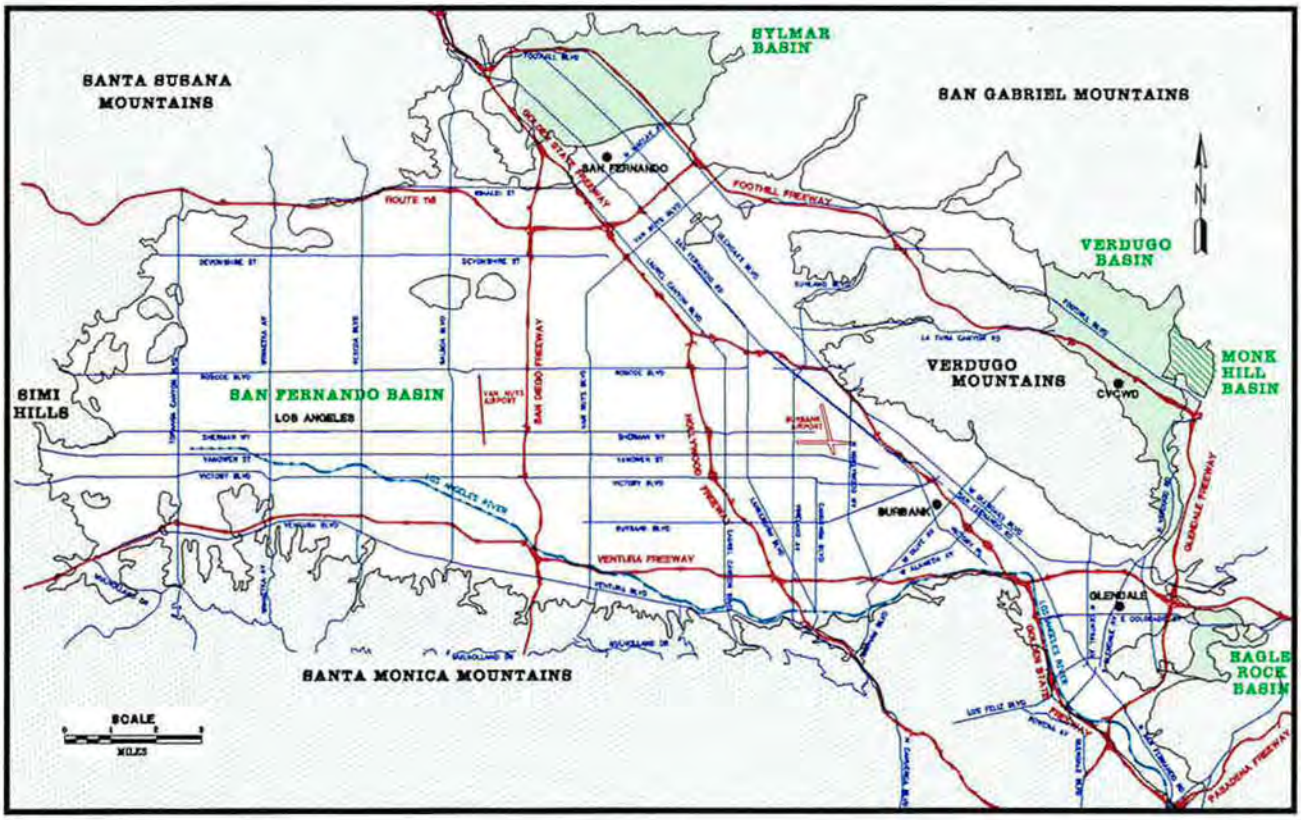
UPPER LOS ANGELES RIVER AREA WATERMASTER

CITY OF LOS ANGELES VS. CITY OF SAN FERNANDO, ET AL
CASE NO. 650079 - COUNTY OF LOS ANGELES

WATERMASTER SERVICE
IN THE
UPPER LOS ANGELES RIVER AREA
LOS ANGELES COUNTY

1999-2000 WATER YEAR
OCTOBER 1, 1999 - SEPTEMBER 30, 2000



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MAY 2001

FOREWORD

As Watermaster for the Upper Los Angeles River Area (ULARA), I am pleased to submit this report of the water supply in accordance with the provisions of the Final Judgment signed by the Los Angeles Superior Court on January 26, 1979.

This report describes the water rights in each basin, lists the allowable pumping for the 1999-2000 Water Year, and indicates the water in storage to the credit of each party as of October 1, 2000. In addition, this report includes background information on the history of the San Fernando Case; information as to each basin and the ULARA, with respect to water supply, groundwater extractions, groundwater levels, quantities of imported water use, recharge operations, water quality conditions; and other pertinent information occurring during the 1999-2000 Water Year pursuant to the provisions of the Judgment.

Updates on the development of "Significant Events" through April 2001 are discussed in Section 1.5. These include the status of the Glendale North/South Operable Unit, the issues surrounding Chromium, and the implementation of the Standard Urban Stormwater Mitigation Plan. There are comments on the agreements established with Middle Ranch, Hathaway, and Vulcan – CalMat Division confirming the water rights of the City of Los Angeles.

Other matters that are under investigation are the presence of illegal pumpers in both the City of Los Angeles and the unincorporated areas of Los Angeles County within the boundaries of ULARA, and dewaterers along Ventura Boulevard and the western end of ULARA.

To provide more extensive groundwater quality management for the ULARA basins, the ULARA Watermaster and Administrative Committee met on a quarterly basis during 1999-2000. As provided in Section 5.4 of the ULARA Policies and Procedures, the fifth ULARA Groundwater Pumping and Spreading Plan was completed and filed with the court on July 2000.

I also wish to acknowledge and express appreciation to all the parties who have provided information and data which were essential to the completion of this report.

MELVIN L. BLEVINS
ULARA Watermaster

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APPENDICES

1. INTRODUCTION

1. INTRODUCTION

1.1 Background

The Upper Los Angeles River Area (ULARA) encompasses all the watershed of the Los Angeles River and its tributaries above a point in the river designated as Los Angeles County Department of Public Works (LACDPW) Gaging Station F-57C-R, near the junction of the Los Angeles River and the Arroyo Seco (Plates 1 and 5). ULARA encompasses 328,500 acres, composed of 122,800 acres of valley fill, referred to as the groundwater basins, and 205,700 acres of tributary hills and mountains. ULARA is bounded on the north and northwest by the Santa Susana Mountains; on the north and northeast by the San Gabriel Mountains; on the east by the San Rafael Hills, which separate it from the San Gabriel Basin; on the south by the Santa Monica Mountains, which separate it from the Los Angeles Coastal Plain; and on the west by the Simi Hills.

ULARA has four distinct groundwater basins. The water supplies of these basins are separate and are replenished by deep percolation from rainfall, surface runoff and from a portion of the water that is delivered for use within these basins. The four groundwater basins in ULARA are the San Fernando, Sylmar, Verdugo, and Eagle Rock Basins.

THE SAN FERNANDO BASIN (SFB), the largest of the four basins, consists of 112,000 acres and comprises 91.2 percent of the total valley fill. It is bounded on the east and northeast by the San Rafael Hills, Verdugo Mountains, and San Gabriel Mountains; on the north by the San Gabriel Mountains and the eroded south limb of the Little Tujunga Syncline which separates it from the Sylmar Basin; on the northwest and west by the Santa Susana Mountains and Simi Hills; and on the south by the Santa Monica Mountains.

THE SYLMAR BASIN, in the northerly part of ULARA, consists of 5,600 acres and comprises 4.6 percent of the total valley fill. It is bounded on the north and east by the San Gabriel Mountains; on the west by a topographic divide in the valley fill between the Mission Hills and the San Gabriel Mountains; on the southwest by the Mission Hills; on the east by the bedrock of Saugus Formation along the east bank of the Pacoima Wash; and on the south by the eroded south limb of the Little Tujunga Syncline, which separates it from the SFB.

THE VERDUGO BASIN, north and east of the Verdugo Mountains, consists of 4,400 acres and comprises 3.6 percent of the total valley fill. It is bounded on the north by the San Gabriel Mountains; on the east by a groundwater divide separating it from the Monk Hill Subarea of the

January 26, 1979 appointing Melvin L. Blevins as Watermaster under the Judgment in this case.

On August 26, 1983, the Watermaster reported to the Court pursuant to Section 10.2 of the Judgment that the Sylmar Basin was in a condition of overdraft. In response to the Watermaster's letter and a Minute Order of this Court, the Cities of Los Angeles and San Fernando responded by letter to the Court, agreeing with the Watermaster's report on overdraft. On March 22, 1984, Judge Harry L. Hupp signed a stipulation ordering, effective October 1, 1984, that the Cities of Los Angeles and San Fernando would be limited in their pumping to bring the total pumping within the safe yield of the basin, including any rights exercised by private parties.

The following table lists the judges who have succeeded Judge Hupp as Judge of Record for the San Fernando Judgment.

TABLE 1-1: JUDGES OF RECORD

Judge	Date Appointed
Susan Bryant-Deason	January 1, 1999
Ricardo A. Torres	January 1, 1993
Gary Klausner	December 9, 1991
Jerold A. Krieger	April 16, 1991
Sally Disco	May 25, 1990
Miriam Vogel	January 16, 1990
Vernon G. Foster	April 30, 1985

1.3 Extraction Rights

The extraction rights under the Judgment and Sylmar Basin Stipulation are as follows:

San Fernando Basin

Native Water

Los Angeles has an exclusive right to extract and utilize all the native safe yield water that has been determined to be 43,660 acre-feet per year (AF/Y). This represents Los Angeles' pueblo water right to the Judgment.

Import Return Water

Los Angeles, Glendale, and Burbank each has a right to extract the following amounts of groundwater from the San Fernando Basin.

Los Angeles: 20.8 percent of all delivered water, including reclaimed water, to valley fill lands of the SFB.

Burbank: 20.0 percent of all delivered water, including reclaimed water, to the SFB and its tributary hill and mountain areas.

Glendale: 20.0 percent of all delivered water, including reclaimed water, to the SFB and its tributary hill and mountain areas (i.e., total delivered water less 105 percent of total sales by Glendale in the Verdugo Basin and its tributary hills).

Physical Solution Water

Several parties are granted limited entitlement to extract groundwater chargeable to the rights of others upon payment of specified charges. The following table lists the parties and their maximum physical solution quantities.

TABLE 1-2: PHYSICAL SOLUTION PARTIES

Chargeable Party	Pumping Party	Allowable Pumping (acre-feet)
City of Los Angeles	City of Glendale	5,500
	City of Burbank	4,200
	Middle Ranch	50
	Hathaway	60
	Van de Kamp[1]	120
	Toluca Lake	100
	Sportsmen's Lodge	25
City of Glendale	Forest Lawn	400
	Angelica Healthcare[2]	75
City of Burbank	Valhalla	300
	Lockheed	25

1. Van de Kamp has never pumped their physical solution right.
2. Angelica Healthcare no longer pump their physical solution rights.

groundwater with Liquid-Phase Granular Activated Carbon (GAC). The GAC removes the volatile organic compounds; the supply is chlorinated, and blended with imported supplies to reduce the nitrate in the pumped groundwater. Restoring the use of the Pollock wells has reduced groundwater levels in a localized area near the Los Angeles River and eliminated excessive rising groundwater flow within the river, thus preserving Los Angeles' water rights within the Los Angeles Narrows area of up to 3,000 acre-feet per year. A total of 1,851 AF were pumped and treated in the 1999-00 water year.

Holchem Inc. - Pacoima Area Groundwater Investigation

A significant groundwater contaminant plume exists in the Pacoima area near the intersection of the Simi Valley Freeway and San Fernando Road. As the lead agency, the Department of Toxic Substances Control of the California Environmental Protection Agency (DTSC) is working with the Los Angeles Regional Water Quality Control Board (RWQCB), the LADWP, and the Watermaster's Office to develop strategies to further investigate the extent and nature of the contaminant plume. A Removal Action Workplan has been approved by the DTSC for the Holchem site. Price-Pfister, a second site in the Pacoima Area, is under the supervision of the RWQCB.

Marquardt Contamination Investigation

Marquardt Company property in the San Fernando Valley was used for rocket testing and development. Under the supervision and direction of the DTSC, Marquardt is still characterizing the site contamination and has not submitted a corrective measure study for DTSC's evaluation. DTSC has not issued any information regarding future use of the property. DTSC is working with the new owners, Trammel Crow, and the Mayor's office to assure any proposal for development will not interfere with the necessary characterization and cleanup of existing contamination.

Hathaway Children and Family Services (Hathaway)

Hathaway is a Party in the case of City of Los Angeles vs. San Fernando by virtue of being successor-in-interest to Disclaiming Parties, the DeMille Estate. In June 1999 the Watermaster, City of Los Angeles and Hathway signed a stipulation to permit Hathaway to pump up to 60 acre-feet annually. Monthly production reports for the three wells are sent to the Watermaster, and the pumped groundwater is deducted from Los Angeles' stored water credits.

Middle Ranch (formerly DeMille)

In June 1998 the Superior Court of Los Angeles ordered that the motion to enforce the injunction set forth in the Judgment against Middle Ranch be granted. The order affirmed that the parties are successors-in-interest to a party (DeMille) originally named in the action with respect to water rights adjudicated in the Judgment, and that the parties are subject to the terms of the Judgment to the same extent as such predecessor-in-interest. Middle Ranch has complied with the terms of the agreement and has reported its pumping, which is deducted from Los Angeles' stored water credits.

Vulcan-CalMat Division

The Vulcan-CalMat Division is permitted to pump groundwater to be used for processing sands and gravel in their mining operations following a minimal-consumptive use Physical Solution provision of the Judgment. CalMat does not hold a water right. CalMat may use the groundwater for aggregate washing with the obligation to return 90 percent of the pumped groundwater and the groundwater lost to evaporation, and to compensate Los Angeles for up to 10 percent total consumptive losses by purchasing an equivalent amount of water from the City of Los Angeles municipal water distribution system. In December 1999 an agreement was reached among the City of Los Angeles, Vulcan-CalMat, and the Watermaster regarding the addition of more precise measuring devices to calculate groundwater usage. In 1999-2000 Vulcan-Calmat returned more water than it pumped or lost through evaporation by purchasing 27.43 AF in excess of consumptively used water in their sand and gravel mining process (Appendix H).

Metropolitan Transportation Authority (MTA)

On June 30, 2000 the MTA completed construction of the Metro Red Line – Segment 3 North Hollywood subway. During the six years of construction nearly 1,700 acre-feet of groundwater were removed by dewatering along portions of the tunnel that entered the water table of the San Fernando Basin. The MTA is entering into a long-term agreement with the City of Los Angeles to dewater as needed in the future. The MTA will pay for the extracted groundwater which will be deducted from Los Angeles' stored water credits (Appendix G).

Chromium

Chromium, and in particular hexavalent chromium, has taken up a great deal of time for all the water purveyors and corresponding agencies during the 1999-2000 Water Year. The focus has been on the Glendale Operable Unit. This facility began operating in September 2000, but

because of the concern of the Glendale City Council, who refused to accept treated water with higher hexavalent chromium levels than currently distributed MWD water, the treated water was discharged to the Los Angeles River.

The confusion began in February 1999, when the Office of Environmental Health Hazard Assessment of the California Environmental Protection Agency (OEHHA) formally adopted the Public Health Goal (PHG) for total chromium at 2.5 µg/L. The PHG assumes a concentration of 0.2 µg/L for hexavalent chromium. The current State Maximum Contaminant Level (MCL) for total chromium is 50 µg/L. The MCL is the drinking water standard established by the State Department of Health Services after a lengthy process which considers numerous factors including health risk and the willingness of the public to finance a new standard. Hexavalent chromium is a known carcinogen when inhaled, but it is not clear among the scientists if the risk is similar when it is ingested in drinking water. At this time there is no proven treatment method available for large quantities of water to levels below 1.0 µg/L nor is there a separate MCL for hexavalent chromium. Several State bills have been adopted and/or proposed to further investigate and to develop procedures for regulating hexavalent chromium.

Tujunga Spreading Grounds Task Force

The Watermaster initiated the Tujunga Spreading Grounds Task Force in May 1998. The purpose of the task force was to: restore the recharge capacity of the Tujunga Spreading Grounds; enhance gas control and monitoring at the Sheldon-Arleta Landfill; and improve storm water management. The maximum use of the Tujunga Spreading Grounds has been significantly limited in above-normal runoff years because of environmental issues associated with gas migration from nearby landfills. The task force is made up of representatives of the Los Angeles County Department of Public Works, Los Angeles Bureau of Sanitation, LADWP, and the Watermaster's Office. The task force is presently working with a consultant to evaluate several mitigation plans to address the methane gas migration problem.

Upper Sun Valley Watershed Stakeholders

The Watermaster's Office has been participating in the Upper Sun Valley Watershed Stakeholders meetings. The objective of the group is to identify the feasibility of alternative ways to solve the local flooding problems in the Upper Sun Valley area. Alternatives could replace or support the traditional approach of an improved storm drain system and have the potential of saving money. Some of the alternatives under consideration include local infiltration of storm runoff and the acquisition of gravel pits for conversion into spreading basins.

Standard Urban Stormwater Mitigation Plan (SUSMP)

The Los Angeles Regional Water Quality Control Board adopted SUSMP on March 8, 2000. It requires certain new developments and re-developments to control the first ¾-inch of rainfall runoff from every storm by treating or infiltrating it into the subsurface. The Watermaster is concerned that infiltrating contaminated urban runoff could have a negative effect on groundwater quality. In addition, diverting this native runoff for consumptive use would be a violation of the San Fernando Judgment. The Watermaster's Office is working closely with various groups and agencies to implement SUSMP in a manner that will be protective of both water quality and water rights within ULARA.

Dewaterers

The groundwater table in parts of the SFB is near the ground surface. This circumstance in some instances requires continuous dewatering to maintain subsurface structures. As building permits are requested in the SFB, the Department of Building and Safety notifies the Watermaster's Office when plans are submitted that have the potential for dewatering. The Watermaster's Office reviews the plans, determines the need for short or long-term dewatering, and provides instruction for compliance. If there is no long-term dewatering, the party is released from any further responsibilities. The City of Los Angeles is developing a dewatering ordinance.

Unauthorized Pumping in ULARA Outside of the City

The Watermaster has been meeting with Supervisor Antonovich's and Supervisor Yaroslavsky's staffs to investigate pumping in areas of the Upper Los Angeles River Area located in unincorporated areas of the County. The water rights in this geographic area belong to the City of Los Angeles. The Watermaster is examining the rights and responsibilities of all the parties and government agencies. Databases and maps detailing the location of water purveyors within ULARA and developed properties outside the service areas of these water purveyors within ULARA are being reviewed.

Well Permits and the ULARA Assessor Page Map

Well permits are obtained from and approved by the Los Angeles County Department of Health Services (DHS). The DHS's primary concern is public health. The issue becomes confusing when a party obtains a permit to install a well because the permit does not establish a water right. In adjudicated groundwater basins, water rights are assigned to parties by their

judgments and are enforced by the various Court appointed Watermasters. The ULARA Watermaster's Office, working with DHS, developed a public notice explaining water rights and a map that details the adjudicated areas within the County of Los Angeles. The Watermaster's Office has coordinated the development of a ULARA Assessor Page Map that links the information available within the perimeter of ULARA to the Thomas Brothers Map. This database provides a means to answer questions related to water rights of a specific parcel more quickly. Legal descriptions of the more than 400,000 parcels within ULARA have been distributed to title companies.

1.6 Summary of Water Supply, Operations, and Hydrologic Conditions

Highlights of operations for the 1998-99 and 1999-00 Water Years are summarized in Table 1-3. Details of the 1999-00 Water Year operations and hydrologic conditions are given in Section 2. Locations of the groundwater basins, water service areas of the parties and individual producers, and other pertinent hydrologic facilities are shown on Plates 2 through 9.

Average Rainfall

Precipitation on the valley floor area during 1999-00 was 14.84 inches, 90 percent of the calculated 100-year mean (16.48 inches); precipitation in the mountain areas was 18.7 inches, 86 percent of the calculated 100-year mean (21.76 inches).

Spreading Operations

A total of 15,376 acre-feet of water were spread, a large decrease from the 61,119 acre-feet spread during the rainy 1997-98 Water Year. Average annual spreading for the 1968-2000 period was 33,785 acre-feet.

Extractions

Total extractions amounted to 129,464 acre-feet. This is a decrease of 32,023 acre-feet from 1998-99 and approximately 134 percent of the 1968-2000 average of 96,524 acre-feet. Of the total for the 1999-00 Water Year, 3,093 acre-feet were for non-consumptive use. The decrease in pumping was due in part to the near average precipitation. Appendix A contains a summary of groundwater extractions for the 1999-00 Water Year.

Imports

Gross imports (including pass-through water) totaled 560,994 acre-feet, an increase of 15 percent from 1998-99. Net imports used within ULARA amounted to 334,790 acre-feet, a 51,250 acre-feet increase from 1998-99.

Exports

A total of 317,248 acre-feet of water was exported from ULARA, a decrease of 900 acre-feet from the previous year. Of the 317,248 acre-feet exported, 91,044 acre-feet were from groundwater extractions, and 226,204 acre-feet were from imported supplies (pass-through).

Treated Wastewater

A total of 96,982 acre-feet of wastewater were treated in ULARA. The majority of the treated water was discharged to the Los Angeles River, a small amount was delivered to the Hyperion Treatment Plant, and approximately nine percent was used as recycled water.

Recycled Water

Total recycled water used in ULARA was 8,990 acre-feet, a 2,200 acre-feet increase from last year. The recycled water is used for landscape irrigation, in-plant use, power plant use (i.e. cooling), and other industrial uses.

Sewage Export

Sewage export was estimated at 110,137 acre-feet; this was the amount of sewage delivered by pipeline to the Hyperion Treatment Plant. The estimate does not include treated wastewater discharged to the Los Angeles River that leaves ULARA as surface flow.

Groundwater Storage

Groundwater storage in the SFB during 1999-00 decreased by 31,044 acre-feet; the total cumulative increase in groundwater storage since October 1, 1968 is 156,645 acre-feet. The 1999-00 decreases are due to a combination of below average spreading activities by the LACDPW, below average rainfall, and above average groundwater pumping. The change in groundwater storage for the Sylmar, Verdugo, and Eagle Rock Basins was – 122, – 2,024, and 0 acre-feet, respectively.

Wells

During 1999-00 Headworks Wells No. 26 (3893L), No. 27 (3893K), No. 28 (3893M), No. 29 (3893N) and No. 30 (3893P) were destroyed. Four new Headworks wells were drilled: Headworks 27A (3893Q), 28A (3893R), 29 A (3893S), and 30A (3893T).

TABLE 1-3: SUMMARY OF OPERATIONS IN ULARA

Item	Water Year 1998-99	Water Year 1999-00
Active Pumpers (party and nonparties)	26	27
Inactive Pumpers (parties within valley fill)[1]	4	5
Valley Rainfall, in inches		
Valley Floor	9.81	14.84
Mountain Area	11.53	18.70
Spreading Operations, in acre-feet	14,662	15,376
Extractions, in acre-feet		
Used in ULARA	37,937	33,897
Exported from ULARA	112,006	91,044
Nonconsumptive Use	3,076	3,093
Basin Account/Testing[2]	413	1,087
Clean-up/Dewaterers	3,055	343
Total	**156,487**	**129,464**
Gross Imports, in acre-feet		
Los Angeles Aqueduct Water	394,906	273,015
MWD Water	94,586	287,979
Total	**489,492**	**560,994**
Exports, in acre-feet		
Los Angeles Aqueduct Water	184,145	123,114
MWD Water	21,807	103,090
Groundwater	112,006	91,044
Total	**317,958**	**317,248**
Net Imports Used in ULARA, in acre-feet	283,540	334,790
Reclaimed Water Use, in acre-feet	6,771	8,990
Total Water Used in ULARA, in acre-feet[3]	328,248	377,677
Treated Wastewater, in acre-feet[4]	90,062	96,982
Sewage Export to Hyperion, in acre-feet[5]	93,454	110,137

1) The five inactive pumpers are Hinkley-Schmidt (Deep Rock), Van de Kamp, Disney, Angelica, Santiago Estates.
2) Water accounted for under a testing situation or treatment facility water used for backwash.
3) Extractions used in ULARA plus Net Imports and Recycled.
4) Most treated wastewater flows to LAR, a portion to Hyperion (see T2-7), and for recycled water.
5) Sewage outflow includes estimates of outflow from each of the four basins, and discharges to Hyperion from the Tillman and Los Angeles-Glendale Water Reclamation Plants.

1.7 Allowable Pumping for the 2000-01 Water Year

Table 1-4 shows a summary of extraction rights for the 2000-01 Water Year and stored water credit as of October 1, 2000, for the Cities of Los Angeles, Burbank, Glendale, San Fernando, and the CVWD. The calculation of these values is shown in more detail in Section 2.

TABLE 1-4: ALLOWABLE PUMPING 2000-01 WATER YEAR
(acre-feet)

	Native Safe Yield Credit[1]	Import Return Credit[2]	Total Native+Import	Stored Water Credit (as of Oct. 1, 2000)	Allowable Pumping 2000-01 Water Year
San Fernando Basin					
City of Los Angeles	43,660	46,739	90,399	208,609	299,008
City of Burbank	—	5,262	5,262	42,443	47,705
City of Glendale	—	6,006	6,006	74,484	80,490
Total	**43,660**	**58,007**	**101,667**	**325,536**	**427,203**
Sylmar Basin					
City of Los Angeles	3,255	—	3,255	3,711	6,966
City of San Fernando	3,255	—	3,255	1,480	4,735
Total	**6,510**	**—**	**6,510**	**5,191**	**11,701**
Verdugo Basin[3]					
CVWD	3,294	—	3,294	—	3,294
City of Glendale	3,856	—	3,856	—	3,856
Total	**7,150**	**—**	**7,150**	**—**	**7,150**

1) Native Safe Yield extraction right per Judgment, page 11.
2) Import Return extraction right per Judgment, page 17.
3) There is no Stored Credit assigned in the Verdugo Basin.

2. WATER SUPPLY, OPERATIONS, AND HYDROLOGIC CONDITIONS

TABLE 2-1: 1999-2000 PRECIPITATION

(inches)

LACDPW Rain Gage Stations No.	Name	1999-00 Precipitation	100-Year Mean (1881-1981)	Percent of 100-Year Mean
	Valley Stations			
13C	North Hollywood-Lakeside	15.83	16.63	95%
1107D	La Tuna Canyon [2]	10.40	14.98	69%
465C	Sepulveda Dam	15.65	15.30	102%
21B	Woodland Hills	11.97	14.60	82%
23B	Chatsworth Reservoir	13.08	15.19	86%
25C	Northridge-LADWP	14.17	15.16	93%
251C	La Crescenta	18.53	23.31	79%
293B	Los Angeles Reservoir	18.10	17.32	105%
	Weighted Average [1]	**14.84**	**16.48**	**90%**
	Mountain Stations			
11D	Upper Franklin Canyon Reservoir	18.62	18.50	101%
17	Sepulveda Canyon at Mulholland	16.57	16.84	98%
33A	Pacoima Dam	17.49	19.64	89%
47D	Clear Creek - City School	18.37	33.01	56%
1076B	Monte Cristo Ranger Station [3]	16.09	29.04	55%
54C	Loomis Ranch-Alder Creek [3]	16.09	18.62	86%
210C	Brand Parks	11.15	19.97	56%
797	DeSoto Reservoir [4]	14.62	17.52	83%
1074	Little Gleason	14.21	21.79	65%
	Weighted Average [1]	**18.70**	**21.76**	**86%**
	Weighted Average Valley/Mountain Areas [1]	**16.77**	**19.64**	**85%**

1. Weighted Average calculations performed according to Report of Referee-7/62.
2. Station 1107D substituted for Station 14C.
3. Station 1076B substituted for 53D and 54C.
4. Station 797 replaced Station 259 which has been discontinued.

2.2 Runoff and Outflow from ULARA

The drainage area of ULARA contains 328,500 acres, of which 205,700 acres are hills and mountains. The drainage system is made up of the Los Angeles River and its tributaries. Surface flow originates as storm runoff from the hills and mountains, storm runoff from the impervious areas of the valley, industrial and sanitary waste discharges, and rising groundwater.

A number of stream-gaging stations are maintained throughout ULARA, either by the LACDPW or the United States Geological Survey (USGS). The Watermaster has selected six key gaging stations which record runoff from the main hydrologic areas in ULARA (Plate 5 shows the location of the stations). The six gaging stations are as follows:

1. Station F-57C-R registers all surface outflow from ULARA.

2. Station F-252-R registers flow from Verdugo Canyon which includes flows from Dunsmore and Pickens Canyons.

3. Station E-285-R registers flow from the westerly slopes of the Verdugo Mountains and some flow from east of Lankershim Boulevard. It also records any releases of reclaimed wastewater discharged by the City of Burbank.

4. Station F-300-R registers all flow east of Lankershim Boulevard plus the portion of outflow from Hansen Dam which is not spread. These records also include flow through the Sepulveda Dam, which may include extractions from the Reseda wells.

5. Station F-168-R registers all releases from Big Tujunga Dam, which collects runoff from the watershed to the northeast. Runoff below this point flows to Hansen Dam.

6. Station F-118B-R registers all releases from Pacoima Dam. Runoff below this point flows to the Los Angeles River through lined channels, or can be diverted to the Lopez and Pacoima spreading grounds. This station, severely damaged in January 1994 during the Northridge Earthquake, began reporting again in November 1996.

Table 2-2 summarizes the 1998-99 and 1999-00 monthly runoff for these stations. The higher runoff in 1999-00 is related to higher rainfall in 1999-00 than in 1998-99. The mean daily discharge rates for these six stations during 1999-00 are summarized in Appendix B.

TABLE 2-2: MONTHLY RUNOFF AT SELECTED GAGING STATIONS

(acre-feet)

Station	Water Year	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
F-57C-R	1999-00	6,880	6,430	6,370	9,170	40,590	18,900	20,760	6,900	6,330	6,760	7,110	6,590	**142,790**
L.A. River	1998-99	6,940	11,060	7,600	14,020	7,110	13,940	17,830	7,750	9,210	6,300	6,360	5,790	**113,910**
Arroyo Seco														
F-252-R	1999-00	339	427	438	542	2,840	1,260	1,170	425	257	251	255	266	**8,470**
Verdugo Wash	1998-99	594	756	531	882	588	775	1,030	490	652	311	333	313	**7,255**
E-285-R	1999-00	685	705	629	756	2,620	1,340	1,340	718	742	760	783	756	**11,834**
Burbank	1998-99	733	1,110	827	1,210	764	1,240	1,300	808	826	768	749	567	**10,924**
Storm Drain														
F-300-R	1999-00	4,740	4,860	4,190	6,220	26,040	11,360	12,400	5,530	5,230	5,600	5,810	5,460	**97,440**
L.A. River	1998-99	3,710	6,410	4,280	7,080	3,720	7,470	9,950	2,890	3,610	3,770	4,160	4,570	**61,620**
Tujunga Ave.														
F-168-R	1999-00	3	170	127	212	1,240	1,890	989	370	382	3	1	1	**5,387**
Big Tujunga	1998-99	443	474	659	385	867	860	1,190	341	569	90	4	3	**5,885**
Dam														
F-118B-R	1999-00	0	68	14	0	302	414	324	706	3	0	1	0	**1,832**
Pacoima Dam	1998-99	0	171	555	188	263	280	245	118	97	186	0	0	**2,103**

2.3 Components of Surface Flow

The surface flow of the Los Angeles River at Gaging Station F-57C-R consists of:

1. Storm flows;
2. Reclaimed wastewater from the Tillman, Burbank, and Los Angeles-Glendale Water Reclamation Plants;
3. Industrial discharges; and,
4. Rising groundwater.

In the Report of Referee (Volume II, Appendix O), procedures were developed for the calculation of rising groundwater for the period 1928-1958. Some of the important factors of that study are no longer significant - releases of Owens River water, operation of the Chatsworth Reservoir, and (temporarily, at least) operation of the Headworks Spreading Grounds. As shown on Figure O-2 of the Report of Referee, rising groundwater was considered to have fallen to zero by the late 1950s. The January 1993 report by Brown and Caldwell, "Potential Infiltration of Chlorides from the Los Angeles River into the Groundwater Aquifer" studied groundwater levels along the course of the Los Angeles River. The Watermaster provided the insight and data for this evaluation. As of the end of the drought period in 1977, groundwater levels in the Los Angeles River Narrows were very low, with very little potential for rising groundwater. Heavy runoff occurred during the 1978-83 period, which,

combined with reduced pumping in the Crystal Springs, Grandview, and Pollock Well Fields, caused large recoveries of groundwater levels in the Los Angeles River Narrows.

An even greater factor affecting hydrologic conditions in the Los Angeles River Narrows has been the increasing releases of reclaimed waters. Releases from the Los Angeles-Glendale Plant were started in 1976-77 and from the Tillman Plant in 1985-86. These large year-round releases tend to keep the alluvium of the Los Angeles River Narrows saturated, even in dry years. There is opportunity for continuing percolation in the unlined reach, both upstream and downstream of the paved section near the confluence of the Verdugo Wash and the Los Angeles River. Water percolating in the unlined reach is believed to circulate through shallow zones and re-appear as rising groundwater downstream from Los Feliz Boulevard. Also, there is up to 3,000 acre-feet of recharge from delivered water within the Los Angeles Narrows-Pollock Well Field area that adds to the rising groundwater conditions.

Rising groundwater also occurs above the Verdugo Narrows, and in the reach upgradient from Gage F-57C-R. During dry periods, conditions in the unlined reach are stabilized with regard to percolation and rising water by releases of treated water. In wet periods, rising groundwater above Gage F-57C-R has been considered to be related to the increase of rising water above the Verdugo Narrows. From 1991-92 (Table 2-3) to the very wet year of 1992-93 there was an increase of rising water at Gage F-252-R of about 1,900 acre-feet. From 1998-99 to 1999-00, flows of rising water at Gage F-252-R was estimated at 824 acre-feet. For 1999-00 the rising groundwater flow at Gage F-57C-R was estimated at 1,980 acre-feet.

Field inspection during 1998-99 confirmed significant unmetered flows of storm drain water contributing to year-round flows of water from residences, golf courses and others beginning high in the San Rafael Hills that flow down to the Los Angeles River through the Sycamore Channel and several other storm drains north of Gage F-57C-R. The Watermaster's Office is working with the LACDPW to more precisely measure the surface flows and rising groundwater.

TABLE 2-3: ESTIMATED SEPARATION OF SURFACE FLOW AT STATIONS F-57C-R & F-252-R

(acre-feet)

Water Year	F-57C-R Rising Groundwater	F-57C-R Waste Discharge	F-57C-R Storm Runoff	F-57C-R Total Outflow	F-252-R Rising Groundwater	F-252-R Storm Runoff	F-252-R Total Outflow
1999-00	1,980	78,009	62,202	142,190	824	4,243	8,470
1998-99	4,400	70,390	39,110	113,900	1,300	2,185	7,250
1997-98	4,000	97,681	245,079	346,730	4,000	12,140	16,140
1996-97	3,000	75,827	76,485	155,312	3,000	13,860	16,860
1995-96	3,841	86,127	61,188	151,156	2,577	10,946	13,523
1994-95	4,900	66,209	367,458	438,567	4,809	28,881	33,696
1993-94	2,952	60,594	73,149	136,695	1,387	6,156	7,543
1992-93	4,900	77,000	478,123	560,023	3,335	20,185	23,520
1991-92	3,000	120,789	197,040	320,829	1,412	13,209	14,621
1990-91	3,203	75,647	117,779	196,629	1,157	6,865	8,022
1989-90	3,000	76,789	55,811	167,639	1,182	2,938	4,120
1988-89	3,000	80,020	56,535	136,843	1,995	4,453	6,448
1987-88	3,000	81,920	74,074	156,204	3,548	10,493	14,041
1986-87	3,000	64,125	19,050	83,295	2,100	1,690	3,790
1985-86	3,880	48,370	102,840	155,090	2,470	6,270	8,740
1984-85	3,260	21,600	46,300	71,160	2,710	3,970	6,680
1983-84	3,000	17,780	49,090	69,870	4,000	n/a	n/a
1982-83	3,460	17,610	384,620	405,690	5,330	21,384	26,714
1981-82	1,280	18,180	80,000	99,460	3,710	5,367	9,077
1980-81	4,710	19,580	51,940	76,230	5,780	2,917	8,697
1979-80	5,500	16,500	n/a	n/a	5,150	7,752	12,902
1978-79	2,840	16,450	119,810	139,100	2,470	n/a	n/a
1977-78	1,331	7,449	357,883	366,663	1,168	23,571	24,739
1976-77	839	7,128	58,046	66,013	1,683	2,635	4,318
1975-76	261	6,741	32,723	39,725	2,170	2,380	4,550
1974-75	427	7,318	56,396	64,141	1,333	4,255	5,588
1973-74	2,694	6,366	79,587	88,878	1,772	5,613	7,385
1972-73	4,596	8,776	100,587	113,959	1,706	7,702	9,408
1971-72	—	—	—	—	2,050	2,513	4,563

2.4 Groundwater Recharge

Precipitation has a marked influence on groundwater recharge and, with some delay, groundwater storage. Urban development in ULARA has resulted in a significant portion of the rainfall being collected and routed into paved channels which discharge into the Los Angeles River. To partially offset the increased runoff due to urbanization, Pacoima and Hansen Dams, originally built for flood control, are utilized to regulate storm flows and allow recapture of the flow in downstream spreading basins operated by the LACDPW and the City of Los Angeles.

The LACDPW operates the Branford, Hansen, Lopez, and Pacoima Spreading Grounds; the City of Los Angeles operates the Headworks Spreading Grounds, however, it is currently inactive. The LACDPW, in cooperation with the City of Los Angeles, operates the Tujunga Spreading Grounds. The spreading grounds operated by the LACDPW are utilized for spreading native water, imported water, and recyled water under agreements. Table 2-4 summarizes the spreading operations for the 1999-2000 Water Year, and Plate 6 shows the locations of the spreading basins.

TABLE 2-4: 1999-2000 SPREADING OPERATIONS IN THE SAN FERNANDO BASIN
(acre-feet)

Agency	Spreading Facility	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	TOTAL
LACDPW														
	Branford	13	31	10	117	79	24	77	22	19	21	27	28	468
	Hansen	18	9	14	18	2,510	2,250	1,180	573	446	244	225	0	7,487
	Lopez	0	11	4	2	3	3	178	373	2	1	0	0	578
	Pacoima	0	0	0	79	1,600	934	296	0	0	0	0	0	2,909
	Tujunga	0	310	0	108	12	65	1,760	682	420	396	178	3	3,934
	Total	31	361	28	324	4,204	3,276	3,491	1,650	887	662	430	31	15,376
City of Los Angeles														
	Tujunga	0	0	0	0	0	0	0	0	0	0	0	0	0
	Headworks	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hansen	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Basin Total		31	361	28	324	4,204	3,276	3,491	1,650	887	662	430	31	15,376

2.5 Groundwater Extractions

The original trial court adjudication of groundwater rights in ULARA restricted all groundwater extractions, effective October 1, 1968. On that date, extractions were restricted to approximately 104,000 acre-feet per water year. This amounted to a reduction of approximately 50,000 acre-feet from the previous six-year average. The State Supreme Court's opinion, as implemented on remand in the Judgment entered on January 26, 1979, provides a similar restriction in groundwater pumping.

McKesson Water Products (formerly Sparkletts Drinking Water Corporation) and Deep Rock Water Company are the only Physical Solution parties that have rights to extract water from the Eagle Rock Basin. These parties pay the City of Los Angeles for pumped groundwater pursuant to the Judgment.

Figure 2.2 illustrates the imported water used in ULARA and annual groundwater extractions, beginning with the 1954-55 Water Year. It can be noted that for the 14 years prior to pumping restrictions (1954-55 to 1967-68), imports exceeded extractions by 50,000 to 90,000 acre-feet per year, in contrast to the past 31 years (1968-69 to 1999-00) where imports have exceeded extractions by 110,000 to 250,000 acre-feet per year (Refer to Figure 2.3 - Monthly Extractions and Imports).

A total of 129,423 acre-feet was pumped from ULARA during the 1999-00 Water Year- 116,357 acre-feet from the SFB, 6,400 acre-feet from the Sylmar Basin, 6,426 acre-feet from the Verdugo Basin, and 239 acre-feet from the Eagle Rock Basin. The respective safe yield values for the 1999-00 Water Year are 96,564 acre-feet (Native Safe Yield of 43,660 plus an import return of 52,904 acre-feet) for the SFB, 6,510 acre-feet for the Sylmar Basin, and 7,150 acre-feet for the Verdugo Basin. Appendix A contains a summary of groundwater extractions for the 1999-00 Water Year, Plate 9 shows the locations of the well fields, and Plate 10 describes the pattern of groundwater extractions.

Of the total amount pumped in the SFB (116,357 acre-feet), 110,554 acre-feet constitutes extraction rights by Parties to the Judgment, 3,093 acre-feet constitutes nonconsumptive use, and 2,710 acre-feet were used for physical solutions, groundwater cleanup, testing/well development, and dewatering parties (Appendix E). Table 2-5 summarizes 1999-00 private party pumping in the SFB, and Plate 3 shows the locations of the individual producers.

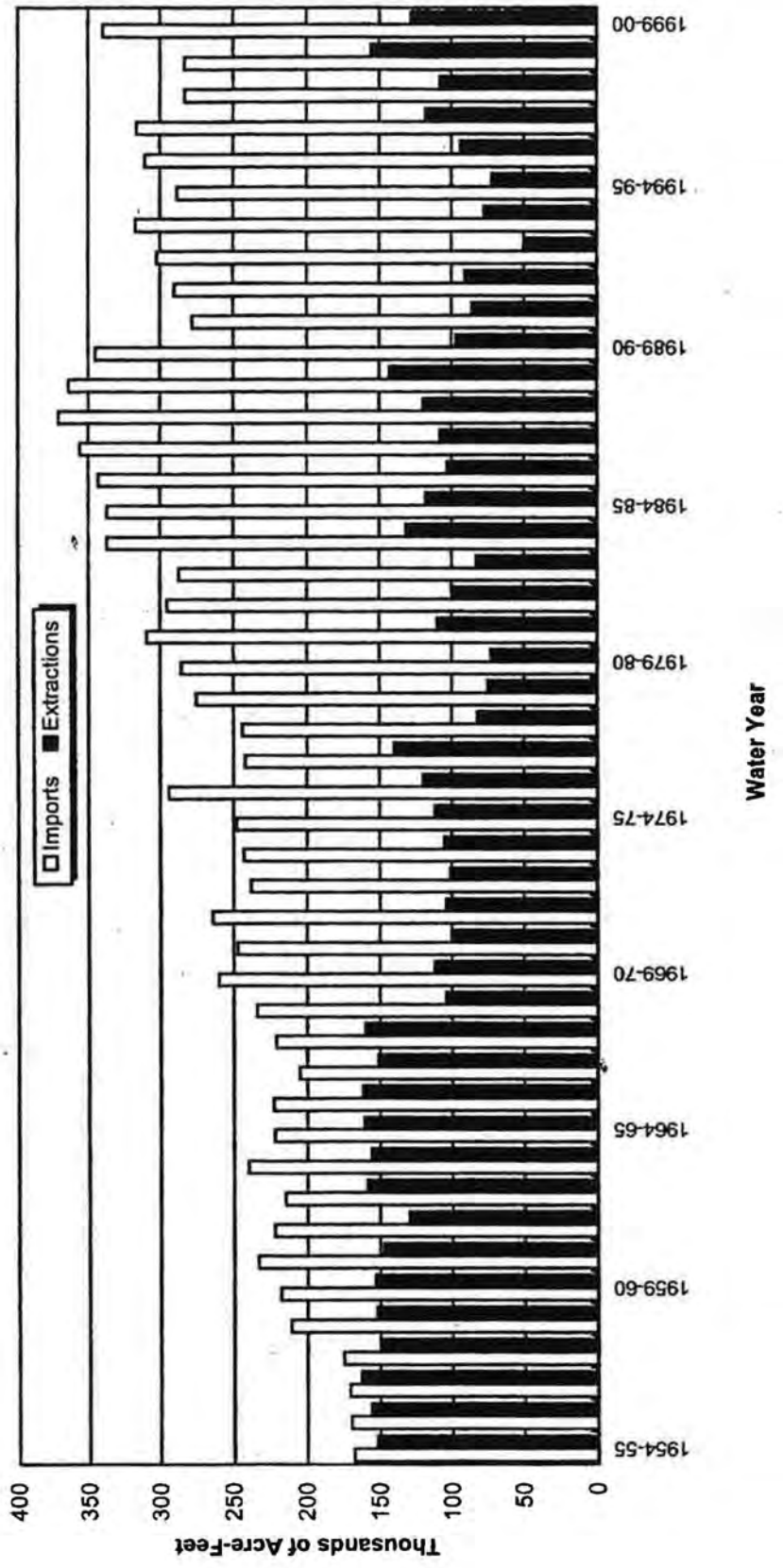


FIGURE 2.2 - YEARLY IMPORTS USED IN ULARA AND ULARA EXTRACTIONS

2.8 Water Level Elevations

The 2000 contour maps for the Spring (April) and the Fall (September) were produced by using the SFB Groundwater Flow Model. The SFB model was initially developed during the Remedial Investigation (RI) study of groundwater contamination in the San Fernando Valley. The RI study was funded through the EPA's Superfund program.

The model is comprised of up to four layers, in the deepest portion of the eastern SFB, and includes 22,016 cells, ranging in size from 1,000 by 1,000 feet to 3,000 by 3,000 feet. The model parameters were calibrated by matching the simulated hydraulic-head fluctuations with the historical water level fluctuations measured at selected key monitoring wells for a 10-year period. The 2000 contours were simulated by incorporating the estimated monthly recharge (e.g. spread water, precipitation, etc.) and discharge (groundwater extractions, rising groundwater, etc.) values for the 1999-00 water year. The model was then run for twelve consecutive stress periods beginning October 1999 through September 2000. The simulated head values at the end of the April and September stress periods were then plotted by utilizing a groundwater contour software package.

The simulated Spring and Fall 2000 Groundwater Contour Maps are shown as Plates 9 and 10. These contours are intended to depict the general trend of groundwater flow for April and September 2000. Up-to-date groundwater elevations for specific locations can be obtained by contacting the Watermaster's Office at (213) 367-0921 or (213) 367-1020.

Plate 11 exhibits the change in groundwater elevation from the Fall of 1999 to the Fall of 2000. The drop in groundwater levels in the north portion of the SFB, specifically near the Hansen Spreading Grounds, is attributed to the small volume of Native Runoff water spread at the Hansen, Pacoima, and Tujunga Spreading Grounds (15,376 AF), as compared to the long-term average of 33,805.

The 10 to 20 foot rise in groundwater levels as shown near the Rinaldi-Toluca, North Hollywood and Tujunga well field areas is primarily due to decreased groundwater extractions. Overall SFB extractions decreased 18 percent from 1998-99 to 1999-00 (141,757 acre-feet to 116,537 acre-feet). The vicinity of the Burbank well field area shows a decline in groundwater levels of approximately six feet as a result of increased pumping from 9,183 acre-feet to 11,451 acre-feet. In general, away from the center of pumping activity, the San Fernando Basin shows a continuous decline in groundwater elevations as a result of low precipitation and low artificial

recharge. Plate 12 exhibits groundwater flow directions and estimated groundwater velocities in ULARA.

Figure 2.4 shows historic well hydrographs of wells throughout ULARA and their locations. Valley Steam Plant Well No. 6 (4896A) has been added to the hydrographs to better reflect the impact of pumping from the Tujunga Well Field on the water elevations in the middle of the San Fernando Basin.

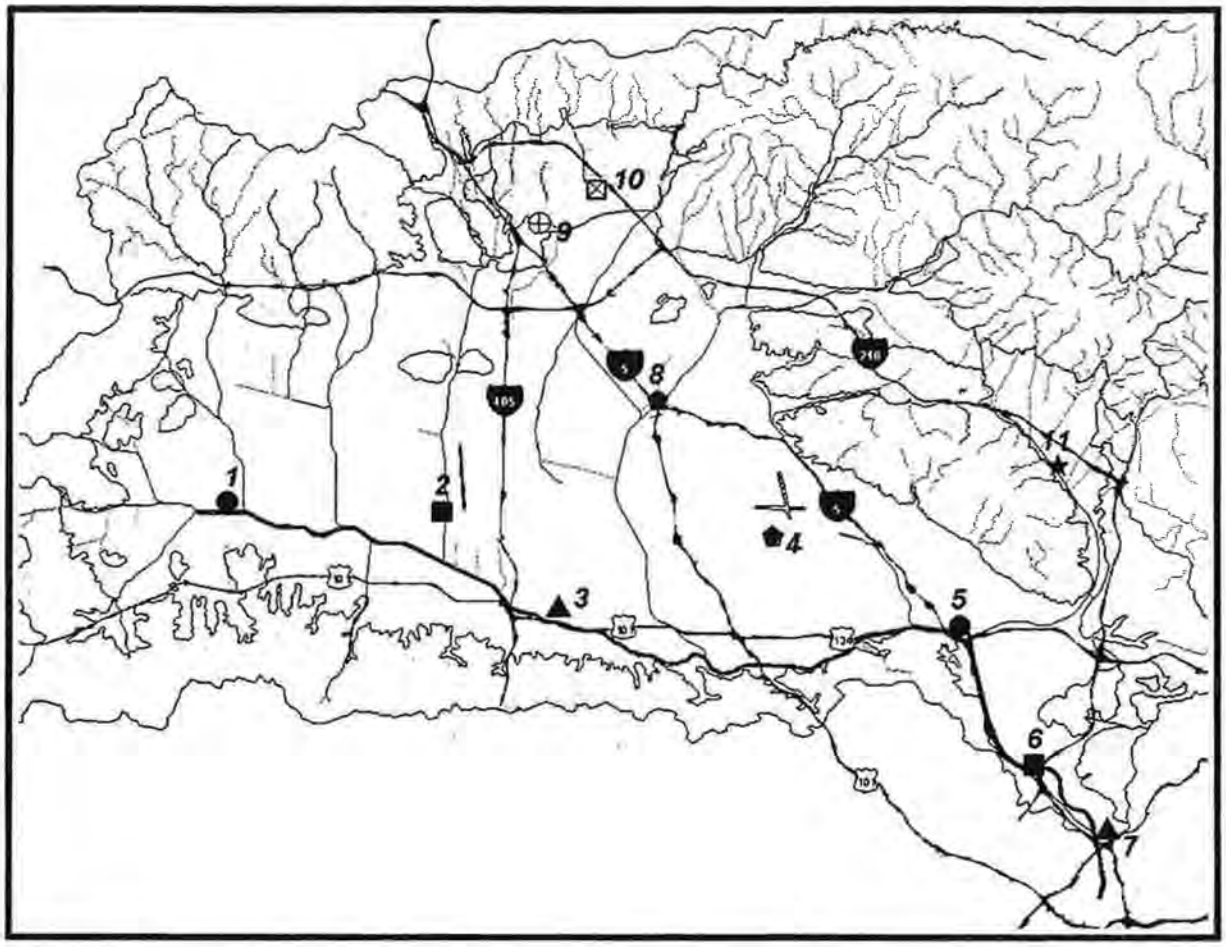
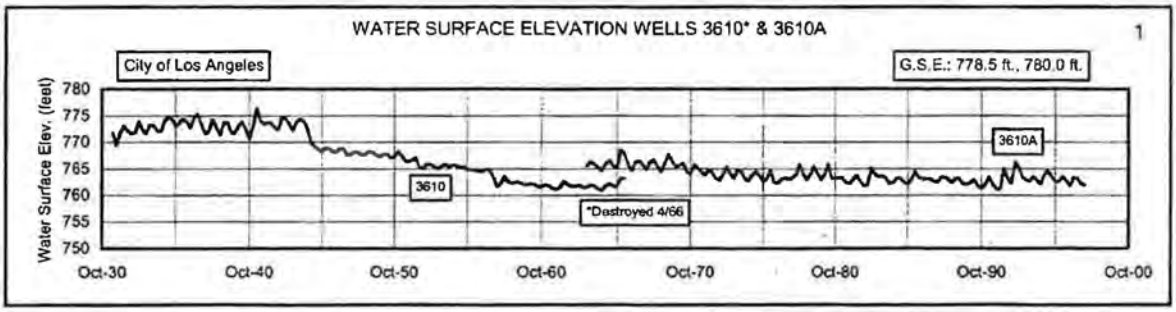
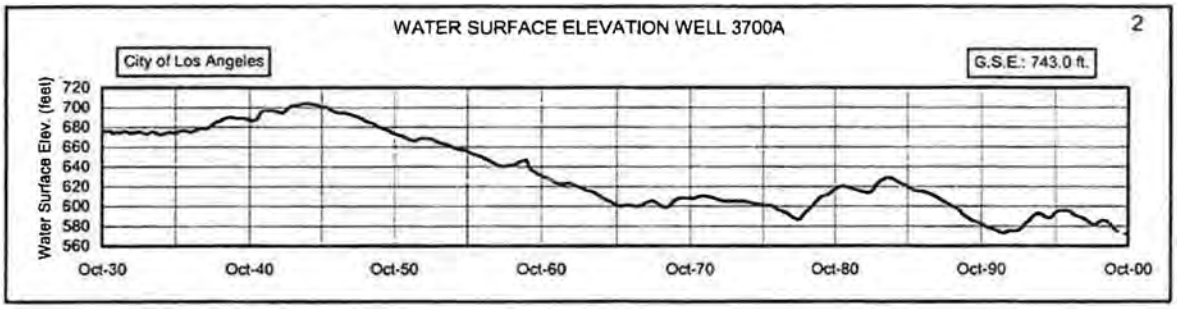
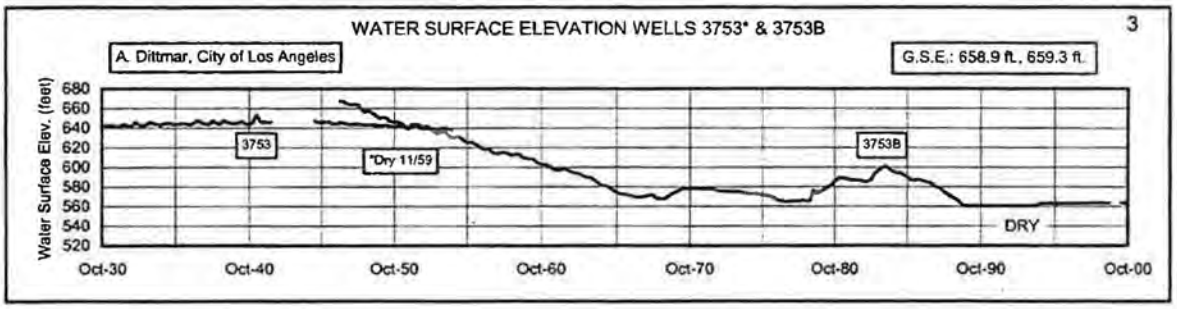


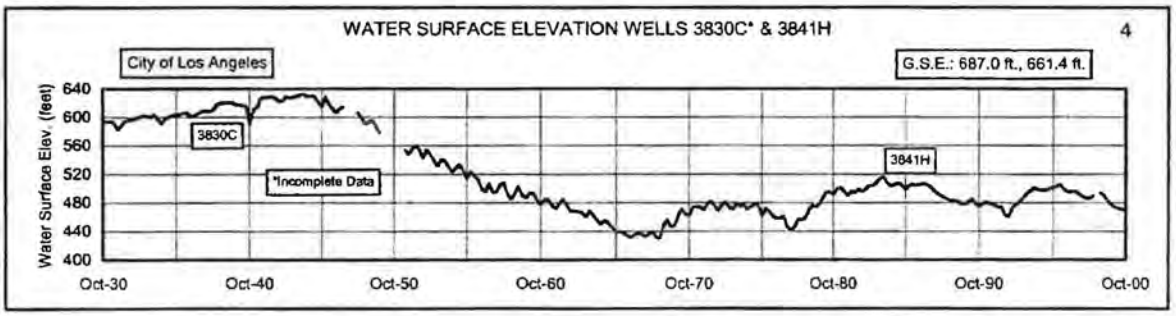
FIGURE 2.4 HYDROGRAPHS AND LOCATIONS OF WELLS THROUGHOUT ULARA

SAN FERNANDO BASIN

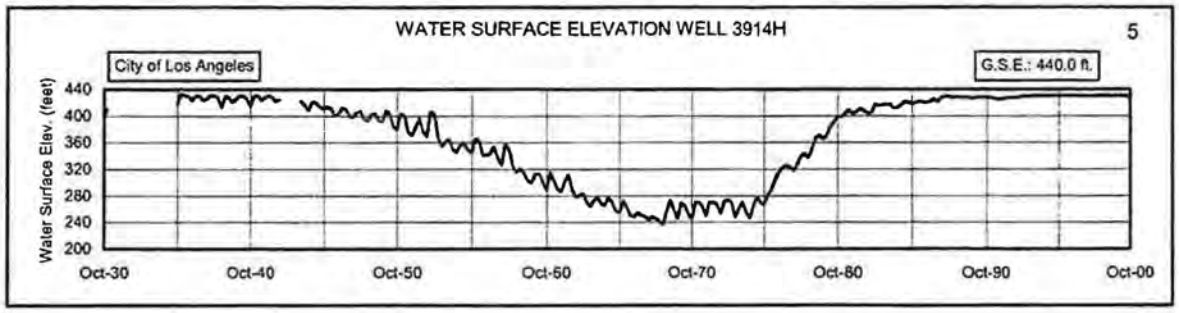


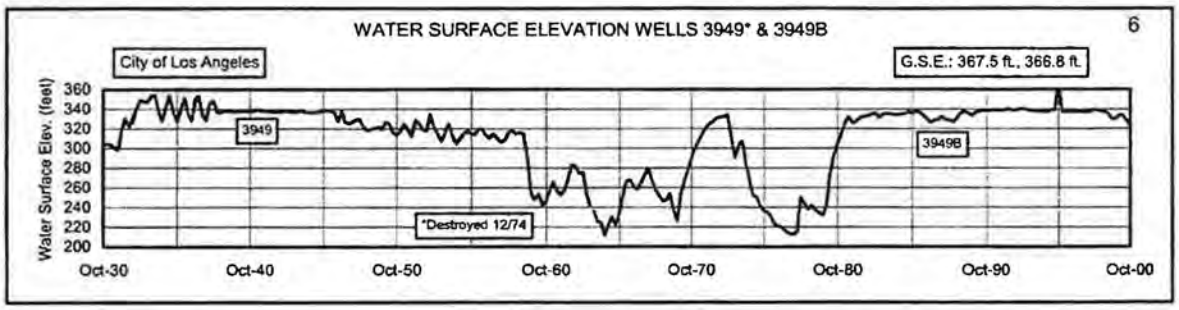


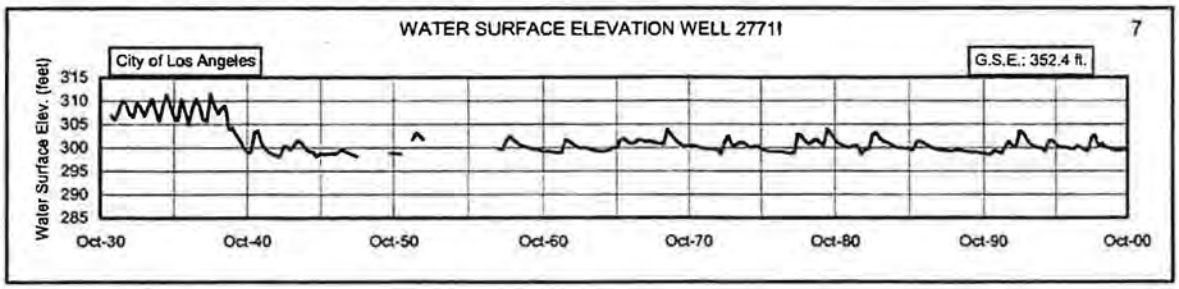


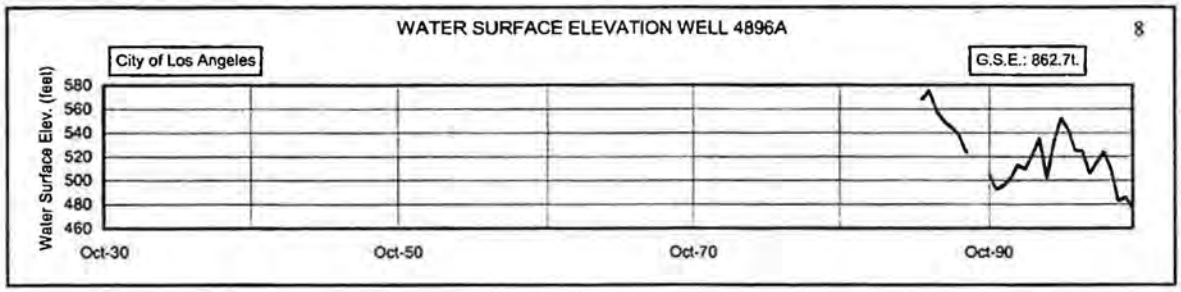


SAN FERNANDO BASIN

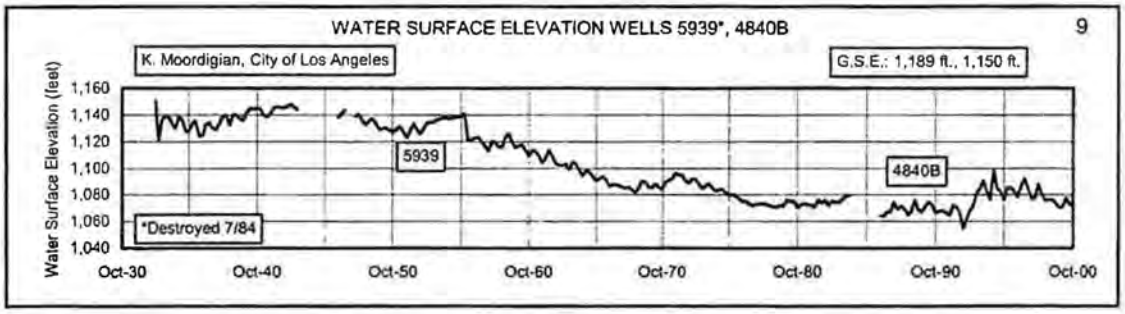


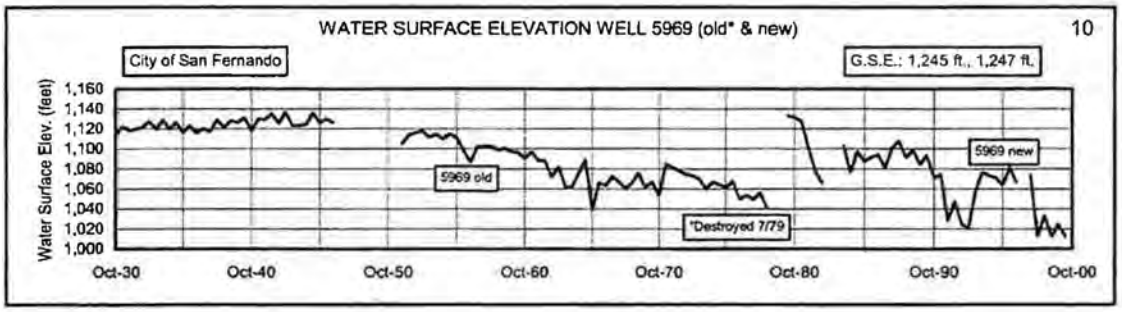






SYLMAR BASIN





VERDUGO BASIN

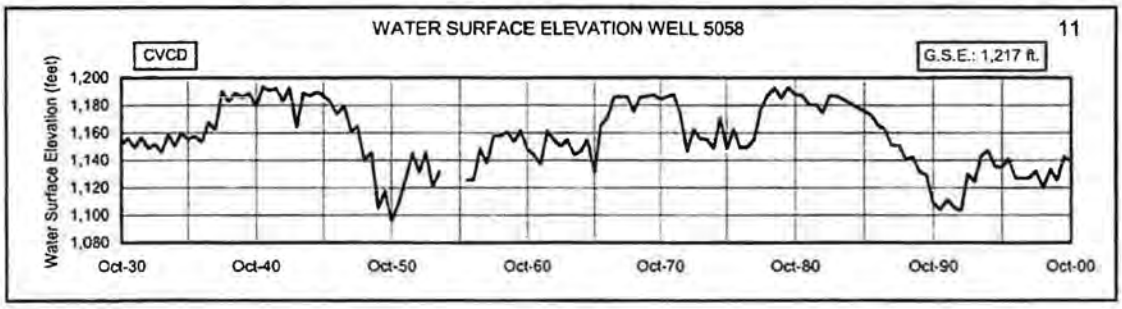


FIGURE 2.4 - HYDROGRAPHS AND LOCATION OF WELLS THROUGHOUT ULARA

TABLE 2-8: CHANGE IN GROUNDWATER STORAGE SAN FERNANDO BASIN

Water Year	Valley Floor Precipitation (in)	Change in Storage (acre-feet)	Cumulative Change in Storage (acre-feet)	Pumping (acre-feet)
1999-00	14.84	-31,044	156,645	116,357
1998-99	9.81	-82,673	187,689	141,757
1997-98	37.04	44,113	270,362	94,682
1996-97	15.17	-35,737	226,249	105,899
1995-96	12.03	-49,223	261,986	82,862
1994-95	33.36	79,132	311,209	58,121
1993-94	10.19	-22,238	232,077	62,990
1992-93	36.62	106,317	254,315	36,419
1991-92	30.05	411	147,998	76,213
1990-91	14.38	-14,122	147,587	71,065
1989-90	8.20	-29,941	161,709	81,466
1988-89	9.12	-30,550	191,650	127,973
1987-88	18.62	-5,000	222,200	105,470
1986-87	5.99	-31,940	227,200	91,632
1985-86	20.27	-7,980	259,140	86,904
1984-85	11.00	-31,690	267,120	101,591
1983-84	9.97	-63,180	298,810	115,611
1982-83	39.64	121,090	361,990	68,394
1981-82	17.18	-530	240,900	84,682
1980-81	11.04	-32,560	241,430	92,791
1979-80	30.25	99,970	273,990	58,915
1978-79	21.76	78,080	174,020	59,843
1977-78	35.43	136,150	95,940	66,314
1976-77	14.19	-50,490	-40,210	125,445
1975-76	9.90	-30,090	10,280	103,740
1974-75	14.74	-22,580	40,370	95,830
1973-74	15.75	-21,820	62,950	88,017
1972-73	20.65	17,020	84,770	82,004
1971-72	8.10	-17,090	67,750	84,140
1970-71	15.57	15,340	84,840	79,010
1969-70	10.50	-9,740	69,500	88,856
1968-69	29.00	79,240	79,240 [1]	84,186
31 Year Average	**18.45**	**4895.16**		**88,099**

1. Accumulation of storage begun as of October 1, 1968.

2.9 Groundwater Storage

San Fernando Basin

The total groundwater storage capacity of the SFB was estimated in the Report of Referee to be approximately 3,200,000 acre-feet, of which a regulatory storage capacity of 360,000 acre-feet is required by the Judgment.

The estimated change in groundwater storage for 1999-00 from 1968-69 is -31,044 acre-feet (Table 2-8). Fall 1968 is the start of the Safe Yield Operations at -655,370 acre feet. From the start of safe yield operation in the Fall of 1968 through Fall of 2000, the amount of groundwater in storage has increased by +156,645 acre-feet to -498,725. However, during the 1968-2000 period there has been an accumulation of 325,536 acre-feet of stored water credit through spreading and in-lieu activities of the parties, such as leaving groundwater in storage rather than pumping it. Stored groundwater can be extracted by the credited parties in excess of normal pumping rights with the approval of the Watermaster. If this water were to be removed, the cumulative change in storage since 1928-29 would be -824,261 acre-feet (Plate 13). As a result the basin would be 168,891 AF below the beginning of safe yield operation in the Fall of 1968. Since rainfall in the past 31 years has been approximately normal, the Watermaster is evaluating the cause of the imbalance in the basin.

Sylmar Basin

The groundwater storage capacity of the Sylmar Basin is approximately 310,000 acre-feet. The estimated change in storage for 1999-00 is -122 acre-feet, and the cumulative change in storage from 1968-69 through 1999-00 is -3,748 acre-feet.

Verdugo Basin

The groundwater storage capacity of the Verdugo Basin is approximately 160,000 acre-feet. The estimated change in storage for 1999-2000 compared to 1998-1999 is acre-feet, – 2,024 and the cumulative change in storage from 1968-69 through 1999-2000 is – 11,552 acre-feet.

Eagle Rock Basin

The estimated change in storage at steady state.

2.10 Water Supply and Disposal - Basin Summaries

Tables 2-9A, 2-9B, 2-9C, and 2-9D summarize water supply and disposal in the San Fernando, Sylmar, Verdugo, and Eagle Rock basins, respectively. The Watermaster made computations of subsurface outflows based on similar computations made by the State Water Rights Board in the Report of Referee.

2.11 Extraction Rights and Stored Water Credit - Basin Summaries

San Fernando Basin

Tables 2-10A and 2-11A show the calculation of SFB extraction rights for the 1999-00 Water Year and stored water credit (as of October 1, 2000) for the Cities of Burbank, Glendale, and Los Angeles. All rights are based on the City of Los Angeles vs. City of San Fernando, et al., Judgment, dated January 26, 1979.

During the past water year an adjustment was made to the stored water credits of the City of Los Angeles. 34,181 AF were debited for rising groundwater lost during ten years while the Pollock Well Field was shut down, and for discharges by Disney when the inflatable dam used to divert water from the Los Angeles River to the Headworks Spreading Ground was removed from service (Appendix I).

Sylmar Basin

Tables 2-10B and 2-11B show the calculation of Sylmar Basin extraction rights for the 1999-00 Water Year and stored water credit (as of October 1, 2000) for the Cities of Los Angeles and San Fernando. All rights are based on the March 22, 1984 stipulation between the City of San Fernando and the City of Los Angeles (filed with the Superior Court) and the action by the Administrative Committee on July 16, 1996 to increase the safe yield from 6,210 AF/Y to 6,510 AF/Y.

Verdugo Basin

Crescenta Valley Water District was allowed to extract 405 AF above its prescriptive right of 3,294 AF/Y in 1999-00. Glendale has a prescriptive right to extract 3,856 AF/Y, but is not currently pumping its full right. There is no stored water credit assigned in the Verdugo Basin.

TABLE 2-9A: SUMMARY OF 1999-00 WATER SUPPLY AND DISPOSAL SAN FERNANDO BASIN

(acre-feet)

Water Source and Use	City of Burbank	City of Glendale	City of Los Angeles	City of San Fernando	All Others	Total
Extractions						
Municipal Use	12,430	109	98,016	—	0	110,554
Basin Account	—	—	—	—	1,087	1,087
Physical Solution	432 [1]	406 [1]	—	—	442	1,280
Cleanup/Dewaterers	—	—	—	—	343	343
Non-consumptive Use	—	—	—	—	3,093	3,093
Total	**12,862**	**515**	**98,016**	**0**	**4,965**	**116,357**
Imports						
LA Aqueduct Water	—	—	273,015	—	—	273,015
MWD Water	10,471	29,835	230,743	0	7,820 [2]	278,868
Groundwater from Sylmar Basin	—	—	2,634	3,451	—	6,085
Total	**10,471**	**29,835**	**506,392**	**3,451**	**7,820**	**557,968**
Reclaimed Water Use	2,979	1,758	2,328	0	1,924	8,990
Exports [3]						
LA Aqueduct Water out of SFB	—	—	129,585	—	—	129,585
MWD Water						
out of SFB	—	—	108,562	—	—	108,562
to Verdugo Basin	—	2,012		—	—	2,012
Groundwater	—	65	90,900	—	—	90,965
Total	**0**	**2,077**	**329,047**	**0**	**0**	**331,124**
Delivered Water						
Hill & Mountain Areas	—	—	52,984	—	—	52,984
Total - All Areas	26,312	30,030	277,689	3,451	14,709	352,190
Water Outflow						
Surface (Sta. F-57C-R)	—	—	—	—	—	142,790
Subsurface	—	—	—	—	—	355
Sewage	7,132	17,136	76,688	2,169	—	103,125
Reclaimed Water to the LA River	4,631	—	61,532	—	—	66,163
Total	**11,763**	**17,136**	**138,220**	**2,169**	**0**	**312,433**

1. Includes Valhalla (Burbank) and Forest Lawn (Glendale).
2. Las Virgenes Municipal Water District.
3. Exports include water exported by LA from SFB to Sylmar, Verdugo, and Eagle Rock Basins.

TABLE 2-9B: SUMMARY OF 1999-00 WATER SUPPLY AND DISPOSAL SYLMAR BASIN

Water Source and Use	City of Los Angeles	City of San Fernando	All Others	Total
Total Extractions	2,634	3,807	0 [1]	6,441
Imports				
LA Aqueduct Water	5,588	–	–	5,588
MWD Water	4,723	0	–	4,723
Total	**10,310**	**0**	**0**	**10,310**
Exports - Groundwater				
San Fernando Basin	2,634	3,451	0	6,085
Total Delivered Water	10,310	356	0	10,666
Water Outflow				
Surface				5,000 [4]
Subsurface	460 [2]	–	–	460
Sewage	830 [3]	215	–	1,045
Total	**1,290**	**215**	**0**	**6,505**

(acre-feet)

1. Pumping for landscape irrigation by Santiago Estates. The well was capped in 1999.
2. Estimated in the Report of Referee.
3. Estimated.
4. Surface outflow is not measured. Value based on Mr. F. Laverty – SF Exhibits 57 and 64.

TABLE 2-9C: SUMMARY OF 1999-00 WATER SUPPLY AND DISPOSAL VERDUGO BASIN

(acre-feet)

Water Source and Use	Crescenta Valley Water District	City of Glendale	La Canada Irrigation District	City of Los Angeles	Total
Total Extractions	3,699 [1]	2,727	0	—	6,426
Imports					
LA Aqueduct Water	—	—	—	456	456
MWD Water	2,186	2,012	1,317	388	5,904
Total	2,186	2,012	1,317	844	6,359
Exports	0	0	0	0	0
Total Delivered Water	5,886	4,739 [2]	1,317	844	12,785
Water Outflow					
Subsurface to:					
Monk Hill Basin	—	—	—	—	300 [3]
San Fernando Basin	—	—	—	—	70 [3]
Sewage	1,785	1,174	0	473	3,432
Total	**1,785**	**1,174**	**0**	**473**	**3,802**

1. Administrative Committee and Watermaster approval (10/98), on a temporary basis, that CVWD may pump in excess of its prescriptive rights until the City of Glendale pumps its complete prescriptive right (Appendix G).

2. Verdugo Basin metered sales x 105%. Based on 15% of total water consumption of city.
3. Maximum with high groundwater levels (Report of Referee).

TABLE 2-9D: SUMMARY OF 1999-00 WATER SUPPLY AND DISPOSAL EAGLE ROCK BASIN

(acre-feet)

Water Source and Use	City of Los Angeles	Deep Rock Water Company	McKesson Water Products Co.	Total
Total Extractions	0	0 [1]	239 [1]	239
Imports				
LA Aqueduct Water	427	–	–	427
MWD Water (25+35)	361			361
MWD Water (17)	3,596			3,596
Groundwater from SFB	161	–	–	161
Total	**4,545**	**0**	**0**	**4,545**
Exports				
Groundwater	0	0	239	239
Total Delivered Water	4,545	0	0	4,545
Water Outflow				
Surface	–	–	–	0
Subsurface	0 [2]	–	–	0
Sewage	2,535 [3]	0	0	2,535
Total	**2,535**	**0**	**0**	**2,535**

1. Deep Rock Water Co. and McKesson Water Products Co. (formerly Sparkletts Drinking Water Co.) are allowed to pump under a stipulated agreement with The City of Los Angeles; extractions are limited to 500 AF/year, and they are allowed to export equivalent amounts.
2. Estimated in Supplement No. 2 to Report of Referee for dry years 1960-61. Currently considered insignificant.
3. Estimated.

TABLE 2-10A: CALCULATION OF 2000-2001 EXTRACTION RIGHTS SAN FERNANDO BASIN

(acre-feet)

	City of Burbank	City of Glendale	City of Los Angeles
Total Delivered Water, 1999-00	26,312	30,031	277,689
Water Delivered to Hill and Mountain Areas, 1999-00	---	---	52,983
Water Delivered to Valley Fill, 1999-00	26,312	30,031	224,706
Percent Recharge Credit	20.0%	20.0%	20.8%
Return Water Extraction Right	5,262	6,006	46,739
Native Safe Yield Credit	---	---	43,660
Total Extraction Right for the 2000-2001 Water Year[1]	**5,262**	**6,006**	**90,399**

1. Does not include stored water credit.

TABLE 2-10B: CALCULATION OF 2000-2001 EXTRACTION RIGHT SYLMAR BASIN

(acre-feet)

	City of Los Angeles	City of San Fernando	All Others
Extraction Right for the 2000-2001 Water Year[1]	3,255	3,255	--- [2]

1. Does not include stored water credit. The safe yield of the Sylmar Basin has been increased on a trial basis to 6,510 AF/YR effective 10/1/95. Effective October 1, 1984 safe yield less pumping by Santiago Estates is equally shared by Los Angeles and San Fernando.
2. Santiago Estates (Home Owners Group) stopped pumping in 1999.

TABLE 2-11A: CALCULATION OF STORED WATER CREDIT SAN FERNANDO BASIN

(acre-feet)

	City of Burbank	City of Glendale	City of Los Angeles
1. Stored Water Credit (as of October 1, 1999)	50,771	69,665	254,895
2. Extraction Right for the 1999-00 Water Year	4,534	5,334	86,696
3. 1999-00 Extractions			
Party Extractions	12,430	44	98,016
Physical Solution Extractions	432	406	442
Clean-up/Dewaterers			343
Glendale OU Discharge to LAR		65	
Adjustment for Disney and Pollock [1]			34,181
Total	12,862	515	132,982
4. Total 1999-00 Spread Water	0	0	0
5. Stored Water Credit [2] (as of October 1, 2000)	**42,443**	**74,484**	**208,609**

1. Water discharged by Disney unable to be spread at Headworks from 1982 to 1992, and excess rising Groundwater, 1989 to 1999 when Pollock Well Field not being pumped.
2. Item 5 = 1 + 2 – 3 + 4.

TABLE 2-11B: CALCULATION OF STORED WATER CREDIT SYLMAR BASIN

(acre-feet)

	City of Los Angeles	City of San Fernando
1. Stored Water Credit (as of October 1, 1999)	3,090	1,991
2. Extraction Right for the 1999-00 Water Year	3,255	3,255
3. Total 1999-00 Extractions	2,634	3,807
Santiago Estates[2]	0.0	0.0
4. Stored Water Credit[3] (as of October 1, 2000)	**3,711**	**1,439**

1. The safe yield of the Sylmar Basin has been increased on a trial basis to 6,510 AF/YR as of 10/1/95.
2. Santiago Estates pumping is equally taken from the rights of San Fernando and Los Angeles. Santiago Estates capped well in 1999.
3. Item 4 = 1 + 2 - 3

3. WATER QUALITY, TREATMENT, AND REMEDIAL INVESTIGATION ACTIVITIES

3. WATER QUALITY, TREATMENT, AND REMEDIAL INVESTIGATION ACTIVITIES

3.1 Water Quality

Imported Water

1. *LOS ANGELES AQUEDUCT* water is sodium bicarbonate in character and is the highest quality water available to ULARA. Its Total Dissolved Solids (TDS) concentration averaged about 210 milligrams per liter (mg/L) for 30 years before 1969. The highest on record was 320 mg/L on April 1, 1946. TDS concentration on June 15, 2000, was 186 mg/L.

2. *COLORADO RIVER* water is predominantly sodium-calcium sulfate in character, changing to sodium sulfate after treatment to reduce total hardness. Samples taken at the Burbank turnout between 1941 and 1975 indicated a high TDS concentration of 875 mg/L in August 1955 and a low of 625 mg/L in April 1959. The average TDS concentration over the 34-year period was approximately 740 mg/L. Tests conducted at Lake Matthews showed an average TDS concentration of 544 mg/L for September 2000.

3. *NORTHERN CALIFORNIA* water (State Water Project) is sodium bicarbonate-sulfate in character. It generally contains less TDS and is softer than local and Colorado River water. Since its arrival in Southern California in April 1972, the water has had a high TDS concentration of 410 mg/L and a low of 247 mg/l. Tests conducted at the Joseph Jensen Filtration Plant showed an average TDS concentration of 270 mg/L during September 2000.

4. *COLORADO RIVER/NORTHERN CALIFORNIA* water were first blended at Weymouth Plant in May 1975. Blending ratios vary, and tests are taken from the effluent. Tests conducted at the Weymouth Plant showed an average TDS concentration of 428 mg/L during September 2000.

Surface Water

Surface runoff contains salts dissolved from rocks in the tributary areas and is sodium-calcium, sulfate-bicarbonate in character. The most recent tests taken in September 1995 from flows in the Los Angeles River at the Arroyo Seco showed a TDS concentration of 666mg/L and a total

hardness of 270 mg/L. These values also reflect the inclusion of rising groundwater in the Los Angeles River reach between Los Feliz Blvd. and Gage F-57C-R.

Chlorides in Surface Water

In 1997 the Regional Board Amended Resolution No. 90-04 was rescinded by Resolution No. 97-02 on chlorides. Water quality objectives for chloride for certain surface waters were revised to accommodate fluctuations in chloride concentrations that may be due to future droughts. The Amendment to the Water Quality Control Plan to Incorporate a Policy for Addressing Levels of Chloride in Discharges of Wastewaters for ULARA in the Waterbody – Los Angeles River- between Sepulveda Flood Control Basin and Figueroa Street (including Burbank Western Channel only) currently has a maximum of 190 mg/L. Chloride levels are reported in Appendix D.

Groundwater

Groundwater in ULARA is moderately hard to very hard. The character of groundwater from the major water-bearing formations is of two general types, each reflecting the composition of the surface runoff in the area. In the western part of ULARA, it is calcium sulfate-bicarbonate in character, while in the eastern part, including Sylmar and Verdugo Basins, it is calcium bicarbonate in character.

Groundwater is generally within the recommended limits of the California Title 22 Drinking Water Standards, except for: 1) areas of the eastern SFB where high concentrations of Trichloroethene (TCE), Tetrachloroethene (PCE), and nitrates are present; 2) wells in the western end of the SFB having excess concentrations of sulfate and TDS; and 3) areas throughout the Verdugo Basin that have abnormally high concentrations of nitrate. In each area the groundwater delivered is either being treated or blended in order to meet State Drinking Water Standards.

A history of the TDS content and mineral analyses of imported, surface, and groundwater is contained in Appendix D.

3.2 Groundwater Quality Management Plan

During the 1999-00 Water Year, the Interagency Coordinating Committee continued to implement the recommendations of the "Groundwater Quality Management Plan - San

Fernando Valley Basins" issued in July 1983. The objective of this effort is to protect and upgrade the quality of stored water held in ULARA. Special emphasis is placed on monitoring and removing the organic contaminants TCE and PCE found in the groundwater. Table 3-1 summarizes the number of ULARA wells that are contaminated at the indicated levels above the Maximum Contaminant Level (MCL) of the California Drinking Water Standards of 5 micrograms per liter (µg/L) for TCE and 5 µg/L for PCE.

TABLE 3-1: 1999-00 NUMBER OF WELLS IN THE ULARA WELL FIELDS EXCEEDING STATE MCL FOR TCE AND PCE

	City of Los Angeles[3]									Sub-	Others[3]			Grand
Total Number of	NH	RT	P	HW	E	W	TJ	V	AE	Total	B	G	C	Total
Wells in Well Field[2]	36	15	3	4	8	8	12	5	7	98	10	15	11	134
TCE Levels µ g/L	Number of Wells Exceeding Contaminant Level[1]													
5-20	6	4	1	0	1	4	7	2	0	25	0	3	0	28
20-100	9	0	2	0	0	3	0	1	5	20	5	4	0	29
>100	2	0	0	3	0	0	0	0	2	7	4	2	0	13
Total	17	4	3	3	1	7	7	3	7	52	9	9	0	70
PCE Levels µ g/L	Number of Wells Exceeding Contaminant Level[1]													
5-20	7	1	1	0	0	1	0	1	4	15	1	2	0	18
20-100	2	0	2	1	0	0	0	0	3	8	4	0	0	12
>100	0	0	0	2	0	0	0	0	0	2	4	0	0	6
Total	9	1	3	3	0	1	0	1	7	25	9	2	0	36

1. Wells are categorized based upon maximum TCE and PCE values attained during the 1999-00 Water Year. Where data was not available for 1999-00, data from the most recent water year was used. No data was available for some old inactive wells.
2. Includes active, inactive, and stand-by wells.
3. Well Fields: NH - North Hollywood; P - Pollock; HW - Headworks; E - Erwin; W - Whitnall; TJ - Tujunga; V - Verdugo; AE - LADWP Aeration Tower Wells; B - City of Burbank; G - City of Glendale; C - Crescenta Valley Water District

3.3 Underground Tanks, Sumps, and Pipelines

The City of Los Angeles Fire Department (LAFD) continues to implement the State-mandated Underground Storage Tank (UST) Program and is actively conducting a program to bring the large number of underground tanks in the San Fernando Valley into compliance with current law. During the 1999-00 Water Year, a total of 294 sites were remediated under the direction of the LAFD.

The main focus of the LAFD UST Program in ULARA has been the monitoring and removal of gasoline, diesel, and their related constituents from the soils, in order to prevent contamination of the underlying groundwater. If a site investigation indicates contamination, the site is referred to the RWQCB for further action. Since October 1, 1988, 4,062 sites have been assigned to the Underground Tank Plan Check Unit, and of these, 1,970 have been remediated. In addition, 1,022 sites have been referred to the RWQCB. Currently, the Environmental Unit of the LAFD is monitoring the remediation of 649 sites.

3.4 Private Sewage Disposal Systems (PSDS)

In order to eliminate existing commercial and industrial PSDS and their discharges of wastewater to the groundwater basin, a sanitary sewer construction program was in progress for many years until the passage of Proposition 218. This program is continuing to systematically install sanitary sewers in eighteen designated areas throughout the San Fernando Valley. To date, a total of twelve areas have had construction completed, and six areas are in various stages of right-of-way acquisition and processing. Plate 8 shows the locations of the Districts.

The sewer construction program ordered by the City Council was funded through Assessment Act provisions. Proposition 218, approved by the electorate on November 5, 1996, requires a weighted majority mail-in ballot of property owners for any new or increased assessments. The passage of Proposition 218 and continued downsizing of the workforce of the City of Los Angeles has impeded the sewer construction program for the remaining six areas.

Toward the end of the 1998-1999 water year, inquiries by the Watermaster regarding scheduling for the completion of the remaining six designated area projects led to the revision and re-estimation of construction plans for these improvements. It is likely that these projects will be reactivated for construction through the Assessment Program or by other means.

During 1999-2000 the Bureau of Sanitation identified approximately 9,000 properties within 50 feet of an existing sewer being billed for water, but not for sewer usage. There will be follow-up work with the communities to confirm connections to sewers. City Councilman Alex Padilla obtained federal funds to to subsidize sewer installation for lower-income families in the northeast San Fernando Valley. Funding applications became available in March 2001.

The Industrial Waste Management Division of the Bureau of Sanitation continued to pursue the enforcement provisions of the PSDS elimination program. There has been good compliance with the mandatory sewer connection ordinance, and more than 2,025 properties have already abandoned PSDS and connected to the public sewer. Continuation of this effort depends upon completion of the sanitary sewer construction program.

3.5 Landfills

The Solid Waste Assessment Test (SWAT) reports for major SWAT Rank 1 to 4 landfills in the Los Angeles area have been completed and submitted to the RWQCB for approval. The reports reviewed by the RWQCB are listed in Table 3-2. As stipulated by Article 5 of Title 27, a follow-on sampling program under an Evaluation Monitoring Plan was required for some landfills due to the presence of VOCs in the underlying groundwater.

The Pendleton Landfill, owned by the LADWP, is an inactive landfill and was closed under permit approved by the RWQCB. The sale of the property to the Bureau of Sanitation has been completed. The Bureau of Sanitation intends to have a Transfer Station at this site. The Sunshine Canyon Landfill is operated by BFI and monitored by the Regional Board. The Regional Board has held several community meetings to provide the surrounding neighborhood with information in response to their concerns.

TABLE 3-2: LANDFILLS WITH SWAT INVESTIGATIONS

(reported to Interagency Coordinating Committee)

Name	Rank	Status	Current Owner	Location	SWAT Report Completed	Final SWAT Submitted	Phase II SWAT Req.	Approved by RWQCB	Site Leak (1)	Type of Emission (2)	Further Monitoring
Bradley West	1	Open	WMDSC	Sun Valley, SE of Sheldon St.	6/87	11/90		4/92	G	NHA (I/O)	3
Sheldon-Arleta	1	Closed	City of Los Angeles Bureau of Sanitation	Sun Valley District near Hollywood & Golden State Fwys	5/87	5/87		2/90	G		4
Scholl Canyon	1	Open	City of Glendale	San Rafael Hills, 1 mile West of Rose Bowl	7/87	4/88		8/90	G	NHA (I/O)	3
Scholl Canyon	2	Closed	City of Glendale	San Rafael Hills, 1 mile West of Rose Bowl	7/87	1/91		12/93	G	NHA	5
Bradley East	2	Closed	WMDSC	SE of Sheldon St	6/87	11/90		4/92	G	NHA (I/O)	4, 8
Bradley West Extension	3	Open	WMDSC	Near Canyon Blvd & Sheldon St	7/88	7/89		4/92	G	Inert Site	4, 8
Sunshine Cyn. LA City	2	Closed	Browning - Ferris Industries	SE Santa Susana Mtns W of Golden State Fwy	7/88	7/89		4/94	G		6
Sunshine Cyn. LA County	2	Open	Browning - Ferris Industries	SE Santa Susana Mtns W of Golden State Fwy	7/88	7/89		4/94			6
Gregg Pit/Bentz	2	Closed	CalMat Properties	Between Pendleton St & Tujunga Ave	7/89	7/89		2/90	G	NHA	4
Branford	2	Closed	City of Los Angeles Bureau of Sanitation	Sun Valley District, NW of Tujunga Wash	7/88	10/90	X				5
CalMat (Sun Valley #3)	2	Open	CalMat Properties	Sun Valley District, NE of Glenoaks Blvd	7/88	11/90		6/92	N		N,7
Lopez Canyon	2	Closed	City of Los Angeles Bureau of Sanitation	N of Hansen Dam near Lopez and Kagel Cyn	6/88	6/88	X				8
Toyon Canyon	2	Closed	City of Los Angeles Bureau of Sanitation	Griffith Park	6/88	3/89		4/91	L	NHA (I/O)	3
Tuxford Pit	2	Closed	Aadlin Bros. (LA By-Products Co.)	Sun Valley District, SW of Golden State Fwy & Tujunga Ave	6/88	12/90		6/92			4, 8, 9
Penrose	2	Closed	Los Angeles (LA By-Products Co.)	N of Strathern St, Tujunga Ave	6/88	7/89		9/89	G	NHB (I/O)	4
Newberry	3	Closed	Los Angeles (LA By-Products Co.)	N of Strathern St, Tujunga Ave	6/88	7/89		9/89	G	NHB (I/O)	4
Hewitt Pit	2	Closed	CalMat Properties	North Hollywood District Hollywood Fwy, Laurel	6/88	7/89		5/91	G	NHB (I)	N
Pendleton St.	4	Closed	City of Los Angeles Bureau of Sanitation	Sun Valley, Pendelton St & Glenoaks Blvd	7/90	5/91		6/92	N		5
Stough Park	2	Open	City of Burbank	Bel Air Drive & Cambridge Drive	6/88	12/88		4/90	G	NHA Inert Site	3
Strathern			Never completed. Application 12/88.	Strathern St. & Tujunga Ave							10

1. G – Gas, L – Liquid.
2. NHA - Non-Hazardous but above state drinking water regulatory levels
   NHB - Non-Hazardous but below state drinking water regulatory levels
   I – Inorganic, O – Organic; N-No, Y-Yes
3. Under Title 27 Corrective Action Program (CAP), after completion of EMP.
4. Closed landfills with groundwater monitoring required under Title 27. Monitoring results are submitted to the Regional Board periodically.
5. Subject to SWAT requirements. Further monitoring may be required under Title 27.
6. All open landfills are required to have groundwater monitoring under Title 27. Monitoring results are submitted to the Regional Board quarterly or semi-annually.
7. Semi-annual groundwater monitoring.
8. Groundwater contamination Evaluation Monitoring Program (EMP) required under Title 27.
9. EPA involved in evaluation.
10. Under permit as Inert Landfill.

3.6 San Fernando Valley Remedial Investigation Activities

A remedial investigation (RI) of groundwater contamination in the San Fernando Valley was initiated in July 1987 by the EPA to characterize the San Fernando Basin and the Verdugo Basin and their contamination with TCE and PCE. The LADWP was selected by the EPA to serve as the lead agency in conducting the RI and entered into a cooperative agreement that has provided over $21 million in federal funding to DWP since July 1987. In August 1987, the DWP selected James M. Montgomery, Consulting Engineers, Incorporated to serve as its consultant to perform various RI tasks.

The report, "Remedial Investigation of Groundwater Contamination in the San Fernando Valley," was completed in December 1992 and is a comprehensive, five-volume report that presents the findings and characterizations of the SFB and the Verdugo Basin with regard to their geology, hydrogeology, and nature and extent of contamination. The RI report also provides a description and the documentation of the SFB Groundwater Flow Model, summarizes the RI field investigation activities, and evaluates potential risks to human health and the environment.

The SFB Groundwater Flow Model was developed as a part of the San Fernando Valley Remedial Investigation and is a comprehensive, three-dimensional, regional-scale model. A three-dimensional mass transport model has also been developed for the SFB. The model has been utilized for the East Valley Water Recycling Project and other groundwater remediation projects to analyze the storage and physical characteristics of groundwater in the SFB.

EPA's consultant, CH2M HILL, continues to periodically sample the 87 groundwater monitoring wells that were installed as part of the RI. CH2M HILL also obtains groundwater quality and groundwater elevation data from the DWP, other municipalities, and various agencies and facilities in the San Fernando Valley to update the SFB database. CH2M HILL utilizes the data to produce contaminant plume maps.

The RI Report and semi-annual sampling reports are available for public use at the Superfund Primary Information Repositories, which are located in the following agencies' libraries: City of Glendale, City of Burbank, LADWP, California State University-Northridge, and the University of California - Los Angeles.

chromium is ingested, the varying standards by state (50 ppb for total chromium) and federal (100 ppb for total chromium) MCLs, and the absence of any standard for hexavalent chromium. Initially, there was also a problem created by the fact that test labs were not consistently able to analyze total chromium and hexavalent chromium reliably at very low levels. Adding to the bewildering atmosphere was the call by Ms. Erin Brockovich for zero tolerance. Erin Brockovich is a real-life individual portrayed in a movie of the same name who identified a source of large concentrations (in the tens of thousands of parts per billion) of hexavalent chromium in one small California community where many residents had a variety of illnesses allegedly related to the chromium contamination.

Other Treatment Facilities

1. *GLENDALE-VERDUGO PARK WATER TREATMENT PLANT (VPWTP)* - The VPWTP produces about 500 gpm. The water supply is limited at the lower end of the Verdugo Basin. Glendale continues to investigate opportunities to increase groundwater production.

2. *GLENWOOD NITRATE WATER TREATMENT PLANT* - The CVWD's Glenwood Nitrate Water Treatment Plant, which uses an ion-exchange process for nitrate removal, continued to operate satisfactorily during the 1999-00 Water Year. A total of 370.5 million gallons (1,137 acre-feet) of water was treated.

3. *POLLOCK WELLS TREATMENT PLANT PROJECT* – The 3,000 gpm City of Los Angeles Pollock Project was dedicated on March 17, 1999. The treatment plant restores Pollock Wells No. 4 and No. 6 to operation. The operation of these production wells reduces groundwater discharge to the Los Angeles River due to rising groundwater in the area. The facility uses four GAC vessels to treat for VOCs. The treated water is chlorinated before distribution in the water system. The plant operated from February 2000 until October 2000 when it was shut down for spent GAC replacement. A total of 603 million gallons (1,851 acre-feet) of groundwater was treated during the year.

4. *HEADWORKS WELL FIELD REMEDIATION* – The City of Los Angeles Department of Water and Power has slowed down progress on its Headworks Well Field Remediation project pending changes in the MCLs for contaminants that

might flow into the facility in the future. Changes to the MCLs may require design modifications to the facility. The Department continues with groundwater modeling to establish the 10-year capture zone of the Headworks Well Field for the Source Water Assessment and selection of monitoring wells to be included in the Raw Water Characterization for the DHS Impaired Water Policy 97-005.

The Headworks Project consists of groundwater treatment and distribution facilities to be located at the Headworks Spreading Grounds, including four newly constructed production wells to replace four existing Headworks Wells that do not comply with current wellhead standards as required by the California Department of Health Services. When completed, the Headworks Project will treat and deliver up to 13,500 gpm of groundwater supply to ensure that maximum inflows to the Silver Lake Reservoir service area can be maintained.

5. *BURBANK GAC TREATMENT PLANT* - The City of Burbank GAC system treated 1,096 acre-feet of water from the combined pumping of Burbank Wells No. 7 and No. 15. The treatment plant has been incorporated into Phase II of the Consent Decree (Burbank OU) between EPA, Lockheed, and Burbank. Production at the GAC will be considered as part of the designated average annual pumping goal of 9,000 gpm for the Burbank OU.

3.8 Groundwater Quality Investigations

During the 1999-00 Water Year, several groundwater contamination investigations were performed at various sites. As part of these investigations, groundwater monitoring wells have been drilled, and groundwater has been extracted for the purpose of testing or cleanup. Some of the major sites and their activities through April 2001 are summarized below:

Boeing (Rockwell-Rocketdyne, 6633 Canoga Avenue, Canoga Park)

Contaminants at this site include chloroform, TCE, PCE, 1,1-DCE, TCA and Freon 113. There are also free-floating hydrocarbons derived from several upgradient service stations. There are 85 monitoring wells on site: 65 in the shallow zone, 14 in the upper zone, and 6 in the lower zone. Additionally, there are another 31 monitoring wells near four upgradient service stations. Nine extraction wells feed a treatment facility in the southeast portion of the property. Based on groundwater monitoring results between June 1999 and March 2000 the Regional Board

decided that the groundwater treatment at the Canoga Park facility was no longer necessary. The treatment system was removed in December 2000. The Boeing Company will continue to monitor the groundwater quality under a new groundwater monitoring work plan. The new work plan is being developed and will be submitted to the Regional Board for review and approval.

Holchem - Pacoima Area Groundwater Investigation

Progress has been made in the Pacoima Area investigation by a coordinated effort with the lead agency Cal-EPA DTSC, the RWQCB, LADWP, and the Watermaster's Office. A potential groundwater contaminant plume was identified in the Pacoima district near the intersection of the Simi Valley Freeway (118 Freeway) and San Fernando Road. The contaminant plume is comprised of VOCs with levels upward of 12,000 µg/l of TCE, 3,900 µg/l of PCE, and 7,600 µg/l of 1,1,1-TCA. This site is approximately 2.5 miles upgradient of LADWP's Tujunga Well Field, which can supply up to 120 cfs of groundwater. LADWP installed two monitoring wells downgradient of the contaminant plumes. A Removal Action Workplan (RAW) has been approved by DTSC for the Holchem site. The RAW includes both soil vapor extraction and groundwater treament activities.

The Price Pfister site, also located in the Pacoima Area, has been moved from DTSC to the jurisdiction of the Regional Board as of November 2000.

Raytheon (Hughes Missile Systems Company, 8433 Fallbrook Avenue, Canoga Park)

The most prominent contaminant has been 1,1-DCE with lesser amounts of TCE, PCE, TCA, and 1,1-DCA. Petroleum compounds (BTEX) are found in the northwest area (Buildings 269 and 270). TDS is in excess of the Basin Plan objectives, and may not be discharged to the Los Angeles River, although the origin of the high TDS is related to the naturally occurring groundwater. As a result of the high TDS, the treatment plant effluent is stored in holding tanks, and used for on-site irrigation. Since September 1995, approximately 6,765 pounds of hydrocarbons and 500 pounds of chlorinated hydrocarbons have been removed from the soil. Due to significant decreases in contaminant concentrations, the Regional Board has approved groundwater sampling and analyses on a semiannual basis. Residual concentrations of VOCs in groundwater remain primarily along the northern boundary of the property in the northwest corner of the facility. Although the property is now owned by other entities, Raytheon Company is the current operator of a soil and groundwater treatment system installed in 1995. During construction and grading throughout 1999 the facility was turned off. The groundwater treatment facility has been operational throughout most of 2000.

3M (Formerly Riker Lab, 19901 Nordhoff, Northridge)

The main pollutant at this site is chloroform. There has been an interim groundwater extraction and treatment system since 1988. REW-1 and REW-2 pump from the shallow zone. RMW-1 pumps from the lower water-bearing zone. There are numerous monitoring wells on the property, and off-site to the south. Two additional wells were incorporated into the system in November 2000. During the 1999-00 Water Year, 58.92 acre-feet were treated of which 50% of the treated groundwater was beneficially reused in the plant for rotoclones (dust collectors). From start-up through the beginning of October 2000, approximately 14,400 pounds of VOCs have been removed from the soil and 2,950 pounds of VOCs from the groundwater in the three affected areas. 3-M converted one of its monitoring wells in the northeast corner of the site to an extraction well. Groundwater extracted from this well will be discharged to Micro Matics, Inc.'s interim remediation system. Groundwater contamination on 3M's property attributable to Micro Matics. Inc. will be addressed through an interim measure, pending implementation of a final remedy at the Micro Matics Inc. site.

Taylor Yard (Narrows Area)

The remediation of the Taylor Yard of the Southern Pacific Transportation Company is under the jurisdiction of the Cal-EPA DTSC. To expedite the remediation, the Taylor Yard has been divided into two parts - active yard and sale parcel. Part of the Taylor Yard was sold to Lincoln Properties for movie industry related facilities. The active yard has two areas of contamination located in the northern and northeastern sections of the Taylor Yard. Light nonaqueous phase liquids, approximately 6 inches deep, are perched at a depth of 30 feet over an area of five acres. Soil vapor extraction systems began full time operation in June 2000 for the Service Track Area and in May 2000 for the Diesel Shop. There are currently 33 on-site groundwater monitoring wells and 5 off-site wells in the Taylor Yard monitoring program. The Phase 5 investigation is nearly completed. DTSC has submitted comments on the Remedial Investigation to the consultant ERM. Several parties have expressed interest in the property, in particular the Friends of the Los Angeles River.

Chromium

Chromium is a naturally occurring element of the earth. It is usually found in two main forms: trivalent chromium III (Cr^{3+}) and hexavalent chromium VI (Cr^{6+}). Trivalent chromium occurs naturally in the environment and to a smaller extent so does hexavalent chromium. The occurrence of high levels of hexavalent chromium is usually the result of industrial processes. Chromium is used in chrome plating, leather tanning, wood preservatives, and in the

manufacturing of stainless and hard-alloy steels, dyes and pigments. As a reaction to acid/alkaline environments trivalent chromium and hexavalent chromium can switch back and forth within the natural environment and within the human body.

Trivalent chromium is relatively harmless and is an essential nutrient for the human body. Hexavalent chromium is considered to be carcinogenic through inhalation, but it is uncertain whether it is a carcinogen through ingestion of drinking water. There is no known taste or odor associated with low levels of chromium. Under a contract with the USEPA, CH2M Hill conducted a basin-wide investigation of total and hexavalent chromium through evaluation of some existing databases and a sampling of the RI monitoring wells. The results were published in February 1996 and indicated some areas with pockets of relatively high chromium concentrations.

The State of California DHS previously set the state Maximum Contaminant Level (MCL) for total chromium at 50 µg/L. At the federal level the MCL is set at 100 µg/L. In establishing MCLs the states and federal government use two tests – the health risk and the willingness of the public to pay for the incremental cost of meeting the new standard. The Office of Environmental Health Hazard Assessment of the California Environmental Protection Agency formally adopted a Public Health Goal (PHG) for total chromium in drinking water of 2.5 ppb in February 1999. As part of the process, DHS will evaluate the PHG and other information relative to the existing MCL for chromium.

The Los Angeles Regional Water Quality Control Board has created databases and maps to locate potential sources of chromium. The databases were formed from information provided by earlier Regional Board investigations of industrial sites, 200 sites were provided by the State of California Department of Toxic Substance Control, and a list of sites was provided by the Air Quality Management District. The Regional Board began site inspections in January 2001.

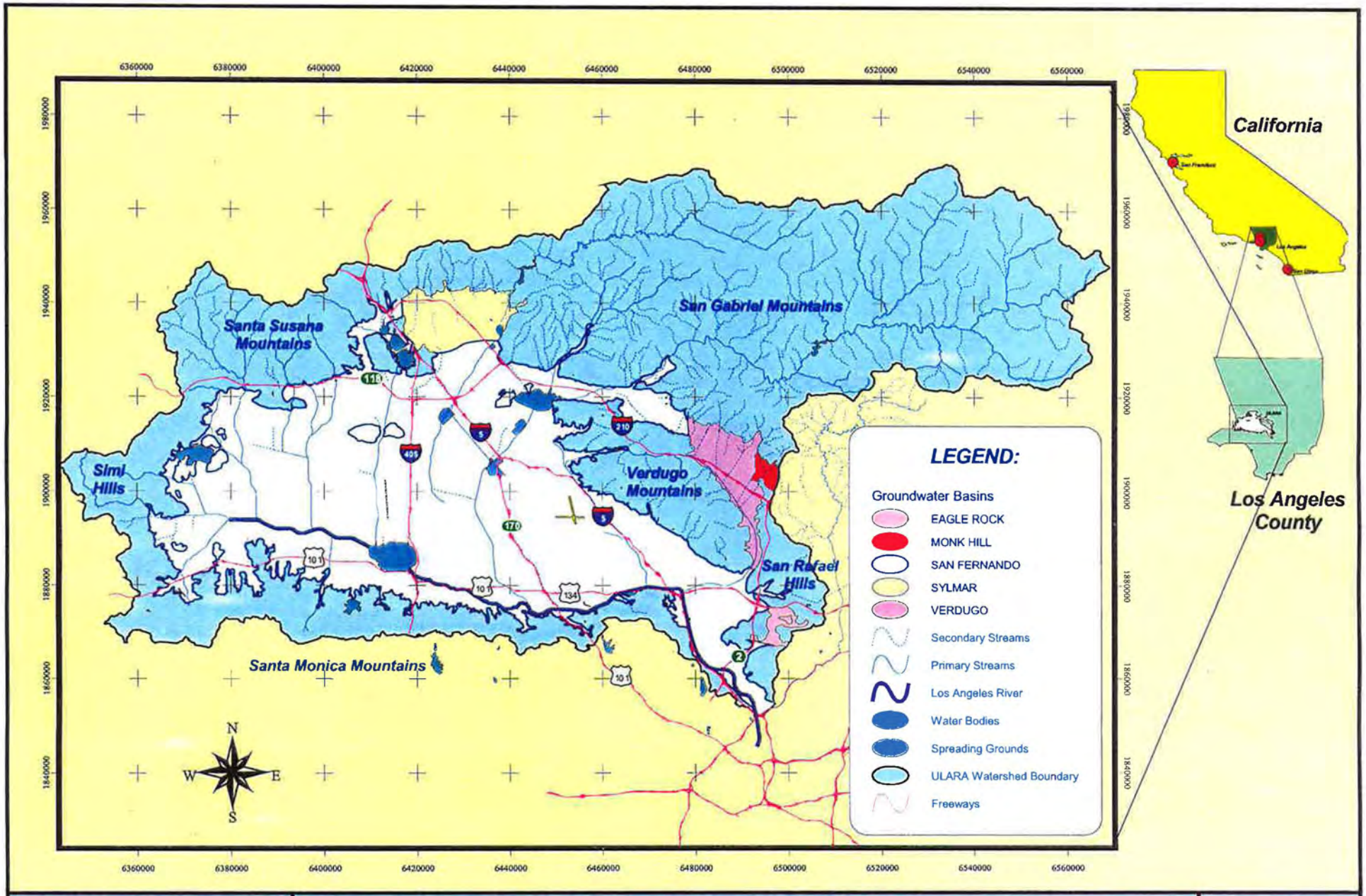
State Senate Bill 2127 was approved in September 2000. This bill requires the State Department of Health Services to determine the levels of hexavalent chromium in the drinking water supplied by the public water systems in the San Fernando Basin aquifer and, in consultation with the Office of Environmental Health Hazard Assessment (OEHHA), assess the exposures and risks to the public due to the levels of hexavalent chromium. The report of findings must be delivered to the Governor and the Legislature no later than January 1, 2002.

In response to SB2127 the Watermaster, DHS, OEHHA, and the citites of Burbank, Glendale, San Fernando and Los Angeles are working to develop a schedule, gather samples, analyze data, and to design a reporting mechanism for OEHHA to use in its risk assessment. In January 2001 labs were certified by the State to meet newly issued detection levels for total chromium and hexavalent chromium. These new detection levels should provide more reliable data at levels less than one part per billion.

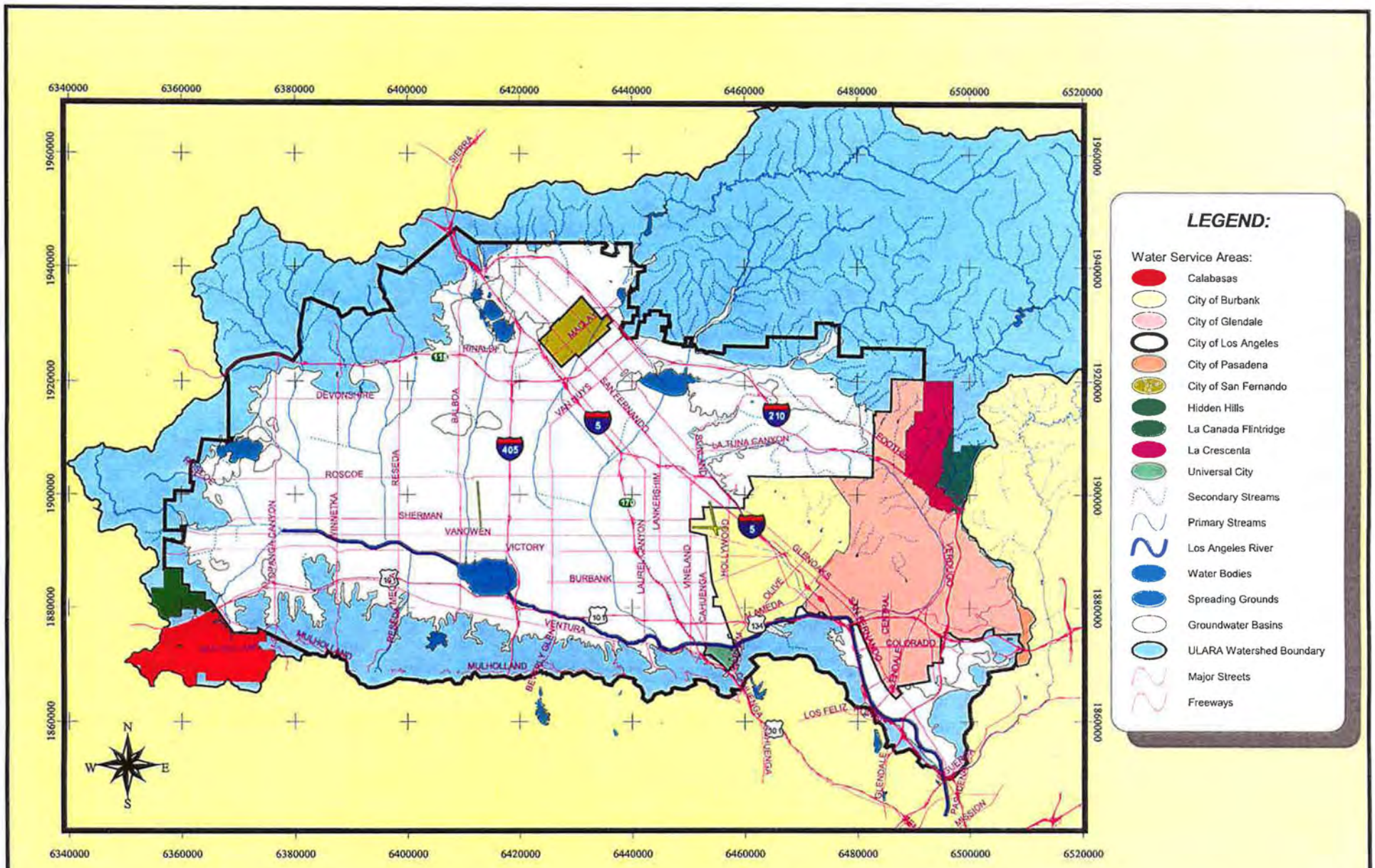
State Senator Jack Scott (D-Glendale) introduced SB460 in February 2001 that would spend $15 million toward finding new technologies for dealing with hexavalent chromium in the groundwater. This funding would be divided between two demonstration projects - one in Northern California and one in Southern California.

PLATES

PLATES



1999-00 Water Year ULARA Watermaster Report	**Upper Los Angeles River Area: Vicinity and Location Map**	PLATE 1



LEGEND:

Water Service Areas:

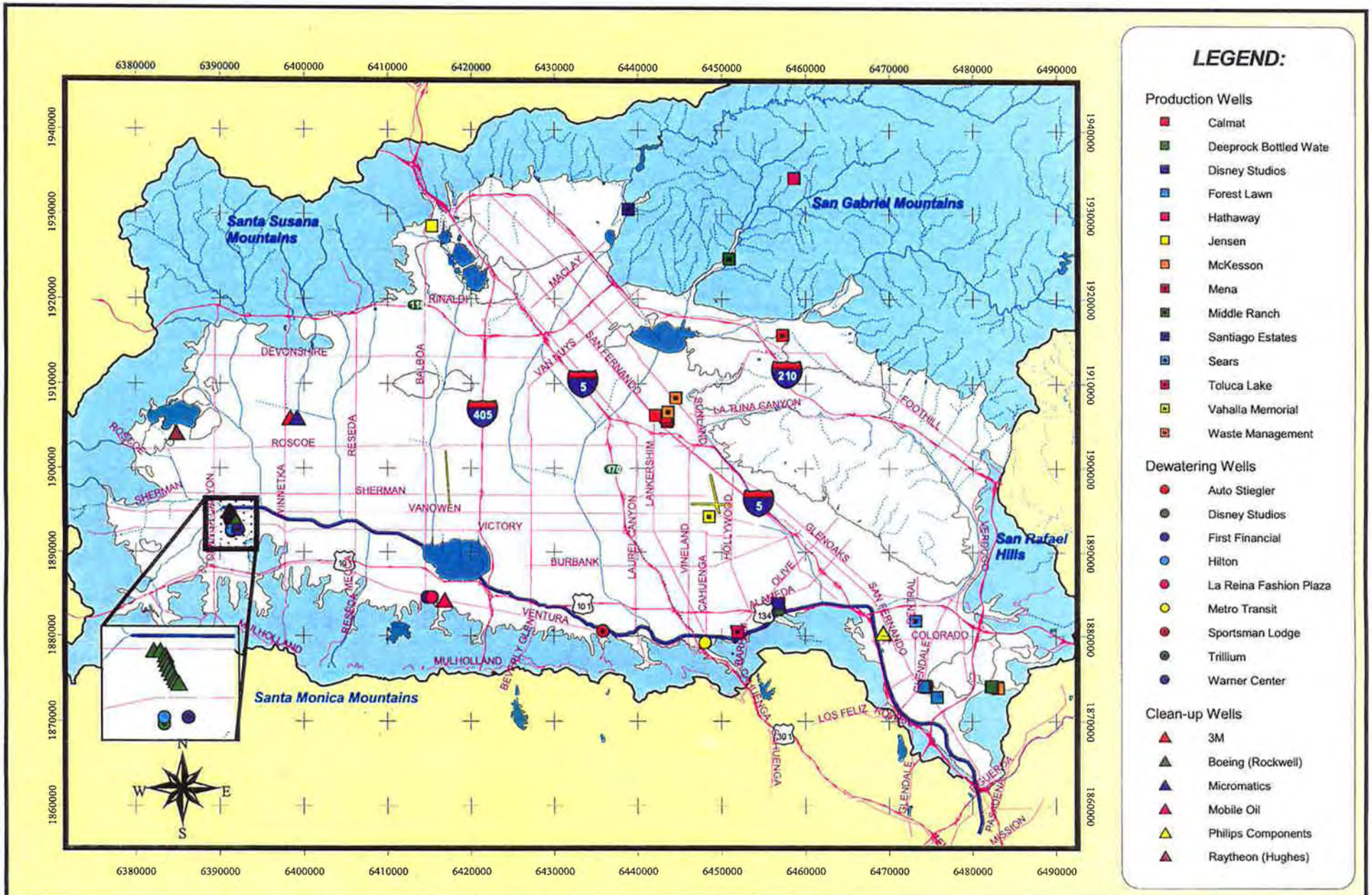
- Calabasas
- City of Burbank
- City of Glendale
- City of Los Angeles
- City of Pasadena
- City of San Fernando
- Hidden Hills
- La Canada Flintridge
- La Crescenta
- Universal City

- Secondary Streams
- Primary Streams
- Los Angeles River
- Water Bodies
- Spreading Grounds
- Groundwater Basins
- ULARA Watershed Boundary
- Major Streets
- Freeways

1999-00 Water Year
ULARA Watermaster Report

Upper Los Angeles River Area: Water Service Areas of Public Agencies

PLATE
2



LEGEND:

Production Wells

- Calmat
- Deeprock Bottled Wate
- Disney Studios
- Forest Lawn
- Hathaway
- Jensen
- McKesson
- Mena
- Middle Ranch
- Santiago Estates
- Sears
- Toluca Lake
- Vahalla Memorial
- Waste Management

Dewatering Wells

- Auto Stiegler
- Disney Studios
- First Financial
- Hilton
- La Reina Fashion Plaza
- Metro Transit
- Sportsman Lodge
- Trillium
- Warner Center

Clean-up Wells

- 3M
- Boeing (Rockwell)
- Micromatics
- Mobile Oil
- Philips Components
- Raytheon (Hughes)

1999-00 Water Year ULARA Watermaster Report	**Upper Los Angeles River Area: Location of Individual Producers**	PLATE 3

UPPER LOS ANGELES RIVER AREA

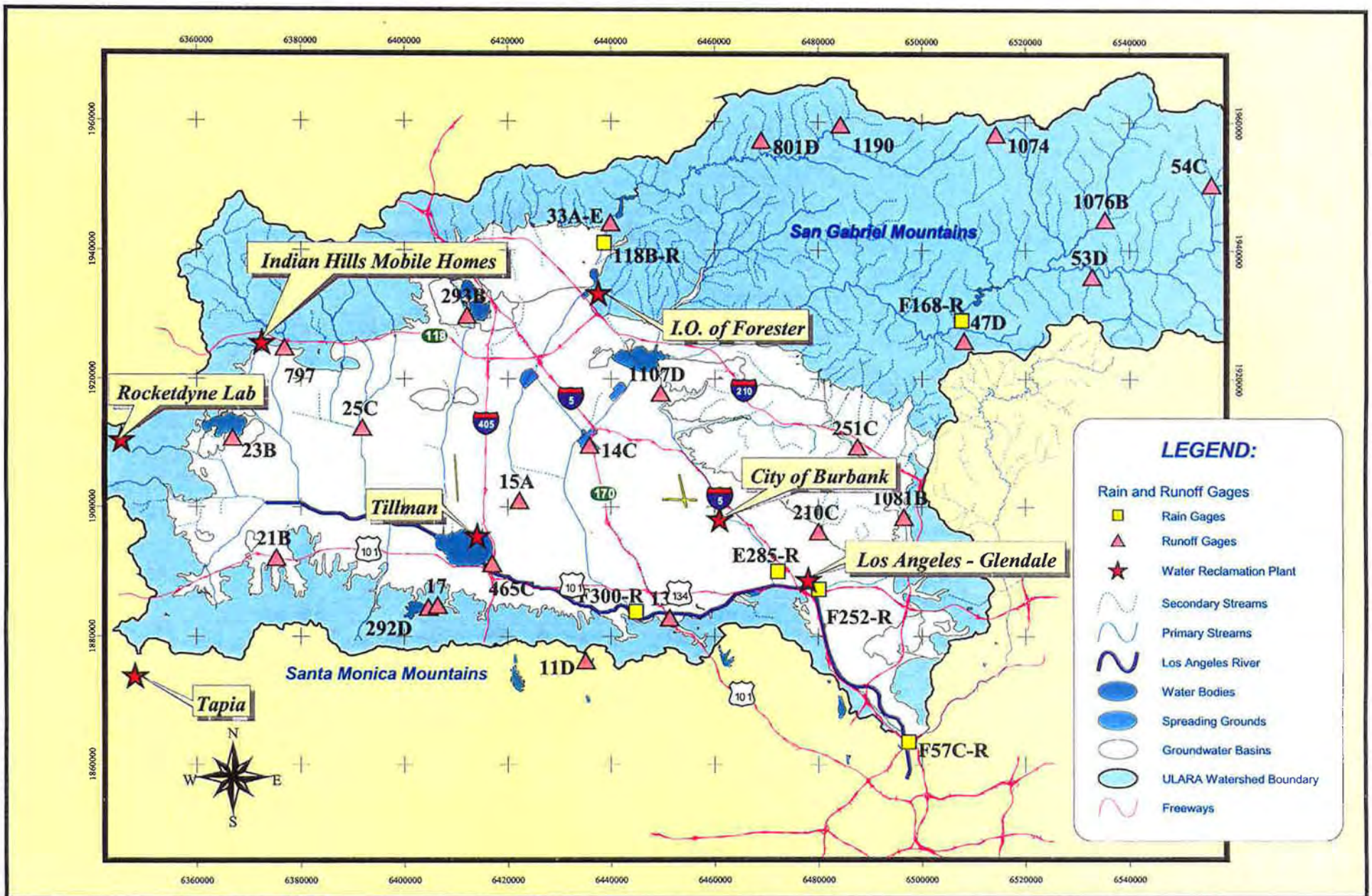
LOCATION OF WELLS AND HYDROLOGIC FACILITIES

LEGEND

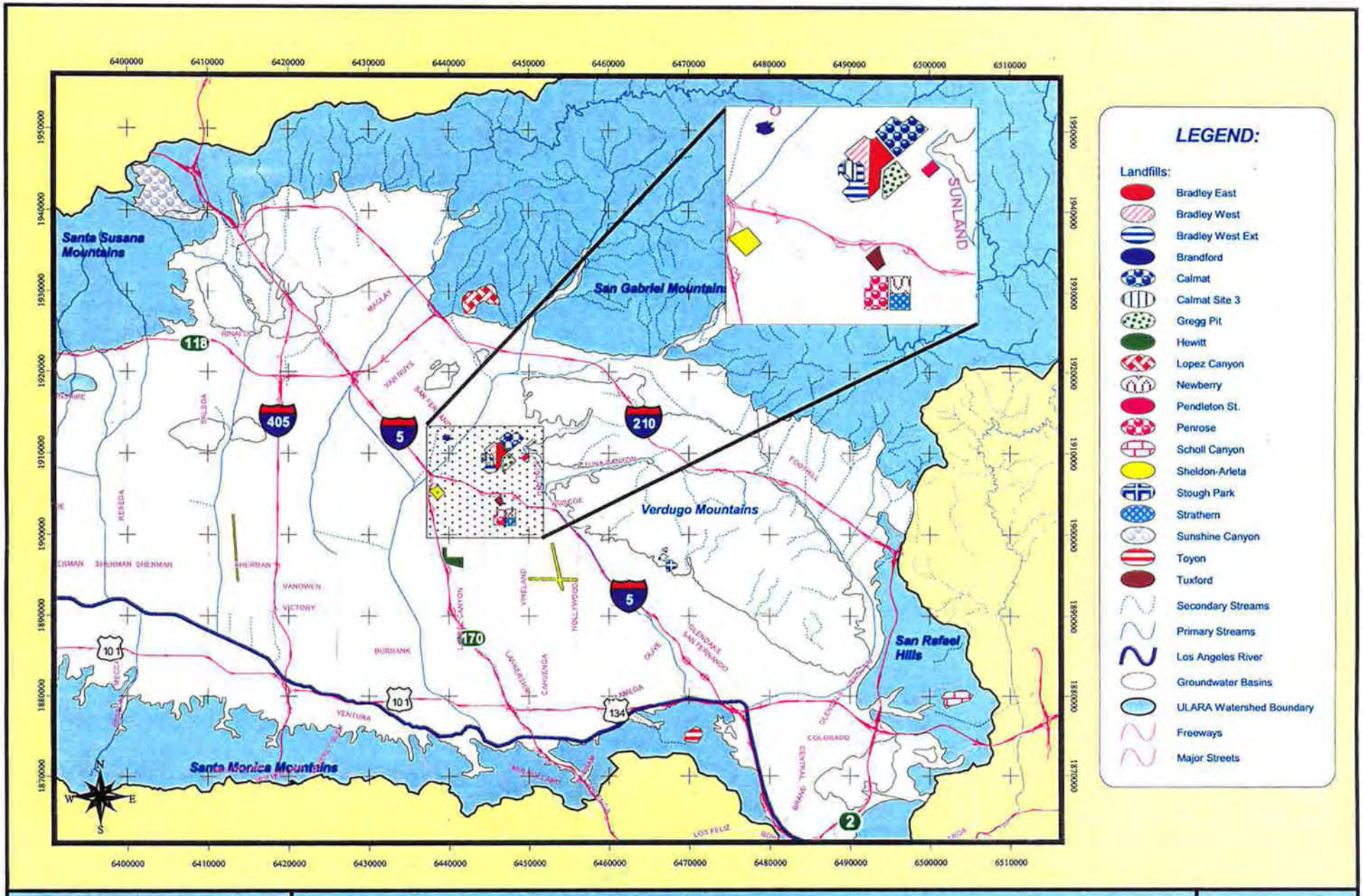
- IMPEDIMENTS TO GROUNDWATER FLOW
- GROUNDWATER CASCADES
- QUESTIONABLE IMPEDIMENT OR GROUNDWATER CASCADE
- CLIMATIC STATION
- SURFACE WATER GAGING STATION
- SURFACE WATER SAMPLING POINT
- KEY WELL USED FOR HYDROGRAPHS
- KEY WELL USED FOR SAMPLING
- ACTIVE, OBSERVATION, OR TEST WELL
- SURFACE AND GRAVITY DIVERSION

SCALE

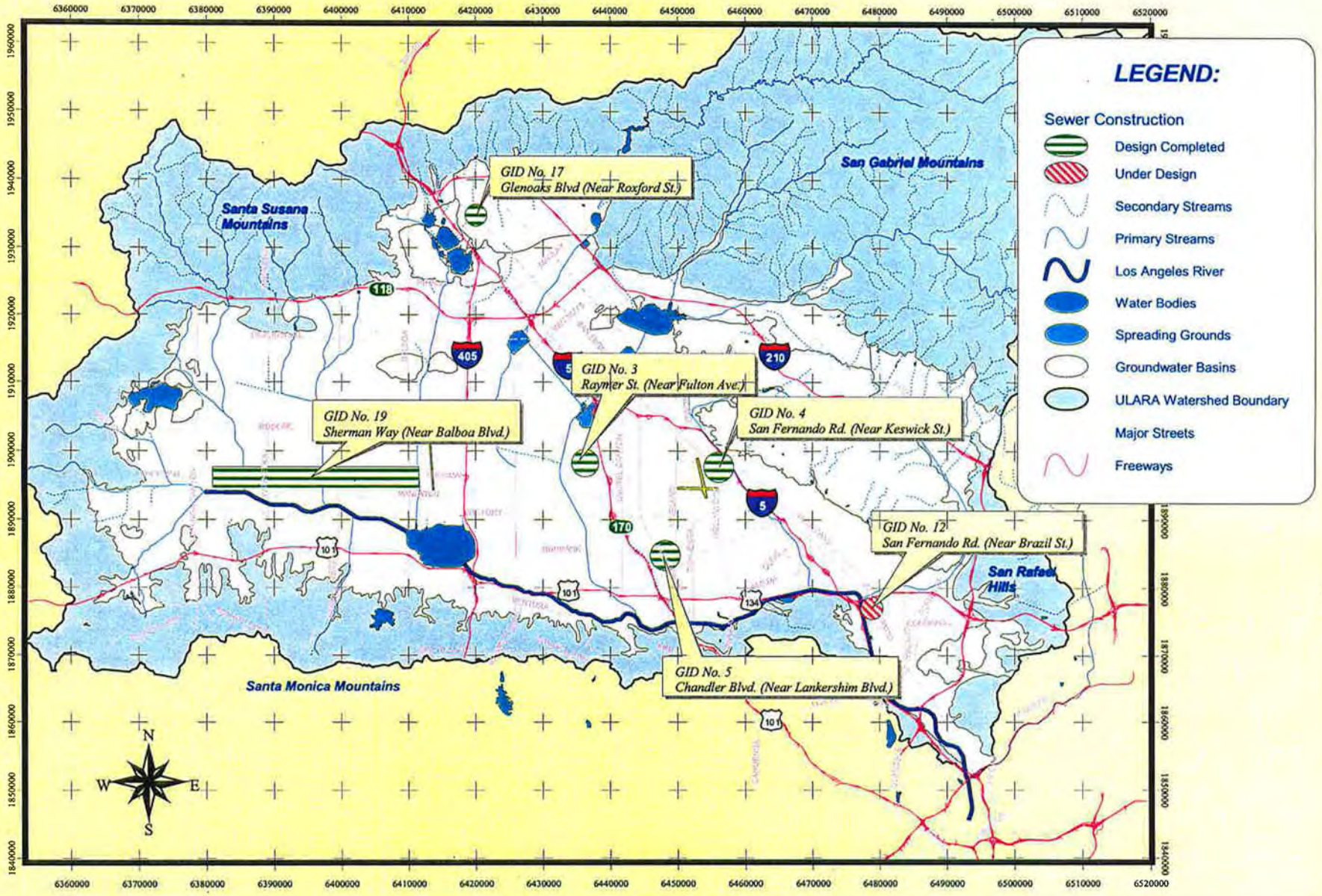
NOTE: 4.25 miles to Tapia Water Reclamation Plant which delivers water to a portion of the west end of ULARA area.



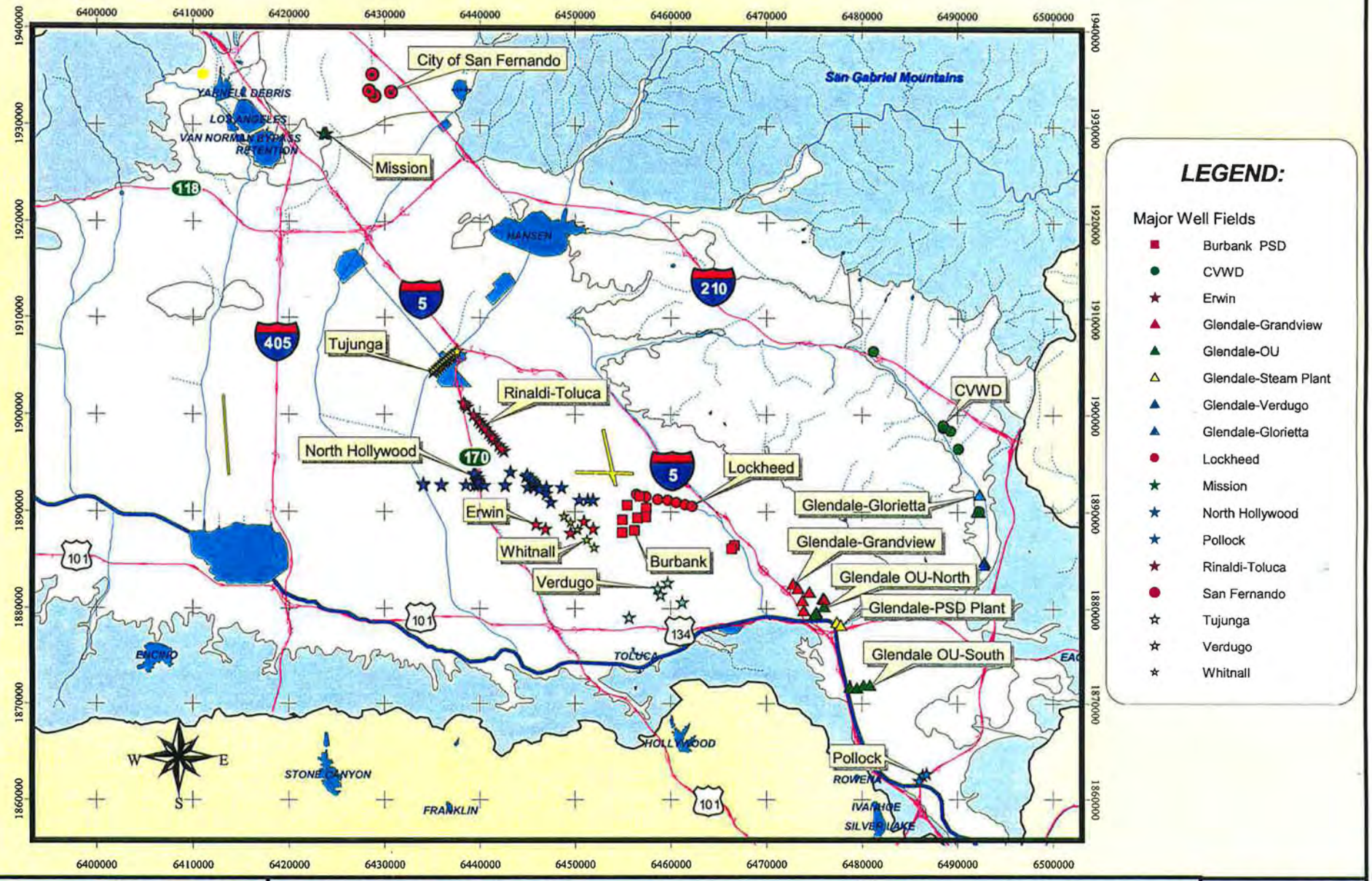
1999-00 Water Year ULARA Watermaster Report	Upper Los Angeles River Area: Water Reclamation Plant and Rain-Runoff Gages	PLATE 5



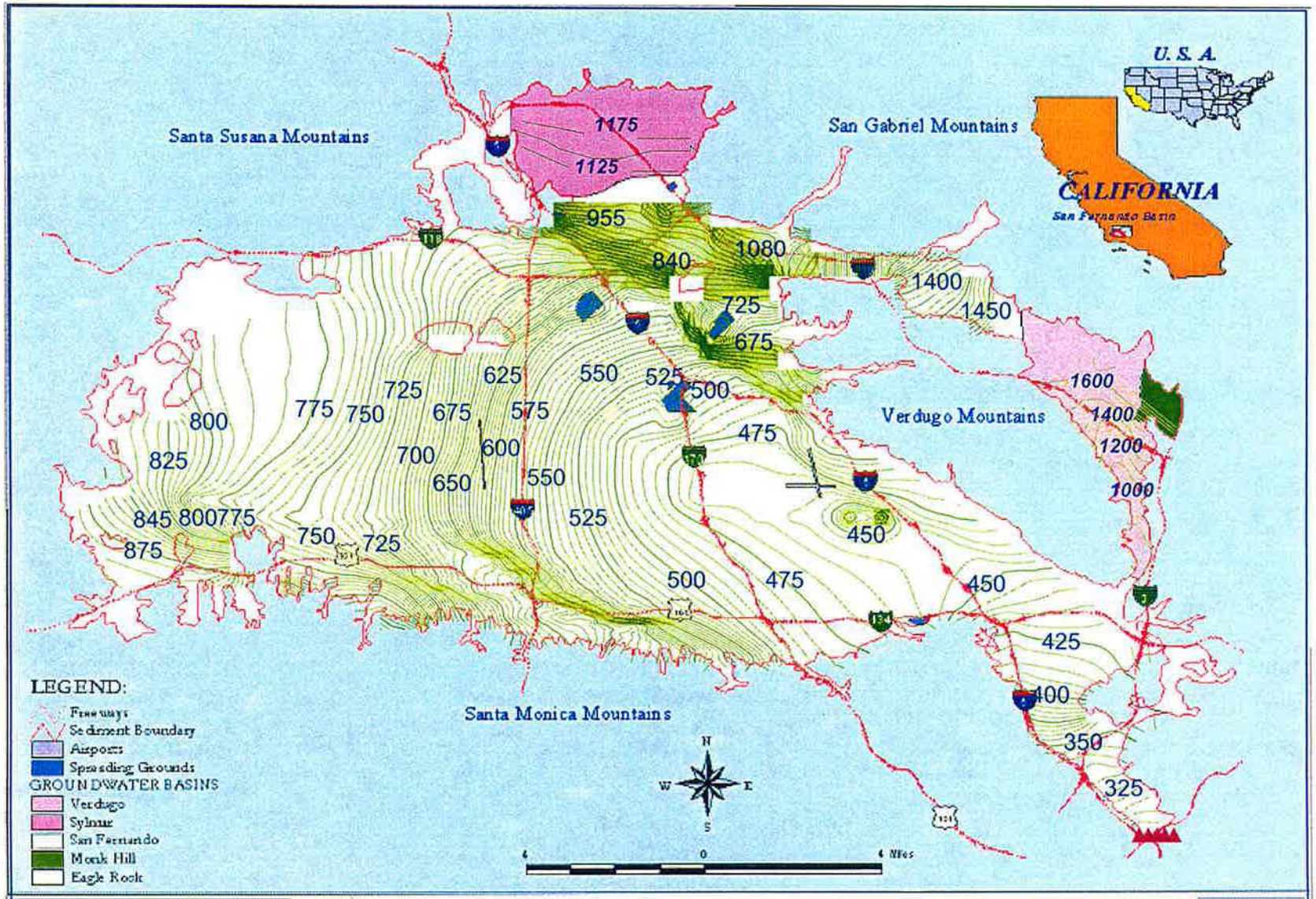
1999-00 Water Year ULARA Watermaster Report	Upper Los Angeles River Area: Landfill Locations	PLATE 6



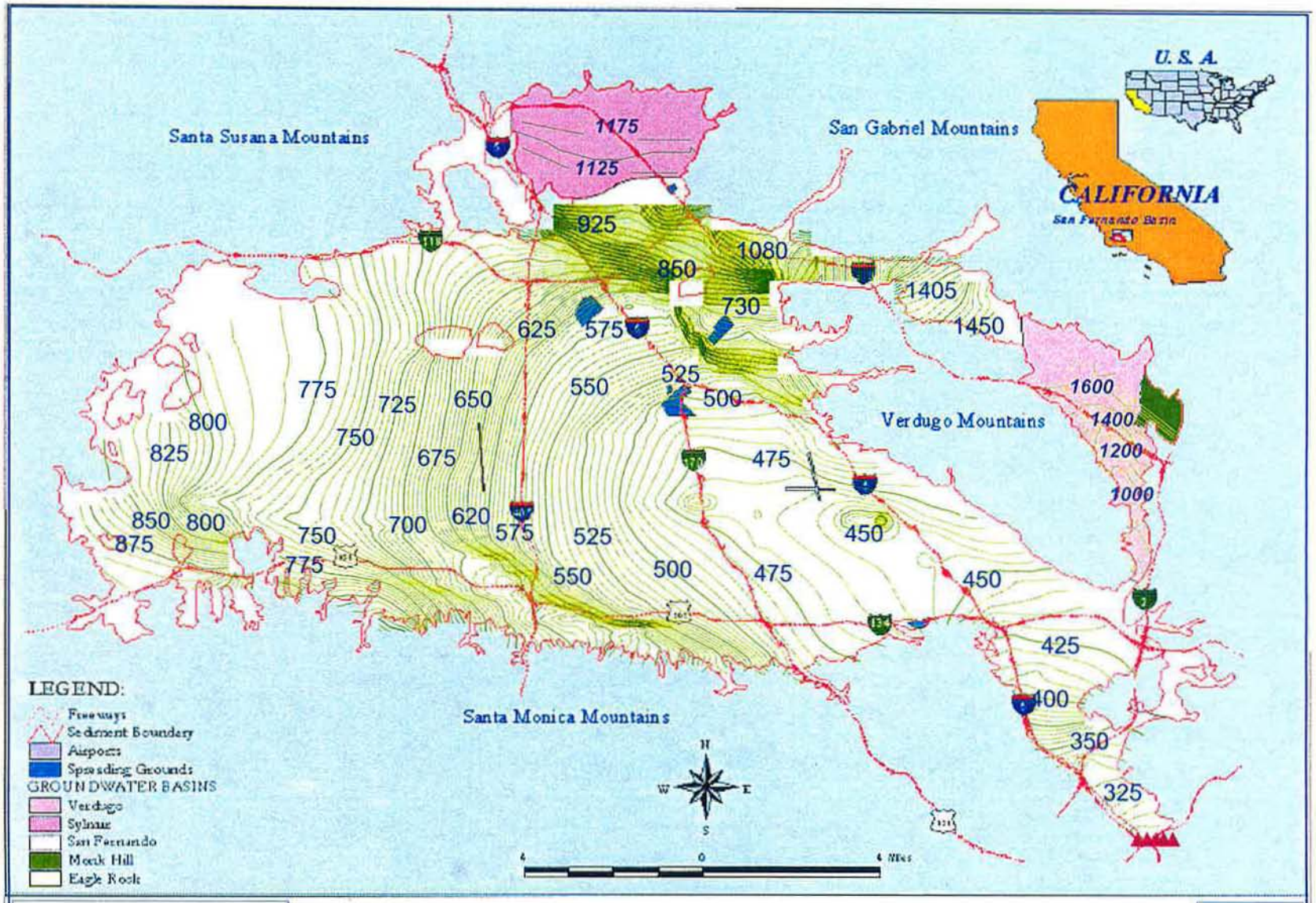
1999-00 Water Year ULARA Watermaster Report	**Upper Los Angeles River Area:** **Los Angeles Bureau of Sanitation Sewer Construction Program for Commercial Parcels**	PLATE 7



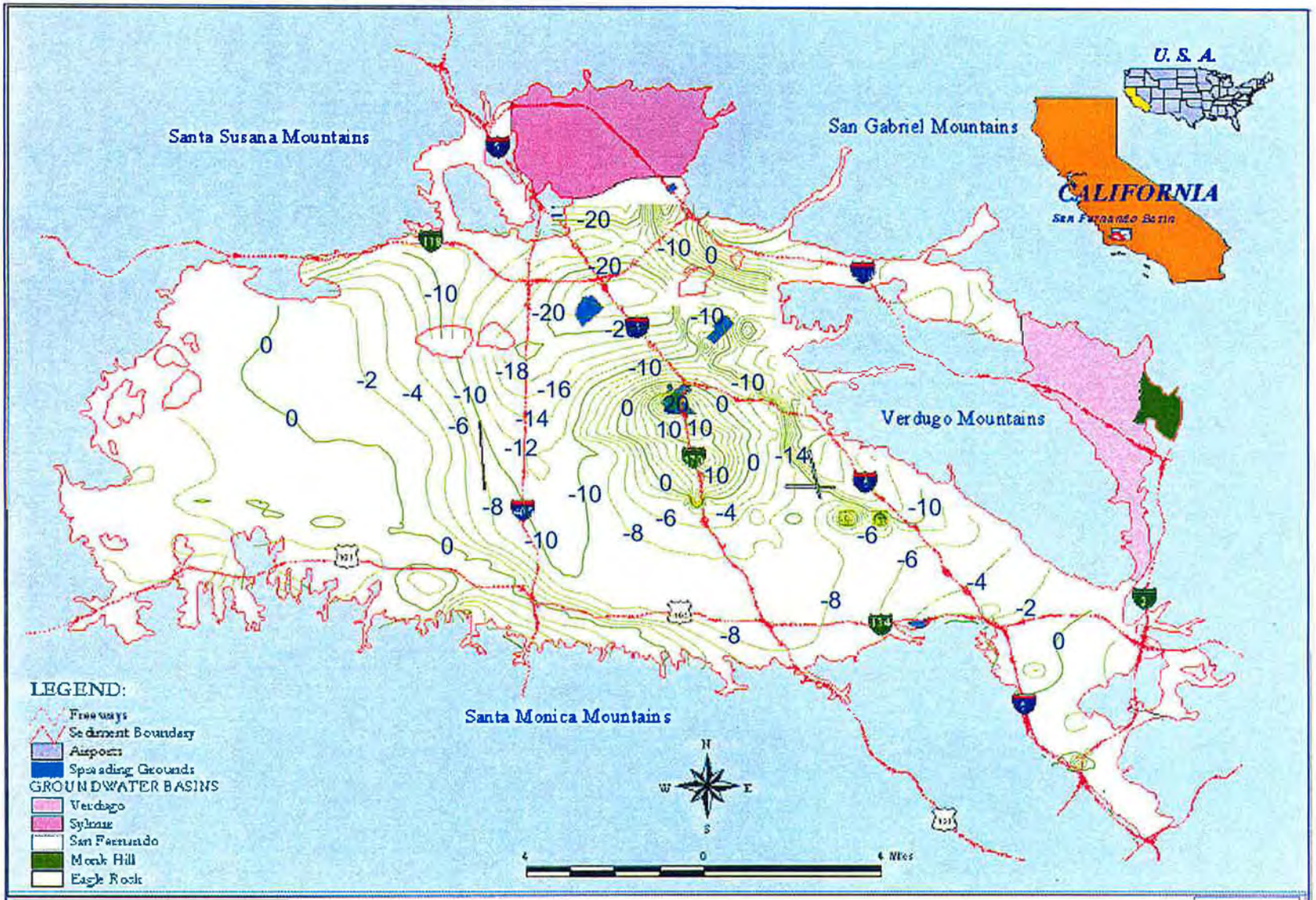
1999-00 Water Year **ULARA Watermaster Report**	**Upper Los Angeles River Area:** **Major Well Fields**	**PLATE** **8**



1999-00 Water Year ULARA Watermaster Report	**Simulated Groundwater Contours** SPRING (APRIL) 2000	PLATE 9



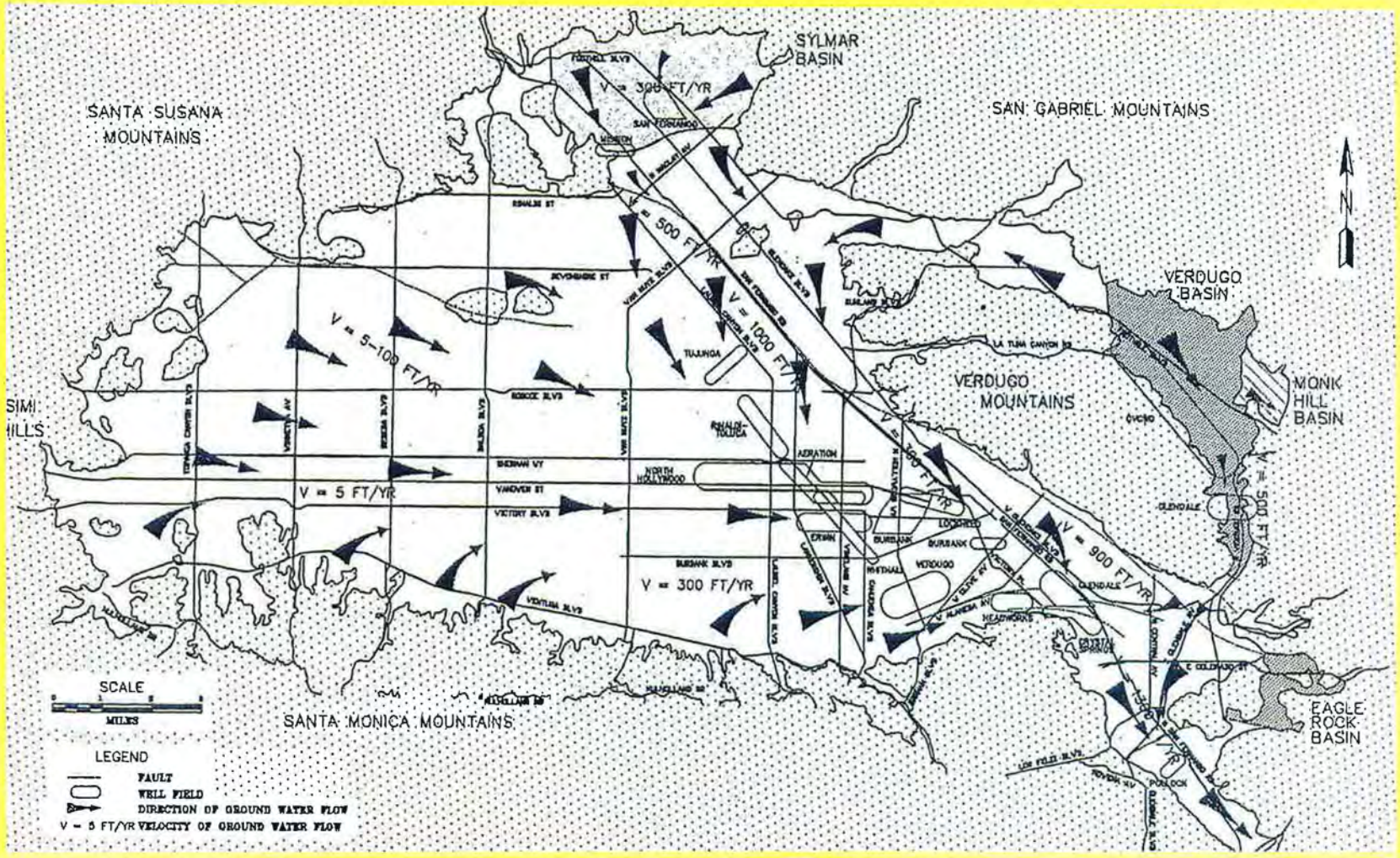
1999-00 Water Year ULARA Watermaster Report	**Simulated Groundwater Contours FALL (September) 2000**	**PLATE 10**



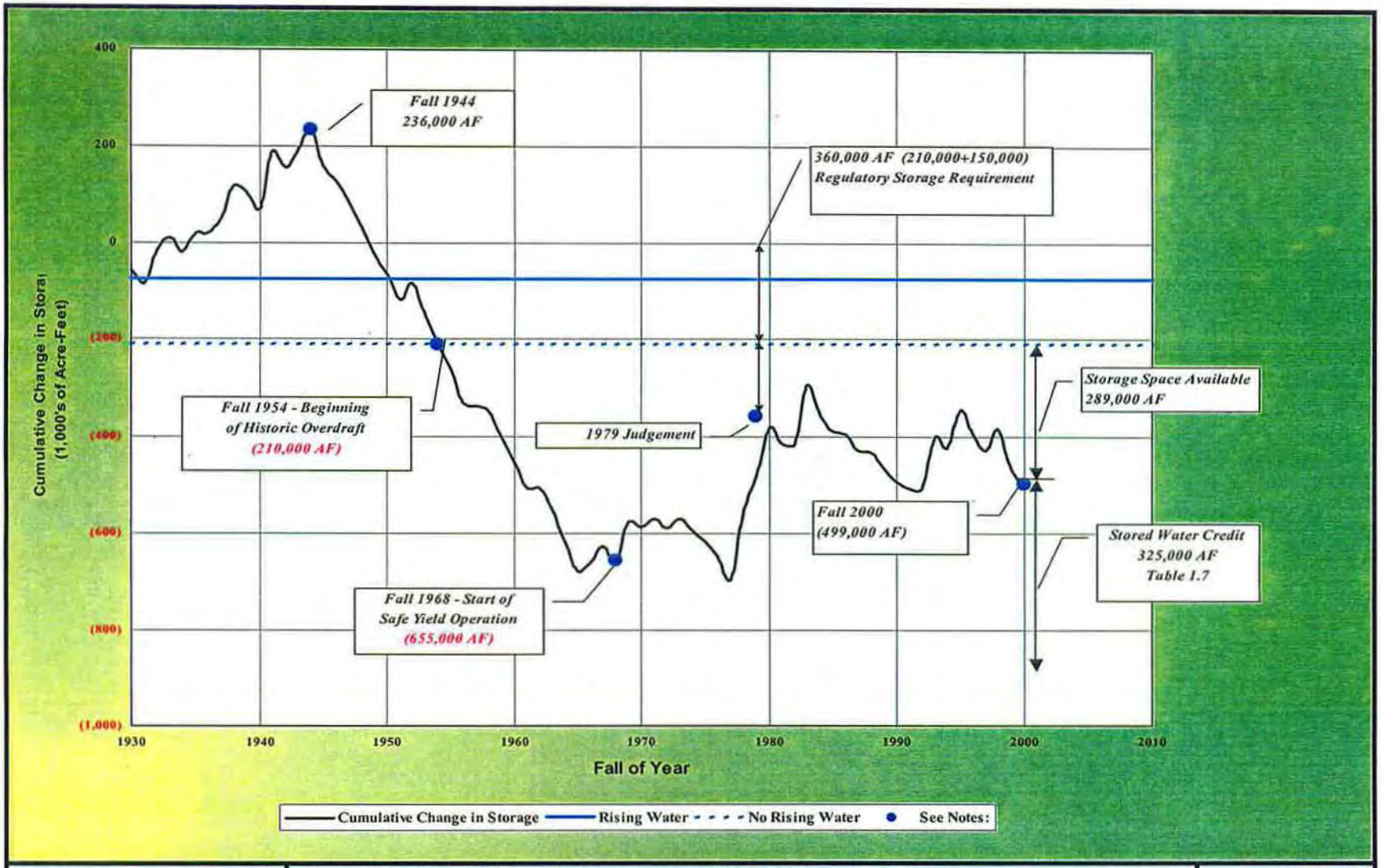
1999-00 Water Year
ULARA Watermaster Report

Change in Groundwater Elevations
Fall 1999 - Fall 2000

PLATE
11



1999-00 Water Year ULARA Watermaster Report	**Upper Los Angeles River Area: Estimated Directions and Velocities of Groundwater**	PLATE **12**

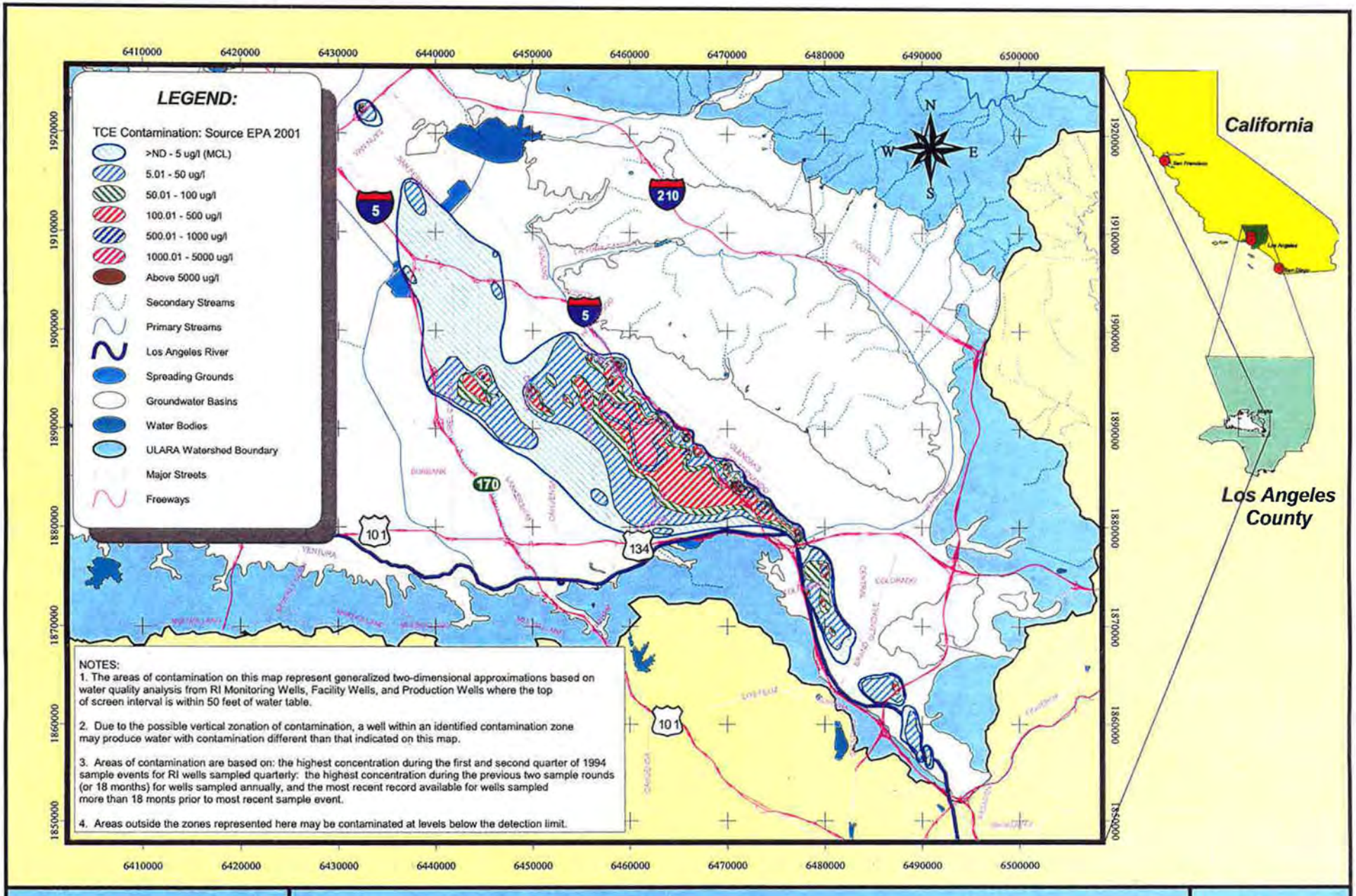


1999-00 Water Year ULARA Watermaster Report	**San Fernando Basin: Cumulative Change in Groundwater Storage**	PLATE 13

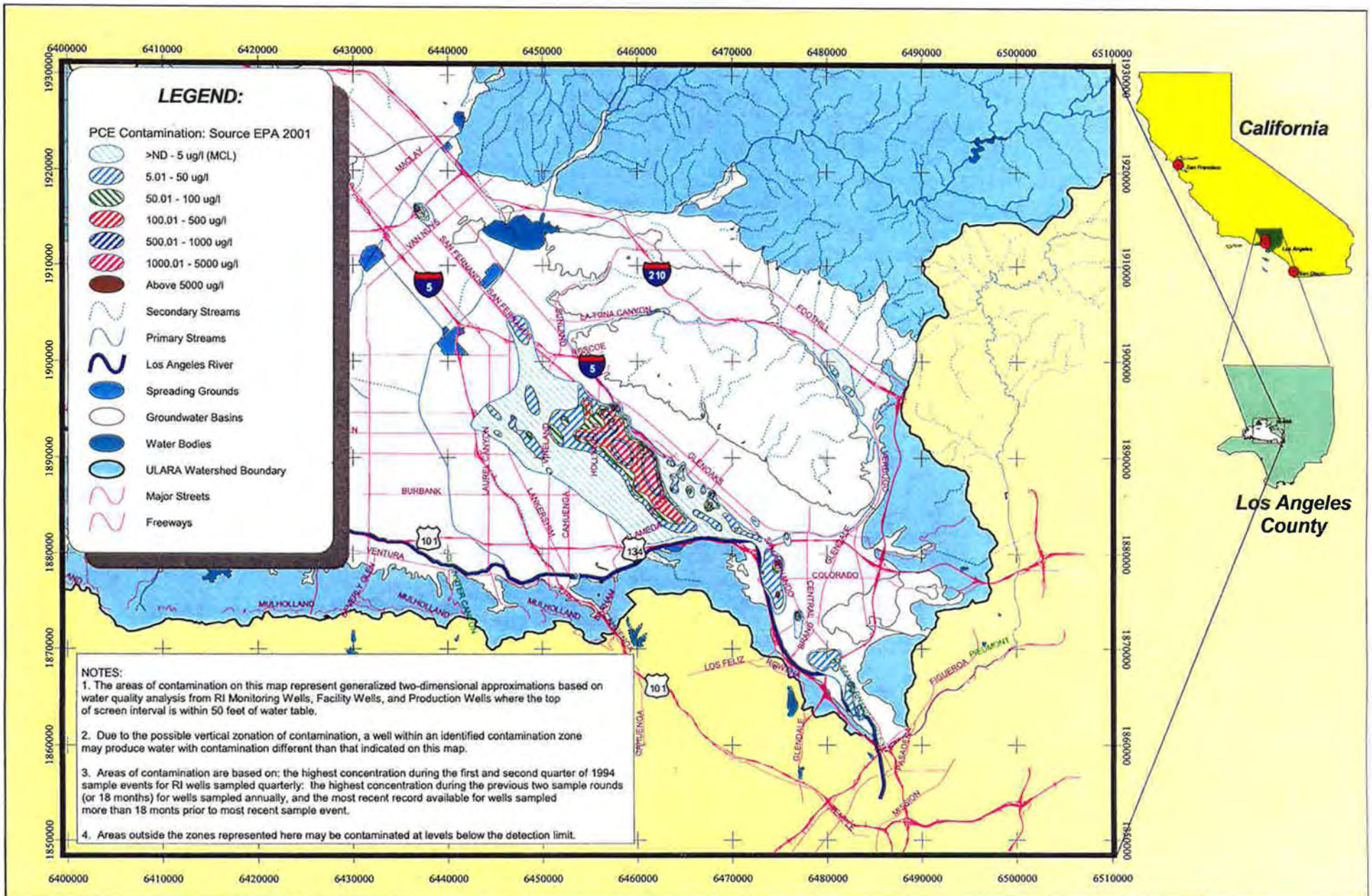
PLATE 13 - ULARA WATERMASTER REPORT

SAN FERNANDO BASIN
CUMULATIVE CHANGE IN GROUNDWATER STORAGE

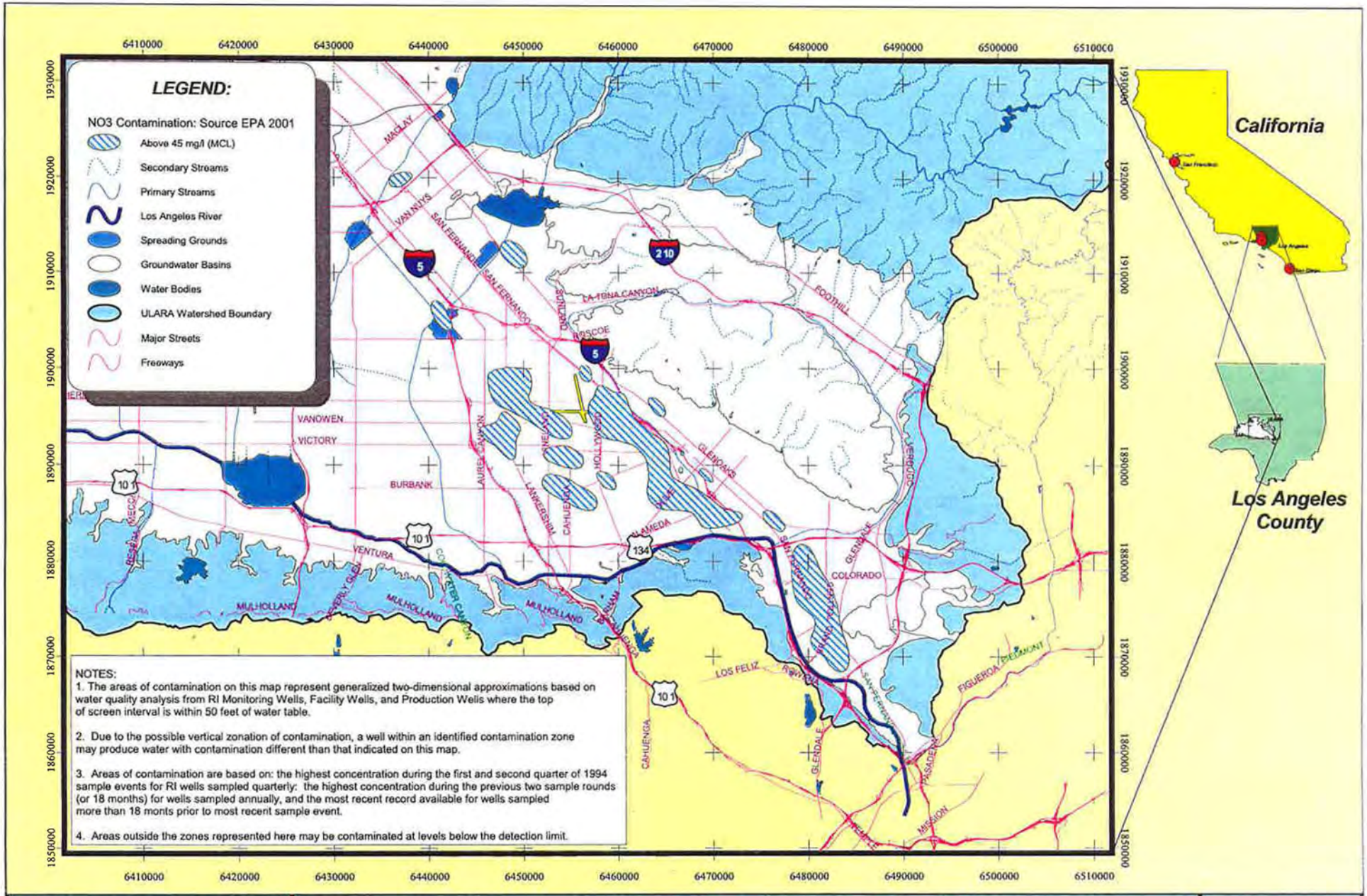
Fall of Year	Change in Storage	Cumulative Chg. in Storage	Cumulative Chg. in Storage/1,000	Cumulative Chg. in Storage (1944)	Cumulative Chg. in Storage/1,000
1928	0	0	0		
1929	-41,510	-41,510	-42		
1930	-15,690	-57,200	-57		
1931	-26,320	-83,520	-84		
1932	67,030	-16,490	-16		
1933	26,640	10,150	10		
1934	-28,560	-18,410	-18		
1935	38,040	19,630	20		
1936	1,000	20,630	21		
1937	30,660	51,290	51		
1938	66,420	117,710	118		
1939	-12,540	105,170	105		
1940	-32,650	72,520	73		
1941	116,850	189,370	189		
1942	-31,230	158,140	158		
1943	31,030	189,170	189		
1944	47,200	236,370	236	0	0
1945	-74,180	162,190	162	-74,180	-74
1946	-33,300	128,890	129	-107,480	-107
1947	-41,200	87,690	88	-148,680	-149
1948	-52,770	34,920	35	-201,450	-201
1949	-56,360	-21,440	-21	-257,810	-258
1950	-43,390	-64,830	-65	-301,200	-301
1951	-53,290	-118,120	-118	-354,490	-354
1952	33,720	-84,400	-84	-320,770	-321
1953	-68,280	-152,680	-153	-389,050	-389
1954	-56,770	-209,450	-209	-445,820	-446
1955	-51,370	-260,820	-261	-497,190	-497
1956	-71,390	-332,210	-332	-568,580	-569
1957	-6,280	-338,490	-338	-574,860	-575
1958	-9,160	-347,650	-348	-584,020	-584
1959	-52,160	-399,810	-400	-636,180	-636
1960	-53,080	-452,890	-453	-689,260	-689
1961	-50,770	-503,660	-504	-740,030	-740
1962	-3,590	-507,250	-507	-743,620	-744
1963	-40,390	-547,640	-548	-784,010	-784
1964	-70,220	-617,860	-618	-854,230	-854
1965	-57,850	-675,710	-676	-912,080	-912
1966	14,970	-660,740	-661	-897,110	-897
1967	36,720	-624,020	-624	-860,390	-860
1968	-31,350	-655,370	-655	-891,740	-892
1969	79,240	-576,130	-576	-812,500	-813



1999-00 Water Year **ULARA Watermaster Report**	**Upper Los Angeles River Area:** **TCE Contamination (ug/l) in the Upper Zone (1999)**	**PLATE** **14**



1999-00 Water Year **ULARA Watermaster Report**	**Upper Los Angeles River Area:** **PCE Contamination (ug/l) in the Upper Zone (1999)**	**PLATE** **15**



1999-00 Water Year ULARA Watermaster Report	Upper Los Angeles River Area: NO3 Contamination (ug/l) in the Upper Zone (1999)	PLATE 16

APPENDIX A
GROUNDWATER EXTRACTIONS

1999-2000 WATER YEAR
(acre-feet)

LACDPW Well No.	Owner Well No.	1999 Oct.	Nov.	Dec.	2000 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
					San Fernando Basin									
Angelica Healthcare Services			(abandoned 12/97)											
3934A	M050A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Auto Stiegler														
—	—	3.18	3.02	3.45	2.80	2.80	0.22	0.00	0.00	0.00	0.00	0.00	0.00	15.47
Burbank, City of														
3841C	6A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3882P	7	63.13	0.00	0.00	0.00	0.00	0.00	53.76	139.74	136.61	109.28	11.76	101.10	615.38
3851E	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3851K	13A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3882T	15	51.32	0.00	0.00	0.00	0.00	0.00	71.31	116.04	85.01	35.29	33.23	88.83	481.03
3841G	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	114.45	0.00	0.00	0.00	0.00	0.00	125.07	255.78	221.62	144.57	44.99	189.93	1,096.41
CalMat														
4916A	2	108.35	101.25	127.74	35.69	0.59	0.00	72.59	120.24	45.62	2.46	11.52	0.00	626.05
4916	3	49.19	45.62	26.96	0.00	0.00	18.26	37.05	63.84	81.17	76.08	81.51	72.71	552.39
4916(x)	1	104.85	100.29	119.44	103.96	77.64	97.03	88.59	105.46	109.68	97.03	132.17	133.59	1,269.73
Sheldon Pond		0.02	0.00	0.02	0.16	34.95	49.21	26.14	0.00	120.05	151.46	142.77	139.85	664.66
	Total:	262.41	247.16	274.14	139.81	113.18	164.50	224.37	289.54	356.55	327.03	367.97	346.15	3,112.81
First Financial Plaza Site														
N/A	F.F.P.S.	1.38	1.19	3.08	1.10	1.51	3.65	2.56	2.98	3.01	1.43	1.72	1.82	25.41
Forest Lawn Memorial Park														
3947A	2	20.86	2.80	13.31	3.45	1.40	5.69	10.36	20.92	17.37	10.04	17.30	2.43	125.93
3947B	3	23.00	7.38	14.74	3.76	1.52	6.20	11.29	23.17	19.32	11.13	19.19	8.88	149.58
3947C	4	20.42	6.50	13.03	3.35	1.36	5.58	10.15	20.63	17.10	9.84	14.72	7.86	130.54
3858K	7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	64.28	16.68	41.08	10.56	4.28	17.47	31.80	64.72	53.79	31.01	51.21	19.17	406.05
Glendale, City of														
3924N	STPT 1	1.20	2.27	2.20	0.87	0.73	1.39	1.18	2.37	1.24	1.75	6.04	6.92	28.16
3924R	STPT 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.21	9.51	15.72
GVENT	GVENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	1.20	2.27	2.20	0.87	0.73	1.39	1.18	2.37	1.24	1.75	12.25	16.43	43.88
Glendale No/So OU														
	GN-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	53.37	56.26	109.63
	GN-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.68	70.01	132.69
	GN-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.69	72.88	118.57
	GN-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	151.79	197.28	349.07
	GS-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	GS-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.91	55.32	95.23
	GS-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.64	43.18	82.82
	GS-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	35.30	55.34	90.64
	Total:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	428.38	550.27	978.65
Greeff Fabrics														
—	—													0.00
Hathaway (successor to deMille)														
—	1	2.41	1.83	2.05	1.53	0.60	1.64	2.12	2.92	3.07	2.54	3.01	2.58	27.30
	2	0.81	0.74	1.37	0.85	1.04	1.21	0.91	1.31	1.11	1.12	1.07	0.71	12.25
	3	1.76	1.52	0.69	0.00	0.42	0.21	0.57	0.35	0.00	0.68	0.04	0.50	6.74
	Total:	4.98	4.09	4.11	2.38	2.06	3.06	3.60	4.58	4.18	5.34	4.12	3.79	46.29
Raytheon (Hughes Missile Systems)														
—	—	0.57	0.43	0.61	0.41	0.17	0.13	0.17	0.52	0.14	0.29	0.52	0.22	4.18

1999-2000 WATER YEAR
(acre-feet)

LACDPW Well No.	Owner Well No.	1999 Oct	Nov.	Dec.	2000 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
San Fernando Basin (cont'd)														
Lockheed - Burbank Operable Unit														
3871L	VO-1	180.94	25.85	141.19	132.22	132.65	145.81	131.59	109.47	77.54	18.55	74.25	87.10	1,257.16
3861G	VO-2	177.35	162.36	157.88	137.44	20.46	117.30	129.58	145.41	97.86	28.81	111.93	124.42	1,410.80
3861K	VO-3	0.11	4.64	35.11	66.16	66.77	54.71	59.23	110.77	76.48	17.38	109.65	21.64	622.65
3861L	VO-4	147.32	141.45	137.32	131.65	101.24	99.85	129.69	129.67	93.94	30.64	117.28	131.20	1,391.25
3850X	VO-5	50.91	170.39	191.81	168.02	140.89	110.88	86.29	0.00	0.00	0.00	111.21	156.99	1,187.39
3850Z	VO-6	277.23	257.15	240.35	244.80	203.97	204.64	230.02	249.36	175.27	0.00	0.21	9.00	2,092.00
3850AB	VO-7	244.97	267.29	93.60	70.86	121.47	182.03	178.66	170.11	125.66	66.59	127.94	0.00	1,589.18
3851C	VO-8	154.02	188.50	200.90	173.14	141.52	167.73	169.83	172.73	123.52	107.68	142.62	158.41	1,900.60
	Total:	1,232.85	1,157.63	1,198.16	1,124.29	928.97	1,082.95	1,114.89	1,087.52	770.27	269.65	795.09	688.76	11,451.03
Mena, John & Barbara														
4973J		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Metropolitan Transportation Authority						Construction						Operations		
—	1065	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
—	1075	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
—	1130	0.54	0.56	0.98	0.55	0.69	1.52	0.88	3.14	3.04	0.45	0.34	0.63	13.32
—	1140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
—	1150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.11	0.00	4.11
—	1070	5.41	5.61	5.46	5.22	5.38	4.07	1.58	4.23	4.09	3.34	0.00	3.03	47.42
—	1133	0.77	0.02	0.15	0.01	0.38	0.01	0.18	0.01	0.01	0.00	0.00	0.00	1.54
	Total:	6.72	6.19	6.59	5.78	6.45	5.60	2.64	7.38	7.14	3.79	4.45	3.66	66.39
Metropolitan Water District														
	Jensen	16.30	16.20	17.00	17.80	16.10	17.10	17.60	17.00	16.40	16.50	16.10	15.60	199.70
Mobil Oil Corporation														
—	—	0.05	0.07	0.07	0.05	0.05	0.00	0.01	0.01	0.00	0.44	0.37	0.03	1.14
Middle Ranch (Successor to deMille)														
4931 x	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4940-1	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
new	5	0.01	0.01	0.00	0.02	0.02	0.03	0.05	0.05	0.08	0.05	0.06	0.03	0.41
4940-3	6	0.76	0.32	0.30	0.31	0.29	0.48	0.73	0.70	0.91	0.77	0.83	0.62	7.02
4940-2	7	0.48	0.28	0.41	0.09	0.04	0.05	0.25	0.27	0.30	0.45	0.49	0.23	3.34
new	8	0.44	0.38	0.69	0.39	0.09	0.26	0.33	0.28	0.38	0.33	1.03	0.66	5.26
	Spring 1&	0.07	0.05	0.06	0.02	0.02	0.03	0.07	0.07	0.08	0.05	0.07	0.06	0.65
	Total	1.76	1.04	1.46	0.83	0.46	0.85	1.43	1.37	1.75	1.65	2.48	1.60	16.68
Micro Matics														
JEW	1	0.04	0.00	0.00	0.07	0.15	0.32	0.15	0.28	0.20	0.24	0.31	0.27	2.03
JEW	2				0.01	0.11	0.08	0.07	0.13	0.07	0.10	0.14	0.13	0.84
	Total	0.04	0.00	0.00	0.08	0.26	0.40	0.22	0.41	0.27	0.34	0.45	0.40	2.87
Boeing\Rockwell International (No further pumping until 2000)														
—	E-1 to E-9													0.00
Sears Roebuck & Co.														
3945	3945	17.60	18.82	31.28	32.13	34.07	31.04	18.06	18.02	17.78	18.22	16.82	17.59	271.43

1999-2000 WATER YEAR
(acre-feet)

LACDPW Well No.	Owner Well No.	1999 Oct	Nov	Dec	2000 Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	TOTAL
San Fernando Basin (cont'd)														
Sportsmen's Lodge														
3785A	1	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.00	0.01	0.07
3M-Pharmaceuticals														
—	—	5.20	4.85	3.97	4.57	5.60	5.32	5.12	5.00	4.02	5.81	5.06	4.40	58.92
Toluca Lake Property Owners Association														
3845F	3845F	4.35	4.64	4.20	2.38	1.04	0.78	2.45	5.35	6.39	6.96	6.86	5.44	50.84
Trillium Corporation														
Well #1	—	0.00	0.32	0.32	0.32	1.50	0.92	0.61	0.61	0.61	0.61	0.13	2.27	8.22
Well #2	—	2.98	1.98	1.98	1.98	0.51	0.51	0.47	0.98	0.98	0.98	0.04	2.19	15.58
	Total:	2.98	2.30	2.30	2.30	2.01	1.43	1.08	1.59	1.59	1.59	0.17	4.46	23.80
Valhalla Memorial Park and Mortuary														
3840K	4	37.84	23.48	28.79	16.44	6.74	16.33	27.98	46.99	56.85	56.85	56.85	56.59	431.73
Waste Management Disposal Services of Calif.														
4916D		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walt Disney Pictures and Television	(wells inactive/ not abandoned)													
3874E	EAST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3874F	WEST	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3874G	NORTH	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walt Disney Riverside Building														
—	—	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Waterworks District No. 21														
—	—	2.63	1.53	2.16	4.71	5.01	2.42	4.05	3.51	2.44	3.30	1.24	2.66	35.66
Wildlife Waystation														
—	—	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	2.40
Los Angeles, City of														
Aeration (A)														
3800E	A-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810U	A-2	0.00	0.00	0.00	0.00	21.18	16.50	13.24	17.14	20.22	16.23	17.24	3.85	125.60
3810V	A-3	0.00	0.00	0.00	0.00	22.47	10.85	10.28	16.41	19.60	15.15	16.27	16.68	127.71
3810W	A-4	0.00	0.00	0.00	0.00	22.06	11.82	8.88	19.53	6.17	18.50	18.45	2.77	108.18
3820H	A-5	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	0.00	2.11	9.45	37.16	48.97
3821J	A-6	0.00	0.00	0.00	0.00	34.25	32.04	32.41	16.75	41.23	32.75	37.53	32.62	259.58
3830P	A-7	0.00	0.00	0.00	0.00	34.82	32.69	31.77	26.60	42.12	33.40	37.58	33.95	272.93
3831K	A-8	0.00	0.00	0.00	0.00	36.75	34.80	35.90	28.28	33.58	35.58	35.37	29.52	269.78
	A Total:	0.00	0.00	0.00	0.00	171.78	138.70	132.48	124.71	162.92	153.72	171.89	156.55	1,212.75
Erwin (E)														
3831H	E-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821I	E-2A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3831G	E-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821F	E-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3831F	E-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821H	E-6	130.60	58.81	0.00	0.00	155.14	118.29	0.00	49.77	63.61	136.84	169.16	155.50	1,037.72
3811F	E-10	67.81	76.17	57.98	81.97	74.01	52.70	0.00	25.04	32.96	69.97	84.48	73.80	696.89
	E Total:	198.41	134.98	57.98	81.97	229.15	170.99	0.00	74.81	96.57	206.81	253.64	229.30	1,734.61

1999-2000 WATER YEAR
(acre-feet)

LACDPW	Owner	1999			2000								
Well No.	Well No.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
San Fernando Basin (cont'd)														
Headworks (H)														
3893L	H-26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3893K	H-27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3893M	H-28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3893N	H-29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3893P	H-30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	H Total:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
North Hollywood (NH)														
3800	NH-2	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
3780A	NH-4	0.00	0.00	0.00	0.00	0.00	106.56	0.00	0.00	47.45	160.07	230.55	161.04	705.67
3810S	NH-5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3770	NH-7	114.99	94.46	132.85	85.90	52.41	0.00	0.00	0.00	0.00	0.00	83.01	128.21	691.83
3810	NH-11	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.00	0.00	1.25
3810A	NH-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810B	NH-14A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3790B	NH-15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3820D	NH-16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3820C	NH-17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3820B	NH-18	0.36	0.20	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78
3830D	NH-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3830C	NH-20	0.00	0.00	0.18	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24
3830B	NH-21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3790C	NH-22	140.26	213.26	240.49	212.85	266.39	157.78	0.00	86.61	72.45	217.97	306.40	187.51	2,101.97
3790D	NH-23	307.69	254.86	278.19	247.35	212.85	0.00	0.00	0.00	0.00	0.00	140.35	272.33	1,713.62
3800C	NH-24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3790F	NH-25	0.00	0.00	0.00	0.00	97.26	58.99	0.00	0.00	64.69	203.99	269.81	168.13	862.87
3790E	NH-26	176.53	140.84	155.69	133.03	158.12	55.92	0.00	30.71	36.52	139.72	70.73	22.19	1,120.00
3820F	NH-27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810K	NH-28	0.18	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17	0.00	0.00	1.64
3810L	NH-29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3800D	NH-30	0.00	0.22	0.09	0.06	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.50
3810T	NH-31	0.00	0.00	219.21	0.00	0.00	139.78	0.00	0.00	0.00	0.00	0.00	0.00	358.99
3770C	NH-32	192.14	101.35	0.00	198.02	214.99	60.19	0.00	0.00	59.64	201.62	271.07	171.16	1,470.18
3780C	NH-33	21.05	0.00	0.00	0.00	80.00	69.85	0.00	0.00	0.36	0.13	186.40	237.25	595.04
3790G	NH-34	221.67	187.99	209.61	183.97	233.99	93.91	0.00	0.45	0.13	0.11	0.22	0.00	1,132.05
3830N	NH-35	271.85	272.52	281.19	271.09	323.59	56.40	0.00	0.45	0.25	0.18	0.00	0.00	1,477.52
3790H	NH-36	276.60	225.73	235.69	191.18	231.77	102.27	0.00	73.14	0.18	0.11	162.19	167.28	1,666.14
3790J	NH-37	406.22	345.29	384.64	332.82	415.58	0.00	0.00	145.01	0.22	344.23	487.92	223.23	3,085.16
3810M	NH-38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810N	NH-39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3810P	NH-40	21.55	0.41	0.00	0.00	0.00	0.96	0.00	0.71	0.48	0.27	0.00	0.00	24.38
3810Q	NH-41	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.18	0.39	0.48	0.00	0.00	1.60
3810R	NH-42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3790K	NH-43A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3790L	NH-44	0.00	0.00	0.00	0.00	129.08	269.74	0.00	137.48	124.72	373.00	527.31	324.88	1,906.21
3790M	NH-45	478.35	383.31	409.27	321.96	384.45	222.56	0.00	170.45	143.38	436.70	633.03	377.80	3,961.26
	NH Total:	2,629.60	2,220.73	2,547.66	2,178.23	2,800.54	1,395.59	0.00	665.19	550.86	2,080.66	3,368.99	2,441.01	22,879.06

1999-2000 WATER YEAR
(acre-feet)

LACDPW	Owner	1999			2000								
Well No.	Well No.	Oct	Nov.	Dec	Jan	Feb	Mar.	Apr	May	June	July	Aug	Sept	TOTAL
San Fernando Basin (cont'd)														
Pollock (P)														
3959E	P-4	31.54	0.00	0.00	0.00	0.00	161.00	0.00	0.00	200.45	193.45	184.89	186.13	957.46
3958H	P-6	21.80	0.00	0.00	0.00	0.00	0.00	160.69	145.40	0.00	161.63	225.84	170.50	885.86
3958J	P-7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.05	0.00	0.00	0.00	8.05
	P Total:	53.34	0.00	0.00	0.00	0.00	161.00	160.69	145.40	208.50	355.08	410.73	356.63	1,851.37
Rinaldi-Toluca (RT)														
4909E	RT-1	326.65	306.29	397.88	22.86	0.91	0.34	0.00	0.13	0.43	0.43	0.00	0.00	1,055.92
4898A	RT-2	410.35	392.88	547.24	417.21	514.76	43.66	0.00	0.16	187.39	427.64	548.18	134.55	3,624.02
4898B	RT-3	463.38	440.67	575.52	427.11	519.51	45.43	0.00	0.18	190.77	435.67	554.66	227.86	3,880.76
4898C	RT-4	0.00	0.00	584.29	443.25	478.76	0.06	0.00	0.29	33.12	0.00	353.44	241.89	2,135.10
4898D	RT-5	456.10	436.27	573.39	403.39	471.67	0.14	0.00	0.36	190.54	435.81	222.88	0.00	3,190.55
4898E	RT-6	0.00	467.30	617.53	0.00	596.05	0.00	0.00	0.34	197.97	94.65	572.77	238.61	2,785.22
4898F	RT-7	484.71	0.00	0.00	463.88	0.00	51.33	0.00	0.00	0.00	454.45	581.12	239.37	2,274.86
4898G	RT-8	438.79	205.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	644.62
4898H	RT-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	175.61	449.90	548.94	230.32	1,404.77
4909G	RT-10	472.61	440.49	569.32	435.39	581.77	33.12	0.00	0.00	99.54	453.42	567.60	240.63	3,893.89
4909K	RT-11	433.37	401.79	518.59	369.90	324.77	0.09	0.00	0.29	0.25	0.68	0.84	0.27	2,050.84
4909H	RT-12	431.26	399.65	516.50	397.31	455.78	0.16	0.00	0.22	0.11	0.50	0.50	0.32	2,202.31
4909J	RT-13	449.90	416.04	538.22	412.02	471.44	0.09	0.00	0.25	64.66	0.34	0.43	0.06	2,353.45
4909L	RT-14	410.90	380.55	493.36	351.51	348.02	0.04	0.00	0.11	0.25	0.20	0.61	0.39	1,985.94
4909M	RT-15	0.00	0.89	0.39	0.00	0.52	0.00	0.00	0.02	0.13	0.29	1.12	0.25	3.61
	RT Total:	4,778.02	4,288.65	5,932.23	4,143.83	4,763.96	174.46	0.00	2.35	1,140.77	2,753.98	3,953.09	1,554.52	33,485.86
Tujunga (T)														
4887C	T-1	504.84	470.66	597.33	462.53	533.14	129.04	0.00	0.32	0.48	291.25	635.60	457.25	4,082.44
4887D	T-2	525.36	494.97	635.62	510.16	572.52	126.33	0.00	0.68	0.45	0.68	498.43	429.01	3,794.21
4887E	T-3	538.72	506.79	650.82	486.57	472.54	0.41	0.00	0.78	1.12	330.89	705.46	507.04	4,201.14
4887F	T-4	496.51	461.75	585.49	438.36	420.86	0.61	0.00	0.29	0.68	16.46	598.09	124.01	3,143.11
4887G	T-5	511.73	477.98	608.70	441.43	391.27	0.59	0.00	0.80	0.04	0.06	0.80	0.32	2,433.72
4887H	T-6	0.00	0.29	0.00	0.00	0.00	0.91	0.00	0.82	0.82	0.34	0.45	0.78	4.41
4887J	T-7	515.72	481.29	610.74	451.30	432.34	1.10	0.00	3.05	0.61	0.27	0.27	0.22	2,496.91
4887K	T-8	521.57	486.63	614.27	564.46	457.46	0.50	0.00	2.04	1.56	0.45	0.96	0.27	2,650.17
4886B	T-9	0.61	0.91	0.00	44.05	0.75	0.96	0.00	1.95	1.49	1.28	825.22	149.58	826.80
4886C	T-10	378.94	484.15	610.95	481.86	437.32	1.42	0.00	0.82	1.76	260.07	2.18	158.67	2,818.14
4886D	T-11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4886E	T-12	534.18	481.35	614.89	542.42	455.94	1.19	0.00	2.34	1.58	22.38	690.19	504.26	3,850.72
	T Total:	4,528.18	4,346.77	5,528.81	4,423.14	4,174.14	263.06	0.00	13.89	10.59	924.13	3,757.65	2,331.41	30,301.77
Verdugo (V)														
3863H	V-1	0.00	0.20	0.00	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33
3863P	V-2	0.00	0.22	0.00	29.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.13
3863J	V-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3863L	V-11	183.70	196.62	228.65	122.68	229.86	189.11	0.00	0.00	91.59	183.83	233.44	206.58	1,866.06
3853G	V-13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3854F	V-22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3844R	V-24	225.94	262.55	300.43	253.69	306.10	248.23	0.00	0.00	126.74	246.02	321.76	292.07	2,583.53
	V Total:	409.64	459.59	529.08	406.41	535.96	437.34	0.00	0.00	218.33	429.85	555.20	498.65	4,480.05

1999-2000 WATER YEAR
(acre-feet)

LACDPW Well No.	Owner Well No.	1999 Oct.	Nov.	Dec.	2000 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
San Fernando Basin (cont'd)														
Whitnall (W)														
3820E	W-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821B	W-2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821C	W-3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3821D	W-4	0.00	0.94	0.00	0.16	0.00	0.22	0.00	0.00	1.05	0.00	0.00	0.00	2.37
3821E	W-5	0.00	0.48	0.00	0.11	0.00	0.13	0.00	0.00	0.87	0.00	0.32	0.00	1.91
3831J	W-6A	183.44	158.79	115.65	97.49	110.14	70.84	0.00	27.08	31.91	65.01	82.89	77.82	1,021.06
3832K	W-7	99.54	106.68	113.26	95.06	109.96	76.30	0.00	36.61	52.64	102.98	134.84	116.98	1,044.85
3832L	W-8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3832M	W-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3842E	W-10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	W Total:	282.98	266.89	228.91	192.82	220.10	147.49	0.00	63.69	86.47	167.99	218.05	194.80	2,070.19
Los Angeles, City of														
Total:		12,880.17	11,717.61	14,824.67	11,426.40	12,895.63	2,888.63	293.17	1,090.04	2,475.01	7,072.22	12,689.24	7,762.87	98,015.66
San Fernando Basin Total:		14,658.31	13,227.68	16,447.16	12,790.99	14,022.11	4,240.86	1,873.39	2,901.18	3,998.01	7,965.45	14,076.72	9,138.92	116,357.47

Sylmar Basin														
Los Angeles, City of														
Plant	Mission													0.00
Well	5	78.39	59.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	137.98
Well	6	75.64	114.55	28.87	0.00	0.00	0.52	19.74	105.39	236.73	160.69	169.97	180.11	1,092.21
Well	7	111.96	167.56	56.10	0.00	0.18	0.09	22.42	127.06	284.50	196.07	212.74	225.13	1,403.81
		265.99	341.70	84.97	0.00	0.18	0.61	42.16	232.45	521.23	356.76	382.71	405.24	2,634.00
Santiago Estates														
5998	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
San Fernando, City of														
5969D	2A	204.10	149.12	135.20	110.99	97.57	130.58	131.56	156.91	171.20	151.73	154.04	134.51	1,727.51
5959	3	78.20	72.90	85.79	93.22	69.26	63.27	78.14	95.93	108.63	118.80	126.48	105.12	1,095.74
5969	4	23.90	20.44	22.03	19.13	12.29	20.57	25.61	28.70	24.58	34.86	32.44	31.17	295.72
5968	7A	53.35	49.97	60.25	43.09	38.41	38.28	49.91	47.15	54.74	88.18	89.09	75.72	688.14
	Total:	359.55	292.43	303.27	266.43	217.53	252.70	285.22	328.69	359.15	393.57	402.05	346.52	3,807.11
Sylmar Basin Total:		625.54	634.13	388.24	266.43	217.71	253.31	327.38	561.14	880.38	750.33	784.76	751.76	6,441.11

Verdugo Basin														
Crescenta Valley County Water District														
5058B	1	41.44	40.08	36.38	35.09	38.94	38.20	39.95	42.06	38.73	35.49	36.32	34.96	457.64
5036A	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5058H	5	81.82	60.97	70.82	57.75	7.40	33.10	49.68	58.97	60.97	82.76	83.15	63.00	710.39
5058	6	18.21	18.74	13.25	0.05	0.00	3.94	0.10	8.35	6.70	14.93	5.56	2.82	92.65
5047B	7	25.36	25.29	25.45	20.64	15.82	13.92	16.16	19.72	20.93	22.94	20.97	27.48	254.68
5069J	8	54.58	54.23	48.89	41.94	55.83	56.04	54.87	50.07	45.73	45.21	52.03	38.72	596.14
5047D	9	33.35	31.67	30.01	30.02	27.67	27.28	28.54	29.28	25.46	25.55	24.26	22.68	335.77
5058D	10	57.80	51.50	53.50	48.86	1.09	3.69	1.50	41.99	49.49	50.30	48.48	53.06	461.26
5058E	11	37.22	34.36	35.57	12.78	0.00	0.27	0.13	25.53	34.60	36.74	35.48	28.35	281.03
5058J	12	16.23	20.62	9.02	5.81	42.50	44.89	41.29	51.29	47.31	42.92	21.42	11.30	354.60
5069F	14	36.81	25.98	23.16	0.07	0.00	0.00	0.00	0.00	0.05	0.00	0.00	14.64	100.71
	PICK	5.13	4.40	5.16	4.67	4.29	4.60	4.26	4.65	4.33	4.27	4.40	4.25	54.41
	Total:	407.95	367.84	351.21	257.68	193.54	225.93	236.48	331.91	334.30	361.11	332.07	299.26	3,699.28

1999-2000 WATER YEAR
(acre-feet)

LACDPW Well No.	Owner Well No.	1999 Oct.	Nov.	Dec.	2000 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	TOTAL
						Verdugo Basin (cont'd)								
Glendale, City of														
3961-3971	GL3-5	110.44	91.80	97.94	86.92	72.63	139.82	42.84	66.57	79.95	89.56	85.33	78.80	1,042.60
3970	GL-6	109.08	104.19	46.12	96.67	78.46	89.12	82.18	81.20	74.64	73.18	71.20	66.44	972.48
—	VPCKP	69.39	67.08	66.58	66.94	47.11	54.52	64.29	69.23	68.49	37.38	33.28	67.45	711.74
—	MM-1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	288.91	263.07	210.64	250.53	198.20	283.46	189.31	217.00	223.08	200.12	189.81	212.69	2,726.82
	Verdugo Basin Total:	696.86	630.91	561.85	508.21	391.74	509.39	425.79	548.91	557.38	561.23	521.88	511.95	6,426.10

						Eagle Rock Basin								
Sparkletts														
3987A	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3987B	2	6.23	5.58	6.17	5.03	5.14	6.13	5.40	6.07	6.16	5.68	6.87	5.50	69.96
3987F	3	5.98	5.98	6.11	4.36	5.03	6.59	4.91	6.08	6.29	5.77	6.93	6.21	70.24
3987G	4	8.86	7.84	8.81	7.46	7.40	8.04	7.71	7.84	8.96	8.00	9.87	8.06	98.85
	Total:	21.07	19.40	21.09	16.85	17.57	20.76	18.02	19.99	21.41	19.45	23.67	19.77	239.05
	Eagle Rock Basin Total:	21.07	19.40	21.09	16.85	17.57	20.76	18.02	19.99	21.41	19.45	23.67	19.77	239.05

ULARA Total:		16,001.78	14,512.12	17,418.34	13,582.48	14,649.13	5,024.32	2,644.58	4,031.22	5,457.18	9,296.46	15,407.03	10,422.40	129,463.73

APPENDIX B
KEY GAGING STATIONS SURFACE RUNOFF

OS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS
F168-R BIG TUJUNGA CREEK BELOW DAM

DAILY DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCT 1999 TO SEP 2000

ay	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.05	.05	.05	.04	.02	77	19	.04	.04	.22	.01	0
2	.05	.05	.05	.03	.02	44	21	.03	.04	.10	.03	0
3	.04	.05	.05	.02	.01	14	22	.03	.03	.04	.05	.01
4	.04	.05	.05	.02	.02	13	20	.03	.04	.05	.07	.01
5	.04	.05	.05	.02	.02	26	17	.03	.04	.05	.05	.02
6	.05	.05	.06	.02	.02	75	11	.03	.04	.06	.03	.03
7	.05	.06	.06	.02	13	70	.25	.03	.04	.06	.02	.03
8	.05	26	.05	.02	23	66	.06	.03	.05	.07	.01	.02
9	.05	38	.05	.02	21	62	.04	16	.06	.08	.01	.01
0	.04	16	.06	.02	13	59	.04	26	.06	.09	.02	0
1	.04	.40	.05	18	1.2	56	.04	26	.05	.10	.01	0
2	.04	.07	.05	96	1.7	53	.04	26	.05	.10	0	0
3	.04	.05	.05	31	.30	43	.04	26	.04	.12	0	0
4	.04	.04	.05	.95	.10	26	.05	26	.03	.07	0	0
5	.04	.03	.05	.05	.06	25	.05	26	.03	.04	0	0
6	.05	.04	.05	.02	.68	29	.05	12	.03	.02	0	0
7	.05	.04	.05	.02	.53	35	10	1.3	.03	.01	0	0
8	.06	3.3	.04	.02	.52	30	42	.28	.04	.03	0	0
9	.06	.97	.04	.02	.73	27	78	.07	.04	.05	0	0
0	.06	.10	.04	.02	3.3	26	65	.05	.04	.04	0	0
1	.05	.05	13	.02	123	23	49	.05	.04	.04	0	0
2	.05	.05	21	.02	74	22	31	.05	25	.03	0	0
3	.04	.05	20	.02	66	20	2.7	.05	44	.03	0	.01
4	.05	.05	8.7	.02	76	9.4	.60	.06	43	.04	0	.04
5	.04	.04	.24	.08	55	.49	.11	.07	41	.02	0	.03
6	.05	.05	.05	.03	59	.22	35	.07	30	0	0	.03
7	.05	.04	.04	.02	39	.13	46	.06	4.5	0	0	.03
8	.05	.04	.03	.02	10	.11	27	.05	2.5	0	0	.03
9	.05	.04	.03	.02	43	.20	1.3	.04	1.3	0	0	.03
0	.05	.05	.03	.02	------	4.6	.10	.03	.55	0	0	.04
1	.04	------	.05	.03	------	17	------	.04	------	0	.02	------
OTAL	1.46	85.86	64.17	106.63	624.23	953.15	498.47	186.52	192.71	1.56	0.33	0.37
EAN	.047	2.86	2.07	3.44	21.5	30.7	16.6	6.02	6.42	.050	.011	.012
AX	.06	38	21	56	123	77	78	26	44	.22	.07	.04
IN	.04	.03	.03	.02	.01	.11	.04	.03	.03	0	0	0
C-FT	2.9	170	127	212	1,240	1,890	989	370	382	3.1	.7	.7

AL YEAR 1999	TOTAL*	151.49	MEAN	1.65	MAX	38	MIN	.03	AC-FT	300
TR YEAR 2000	TOTAL	2,715.46	MEAN	7.42	MAX	123	MIN	0	AC-FT	5,390

* Incomplete Record

WESTERN HYDROLOGIC SYSTEMS - (916) 885-2480
F300-R LOS ANGELES RIVER @ TUJUNGA AVE.

Dse 10-11-00

DAILY DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCT 1999 TO SEP 2000

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	73	70	64	73	70	61	67	90	90	87	87	88
2	72	67	64	64	65	60	67	91	90	83	89	84
3	69	71	50	60	52	172	65	88	88	82	60	82
4	75	73	62	62	50	332	69	68	86	86	90	83
5	73	67	65	60	47	2,050	69	90	87	89	90	87
6	81	69	65	63	53	465	68	96	90	96	88	90
7	77	66	65	64	61	109	70	92	93	93	92	88
8	77	465	67	64	61	983	66	91	90	94	91	85
9	80	66	64	64	60	124	64	91	90	89	89	89
10	79	77	64	68	475	92	63	98	85	90	89	88
11	82	77	61	63	144	83	65	92	84	92	92	90
12	76	74	61	64	1,120	67	65	90	90	94	93	87
13	75	68	65	64	373	63	80	89	87	95	83	76
14	74	66	74	64	460	63	85	85	93	90	89	60
15	79	62	65	58	99	60	86	87	91	94	89	70
16	79	69	62	51	671	62	88	89	90	92	92	71
17	72	70	64	95	127	57	2,260	90	93	92	91	91
18	75	52	66	64	71	56	1,650	91	84	97	89	92
19	63	62	65	54	68	56	139	88	83	92	82	97
	78	99	64	60	2,180	53	114	90	86	88	80	102
21	76	64	63	60	2,660	50	102	91	88	91	92	81
22	80	66	63	61	221	55	101	94	86	93	95	106
23	80	68	63	59	2,790	56	96	94	87	88	90	233
24	82	63	62	65	244	61	93	92	83	92	94	96
25	85	62	62	863	124	60	91	104	82	94	85	95
26	84	67	66	107	97	59	95	88	84	87	89	86
27	80	64	66	65	493	54	96	91	86	92	82	86
28	78	62	70	62	124	58	100	85	90	90	90	75
29	82	77	62	59	68	67	91	84	92	94	279	99
30	81	68	67	181	------	71	89	92	87	93	97	95
31	73	------	189	277	------	70	------	88	------	96	90	------
TOTAL	2,390	2,451	2,110	3,138	13,128	5,729	6,254	2,789	2,635	2,825	2,928	2,752
MEAN	77.1	81.7	68.1	101	453	185	208	90.0	87.8	91.1	94.5	91.7
MAX	85	465	189	863	2,790	2,050	2,260	104	93	97	279	233
MIN	63	52	50	51	47	50	63	68	82	82	60	60
AC-FT	4,740	4,860	4,190	6,220	26,040	11,360	12,400	5,530	5,230	5,600	5,810	5,460

CAL YEAR 1999	TOTAL*	6,951	MEAN	75.6	MAX	465	MIN	50	AC-FT	13,790
WTR YEAR 2000	TOTAL	49,129	MEAN	134	MAX	2,790	MIN	47	AC-FT	97,450

* Incomplete Record

Record estimated due to construction; Sept 16-21, 2000.

WESTERN HYDROLOGIC SYSTEMS - (916) 885-2480
E285-R BURBANK WESTERN STORM DRAIN

Dre 10-11-00

DAILY DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCT 1999 TO SEP 2000

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.9	12	9.8	12	11	7.9	8.9	10	13	13	11	13
2	10	13	10	10	11	8.2	10	10	13	13	12	12
3	11	12	9.9	11	9.1	40	11	11	13	13	13	12
4	11	13	11	11	8.6	25	10	11	12	13	12	13
5	10	12	10	10	10	279	8.8	13	15	14	13	12
6	9.7	13	10	11	9.7	30	7.4	13	12	12	12	14
7	10	13	9.9	10	9.2	12	8.2	12	12	11	12	12
8	10	24	10	10	10	58	6.3	13	14	11	12	12
9	9.9	13	10	10	10	10	6.3	12	13	12	14	12
10	9.8	13	11	9.1	71	8.0	6.9	11	13	13	13	12
11	10	13	10	9.2	11	10	6.9	12	13	15	13	11
12	9.8	13	10	9.0	119	9.4	6.6	11	12	15	12	11
13	9.3	13	10	9.3	30	9.8	8.5	11	12	14	13	12
14	9.2	12	10	9.8	14	9.8	6.3	11	12	14	13	12
15	11	11	10	9.6	11	9.1	6.2	12	12	14	13	12
16	11	13	11	9.7	131	9.4	6.5	12	12	14	14	11
17	11	11	9.5	13	9.8	9.2	253	12	12	13	11	12
18	12	8.6	10	10	10	9.4	159	11	12	12	12	12
19	11	10	9.4	9.9	11	9.3	10	11	13	12	11	12
2	12	11	9.8	10	226	8.7	12	12	12	9.3	12	12
21	12	11	10	9.8	220	9.0	11	12	12	12	12	13
22	13	11	10	9.8	15	8.9	11	12	13	10	12	20
23	13	10	10	9.8	252	9.0	11	12	13	12	13	22
24	12	10	10	10	15	9.2	11	12	12	11	13	13
25	12	11	9.1	66	11	9.1	12	13	11	11	12	12
26	13	9.4	10	11	10	9.1	12	13	12	11	13	12
27	12	9.5	9.8	9.9	51	9.6	13	11	11	11	13	12
28	13	10	9.8	11	8.9	9.5	13	10	12	12	12	12
29	13	10	10	11	6.5	9.8	12	12	13	12	20	12
30	12	10	11	15	------	9.7	12	12	13	13	14	12
31	13	------	16	14	------	9.7	------	12	------	11	13	------
TOTAL	345.6	355.5	317.0	380.9	1,321.8	674.8	676.8	362	374	383.3	395	381
MEAN	11.1	11.9	10.2	12.3	45.6	21.8	22.6	11.7	12.5	12.4	12.7	12.7
MAX	13	24	16	66	252	279	253	13	15	15	20	22
MIN	9.2	8.6	9.1	9.0	6.5	7.9	6.2	10	11	9.3	11	11
AC-FT	685	705	629	756	2,620	1,340	1,340	718	742	760	783	756

CAL YEAR 1999	TOTAL*	1,018.1	MEAN	11.1	MAX	24	MIN	8.6	AC-FT	2,020
WTR YEAR 2000	TOTAL	5,967.7	MEAN	16.3	MAX	279	MIN	6.2	AC-FT	11,840

* Incomplete Record

WESTERN HYDROLOGIC SYSTEMS - (916) 885-2480
F252-R VERDUGO WASH @ ESTELLE AVE.

DRE 10-11-00

DAILY DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCT 1999 TO SEP 2000

Day	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.7	5.9	11	7.2	6.4	8.2	8.0	9.7	4.8	3.6	3.2	3.5
2	4.7	6.1	10	5.8	5.9	8.0	8.0	8.4	4.9	3.9	3.2	3.6
3	6.0	6.0	10	5.3	5.8	19	8.0	8.3	4.4	3.8	3.1	3.7
4	5.9	6.3	11	5.5	6.2	25	8.0	8.2	4.5	3.9	3.1	3.2
5	5.3	6.4	10	5.7	6.2	273	7.9	8.3	4.5	3.6	3.1	3.5
6	4.8	6.2	5.9	4.8	5.9	23	8.2	8.1	4.7	3.6	3.1	3.0
7	5.8	6.1	6.7	5.4	5.7	12	8.7	7.7	4.4	3.5	3.4	3.1
8	7.2	24	7.1	6.3	7.4	61	8.7	7.9	5.4	3.5	3.3	3.1
9	5.7	6.9	5.9	5.9	8.6	13	8.5	8.1	3.9	3.4	5.7	2.9
10	5.3	6.4	5.8	6.5	111	11	8.4	7.9	4.6	3.8	9.3	3.0
11	4.7	6.1	6.0	6.4	9.1	11	8.4	7.7	4.0	3.6	6.8	3.9
12	4.7	6.1	5.8	5.9	111	12	8.2	8.1	4.7	3.9	3.1	6.2
13	4.7	6.3	6.4	5.8	33	9.8	8.0	8.2	4.5	4.8	3.0	7.7
14	4.7	6.2	6.1	8.0	23	8.6	9.0	7.9	4.7	7.8	7.1	6.6
15	5.0	6.8	5.9	12	8.4	8.0	8.6	8.0	4.7	8.9	8.7	3.4
16	5.9	6.8	6.1	12	177	8.1	8.5	13	4.7	7.2	4.5	3.4
17	5.7	6.8	6.5	13	13	8.0	215	6.2	4.4	5.2	3.5	3.5
18	5.3	6.9	5.8	6.6	8.1	8.0	112	6.1	4.3	4.9	3.3	3.3
19	5.4	6.4	5.7	5.9	8.0	8.0	10	5.5	4.4	4.1	3.2	3.5
20	6.0	8.4	6.0	6.7	172	8.5	9.0	4.6	4.3	3.9	3.0	3.7
21	5.9	6.2	5.7	6.4	289	8.7	8.9	4.7	4.2	3.5	3.3	6.0
22	5.4	6.1	7.5	5.6	22	8.9	8.9	4.7	4.1	3.2	3.3	11
23	5.4	6.2	6.2	5.6	251	8.5	8.8	4.8	4.2	3.2	3.1	15
24	5.4	6.3	6.4	6.0	20	9.1	9.5	5.6	3.6	3.2	3.4	3.6
25	5.8	6.2	5.9	50	11	8.5	9.5	8.4	3.7	3.2	3.4	3.6
26	5.4	6.4	5.4	9.2	8.9	8.0	11	4.8	4.1	3.2	3.5	3.2
27	5.6	6.4	5.9	6.6	76	8.0	15	5.0	3.9	3.2	3.1	3.3
28	6.9	6.5	6.6	7.0	11	8.0	16	4.6	3.7	3.2	3.3	3.6
29	6.4	7.9	7.3	6.2	8.9	8.1	14	4.5	3.7	3.2	7.6	3.7
30	5.8	10	6.0	12	------	9.0	9.8	4.7	3.7	3.2	3.9	3.4
31	5.6	------	14	18	------	8.3	------	4.7	------	3.2	3.9	------
TOTAL	171.1	215.3	220.6	273.3	1,429.5	636.3	590.5	214.4	129.7	126.4	128.5	134.2
MEAN	5.52	7.18	7.12	8.82	49.3	20.5	19.7	6.92	4.32	4.08	4.15	4.47
MAX	7.2	24	14	50	289	273	215	13	5.4	8.9	9.3	15
MIN	4.7	5.9	5.4	4.8	5.7	8.0	7.9	4.5	3.6	3.2	3.0	2.9
AC-FT	339	427	438	542	2,840	1,260	1,170	425	257	251	255	266

CAL YEAR 1999	TOTAL*	607.0	MEAN	6.60	MAX	24	MIN	4.7	AC-FT	1,200
WTR YEAR 2000	TOTAL	4,269.8	MEAN	11.7	MAX	289	MIN	2.9	AC-FT	8,470

* Incomplete Record

ESTERN HYDROLOGIC SYSTEMS - (916) 885-2480
F57C-R LOS ANGELES RIVER ABOVE ARROYO SECO

DRL 10-23-00

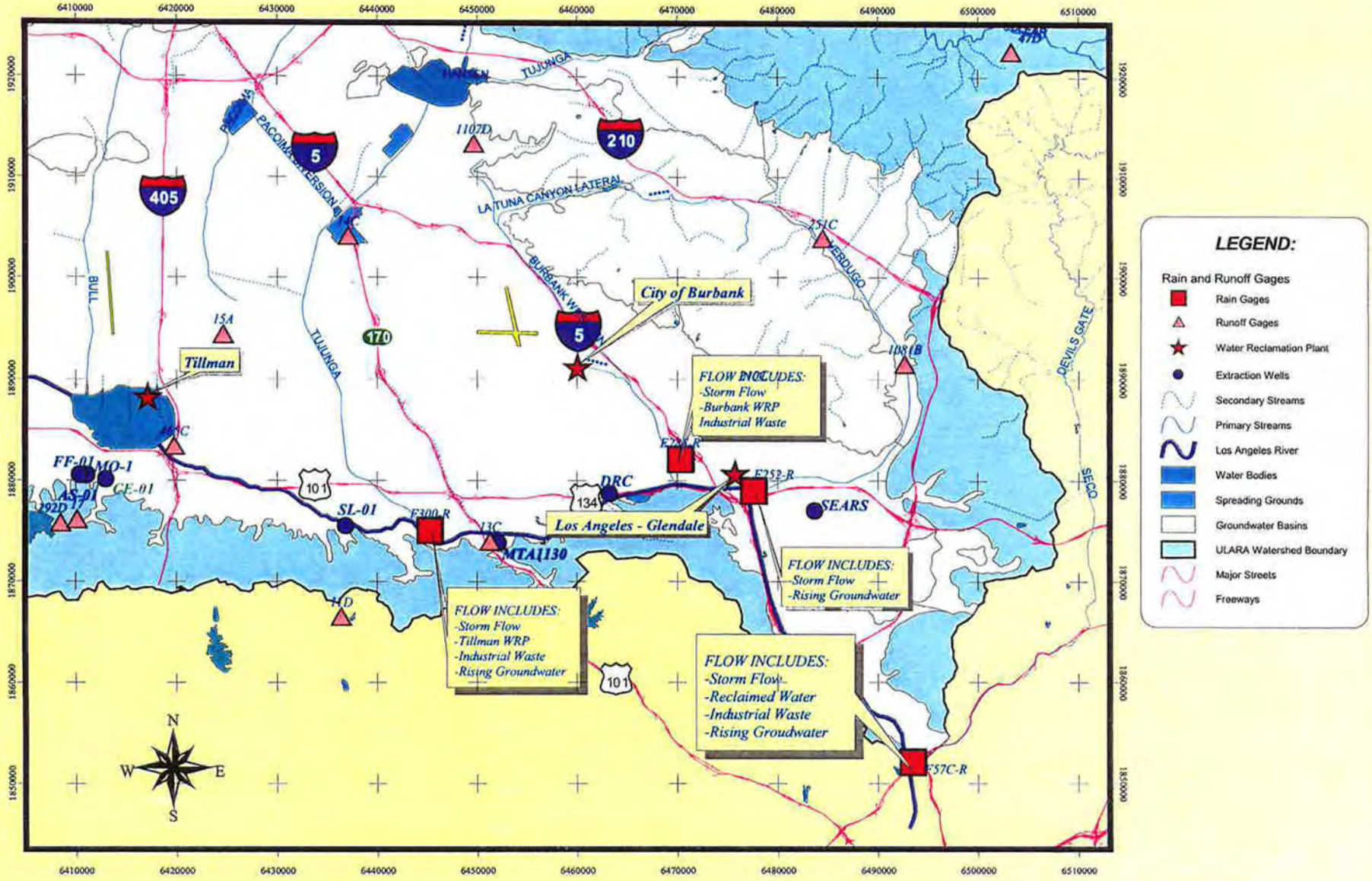
AILY DISCHARGE IN CUBIC FEET PER SECOND WATER YEAR OCT 1999 TO SEP 2000

Y	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
	106	98	93	106	126	89	238	84	100	95	105	96
	108	95	93	89	119	91	230	86	99	94	109	95
	106	100	89	85	112	190	229	87	96	92	92	96
	103	101	95	88	104	665	216	82	96	93	107	98
	99	99	98	84	98	3,390	208	93	95	95	109	101
	98	100	99	89	102	504	199	99	97	97	109	105
	100	96	98	89	111	139	193	100	99	113	109	102
	97	511	99	91	118	1,320	183	101	100	129	110	104
	99	87	98	91	117	150	163	104	101	129	114	107
	96	89	99	93	1,040	108	167	107	100	129	115	107
	100	91	99	90	229	105	162	108	104	129	117	107
	99	89	96	91	1,880	95	164	109	108	129	113	108
	100	88	98	94	435	97	185	112	108	129	111	110
	102	86	104	94	557	100	190	110	117	129	111	105
	105	87	100	95	148	97	181	114	121	129	112	115
	105	92	99	90	1,450	100	181	119	124	129	110	110
	101	98	99	109	203	98	3,560	115	123	129	108	94
	100	90	102	104	102	101	2,340	119	119	109	109	108
	96	96	102	86	99	102	143	116	117	103	109	122
	102	119	103	87	2,950	108	126	130	121	98	108	128
1	100	96	101	90	4,370	106	115	142	123	99	114	119
2	103	92	102	90	302	116	115	155	123	101	120	143
3	103	94	101	90	4,120	130	116	161	116	100	117	208
4	104	92	101	90	316	147	115	159	107	101	121	105
5	105	91	97	1,330	134	155	115	151	100	103	122	104
6	106	96	101	196	114	164	120	113	95	101	121	99
7	105	94	101	109	756	184	127	104	94	102	124	102
8	104	86	102	106	155	188	132	100	96	102	127	97
9	107	95	98	104	98	219	130	98	95	105	236	114
0	106	95	101	136	------	227	125	102	95	107	101	114
1	100	------	243	436	------	242	------	101	------	108	96	------
OTAL	3,165	3,243	3,211	4,622	20,465	9,527	10,468	3,481	3,189	3,408	3,586	3,323
EAN	102	108	104	149	706	307	349	112	106	110	116	111
AX	108	511	243	1,330	4,370	3,390	3,560	161	124	129	236	208
IN	96	86	89	84	98	89	115	82	94	92	92	94
C-FT	6,280	6,430	6,370	9,170	40,590	18,900	20,760	6,900	6,330	6,760	7,110	6,590

AL YEAR 1999	TOTAL*	9,619	MEAN	105	MAX	511	MIN	86	AC-FT	19,080
TR YEAR 2000	TOTAL	71,688	MEAN	196	MAX	4,370	MIN	82	AC-FT	142,200

Incomplete Record — Record partly estimated, recoorder inoperative; Dates: Sept 15, 16, 22, and 23, 2000.

APPENDIX C
COMPONENTS OF LOS ANGELES RIVER FLOW



1999-00 Water Year
ULARA Watermaster Report

Upper Los Angeles River Area: Components of Los Angeles River

PLATE
C.1

UPPER LOS ANGELES RIVER AREA: COMPONENTS OF LOS ANGELES RIVER FLOW							
1999-2000 WATER YEAR							
TOTAL FLOW AT GAGE F-57C-R			F-57C-R: Storm, Reclaimed, Industrial, Rising Ground				
			F300-R: Storm, Tillman, Industrial Waste, and Rising				
Total:	142190		E285-R :Storm, Burbank WRP, Industrial Waste				
			F252-R: Storm, Rising Water				
I. RECLAIMED WATER DISCHARGED TO L.A. RIVER IN ULARA							
Tillman:	61004	: Record					
L.A.-Glendale:	12373	: Record					
Burbank WRP:	4632	: Record					
Total:	**78009**						
II. INDUSTRIAL WATER and STORM FLOWS DISCHARGED TO L.A. RIVER IN ULAR							
Upstream of F300-R							
Industrial Water	103	: From F300-R separation of flow					
F168	5387						
F118	1832						
Storm Flows @300	29111	Storm flows less F168 and F118)					
	36433						
Between F300-R and E-285							
Disney	0	Disney Riverside Construction					
MTA	66						
Storm Drains and Unaccounted water	7964	:10 cfs assumes 7964					
Headworks:	0	:pilot project record					
Western Drain:	3250	: From E285-R separation of flow					
Storm Flows @285	3940						
	15220						
Between E-285 and F57C-R							
Storm Flows@ 252	4224						
Irrigation and Industrial Flows	4246	:From F252-R separation of flow					
Glendale Operable Unit	979						
Sycamore Canyon	1100	Estimated from historic flows					
	10549						
Total Part II	**62202**						
III. RISING WATER IN L.A. RIVER IN ULARA							
Total:	1979	: See Section 2.3 of the Watermaster's Report					

APPENDIX D
WATER QUALITY DATA

REPRESENTATIVE MINERAL ANALYSES OF WATER

Well Number or Source	Date Sampled	Spec. Cond. µmho/c	Mineral Constituents in milligrams per liter (mg/l)												TDS mg/l	Hardness as $CaCO_3$ mg/l
			pH	Ca	Mg	Na	K	CO_3	HCO_3	SO_4	Cl	NO_3	F	B		
Imported Water																
Colorado River Water at Eagle Rock Reservoir	09/2000	720	8.1	49	21.5	64	3.6	0	124	155	63	0.8	0.21	0.13	428	211
LA Aqueduct Influent	6/15/00	313	8.2	22.6	5.5	33.9	3.9	0	128	20.2	19.4	-	0.64	0.48	186	73.4
LA Aqueduct/MWD Filtration Plant Influent	6/15/00	338	8.2	24.8	6.5	37	3.7	0	124	31.1	28	0.68	0.55	0.46	212	99
State Water Project at Joseph Jensen Filtration Plant (Influent)	09/2000	480	7.6	28	14	44	2.9	0	104	59	55	2.2	0.17	0.26	270	128
Surface Water																
Tillman Rec. Plant Discharge to LA River	2000FY	847	7.2	37.2	11.6	80	10	-	-	110	101	0.84	0.8	0.86	506	163
Los Angeles River at Arroyo Seco	9/95	981	8.0	68.1	24.3	96.5	9.75	ND	171	191	108	7.4	0.3	0.58	666	270
LA/Glendale Treatment Plant Station R-7	02 - 05/200	1123	8.0	-	-	-	-	-	-	207	104	4.9	-	-	712	336
LA/Glendale Rec. Plant Discharge to LA River	2000FY	1266	7.2	51	17	107	12	-	-	153	156	1.9	0.5	0.6	698	244
Ground Water																
(San Fernando Basin - Western Portion)																
4757C (Reseda No. 6)	10/13/83	944	7.8	115	31	43	2.1	-	301	200	33	2.6	0.31	0.24	595	416
(San Fernando Basin - Eastern Portion)																
3800 (No. Hollywood No. 2)	8/18/99	724	7.6	101	17	29	3.7	ND	290	81.8	33.8	36	0.19	0.33	465	322
3841C (Burbank No. 7)	6/24/97	570	7.4	63.2	14.8	35.2	3.39	ND	218	105	30.5	19	0.53	-	384	228
Glendale OU Average of North Wells	2/3/00	540	7.6	96	26	37	4.2	0.63	260	129	50	7	ND	0.15	492	348
(San Fernando Basin - L.A. Narrows)																
3959E (Pollock No. 6) (b)	4/15/99	918	7.2	93.1	34.3	55.2	2.32	ND	291	121	72.7	38.7	0.27	0.38	612	363
(Sylmar Basin)																
4840J (Mission No. 5)	6/17/99	730	7.7	79.8	18.8	34.5	4.31	ND	261	73.8	33.2	28.6	0.3	0.32	449	214
5969 (San Fernando No. 4A)	3/20/00	475	8.0	52	10	34	4.3	1.2	184	50	21	18	0.25	-	290	173
(Verdugo Basin)																
3971 (Glorietta No. 3)	10/5/00	1065	6.8	106	36.4	44.3	3.69	ND	210	146	97	39.8	0.16	-	644	393
5058 (CVWD No. 8)	1/31/00	815	6.7	100	24.6	35.2	2.7	<1	201	124	72	50.2	0.27	-	508	352

APPENDIX E
DEWATERING AND REMEDIATION PROJECTS

DEWATERING PROJECTS

No.	Company	Contact	Address	ID	Start Date
1	Danalax Engineering Corp.	Krell, Alex	11239 Ventura Blvd.	P	
2		Henkin, Doug	8806 Etiwanda Ave.	P	
3	Delta Tech. Engineering	Abbasi, Z. A.	12800 Ventura Blvd.	P	
4	Helfman, Hoffman & Associates	Varadi, Ivan	5550 Topanga Canyon	D	Jun 19, 1989
5	Encino Spectrum Project	Helfman, Haloosim & Assoc.	15503 Ventura Blvd.	D	Jun 14, 1989
6	Home Savings of America	Eli Silon & Associates	13949 Ventura Blvd.	D	Jun 14, 1989
7	Warner Center Ent. Complex	Tsuchiyama and Kaino	5955 Owensmouth Ave.	D	Jun 26, 1989
8	T Violes Construction Company	Viole, Tim, Jr.	15840 Ventura Blvd.	P	
9		Eccleston, C. W.	22020 Clarendon St.	P	
10		Marks, Ronald	5348 Topanga Canyon	P	
11		Helfman, Haloosim & Assoc.	21820 Burbank Blvd.	P	
12	Park Hill Medical Plaza	Anjomshoaa, Mahmoud	7303 Medical Center Dr.	D	Dec 27, 1989
13	Danalex Engineering		12050 Ventura Blvd.	P	
14	Ellis Plumbing Co.	Ellis, Chris	4235 Mary Ellen Ave.	P	
15	Tarzana Office Plaza	Varadi Engineering	18701 Burbank Ave.	P	
16	Helfman, Haloosim & Associates	Varadi, Ivan	5350 White Oak Ave.	P	
17	First Financial Plaza Site	Slade, Richard	16830 Ventura Blvd.	D	Oct 9, 1987
18	Trillium	Addison, Travis	6310 Canoga Ave.	D	Apr 27, 1988
19	LAMCO	O'Neil, John	21300 Victory Blvd	D	Apr 27, 1988
20	La Reina Fashion Plaza	Blumenfeld, Dolores	14622 Ventura Blvd.	D	Apr 27, 1988
21	Auto Stiegler	Stiegler, John	16721 Ventura Blvd.	D	Oct 31, 1987
22	Sherway Properties	Vasquez, Rodney	4477 Woodman Ave.	P	
23	Ellis Plumbing Co.	Ellis, Chris	19951 Roscoe Blvd.	P	
24	Metropolitan Transportation Authority	Higgins, John	Metro Red Line	D	April, 1995
25		Carter, Dennis	4547 Murietta Ave	P	Jan 16, 1997
26	Brent & Miller	Brent, Stanley	4328 Mammoth Ave	D	13-Jan-00

Notes:

1) ID - Refers to the type of project;

D: Permanent dewatering required.

P: No dewatering required presently, however there is potential for dewatering in the future.

TD: Temporary Dewatering

2) Start Date - Date project was brought to the attention of the ULARA Watermaster.

REMEDIATION PROJECTS

No.	Company	Contact	Address	ID	Start Date
1	Mobil Oil	Alton Geoscience	16461 Ventura Blvd.	R	May 11, 1989
2	Thrifty Oil	Delta Tech. Eng.	18226 Ventura Blvd.	R	Feb 2, 1990
3	California Environmental	Buckley, Charles	5455 Van Nuys Blvd.	R	Oct 4, 1989
4	Boeing (Rockwell International)	Lafflam, S. R.	6633 Canoga Park Ave.	R	Jun 10, 1990
5	Lockheed	Gene Matsushita	N. Hollywood Way	R	Jan 5, 1989
6	3M Pharmaceutical	Lee, M. E.	19901 Nordhoff St.	R	Feb 8, 1989
7	Philips Components	Smith, Wade	4561 Colorado St.	R	Jul 14, 1987
8	Greeff Fabrics	Edelson, Bruce	4000 Chevy Chase Dr.	R	March, 1993
9	Raytheon (Hughes)	Garvey, Tim	Canoga Park, CA	R	February 1995
10	Holchem	Simko, Jeff	Pacoima, CA	R	Feb-00
11	Micro Matics Inc.	Thorne, Brian	Northridge CA	R	April, 1999

Notes:

1) ID - Refers to the type of project;
R: Ground water remediation site.

2) Start Date - Date project was brought to the attention of the ULARA Watermaster.

APPENDIX F
CRESCENTA VALLEY WATER DISTRICT

UPPER LOS ANGELES RIVER AREA WATERMASTER

CITY OF LOS ANGELES VS. CITY OF SAN FERNANDO, ET AL
CASE NO. 650079 -- COUNTY OF LOS ANGELES

MELVIN L. BLEVINS – WATERMASTER

OFFICE LOCATION:
111 North Hope Street, Room 1463
Los Angeles, CA 90012
TELEPHONE: (213) 367-1020
FAX: (213) 367-1131

MAILING ADDRESS:
ULARA WATERMASTER
P.O. Box 51111, Room 1463
Los Angeles, CA 90051-0100

October 27, 1999

Mr. Michael G. Sovich
General Manager
Crescenta Valley Water District
2700 Foothill Boulevard
La Crescenta, California 91214

Dear Mr. Sovich:

1999-2000 Verdugo Basin Water Rights

The Watermaster and the Administrative Committee at its meeting October 13, 1999, approved the additional pumping requested by Crescenta Valley Water District (CVWD) in the Verdugo Basin for the 1999-2000 water year.

This approval permits CVWD to pump the unused portion of Glendale's annual pumping allocation, so long as, the total amount pumped is within the total safe yield for the Verdugo Basin of 7,150 acre foot per year.

Sincerely,

MELVIN L. BLEVINS
ULARA Watermaster

PTK:pg

c: ULARA Administrative Committee
Mr. Fred Lantz, President
City of Burbank
Mr. Michael Drake
City of San Fernando

Mr. Donald Froelich
City of Glendale
Mr. Thomas M. Erb
City of Los Angeles

The Honorable Judge Susan Bryant-Deason
Mr. Richard A. Nagel

bc: Patricia T. Kiechler
ULARA Watermaster File ✓

PLG01-Verdugo
M. BLEVINS
OCT 27 1999

PAT KIECHLER
OCT 26 1999

APPENDIX G
METROPOLITAN TRANSPORTATION AUTHORITY

UPPER LOS ANGELES RIVER AREA WATERMASTER

CITY OF LOS ANGELES VS. CITY OF SAN FERNANDO, ET AL
CASE NO. 650079 – COUNTY OF LOS ANGELES

MELVIN L. BLEVINS – WATERMASTER

OFFICE LOCATION:
111 North Hope Street, Room 1463
Los Angeles, CA 90012
TELEPHONE: (213) 367-1020
FAX: (213) 367-1131

MAILING ADDRESS:
ULARA WATERMASTER
P.O. Box 51111, Room 1463
Los Angeles, CA 90051-0100

September 18, 2000

Mr. John Higgins, Utilities Coordinator
Metro Red Line
Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, California 90012

Dear Mr. Higgins:

Metropolitan Transportation Authority
Final Dewatering Report for Construction Phase

The ULARA Watermaster is in receipt of the final dewatering report for the construction phase of the Metro Red Line – Segment 3 in North Hollywood. During the past six years, the Administrative Committee to the ULARA Watermaster approved a waiver up to 1,700 acre-feet of groundwater dewatered during the Construction Phase. The waiver permitted the Metropolitan Transportation Authority (MTA) to dewater without paying for the water. The Construction Phase ended June 30, 2000.

MTA staff is currently reviewing a Dewatering Agreement for the Operation and Maintenance Phase which will be effective beginning July 1, 2000. The Construction Team has completed its obligation with its final reported dated September 7, 2000. Thank you for your timeliness in reporting, your attention to detail, and your cooperation with the Watermaster staff over these past many years.

If you have any further questions, please call me at (213) 367-1020.

Sincerely,

MELVIN L. BLEVINS
ULARA Watermaster

PTK:bw

c: Administrative Committee Members
Mr. Fred Lantz, City of Burbank
Mr. Michael Sovich, Crescenta Valley Water District
Mr. Michael Drake, City of San Fernando
Mr. Donald Froelich, City of Glendale
Mr. Thomas M. Erb, City of Los Angeles

Mr. Arthur Walsh, City Attorney
Mr. Gerald A. Gewe, City of Los Angeles

Mr. Gerardo Alvarez, MTA
Mr. Dennis Dickerson, RWQCB
Mr. Gary Yamanoto, DHS
Mr. David Bacharowski, RWQCB

Watermaster Staff
Mr. Melvin L. Blevins, Watermaster
Mr. Frederic Fudacz, Special Counsel
Mr. Mark G. Mackowski, Assistant Watermaster
Ms. Patricia T. Kiechler, Administrator

ULARA Watermaster File
A:\BW03\MTA Final Construction

APPENDIX H
VULCAN-CALMAT

UPPER LOS ANGELES RIVER AREA WATERMASTER

CITY OF LOS ANGELES VS. CITY OF SAN FERNANDO, ET AL
CASE NO. 650079 – COUNTY OF LOS ANGELES

MELVIN L. BLEVINS – WATERMASTER

OFFICE LOCATION:
111 North Hope Street, Room 1463
Los Angeles, CA 90012
TELEPHONE: (213) 367-1020
FAX: (213) 367-1131

MAILING ADDRESS:
ULARA WATERMASTER
P.O. Box 51111, Room 1463
Los Angeles, CA 90051-0100

November 30, 2000

Mr. Jim Dean
Vulcan CalMat Division
11401 W. Tuxford Street
Sun Valley, CA 91352

Dear Mr. Dean:

Carry-Over Credit

As you may recall there were two unresolved issues after the three-party agreement was signed November 30, 1999 among the City of Los Angeles, Vulcan CalMat Division (CalMat), and the Upper Los Angeles River Area (ULARA) Watermaster. These two issues are carry-over credits and a rate for consumptive use in excess of 10 percent, (Section 2.0 of Three Party Agreement). This letter proposes a method for managing a "Carry-Over Credit".

As shown in the attached spreadsheet showing CalMat's Consumptive Use for 1999-2000, the cumulative net wash water returned to Sheldon Pond (Column I) was greater than the cumulative total water used (Column J) by 27.43 acre-feet (Column M) for the 1999-2000 year (Attachment A). CalMat has the right to use the water, but has no ownership water right. And, according to the Judgment, it may not store water credits. However, the parties to the November 1999 agreement recognize that CalMat should not be penalized when its efforts result in excess water returned to the basin. When that effort includes balancing large quantities of water through a complex system that includes water used in process, carried off in product, lost through evaporation and returned to a pond, fairness suggests that subsequent year a carry-over credit should be made available in some manner.

A new spreadsheet for CalMat's Consumptive Use for 2000-2001 will begin with a carry-over credit in Column M of 27.43 acre feet (Attachment B). Thus, CalMat can plan its water use with the credit balance that can be used to offset some future purchases of water.

In the future, Los Angeles will be discussing the cost of any under returns and under purchases, but the credit may make a difference to CalMat now in the beginning of the 2000-2001 Water Year as you plan your 2000-2001 pumping and water purchases. If you have any questions or comments with regard to the carry-over proposal, please contact Ms. Patricia Kiechler at (213) 367 – 0921 with any questions.

Sincerely,

MELVIN L. BLEVINS
ULARA Watermaster

PTK:bw

Enclosures

c: Administrative Committee Members
Mr. Fred Lantz, City of Burbank
Mr. Michael Sovich, Crescenta Valley Water District
Mr. Michael Drake, City of San Fernando
Mr. Donald Froelich, City of Glendale
Mr. Thomas M. Erb, City of Los Angeles

Mr. Jess Senecal, Counsel to Vulcan/CalMat
Mr. Jim Dean, Vulcan/CalMat

Mr. Arthur Walsh, City Attorney

Mr. Gerald A. Gewe, City of Los Angeles
Mr. Ernest F. Wong, City of Los Angeles

Watermaster Staff
Mr. Melvin L. Blevins, Watermaster
Mr. Frederic Fudacz, Special Counsel
Mr. Mark G. Mackowski, Assistant Watermaster
Ms. Patricia T. Kiechler, Administrator

ULARA Watermaster File
A:\Calmat Carry-Over\BW04

CalMat's Consumptive Use
1999-2000

Adjusted for under reported Well No. 1 pending Jim Dean's comments.

A	B	C	D (B+C)	E	F	G	H	I Gx (1-H)	J (D+F)	K (10%xD)	L	M (I+J)
Date	Pumped from Wells 4916, 4916A, 4916x (AF)	Pumped from Sheldon Pond (AF)	Total Groundwater Pumped (AF)	Surface Area of Sheldon Pond* (Acres)	Pond Surface Evaporation ** (AF)	Gross Wash Water Returned to Sheldon Pond (AF)	Suspended Solids in Returned Wash Water	Net Wash Water Returned to Sheldon Pond (AF)	Total Water Used (AF)	10% Consumptive Use from all Groundwater Pumping (AF)	Total Water Purchased from DWP (AF)	Net Consumptive Use (AF)
Oct-99	-262.41	-0.02	-262.43	18	-7.5	263.78	2.40%	257.45	-269.93	-26.24		-12.48
Nov-99	-247.16	0.00	-247.16	10	-4.2	240.02	2.40%	234.26	-251.33	-24.72		-17.07
Dec-99	-274.12	-0.02	-274.14	8	-3.3	258.49	2.40%	252.29	-277.47	-27.41		-25.19
Jan-00	-139.65	-0.16	-139.81	21	-8.8	230.11	3.17%	222.81	-148.56	-13.98		74.25
Feb-00	-78.23	-34.94	-113.17	21	-8.8	188.57	3.17%	182.59	-121.92	-11.32		60.67
Mar-00	-115.29	-49.21	-164.50	25	-10.4	253.64	3.17%	245.60	-174.92	-16.45		70.68
Apr-00	-198.23	-26.14	-224.37	40	-16.7	217.31	4.63%	207.25	-241.04	-22.44		-33.79
May-00	-289.54	0.00	-289.54	45	-18.8	313.83	4.63%	299.30	-308.29	-28.95		-8.99
Jun-00	-236.47	-120.08	-356.55	47	-19.6	383.66	4.63%	365.90	-376.13	-35.66		-10.24
Jul-00	-175.57	-151.46	-327.03	45	-18.8	358.42	4.31%	342.97	-345.78	-32.70		-2.81
Aug-00	-225.20	-142.77	-367.97	41	-17.1	377.00	4.31%	360.75	-385.05	-36.80		-24.30
Sep-00	-206.30	-139.85	-346.15	37	-15.4	332.58	4.31%	318.25	-361.57	-34.62		-43.32
Total YTD	-2448.17	-664.65	-3112.82		-149.2	3417.40		3289.41	-3261.98	-311.28	535.62	27.43

* Pond surface area for Oct.-Dec. 1999 based on estimates. Surface area beginning Jan. 2000 based on transducer readings (see table below) and Area/Elevation Curve.

** Evaporation Rate Formula = 5AF/A/Yr.

Negative numbers denote water leaving the Basin through pumping, and evaporation. Positive numbers denote water returned to the Basin.

K=Allowable Consumptive Use is 10% of Total Groundwater Pumped (D). An equivalent amount is to be purchased by CalMat and returned to Basin.

M = Net Consumptive Use. If M<0, CalMat is using water consumptively. If M>0, they are returning more water to the Basin than they are using (pumping + evap). Excess water returned to the Basin must be obtained through purchases from DWP. If M>0, subtract M from L (L-M). The YTD balance (L-M), or Water Balance (N), should => 0.

If N<0, then there is more water in the process system than is currently reported from all groundwater meters plus water purchases, indicating a possible problem with a meter or a meter report.

Date	Pond Elev. from Transducer (Monthly Avg.)
Oct-99	N/A
Nov-99	N/A
Dec-99	N/A
Jan-00	711.43
Feb-00	710.73
Mar-00	715.45
Apr-00	726.52
May-00	731.18
Jun-00	732.37
Jul-00	729.44
Aug-00	726.89
Sep-00	724.48

	N (L-M) Water Balance
Total YTD	508.19

Source: San Fernando Valley Judgment, Case No. 650079 and subsequent agreement with CalMat/Vulcan Materials

Attachment A

CalMat's Consumptive Use
2000-2001

A	B	C	D (B+C)	E	F	G	H	I Gx (1-H)	J (D+F)	K (10%xD)	L	M (I+J)
Date	Pumped from Wells 4916, 4916A, 4916x (AF)	Pumped from Sheldon Pond (AF)	Total Groundwater Pumped (AF)	Surface Area of Sheldon Pond* (Acres)	Pond Surface Evaporation ** (AF)	Gross Wash Water Returned to Sheldon Pond (AF)	Suspended Solids in Returned Wash Water	Net Wash Water Returned to Sheldon Pond (AF)	Total Water Used (AF)	10% Consumptive Use from all Groundwater Pumping (AF)	Total Water Purchased from DWP (AF)	Net Change in San Fernando Basin (AF)
Carry-Over Credit												27.43
Oct-00			0.00	35	-14.6		4.31%	0.00	-14.58	0.00		-14.58
Nov-00			0.00		0.0			0.00	0.00	0.00		0.00
Dec-00			0.00		0.0			0.00	0.00	0.00		0.00
Jan-01			0.00		0.0			0.00	0.00	0.00		0.00
Feb-01			0.00		0.0			0.00	0.00	0.00		0.00
Mar-01			0.00		0.0			0.00	0.00	0.00		0.00
Apr-01			0.00		0.0			0.00	0.00	0.00		0.00
May-01			0.00		0.0			0.00	0.00	0.00		0.00
Jun-01			0.00		0.0			0.00	0.00	0.00		0.00
Jul-01			0.00		0.0			0.00	0.00	0.00		0.00
Aug-01			0.00		0.0			0.00	0.00	0.00		0.00
Sep-01			0.00		0.0			0.00	0.00	0.00		0.00
Total YTD	0.00	0.00	0.00		-14.6	0.00		0.00	-14.58	0.00		12.85

* Surface area beginning Jan. 2000 based on transducer readings (see table below) and Area/Elevation Curve.

** Evaporation Rate Formula = 5AF/A/Yr.

Negative numbers denote water leaving the Basin through pumping, and evaporation. Positive numbers denote water returned to the Basin.

K=Allowable Consumptive Use is 10% of Total Groundwater Pumped (D). An equivalent amount is to be purchased by CalMat and returned to Basin.

M = Net Consumptive Use. If M<0, CalMat is using water consumptively. If M>0, they are returning more water to the Basin than they are using (pumping + evap). Excess water returned to the Basin must be obtained through purchases from DWP. If M>0, subtract M from L (L-M). The YTD balance (L-M), or Water Balance (N), should => 0.

*** Carry-Over Credit = the amount of water returned above the total used from all sources during the immediately past water year.

If N<0, then there is more water in the process system than is currently reported from all groundwater meters plus water purchases, indicating a possible problem with a meter or a meter report, or a carry-over credit.

Date	Pond Elev. from Transducer (Monthly Avg.)
Oct-00	722.48
Nov-00	
Dec-00	
Jan-01	
Feb-01	
Mar-01	
Apr-01	
May-01	
Jun-01	
Jul-01	
Aug-01	
Sep-01	

	N (L-M)
Total YTD	-12.85

Source: San Fernando Valley Judgment, Case No. 650079 and subsequent agreement with Vulcan Materials CalMat Division.

Attachment B

APPENDIX I
CITY OF LOS ANGELES

UPPER LOS ANGELES RIVER AREA WATERMASTER

CITY OF LOS ANGELES VS. CITY OF SAN FERNANDO, ET AL
CASE NO. 650079 – COUNTY OF LOS ANGELES

MELVIN L. BLEVINS – WATERMASTER

OFFICE LOCATION:
111 North Hope Street, Room 1463
Los Angeles, CA 90012
TELEPHONE: (213) 367-1020
FAX: (213) 367-1131

MAILING ADDRESS:
ULARA WATERMASTER
P.O. Box 51111, Room 1463
Los Angeles, CA 90051-0100

December 21, 2000

Mr. Gerald Gewe
Assistant General Manager - Water
Department of Water and Power
111 No. Hope, Room 1455
Los Angeles CA 90012

Dear Mr. Gewe:

Stored Water Credit

During the past month the Watermaster's Office has been reviewing and evaluating the stored water credits of the municipal parties to the San Fernando Judgment. Two issues have become apparent; 1) there is a significant difference between the stored water credits accrued by the parties and the actual groundwater stored in the basin (Attachment A); and 2) discharges of about 34,181 AF to the Los Angeles River were never debited from Los Angeles' stored water credit (Attachment B). Also, the City of Glendale is discharging treated groundwater to the Los Angeles River at the direction of its City Council because of the presence of Chromium VI. In order to be consistent, to rectify the stored water account, and to be realistic about the amount of water actually in the San Fernando Basin, I will be debiting the unaccounted discharges from Los Angeles' stored credit. Also, I will be debiting the groundwater from the City of Glendale's account. We will discuss this further at the next Administrative Committee Meeting.

The difference between stored water credits and the actual groundwater stored in the basin occurred primarily because of the discharges of groundwater by Disney of 14,181 AF from 1982 to 1992, and the 20,000 AF of excess rising groundwater lost to the river during the years 1989 to 1999, when the Pollock Well Field was not being pumped. Disney had a stipulation to the Judgment that permitted it to pump groundwater for use in cooling towers that was then discharged to the river and diverted to the Headworks Spreading Grounds by an inflatable dam. The Headworks Spreading Ground was removed from service due to water quality problems and the inflatable dam was also removed. After many years Disney was convinced to stop using its groundwater for the cooling towers and the pumps were removed from its wells. During this time Disney continued to report its pumping monthly as required by the Judgment.

The Pollock Well Field was shut down due to water quality problems also. At the Pollock Well Field the un-pumped groundwater rose through the unlined portion of the Los Angeles River and flowed to the ocean. The rate of flow contributed by the out-of-service Pollock Well Field was approximately 2,000 AF annually for ten years.

The Watermaster's Office will continue to review and evaluate its records and accounts to correct any under-reported amounts of groundwater. The City Council of Glendale made a decision not to accept the treated groundwater from its new Glendale Operable Unit for 90 days until January 2, 2001. I will be monitoring the efforts being made by Glendale and its consultants to maximize treatment and pumping in order to serve the treated water to its customers with a lower level of Chromium VI. In the meantime I will be deducting approximately 600 AF/month of treated groundwater being discharged to the river from September 26, 2000 to January 2, 2001. And finally, I will be debiting from Los Angeles' account 34,181 AF for the Disney discharges and the excess rising groundwater lost as a result of Los Angeles' inability to pump groundwater at the Pollock Well Field.

If you have any questions or comments about the method I have selected to balance the stored water account, please call me at (213) 367-1020. My primary responsibility as Watermaster is accounting for the water into and out of the basin. Using a "Basin Account" provides some flexibility in unusual circumstances, but in the end a realistic accounting requires an actual balance as stated by the Judgment.

Sincerely,

M L Blevins

MELVIN L. BLEVINS
ULARA Watermaster

PTK:bw

Enclosures

c: Judge Susan Bryant-Deason

Administrative Committee Members
Mr. Fred Lantz, City of Burbank
Mr. Michael Sovich, Crescenta Valley Water District
Mr. Michael Drake, City of San Fernando
Mr. Donald Froelich, City of Glendale
Mr. Thomas M. Erb, City of Los Angeles

Watermaster Staff
Mr. Melvin L. Blevins, Watermaster
Mr. Frederic Fudacz, Special Counsel
Mr. Mark G. Mackowski, Assistant Watermaster
Ms. Patricia T. Kiechler, Administrator

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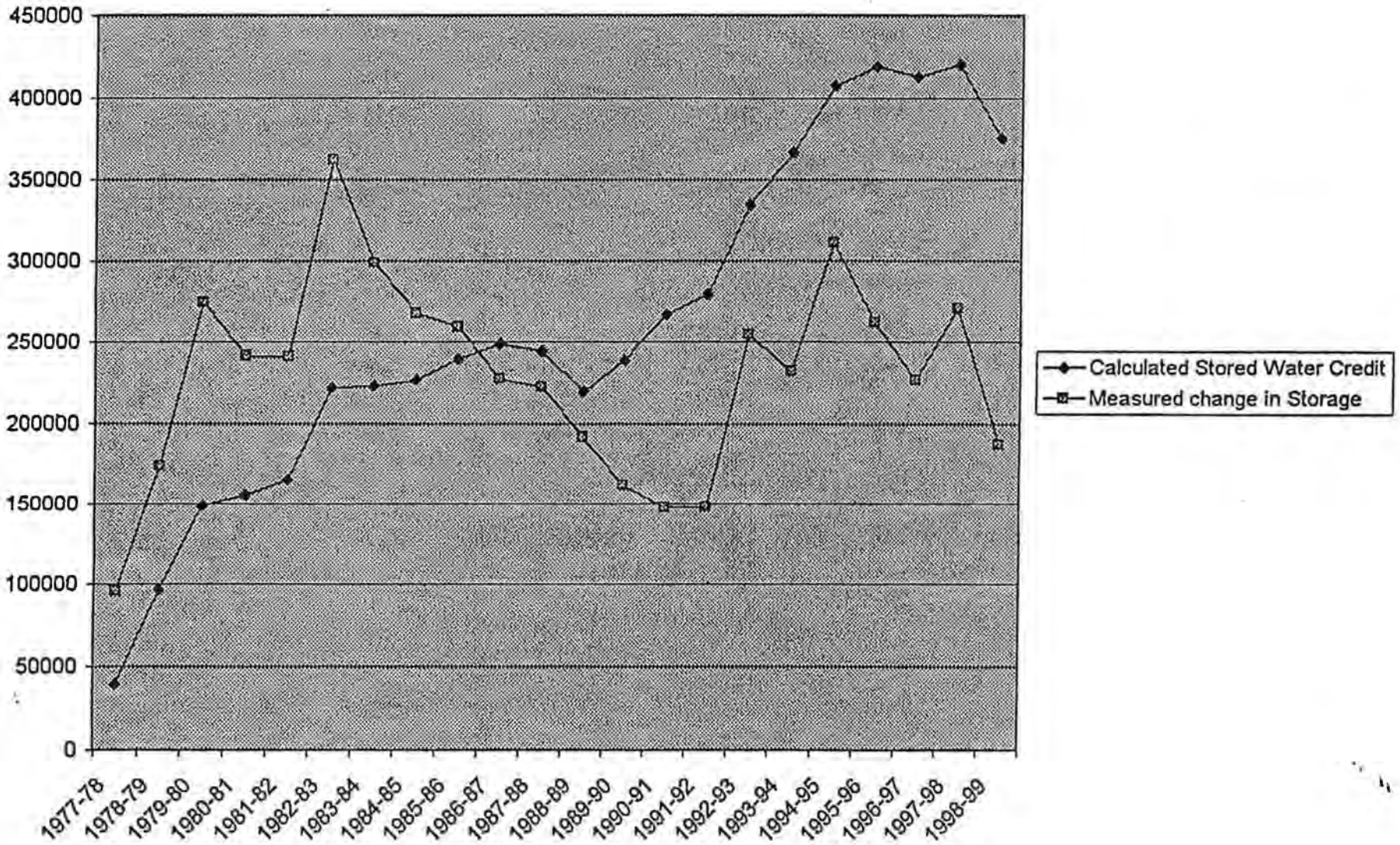
Calculated/Measured Change in Storage



Attachment A

LA water

Attachment B

Los Angeles Groundwater Discharged to River			
Water Year	Walt Disney's Groundwater Pumping Lost from ULARA*	Pollock Well Field Area Excess Rising Groundwater Outflow**	Total Groundwater Discharged to River
1982-83	742	—	742
1983-84	958	—	958
1984-85	1482	—	1482
1985-86	1429	—	1429
1986-87	1489	—	1489
1987-88	1310	—	1310
1988-89	1697	—	1697
1989-90	2030	2000	4030
1990-91	2444	2000	4444
1991-92	600	2000	2600
1992-93	0	2000	2000
1993-94	0	2000	2000
1994-95	0	2000	2000
1995-96	0	2000	2000
1996-97	0	2000	2000
1997-98	0	2000	2000
1998-99	0	2000	2000
1999-2000	0	—	0
Total in AF	14181	20000	34181

* Discharge to Los Angeles River of Disney's groundwater pumping (re: Stipulation with Los Angeles) Water then flows to the ocean.

** Excess outflow of groundwater due to non-pumping of Pollock Wells.

Table - Attachment A

Calculated and Measured Change in Storage

Water Year	Cumulated Stored Water Credit	Cumulated Change in Groundwater Storage
1977-78	39490	95940
1978-79	96651	174020
1979-80	148344	273990
1980-81	155215	241430
1981-82	164995	240900
1982-83	221308	361990
1983-84	223031	298810
1984-85	226396	267120
1985-86	239833	259140
1986-87	248531	227200
1987-88	244769	222200
1988-89	219321	191650
1989-90	238795	161709
1990-91	266650	147587
1991-92	279137	147998
1992-93	334531	254315
1993-94	366210	232077
1994-95	407499	311209
1995-96	418882	261986
1996-97	412703	226249
1997-98	420593	270362
1998-99	375331	187689

APPENDIX J
WELLS DRILLED OR ABANDONED

WELLS DRILLED FOR GROUND WATER INVESTIGATIONS

1999-2000 WATER YEAR

1. City of Los Angeles

   Five wells in the Headworks Well Field were destroyed as part of the construction process for the Headworks Treatment Plant. The destroyed wells were: Headworks No. 26 (3893L), No. 27 (3893K), No. 28 (3893M), No. 29 (3893N), No. 30 (3893P). . Four new wells were constructed Headworks Nos. 27A (3893Q), 28A (3893R), 29A (3893S), and 30A (3893T).

   Several other wells previously used to monitor groundwater elevations were also destroyed including: 3874I, 3914T, 3959G, 3959H.

2. Sears

   Well No. 3945 used to provide chilled water for the air-conditioning cooling tower was disconnected and capped in order to install a new system. This well provided Sears non-consumptive water usage according to the Judgment. The water from this well was returned to the basin.

APPENDIX K
ACTION ITEMS 2000-2001

ACTION ITEMS

WATERMASTER ACTIVITIES FOR 2000-2001 REPORT

- Facilitate dissemination of information on chromium standards.
- Continue assisting water agencies to clean up contamination in their districts while meeting the concerns of citizens regarding newly identified chemicals with potential health risks and protecting water rights.
- Provide assistance in developing Best Management Practices for the Standard Urban Stormwater Mitigation Plan that protects water quality and water rights in ULARA.
- Facilitate Pacoima Area Investigation.
- Evaluate method to calculate Separation of Flow at Gage F57.
- Continue maximization program for the Tujunga/Hansen Spreading Grounds.
- Continue supporting the work of the City and County to account for groundwater production in the unincorporated areas of the County.
- Continue delivering hard copies of legal description of each parcel in ULARA to title companies for their in-put to databases.

APPENDIX L
WATER EQUIVALENTS

Water Equivalents

Volume

1 gallon*.....= 3.7854 liters (L) =231** cubic inches (in^3)
.....= 0.003785 cubic meters (m^3) = 0.132475 cubic feet (ft^3)

100 cubic feet (HCF)****.....= 748 gallons (gal) = 2.83317 cubic meters (m^3)
.....= 2,832 liters (L) = 3.70386 cubic yards (yd^3)
.....= 6,230.8 pounds of water (lb) = 2,826.24 kilograms (kg)

1 acre-foot (AF)***.....= 43,560** cubic feet (ft^3) = 1233.5 cubic meters (m^3)
.....= 325,851 gallons (gal) = 1,233,476.3754 liters (L)
.....= the average amount of water used by two families for one year

Flow

1 cubic foot per
second(cfs).....= 448.83 gallons per minute (gpm) = 0.028317 cubic meters/sec (m^3/s)
.....= 646,317 gallons per day (gal/day) = 1.70 cubic meters/min
.....= 1.98 AF/day = 2446.6 cubic meters/day

1,000 gallons per
minute(gpm) .....= 2.23 cubic feet per second (cfs) = 0.063 cubic meters/sec (m^3/s)
.....= 4.42 AF/day = 5452.6 cubic meters/day
.....= 1,1613.01 AF/year = 1.99 million cubic meters/yr

1 million gallons per
day (mgd) .....=3.07 AF/day =3785 cubic meters/day
.....=1,120.14 AF/year =1.38 million cubic meters/yr.

Concentration

.....1.0 milligrams per liter (mg/L) = 1.0 parts per million (ppm)

.....1.0 micrograms per liter (µg/L) = 1.0 parts per billion (ppb)

* U.S. gallons
** Exact Value
*** An acre foot covers one acre of land one foot deep
**** This is a billing unit of DWP

APPENDIX M
LIST OF ABBREVIATIONS

List of Abbreviations

AF	Acre-feet
BOU	Burbank Operable Unit
BTEX	Benzene, tolulene,ethylbenzene,and total xylene
CVWD	Crescenta Valley Water District
Cal-EPA	California Environmental Protection Agency
DCA	Dichloroethane
DCE	Dichloroethylene
DHS	California Department of Health Services
DTSC	California Department of Toxic Substances Control
DWP	Department of Water and Power
EPA	Environmental Protection Agency
EVWRP	East Valley Water Recycling Project
LAFD	Los Angeles Fire Department
GAC	Granular Activated Carbon
gpm	Gallons Per Minute
LACDPW	Los Angeles County Department of Public Works
LADWP	Los Angeles Department of Water and Power
MCL	Maximum Contaminant Level
mg/L	Milligrams per Liter
MTA	Metropolitan Transportation Authority
MWD	Metropolitan Water District
OEHHA	Office of Environmental Health Hazard Assessment
OU	Operable Unit
PCE	Tetrachloroethylene
PHG	Public Health Goal
PSDS	Private Sewage Disposal Systems
RAW	Removal Action Workplan
RI	Remedial Investigation
RWQCB	Regional Water Quality Control Board
SFB	San Fernando Basin
SUSMP	Standard Urban Stormwater Mitigation Plan
SWCRB	State Water Resouces Control Board
SWAT	Solid Waste Assessment Test
TCA	1,1,1- Trichloroethane
TCE	Trichloroethylene
TDS	Total Dissolved Solids
ug/L	Micrograms per Liter
ULARA	Upper Los Angeles River Area
UST	Underground Storage Tank
VOC	Volatile Organic Compound
VPWTP	Glendale-Verdugo Park Water Treatment Plant
USGS	United States Geological Survey