termed the Aspen site, is located along Rainbow Creek about two miles upstream from its confluence with the Santa Margarita River. In 1990, a Draft EIR/EIS on the proposed sites was circulated for comment. Many water entities, including the Metropolitan Water District of Southern California, the San Diego County Water Authority, Fallbrook PUD, Camp Pendleton, and the Watermaster commented adversely on the proposal.

The primary basis for comments was why risk contamination of valuable groundwater resources when other sites are available with less exposure.

Following review of comments on the EIR/EIS, the County Planning Commission disapproved the EIR/EIS. However, the County Board of Supervisors continues to pursue approvals for the Aspen site.

SECTION 10 - WATER QUALITY

10.1 Surface Water Quality

Over the years, water quality samples have been collected from surface streams in the Santa Margarita River Watershed. Records of the laboratory analysis of these samples are available in Federal, State and local agency reports, as well as in files of various organizations in the Santa Margarita River Watershed. In 1989-90 surface water quality in the Watershed was monitored by the Camp Pendleton Environmental Resources Management Office at ten locations. These stations are listed on Table 10.1 which also shows the available period of record at these locations. Water quality data for eight of these stations are listed in Appendix D.

Comparison of the data collected in 1989 and 1990 with data from prior years indicates the following:

1. A significant increase in total dissolved solids in DeLuz Creek at McDowell, probably related to increasing irrigation return flows.

2. Reduction in nitrate concentration in 1990 compared to 1989 at two stations: Santa Margarita River at Fallbrook PUD Sump and Rainbow Creek at Willow Glen Road. The higher concentrations experienced during the 1985-1989 period may reflect one time leaching of nitrates. Alternatively the lower concentrations may reflect lowered water applications in the drainage area because of the concern about nitrate concentrations or ongoing drought conditions.

3. A leveling off of the upward trend in total dissolved solids concentrations in Rainbow Creek at Willow Glen. Total dissolved solids concentrations at this station increased from about 400 to 600 mg/l in the early 1970's to the 800 to 1300 mg/l range in the mid 1980's.

4. There appears to be little change from historical concentrations in the samples from Murrieta Creek at Temecula and Temecula Creek at Interstate 15.

Surface water quality samples were also collected from 1986 to 1988 by Rancho California Water District at five stations in the Watershed. These data are included in Appendix D and are generally consistent with the data collected by Camp Pendleton.

TABLE 10.1

SANTA MARGARITA RIVER WATERSHED
CURRENT WATER QUALITY MONITORING STATIONS 1/

STATION	SAMPLING FREQUENCY	PERIOD FROM	PERIOD TO	PERIOD OF RECORD
Fallbrook Creek/NWS	Periodically	1968	Present	XXXXXXXXXXXXXXXXXXXX
Santa Margarita River Near FPUD Sump	Periodically	1951	Present	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
DeLuz Creek at DeLuz/ Murrieta Road (McDowell)	Periodically	1953	Present	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Murrieta Creek Near Temecula	Periodically	1968	Present	XXXXXXXXXXXXXXXXXXXX
Temecula Creek at I-15	Periodically	1961	Present	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
Fallbrook Creek at Lake O'Neill	Periodically	1965	Present	XXXXXXXXXXXXXXXXXXXXXXXX
Lake O'Neill	Periodically	1952	Present	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Rainbow Creek at Willow Glen Road	Periodically	1970	Present	XXXXXXXXXXXXXXXXXX
Sandia Creek Near Fallbrook	Periodically	1989	Present	X
Santa Margarita River at Temecula Gorge	Periodically	1989	Present	X

YEAR 1950 1960 1970 1980 1990

1/ Stations sampled by USMC, Camp Pendleton

Santa Margarita River water quality was also monitored during 1989-90 by the Fallbrook PUD at its infiltration gallery site, and by the State Department of Water Resources at the DeLuz Road crossing.

Concentrations of total dissolved solids and specific conductance collected by the State from their Santa Margarita sampling site for the period between 1951 and 1989 are shown on Figure 10.1. No particular trend of increasing concentration over time is apparent.

In addition, Eastern Municipal Water District has initiated a water quality monitoring program as part of its project to discharge treated wastewater into the Santa Margarita River.

10.2 Groundwater Quality

Samples of groundwater from various wells in the Watershed have been collected by various water purveyors. These data are listed in Appendix D ,for wells in Murrieta County Water District, Rancho California Water District and Camp Pendleton respectively.

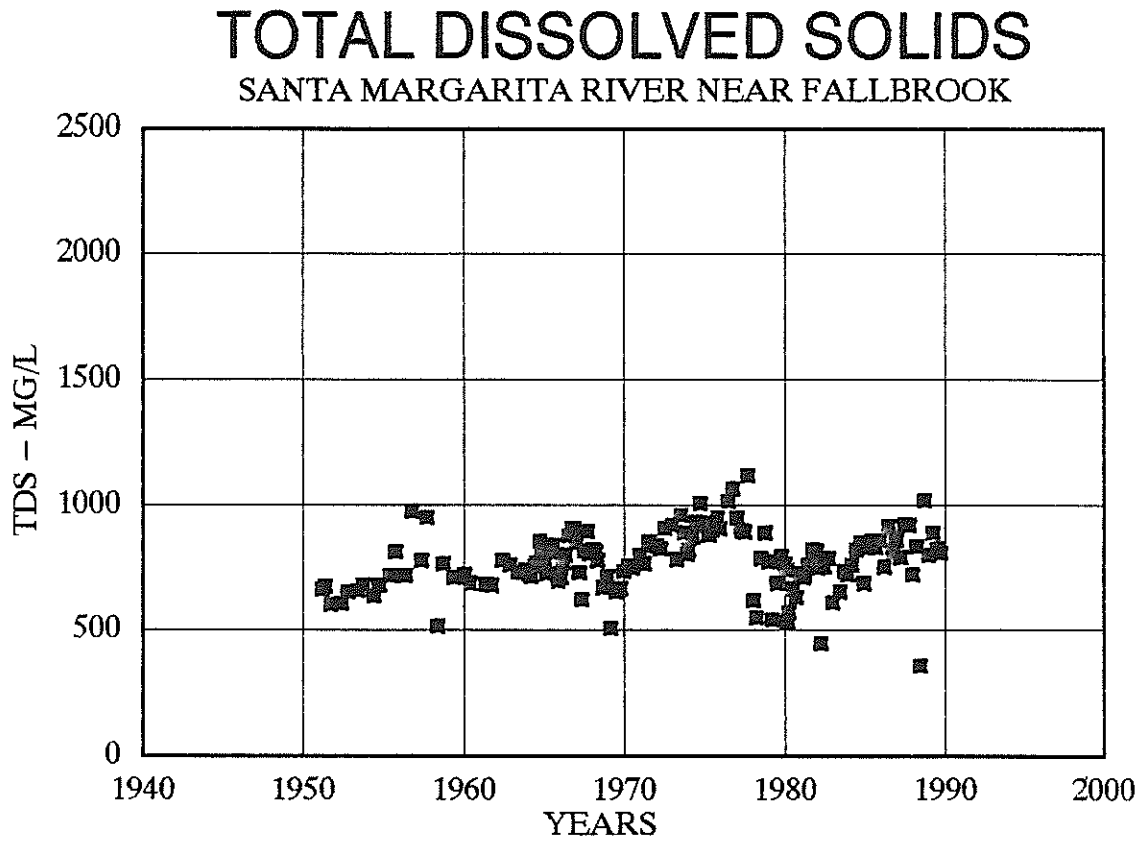
These data indicate that in general the groundwater in the Watershed is of high quality, with total dissolved solids in many of the wells in the 350 to 500 mg/l range.

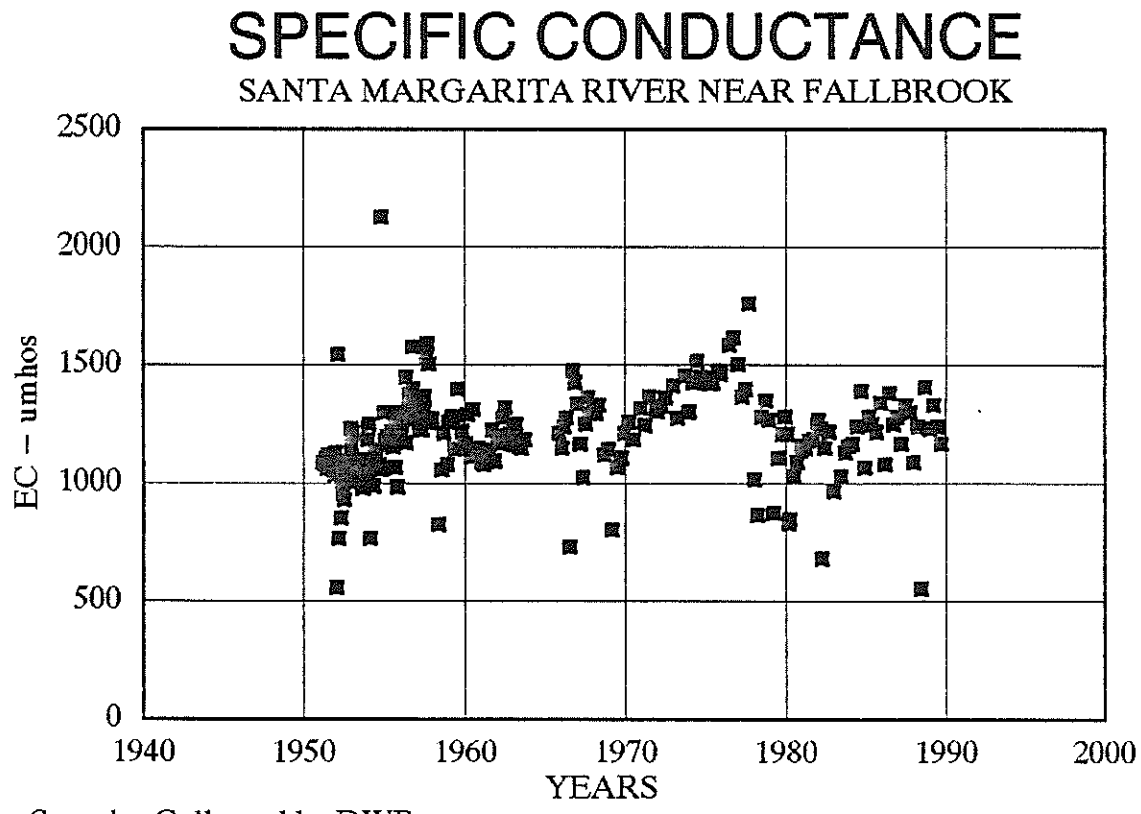
Occasionally groundwater is found which has higher than normal concentration of one or more constituents. These include Well Nos. 150 and 151 in the Rancho California Water District which have total dissolved solids over 1000 mg/l and sodium levels over 200 mg/l. These wells were exploratory wells and have been abandoned by Rancho California Water District. Well Nos. 150 and 151 were located in the Murrieta Valley, T7S, R3W, Sections 27 and 34.

Comparison of the water quality data collected in 1989 and 1990 from wells at Camp Pendleton indicates increases in conductivity at Wells 10S/5W-26C1 and 10S/4W-7H2. In each case the conductivity appears to be about ten percent higher in 1989 and 1990 than in previous years. The increase in conductivity in Well 26C1 does not reflect increases in major constituents. However the increase at Well 7H2 does reflect increases in concentrations of all the major constituents. The reasons for this increase are not known.

In 1989, wells on the Cahuilla and Pechanga Indian Reservation were sampled by the U. S. Geological Survey. These data are also shown on Table D and demonstrate the high quality of groundwater found on both Reservations.

FIGURE 10.1





Samples Collected by DWR

SECTION 11 - FIVE YEAR PROJECTION OF WATERMASTER OFFICE TASKS, EXPENDITURES AND REQUIREMENTS

11.1 General

Primary Watermaster tasks are listed in Table 11.1 together with the estimated hours of time to be devoted to each task during the current 1990-91 Water Year and over the five Water Years 1991-92 through 1995-96. A projection of Watermaster Office expenditures over the next five years is also shown on Table 11.1.

11.2 Task Description

These tasks are briefly described in the following paragraphs.

1. Update List of Substantial Users - A basic list of substantial water users is shown in Appendix C. Activities include adding new users to the list and monitoring the users on the current list. Specific wells will be added to the list in 1991-92.

2. Collect Water Production, Use, Import and Availability Data - This task includes collection of the amount of water diverted, extracted, impounded, exported, imported, used or reclaimed by water districts and by other substantial users. As shown in Appendices A and B, water use is categorized among agricultural, domestic and commercial uses. This task also includes collection of data on surface diversions, and related consumptive use, return flows and losses.

3. Collect Well Location, Construction and Water Level Data - Determination of the water in subsurface storage, changes in groundwater storage and trends in water levels requires collection of information on water levels and well construction data. Well logs are being collected during the 1990-91 Water Year. In 1991-92, the major emphasis will be on water level data.

TABLE 11.1

SANTA MARGARITA RIVER WATERSHED
PROJECTED WATERMASTER TASKS
Estimated Hours per Water Year

WATERMASTER TASKS	CURRENT YEAR	PROJECTED FUTURE YEARS				
	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96
1. Update List of Substantial Users	100	50	50	50	50	50
2. Collect Water Production, Use, Import and Availability Data	100	100	100	100	100	100
3. Collect Well Construction and Water Level Data	100	250	200	100	100	100
4. Determine Changes in Subsurface Storage	200	450	300	100	100	100
5. Collect Water Quality Data	50	100	100	40	40	40
6. Determine Salt Balance	0	110	200	0	0	0
7. Prepare List of All Water Users under Court Jurisdiction	200	100	200	200	200	200
8. Attend Meetings	150	150	150	150	150	150
9. Administer Lake Skinner MOU	90	60	60	60	60	60
10. Administer Steering Committee Matters	150	150	150	150	150	150
11. Prepare Court Reports/Budgets	150	150	120	100	100	100
12. Miscellaneous Computer Operation	60	60	60	60	60	60
13. Monitor Streamflow and Water Quality Measuring Stations	50	50	50	50	50	50
14. Monitor Water Quality Activities and Water Right Appropriations	50	50	50	50	50	50
15. Miscellaneous Administrative Services	400	300	200	200	200	200
16. Data Management	2,000	2,300	2,200	2,000	2,000	2,000
17. Prepare Inventory of Stockponds and Reservoirs	100	100	30	30	30	30
18. Contingency for Unforeseen Tasks	200	200	200	200	200	200
19. TOTAL	4,150	4,730	4,420	3,640	3,640	3,640
20. ESTIMATED BUDGET	$172,956	$196,221	$175,000	$150,000	$156,000	$164,000

4. Determine Changes in Subsurface Storage - In this task well construction and water level data will be used to determine trends in levels, as well as quantities in storage in various hydrologic subunits. This determination will include estimates of quantities of water in storage and the source and quantity of recharge.

5. Collect Water Quality Data - Determination of basin water quality trends and salt balance requires collection of water quality data. Such data are needed for historic surface water supplies, historic outflows and exports as well as groundwater in storage.

6. Determine Salt Balance - Following collection of water quality data and understanding of subsurface recharge the salt balances for various hydrologic subunits will be determined. This work follows the water level and storage change analysis.

7. Prepare List of All Water Users Under Court Jurisdiction - This major task has been deferred until 1992-93 Water Year because it involves preparing a list of all private water users within certain areas in the Watershed. It can best be prepared using the assessor rolls as a starting point and then determining if there is any water use on the property. This list will also include a description of vested rights and appropriative priority dates if required.

8. Attend Meetings - This task provides for attending meetings to remain apprised of activities which affect water matters in the Santa Margarita River Watershed.

9. Administer Lake Skinner MOU - This task provides for monitoring the operation of Lake Skinner to ensure that MWD is in compliance with the provisions of the Memorandum of Understanding on the Operation of Lake Skinner.

10. Administer Steering Committee Matters - This task involves administration of quarterly Steering Committee meetings, including distribution of notices and agendas, preparation of minutes, attendance at meetings, and dealing with various Steering Committee matters.

11. Prepare Court Reports/Budgets - Each year an annual report, which includes a budget and projected tasks, is required to be forwarded to the Court.

12. Miscellaneous Computer Operations - Efficient operation of the Watermaster Office is based on maximizing the use of computers. This requires periodic attendance at training sessions, classes and/or acquisition and use of new software and computer equipment.

13. Monitor Streamflow and Water Quality Measuring Stations Operation and maintenance of existing stream gaging stations and water quality monitoring stations are handled by others, however the Watermaster Office relies on the data from these stations and assists in interpretation of station data and in the maintaining or improving the quality of station records and data. This task includes determining source of flows measured at gaging stations.

14. Monitor Water Quality and Water Right Activities - This task is to provide for investigating unauthorized water appropriations and water quality violations in the Watershed.

15. Miscellaneous Administrative Services - This task provides for office administration, operation and general correspondence.

16. Data Management - This task provides for assistance to the Watermaster with handling the data management, report and correspondence requirements of the Watermaster Office.

17. Prepare Inventory of Ponds and Reservoirs - In recent years numerous small ponds and reservoirs have been constructed along streams in the Watershed. Some of these store water appropriated using State Water Resources Control Board procedures. Others may constitute unauthorized water appropriation. In this task an inventory of ponds would be developed as a first step in determining which are authorized and which are not. Completion of this task provides an opportunity to check surface water diversions and substantial users.

18. Contingency for Unforeseen Tasks - This task provides for tasks that cannot be foreseen two or three years ahead. For example, MWD may locate its Eastside Reservoir project in the Watershed, which would require some effort in developing an MOU. Alternatively, some time could be required to deal with issues raised in connection with the 1940 Stipulated Judgment or other matters.

SECTION 12 - WATERMASTER OFFICE BUDGET 1991-92

A proposed Watermaster Office Budget for the Water Year ending September 30, 1992, is included in this report as Table 12.1. A total cost of $196,221 is proposed for the 1992 Water Year.

TABLE 12.1

SANTA MARGARITA RIVER WATERSHED
PROPOSED WATERMASTER OFFICE BUDGET
Water Year Ending September 30, 1992

	APPROVED BUDGET CURRENT YEAR 1990-1991	PROPOSED BUDGET 1991-1992
	Total	Total
Watermaster Office	$	$
Rent	2,400	2,400
Accounting Services	2,640	3,960
Supplies	1,980	1,980
Insurance		
General Liability & Professional	5,220	4,000
Printing	1,320	1,320
Audit	2,640	2,100
Publications	600	2,100
Clerical/Data Management	31,200	31,200
Engineering Assistance	---	20,400
Utilities		
Telephone	2,640	2,100
Sanitation	900	1,200
Electric	1,320	900
Miscellaneous Operating	2,400	2,400
Watermaster		
Basic Consulting Fee	75,600	79,200
Overhead Allowance	24,876	24,941
Automobile Expense	4,800	4,800
Travel Reimbursements	4,800	3,600
Equipment		
Computer	1,500	1,500
Software	1,200	1,200
Furniture	960	960
Copier	360	360
Contingency	3,600	3,600
TOTAL	$172,956	$196,221

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER WATERSHED

ANNUAL WATERMASTER REPORT

WATER YEAR 1989-90

APPENDIX A

WATER PRODUCTION AND USE

WATER YEAR 1989-90

JULY 1991

TABLE A-1

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

DELUZ HEIGHTS MUNICIPAL WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION			USE					
MONTH YEAR	LOCAL	IMPORT	TOTAL	AG	DOM	COMM	TOTAL DELIVERED	LOSS*	TOTAL USE
1989									
OCT	7	288	295	250	(Const)3	7	260	35	295
NOV	7	293	300	258	0	7	265	35	300
DEC	1	301	302	248	0	7	255	47	302
1990									
JAN	0	118	118	112	0	6	118	0	118
FEB	0	76	76	72	0	5	77	(1)	76
MAR	0	172	172	146	0	6	152	20	172
APR	0	213	213	145	0	7	152	61	213
MAY	0	338	338	313	0	7	320	18	338
JUNE	0	353	353	276	0	7	283	70	353
JULY	0	546	546	495	0	7	502	44	546
AUG	0	525	525	446	0	7	453	72	525
SEPT	0	522	522	439	0	7	446	76	522
TOTAL	15	3,745	3,760	3,200	3	80	3,283	477	3,760

*Loss = Total production minus total use

No commercial use in District

TABLE A-2

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

EASTERN MUNICIPAL WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION			USE						RECLAIMED WASTE WATER			
MONTH YEAR	WELLS	IMPORTED 1/	TOTAL	AG 2/	COMM	DOM 3/	TOTAL	LOSS	TOTAL USE+LOSS	REUSE IN SMRW	EXPORT	RECHARGED	TOTAL
1989													
OCT	41	454	495	128	0	342	470	25	495	58	0	238	296
NOV	49	370	419	86	0	312	398	21	419	45	0	245	290
DEC	40	278	318	33	0	269	302	16	318	70	0	231	301
1990													
JAN	38	76	114	18	0	90	108	6	114	90	0	229	319
FEB	55	48	103	13	0	85	98	5	103	78	0	217	295
MAR	51	130	181	22	0	150	172	9	181	109	0	210	319
APR	25	220	245	22	0	211	233	12	245	75	0	233	308
MAY	43	727	770	54	0	677	731	39	770	194	0	120	314
JUNE	48	855	903	90	0	768	858	45	903	168	0	150	318
JULY	40	1,556	1,596	102	0	1,415	1,517	79	1,596	235	0	89	324
AUG	38	2,036	2,074	471	0	1,499	1,970	104	2,074	200	0	126	326
SEPT	24	1,828	1,852	437	0	1,322	1,759	93	1,852	245	0	72	317
TOTAL	492	8,578	9,070	1,476	0	7,140	8,616	454	9,070	1,567	0	2,160	3,727

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

TABLE A-3

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

FALLBROOK PUBLIC UTILITY DISTRICT
Quantities in Acre Feet

	PRODUCTION				USE					
MONTH YEAR	LOCAL	IMPORT	TOTAL	TOTAL 1/ IN SMRW	AG 1/	COMM 1/	DOM 1/	TOTAL IN SMRW	LOSS*	TOTAL USE IN SMRW
1989										
OCT	0	1,285	1,285	591	327	28	260	615	(24)	591
NOV	0	1,181	1,181	543	305	28	218	551	(8)	543
DEC	0	1,174	1,174	540	243	25	219	487	53	540
1990										
JAN	0	563	563	259	136	22	168	376	(117)	259
FEB	0	494	494	227	98	18	139	255	(28)	227
MAR	0	836	836	385	96	20	116	232	153	385
APR	0	766	766	352	178	23	171	372	(20)	352
MAY	0	1,293	1,293	595	227	24	175	426	169	595
JUNE	0	1,259	1,259	579	227	24	222	473	106	579
JULY	0	1,537	1,537	707	404	36	241	681	26	707
AUG	0	1,838	1,838	845	376	26	306	708	138	845
SEPT	0	1,597	1,597	734	408	27	259	694	40	734
TOTAL	0	13,823	13,823	6,358	3,075	301	2,494	5,870	488	6,358

1/ Approximately 46% of FPUD supply is used in the Santa Margarita River Watershed

*Loss = Total production less total use

TABLE A-4

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

MURRIETA COUNTY WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION	USE					
MONTH YEAR	WELLS	AG	COMM	DOM	TOTAL DELIVERED	LOSS*	TOTAL USE
1989							
OCT	33	1	5	24	30	3	33
NOV	35	2	3	20	25	10	35
DEC	29	2	3	18	23	6	29
1990							
JAN	20	1	5	13	19	1	20
FEB	17	0	3	10	13	4	17
MAR	26	0	4	10	14	12	26
APR	29	3	6	19	28	1	29
MAY	49	1	6	21	28	21	49
JUNE	58	1	6	24	31	27	58
JULY	60	1	11	35	47	13	60
AUG	57	0	13	38	51	6	57
SEPT	52	1	11	34	46	6	52
TOTAL	465	13	76	266	355	110	465

* Loss = Total production less total delivered

TABLE A-5

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

RAINBOW MUNICIPAL WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION			USE				
MONTH YEAR	LOCAL	IMPORT TO WATERSHED	TOTAL IN WATERSHED	AG	COMMERCIAL/ DOMESTIC	TOTAL DELIVERIES	LOSS*	TOTAL USE
1989								
OCT	0	421	421	339	44	383	38	421
NOV	0	383	383	307	41	348	35	383
DEC	0	246	246	190	34	224	22	246
1990								
JAN	0	196	196	145	33	178	18	196
FEB	0	106	106	74	22	96	10	106
MAR	0	219	219	165	34	199	20	219
APR	0	213	213	163	31	194	19	213
MAY	0	359	359	286	40	326	33	359
JUNE	0	315	315	252	34	286	29	315
JULY	0	463	463	370	51	421	42	463
AUG	0	430	430	342	49	391	39	430
SEPT	0	467	467	370	55	425	42	467
WATER YEAR TOTAL	0	3,818	3,818	3,003	468	3,471	347	3,818

*Loss = 10% of use

TABLE A-6

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

RANCHO CALIFORNIA WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION					USE							RECLAIMED WASTE WATER		
	LOCAL			IMPORT	TOTAL	AG	COMM	DOM	SMR RELEASE	TOTAL USE	LOSS*	TOTAL	REUSE IN SMRW	EXPORT	RECHARGED
MONTH YEAR	WELLS IN GWA	WELLS OUT GWA	VAIL RELEASE												
1989															
OCT	3,520	0	0	1,698	5,218	3,139	415	1,516	189	5,259	(41)	5,218	30	0	0
NOV	3,227	0	0	934	4,161	2,173	346	937	0	3,456	705	4,161	28	0	0
DEC	2,391	0	0	1,395	3,786	2,503	255	1,069	0	3,827	(41)	3,786	12	0	0
1990															
JAN	1,707	0	0	286	1,993	2,149	318	1,099	0	3,566	(1,573)	1,993	10	0	0
FEB	1,025	0	0	213	1,238	887	220	695	0	1,802	(564)	1,238	9	0	0
MAR	2,185	0	0	658	2,843	779	269	740	0	1,788	1,055	2,843	0	0	0
APR	2,551	0	0	696	3,247	1,333	235	850	0	2,418	829	3,247	0	0	0
MAY	3,406	0	0	1,730	5,136	1,604	248	1,008	163	3,023	2,113	5,136	0	0	0
JUNE	3,108	0	0	2,404	5,512	2,590	377	1,422	160	4,549	963	5,512	7	0	0
JULY	3,975	0	0	4,004	7,979	2,445	358	1,551	104	4,458	3,521	7,979	14	0	0
AUG	3,204			4,158	7,362	4,153	492	2,084	103	6,832	530	7,362	12	0	0
SEPT	2,942	0	0	3,854	6,796	3,888	407	1,945	183	6,423	373	6,796	11	0	0
TOTAL	33,241	0	0	22,030	55,271	27,643	3,940	14,916	902	47,401	7,870	55,271	133	0	0

*Loss = Total production less total use

TABLE A-7

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

U.S.M.C. - CAMP PENDLETON
Quantities in Acre Feet

	PRODUCTION			USE						RECLAIMED WASTE WATER		
MONTH YEAR	AG	CAMP SUPPLY	TOTAL	AGRICULTURE 1/ IN-SMRW	AGRICULTURE 1/ OUT-SMRW	CAMP SUPPLY 2/ IN-SMRW	CAMP SUPPLY 2/ OUT-SMRW	TOTAL EXPORT	TOTAL* IN-SMRW	RECHARGED IN-SMR 3/	IMPORT 4/ RECHARGED IN SMRW	TOTAL RECHARGED IN SMRW
1989												
OCT	91	418	508	35	55	184	234	289	219	105	145	250
NOV	25	389	414	10	15	171	218	233	181	109	146	255
DEC	29	382	411	11	18	168	214	232	179	107	134	241
1990												
JAN	21	341	362	8	13	150	191	204	158	113	148	261
FEB	20	276	296	8	12	121	155	167	129	105	106	211
MAR	41	341	382	16	25	150	191	216	166	109	106	215
APR	61	293	354	24	37	129	164	201	153	108	107	215
MAY	78	342	420	30	47	151	192	239	181	107	113	220
JUNE	71	353	424	28	43	155	198	241	183	105	118	223
JULY	141	383	523	55	86	168	214	300	223	117	115	232
AUG	146	429	575	57	89	189	240	329	246	106	110	216
SEPT	133	281	414	51	82	124	157	239	175	86	103	189
TOTAL	855	4,228	5,083	333	522	1,860	2,368	2,890	2,193	1,277	1,451	2,728

* Assumes no losses

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

2/ Camp Supply water use is divided with 44% used inside the SMRW and 56% used outside

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

4/ Discharge from Plant No. 1 plus excess of Plant No. 13 over 29.17 acre feet per month

TABLE A-8

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

1988-1989

MONTH YEAR	WESTERN MWD IMPORTS TO IMPROVEMENT DISTRICT A	PRODUCTION			
		ANZA MUTUAL WATER CO.	THOUSAND TRAILS	BUTTERFIELD OAKS MOBILE HOME PARK	LAKE RIVERSIDE ESTATES
1988					
OCT	2	3	4		64
NOV	1	1	3		23
DEC	2	1	3		10
1989					
JAN	1	1	2		1
FEB	3	1	2		4
MAR	1	3	3		10
APR	1	3	6		17
MAY	2	4	3		22
JUNE	3	6	4		29
JULY	3	5	4		17
AUG	3	2	2		40
SEPT	2	3	6		11
TOTAL	24	33 *	42	24	250

* - Revised

1989-1990

MONTH YEAR	WESTERN MWD IMPORTS TO IMPROVEMENT DISTRICT A	PRODUCTION			
		ANZA MUTUAL WATER CO.	THOUSAND TRAILS	BUTTERFIELD OAKS MOBILE HOME PARK	LAKE RIVERSIDE ESTATES
1989					
OCT	2	4	5		11
NOV	1	2	5		11
DEC	2	2	4		11
1990					
JAN	1	1	3		12
FEB	1	2	4		17
MAR	1	2	3		3
APR	1	2	3		13
MAY	2	4	4		13
JUNE	2	4	4		16
JULY	3	5	6		18
AUG	3	4	5		41
SEPT	3	5	5		81
TOTAL	22	37	51	24	247

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER WATERSHED

ANNUAL WATERMASTER REPORT

WATER YEAR 1989-90

APPENDIX B

WATER PRODUCTION AND USE

WATER YEAR 1965-66 TO WATER YEAR 1989-90

JULY 1991

TABLE B-1

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

DELUZ HEIGHTS MUNICIPAL WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION			USE					
WATER YEAR	LOCAL	IMPORT	TOTAL	AG	COMM	DOM	TOTAL DELIVERIES	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	38	38	24	0	10	34	4	38
1974	0	134	134	105	0	16	121	13	134
1975	0	213	213	170	0	21	192	21	213
1976	0	431	431	360	0	28	388	43	431
1977	20	587	607	514	0	33	546	61	607
1978	97	651	748	641	0	32	673	75	748
1979	187	961	1,148	996	0	37	1,033	115	1,148
1980	192	1,191	1,383	1,195	0	50	1,245	138	1,383
1981	87	1,994	2,081	1,820	0	52	1,873	208	2,081
1982	0	1,805	1,805	1,577	0	47	1,625	180	1,805
1983	0	1,969	1,969	1,717	0	55	1,772	197	1,969
1984	0	2,609	2,609	2,294	0	54	2,348	261	2,609
1985	0	2,358	2,358	2,067	0	55	2,122	236	2,358
1986	0	2,794	2,794	2,452	0	63	2,515	279	2,794
1987	0	2,986	2,986	2,626	0	62	2,687	299	2,986
1988	28	2,559	2,587	2,258	0	70	2,328	259	2,587
1989	94	3,007	3,101	2,709	0	87	2,796	305	3,101
1990	15	3,745	3,760	3,200	3 **	80	3,283	477	3,760

*Loss = 10% of production (1966 - 1988)

** Construction water; no commercial use in District

TABLE B-2

SANTA MARGARITA RIVER WATERSHED
MONTHLY WATER PRODUCTION AND USE

EASTERN MUNICIPAL WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION			USE						RECLAIMED WASTE WATER			
WATER YEAR	WELLS	IMPORTED 1/	TOTAL	AG 2/	COMM	DOM 3/	TOTAL	LOSS	TOTAL USE+LOSS	REUSE IN SMRW	EXPORT	RECHARGED	TOTAL
1966	0	1,604	1,604	1,520	0	4	1,524	80	1,604	0	0	100	100
1967	0	1,630	1,630	1,544	0	4	1,548	82	1,630	0	0	100	100
1968	0	1,464	1,464	1,386	0	5	1,391	73	1,464	0	0	100	100
1969	0	1,741	1,741	1,648	0	6	1,654	87	1,741	0	0	100	100
1970	0	1,417	1,417	1,340	0	7	1,346	71	1,417	0	0	101	101
1971	0	1,383	1,383	1,306	0	8	1,314	69	1,383	0	0	119	119
1972	0	1,470	1,470	1,388	0	8	1,396	74	1,470	0	0	242	242
1973	0	1,533	1,533	1,447	0	10	1,456	77	1,533	0	0	217	217
1974	0	1,601	1,601	1,511	0	10	1,521	80	1,601	0	0	193	193
1975	0	1,969	1,969	1,859	0	11	1,871	98	1,969	0	0	253	253
1976	145	2,493	2,638	2,356	0	150	2,506	132	2,638	134	0	155	289
1977	431	2,947	3,378	2,723	64	423	3,209	169	3,378	244	0	70	314
1978	375	2,551	2,926	2,409	0	371	2,780	146	2,926	300	0	75	375
1979	289	1,894	2,183	1,784	0	290	2,074	109	2,183	350	0	147	497
1980	281	1,192	1,473	1,116	0	283	1,399	74	1,473	375	0	220	595
1981	282	716	998	663	0	285	948	50	998	375	0	304	679
1982	321	1,112	1,433	1,038	0	323	1,361	72	1,433	375	0	386	761
1983	106	1,211	1,317	1,131	0	120	1,251	66	1,317	375	0	466	841
1984	236	699	935	644	0	244	888	47	935	400	0	525	925
1985	314	679	993	624	0	319	943	50	993	450	0	565	1,015
1986	229	760	989	700	0	239	940	49	989	600	0	509	1,109
1987	89	1,155	1,244	638	0	543	1,182	62	1,244	650	0	554	1,204
1988	4	2,047	2,051	524	0	1,424	1,948	103	2,051	650	0	650	1,300
1989	685	3,746	4,431	1,146	0	3,064	4,209	222	4,431	1,058	0	1,636	2,694
1990	492	8,578	9,070	1,476	0	7,140	8,616	454	9,070	1,567	0	2,160	3,727

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

TABLE B-3

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

FALLBROOK PUBLIC UTILITY DISTRICT
Quantities in Acre Feet

	PRODUCTION				USE				
WATER YEAR	LOCAL	IMPORT	TOTAL	TOTAL IN SMRW	AG	COMM/DOM	TOTAL DELIVERED	LOSS*	TOTAL USE IN SMRW
1966	176	11,169	11,345	3,404	2,735	328	3,063	341	3,404
1967	16	9,508	9,524	2,857	2,253	319	2,572	285	2,857
1968	13	11,411	11,424	3,427	2,554	531	3,085	342	3,427
1969	178	9,458	9,636	2,891	1,787	814	2,601	290	2,891
1970	305	11,794	12,099	3,630	2,649	617	3,266	364	3,630
1971	7	11,350	11,357	3,407	2,386	681	3,067	340	3,407
1972	0	13,054	13,054	3,916	2,749	775	3,524	392	3,916
1973	0	10,572	10,572	3,172	2,132	722	2,854	318	3,172
1974	0	12,777	12,777	3,833	2,598	852	3,450	383	3,833
1975	0	11,279	11,279	3,384	2,250	795	3,045	339	3,384
1976	0	12,716	12,716	4,196	2,840	937	3,777	419	4,196
1977	0	12,848	12,848	4,625	3,022	1,141	4,163	462	4,625
1978	0	11,975	11,975	4,551	2,863	1,233	4,096	455	4,551
1979	0	11,904	11,904	4,762	2,824	1,461	4,285	477	4,762
1980	0	12,411	12,411	5,213	3,063	1,628	4,691	522	5,213
1981	0	14,884	14,884	6,549	3,868	2,092	5,960	589	6,549
1982	0	11,465	11,465	5,274	3,037	1,815	4,852	422	5,274
1983	0	10,329	10,329	4,751	2,603	1,816	4,419	332	4,751
1984	0	12,820	12,820	5,897	3,520	2,023	5,543	354	5,897
1985	0	11,898	11,898	5,473	3,120	2,080	5,200	273	5,473
1986	0	12,589	12,589	5,791	3,246	2,256	5,502	289	5,791
1987	0	12,327	12,327	5,670	3,167	2,219	5,386	284	5,670
1988	0	11,901	11,901	5,474	2,923	2,278	5,201	273	5,474
1989	0	13,172	13,172	6,060	2,911	2,619	5,530	530	6,060
1990	0	13,823	13,823	6,358	3,075	2,795	5,870	488	6,358

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

TABLE B-4

SANTA MARGARITA RIVER WATERSHED
ANNUAL WASTEWATER PRODUCTION AND DISPOSITION

FALLBROOK SANITARY DISTRICT
Quantities in Acre Feet

WATER YEAR	TOTAL WASTEWATER PRODUCTION	% WASTEWATER FROM SMRW	WASTEWATER FROM SMRW	WASTEWATER EXPORTED FROM SMRW	% WASTEWATER FROM SLR* WATERSHED	WASTEWATER IMPORTED FROM SLR* WATERSHED
1966	395	81	320	0	19	75
1967	460	80	368	0	20	92
1968	524	80	419	0	20	105
1969	588	79	465	0	21	123
1970	652	78	509	0	22	143
1971	717	78	559	0	22	158
1972	782	77	602	0	23	180
1973	847	76	644	0	24	203
1974	912	75	684	0	25	228
1975	976	75	732	0	25	244
1976	1,040	74	770	0	26	270
1977	1,105	73	807	0	27	298
1978	1,170	72	842	0	28	328
1979	1,234	72	888	0	28	346
1980	1,298	71	922	0	29	376
1981	1,363	70	954	0	30	409
1982	1,428	69	985	0	31	443
1983	1,492	69	1,029	1,029	0	0
1984	1,556	68	1,058	1,058	0	0
1985	1,621	67	1,086	1,086	0	0
1986	1,685	66	1,112	1,112	0	0
1987	1,750	66	1,155	1,155	0	0
1988	1,815	65	1,180	1,180	0	0
1989	1,881	64	1,204	1,204	0	0
1990	1,952	66	1,298	1,298	0	0

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

* - San Luis Rey

TABLE B-5

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

MURRIETA COUNTY WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION	USE					
WATER YEAR	WELLS	AG	COMM	DOM	TOTAL DELIVERED	LOSS*	TOTAL USE
1966	41	0	0	37	37	4	41
1967	45	0	0	41	41	4	45
1968	54	0	0	49	49	5	54
1969	54	0	0	49	49	5	54
1970	73	0	0	66	66	7	73
1971	83	3	0	72	75	8	83
1972	111	10	0	91	101	10	111
1973	92	11	0	72	84	8	92
1974	132	14	0	107	120	12	132
1975	153	18	0	121	139	14	153
1976	117	22	0	84	106	11	117
1977	170	21	0	134	155	15	170
1978	169	19	0	135	154	15	169
1979	197	19	0	160	179	18	197
1980	218	20	0	178	198	20	218
1981	265	30	0	211	241	24	265
1982	230	21	0	188	209	21	230
1983	216	14	0	182	196	20	216
1984	304	26	0	250	276	28	304
1985	308	19	0	261	280	28	308
1986	305	22	0	255	277	28	305
1987	326	23	0	273	296	30	326
1988	303	13	35	262	275	28	303
1989	286	11	72	262	344	-4	340
1990	465	13	76	266	355	110	465

* Losses assumed to be 10% of use (1966 - 1988)

TABLE B-6

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

RAINBOW MUNICIPAL WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION			USE				
WATER YEAR	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

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-7

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

RANCHO CALIFORNIA WATER DISTRICT
Quantities in Acre Feet

	PRODUCTION							USE						RECLAIMED WASTE WATER		
	LOCAL		VAIL DIVERSIONS 1/			IMPORT	TOTAL 2/	AG	COMM	DOM	SNR RELEASE	TOTAL USE	LOSS 3/ TOTAL	REUSE IN SMRW	EXPORT	RECHARGED
WATER YEAR	WELLS IN GWA	WELLS OUT GWA	RECHARGE	IRRIGATION	TOTAL DIVERSIONS											
1966		0		185 *	185	0										
1967	4,288	0		1,136 *	1,136	0	5,424						5,424	0	0	0
1968	5,100	0		398 *	398	0	5,498						5,498	0	0	0
1969	3,617	0		697 *	697	0	4,314						4,314	0	0	0
1970	6,721	0		840 *	840	0	7,561						7,561	0	0	0
1971	7,960	0		203 *	203	0	8,163						8,163	0	0	0
1972	8,369	0	1,973	1,541 *	3,514	0	9,910						9,910	0	0	0
1973	7,726	0	5,088	524 *	5,612	0	8,250						8,250	0	0	0
1974	10,163	0	2,114	1,066 *	3,180	0	11,229						11,229	0	0	0
1975	10,357	0	1,823	369 *	2,192	0	10,726						10,726	0	0	0
1976	11,809	0	2,144	50 *	2,194	119	11,978						11,978	0	0	0
1977	10,522	0	1,503	0	1,503	1,845	12,367						12,367	0	0	0
1978	8,930	0	20,819	0	20,819	5,774	14,704						14,704	0	0	0
1979	11,371	0	6,519	0	6,519	7,009	18,380						18,380	0	0	0
1980	12,621	0	10,944	0	10,944	10,126	22,747						22,747	0	0	0
1981	15,612	0	6,802	0	6,802	15,282	30,894						30,894	0	0	0
1982	12,631	0	6,058	0	6,058	13,378	26,009						26,009	0	0	0
1983	16,577	98	12,113	715	12,828	5,752	23,142						22,427	0	0	0
1984	25,660	4	6,612	1,144	7,756	6,716	33,524						32,380	0	0	0
1985	24,373	0	5,027	1,201	6,228	7,158	32,732						31,531	0	0	0
1986	26,997	0	8,722	1,053	9,775	11,174	39,224						38,171	0	0	0
1987	33,735	0	8,089	273	8,362	7,564	41,572						41,299	48	0	0
1988	21,367	0	4,844	0	4,844	17,854	39,221						39,221	82	0	0
1989	26,169	0	0	0	0	22,720	48,889	25,533	3,316	13,198	852	42,899	5,990 48,889	168	0	0
1990	33,241	0	0	0	0	22,030	55,271	27,643	3,940	14,916	902	47,401	7,870 55,271	133	0	0

1/ Figures from 1966 to 1972 supplied by USGS; 1972 to 1990 supplied by RCWD

2/ Total production = Wells, Import and Vail Irrigation

3/ Loss = Total production less total use

* - Irrigation 1966 to 1976 by pumping from Vail Lake

TABLE B-8

SANTA MARGARITA RIVER WATERSHED
ANNUAL WATER PRODUCTION AND USE

U.S.M.C. - CAMP PENDLETON
Quantities in Acre Feet

	PRODUCTION			USE						RECLAIMED WASTE WATER		
WATER YEAR	AG	CAMP SUPPLY	TOTAL	AGRICULTURE 1/ IN-SMRW	AGRICULTURE 1/ OUT-SMRW	CAMP SUPPLY 2/ IN-SMRW	CAMP SUPPLY 2/ OUT-SMRW	TOTAL EXPORT	TOTAL* IN-SMRW	RECHARGED IN-SMR 3/	IMPORT 4/ RECHARGED IN SMRW	TOTAL RECHARGED IN SMRW
1966	1,101	4,692	5,793	429	672	2,064	2,628	3,299	2,494	919	974	1,893
1967	796	4,903	5,699	310	486	2,157	2,746	3,231	2,468	914	1,243	2,156
1968	986	5,046	6,032	385	601	2,220	2,826	3,427	2,605	866	1,214	2,080
1969	940	4,959	5,899	367	573	2,182	2,777	3,350	2,549	1,019	1,170	2,189
1970	1,106	5,633	6,739	431	675	2,479	3,154	3,829	2,910	1,032	1,113	2,145
1971	819	5,330	6,149	319	500	2,345	2,985	3,4[illegible]	2,665	921	1,090	2,011
1972	817	5,323	6,140	319	498	2,342	2,981	3,4[illegible]	2,661	900	1,168	2,068
1973	1,003	5,121	6,124	391	612	2,253	2,868	3,480	2,644	949	1,187	2,137
1974	909	5,202	6,111	355	554	2,289	2,913	3,468	2,643	915	1,140	2,055
1975	757	4,593	5,350	295	462	2,021	2,572	3,034	2,316	989	1,530	2,519
1976	885	5,384	6,269	345	540	2,369	3,015	3,555	2,714	949	1,497	2,447
1977	994	4,506	5,500	388	606	1,983	2,523	3,130	2,370	942	1,416	2,358
1978	176	5,177	5,353	69	107	2,278	2,899	3,006	2,347	1,164	1,283	2,446
1979	1,070	7,213	8,283	417	653	3,174	4,039	4,692	3,591	1,065	1,427	2,493
1980	835	5,495	6,330	326	509	2,418	3,077	3,587	2,743	1,101	1,405	2,506
1981	1,464	5,240	6,704	571	893	2,306	2,934	3,827	2,877	1,119	1,249	2,368
1982	1,447	5,024	6,471	564	883	2,211	2,813	3,696	2,775	982	1,273	2,254
1983	942	4,215	5,157	367	575	1,855	2,360	2,935	2,222	1,252	1,242	2,494
1984	1,078	4,501	5,579	420	658	1,980	2,521	3,178	2,401	1,323	1,120	2,443
1985	1,069	4,764	5,833	417	652	2,096	2,668	3,320	2,513	1,419	1,200	2,619
1986	953	4,807	5,760	372	581	2,115	2,692	3,273	2,487	1,259	981	2,240
1987	1,098	4,838	5,936	428	670	2,129	2,709	3,379	2,557	1,367	1,799	3,166
1988	1,223	5,944	7,168	477	746	2,616	3,329	4,075	3,093	1,523	1,872	3,396
1989	856	5,043	5,900	334	522	2,219	2,824	3,347	2,553	1,301	1,446	2,747
1990	855	4,228	5,083	333	522	1,860	2,368	2,890	2,193	1,277	1,451	2,728

* Assumes No Losses

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

2/ Camp Supply water use is divided with 44% used inside the SMRW and 56% used outside

3/ Wastewater Recharged in SMR equals effluent from Plants 3, 8 and 13 (partial).

4/ 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 3/.
No record available for effluent from Plant 2 returned to SMRW for 1966-1974 and after 1982.
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

SANTA MARGARITA RIVER WATERSHED

ANNUAL WATERMASTER REPORT

WATER YEAR 1989-90

APPENDIX C

SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

JULY 1991

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 89-90	IRRIGATED CROP 89-90	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
AGUANGA GROUNDWATER AREA							
Clawson, Gary A.	43425 Sage Road	917-050-09	309.74	30.00	Alfalfa	90.00	
	Aguanga, CA 92536	917-050-07	82.19	(Total)			
		581-07-13	43.10				
		581-07-14	158.08				
		581-15-13	120.56				
		581-15-16	25.37				
Cottle, Thomas C.	42551 Hwy 79	583-040-028	25.52	66.00	Oats &	79.40	88.00
	Aguanga, CA 92536	583-040-029	19.89	(Total)	Pasture		
		583-040-024	23.48				
		583-040-025	23.12				
		583-040-026	23.16				
		583-040-027	22.64				
Strange, Owen W.	m/t P.O. Box 1974	583-040-22	97.78	35.00	Alf,Rye,Sudan	145.50	162.00
and Elizabeth G.	Rancho Santa Fe, CA	583-040-21	13.45	64.00	Oats & Barley		
Trustees, Strange	92067	583-130-001-3	80.00	2.00	Permanent pasture		
Living Trust of 4-15-88	43023 Hwy 79	583-120-001-2	120.00				
		583-060-003-9	41.60				
Twin Creek Ranch, L.P.	c/o Lawrence Wrobleski	583-120-081	17.29	0.00		554.40	67.76
	P. O. Box 407	583-120-083	68.09	40.00	Oats		
	Murietta, CA 92362	583-120-084	179.39	80.00	Range Grass/Oats		
	44201 Hwy 79 Aguanga	583-150-001	80.00	0.00			
	44735 Hwy 79 Aguanga	583-140-014	48.03	20.00	Row Crops		
		583-140-015	40.00	20.00	Row Crops		
		583-140-016	40.00	20.00	Row Crops		
		583-140-018	10.09	0.00			
		583-140-020	10.15	0.00			
Vrieling, Gerrit J.	m/t 15015 Cheshire	583-240-22	10.00	9.00	Pistachios	9.90	
and Betty J.	La Mirada, CA, 90638						
	45203 Hwy 371 Aguanga						
Harris, Homer N.	44444 Sage Road	581-160-014	17.73	10.00	Citrus	30.00	
and Dolores G.	Aguanga, CA 92536	581-160-015	7.42	10.00	Walnuts		
		581-150-009	7.00				
Missionary Foundation,	m/t 5169 Harriett Cir	581-170-004	310.00	105.00	Potatoes	178.00	183.00
Inc.	Riverside, CA 92505	581-130-009	120.00	0.00			
	44200 Sage Rd	581-190-001	320.00	0.00			
	Aguanga, CA 92536	581-120-006	200.00	10.00	Citrus,	40.50	
				5.00	Grapes & Row		
				10.00	Deciduous		
TOTAL				536.00		1127.70	500.76

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 89-90	IRRIGATED CROP 89-90	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
TEMECULA CREEK ABOVE AGUANGA GROUNDWATER AREA							
Agri-Empire, Inc.	m/t P. O. Box 490	113-090-01	377.07	0.00			
	San Jacinto, Ca 92383	113-090-03	21.46	0.00			
		113-090-05	541.22	40.00	Grain	13.20	
		113-100-01	389.81	0.00			
		113-130-01	150.09	0.00			
		113-140-03	196.54	103.00	Potatoes	328.57	40.00
				40.00	Grain	13.20	
		113-140-04	503.24	80.00	Potatoes	255.20	40.00
		113-140-05	45.09	0.00			
		113-140-06	93.94	0.00			
		114-020-09	37.16	0.00			
		114-030-08	331.79	0.00			
		114-030-26	42.87	0.00			
Bergman, Arlie W.	37126 Hwy 79	113-140-01	358.62	Total of			
and Coral R.	Aguanga, Ca 92536	113-140-02	38.75	80.00	Potatoes	255.20	
		114-020-12	108.78	0.00			
		114-030-10	41.51	0.00			
		113-130-03	115.75				
		113-130-04	39.65				
Ward, Alvis A	m/t 2 Rue Biarritz	112-030-58	69.83	20.00	Pasture	76.00	
	Newport Beach, CA 92660	112-030-38	40.00	33.00	Grain/Grass	125.40	
	38790 Highway 79	112-030-22	24.77	10.00	Pasture	38.00	
	Warner Springs, CA 92086						
Ward, Donald F.	38790 Highway 79	112-030-67	67.41	10.00	Oats &	38.00	
	Aguanga, CA 92536	112-030-59	160.00	8.00	Sudan	30.40	
Templeton, Robert D.	35490 Highway 79	114-120-42	78.41	5.00	Alfalfa	15.00	
and Linda K.	Warner Sprngs, CA 92086	114-070-07	76.42	13.00	Pasture	49.40	
		114-080-14	42.51	29.00	Pasture	110.20	
		114-080-13	21.30	13.00	Alfalfa		

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 89-90	IRRIGATED CROP 89-90	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
TEMECULA CREEK ABOVE AGUANGA GROUNDWATER AREA (Cont)							
Sympson, Claud F.	m/t 501 S. Olive	114-020-04	82.39	10.00	Pasture/Oats	38.00	
	Anaheim, CA 92805	114-030-05	41.78	5.00	Pasture/Oats	19.00	
	Highway 79	114-070-01	41.02	10.00	Pasture/Oats	38.00	
	Warner Springs, CA	114-070-16	39.19	0.00			
	92086	114-070-26	129.37	5.00	Pasture/Oats	19.00	
Sympson, Claud F. and	m/t 57 The Point	114-030-04	10.43	0.00			
Eric & Judith Kroesche	Coronado, CA 92118-3216	114-070-32	28.04	10.00	5 Pasture	38.00	
	Highway 79				5 Oats		
	Warner Springs, CA 92096	114-070-38	14.62	0.00			
TOTAL				524.00		1499.77	80.00

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS		ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 89-90	IRRIGATED CROP 89-90	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
WILSON CREEK ABOVE AGUANGA GROUNDWATER AREA								
ANZA VALLEY								
Agri-Empire, Inc.	P.O. Box 490 San Jacinto, CA 92383							
		Section 8	573-090-05	45.17	40.00	Potatoes	127.60	
Leased from Leighvon Garst			573-090-06*	27.74	27.74	Potatoes	88.49	
1847 Lincoln St, Long Beach, Ca								
Leased from Sharen L. Bloucher			573-090-08*	4.91	4.91	Potatoes	15.66	
c/o James M. Bloucher			573-090-09*	4.91	4.91	Potatoes	15.66	
2385 Carpenter Cyn Rd			573-090-10*	4.91	4.91	Potatoes	15.66	
San Luis Obispo, Ca.			573-090-11*	4.91	4.91	Potatoes	15.66	
Leased from Stewart C. Sale			573-090-12*	30.29	30.29	Potatoes	96.63	
22424 Poplar Court			573-090-13*	18.98	18.98	Potatoes	60.55	
Murrieta, CA 92362			573-090-14*	17.54	17.54	Potatoes	55.95	
			573-090-15*	17.92	17.92	Potatoes	57.16	
			573-090-16*	18.50	18.50	Potatoes	59.02	
			573-090-17*	18.83	18.83	Potatoes	60.07	
			573-100-02	27.79	27.79	Potatoes	88.65	
		Section 10	575-050-44	14.36	0.00			
			575-050-45	14.36	0.00			
			575-050-46	14.35	0.00			
			575-060-02	113.49	0.00			
		Section 13	575-100-37	57.80	0.00			
		Section 14	575-110-21	143.75	143.75	Grain	47.44	
			575-110-27	54.45	54.45	Grain	17.97	
			575-310-2	39.09	39.09	Grain	12.90	
			575-310-11	80.00	0.00			
			575-310-12	80.00	0.00			
			575-310-13	17.46	17.46	Grain	5.76	
			575-310-27	17.46	17.46	Grain	5.76	

* Leased Parcel

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 89-90	IRRIGATED CROP 89-90	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
ANZA VALLEY (Cont)							
Agri-Empire, Inc.	P.O. Box 490 San Jacinto, CA 92383						
	Section 15	575-080-14	9.92	9.92	Potatoes	31.64	
		575-080-15	4.35	0.00			
		575-080-17	9.75	9.75	Potatoes	31.10	
		575-080-18	10.13	10.13	Potatoes	32.31	
		575-080-19	31.29	31.29	Potatoes	99.82	
		575-080-21	20.00	20.00	Potatoes	63.80	
		575-080-22	20.00	20.00	Potatoes	63.80	
		575-080-24	20.00	20.00	Potatoes	63.80	
		575-080-27	20.00	20.00	Potatoes	63.80	
		575-090-10	38.80	38.80	Potatoes	123.77	
	Section 17	573-180-11	39.74	30.00	Grain	9.90	
Leased from Linus W. & Helen M. Miller P. O. Box 602 Anza, CA 92306		573-200-04*	18.24	Total			
		573-200-05*	18.50	Grown			
		573-200-06*	18.89	On			
		573-200-07*	18.88	Miller			
		573-200-08*	18.31	Lease			
		573-200-09*	36.40	Is			
		573-200-10*	18.68	120.00	Grain	39.60	
	Section 20	576-060-09	8.26	8.26	Grain	2.73	
		576-060-31	16.09	16.09	Grain	5.31	
		576-060-33	79.45	79.45	Grain	26.22	
		576-060-37	41.41	41.41	Grain	13.67	
		576-070-03	80.00	80.00	Grain	26.40	
		576-070-05	116.57	116.57	Grain	38.47	
	Section 21	576-080-03	133.72	133.72	Grain	44.13	
Leased from Louise Phebe Hamilton Tr P. O. Box 102, Anza, Ca 92306		576-110-001*	160.00	40.00	Potatoes	127.60	
				80.00	Grain	26.40	
		576-110-02	28.00	0.00			
		576-110-04	50.00	0.00			
		576-110-06	19.29	19.29	Grain	6.37	
		576-110-07	17.82	17.82	Grain	5.88	
		576-110-08	17.00	17.00	Potatoes	54.23	
		576-110-09	18.41	18.41	Potatoes	58.73	

* Leased Parcel

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 89-90	IRRIGATED CROP 89-90	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
ANZA VALLEY (Cont)							
Agri-Empire, Inc.	P.O. Box 490 San Jacinto, CA 92383						
	Section 22	575-120-12	88.03	88.03	Grain	29.05	
		575-130-03	19.55	19.55	Grain	6.45	
		575-130-06	40.89	40.89	Grain	13.49	
		575-130-08	18.56	18.56	Grain	6.12	
		575-130-09	20.06	20.06	Grain	6.62	
		575-130-10	20.07	20.07	Grain	6.62	
		575-130-11	19.19	19.19	Grain	6.33	
		575-130-12	18.18	18.18	Grain	6.00	
		575-130-13	19.02	19.02	Grain	6.28	
		575-130-14	19.00	19.00	Grain	6.27	
		575-130-15	17.56	17.56	Grain	5.79	
	Section 23	575-140-19	105.04	105.04	Grain	34.66	
Leased from Cahuilla	Section 26	576-130-002*	640.00	160.00	Potatoes	510.40	
Indian Reservation	Section 27	576-130-001*	640.00				
	Section 29	576-120-002*	640.00	125.00	Potatoes	398.75	
SUBTOTAL ANZA VALLEY				2,197.50		2,948.90	0.00
LEWIS VALLEY							
Green Shell Company	39850 Sage Road Hemet, CA 92343	571-080-12	80.00	50.00	Olive Trees	55.00	
SUBTOTAL LEWIS VALLEY				50.00		55.00	0.00
TOTAL WILSON CREEK ABOVE AGUANGA GROUNDWATER AREA				2,247.50		3,003.90	0.00

* Leased Parcel

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 89-90	IRRIGATED CROP 89-90	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
MURRIETA-TEMECULA GROUNDWATER AREA							
Poyorena, Thomas J.	m/t 22145 Grand Ave Wildomar, CA 92395 21853 Palomar St.	369-510-22	18.79	14.00	Pasture	53.20	
Murrieta Stud	m/t P. O. Box 1187 Arcadia, CA 91006						
	42670 Juniper	906-240-006	38.18	32.00	Pasture	122.00	
	42680 Kalmia	906-250-013	53.83	50.00	Pasture	190.00	
	42660 Ivy Murrieta, CA 92362	909-140-001	20.00	18.00	Pasture	68.50	
Mitchell Stock Farm, Inc.	m/t 42125 Elm St Murrieta, CA. 92362 25849 Washington Ave Murrieta, CA 92362	909-100-007	40.00	11.50	Bermuda Grass	43.70	
Delaney, Jane M.	m/t 41820 Hawthorne Murrieta, CA 92362 42551 Guava St Murrieta, CA 92362	909-090-034 909-090-033	12.36 12.32	24.00	Pasture	91.20	
International Immunology	m/t 25549 Adams Ave Murrieta, CA 92362	909-060-020 909-170-010 909-170-011	9.33 9.55 27.77	10.00	Pasture	38.00	
Temecula Ranchos c/o Milo D. Rowell	m/t 2100 Tulare St #405 Fresno, CA 93271 45055 Rio Linda Rd Temecula, CA	926-200-06 926-430-06	429.43 48.92	378.46 41.20	Citrus Citrus	201.00 157.00	
Anza Grove	c/o McMillan Farm Mgt. 29379 Rancho Cal. Rd #201 Temecula, CA 92390	942-180-02 942-240-03 942-240-04 942-240-05	40.28 40.83 40.83 39.31	155.00 6.00 (Total)	Citrus Grapes	258.00	
Bear Valley Vineyard Co., Ltd. Manley Bear Valley Partners	c/o McMillan Farm Mgt. 29379 Rancho Cal. Rd #201 Temecula, CA 92390	904-05-08 904-05-10 904-06-09 904-06-08 904-06-10	17.51 90.12 129.46 48.00 153.47	17.00 90.00 129.00 48.00 0.00	Wine Grapes Wine Grapes Wine Grapes Wine Grapes	440.00	

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 89-90	IRRIGATED CROP 89-90	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
MURRIETA-TEMECULA GROUNDWATER AREA (Cont)							
Nevada Beverage Co.	m/t P. O. Box 93538 Las Vegas, Nevada 89193 41621 Magnolia Avenue Murrieta, CA 92362	906-020-41 906-020-42	18.66 38.20	16.00 34.00	Pasture Pasture	190.00	
Boots, Clydene	P. O. Box 321 Murrieta, CA 92362 25555 Washington Ave Murrieta, CA 92362	909-090-19	16.66	14.00	Pasture	53.20	
Sandoval, Robert A.	m/t 25851 Douglas St Murrieta, CA 92362	909-090-020 909-100-062 909-100-063 909-100-064 909-100-065	14.22 17.49 19.09 17.09 18.22	50.00	Cucumbers	100.00	
Rancho California Association No. 2	3146 Quiet Hills Escondido, CA 92025 42835 Ivy St., Murrieta	906-24-07 904-040-071-5	53.66 3.02	56.00	Pasture	212.00	
Hutchison, Robert J. and Coletha	P. O. Box 903 Murrieta, CA 92362 25441 Hayes Ave	909-260-035 909-260-041	9.77 4.85	10.00 (TOTAL)	Pasture	38.00	
Carson, David M. and Carol J.	25471 Hayes Ave Murrieta, CA 92362	909-260-036 909-260-042	8.87 4.31	7.00 3.50	Pasture Pasture	26.60 13.30	
TOTAL				1214.66		2295.70	0.00

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 89-90	IRRIGATED CROP 89-90	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
SANTA MARGARITA RIVER BELOW GORGE							
DE LUZ CREEK							
Ezor, Albert E. and Sylvia L.	m/t 31421 Cavendish Dr. Los Angeles, Ca 90064	101-271-17	47.79	14.00 8.00	Avocado Kiwi	45.00	
Woosley, Donna J.	Rt 6, Box 49-B Fallbrook, Ca 92028 40710 DeLuz Rd, Fbk	101-271-13	42.28	8.00	Pasture	30.40	
Durling, Robert G. and Eleanor J.	40401 DeLuz Rd Fallbrook, Ca 92028	101-271-08	25.60	9.75	Citrus	32.00	
Durling, Don & Margaret	41500 DeLuz Road Fallbrook, CA 92028	101-210-28-00 101-180-05-00 101-210-41 101-210-27 101-210-39 101-180-01	40.09 11.44 15.16 64.64 116.07 32.30	33.00	Citrus and Avocado	172.00	
Matthews, Richard R. and Baum, Mary J.	7950 S. Alamedas St Huntington Park, Ca 90256 m/t Stephen Lopardo, Esq. POBox 427, Fallbrook 92028	101-210-53 101-220-12	50.44 31.63	12.00	Avocados and Citrus	36.00	
Durlings Nursery (Corporation)	41500 DeLuz Rd Fallbrook, Ca 92028	101-210-42	53.14	53.00	Avocados and Citrus	181.00	
Raley, Harold R and Mary E.	41321 DeLuz Creek Rd Fallbrook, Ca 92028	101-210-11	15.23	8.50 0.50	Avocado Citrus	20.40 0.95	
Herbel, John & Jeraldine	41257 DeLuz Rd Fallbrook, Ca 92028	101-210-12	30.28	10.00 18.00 2.00	Avocado Citrus Row crops	24.00 34.20 8.00	
Wagner, Wilbur A. and Shirley A.	m/t 14539 San Dieguito La Mirada, CA 90638 DeLuz Road, Fbrk.	101-210-23 101-210-22	17.19 4.55	18.00	Avocado, Fruit Citrus, Persimmon	32.80	
Welburn, Douglas J. and Sue	Rt. 6, Box 77 Fallbrook, Ca 92028 40751 DeLuz Murrieta Rd	101-571-08	26.98	11.00	Row Crops	36.00	
TOTAL				205.75		652.75	0.00

APPENDIX C

SANTA MARGARITA RIVER WATERSHED
SUBSTANTIAL USERS OUTSIDE ORGANIZED WATER SERVICE AREAS

CURRENT OWNER	ADDRESS	ASSESSOR PARCEL NO.	PARCEL ACREAGE	ACRES IRRIGATED 89-90	IRRIGATED CROP 89-90	WELL PRODUCTION AC. FT	SURFACE DIVERSION AC. FT
SANDIA CREEK							
Cal June, Inc.	P. O. Box 9551 No. Hollywood, CA 91609 40376 Sandia Creek, Fbrk	101-360-40	126.32	50.00 75.00 1.00	Avocados Fruit Citrus	100.00	100.00
TOTAL				126.00		100.00	100.00
SANTA MARGARITA RIVER							
Henderson, Leland	m/t Margarita Land & Development PO Box 584, Fbk.92028 47981 & 47991 Willow Glen Rd Temecula, CA 92390	918-040-10 918-060-17	200.00 40.00	20.00 0.00	Citrus, Avocados	38.96	51.64
TOTAL				20.00		38.96	51.64
LOWER MURRIETA							
Duncan, Frank and Marjorie R. (Sage Ranch Nursery)	m/t 1850 N. Whitley #1219 Hollywood, CA 90028 42525 E. Benton Rd.	571-020-046 571-020-047 571-020-048 571-020-049 571-520-005 571-520-007 571-520-008 571-520-009 470-210-007 470-220-004	--- 40.80 36.75 148.86 34.31 109.50 99.43 80.23 53.62 121.00	845.00	Olive trees		30.00
Zamora, John and Linda	39800 E. Benton Rd. Temecula, CA 92390	915-120-18	37.74	20.00	Pasture	76.00	
TOTAL				865.00		76.00	30.00
GRAND TOTAL				5,738.91		8,794.78	762.40

WATERMASTER
SANTA MARGARITA RIVER WATERSHED

SANTA MARGARITA RIVER WATERSHED

ANNUAL WATERMASTER REPORT

WATER YEAR 1989-90

APPENDIX D

WATER QUALITY DATA

JULY 1991

TABLE D-1

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

SURFACE STREAMS SAMPLED BY 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
	1989										
Naval Weapons	May	1601	1112	111	73.3	128	---	203	317	229	13.6
Station at	June	2500	1120	114	72.6	145	---	196	301	235	10.7
Fallbrook Creek	July	1629	1160	127	71.7	128	---	197	324	241	6.2
	1990										
	Jan	1630	1140	121	74.5	137	3.0	212	384	260	1.4
	Apr	1110	812	83.1	45.5	94.7	4.9	125	255	152	4.2
	May	1680	1160	110	71.9	138	2.3	210	358	262	1.0
	1989										
Fallbrook PUD	May	1259	838	98.0	41.6	106	---	141	198	197	29.3
Sump at Santa	June	1298	810	92.5	40.7	119	---	150	189	189	23.8
Margarita River	July	1252	790	98.1	40.1	100	---	143	191	202	11.5
	1990										
	Jan	1440	940	114	55.5	105	11.8	191	301	186	12.1
	Apr	1460	946	122	57.7	112	11.8	180	301	193	10.7
	May	1340	906	106	45.3	107	9.1	165	254	202	6.6
	1989										
Sandia Creek	May	1260	800	107	53.1	80	---	174	168	176	17
Near Santa	June	1678	798	106	52.6	84.7	---	195	167	183	7.86
Margarita	July	1241	816	125	54.4	75.8	---	196	170	173	4.4
	1990										
	Jan	1220	760	104	52.6	77.3	2.6	183	186	174	3.0
	Apr	1240	830	104	54.0	83.2	2.6	195	183	181	2.8
	May	1260	830	101	50.7	79.5	2.2	205	203	183	1.2
	1989										
DeLuz Creek	May	718	408	24.8	6.94	111	---	81.3	72	140	7.3
At McDowell	June	1260	720	96.4	42.6	92.8	---	188	117	202	<0.4
	July	1097	675	93.5	37.0	78.6	---	170	102	201	<0.4
	1990										
	Jan	1250	776	108	52.4	84	1.7	200	185	214	0.45
	Apr	1190	802	103	49.1	89.4	2.0	180	158	196	1.1
	May	1240	820	101	48.3	83.7	1.5	195	170	204	8.8

TABLE D-1 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

SURFACE STREAMS SAMPLED BY 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
	1989										
Murrieta Creek	May	1130	708	94.7	40.30	80.7	---	166	125	197	<0.40
At Temecula	June	650	354	14.3	4.40	108	---	69.8	61.4	117	2.97
	July	654	375	19.2	4.87	105	---	69.2	66	139	1.30
	1990										
	Jan	810	444	53.7	16.7	97.3	2.7	84.3	93.6	200	<0.05
	Apr	850	530	59.3	17.2	97.6	2.8	90	34.3	226	<0.05
	May	850	544	46.3	13.8	110	2.8	95	117	169	0.38
	1989										
Temecula Creek	May	1540	1052	117	49.4	103	---	168	278	116	1.23 *
At Interstate 15	June	1148	674	110	24.9	92.4	---	106	110	281	2.79
	July	1086	680	131	27.4	84.1	---	105	108	281	0.04
	1990										
	Jan	1090	670	116	25.4	89.1	2.2	118	150	297	0.59
	Apr	1150	784	123	26.2	98.3	3.0	105	127	308	0.81
	May	1150	772	121	26.1	94.0	2.2	110	164	310	0.33
	1989										
Santa Margarita	May	1035	680	101	22.3	77.9	---	105.0	128	278	8.5
River at	June	749	426	34.9	9.56	102.0	---	78.9	73.6	145	2.53
Temecula Gorge	July	798	456	50.6	11.4	95.7	---	79.8	76.4	181	0.4
	1990	1080	667	113	25.2	90.5	2.4	114	150	295	0.55
	Jan	1130	748	119	25.8	98.5	2.9	1115	113	296	0.78
	Apr	1050	682	83.4	20.9	110	3.0	100	208	210	0.47
	May										
	1989										
Rainbow Creek at	May	773	444	40.2	11.4	89.1	---	82.5	76.9	163	8.9
Willow Glen Road	June	1610	1060	177	52.6	132	---	162	323	100	96.6
	July	1508	1141	135	53.4	111	---	155	309	100	105
	1990										
	Jan	1520	976	117	54.8	109	28.6	116	670	106	40
	Apr	1530	1040	111	51.11	118	42.4	160	376	80	36.3
	May	1450	1030	106	47.2	116	24.5	155	333	124	21.4

* Lab reported 123

TABLE D-2

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

SURFACE STREAMS 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
Temecula Creek	3/13/87	890	575	---	---	76	---	68	---	---	<.1 @N
At Hwy 79	5/8/87	1180	750	---	---	115	---	78	---	---	<.1 @N
	9/4/87	1350	895	---	---	134	---	110	---	---	.2 @N
	1/20/88	660	370	---	---	55	---	43	---	---	.2 @N
DeLuz Creek	8/21/86	1220	760	*94	44	92	2	193	165	204	17
At Dios Rio Road	11/25/86	1200	740	92	42	92	4	175	195	146	39
	3/13/87	1090	670	---	---	85	---	165	---	---	4 @N
	5/8/87	1130	700	---	---	94	---	200	---	---	9 @N
	9/4/87	1110	755	---	---	92	---	95	---	---	3.4 @N
	1/20/88	1250	775	---	---	100	---	142	---	---	11.7 @N
Sandia Creek at	8/21/86	1070	680	88	42	78	2	174	140	198	15
Buenos Campos Road	11/25/86	1130	685	92	44	73	2	165	150	207	16
	3/13/87	1130	660	---	---	73	---	160	---	---	2.7 @N
	5/8/87	1130	725	---	---	80	---	182	---	---	14 @N
	9/4/87	1110	690	---	---	75	---	90	---	---	3.4 @N
	1/20/88	1160	720	---	---	99	---	132	---	---	5.6 @N
Murrieta Creek	8/21/86	850	510	66	15	96	4	96	135	372	10
At Gaging Station	11/25/86	890	520	62	18	103	3	109	81	259	3
	4/2/87	870	515	---	---	99	---	104	---	---	.2 @N
	5/8/87	850	790	---	---	102	---	9	---	---	.2 @N
	9/4/87	730	445	---	---	84	---	45	---	---	.7 @N
	1/20/88	830	525	---	---	85	---	109	---	---	.7 @N
Santa Margarita	8/21/86	880	540	70	15	96	2	110	115	198	5
River at	11/25/86	1050	600	110	24	85	3	103	105	311	4
Gaging Station	3/13/87	1050	660	---	---	87	---	107	---	---	.7 @N
	5/8/87	1050	630	---	---	93	---	98	---	---	1.1 @N
	9/4/87	1000	640	---	---	88	---	100	---	---	<1 @N
	1/20/88	790	400	---	---	84	---	89	---	---	.7 @N

* - Laboratory reported as 940

TABLE D-3

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS IN 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	6/16/89	1300	775	122	39	100	2	178	66	372	40
House Well 7S/3W-20G06	6/16/89	660	345	34	3	95	2	87	60	153	<1
Lynch Well 7S/3W-17R02	6/16/89	760	410	70	17	55	1	86	30	262	8
North Well 7S/3W-18J02	6/16/89	730	390	40	7	98	2	98	45	201	<1

TABLE D-4

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS IN 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. 102 8S/3W-2Q1	1/4/89	695	370	9	2	134	1	101	25	195	<1
No. 105 7S/3W-25M1	7/6/89	500	280	30	6	66	2	71	22	134	14
No. 110 8S/1W-06K1	3/31/88	1100	630	70	23	132	6	115	163	268	3
No. 113 7S/2W-25H01	3/28/88	700	400	41	12	87	2	11	20	192	18
No. 121 7S/3W-34J	10/27/8	900	475	63	14	99	2	109	28	290	<1
No. 126 8S/2W-15H	7/6/89	500	270	2	1	108	<1	55	11	98	<1
No. 128 7/3W-36M	7/6/89	400	230	27	3	54	2	59	7	101	25
No. 129 7S/2W-20L	11/29/8	430	260	16	3	66	2	71	16	92	9
No. 130 8S/2W-11R	2/17/88	650	365	16	1	132	1	69	64	0	4
No. 131 8S/1W-12J	3/10/88	530	270	4	<1	108	1	57	52	31	1
No. 132 8S/1W-07D	4/18/88	1000	620	94	13	103	6	109	153	235	2
No. 135 7S/3W-27M	5/24/89	2450	1390	122	65	300	2	410	225	464	33
No. 139 7S/2W-32G	12/30/8	460	295	24	7	65	1	60	11	104	7
No. 140 7S/2W-33F	2/18/88	560	325	33	10	65	2	77	14	153	13
No. 141 8S/2W-11P	1/6/88	780	440	64	11	82	3	65	91	217	13

TABLE D-4 (cont'd)

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS IN 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	1/18/88	670	345	8	2	134	1	91	57	95	11
No. 144	9/14/88	610	335	8	<1	114	1	95	33	92	<1
No. 149A	8/26/88	950	540	71	211	96	1	115	47	302	18
No. 150	9/29/88	1950	1235	134	29	225	2	290	220	390	15
No. 151	9/20/88	5780	3410	280	114	840	5	1660	670	369	<1
No. 202 7S/2W-36J1	12/14/88	740	440	47	18	84	3	97	48	223	17
No. 203 8S/1W-6P1	6/29/88	970	530	44	36	112	4	120	123	250	5
No. 205 7S/3W-35A	3/28/88	500	290	23	3	81	2	83	27	107	21
No. 207	9/1/88	510	245	1	<1	108	<1	54	26	82	<1
8S/2W-14B	9/14/88	480	305	3	<1	106	<1	58	23	24	1
No. 212 8S/2W-11N	3/28/88	640	330	42	2	74	3	81	33	146	14
No. 216	6/1/88	480	280	25	4	65	2	71	11	134	---
8S/2W-7W	6/29/88	480	275	29	5	59	3	81	7	110	26
No. 217	3/28/88	580	285	8	1	108	1	81	20	113	15
8S/2W-17M12	8/10/88	570	280	8	1	105	1	82	20	55	13
No. 234 (Old 114) 8S/2W-11P	3/31/88	840	480	54	15	100	4	61	109	241	18
No. 235 (Old 137) 8S/3W-1Q	6/24/88	460	310	40	10	41	2	58	10	140	15
No. 302 7S/3W-18H	4/11/88	690	360	36	6	100	1	77	65	192	<1

TABLE D-5

SANTA MARGARITA RIVER WATERSHED
WATER QUALITY DATA

WELLS ON INDIAN RESERVATIONS

Site Location	Date Tested	Specific Conductance umhos	Total Dissolved Solids (mg/l)	Chemical Constituents - mg/l							
				Ca	Mg	Na	K	Cl	SO4	HCO3*	NO3
Pechanga Indian Reservation											
8S/2W-28R	8/3/89	495	---	---	---	---	---	---	---	---	1.1 @N
8S/2W-35D	8/3/89	660	347	43	5.5	87	1.2	78	35	169	.35 @N
8S/2W-29A	8/2/89	342	207	31	11	24	0.4	18	7	135	2 @N
8S/2W-34B	10/5/89	600	---	---	---	---	---	---	---	198	.47 @N
8S/2W-28Q	10/5/89	620	---	---	---	---	---	---	---	---	4.2 @N
Cahuilla Indian Reservation											
8S/3E-2K	7/20/89	535	323	46	11	41	3.4	60	22	137	3.6 @N
7S/3E-21L	8/2/89	1040	---	---	---	---	---	---	---	---	3.1 @N
7S/2E-33N	8/2/89	355	206	16	2.1	53	3.5	48	15	78	.73 @N
7S/3E-34E	7/20/89	340	204	30	5.6	26	5	29	7	99	3.3 @N

* - Alkalinity

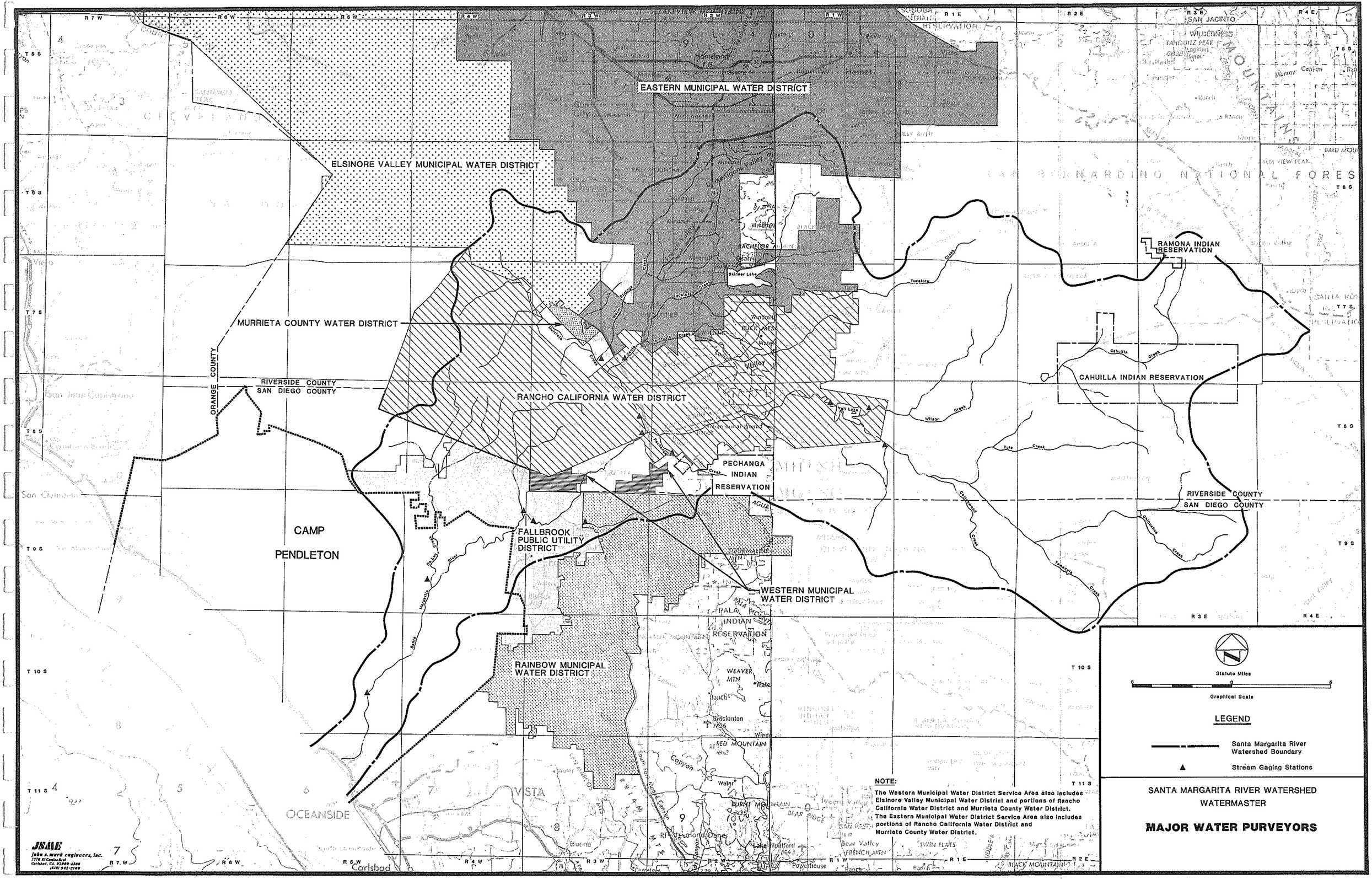
TABLE D-6

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-26C1 (Bldg 2201)	June 1989	1302	734	78.1	23.0	85.9		136	145	212	<0.4
10S/5W/23J1 (Bldg 2301)	June 1989	1139	662	71.5	21.7	80.8	---	117	128	209	<0.4
	Jan 1990	1150	632	90.6	32.4	102	---	160	170	214	<0.5
10S/4W/18M4 (Bldg 2373)	June 1989	1156	688	74.6	24.4	67.9	---	130	138	197	8.9
	Jan 1990	1120	630	86.4	32.3	101	---	156	166	210	<0.05
	Apr 1990	1160	720	98.8	34.8	107	---	152	146	218	1.4
10S/4W/18E3 (Bldg 2393)	June 1989	1166	758	80.5	28.1	67.4	---	132	157	198	9.5
	Jan 1990	1230	748	97.4	39.7	106	---	178	179	226	<0.05
	Apr 1990	1190	733	99.6	37.5	112	---	159	156	207	2.5
10S/4W-7R2 (Bldg 2603)	June 1989	1281	765	76.5	25.1	82.4	---	149	153	209	10.3
	Apr 1990	1270	788	104	36.5	126	---	173	161	215	2.6
10S/4W-7H2 (Bldg 2671)	June 1989	1137	826	79.1	28.5	85.5	---	157	158	246	12.6
	Jan 1990	1290	772	96.3	38.6	116	---	184	179	252	0.9/1.2
	Apr 1990	1320	817	109	42.1	128	---	177	167	249	5.4
10S/4W-7A2 (Bldg 2673)	June 1989	1073	688	72.1	23.9	59.6	---	120	140	184	15.9
	Jan 1990	1080	572	91.2	34.2	80.2	---	151	178	174	1.4
	Apr 1990	1130	718	111	42.1	91	---	148	167	175	9.1
10S/5W-23K2 (Bldg 33924)	June 1989	1207	698	75.6	22.8	84	---	138	137	231	<0.4
	Apr 1990	1240	728	100	32.9	129	---	158	148	245	1.3
10S/5W-13R2 (Bldg 2363)	Jan 1990	1030	540	*96	26.6	94.8	---	141	130	200	0.7

* - Reported as .96



NOTE:

The Western Municipal Water District Service Area also includes Elsinore Valley Municipal Water District and portions of 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.

SANTA MARGARITA RIVER WATERSHED
WATERMASTER

MAJOR WATER PURVEYORS

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