

SAN GABRIEL RIVER WATERMASTER

FOR

CITY OF LONG BEACH, et al., vs. SAN GABRIEL VALLEY WATER CO., et al.

CASE No. 722647 — LOS ANGELES COUNTY

THIRD ANNUAL REPORT OF

**SAN GABRIEL RIVER
WATERMASTER SERVICE**

1965-66

February 28, 1967

SAN GABRIEL RIVER WATERMASTER

FOR
CITY OF LONG BEACH ET AL VS SAN GABRIEL VALLEY WATER CO.
CASE NO. 722647—LOS ANGELES COUNTY

WATERMASTERS
MAX BOOKMAN
M. E. SALSBURY
THOMAS M. STETSON

MAILING ADDRESS
SECURITY BLDG., ROOM 604
102 N. BRAND BLVD.
GLENDALE, CALIF. 91203
TELEPHONE: 245-1883

February 28, 1967

To: Clerk of Superior Court of Los Angeles County
and All Parties

Re: Watermaster Report for 1965-66 Water Year

Gentlemen:

The third annual Watermaster Report of the San Gabriel River Watermaster, which is for the water year 1965-66, has been prepared in accordance with the Judgment in this case, entered September 24, 1965.

It is our finding that for the 1965-66 water year the amount of Usable Water was 71,562 acre-feet and the Lower Area Annual Entitlement was 70,300 acre-feet, leaving a credit in supply to the Lower Area of 1,262 acre-feet. Further, the required amount of Makeup Water which must be delivered by Upper District prior to October 1, 1967, is 7,983 acre-feet.

The Watermaster gratefully acknowledges the cooperation and data provided by the Los Angeles County Flood Control District and others.

Very truly yours,

SAN GABRIEL RIVER WATERMASTER

By:

Max Bookman
Max Bookman

M. E. Salisbury
M. E. Salisbury

Thomas M. Stetson
Thomas M. Stetson

Encl.

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CHAPTER I. ACTIVITIES OF WATERMASTER

The Judgment in the case of City of Long Beach, et al, v. San Gabriel Valley Water Company, et al, provides for the establishment of a Watermaster and requires that he submit an annual report. Presented in this report is a brief history of the litigation and a summary of the activities of the San Gabriel River Watermaster. Also included is a determination of the Lower Area Annual Entitlement, Usable Water, Accrued Debit and the Makeup Water required to be delivered by the Upper Area.

History of Litigation

On May 12, 1959, a complaint was filed in the Superior Court in and for the County of Los Angeles, Case No. 722,647, by the City of Long Beach, the Central Basin Municipal Water District, and the City of Compton. The purpose of the suit was to determine the rights of the parties to waters of the San Gabriel River system and to provide for protection against interference with the rights of the Lower Area Parties.

In an effort to reach a physical solution, two negotiating committees of five members each were appointed, one to represent the plaintiffs and one to represent the major group of defendants. Attorneys, engineers and geologists were utilized as advisors to the negotiating committees and on September 26, 1961, a statement of "Principles for Settlement"

was executed. There followed a period of study and negotiations in order to arrive at a fair and equitable physical solution to the problem.

On August 24, 1964, the Upper San Gabriel Valley Municipal Water District intervened in the action. The purpose of intervening in the action was to enable the District to assume the responsibilities of the Upper Area under the terms of the Judgment. In order to reimburse the District for its expenses in so doing, a Reimbursement Contract was entered into by the District and all of the defendants and certain other producers of water from the Upper Area.

A proposed Stipulation for Judgment and Judgment were approved by the joint negotiating committees on December 7, 1964, and thereafter were approved by all parties. On September 24, 1965, Judgment was entered by Judge Edmund Moor.

The Judgment provided that the Lower Area Average Entitlement would be an average annual usable supply of 98,415 acre-feet. However, due to fluctuations in rainfall, the Lower Area Annual Entitlement in any particular year is allowed to vary from the average in accordance with rainfall received in San Gabriel Valley during the ten preceding years. The components of usable supply are Surface Flow, Subsurface Flow and Export to Lower Area. Deficiencies in the Lower Area Annual Entitlement are to be satisfied by the Upper District as Makeup Water. The effective date of the Judgment was October 1, 1963.

The Judgment provided for the appointment of a three-man Watermaster, one to represent the Upper Area, one to represent the Lower Area, and the third to represent both areas. On November 12, 1965, the three-man Watermaster was appointed and certified by the Court. The Upper Area is represented by Thomas M. Stetson, the Lower Area by Max Bookman, and both areas by M. E. Salisbury.

Plate 1, entitled "Stream Gaging Stations, Rio Hondo-San Gabriel River System," shows the general vicinity of the Whittier Narrows area. Plate 2, entitled "Map of Whittier Narrows," shows in detail the channels and facilities in the Whittier Narrows area.

Watermaster Operations

The activities of the Watermaster include administration of operations under the Judgment; the performance of field inspections, collection of data and maintenance of records; analysis of data and preparation of the annual report; and the maintenance of records on the transfer of water rights. All operations and reports are based on the "water year," which is from October 1 to September 30.

The Judgment requires that the Watermaster make the following determinations each year:

1. The number of inches of depth of average rainfall on San Gabriel Valley.

2. The average annual rainfall on San Gabriel Valley for the ten consecutive water years ending with the year of calculation.
3. The Lower Area Annual Entitlement and the entitlement for the Long-term Accounting Period.
4. The amount of Surface Flow through Whittier Narrows.
5. The amount of Subsurface Flow.
6. The amount of Export to Lower Area.
7. The amount of Lower Area Replenishment Water.
8. The amount and quality of Reclaimed Water reclaimed by or on behalf of Lower Area.
9. The total amount of Makeup Water delivered to Lower Area.
10. The surface outflow from Montebello Forebay in the channel of each of the Rio Hondo and San Gabriel River.
11. The amount of Usable Water received by the Lower Area.
12. The Accrued Debit of Upper Area, if any, or Accrued Credit of Upper Area, if any, as it exists at the end of each water year.
13. The amount, if any, of Makeup Water which Upper District is obligated to deliver during the following water year.

Administration

The official office and depository of records of the Watermaster is at 102 North Brand Boulevard, Glendale, California, and such records are available for inspection at the request of any party.

A tentative budget for the water year 1966-67 was transmitted to the parties on July 22, 1966. After fifteen days, there being no objections thereto, the tentative budget became the final budget and is set forth in Table 1.

An audit of expenditures of the Watermaster since establishment of the office in November 1965 was obtained. This audit was performed by R. J. Galletly, CPA, and Table 2 shows the income and expense for the water year 1965-66. A letter from the auditor dated February 10, 1967, presenting the auditor's findings is included in the appendix.

Data Collection

The Watermaster collects data on stream flow, rainfall, water quality, ground water levels, export of water, reclaimed water, replenishment water, and other information as required. The principal source of data is the Los Angeles County Flood Control District. Copies of records were obtained from the District, and many conferences were held between Flood Control District personnel and Watermaster personnel in order that the Watermaster would be fully informed on the facts necessary to the determinations required by the Judgment. Other data were obtained from the Metropolitan Water District, the County Sanitation Districts, the Central and West Basin Water Replenishment District, the Upper San Gabriel Valley Municipal Water District and the U.S. Geological Survey. Records of water exported were obtained and compiled during the year. A number of field inspections were made of stream gaging facilities in the Whittier Narrows area.

TABLE 1
WATERMASTER BUDGET
FOR THE
WATER YEAR 1966-67

Administrative fees of Watermaster and general operation expenses	\$ 3,000.00
Field inspections	500.00
Collection of data and maintenance of records	3,000.00
Calculations and preparation of Watermaster Report for water year 1965-66	4,500.00
Printing and reproduction costs	500.00
Contingencies	<u>1,000.00</u>
TOTAL	\$12,500.00
Less estimated carryover from 1965-66	<u>2,500.00</u>
Balance to be financed for 1966-67	\$10,000.00

Proration for Payment Purposes

Upper San Gabriel Valley Municipal Water District	50%	\$ 5,000.00
Central Basin Municipal Water District	41.2%	4,120.00
City of Long Beach	7.125%	712.50
City of Compton	1.675%	<u>167.50</u>
TOTAL		\$10,000.00

TABLE 2

STATEMENT OF INCOME AND EXPENDITURES
FOR THE
WATER YEAR 1965-66

Income		\$15,000.00
Expenditures		
Administrative fees and general operation expenses	\$2,478.49	
Field inspections	1,130.37	
Collection of data and maintenance of records	2,616.04	
Calculations and preparation of Watermaster Reports for water years 1963-64 and 1964-65	4,863.56	
Printing and reproduction costs	396.71	
Travel and incidental expenses	<u>79.65</u>	
Total expenditures		<u>11,564.82</u>
Balance		<u>\$ 3,435.18</u>

Preparation of Annual Report

One of the required functions of the Watermaster is the preparation of the annual report. The Judgment provides that a report be prepared and submitted within five months after the end of each water year. This report covers the third year of operation under the Judgment - the water year 1965-66.

Delivery of Makeup Water

The Upper District was required during the 1965-66 water year to deliver to Lower Area a minimum of 34,255 acre-feet of Makeup Water. The Upper District satisfied a part of this requirement by payment of \$399,841.83 to Central Municipal for 27,785 acre-feet of Reclaimed Water. In addition, the Upper District purchased 6,500 acre-feet of Colorado River water, which was released to stream channels for delivery to the Lower Area as Makeup Water. This water was delivered during the period April 25, 1966, to May 14, 1966, by the Metropolitan Water District to the San Gabriel River. The Los Angeles County Flood Control District took control of the water discharged into the river and spread it in the Lower Area.

Stream Gaging Stations

The Watermaster maintained contact with the Los Angeles County Flood Control District regarding operation of stream gaging stations in the vicinity of Whittier Narrows. It was contemplated at the time of the Judgment that a gaging station on the San Gabriel River at Parkway Bridge

would be constructed as a part of the channel improvement work by the Corps of Engineers. This gage will replace Station F263B-R, San Gabriel River at Beverly Boulevard. It was learned, however, that the Corps had made changes in the design of proposed channel improvements, proposed to be constructed in 1967, which would place the gage location at a point which would not meet the needs of the Watermaster. Through efforts of the Watermaster, the Corps of Engineers has revised its plans so that the gage can be located in the vicinity of the Parkway Bridge.

The Watermaster requested, by letter dated January 24, 1967, to the Los Angeles County Flood Control District, that the existing gage at Beverly Boulevard be operated for a period of time subsequent to the installation of the new gage at Parkway Bridge. By letter of January 30, 1967, the Flood Control District advised the Watermaster that this request will be granted.

Station F262-R, San Gabriel River at Florence Avenue, is to be moved upstream about 1,300 feet during the channel improvement work. The new station will be incorporated in the first drop structure north of Florence Avenue. A suitable location does not exist downstream of Florence Avenue. Due principally to the improved channel control, better records will be obtainable of the discharge at this location.

Miscellaneous Activities

In June of 1966 the Watermaster made a preliminary estimate of the Makeup Water requirements for the 1965-66 water year. The

objective of this study was twofold. First, it provided an estimate of the deficit or surplus at the end of the water year, to assist the Upper District in its budgeting. Second, the Watermaster, in reviewing the measurements of water shortly after they were made, was able to satisfy himself regarding the adequacy of such data.

The Watermaster also made a study of the availability of wells having water level data which can be utilized in calculating the Subsurface Flow at the Whittier Narrows. An inventory was made of all wells within the vicinity of Whittier Narrows. Certain wells which are not being measured were located and plans were made to obtain measurements from those wells.

The well locations were plotted on a map prepared from aerial photography. This map was utilized to more accurately construct ground water contours in the Whittier Narrows area for the purpose of determining the Subsurface Flow.

Transfer of Water Rights

In event of a change in ownership of any of the Defendants in the case, the Judgment requires that such transfer shall be made in writing to the Watermaster, and the Watermaster is required to notify all parties of certain details regarding the transfer. Ownership of the water system of California Water and Telephone Company was transferred on to California-American Water Company. The Watermaster was notified by letter of February 13, 1967, that such a transfer had occurred in March

1966. A copy of this letter is included in the Appendix. The Watermaster has requested that specific information required in Paragraph 16 of the Judgment be furnished so that all parties may be notified.

CHAPTER II. LOWER AREA ANNUAL ENTITLEMENT

The Lower Area Annual Entitlement is based on the average annual rainfall which occurred in the 10-year period ending with water year 1965-66 and the corresponding entitlement shown in Table A of the Judgment. Four precipitation stations in the San Gabriel Valley are utilized to determine the average annual precipitation for San Gabriel Valley. The four stations are located at San Dimas, Walnut, El Monte and Pasadena. The precipitation during the 1965-66 water year at the four locations was as follows:

<u>Station number</u>	<u>Location</u>	<u>Depth of precipitation, in inches</u>
95	114 East First Street, San Dimas	18.14
102C	19711 East Valley Blvd., Walnut	16.46
108D	119 South Hoyt Avenue, El Monte	19.67
610B	City Hall, Pasadena	<u>24.18</u>
Average rainfall		19.61

Shown following is the calculation of the 10-year average rainfall in the San Gabriel Valley for the water years 1956-57 through 1965-66:

<u>Water year</u>	<u>Rainfall, in inches</u>
1956-57	13.7
1957-58	30.2
1958-59	8.5
1959-60	10.6
1960-61	5.9
1961-62	22.4
1962-63	12.3
1963-64	9.4
1964-65	15.2
1965-66	<u>19.6</u>
Total	147.8
10-year average	14.8

Based on the 10-year average rainfall of 14.8 inches, the Lower Area Annual Entitlement for the water year 1965-66 is 70,300 acre-feet, determined from Table A of the Judgment.

CHAPTER III. USABLE WATER

Presented in this chapter is the determination of the quantity of Usable Water received by the Lower Area during the water year 1965-66.

Surface Flow

The items to be included in Surface Flow through Whittier Narrows are described in Part III. A. of Exhibit B of the Judgment. The Surface Flow is, for the most part, based upon stream flow measurements made by the Los Angeles County Flood Control District. With the exception of the staff gage located on the San Gabriel River at the point of maximum rising water, all stream gaging stations were equipped with continuous recorders.

Rio Hondo above Mission Bridge, Station F64-R

The measured flow at Station F64-R for the water year 1965-66 was 92,390 acre-feet.

Mission Creek at San Gabriel Boulevard, Station F83-R

The measured flow at Station F83-R for the water year 1965-66 was 120 acre-feet.

Rio Hondo Bypass Channel, Station F313-R

No water flowed through the channel at this gage during the water year 1965-66.

Whittier Narrows Flood Channel, Station E337-R

The U. S. Geological Survey, which operates Station E337-R, reported a flow of 66,430 acre-feet for the water year 1965-66. In addition, a flow of 626 acre-feet was reported by the Los Angeles County Flood Control District as flowing into the Lower Area through a culvert beneath Rosemead Boulevard near, but not measured by, Gage E337-R. The total flow at and near Station E337-R is thus 67,056 acre-feet.

A review of the U. S. Geological Survey record of flow for Station E337-R indicates that the calculated flow may be inconsistent with other gaged quantities. The Watermaster intends to conduct an extensive review of all data pertinent to Station E337-R, but the record as presently available is being used for the determinations of this report. When this review is completed, the Watermaster may amend his findings presented herein in the next annual report.

Sycamore Canyon

The runoff from Sycamore Canyon which flows through Whittier Narrows is based on precipitation at Potrero Heights (Station Number 170D). During the water year 1965-66 the precipitation at that station was 20.58 inches. Referring to Table 6 of Exhibit B, the runoff from Sycamore Canyon was determined to be 275 acre-feet.

San Gabriel River at Point of Maximum Rising Water

Prior to the installation of a new gage near Parkway Bridge, the Watermaster is required to use the station at Beverly Boulevard

(F263B-R), which is located about two-thirds of a mile downstream from Parkway Bridge. The Watermaster is to determine the amount of water which percolates between that station and the point of maximum rising water. The determination is based on periodic measurements at the point of maximum rising water (F86-S) and the continuous record of the gage at Beverly Boulevard (F263B-R).

Percolation between the point of maximum rising water and Beverly Boulevard was determined to be 4,820 acre-feet for the 1965-66 water year. The measured flow at Beverly Boulevard was 55,300 acre-feet, resulting in a total flow at the point of maximum rising water of 60,120 acre-feet for the 1965-66 water year. During the winter months only minor amounts of storm water were released past Whittier Narrows Dam into the San Gabriel River due to channel construction work in the San Gabriel River south of Florence Avenue. Flood waters in the San Gabriel River above Whittier Narrows Dam were transferred to the Rio Hondo by means of the Whittier Narrows Flood Channel and are reflected in the quantity of water measured at Station E337-R.

Reclaimed Water Delivered to Rio Hondo

Water from the Whittier Narrows Reclamation Plant is delivered to either the San Gabriel River or Rio Hondo. Of the total production of 15,841 acre-feet of Reclaimed Water during the 1965-66 water year, 12,711 acre-feet were delivered to the Rio Hondo, and of the latter amount 95 acre-feet was included with the storm flow measured at

Station E377-R. Thus, 12,616 acre-feet was delivered to the river below the F64-R gage and must therefore be added as Surface Flow. Reclaimed Water in the amount of 3,130 acre-feet was delivered to the San Gabriel River above the gaging station and is included in the measurement at Beverly Boulevard. Reclaimed Water lost to the ocean during storm operations is not paid for by the Central and West Basin Water Replenishment District. The losses during the year were 785 acre-feet, resulting in a purchase of Reclaimed Water of 15,056 acre-feet.

Summary of Surface Flow

Shown in Table 3 are the amounts of Surface Flow passing through Whittier Narrows during the water year 1965-66, which total 232,577 acre-feet.

TABLE 3
SUMMARY OF SURFACE FLOW THROUGH WHITTIER NARROWS
FOR WATER YEAR 1965-66

<u>Point of measurement</u>	<u>Amount in acre-feet</u>
Rio Hondo above Mission Bridge, Station F64-R	92,390
Mission Creek at San Gabriel River, Station F83-R	120
Rio Hondo Bypass Channel, Station F313-R	0
Whittier Narrows Flood Channel, Station E337-R and culvert at Rosemead Boulevard	67,056
Sycamore Canyon	275
San Gabriel River at point of maximum rising water	60,120
Reclaimed water delivered to Rio Hondo Channel below Station F64-R	<u>12,616</u>
Total Surface Flow	232,577

Subsurface Flow

The method utilized to determine Subsurface Flow through Whittier Narrows is set forth in Exhibit B of the Judgment. The data used for computing Subsurface Flow are the spring and fall ground water levels in Whittier Narrows. The Subsurface Flow for any year is the average of the six spring and fall computations of Subsurface Flow for the three years ending with the year of calculation. Shown in the following tabulation is the result of those calculations and the computations of Subsurface Flow for the water year 1965-66, which is 17,300 acre-feet.

<u>Time</u>	<u>Subsurface flow in acre-feet</u>
Spring 1964	20,500
Fall 1964	22,300
Spring 1965	16,400
Fall 1965	13,300
Spring 1966	16,700
Fall 1966	<u>14,600</u>
Subsurface Flow 1965-66	17,300

Export to Lower Area

The Watermaster is required to determine the amount of water which is pumped from ground water or diverted from surface streams in the Upper Area and transported in conduits through Whittier Narrows.

During water year 1965-66 there were three entities which transported water via pipeline through Whittier Narrows. They were the California Domestic Water Company, Suburban Water Systems and the City of Whittier.

The Watermaster obtained records of meter readings of water production of all wells used by the three entities to produce water for export from San Gabriel Valley through Whittier Narrows. These records for the 1965-66 water year were converted to acre-feet. Records of energy consumption were also obtained from the exporters and used to verify the quantities of water exported. The total export for each of the exporters in water year 1965-66 is shown below:

<u>Exporter</u>	<u>Export to Lower Area, in acre-feet</u>
California Domestic Water Company	12,692
Suburban Water Systems	10,980
City of Whittier	<u>8,834</u>
Total	32,506

Lower Area Replenishment Water

The Lower Area purchases replenishment water from The Metropolitan Water District of Southern California. Deliveries were made during water year 1965-66 from Metropolitan's Middle Feeder at three connections: (1) San Gabriel River north of the San Bernardino Freeway (M335-R); (2) Alhambra Wash (M340-R); and (3) Live Oak Wash (F311-R).

All connections are metered and delivered amounts are recorded by the Metropolitan Water District. During water year 1965-66 the amount of imported water purchased for replenishment by or on behalf of the Lower Area Parties was 62,110 acre-feet at Alhambra Wash, 53,653 acre-feet at the San Gabriel River, and 5,897 acre-feet at Live Oak Wash, a total of 121,660 acre-feet.

Provision is made in the Judgment for the deduction of evaporation losses from the metered releases of replenishment water. The calculated annual amounts of evaporation are 26 acre-feet on the Alhambra Wash releases and 100 acre-feet on San Gabriel River and Live Oak Wash releases, or a total of 126 acre-feet.

The net replenishment water, after deducting evaporation, is 62,084 acre-feet on the Rio Hondo and 59,450 acre-feet on the San Gabriel side, which includes the Live Oak Wash releases, or a total net amount of 121,534 acre-feet purchased by the Lower Area.

Reclaimed Water

The total amount of Reclaimed Water produced was 15,841 acre-feet. During storm periods 785 acre-feet of the Reclaimed Water delivered to the Rio Hondo subsequently flowed past the Montebello Forebay. The total amount of Reclaimed Water purchased in the water year 1965-66 was therefore 15,056 acre-feet. A typical chemical analysis of the Reclaimed Water is included in the Appendix.

Makeup Water

During the water year 1965-66 the Upper Area purchased 6,500 acre-feet of Metropolitan Water District replenishment water for delivery to the Lower Area as Makeup Water. This water was delivered concurrently with Lower Area replenishment water. The evaporation of Makeup Water was determined to be 11 acre-feet, resulting in a net delivery of Makeup Water of 6,489 acre-feet.

Recirculation of Measured Water

During the water year 1965-66 there was no recirculation of measured water as defined in Paragraph 3(1)(6) of the Judgment.

Unusable Surface Flow

The water from San Gabriel Valley which flows past the Montebello Forebay is called Unusable Surface Flow and is determined in accordance with Exhibit B of the Judgment. Surface outflow from the Montebello Forebay is measured on the Rio Hondo at Stewart and Gray Road, Station F45B-R, and on the San Gabriel River at Florence Avenue, Station F262-R. This surface outflow may be comprised of water from the San Gabriel Valley and of local storm water which enters the channels southerly of Whittier Narrows.

During water year 1965-66 the measured outflow from the Montebello Forebay on the Rio Hondo at Station F45B-R was 69,390 acre-feet. This included water from San Gabriel Valley and local inflow originating below Whittier Narrows. The daily inflow from tributary channels was estimated by correlating the drainage areas of the unmeasured storm drains with the Montebello Storm Drain, which is equipped with a stream flow recorder. The total amount of Local Storm Inflow was calculated to be 6,340 acre-feet. By an analysis of daily flows it was possible to segregate the flow at Stewart and Gray Road into Local Storm Outflow and Unusable Surface Flow. It was determined that the Local Storm Outflow was 5,640 acre-feet and the Unusable Surface Flow in the Rio Hondo was 63,750 acre-feet.

The amount of outflow in the Rio Hondo for water year 1965-66 was considerably higher than the amounts for the two prior water years. This resulted from (a) the greater amount of runoff due to the higher intensity of precipitation, (b) storm water in the San Gabriel River at Whittier Narrows Dam being transferred to the Rio Hondo, and (c) reservoir releases from upstream regulating reservoirs in anticipation of future storms.

The surface outflow from the Montebello Forebay on the San Gabriel River, Station F262-R, was 5,620 acre-feet during water year 1965-66. The Local Storm Inflow to the San Gabriel River was calculated to be 2,510 acre-feet on the basis of correlation of drainage areas

with that of the Montebello Storm Drain. The Judgment specifies the method to be used in segregating the outflow between Local Storm Outflow and Unusable Surface Flow. It was determined that 3,992 acre-feet was Unusable Surface Flow in the San Gabriel River.

The total amount of Unusable Surface Flow for the water year 1965-66 was 67,742 acre-feet, consisting of 63,750 acre-feet from the Rio Hondo and 3,992 acre-feet from the San Gabriel River.

Determination of Usable Water

Usable Water under terms of the Judgment is defined as the sum of Surface Flow, Subsurface Flow and Export to Lower Area less Lower Area Replenishment Water, Reclaimed Water, Makeup Water, recirculation of measured water and Unusable Surface Flow. Shown in Table 4 is the determination of Usable Water for water year 1965-66.

TABLE 4
USABLE WATER IN
WATER YEAR 1965-66

<u>Item</u>	<u>Amount, in acre-feet</u>
Surface Flow	232,577
Subsurface Flow	17,300
Export to Lower Area	<u>32,506</u>
Subtotal	282,383
Less:	
Lower Area Replenishment Water	121,534
Reclaimed Water	15,056
Makeup Water	6,489
Recirculation of measured water	0
Unusable Surface Flow	<u>67,742</u>
Subtotal	210,821
Usable Water	71,562

CHAPTER IV. ACCRUED DEBIT, MAKEUP WATER AND LONG-TERM ACCOUNTING

Under terms of the Judgment, the Watermaster is required to annually determine the Accrued Debit or Credit of the Upper Area and to make a Long-term Accounting each 15 to 25 years. There is presented herein a summary of Usable Water received, Annual Entitlement, Accrued Debit or Credit and Makeup Water requirement. Also included in this section is a review of prior year determinations.

Prior Year Determinations

Revised Data

Subsequent to the publishing of the first and second annual Watermaster reports on February 28, 1967, the Los Angeles County Flood Control District released its biennial report entitled "Biennial Report on Hydrologic Data, Seasons of 1963-64 and 1964-65." A review of that report indicates agreement of data presented for water year 1963-64 between the Flood Control District report and the Watermaster Report. A review of data for the 1964-65 year, however, indicates that a revision has been made to the preliminary data by the Flood Control District for two inflow gaging stations. These adjustments resulted from changes made by Flood Control during rechecking of computations subsequent to the time the Watermaster obtained the data. Final checking of the data

for Station F64-R, Rio Hondo above Mission Bridge, indicated a total annual flow of 78,300 acre-feet for water year 1964-65. This quantity is 230 acre-feet less than was utilized in the prior Watermaster Report. Also, checking of data for Station F83-R, Mission Creek at San Gabriel Boulevard, indicated that a total flow of 0.6 acre-feet of water passed the gage. This gage was previously reported by the Watermaster based on preliminary data as having no flow passing during the water year 1964-65. This value should be rounded to one acre-foot. The Watermaster investigated the changes and found them to be in order. The net effect of the two changes is to decrease the amount of Usable Water received by the Lower Area during water year 1964-65 by 229 acre-feet. Shown in Table 5 is a summary of revised findings for the water year 1964-65.

It should be noted that the Upper District purchased 6,500 acre-feet of MWD water as Makeup Water to fulfill its obligation to reduce the Accrued Debit to 25,000 acre-feet, on the basis of the Watermaster's prior findings. This quantity purchased, however, was based upon the preliminary estimate of flow and the Watermaster's prior finding and it is the opinion of the Watermaster that the Upper District had intended to fully meet its obligation.

TABLE 5
SUMMARY OF FINDINGS FOR 1964-65

<u>Item</u>	<u>Quantities in acre-feet</u>
1. Rainfall 1964-65, 15.24 inches	
2. 10-year average rainfall, 14.5 inches	
3. LOWER AREA ANNUAL ENTITLEMENT	68,000
4. Surface Flow through Whittier Narrows	
Rio Hondo above Mission Bridge	78,300
Mission Creek at San Gabriel	1
Rio Hondo bypass channel	0
Whittier Narrows Flood Channel	635
Sycamore Canyon	75
San Gabriel River at point of maximum rising water	82,730
Reclaimed Water delivered to Rio Hondo below Station F64-R	<u>9,856</u>
5. Subsurface Flow through Whittier Narrows	171,597
6. Water exported through Whittier Narrows	18,800
7. Total flow through Whittier Narrows	30,139
8. Lower Area Replenishment Water	220,536
9. Reclaimed Water	160,027
10. Recirculation of Measured Water	14,528
11. Unusable Surface Flow	0
12. USABLE WATER RECEIVED BY LOWER AREA	11,240
13. DEFICIENCY DURING WATER YEAR	34,741
14. ACCRUED DEBIT OF UPPER AREA AS OF SEPTEMBER 30, 1965	33,259
15. MINIMUM AMOUNT OF MAKEUP WATER REQUIRED TO BE DELIVERED TO LOWER AREA PRIOR TO OCTOBER 1, 1966	59,484
	34,484

Delivery of Makeup Water

By letter dated October 18, 1965, the Upper District requested of Central Municipal the total number of acre-feet of Reclaimed Water purchased and the cost per acre-foot therefor for the 1963-64 and 1964-65 water years. By letter dated October 25, 1965, Central Municipal advised Upper Area that it had purchased the following amounts of Reclaimed Water at the costs shown:

<u>Period</u>	<u>Reclaimed Water purchased, in acre-feet</u>	<u>Price, in dollars per acre-foot</u>
Oct. 1, 1963 - June 30, 1964	9,553.6	\$12.75
July 1, 1964 - Sept. 30, 1964	3,704.0	15.25
Oct. 1, 1964 - Sept. 30, 1965	14,527.7	15.25

The Upper District elected to purchase the maximum amount of Reclaimed Water available and supplement this with a direct delivery of Surface Flow. Accordingly, the following payments were made to Central Municipal:

<u>Date</u>	<u>Quantity of Reclaimed Water purchased, in acre-feet</u>	<u>Price, in dollars per acre-foot</u>	<u>Amount paid</u>
March 23, 1966	9,553.6	\$12.75	\$121,808.40
	<u>3,704.0</u>	15.25	<u>56,486.00</u>
Subtotal	13,257.6		\$178,294.40
September 29, 1966	<u>14,527.7</u>	15.25	<u>221,547.43</u>
Total	27,785.3		\$399,841.83

Payment for 27,785 acre-feet of Reclaimed Water left an additional amount of 6,470 acre-feet of Makeup Water to be delivered for the water year 1964-65. The Upper District requested that Colorado River water in the amount of 6,500 acre-feet be delivered to the Lower Area. The Watermaster arranged for this delivery, which was made between April 25, 1966, and May 14, 1966, concurrently with Lower Area Replenishment Water. The Watermaster, as reported above, determined the evaporation losses were 11 acre-feet, resulting in a net delivery of 6,489 acre-feet of water to the Lower Area.

Shown in the following tabulation is the determination of the "Adjusted Accrued Debit" as of September 30, 1965. The Adjusted Accrued Debit as of September 30, 1965, is defined herein as the "Accrued Debit as of September 30, 1965, adjusted for the Makeup Water delivered in 1965-66 water year."

	<u>Quantity, in acre-feet</u>
Accrued Debit of Upper Area as of September 30, 1965 (Table 5, Item 14)	59,484
Makeup Water deliveries	
Reclaimed Waste Water	27,785
Surface Flow delivery	<u>6,489</u>
Subtotal	34,274
Adjusted Accrued Debit of Upper Area as of September 30, 1965	25,210

Accrued Debit and Requirement for Makeup Water for 1965-66

The Lower Area Annual Entitlement, as heretofore determined for 1965-66, is 70,300 acre-feet. The Usable Water received was 71,562 acre-feet, which leaves a credit for the water year 1965-66 of 1,262 acre-feet. The Accrued Debit as of September 30, 1966, is the sum of the adjusted Accrued Debit as of September 30, 1965 (25,210 acre-feet) and the credit of 1,262 acre-feet for 1965-66, or a total of 23,948 acre-feet.

In accordance with the provisions of the Judgment, Makeup Water amounting to at least one-third of the Accrued Debit plus any amount needed to reduce the Accrued Debit to 25,000 acre-feet must be delivered during water year 1966-67. This means that Upper District must deliver 7,983 acre-feet of Makeup Water to the Lower Area prior to October 1, 1967.

By letter dated October 3, 1966, the Upper District requested of Central Municipal the total number of acre-feet of Reclaimed Water purchased during water year 1965-66 and the cost per acre-foot therefor. By letter dated October 7, 1966, Central Municipal advised Upper District that the Lower Area had purchased 15,056.2 acre-feet of Reclaimed Water during the water year 1965-66 at a cost of \$15.25 per acre-foot. Copies of those letters are included in the appendix to this report. Under terms of the Judgment the Upper Area has the option of paying for an

amount not to exceed 14,735 acre-feet of Reclaimed Water. The Upper District could thereby satisfy the required delivery by the payment on or before September 30, 1967, to Central Municipal for 7,983 acre-feet of Reclaimed Water purchased during water year 1965-66. It will not be necessary to schedule Makeup Water deliveries by Surface Flow during the current water year, assuming the above payment is made.

Table 6 shows Lower Area Annual Entitlement, Usable Water received by Lower Area, and the Accrued Debit of Upper Area for period of operation under the Judgment.

TABLE 6
SUMMARY OF OPERATION OF JUDGMENT
(Values in acre-feet)

<u>Water year</u>	<u>Lower Area Annual Entitle- ment</u>	<u>Water received by Lower Area</u>			<u>Annual Debit or Credit</u>
		<u>Usable</u>	<u>Makeup</u>	<u>Total</u>	
1963-64	67,200	40,975	0	40,975	-26,225
1964-65	68,000	34,741	13,257	47,998	-46,227
1965-66	70,300	71,562	21,017	92,579	-23,948

Long-term Accounting

The Watermaster is required each 15 to 25 years to make a Long-term Accounting of the average rainfall in the San Gabriel Valley and the amount of Usable Water and Makeup Water received by the Lower Area. Shown following is a summary of these items since the effective date of the agreement:

Water year	<u>Rainfall, in inches</u>		Water received by			Accumu- lated Total
	Annual amount	Accumu- lated average annual amount	Lower Area			
			in acre-feet			
			<u>Usable</u>	<u>Makeup</u>	<u>Total</u>	
1963-64	9.45	9.45	40,975	0	40,975	40,975
1964-65	15.24	12.34	34,741	13,257	47,998	88,973
1965-66	19.61	14.77	71,562	21,017	92,579	181,552

CHAPTER V. SUMMARY OF FINDINGS FOR WATER YEAR 1965-66

The findings of the Watermaster are as follow:

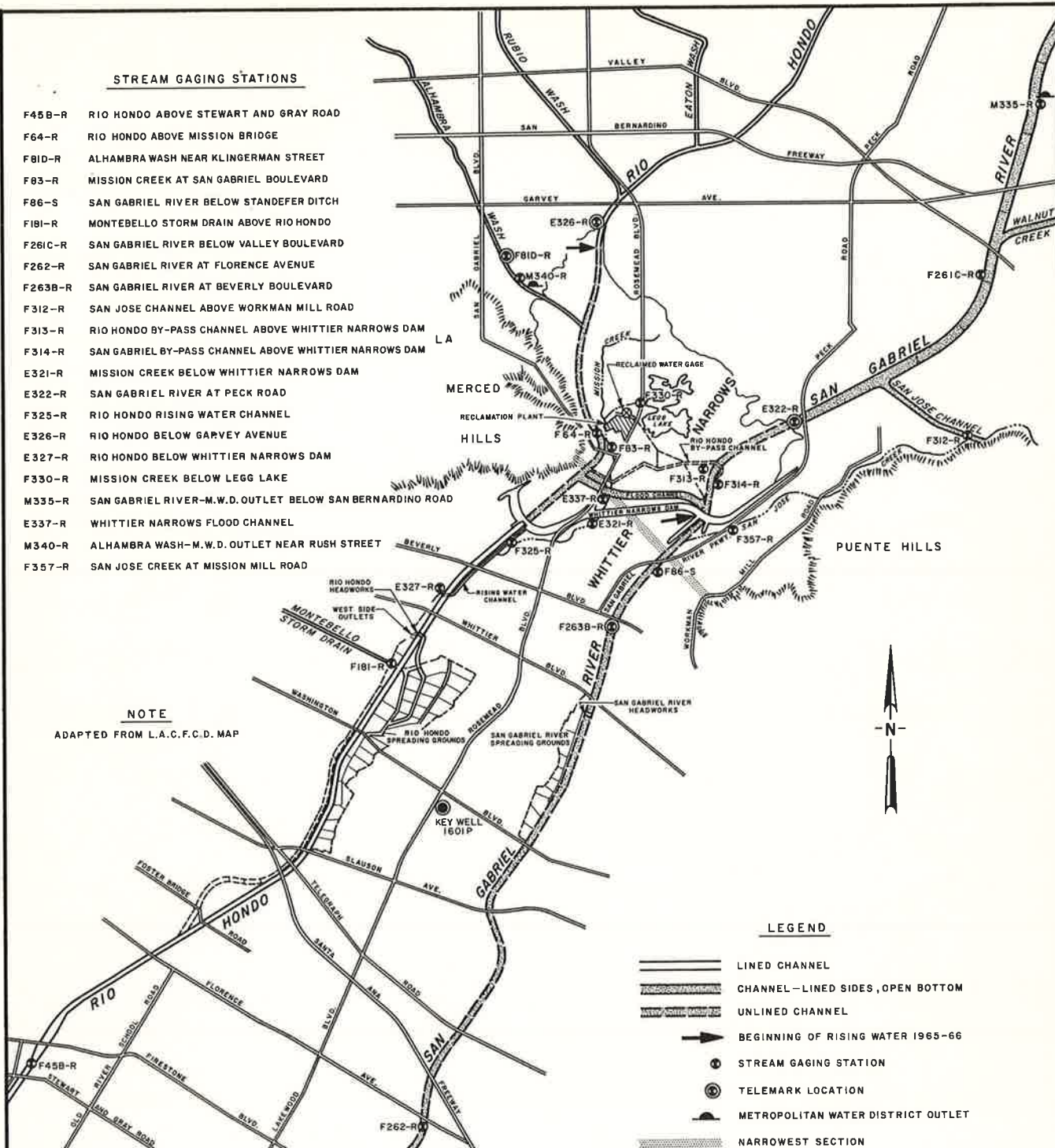
<u>Item</u>	<u>Quantities in acre-feet</u>
1. Rainfall 1965-66, 19.61 inches	
2. 10-year average rainfall, 14.8 inches	
3. Lower Area Annual Entitlement	70,300
4. Surface Flow through Whittier Narrows	232,577
5. Subsurface Flow through Whittier Narrows	17,300
6. Water exported through Whittier Narrows	32,506
7. Total flow through Whittier Narrows	282,383
8. Lower Area Replenishment Water	121,534
9. Reclaimed Water	15,056
10. Makeup Water	6,489
11. Recirculation of Measured Water	0
12. Unusable Surface Flow	67,742
13. Usable Water received by Lower Area	71,562
14. Credit for water year 1965-66	1,262
15. Accrued Debit of Upper Area as of September 30, 1965 (corrected)	59,484
16. Amount of Makeup Water delivered prior to October 1, 1966	
Reclaimed Water	27,785
Colorado River water	<u>6,489</u>
Total	34,274
17. Accrued Debit as of September 30, 1966, unadjusted for credit during 1965-66 water year (see text)	25,210
18. Accrued Debit of Upper Area as of September 30, 1966	23,948
19. Minimum amount of Makeup Water required to be delivered to Lower Area prior to October 1, 1967	7,983

STREAM GAGING STATIONS

- F45B-R RIO HONDO ABOVE STEWART AND GRAY ROAD
- F64-R RIO HONDO ABOVE MISSION BRIDGE
- F81D-R ALHAMBRA WASH NEAR KLINGERMANN STREET
- F83-R MISSION CREEK AT SAN GABRIEL BOULEVARD
- F86-S SAN GABRIEL RIVER BELOW STANDEFER DITCH
- F181-R MONTEBELLO STORM DRAIN ABOVE RIO HONDO
- F261C-R SAN GABRIEL RIVER BELOW VALLEY BOULEVARD
- F262-R SAN GABRIEL RIVER AT FLORENCE AVENUE
- F263B-R SAN GABRIEL RIVER AT BEVERLY BOULEVARD
- F312-R SAN JOSE CHANNEL ABOVE WORKMAN MILL ROAD
- F313-R RIO HONDO BY-PASS CHANNEL ABOVE WHITTIER NARROWS DAM
- F314-R SAN GABRIEL BY-PASS CHANNEL ABOVE WHITTIER NARROWS DAM
- E321-R MISSION CREEK BELOW WHITTIER NARROWS DAM
- E322-R SAN GABRIEL RIVER AT PECK ROAD
- F325-R RIO HONDO RISING WATER CHANNEL
- E326-R RIO HONDO BELOW GARVEY AVENUE
- E327-R RIO HONDO BELOW WHITTIER NARROWS DAM
- F330-R MISSION CREEK BELOW LEGG LAKE
- M335-R SAN GABRIEL RIVER-M.W.D. OUTLET BELOW SAN BERNARDINO ROAD
- E337-R WHITTIER NARROWS FLOOD CHANNEL
- M340-R ALHAMBRA WASH-M.W.D. OUTLET NEAR RUSH STREET
- F357-R SAN JOSE CREEK AT MISSION MILL ROAD

NOTE

ADAPTED FROM L.A.C.F.C.D. MAP



SAN GABRIEL RIVER WATERMASTER

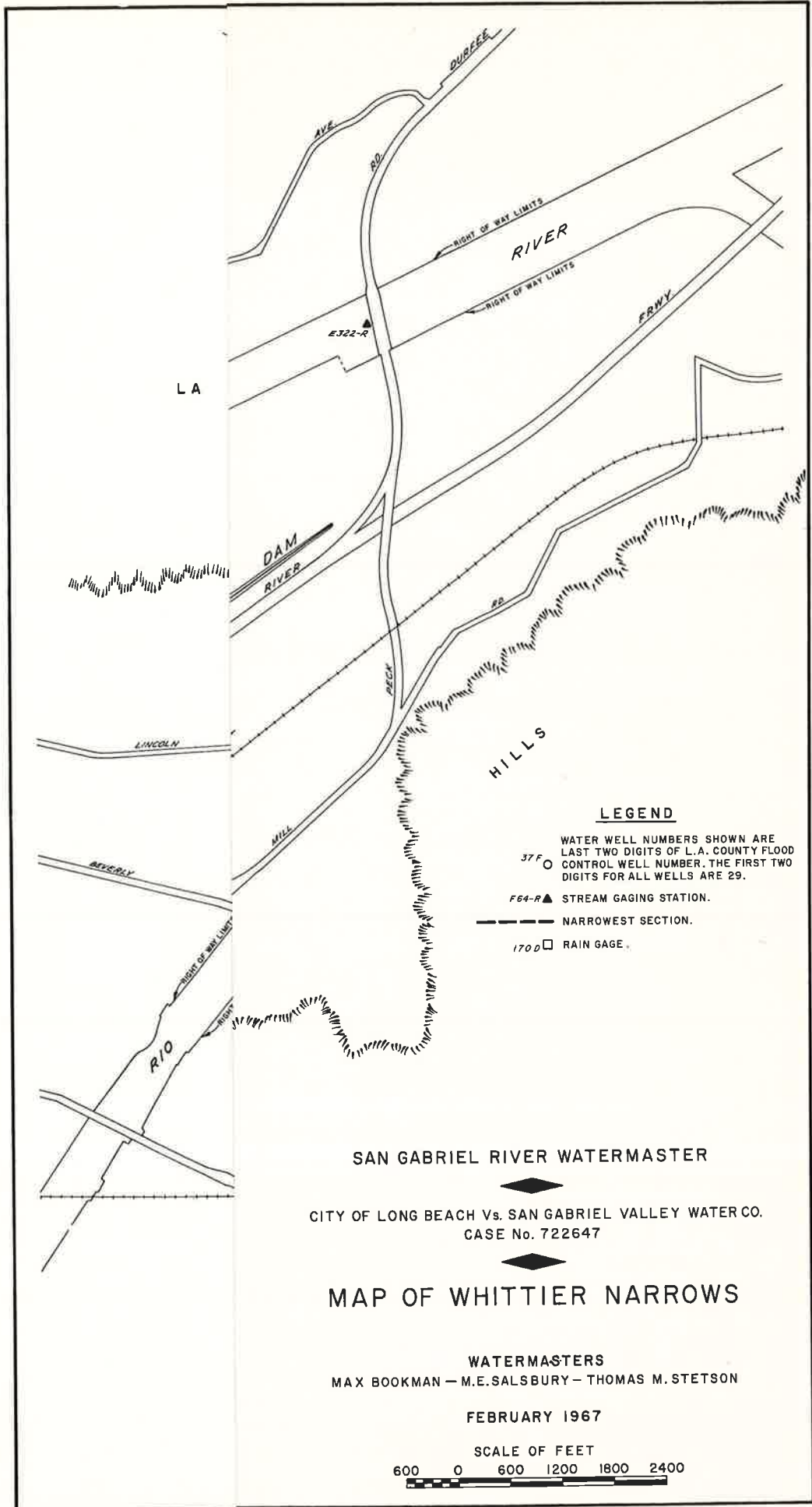
CITY OF LONG BEACH Vs. SAN GABRIEL VALLEY WATER CO.
CASE No. 722647

STREAM GAGING STATIONS
RIO HONDO - SAN GABRIEL RIVER SYSTEM

WATERMASTERS
MAX BOOKMAN - M.E. SALSBUURY - THOMAS M. STETSON

FEBRUARY 1967

SCALE OF FEET
0 4000 8000



APPENDIX

DIRECTORS

MILO DELLMANN, *President*
MARSHALL R. BOWEN
ROBERT J. FURLONG
CLAIRE S. THOMPSON, JR.
FRANK H. WHELOCK

CENTRAL BASIN
MUNICIPAL WATER DISTRICT

7439 EAST FLORENCE AVENUE
DOWNEY, CALIFORNIA
TOpaz 9-1163

October 7, 1966

Board of Directors
Upper San Gabriel Valley
Municipal Water District
Suite 202, Neer Building
11229 Valley Boulevard
El Monte, California 91731

Gentlemen:

In accordance with provisions of Paragraph 5 (i) (2) of the Judgment in the Long Beach case, written notice is hereby given of the total number of acre feet of reclaimed water purchases, and of the cost per acre foot, at the existing Whittier Narrows Water Reclamation Plant for the water year commencing October 1, 1965, as follows:

Water Year Commencing October 1, 1965

October 1, 1965 through September 30, 1966

15,056.2 acre feet @ \$15.25 per acre foot

Very truly yours,

Marvel A. Roberts
Deputy Secretary

MAR:m

cc: Max Bookman, Watermaster
M. E. Salsbury, Watermaster
Thomas M. Stetson, Watermaster

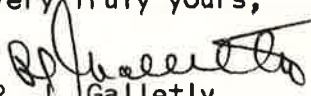
R. J. GALLETTY
CERTIFIED PUBLIC ACCOUNTANT
GLENDALE FEDERAL SAVINGS & LOAN BUILDING
401 NORTH BRAND BOULEVARD
GLENDALE 3, CALIFORNIA
CHAPMAN 5-2402

February 10, 1967

San Gabriel River Watermaster
Security Building, Room 604
102 North Brand Blvd.
Glendale, California

In our opinion the accompanying statement of Income and Expenditures for the San Gabriel River Watermaster for the water year 1965 - 1966 presents fairly the results of its operations for the year in conformity with generally accepted accounting principles. Our examination was made in accordance with generally accepted auditing standards, and accordingly included tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

Very truly yours,


R. J. Galletly
Certified Public Accountant

San Gabriel River Watermaster
Statement of Income and Expenditures
For the Water Year 1965 - 1966

Income		\$ 15,000.00
Expenditures		
Administrative fees and general operating expenses	\$ 2,478.49	
Field inspections	1,130.37	
Collection of data and maintenance of records	2,616.04	
Calculations and preparation of Watermaster Reports for water years 1963-64 and 1964-65	4,863.56	
Printing and reproduction costs	396.71	
Travel and incidental expenses	<u>79.65</u>	
Total expenditures		<u>11,564.82</u>
Balance		\$ <u><u>3,435.18</u></u>

TADINI BACIGALUPI 1881-1962
CHARLES DE Y. ELKUS 1881-1963

HERBERT H. SALINGER
CLAUDE N. ROSENBERG
CHARLES DE Y. ELKUS, JR.
TADINI BACIGALUPI, JR.
ALVIN H. PELAVIN
ROBERT C. ELKUS
WILLIAM G. FLECKLES
PETER K. MAIER
ROBERT M. HARLICK
MICHAEL B. FOLEY
WILLIAM C. GORDON
GAYLE NIN ROSENKRANTZ
PAUL J. MATZGER

LAW OFFICES

BACIGALUPI, ELKUS, SALINGER & ROSENBERG

300 MONTGOMERY STREET, SUITE 1030

SAN FRANCISCO 94104

TELEPHONE 362-7575
AREA CODE 415

February 13, 1967

Mr. Thomas M. Stetson
Civil and Consulting Engineers
215 West Seventh Street
Los Angeles, California

Re: Upper San Gabriel Basin Litigation

Dear Tom:

In March of 1966, California Water & Telephone Company sold and transferred all of its water properties to California-American Water Company, and as a part of such sale, assigned all of its right, title and interest in connection with the Long Beach suit and the Upper San Gabriel situation to California-American Water Company. California-American Water Company acquired all rights and assumed all obligations, including obligations arising under the Reimbursement Contract.

For reporting purposes, will you please note Cal-American as the owner, rather than California Water & Telephone Company, and forward all future correspondence to W. J. Hays, President, California-American Water Company, P. O. Box 45053, Los Angeles

Mr. Thomas M. Stetson

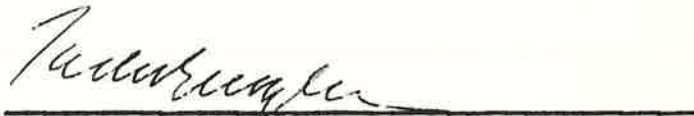
Page Two

90045; to David H. Fiscus, Division Manager, San Gabriel Valley Division, 2116 Huntington Drive, San Marino, California 91108; and to this office as attorneys for Cal-American.

Yours very truly,

BACIGALUPI, ELKUS, SALINGER & ROSENBERG

By

A handwritten signature in cursive script, appearing to read "Tadini Bacigalupi, Jr.", is written over a horizontal line.

TADINI BACIGALUPI, JR.

cc: Mr. W. J. Hays
Mr. David H. Fiscus

TBJR:ac

WHITTIER NARROWS WATER RECLAMATION PLANT
QUARTERLY CHEMICAL ANALYSIS FOR WQCB

Composite: 8:00 a.m. January 11th to 8:00 a.m. January 12, 1966

Constituents	: Final : Effluent	: Maximum : Limits
BOD, 5 days at 20°C, ppm O	3	
Suspended Solids, ppm	7	
Total Dissolved Solids	573	1,000
Sulfate, ppm SO ₄	72	
Chloride, ppm Cl	92	250
Sulfate + Chloride	169	500
Boron, ppm B	0.40	2.0
Sodium Equivalent Ratio, % Na	51.0	60.0
ABS, ppm	0.6	2.0
Phenol, ppm C ₆ H ₅ OH	0.002	
Lead, ppm Pb	0.03	0.1
Fluoride, ppm F	0.73	1.5
Arsenic, ppm As	0.01	0.05
Selenium, ppm Se	0.00	0.05
Chromium, Hexavalent, ppm Cr	0.27	0.05
Copper, ppm Cu	0.08	3.0
Iron, ppm Fe	0.06	
Manganese, ppm Mn	0.00	
Iron + Manganese	0.06	0.3
Zinc, ppm Zn	0.04	15