

**LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS**

HYDROLOGIC REPORT

1993-94

PREPARED BY THE
HYDRAULIC/WATER CONSERVATION DIVISION
NOVEMBER 1995

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INTRODUCTION

This report contains hydrologic data relative to Los Angeles County for the period beginning October 1, 1993 and ending September 30, 1994. The data are presented in seven sections.

Precipitation - lists 284 active rainfall stations and presents corresponding seasonal rainfall amounts.

Evaporation - lists all locations for which evaporation data is on file and provides monthly evaporation amounts at 14 locations.

Runoff - presents the maximum, minimum, and mean of the daily flow rates for each month and the monthly volumes for 40 streamflow stations.

Dam Operation - presents the maximum and minimum of the daily inflow and outflow rates for each month, the instantaneous peak inflow and outflow rates and storage volumes for 14 dams and reservoirs.

Erosion Control - lists debris basins and debris production amounts.

Water Quality Monitoring - presents maps of surface and groundwater sampling locations, and data at selected locations.

Conservation and Groundwater - presents records of water conserved at various facilities, water injected at seawater barrier projects, well hydrographs, and Fall, 1993 static groundwater contour maps.

Where practical, data which would satisfy immediate needs and serve as useful reference are published in these reports. Several tables appear listing locations for which unpublished data are available. Additional information may be obtained by writing to:

**Los Angeles County Department of Public Works
Hydraulic/Water Conservation Division
P.O. Box 1460
Alhambra, CA 91802-1460**

or telephone: **(818) 458-6112**

LOS ANGELES COUNTY

TOPOGRAPHY

The County of Los Angeles covers an area of 4,083 square miles and measures approximately 66 miles in the east - west and 73 miles in the north - south directions.

The terrain within the County can be classified in broad terms as being 25 percent mountainous; 10 percent coastal plain; and 65 percent hills, valleys, or deserts. Relief of the terrain ranges from sea level to a maximum elevation of 10,000 feet. The coastal plain is generally of mild slope and contains relatively few depressions or natural ponding areas. The slopes of main river systems crossing the coastal plain, such as the San Gabriel River, Los Angeles River, and Ballona Creek, range from 4 to 14 feet per mile.

Topography in the mountainous area is generally rugged with deep, V-shaped canyons separated by sharp dividing ridges. Steepwalled canyons with side slopes of 70 percent or more are common. The gradient of principal canyons in the San Gabriel Mountains ranges from 150 to 850 feet per mile. Mountain ranges are aligned in a general east-west direction with the major range being the San Gabriel Mountains. The majority of mountain ridges lie below Elevation 5,000 feet. The total area above this level is approximately 210 square miles.

GEOLOGY - SOILS

Igneous, sedimentary, and metamorphic rock groups are all presented within the County. The San Gabriel Mountains and Verdugo Hills are composed primarily of highly fractured igneous rock, with large areas of granitic rock formation being exposed. Faulting and deep weathering have produced porous zones in the rock formation; however, rock masses have produced a comparatively shallow soil mantle due to the steepness of slopes which accelerates erosion of the fine material.

Other mountains and hilly reaches are composed primarily of folded and faulted sedimentary rocks, including shale, sandstone, and conglomerate. Residual soils in these areas are shallow and are generally less pervious than those of the San Gabriel Mountain range.

Valley and desert soils are alluvial and vary from coarse sand and gravel near canyon mouths to silty clay, clay and sand and gravel in lower valleys and the coastal plain. The alluvial fill has been built up by repeated deposition of debris to depths as great as several thousand feet. This fill is quite porous in areas of relatively low clay content. Geologic structures and irregularities in the underlying bedrock divide the alluvium into several groundwater basins. Valley soils are generally well drained but there are a few areas having perched water.

LAND USE

The principal vegetative cover of upper mountain areas consists of various species of brush and shrubs known as chaparral. Most trees found on mountain slopes are oak, with alder, willow, and sycamore found along streambeds at lower elevations. Pine, cedar, and juniper are found in ravines at higher elevations and along high mountain summits.

The chaparral is extremely flammable, and extensive burns of the mountain vegetation frequently occur during dry, low-humidity weather accompanied by high winds. Chaparral has the ability to sprout following fire and grows rapidly to re-establish the watershed cover within a period of 5 to 10 years.

Grasses are the principal natural vegetation on the hills. Much of the hill land and nearly all of the valley land in the densely populated portion of the County south of the San Gabriel Mountains has been converted to urban and suburban use. Development of the Santa Clarita Valley and desert areas to the north of the San Gabriel Mountains is sparse at present but is proceeding rapidly.

CLIMATE

The climate within the County varies between subtropical on the Pacific Ocean side of the San Gabriel Mountain range to arid in the Mojave Desert. Nearly all precipitation occurs during the months of December through March. Precipitation during summer months is infrequent, and rainless periods of several months are common. Snowfall at elevations above 5,000 feet is frequently experienced during the winter storms, but the snow melts rapidly except on higher peaks and the northern slopes. Snow is rarely experienced on the coastal plain.

January and July are the coldest and warmest months of the year, respectively. At Los Angeles, the 30-year average daily minimum temperature for January is 48 degrees above zero. The average daily maximum temperature for July is 84 degrees. At Mount Wilson (Elevation 5,850 feet), the 30-year average daily minimum temperature for January is 35 degrees above zero and the average daily maximum temperature for July is 80 degrees.

HYDROMETEOROLOGIC CHARACTERISTICS

Coastal and Mountain Areas

Precipitation in the Los Angeles area occurs primarily in the form of winter orographic rainfall associated with extratropical cyclones of North Pacific origin. Major storms consist of one or more frontal systems and occasionally last four days or longer. Air masses and frontal systems associated with major storms commonly extend for 500 to 1,000 miles in length and produce rainfall simultaneously throughout the County. Major storms approach Southern California from the west or southwest with southerly winds which continue until frontal passage. The mountain ranges lie directly across the path of the inflow of warm, moist air, and orographic effects greatly intensify precipitation.

The seasonal normal rainfall in Los Angeles County ranges from 27.50 inches in San Gabriel Mountains to 7.83 inches in the desert. The annual County average for the annual rainfall for Los Angeles County is 15.65 inches.

The effects of snowmelt upon flood runoff is of significance in the few cases when warm spring rains from southerly storms fall on a snowpack. During major storms, temperatures throughout the County may remain above freezing. Average individual storm rainfall amounts and intensities conform to a fairly definite aerial pattern which reflects general effects of topographic differences.

Desert Areas

Summer convective rainfall is principally experienced in the upper San Gabriel Mountains and the Mojave Desert regions. In many desert areas, the most serious flooding occurs as a result of summer convective storms.

RUNOFF CHARACTERISTICS

Mountain Areas

In mountain areas, the steep canyon slopes and channel gradients promote a rapid concentration of storm runoff quantities. Depression storage and detention storage effects are minor in the rugged terrain. Soil moisture during a storm has a pronounced effect on runoff from the porous soils supporting a good growth of deeprooted vegetation such as chaparral. Soil moisture deficiency is greatest at the beginning of a rainy season, having been depleted by the evapotranspiration process during the dry summer months. Precipitation during periods of soil moisture deficiency is nearly entirely absorbed by soils, and except for periods of extremely intense rainfall, significant runoff does not occur until soils are wetted to field moisture capacity. Due to high infiltration rates and porosity of mountain soils, runoff occurs primarily as subsurface flow or interflow in addition to direct runoff. Spring or base flow is essentially limited to portions of the San Gabriel Mountain range. Consequently, most streams in the County are intermittent.

Runoff from a mountain watershed recently denuded by fire exceeds that for the unburned state due to greatly increased quantities of inorganic debris present in the flow and increased direct runoff resulting from lowered infiltration rates. Debris production from a major storm has amounted to as much as 223,000 cubic yards per square mile of watershed. Boulders up to eight feet in diameter have been deposited in valley areas a considerable distance from their source.

Debris quantities equal in volume to storm runoff, or in other words 100 percent bulking of runoff from a major storm, have been recorded. Where debris-laden flow traverses an alluvial fill unconfined by flood control works, flood discharges follow an unpredictable path across the debris cone formed at the canyon mouth.

Hill and Valley Areas

In hill areas, runoff concentrates rapidly from the generally steep slopes; however, runoff rates from undeveloped hill areas are normally smaller than those from mountain areas of the same size. In those hill areas which have been developed for residential use, concentration times become considerably decreased due to drainage improvement, and runoff volumes and rates become increased due to increased imperviousness. On the other hand, erosion is controlled and debris is minimized from storm flows. Debris production rates from undeveloped hill areas are normally smaller than those from mountain areas of the same size.

In highly developed valley areas, local runoff volumes have increased as the soil surface has become covered by impervious materials. Peak runoff rates for valley areas have also increased due to

elimination of natural ponding areas and improved hydraulic efficiency of water carriers such as streets and storm drain systems.

FLOOD CONTROL AND WATER CONSERVATION

FLOODS. . .AN OLD STORY

Floods in Los Angeles County have been recorded as far back as the days of the Mission Padres. For centuries waters have swept out of the San Gabriel Mountains causing extensive property damage and taking a great toll of lives.

Such a flood occurred in 1914 causing over \$10 million in property damage and taking many lives. As a result, the State legislature in 1915 enacted the statute creating the Los Angeles County Flood Control District. The responsibilities and authority vested in the Flood Control District in 1985 were transferred to, and are now part of the Los Angeles County Department of Public Works.

The Department, under the Flood Control Act, has two tasks. . .control the floods and conserve the water.

CONTROLLING THE WATERS

Successful early bond issues financed construction of the 14 dams which the Department built in the San Gabriel Mountains and foothills to impound storm waters until they could be safely released. Debris basins were constructed to trap eroded materials which had caused terrible damage in the past. Flood channel improvements were undertaken to confine the waters and convey them safely through the urbanized areas to the ocean.

Department engineers prepared a Comprehensive Plan in the early 1930's which would control flooding and save as much of the water as practicable when fully implemented.

Federal legislation in 1936 brought the United States Army Corps of Engineers into the local flood control picture. Since that time, the two agencies have been jointly pursuing implementation of the Comprehensive Plan. The Department also cooperates with the United States Natural Resources Conservation Service and Forestry Service in erosion control.

CONSERVING THE WATERS

In addition to its flood control program, the Department has the equally important task of conserving as much of the storm and other waste waters as practicable. The use of water conservation facilities in or adjacent to river channels and their tributaries permits water to be percolated into groundwater reservoirs for later pumping and supply to consumers. These water conservation facilities are located in areas where the underlying soils are composed of porous sands and gravel formations. Some resemble rice paddies, while others are deep basins which were once gravel pits.

The importance of this activity is apparent when it is realized that about 30 to 40 percent of the water used in the County is pumped from ground supplies. The growth of the County, combined with periodic droughts, seriously depleted these supplies on numerous occasions throughout the history of the County.

Other major conservation efforts by the Department include combatting the serious salt water intrusion into groundwater supplies inland from the Pacific Ocean and utilizing imported water and reclaimed waters in groundwater recharge operations.

ORGANIZED TO DO THE JOB

Day-to-day administration of Department affairs is vested in the Director of Public Works who is appointed by and responsible to the Los Angeles County Board of Supervisors. A part of the Department's activities involve the planning, design and construction of flood control and water conservation facilities, and the operation and maintenance of dams, debris basins, spreading grounds, channels, and storm drains.

PRECIPITATION

PRECIPITATION

This section contains annual precipitation data collected by the Department for the period beginning October 1, 1993 and ending September 30, 1994. Although the Department operates and maintains 271 rainfall stations, including 199 standard and 72 automatic gages which record amounts for durations ranging from 5 minutes to 24 hours, only annual amounts for the report period are listed herein. Additional data can be obtained by contacting the custodian of hydrologic records at the location shown in the front of the report.

RAINFALL AMOUNTS

For the year, rainfall recorded at the downtown Los Angeles station (No. 716) reached 9.07 inches, or 58 percent of the long-term average of 15.51 inches. The Cogswell Dam station (No. 334B) recorded 18.92 inches for the year which is 58 percent of the long-term average of 32.88 inches.

ALERT SYSTEM (AUTOMATIC LOCAL EVALUATION IN REAL TIME)

The Department of Public Works has installed a state-of-the-art ALERT computer system to monitor meteorological conditions in the County and Southern California in real time, i.e., as they occur. The system includes a network of field sensors that monitor precipitation amounts, river stages, and reservoir levels.

During the report period, the Department has continued to install and expand its ALERT System. The Department's ALERT system is also now automatically receiving rainfall data from the Corps of Engineers' Los Angeles Telemetry System.

COOPERATION

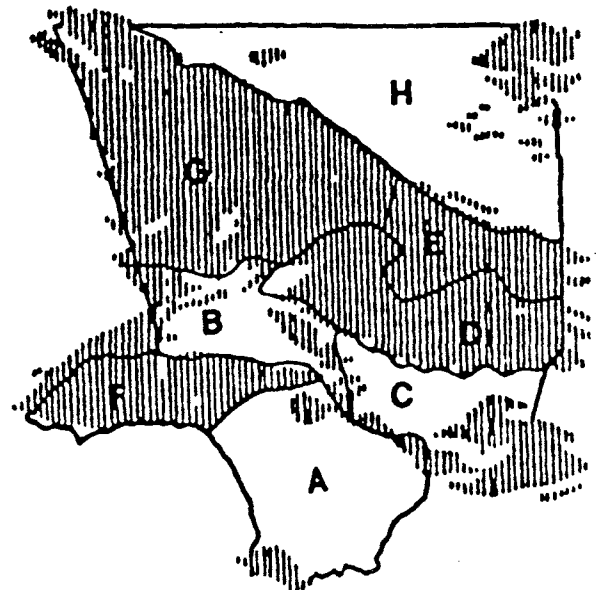
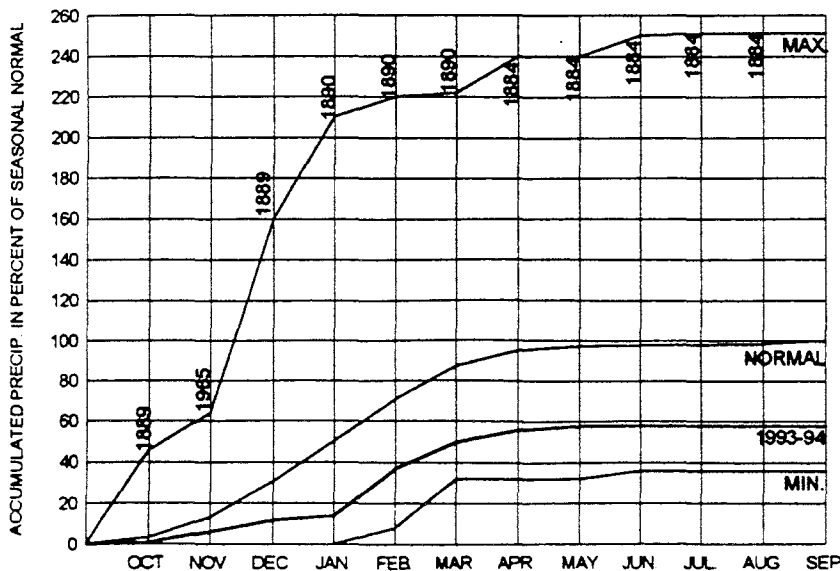
The cooperation of observers in furnishing rainfall data to the Department as a public service is appreciated. The effort of the many agencies and individuals who have so freely cooperated with us in the collection of this data have resulted in the large number of complete records for the period covered by this report.

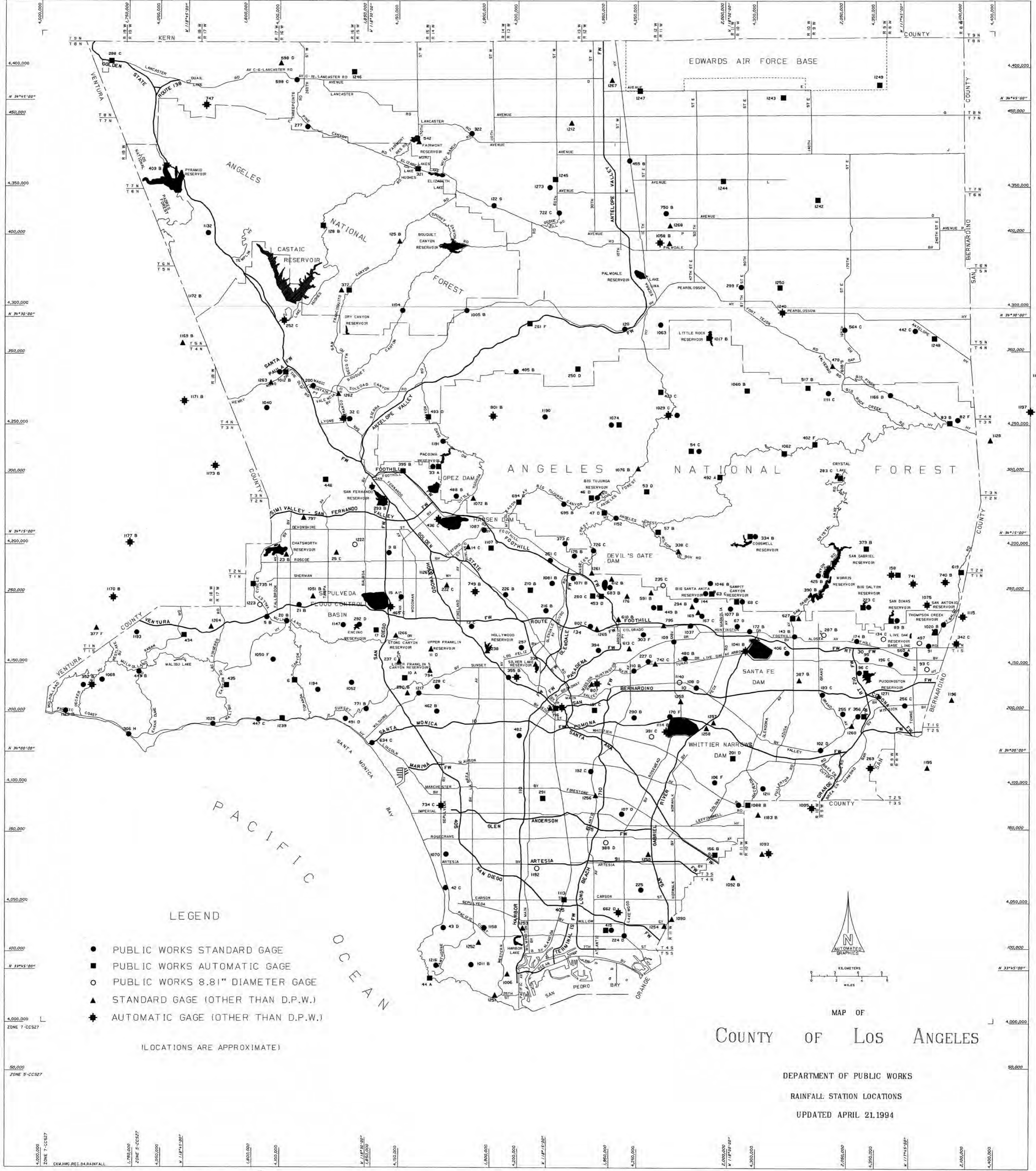
**LOS ANGELES COUNTY RAINFALL INDICES
USING SELECTED STATIONS FOR THE PERIOD
OCTOBER 1, 1993 THROUGH SEPTEMBER 30, 1994**

	PERCENT OF AREA	SEASONAL NORMAL PRECIP. (inches)	TOTAL PRECIP. TO DATE	PERCENT OF SEASONAL NORMAL	TOTAL PRECIP. LAST YR. TO DATE
A. COASTAL PLAIN	14.10	13.71	9.03	66	26.27
B. SAN FERNANDO VALLEY	7.90	17.62	11.27	64	35.96
C. SAN GABRIEL VALLEY	7.50	17.64	11.65	66	35.56
D. SAN GABRIEL MTS.	13.40	27.50	17.06	62	58.76
E. LITTLE ROCK , BIG ROCK	4.50	18.61	12.96	70	37.18
F. SANTA MONICA MTS.	5.70	19.96	12.50	63	38.33
G. SANTA CLARA	18.90	16.64	10.42	63	34.61
H. DESERT	28.00	7.83	5.15	66	19.89
COUNTY	100.00	15.65	10.02	64	33.05
LOS ANGELES (STATION #716)		15.51	9.07	58	30.89
COGSWELL DAM (STATION #334B)		32.88	18.92	58	77.02

MAX., MIN. & NORMAL CURVES

**LOS ANGELES (STATION #716)
SEASONAL NORMAL PRECIPITATION - 15.51"**

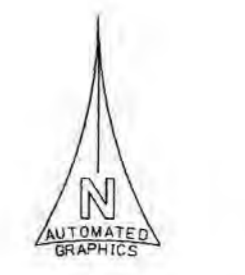




LEGEND

- PUBLIC WORKS STANDARD GAGE
- PUBLIC WORKS AUTOMATIC GAGE
- PUBLIC WORKS 8.8" DIAMETER GAGE
- ▲ STANDARD GAGE (OTHER THAN D.P.W.)
- ⊠ AUTOMATIC GAGE (OTHER THAN D.P.W.)

(LOCATIONS ARE APPROXIMATE)



MAP OF
COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

RAINFALL STATION LOCATIONS

UPDATED APRIL 21, 1994

Active Rainfall Stations 1993-94

Station No.	Station Name	Type of Gage	Thomas Guide Page	North Latitude	West Longitude	Gage Elev. (Feet)	Seasonal Total (Inches)
5B	CALABASAS	S	100 F3	34-09-24	118-38-14	924	12.30
6	TOPANGA PATROL STATION	A	109 C5	34-05-03	118-35-57	745	15.90*
9B	SEPULVEDA AND RAYEN	S	8 C6	34-13-52	118-28-04	828	10.97
10A	BEL AIR HOTEL	A	32 E5	34-05-11	118-26-45	540	10.80
11D	UPPER FRANKLIN CYN RES.	SP	33 B1	34-07-10	118-24-35	867	11.64*
13C	NORTH HOLLYWOOD-LAKESIDE	S	23 F4	34-08-46	118-21-13	550	11.83
14C	ROSCOE-MERRILL	S	9 F5	34-14-19	118-21-32	1050	8.19*
15A	VAN NUYS	S	15 D6	34-10-48	118-27-03	695	9.47
17	SEPULVEDA CYN AT MULHOLLAND	A	22 A5	34-07-51	118-29-26	1425	13.00*
20B	GIRARD RESERVOIR	S	13 B3	34-09-07	118-36-36	986	12.32
21B	WOODLAND HILLS	S	13 C1	34-10-14	118-35-33	875	11.20
23B	CHATSWORTH RESERVOIR	SP AP	6 A6	34-13-44	118-37-18	900	8.98*
25C	NORTHRIDGE-L.A.D.W.P.	SP	7 B6	34-13-52	118-32-28	810	8.98
32C	NEWHALL-SOLEDAD DIV. HDQTRS	AP S	127 C3	34-23-07	118-31-54	1243	10.38
33A	PACOIMA DAM	S A	128 F9	34-19-48	118-23-59	1500	11.56
42C	REDONDO BEACH-CITY HALL	S	67 D3	33-50-43	118-23-20	70	8.81*
43D	PALOS VERDES ESTATES	S	72 C2	33-47-58	118-23-29	216	7.13
44A	POINT VICENTE LIGHTHOUSE	A	77 B3	33-44-30	118-24-38	125	7.40
46D	BIG TUJUNGA DAM	S A	M C2	34-17-40	118-11-14	2315	15.50
47D	CLEAR CREEK-CITY SCHOOL	A	M D3	34-16-38	118-10-12	3150	16.10
53D	COLBYS	A	M F2	34-18-05	118-06-39	3620	13.70
54C	LOOMIS RANCH-ALDER CREEK	S A	(197)	34-20-55	118-02-54	4325	12.10
57B	CAMP HI HILL (OPIDS)	A	M F3	34-15-18	118-05-41	4250	23.00
63C	SANTA ANITA DAM	S A	20A F2	34-11-03	118-01-12	1400	17.36
67G	MONROVIA-MOUNTAIN AVENUE	S	29 C4	34-08-46	117-59-05	602	12.68
68C	SAWPIT DAM	S A	20B C6	34-10-30	117-59-07	1375	16.31
82F	TABLE MOUNTAIN	S	(201)	34-22-56	117-40-39	7420	13.94
83B	BIG PINES RECREATION PARK	A	(201)	34-22-44	117-41-20	6860	15.90
89B	SAN DIMAS DAM	S A	95A C3	34-09-10	117-46-17	1350	15.13
91	CLAREMONT-INDIAN HILL	S	91 B1	34-07-22	117-43-11	1403	12.85
93C	CLAREMONT-POLICE STATION	8.81	91 B4	34-05-45	117-43-18	1170	11.63
95	SAN DIMAS-FIRE WARDEN	S	89 F3	34-06-26	117-48-19	955	13.81
96C	PUDDINGSTONE DAM	S A	89 F4	34-05-31	117-48-24	1030	12.44
102D	WALNUT-N.I. INDUSTRIES	S	97 B2	34-00-11	117-52-10	500	11.90
106F	WHITTIER CITY YARD	S	55 D4	33-58-57	118-02-50	300	8.82
107D	DOWNEY-FIRE DEPARTMENT	S	60 A5	33-55-48	118-08-47	110	9.26
108D	EL MONTE FIRE STATION	S	38 D6	34-04-30	118-02-30	275	9.91
109D	WEST ARCADIA	S	28 A6	34-07-42	118-04-22	547	10.91
110B	ALHAMBRA	S	37 B3	34-05-40	118-07-41	533	10.47
120	VINCENT PATROL STATION	S	183 A9	34-29-17	118-08-27	3135	5.52
125B	SAN FRANCISQUITO CYN P.H. 1	SP	(169)	34-35-25	118-27-15	2105	10.65
128B	ELIZABETH LAKE	A	(168)	34-36-28	118-33-40	2075	11.10
134C	PUDDINGSTONE DIVERSION	8.81	95A C5	34-07-52	117-46-55	1160	11.99
143B	AZUSA-CITY PARK	S	86 D5	34-08-03	117-54-17	610	12.73
144	SIERRA MADRE DAM	S	20A D3	34-10-34	118-02-32	1100	16.77
156B	LA MIRADA-STANDARD OIL CO.	A	83 A4	33-52-59	118-01-00	75	9.80
158	TANBARK FLATS	AP A	P D5	34-12-20	117-45-40	2750	17.00
167C	ARCADIA PUMPING PLANT #1	S	28 E2	34-09-31	118-02-02	611	13.54
169	SIERRA MADRE PUMPING PLANT	SP	28 D2	34-09-47	118-02-21	700	15.48
170F	POTRERO HEIGHTS	S	47 A4	34-02-32	118-04-44	285	10.28
172B	DUARTE	S	29 E4	34-08-26	117-58-02	548	9.51
174B	GLENDORA	S	87 E6	34-07-43	117-49-08	930	10.76
175B	LA CANADA IRRIGATION DIS.	S	19 A1	34-13-39	118-12-40	2020	14.71
176	ALTADENA-RUBIO CANYON	SP	20 B6	34-10-55	118-08-15	1125	13.80
191C	L.A.C.D.P.W.-WAREHOUSE	A	45 B1	34-03-48	118-11-58	400	10.40
192C	BELL-FIRE STATION	8.81	53 C5	33-58-45	118-11-16	145	9.87*
193C	COVINA-NIGG	S	89 A5	34-04-55	117-52-25	575	10.80

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Station No.	Station Name	Type of Gage	Thomas Guide Page	North Latitude	West Longitude	Gage Elev. (Feet)	Seasonal Total (Inches)
196C	LA VERNE-FIRE STATION	S	90 D3	34-06-06	117-46-20	1050	11.78
200	SAUGUS-S. C. EDISON CO.	S	123 H8	34-25-21	118-34-26	1096	8.00*
201D	HACIENDA HEIGHTS	A	85 C3	33-59-40	117-59-28	875	11.80
210C	BRAND PARK	A	18 B5	34-11-18	118-16-20	1250	10.00
216B	GLENDALE-ANDREE	S	25 D2	34-09-54	118-15-01	615	10.70
222C	NORTH HOLLYWOOD P. P.	SP	16 C4	34-11-39	118-23-17	717	8.20*
223C	BIG DALTON DAM	S A	87 F2	34-10-06	117-48-36	1587	17.18
224D	LONG BEACH-ALAMITOS LAND CO.	S	76 B3	33-46-42	118-08-04	45	8.82*
225	MONTANA RANCH-LAKEWOOD	S	71 C3	33-50-35	118-07-09	47	10.57
226B	BURBANK-FIRE STATION	S	17 E6	34-10-58	118-18-23	680	10.29*
227D	SAN GABRIEL-BRINGTON-ORTON	S	37 D2	34-06-18	118-06-32	472	11.37
228C	BEVERLY HILLS CITY HALL	AP S	33 C6	34-06-00	118-23-40	245	9.61
235C	HENNIGER FLATS	A 8.81	20 F4	34-11-38	118-05-17	2550	16.69
237C	STONE CANYON RESERVOIR	SP	32 D2	34-06-21	118-27-13	865	11.29*
238	HOLLYWOOD DAM	SP	34 C1	34-07-04	118-19-55	750	8.27
250D	ACTON CAMP	A	189 E5	34-27-02	118-11-55	2625	6.90
251C	LA CRESCENTA	S	18 D1	34-13-20	118-14-40	1440	12.21
252C	CASTAIC DAM	SP AP	(178)	34-29-53	118-36-53	1150	9.52
255F	MT. SAN ANTONIO COLLEGE	S	93 D4	34-02-41	117-50-19	720	8.86
256C	POMONA-FIRE STATION	S	94 E3	34-03-16	117-45-10	844	11.77*
261F	ACTON-ESCONDIDO CANYON	A	181 H9	34-29-42	118-16-22	2960	7.70
269D	DIAMOND BAR FIRE STATION	SP AP	97 F2	33-59-50	117-48-55	870	12.65
277	SAWMILL MOUNTAIN	S	(155)	34-43-15	118-35-00	3700	14.81
280C	FLINTRIDGE-SACRED HEART	A	19 D6	34-10-54	118-11-08	1600	13.60
283C	CRYSTAL LAKE-EAST PINE FLAT	A	P B1	34-19-02	117-50-28	5370	23.60
287B	GLENDORA-CITY HALL	8.81	87 B5	34-08-09	117-51-52	785	13.01
290B	MONTEREY PARK-FIRE STATION	S	46 B4	34-02-27	118-07-42	305	11.30
291	LOS ANGELES-96th AND CENTRAL	A	58 C3	33-56-56	118-15-17	121	9.90
292D	ENCINO RESERVOIR	S A	21 D3	34-08-56	118-30-57	1075	11.53
293B	LAKE LOS ANGELES	SP	2 A4	34-17-18	118-28-54	1150	11.32
294B	SIERRA MADRE-MIRA MONTE P.P.	SP	28 C1	34-10-11	118-02-51	985	16.27
298C	GORMAN - SHERIFF	A	(141)	34-47-47	118-51-27	3835	11.20
299F	LITTLE ROCK - SCHWAB	S	184 F5	34-32-12	117-58-43	2800	4.64
303F	PASADENA - CALTECH	S	27 C5	34-08-14	118-07-25	800	11.47*
306H	ZUMA BEACH	S	111 F6	34-01-15	118-49-42	15	11.28
321	PINE CANYON PATROL STATION	A	157 D7	34-40-24	118-25-45	3286	11.60
322	MUNZ VALLEY RANCH	S	158 A2	34-42-50	118-21-15	2600	7.57
334B	COGSWELL DAM	S A	N D4	34-14-37	117-57-35	2300	18.92
336	SILVER LAKE RESERVOIR	SP	35 B3	34-06-08	118-15-54	445	6.70
338C	MT. WILSON-OBSERVATORY	SP	20A C1	34-14-07	118-04-28	5709	20.03
342C	UPLAND-CHAPPEL	AP	96 E6	34-07-33	117-40-52	1610	12.44
352B	LECHUZA PATROL STATION	AP S	105 B6	34-04-38	118-52-47	1620	13.24
355B	LOS ANGELES CITY COLLEGE	AP S	34 F4	34-05-14	118-17-28	310	8.59*
356C	SPADRA-LANTERMAN HOSPITAL	S A	93 F4	34-02-31	117-48-35	690	10.89
372	SAN FRANCISQUITO P. H. NO.2	SP A	(179)	34-32-02	118-31-27	1580	9.01
373C	BRIGGS TERRACE	S A	11 F5	34-14-17	118-13-27	2200	15.69
377F	LAKE SHERWOOD ESTATES	SP AP	102A C4	34-08-26	118-52-31	960	13.36
379B	SAN GABRIEL-EAST FORK	A	P C4	34-14-09	117-48-18	1600	14.60
387B	COVINA CITY YARD	SP	88 E5	34-05-02	117-53-57	508	10.99
388D	PARAMOUNT-COUNTY FIRE DEPT.	8.81	65 E3	33-53-50	118-10-02	80	11.97
390B	MORRIS DAM	SP	P A6	34-10-53	117-52-43	1210	14.38
391C	MONTEBELLO-FIRE DEPARTMENT	8.81	54 E1	34-01-08	118-06-15	250	9.54
394	HIGHLAND PARK	S	36 D1	34-07-06	118-10-39	620	9.49
395B	OLIVE VIEW SANITARIUM	A	2 D1	34-19-29	118-26-55	1425	12.20
402F	CEDAR SPRINGS	A	(199)	34-21-21	117-52-34	6780	21.50
405B	SOLEDAD CANYON	S	188 F6	34-26-23	118-17-33	2150	8.38
406C	WEST AZUSA	S	88 C2	34-06-53	117-54-56	505	11.88

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Station No.	Station Name	Type of Gage	Thomas Guide Page	North Latitude	West Longitude	Gage Elev. (Feet)	Seasonal Total (Inches)
409B	PYRAMID RESERVOIR	SP AP	(154)	34-40-34	118-46-47	2505	11.22
415	SIGNAL HILL-CITY HALL	S A	75 E2	33-47-49	118-10-03	140	9.61
423C	ANGELES FOREST-ALISO CYN	A	(190A)	34-24-57	118-05-26	3920	12.10
425B	SAN GABRIEL DAM	S A	P A5	34-12-19	117-51-38	1481	17.55
434	AGOURA	A	100A A5	34-08-08	118-45-08	800	11.50
435	MONTE NIDO	A	108 A6	34-04-41	118-41-35	600	14.00
436C	HANSEN DAM	AP	9 C2	34-16-08	118-23-59	1110	9.64
442C	MESCAL CREEK	S	(194)	34-29-05	117-44-10	3570	3.50
443B	LATIGO CANYON-BEACH RANCH	S	106 B4	34-05-35	118-48-52	1700	15.06
446	ALISO CANYON-OAT MOUNTAIN	A	1 A2	34-18-53	118-33-25	2367	13.70
447C	CARBON CANYON	S	114 E4	34-02-18	118-38-56	50	9.63
449B	EATON WASH DAM	S A	27 E1	34-10-06	118-05-33	880	12.00
453D	DEVILS GATE DAM	A	19 D6	34-10-53	118-10-27	980	9.70
455B	LANCASTER-HWY MAINTENANCE	S	160 B6	34-40-57	118-08-02	2395	4.23
462B	HILLCREST COUNTRY CLUB	S	42 B3	34-02-54	118-24-06	185	9.50
465C	SEPULVEDA DAM	AP	22 B1	34-10-06	118-28-11	683	9.59
480B	TEMPLE CITY FIRE STATION	S	38 C2	34-06-31	118-03-25	404	9.70
482	LOS ANGELES-U.S.C.	S	43 F6	34-01-14	118-17-15	208	8.19
488B	KAGEL CANYON PATROL STATION	S	3 E4	34-17-45	118-22-30	1450	10.53
491D	PACIFIC PALISADES	S	40 C4	34-02-22	118-31-43	293	10.13
492A	CHILAO-HWY MAINTENANCE STA.	A	N C1	34-19-05	118-00-30	5275	16.90
493D	SAND CANYON-MACMILLAN RANCH	A	128 D3	34-23-17	118-24-50	1805	12.84*
497	CLAREMONT-SLAUGHTER	8.81	91 A1	34-07-35	117-43-55	1350	13.71
517B	LEWIS RANCH	A	(192A)	34-25-12	117-53-11	4615	10.90
542	FAIRMONT	SP	(145)	34-42-15	118-25-40	3050	9.98
560A	LA VERNE HEIGHTS	S	90 E2	34-06-48	117-45-02	1210	13.17
564C	LLANO	S	185 J9	34-29-13	117-50-02	3390	3.78
591B	SANTA ANITA RESERVOIR	SP	20 E5	34-11-08	118-06-16	1205	14.87
598C	NEENACH-ERSTAD	S	(143)	34-46-28	118-35-55	3062	6.18
598D	NEENACH-CHECK 43-D.W.R.	SP	(143)	34-47-40	118-37-15	2965	9.30
610B	PASADENA-CITY HALL	SP	27 A4	34-08-54	118-08-36	864	10.95
612B	PASADENA-CHLORINE PLANT	SP	19 E3	34-12-04	118-09-49	1160	15.66
613C	PASADENA FIRE STATION	SP	27 B5	34-07-15	118-08-05	779	10.84
619	SAN ANTONIO CYN-SIERRA P. H.	A	P F5	34-12-29	117-40-26	3110	19.80
627	SAN GABRIEL CANYON-P. H.	SP A	86 D3	34-09-20	117-54-28	744	13.77
634C	SANTA MONICA	S	49 A1	34-00-43	118-29-27	94	8.81
662D	LONG BEACH AIRPORT	SP	71 A6	33-49-00	118-09-00	34	8.98
680B	WESTWOOD (U.C.L.A.)	SP	41 E1	34-04-10	118-26-30	430	9.73
683B	SUNSET RIDGE	S A	19 E4	34-12-53	118-08-47	2110	18.64
694G	BIG TUJUNGA CANYON-CAMP 15	A	M D6	34-17-22	118-17-17	1525	11.50
695B	TUJUNGA CANYON-VOGEL FLAT	S	M B2	34-17-12	118-13-32	1850	15.71
716	LOS ANGELES-DUCOMMUN ST.	SP A AP	44 E3	34-03-09	118-14-13	306	9.07
722C	BELLEVIEW	S	171 B3	34-37-23	118-13-55	2880	6.04
726C	ANGELES CREST GUARD STATION	S	M D4	34-14-01	118-11-04	2300	17.16
734C	L. A. INTERNATIONAL AIRPORT	SP AP	56 C3	33-56-25	118-23-44	105	8.21
735H	BELL CANYON	A	5 D4	34-11-40	118-39-23	895	11.60
740B	SAN DIMAS CANYON-FERN NO.2	AP	P F6	34-11-48	117-41-45	5200	19.30*
741	SAN DIMAS CYN	AP	P E6	34-11-41	117-44-26	2675	15.50*
742C	SAN GABRIEL FIRE DEPARTMENT	SP	37 E3	34-06-11	118-05-56	445	10.55
747	SANDBERG-AIRWAYS STATION	SP AP	(142)	34-44-47	118-43-29	4517	8.50*
749B	BURBANK VALLEY PUMP PLANT	SP AP	17 A5	34-11-11	118-20-54	655	9.24
750B	PALMDALE REGIONAL AIRPORT	S	172 F6	34-37-20	118-05-00	2528	4.35
771B	PACIFIC PALISADES-RIVIERA	S	40 F3	34-03-03	118-29-58	315	9.79*
794	LOWER FRANKLIN RESERVOIR	SP	33 B4	34-05-43	118-24-40	585	9.32*
795	PASADENA-JOURDAN	SP	27 F4	34-08-52	118-05-14	705	11.41
797	DE SOTO RESERVOIR	SP	6 D1	34-16-17	118-35-12	1127	11.92
801B	MAGIC MOUNTAIN	AP	(195)	34-23-18	118-19-27	4720	14.02

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Station No.	Station Name	Type of Gage	Thomas Guide Page	North Latitude	West Longitude	Gage Elev. (Feet)	Seasonal Total (Inches)
802C	EAGLE ROCK RESERVOIR	SP	26 C4	34-08-47	118-11-20	970	10.68
807	ASCOT RESERVOIR	SP AP	36 C5	34-04-46	118-11-14	620	8.98
1005B	MINT CANYON FIRE STATION	S	(180)	34-30-35	118-21-40	2300	7.45
1006	SAN PEDRO-CITY RESERVOIR	SP A	78 F2	33-44-37	118-17-47	150	9.36
1011B	PALOS VERDES FIRE STATION	S	78 A1	33-45-25	118-21-11	1275	9.96
1012B	CASTAIC JUNCTION	S A	123 E6	34-26-18	118-36-43	1005	8.20
1017B	LITTLE ROCK CREEK ABOVE DAM	A	(191)	34-28-41	118-01-24	3280	6.50
1020B	PADUA HILLS PATROL STATION	S	96 D4	34-08-52	117-41-55	1800	14.47
1025	MALIBU BEACH-DUNNE	S	113 E5	34-02-00	118-42-42	160	8.54
1029C	TUJUNGA-MILL CREEK SUMMIT	AP S	(197)	34-23-22	118-04-49	4990	13.12
1037	ARCADIA-ARBORETUM	S	28 C4	34-08-48	118-02-59	565	12.67
1041B	SANTA FE DAM	AP	39 D1	34-07-04	117-58-24	427	10.54
1046B	SANTA ANITA CYN-CHANTRY FLAT	S	20A F1	34-11-46	118-01-20	2175	19.36
1050F	OLD TOPANGA CANYON	S	108 F3	34-06-24	118-37-43	1000	15.91
1051B	CANOGA PARK-PIERCE COLLEGE	SP	12 E5	34-10-51	118-34-23	800	10.90
1058B	PALMDALE	SP AP	172 E7	34-35-17	118-05-31	2595	4.34
1060B	LITTLE ROCK-SYCAMORE CAMP	A	(191)	34-25-02	117-58-13	4000	9.10
1062	BUCKHORN FLAT	A	(199)	34-20-44	117-55-08	6760	19.60*
1063	SOLEDAD PASS	S	183 E9	34-29-35	118-05-28	3520	7.92
1068	RATTLESNAKE CANYON	S	105 C5	34-05-00	118-51-55	1290	13.84*
1070	MANHATTAN BEACH	S	62 D4	33-53-00	118-23-19	182	7.67
1071B	DESCANSO GARDENS	S	19 B2	34-12-07	118-12-46	1325	12.74
1072B	LITTLE TUJUNGA RANGER STA.	SP A	3 F5	34-17-37	118-21-38	1275	11.82
1074	LITTLE GLEASON	A	(197)	34-22-43	118-08-57	5600	13.29
1075	UPPER WOLFSKILL	AP	96 B2	34-10-13	117-43-16	3625	18.78*
1076B	MONTE CRISTO RANGER STATION	SP	M E1	34-19-42	118-07-20	3360	11.62
1077B	MONROVIA-FIVE POINTS	S	29 B1	34-09-58	117-59-37	962	15.70
1081B	GLENDALE-GREGG	SP	18 D4	34-11-45	118-14-30	1350	12.07
1087	GREEN-VERDUGO PUMPING PLANT	S	10 B3	34-15-25	118-20-11	1340	9.52*
1088B	LA HABRA HEIGHTS	S A	84 E2	33-56-55	117-57-51	445	10.40
1090	LOS ALAMITOS	SP	81 B6	33-48-35	118-04-35	25	9.50*
1092B	BUENA PARK	3"P	OC10 C1	33-51-28	117-59-29	80	9.20*
1095	ORANGE COUNTY RESERVOIR	SP AP	OC 2 F4	33-56-07	117-52-58	660	10.00
1104	BOUQUET CANYON AT TEXAS CYN	S	(180)	34-30-35	118-27-00	1760	9.68*
1107D	LA TUNA DEBRIS BASIN	A	10 C5	34-14-13	118-19-37	1160	8.50
1111C	DEVILS PUNCHBOWL	S	(192A)	34-24-48	117-51-25	4760	10.70*
1113	DOMINGUEZ WATER CO.	A	69 F4	33-49-54	118-13-30	30	9.80
1114B	WHITTIER NARROWS DAM	AP	47 A6	34-01-29	118-05-02	239	10.53
1115	SAN ANTONIO DAM	AP SP	96 F3	34-09-24	117-40-20	2120	15.49
1126A	LOS ANGELES-EAST VALLEY	8.81	16 B3	34-12-30	118-24-35	780	9.61
1128	WRIGHTWOOD FIRE DEPARTMENT	SP	S.B.CO.	34-21-34	117-37-57	5960	9.20
1129B	NICHOLAS CANYON	S	110 D3	34-02-52	118-54-57	340	10.86
1132	OAK FLAT GUARD STATION	S	(166)	34-35-56	118-43-15	2800	15.00*
1140	ROSEMEAD	8.81	38 B5	34-04-53	118-03-55	305	12.01
1147	EL CABALLERO COUNTRY CLUB	S	21 C4	34-08-52	118-31-53	1000	11.08*
1152	CLEAR CREEK RANGER STATION	S	M D3	34-16-15	118-09-11	3625	16.20*
1158	TORRANCE MUNICIPAL AIRPORT	S	73 B2	33-47-59	118-20-08	102	9.01
1166B	MILE HIGH RANCH	S	(193)	34-24-40	117-46-15	5280	7.82
1169B	PIRU-TEMESCAL GUARD STATION	SP	V.CO.	34-28-22	118-45-21	1150	11.92
1170B	THOUSAND OAKS WEATHER STA.	AP	V.CO.	34-10-44	118-51-01	805	10.59
1171B	CAMULOS RANCH	SP AP	V.CO.	34-24-22	118-45-21	725	11.37
1172B	PIRU CANYON ABOVE PIRU LAKE	AP	(177)	34-30-48	118-45-24	1120	11.54
1173B	TAPO CANYON	AP	V.CO.	34-19-54	118-42-39	1525	10.74
1177B	BARD RESERVOIR	AP	V.CO.	34-14-32	118-49-41	1010	10.38
1183B	LA HABRA FIRE STATION	3"P	84 F4	33-55-53	117-57-17	315	10.20*
1190	PACOIMA CYN-NORTH FORK	S	(195)	34-23-17	118-15-06	4180	15.81
1191	BEAR DIVIDE	S	128 F6	34-21-35	118-23-37	2700	17.11

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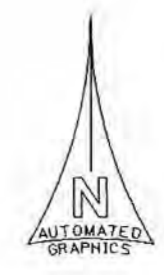
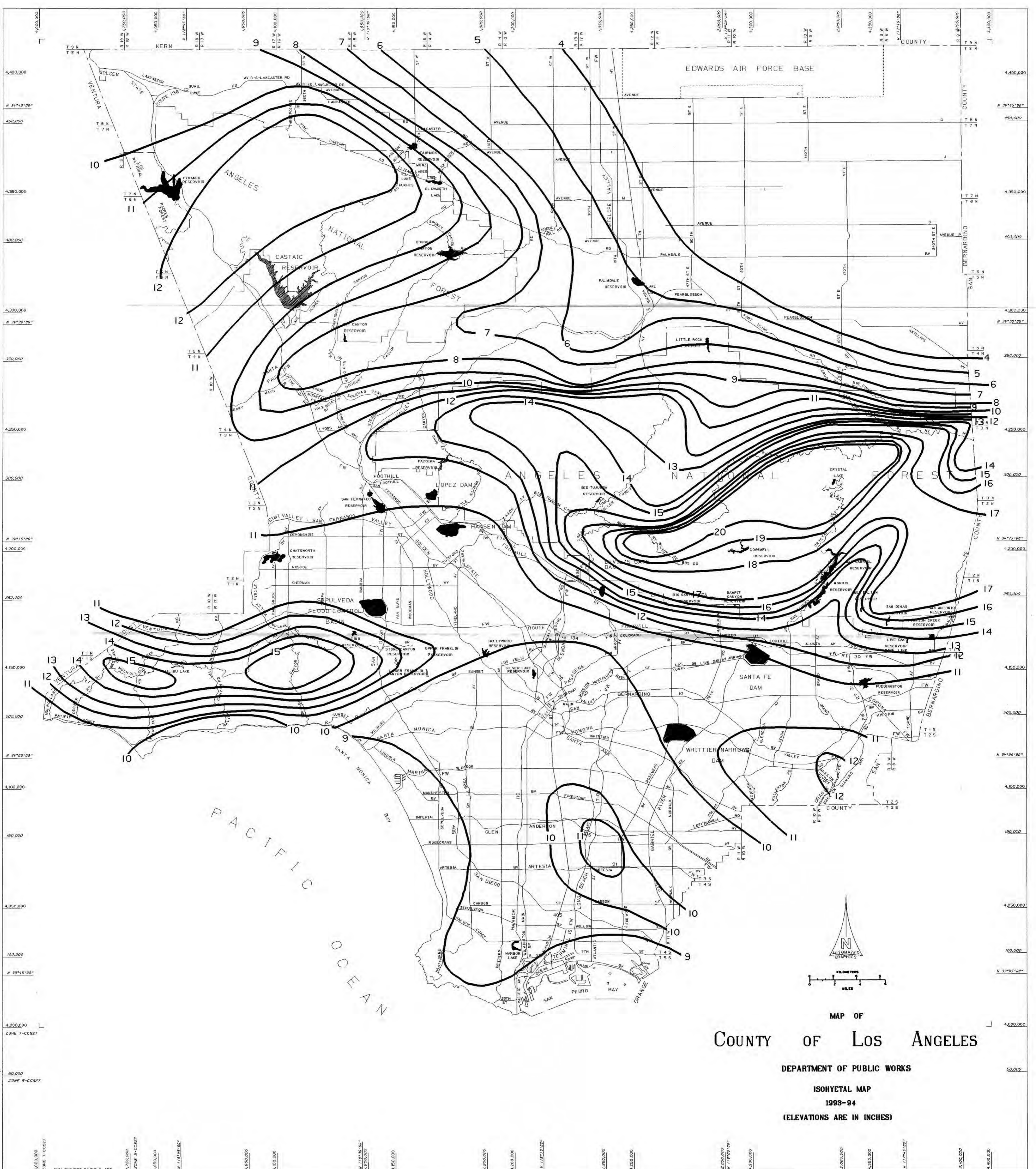
Station No.	Station Name	Type of Gage	Thomas Guide Page	North Latitude	West Longitude	Gage Elev. (Feet)	Seasonal Total (Inches)
1192	CARSON FIRE STATION	8.81	64 C6	33-52-04	118-15-45	92	9.15
1193	WESTLAKE VILLAGE	S	102 A5	34-08-19	118-49-05	885	7.96*
1194	SANTA YNEZ RESERVOIR	S	109 F6	34-04-23	118-33-59	735	9.78*
1195	CHINO FIRE STATION NO. 2	SP	S.B.CO.	33-59-00	117-43-20	655	6.49
1196	MONTCLAIR FIRE DEPARTMENT	SP	95 E2	34-03-41	117-41-16	965	9.30
1197	CAJON WEST SUMMIT	SP	S.B.CO.	34-23-30	117-34-35	4838	4.30*
1198	PHELAN FIRE CONTROL	SP	S.B.CO.	34-25-30	117-34-00	4160	4.16
1211	HACIENDA GOLF CLUB	S	98A A1	33-57-40	117-56-57	750	11.00*
1212	LANCASTER FSS/FAA	SP	147 C9	34-44-00	118-13-00	2340	4.14
1216	RANCHO PALOS VERDES	S	77 C1	33-45-10	118-23-32	780	8.15
1217	LOS ANGELES COUNTRY CLUB	S	42 A1	34-04-10	118-25-17	380	9.72
1222	NORTHRIDGE-GARLAND	8.81	7 E3	34-14-17	118-30-59	911	10.14
1223	WOODLAND HILLS-SHERMAN	8.81	100 E1	34-10-06	118-38-57	1035	10.85
1239	MALIBU-BIG ROCK MESA	A	115 A4	34-02-34	118-37-16	725	11.50
1240	PEARBLOSSOM-CALIF.D.W.R.	SP AP	185 B7	34-30-32	117-55-15	3050	4.13
1242	ROCKY BUTTES	A	(162)	34-39-00	117-51-48	2540	3.60*
1243	REDMAN	A	(150)	34-45-52	117-55-30	2360	2.70
1244	LANCASTER-ROPER	A	161 C6	34-40-27	118-00-37	2450	3.90
1245	QUARTZ HILL-HALL	A	159 B7	34-40-28	118-14-40	2395	5.20
1246	SCOTT RANCH	A	(145)	34-46-59	118-28-10	2710	5.10
1247	NORTH LANCASTER	A	148 D6	34-45-41	118-07-30	2310	3.10
1248	MESCAL-SMITH	A	(194)	34-28-03	117-42-40	3810	3.60
1249	RELAY	A	(150)	34-45-43	117-47-55	3140	4.10
1250	AVEK	A	185 B5	34-32-21	117-55-23	2825	3.50
1251	PALOS VERDES-WHITES POINT	SP	78 D6	33-42-50	118-19-02	100	8.27
1252	PALOS VERDES LANDFILL	SP	73 A4	33-45-40	118-20-03	400	9.79
1253	CARSON-COUNTY SANITATION	SP	74 A2	33-48-07	118-16-58	40	8.88*
1254	LONG BEACH RECLAMATION PLANT	SP	76 F1	33-48-11	118-05-20	20	10.90
1255	LOS COYOTES RECLAMATION	SP	66 E4	33-53-05	118-06-24	70	9.49
1256	SOUTH GATE TRANSFER STATION	SP	59 E3	33-56-40	118-09-56	100	7.66
1257	SAN JOSE CREEK RECLAMATION	SP	47 F4	34-01-55	118-01-16	275	10.46
1258	PUENTE HILLS LANDFILL	SP	47 E5	34-01-35	118-01-49	300	10.85
1259	WHITTIER NARROWS RECLAMATION	SP	47 B1	34-03-59	118-03-54	225	10.53
1260	SPADRA LANDFILL	SP	93 E4	34-02-36	117-49-50	700	10.47
1261	LA CANADA RECLAMATION PLANT	SP	19 D2	34-13-00	118-11-14	1800	13.19
1262	SAUGUS RECLAMATION PLANT	SP	124 B9	34-24-48	118-32-23	1150	9.03
1263	VALENCIA RECLAMATION PLANT	SP	123 D7	34-25-55	118-37-13	1000	8.00
1264	CALABASAS LANDFILL	SP	100A E3	34-08-25	118-42-35	800	10.70
1265	SCHOLL CANYON LANDFILL	SP	26 C4	34-08-38	118-11-07	1000	11.59
1266	MISSION CANYON LANDFILL	SP	22 B6	34-08-40	118-28-45	1150	10.39
1267	LANCASTER RECLAMATION PLANT	SP	147 H4	34-46-38	118-09-11	2302	3.35
1268	PALMDALE RECLAMATION PLANT	SP	172 G6	34-35-30	118-05-10	2565	3.49
1271	POMONA WASTE RECLAMATION	SP	94 B3	34-03-18	117-47-34	786	10.56
1093	FULLERTON AIRPORT	SP AP	83 D5	33-52-23	117-58-24	100	9.80*

LEGEND:

S	Standard 8 inch diameter non-recording gage owned by the Department of Public Works
8.81	8.81 inch diameter non-recording gage owned by the Department of Public Works
A	Automatic recording gage owned by the Department of Public Works
ST	Storage type gage owned by the Department of Public Works
SP	Standard 8 inch diameter non-recording gage owned by outside interest
AP	Automatic recording gage owned by outside interest
()	Thomas Guide future page
O.CO.	Orange County Thomas Guide page
V.CO.	Ventura County Thomas Guide page
S.B.CO.	San Bernardino County Thomas Guide page

Active Rainfall Stations 1993-94

Station No.	Station Name	Type of Gage	Thomas Guide Page	North Latitude	West Longitude	Gage Elev. (Feet)	Seasonal Total (Inches)
DSC.	Discontinued						
INC.	Incomplete records						
*	Estimated Seasonal Total						
N.R.	No Record(Data Not Available)						



MAP OF
COUNTY OF LOS ANGELES
 DEPARTMENT OF PUBLIC WORKS
ISOHYETAL MAP
1993-94
 (ELEVATIONS ARE IN INCHES)

EVAPORATION

EVAPORATION

Data for 14 active evaporation stations were reported to the Department during the 1993-94 water year. Daily records of active and inactive Department stations, as well as some stations of other agencies, are available in the Department's files. Monthly and seasonal evaporation has been published in the Department's Annual or Biennial Reports on Hydrologic Data since the 1931-32 season.

COOPERATION

The Department receives evaporation data from The Metropolitan Water District, Palmdale Water District, California Department of Water Resources, and Descanso Gardens.

LENGTH OF RECORD

The first land pan installed by this Department was at Santa Anita Dam in March 1929. There are 30 evaporation stations which have records of 15 seasons or more in the Department's files.

EVAPORATION STATION LIST 1993-94

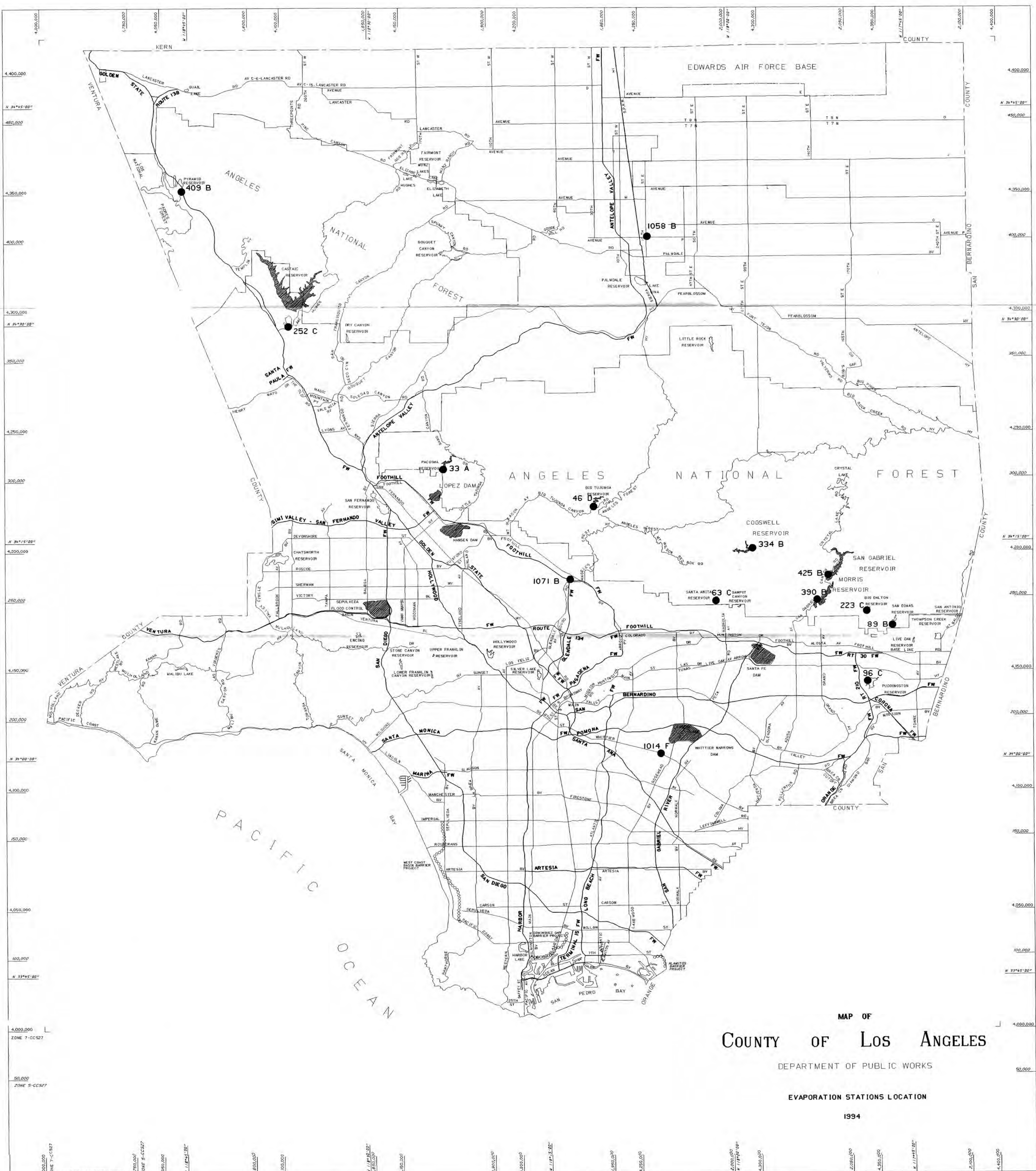
STA. NO.	STATION NAME	EQUIPMENT	ELEVATION OF PAN	THOMAS GUIDE	NORTH LATITUDE	WEST LONGITUDE
33 A	Pacoima Dam	24X36 S	1500 ft.	482 F1	34-19-48	118-23-59
46 D	Big Tujunga Dam	24X36 S	2315 ft.	xi	34-17-40	118-11-14
63 C	Santa Anita Dam	24X36 S	1400 ft.	710 B2	34-11-03	118-01-12
89 B	San Dimas Dam	24X36 S	1350 ft.	470 F2	34-09-10	117-46-17
96 C	Puddingstone Dam	24X36 S	1030 ft.	600 A4	34-05-31	117-48-24
223 B	Big Dalton Dam	24X36 S	1587 ft.	570 B4	34-10-06	117-48-36
252 C	Castaic Reservoir	48X10 S	1150 ft.	4369 H6	34-29-53	118-36-53
334 B	Cogswell Dam	24X36 S	2300 ft.	ix	34-14-37	117-57-35
390 B	Morris Dam	72X36 US	1210 ft.	ix	34-10-53	117-52-43
409 B	Pyramid Reservoir	48X10 S	2505 ft.	593 E1	34-40-34	118-46-47
425 B	San Gabriel Dam	24X36 S	1481 ft.	ix	34-12-19	117-51-38
1014 F	Rio Hondo S.G.	24X36 S	170 ft.	676 D4	33-59-57	118-06-04
1058 B	Palmdale	24X36 S	2595 ft.	4196 E6	34-35-17	118-05-31
1071 B	Descanso Gardens	24X36 S	1325 ft.	535 B4	34-12-07	118-12-46

LEGEND

- 24X36 S** = Screened land pan, 24 inches in diameter by 36 inches deep.
- 48X10 S** = Screened land pan, 48 inches in diameter by 10 inches deep.
- 72X36 US** = Unscreened land pan, 72 inches in diameter by 36 inches deep.
- ()** = Thomas Guide future page assignment.

MONTHLY EVAPORATION SUMMARY FOR WATER YEAR 1993-94 (inches)

STA. NO.	STATION NAME	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEP.	TOTAL
33 A	Pacoima Dam	8.39	7.96	6.73	7.71	5.02	5.87	5.69	4.30	9.05	8.16	11.19	9.25	89.32
46D	Big Tujunga Dam	7.71	6.53	3.33	5.33	4.79	5.14	5.78	5.13	9.70	11.26	12.40	9.55	86.65
63 C	Santa Anita Dam	4.80	4.05	2.99	3.58	1.92	3.03	2.71	2.90	5.28	5.33	7.46	6.18	50.23
89 B	San Dimas Dam	3.66	2.38	1.66	2.10	1.57	2.82	3.50	3.41	6.68	7.17	8.35	6.10	49.40
96 C	Puddingstone Dam	5.75	4.30	2.80	3.42	2.38	3.97	4.94	4.84	9.00	9.35	10.27	7.90	68.92
223 C	Big Dalton Dam	3.73	2.74	1.52	1.87	2.95	2.22	3.23	3.31	6.86	7.43	9.59	6.60	52.05
252 C	Castaic Reservoir	6.37	4.47	3.06	4.03	2.59	4.49	4.00	4.58	9.75	10.58	11.06	8.45	73.43
334 B	Cogswell Dam	4.09	2.76	1.50	1.60	1.39	2.47	3.26	3.92	7.55	9.00	8.86	6.30	52.70
390 B	Morris Dam	7.42	6.52	4.67	4.61	3.18	5.40	5.44	5.65	11.03	10.72	12.76	10.00	87.40
409 B	Pyramid Reservoir	6.07	3.59	2.93	3.39	6.20	3.93	5.25	5.74	10.63	10.32	10.44	8.40	76.89
425 B	San Gabriel Dam	6.75	5.15	3.73	4.49	2.53	4.51	4.75	4.63	9.07	8.53	11.07	9.27	74.48
1014 F	Rio Hondo S.G.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	8.25	6.13	INC.
1058 B	Palmdale	6.69	4.29	2.82	2.96	2.67	5.41	8.11	9.30	14.95	16.88	15.18	10.25	99.51
1071 B	Descanso Gardens	3.53	2.30	1.56	1.83	1.45	2.73	3.24	2.66	6.01	6.37	7.22	5.32	44.22



MAP OF COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

EVAPORATION STATIONS LOCATION

1994

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ZONE 7-CC527
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RUNOFF

RUNOFF

The Department operated 64 water-stage recording stations and 3 witness gages during the 1993-94 water year. Data from 40 of those stations are summarized and published in this volume.

RECORDS OF STREAMFLOW

Records published give the following information:

1. Station description which presents location, drainage area, type of channel, control, regulations, diversions, and available records.
2. Discharge tabulation which summarizes the maximum, minimum, and mean of the daily flow rates in second-feet for each month and the total monthly volumes in acre-feet.

ALERT SYSTEM (AUTOMATIC LOCAL EVALUATION IN REAL TIME)

The Department of Public Works has installed a state-of-the-art ALERT computer system to monitor meteorological conditions at 59 locations in the County. The system includes a network of field sensors that monitor precipitation amounts, river stages, and reservoir levels.

During the report period, the Department has continued to install and expand its ALERT System. The Department's ALERT system also receives rainfall, streamflow, and reservoir data from the Corps of Engineers' Los Angeles Telemetry System.

COOPERATION

The Department receives or has access to streamflow data from other agencies. Data from 5 of the Department's stations are published in the United States Geological Survey's annual water supply papers.

Agencies with which the Department exchanges data are:

United States Geological Survey, Water Resource Division
United States Corps of Engineers
State Department of Water Resources
The Metropolitan Water District
San Gabriel River Water Committee

LEGEND

Stations are designated by letters and numbers which indicate ownership, operation agency, and type of station. The letters used have the following connotations:

Prefix F - Indicates a station owned and operated by the Los Angeles County Department of Public Works.

Prefix E - Indicates a station owned by the Corps of Engineers, Department of the Army, but operated and maintained by the United States Geological Survey.

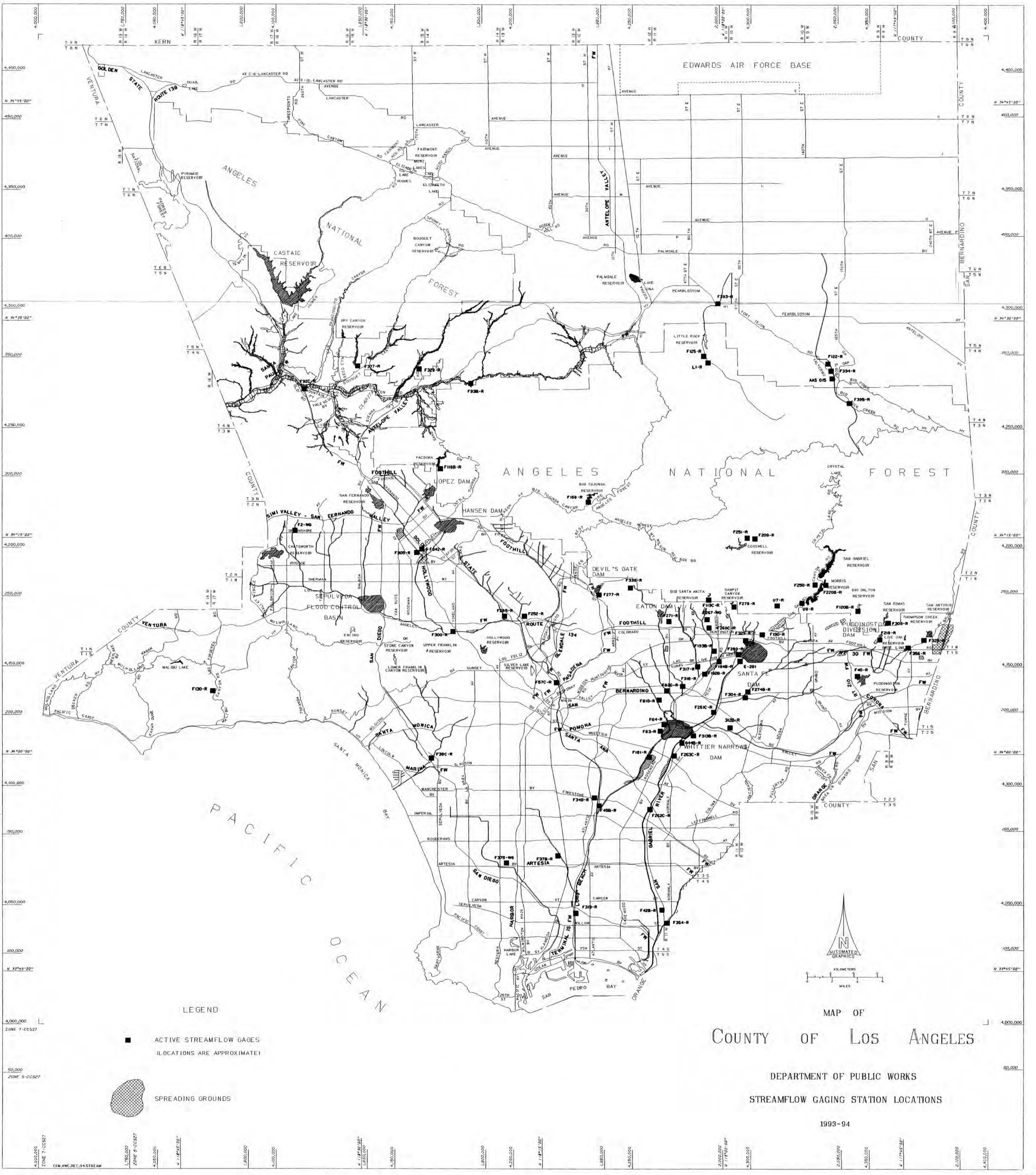
Prefix U - Indicates a station originally constructed and operated by the United States Geological Survey, Water Resources Division, now operated by the Department.

Prefix P - Indicates a station owned and operated by the Department, formerly operated by the Pasadena Water Department.

Prefix L - Indicates a station owned and operated by the Department, formerly owned by Little Rock Water District.

Suffix R - Indicates a recorder station.

Suffix B - Indicates that the station has been moved. B represents second location, C a third location, etc.



LEGEND

■ ACTIVE STREAMFLOW GAGES
 (LOCATIONS ARE APPROXIMATE)

▨ SPREADING GROUNDS

MAP OF
 COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS
 STREAMFLOW GAGING STATION LOCATIONS

1993-94

INDEX OF STREAM GAGING STATIONS

STATION	NAME	THOMAS GUIDE PG.	ALERT NO.	REGU- LATED	DRAINAGE AREA *
L1-R	LITTLE ROCK CREEK ABOVE LITTLE ROCK DAM	J		NO	49.20
F2WG	BROWNS CREEK AT VARIEL AVENUE	6 / D-2		NO	13.50
U7-R	FISH CREEK ABOVE MOUTH OF CANYON	86 / B-2		NO	6.36
U8-R	SAN GABRIEL RIVER BELOW MORRIS DAM	86 / F-1	415	YES	212.40
AAS(015)	VALYERMO S.G., BIG ROCK CK. D/S VALYERMO RD.	192/H-5			
F32B-R	THOMPSON CREEK BELOW THOMPSON CREEK DAM	96 / C-5	433	YES	3.70
F34D-R	LOS ANGELES RIVER BELOW FIRESTONE BLVD.	59 / E-3	315	YES	596.00
F37B-R	COMPTON CREEK NEAR GREENLEAF DRIVE	64 / F-4		NO	22.60
F38C-R	BALLONA CREEK ABOVE SAWTELLE BLVD.	50 / B-3	369	YES	88.60
F40-R	PUDDINGSTONE CREEK BELOW PUDDINGSTONE DAM	89 / F-4	427	YES	33.20
F42B-R	SAN GABRIEL RIVER ABOVE SPRING STREET	76 / F-1	435	YES	231.00
F45B-R	RIO HONDO ABOVE STUART AND GRAY ROAD	59 / E-3	307	YES	140.00
F57C-R	LOS ANGELES RIVER ABOVE ARROYO SECO	35 / F-5		YES	511.00
F64-R	RIO HONDO ABOVE MISSION BRIDGE	47 / B-5		YES	115.00
F81D-R	ALHAMBRA WASH NEAR KLINGERMAN STREET	46 / F-2	347	NO	15.20
F82C-R	RUBIO WASH AT GLENDON WAY	38 / A-6	353	YES	10.90
F83	MISSION CREEK AT SAN GABRIEL BLVD.			YES	4.2
F92C-R	SANTA CLARA RIVER AT OLD ROAD BRIDGE	123 / G-7		YES	410.40
F93	SANTA CLARA RIVER AT LANG RAILROAD BRIDGE	125 / J-7		NO	157.30
F118B-R	PACOIMA CREEK FLUME BELOW PACOIMA DAM	3 / C-1	330	YES	28.20
F119C-R	SANTA ANITA CREEK BELOW SANTA ANITA DAM	20A / F-2	345	YES	10.80
F120B-R	BIG DALTON CREEK BELOW BIG DALTON DAM	87 / F-2	418	YES	4.80
F122-R	PALLETT CREEK AT VALYERMO HIGHWAY	199 / G-4		NO	15.80
F125-R	SANTIAGO CREEK ABOVE LITTLE ROCK CREEK	J		NO	11.20
F130-R	MALIBU CREEK BELOW COLD CREEK	107 / F-6		YES	104.96
F168-R	BIG TUJUNGA CREEK BELOW BIG TUJUNGA DAM	M / C-2	333	YES	82.30
F181-R	MONTEBELLO STORM DRAIN OUTLET TO RIO HONDO	54 / E-3		NO	9.60
F190-R	SAN GABRIEL RIVER AT FOOTHILL BLVD.	86 / A-5		YES	230.00
F192B-R	RIO HONDO BELOW LOWER AZUSA ROAD	38 / E-4		YES	40.90
F193B-R	SANTA ANITA WASH AT LONGDEN AVENUE	38 / F-1		YES	18.80
F194B-R	SAWPIT WASH BELOW LIVE OAK AVENUE	39 / A-2		YES	16.10
F209-R	SAN GABRIEL RIVER - W. FORK BELOW COGSWELL DAM	N / D-4	410	YES	41.00
F218-R	SAN DIMAS WASH BELOW PUDD. DIVERSION DAM	95A / C-5	424	YES	19.90
F220B-R	SAN GABRIEL - AZUSA CONDUIT 10FT WEIR BELOW DAM	P / A-5		YES	0.00
F250-R	SAN GABRIEL - AZUSA CONDUIT 25FT WEIR BELOW DAM	P / A-5		YES	202.70
F251-R	SAN GABRIEL W. FORK AT TOE OF COGSWELL DAM	N / D-4		YES	39.20
F252-R	VERDUGO WASH AT ESTELLE AVENUE	25 / B-3		YES	26.80
F260C-R	SANTA ANITA WASH BELOW FOOTHILL BLVD.	28 / E-3		YES	17.20
F261C-R	SAN GABRIEL RIVER BELOW VALLEY BLVD.	48 / A-2	351	YES	118.00
F262C-R	SAN GABRIEL RIVER ABOVE FLORENCE AVE.	60 / E-4		YES	215.80
F263C-R	SAN GABRIEL RIVER BELOW S.G. RIVER PKWY	55 / C-1		YES	206.30
F267WG	SIERRA MADRE WASH AT HIGHLAND OAKS AVENUE	28 / E-3		YES	3.80
F271-R	EATON WASH BELOW EATON WASH DAM	27 / F-1	342	YES	12.40
F274B-R	DALTON WASH AT MERCED AVENUE	48 / F-1		YES	35.95
F277-R	ARROYO SECO BELOW DEVIL'S GATE DAM	19 / D-5	336	YES	32.50
F278-R	SAWPIT CREEK BELOW SAWPIT DAM	29 / C-1	339	YES	3.30
F280-R	SANTA FE DIVERSION CHANNEL BELOW SANTA FE DAM	39 / D-2		YES	CONTROLLED
E285-R	BURBANK WESTERN STORM DRAIN AT RIVERSIDE DR.	24 / E-2		YES	25.00
F300-R	LOS ANGELES RIVER AT TUJUNGA AVE.	23 / D-4		YES	401.00

INDEX OF STREAM GAGING STATIONS

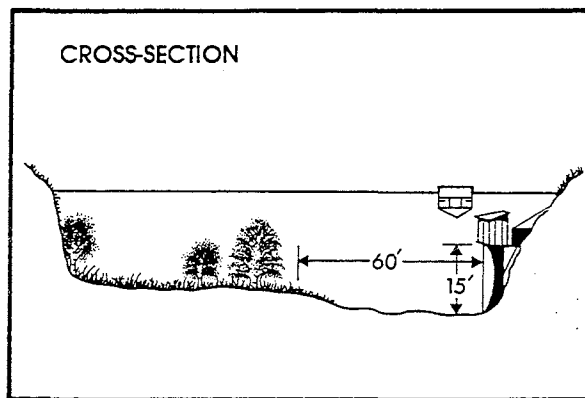
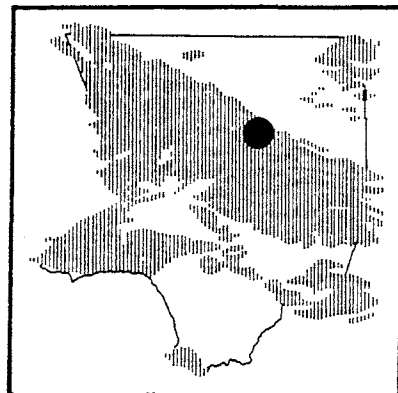
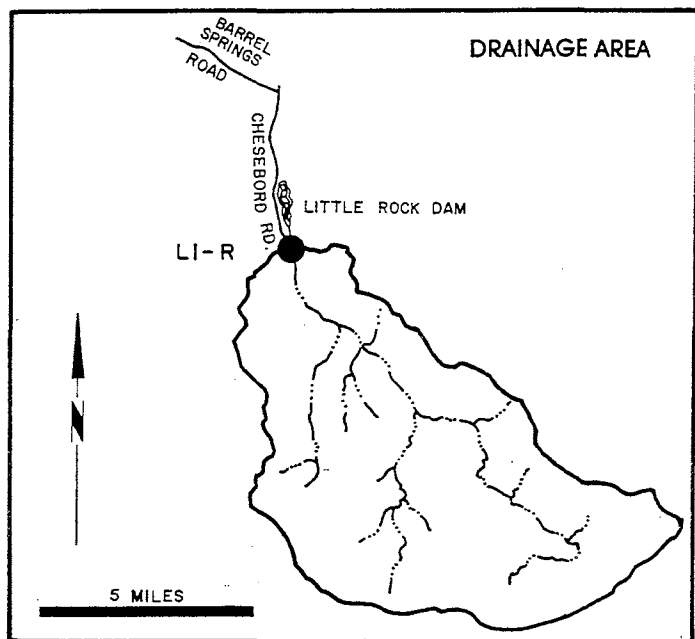
STATION	NAME	THOMAS GUIDE PG.	ALERT NO.	REGU- LATED	DRAINAGE AREA *
F303-R	SAN DIMAS CREEK BELOW SAN DIMAS DAM	95A / C-3	421	YES	16.20
F304-R	WALNUT CREEK ABOVE PUENTE AVENUE	48 / D-1		YES	57.60
F305-R	PACOIMA DIVERSION AT BRANFORD STREET	9 / A-5		YES	48.80
F312B-R	SAN JOSE CHANNEL BELOW SEVENTH AVE.	47 / F-5	324	YES	83.40
F313B-R	RIO HONDO BYPASS CHANNEL ABOVE WHITTIER NAR.	47 / B-5		YES	CONTROLLED
F317-R	ARCADIA WASH BELOW GRAND AVENUE	38 / E-3	355	YES	8.50
F318-R	EATON WASH AT LOFTUS DRIVE	34 / C-6		YES	22.80
F319-R	LOS ANGELES RIVER BELOW WARDLOW RIVER RD.	70 / B-5	313	YES	815.00
F328-R	MINT CANYON CREEK AT FITCH AVENUE	125 / C-5		NO	26.90
F329-R	BRADBURY CHANNEL BELOW CENTRAL AVENUE	29 / F-5		YES	3.30
F338-R	RUBIO DIV. CHANNEL BEL. GOOSEBERRY CYN INLET	20 / C-4		YES	2.10
F342-R	BRANFORD STREET CHANNEL BELOW SHARP AVE.	9 / B-5		YES	5.01
F354-R	COYOTE CREEK BELOW SPRING STREET	76 / F-1	437	YES	185.00
F356-R	LIVE OAK CREEK BELOW LIVE OAK DAM	95A / F-6	430	YES	2.28
F377-R	BOUQUET CANYON CREEK AT URBAN DALE AVENUE	124 / F-5		YES	51.90
F378WG	DOMINGUEZ CHANNEL BELOW WESTERN AVENUE	63 / F-5		NO	37.10
F393-R	LITTLE ROCK AT HIGHWAY 138	184 / D-6		YES	70.00
F394-R	BIG ROCK CREEK UPSTREAM FROM PALLETT CREEK	192 / J-4		NO	34.30
F395-R	MESCAL CREEK AT MOUTH	J		NO	5.71
G44B-R	SAN GABRIEL RIVER ABOVE WHITTIER NAR. DAM	47 / C-6		NO	

* NOTE: All drainage areas in square miles.

LITTLE ROCK CREEK

above Little Rock Dam

STATION NO. L1-R



RECORDER- continuous water stage.
 METHOD OF MEASUREMENTS- wading or from cable car.
 DRAINAGE AREA- 49.2 square miles.
 LOCATION- 2.0 miles above Little Rock Dam, 5.0 miles south of Little Rock.
 REGULATION- none.
 CHANNEL- sand, gravel, and boulders, natural in section.
 CONTROL- channel forms control.
 LENGTH OF RECORD- October 1, 1930 to date.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

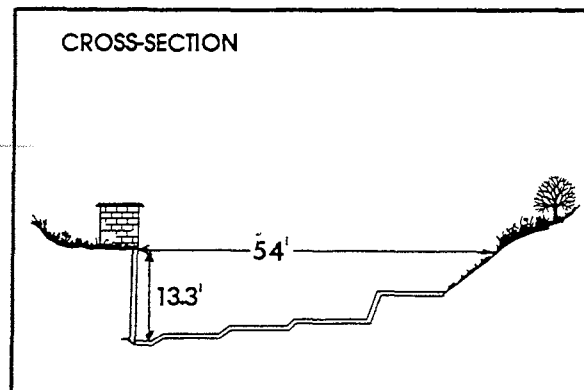
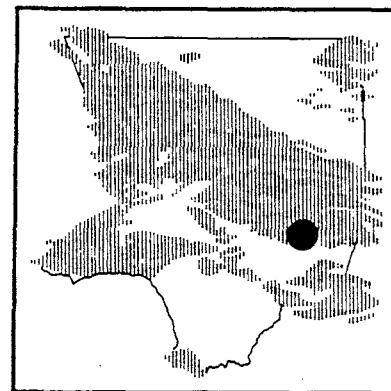
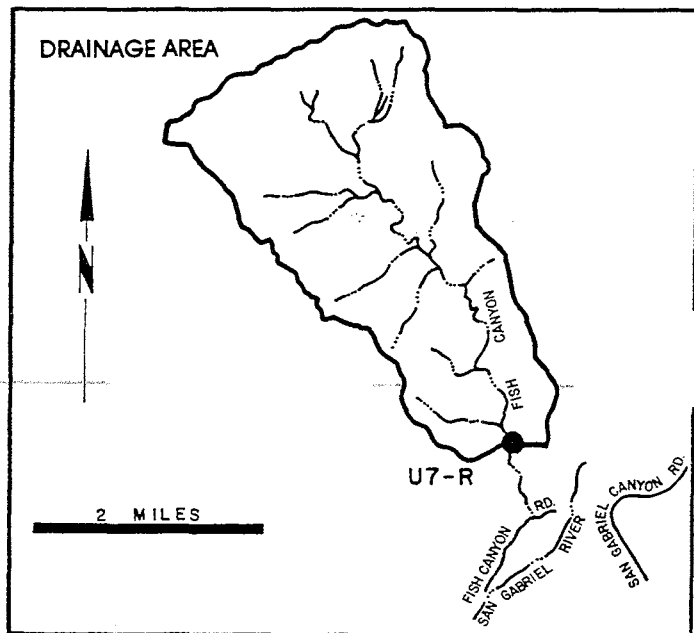
STATION NO.: L1-R

DRAINAGE AREA: 49.20 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	OUT	2.8	5.0	5.5	14.4	25.1	19.6	OUT	OUT	0.0	0.0	0.0
MAX.	OF	4.2	6.5	6.6	46.9	41.9	30.3	OF	OF	0.0	0.0	0.0
MIN.	SERVICE	1.3	3.9	4.8	6.6	17.3	9.4	SERVICE	SERVICE	0.0	0.0	0.0
TOTAL AF		164.0	306.0	341.0	801.0	1,544.0	1,166.0			0.0	0.0	0.0

FISH CREEK

above Mouth of Canyon
STATION NO. U7-R



RECORDER- continuous water stage.
 METHOD OF MEASUREMENTS- wading.
 DRAINAGE AREA- 6.36 square miles.
 LOCATION - 0.8 miles upstream of mouth of canyon and 3.0 miles northeast of Duarte.
 REGULATION- none.
 CHANNEL- natural, rock and gravel.
 CONTROL- concrete control.
 LENGTH OF RECORD- July to September 1916. July 1917 to date.
 REMARKS- operated and maintained by USGS until October 1, 1971.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : U7-R

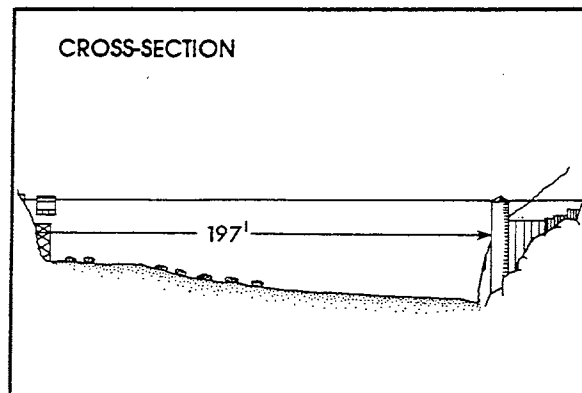
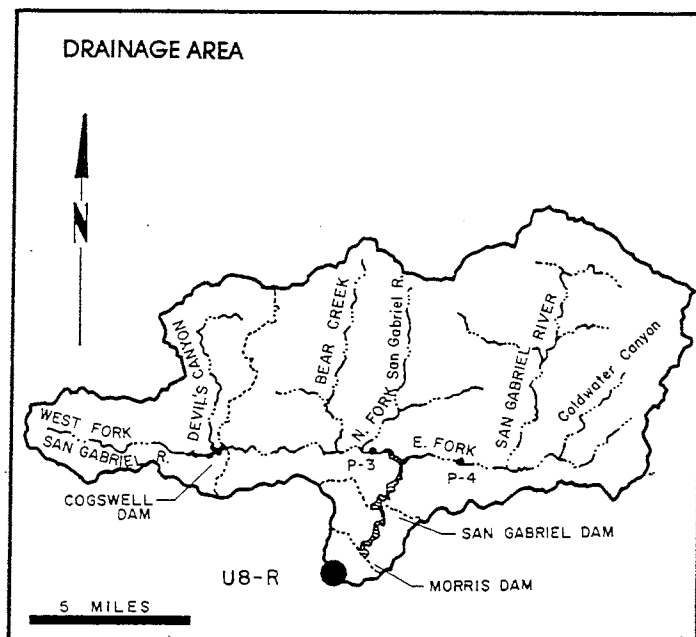
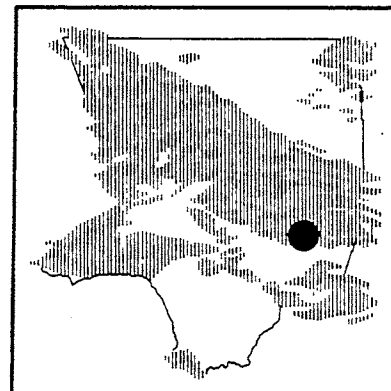
DRAINAGE AREA : 6.36 SQ. MI.

MONTH	OCT.	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.3	1.2	2.0	1.5	2.6	2.1	1.4	0.9	0.6	0.2	0.1	0.1
MAX.	1.6	1.5	3.7	2.8	13.3	9.5	2.1	1.1	1.0	0.3	0.2	0.1
MIN.	1.0	1.0	1.2	1.4	0.3	0.0	0.7	0.8	0.2	0.2	0.1	0.1
TOTAL AF	81.0	70.0	123.0	94.0	146.0	129.0	84.0	58.0	34.0	13.0	7.0	6.0

SAN GABRIEL RIVER

below Morris Dam

STATION NO.U8-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from cable car.

DRAINAGE AREA- 212.4 square miles.

LOCATION- 1.1 miles downstream of Morris Dam, 2.7 miles northeast of Azusa.

REGULATION- all flows regulated by Cogswell, San Gabriel, and Morris Dams.

CHANNEL- gravel and boulders, natural section.

CONTROL- concrete control.

LENGTH OF RECORD- May 1894 to date.

REMARKS- flows up to 90 cfs are at times diverted past the station through the Azusa Conduit; flows at station may include imported water from the MWD outlet below Morris Dam.

WATER YEAR 1993–1994

(DISCHARGE IN CFS)

STATION NO. : U8-R

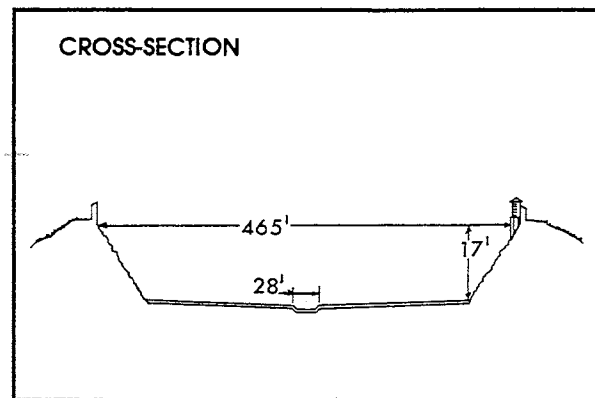
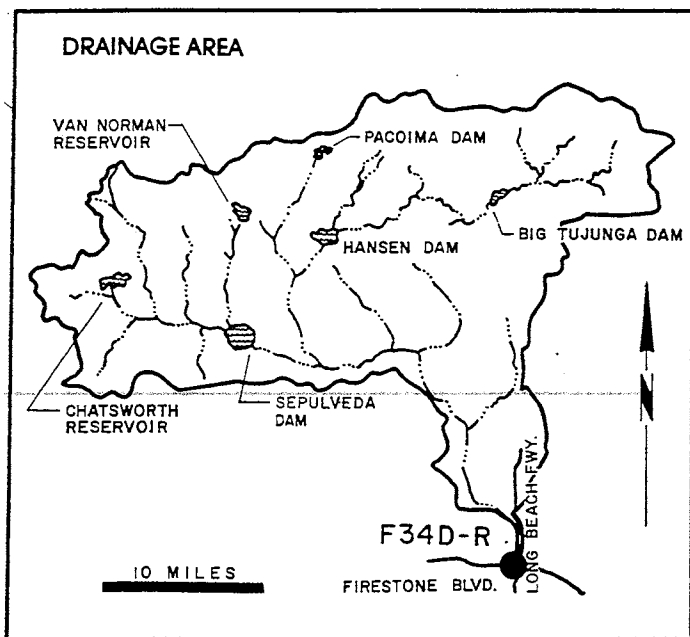
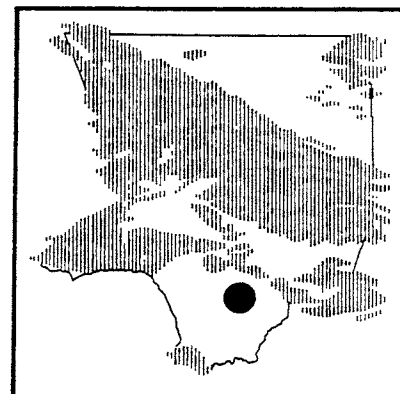
DRAINAGE AREA : 212.40 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	172.0	47.7	32.6	4.2	19.3	0.7	69.0	226.0	105.0	6.3	6.1	0.7
MAX.	330.0	221.0	318.0	4.8	480.0	2.4	212.0	236.0	239.0	182.0	180.0	6.2
MIN.	4.4	4.1	4.0	2.4	0.8	0.1	0.0	220.0	0.4	0.0	0.0	0.0
TOTAL AF	10,600.0	2,836.0	2,007.0	261.0	1,069.0	40.0	4,106.0	13,920.0	6,224.0	387.0	376.0	39.0

LOS ANGELES RIVER

below Firestone Boulevard

STATION NO. F34D-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from bridge.

DRAINAGE AREA- 596.0 square miles.

LOCATION- 472.0 feet downstream of Firestone Boulevard 3.0 miles west of Downey.

REGULATION- partially regulated by Sepulveda, Pacoima, Big Tujunga, Hansen, and Devil's Gate Dam; and by several spreading grounds, reservoirs, and debris basins.

CHANNEL- concrete, with rip-rap side slopes, trapezoidal in section, with trapezoidal low-flow channel.

CONTROL- channel forms control.

LENGTH OF RECORD- at Station F34-R, March 1, 1928 to April 11, 1938. at Station F34B-R, April 11, 1938 to November 3, 1949. at Station F34C-R, November 4, 1949, to December 11, 1956. at Station F34D-R, December 11, 1956 to date.

REMARKS- subject to diversions from Big Tujunga Creek, Arroyo Seco, and other domestic and irrigation diversions.

WATER YEAR 1993-1994

(DISCHARGE IN CFS)

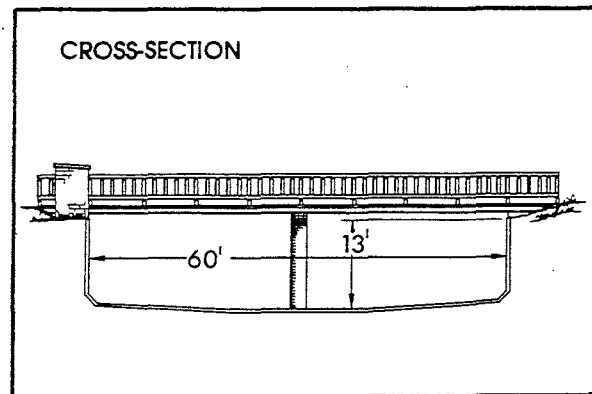
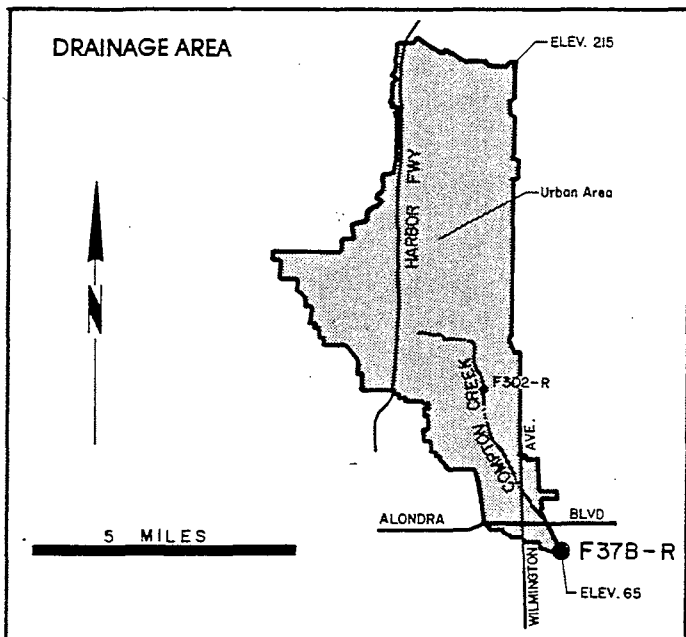
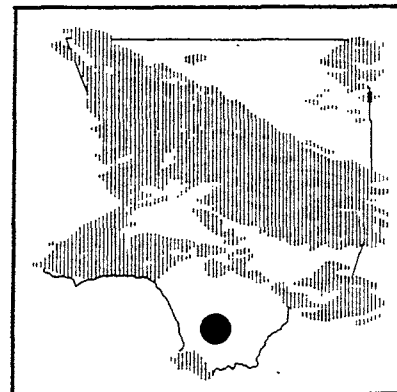
STATION NO.: F34D-R

DRAINAGE AREA: 596.00 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	152.0	177.0	192.0	149.0	502.0	317.0	168.0	160.0	130.0	139.0	128.0	111.0
MAX	442.0	1,200.0	1,720.0	727.0	3,870.0	2,800.0	451.0	219.0	150.0	147.0	136.0	120.0
MIN	111.0	106.0	93.6	92.6	122.0	124.0	124.0	148.0	119.0	124.0	121.0	103.0
TOTAL AF	9,350.0	10,510.0	11,780.0	9,160.0	27,870.0	19,520.0	10,020.0	9,810.0	7,757.0	8,535.0	7,874.0	6,585.0

COMPTON CREEK

near Greenleaf Drive
STATION NO. F37B-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from bridge.

DRAINAGE AREA- 22.6 square miles.

LOCATION- 120.0 feet above Greenleaf Boulevard, 1.5 miles south west of Compton.

REGULATION- none.

CHANNEL- concrete, rectangular in section, 60 feet wide by 13 feet deep.

CONTROL- channel forms control.

LENGTH OF RECORD- at Station F37-R January 22, 1928 to June 9, 1938. at Station F37B-R October 3, 1938 to date

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F37B-R

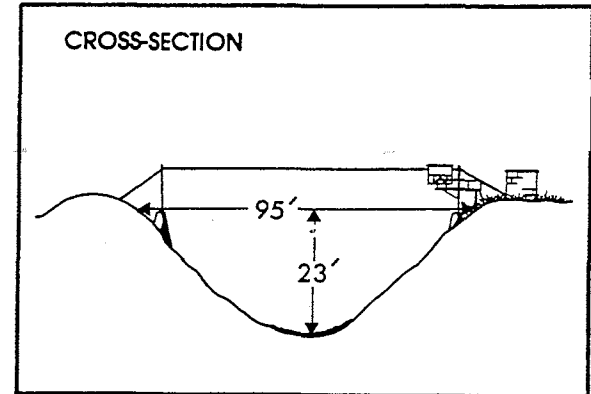
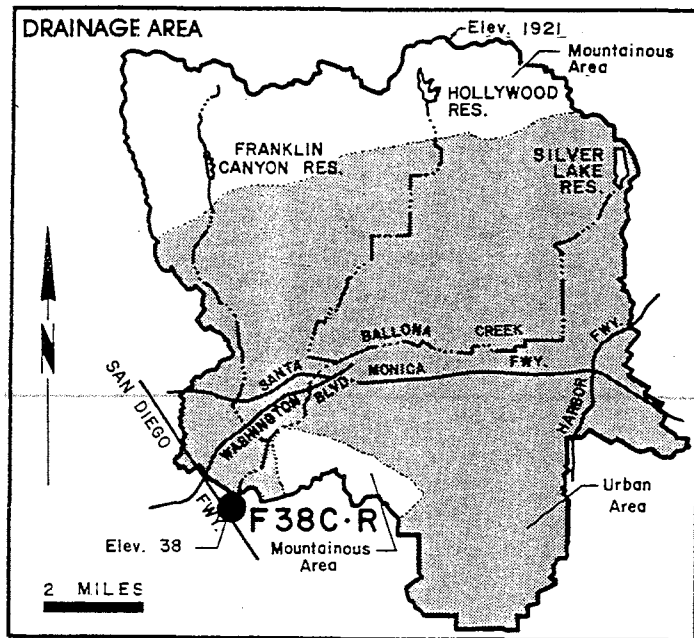
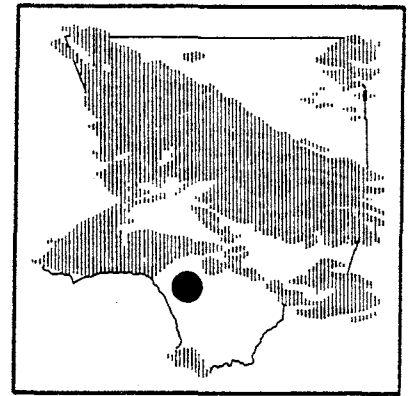
DRAINAGE AREA : 22.60 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.7	7.8	5.3	2.3	34.3	14.1	3.6	1.3	0.7	0.9	1.1	0.9
MAX.	15.0	143.0	57.1	40.2	290.0	219.0	55.8	6.1	0.9	0.9	1.5	0.9
MIN.	0.6	0.7	0.2	0.5	0.6	0.8	0.6	0.8	0.5	0.9	0.8	0.7
TOTAL AF	104.0	463.0	327.0	143.0	1,903.0	866.0	212.0	83.0	41.0	55.0	66.0	51.0

BALLONA CREEK

above Sawtelle Boulevard

STATION NO. F38C-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from cable car.

DRAINAGE AREA- 88.6 square miles.

LOCATION- 530.0 feet above Sawtelle Boulevard, 1.5 miles southwest of Culver City.

REGULATION- Stone Canyon Reservoir prior to January, 1951. Upper and Lower Franklin Canyon Reservoir, Hollywood Reservoir, and Silverlake Reservoir.

CHANNEL- concrete rubble, trapezoidal in section.

CONTROL- channel forms control.

LENGTH OF RECORD- at Station F38-R February 27, 1928 to April 27, 1936. at Station F38B-R, May 14, 1936 to August 10, 1967. at Station F38C-R August 10, 1967, to date.

WATER YEAR 1993-1994

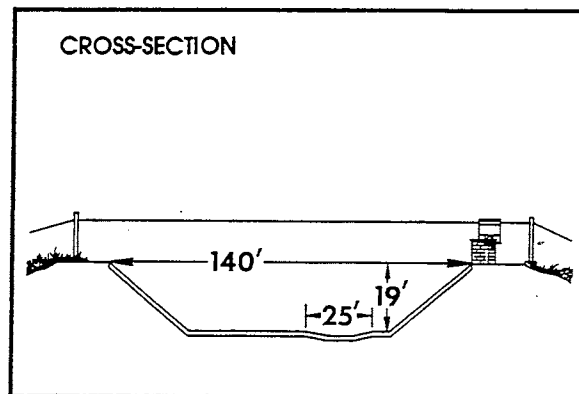
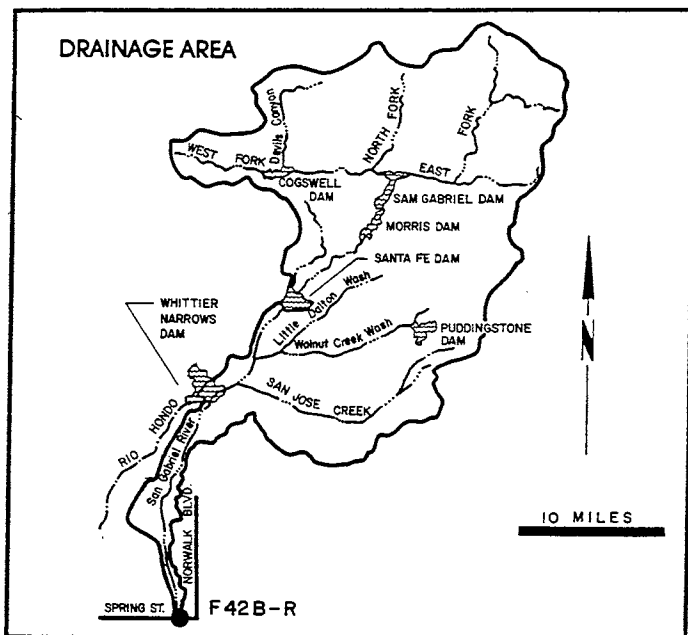
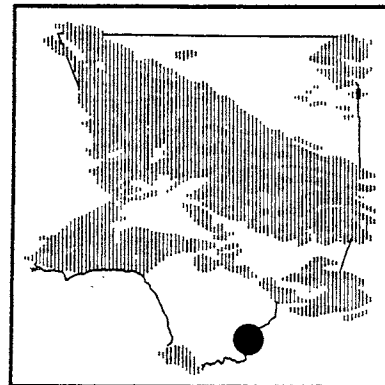
(DISCHARGE IN CFS)

STATION NO. : F38C-R

DRAINAGE AREA : 88.60 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	25.2	40.7	43.7	29.8	169.0	62.4	30.3	17.6	15.2	16.8	14.7	11.6
MAX.	149.0	531.0	450.0	229.0	1,450.0	771.0	365.0	59.1	17.5	21.7	18.4	13.8
MIN.	16.7	13.6	13.4	12.6	21.6	13.4	14.2	13.0	12.8	12.8	12.3	9.7
TOTAL AF	1,548.0	2,422.0	2,686.0	1,835.0	9,400.0	3,836.0	1,802.0	1,082.0	905.0	1,033.0	905.0	692.0

SAN GABRIEL RIVER above Spring Street STATION NO. F42B-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from cable car.

DRAINAGE AREA- 231.0 square miles (excludes area above Santa Fe Dam).

LOCATION- 455.0 feet north of Spring Street, 4.0 miles east of Signal Hill, Long Beach.

REGULATION- partially regulated by Cogswell, San Gabriel, Morris, Santa Fe, Big Dalton, San Dimas, Puddingstone Diversion, Puddingstone, Live Oak, Thompson Creek, and Whittier Narrows Dams, several debris basins, MWD outlet, and several spreading grounds.

CHANNEL- concrete, trapezoidal section with a low-flow channel.

CONTROL- channel forms control.

LENGTH OF RECORD- at Station F42-R February 6, 1928 to May 26, 1964. at Station F42B-R, November 16, 1964 to date.

REMARKS- high flows into Whittier Narrows Reservoir are partially diverted to the Rio Hondo.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

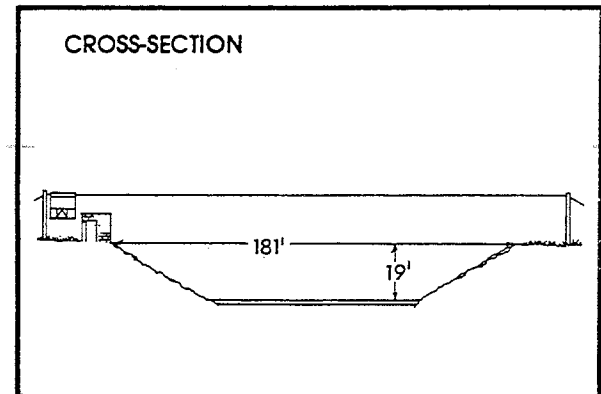
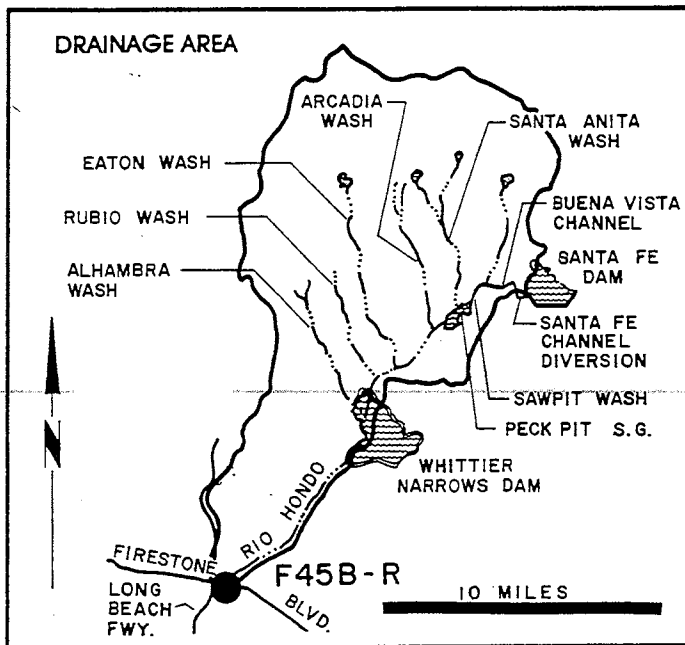
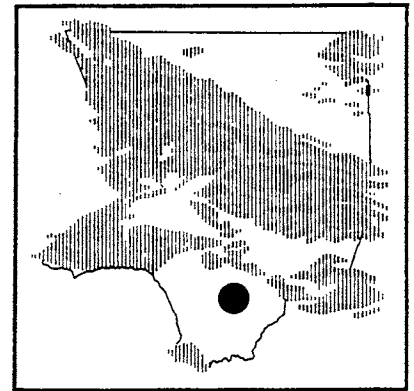
STATION NO.: F42B-R

DRAINAGE AREA: 231.00 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	56.4	*	OUT	OUT	*115	78.7	66.3	81.0	84.1	*	OUT	OUT
MAX.	141.0	*	OF	OF	*270	159.0	123.0	99.2	106.0	*	OF	OF
MIN.	40.9	*	SERVICE	SERVICE	*83.6	28.6	24.3	24.1	34.5	*	SERVICE	SERVICE
TOTAL AF	3,467.0	*			*5939	4,836.0	3,947.0	4,981.0	5,002.0	*		

LEGEND * - Recorder malfunctioned during part of the month. Partial data is available

RIO HONDO above Stewart and Gray Road STATION NO. F45B-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from cable car.

DRAINAGE AREA- 140 square miles (excludes area above Santa Fe Dam).

LOCATION- 0.6 mile upstream of the confluence of Rio Hondo and Los Angeles River, 1.5 miles west of Downey.

REGULATION- partially regulated by Sierra Madre, Santa Anita, Sawpit, Eaton, Santa Fe, and Whittier Narrows Dams, several debris basins, and spreading grounds.

CHANNEL- concrete with rip-rap side slopes. trapezoidal in section.

CONTROL- channel forms control.

LENGTH OF RECORD- at Station F45-R March 1, 1928 to April 18, 1951. at Station F45B-R October 31, 1951 to date.

REMARKS- subject to diversions from Eaton Creek, Monrovia Creek, Sawpit Creek, Little Santa Anita Canyon and other locations for irrigation and spreading. High flows from San Gabriel River may flow into Rio Hondo above Whittier Narrows Dam.

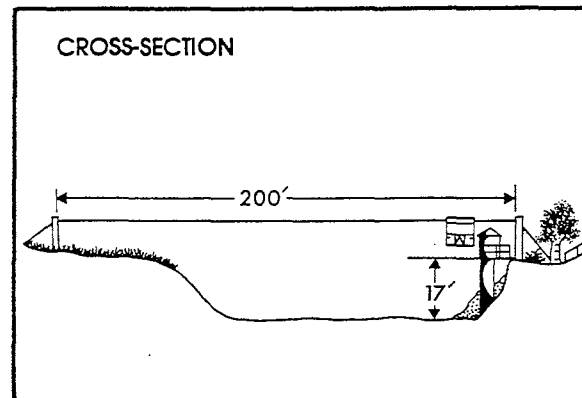
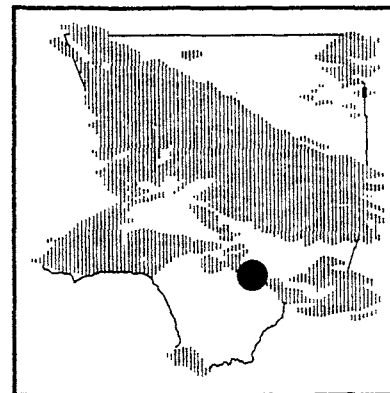
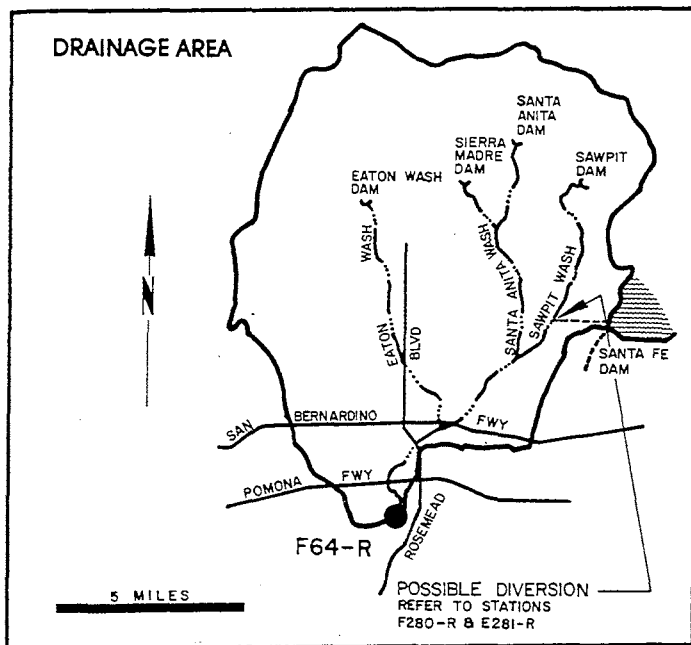
WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F45B-R

DRAINAGE AREA: 140.00 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.4	10.5	3.8	1.4	22.5	24.3	3.4	1.3	0.6	10.0	32.2	9.9
MAX.	3.2	167.0	46.9	25.8	179.0	260.0	54.9	12.7	1.4	36.8	45.9	30.0
MIN.	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	1.3	0.4
TOTAL AF	27.0	626.0	233.0	88.0	1,252.0	1,496.0	201.0	79.0	35.0	612.0	1,980.0	590.0

RIO HONDO above Mission Bridge STATION NO. F64-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from cable car.

DRAINAGE AREA- 115 square miles (excludes area above Santa Fe Dam).

LOCATION- 1,000 feet above San Gabriel Boulevard, west of Rosemead Boulevard, 2.0 miles northeast of Montebello.

REGULATION- partially regulated by Sierra Madre, Santa Anita, Sawpit, Eaton, and Santa Fe Dams and several debris basins.

CHANNEL- sand and silt, natural in section.

CONTROL- none.

LENGTH OF RECORD- July 1, 1928 to date.

REMARKS- subject to diversions; water purchased from the MWD passes this station for spreading in the coastal basin.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

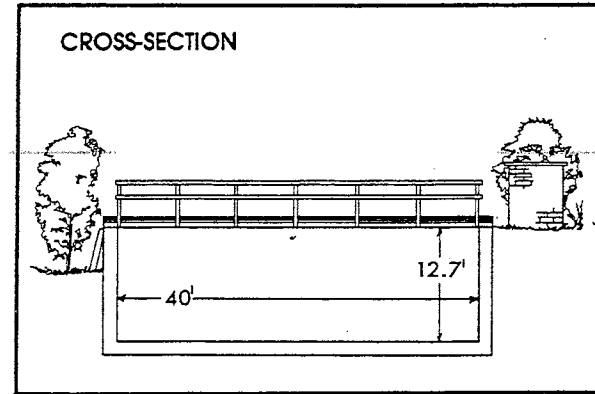
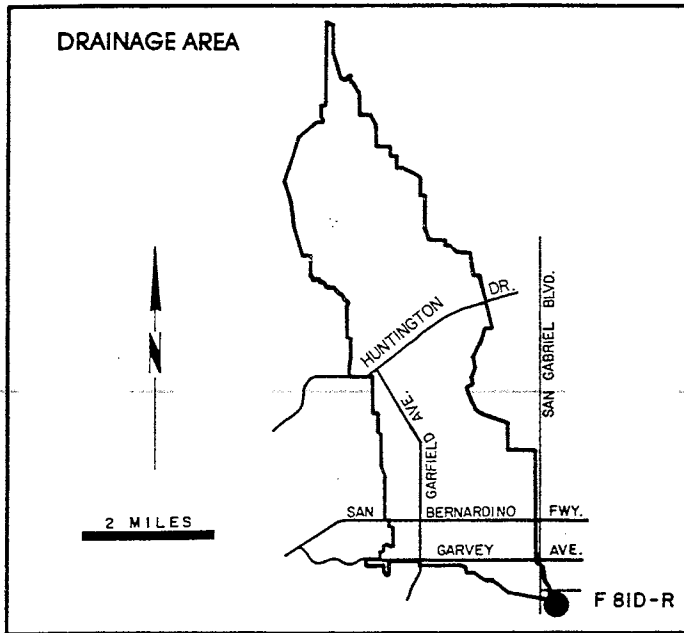
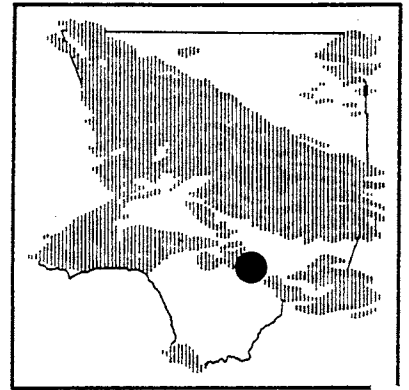
STATION NO. : F64-R

DRAINAGE AREA : 115.00 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	4.7	20.3	35.2	15.5	*	*	*	18.7	20.7	16.0	4.7	5.8
MAX.	10.0	171.0	482.0	182.0	*	*	*	38.9	29.9	25.6	7.5	23.8
MIN.	0.0	0.0	5.2	5.8	*	*	*	12.7	11.8	9.2	3.4	2.2
TOTAL AF	287.0	1,209.0	2,167.0	953.0	*	*	*	1,152.0	1,234.0	981.0	290.0	347.0

LEGEND * - Data inaccurate due to back water condition.

ALHAMBRA WASH near Klingerman Street STATION NO. F81D-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from footbridge.

DRAINAGE AREA- 15.2 square miles.

LOCATION- 250± feet above Klingerman Street and 2,650.0 feet below Garvey Avenue, South San Gabriel.

REGULATION- none.

CHANNEL- concrete, rectangular in section, 40.0 feet wide by 12.7 feet deep.

CONTROL- channel forms control.

LENGTH OF RECORD- at Station F81-R January 14, 1930 to September 30, 1934. at Station F81B-R October 1, 1934 to February 25, 1935. at Station F81C-R February 25, 1935 to April 27, 1936. at Station F81B-R April 27, 1936 to May 22, 1936. at Station F81D-R September 2, 1936 to date.

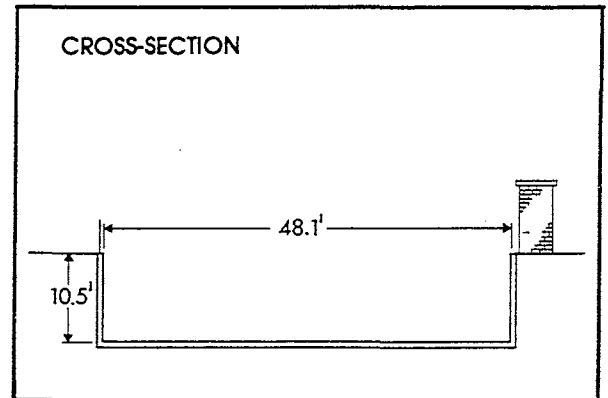
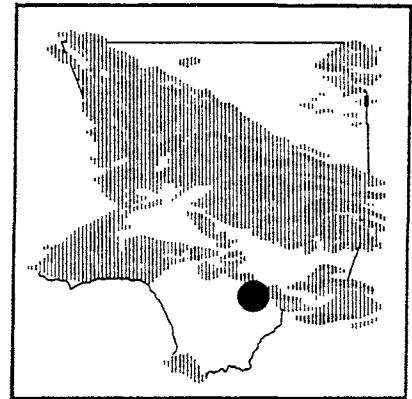
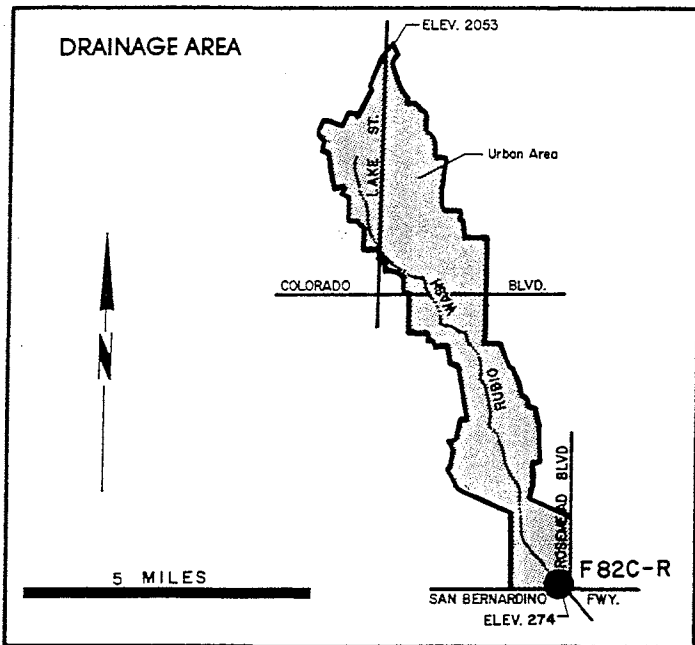
WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO.: F81D-R

DRAINAGE AREA: 15.20 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.7	6.9	8.5	5.1	31.2	17.3	5.0	2.3	2.4	2.0	2.1	2.1
MAX.	15.2	69.8	97.1	73.9	233.0	260.0	52.8	10.0	6.3	2.1	2.1	2.1
MIN.	2.0	2.4	1.3	1.7	0.5	1.4	1.2	1.2	1.6	1.8	2.1	2.1
TOTAL AF	165.0	410.0	524.0	312.0	1,731.0	1,063.0	297.0	143.0	140.0	120.0	129.0	125.0

RUBIO WASH at Glendon Wash STATION NO. F82C-R



- RECORDER- 15 minute punched tape.
- METHOD OF MEASUREMENTS- low flows measured by wading. High flows measured from footbridge at station.
- DRAINAGE AREA- 10.9 square miles.
- LOCATION- on the east side of channel, 10 feet south of the westerly extension of Glendon Way, Rosemead.
- REGULATION- flow partly regulated by Las Flores and Rubio debris basins.
- CHANNEL- rectangular concrete.
- CONTROL- channel forms control.
- LENGTH OF RECORD- see station summary.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F82C-R

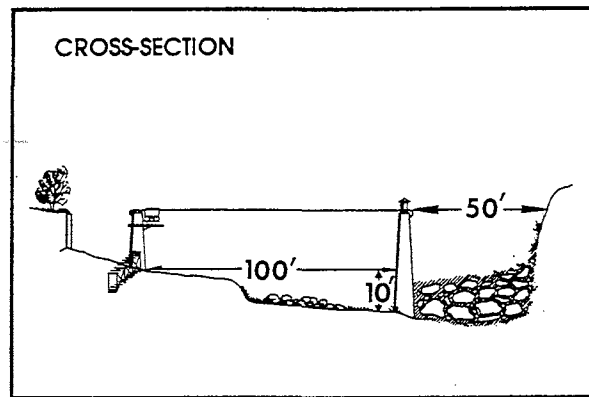
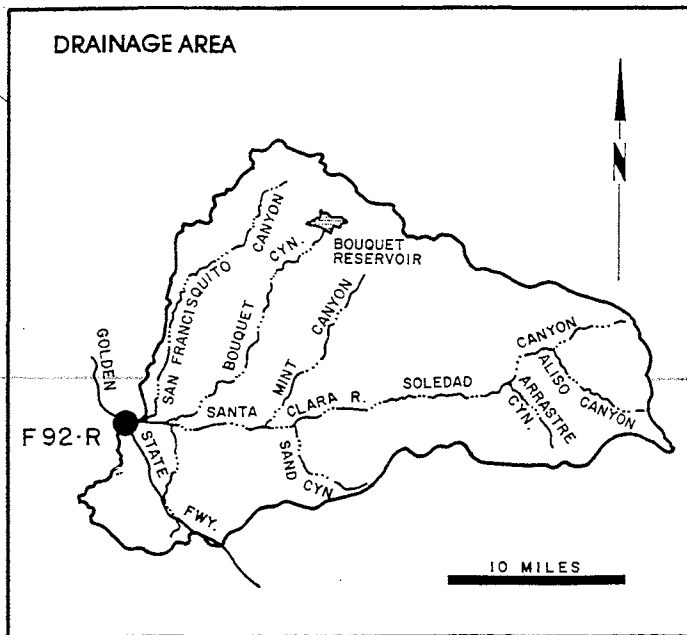
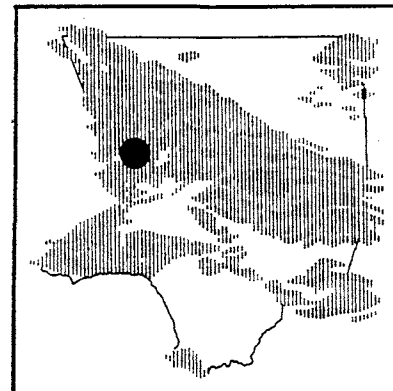
DRAINAGE AREA : 10.90 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.3	2.1	3.2	1.5	10.7	6.2	2.4	1.0	0.5	0.0	0.0	0.0
MAX.	4.4	32.7	50.8	34.4	98.2	105.0	20.8	9.7	2.6	0.0	0.1	0.1
MIN.	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0
TOTAL AF	18.0	122.0	198.0	92.0	592.0	383.0	141.0	62.0	30.0	0.0	0.0	1.0

SANTA CLARA RIVER

below Highway 5

STATION NO. F92C-R



RECORDER- continuous water stage.
 METHOD OF MEASUREMENTS- wading or from cable car.
 DRAINAGE AREA- 410.4 square miles.
 LOCATION- downstream side of Old Highway bridge, 3.0 miles west of Saugus.
 REGULATION- partially regulated by Bouquet Canyon and Dry Canyon Reservoirs.
 CHANNEL- sand and gravel with brush, natural section.
 CONTROL- none.
 LENGTH OF RECORD- at Station F92-R January 18, 1930 to March 28, 1938, and September 24, 1956 to date. at Station F92B-R, October 1, 1938 to September 24, 1956.
 REMARKS- subject to diversions for irrigation.

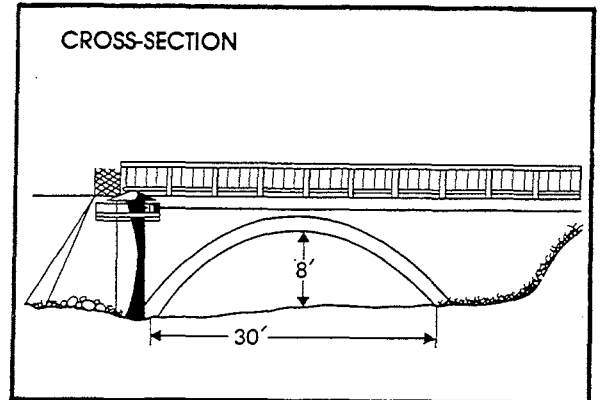
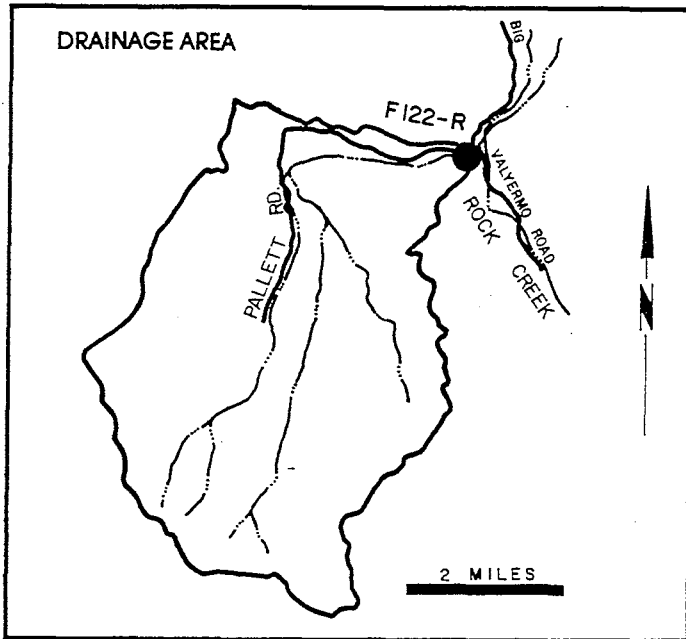
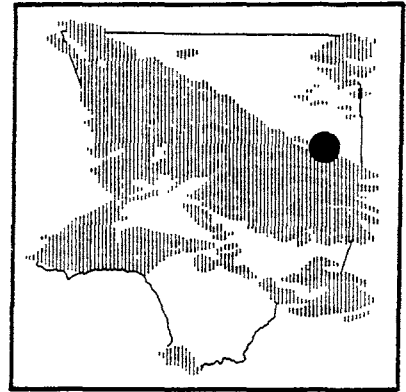
WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F92C-R

DRAINAGE AREA : 410.40 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	OUT	86.2	147.0	OUT	30.0	17.6	9.1	11.4	19.8	13.5	9.7	9.3
MAX.	OF	1,150.0	233.0	OF	171.0	32.5	12.0	23.1	23.4	15.0	13.6	11.0
MIN.	SERVICE	29.9	29.5	SERVICE	11.0	5.9	6.0	7.1	18.1	11.4	6.6	7.9
TOTAL AF		5,130.0	9,037.0		1,664.0	1,080.0	540.0	702.0	1,176.0	828.0	599.0	556.0

PALLETT CREEK at Valyermo Highway STATION NO. F122-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from bridge.

DRAINAGE AREA- 15.8 square miles.

LOCATION- upstream side of Valyermo Highway bridge, 5.0 miles southeast of Pearblossom.

REGULATION- none.

CHANNEL- sand and gravel, natural section.

CONTROL- channel forms control for low flows; bridge culvert forms control for high flows.

LENGTH OF RECORD- at Station F122-S December 29, 1930 to October 31, 1961. at Station F122-R, October 31, 1961 to date.

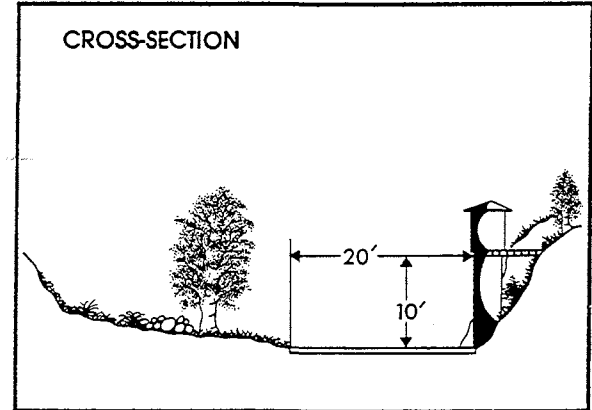
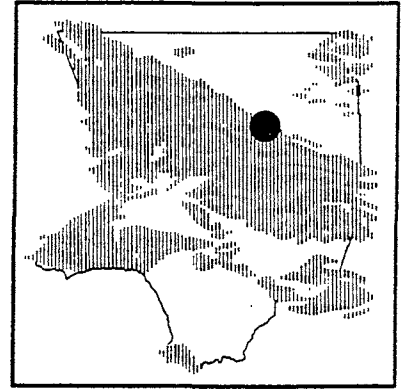
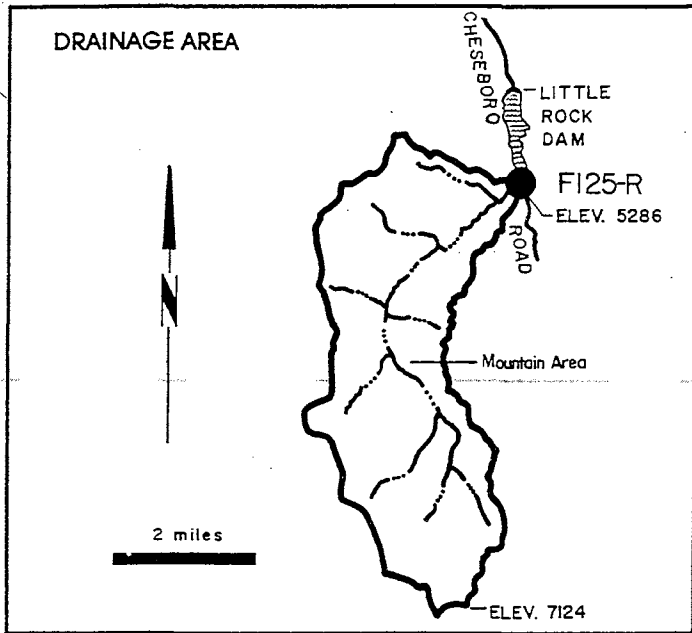
WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F122-R

DRAINAGE AREA : 15.8 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.8	1.5	1.4	1.2	1.4	1.2	OUT	0.5	0.6	0.5	0.3	0.2
MAX.	2.0	1.7	1.5	1.5	1.5	1.3	OF	0.6	0.6	0.6	0.4	0.3
MIN.	1.4	1.2	1.3	1.1	1.2	1.1	SERVICE	0.5	0.5	0.3	0.3	0.2
TOTAL AF	111.0	88.0	88.0	77.0	78.0	74.0		32.0	34.0	29.0	20.0	12.0

SANTIAGO CREEK above Little Rock Creek STATION NO. F125-R



RECORDER- continuous water stage.
 METHOD OF MEASUREMENTS- wading.
 DRAINAGE AREA- 11.2 square miles.
 LOCATION- 1,000 feet above Little Creek and 4.5 miles south of Little Rock.
 REGULATION- none.
 CHANNEL- sand, gravel and boulders.
 CONTROL- concrete and rubble wall.
 LENGTH OF RECORD- September 29, 1953 to date.
 REMARKS- no high flow measurements.

WATER YEAR 1993–1994 (DISCHARGE IN CFS)

STATION NO. : F125-R

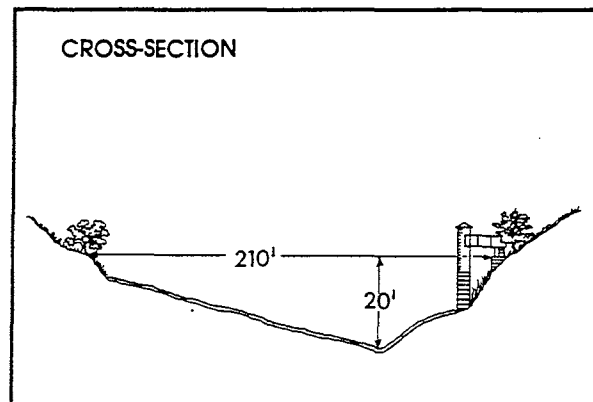
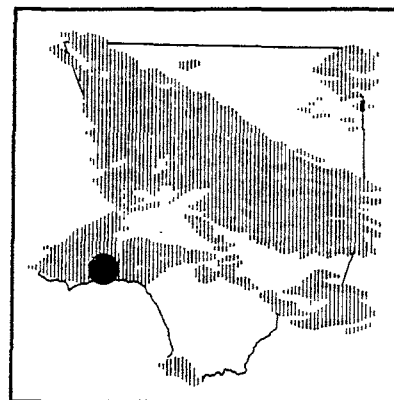
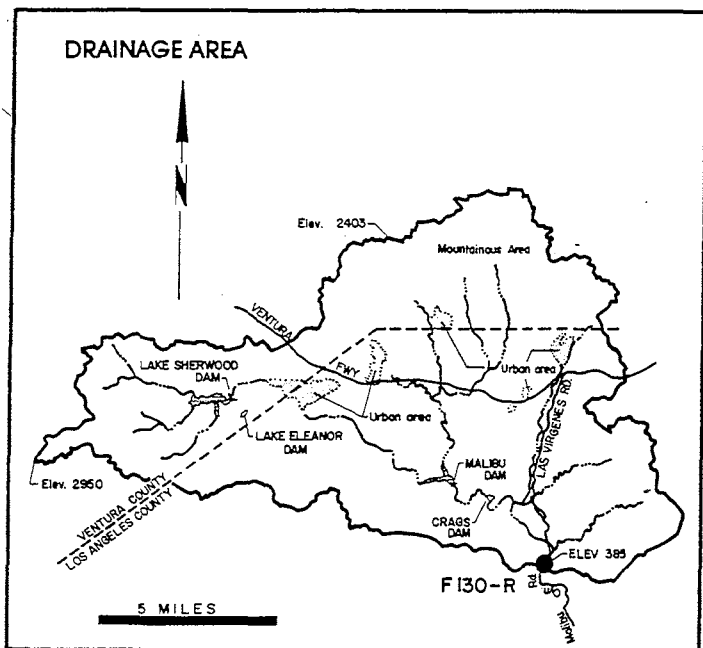
DRAINAGE AREA : 11.20 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.1	0.2	0.7	0.3	1.0	1.2	0.5	0.1	0.0	0.0	0.0	0.0
MAX.	0.2	0.4	1.2	0.6	1.5	1.5	1.5	0.2	0.0	0.0	0.0	0.0
MIN.	0.1	0.1	0.5	0.2	0.5	0.7	0.1	0.0	0.0	0.0	0.0	0.0
TOTAL AF	6.0	10.0	45.0	19.0	57.0	73.0	31.0	6.0	0.0	0.0	0.0	0.0

MALIBU CREEK

below Cold Creek

STATION NO. F130B-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from cable car.

DRAINAGE AREA- 104.96 square miles

LOCATION- 0.2± mile downstream of Cold Creek, 6.0 miles southwest of Calabasas.

REGULATION- Lake Sherwood Dam, Lake Eleanor Dam, Malibu Lake Dam, and Crag's Dam. Other small recreational dams affect low summer flows.

CHANNEL- coarse sand and gravel, lined with trees and brush, natural in section.

CONTROL- concrete stabilizer.

LENGTH OF RECORD- January 17, 1931 to date.

REMARKS- cableway washed out on January 25, 1969; no high flow measurements since that date.

WATER YEAR 1993-1994

(DISCHARGE IN CFS)

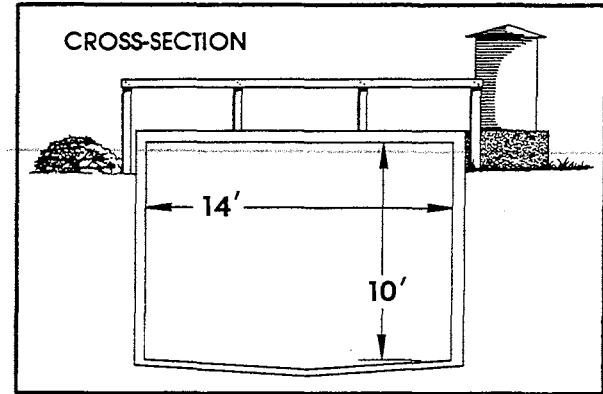
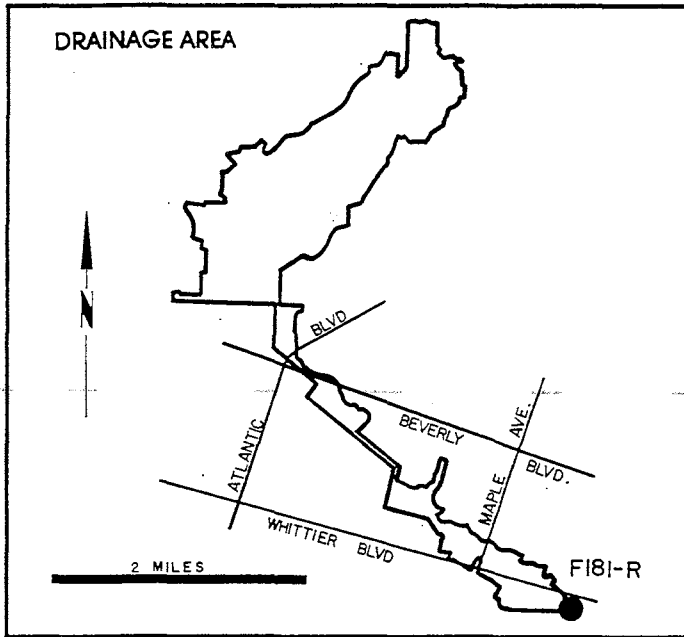
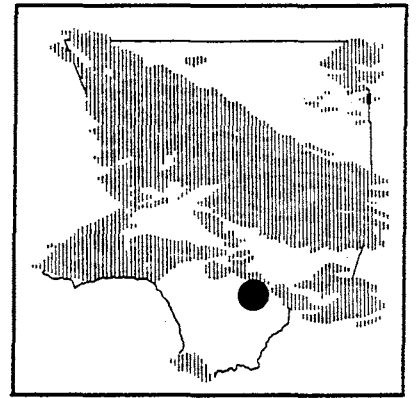
STATION NO. : F130-R

DRAINAGE AREA : 104.96 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.1	7.4	15.5	10.3	79.7	40.4	11.2	5.4	3.7	5.7	4.4	OUT
MAX	5.3	14.3	53.4	21.7	880.0	191.0	17.3	8.6	7.2	7.4	6.4	OF
MIN.	5.1	5.0	7.9	6.3	8.1	16.7	6.9	1.5	0.9	4.8	3.4	SERVICE
TOTAL AF	315.0	443.0	952.0	633.0	4,428.0	2,483.0	665.0	332.0	222.0	350.0	270.0	

MONTEBELLO STORM DRAIN

above Rio Hondo
STATION NO. F181-R



RECORDER- continuous water stage.
 METHOD OF MEASUREMENTS- wading or from footbridge.
 DRAINAGE AREA- 9.6 square miles.
 LOCATION- 150.0 feet east of Mines Avenue and 500.0 feet west of Rio Hondo.
 REGULATION- none.
 CHANNEL- 14.0-foot by 10.0-foot concrete, box section.
 CONTROL- channel forms control.
 LENGTH OF RECORD- January 12, 1932 to date.
 REMARKS- may be affected by backwater during flood flows.

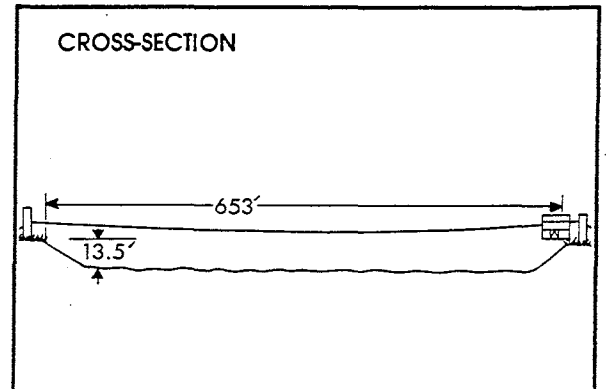
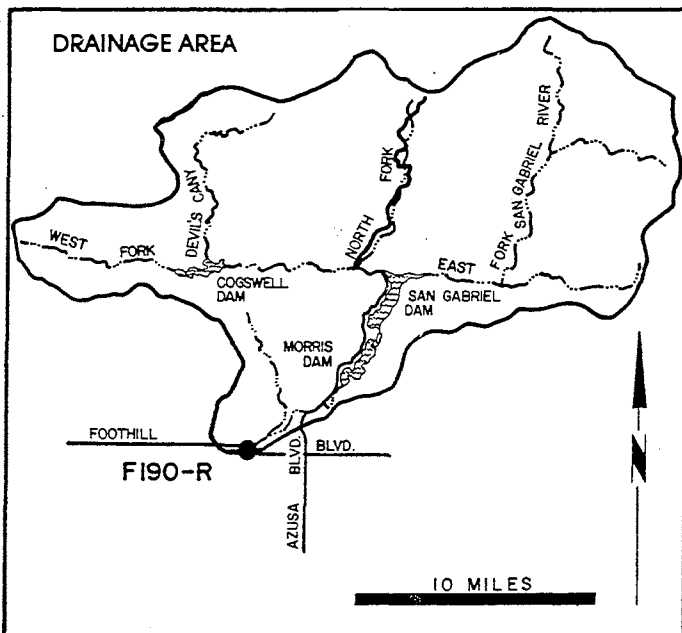
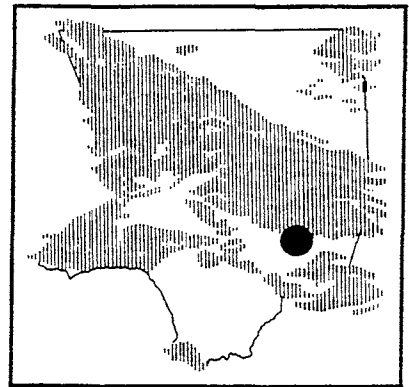
WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F181-R

DRAINAGE AREA : 9.60 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.2	0.6	0.7	0.4	3.1	2.4	0.5	0.2	0.3	0.3	0.2	0.3
MAX.	0.6	9.5	9.8	7.7	24.9	47.7	9.4	2.8	0.5	0.4	0.4	0.5
MIN.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
TOTAL AF	10.0	34.0	44.0	22.0	173.0	147.0	28.0	13.0	20.0	18.0	12.0	17.0

SAN GABRIEL RIVER at Foothill Boulevard STATION NO. F190-R



RECORDER- continuous water stage.
METHOD OF MEASUREMENTS- wading or from cable car.
DRAINAGE AREA- 230.0 square miles.
LOCATION- downstream side of Foothill Boulevard bridge, 2.0 miles west of Azusa.
REGULATION- partially regulated by Cogswell, San Gabriel, and Morris Dams.
CHANNEL- sand, gravel and rock, trapezoidal section with soft bottom.
CONTROL- gunited rock stabilizers.
LENGTH OF RECORD- February 22, 1932 to date.
REMARKS- flows may include imported water originating at the Metropolitan Water District outlet below Morris Dam.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F190-R

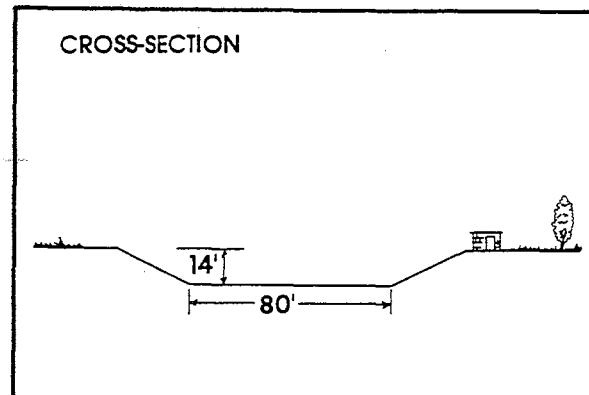
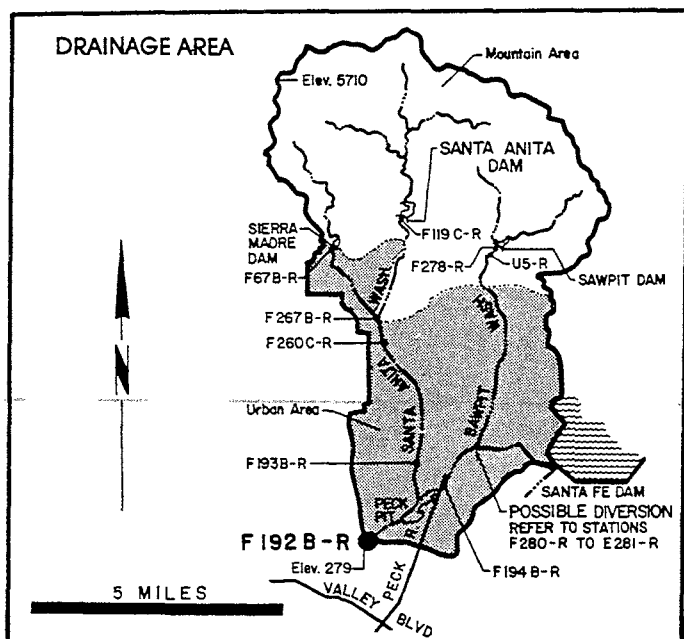
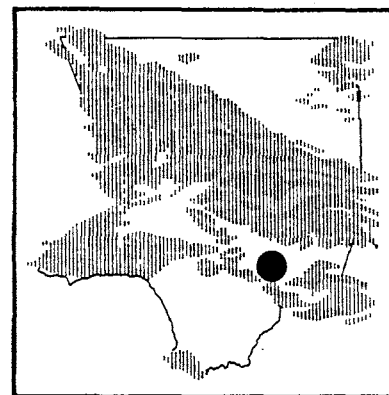
DRAINAGE AREA : 230.00 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	156.0	44.2	26.8	3.4	19.9	0.9	78.2	212.0	85.6	4.6	6.4	0.0
MAX.	314.0	243.0	268.0	7.4	393.0	3.6	225.0	223.0	254.0	141.0	196.0	0.0
MIN.	1.0	0.0	0.0	1.5	1.9	0.0	0.0	187.0	0.0	0.0	0.0	0.0
TOTAL AF	9,582.0	2,630.0	1,649.0	208.0	1,104.0	58.0	4,651.0	13,010.0	5,092.0	286.0	394.0	0.0

RIO HONDO

below Lower Azusa Road

STATION NO. F192B-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading.

DRAINAGE AREA- 40.9 square miles (excludes area above Santa Fe Dam).

LOCATION- 300.0 feet downstream from Lower Azusa Road, 1.5 miles north of El Monte.

REGULATION- partially regulated by Sierra Madre Dam, Santa Anita Dam, Sawpit Dam, Santa Fe Dam, Peck Pit, Buena Vista Pit, and several debris basins.

CHANNEL- concrete, trapezoidal in section.

CONTROL- channel forms control.

LENGTH OF RECORD- at Station F192-R February 22, 1932 to May 7, 1958. at Station F192B-R May 7, 1958 to date.

REMARKS- subject to diversions from Monrovia, Sawpit, and Little Santa Anita Creeks. Also from the San Gabriel River below Santa Fe Dam; and for irrigation and spreading.

WATER YEAR 1993 – 1994

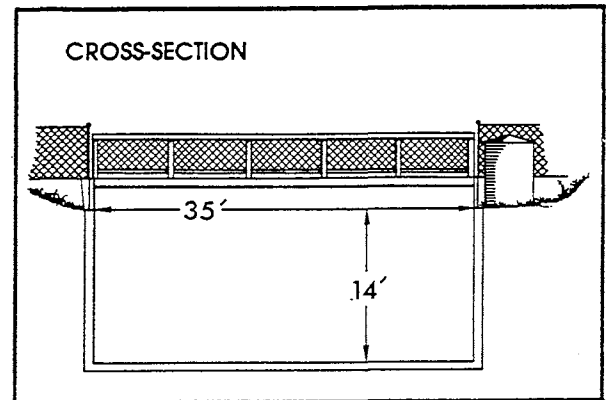
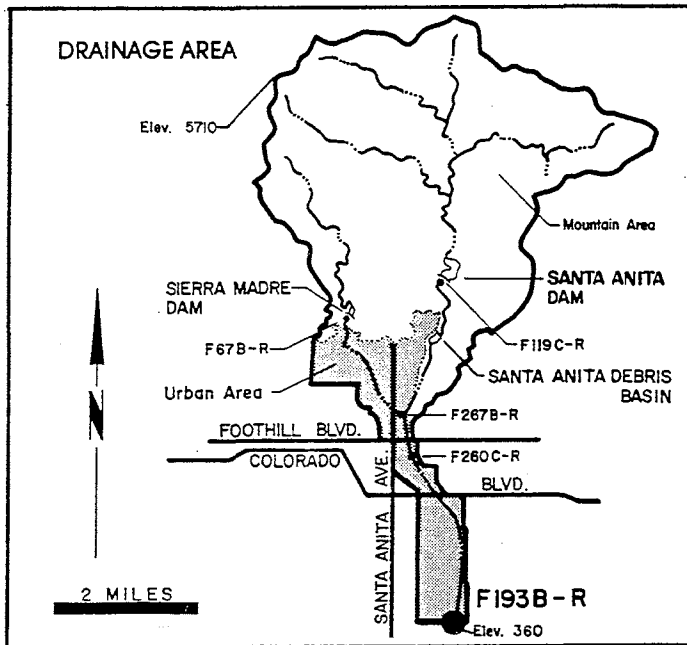
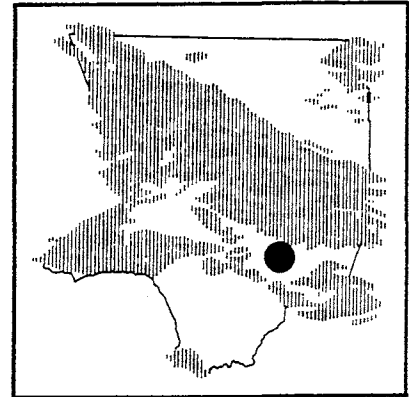
(DISCHARGE IN CFS)

STATION NO.: F192B-R

DRAINAGE AREA: 40.90 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.2	7.6	12.0	0.4	7.5	1.4	0.3	0.1	0.0	0.0	0.0	0.0
MAX.	0.4	47.0	43.1	7.3	31.5	23.3	2.8	1.1	0.0	0.1	0.0	0.1
MIN.	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL AF	14.0	451.0	738.0	23.0	417.0	87.0	16.0	3.0	0.0	0.0	0.0	0.0

SANTA ANITA WASH at Longden Avenue STATION NO. F193B-R



RECORDER - continuous water stage.

METHOD OF MEASUREMENTS- wading or from bridge.

DRAINAGE AREA- 18.8 square miles.

LOCATION - 30.0 feet above Longden Avenue, 1.5 miles south of Arcadia.

REGULATION - regulated by Santa Anita and Sierra Madre Dams, and Santa Anita Debris Basin.

CHANNEL - concrete rectangular section.

CONTROL- channel forms control.

LENGTH OF RECORD- at Station F193-R, April 25, 1932 to March 1, 1938. at Station F193B-R, January 5, 1960 to date.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

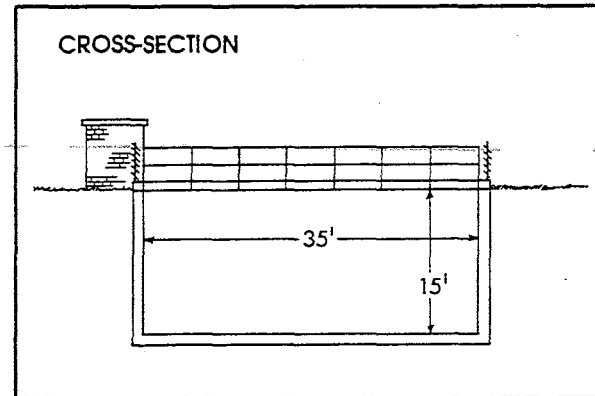
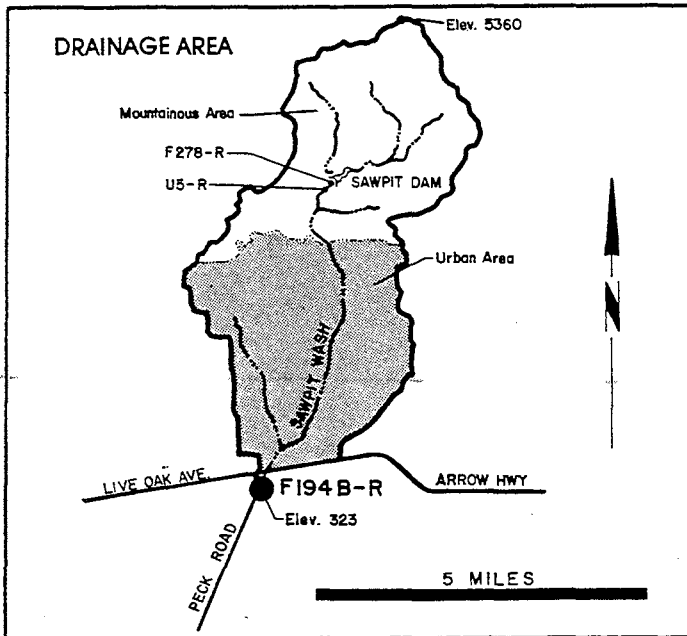
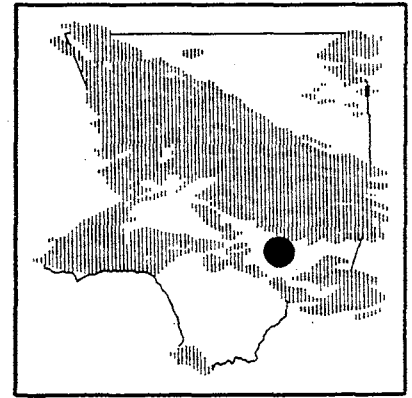
STATION NO. : F193B-R

DRAINAGE AREA : 18.80 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.2	0.8	12.1	1.9	4.1	2.5	2.1	0.5	0.0	0.0	0.3	1.3
MAX.	2.6	7.8	354.0	14.5	29.3	19.1	28.4	7.9	0.1	0.1	1.2	2.5
MIN.	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
TOTAL AF	75.0	48.0	747.0	116.0	227.0	154.0	124.0	28.0	1.0	2.0	20.0	80.0

SAWPIT WASH

below Live Oak Avenue
STATION NO. F194B-R



RECORDER- continuous water stage.
 METHOD OF MEASUREMENTS- wading or from footbridge.
 DRAINAGE AREA- 16.1 square miles.
 LOCATION- 1,500 feet below Arrow Highway, 3.0 miles south of Monrovia.
 REGULATION- partially regulated by Sawpit and Santa Fe Dams, and by several debris basins.
 CHANNEL- concrete, rectangular section.
 CONTROL- channel forms control.
 LENGTH OF RECORD- at Station F194-R February 22, 1932 to September 1, 1935. at Station F194B-R December 5, 1960 to date.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

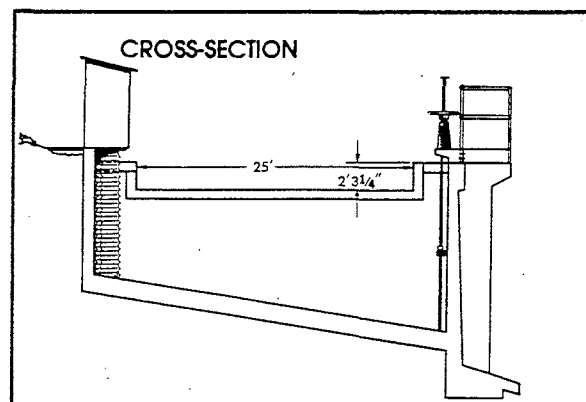
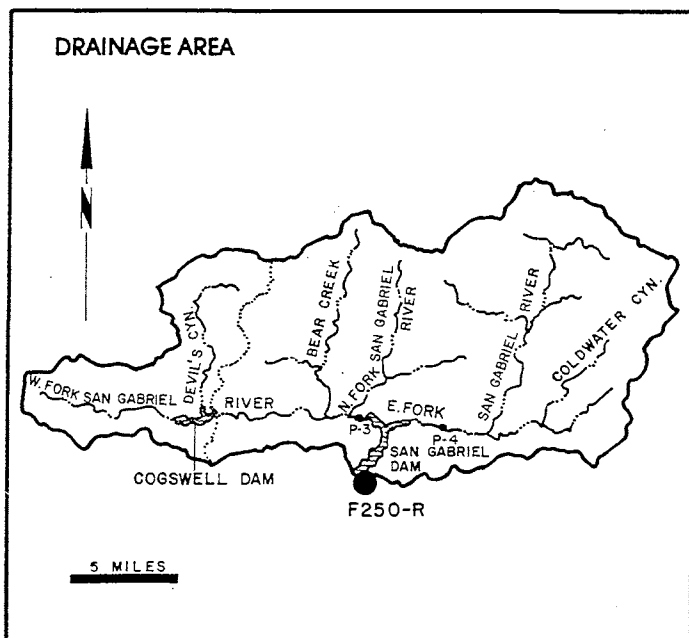
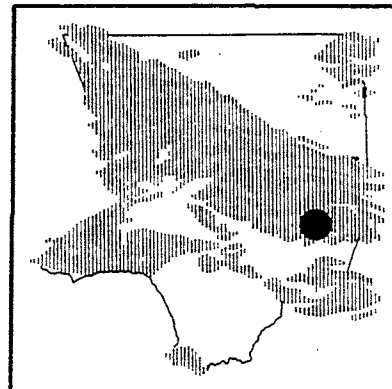
STATION NO. : F194B-R

DRAINAGE AREA : 16.10 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.0	13.8	8.4	1.2	10.4	5.2	2.5	0.4	0.1	0.6	1.3	0.1
MAX.	2.4	66.7	62.2	22.5	54.7	72.2	36.6	5.0	0.2	15.5	37.5	0.2
MIN.	0.1	0.1	0.1	0.1	1.6	0.0	0.0	0.0	0.0	0.0	0.1	0.1
TOTAL AF	60.0	820.0	518.0	75.0	576.0	319.0	150.0	23.0	5.0	36.0	83.0	7.0

SAN GABRIEL-AZUSA CONDUIT

at 25 ft. Weir below San Gabriel Dam
STATION NO. F250-R



RECORDER- continuous water stage.
 METHOD OF MEASUREMENTS- weir formula with gage height observation.
 DRAINAGE AREA- none.
 LOCATION- on the concrete conduit which diverts from San Gabriel Dam, 160 feet below the Dam.
 REGULATION- regulated in section.
 CONTROL- 25-foot concrete weir.
 LENGTH OF RECORD- February 26, 1933, to date.
 REMARKS- approximate capacity 95 second-feet.

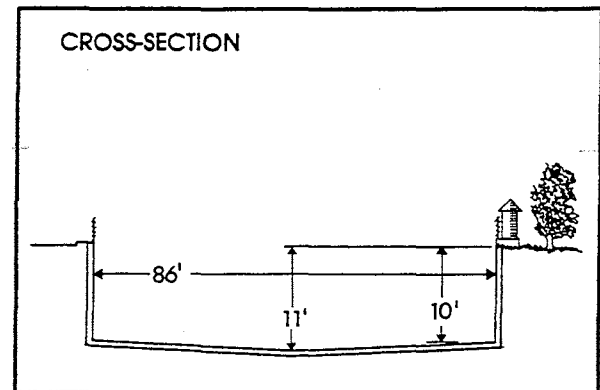
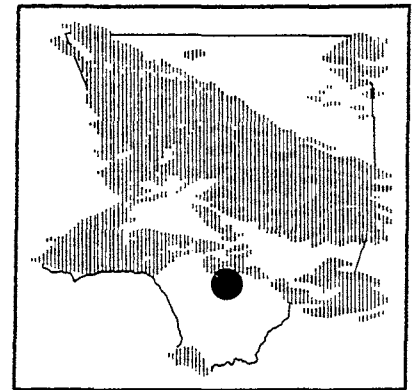
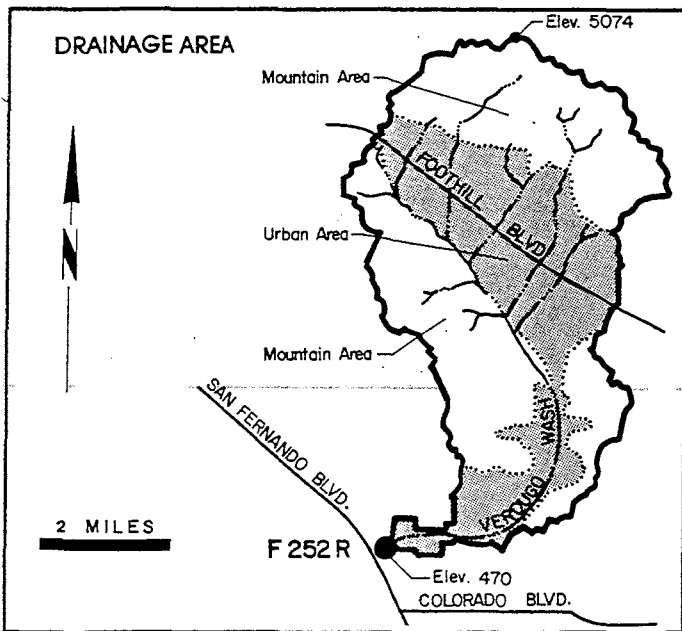
WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F250-R

DRAINAGE AREA : NONE SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	71.5	56.3	51.2	51.6	37.6	54.2	42.5	46.6	80.3	80.2	78.1	49.5
MAX.	82.2	72.0	52.3	52.4	52.3	70.2	47.7	47.0	81.7	80.8	80.9	76.0
MIN.	48.6	49.9	49.2	50.4	35.4	36.1	0.0	45.9	69.7	79.0	74.6	36.2
TOTAL AF	4,396.0	3,348.0	3,150.0	3,174.0	2,090.0	3,334.0	2,528.0	2,867.0	4,781.0	4,930.0	4,801.0	2,946.0

VERDUGO WASH at Estelle Avenue STATION NO. F252-R



RECORDER- continuous water stage.
 METHOD OF MEASUREMENTS- wading or from Concord Street Bridge.
 DRAINAGE AREA- 26.8 square miles.
 LOCATION- 800.0 feet east of San Fernando Road, 2.0 miles northwest of Glendale.
 REGULATION- partially regulated by several debris basins.
 CHANNEL- concrete, rectangular in section.
 CONTROL- channel forms control.
 LENGTH OF RECORD- December 2, 1935 to date.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F252-R

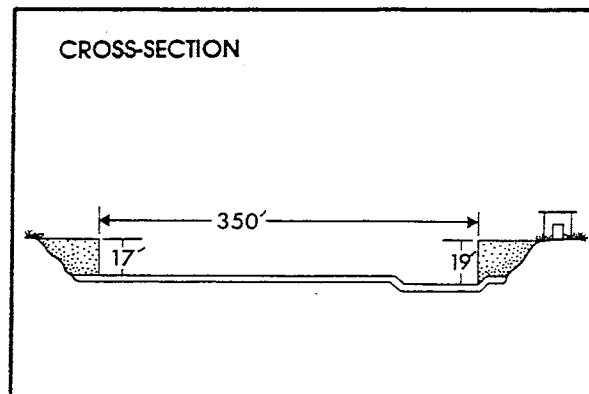
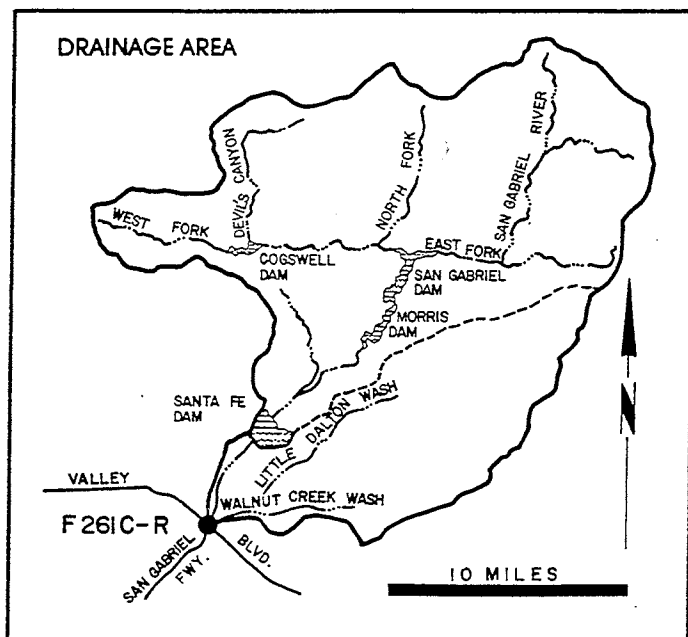
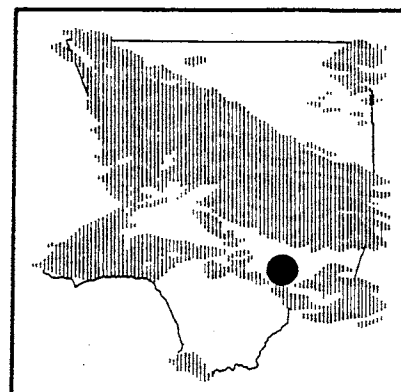
DRAINAGE AREA : 26.80 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.4	10.4	10.8	7.8	34.1	27.8	9.1	9.9	12.7	1.1	0.5	0.5
MAX.	9.2	130.0	163.0	83.6	265.0	225.0	47.4	74.4	18.7	4.7	0.5	0.5
MIN.	2.0	1.9	2.0	2.3	1.7	1.7	2.3	2.0	5.1	0.0	0.5	0.5
TOTAL AF	148.0	619.0	667.0	479.0	1,891.0	1,708.0	543.0	607.0	753.0	67.0	3.1	30.0

SAN GABRIEL RIVER

below Valley Boulevard

STATION NO. F261C-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading.

DRAINAGE AREA- 118.0 square miles (excludes area above Santa Fe Dam).

LOCATION- 1,150.0 feet below Valley Boulevard, 2.5 miles east of El Monte.

REGULATION- partly regulated by Santa Fe, Big Dalton, Puddingstone Diversion, and Puddingstone Dams.

CHANNEL- sand and gravel bottom with rip-rap side slopes; trapezoidal section.

CONTROL- concrete stabilizer with low-flow notch.

LENGTH OF RECORD- at Station F261-R March 11, 1937 to September 30, 1941. at Station F261B-R October 1, 1941 to April 23, 1946. at Station F261C-R November 29, 1960 to date.

REMARKS- flows may include imported water originating at Metropolitan Water District outlets at San Dimas Canyon and below San Bernardino Road.

WATER YEAR 1993-1994

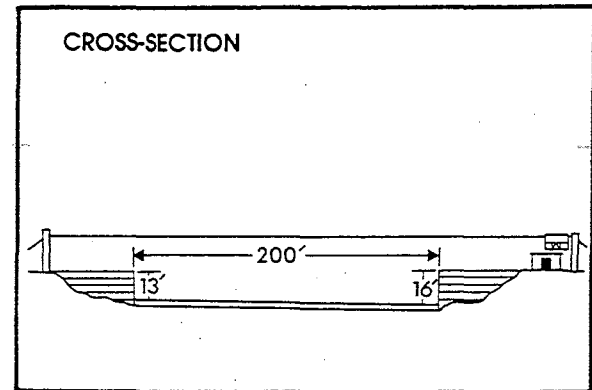
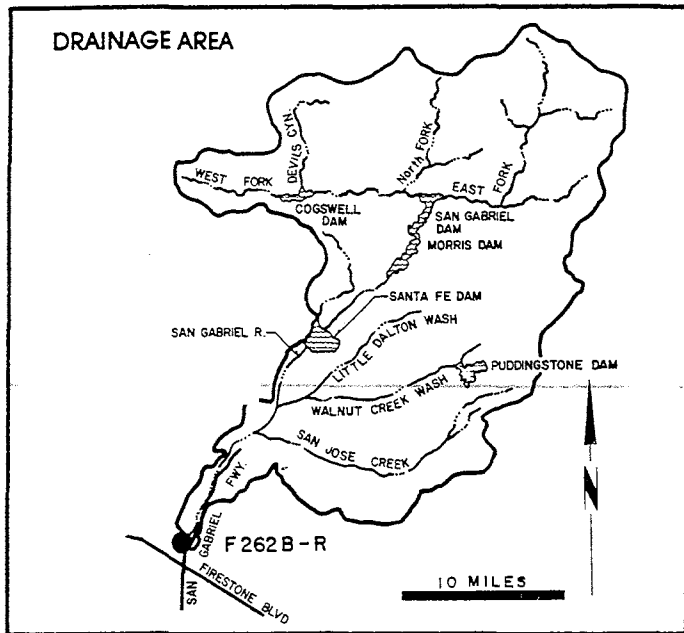
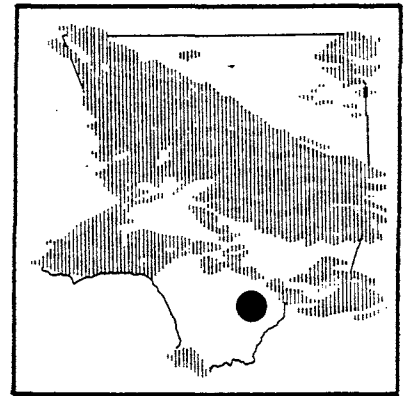
(DISCHARGE IN CFS)

STATION NO. : F261C-R

DRAINAGE AREA : 118.00 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.6	9.2	19.3	4.4	35.2	24.4	12.4	0.4	0.2	0.0	0.0	0.0
MAX.	6.8	127.0	256.0	69.1	280.0	379.0	251.0	5.9	2.5	0.0	0.0	0.0
MIN.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL AF	36.0	548.0	1,188.0	271.0	1,954.0	1,503.0	738.0	27.0	12.0	0.0	0.0	0.0

SAN GABRIEL RIVER above Florence Avenue STATION NO. F262C-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from cable car.

DRAINAGE AREA- 215.8 square miles (excludes area above Santa Fe Dam).

LOCATION- 1,400 feet above Florence Avenue, 2.0 miles east of Downey.

REGULATION- partially regulated by Cogswell, San Gabriel, Morris, Santa Fe, Big Dalton, San Dimas, Puddingstone Diversion, Puddingstone, Live Oak, Thompson Creek and Whittier Narrows Dams, several debris basins, MWD outlets, and several spreading grounds.

CHANNEL- sand bottom with rip-rap slopes, trapezoidal section.

CONTROL- concrete stabilizer.

LENGTH OF RECORD- at Station F267-R February 27, 1937 to September 30, 1967. at Station F262B-R August 6, 1968 to date.

REMARKS- no record during 1967-1968 season due to channel construction.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO.: F262C-R

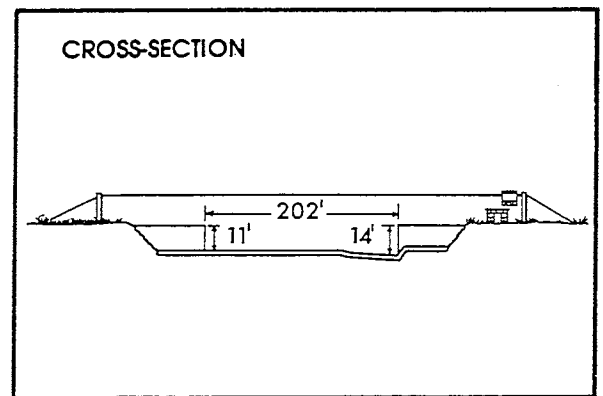
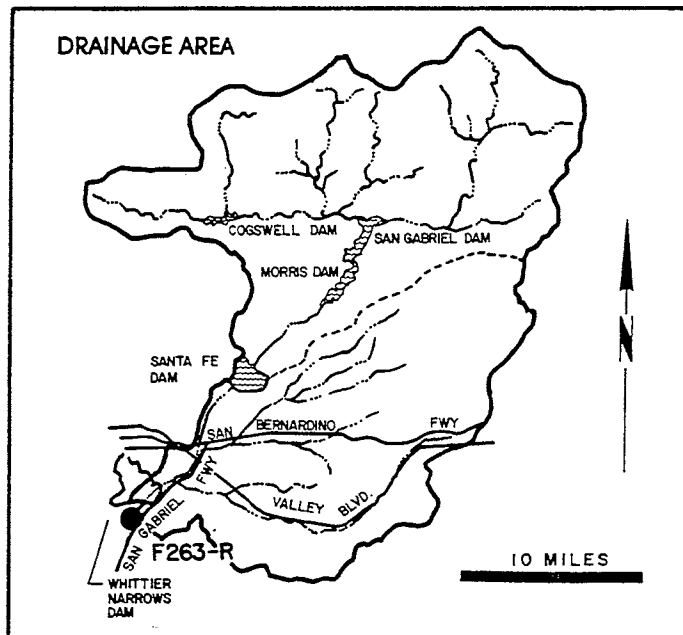
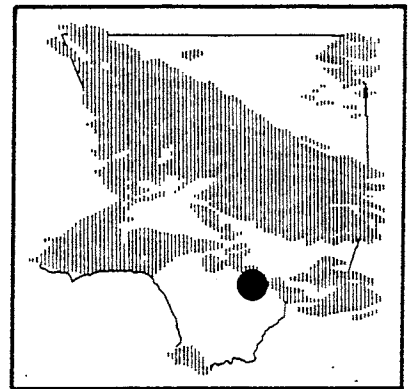
DRAINAGE AREA: 215.8 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MIN.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL AF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SAN GABRIEL RIVER

below San Gabriel River Parkway

STATION NO. F263C-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from cable car.

DRAINAGE AREA- 206.3 square miles (excludes area above Santa Fe Dam).

LOCATION- 462.0 feet below San Gabriel River Parkway, 1.4 miles northeast of Pico Rivera.

REGULATION- partly regulated by Santa Fe, Big Dalton, Puddingstone Diversion, Puddingstone, and Thompson Creek Dams. Flows may include imported water from several Metropolitan Water District outlets. Water is at times diverted to the Zone I ditch upstream of Whittier Narrows Dam.

CHANNEL- rip-rap slopes with sand bottom trapezoidal section.

CONTROL- concrete stabilizer.

LENGTH OF RECORD - at Station F263-R February 4, 1937 to March 6, 1952. at Station F263B-R March 6, 1952 to August 9, 1968. at Station F263C-R August 9, 1968 to date.

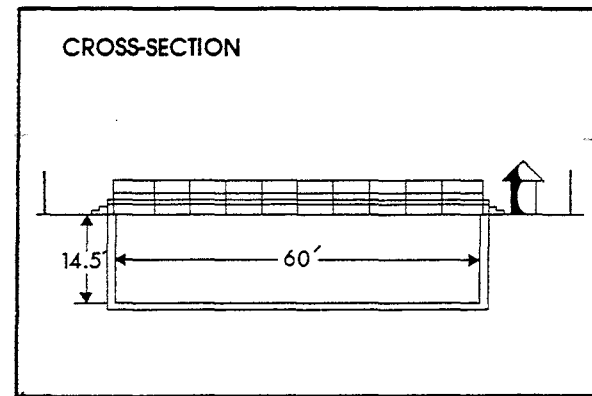
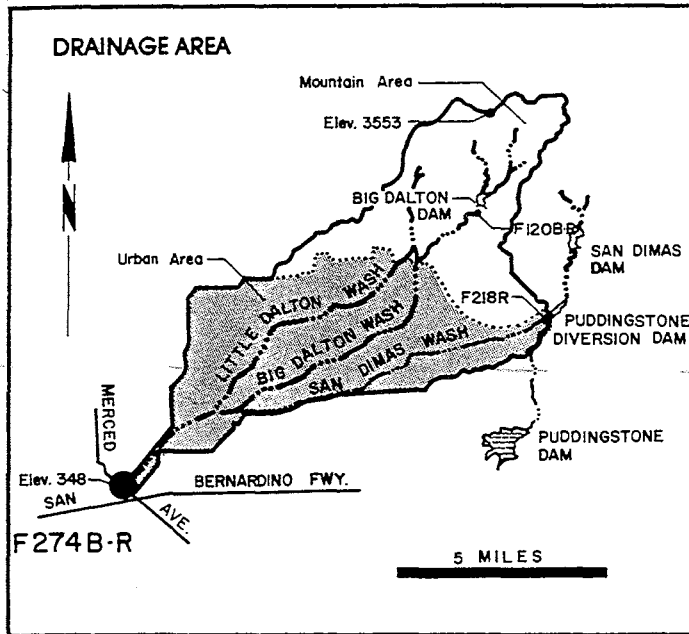
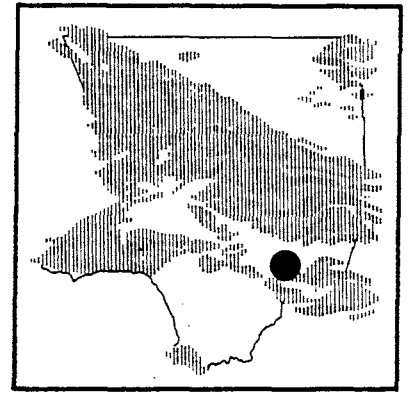
WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F263C-R

DRAINAGE AREA : 206.30 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.4	44.7	57.8	13.8	82.9	76.4	44.7	31.0	64.0	7.9	2.9	2.3
MAX	41.8	387.0	327.0	232.0	218.0	193.0	77.5	65.1	91.6	63.2	3.9	7.1
MIN.	4.3	4.3	6.1	5.0	8.2	41.7	30.8	16.0	42.5	3.9	2.6	0.2
TOTAL AF	454.0	2,662.0	3,554.0	850.0	4,602.0	4,699.0	2,660.0	1,909.0	3,808.0	483.0	177.0	136.0

DALTON WASH at Merced Avenue STATION NO. F274B-R



RECORDER- 15 minute punched tape.

METHOD OF MEASUREMENTS- low flows measured by wading. High flows measured from footbridge 100 feet upstream from station.

DRAINAGE AREA- 36.0 square miles, not including the area above Puddingstone Diversion Dam.

LOCATION- on the west bank and upstream of Merced Avenue about 150 feet, about one-half mile above the junction with Walnut Wash and about one mile south of Baldwin Park.

REGULATION- partly regulated by Big Dalton Dam, San Dimas Dam, Puddingstone Diversion Dam, Big Dalton Spreading Grounds, Little Dalton Spreading Grounds, Big Dalton Debris Basin, Little Dalton Debris Basin, and Irwindale Spreading Grounds.

REMARKS- flow may include imported water originating at San Dimas.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

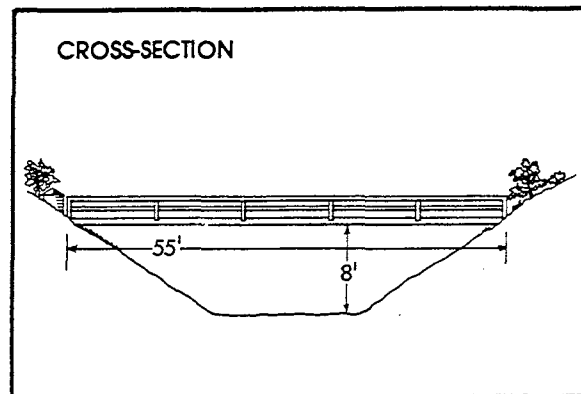
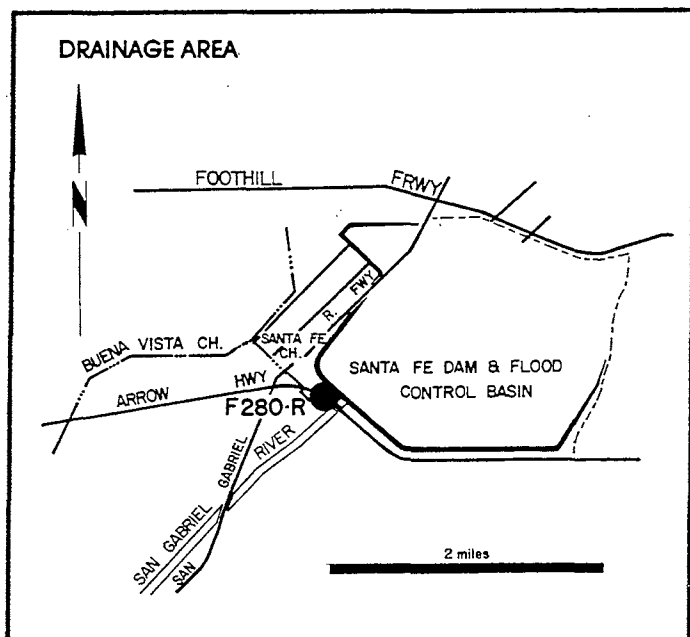
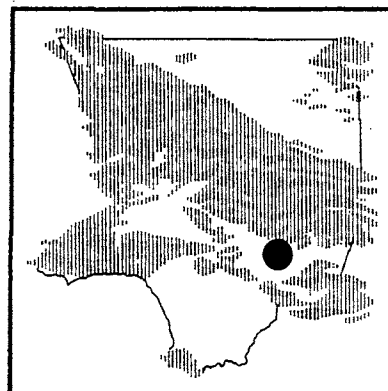
STATION NO. : F274B-R

DRAINAGE AREA : 36.00 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.6	10.1	10.6	7.4	10.2	12.3	8.7	2.9	2.4	0.8	2.1	1.3
MAX.	16.9	50.2	162.0	35.7	79.2	169.0	131.0	11.5	11.0	2.5	8.1	2.4
MIN.	3.5	1.3	1.7	1.5	0.2	0.1	1.1	0.3	0.1	0.2	0.2	0.2
TOTAL AF	343.0	604.0	655.0	454.0	567.0	757.0	517.0	179.0	144.0	50.0	127.0	75.0

SANTA FE CHANNEL

below Santa Fe Dam
STATION NO. F280-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from footbridge.

DRAINAGE AREA- controlled.

LOCATION- 400.0 feet downstream of Santa Fe Dam outlet and 1.5 miles north of Baldwin Park.

REGULATION- flow regulated by five gates of stilling basin outlet of Santa Fe Dam.

CHANNEL- sand and gravel, natural section.

CONTROL- concrete stabilizer.

LENGTH OF RECORD- at Station F280-S October 1, 1942 to May 12, 1944. at Station F280-R May 12, 1944 to date.

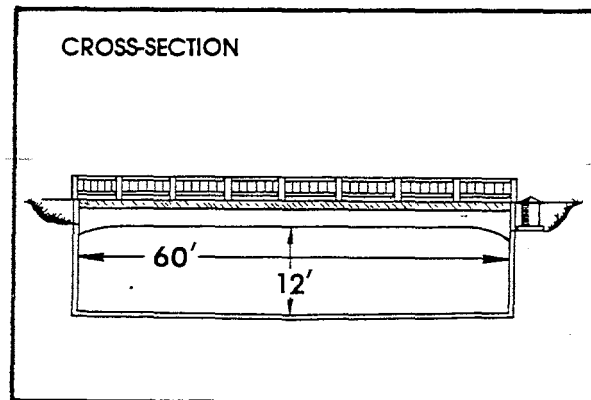
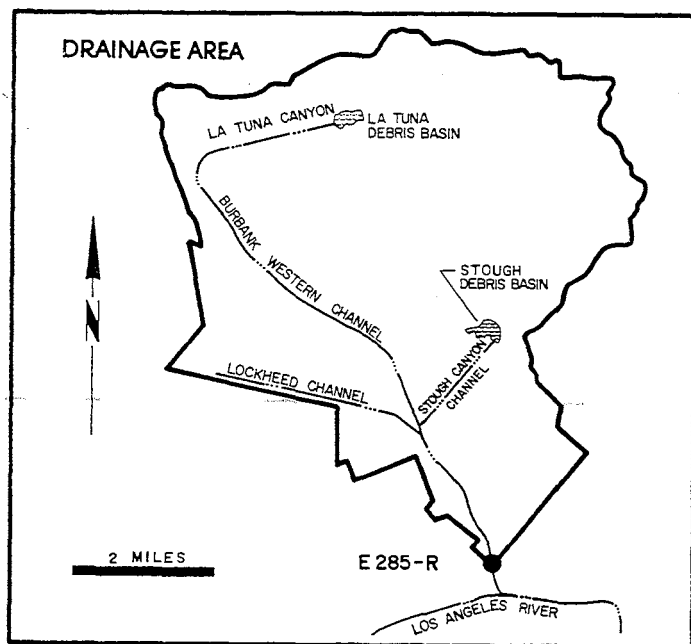
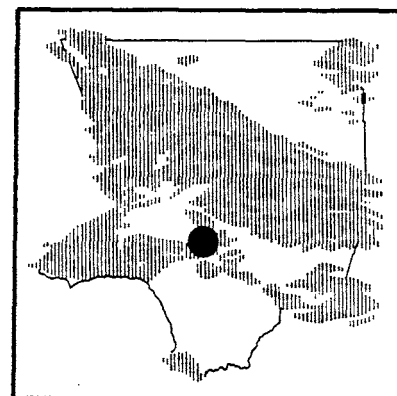
WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F280-R

DRAINAGE AREA : CONTROLLED

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.0	17.3	6.1	0.0	0.0	0.0	0.2	0.0	0.0	0.5	1.1	0.0
MAX	0.0	72.0	57.4	0.0	0.0	0.0	6.4	0.0	0.6	15.0	32.7	0.0
MIN.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL AF	0.0	1,030.0	372.0	0.0	0.0	0.0	13.0	0.0	1.0	30.0	65.0	0.0

BURBANK-WESTERN ST. DR. at Riverside Drive STATION NO. E 285-R



RECORDER- continuous water stage.
 METHOD OF MEASUREMENTS- wading and from bridge.
 DRAINAGE AREA- 25.0 square miles.
 LOCATION- 20.0 feet upstream from Riverside Drive bridge, Glendale.
 REGULATION- Several debris basins on tributaries.
 CHANNEL- concrete, rectangular section.
 CONTROL- channel forms control.
 LENGTH OF RECORD- October 1, 1949 to date.
 REMARKS- operated in cooperation with the USCE.

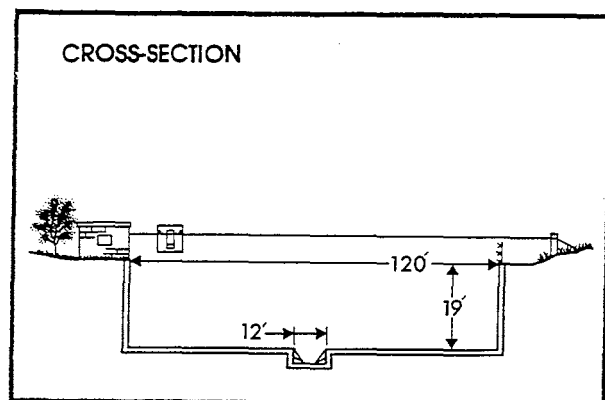
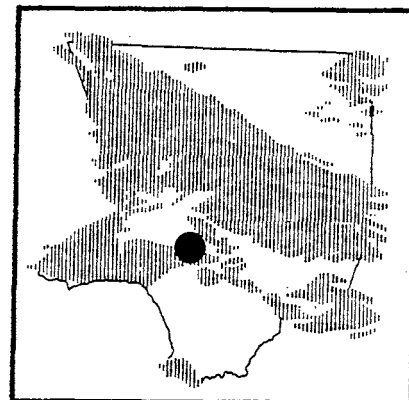
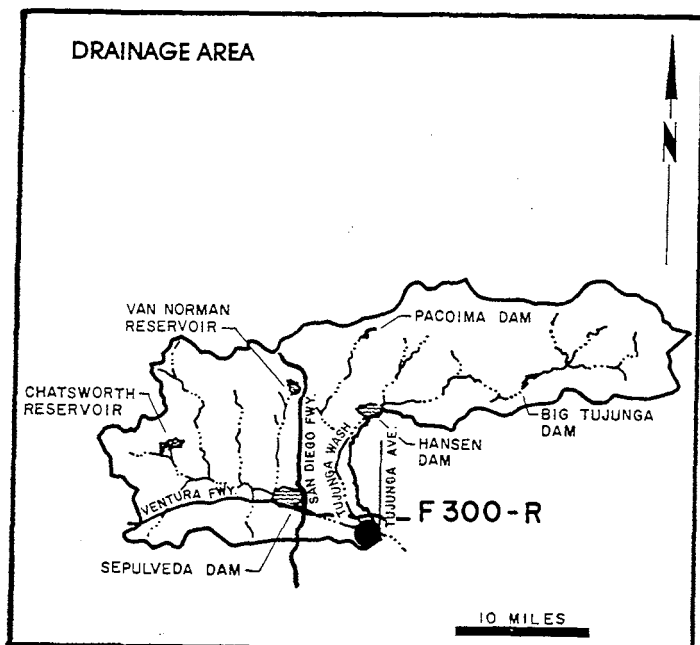
WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : E285-R

DRAINAGE AREA : 25.00 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	10.6	17.1	16.9	14.1	54.1	30.5	11.9	9.7	11.1	11.0	8.9	8.6
MAX.	32.2	165.0	115.0	73.0	355.0	290.0	15.4	11.5	14.6	12.0	10.2	9.0
MIN.	6.8	5.7	7.9	9.3	8.0	9.2	9.8	6.7	9.1	10.2	7.0	7.9
TOTAL AF	654.0	1,018.0	1,038.0	865.0	3,007.0	1,875.0	709.0	596.0	662.0	674.0	545.0	512.0

LOS ANGELES RIVER at Tujunga Avenue STATION NO. F300-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from cable car.

DRAINAGE AREA- 401.0 square miles.

LOCATION- 200.0 feet above Tujunga Avenue bridge, Studio City.

REGULATION- flow regulated by Sepulveda, Big Tujunga, Hansen, and Pacoima Dams, Lopez Debris Dam, and Project No. 85 Diversion.

CHANNEL- concrete, rectangular section, 120 feet wide by 19 feet deep.

CONTROL- channel forms control.

LENGTH OF RECORD- May 8, 1950, to date.

REMARKS- subject to diversions at mouth of Big Tujunga and Pacoima Canyons for irrigation, at Big Tujunga, Branford, Hansen, and Pacoima Spreading Grounds.

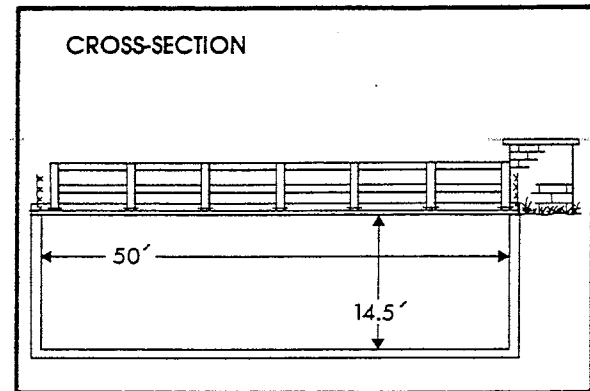
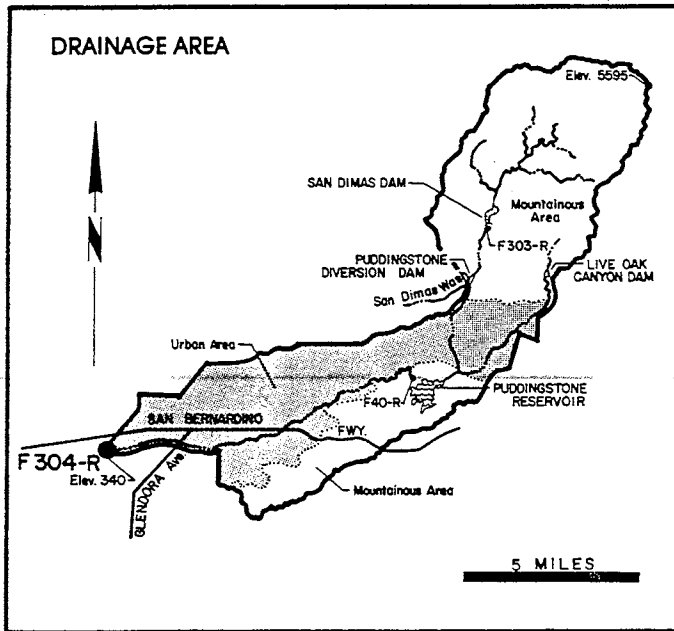
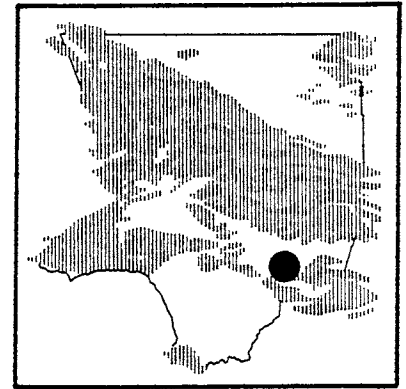
WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F300-R

DRAINAGE AREA : 401.00 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	87.4	98.5	117.0	70.3	491.0	209.0	115.0	97.7	92.3	83.2	81.7	78.1
MAX.	407.0	484.0	849.0	93.7	2,390.0	1,410.0	500.0	214.0	106.0	98.9	89.3	88.2
MIN.	54.7	56.9	57.7	55.8	91.0	82.3	81.2	73.3	77.1	73.5	71.3	67.5
TOTAL AF	5,377.0	5,860.0	7,196.0	4,320.0	27,260.0	12,880.0	6,834.0	6,007.0	5,492.0	5,117.0	5,025.0	4,650.0

WALNUT CREEK above Puente Avenue STATION NO. F304-R



RECORDER- continuous water stage.
METHOD OF MEASUREMENTS- wading or from footbridge.
DRAINAGE AREA- 57.6 square miles.
LOCATION- 845.0 feet upstream of Puente Avenue bridge, Baldwin Park.
REGULATION- partially regulated by San Dimas, Puddingstone Diversion, Puddingstone, and Live Oak Dams.
CHANNEL- concrete, rectangular in section.
CONTROL- channel forms control.
LENGTH OF RECORD- October 14, 1952 to April 11, 1961, January 3, 1962 to date.
REMARKS- no record during April 11, 1961 to January 3, 1962 due to channel construction.

WATER YEAR 1993–1994 (DISCHARGE IN CFS)

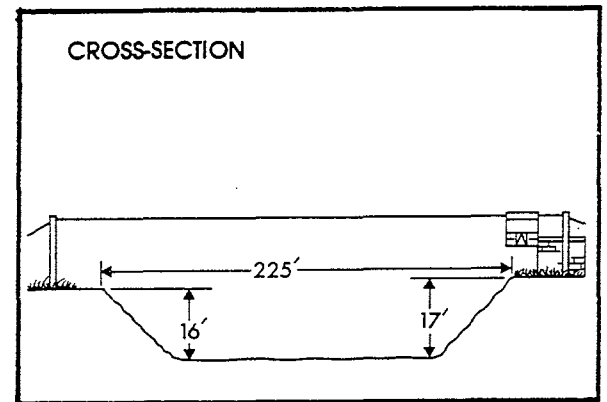
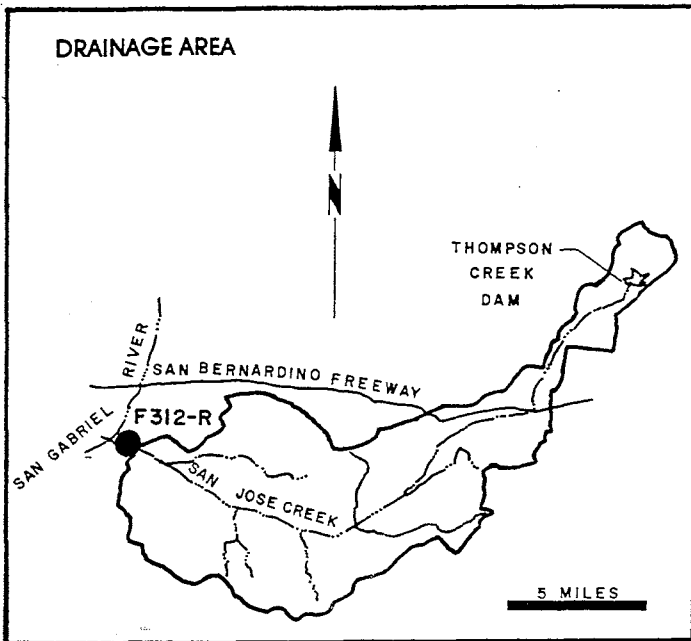
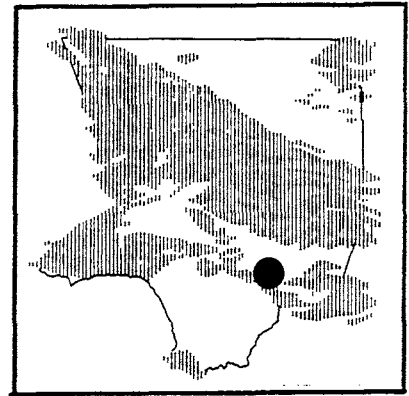
STATION NO. : F304-R

DRAINAGE AREA : 57.60 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.9	6.2	18.0	2.5	20.3	16.6	11.4	1.8	0.7	0.4	0.5	0.4
MAX.	8.0	57.0	147.0	22.3	190.0	249.0	208.0	7.1	1.5	1.2	1.4	1.5
MIN.	0.4	0.2	0.6	0.6	0.3	0.9	0.6	0.1	0.0	0.1	0.1	0.1
TOTAL AF	116.0	367.0	1,109.0	151.0	1,126.0	1,022.0	680.0	112.0	42.0	23.0	33.0	26.0

SAN JOSE CHANNEL

above Workman Mill Road
STATION NO. F312-R



RECORDER- continuous water stage.
 METHOD OF MEASUREMENTS- wading or from cable car.
 DRAINAGE AREA- 83.4 square miles.
 LOCATION- 1,650 feet above Workman Mill Road, 3.0 miles southeast of El Monte.
 REGULATION- partially regulated by Thompson Creek Dam and Pomona Sewage Treatment Plant.
 CHANNEL- grouted rip-rap side slopes with natural bottom, trapezoidal section.
 CONTROL- rock stabilizer.
 LENGTH OF RECORD- September 13, 1955 to date.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

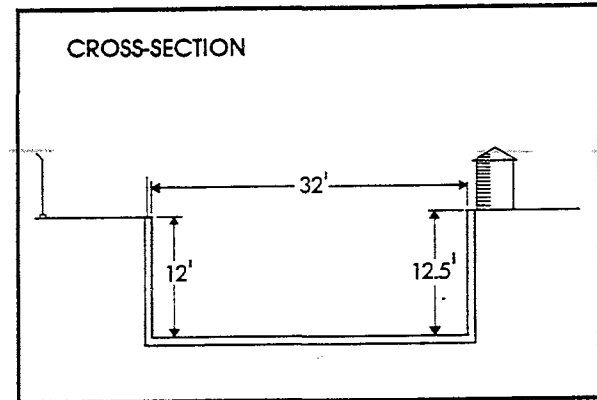
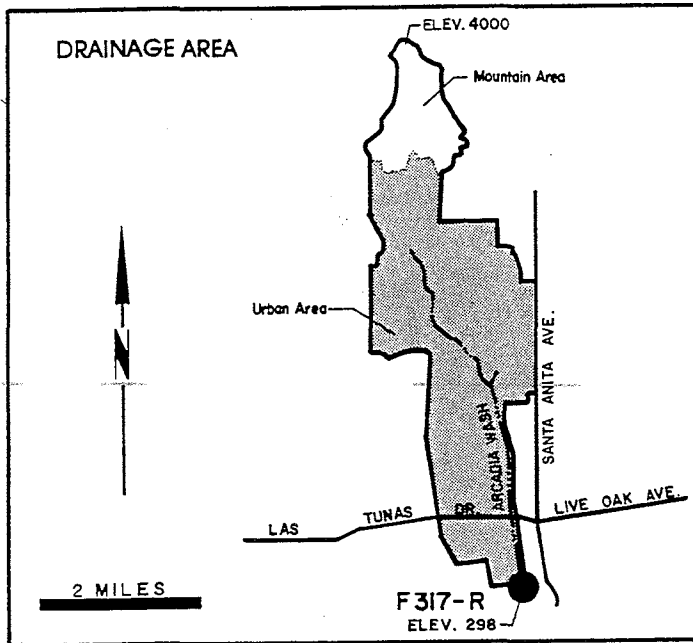
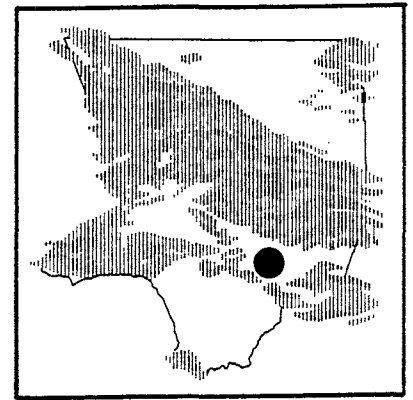
STATION NO. : F312B-R

DRAINAGE AREA : 83.40 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	14.6	19.8	18.3	15.9	36.5	13.0	12.0	118.8	129.5	9.2	6.3	8.9
MAX.	46.0	136.0	127.0	131.0	149.0	16.0	52.0	136.0	136.0	13.6	9.1	13.6
MIN.	6.8	11.4	11.4	4.6	7.0	10.0	6.8	11.4	127.0	6.8	4.6	4.6
TOTAL AF	899.0	1,178.0	1,127.0	978.0	2,025.0	802.0	712.0	7,307.0	7,704.0	563.0	389.0	532.0

NOTE: DATA WAS ESTIMATED.

ARCADIA WASH below Grand Avenue STATION NO. F 317-R



RECORDER- 15 minute punched tape.

METHOD OF MEASUREMENTS- low flows measured by wading. High flows measured from upstream side of Grand Avenue bridge.

DRAINAGE AREA- 8.5 square miles.

LOCATION- on the west wall of Arcadia Wash about 75 feet downstream from centerline of Grand Avenue.

REGULATION- several debris basins located upstream.

CHANNEL- rectangular concrete.

LENGTH OF RECORD- December 12, 1955 to date.

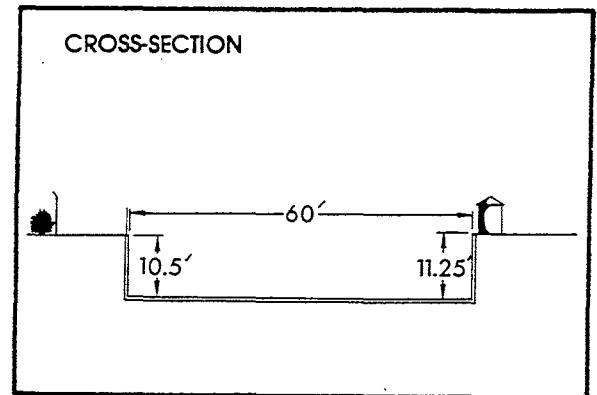
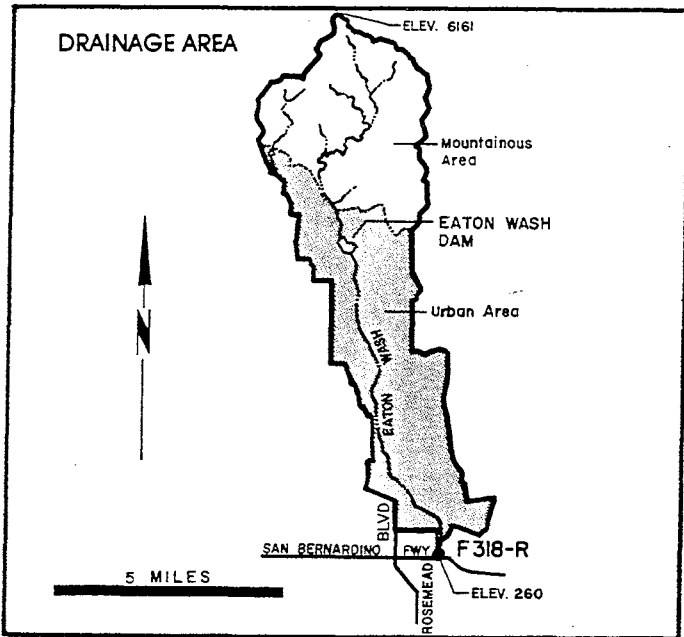
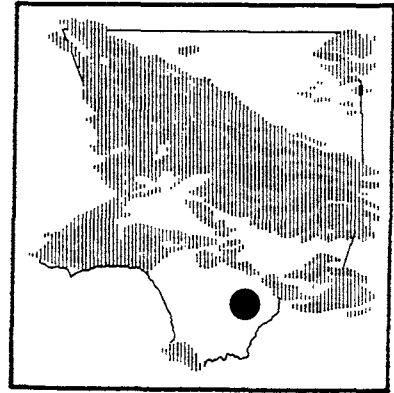
WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F317-R

DRAINAGE AREA : 8.50 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	2.5	8.9	2.9	2.3	9.0	22.8	11.0	13.0	0.7	2.1	1.3	0.8
MAX.	7.6	162.0	55.2	33.1	57.0	239.0	95.2	125.0	1.4	4.3	3.9	1.3
MIN.	0.7	0.9	0.0	0.1	0.5	0.4	0.5	0.5	0.2	0.5	0.5	0.5
TOTAL AF	157.0	529.0	179.0	142.0	497.0	1,402.0	656.0	799.0	41.0	132.0	83.0	46.0

EATON WASH at Loftus Drive STATION NO. F318-R



RECORDER- 15 minute punched tape.

METHOD OF MEASUREMENTS- low flows measured by wading. High flows measured from upstream side of East Loftus Drive bridge.

DRAINAGE- 22.8 square miles.

LOCATION- on the west wall of the channel 52 feet above the centerline of East Loftus Drive bridge, 1.3 miles west of El Monte.

REGULATION- partly regulated by Eaton Dam.

DIVERSIONS- the Pasadena Water Department diverts some water just above the mouth of Eaton Canyon. The Flood Control District diverts water to spreading grounds below Eaton Dam and below Huntington Drive.

CHANNEL- rectangular concrete, 60 feet wide, 11.3 feet.

CONTROL- channel forms control.

LENGTH OF RECORD- 1956 to date.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO.: F318-R

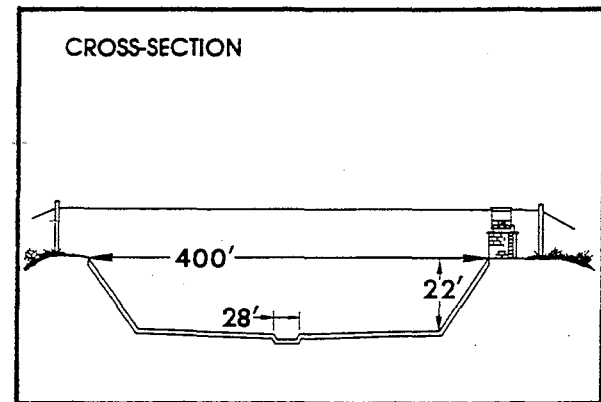
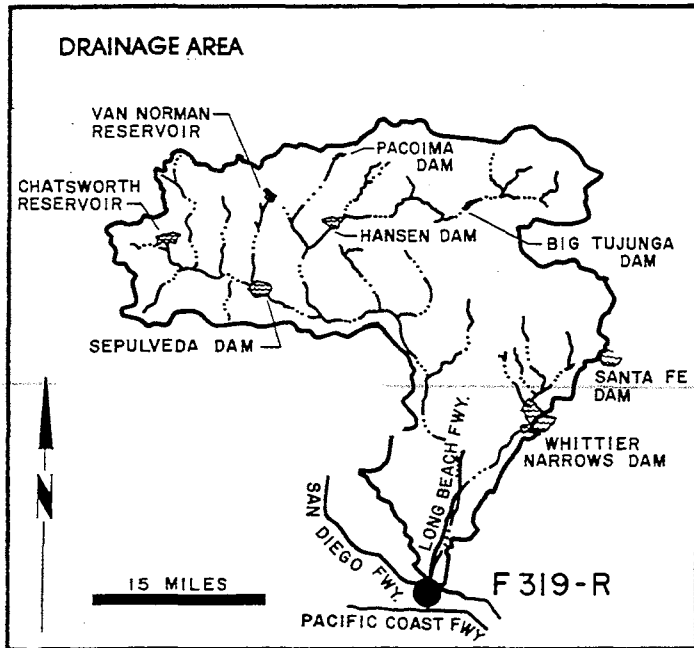
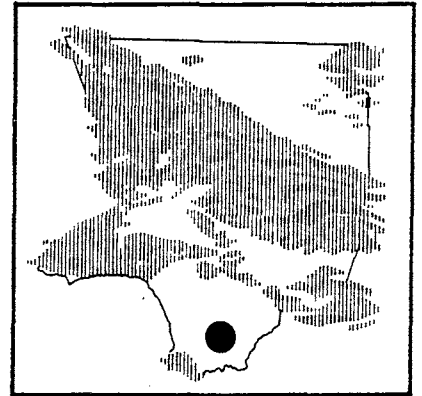
DRAINAGE AREA: 22.80 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.6	3.9	5.3	0.2	7.4	11.5	4.6	1.7	0.1	0.1	0.1	0.1
MAX.	4.9	64.1	77.4	0.5	159.0	146.0	40.5	14.3	0.3	0.1	0.2	0.3
MIN.	0.2	0.1	0.0	0.0	0.2	0.3	0.3	0.2	0.0	0.0	0.0	0.0
TOTAL AF	38.0	232.0	324.0	11.0	411.0	706.0	271.0	104.0	6.0	5.0	7.0	8.0

LOS ANGELES RIVER

below Wardlow Road

STATION NO. F319-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from cable car.

DRAINAGE AREA- 815.0 square miles (excludes area above Santa Fe Dam).

LOCATION- 900.0 feet below Wardlow Road, Long Beach.

REGULATION- flow is subject to the same regulation as Stations F34D-R and P45B-R.

DIVERSIONS- flows diverted to Dominguez Gap Spreading Grounds.

CHANNEL- trapezoidal, concrete, 302.0 feet wide at bottom with 2.25:1 side slopes. Low flow channel 28.0 feet wide by 1.0 foot deep in center of channel.

CONTROL- channel forms control.

LENGTH OF RECORD- at Station F180-R October 31, 1931 to January 13, 1956. at Station F319-R January 13, 1956 to date.

REMARKS- prior to 1931, see Station F36-R.

WATER YEAR 1993-1994

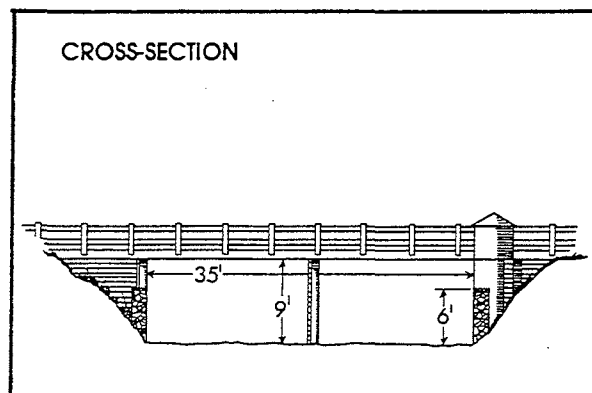
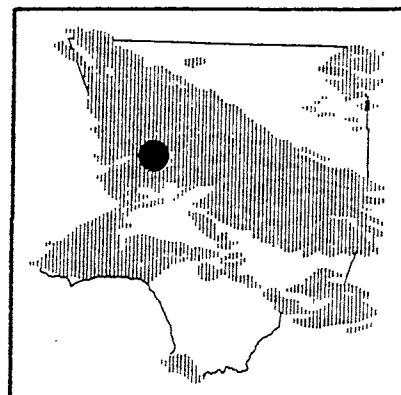
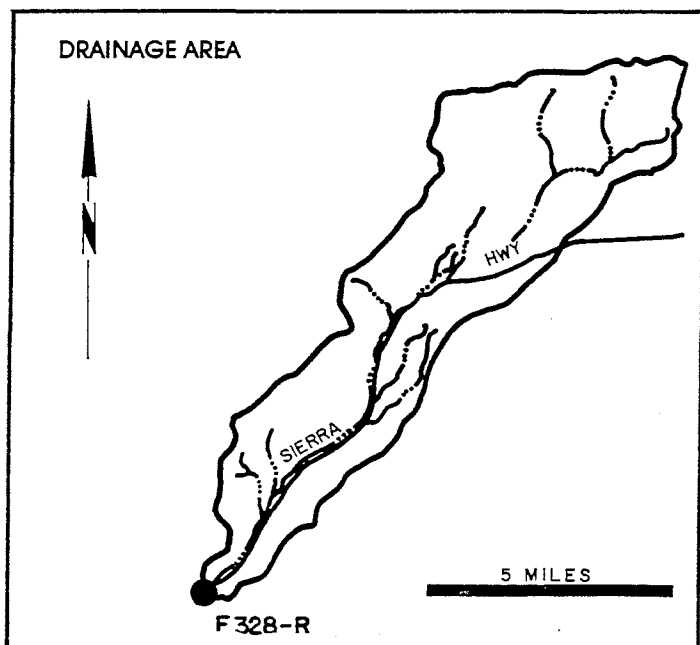
(DISCHARGE IN CFS)

STATION NO. : F319-R

DRAINAGE AREA : 815.00 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	214.0	266.0	284.0	197.0	721.0	422.0	218.0	182.0	171.0	168.0	160.0	140.0
MAX.	629.0	1,850.0	1,720.0	1,370.0	4,090.0	2,430.0	830.0	346.0	180.0	189.0	186.0	175.0
MIN.	152.0	153.0	151.0	113.0	182.0	135.0	150.0	153.0	156.0	152.0	129.0	119.0
TOTAL AF	13,170.0	15,820.0	17,470.0	12,090.0	40,060.0	25,970.0	12,950.0	11,220.0	10,160.0	10,300.0	9,824.0	8,356.0

MINT CANYON CREEK at Finch Avenue STATION NO. F328-R



RECORDER- continuous water stage.
 METHOD OF MEASUREMENTS- wading or from bridge.
 DRAINAGE AREA- 26.9 square miles.
 LOCATION- 8.5 miles northeast of Saugus on west end of Finch Avenue bridge.
 REGULATION- none.
 CHANNEL- natural, sand and gravel.
 CONTROL- concrete control at downstream end of bridge.
 LENGTH OF RECORD- October 26, 1956 to date.

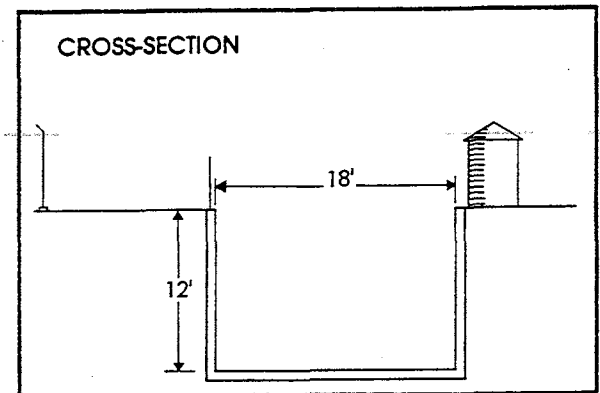
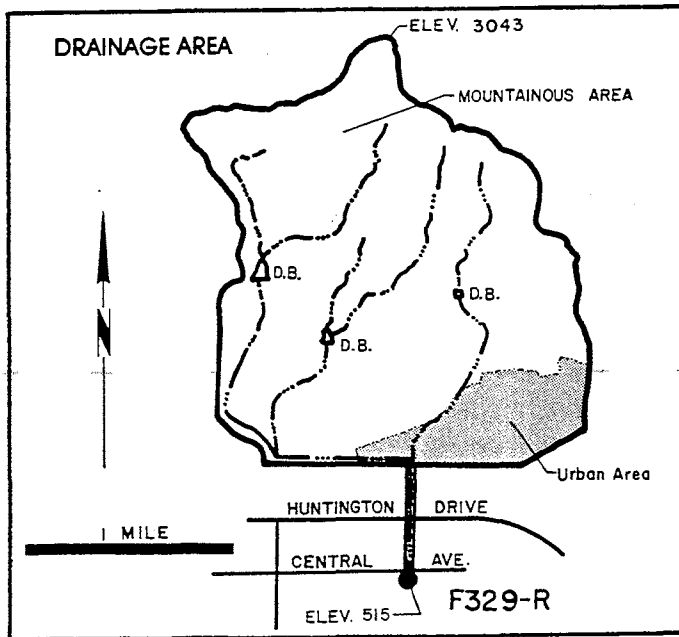
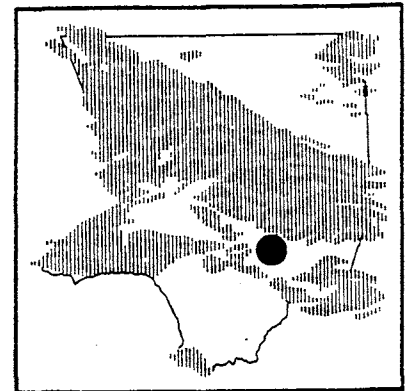
WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F328-R

DRAINAGE AREA : 26.90 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.7	1.1	0.7	0.5	0.9	0.6	0.5	0.7	0.3	0.2	0.2	0.0
MAX.	1.3	1.5	1.3	0.8	1.4	1.2	1.0	1.2	0.6	0.4	0.4	0.7
MIN.	0.3	0.7	0.4	0.1	0.5	0.3	0.1	0.1	0.1	0.1	0.1	0.0
TOTAL AF	44.0	65.0	46.0	33.0	51.0	39.0	27.0	46.0	18.0	11.0	10.0	2.0

BRADBURY CHANNEL below Central Avenue STATION NO. F329-R



RECORDER- 15 minute punched tape.

METHOD OF MEASUREMENT- low flows measured by wading. High flows measured from footbridge four feet downstream from recorder.

DRAINAGE AREA- 3.3 square miles.

LOCATION- on the east wall of Bradbury Channel, 200 feet downstream from the centerline of Central Avenue, one mile east of Duarte.

REGULATION- two debris basins located upstream.

CHANNEL- rectangular concrete, 18 feet wide, 12 feet deep.

CONTROL- channel forms control.

LENGTH OF RECORD- June 14, 1957 to present.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F329-R

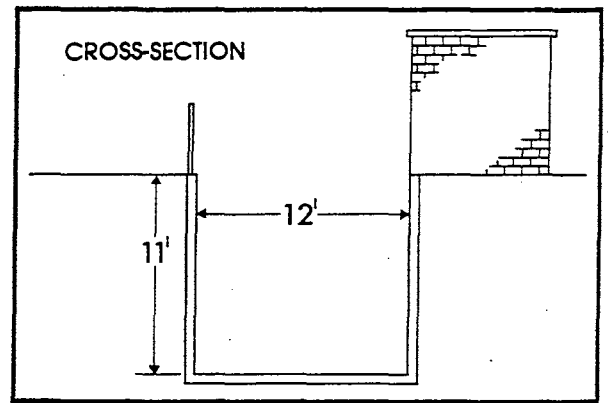
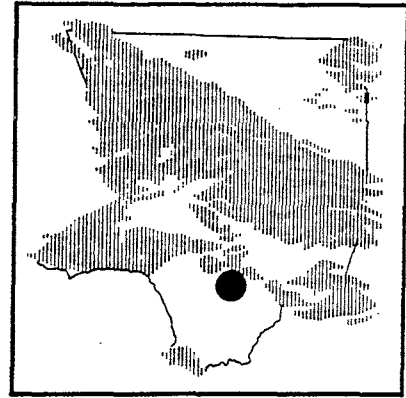
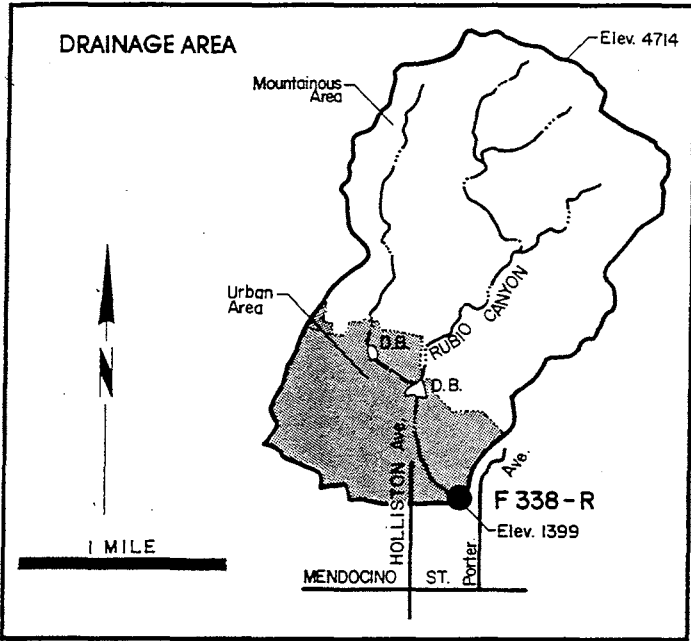
DRAINAGE AREA : 3.30 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.4	1.3	0.6	0.3	1.5	1.4	0.3	0.2	0.9	0.7	0.2	0.1
MAX	1.3	5.6	7.8	3.4	8.8	14.6	4.2	1.4	2.0	2.1	0.6	0.2
MIN	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.1	0.0	0.0
TOTAL AF	26.0	75.0	37.0	18.0	84.0	87.0	15.0	12.0	54.0	42.0	12.0	6.0

RUBIO DIVERSION CHANNEL

below Goosebury Inlet

STATION NO. F338-R



RECORDER- 15 minute punched tape.

METHOD OF MEASUREMENTS- low flows measured by wading. High flows measured from steel footbridge 27 feet above station.

DRAINAGE AREA- 2.1 square miles.

LOCATION- on the north bank, 375 feet upstream of Crest Drive, three and one-half miles northeast of Pasadena.

REGULATION- flow partially regulated by Rubio and Gooseberry Debris Basins.

DIVERSIONS- Rubio Canyon Land and Water Association diverts low flows in Rubio Canyon.

CHANNEL- rectangular concrete, 12 feet wide and 11 feet deep.

CONTROL- channel forms control.

LENGTH OF RECORD- December 16, 1959 to date.

WATER YEAR 1993-1994

(DISCHARGE IN CFS)

STATION NO. : F338-R

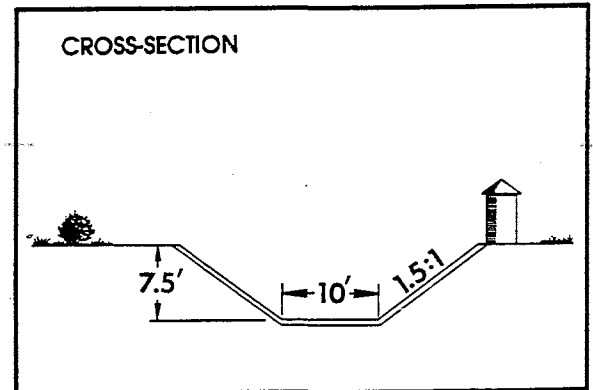
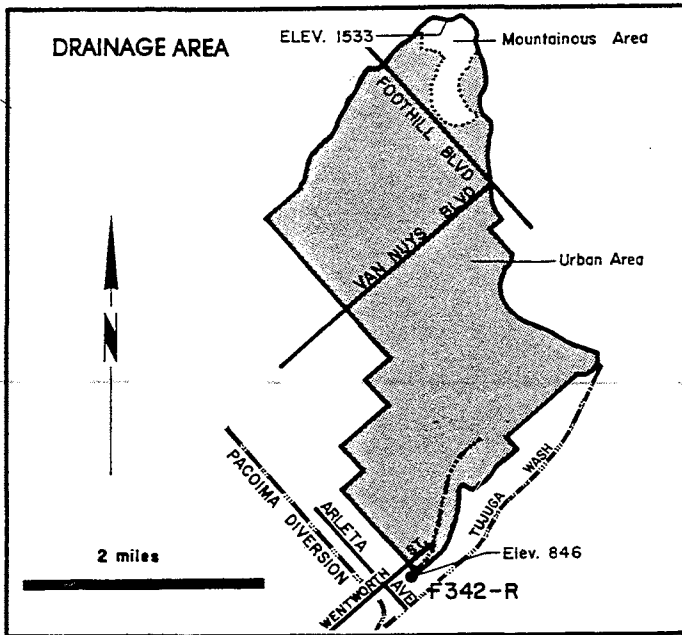
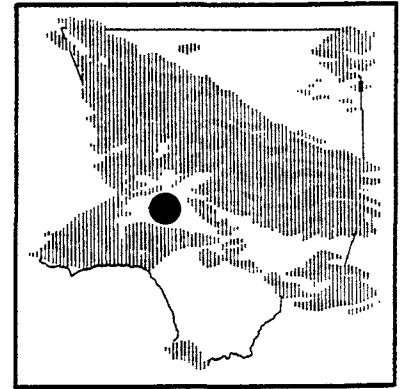
DRAINAGE AREA : 2.10 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.9	1.3	*	OUT	2.8	2.1	15.9	0.8	0.3	0.0	*	0.1
MAX.	1.8	7.0	*	OF	10.7	9.8	41.5	2.4	0.8	0.3	*	1.0
MIN.	0.2	0.0	*	SERVICE	0.0	0.4	0.3	0.0	0.0	0.0	*	0.0
TOTAL AF	56.0	75.0	*		154.0	129.0	947.0	52.0	17.0	2.0	*	8.0

LEGEND * - Recorder malfunctioned during part of the month. Partial data is available

BRANFORD STREET CHANNEL

below Sharp Avenue
STATION NO. F342-R



RECORDER- 15 minute punched tape.
 METHOD OF MEASUREMENTS- low flows measured by wading. High flows measured by floats.
 DRAINAGE AREA- 5.01 square miles.
 LOCATION- on the south bank of channel, 125 feet downstream from Sharp Avenue, about 3.6 miles south of San Fernando.
 REGULATION- flow from Lopez Creek is diverted to Hansen Dam at the mouth of Lopez Canyon.
 CHANNEL- trapezoidal, 10 feet wide at bottom and 7.5 feet deep with 1.5 to 1 side slopes.
 CONTROL- channel forms control.
 LENGTH OF RECORD- January 12, 1962 to date.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F342-R

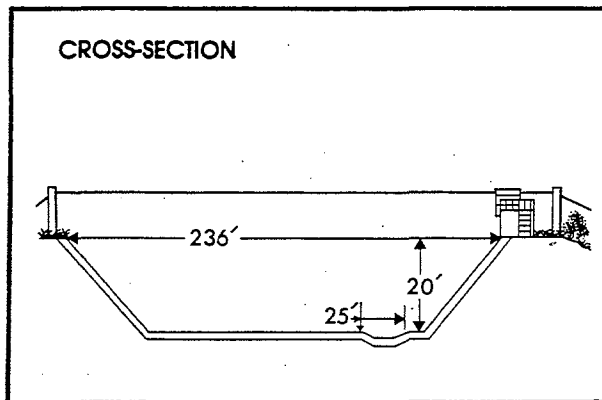
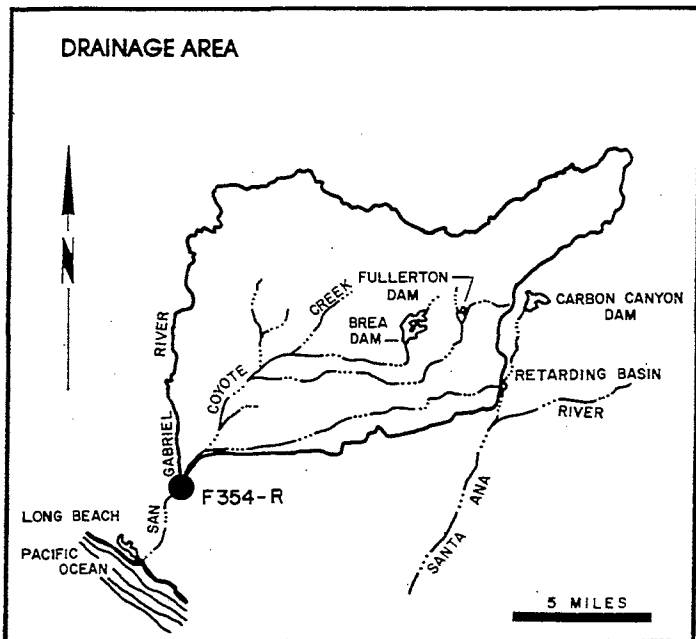
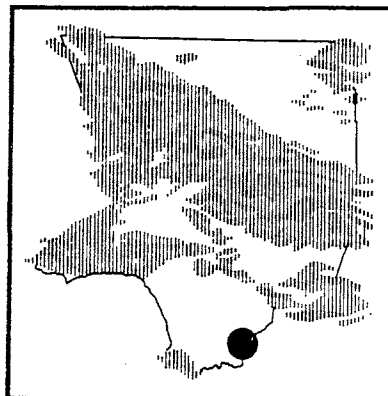
DRAINAGE AREA : 5.01 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.3	*	*	*	3.2	1.8	0.4	0.1	0.0	0.0	0.0	*
MAX.	8.4	*	*	*	35.3	34.7	6.3	3.3	0.0	0.5	0.0	*
MIN.	0.0	*	*	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	*
TOTAL AF	21.0	*	*	*	178.0	109.0	22.0	9.0	0.0	1.0	0.0	*

LEGEND * - Recorder malfunctioned during part of month. Partial data is available.

COYOTE CREEK

below Spring Street
STATION NO. F354-R



RECORDER- continuous water stage.

METHOD OF MEASUREMENTS- wading or from cable car.

DRAINAGE AREA- 185.0 square miles.

LOCATION- 241.0 feet below Spring Street, 7.5 miles northeast of Long Beach.

REGULATION- partially regulated by Fullerton Dam, Brea Dam, and Carbon Canyon Dam.

CHANNEL- concrete, trapezoidal in section.

CONTROL- channel forms control.

LENGTH OF RECORD - December 17, 1963 to date.

REMARKS - previous gaging stations for record correlation: Station F41 - S December 1, 1928 to January 14, 1930. Station F41 - R January 14, 1930 to October 30, 1936. Station F41B - R October 30, 1936 to February 17, 1937. Station F41C - R February 18, 1937 to February 8, 1956. Station F320 - R February 9, 1956 to July 2, 1965.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F354-R

DRAINAGE AREA : 185.00 SQ. MI.

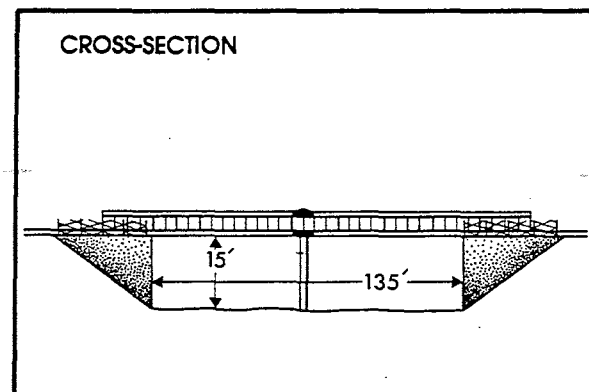
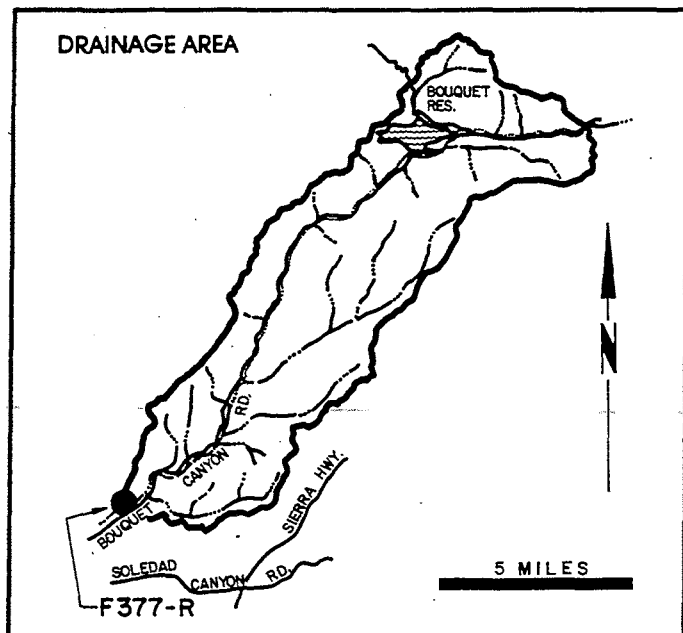
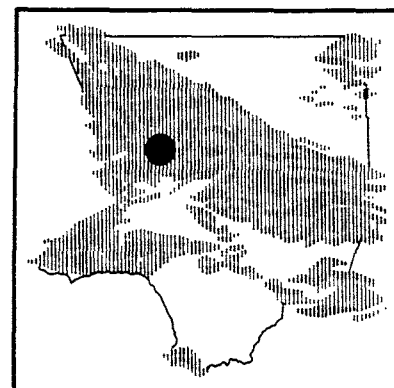
MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	15.9	OUT	*	*	210.0	110.0	*	*	OUT	*	OUT	OUT
MAX.	44.0	OF	*	*	1,510.0	1,230.0	*	*	OF	*	OF	OF
MIN.	5.0	SERVICE	*	*	7.2	20.6	*	*	SERVICE	*	SERVICE	SERVICE
TOTAL AF	979.0		*	*	11,660.0	6,765.0	*	*		*		

LEGEND * - Recorder malfunctioned during part of month. Partial data is available.

BOUQUET CANYON CREEK

at Urbandale Avenue

STATION NO. F377-R



RECORDER- continuous water stage.
 METHOD OF MEASUREMENTS- wading or from bridge.
 DRAINAGE AREA- 51.9 square miles.
 LOCATION- Bouquet Canyon Creek at Urbandale Avenue, 3.5 miles northeast of Saugus.
 REGULATION- Bouquet Reservoir.
 CHANNEL- concrete sides with natural bottom, trapezoidal in section.
 CONTROL- concrete stabilizer.
 LENGTH OF RECORD- October 11, 1967 to date.

WATER YEAR 1993-1994 (DISCHARGE IN CFS)

STATION NO. : F377-R

DRAINAGE AREA : 51.90 SQ. MI.

MONTH	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	0.1	0.2	*	*	0.0	0.1	0.1	0.8	0.0	0.0	OUT	*
MAX.	1.0	0.9	*	*	0.2	0.8	0.6	5.0	0.0	0.0	OF	*
MIN.	0.0	0.0	*	*	0.0	0.0	0.0	0.0	0.0	0.0	SERVICE	*
TOTAL AF	6.0	10.0	*	*	1.0	4.0	3.0	48.0	60.0	0.0		*

LEGEND * - Recorder malfunctioned during part of month. Partial data is available.

RESERVOIRS

RESERVOIRS

Following the damaging flood of 1914 and creation of the Los Angeles County Flood Control District in 1915, a program of flood control and water conservation was initiated. Part of this program included the construction of 14 dams which were completed between 1920 and 1939. These dams were operated by the Department during the period covered by this report. In addition, five Corps of Engineers' dams, Lopez, Hansen, Santa Fe, Sepulveda and Whittier Narrows Dams, and Morris Dam owned by The Metropolitan Water District were operated in conjunction with the Department dams to achieve flood control and/or water conservation.

OPERATION

The reservoirs are operated to control flood waters during storm periods. Post storm releases are made, when feasible, in amounts which can be conserved in downstream spreading grounds and by channel percolation. Cleanouts are done to regain storage capacity in reservoirs (see Erosion Control for cleanout data).

RECORDS

The storage and flow records at the 14 Department reservoirs are summarized on the Dam Operation Record Sheets. The sheets show:

1. Daily reservoir water surface elevations. Elevations are obtained from water stage recorder graphs or interpolation from staff gage readings and recorded as of midnight of each day. Only maximum and minimum water surface elevations for each year are shown.
2. Available storage in acre-feet based on the most recent topographic surveys. Annual storage volumes are shown.
3. Stream inflow rates in cubic feet per second. This is usually calculated from storage change and known outflow.
4. Outflow in cubic feet per second. These values are determined from gaging station records, or when these are not available, from valve and spillway rating curves. Only the maximum and minimum of the daily outflow rates for the year and the instantaneous peak outflow rate are shown.
5. Discrepancies between outflow and storage losses at certain dams are attributable to evaporation and/or percolation losses. Total monthly evaporation losses are determined from the measurements made on land evaporation pans. In those cases where no allowances were made for evaporation, the amounts are necessarily included in the flow values. Accuracy of flow records computed from storage records is dependent on the frequency with which storage data are revised to keep in step with the physical change in reservoirs due to sediment deposition, accumulation and removal.

RESERVOIR CLEANOUTS

The periodical removal of Sediment is necessary in our reservoirs in order to maintain storage capacity. Sediment deposition adversely affects flood control and water conservation and storage activities in our reservoirs.

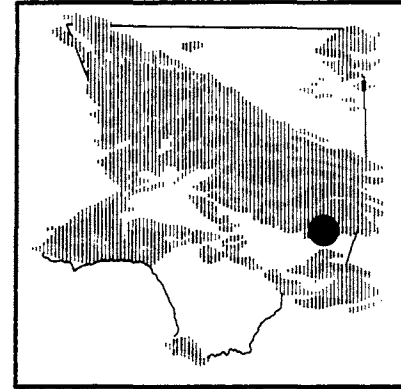
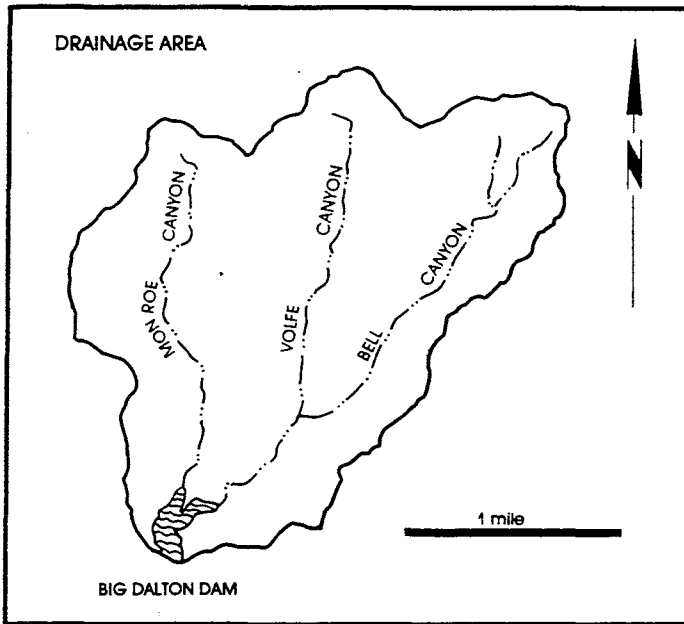
Between June 1993 and June 1994 the Department completed seven cleanouts. These cleanouts removed a total of 847,534 cyds of sediment from our reservoirs at the cost of \$5.2 million. Eaton Wash Reservoir cleanout removed 314,000 CY of sediment. San Dimas Reservoir cleanout removed 87,400 CY of sediment. Santa Anita Reservoir cleanout removed 72,300 CY of sediment that was disposed of at Santa Anita SPS. Puddingstone Reservoir cleanout removed 113,600 CY of sediment. Big Dalton Sediment cleanout removed 43,000 CY of sediment that was disposed of at Dalton SPS. Live Oak removed 24,234 CY of sediment that was disposed of at Webb School. The Devil's Gate cleanout removed 193,000 CY of sediment that was disposed of at Scholl Canyon. Since the 1992 and 1993 storms were declared disaster events by the state and the federal government a portion of the total sediment inflow for these two seasons is eligible for Fema reimbursement. Currently, there are ongoing sediment removal projects at Big Tujunga, Cogswell (phase2), and Whittier Narrows. These cleanouts should restore an additional 4.9 mcy of capacity at these reservoirs at a cost of \$23.2 million.

MORRIS RESERVOIR SEDIMENT TESTING

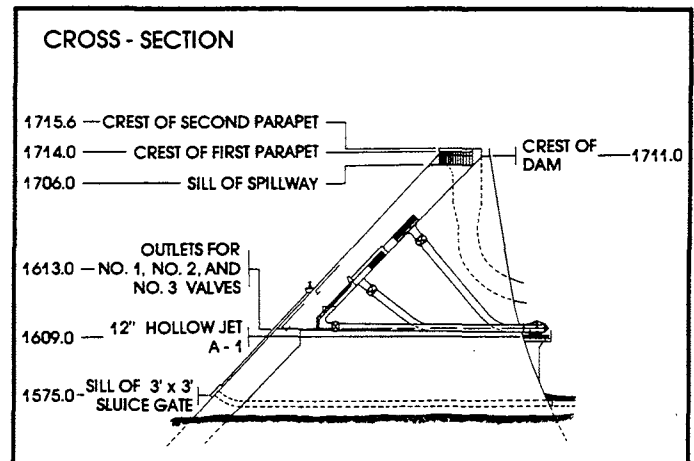
During the public review period for the San Gabriel Canyon Sediment Management Plan (SMP) Environmental Impact Statement Report/ Environmental Impact Statement a concern was raised about the possibility that the sediment within Morris Reservoir may have been contaminated by past naval activities at the facility. As a result, the Department hired a consultant to conduct a sediment testing program.

Our consultant Fugro-West, Inc. completed the Morris Reservoir sediment sampling program in October 1994. A total of 225 soil samples were collected throughout the reservoir for analytical chemistry analysis from 65 locations. Results of the analytical test data do not indicate the presence of any constituent that may be an environmental hazard. Fugro's report concludes that the sediments in the reservoir do not pose a threat to the groundwater and can be disposed of at an inert landfill.

BIG DALTON DAM AND RESERVOIR



PURPOSE - Flood Control and Conservation.
DATE CONSTRUCTED - Started December 1927. Completed August 1929.
LOCATION - Big Dalton Canyon, 4.0 miles northeast of Glendora.
DRAINAGE AREA - 4.5 square miles.
CAPACITY - 963 acre - feet.
SPILLWAY ELEVATION - 1,706.0 feet.



DAM OPERATION RECORD SUMMARY

Max. Peak Inflow	4.18 CFS from 1800 on 02-07-94 to 1900 on 02-07-94		
Max. Peak Outflow	12.60 CFS from 0815 on 04-06-94 to 0830 on 04-06-94		
Max. Water Surface Elev.	1,649.40 feet on	04-06-94	STORAGE 148.80 Acre-feet
Min. Water Surface Elev.	1,618.00 feet on	varies	STORAGE 35.60 Acre-feet

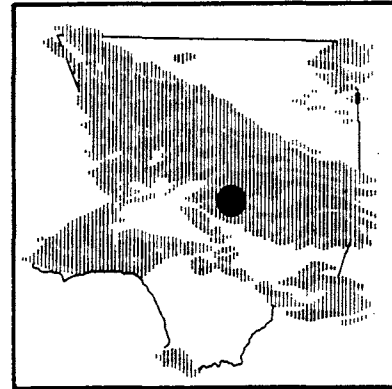
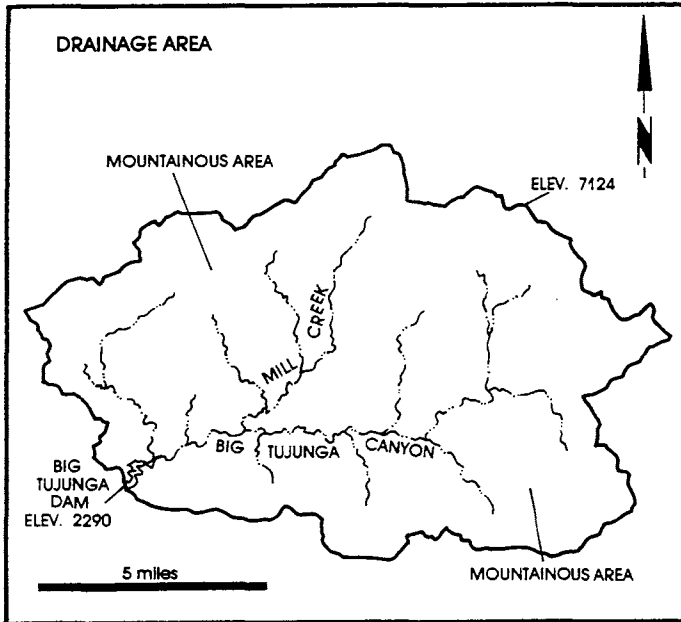
BIG DALTON DAM OPERATION RECORD SUMMARY

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	18.50	13.10	18.50	19.70
TOTAL MONTHLY OUTFLOW (AF)	10.90	0.00	4.00	1.80
MAX. MEAN DAILY INFLOW (CFS)	0.50	0.80	0.40	0.60
TOTAL MONTHLY LOSSES (AF)	0.30	2.30	0.30	0.60
MIN. MEAN DAILY INFLOW (CFS)	0.10	0.10	0.10	0.10
MONTHLY STORAGE CHANGE	7.30	10.80	14.20	17.30

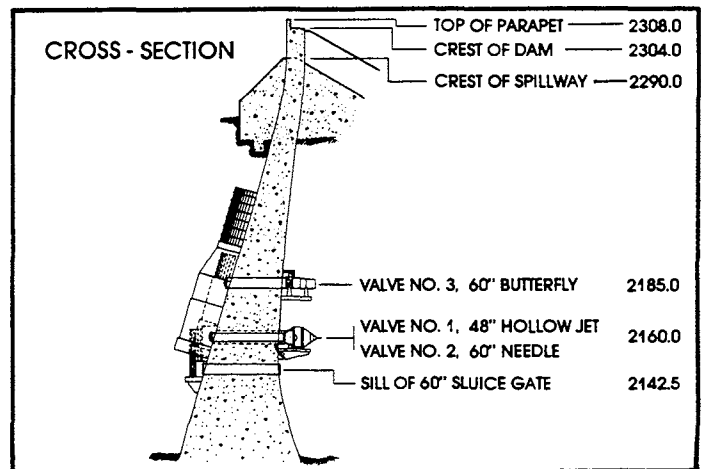
WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	85.20	86.40	54.80	38.20
TOTAL MONTHLY OUTFLOW (AF)	62.10	42.80	122.40	22.00
MAX. MEAN DAILY INFLOW (CFS)	3.00	2.30	2.00	1.70
TOTAL MONTHLY LOSSES (AF)	1.20	1.40	1.30	1.30
MIN. MEAN DAILY INFLOW (CFS)	0.30	0.90	0.10	0.20
MONTHLY STORAGE CHANGE	21.90	42.20	-68.90	14.90

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	15.90	8.20	6.40	3.60
TOTAL MONTHLY OUTFLOW (AF)	34.10	0.00	0.00	0.00
MAX. MEAN DAILY INFLOW (CFS)	0.50	0.30	0.30	0.20
TOTAL MONTHLY LOSSES (AF)	2.20	2.70	3.00	2.50
MIN. MEAN DAILY INFLOW (CFS)	0.10	0.00	0.00	0.00
MONTHLY STORAGE CHANGE	-20.40	5.50	3.40	1.10

BIG TUJUNGA DAM AND RESERVOIR



PURPOSE - Flood Control Conservation.
DATE CONSTRUCTED - Started January 1930. Completed July 1931.
LOCATION - Big Tujunga Canyon, 10.0 miles northeast of Sunland.
DRAINAGE AREA - 82.3 square miles.
CAPACITY - 6,027 acre - feet.
SPILLWAY ELEVATION - 2,290.0 feet.



DAM OPERATION RECORD SUMMARY

Max. Peak Inflow	169.85 CFS from 0100 on 02-08-94 to 0200 on 02-08-94			
Max. Peak Outflow	159.00 CFS from 1515 on 02-08-94 to 1530 on 02-08-94			
Max. Water Surface Elev.	2,215.30 feet on	02-08-94	STORAGE	1,343.60 Acre-feet
Min. Water Surface Elev.	2,140.00 feet on	varies	STORAGE	0.20 Acre-feet

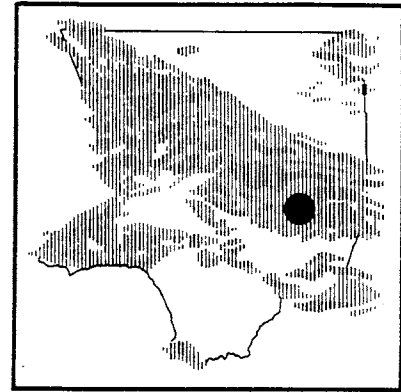
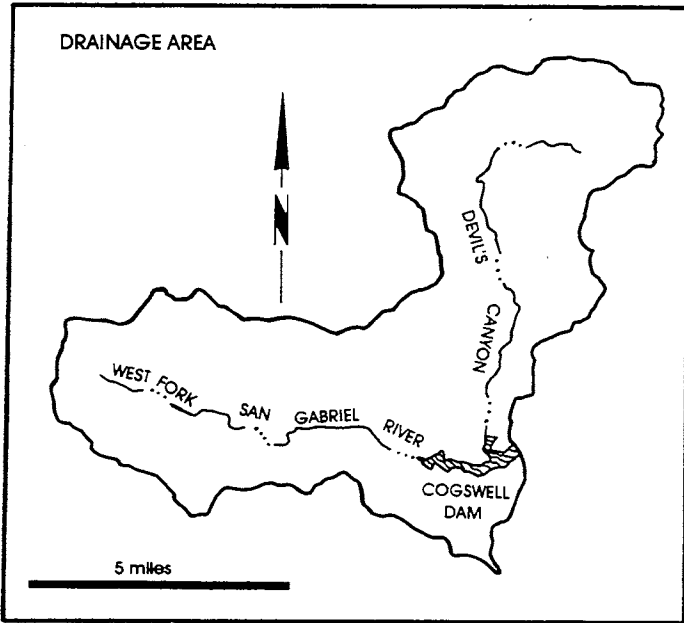
BIG TUJUNGA DAM OPERATION RECORD SUMMARY

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	728.20	896.00	942.70	1,012.50
TOTAL MONTHLY OUTFLOW (AF)	827.30	755.90	1,100.00	950.90
MAX. MEAN DAILY INFLOW (CFS)	14.10	23.90	22.00	26.90
TOTAL MONTHLY LOSSES (AF)	17.70	13.60	8.30	11.60
MIN. MEAN DAILY INFLOW (CFS)	10.00	11.40	9.80	13.00
MONTHLY STORAGE CHANGE	-116.80	126.50	-165.60	50.00

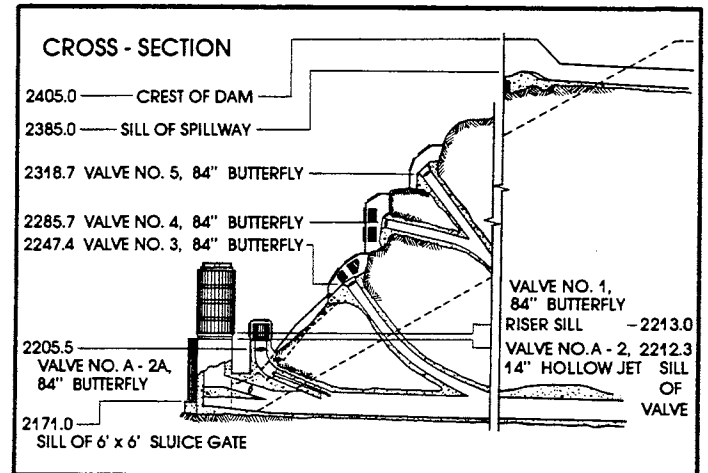
WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	2,186.30	1,364.00	1,159.00	110.50
TOTAL MONTHLY OUTFLOW (AF)	2,166.70	1,452.50	1,638.00	115.00
MAX. MEAN DAILY INFLOW (CFS)	79.80	39.70	44.00	5.00
TOTAL MONTHLY LOSSES (AF)	15.20	11.80	12.10	0.10
MIN. MEAN DAILY INFLOW (CFS)	17.00	3.50	4.80	0.00
MONTHLY STORAGE CHANGE	4.40	-100.30	-490.20	-4.60

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	125.10	32.10	42.40	35.30
TOTAL MONTHLY OUTFLOW (AF)	125.00	32.10	42.40	35.30
MAX. MEAN DAILY INFLOW (CFS)	2.10	0.90	1.00	1.00
TOTAL MONTHLY LOSSES (AF)	0.10	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	2.10	0.30	0.40	0.40
MONTHLY STORAGE CHANGE	0.00	0.00	0.00	0.00

COGSWELL DAM AND RESERVOIR



PURPOSE - Flood Control, Conservation, and Recreation.
 DATE CONSTRUCTED - Started March 1932. Completed April 1934.
 LOCATION - 22.0 miles north of Azusa.
 DRAINAGE AREA - 39.2 square miles.
 CAPACITY - 9,339 acre - feet.
 SPILLWAY ELEVATION - 2,385.0 feet.



DAM OPERATION RECORD SUMMARY

Max. Peak Inflow	161.85 CFS from 0700 on 02-08-94 to 0800 on 02-08-94		
Max. Peak Outflow	85.50 CFS from 0145 on 12-02-93 to 0200 on 12-02-93		
Max. Water Surface Elev.	2,345.73 feet on 10-01-93	STORAGE	4,372.10 Acre-feet
Min. Water Surface Elev.	2,230.58 feet on 09-30-94	STORAGE	53.80 Acre-feet

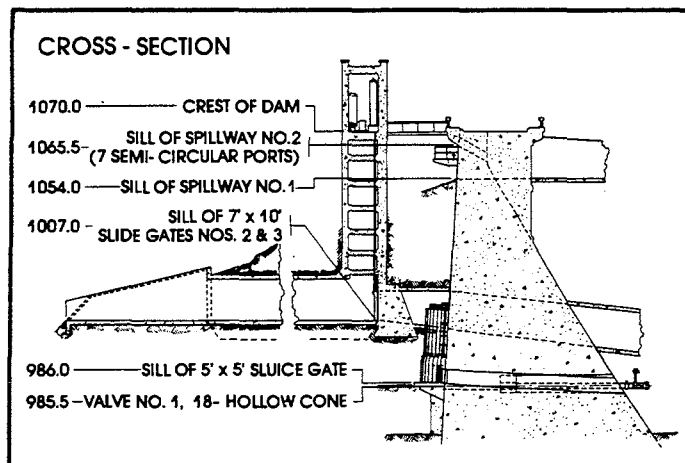
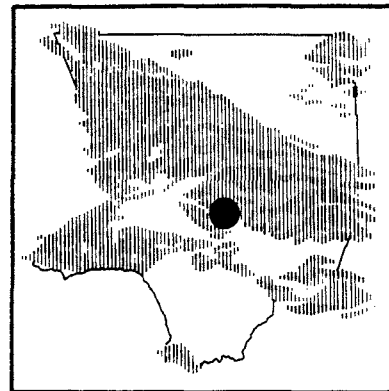
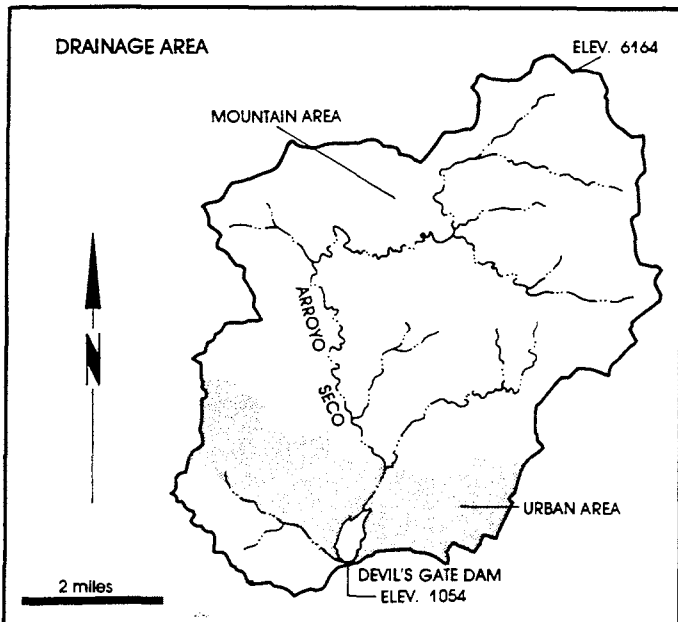
COGSWELL DAM OPERATION RECORD SUMMARY

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	754.70	402.00	592.10	409.20
TOTAL MONTHLY OUTFLOW (AF)	2,219.50	819.40	1,814.30	339.00
MAX. MEAN DAILY INFLOW (CFS)	14.30	11.00	15.70	10.60
TOTAL MONTHLY LOSSES (AF)	26.50	14.90	5.00	5.20
MIN. MEAN DAILY INFLOW (CFS)	10.60	4.10	4.10	5.10
MONTHLY STORAGE CHANGE	-1,491.30	-432.30	-1,227.20	65.00

WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	1,249.70	1,604.30	904.90	529.50
TOTAL MONTHLY OUTFLOW (AF)	859.00	2,817.10	1,235.50	552.80
MAX. MEAN DAILY INFLOW (CFS)	105.10	56.90	29.50	13.00
TOTAL MONTHLY LOSSES (AF)	5.50	4.40	3.00	1.90
MIN. MEAN DAILY INFLOW (CFS)	7.60	16.20	6.50	2.40
MONTHLY STORAGE CHANGE	385.20	-1,217.20	-333.60	-25.20

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	198.10	146.10	64.80	40.30
TOTAL MONTHLY OUTFLOW (AF)	186.40	156.70	78.70	63.10
MAX. MEAN DAILY INFLOW (CFS)	5.90	4.50	1.90	1.30
TOTAL MONTHLY LOSSES (AF)	5.10	5.90	5.60	3.40
MIN. MEAN DAILY INFLOW (CFS)	1.70	1.10	0.50	0.20
MONTHLY STORAGE CHANGE	6.60	-16.50	-19.50	-26.20

DEVIL'S GATE DAM AND RESERVOIR



PURPOSE - Flood Control and Conservation.
 DATE CONSTRUCTED - Started May 1919. Completed June 1920.
 LOCATION - On Arroyo Seco, northwest of Pasadena.
 DRAINAGE AREA - 31.9 square miles.
 CAPACITY - 1,928 acre - feet.
 SPILLWAY ELEVATION - 1,054.0 feet.

DAM OPERATION RECORD SUMMARY†

Max. Peak Inflow	25.30 CFS from 0800 on 02-17-94 to 0900 on 02-17-94			
Max. Peak Outflow	25.00 CFS from 1030 on 02-17-94 to 1045 on 02-17-94			
Max. Water Surface Elev.	997.80 feet on	04-26-94	STORAGE	2.80 Acre-feet
Min. Water Surface Elev.	987.00 feet on	varies	STORAGE	0.00 Acre-feet

† - Values estimated due to incomplete records.

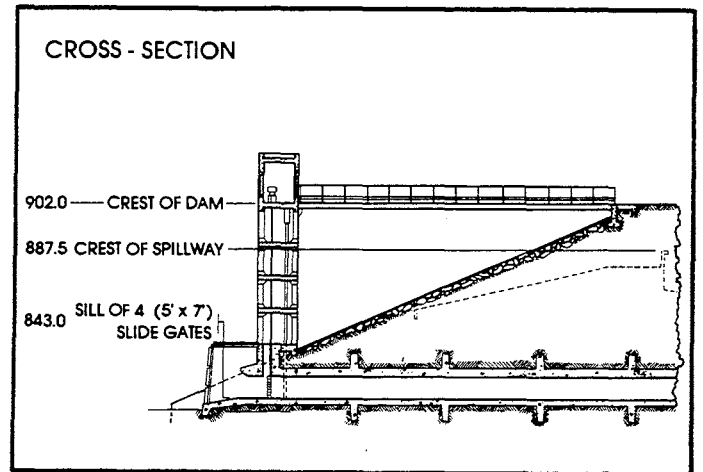
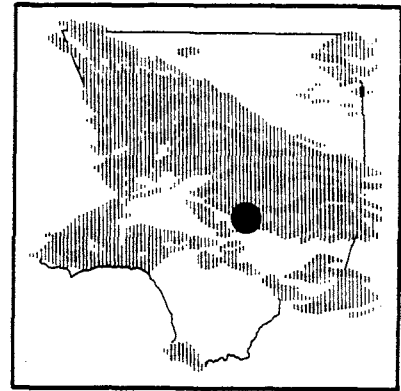
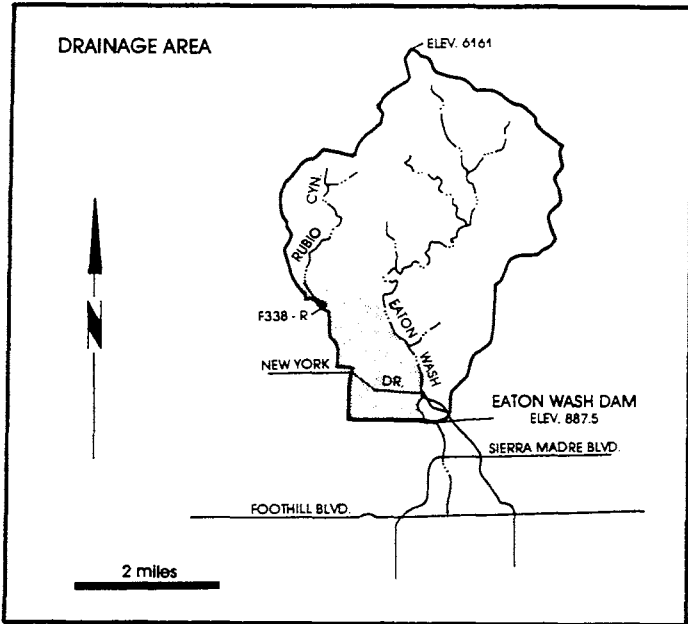
DEVIL'S GATE DAM OPERATION RECORD SUMMARY†

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	82.90	93.20	172.80	140.60
TOTAL MONTHLY OUTFLOW (AF)	82.90	93.20	172.80	140.40
MAX. MEAN DAILY INFLOW (CFS)	1.50	6.20	21.30	8.10
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	1.30	0.00	1.30	1.30
MONTHLY STORAGE CHANGE	0.00	0.00	0.00	0.20

WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	264.20	222.00	165.20	122.20
TOTAL MONTHLY OUTFLOW (AF)	263.60	222.00	165.20	122.60
MAX. MEAN DAILY INFLOW (CFS)	20.00	12.00	10.30	4.40
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	2.10	1.90	0.00	1.80
MONTHLY STORAGE CHANGE	0.60	0.00	0.00	-0.40

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	126.10	46.80	12.20	8.10
TOTAL MONTHLY OUTFLOW (AF)	126.10	47.00	12.30	8.10
MAX. MEAN DAILY INFLOW (CFS)	5.30	1.90	0.20	0.20
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	0.00	0.10	0.10	0.00
MONTHLY STORAGE CHANGE	0.00	-0.20	-0.10	0.00

EATON WASH DAM AND RESERVOIR



PURPOSE - Debris Storage and Conservation.
 DATE CONSTRUCTED - Started January 1936 . Completed February 1937.
 LOCATION - Eaton Wash, northeast of Pasadena.
 DRAINAGE AREA - 12.4 square miles.
 CAPACITY - 879 acre - feet.
 SPILLWAY ELEVATION - 887.5 feet.

DAM OPERATION RECORD SUMMARY

Max. Peak Inflow	50.58 CFS from 0600 on 02-08-94 to 0700 on 02-08-94		
Max. Peak Outflow	17.00 CFS from 1300 on 03-07-94 to 1445 on 03-07-94		
Max. Water Surface Elev.	873.16 feet on	03-27-94	STORAGE 384.90 Acre-feet
Min. Water Surface Elev.	842.00 feet on	varies	STORAGE 0.00 Acre-feet

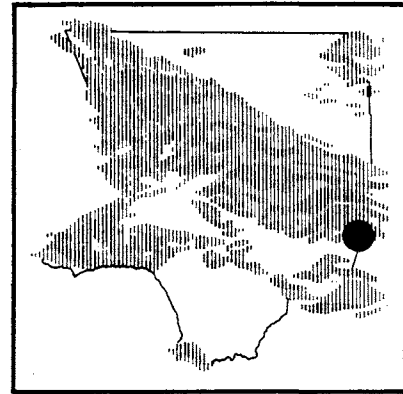
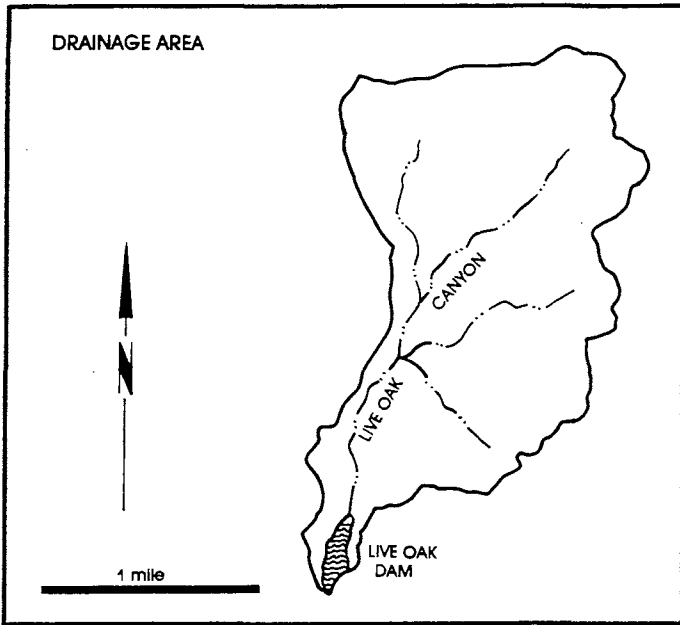
EATON WASH DAM OPERATION RECORD SUMMARY

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	61.50	75.80	139.30	155.50
TOTAL MONTHLY OUTFLOW (AF)	61.50	75.60	139.20	84.10
MAX. MEAN DAILY INFLOW (CFS)	1.00	3.00	13.20	6.90
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	1.00	1.00	1.30	1.40
MONTHLY STORAGE CHANGE	0.00	0.20	0.10	71.40

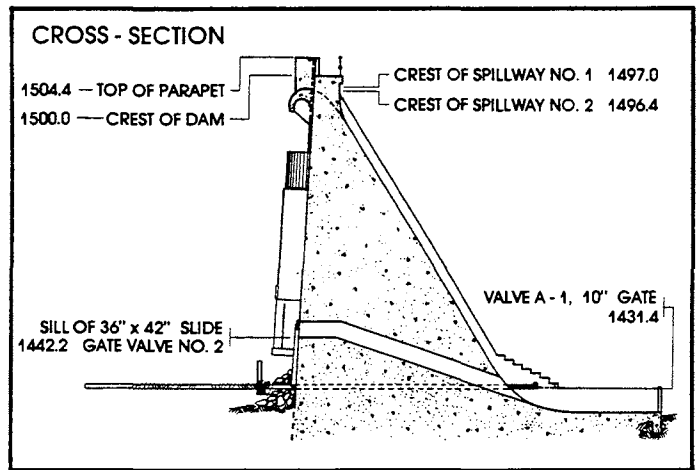
WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	264.00	176.40	127.00	75.30
TOTAL MONTHLY OUTFLOW (AF)	68.40	136.30	310.80	89.90
MAX. MEAN DAILY INFLOW (CFS)	25.90	17.90	10.60	3.70
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	3.20	45.20
MIN. MEAN DAILY INFLOW (CFS)	0.30	0.00	0.00	0.10
MONTHLY STORAGE CHANGE	195.60	40.10	-187.00	-59.80

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	25.60	0.00	0.00	0.00
TOTAL MONTHLY OUTFLOW (AF)	17.90	0.00	0.00	0.00
MAX. MEAN DAILY INFLOW (CFS)	1.00	0.00	0.00	0.00
TOTAL MONTHLY LOSSES (AF)	68.40	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	0.00	0.00	0.00	0.00
MONTHLY STORAGE CHANGE	-60.70	0.00	0.00	0.00

LIVE OAK DAM AND RESERVOIR



PURPOSE - Flood Control and Conservation.
DATE CONSTRUCTED - Started August 1921. Completed November 1922.
LOCATION - 2.5 miles northeast of La Verne.
DRAINAGE AREA - 2.3 square miles.
CAPACITY - 240 acre-feet.
SPILLWAY ELEVATION - 1,496.0 feet.



DAM OPERATION RECORD SUMMARY

Max. Peak Inflow	17.20 CFS from 1500 on 03-19-94 to 1600 on 03-19-94		
Max. Peak Outflow	6.30 CFS from 0500 on 05-10-94 to 0515 on 05-10-94		
Max. Water Surface Elev.	1,479.00 feet on 05-10-94	STORAGE	92.00 Acre-feet
Min. Water Surface Elev.	1,443.00 feet on	varies	STORAGE 0.00 Acre-feet

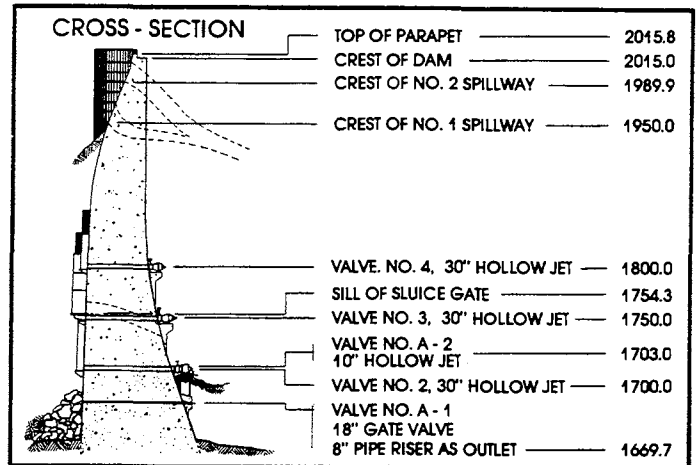
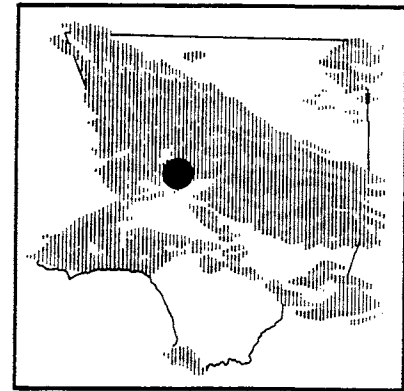
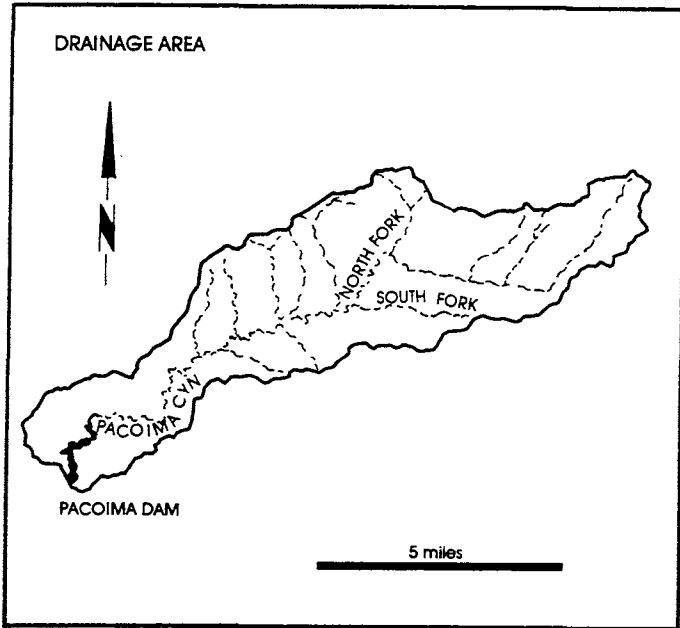
LIVE OAK DAM OPERATION RECORD SUMMARY

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	24.40	17.80	19.20	16.10
TOTAL MONTHLY OUTFLOW (AF)	23.80	7.90	0.00	0.00
MAX. MEAN DAILY INFLOW (CFS)	0.80	0.70	0.60	0.40
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	0.20	0.10	0.10	0.20
MONTHLY STORAGE CHANGE	0.60	9.90	19.20	16.10

WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	27.90	37.00	27.80	29.20
TOTAL MONTHLY OUTFLOW (AF)	0.00	33.30	17.90	120.40
MAX. MEAN DAILY INFLOW (CFS)	1.70	2.80	1.20	1.70
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	0.00	0.00	0.30	0.00
MONTHLY STORAGE CHANGE	27.90	3.70	9.90	-91.20

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	23.90	3.80	3.20	0.00
TOTAL MONTHLY OUTFLOW (AF)	24.40	3.80	3.20	0.00
MAX. MEAN DAILY INFLOW (CFS)	0.60	0.20	0.10	0.00
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	0.10	0.00	0.00	0.00
MONTHLY STORAGE CHANGE	-0.50	0.00	0.00	0.00

PACOIMA DAM AND RESERVOIR



PURPOSE - Flood Control and Conservation.
DATE CONSTRUCTED - Started March 1925. Completed February 1929.
LOCATION - Pacoima Canyon, 4.0 miles northeast of San Fernando.
DRAINAGE AREA - 28.2 square miles.
CAPACITY - 3,929 acre - feet.
SPIELWAY ELEVATION - 1,950.0 feet.

DAM OPERATION RECORD SUMMARY†

Max. Peak Inflow	46.46 CFS from 0900 on 02-08-94 to 1000 on 02-08-94		
Max. Peak Outflow	82.00 CFS from 1700 on 03-25-94 to 0700 on 03-26-94		
Max. Water Surface Elev.	1,903.50 feet on	10-12-93	STORAGE 1,534.30 Acre-feet
Min. Water Surface Elev.	1,850.00 feet on	06-30-94	STORAGE 432.30 Acre-feet

† - Values estimated due to incomplete records.

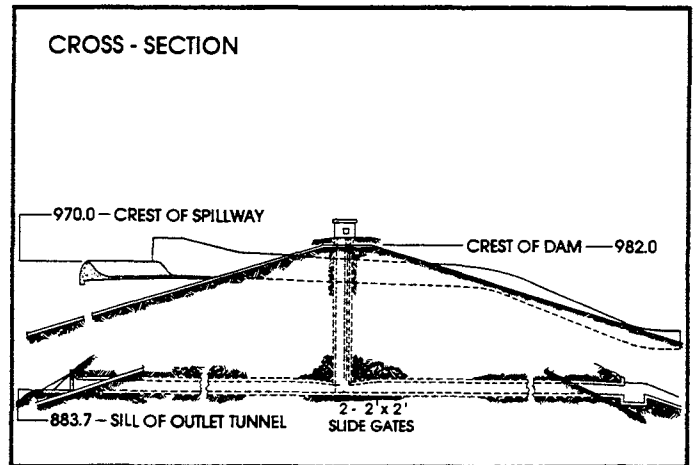
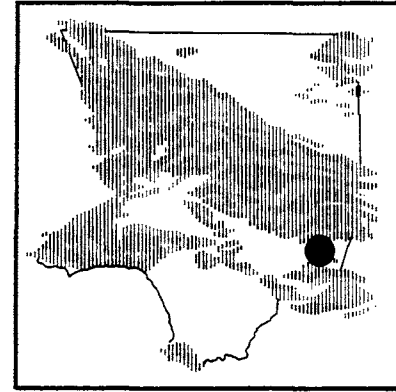
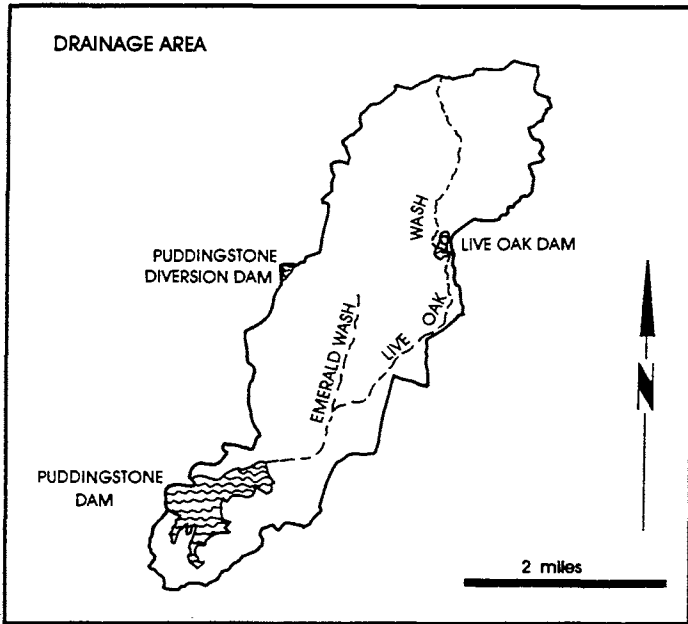
PACOIMA DAM OPERATION RECORD SUMMARY†

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	164.10	88.20	185.60	201.20
TOTAL MONTHLY OUTFLOW (AF)	596.40	0.00	336.40	190.20
MAX. MEAN DAILY INFLOW (CFS)	5.80	2.40	8.80	10.20
TOTAL MONTHLY LOSSES (AF)	16.90	14.70	11.30	13.70
MIN. MEAN DAILY INFLOW (CFS)	0.90	1.00	0.90	1.10
MONTHLY STORAGE CHANGE	-449.20	73.50	-162.10	-2.70

WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	550.40	448.00	268.70	171.90
TOTAL MONTHLY OUTFLOW (AF)	674.40	275.10	253.70	155.30
MAX. MEAN DAILY INFLOW (CFS)	26.70	14.50	16.00	6.00
TOTAL MONTHLY LOSSES (AF)	8.60	9.40	16.30	7.50
MIN. MEAN DAILY INFLOW (CFS)	0.70	2.40	0.00	0.30
MONTHLY STORAGE CHANGE	-132.60	163.50	-1.30	9.10

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	170.00	97.20	68.70	51.10
TOTAL MONTHLY OUTFLOW (AF)	728.30	57.70	40.70	45.40
MAX. MEAN DAILY INFLOW (CFS)	13.90	4.70	6.20	2.10
TOTAL MONTHLY LOSSES (AF)	12.50	10.70	14.60	12.10
MIN. MEAN DAILY INFLOW (CFS)	0.00	0.30	0.20	0.50
MONTHLY STORAGE CHANGE	-570.80	28.80	13.40	-6.40

PUDDINGSTONE DAM AND RESERVOIR



PURPOSE - Flood Control and Recreation.
DATE CONSTRUCTED - Started February 1925. Completed January 1928.
LOCATION - 1.0 mile south of San Dimas.
DRAINAGE AREA - 11.0 square miles (uncontrolled)
 22.1 square miles (controlled)
 Total 33.1 square miles
CAPACITY - 16,856 acre - feet.
SPILLWAY ELEVATION - 970.0 feet.

DAM OPERATION RECORD SUMMARY

Max. Peak Inflow	212.22 CFS from 1400 on 02-07-94 to 1500 on 02-07-94			
Max. Peak Outflow	42.70 CFS from 0900 on 04-06-94 to 1000 on 04-06-94			
Max. Water Surface Elev.	943.30 feet on	05-03-94	STORAGE	6,899.00 Acre-feet
Min. Water Surface Elev.	938.88 feet on	varies	STORAGE	5,795.30 Acre-feet

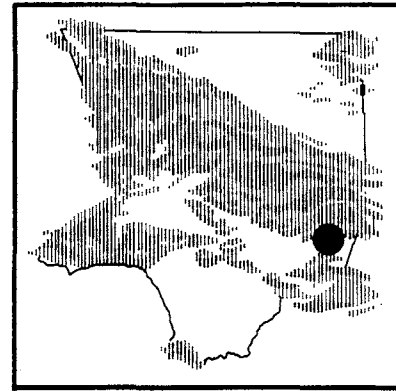
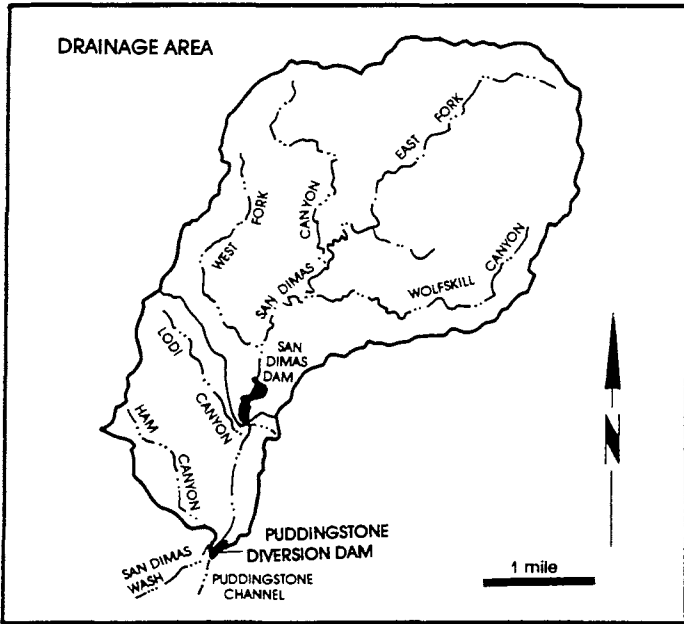
PUDDINGSTONE DAM OPERATION RECORD SUMMARY

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	84.80	119.30	278.30	136.30
TOTAL MONTHLY OUTFLOW (AF)	25.60	15.70	653.40	6.70
MAX. MEAN DAILY INFLOW (CFS)	3.40	7.20	27.50	12.60
TOTAL MONTHLY LOSSES (AF)	118.70	88.80	74.90	68.80
MIN. MEAN DAILY INFLOW (CFS)	0.40	0.10	0.60	0.50
MONTHLY STORAGE CHANGE	-59.50	14.80	-450.00	60.80

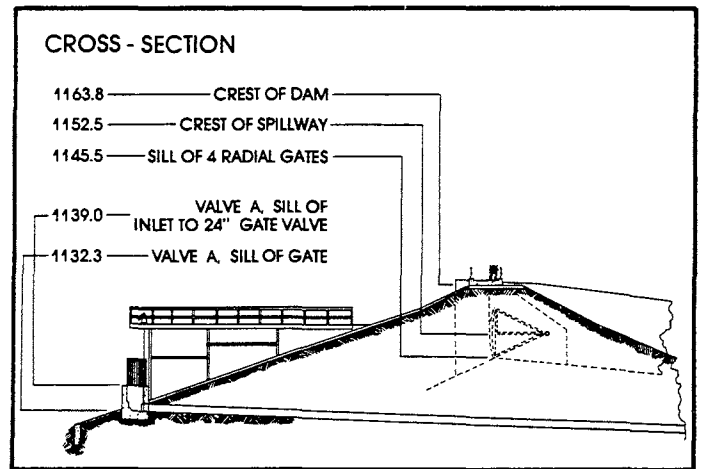
WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	645.70	567.20	435.50	160.70
TOTAL MONTHLY OUTFLOW (AF)	9.90	95.40	216.20	188.60
MAX. MEAN DAILY INFLOW (CFS)	77.60	60.70	63.40	13.70
TOTAL MONTHLY LOSSES (AF)	49.10	92.30	144.50	107.80
MIN. MEAN DAILY INFLOW (CFS)	0.60	0.90	0.10	0.50
MONTHLY STORAGE CHANGE	586.70	379.50	74.80	-135.70

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	111.10	115.70	115.30	113.70
TOTAL MONTHLY OUTFLOW (AF)	24.80	28.20	31.10	26.60
MAX. MEAN DAILY INFLOW (CFS)	3.60	4.10	4.10	5.20
TOTAL MONTHLY LOSSES (AF)	190.40	196.30	214.70	165.20
MIN. MEAN DAILY INFLOW (CFS)	0.20	0.70	0.50	0.40
MONTHLY STORAGE CHANGE	-104.10	-108.80	-130.50	-78.10

PUDDINGSTONE DIVERSION DAM AND RESERVOIR



PURPOSE - Flood Control and Diversion of flow and Conservation.
DATE CONSTRUCTED - Started September 1927. Completed July 1928.
LOCATION - 2.0 miles northeast of San Dimas.
DRAINAGE AREA - 3.7 square miles (uncontrolled)
 16.2 square miles (controlled)
 Total 19.9 square miles
CAPACITY - 148 acre feet.
SPILLWAY ELEVATION - 1,152.0 feet.



DAM OPERATION RECORD SUMMARY

Max. Peak Inflow	23.41 CFS from 1300 on 02-07-94 to 1400 on 02-07-94		
Max. Peak Outflow	15.00 CFS from 1300 on 02-22-94 to 1400 on 02-07-94		
Max. Water Surface Elev.	1,140.80 feet on	11-02-93	STORAGE 54.50 Acre-feet
Min. Water Surface Elev.	1,133.00 feet on	varies	STORAGE 0.00 Acre-feet

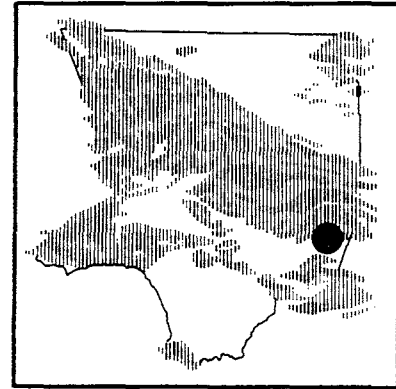
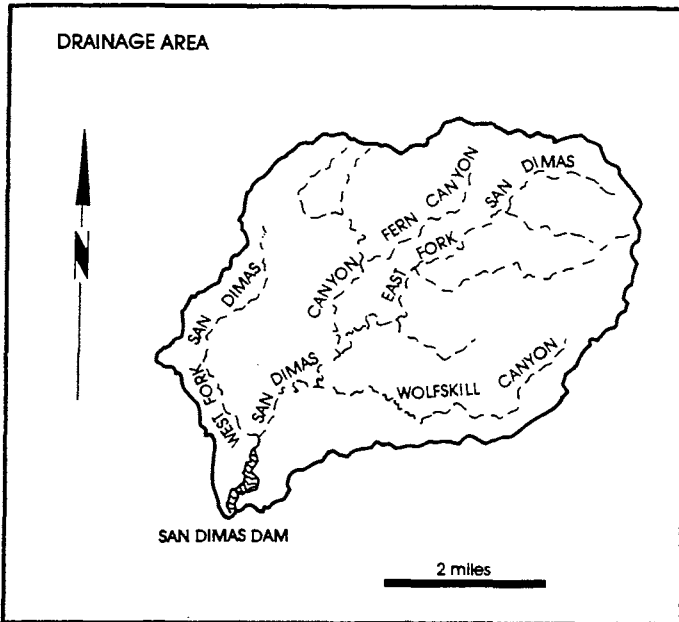
PUDD. DIVERSION DAM OPERATION RECORD SUMMARY

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	22.60	125.10	157.90	46.20
TOTAL MONTHLY OUTFLOW (AF)	0.00	171.80	167.00	24.80
MAX. MEAN DAILY INFLOW (CFS)	2.60	7.20	10.50	2.70
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.80	0.80
MIN. MEAN DAILY INFLOW (CFS)	0.00	0.00	0.10	0.10
MONTHLY STORAGE CHANGE	22.60	-46.70	-9.90	20.60

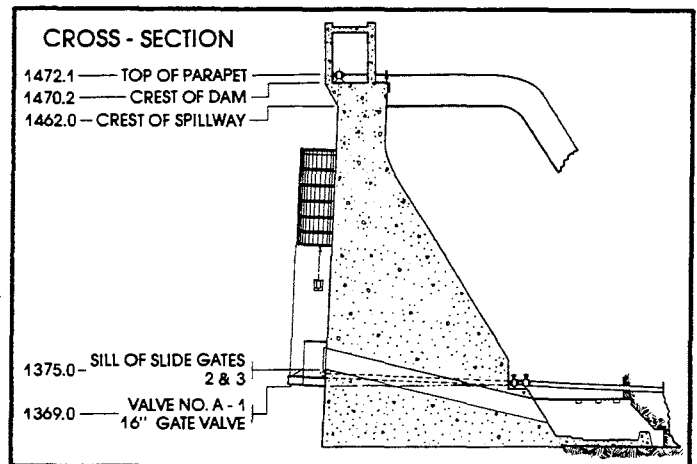
WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	450.00	139.40	19.20	10.00
TOTAL MONTHLY OUTFLOW (AF)	449.10	148.80	24.40	12.30
MAX. MEAN DAILY INFLOW (CFS)	13.70	10.70	1.20	0.90
TOTAL MONTHLY LOSSES (AF)	0.10	0.00	0.40	4.40
MIN. MEAN DAILY INFLOW (CFS)	0.20	0.00	0.00	0.00
MONTHLY STORAGE CHANGE	0.80	-6.40	-5.60	-6.70

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	365.20	123.60	13.80	1.80
TOTAL MONTHLY OUTFLOW (AF)	343.10	133.10	14.30	1.80
MAX. MEAN DAILY INFLOW (CFS)	11.90	13.10	0.60	0.70
TOTAL MONTHLY LOSSES (AF)	0.00	11.90	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	0.80	0.10	0.00	0.00
MONTHLY STORAGE CHANGE	22.10	-21.40	-0.50	0.00

SAN DIMAS DAM AND RESERVOIR



PURPOSE - Flood Control and Conservation.
 DATE CONSTRUCTED - Started November 1920. Completed September 1922.
 LOCATION - 3.0 miles northeast of San Dimas.
 DRAINAGE AREA - 16.2 square miles.
 CAPACITY - 1,515 acre-feet.
 SPILLWAY ELEVATION - 1,462.0 feet.



DAM OPERATION RECORD SUMMARY

Max. Peak Inflow	30.58 CFS from 1600 on 02-07-94 to 1700 on 02-07-94		
Max. Peak Outflow	130.00 CFS from 0800 on 10-27-93 to 0815 on 10-27-93		
Max. Water Surface Elev.	1,444.10 feet on	05-31-94	STORAGE 961.90 Acre-feet
Min. Water Surface Elev.	1,418.50 feet on	09-30-94	STORAGE 318.80 Acre-feet

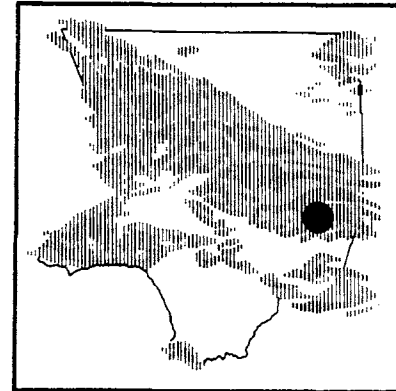
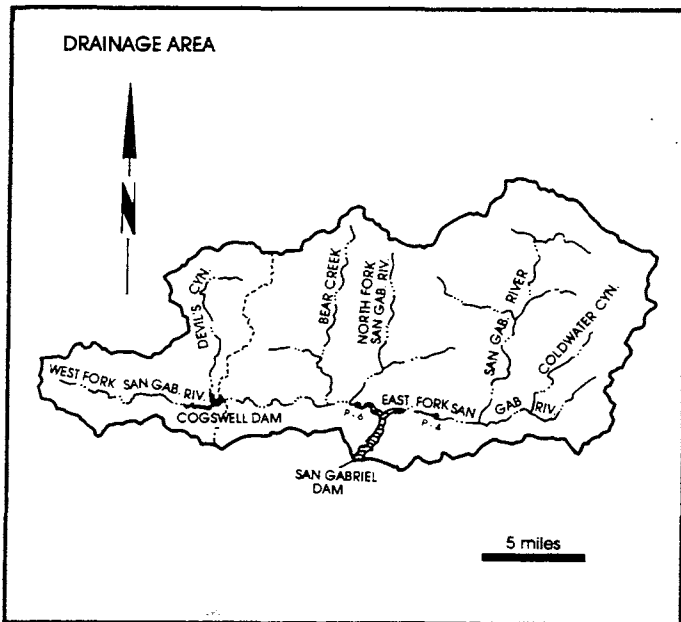
SAN DIMAS DAM OPERATION RECORD SUMMARY

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	199.60	199.10	242.60	224.40
TOTAL MONTHLY OUTFLOW (AF)	151.50	229.70	241.20	95.40
MAX. MEAN DAILY INFLOW (CFS)	4.40	4.60	7.90	6.00
TOTAL MONTHLY LOSSES (AF)	7.70	4.20	3.30	4.40
MIN. MEAN DAILY INFLOW (CFS)	2.10	1.90	1.60	2.80
MONTHLY STORAGE CHANGE	40.40	-34.80	-1.90	124.60

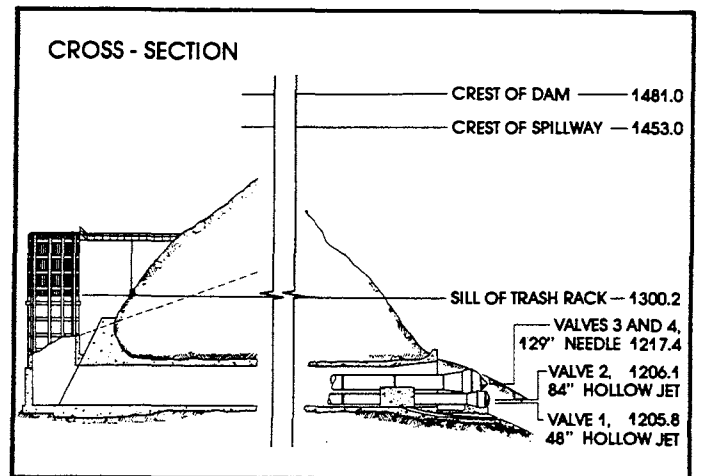
WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	332.30	312.60	250.80	212.50
TOTAL MONTHLY OUTFLOW (AF)	469.90	159.50	79.50	87.50
MAX. MEAN DAILY INFLOW (CFS)	17.30	10.30	7.70	4.60
TOTAL MONTHLY LOSSES (AF)	3.20	5.70	8.00	7.80
MIN. MEAN DAILY INFLOW (CFS)	2.80	3.60	3.20	2.20
MONTHLY STORAGE CHANGE	-140.80	147.40	163.30	117.20

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	141.20	99.00	34.00	46.60
TOTAL MONTHLY OUTFLOW (AF)	494.50	242.20	103.70	69.20
MAX. MEAN DAILY INFLOW (CFS)	3.40	5.20	1.20	1.20
TOTAL MONTHLY LOSSES (AF)	15.30	13.50	14.90	9.70
MIN. MEAN DAILY INFLOW (CFS)	1.10	0.20	0.20	0.30
MONTHLY STORAGE CHANGE	-368.60	-156.70	-84.60	-32.30

SAN GABRIEL DAM AND RESERVOIR



PURPOSE - Flood Control and Conservation.
DATE CONSTRUCTED - Started December 1932. Completed July 1939.
LOCATION - San Gabriel Canyon, 7.5 miles north of Azusa.
DRAINAGE AREA - 163.5 square miles (uncontrolled)
 39.2 square miles (controlled)
 Total 202.7 square miles
 (Includes Cogswell drainage)
CAPACITY - 41,549 acre - feet.
SPILLWAY ELEVATION - 1,453 feet.



DAM OPERATION RECORD SUMMARY

Max. Peak Inflow	433.41 CFS from 0500 on 02-08-94 to 0600 on 02-08-94
Max. Peak Outflow	387.30 CFS from 0800 on 12-01-93 to 1500 on 12-01-93
Max. Water Surface Elev.	1,391.67 feet on 05-29-94 STORAGE 19,389.00 Acre-feet
Min. Water Surface Elev.	1,336.54 feet on 09-30-94 STORAGE 5,083.00 Acre-feet

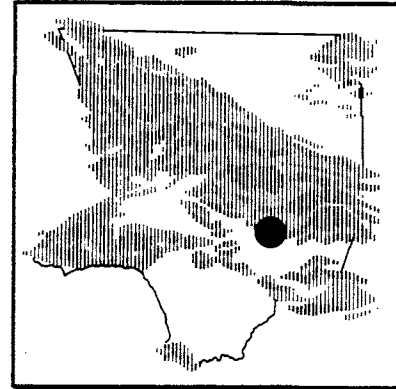
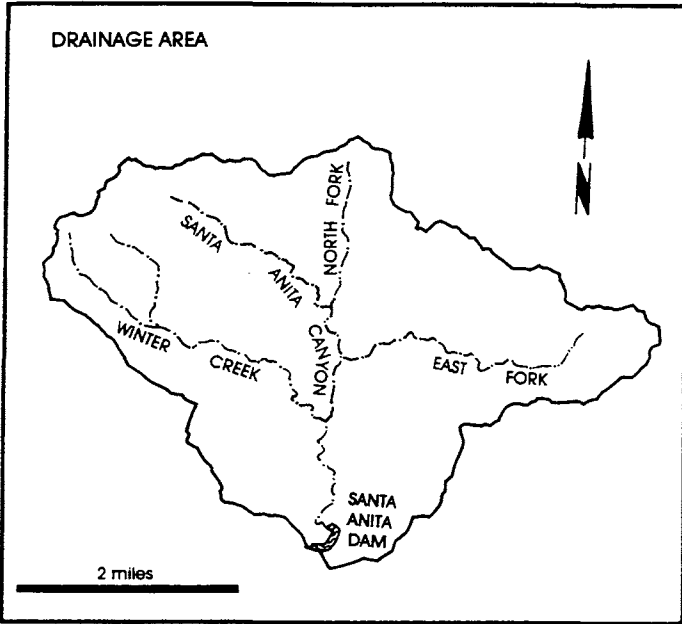
SAN GABRIEL DAM OPERATION RECORD SUMMARY

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	4,989.10	3,450.20	4,892.20	3,238.10
TOTAL MONTHLY OUTFLOW (AF)	9,418.70	3,526.60	4,710.70	3,281.30
MAX. MEAN DAILY INFLOW (CFS)	101.10	73.30	147.00	73.70
TOTAL MONTHLY LOSSES (AF)	135.10	97.40	70.60	86.20
MIN. MEAN DAILY INFLOW (CFS)	54.90	7.10	49.70	44.50
MONTHLY STORAGE CHANGE	-4,564.70	-173.80	110.90	-129.40

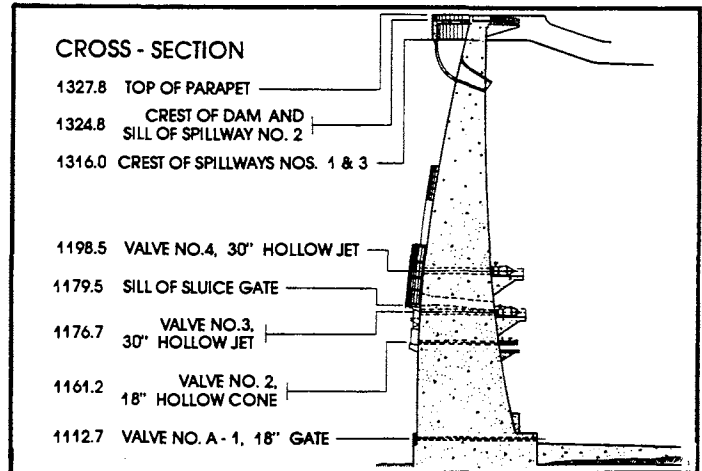
WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	6,421.90	8,052.50	5,206.90	3,729.20
TOTAL MONTHLY OUTFLOW (AF)	2,125.50	4,131.20	2,700.90	2,877.60
MAX. MEAN DAILY INFLOW (CFS)	312.30	173.10	144.60	96.90
TOTAL MONTHLY LOSSES (AF)	52.50	109.60	122.60	84.70
MIN. MEAN DAILY INFLOW (CFS)	54.60	88.20	62.20	38.40
MONTHLY STORAGE CHANGE	4,243.90	3,811.70	2,383.40	766.90

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	1,872.80	1,181.50	617.70	616.90
TOTAL MONTHLY OUTFLOW (AF)	4,871.20	4,897.20	4,886.90	3,012.90
MAX. MEAN DAILY INFLOW (CFS)	45.20	25.30	18.50	16.20
TOTAL MONTHLY LOSSES (AF)	235.20	202.40	190.10	150.80
MIN. MEAN DAILY INFLOW (CFS)	20.10	14.20	0.60	5.40
MONTHLY STORAGE CHANGE	-3,233.60	-3,918.10	-4,459.30	-2,546.80

SANTA ANITA DAM AND RESERVOIR



PURPOSE - Flood Control and Conservation.
 DATE CONSTRUCTED - Started October 1924. Completed March 1927.
 LOCATION - 2.5 miles north of Arcadia
 DRAINAGE AREA - 10.8 square miles.
 CAPACITY - 836 acre - feet.
 SPILLWAY ELEVATION - 1,316.0 feet.



DAM OPERATION RECORD SUMMARY

Max. Peak Inflow	19.07 CFS from 2000 on 03-24-94 to 2100 on 03-24-94		
Max. Peak Outflow	146.00 CFS from 0845 on 05-26-94 to 0900 on 05-26-94		
Max. Water Surface Elev.	1,277.90 feet on 04-18-94	STORAGE	388.30 Acre-feet
Min. Water Surface Elev.	1,238.55 feet on 12-30-93	STORAGE	112.80 Acre-feet

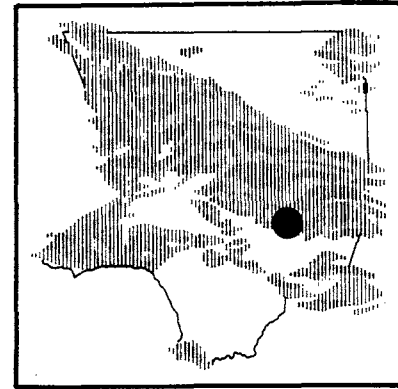
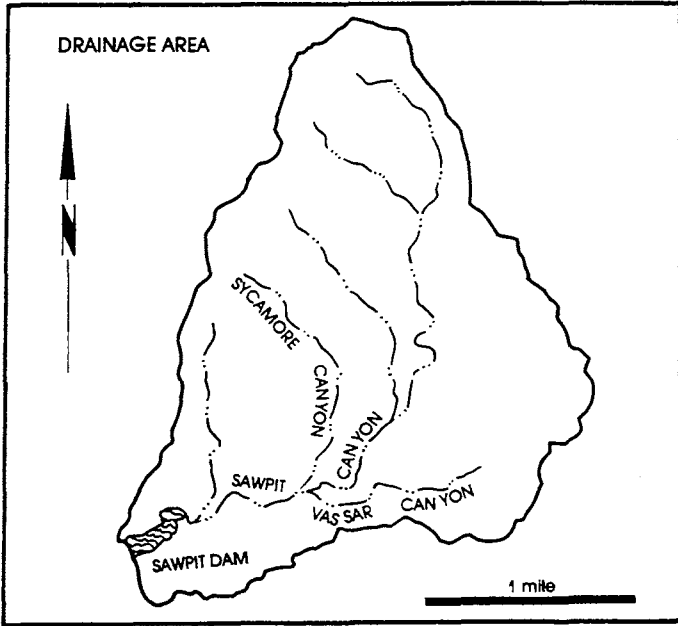
SANTA ANITA DAM OPERATION RECORD SUMMARY

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	125.30	130.50	150.70	146.30
TOTAL MONTHLY OUTFLOW (AF)	191.40	23.20	297.70	17.30
MAX. MEAN DAILY INFLOW (CFS)	3.20	3.20	4.30	4.00
TOTAL MONTHLY LOSSES (AF)	2.80	2.20	1.70	1.80
MIN. MEAN DAILY INFLOW (CFS)	0.20	1.70	0.80	1.90
MONTHLY STORAGE CHANGE	-68.90	105.10	-148.70	127.20

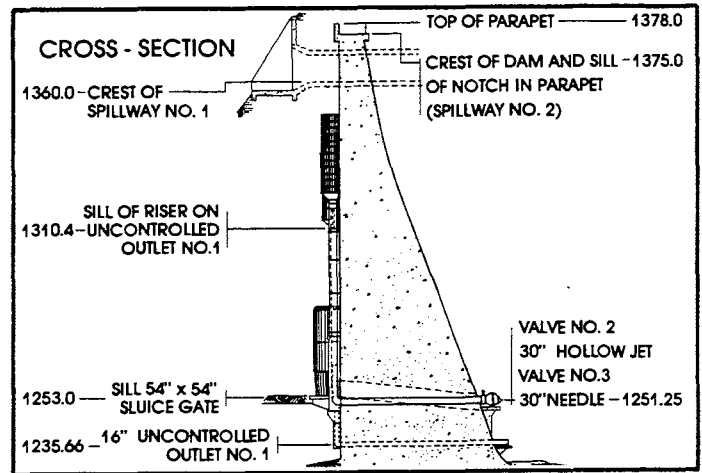
WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	283.80	232.90	143.20	172.00
TOTAL MONTHLY OUTFLOW (AF)	301.90	149.00	156.30	315.20
MAX. MEAN DAILY INFLOW (CFS)	15.10	8.20	4.10	5.10
TOTAL MONTHLY LOSSES (AF)	1.00	1.70	1.90	6.20
MIN. MEAN DAILY INFLOW (CFS)	0.80	2.10	1.60	1.60
MONTHLY STORAGE CHANGE	-19.10	82.20	-15.00	-149.40

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	51.50	21.30	11.60	5.90
TOTAL MONTHLY OUTFLOW (AF)	37.70	14.30	30.70	29.80
MAX. MEAN DAILY INFLOW (CFS)	1.90	0.60	0.60	0.20
TOTAL MONTHLY LOSSES (AF)	2.50	2.60	3.50	2.80
MIN. MEAN DAILY INFLOW (CFS)	0.30	0.00	0.00	0.00
MONTHLY STORAGE CHANGE	11.30	4.40	-22.60	-26.70

SAWPIT DAM AND RESERVOIR



PURPOSE - Flood Control and Conservation.
 DATE CONSTRUCTED - Started March 1926. Completed June 1927.
 LOCATION - 2.0 miles north of Monrovia.
 DRAINAGE AREA - 3.2 square miles.
 CAPACITY - 391 acre - feet.
 SPILLWAY ELEVATION - 1,360.0 feet.



DAM OPERATION RECORD SUMMARY

Max. Peak Inflow	6.77 CFS from 0500 on 02-08-94 to 0600 on 02-08-94		
Max. Peak Outflow	29.70 CFS from 0815 on 06-22-94 to 0830 on 06-22-94		
Max. Water Surface Elev.	1,310.54 feet on	02-08-94	STORAGE 96.70 Acre-feet
Min. Water Surface Elev.	1,310.30 feet on	varies	STORAGE 95.90 Acre-feet

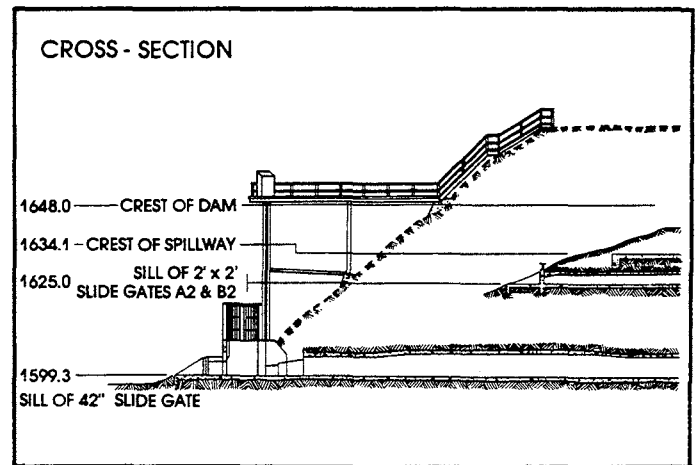
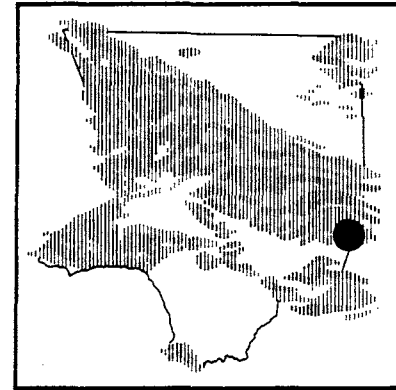
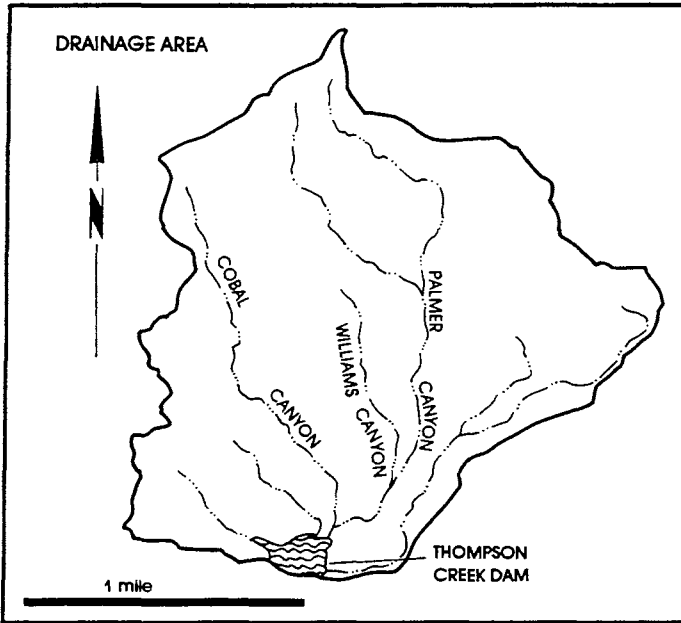
SAWPIT DAM OPERATION RECORD SUMMARY

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	149.00	142.70	147.80	145.20
TOTAL MONTHLY OUTFLOW (AF)	149.00	142.60	147.80	145.20
MAX. MEAN DAILY INFLOW (CFS)	2.60	3.00	2.90	3.10
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	2.20	2.30	2.30	2.20
MONTHLY STORAGE CHANGE	0.00	0.10	0.00	0.00

WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	144.80	149.60	133.30	130.80
TOTAL MONTHLY OUTFLOW (AF)	144.80	149.60	133.30	130.70
MAX. MEAN DAILY INFLOW (CFS)	4.10	3.40	2.60	2.60
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	2.30	2.10	2.10	1.90
MONTHLY STORAGE CHANGE	0.00	0.00	0.00	0.10

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	108.40	108.10	97.40	98.20
TOTAL MONTHLY OUTFLOW (AF)	108.70	108.10	97.40	98.20
MAX. MEAN DAILY INFLOW (CFS)	2.20	1.80	1.70	1.80
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	1.60	1.70	1.50	1.40
MONTHLY STORAGE CHANGE	-0.30	0.00	0.00	0.00

THOMPSON CREEK DAM AND RESERVOIR



PURPOSE - Flood Control and Conservation.
DATE CONSTRUCTED - Started September 1925. Completed March 1928.
LOCATION - 3.0 miles north of Claremont.
DRAINAGE AREA - 3.5 square miles.
CAPACITY - 447.5 acre - feet.
SPILLWAY ELEVATION - 1,634 feet.

DAM OPERATION RECORD SUMMARY

Max. Peak Inflow	1.20 CFS from 1300 on 03-19-94 to 1400 on 03-19-94			
Max. Peak Outflow	1.20 CFS from 1400 on 03-19-94 to 1415 on 03-19-94			
Max. Water Surface Elev.	1,600.00 feet on	varies	STORAGE	0.00 Acre-feet
Min. Water Surface Elev.	1,600.00 feet on	varies	STORAGE	0.00 Acre-feet

THOMPSON CREEK DAM OPERATION RECORD SUMMARY

WATER YEAR 1993-1994	OCTOBER	NOVEMBER	DECEMBER	JANUARY
TOTAL MONTHLY INFLOW (AF)	0.00	0.00	0.00	0.00
TOTAL MONTHLY OUTFLOW (AF)	0.00	0.00	0.00	0.00
MAX. MEAN DAILY INFLOW (CFS)	0.00	0.00	0.00	0.00
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	0.00	0.00	0.00	0.00
MONTHLY STORAGE CHANGE	0.00	0.00	0.00	0.00

WATER YEAR 1993-1994	FEBRUARY	MARCH	APRIL	MAY
TOTAL MONTHLY INFLOW (AF)	0.20	0.20	0.00	0.00
TOTAL MONTHLY OUTFLOW (AF)	0.20	0.20	0.00	0.00
MAX. MEAN DAILY INFLOW (CFS)	0.10	0.10	0.00	0.00
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	0.00	0.00	0.00	0.00
MONTHLY STORAGE CHANGE	0.00	0.00	0.00	0.00

WATER YEAR 1993-1994	JUNE	JULY	AUGUST	SEPTEMBER
TOTAL MONTHLY INFLOW (AF)	0.00	0.00	0.00	0.00
TOTAL MONTHLY OUTFLOW (AF)	0.00	0.00	0.00	0.00
MAX. MEAN DAILY INFLOW (CFS)	0.00	0.00	0.00	0.00
TOTAL MONTHLY LOSSES (AF)	0.00	0.00	0.00	0.00
MIN. MEAN DAILY INFLOW (CFS)	0.00	0.00	0.00	0.00
MONTHLY STORAGE CHANGE	0.00	0.00	0.00	0.00

EROSION CONTROL

EROSION CONTROL

Each year eroded material in various forms (trees, rock, sand, etc.) flows out of the mountain watersheds of Los Angeles County. In an effort to control this potentially disruptive force, the Department maintains a series of debris basins in canyon mouths and upstream stabilization structures in selected watersheds.

DEBRIS BASINS

The purpose of a debris basin is to entrap the sediment flows emanating from the canyon and let the relatively desilted water pass into the flood control channels.

In the 1993-1994 water year, the Department maintained 114 debris basins. The total maximum capacity of the basins is approximately 7,549,350 cubic yards.

The Department cleaned out 13 debris basins (Auburn, Bailey, Carriage House, Carter, Devonwood, Fair Oaks, Fern, Kinneloa West, Rubio, Sierra Madre Villa, Sunnyside, and West Ravine). The total amount of sediment removed was approximately 371,050 cubic yards.

Records of sediment inflow at individual debris basins and amounts removed from the debris basins are available in the Hydraulic/Water Conservation Division.

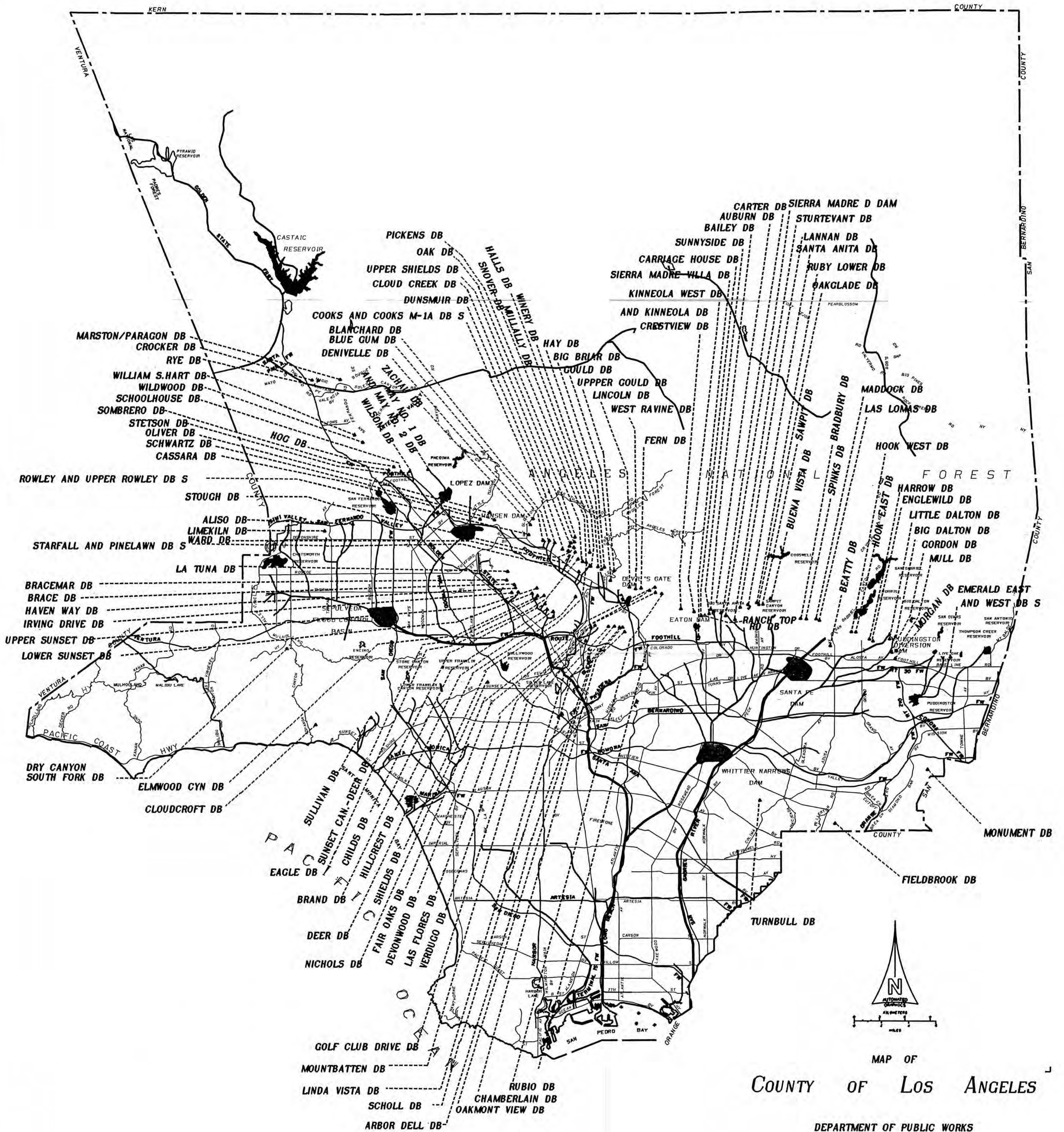
STABILIZATION STRUCTURES

Stabilization structures are constructed to control erosion in natural canyons. They serve to prevent downcutting by stabilizing alluvium deposits. In addition, they store debris generated by the watershed and serve to stabilize side banks, reducing side slope sloughing and bank erosion.

The Department maintains 218 stabilization structures in 47 major watersheds. No structures have been constructed since the 1973-74 water year.

EMERGENCY STRUCTURES

Emergency structures (rail and timber, crib structures are not) have been constructed to entrap the debris inflow from burned watersheds. They serve to protect improvements (road, channel, residence, etc.) located immediately downstream of the watersheds. Currently, 33 emergency structures exist with a total maximum capacity of 266,400 cubic yards. Eight major fires (over 500 acres) burned 31,331 acres in this water year and are shown on the Burned Area Location Map on page PE2.



LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

DEBRIS BASIN - DESIGN DATA

Including 1993-1994 Storm Season

DATA SHEET A

Compiled by: Hydraulic and Water Conservation

Division - Sedimentation Management

Date: November 30, 1994

FILE: DSA94.xlw

DEBRIS BASIN	FIRST DEBRIS SEASON	UNCONTROLLED DRAINAGE AREA ABOVE BASIN (SQ. MI.)	BOTTOM ELEV. AT MAX CAP. (FT.)	ELEVATION PORT INVERT (FT.)	ELEVATION SPILLWAY CREST (FT.)	WIDTH SPILLWAY (FT.)	ELEVATION OF DAM (FT.)	MAXIMUM DEBRIS CAPACITY (CU. YDS.)
Aliso	1970 - 71	2.77	1108	1108.4	1120.0	70.0	1134.0	41,700 (8)
Arbor Dell	1971 - 72	0.11	898.7	898.4	913.0	22.9	919.6	12,400
Auburn	1954 - 55	0.19	1263.9	1263.0	1275.0	30.0	1283.0	31,600
Bailey	1945 - 46	0.60	1123	1123.1	1155.0	30.0	1166.0	128,800
Beatty	1970 - 71	0.27	800	800.0	807.0	32.0	815.5	43,000
Bigbriar	1971 - 72	0.02	1898.3	1896.0	1910.0	14.0	1910.8	2,600
Big Dalton	1959 - 60	2.94	1102	1101.9 (3)	1131.5	116.0	1148.7	517,800
Blanchard	1968 - 69	0.47	2026	2026.0	2053.5	40.0	2065.0	74,500
Blue Gum	1968 - 69	0.19	2020	2020.0	2042.0	25.0	2053.0	39,600
Brace	1971 - 72	0.29	1189.7	1189.7	1196.0 (15)	20.0	1203.3	30,000 (15)
Bracemar	1971 - 72	0.01	1140	1140.0	1145.5	8.0	1148.0	700 (14)
Bradbury	1954 - 55	0.68	912.5	913.1	920.0	58.0	928.0	89,800
Brand	1935 - 36	1.04	860	860.0	890.0	60.0	903.0	166,000
Buena Vista	1985 - 86	0.10	978.7	978.7	992.2	39.0	997.7	21,800
Carriage House	1970 - 71	0.03	1350.2	1350.0	1362.9	15.0	1366.8	6,100
Carter	1954 - 55	0.12	1222	1223.2	1238.2	30.0	1245.0	14,500
Cassara	1976 - 77	0.21	1271.5	1271.5	1291.7	66.0	1295.4	36,700
Chambertain	1974 - 75	0.04	1084.6	1084.0	1097.5	20.0	1101.3	4,700
Childs	1963 - 64	0.30	1022	1022.0	1058.8	23.0	1071.0	50,400
Cloud Creek	1972 - 73	0.01	2350.5	2350.5	2360.0	(5)	2362.0	5,100
Cloudcroft	1973 - 74	0.21	313.9	315.0	329.5	36.0	329.5	34,700
Cooks	1951 - 52	0.58	2058	2058.0	2082.9	48.0	2092.0	51,900
Cooks M-1A	1975 - 76	(13)	2120.0	(10)	2142.4	(10)	(10)	33,700
Crestview	1983 - 84	0.03	864.4	864.0	886.2	20.0	891.7	5,900 (14)
Crocker	1983 - 84	0.67	1064.2	1064.2	1069.8	36.0	1077.0	19,300 (14)
Deer	1954 - 55	0.59	1185.4	1185.0	1201.0	56.0	1209.6	56,600
Denivelle	1976 - 77	0.18	1471	1471.0	1479.3	46.0	1483.3	8,200
Devonwood	1981 - 82	0.03	1899	1899.0	1915.8	22.0	1921.5	5,800
Dry Canyon-South Fork	1978 - 79	0.49	1062.8	1062.5	1074.8	32.0	1079.3	7,900
Dunsmuir	1935 - 36	0.84	2228	2227.7	2257.2	60.0	2272.2	102,700
Eagle	1936 - 37	0.48	1848.3	1848.3	1880.2	60.0	1895.2	62,400
Elmwood	1964 - 65	0.31	912	911.5	938.0	22.0	952.0	66,400
Emerald-East	1964 - 65	0.32	1184.7	1181.1	1192.0	30.0	1204.0	13,600
Englewild	1961 - 62	0.44	1274.9	1275.0	1297.0	50.0	1300.0	40,600
Fair Oaks	1935 - 36	0.21	1544	1544.0	1561.9	(6)	1566.5	23,800
Fern	1935 - 36	0.31	1,440	(15) 1,440 (15)	1,476 (15)	25 (15)	1,482 (15)	43,200 (15)
Fieldbrook	1974 - 75	0.35	712.7	713.0	718.0	28.0	722.3	2,800
Golf Club Drive	1970 - 71	0.99	880.7	880.7	902.0	36.7	915.0	14,700

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

DEBRIS BASIN - DESIGN DATA

Including 1993-1994 Storm Season

Compiled by: Hydraulic and Water Conservation

Division - Sedimentation Management

Date: November 30, 1994

FILE: DSA94.xlw

DATA SHEET A

DEBRIS BASIN	FIRST DEBRIS SEASON	UNCONTROLLED DRAINAGE AREA ABOVE BASIN (SQ. MI.)	BOTTOM ELEV. AT MAX CAP. (FT.)	ELEVATION PORT INVERT (FT.)	ELEVATION SPILLWAY CREST (FT.)	WIDTH SPILLWAY (FT.)	ELEVATION CREST OF DAM (FT.)	MAXIMUM DEBRIS CAPACITY (CU. YDS.)
Gordon	1973 - 74	0.18	1075.7	1075.0	1096.0 (15)	22.0	1104.5 (15)	33,100 (15)
Gould	1947 - 48	0.36	1529.5	1528.2	1548.0	55.0	1548.0	52,800
Gould (Upper)	1976 - 77	0.18	1863.9	1863.9	1897.7	32.0	1901.0	52,300
Halls	1935 - 36	0.86	1641.6	1641.8	1661.3	131.0	1664.0	89,400
Harrow	1958 - 59	0.43	1254.8	1255.0	1269.0	40.0	1277.8	68,000
Haven Way	1991 - 92	0.13	1323	1323.0	1329.0	20.0	1335.6	38,200
Hay	1936 - 37	0.20	1875.4	1901.0	1905.0	36.0	1915.0	34,400
Hillcrest	1962 - 63	0.35	863.5	863.5	885.0	18.0	901.0	57,800
Hog	1969 - 70	0.33	1520.1	1520.0	1535.0	32.0	1547.0	39,600
Hook East	1968 - 69	0.18	1197.5	1198.0	1210.9	37.0	1215.0	22,300
Hook West	1970 - 71	0.17	1144.8	1145.0	1158.9	40.0	1167.0	21,600
Inverness	1982 - 83	0.03	1253	1252.9	1256.7	20.0	1261.0	3,300
Irving Drive	1974 - 75	0.03	905.8	905.0	915.3	12.0	920.0	1,200
Kinneloa	1964 - 65	0.20	1370	1370.0	1388.0	40.0	1395.0	14,100
Kinneloa - West	1966 - 67	0.19	1384.9	1385.0	1400.0	22.0	1408.5	14,200
Lannan	1954 - 55	0.25	1016.0	1015.0	1035.8	14.0	1043.0	41,400
La Tuna	1955 - 56	5.34	1109.0	1110.0	1140.0	75.0	1157.0	495,300
Las Flores	1935 - 36	0.45	1685.1	(9)	1715.6	50.0	1726.4	55,600
Las Lomas	1983 - 84	0.07	887.0	(15) 887.0 (15)	906.0 (15)	77.0 (15)	908.5 (15)	17,900 (15)
Limekiln	1963 - 64	3.72	992.0	992.0	1003.0	77.0	1019.0	171,600
Lincoln	1935 - 36	0.50	1275.8	1276.0	1304.0	56.0	1322.5	38,400
Linda Vista	1970 - 71	0.37	979.5	979.5	989.8	40.0	995.7	3,200
Little Dalton	1959 - 60	3.31	1140.0	1139.5	1186.0	84.0	1200.2	660,500
Maddock	1954 - 55	0.26	888.6	891.8	901.0	36.0	904.0	45,000
Marston/Paragon	1988 - 89	0.20	1455.6	1455.6	1460.0	20.0	1466.0	6,000
May No. 1	1953 - 54	0.70	1666.0	1666.0	1684.0	60.0	1692.5	64,000
May No. 2	1953 - 54	0.09	1663.4	1663.5 (2)	1669.5	20.0	1674.0	13,400 (17)
Monument	1981 - 82	0.11	943.8	942.3	950.0	12.0	954.0	6,800
Morgan	1964 - 65	0.60	1135.0	1135.0	1161.9 (15)	45.0	1171.5 (15)	76,800 (15)
Mountbatten	1983 - 84	0.01	1136.2	1135.5	1140.9	20.0	1141.0	1,400
Mull	1973 - 74	0.15	1146.9	1147.0	1154.0	20.0	1165.0	12,500
Mullally (11)	1974 - 75	0.34	2420.0	2420.0	2435.4	42.0	2439.6	9,400
Nichols	1937 - 38	0.94	480.5	481.0	485.1	50.0	495.0	14,100
Oak	1975 - 76	0.05	2145.4	2145.7	2151.8	50.0	2156.2	12,000 (15)
Oakglade	1974 - 75	0.06	1274.6	1280.0	1290.0	20.0	1296.0	7,250
Oakmont View Drive	1984 - 85	0.02	1315.5	1315.5	1327.5	20.0	1327.5	3,400
Oliver	1989 - 90	0.18	1258.0	1258.0	1278.3	41.0	1283.3	32,100
Pickens	1935 - 36	1.50	1563.6	1564.0	1600.0	123.0	1613.0	125,100

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

DEBRIS BASIN - DESIGN DATA

Including 1993-1994 Storm Season

Compiled by: Hydraulic and Water Conservation

Division - Sedimentation Management

Date: November 30, 1994

FILE: DSA94.xlw

DATA SHEET A

DEBRIS BASIN	FIRST DEBRIS SEASON	UNCONTROLLED DRAINAGE AREA ABOVE BASIN (SQ. MI.)	BOTTOM ELEV. AT MAX CAP. (FT.)	ELEVATION PORT INVERT (FT.)	ELEVATION SPILLWAY CREST (FT.)	WIDTH SPILLWAY (FT.)	ELEVATION CREST OF DAM (FT.)	MAXIMUM DEBRIS CAPACITY (CU. YDS.)
Pinelawn	1973 - 74	0.02	2431.0	2430.5	2443.0	(7)	2448.5	3,200
Rowley	1953 - 54	0.21	1703.6	1703.6	1714.0	60.0	1722.0	43,100
Rowley (Upper)	1976 - 77	0.31	1926.0	1926.0	1946.0	42.0	1951.3	28,800
Rubio	1943 - 44	1.26	1582.1	1582.1	1608.3	59.0	1625.5	127,200
Ruby (Lower)	1955 - 56	0.28	810.8	809.6	828.0	45.0	833.0	28,600
Rye	1981 - 82	1.11	1073.9	1073.8	1077.7	58.2	1081.5	19,100
Saddleback	1988 - 89	0.04	1779.0	1779.3	1790.0	(10)	1796.0	27,000
Santa Anita	1959 - 60	1.70	748.5	748.5 (3)	774.7	160.0	796.0	394,600
Sawpit	1954 - 55	2.82	930.3	930.3	982.0	110.0	1000.0	635,700
Scholl	1945 - 46	0.16	950.0	950.0 (2)	956.0	76.0	966.0	9,300
Schoolhouse	1962 - 63	0.28	1459.6	1460.0	1478.5	20.0	1491.0	67,700
Schwartz	1976 - 77	0.25	1294.7	1294.7	1313.2	35.0	1319.0	45,400
Shields	1937 - 38	0.06	2030.0	2050.0	2058.1	30.0	2070.2	34,800
Sierra Madre Dam (12)	1927 - 28	2.39	1119.6	1119.5	1172.5	62.5	1175.0	136,400
Sierra Madre Villa	1957 - 58	1.46	1069.2	1069.2	1088.9	48.0	1102.5	402,300
Snover	1936 - 37	0.21	1862.8	1862.7	1879.0	40.0	1893.7	24,800
Sombrero	1969 - 70	1.06	1539.6	1540.0	1564.8	45.0	1580.0	87,900
Spinks	1958 - 59	0.44	750.0	750.0	761.5	40.0	765.9	56,000
Starfall	1973 - 74	0.13	2428.0	2428.0	2441.5	30.0	2446.5	14,900
Stetson	1969 - 70	0.29	1556.0	1555.0	1570.0	32.0	1570.0	41,300
Stough	1940 - 41	1.65	1006.0	1005.8	1031.5 (4)	100.0	1043.5	180,600
Sturtevant	1967 - 68	0.03	975.0	971.0	983.6	8.0	990.0	1,400
Sullivan	1970 - 71	2.38	570.0	570.0	587.0	50.0	599.3	51,000
Sunnyside	1970 - 71	0.02	1290.0	1290.0	1299.5	15.0	1303.8	3,400
Sunset Canyon-Deer	1982 - 83	0.21	1382.4	1380.5	1401.8	24.0	1409.1	5,000
Sunset (Lower)	1963 - 64	0.45	1003.8	994.5	1040.0	40.0	1056.0	158,900
Sunset (Upper)	1928 - 29	0.44	1574.2	1574.0	1603.7	75.0	1610.1	15,900
Turnbull	1952 - 53	0.99	476.1	475.6	492.0	40.0	503.0	21,600
Upper Shields	1976 - 77	0.21	2498.0	2498.0	2530.0	33.3	2536.0	35,400
Verdugo	1935 - 36	9.40	1109.5	1110.0	1119.7	145.0	1131.0	131,000
Ward	1956 - 57	0.12	2021.8	2022.0	2043.0	58.0	2035.3	26,400
West Ravine	1935 - 36	0.25	1468.8	1469.6 (1)	1501.9	20.0	1505.5	44,900
Westridge	1974 - 75	0.02	894	894.0	901.0	10.7	906.0	1,400
Wildwood	1967 - 68	0.65	1342.9	1342.9	1354.0	50.0	1360.0	20,700
William S. Hart Park	1983 - 84	0.09	1282.5	1280.0	1290.0	19.0	1293.0	2,400
Wilson	1962 - 63	2.58	1493.0	1493.0	1526.0	60.0	1543.0	313,100
Winery	1968 - 69	0.18	1920	1920.0	1935.0	20.0	1945.0	29,200
Zachau	1956 - 57	0.35	1803.4	1803.1	1820.5	44.0	1823.0	47,900

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

DEBRIS BASIN - DESIGN DATA

Including 1993-1994 Storm Season

Compiled by: Hydraulic and Water Conservation

Division - Sedimentation Management

Date: November 30, 1994

FILE: DSAR94.xlw

DATA SHEET A

- (1) LOWEST CLEAR WATER OUTLET, NOT SPILLWAY.
- (2) ELEVATION OF SPILLWAY NOTCH.
- (3) FLOW LINE OF SLUICeway.
- (4) ELEVATION OF SPILLWAY INTO OUTLET CHANNEL. ELEVATION OF OVERFLOW SPILLWAY 1036.9 FEET.
- (5) ONE 30-INCH REINFORCED CONCRETE PIPE.
- (6) FOUR 36-INCH CORRUGATED METAL PIPES.
- (7) ONE 36-INCH REINFORCED CONCRETE PIPE. (ELEVATED INLET)
- (8) DEBRIS CAPACITY AVAILABLE WITHIN RIGHT OF WAY LIMITS.
- (9) PIT-TYPE BASIN.
- (10) INFORMATION UNAVAILABLE.
- (11) SPECIAL CLEANOUT REQUIRED TO LIMITED STORAGE.
- (12) CLEANOUT REQUIRED WHEN DEBRIS REACHES OR EXCEEDS ELEV. 1128.9 FEET AGAINST FACE OF DAM.
- (13) VALUES ARE COMBINED WITH COOKS DEBRIS BASIN.
- (14) SPILLWAY LEVEL STORAGE CAPACITY.
- (15) DATA TAKEN FROM DESIGN DRAWINGS USED FOR ENLARGING THE BASIN CAPACITY.
- (16) DATA BASED ON AS-BUILT DRAWINGS.
- (17) BASED ON AS-BUILT TOPOGRAPHIC MAP FOLLOWING ENLARGEMENT CONSTRUCTION.

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

DEBRIS BASIN-DEBRIS PRODUCTION HISTORY

Including 1993 -1994 Storm Season

DATA SHEET B

Compiled by: Hydraulic and Water Conservation
 Division - Sedimentation Management
 Date: November 30, 1994
 File: DSB94.XLW

DEBRIS BASIN	DPA ZONE	NUMBER OF SEASONS	TOTAL DEBRIS DEPOSITED (CU. YDS.)(1)	AVERAGE ANNUAL DEBRIS PRODUCTION (CU.YDS./YR)(15)	MAXIMUM SEASONAL DEBRIS PRODUCTION		ESTIMATED CONDITIONS		
					CU. YDS.	SEASON	DEBRIS STORED CU. YDS. (17)	CAPACITY AVAILABLE	
								CU. YDS.	PERCENT
Aliso	4	24	191,511	7,980	32,298	1991-92	0	41,700	100 (5)
Arbor Dell	2	23	1,441	63	800	1979-80	460	11,940	96
Auburn (11)	1	40	97,364	2,434	20,100	1961-62	0	31,600	100
Bailey (11)	1	49	279,599	5,706	91,000	1979-80	810	127,990	99
Beatty	1	24	14,061	586	7,600	1979-80	4,000	39,000	91
Bigbriar	1	23	3,318	144	623	1987-88	60	2,540	98
Big Dalton	1	35	859,003	24,543	296,700	1968-69	31,200	486,600	94
Blanchard	1	26	78,368	3,014	36,600	1977-78	1,557	72,943	98
Blue Gum	1	26	38,366	1,476	19,100	1977-78	-2893	42,493	107
Brace	2	23	42,372	1,842	12,000	1977-78	0 (16)	30,000 (16)	100
Bracemar	2	23	671 (7)	29	283	1980-81	-193	893	128 (9)
Bradbury	1	40	268,864	6,722	70,200	1968-69	2,700	87,100	97
Brand	1	59	276,813	4,692	53,100	1977-78	6,501	159,499	96
Buena Vista	1	9	440	49	400	1992-93	440	21,360	98
Carriage House (11)	1	24	7,178	299	3,400	1979-80	0	6,100	100
Carter (11)	1	40	40,966	1,024	12,600	1979-80	0	14,500	100
Cassara	1	18	29,487	1,638	16,800	1977-78	2,300	34,400	94
Chamberlain (11)	2	20	710	36	300	1974-75	-573	5,273	112
Childs	1	31	46,518	1,501	10,700	1980-81	1,500	48,900	97
Cloud Creek	1	22	3,362	153	1,800	1977-78	-570	5,670	111
Cloudcroft	4	21	12,372	589	6,100	1973-74	1,450	33,250	96
Cooks	1	43	175,621 (3)	4,084 (3)	61,200 (3)	1977-78	2,600 (3)	83,000 (3)	97 (3)
Cooks M-1A	1	19	(13)	(13)	(13)	(13)	(13)	(13)	(13)
Crestview	1	11	(6)	(6)	(6)	(6)	0	5,900	100
Crocker	8	11	8,452	768	5,745	1991-92	2,336	16,964	88
Deer	1	40	168,108	4,203	44,200	1968-69	797	55,803	99
Denvelle	2	18	9,677	538	5,500	1977-78	400	7,800	95
Devonwood (11)	1	13	6,584	506	5,800	1993-94	0	5,800	100
Dry Canyon-South Fork	4	16	8,968	561	5,300	1979-80	480	7,420	94
Dunsmuir	1	59	372,685	6,317	86,200	1977-78	-3243	105,943	103
Eagle	1	58	194,940	3,361	41,700	1937-38	5,447	56,953	91
Elmwood	1	30	53,711	1,790	16,100	1980-81	300	66,100	100
Emerald-East	2	30	11,578	386	1,800	1985-86	1,062	12,538	92
Englewild	1	33	86,770 (2)	2,629	60,200 (2)	1968-69	1,700	38,900	96
Fair Oaks (11)	1	59	113,360	1,921	15,700	1935-36	0	23,800	100
Fern (11)	1	59	181,802	3,081	23,900	1968-69	0 (16)	43,200 (16)	100
Fieldbrook	6	20	1,894	95	500	1991-92	409	2,391	85
Golf Club Drive	2	24	33,400	1,392	11,600	1979-80	642	14,058	96
Gordon	1	21	5,604	267	3,800	1977-78	0 (16)	33,100 (16)	100

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

DEBRIS BASIN-DEBRIS PRODUCTION HISTORY

Including 1993 -1994 Storm Season

DATA SHEET B

Compiled by: Hydraulic and Water Conservation
 Division - Sedimentation Management
 Date: November 30, 1994
 File: DSB94.XLW

DEBRIS BASIN	DPA ZONE	NUMBER OF SEASONS	TOTAL DEBRIS DEPOSITED (CU. YDS.)(1)	AVERAGE ANNUAL DEBRIS PRODUCTION (CU.YDS./YR)(15)	MAXIMUM SEASONAL DEBRIS PRODUCTION		ESTIMATED CONDITIONS		
					CU. YDS.	SEASON	DEBRIS STORED CU. YDS. (17)	CAPACITY AVAILABLE	
								CU. YDS.	PERCENT
Gould	1	47	133,110	2,832	18,000	1965-66	1,389	51,411	97
Gould (Upper)	1	18	37,013	2,056	11,177	1991-92	1,500	50,800	97
Halls	1	59	604,227	10,241	102,100	1937-38	-1950	91,350	102
Harrow	1	36	78,347 (2)	2,176	63,400 (2)	1968-69	-5511	73,511	108
Haven Way	2	3	(8)	(8)	(8)	(8)	0	38,200	100
Hay	1	58	75,762	1,306	18,200	1937-38	2,150	32,250	94
Hillcrest	1	32	52,649	1,645	11,700	1964-65	4,762	53,038	92
Hog	1	25	7,034	281	3,900	1977-78	600	39,000	98
Hook East	1	26	46,609 (2)	1,793	40,200 (2)	1968-69	0	22,300	100
Hook West	1	24	7,188	300	3,600	1979-80	350	21,250	98
Inverness	2	12	316	26	252	1982-83	518	2,782	84
Irving Drive	2	20	1,746	87	600	1980-81	200	1,000	83
Kinneloa (11)	1	30	93,316 (2)	3,111	36,366	1993-94	0	14,100	100
Kinneloa West (11)	1	28	107,876 (2)	3,853	34,754	1993-94	0	14,200	100
Lannan	1	40	84,767	2,119	18,200	1969-70	700	40,700	98
La Tuna	2	39	652,523	16,731	172,100	1977-78	59,164	436,137	88
Las Flores (11)	1	59	225,152	3,816	36,000	1937-38	-1649	57,249	103
Las Lomas	1	11	615	56	(6)	(6)	0 (16)	17,900 (16)	100
Limekiln	4	31	309,248	9,976	42,300	1965-66	4,000	167,600	98
Lincoln (11)	1	59	134,889	2,286	28,400	1968-69	1,028	37,372	97
Linda Vista	2	24	13,617	567	3,400	1977-78	302	2,898	91
Little Dalton	1	35	933,473	26,671	337,800	1968-69	44,340	616,160	93
Maddock	1	40	57,134	1,428	16,200	1980-81	2,200	42,800	95
Marston/Paragon	5	6	130	22	(6)	(6)	130	5,870	98
May No. 1 (11)	2	41	225,560	5,501	45,800	1968-69	0	64,000	100
May No. 2	2	41	28,016	683	6,200	1966-67	0	13,400 (18)	100
Monument	6	13	3,009	231	2,600	1981-82	292	6,508	96
Morgan	1	30	30,841	1,028	12,900	1968-69	0	76,800 (18)	100
Mountbatten	1	11	110	10	(6)	(6)	110	1,290	92
Mull	1	21	2,394	114	1,100	1979-80	500	12,000	96
Mullally (10)	1	20	65,074 (4)	3,254	24,400 (4)	1977-78	691	8,709	93
Nichols	4	57	131,304	2,304	21,800	1951-52	0	14,100	100
Oak	1	19	13,267	698	6,900	1977-78	0	12,000 (16)	100
Oakglade	1	20	1,567	78	1,200	1977-78	650	6,600	91
Oakmont View Drive	1	10	440	44	221	1991-92	-126	3,526	104
Oliver	1	5	31,580 (14)	6,316	16,255 (14)	1977-78	1,200	30,900	96
Pickens	1	59	730,027	12,373	140,600	1977-78	920	124,180	99
Pinelawn	1	21	5,309	253	1,200	1976-77	130	3,070	96
Rowley	1&7	41	78,235 (4)	1,908	13,000 (4)	1977-78	2,000	41,100	95
Rowley (Upper)	1	18	51,805 (4)	2,878	31,900 (4)	1977-78	-574	29,374	102

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

DEBRIS BASIN-DEBRIS PRODUCTION HISTORY

Including 1993 -1994 Storm Season

DATA SHEET B

Compiled by: Hydraulic and Water Conservation
 Division - Sedimentation Management
 Date: November 30, 1994
 File: DSB94.XLW

DEBRIS BASIN	DPA ZONE	NUMBER OF SEASONS	TOTAL DEBRIS DEPOSITED (CU. YDS.)(1)	AVERAGE ANNUAL DEBRIS PRODUCTION (CU.YDS./YR)(15)	MAXIMUM SEASONAL DEBRIS PRODUCTION		ESTIMATED CONDITIONS		
					CU. YDS.	SEASON	DEBRIS STORED CU. YDS. (17)	CAPACITY AVAILABLE	
								CU. YDS.	PERCENT
Rubio (11)	1	51	310,910	6,096	133,000	1979-80	0	127,200	100
Ruby (Lower)	1	39	21,432	550	8,300	1968-69	2,000	26,600	93
Rye	5	13	15,748	1,211	10,000	1981-82	-756	19,856	104
Saddleback	1	6	520	87	(6)	(6)	520	26,480	98
Santa Anita	1	35	755,383 (2,3)	21,582	132,000 (2,3)	1961-62	-3334	397,934	101
Sawpit	1	40	707,247 (2,3)	17,681	232,200 (2,3)	1968-69	20,250	615,450	97
Scholl	2	49	18,294	373	800	1968-69	800	8,500	91
Schoolhouse	1	32	34,491	1,078	21,600	1962-63	5,226	62,474	92
Schwartz	1	18	49,559	2,753	21,600	1977-78	4,500	40,900	90
Shields	1	57	173,622 (3)	3,046	7,800	1937-38	1,810	32,990	95
Sierra Madre Dam(11&12)	1	67	366,388 (2)	5,468	95,200 (2)	1968-69	-5485	141,885	104
Sierra Madre Villa (11)	1	37	719,755	19,453	171,775	1993-94	0	402,300	100
Snover	1	58	109,480	1,888	19,300	1938-39	0	24,800	100
Sombrero	1	25	11,855	474	3,300	1977-78	6,000	81,900	93
Spinks	1	36	67,486	1,875	15,600	1968-69	1,100	54,900	98
Starfall	1	21	29,110	1,386	14,200	1977-78	1,937	12,963	87
Stetson (11)	1	25	21,452	858	1,500	1977-78	100	41,300	99
Stough	2	54	162,819	3,015	44,100	1964-65	3,500	177,100	98
Sturtevant	1	27	1,356	50	500	1977-78	155	1,245	89
Sullivan	4	24	93,952	3,915	35,300	1979-80	0	51,000	100
Sunnyside (11)	1	24	3,450	144	1,621	1993-94	0	3,400	100
Sunset Canyon-Deer	1	12	4,155	346	3,400	1982-83	180	4,820	96
Sunset (Lower)	1	31	145,469	4,693	20,200	1980-81	3,700	155,200	98
Sunset (Upper)	1	66	149,680	2,268	27,000	1964-65	-1470	17,370	109
Turnbull (11)	6	42	69,646 (2)	1,658	15,900 (2)	1968-69	160	21,440	99
Upper Shields	1	18	43,217 (4,14)	2,401	16,900 (4,14)	1977-78	0 (8)	35,400	100
Verdugo	1	59	827,992	14,034	105,400	1937-38	13,334	117,666	90
Ward	1	38	52,671	1,386	17,800	1977-78	1,233	25,167	95
West Ravine (11)	1	59	159,887	2,710	29,900	1937-38	0	44,900	100
Westridge	1&7	20	223	11	(6)	(6)	210	1,190	85
Wildwood	3&5	27	86,252	3,195	16,700	1977-78	-1836	22,536	109
William S. Hart Park	5	11	658	60	600	1983-84	-97	2,497	104
Wilson	2	32	216,134	6,754	55,500	1968-69	15,171	297,929	95
Winery	1	26	27,215	1,047	9,400	1968-69	0	29,200	100
Zachau	1	38	110,636 (4)	2,911	48,100 (4)	1977-78	3,496	44,404	93

114 DEBRIS BASINS

14,349,361

363,902

266,999

7,431,752

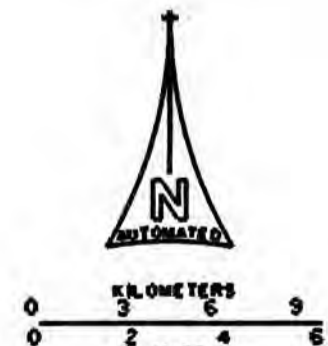
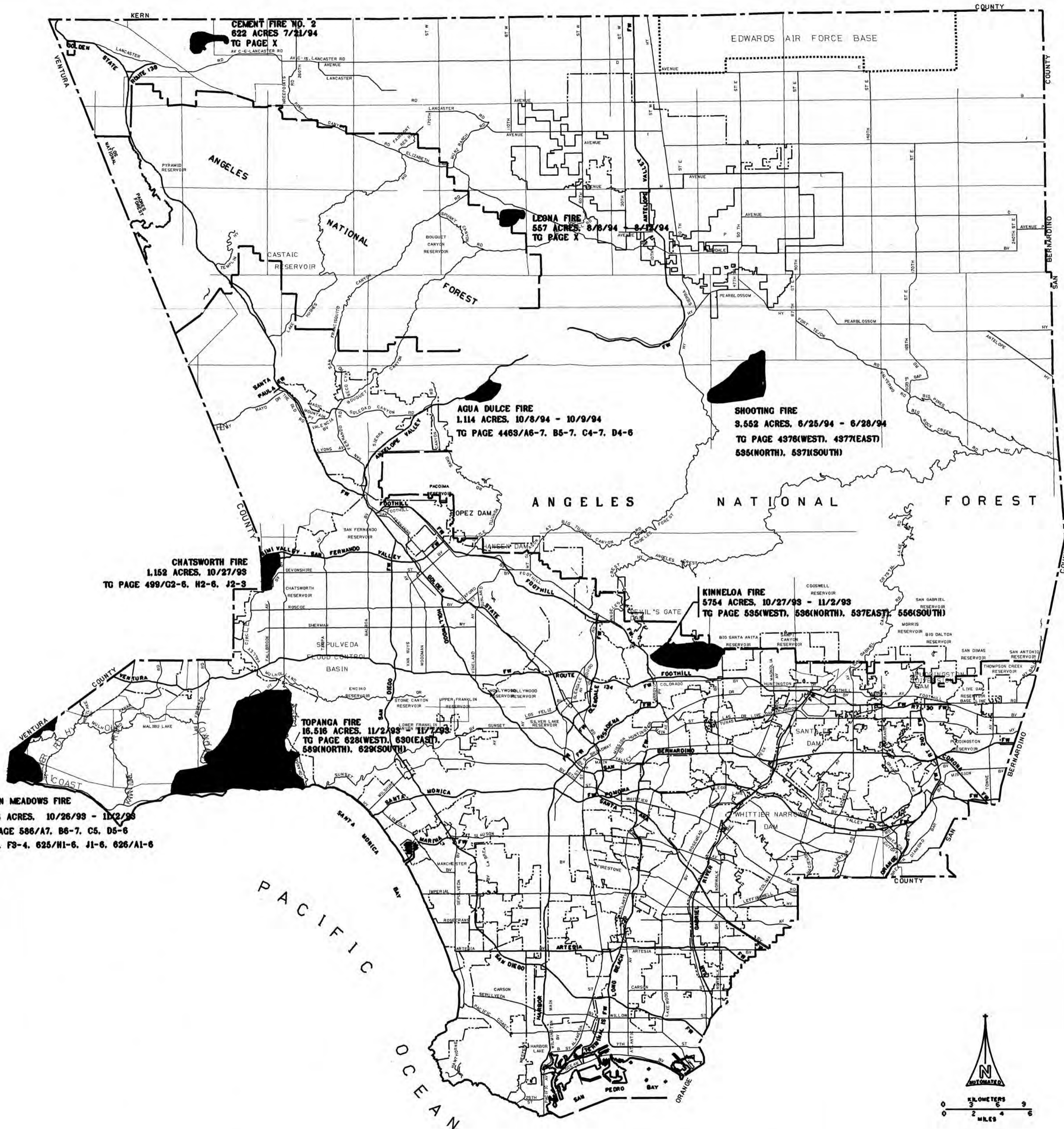
LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

DEBRIS BASIN-DEBRIS PRODUCTION HISTORY Including 1993-1994 Storm Season

DATA SHEET B

Compiled by: Hydraulic and Water Conservation
Division - Sedimentation Management
Date: November 30, 1994
File:DSB94SHT.XLS

- (1) VOLUME OF DEBRIS DEPOSITED IN BASINS DOES NOT INCLUDE DEBRIS SLICED THROUGH OPEN PORTS OR NOTCH.
- (2) VOLUME OF DEBRIS DEPOSITED IN BASINS DOES NOT INCLUDE DEBRIS WHICH PASSED OVER SPILLWAY DURING THE STORMS IN 1968-69 SEASON.
- (3) INCLUDING DEBRIS FROM UPSTREAM BASIN OR DAM.
- (4) VOLUME OF DEBRIS DEPOSITED IN BASINS DOES NOT INCLUDE DEBRIS WHICH PASSED OVER SPILLWAY DURING THE STORMS IN 1977-78 SEASON.
- (5) DEBRIS CAPACITY AVAILABLE WITHIN RIGHT OF WAY LIMITS.
- (6) NO SIGNIFICANT DEBRIS INFLOWS RECORDED.
- (7) NO DEBRIS RECORDS EXIST FOR THE FIRST 9 SEASONS.
- (8) INFORMATION UNAVAILABLE.
- (9) MAXIMUM CAPACITY MAY BE MORE THAN SHOWN AND WILL BE REVIEWED.
- (10) SPECIAL CLEANOUT REQUIRED DUE TO LIMITED STORAGE.
- (11) SPECIAL CLEANOUT REQUIRED DUE TO BURNED WATERSHED.
- (12) CLEANOUT REQUIRED WHEN DEBRIS REACHES OR EXCEEDS ELEV. 1128.9 FEET AGAINST FACE OF DAM.
- (13) VALUES ARE COMBINED WITH COOKS DEBRIS BASIN.
- (14) INCLUDING DEBRIS DATA FROM PREVIOUS BASIN.
- (15) CALCULATED BASED ON THE TOTAL DEBRIS DEPOSITED IN THE BASIN DIVIDED BY THE NUMBER OF SEASONS.
- (16) BASED ON DESIGN DRAWINGS USED FOR ENLARGING THE BASIN CAPACITY. THE DATA WILL BE REVISED BASED ON UPDATED TOPOGRAPHIC MAP.
- (17) DEBRIS IN STORAGE DETERMINED BASED ON TOPOGRAPHIC SURVEY MAP OR FROM FIELD ESTIMATES.
- (18) BASED ON AS-BUILT TOPOGRAPHIC MAP FOLLOWING ENLARGEMENT CONSTRUCTION.



MAP OF
COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
OCT. 1, 1993 THRU
SEPT. 30, 1994 FIRES
OVER 500 ACRES IN AREA
BURNED AREA LOCATIONS

WATER QUALITY

WATER QUALITY

Since its conception, the Flood Control District (now Department of Public Works) has actively engaged in operations which have proven indispensable in preserving the integrity of our water resources, both quantity and quality, and has aided in the establishment of regulations or controlling criteria by those agencies so empowered.

Prior to March 1986, monitoring activities in the field of water quality control were conducted by the Water Quality Section of Hydraulic/Water Conservation Division. In March 1986, the responsibilities of conducting such activities were transferred to Waste Management Division as a result of the consolidation. These activities include, among others, the collection of water quality samples, their analyses, and the interpretation and reporting of the resulting data.

Areas of involvement include the monitoring of all groundwater basins through the sampling of numerous wells, the monitoring of storm and low water flows at various strategic locations on the major streams or channels, and an assumed or obligated responsibility to monitor the quality effects and subsurface travel of recharge areas, specifically the Whittier Narrows Spreading Grounds area.

The Water Quality Section, together with personnel of other Departmental divisions, also conducts investigations into pollution problems relative to our facilities, particularly those from industrial discharges, vehicle accidents, ruptured pipelines, or the indiscriminate dumping of various waste products.

The principal objectives of these investigations are to determine the degree and apparent source or origin of the pollution and to take the necessary action that will immediately abate the existing problem and possibly provide a means to prevent or limit recurrence.

Since 1986, the Water Quality Section also has been conducting the screening of proposed connections to County storm drains, and developments over County right-of-ways, for the purpose of minimizing/eliminating potential of pollutants to the storm drain waters and, thereby, to the environment.

The above-mentioned activities of the Water Quality Section have recently been expanded, particularly in the areas of interfacing and coordinating with other municipalities/cities, environmental organizations, as well as Federal and State agencies. In compliance with mandates under the 1987 Clean Water Act, the Department is implementing tasks required by the National Pollutant Discharge Elimination System (NPDES) municipal stormwater permit.

The NPDES Permit (CA0061654) issued for the storm drain system in Los Angeles County requires the development and implementation of programs to improve the quality of stormwater/urban runoff discharges into the storm drain system. Los Angeles County, represented by the Department of Public Works, is the Principal Permittee and the cities within the County are Co-Permittees. The drainage area covered by the Permit is divided into three phases; with Phase I, the Santa Monica Bay Drainage Basin, having begun July 1, 1990, Phase II, which involves the Upper L.A. River and Upper San Gabriel River Drainage Basins, having begun in July 1992, and Phase III, which includes the

Lower L.A. River, Lower San Gabriel River, and Santa Clarita River Drainage Basins, initiated in July 1993.

The Permit requires the County, together with the cities to develop and implement a stormwater/urban runoff monitoring program to gather data on the type and source of pollutants within the drainage basins. The permit also requires the development and implementation of Best Management Practices (BMPs) to reduced the amount of pollutants that find their way into the storm drain system and to implement procedures to detect and eliminate illegal discharges.

SURFACE WATER QUALITY

Prior to 1984, dry weather samples were collected from 30 sampling stations on a monthly basis for analysis such as general minerals, bacteria, pesticides, and heavy metals. In addition, storm samples were also collected and analyzed at least three times annually from the same 30 stations during storms season.

From 1984 to 1987, as a result of reorganization, the number of surface water monitoring stations was reduced to 21, while the parameters analyzed were reduced to include only total dissolved solids, pH, and dissolved oxygen. Storm sampling activities were also significantly curtailed.

In 1988, recognizing the inadequacy of the then existing monitoring program to meet the Department's need in dealing with the important issues in the areas of water quality, the Department Administration approved and implemented an expanded monitoring program effective May 1, 1988.

There are 28 monitoring stations in the Department's current Surface Water Quality Monitoring Program, from which dry weather grab samples are collected and analyzed on a monthly basis. These sampling stations are strategically located throughout the Department's major storm drains and water conservation facilities where the flows are representative of typical land uses as well as areas of significant water quality concerns. Of the 28 monitoring stations in the program, six are located at the outlets to Santa Monica Bay, while one is located in the mountain area where flow is considered to be natural and uncontaminated with the various pollutants associated with urbanization and developed land uses.

Monthly dry weather grab samples, thus collected, are analyzed for general minerals (pH, Specific Conductance, Total Dissolved Solids, total Hardness, Potassium Sulfate, Calcium, Magnesium, Chloride, Fluoride, Nitrate-Nitrogen, Nitrite-Nitrogen, Ammonium-Nitrogen, Phosphate-P, Boron, Iron, and Manganese), bacteria, pesticides, heavy metals (Silver Arsenic, Barium, Cadmium, Chromium, Mercury, Lead, Selenium, Copper, Nickel, Zinc, and Chromium [VI]), Oil and Grease, Total Organic Carbon, Total Petroleum Hydrocarbons, PCB's, Biochemical Oxygen Demand, and Volatile Organic Compounds (TCE, Carbon Tetrachloride, Vinyl Chloride, 1,2 Dichloroethene, Benzene, 1,1 Dichloroethylene, 1,1,1 Trichloroethane, p-Dichlorobenzene). In addition, storm samples (also grab) are collected for three to four storms annually from 21 stations, including San Gabriel Coastal and Rio Hondo Spreading Grounds for extensive analysis similar to those for dry weather samples, with additional testing of Total suspended Solids and Volatile Suspended Solids to be included. For storm samples collected at San Gabriel Coastal and Rio Hondo Spreading Grounds,

priority pollutant constituents are also analyzed under an agreement with the Central and West Basin Water Replenishment District.

A selective list of total dissolved solids is shown for some of the sampling locations on the streams and channels monitored under the Surface Water Quality Program. For a conception of the analysis performed on the surface flows, a yearly compilation of constituent determination is shown for one (Los Angeles River at Wardlow) of the sampling stations in the program.

Beginning in early 1994, a more extensive Stormwater/Urban runoff Monitoring program utilizing automated sampling was established as required by the National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit. This program calls for installation of automated samplers within all major drainage basins, beginning with the Santa Monica Bay Drainage Basin, to collect flow-composite samples to better characterize sampling events. Nine (9) automated monitoring stations within the Santa Monica Bay Drainage Basin have been constructed from which data collection began in the 1994-95 storm season. While this new monitoring program is developing, the existing monitoring program will be maintained.

GROUNDWATER QUALITY

The Department's Groundwater Monitoring Program, which was initiated in the 1970's underwent thorough reevaluation in September 1993, and January 1994, to eliminate duplication of analyses among participating agencies. It was determined that the majority of the 314 wells in the program were already being sampled by the various watermasters within the County. The Department has discontinued its annual sampling activities for the program. However, we maintain the existing groundwater quality records and, upon request, provide the data to the public.

WATER, QUALITY DATA ACCESSIBILITY

Data acquired from the various programs are on file in the Water Quality Section. In addition, all data is accessible to any user through STORET, an Environmental Protection Agency computer system that stores, retrieves, and manipulates data using agency code 21CALAFD.

Surface Water Quality Monitoring Selected Surface Stations

Table I Total Dissolved Solids – ppm

1993–94 Season (Dry Weather Flow)

Sampling Locations	Oct. 1993	Nov. 1993	Dec. 1993	Jan. 1994	Feb. 1994	Mar. 1994	Apr. 1994	May 1994	Jun. 1994	Jul. 1994	Aug. 1994	Sep. 1994	Average
Ballona Creek at Sawtelle Blvd.	758	750	754	710	588	700	644	764	696	700	796	750	718
Coyote Creek at Orangethorpe Avenue Willow Street	1108 832	1196 884	902 1446	320 –	982 1278	1050 916	1102 734	1334 758	848 824	1030 820	1102 992	1088 734	1005 929
Dominguez Channel Above Vermont Avenue	456	786	736	1068	1120	308	890	622	780	894	1012	900	798
Los Angeles River at Wardlow Road Firestone Boulevard	718 712	786 792	678 680	– –	802 764	744 720	820 800	652 702	726 680	692 688	672 622	630 724	720 717
Los Cerritos Channel at Stearns Street	802	422	1272	–	680	528	846	638	800	790	772	648	745
Rio Hondo River at Southern Avenue Spreading Grounds	1150 648	– 616	– –	138 220	848 472	1006 434	760 –	948 642	1800 –	1212 606	692 624	554 582	911 538
Santa Monica Cyn. Ch. at Short Street	–	890	952	988	1000	1020	954	1052	1030	900	920	820	957
San Gabriel River at Spreading Grounds Willow Street	594 774	672 856	564 652	230 –	724 746	654 764	696 1456	700 680	704 734	– 754	– 724	– 722	615 806
San Jose Creek at Workman Mill Road	874	794	856	–	868	882	1120	730	734	910	800	984	868

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Surface Water Quality Analysis
Monthly Monitoring 1993-94 Season (Dry Weather)
Los Angeles River at Wardlow Road

Constituents ppm	Oct. 93	Nov. 93	Dec. 93	Jan. 94	Feb. 94	Mar. 94	Apr. 94	May 94	Jun. 94	Jul. 94	Aug. 94	Sep. 94	Average
Hardness as CaCO3	297	317	297	—	370	330	350	220	315	270	280	190	294
Ammonium	7.8	5.1	6.3	—	6.3	6.9	4.4	0.3	<0.1	0.4	0.1	0.2	3.8
Calcium	75.3	83.3	79.4	—	92.2	84.2	80.2	76.2	72.1	72.1	72.1	64.1	77.4
Magnesium	26.4	26.5	24.1	—	34.0	29.2	36.5	7.3	33.0	21.8	24.3	7.3	24.6
Potassium	10.2	10.5	11.9	—	6.6	6.3	9.7	10.0	7.0	8.1	9.6	9.3	9.0
Sodium	93.5	113.0	115.0	—	58.4	77.5	91.0	109.0	86.0	98.5	113.0	114.0	97.2
Alkalinity as CaCO3	152	134	168	—	179	188	172	104	146	151	146	79	147
Chloride	136.0	151.0	116.0	—	123.0	108.0	158.0	122.4	121.4	122.0	117.0	136.0	128.2
Flouride	0.4	0.4	0.3	—	0.3	0.3	0.3	0.4	0.4	0.8	0.5	0.4	0.4
Sulfate	215.0	238.0	208.0	—	233.0	227.0	252.0	201.2	186.3	184.0	201.0	182.0	211.6
Nitrate-N	8.1	5.1	3.5	—	6.4	3.7	9.6	<0.03	3.0	3.5	2.3	4.1	4.6
Nitrite-N	0.6	1.1	0.7	—	0.7	2.0	<0.03	1.1	<0.03	1.6	3.2	0.9	1.3
Phosphate	1.9	1.1	1.5	—	1.8	1.4	1.3	<0.05	0.8	0.4	0.9	0.3	1.0
Total Dissolved Solids	718	786	678	—	802	744	820	652	726	692	672	630	720
BOD	85.2	<1	59.3	—	121.2	43.9	78.0	NA	59.4	<2	45.2	24.7	64.6
Total Organic Carbon	9.0	9.7	11.6	—	13.8	3.6	14.7	NA	12.0	<1	14.1	12.6	11.2
Oil & Grease	<1	<1	<1	—	<1	<1	<1	<1	<1	<1	<1	<1	<1
TPH	<1	<1	<1	—	<1	<1	<1	<1	<1	<1	<1	<1	<1
pH	7.6	8.9	7.8	—	7.2	8.8	7.8	9.5	8.8	9.3	9.6	9.7	8.6
Temperature	65.0	70.0	58.0	—	58.0	65.0	60.0	82.0	75.0	80.0	82.0	74.0	69.9
MPN/100ml													
Total Coliform	16000	1700	2400	—	11000	>160,000	90000	<20	>160,000	<20	8000	80	NA
Fecal Coliform	500	170	1300	—	11000	>160,000	50000	<20	>160,000	<20	800	80	NA
Fecal Streptococcus	270	260	260	—	500	800	1700	300	300	<20	260	1100	NA
Enterococcus	270	260	170	—	500	800	1700	300	300	<20	260	330	NA

HYD93941

< = Less than > = Greater than NA = Not analyzed ppm = Parts per million ppb = Parts per billion

FS

Surface Water Quality Analysis
Monthly Monitoring 1993-94 Season (Dry Weather)
Los Angeles River at Wardlow Road

Constituents (ppb)	Oct. 93	Nov. 93	Dec. 93	Jan. 94	Feb. 94	Mar. 94	Apr. 94	May 94	Jun. 94	Jul. 94	Aug. 94	Sep. 94	Average
Boron	685	622	495	—	640	645	440	436	<250	660	530	600	575.3
Heavy Metals:													
Arsenic	<10	<10	11	—	<10	<10	<10	<10	<10	<10	<10	<10	<10
Barium	<100	<100	178	—	<100	<100	110	106	<100	<100	<100	<100	<109
Cadmium	<10	<10	<10	—	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chromium	<10	<10	<10	—	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chromium (6)	<10	<10	<10	—	<10	<10	<10	<10	<10	<10	<10	<10	<10
Copper	<10 ²⁴	<10	<10	—	11	<10	40	<10	<10	<10	18	<10	<15
Lead	<10	<10	<10	—	<10	<10	<10	<10	<10	<10	<10	<10	<10
Mercury	<1	<1	<1	—	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	<10	<10	<10	—	<10	<10	<10	<10	<10	<10	<10	<10	<10
Selenium	<5	<5	<5	—	<5	<5	<5	<5	<5	<5	<5	<5	<5
Silver	<10	<10	<10	—	<10	<10	<10	<10	<10	<10	<10	<10	<10
Zinc	<50	<50	<50	—	<50	<50	<50	<50	<50	<50	<50	<50	<50
Iron	<100	<100	<100	—	<100	100	<100	<100	<100	<100	200	<100	<109
Manganese	<30	<30	<30	—	<30	62	<30	<30	<30	<30	<30	<30	<33
Chlorinated Pesticides:													
Aldrin	<0.05	<0.05	<0.05	—	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Lindane	<0.05	<0.05	<0.05	—	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Alpha-BHC	<0.05	<0.05	<0.05	—	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Beta-BHC	<0.05	<0.05	<0.05	—	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Delta-BHC	<0.05	<0.05	<0.05	—	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlordane	<0.05	<0.05	<0.05	—	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pp'DDD	<0.10	<0.10	<0.10	—	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pp'DDE	<0.10	<0.10	<0.10	—	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
pp'DDT	<0.10	<0.10	<0.10	—	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dieldrin	<0.10	<0.10	<0.10	—	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endosulfan I	<0.10	<0.10	<0.10	—	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endosulfan II	<0.10	<0.10	<0.10	—	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endosulfan Sulfate	<0.10	<0.10	<0.10	—	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Endrin	<0.10	<0.10	<0.10	—	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Heptachlor	<0.05	<0.05	<0.05	—	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor Epoxide	<0.05	<0.05	<0.05	—	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toxaphene	<1.0	<1.0	<1.0	—	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

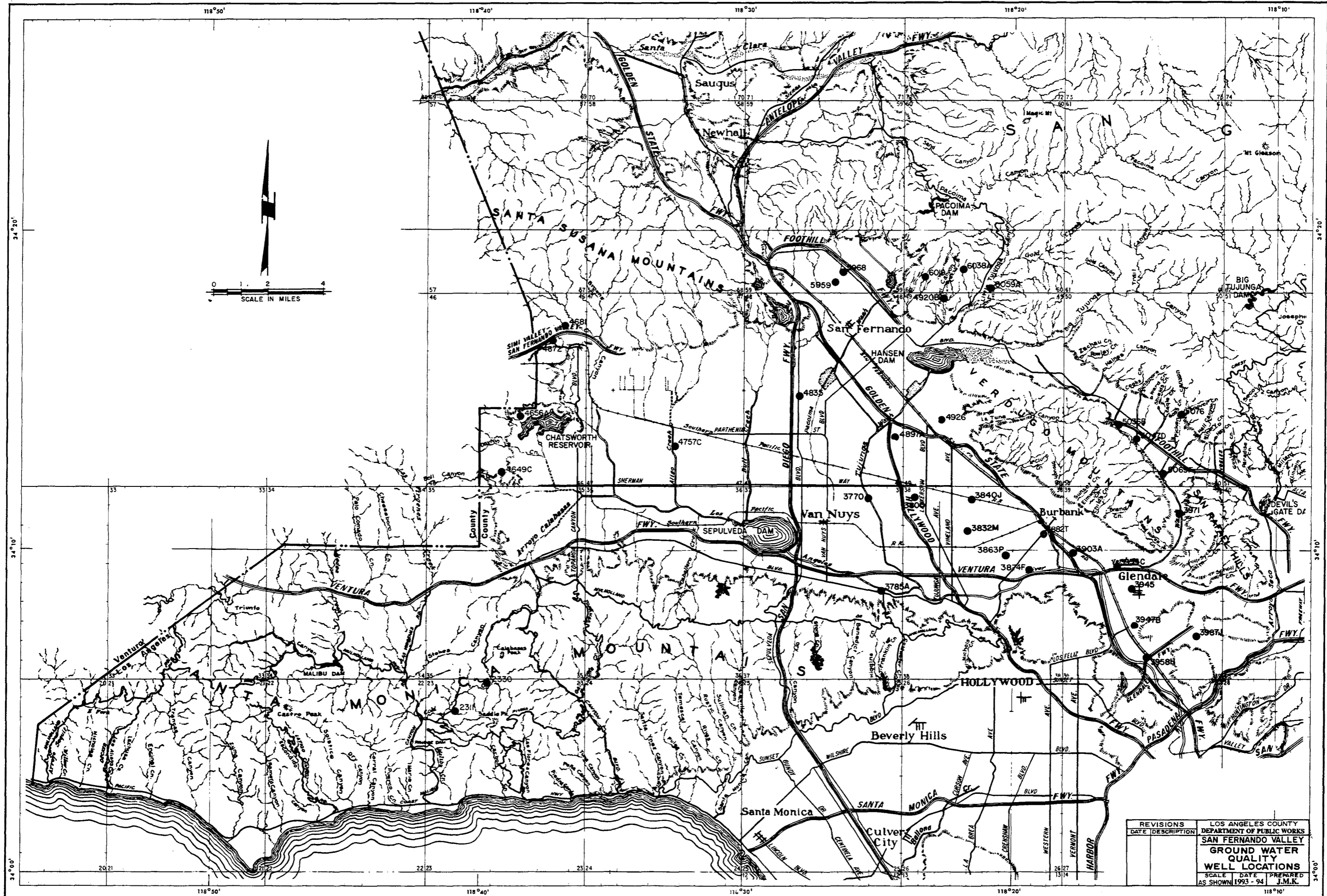
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Surface Water Quality Analysis
Monthly Monitoring 1993-94 Season (Dry Weather)
Los Angeles River at Wardlow Road

Constituents ppb	Oct. 93	Nov. 93	Dec. 93	Jan. 94	Feb. 94	Mar. 94	Apr. 94	May 94	Jun. 94	Jul. 94	Aug. 94	Sep. 94	Average
Polychlorinated biphenyls:													
PCB1016	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PCB1221	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PCB1232	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PCB1242	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PCB1248	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
PCB1254	<1.0	<0.5	<1.0	-	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
PCB1260	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Volatile Organics:													
Benzene	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
Bromodichloromethane	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
Bromoform	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
Bromomethane	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
Carbon Tetrachloride	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
Chlorobenzene	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
Chloroethane	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
2-Chloroethylvinyl ether	NA	NA	NA	-	NA	NA	NA	NA	NA	<1.0	NA	NA	<1.0
Chloroform	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
Chloromethane	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
Dibromochloromethane	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
1,2-Dichlorobenzene	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
1,3-Dichlorobenzene	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
1,4-Dichlorobenzene	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
Dichlorodifluoromethane	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
1,1-Dichloroethane	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
1,2-Dichloroethane	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
1,1-Dichloroethene	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
trans-1,2 Dichloroethene	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
1,2-Dichloropropane	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
cis-1,3-Dichloropropene	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
trans-1,3-Dichloropropene	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
Ethyl benzene	NA	NA	NA	-	NA	NA	NA	NA	NA	<1.0	NA	NA	<1.0
Methylene chloride	NA	NA	NA	-	NA	NA	NA	NA	NA	<1.0	NA	NA	<1.0
1,1,2,2-Tetrachloroethane	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
Tetrachloroethene	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
Toluene	NA	NA	NA	-	NA	NA	NA	NA	NA	<1.0	NA	NA	<1.0
1,1,1 Trichloroethane	NA	NA	NA	-	NA	NA	NA	NA	NA	<1.0	NA	NA	<1.0
1,1,2-Trichloroethane	NA	NA	NA	-	NA	NA	NA	NA	NA	<1.0	NA	NA	<1.0
Trichloroethene	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
Trichlorofluoromethane	NA	NA	NA	-	NA	NA	NA	NA	NA	<1.0	NA	NA	<1.0
Vinyl Chloride	NA	NA	NA	-	NA	NA	NA	NA	NA	<0.5	NA	NA	<0.5
p'-Dichlorobenzene	NA	NA	NA	-	NA	NA	NA	NA	NA	NA	NA	NA	NA

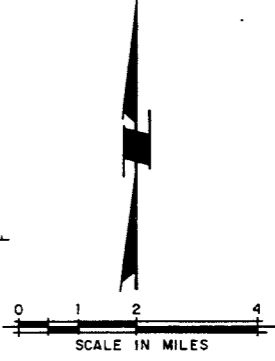
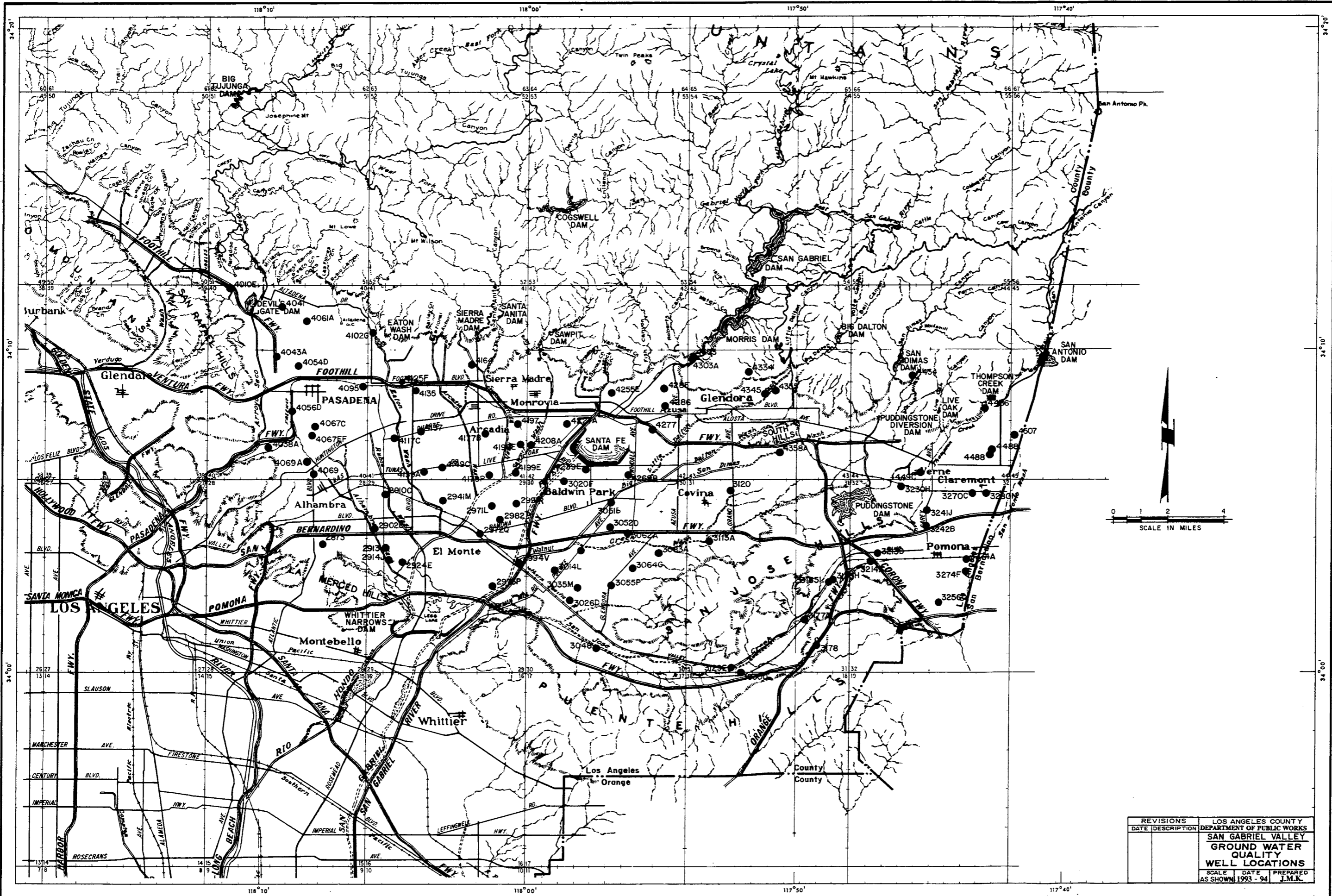
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< = Less than > = Greater than NA = Not analyzed ppm = Parts per million ppb = Parts per billion

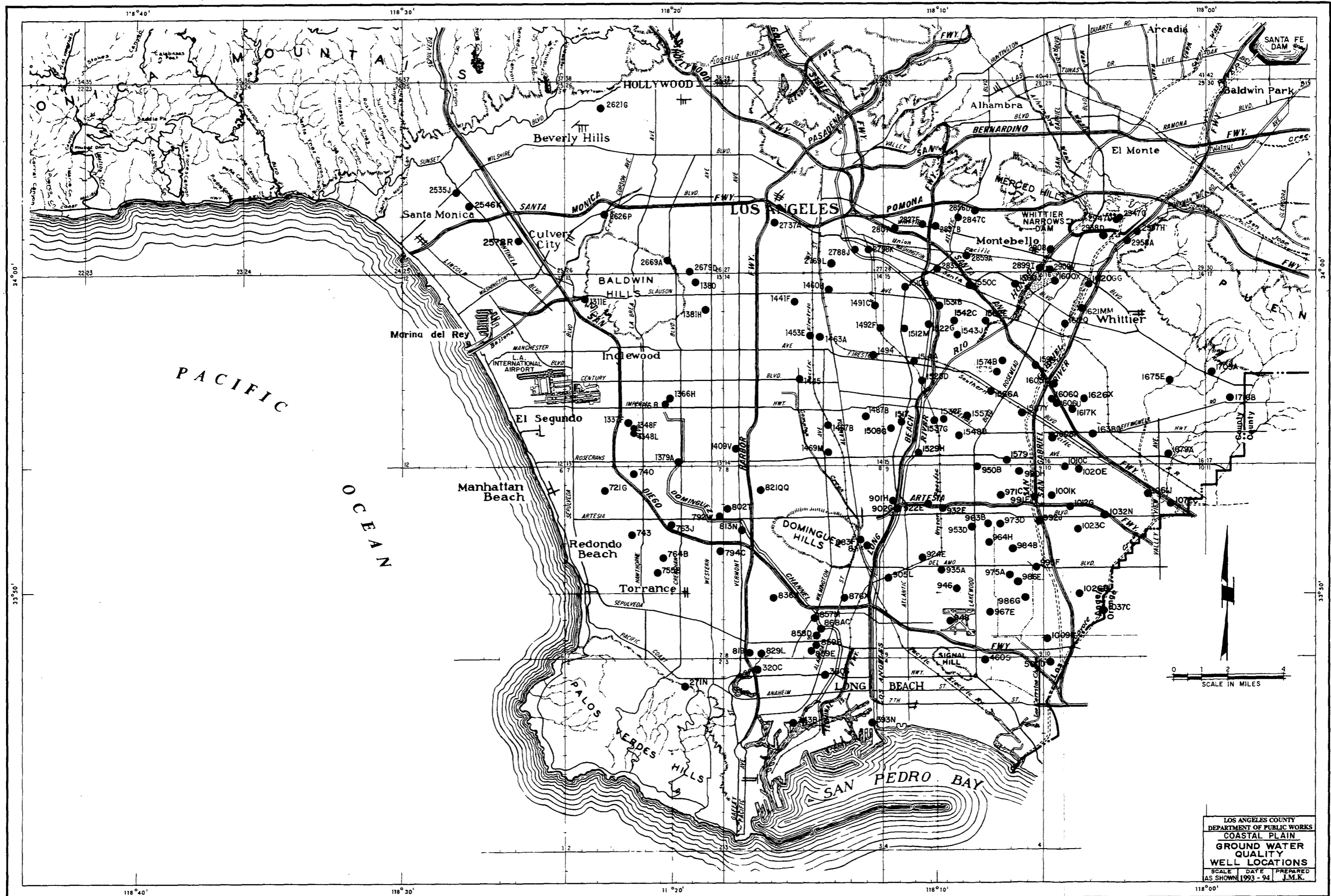


REVISIONS		LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS SAN FERNANDO VALLEY GROUND WATER QUALITY WELL LOCATIONS
DATE	DESCRIPTION	
		SCALE DATE PREPARED AS SHOWN 1993 - 94 J.M.K.

A-1 A-2



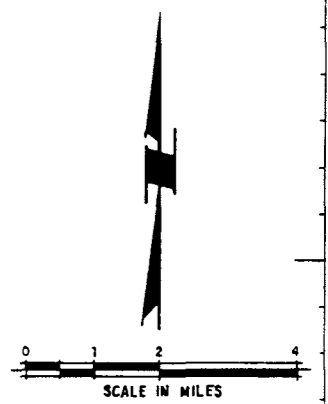
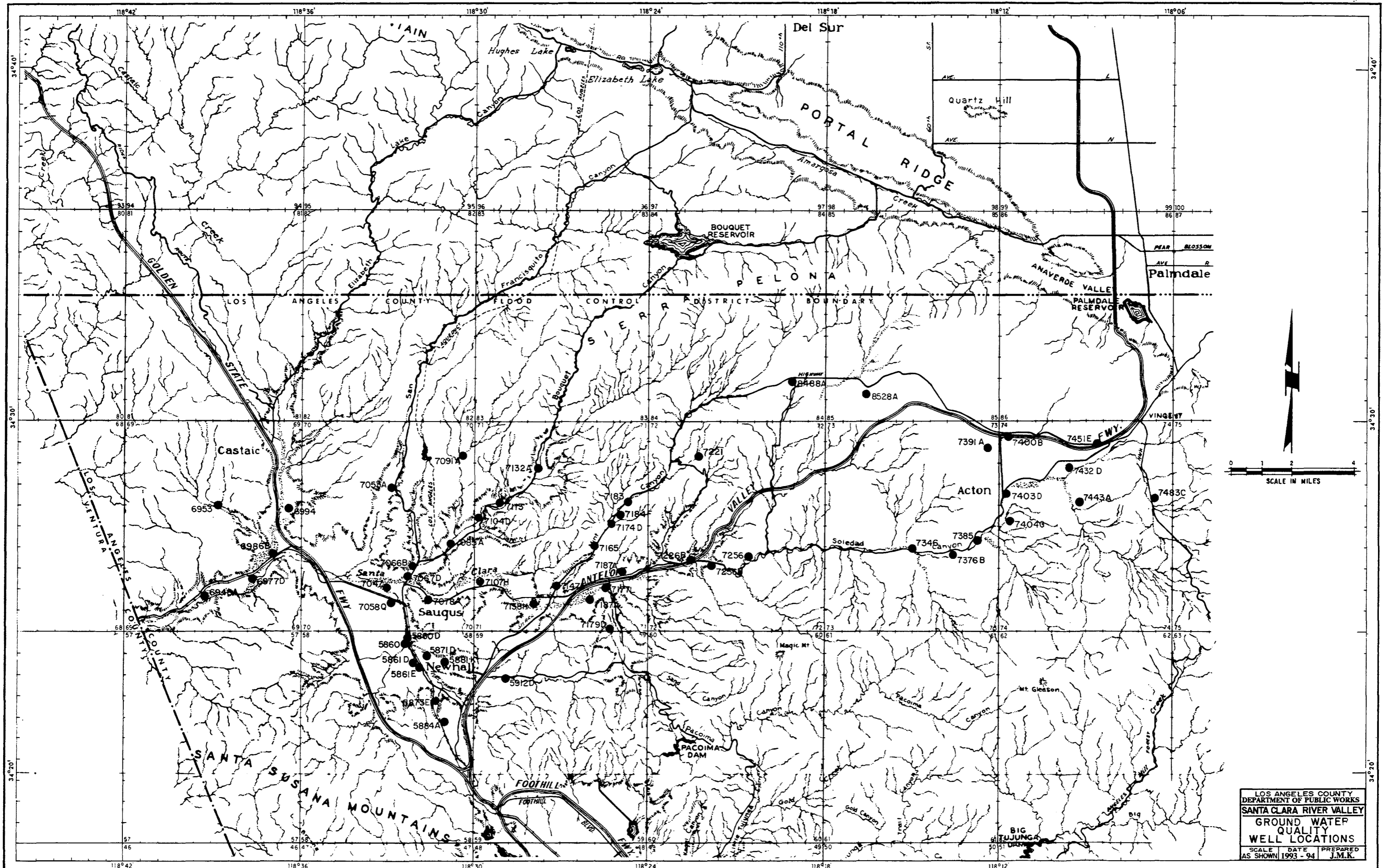
REVISIONS	LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS		
DATE	DESCRIPTION	SAN GABRIEL VALLEY	
GROUND WATER QUALITY			
WELL LOCATIONS			
SCALE	DATE	PREPARED	
AS SHOWN	1993 - 94	J.M.K.	



LOS ANGELES COUNTY
 DEPARTMENT OF PUBLIC WORKS
 COASTAL PLAIN
 GROUND WATER
 QUALITY
 WELL LOCATIONS

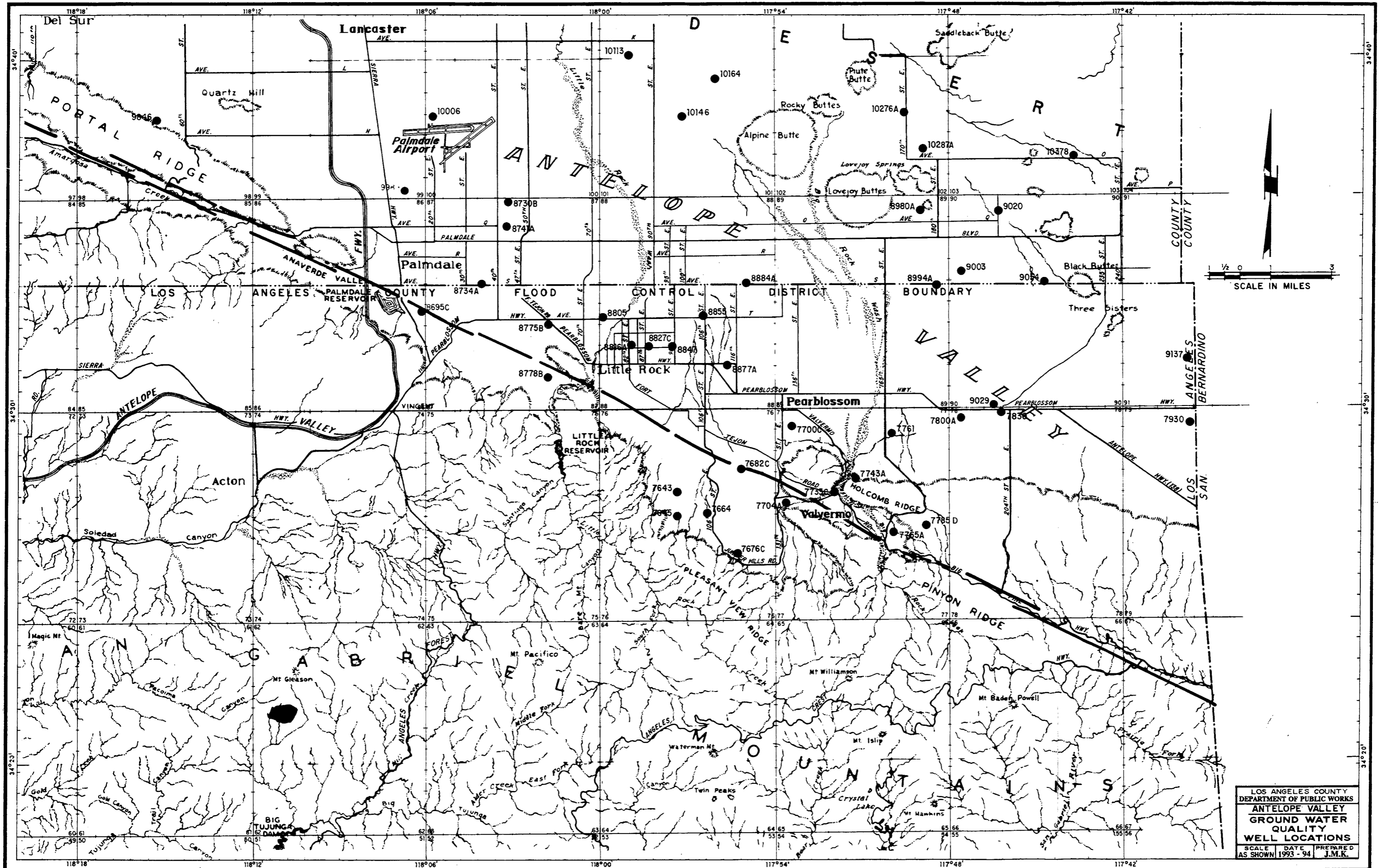
SCALE DATE PREPARED
 AS SHOWN 1993 - 94 J.M.K.

G-2

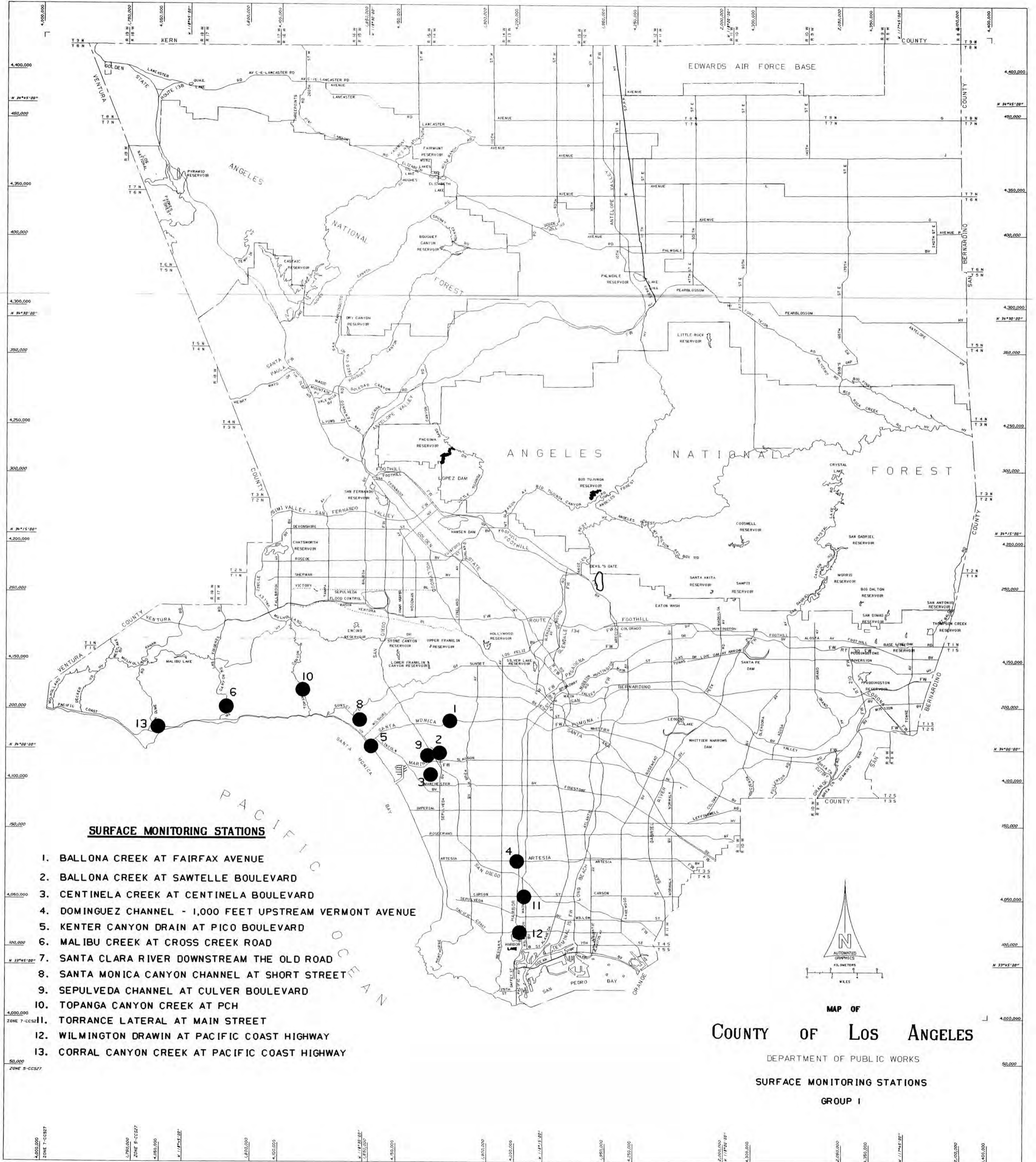


LOS ANGELES COUNTY
 DEPARTMENT OF PUBLIC WORKS
 SANTA CLARA RIVER VALLEY
 GROUND WATER
 QUALITY
 WELL LOCATIONS
 SCALE AS SHOWN DATE 1993 - 94 PREPARED BY J.M.K.

E-1

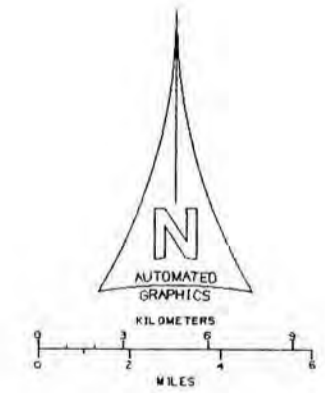


LOS ANGELES COUNTY
 DEPARTMENT OF PUBLIC WORKS
ANTELOPE VALLEY
GROUND WATER
QUALITY
WELL LOCATIONS
 SCALE DATE PREPARED
 AS SHOWN 1993 - 94 J.M.K.



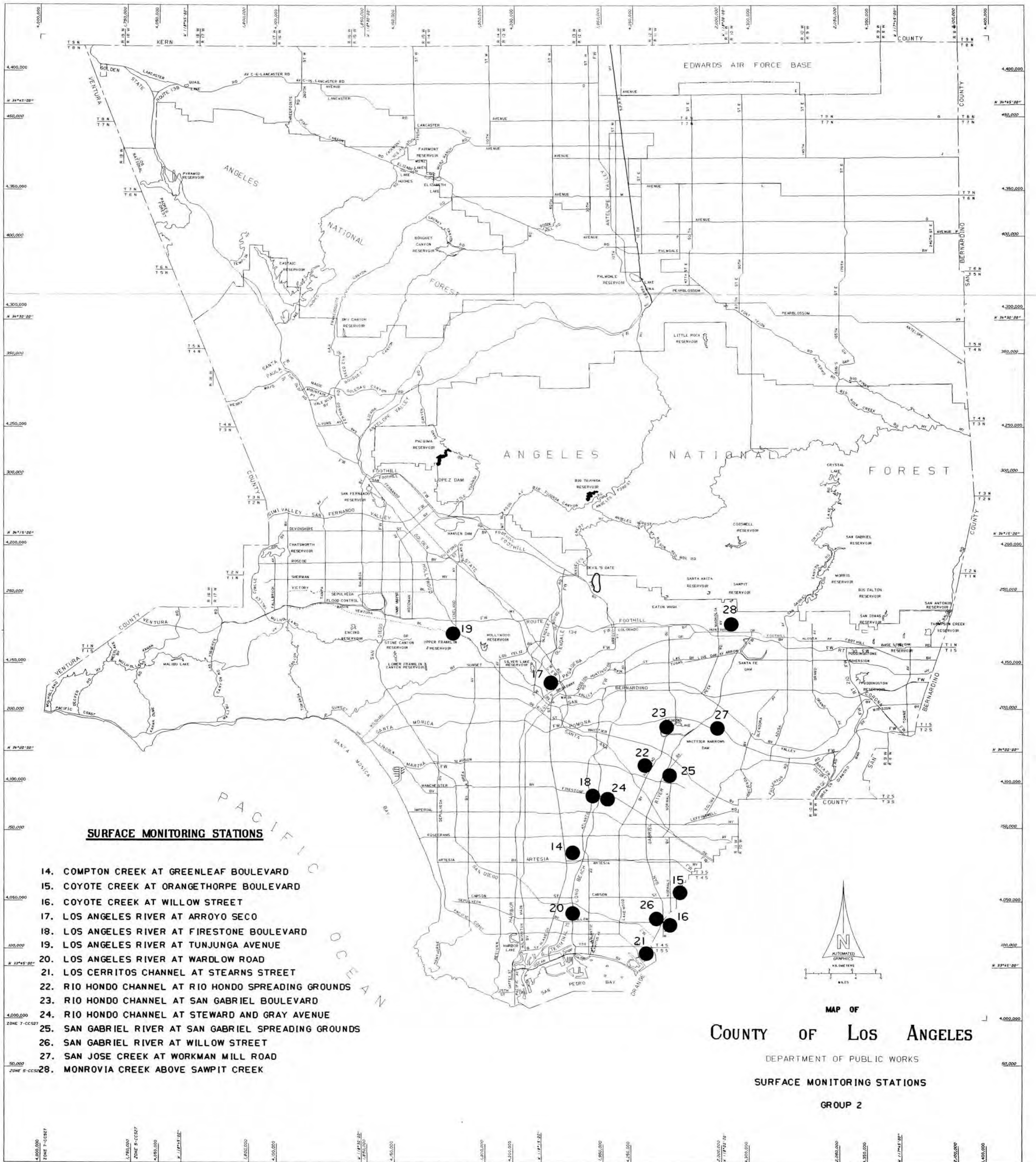
SURFACE MONITORING STATIONS

1. BALLONA CREEK AT FAIRFAX AVENUE
2. BALLONA CREEK AT SAWTELLE BOULEVARD
3. CENTINELA CREEK AT CENTINELA BOULEVARD
4. DOMINGUEZ CHANNEL - 1,000 FEET UPSTREAM VERMONT AVENUE
5. KENTER CANYON DRAIN AT PICO BOULEVARD
6. MALIBU CREEK AT CROSS CREEK ROAD
7. SANTA CLARA RIVER DOWNSTREAM THE OLD ROAD
8. SANTA MONICA CANYON CHANNEL AT SHORT STREET
9. SEPULVEDA CHANNEL AT CULVER BOULEVARD
10. TOPANGA CANYON CREEK AT PCH
11. TORRANCE LATERAL AT MAIN STREET
12. WILMINGTON DRAWIN AT PACIFIC COAST HIGHWAY
13. CORRAL CANYON CREEK AT PACIFIC COAST HIGHWAY



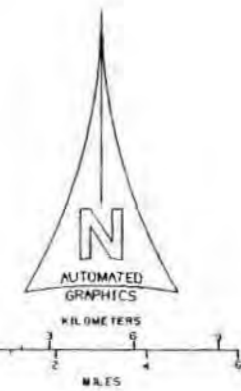
**MAP OF
COUNTY OF LOS ANGELES**

DEPARTMENT OF PUBLIC WORKS
SURFACE MONITORING STATIONS
GROUP I



SURFACE MONITORING STATIONS

- 14. COMPTON CREEK AT GREENLEAF BOULEVARD
- 15. COYOTE CREEK AT ORANGETHORPE BOULEVARD
- 16. COYOTE CREEK AT WILLOW STREET
- 17. LOS ANGELES RIVER AT ARROYO SECO
- 18. LOS ANGELES RIVER AT FIRESTONE BOULEVARD
- 19. LOS ANGELES RIVER AT TUNJUNGA AVENUE
- 20. LOS ANGELES RIVER AT WARDLOW ROAD
- 21. LOS CERRITOS CHANNEL AT STEARNS STREET
- 22. RIO HONDO CHANNEL AT RIO HONDO SPREADING GROUNDS
- 23. RIO HONDO CHANNEL AT SAN GABRIEL BOULEVARD
- 24. RIO HONDO CHANNEL AT STEWARD AND GRAY AVENUE
- 25. SAN GABRIEL RIVER AT SAN GABRIEL SPREADING GROUNDS
- 26. SAN GABRIEL RIVER AT WILLOW STREET
- 27. SAN JOSE CREEK AT WORKMAN MILL ROAD
- 28. MONROVIA CREEK ABOVE SAWPIT CREEK



MAP OF
COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS
SURFACE MONITORING STATIONS
GROUP 2

WATER CONSERVATION

WATER CONSERVATION

Information presented in this section includes amounts of local, imported, and reclaimed water conserved in spreading areas and information on the seawater barrier projects which prevent saltwater intrusion into groundwater zones in the coastal areas. Pertinent data is presented regarding the locations and descriptions of the Department's water conservation facilities, as well as facilities owned by others. Also included are groundwater maps delineating static groundwater elevations recorded during the report period and hydrographs of selected key wells.

CONSERVING THE WATERS

In addition to the flood control program, the Department has the equally important task of conserving as much of the storm and other waters as practicable. The use of water conservation facilities adjacent to river channels, and in soft-bottom channels permits water to percolate into groundwater basins for later pumping. These water spreading facilities are located in areas where the underlying soils are composed of permeable formations.

The various types of water conserved, local, imported, and reclaimed, are construed to have the following meanings in this section: Local water is primarily runoff due to rainfall on the mountain and valley watersheds, dam releases, and rising water within the County. Imported water is water originating outside the County either from Northern California or from the Colorado River. Reclaimed water is the effluent produced by the Whittier Narrows Water Reclamation Plant, the San Jose Creek Water Reclamation Plant, and the Pomona Reclamation Plant, all operated by the Los Angeles County Sanitation District.

The importance of this activity is apparent when it is realized that about 30 to 40 percent of the water used in the County is pumped from groundwater-supplies. The growth of the County, combined with periodic droughts, has seriously depleted these supplies on numerous occasions.

The Department's policy is to conserve the maximum possible amount of storm water consistent with runoff quantity and quality, capacities of the spreading facilities, and groundwater conditions.

IMPORTED WATER

During this report period, imported Colorado River and State Project water for spreading was received from the Metropolitan Water District (MWD) for spreading-Imported water in the Coastal Plain was spread at the Department's facilities in the Rio Hondo and San Gabriel Coastal Basin Spreading Grounds on behalf of the Water Replenishment District of Southern California. Imported water in the San Gabriel Valley was spread in Santa Fe Spreading Grounds, in the San Gabriel River, in Irwindale Spreading Basin/Manning Pit, and in Forbes Spreading Grounds on behalf of the Upper San Gabriel Valley Municipal Water District, and the San Gabriel Valley Municipal Water District.

RECLAIMED WATER

The County Sanitation District's Whittier Narrows Water Reclamation Plant effluent, purchased by the Water Replenishment District of Southern California, is transported to the Rio Hondo and San Gabriel Coastal Basin Spreading Grounds for groundwater replenishment.

The County Sanitation District's San Jose Creek Water Reclamation Plant, made its first delivery of effluent in November 1972. The portion of the effluent that is spread is also purchased by the Water Replenishment District of Southern California.

Water from the Pomona Reclamation Plant is released down the San Jose Creek - San Gabriel River System to the Department's recharge facilities in the Rio Hondo and San Gabriel Coastal Basin spreading grounds.

The maximum amount of reclaimed water allowed for spreading in the Montebello Forebay, effective July 1991, is 60,000 acre-feet per year, but not to exceed 150,000 acre-feet over a three year period.

SEAWATER BARRIER PROJECTS

The Department operates three barrier projects to protect the groundwater in the West Coast and Central Basins against seawater intrusion by creating freshwater pressure ridges along the coastline. The pressure mounds are created by injecting fresh water through a series of injection wells. During the report period, 15,482 acre-feet of water was injected at the West Coast Basin Barrier Project, 5,527 acre-feet at the Dominguez Gap Barrier Project, and 3,677 acre-feet at the Los Angeles part of the Alamitos Barrier Project. On behalf of the Orange County Water District, 1,309 acre-feet of water was injected at the Orange County portion of the Alamitos Barrier Project.

The following seawater barrier improvements were completed during the 1993-94 water year:

1. Alamitos Barrier Project:

Orange County Water District drilled 4 new injection wells.

Two injection wells were pressure-grouted to mitigate surface leakage problems.

41 observation well manholes were modified by retrofitting them with 9-inch watertight vaults.

2. Dominguez Gap Barrier Project

Construction was completed on ten multizone observation wells. The geohydrologic information gathered from this drilling contract will be used for determination of the required remedial improvements for mitigating intrusion around the North-South leg of the barrier.

A consultant study based on strontium isotopes 86/87 ratios was conducted to eliminate oil field brines and other salt sources as contaminants. The study also identified and better defined seawater intrusion paths.

3. West Coast Basin Barrier Project

During this period the construction of three injection wells and thirteen observation wells was completed.

These wells were constructed as part of the Department's consultant study recommendations to mitigate barrier deficiencies in the Silverado and Lower San Pedro aquifers.

SEASONAL DATA AND MAPS

During this report period, weekly, monthly, and semi-annual measurements of groundwater levels in observation wells located throughout the groundwater basins in Los Angeles County were made and processed.

Hydrographs of selected key wells are included in this report.

GROUNDWATER BASINS AND GROUNDWATER RECHARGE

Groundwater in Los Angeles County is stored in basins underlying five major geographic areas. These groundwater basins are separated by geologic features which impede groundwater movement or by political boundaries. The following is a background summary of the Department's groundwater recharge activities within each of these areas:

The Department operates 2,436 acres of spreading grounds and soft-bottom channel spreading areas for replenishment of local groundwater supplies. The Department also assisted in the operation and maintenance of 269 acres of spreading grounds owned by others. An additional 656 acres of spreading grounds are controlled, maintained, and operated by other agencies. The total gross acreage of spreading grounds in the County is 3,361 acres. During the report period, below normal rainfall allowed the Department to conserve approximately 117,260 acre-feet of storm runoff.

The conservation of local runoff is supplemented by spreading imported water and reclaimed water purchased by water agencies. During the report period, 56,041 acre-feet of imported water and 53,982 acre-feet of reclaimed water were spread.

The Department is continuing its efforts to improve its water spreading facilities in order to maximize the amounts of water conserved and to simplify the spreading operations.

SAN GABRIEL VALLEY

The Department operates 20 spreading facilities in the San Gabriel Valley that receive direct valley runoff and flows from the San Gabriel Mountains. Some of these spreading facilities can also receive imported water. During the report period, the Department added approximately 51,200 acre-feet of local water and 36,541 acre-feet of imported water to the groundwater stored in the basins underlying the San Gabriel Valley and diverted 2,618 acre-feet of local water to grounds owned by others.

Main San Gabriel Basin

This is the largest basin underlying the San Gabriel Valley with an estimated storage capacity of 9.5 million acre-feet. It reacts quickly to artificial spreading in Santa Fe Reservoir Spreading Grounds and to infiltration in the San Gabriel River downstream of Santa Fe Dam.

During the report period, the Department replenished the Main San Gabriel Basin with 37,883 acre-feet of local water and 30,981 acre-feet of imported water. Well 3030F in Baldwin Park recorded

a high groundwater elevation for the report period of 259.6 ft on October 20, 1993.

The following improvements were constructed in the Upper San Gabriel Canyon Basin during 1993-94 water year:

San Gabriel Canyon Spreading Grounds - Improvements completed consisted of grading and lining of portions of the inlet canal, construction of an interbasin structure, a canal diversion structure into Basin 1, and the extension of the Basin 2 intake structure. These improvements increase flow capacity, reduced weed growth and erosion, minimized maintenance requirements, and eliminated debris plugging the trashrack and the resulting washouts that have previously occurred.

Upper San Gabriel Canyon Basin

Approximately 6,931 acre-feet of local water and approximately 4,660 acre-feet of imported water were recharged by the Department through its San Gabriel Canyon Spreading Grounds and by percolation in the adjacent San Gabriel River. Also, 1,744 acre-feet of local water was routed to Fish Canyon Spreading Grounds, which is operated by the Committee of Nine.

Lower San Gabriel Canyon Basin

The basin is located south of the Upper San Gabriel Canyon Basin and is separated from it by the underground Lohmon Dike. Groundwater cascades over the Lohmon Dike from the Upper San Gabriel Canyon Basin and recharges the Lower San Gabriel Canyon Basin. The Department spread 995 acre-feet of local water in Sawpit Spreading Grounds which is within the Lower Canyon Basin.

Wayhill Basin

The Department spread 461 acre-feet of local water and 900 acre-feet of imported water at Forbes spreading facility in the Wayhill Basin.

Foothill Basin

The Department spread 3,034 acre-feet of local water at its San Dimas Canyon Spreading Grounds facility in the Foothill Basin.

Glendora Basin

The Department spread 198 acre-feet of local water in its Big and Little Dalton facilities within the Glendora Basin.

Claremont Heights Basin

The Department has no spreading facilities in the Claremont Heights Basin.

Live Oak Basin

The Department has no spreading facilities in the Live Oak Basin.

Chino Basin

The basin is located in the most eastern part of the County. No Department recharge facilities are located within the Chino Basin.

San Dimas Basin

The basin is north of the San Jose Hills, east of the Main Basin, and south of the Wayhill Basin. The Department spread 136 acre-feet of local water in its Live Oak Spreading Grounds to recharge the basin.

Pomona Basin

The basin is located south of Claremont, Live Oak, and San Dimas Basins, and north of the Chino Basin and northeast of the San Jose Hills. The Department has no water spreading facilities within this basin.

Puente and Spadra Basins

No spreading occurs in this area.

Raymond Basin

The basin covering approximately 40 square miles is located in the northwest corner of the San Gabriel Valley and is separated from the Main San Gabriel Basin by the Raymond Fault. The Raymond Basin contains the Monk Hill Basin and the Pasadena and Santa Anita Subareas. The Department recharged 2,634 acre-feet of local water by its spreading facilities in the Raymond Basin and diverted 874 acre-feet to the City of Sierra Madre's spreading facility during the report period.

COASTAL PLAIN

The groundwater basins underlying the Coastal Plain are divided by geological features into the Central (includes the Montebello and Los Angeles Forebays), West Coast, Santa Monica, and Hollywood Basins. During this report period, the Department recharged 43,463 acre-feet of local water, 19,500 acre-feet of imported water, and 53,982 acre-feet of reclaimed water to the groundwater basins underlying the Coastal Plain. Most of the water was spread in the Montebello Forebay.

Central Basin

The Central Basin has the most storage capacity of the basins in the Coastal Plain. In addition to the water recharged in the Department's spreading facilities, water injected in the Alamitos Barrier Project also contributes to the replenishment of the pressure aquifers underlying the Central Basin.

The following project was constructed in the Central Basin during 1993-94 water year:

Rio Hondo Coastal Basin Spreading Grounds - Replaced approximately 3,600 feet of open drainage ditch, which previously experienced severe erosion and seepage problems, with a 72-inch reinforced concrete pipe.

West Coast Basin

The West Coast Basin is the second largest basin underlying the Coastal Plain and is separated from the Central Basin by the Newport-Inglewood Fault zone. Groundwater is primarily recharged by Central Basin subsurface flows and by water injected by the Department in the West Coast Basin and Dominguez Gap Barrier Projects. Groundwater elevations in the West Coast Basin are below sea level except in the area of the West Coast Basin Barrier injection mound.

Santa Monica and Hollywood Basins

The Department has no spreading facilities in either the Santa Monica or Hollywood groundwater basins.

SAN FERNANDO VALLEY

The San Fernando Valley is also called the Upper Los Angeles River Area (ULARA). Most of the runoff from the surrounding mountains flows to the Valley.

San Fernando Main Basin

The basin is the largest basin underlying the San Fernando Valley. During the report period, 19,980 acre-feet of local water and no imported water were spread by the Department. The County entered into an agreement with the City of Los Angeles to spread water at the newly renovated Tujunga Wash Spreading Grounds which is located approximately two miles downstream of Hansen Spreading Grounds. The City installed a rubber dam diversion and appurtenant facilities for County Spreading operations which started in March 1990.

Sylmar Basin

A much smaller basin underlying the San Fernando Valley is the Sylmar Basin; the Department has no spreading facility within this basin.

Verdugo and Eagle Rock Basins

The small Verdugo and Eagle Rock Basins comprise the remaining basins underlying the San Fernando Valley. The Department has no spreading facilities within either basin.

SANTA CLARITA VALLEY

The Department has no spreading facilities in the area. Most of the Valley is farmland, permitting substantial natural percolation.

The Upper Santa Clarita subunit comprises five basins.

ANTELOPE VALLEY

There are several groundwater subbasins underlying the Antelope Valley. Five of them are located within Los Angeles County.

The Department operates no spreading facilities in the Antelope Valley.

The hydrographs for well Nos. 9974 and 8825 are shown on pages G41 and G43. They are located in the Lancaster and Little Rock subbasins respectively.

**LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS
HYDRAULIC/WATER CONSERVATION DIVISION**

**SUMMARY OF DATA ON SPREADING FACILITIES
OWNED AND OPERATED BY THE DEPARTMENT
UPDATED THROUGH SEPTEMBER 1994**

SPREADING FACILITY	TYPE	SEASON FIRST USED	AREA (ACRES)		CAPACITIES				LOCATION	SOURCE OF WATER	REMARKS
			GROSS	WETTED	CHANNEL** (CFS)	INTAKE (CFS)	STORAGE (A.F.)	PERCOLATION* (CFS)			
ARROYO SECO	SHALLOW BASINS	1948-49	24	15.1	-	75	30	18	EASTERLY SIDE OF ARROYO SECO, 0.5 ABOVE DEVIL'S GATE DAM.	CONTROLLED FLOW FROM CITY OF PASADENA. UNCONTROLLED FROM ARROYO SECO AND THE ALTADENA STORM DRAIN.	SPREADING GROUNDS ARE HELD UNDER EASEMENT FROM THE CITY OF PASADENA.
BEN LOMOND	SHALLOW BASINS	1958-59	24	17.0	-	25	25	18	BOTH NORTH AND SOUTH SIDES OF SAN DIMAS WASH CHANNEL AT SOUTHWESTERLY CORNER OF INTERSECTION OF ARROW HIGHWAY AND BARRANCA AVENUE.	COVINA IRRIGATING COMPANY.	SPREADING GROUNDS UTILIZED TO CONSERVE EXCESS COVINA IRRIGATION COMPANY WATER RELEASED FROM THE COMMITTEE OF NINE.
BIG DALTON	SHALLOW BASINS	1930-31	24	7.7	-	45	12	12	WESTERLY SIDE OF BIG DALTON WASH, ONE HALF MILE ABOVE SIERRA MADRE AVENUE.	CONTROLLED FLOWS FROM GIG DALTON DAM AND BIG DALTON DEBRIS BASIN.	DIVIDED BASINS 2, 3, 4, AND 5, AND NOTCHED LEVEES TO ENABLE GROUNDS TO BE RUN IN BATTERY SYSTEM
BRANFORD	DEEP BASIN	1956-57	12	7.0	1,540	1,540	137	1	SOUTHWESTERLY OF ARLETA AVENUE ABOVE CONFLUENCE OF TUJUNGA WASH AND PACOIMA DIVERSION CHANNEL.	UNCONTROLLED FLOWS FROM BRANFORD STREET DRAIN.	INSTREAM SPREADING FACILITY. OUTLET CAPACITY 1,540 CFS TO PACOIMA DIVERSION CHANNEL.
BUENA VISTA	DEEP BASIN	1954-55	10	6.0	2,900	2,900	177	6	1.0 MILE EASTERLY OF SAWPIT WASH. 0.5 MILE NORTHERLY OF ARROW HIGHWAY, BETWEEN MERIDIAN STREET AND BUENA VISTA CHANNEL.	CONTROLLED FLOW FROM SANTA FE DAM AND UNCONTROLLED FLOW FROM BUENA VISTA CHANNEL.	INSTREAM SPREADING FACILITY. TOTAL OUTLET CAPACITY OF 270 CFS.
CITRUS	MEDIUM DEPTH BASINS	1960-61	19	14.6	-	200	80	28	SOUTH SIDE OF BIG DALTON WASH BETWEEN CITRUS AND CERRITOS AVENUES.	CONTROLLED FLOWS FROM BIG DALTON DAM AND LITTLE DALTON DEBRIS DAMS. UNCONTROLLED FLOWS FROM BIG DALTON WASH.	THERE ARE 2 INTAKES, ONE IS A DROP INLET, THE OTHER AN AIR INFLATED RUBBER DAM.
DOMINGUEZ GAP	DEEP BASINS	1957-58	54	23.8	-	20	234	1	SOUTH OF DEL AMO BOULEVARD AND BORDERS THE EASTERN AND WESTERN SIDES OF THE LOS ANGELES RIVER	CONTROLLED FLOW FROM LOS ANGELES RIVER LOW FLOW CHANNEL AND UNCONTROLLED FLOWS FROM STORM DRAINS.	EAST SIDE BASIN USED FOR FLOOD REGULATION WITH SOME CONSERVATION STORAGE. INTAKE CAPACITY IS 20 CFS FOR LOW FLOW DIVERSION FROM THE LOS ANGELES RIVER. THE WEST SIDE BASIN IS FED BY A 24-INCH CONCRETE PIPE FROM THE EAST SIDE BASIN.

* THE CAPACITIES LISTED ARE ESTIMATES OF INFILTRATION RATES. NUMBERS DO NOT REFLECT LONG TERM SPREADING OPERATIONS.

** DESIGN CAPACITY OF MAIN CONCRETE CHANNEL

*** INCLUDES RUBBER DAMS STORAGE

**LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS
HYDRAULIC/WATER CONSERVATION DIVISION**

**SUMMARY OF DATA ON SPREADING FACILITIES
OWNED AND OPERATED BY THE DEPARTMENT
UPDATED THROUGH SEPTEMBER 1994**

SPREADING FACILITY	TYPE	SEASON FIRST USED	AREA (ACRES)		CAPACITIES				LOCATION	SOURCE OF WATER	REMARKS
			GROSS	WETTED	CHANNEL** (CFS)	INTAKE (CFS)	STORAGE (A.F.)	PERCOLATION* (CFS)			
EATON BASIN	DEEP BASIN	1956-57	16	10.5	9,600	400	284	10	EAST SIDE OF EATON WASH, NORTH OF DUARTE ROAD, 0.6 MILES SOUTH OF HUNTINGTON DRIVE.	CONTROLLED FLOW FROM EATON WASH DAM AND UNCONTROLLED FLOWS BETWEEN DAM AND SPREADING BASIN.	
EATON WASH	DEEP & SHALLOW BASINS	1947-48	28	25.4	6,600	200	525	14	EASTERLY SIDE OF EATON WASH FROM BELOW EATON DAM TO FOOTHILL BOULEVARD.	CONTROLLED FLOW FROM EATON WASH DAM.	
FORBES	MEDIUM DEPTH BASINS	1964-65	21	10	-	100	87	5	SOUTH SIDE OF SAN DIMAS WASH BETWEEN LONE HILL AVENUE AND VALLEY CENTER AVENUE.	CONTROLLED RELEASES FROM PUDDINGSTONE DIVERSION DAM, AND UNCONTROLLED FLOWS FROM SAN DIMAS WASH; ALSO IMPORTED RELEASES FROM SGVMWD.	
HANSEN	SHALLOW BASINS	1944-45	156	105.3	22,000	400	279	150	NORTHWESTERLY SIDE OF TUJUNGA WASH FROM ABOVE GLENOAKS BOULEVARD SOUTHWESTERLY TO SAN FERNANDO ROAD.	CONTROLLED FLOWS FROM HANSEN DAM AND GIG TUJUNGA DAM.	
IRWINDALE\MANNING PIT	DEEP BASINS	1958-59	62	30	20,000	400	1134	60	NORTHEASTERLY OF INTERSECTION OF BIG DALTON CHANNEL AND IRWINDALE AVENUE; CONTINUES 1,300 FEET EAST OF IRWINDALE VENUE	BIG DALTON CHANNEL CONTROLLED FLOWS FROM BIG AND LITTLE DALTON DEBRIS DAMS AND PUDDINGSTONE DIVERSION DAM; UNCONTROLLED FLOWS; ALSO IMPORTED RELEASES FROM SGVMWD.	
LITTLE DALTON	SHALLOW BASINS	1931-32	14	4.7	-	20	5	15	WESTERLY OF GLENDORA MT. ROAD FROM LITTLE DALTON DEBRIS BASIN SOUTH TO EAST PALM DRIVE.	CONTROLLED FLOW FROM LITTLE DALTON DEBRIS BASIN.	
LIVE OAK	SHALLOW BASINS	1961-62	5	1.2	-	15	2	13	WESTERLY SIDE OF LIVE OAK WASH. NORTH OF BASE LINE ROAD (PROJECTED).	CONTROLLED FLOW FROM LIVE OAK DAM AND LIVE OAK DEBRIS BASIN.	
LOPEZ	SHALLOW BASINS	1956-57	18	11.9	-	25	23.6	15	SOUTHEASTERLY SIDE OF PACOIMA WASH, NORTHEASTERLY OF FOOTHILL BOULEVARD.	CONTROLLED FLOW FROM PACOIMA DAM AND LOPEZ FLOOD CONTROL BASIN.	

* THE CAPACITIES LISTED ARE ESTIMATES OF INFILTRATION RATES. NUMBERS DO NOT REFLECT LONG TERM SPREADING OPERATIONS.

** DESIGN CAPACITY OF MAIN CONCRETE CHANNEL

*** INCLUDES RUBBER DAMS STORAGE

**LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS
HYDRAULIC/WATER CONSERVATION DIVISION**

**SUMMARY OF DATA ON SPREADING FACILITIES
OWNED AND OPERATED BY THE DEPARTMENT
UPDATED THROUGH SEPTEMBER 1994**

SPREADING FACILITY	TYPE	SEASON FIRST USED	AREA (ACRES)		CAPACITIES				LOCATION	SOURCE OF WATER	REMARKS
			GROSS	WETTED	CHANNEL** (CFS)	INTAKE (CFS)	STORAGE (A.F.)	PERCOLATION* (CFS)			
PACOIMA	MEDIUM DEPTH BASINS	1932-33	169	107.3	17,000	600	440	65	BOTH SIDES OF OLD PACOIMA WASH CHANNEL FROM ARLETA AVENUE SOUTHWESTERLY TO WOODMAN AVENUE.	CONTROLLED FLOW FROM PACOIMA DAM. PARTIALLY CONTROLLED FLOW FROM LOPEZ FLOOD CONTROL BASIN, UNCONTROLLED FLOW FROM EAST CANYON AND PACOIMA WASH. IMPORTED WATER FROM OWENS VALLEY DELIVERED BY CITY OF LOS ANGELES.	
PECK ROAD	DEEP BASIN	1959-60	157	105	30,100	30,100	3,347	25	CONFLUENCE OF SAWPIT AND SANTA ANITA WASHES.	CONTROLLED RELEASES FROM SANTA ANITA AND SAWPIT DEBRIS BASINS AND UNCONTROLLED FLOWS FROM LOCAL RUNOFF VIA SAWPIT AND SANTA ANITA WASHES.	INSTREAM SPREADING FACILITY.
RIO HONDO COASTAL	MEDIUM DEPTH BASINS	1937-38	570	430.1	40,000	1,950	3,694	400	EASTERLY SIDE OF RIO HONDO SOUTHERLY FROM S. P. R. R. (SOUTH OF WHITTIER BLVD.) TO SLAUSON AVENUE; WEST SIDE OF RIO HONDO CHANNEL FROM 0.2 MILE ABOVE WHITTIER BOULEVARD SOUTH TO FOSTER BRIDGE BOULEVARD.	CONTROLLED RELEASES FROM SAN GABRIEL CANYON DAMS, SANTA FE AND WHITTIER NARROWS DAMS. UNCONTROLLED RUNOFF VIA SAN GABRIEL RIVER, RIO HONDO CHANNEL AND THEIR TRIBUTARIES; ALSO IMPORTED AND RECLAIMED WATER.	IN COOPERATION WITH THE CORPS OF ENGINEERS. THE DISTRICT OPERATES 2,500 ACRE-FOOT POOL AT WHITTIER NARROWS DAM FOR RETENTION OF STORM WATER.
SAN DIMAS CANYON	SHALLOW BASINS	1965-66	22	10.8	-	25	22	12	SOUTHEAST SIDE OF SAN DIMAS WASH BETWEEN PUDDINGSTONE DIVERSION AND SAN DIMAS CANYON ROAD.	CONTROLLED RELEASES FROM PUDDINGSTONE DIVERSION DAM; UNCONTROLLED FLOW FROM LOCAL STORM RUNOFF.	
SAN GABRIEL CANYON	DEEP BASINS	1917	165	-	-	60	8170	35	EASTERLY SIDE OF SAN GABRIEL RIVER. BELOW MOUTH OF SAN GABRIEL CANYON. NORTH OF THE CITY OF AZUSA.	SAN GABRIEL RIVER CONTROLLED RELEASES FROM COGSWELL DAM, SAN GABRIEL DAM, AND MORRIS DAM. COMMITTEE OF NINE SURPLUS FLOWS.	
SAN GABRIEL COASTAL	MEDIUM DEPTH BASINS	1938-39	128	95.9	-	350	575	75	WESTERLY SIDE OF SAN GABRIEL RIVER, SOUTHERLY FROM WHITTIER BOULEVARD TO WASHINGTON BOULEVARD.	CONTROLLED RELEASES FROM SAN GABRIEL CANYON DAMS, SANTA FE AND WHITTIER NARROWS DAMS. ALSO IMPORTED AND RECLAIMED WATER.	

* THE CAPACITIES LISTED ARE ESTIMATES OF INFILTRATION RATES. NUMBERS DO NOT REFLECT LONG TERM SPREADING OPERATIONS.

** DESIGN CAPACITY OF MAIN CONCRETE CHANNEL

*** INCLUDES RUBBER DAMS STORAGE

**LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS
HYDRAULIC/WATER CONSERVATION DIVISION**

**SUMMARY OF DATA ON SPREADING FACILITIES
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			GROSS	WETTED	CHANNEL** (CFS)	INTAKE (CFS)	STORAGE (A.F.)	PERCOLATION* (CFS)			
SAN GABRIEL RIVER (MONTEBELLO FOREBAY)	MEDIUM DEPTH BASINS	1954-55	156	156	20,000	550	1,462***	75	HEADWORKS TO FIRESTONE AVE. ONLY. STORAGE BEHIND THE RUBBER DAMS.	SAME AS UPPER PORTION. ALSO RECLAIMED WATER.	FIVE RUBBER DAMS INSTALLED ON DROP STRUCTURES. WHEN INFLATED, CONVERTS RIVER AND TO SPREADING AREAS.
SAN GABRIEL RIVER (SAN GABRIEL VALLEY)	TEMPORAR Y CHECK LEVEES	1965-66	196	196	-	-	-	180	SAN GABRIEL RIVER FROM SANTA FE DAM.	CONTROLLED FLOW FROM DAMS IN SAN GABRIEL CANYON, SANTA FE DAM AND UNCONTROLLED VALLEY RUNOFF BELOW SANTA FE DAM; ALSO IMPORTED WATER.	
SANTA ANITA	SHALLOW BASINS	1944-45	20	8.5	-	20	25	5	WESTERLY SIDE OF SANTA ANITA WASH 1.25 MILES ABOVE FOOTHILL BOULEVARD.	CONTROLLED FLOW FROM SANTA ANITA DAM AND SANTA ANITA DEBRIS BASIN.	THE HEADWORKS LOCATED UPSTREAM OF THE DEBRIS BASIN DIVERTS WATER TO SANTA ANITA SPREADING GROUNDS AND CITY OF SIERRA MADRE SPREADING GROUNDS
SANTA FE	SHALLOW AND MEDIUM DEPTH BASINS	1953-54	338	168	-	400	540	400	WITHIN SANTA FE DAM RESERVOIR AND SPILLWAY AREAS.	CONTROLLED FLOWS FROM SAN GABRIEL CANYON RESERVOIRS. UNCONTROLLED FLOWS FROM SAN GABRIEL RIVER BELOW MORRIS RESERVOIR; ALSO IMPORTED WATER FROM SGVMWD AND USG-3	
SAWPIT	SHALLOW BASINS	1946-47	12	3.8	-	30	13	12	WESTERLY SIDE OF SAWPIT WASH BELOW MOUTH OF CANTON NEAR NORUMBEGA DRIVE, MONROVIA.	CONTROLLED FLOWS FROM SAWPIT DAM AND SAWPIT DEBRIS BASIN.	
WALNUT	DEEP BASIN	1962-63	16	8.4	8,000	150	166	5	WEST SIDE OF WALNUT WASH, NORTH OF SAN BERNARDINO FREEWAY.	CONTROLLED FLOW FROM PUDDINGSTONE DAM AND UNCONTROLLED FLOWS FROM WALNUT WASH CHANNEL.	

* THE CAPACITIES LISTED ARE ESTIMATES OF INFILTRATION RATES.
NUMBERS DO NOT REFLECT LONG TERM SPREADING OPERATIONS.

** DESIGN CAPACITY OF MAIN CONCRETE CHANNEL

*** INCLUDES RUBBER DAMS STORAGE

**LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS
HYDRAULIC/WATER CONSERVATION DIVISION**

**SUMMARY OF DATA ON SPREADING FACILITIES
NOT OWNED BY THE DEPARTMENT
UPDATED THROUGH SEPTEMBER 1994**

SPREADING FACILITY	TYPE	SEASON FIRST USED	AREA (ACRES)		CAPACITIES				LOCATION	SOURCE OF WATER	REMARKS
			GROSS	WETTED	CHANNEL** (CFS)	INTAKE (CFS)	STORAGE (A.F.)	PERCOLATION* (CFS)			
SIERRA MADRE (CITY OF SIERRA MADRE)	SHALLOW BASINS	ABOUT 1933	22	9.0	-	25	47	15	CITY OF SIERRA MADRE, SOUTH SIDE OF GRANDVIEW AVENUE, ONE HALF MILE WEST OF SANTA ANITA AVENUE	LITTLE SANTA ANITA CREEK AND STREET RUNOFF ALSO CONTROLLED FLOWS FROM SANTA ANITA DAM.	THE DEPARTMENT DIVERTS WATER TO THIS FACILITY.
FISH CANYON (COMMITTEE OF NINE)	SHALLOW BASINS	ABOUT 1917	6	4.0	-	-	-	7	WESTERLY SIDE OF SAN GABRIEL RIVER BELOW MOUTH OF FISH CANYON AND NORTH OF THE CITY OF AZUSA.	THE 'COMMITTEE OF NINE'.	OWNED AND OPERATED BY CAL-AMERICAN WATER COMPANY.
THOMPSON CREEK **** POMONA VALLEY PROTECTIVE ASSOCIATION	DITCHES CHECKS AND DEEP BASIN	ABOUT 1928	53	37.0	-	35	-	15	SOUTHERLY FROM, AND ADJACENT TO THOMPSON CREEK DAM, EAST SIDE OF CREEK. ELEVATION 1,625.	COBAL, WILLIAMS, PALMER, AND PADUA CREEKS, ALSO THOMPSON CREEK, WHEN RESERVOIR ABOVE	OPERATED BY POMONA VALLEY PROTECTIVE ASSOCIATION. THE DEPARTMENT DIVERTS WATER TO THIS FACILITY.
TUJUNGA (L.A. CITY DEPT. OF WATER AND POWER) ***	SHALLOW BASINS	ABOUT 1931-32	188	83.2	22,000	400	100	120	SAN FERNANDO VALLEY, EAST SIDE OF TUJUNGA WASH AT ROSCOE BOULEVARD.	LOS ANGELES CITY'S OWENS VALLEY AQUEDUCT AND CONTROLLED RELEASES FROM HANSEN DAM.	THE DEPARTMENT ENTERED INTO AN AGREEMENT WITH THE CITY OF LOS ANGELES TO OPERATE THIS FACILITY.
	TOTALS:		269	133.2	-	-	147	157			

* THE CAPACITIES LISTED ARE ESTIMATES OF INFILTRATION RATES.

** DESIGN CAPACITY OF MAIN CONCRETE CHANNEL.

Los Angeles County Department of Public Works
Hydraulic/Water Conservation Division

TOTAL MONTHLY WATER CONSERVED DURING WATER YEAR 1993-94

AREA	SPREADING FACILITIES	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ACC. TOT
SAN FERNANDO VALLEY	BRANFORD	21	32	69	22	178	109	22	9	0	0	0	0	462
	HANSEN	1,300	842	1,130	1,210	2,480	1,560	1,380	1,690	264	196	0	0	12,052
	LOPEZ	0	0	0	0	0	0	0	0	153	10	12	6	182
	PACOIMA	143	33	432	230	1,120	472	257	158	311	0	0	0	3,156
	TUJUNGA	0	321	634	672	634	702	565	160	439	2	0	0	4,129
	SUBTOTAL	1,464	1,228	2,265	2,134	4,412	2,843	2,224	2,017	1,167	208	12	6	19,980
SAN GABRIEL VALLEY	ARROYO SECO	7	141	204	233	396	358	69	133	21	0	0	0	1,562
	BEN LOMOND	562	498	725	539	271	309	257	614	131	83	27	31	4,047
	BIG DALTON	0	0	0	0	28	6	78	30	0	2	0	0	144
	BUENA VISTA	0	39	33	9	55	61	17	0	0	0	0	0	214
	CITRUS	471	294	413	407	127	146	34	0	21	35	31	39	2,018
	EATON BASIN	4	55	119	34	77	60	4	5	12	12	12	12	406
	EATON GROUNDS	23	12	59	2	0	47	263	78	9	0	0	0	493
	FORBES	21	145	147	190	48	122	0	0	85	205	284	343	1,590
	IRWINDALE	1	1,500	951	555	636	954	323	28	1,510	1,270	1,450	1,360	10,538
	LITTLE DALTON	0	0	0	3	8	7	9	2	0	0	0	0	28
	LIVE OAK	0	0	0	0	0	16	0	77	6	0	0	0	99
	MORRIS TO STA. F190	2,003	1,072	665	290	227	221	178	2,186	1,193	286	136	159	8,616
	STA. F190 TO S.F. DAM OUTFLOW	1,837	1,036	562	226	301	50	117	1,277	631	260	239	4	6,540
	PECK ROAD	121	417	527	168	386	386	258	48	6	38	103	87	2,545
	SAN DIMAS CANYON	0	200	233	31	495	176	30	15	423	164	18	2	1,787
	SAN GABRIEL CANYON	0	0	0	0	0	0	356	283	509	912	873	53	2,986
	SANTA ANITA	51	97	161	78	84	25	22	35	21	4	2	0	579
	SANTA FE SPRD. GROUNDS	7,110	0	0	0	0	0	2,850	8,160	2,710	0	0	0	20,830
	SANTA FE TO STA. F261	423	425	1,328	501	1,734	1,049	1,629	4,620	730	73	160	105	12,777
	SANTA FE DIVERSION	0	600	370	0	0	0	0	0	0	0	0	0	970
SAWPIT	61	153	143	150	4	54	142	69	121	0	45	53	995	
WALNUT	56	65	160	0	31	29	164	112	75	65	60	52	869	
WALNUT, S.JOSE CRK TO 263	456	650	597	510	641	728	550	1,086	447	645	541	257	7,108	
	SUBTOTAL	13,206	7,399	7,397	3,925	5,549	4,804	7,350	18,858	8,661	4,054	3,981	2,557	87,740
COASTAL PLAIN	RIO HONDO EAST FLUME	1,940	4,370	3,190	2,790	5,090	3,580	1,640	3,590	5,170	1,370	132	887	33,749
	WEST FLUME	1,260	1,660	1,480	903	1,160	1,190	426	753	731	1,310	109	39	11,021
	R/W FLUME	155	166	345	221	82	208	132	261	254	8	6	5	1,842
	102" INTAKE	1,162	161	1,037	2,045	4,185	2,596	803	3,427	1,160	151	97	480	17,306
	WHITTIER NARROWS(Rio Hondo Side)	1,680	587	582	1,014	1,580	1,605	1,571	1,444	394	513	1,406	882	13,258
	SAN GABRIEL SYSTEM	2,700	4,729	5,892	2,529	4,602	6,113	4,522	2,280	5,110	483	418	160	39,538
	DOMINGUEZ GAP	2	5	19	30	52	66	33	24	1	0	0	0	231
	SUBTOTAL	8,900	11,677	12,545	9,532	16,751	15,358	9,127	11,779	12,820	3,834	2,168	2,453	116,945
OTHER FACILITIES	SIERRA MADRE	0	0	72	15	229	122	146	254	36	0	0	0	874
	FISH CREEK	294	104	127	123	121	130	114	134	148	148	145	157	1,744
	SUBTOTAL	294	104	199	138	350	252	260	388	184	148	145	157	2,618
TOTAL OF ALL WATER SPREAD &/OR DIVERTED		23,863	20,408	22,407	15,729	27,062	23,257	18,960	33,042	22,832	8,244	6,305	5,174	227,283

* Numbers include water infiltrated in the Rio Hondo Side of Whittier Narrows Reservoir, water infiltrated to the Rio Hondo via the cross-over channel, and infiltration within a portion of the zone 1 ditch.

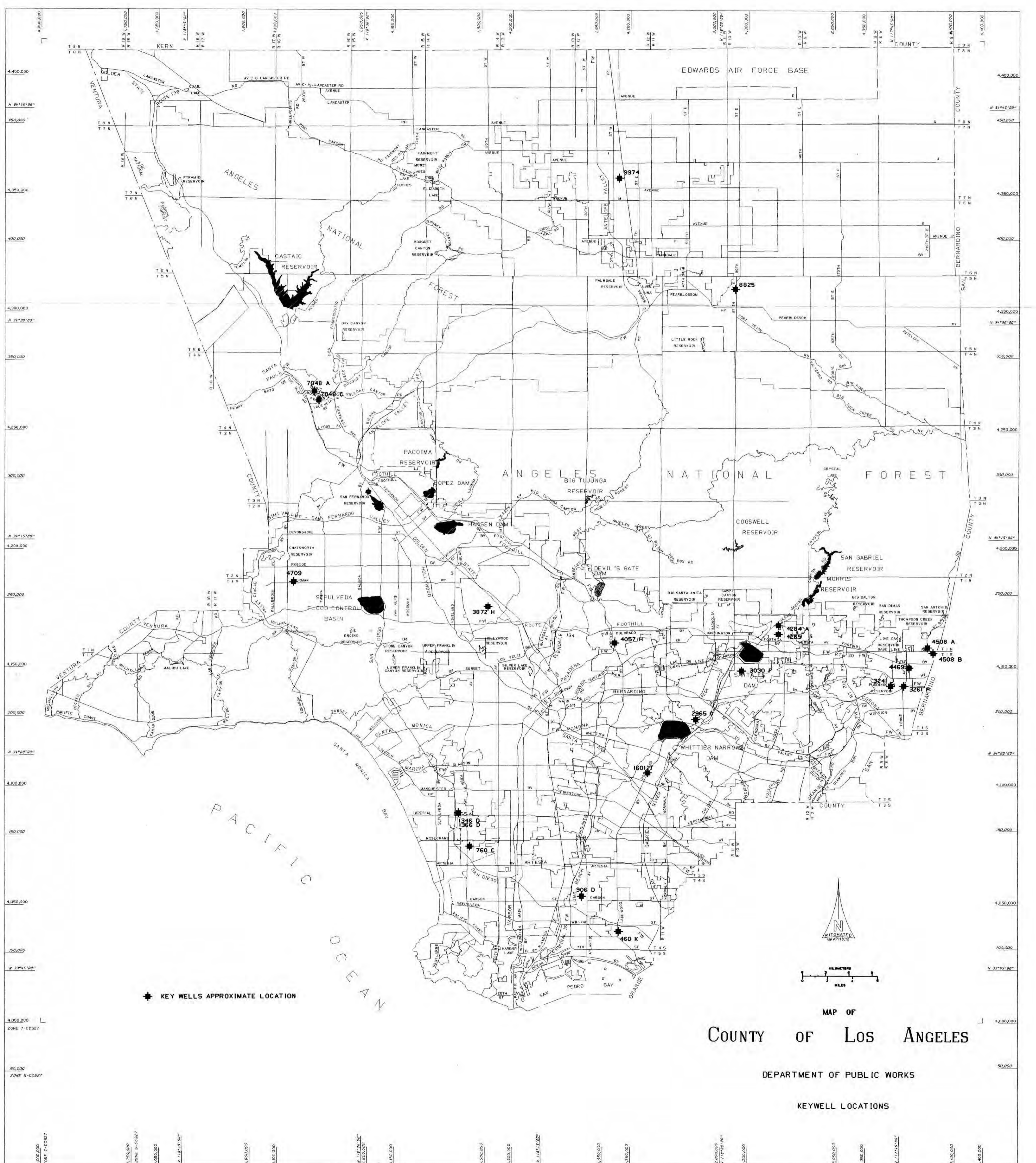
Los Angeles County, Department of Public Works
Hydraulic Water Conservation Division

**Imported and Reclaimed Water Delivered in Acre-Feet
WATER YEAR : 1993-1994**

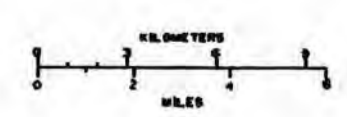
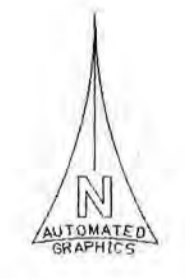
MONTH	IMPORTED WATER OUTLET RELEASES									RECLAIMED WATER DELIVERED									
	SAN DIMAS CB - 48	THOMPSON CREEK CB - 28	SAN GAB. RIVER CB - 37	ALHAMBRA CB - 36	OLDEN ST L.A. 699	USG 3 USGMWD	BEATTY CANYON SGVMWD	SAN DIMAS WH SGVMWD	MONTHLY TOTAL SPREAD	WHITTIER NARROWS PLANT			SAN JOSE PLANT			POMONA PLANT	MONTHLY TOTAL SPREAD		
										DELIVERED		WASTED	MONTHLY SPREAD	DELIVERED				WASTED	MONTHLY SPREAD
										R.HONDO	S.GABRIEL			R.HONDO	S.GABRIEL				
OCT	0	0	0	745	0	0	0	59	804	997	0	0	997	4,318	2,393	0	6,711	426	8,134
NOV	0	0	0	1,899	0	0	0	1,992	3,891	1,190	0	6	1,184	3,239	3,453	0	6,692	534	8,410
DEC	0	0	0	1,348	0	0	0	1,242	2,590	606	0	0	606	2,144	3,470	0	5,614	389	6,609
JAN	0	0	0	859	0	0	0	929	1,788	1,020	0	0	1,020	3,176	1,679	0	4,855	155	6,029
FEB	0	0	0	3	0	0	0	0	3	811	0	7	804	474	1,618	0	2,092	311	3,207
MAR	0	0	0	0	0	0	0	793	793	1,151	0	19	1,132	554	3,263	0	3,817	357	5,306
APR	0	0	0	0	0	388	1,147	303	1,838	863	0	1	862	446	3,699	0	4,146	103	5,110
MAY	0	6,424	0	0	0	13,820	1,854	0	22,099	1,146	0	0	1,146	536	1,792	0	2,328	312	3,785
JUN	0	7,132	0	1,574	0	5,340	0	1,828	15,874	1,010	0	0	1,010	0	2,631	0	2,631	86	3,727
JUL	0	0	0	1,088	0	0	0	1,520	2,608	630	0	0	630	683	153	0	836	113	1,579
AUG	0	0	0	0	0	0	0	1,873	1,873	60	0	0	60	103	241	0	344	19	423
SEP	0	0	0	84	0	0	0	1,798	1,882	798	0	0	798	701	2	0	703	160	1,661
TOTALS	0	13,556	0	7,599	0	19,548	3,001	12,337	56,042	10,281	0	33	10,249	16,373	24,395	0	40,768	2,966	53,982

WELL HYDROGRAPHS INCLUDED IN THIS REPORT

GROUNDWATER BASIN	WELL NO.	APPROXIMATE LOCATION	PAGE NO.
WEST COAST	1346D 760C	11305 TRURO AVE., 250FT. N. OF IMPERIAL HWY., COMPTON 99 FT. S.W. OF INTERSECTION OF COMPTON BLVD. & DOTY AVE., LAWNDALE	G19
CENTRAL BASIN	460K 1601T 906D	2,600 FT. N.E. OF THE INTERSECTION OF LAKEWOOD BLVD. & PACIFIC COAST HWY., LONG BEACH 1,000 FT. S. OF THE INTERSECTION OF WASHINGTON BLVD. & ROSEMEAD BLVD., MONTEBELLO 1,300 FT. N.W. OF THE INTERSECTION OF LONG BEACH & SAN ANTONIO DR., LONG BEACH	G21 G23 G25
MAIN SAN GABRIEL	3030F 2965C	600 FT. N.W. OF THE INTERSECTION OF LOS ANGELES ST. & MAINE AVE., BALDWIN PARK 100 FT. S.W. OF THIENES AVE. & 180 FT. N.W. OF DURFEE AVE. (NOW PECK ROAD)	G27 G29
SAN GABRIEL CANYON	4284A 4285	5,600 FT. N.W. OF THE INTERSECTION OF SIERRA MADRE AVE. & SAN GABRIEL CANYON ROAD., AZUSA 2,700 FT. N.W. OF SAN GABRIEL CANYON RD. & SIERRA MADRE AVE.	G31
POMONA	3251E 3261P 4469A	2,200 FT. N. OF THE INTERSECTION OF SAN BERNARDINO FWY. & TOWNE AVE., POMONA 630 FT. N.E. FROM INTERSECTION OF LA VERNE AVE. & 50 FT. S.E. OF CENTERLINE OF TOWNE AVE. 739 FT. W. OF MOUNTAIN AVE., 1,025 FT. N. OF HARRISON AVE.	G33
CLAREMONT HEIGHTS	4508B 4508A	800 FT. S.E. OF THE INTERSECTION OF BASELINE RD. & PADUA AVE., CLAREMONT 270 FT. N.W. OF WELL 4508	G35
RAYMOND	4057H	LOS ROBLES & GLENARM STREETS, PASADENA	G37
SANTA CLARA	7048A 7048C	S.E. OF THE INTERSECTION OF NEWHALL AVE. & MAGIC MOUNTAIN PARKWAY, SAUGUS 544 FT. W. OF W. CURB OF VALENCIA BLVD., 56 FT. S. OF MAGIC MOUNTAIN PARKWAY, VALENCIA	G39
ANTELOPE VALLEY	9974 8825	8,976 FT. S. OF AVE. K & 200 FT. W. OF SIERRA HWY., LANCASTER 25 FT. N. OF AVE. T & 45 FT. E. OF 90TH ST., LITTLE ROCK	G41 G43
MAIN SAN FERNANDO	3872H 4709	CLARK AVE. & GRIFFITH PARK DR., BURBANK SHERMAN WAY & DEERING AVE., CANOGA PARK	G45 G47



◆ KEY WELLS APPROXIMATE LOCATION



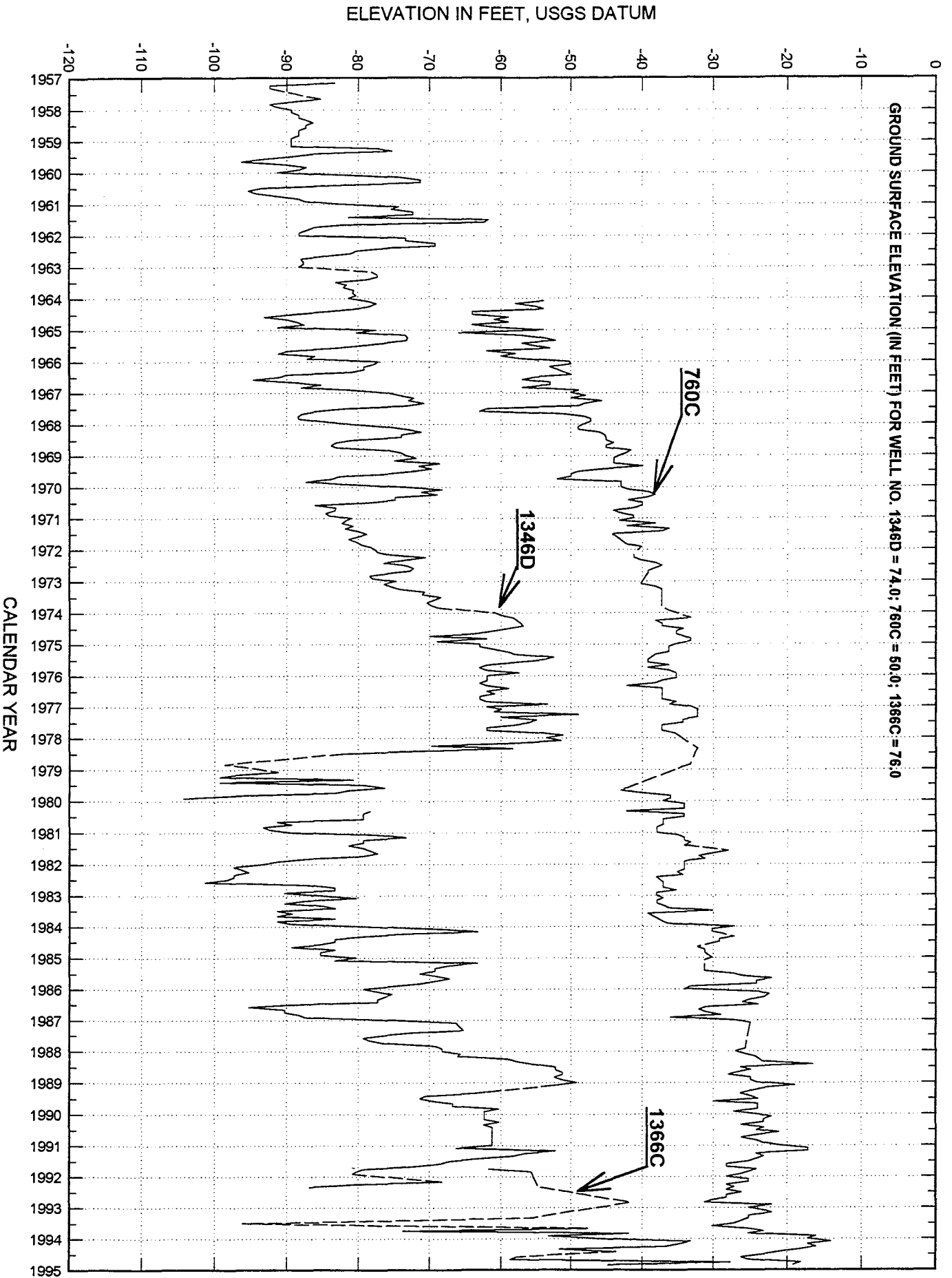
MAP OF
COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

KEYWELL LOCATIONS

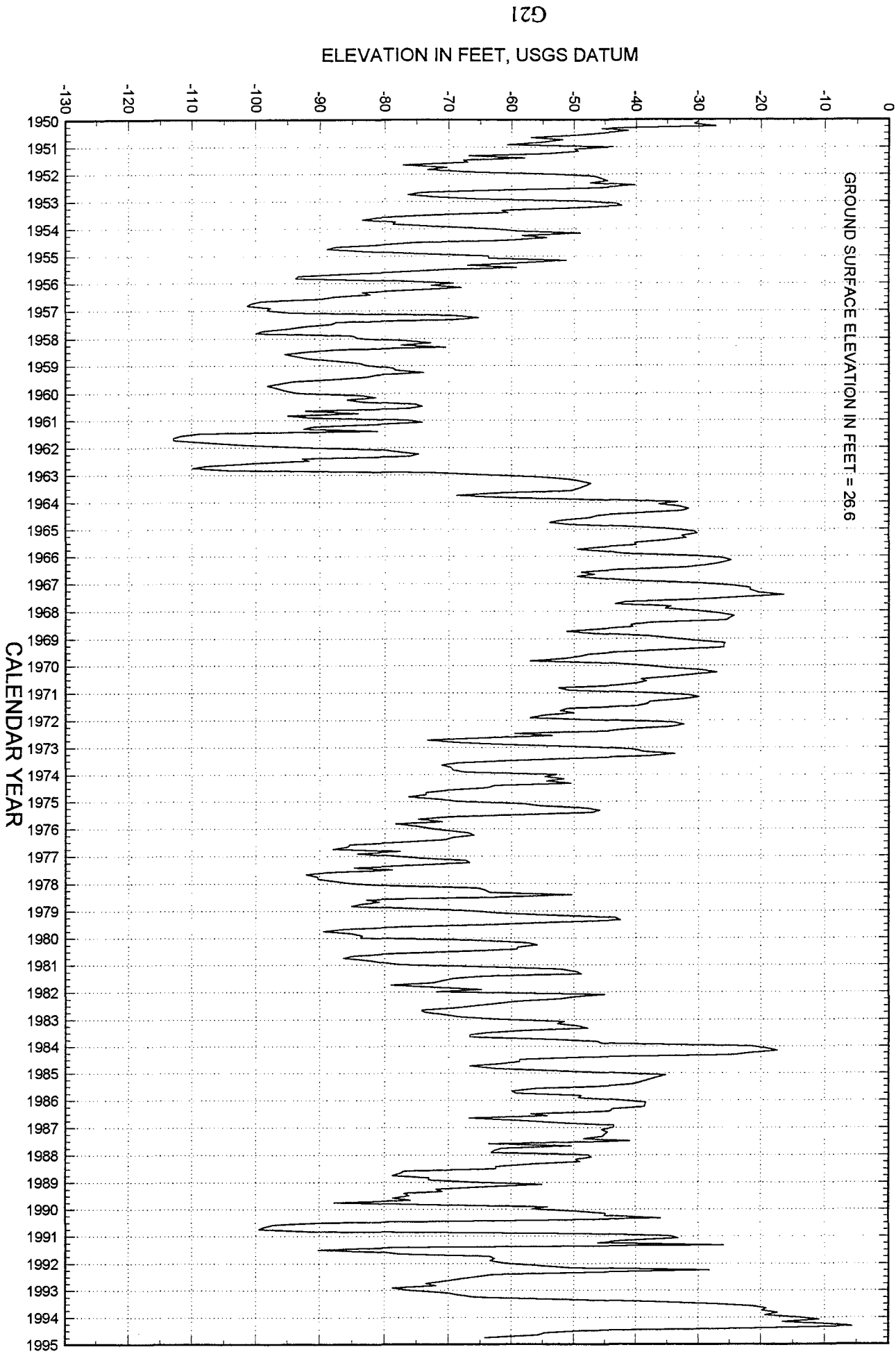
4,000,000
 ZONE 7-CC527
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 ZONE 5-CC227
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 W. 118°45'00"
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 W. 118°45'00"
 1,850,000
 4,050,000
 W. 118°45'00"
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 4,100,000
 W. 118°45'00"
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 2,000,000
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 W. 118°45'00"
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 W. 118°45'00"
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 4,400,000
 W. 118°45'00"

GROUNDWATER FLUCTUATIONS FOR WELL NOS. 1346D, 760C & 1366C COASTAL PLAIN

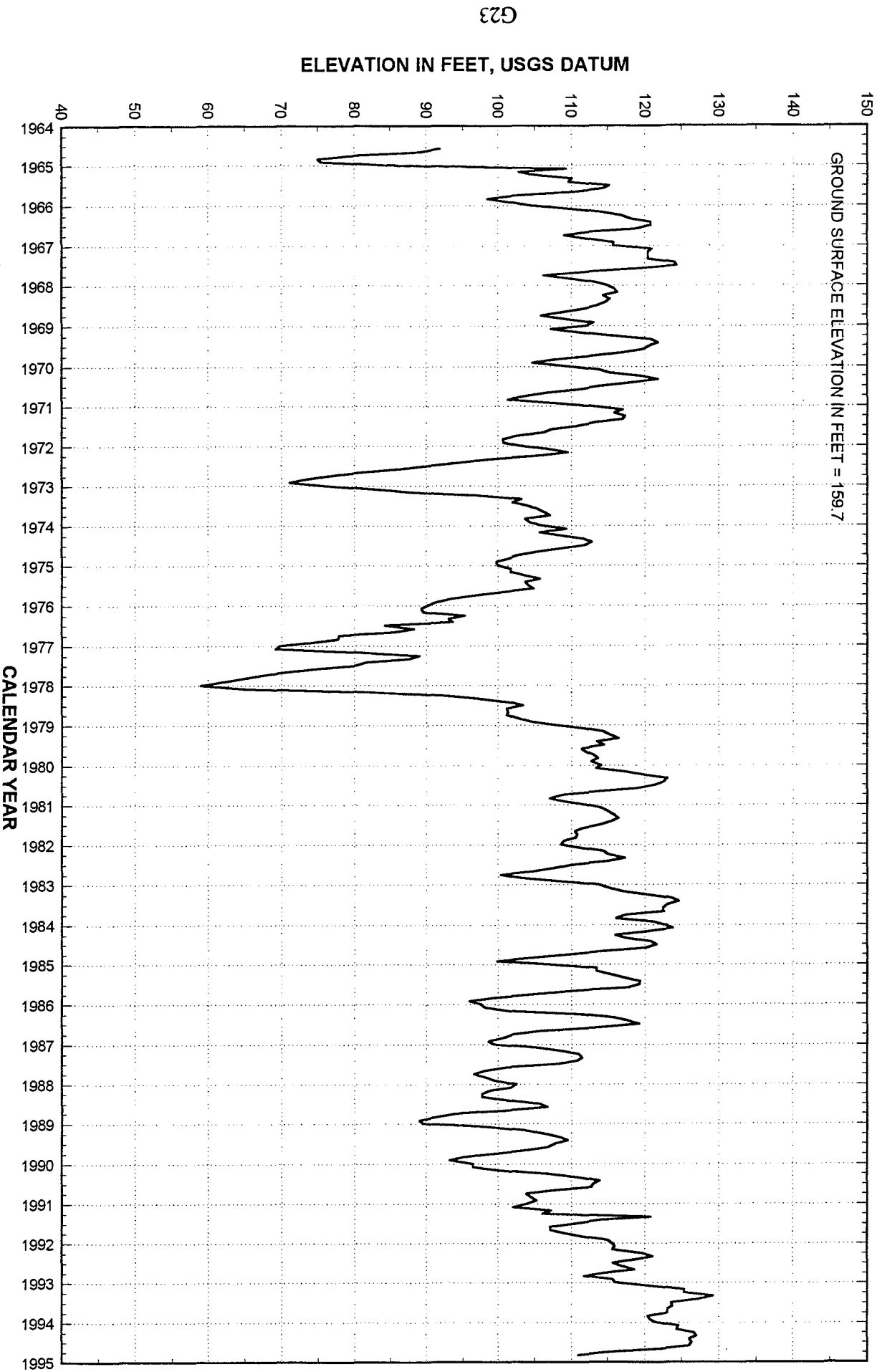


GROUNDWATER FLUCTUATIONS FOR WELL NO. 460K

CITY OF LONG BEACH, COASTAL PLAIN FORMER ARTESIAN AREA

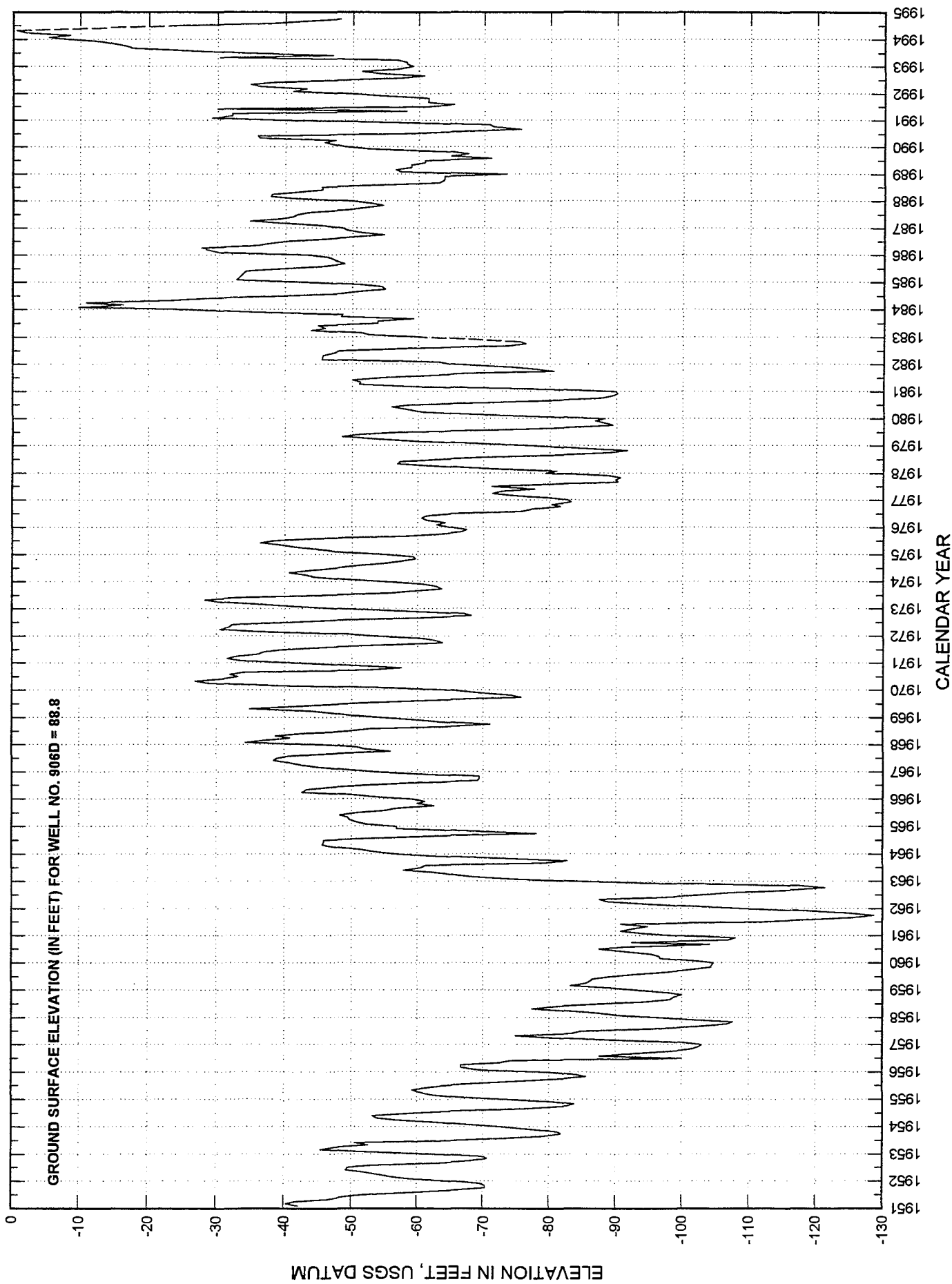


GROUNDWATER FLUCTUATIONS FOR WELL NO. 1601T CENTRAL BASIN

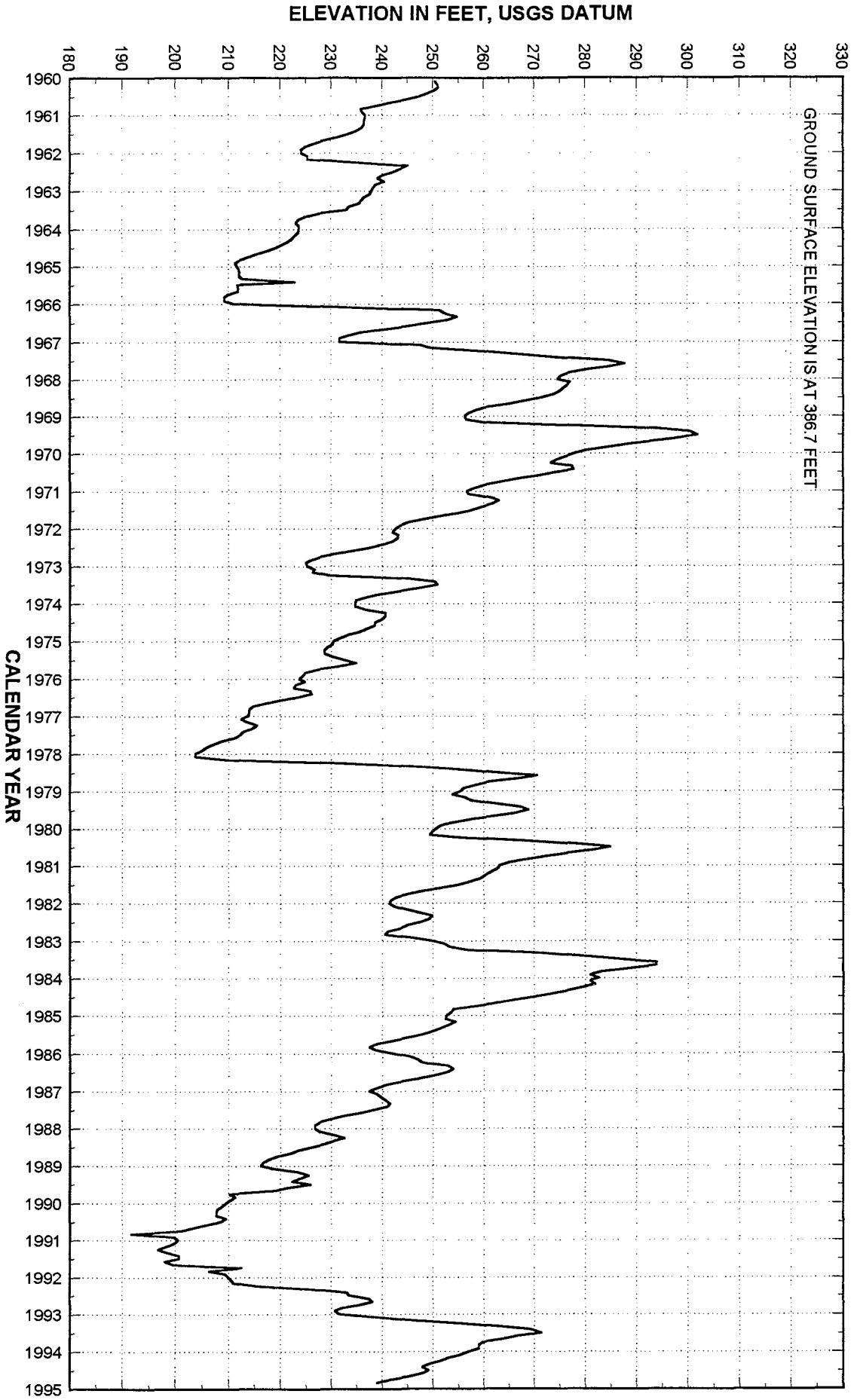


GROUNDWATER FLUCTUATIONS FOR WELL NO. 906D

CITY OF LONG BEACH, COASTAL PLAIN, FORMER ARTESIAN AREA



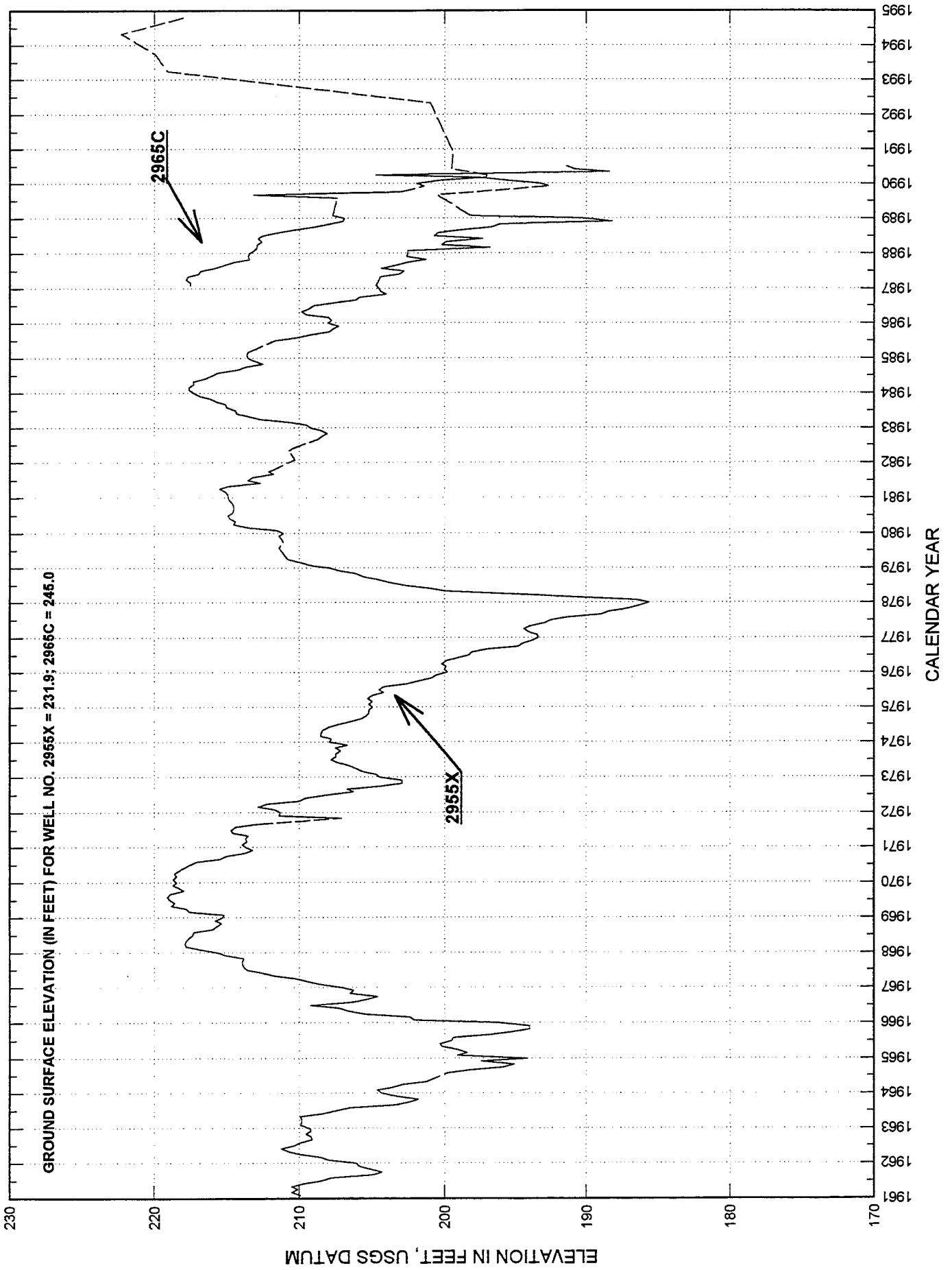
GROUNDWATER FLUCTUATIONS FOR WELL NO. 3030F BALDWIN PARK, MAIN SAN GABRIEL BASIN



G27

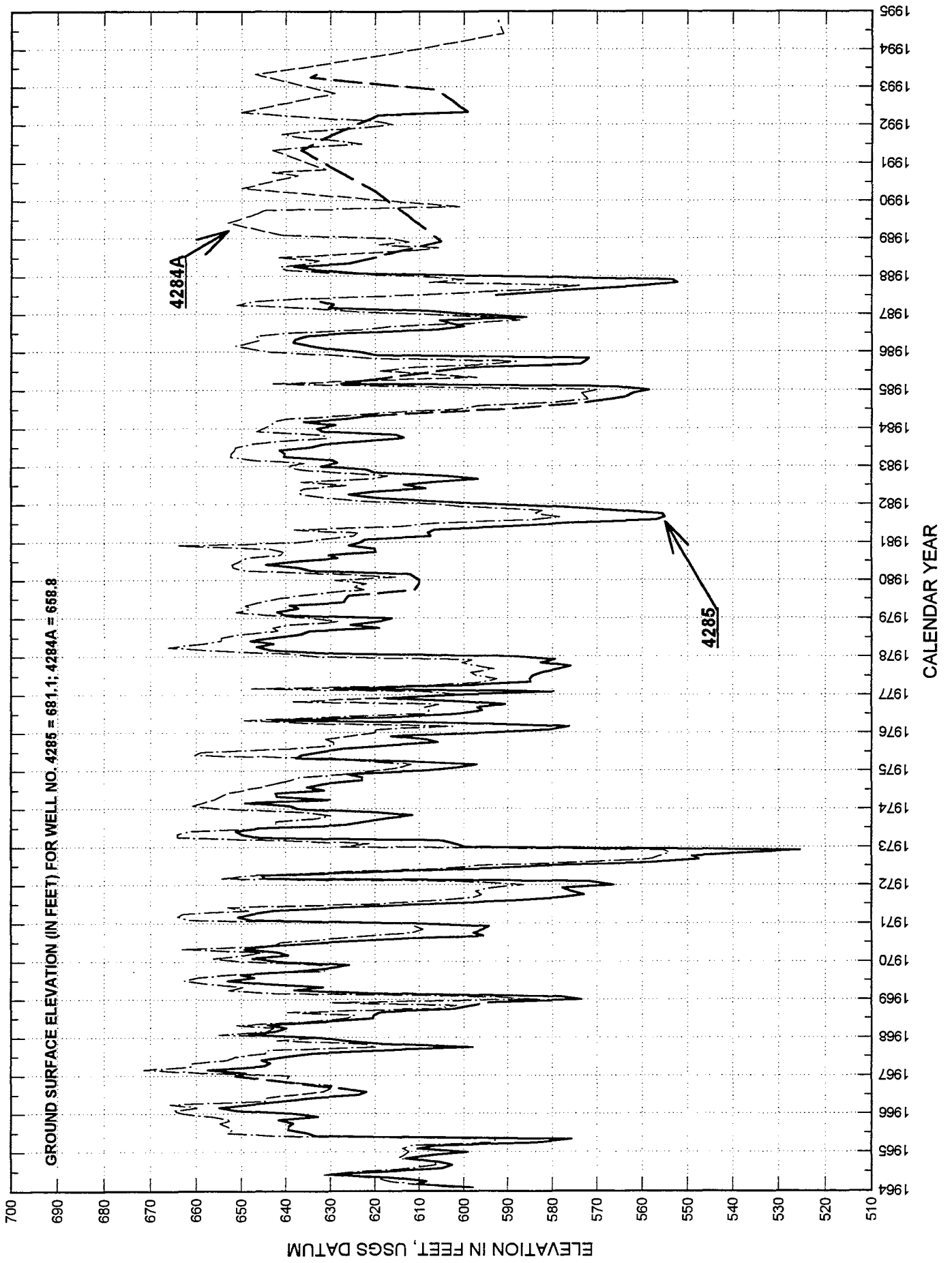
GROUNDWATER FLUCTUATIONS FOR WELL NOS. 2955X & 2965C

MAIN SAN GABRIEL BASIN

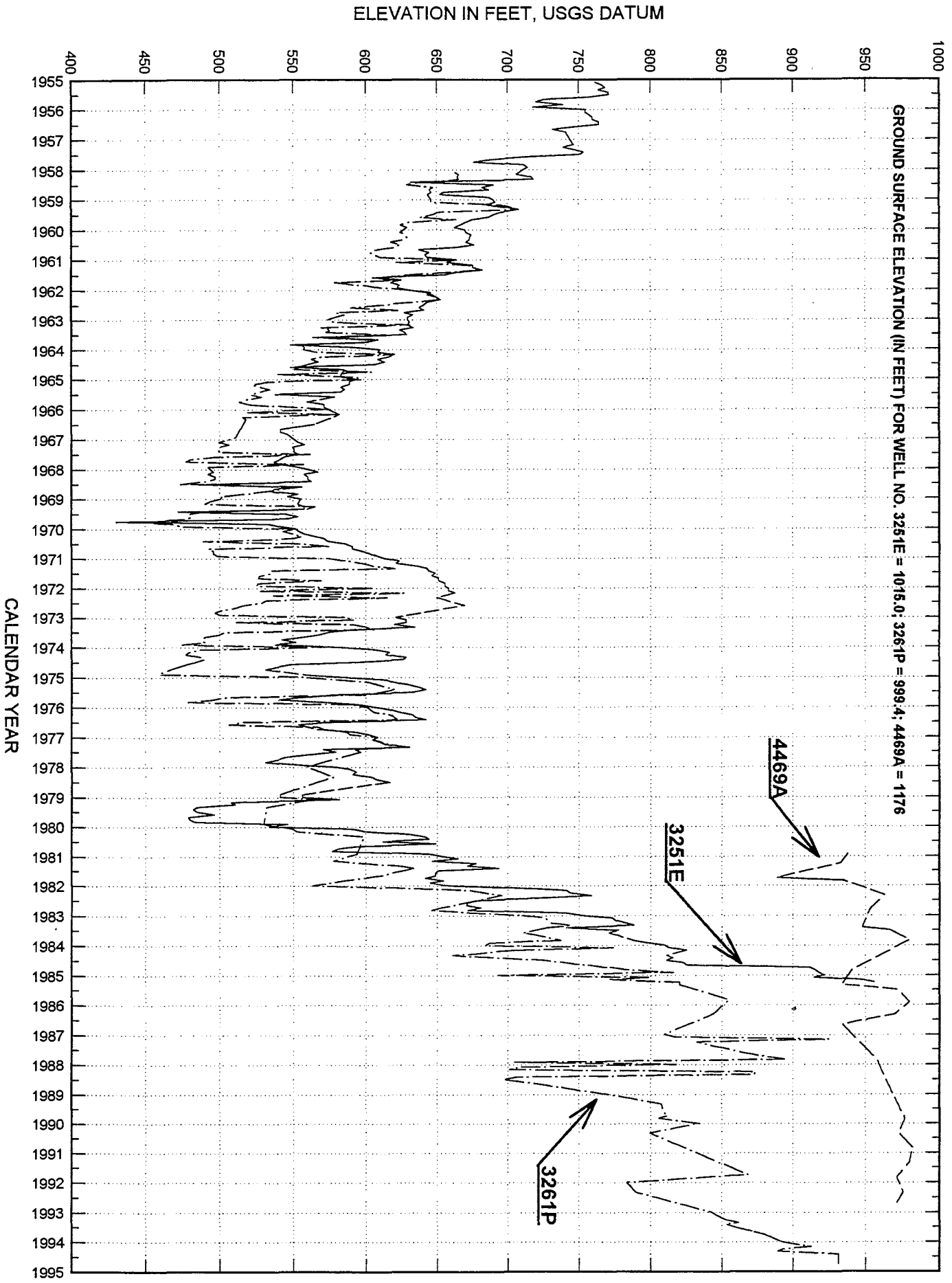


GROUNDWATER FLUCTUATIONS FOR WELL NOS. 4285 & 4284A

NORTH OF AZUSA; SAN GABRIEL CANYON BASIN



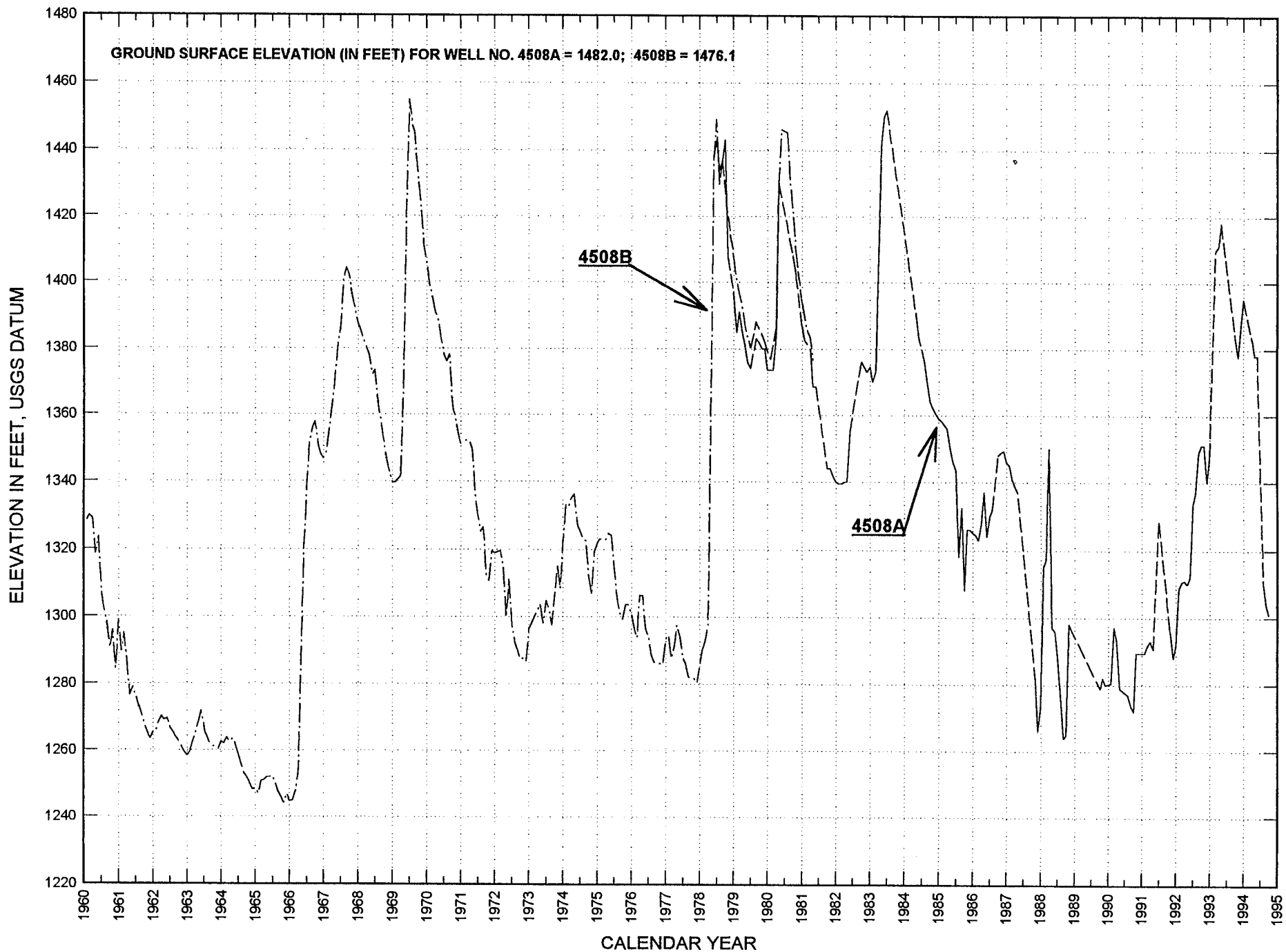
GROUNDWATER FLUCTUATIONS FOR WELL NOS. 3251E, 3261P & 4469A POMONA BASIN



GROUNDWATER FLUCTUATIONS FOR WELL NOS. 4508A & 4508B

UPPER CLAREMONT HEIGHTS

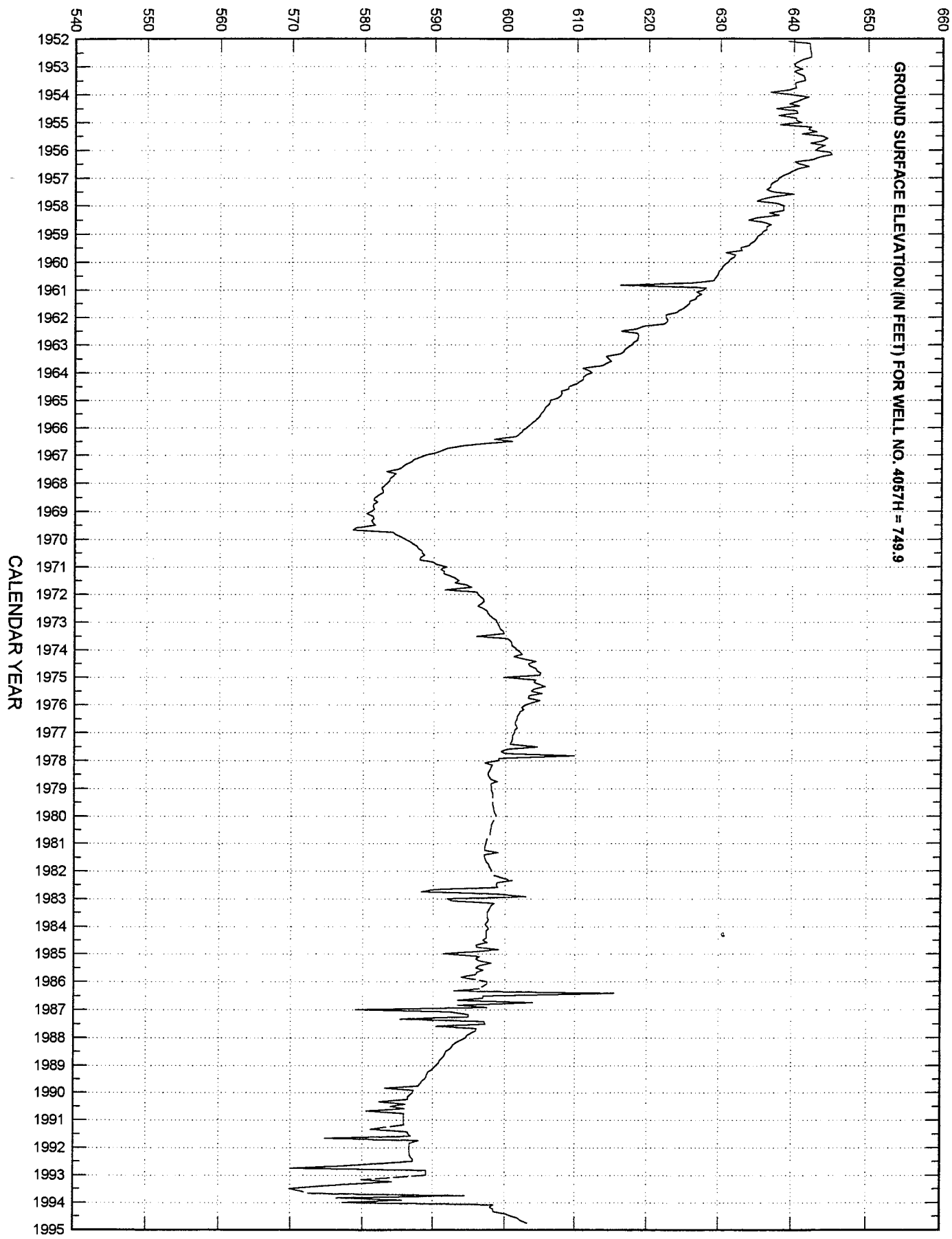
S&D



GROUNDWATER FLUCTUATIONS FOR WELL NO. 4057H RAYMOND BASIN

G37

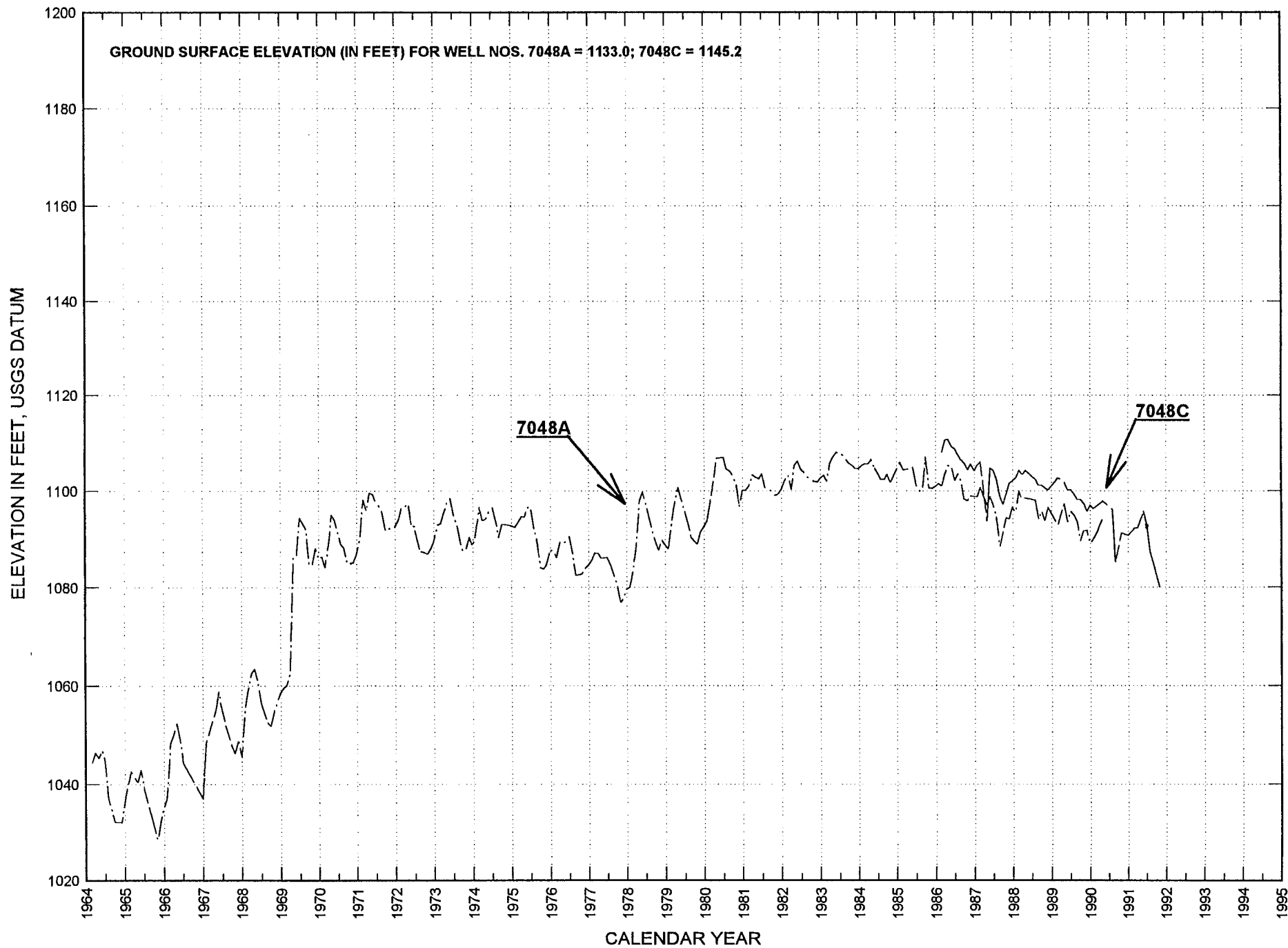
ELEVATION IN FEET, USGS DATUM



GROUNDWATER FLUCTUATIONS FOR WELL NOS. 7048A & 7048C

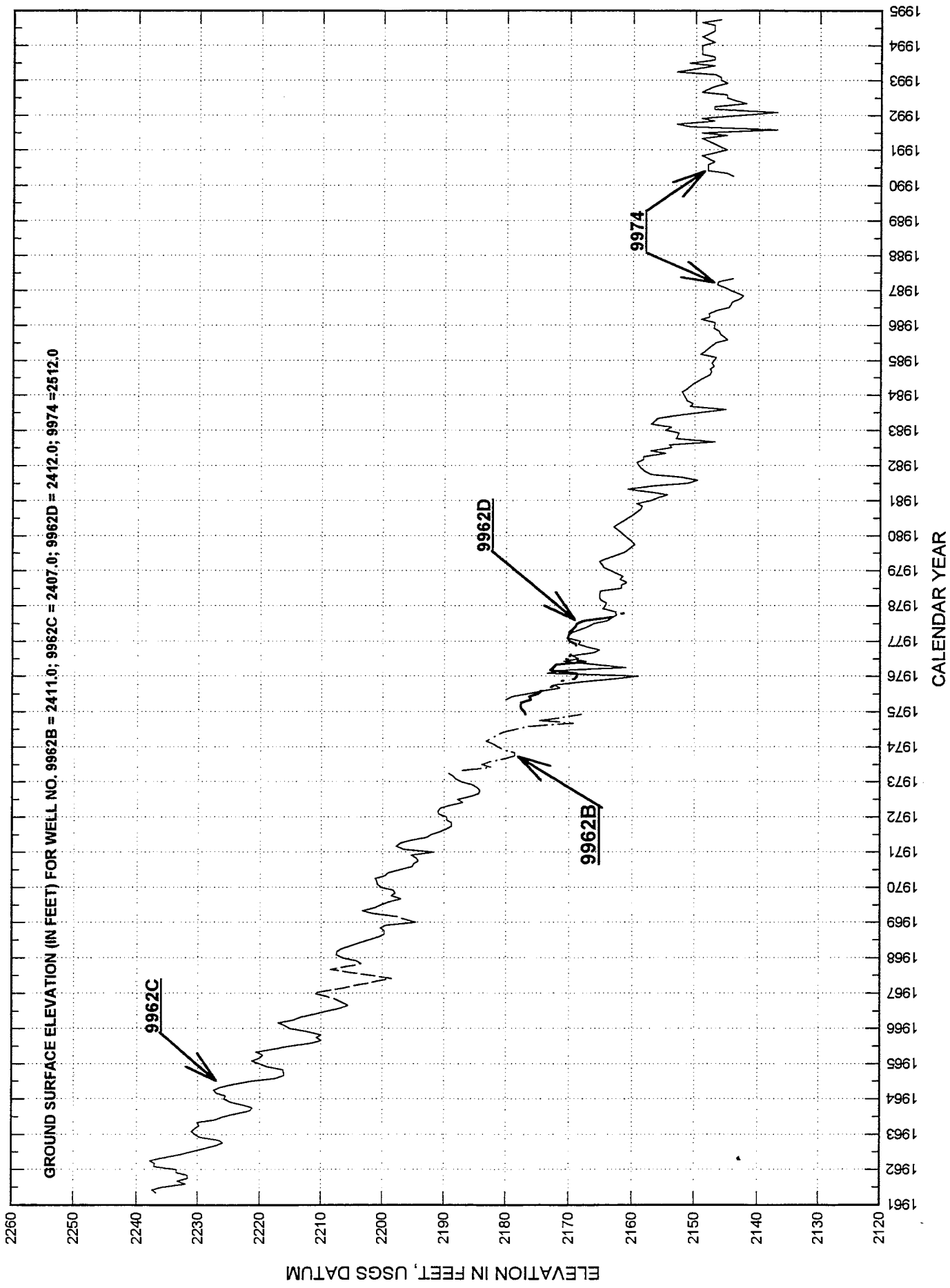
NEAR CASTAIC JUNCTION, SANTA CLARITA VALLEY

639



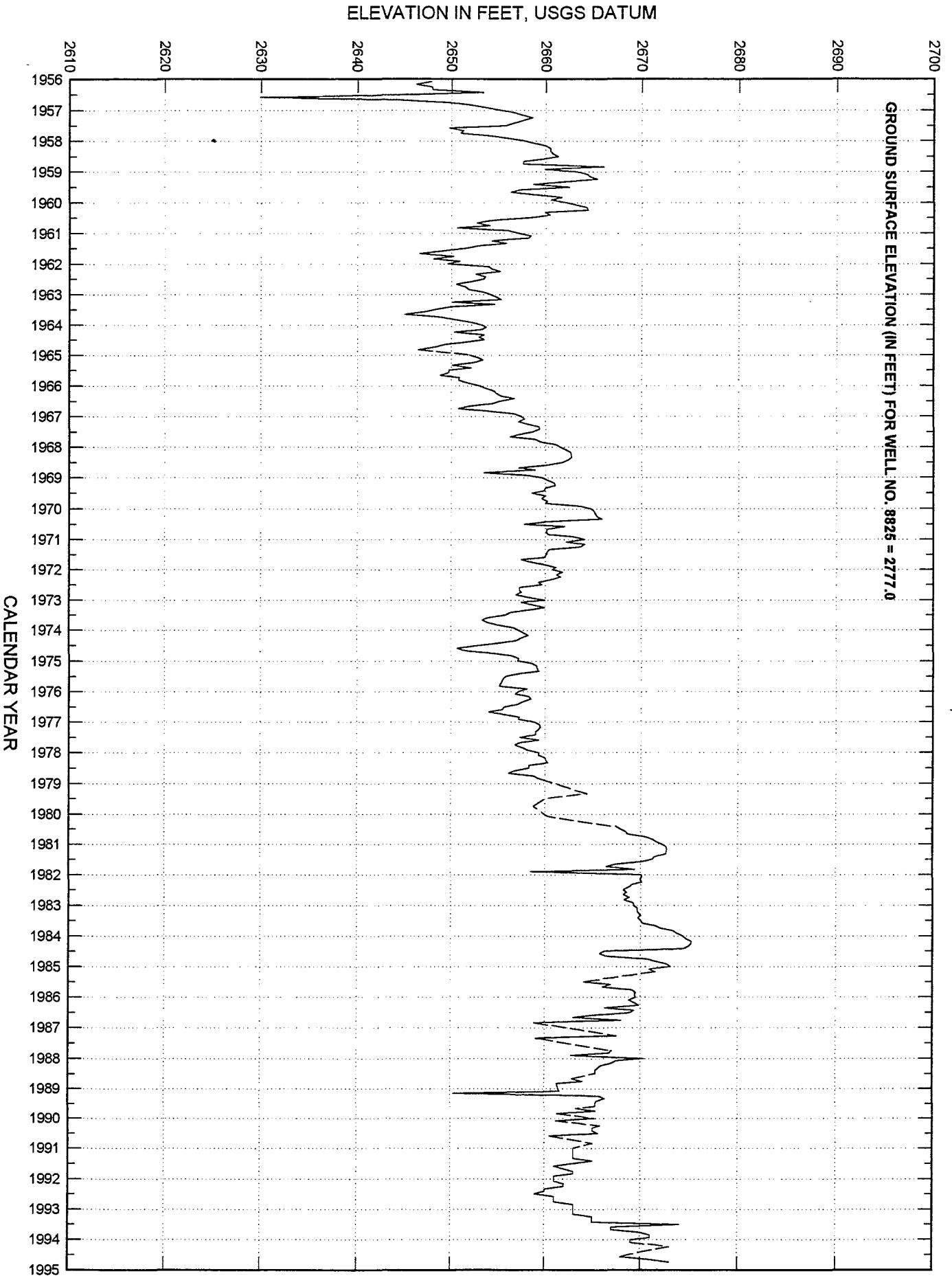
GROUNDWATER FLUCTUATIONS FOR WELL NOS. 9962B, 9962C, 9962D & 9974

SOUTH OF LANCASTER, ANTELOPE VALLEY



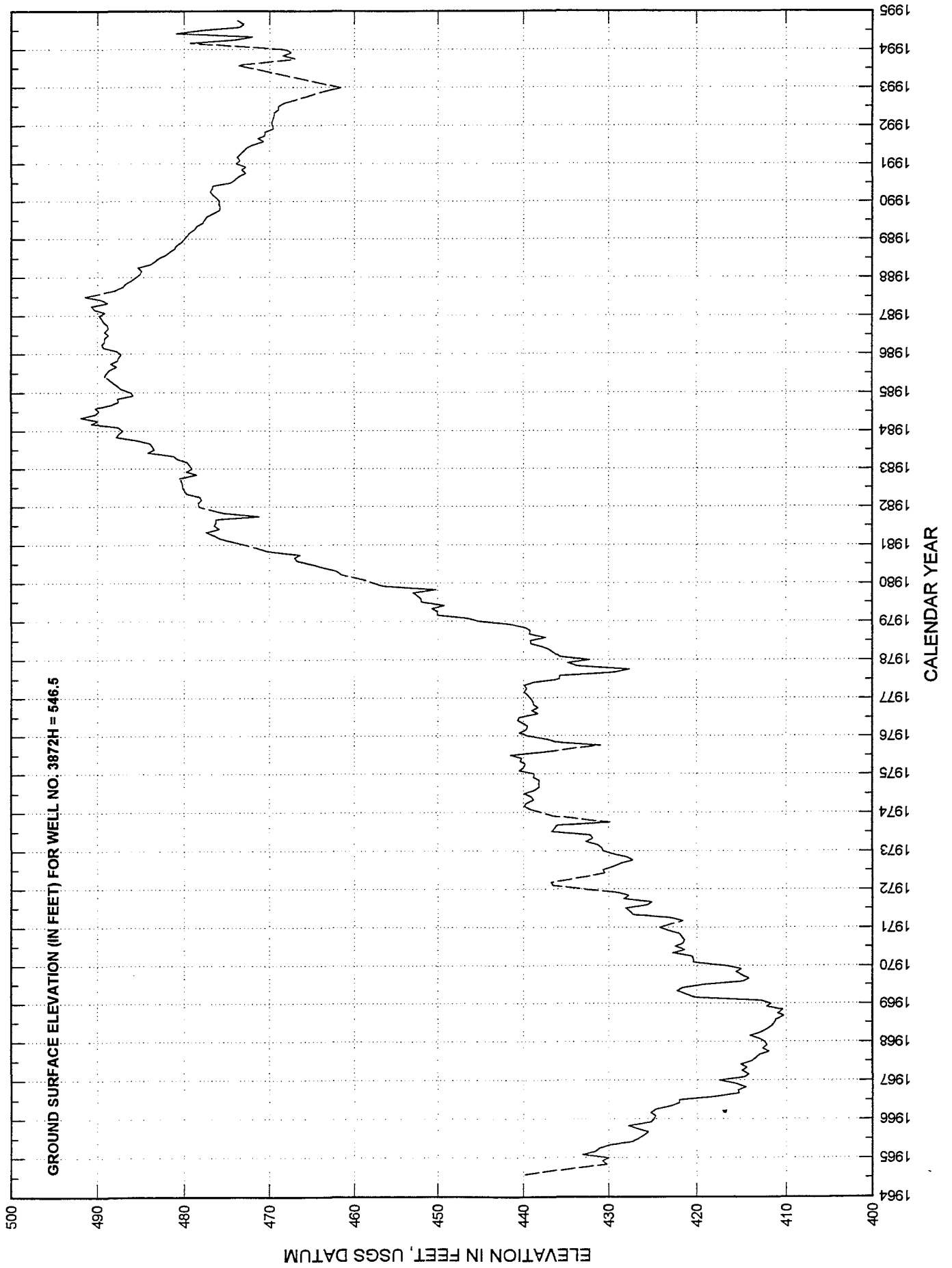
GROUNDWATER FLUCTUATIONS FOR WELL NO. 8825

SOUTH OF PALMDALE, LITTLE ROCK



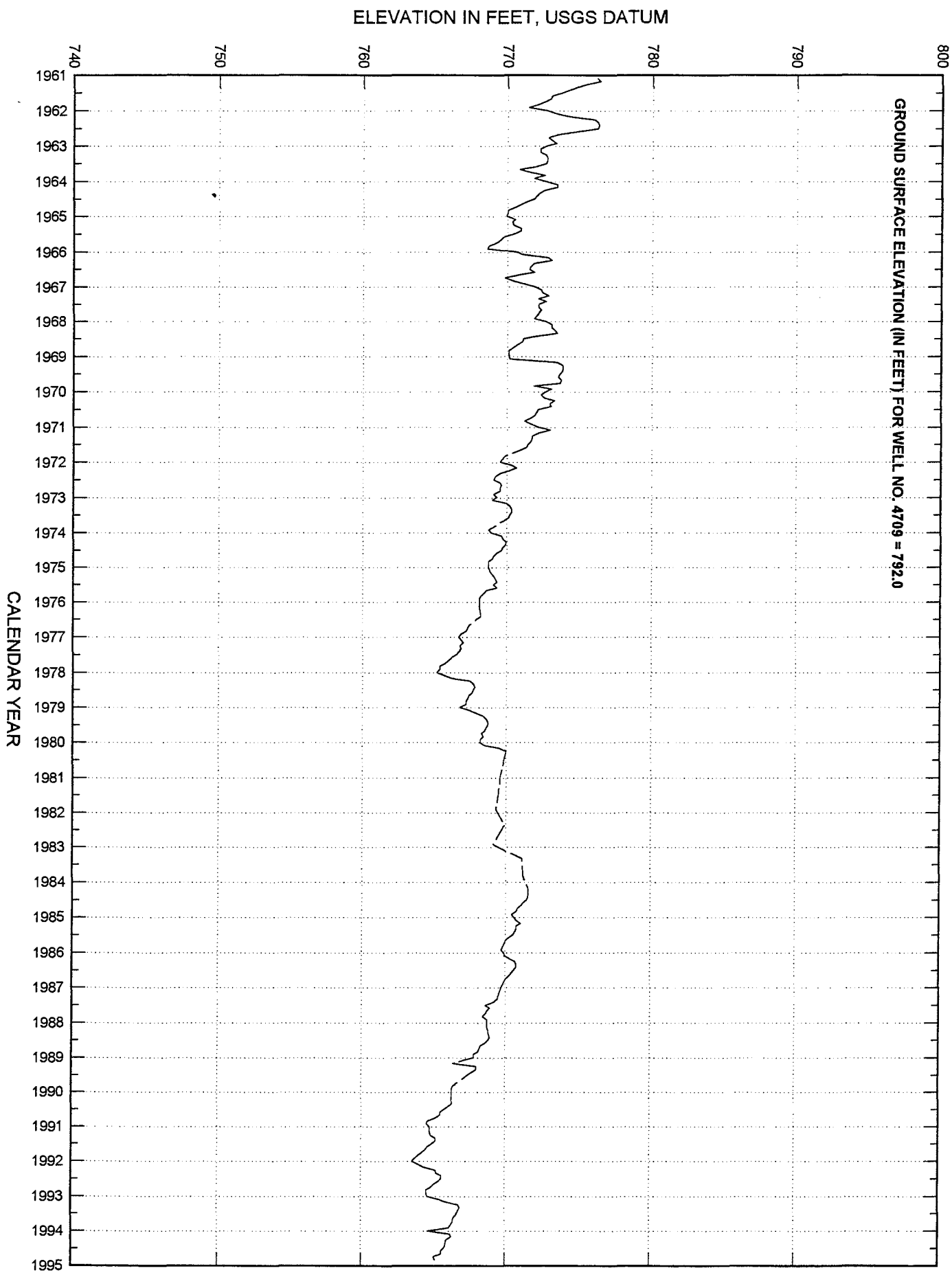
GROUNDWATER FLUCTUATIONS FOR WELL NO. 3872H

BURBANK, SAN FERNANDO VALLEY



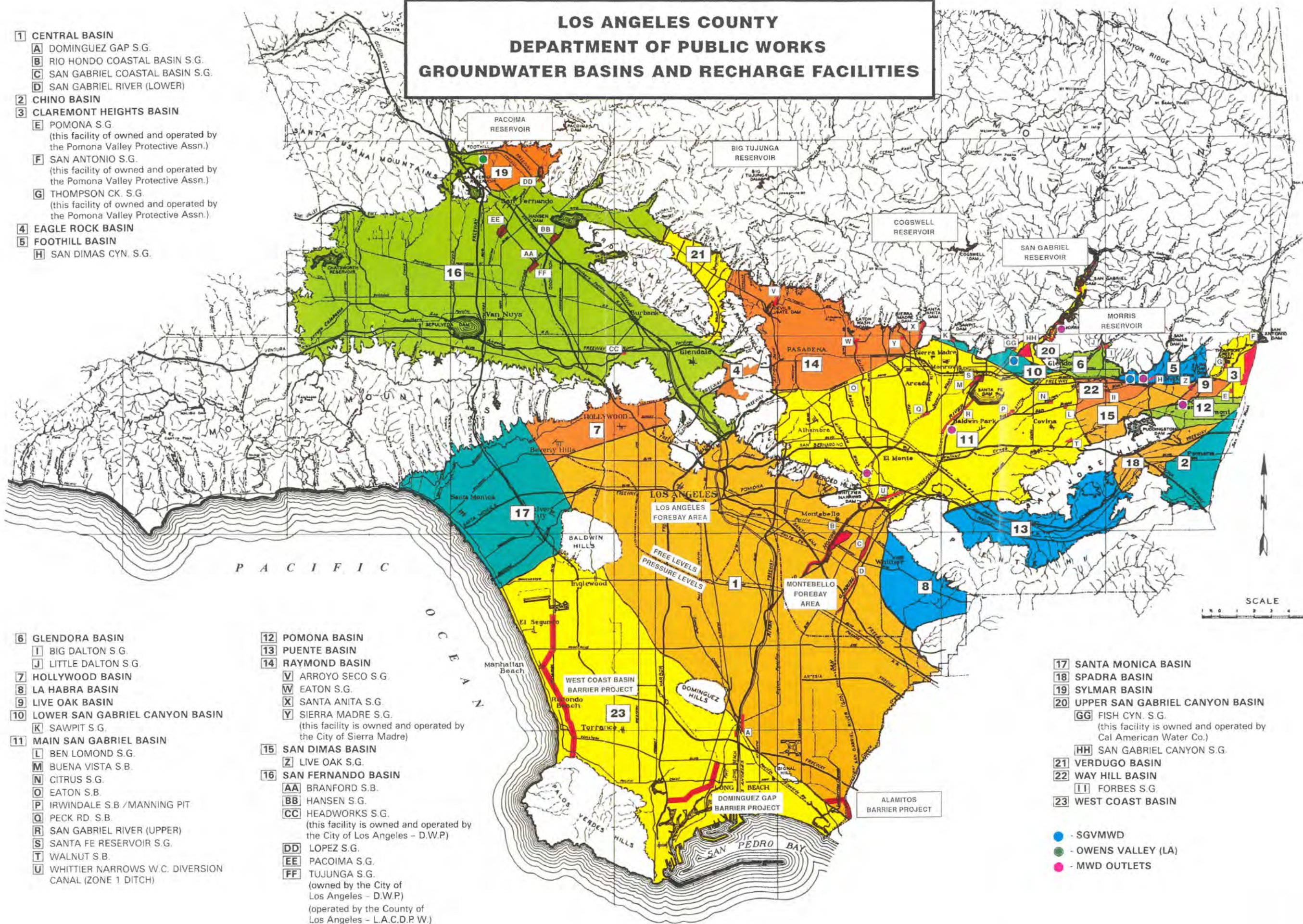
GROUNDWATER FLUCTUATIONS FOR WELL NO. 4709

CANOGA PARK, SAN FERNANDO VALLEY



LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS GROUNDWATER BASINS AND RECHARGE FACILITIES

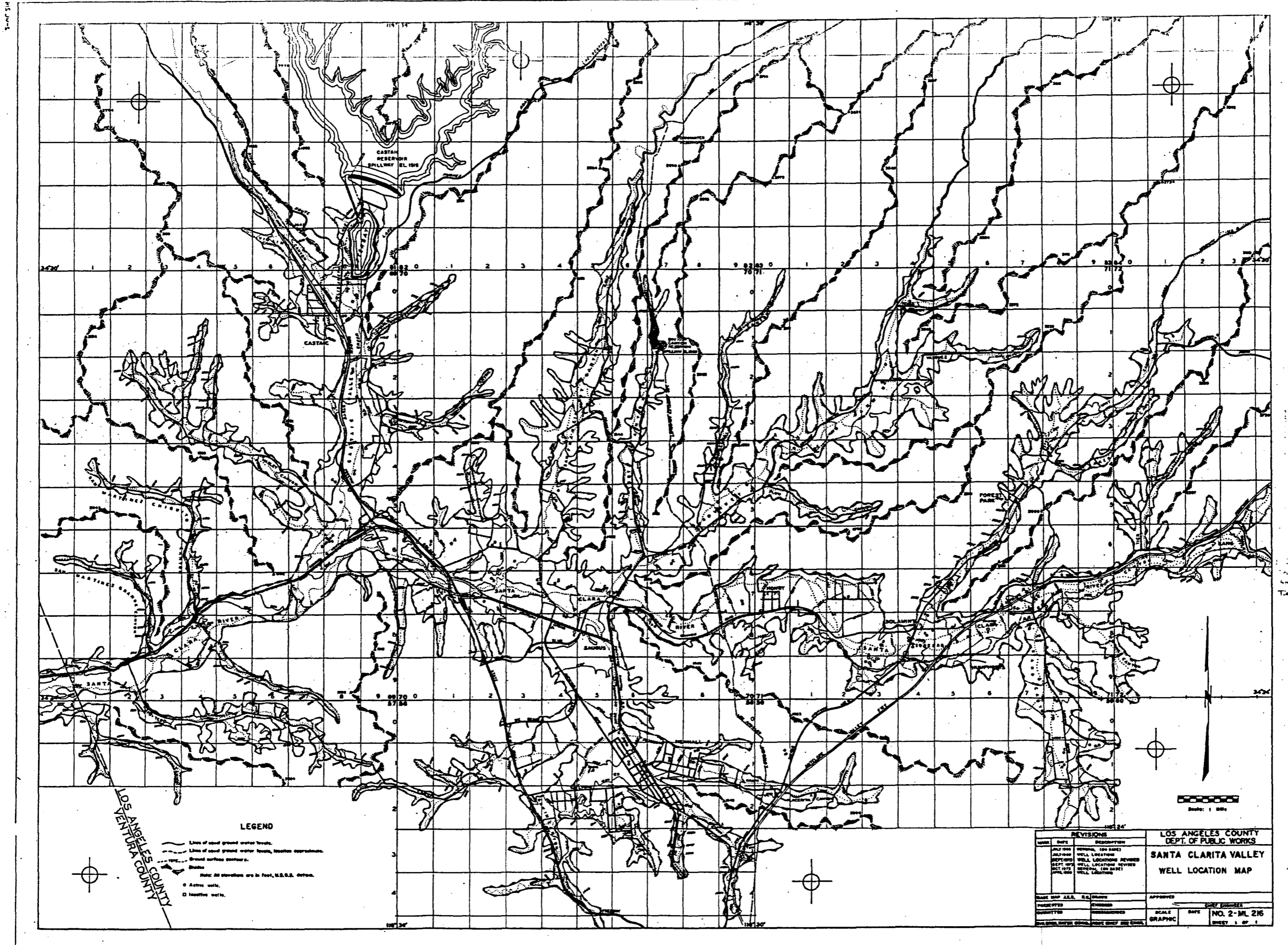
- 1** CENTRAL BASIN
 - A** DOMINGUEZ GAP S.G.
 - B** RIO HONDO COASTAL BASIN S.G.
 - C** SAN GABRIEL COASTAL BASIN S.G.
 - D** SAN GABRIEL RIVER (LOWER)
- 2** CHINO BASIN
- 3** CLAREMONT HEIGHTS BASIN
 - E** POMONA S.G.
(this facility is owned and operated by the Pomona Valley Protective Assn.)
 - F** SAN ANTONIO S.G.
(this facility is owned and operated by the Pomona Valley Protective Assn.)
 - G** THOMPSON CK. S.G.
(this facility is owned and operated by the Pomona Valley Protective Assn.)
- 4** EAGLE ROCK BASIN
- 5** FOOTHILL BASIN
 - H** SAN DIMAS CYN. S.G.



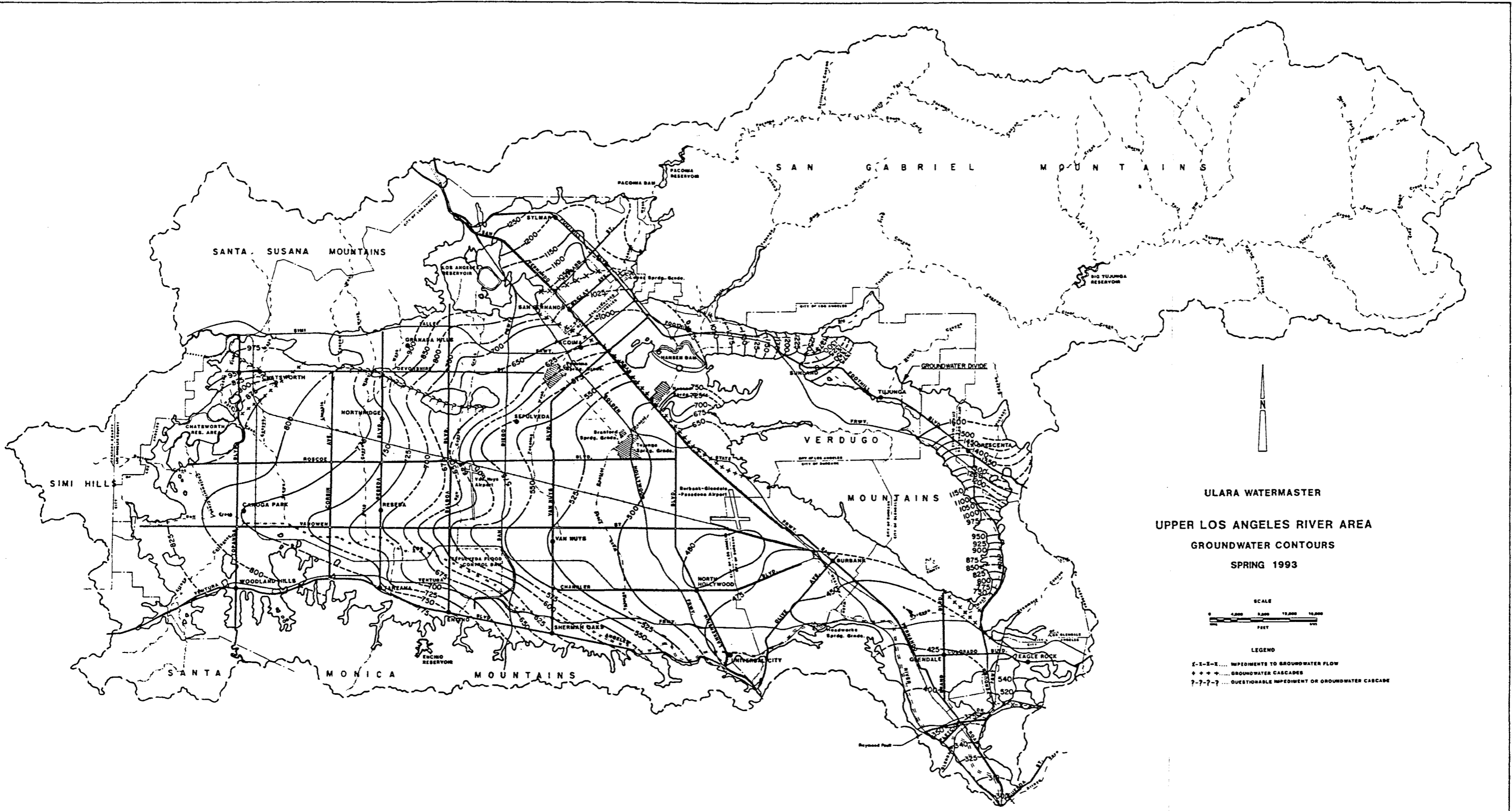
- 6** GLENDORA BASIN
 - I** BIG DALTON S.G.
 - J** LITTLE DALTON S.G.
- 7** HOLLYWOOD BASIN
- 8** LA HABRA BASIN
- 9** LIVE OAK BASIN
- 10** LOWER SAN GABRIEL CANYON BASIN
 - K** SAWPIT S.G.
- 11** MAIN SAN GABRIEL BASIN
 - L** BEN LOMOND S.G.
 - M** BUENA VISTA S.B.
 - N** CITRUS S.G.
 - O** EATON S.B.
 - P** IRWINDALE S.B. /MANNING PIT
 - Q** PECK RD. S.B.
 - R** SAN GABRIEL RIVER (UPPER)
 - S** SANTA FE RESERVOIR S.G.
 - T** WALNUT S.B.
 - U** WHITTIER NARROWS W.C. DIVERSION CANAL (ZONE 1 DITCH)

- 12** POMONA BASIN
- 13** PUENTE BASIN
- 14** RAYMOND BASIN
 - V** ARROYO SECO S.G.
 - W** EATON S.G.
 - X** SANTA ANITA S.G.
 - Y** SIERRA MADRE S.G.
(this facility is owned and operated by the City of Sierra Madre)
- 15** SAN DIMAS BASIN
 - Z** LIVE OAK S.G.
- 16** SAN FERNANDO BASIN
 - AA** BRANFORD S.B.
 - BB** HANSEN S.G.
 - CC** HEADWORKS S.G.
(this facility is owned and operated by the City of Los Angeles - D.W.P.)
 - DD** LOPEZ S.G.
 - EE** PACOIMA S.G.
 - FF** TUJUNGA S.G.
(owned by the City of Los Angeles - D.W.P.)
(operated by the County of Los Angeles - L.A.C.D.P.W.)

- 17** SANTA MONICA BASIN
 - 18** SPADRA BASIN
 - 19** SYLMAR BASIN
 - 20** UPPER SAN GABRIEL CANYON BASIN
 - GG** FISH CYN. S.G.
(this facility is owned and operated by Cal American Water Co.)
 - HH** SAN GABRIEL CANYON S.G.
 - 21** VERDUGO BASIN
 - 22** WAY HILL BASIN
 - II** FORBES S.G.
 - 23** WEST COAST BASIN
- - SGVMWD
● - OWENS VALLEY (LA)
● - MWD OUTLETS



Original Well Location Map

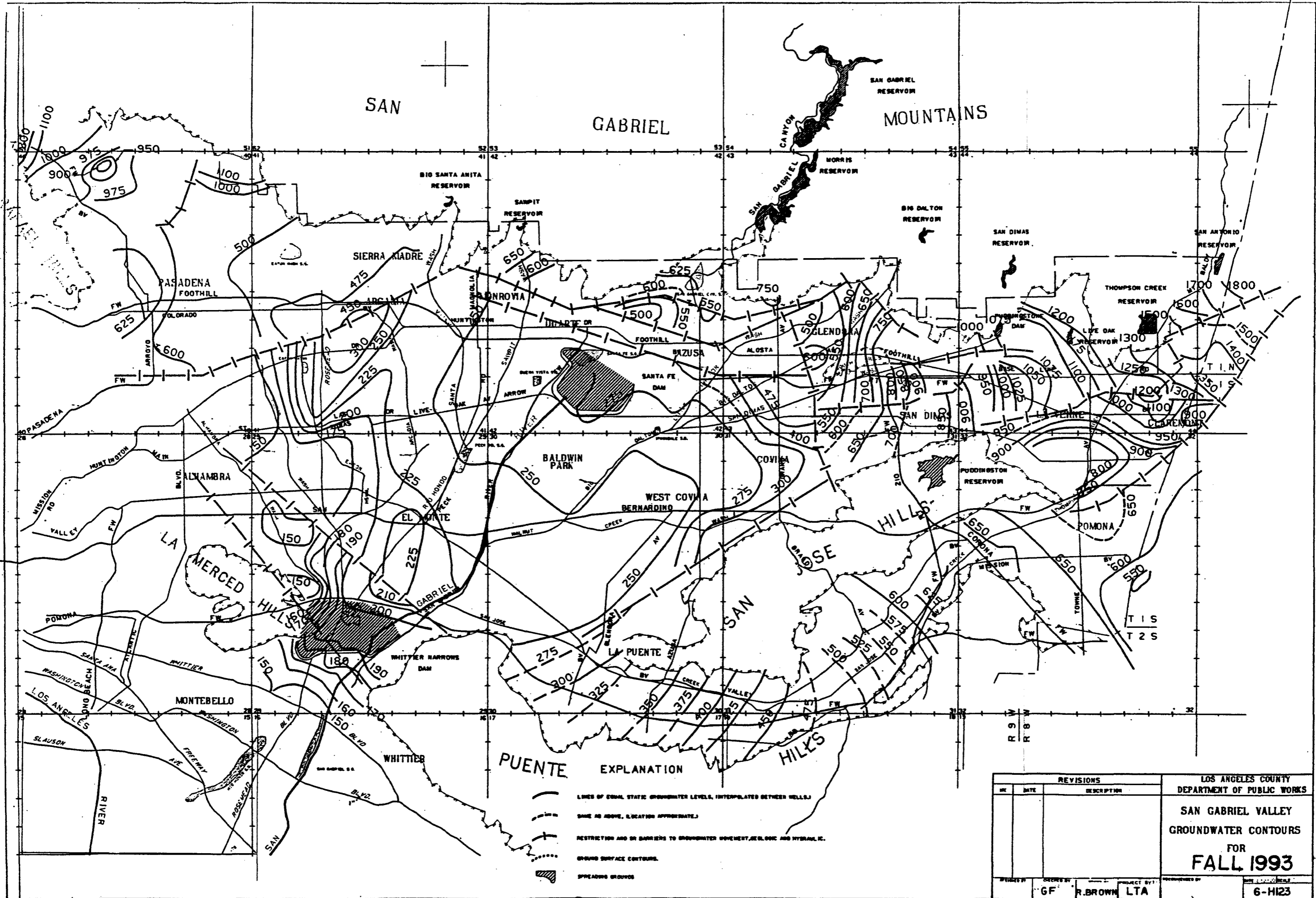


ULARA WATERMASTER
 UPPER LOS ANGELES RIVER AREA
 GROUNDWATER CONTOURS
 SPRING 1993



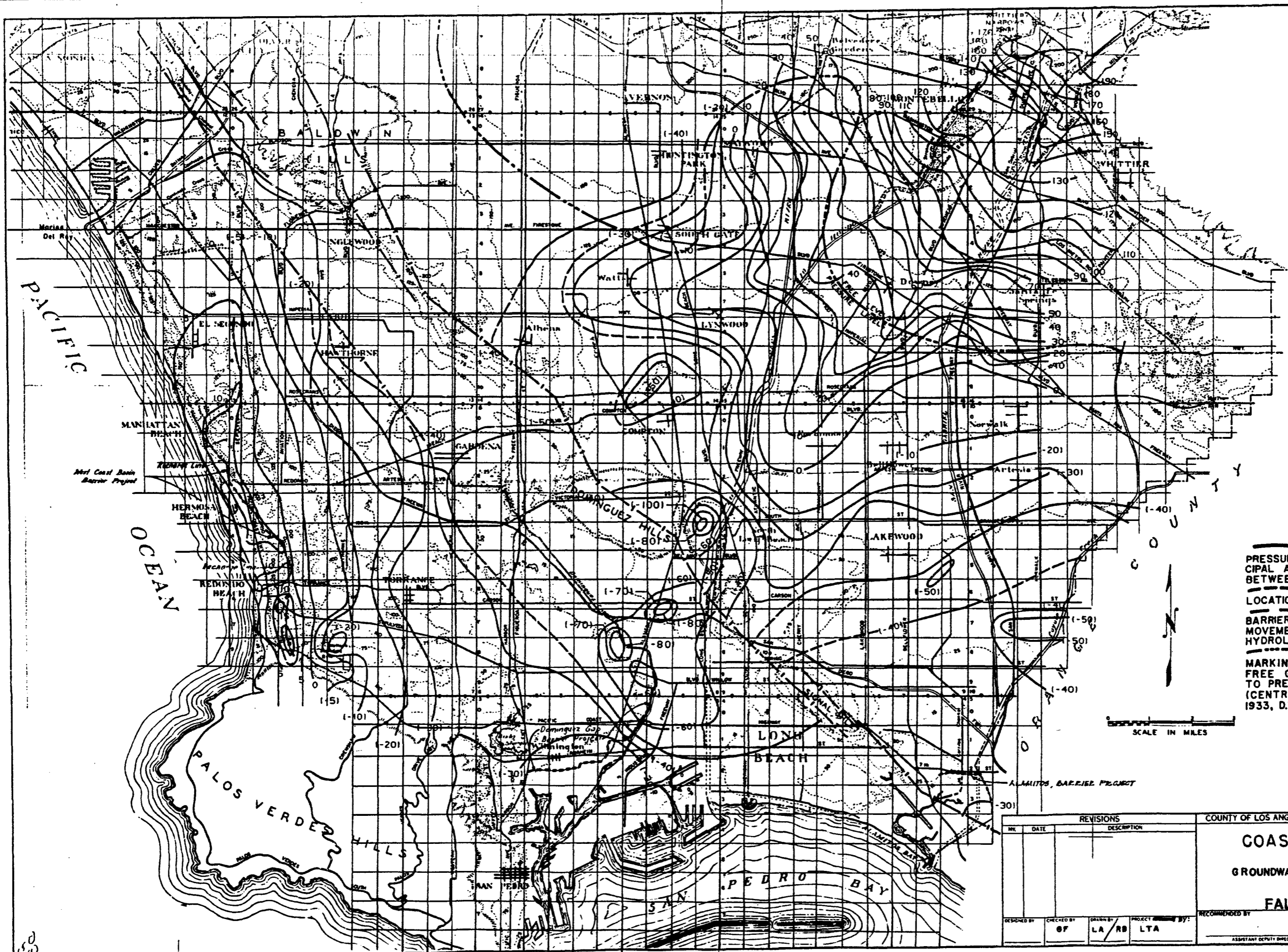
LEGEND
 [Symbol] IMPEDIMENTS TO GROUNDWATER FLOW
 [Symbol] GROUNDWATER CASCADES
 [Symbol] QUESTIONABLE IMPEDIMENT OR GROUNDWATER CASCADE

REVISED BY R. BARNES 1/90



- PUNTE EXPLANATION**
- LINES OF EQUAL STATIC GROUNDWATER LEVELS, INTERPOLATED BETWEEN WELLS.
 - SAME AS ABOVE, LOCATION APPROPRIATE.
 - RESTRICTION AND OR BARRIERS TO GROUNDWATER MOVEMENT, GEOLOGIC AND HYDRAULIC.
 - GROUND SURFACE CONTOURS.
 - SPREADING GROUNDS.

REVISIONS			LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS	
NO.	DATE	DESCRIPTION		
			SAN GABRIEL VALLEY GROUNDWATER CONTOURS FOR FALL 1993	
DESIGNED BY:	DRAWN BY:	CHECKED BY:	PROJECT BY:	APPROVED BY:
	GF	R. BROWN	LTA	
				6-H123

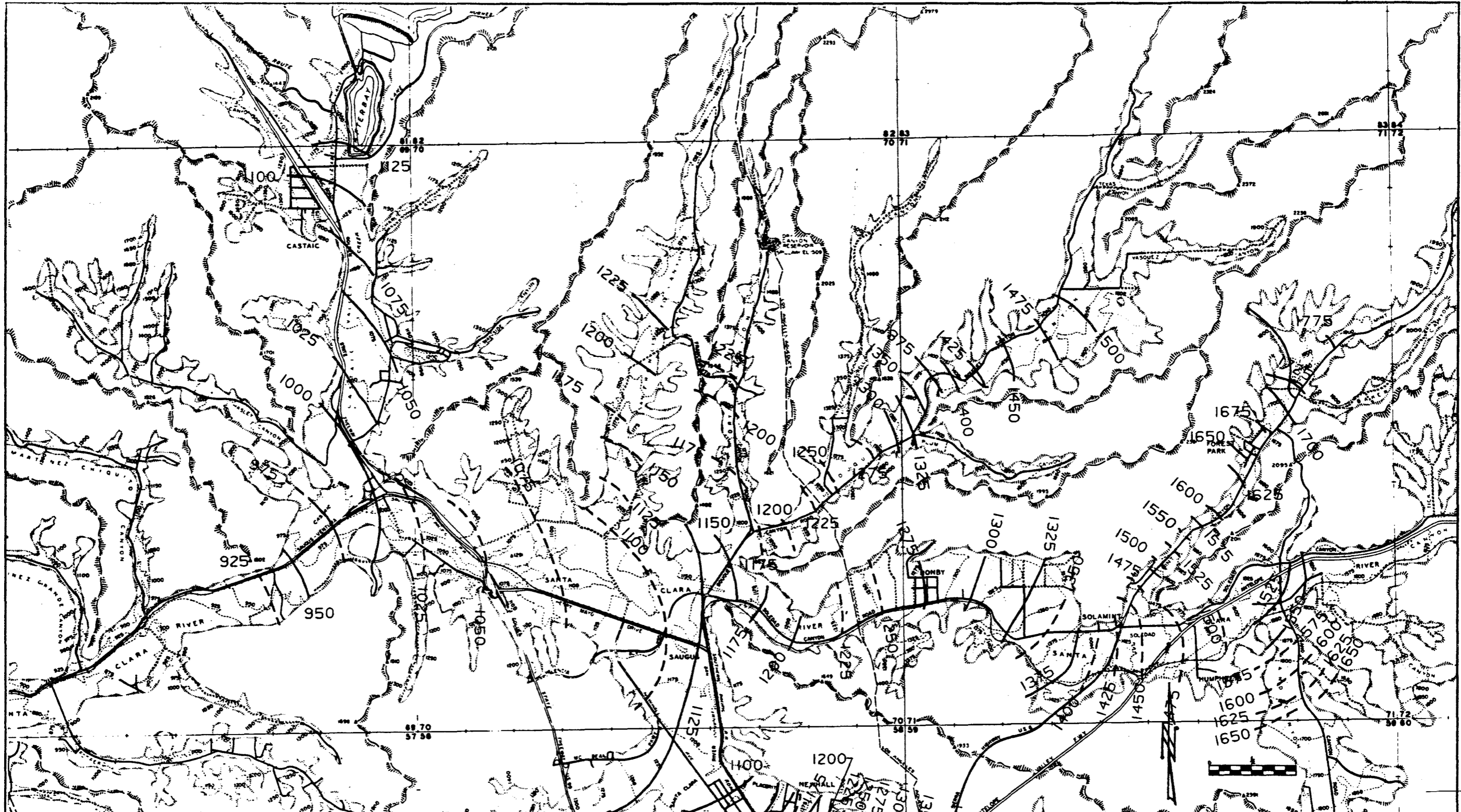


EXPLANATION

- LINES OF EQUAL PRESSURE ELEVATIONS - PRINCIPAL AQUIFER (INTERPOLATED BETWEEN WELLS)
- SAME AS ABOVE, LOCATION APPROXIMATE.
- RESTRICTIONS OR BARRIERS TO GROUNDWATER MOVEMENT (GEOLOGIC AND/OR HYDROLOGIC)
- LINE APPROXIMATELY MARKING TRANSITION FROM FREE GROUNDWATER LEVELS TO PRESSURE LEVELS. (CENTRAL COASTAL PLAIN 1933, D.W.R. BULL. NO. 45.)



REVISIONS			COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS	
NO.	DATE	DESCRIPTION		
			<p align="center">COASTAL PLAIN DEEP AQUIFER GROUNDWATER CONTOUR MAP FOR FALL 1993</p>	
DESIGNED BY:	CHECKED BY:	DRAWN BY:		
				<p>RECOMMENDED BY: _____</p> <p>DATE: _____ SCALE: _____</p> <p>NO. 2-H290 SHEET OF _____</p> <p>ASSISTANT DEPUTY DIRECTOR</p>



EXPLANATION

- LINES OF EQUAL GROUNDWATER LEVEL.
- - - LINES OF EQUAL GROUNDWATER LEVEL, LOCATION APPROXIMATE.
- - - GROUND SURFACE CONTOURS.
- DIVIDES.
- - - LOW-FLOW LINE NATURAL CHANNEL.
- X X X X REACH OF RISING WATER.

NOTE: ALL ELEVATIONS ARE IN FEET, U.S.S.A. DATUM.

REVISIONS		COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS	
NO.	DATE	DESCRIPTION	

DESIGNED BY		CHECKED BY		DRAWN BY		PROJECT ENGINEER		RECOMMENDED BY		DATE	SCALE
								ASSISTANT DEPUTY DIRECTOR		NO.	SHEET OF

**SANTA CLARITA VALLEY
GROUNDWATER CONTOURS
FOR
FALL 1993**