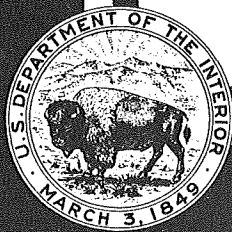


1964

Surface Water Records of California

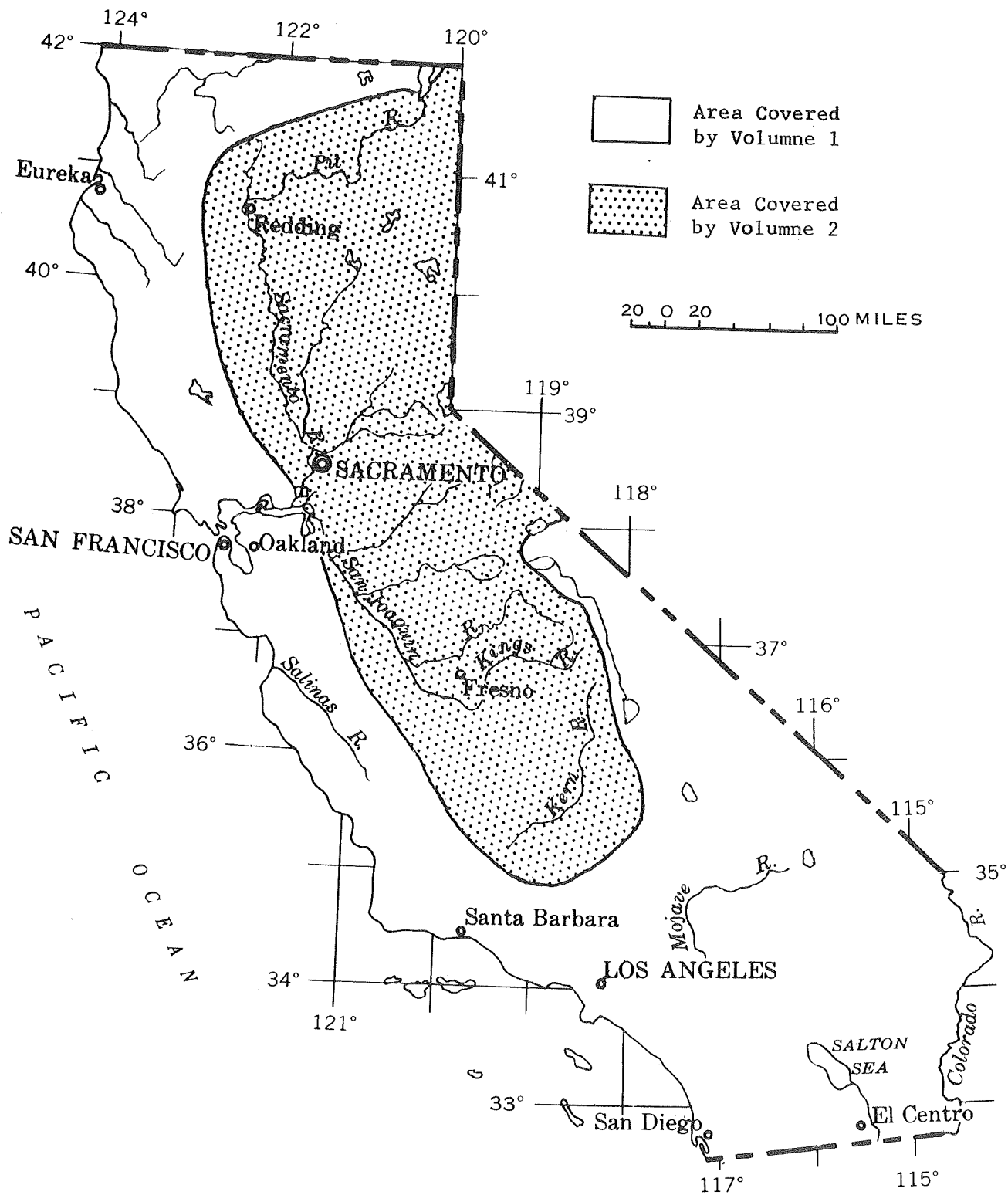
**Volume 1: Colorado River Basin, Southern
Great Basin, and Pacific Slope Basins
excluding Central Valley**



UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY

**Prepared in cooperation with the State of California
and with other agencies**

SURFACE WATER RECORDS OF CALIFORNIA, 1964



United States Department of the Interior
Geological Survey - Water Resources Division

SURFACE WATER RECORDS
OF CALIFORNIA
1964

Volume 1: Colorado River Basin, Southern Great Basin
and Pacific Slope Basins excluding Central Valley

Prepared in cooperation with

State Department of Water Resources
Alameda County Flood Control and Water Conservation District
Alameda County Water District
Calaveras County Water District
Contra Costa County Flood Control and Water Conservation District
Lake County Flood Control and Water Conservation District
Montecito County Water District
Monterey County Flood Control and Water Conservation District
San Bernardino County Flood Control District
Santa Clara County Flood Control and Water Conservation District
Orange County Flood Control District
San Luis Obispo County Flood Control and Water Conservation District
Santa Barbara County Water Agency
Santa Cruz County Flood Control and Water Conservation District
City and County of San Francisco
City of Arcata
City of Santa Barbara
City of San Diego
Antelope Valley-East Kern Water Agency
East Bay Municipal Utility District
Georgetown Divide Public Utility District
Imperial Irrigation District
San Bernardino Valley Water Conservation District
Santa Maria Valley Water Conservation District
Ventura River Municipal Water District
Corps of Engineers, U.S. Army
U.S. Navy
Bureau of Reclamation, U.S. Department of the Interior
Forest Service, U.S. Department of Agriculture

Copies of this report may be obtained from
District Chief, Water Resources Division
U. S. Geological Survey
345 Middlefield Road
Menlo Park, California

CALENDAR FOR WATER YEAR 1964

OCTOBER 1963

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

NOVEMBER 1963

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

DECEMBER 1963

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

JANUARY 1964

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

FEBRUARY 1964

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

MARCH 1964

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL 1964

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

MAY 1964

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE 1964

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY 1964

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

AUGUST 1964

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

SEPTEMBER 1964

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

CONTENTS

	Page
Introduction.....	1
Cooperation.....	2
Definition of terms and abbreviations.....	3
Downstream order and station numbers.....	4
Explanation of data.....	5
Accuracy of field data and computed results.....	8
Supplemental data.....	9
Hydrologic conditions.....	10
Gaging-station records.....	11
<u>Colorado River</u>	
Colorado River below Davis Dam, Ariz.-Nev.....	11
Colorado River at Needles.....	12
Colorado River near Topock, Ariz.....	13
Chemehuevi Wash tributary near Needles.....	14
Havasu Lake:	
<u>Diversion from Havasu Lake</u>	
Colorado River aqueduct near Parker Dam, Ariz.-Calif.....	15
Havasu Lake near Parker Dam, Ariz.-Calif.....	16
Colorado River below Parker Dam, Ariz.-Calif.....	18
<u>Tributaries and diversions between Parker Dam and Palo Verde Dam</u>	
Arch Creek near Earp.....	19
Palo Verde Canal near Blythe.....	20
Colorado River below Palo Verde Dam, Ariz.-Calif.....	21
Colorado River at Imperial Dam, Ariz.-Calif.....	22
Colorado River at Yuma, Ariz.....	23
Colorado River at northerly international boundary above Morelos Dam, near Andrade.....	24
<u>Diversions and return flows at and below Imperial Dam</u>	
Gila Gravity Main Canal at Imperial Dam, Ariz.-Calif.....	25
All-American Canal near Imperial Dam, Ariz.-Calif.....	26
All-American Canal above Pilot Knob wasteway.....	27
Pilot Knob powerplant and wasteway near Pilot Knob.....	28
All-American Canal below Pilot Knob wasteway.....	29
Return surface flows from Yuma project, Ariz.-Calif.....	30
Colorado River below Imperial Dam, schematic diagram.....	34
<u>Panamint Valley</u>	
Wildrose Creek near Wildrose Station.....	35
Darwin Creek near Darwin.....	36
<u>Death Valley</u>	
Big Dip Creek near Stovepipe Wells.....	37
Amargosa River at Tecopa.....	38
Horse Thief Creek near Tecopa.....	39
<u>Ivanpah Valley</u>	
China Spring Creek near Mountain Pass.....	39

Gaging-station records-Continued

<u>Bristol Lake basin</u>	Page
Caruthers Creek near Ivanpah.....	40
<u>Danby Lake basin</u>	
Sunflower Wash near Essex.....	40
<u>Dale Lake basin</u>	
Quail Wash near Joshua Tree.....	40
Fortynine Palms Creek near Twentynine Palms.....	41
<u>Chuckwalla Valley</u>	
Corn Springs Wash near Desert Center.....	41
Eagle Creek at Eagle Mountain.....	41
<u>Salton Sea basin</u>	
Salton Sea near Westmoreland.....	42
Inflow to Salton Sea.....	42
Salt Creek near Mecca.....	43
Alamo River near Niland.....	44
New River near Westmoreland.....	45
San Felipe Creek near Julian.....	46
Coyote Creek near Borrego Springs.....	47
Borrego Palm Creek near Borrego Springs.....	48
Carrizo Creek:	
Vallecito Creek near Julian.....	49
San Felipe Creek near Westmoreland.....	50
Whitewater River at White Water.....	51
Snow Creek near White Water.....	52
Morongo Wash:	
Long Creek near Desert Hot Springs.....	53
Tahquitz Creek near Palm Springs.....	54
Palm Canyon Creek near Palm Springs.....	55
Andreas Creek near Palm Springs.....	56
Deep Creek near Palm Desert.....	57
Whitewater River near Mecca.....	58
Cottonwood Wash near Cottonwood Spring.....	59
<u>Emerson Lake basin</u>	
Pipes Creek near Yucca Valley.....	59
<u>Lucerne Dry Lake basin</u>	
Cushenbury Creek near Lucerne Valley.....	59
<u>Mojave River basin</u>	
Deep Creek (head of Mojave River) near Hesperia.....	60
West Fork Mojave River near Hesperia.....	61
Mojave River at lower narrows, near Victorville.....	62
Beacon Creek at Helendale.....	64
Mojave River at Barstow.....	64
Mojave River at Afton.....	65
<u>Antelope Valley</u>	
Big Rock Creek near Valyermo.....	66
Cooper Creek:	
Buckhorn Creek near Valyermo.....	68
Little Rock Creek near Little Rock.....	69

CONTENTS

V

Gaging-station records--Continued

Antelope Valley--Continued

Page

Oak Creek near Mojave..... 70

Koehn Lake basin

Pine Tree Creek near Mojave..... 71

Indian Wells Valley

Little Lake Creek near Little Lake..... 71

Ninemile Creek near Brown..... 72

Owens Lake basin

Owens River:

Convict Creek near Mammoth Lakes..... 73

Rock Creek at Little Round Valley, near Bishop..... 74

Pine Creek at diversion box, near Bishop..... 75

Silver Canyon Creek near Laws..... 76

Big Pine Creek near Big Pine..... 77

Owens River near Big Pine..... 79

Independence Creek below Pinyon Creek, near Independence..... 80

Mazourka Creek near Independence..... 81

Owens River at Keeler Bridge, near Lone Pine..... 82

Cottonwood Creek near Olancho..... 83

Mono Lake basin

Mono Lake near Mono Lake..... 84

Rush Creek above Grant Lake, near June Lake..... 85

Lee Vining Creek near Lee Vining..... 86

Tia Juana River basin

Cottonwood Creek (head of Tia Juana River) at Morena Dam..... 87

Cottonwood Creek at Barrett Dam, near Dulzura..... 88

Cottonwood Creek above Tecate Creek, near Dulzura..... 88

Tecate Creek:

Campo Creek:

Miller Creek near Live Oak Springs..... 89

Campo Creek near Campo..... 89

Tia Juana River near Dulzura..... 89

Rodriguez Reservoir at Rodriguez Dam, Baja California, Mex..... 90

Tia Juana River near Nestor..... 90

Otay River basin

Jamul Creek (head of Otay River) near Jamul..... 90

Sweetwater River basin

Sweetwater River near Descanso..... 91

Sweetwater River at Loveland Dam, near Alpine..... 93

Sweetwater River at Sweetwater Dam..... 94

San Diego River basin

San Diego River:

Boulder Creek at Cuyamaca Reservoir, near Julian..... 95

San Diego River at El Capitan Dam..... 96

San Diego River near Santee..... 97

San Dieguito River basin

Santa Ysabel Creek (head of San Dieguito River) at Sutherland Dam..... 98

Santa Ysabel Creek near Ramona..... 99

Santa Ysabel Creek near San Pasqual..... 100

Gaging-station records--Continued

San Dieguito River basin--Continued

Santa Ysabel Creek--Continued

Page

Guejito Creek near San Pasqual..... 101

Santa Maria Creek near Ramona..... 102

San Dieguito River near San Pasqual..... 102

San Dieguito River at Lake Hodges..... 103

San Luis Rey River basin

San Luis Rey River:

Agua Caliente Creek near Warner Springs..... 104

West Fork San Luis Rey River near Warner Springs..... 105

San Luis Rey River at Lake Henshaw, near Mesa Grande..... 106

San Luis Rey River at Monserate Narrows, near Pala..... 106

San Luis Rey River near Bonsall..... 107

San Luis Rey River at Oceanside..... 107

Santa Margarita River basin

Temecula Creek (head of Santa Margarita River) near Aguanga..... 108

Temecula Creek at Vail Dam..... 109

Murrieta Creek at Temecula..... 110

Santa Margarita River near Temecula..... 111

Santa Margarita River near Fallbrook..... 112

Santa Margarita River tributary near Fallbrook..... 113

De Luz Creek near Fallbrook..... 113

Santa Margarita River at Ysidora..... 114

Las Flores Creek basin

Las Flores Creek near Oceanside..... 114

San Onofre Creek basin

San Onofre Creek near San Onofre..... 115

San Onofre Creek at San Onofre..... 115

San Mateo Creek basin

San Mateo Creek near San Clemente..... 116

Cristianitos Creek near San Clemente..... 117

San Mateo Creek at San Onofre..... 117

San Juan Creek basin

San Juan Creek near San Juan Capistrano..... 118

Arroyo Trabuco near San Juan Capistrano..... 120

Aliso Creek basin

Aliso Creek at El Toro..... 121

Peters Canyon Wash basin

Peters Canyon Wash:

San Diego Creek near Irving..... 122

Santa Ana River basin (see schematic diagram p. 494)

Santa Ana River:

Bear Creek:

Big Bear Lake near Big Bear Lake..... 123

Santa Ana River near Mentone..... 124

Mill Creek near Yucaipa..... 126

Mill Creek near Mentone..... 128

Plunge Creek near East Highlands..... 129

CONTENTS

VII

Gaging-station records--Continued	
Santa Ana River basin--Continued	
Santa Ana River--Continued	Page
City Creek near Highland.....	131
Santa Ana River at Waterman Avenue, at San Bernardino.....	133
San Timoteo Creek:	
Little San Gorgonio Creek near Beaumont.....	134
San Timoteo Creek near Redlands.....	135
San Timoteo Creek near Loma Linda.....	136
Warm Creek:	
East Twin Creek near Arrowhead Springs.....	137
Waterman Canyon Creek near Arrowhead Springs.....	138
Warm Creek Floodway at San Bernardino.....	139
Warm Creek near San Bernardino.....	142
Meeks & Daley Canal near Colton.....	143
Lytle Creek near Fontana.....	144
Cajon Creek near Keenbrook.....	146
Lone Pine Creek near Keenbrook.....	147
Devil Canyon Creek near San Bernardino.....	148
Santa Ana River at Colton.....	149
Santa Ana River at Riverside Narrows, near Arlington.....	150
Sheehan ditch at Riverside Narrows, near Arlington.....	151
Day Creek near Etiwanda.....	153
Santa Ana River at Auburndale Bridge, near Corona.....	155
San Jacinto River:	
Lake Hemet near Idyllwild.....	156
South Fork San Jacinto River tributary near Valle Vista.....	157
San Jacinto River near San Jacinto.....	158
Bautista Creek near Hemet.....	160
San Jacinto River near Elsinore.....	161
Elsinore Lake at Elsinore.....	162
Temescal Creek near Corona.....	162
Chino Creek:	
San Antonio Creek near Claremont.....	163
Cucamonga Creek near Upland.....	165
Santa Ana River below Prado Dam.....	166
Carbon Creek below Carbon Canyon Dam.....	167
Santiago Creek at Modjeska.....	168
Santiago Creek at Santiago Dam, near Villa Park.....	169
Santiago Creek at Santa Ana.....	170
Santa Ana River at Santa Ana.....	171
<u>San Gabriel River basin</u>	
East Fork San Gabriel River near Camp Bonita.....	172
West Fork San Gabriel River at Camp Rincon.....	173
San Gabriel River near Azusa.....	174
Fish Creek near Duarte.....	175
San Gabriel River below Santa Fe Dam, near Baldwin Park.....	176
Walnut Creek:	
Dalton Creek:	
San Dimas Creek below San Dimas Dam.....	176

Gaging-station records--Continued

San Gabriel River basin--Continued

San Gabriel River--Continued

Walnut Creek--Continued

Dalton Creek--Continued

	Page
Little Dalton Creek near Glendora.....	177
San Gabriel River above Whittier Narrows Dam.....	178
San Jose Creek near Whittier.....	179
San Gabriel River at Pico.....	180
San Gabriel River at Spring Street, near Los Alamitos.....	181
Coyote Creek:	
Brea Creek below Brea Dam, near Fullerton.....	182
Brea Creek at Fullerton.....	183
Fullerton Creek below Fullerton Dam, near Brea.....	184
Fullerton Creek at Fullerton.....	185
Fullerton Creek at Richman Avenue, near Fullerton.....	186
Coyote Creek at Los Alamitos.....	191
<u>Los Angeles River basin</u>	
Los Angeles River at Sepulveda Dam.....	192
Pacoima Creek near San Fernando.....	193
Tujunga Creek below Mill Creek, near Colby Ranch.....	194
Tujunga Creek near Sunland.....	195
Little Tujunga Creek near San Fernando.....	196
Tujunga Creek below Hansen Dam.....	196
Los Angeles River at Los Angeles.....	197
Arroyo Seco near Pasadena.....	198
Los Angeles River near Downey.....	199
Rio Hondo:	
Santa Anita Creek near Sierra Madre.....	200
Eaton Creek near Pasadena.....	201
Rio Hondo above Whittier Narrows Dam.....	202
Rio Hondo near Montebello.....	203
Mission Creek near Montebello.....	204
Mission Creek below Whittier Narrows Dam.....	204
Rio Hondo near Downey.....	205
Los Angeles River at Long Beach.....	206
<u>Ballona Creek basin</u>	
Ballona Creek near Culver City.....	207
<u>Topanga Creek basin</u>	
Topanga Creek near Topanga Beach.....	208
<u>Malibu Creek basin</u>	
Malibu Creek at Crater Camp, near Calabasas.....	209
<u>Santa Clara River basin</u>	
Santa Clara River at Los Angeles-Ventura County line.....	210
Piru Creek above Lake Piru.....	211
Lake Piru near Piru.....	212
Piru Creek below Santa Felicia Dam.....	213
Hopper Creek near Piru.....	214
Sespe Creek near Wheeler Springs.....	215

CONTENTS

IX

Gaging-station records--Continued

Santa Clara River basin--Continued

Santa Clara River--Continued

Page

Sespe Creek near Fillmore..... 217

Santa Paula Creek near Santa Paula..... 219

Ventura River basin

Matilija Creek (head of Ventura River) above reservoir, near

Matilija Hot Springs..... 220

Matilija Reservoir at Matilija Hot Springs..... 221

Matilija Creek at Matilija Hot Springs..... 222

North Fork Matilija Creek at Matilija Hot Springs..... 223

Ventura River near Meiners Oaks..... 224

San Antonio Creek at Casitas Springs..... 225

Coyote Creek near Oak View..... 226

Santa Ana Creek near Oak View..... 227

Ventura River near Ventura..... 228

Carpinteria Creek basin

Carpinteria Creek near Carpinteria..... 230

Atascadero Creek basin

Atascadero Creek near Goleta..... 231

San Jose Creek basin

San Jose Creek near Goleta..... 232

Santa Ynez River basin

Santa Ynez River at Jameson Lake, near Montecito..... 233

Santa Ynez River above Gibraltar Dam, near Santa Barbara..... 234

Santa Ynez River below Gibraltar Dam, near Santa Barbara..... 235

Santa Ynez River below Los Laureles Canyon, near Santa Ynez..... 236

Santa Cruz Creek near Santa Ynez..... 237

Lake Cachuma near Santa Ynez..... 238

Santa Ynez River near Santa Ynez..... 239

Santa Agueda Creek near Santa Ynez..... 240

Santa Ynez River at Grand Avenue, near Santa Ynez..... 240

Alisal Creek near Solvang..... 241

Santa Ynez River at Solvang..... 242

Santa Ynez River near Buellton..... 243

Santa Ynez River at Santa Rosa damsite, near Buellton..... 244

Santa Ynez River at Cooper's Reef, near Lompoc..... 245

Salsipuedes Creek near Lompoc..... 246

Santa Ynez River at 13th Street, near Lompoc..... 247

Santa Ynez River at barrier, near Surf..... 248

San Antonio Creek basin

San Antonio Creek near Casmalia..... 249

Santa Maria River basin

Cuyama River (head of Santa Maria River):

Aliso Canyon Creek near New Cuyama..... 250

Cuyama River below Buckhorn Canyon, near Santa Maria..... 250

Alamo Creek near Nipomo..... 250

Huasna River near Arroyo Grande..... 251

Gaging-station records--Continued

Santa Maria River basin--Continued	Page
Cuyama River below Twitchell Dam.....	252
Sisquoc River near Sisquoc.....	253
La Brea Creek near Sisquoc.....	254
Tepusquet Creek near Sisquoc.....	255
Sisquoc River near Garey.....	256
Santa Maria River at Guadalupe.....	257
<u>Arroyo Grande basin</u>	
Arroyo Grande near Arroyo Grande.....	257
Arroyo Grande at Arroyo Grande.....	258
<u>Santa Rosa Creek basin</u>	
Santa Rosa Creek near Cambria.....	259
<u>Arroyo de la Cruz basin</u>	
Arroyo de la Cruz near San Simeon.....	260
<u>Big Sur River basin</u>	
Big Sur River near Big Sur.....	261
<u>Carmel River basin</u>	
Carmel River at Robles del Rio.....	262
Carmel River near Carmel.....	263
<u>Salinas River basin</u>	
Salinas River near Pozo.....	264
Toro Creek near Pozo.....	265
Salinas Reservoir near Pozo.....	266
Salinas River above Pilitas Creek, near Santa Margarita.....	267
Jack Creek near Templeton.....	268
Santa Rita Creek near Templeton.....	269
Salinas River at Paso Robles.....	270
Huerhuero Creek near Creston.....	271
Estrella River:	
Cholame Creek:	
Cholame Creek tributary near Cholame.....	272
Cholame Creek near Shandon.....	273
Estrella River near Estrella.....	274
Nacimiento River near Bryson.....	275
Nacimiento River below Nacimiento Dam, near Bradley.....	276
San Antonio River at Sam Jones Bridge, near Lockwood.....	277
San Antonio River at Pleyto.....	279
Salinas River near Bradley.....	280
San Lorenzo Creek:	
Cow Creek near Ardo.....	281
San Lorenzo Creek below Bitterwater Creek, near King City.....	282
Arroyo Seco near Greenfield.....	283
Arroyo Seco near Soledad.....	284
Salinas River near Spreckels.....	285
El Toro Creek near Spreckels.....	286
<u>Pajaro River basin</u>	
Pajaro River:	
Cedar Creek near Bell Station.....	289

CONTENTS

XI

Gaging-station records--Continued

Pajaro River basin--Continued

Pajaro River--Continued

Pacheco Creek near Dunneville.....	290
Llagas Creek near Morgan Hill.....	291
Pajaro River near Gilroy.....	292
Carnadero Creek:	
Uvas Creek above Uvas Reservoir, near Morgan Hill.....	293
Bodfish Creek near Gilroy.....	294
Uvas Creek near Gilroy.....	295
San Benito River near Willow Creek School.....	296
Pescadero Creek near Paicines.....	297
Tres Pinos Creek near Tres Pinos.....	298
San Benito River near Hollister.....	299
Pajaro River at Chittenden.....	300
Corralitos Creek near Corralitos.....	301
Corralitos Creek at Freedom.....	302
Green Valley Creek near Corralitos.....	303
Reservoirs in Pajaro River basin.....	304
<u>Aptos Creek basin</u>	
Aptos Creek at Aptos.....	305
<u>Soquel Creek basin</u>	
Soquel Creek:	
West Branch Soquel Creek near Soquel.....	306
Soquel Creek at Soquel.....	307
<u>San Lorenzo River basin</u>	
San Lorenzo River:	
Zayante Creek at Zayante.....	308
San Lorenzo River at Big Trees.....	309
Branciforte Creek at Santa Cruz.....	310
<u>Scott Creek basin</u>	
Scott Creek above Little Creek, near Davenport.....	311
<u>Pescadero Creek basin</u>	
Pescadero Creek near Pescadero.....	312
Butano Creek near Pescadero.....	313
<u>Purisima Creek basin</u>	
Purisima Creek near Half Moon Bay.....	316
<u>Colma Creek basin</u>	
Colma Creek at South San Francisco.....	317
<u>Redwood Creek basin</u>	
Redwood Creek at Redwood City.....	318
<u>Atherton Drainage Channel basin</u>	
Sharon Creek near Menlo Park.....	319
<u>San Francisquito Creek basin</u>	
San Francisquito Creek below Ladera damsite, near Stanford University.....	320
San Francisquito Creek tributary near Stanford University.....	321
Los Trancos Creek:	
Los Trancos Creek tributary near Stanford University.....	322
San Francisquito Creek at Stanford University.....	323

Gaging-station records--Continued

	Page
<u>Matadero Creek basin</u>	
Matadero Creek at Palo Alto.....	324
<u>Stevens Creek basin</u>	
Stevens Creek Reservoir near Monte Vista.....	325
<u>Guadalupe River basin</u>	
Alamitos Creek (head of Guadalupe River) near New Almaden.....	326
Guadalupe River:	
Ross Creek at San Jose.....	327
Los Gatos Creek at Los Gatos.....	328
Guadalupe River at San Jose.....	329
Saratoga Creek at Saratoga.....	330
Reservoirs in Guadalupe River basin.....	331
<u>Coyote Creek basin</u>	
Coyote Creek near Gilroy.....	332
Coyote Creek near Madrone.....	333
Upper Penitencia Creek at San Jose.....	334
Reservoirs in Coyote Creek basin.....	335
<u>Alameda Creek basin</u>	
Alameda Creek:	
San Antonio Creek near Sunol.....	336
Arroyo de la Laguna:	
Arroyo Mocho Canal:	
Arroyo Mocho near Livermore.....	337
Arroyo Mocho near Pleasanton.....	338
Arroyo Valle above Lang Canyon, near Livermore.....	340
Arroyo Valle near Livermore.....	341
Arroyo Valle at Pleasanton.....	343
Alameda Creek near Niles.....	344
Dry Creek at Union City.....	345
Patterson Creek at Union City.....	346
Alameda Creek at Union City.....	347
<u>San Lorenzo Creek basin</u>	
San Lorenzo Creek at Hayward.....	348
<u>Rheem Creek basin</u>	
Rheem Creek at San Pablo.....	349
<u>Pinole Creek basin</u>	
Pinole Creek at Pinole.....	350
<u>Pacheco Creek basin</u>	
Walnut Creek (head of Pacheco Creek):	
San Ramon Creek at San Ramon.....	351
San Ramon Creek at Walnut Creek.....	352
Walnut Creek at Walnut Creek.....	353
<u>Napa River basin</u>	
Napa River near St. Helena.....	354
Dry Creek near Napa.....	356
Napa River near Napa.....	357
Napa Creek:	
Redwood Creek near Napa.....	358

Gaging-station records--Continued

<u>Sonoma Creek basin</u>	Page
Sonoma Creek at Boyes Hot Springs.....	359
<u>Novato Creek basin</u>	
Novato Creek near Novato.....	360
<u>Corte Madera Creek basin</u>	
Corte Madera Creek at Ross.....	361
<u>Walker Creek basin</u>	
Walker Creek near Tomales.....	362
<u>Salmon Creek basin</u>	
Salmon Creek at Bodega.....	363
<u>Russian River basin</u>	
Russian River near Redwood Valley.....	365
Russian River near Ukiah.....	366
East Fork Russian River near Calpella.....	367
East Fork Russian River near Ukiah.....	368
Russian River near Hopland.....	369
Feliz Creek near Hopland.....	370
Russian River near Cloverdale.....	371
Big Sulphur Creek near Cloverdale.....	372
Maacama Creek near Kellogg.....	373
Franz Creek near Kellogg.....	374
Russian River near Healdsburg.....	375
Dry Creek near Cloverdale.....	376
Dry Creek near Geyserville.....	377
Santa Rosa Creek near Santa Rosa.....	378
Russian River near Guerneville.....	379
Austin Creek near Cazadero.....	381
<u>Gualala River basin</u>	
South Fork Gualala River near Annapolis.....	382
<u>Garcia River basin</u>	
Garcia River near Point Arena.....	383
<u>Navarro River basin</u>	
Navarro River:	
Rancheria Creek near Boonville.....	385
Navarro River near Navarro.....	386
<u>Albion River basin</u>	
Albion River near Comptche.....	387
<u>Big River basin</u>	
Big River:	
South Fork Big River near Comptche.....	388
<u>Noyo River basin</u>	
Noyo River near Fort Bragg.....	389
<u>Pudding Creek basin</u>	
Pudding Creek near Fort Bragg.....	390
<u>Cottoneva Creek basin</u>	
Cottoneva Creek:	
Dunn Creek near Rockport.....	391
<u>Mattole River basin</u>	
Mattole River near Petrolia.....	392

Gaging-station records--Continued

Eel River basin

Eel River:	Page
Lake Pillsbury near Potter Valley.....	393
Eel River below Scott Dam, near Potter Valley.....	394
Potter Valley powerhouse tailrace near Potter Valley.....	396
Eel River at Van Arsdale Dam, near Potter Valley.....	397
Tomki Creek near Willits.....	398
Outlet Creek near Longvale.....	400
Eel River above Dos Rios.....	401
Middle Fork Eel River:	
Black Butte River near Covelo.....	403
Middle Fork Eel River below Black Butte River, near Covelo.....	405
Williams Creek near Covelo.....	406
Mill Creek below Alder Creek, near Covelo.....	407
Short Creek near Covelo.....	408
Mill Creek near Covelo.....	409
Eel River below Dos Rios.....	410
North Fork Eel River:	
Hulls Creek near Covelo.....	411
North Fork Eel River near Mina.....	412
Eel River at Alderpoint.....	413
South Fork Eel River near Branscomb.....	415
Tenmile Creek near Laytonville.....	417
South Fork Eel River near Miranda.....	418
Bull Creek near Weott.....	420
Larabee Creek near Holmes.....	421
Eel River at Scotia.....	422
Van Duzen River near Dinsmores.....	424
South Fork Van Duzen River near Bridgeville.....	425
Van Duzen River near Bridgeville.....	427

Elk River basin

Elk River near Falk.....	429
--------------------------	-----

Jacoby Creek basin

Jacoby Creek near Freshwater.....	430
-----------------------------------	-----

Mad River basin

Mad River near Forest Glen.....	431
North Fork Mad River near Korbelt.....	433
Mad River near Arcata.....	434

Little River basin

Little River at Crannell.....	437
-------------------------------	-----

Redwood Creek basin

Redwood Creek at Orick.....	439
-----------------------------	-----

Lower Klamath Lake basin (closed basin adjacent to Klamath River basin)

Dry Lake tributary at Perez.....	440
Antelope Creek near Tennant.....	441

Klamath River basin

Klamath River below John C. Boyle powerplant, near Keno, Oreg.....	442
--	-----

CONTENTS

XV

Gaging-station records--Continued

	Page
Klamath River basin--Continued	
Klamath River below Iron Gate Dam.....	443
Shasta River:	
Little Shasta River near Montague.....	445
Shasta River near Yreka.....	446
Beaver Creek near Klamath River.....	447
Scott River:	
East Fork Scott River at Callahan.....	448
Moffet Creek near Fort Jones.....	449
Scott River near Fort Jones.....	450
Klamath River near Seiad Valley.....	451
Indian Creek near Happy Camp.....	453
Elk Creek near Happy Camp.....	454
Ti Creek near Somesbar.....	455
South Fork Salmon River (head of Salmon River) near Forks of Salmon.....	456
Salmon River:	
North Fork Salmon River near Forks of Salmon.....	457
Salmon River at Somesbar.....	458
Klamath River at Somesbar.....	459
Red Cap Creek near Orleans.....	460
Bluff Creek near Weitchpec.....	461
Trinity River above Coffee Creek, near Trinity Center.....	462
Coffee Creek near Trinity Center.....	463
Clair Engle Lake near Lewiston.....	464
Judge Francis Carr powerplant near French Gulch.....	465
Trinity River at Lewiston.....	467
Weaver Creek near Douglas City.....	469
Browns Creek near Douglas City.....	470
North Fork Trinity River at Helena.....	471
Trinity River near Burnt Ranch.....	472
New River at Denny.....	474
South Fork Trinity River at Forest Glen.....	475
South Fork Trinity River near Hyampom.....	476
Hayfork Creek near Hayfork.....	478
Big Creek near Hayfork.....	479
Hayfork Creek near Hyampom.....	480
South Fork Trinity River near Salyer.....	482
Willow Creek at Willow Creek.....	484
Trinity River near Hoopa.....	485
Klamath River near Klamath.....	487
<u>Smith River basin</u>	
Middle Fork Smith River (head of Smith River) at Gasquet.....	488
Smith River near Crescent City.....	490
<u>Lopez Creek basin</u>	
Lopez Creek near Smith River.....	491
Discharge at partial-record stations and miscellaneous sites.....	492
Crest-stage partial-record stations.....	492
Santa Ana River, absorption studies.....	493
schematic diagram of.....	494
Index.....	495

SURFACE WATER RECORDS OF CALIFORNIA, 1964

INTRODUCTION

The surface-water records for the 1964 water year for gaging stations, partial-record stations, and miscellaneous sites within the State of California are given in this report. For convenience there are also included records for a few pertinent gaging stations in bordering States. The records were collected and computed by the Water Resources Division of the U.S. Geological Survey, under the direction of Walter Hofmann, district engineer, Surface Water Branch.

Through September 30, 1960, the records of discharge and stage of streams and contents and stage of lakes or reservoirs were published in an annual series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Since 1951 there have been 20 volumes in the series; each volume covered an area whose boundaries coincided with those of certain natural drainage areas. The records in California were contained in parts 9, 10, and 11 of that series.

Beginning with the 1961 water year, streamflow records and related data are being released by the Geological Survey in annual reports on a State-boundary basis. Distribution of these basic-data reports is limited and primarily for local needs. The records later will be published in Geological Survey water-supply papers at 5-year intervals. These 5-year water-supply papers will show daily discharge and will be compiled on the same geographical areas previously used for the annual series; however, some of the 14 parts of conterminous United States will be further subdivided.

COOPERATION

In California the work was done under cooperative agreements with:

State Department of Water Resources, W. E. Warne, Director.
Alameda County Water District, M. P. Whitfield, General
Manager.
Calaveras County Water District, Paul E. Lewis, Secretary-
Manager.
Contra Costa County Flood Control and Water Conservation
District, C. C. Rich, Chief Engineer.
Lake County Flood Control and Water Conservation District,
Willard D. Hansen, Manager.
Montecito County Water District, Delbert D. Smith, General
Manager.
Monterey County Flood Control and Water Conservation Dis-
trict, Loren Bunte, Jr., District Engineer.
San Bernardino County Flood Control District, W. A. Sidler,
Chief Engineer.
Santa Clara County Flood Control and Water Conservation
District, Donald K. Currllin, Manager-Counsel.
Orange County Flood Control District, H. G. Osborne, Chief
Engineer.
San Luis Obispo County Flood Control and Water Conserva-
tion District, Robert H. Born, County Hydraulic Engineer.
Santa Barbara County Water Agency, C. W. Bradbury, Chairman.
Santa Cruz County Flood Control and Water Conservation
District, Warren M. Harrison, Director of Public Works.
City of Arcata, Philip Brown, City Manager.
City of San Diego, R. E. Graham, Director of Utilities.
City of Santa Barbara Water Department, Clyde Richardson,
Director.
Alameda Flood Control and Water Conservation District,
Richard W. Karn, Engineer-Manager.
Antelope-Valley-East Kern Water Agency, Randle G. Lunt,
Chief Engineer and General Manager.
East Bay Municipal Utility District, John W. McFarland,
General Manager.
Georgetown Divide Public Utility District, J. E.
Christensen, Manager.
Imperial Irrigation District, R. F. Carter, General
Manager.
San Bernardino Valley Water Conservation District, Edward
F. Dibble, Engineer and Secretary.
Santa Maria Valley Water Conservation District, L. H. Adam,
President.
Ventura River Municipal Water District, Leland G. Bennett,
General Manager and Chief Engineer.

Assistance in the form of funds or services was given by the Corps of Engineers, U. S. Army; U. S. Navy; Bureau of Reclamation and National Park Service, U. S. Department of the Interior; by the Forest Service, U. S. Department of Agriculture, and the city and county of San Francisco, in collecting records published herein.

The following organizations and individuals aided in collecting records: The Pacific Power and Light Co.; California Water and Telephone Co.; The Irvine Ranch; Kings River Water Association; Los Angeles City Department of Water and Power; Los Angeles County Flood Control District; Pauba Ranch; Pacific Gas & Electric Co.; Placer County Water Agency; Sacramento Municipal Utility District; Southern California Edison Co.; United Water Conservation District; Ventura County Water Resources Division; and Helix, Madera, Merced, Modesto, Nevada, Serrano and Carpenter, Turlock, Oakdale, Oroville-Wyandotte, South San Joaquin, Vista, and Woodbridge Irrigation Districts.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms of streamflow and other hydrologic data, as used in this report, are defined as follows:

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. When used in connection with a discharge record, the term is applied only to those gaging stations where a continuous record of discharge is obtained.

Hydrologic bench mark is an area or basin in which the hydrologic regimen will likely be governed solely by natural conditions. Such a basin provides a reference for separating the effects of cultural changes in other basins with similar climate, physiography, and geology.

Partial-record station is a particular site where limited streamflow data are collected systematically over a period of years for use in hydrologic analyses.

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

Cubic feet per second per square mile (cfsm) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Runoff in inches (in.) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Acre-foot (ac-ft) is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as volume per unit of time.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, a long reach of the channel, or an artificial structure.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is so enclosed by a topographic divide that direct surface runoff from precipitation normally would drain by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBERS

Stations are listed in the same downstream order used in the water-supply papers. Records are listed in a downstream direction along the main stem with all stations on a tributary entering above a main-stem station listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indentation in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indentation shows which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

As an added means of identification, each gaging station and partial-record station has been assigned a station number. The numbers have been assigned in the same downstream order used in the annual series of water-supply papers. In assigning station numbers, no distinction is made between partial-record stations and continuous-record gaging stations, so that the station number for a partial-record station indicates downstream order position in a list made up of both types of stations. Gaps are left in the numbers to allow for new stations that may be established; hence the numbers are not consecutive.

The complete number for each station, such as 11-1208.00 includes the part number "11" and a six digit station number. In this report, the part number and only the essential digits of the station number are shown. For example, the complete number 11-1208.00 would appear as 11-1208, just to the left of the station name. In this report, the records are listed in downstream order by parts. All records for a drainage basin encompassing more than one State could be arranged in downstream order by assembling pages from the various State reports by station number to include all records in the basin.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. Records of stage are obtained from a water-stage recorder that gives a continuous chart of the fluctuations (for digital recorders, a tape punched at 15-minute intervals) or from direct readings on a nonrecording gage. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge.

Rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, or computation of flow over dams or weirs), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to those rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge

is determined by shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is in effect the shifting-control method.

At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in determining discharge. Information required for determining the slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage. For such stations, the rate of change in stage is used as a factor in determining discharge.

At some gaging stations the stage-discharge relation is affected by ice during the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for other stations in the same or nearby basins.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute the daily discharge. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, adjoining good record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins.

The data in this report generally comprise a description of the station, a skeleton rating table, and a table showing the daily discharge and monthly and yearly discharge of the stream. Records are published for the water year which begins on October 1 and ends on September 30. A calendar for the 1964 water year is shown on page II to facilitate finding the day of the week for any date.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, and general remarks. The location of the gaging station and the drainage area are obtained from the most accurate maps available. Under "Records available" are given periods for which there are published records for the present station or for stations generally equivalent to the present one. Under "Gage" are given the type of gage currently in use and the datum of the gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of records available. The references to "datum of 1929" and adjustments of other years are to the datum and adjustments of the U.S. Coast and Geodetic Survey. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations having fewer than five complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height if it is significant. In the first paragraph, the data given are for the complete current water year unless otherwise specified. In the second paragraph, the data given are for the periods of record within the calendar year dates in the heading (not necessarily those for the complete years indicated by the heading dates). Reliable information concerning major floods that have occurred outside the period of record are given in the third or last paragraph under "Extremes." Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, a crest-stage indicator, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and to conditions which affect the natural flow at the gaging station is given under "Remarks".

Skeleton rating tables are published for all stations except those for which the daily discharge for the greater part of the open-water period was determined by the shifting-control method, the slope method, or other special methods involving an equivalent adjustment to the gage height of more than one-tenth foot. Skeleton rating tables generally are not published for canals, ditches, or springs.

The daily table gives the discharge corresponding to the daily mean gage height unless there are large or rapid changes in discharge during a day. For days having large or rapid changes, discharge for the day is computed by averaging the mean discharges for several parts of a day. For digital recorders, the daily mean discharge is always the average of the discharges at each punched reading. For stations equipped with nonrecording gages, the daily discharge corresponds to once-daily readings of the gage or to the mean of twice-daily readings; but for periods of rapidly changing stage the discharge is determined from a gage-height graph based on gage readings.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily figures; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Maximum daily and minimum daily discharges for the month are listed in the next two lines. Discharge for the month for three stations only is expressed in cubic feet per second per square mile (line headed "Cfsm"), in inches (line headed "In."), and in acre-feet (line headed "Ac-ft"). Discharge for the month for all other stations is expressed in acre-feet (line headed "Ac-ft"). For those stations equipped with a tipping-bucket rain gage, precipitation, in inches, is given for the month.

In the yearly summary below the monthly summary, the figures of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Peak discharges and the times of their occurrence and corresponding gage heights for most stations are listed below the table of daily and monthly discharge. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year can be presented. Peak discharges are not published for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour time, for example 12:30 a.m. is 0030, 1:30 p.m. is 1330.

Footnotes to the table of daily discharge indicate periods for which discharge was computed or estimated by unusual or special methods because of no gage-height record, ice effect, or other conditions that reduce the degree of accuracy of the records. The footnotes are either reference footnotes, with corresponding symbols used in the table of daily discharge to indicate the days included, or general footnotes, introduced by the word "Note," in which the days included are stated.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published each year for all reservoirs for which records are published on a daily basis, but it is not published for reservoirs for which only monthly data are given.

For those stations equipped with a thermograph, a table of daily maximum and minimum water temperatures is included.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good," less than 10 percent; "fair," less than 15 percent; and "poor," probably more than 15 percent. The records of monthly and yearly mean discharge and runoff are, in general, more nearly accurate than the daily records.

Discharge at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur when relatively large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

SUPPLEMENTAL DATA

Data for most crest-stage partial record stations in California are not included in this report. They are published separately in an annual progress report, Floods from Small Drainage Areas, copies of which may be obtained from the district office. Data from other partial-record stations and measurements made at miscellaneous sites are given at the end of this report. Occasionally, a series of discharge measurements are made within a short time period to investigate the seepage gains or losses along a reach of a stream or to determine the low-flow characteristics of an area. Such

measurements are given in special tables after the list of measurements at miscellaneous sites.

Information of a more detailed nature than that published for most of the gaging stations is on file in the district office, such as discharge measurements and recorder charts or nonrecording-gage readings. Most gaging-station records in the State through 1958 have been analyzed with an electronic computer to give: (1) the number of days in each year that the daily discharge was between selected limits (duration tables); (2) the lowest mean discharge for selected numbers of consecutive days in each year; and (3) the highest mean discharge for selected numbers of consecutive days in each year. At many gaging stations water samples are collected from the streams for the purpose of making chemical analyses; computing dissolved solids, suspended sediment loads, and particle-size distribution; or measuring water temperatures. These data are published in a separate volume, Quality of Water in California, which may be obtained from the district office.

HYDROLOGIC CONDITIONS

Numerous storms during the first five months of the water year caused more than average runoff except in the south. On the east side of the Sierra, excessive runoff occurred in the West Walker basin. During the late spring and early summer months runoff was deficient in all parts of the State with the exception of isolated mountain and desert areas where thunder storm activity caused appreciable runoff. A five-day storm in the northeastern part of the State starting June 6, caused the highest rainfall of record at Alturas. For the remainder of the water year streamflow ranged from slightly above median in the north to below median in the south. Runoff ranged from 80 percent of median in the north coastal area to 31 percent in the south coastal area. The Sacramento and San Joaquin Valleys were about 63 percent of median and the San Francisco Bay and Central Coast areas were 45 and 41 percent of median, respectively.

COLORADO RIVER MAIN STEM

11

9-4230. Colorado River below Davis Dam, Ariz.-Nev.

Location.--Lat 35°11'30", long 114°34'15", in SE¼NE¼ sec.1, T.32 S., R.66 E., Mount Diablo meridian, on right bank half a mile downstream from Davis Dam, 29 miles west of Kingman, Ariz., and 68 miles downstream from Hoover Dam.

Drainage area.--169,300 sq mi, approximately.

Records available.--June 1905 to September 1907 (published as "at Hardyville"), March 1949 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 500.00 ft above mean sea level, datum of 1929. 1905-7, staff gage at site ¼ miles downstream at datum about 13.4 ft lower. Mar. 16 to May 3, 1949, water-stage recorder at site half a mile downstream at present datum. May 4, 1949, to Feb. 24, 1956, water-stage recorder at site 400 ft upstream at present datum.

Average discharge.--15 years (1949-64), 13,640 cfs (9,875,000 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 26,200 cfs July 2 (gage height, 6.54 ft); minimum daily, 4,820 cfs Dec. 8.

1905-7: Maximum daily discharge, 116,000 cfs June 20, 1906; minimum daily, 2,850 cfs Jan. 5, 1906.

1949-64: Maximum discharge, 31,200 cfs Apr. 22, 1952 (gage height, 13.91 ft); no flow at Davis Dam parts of several days July to September and Dec. 27, 1950, when gates in dam were closed; minimum daily discharge, 285 cfs Aug. 3, 1950.

Remarks.--Records excellent. Discharge measurements generally made two to three times a month. Flow regulated by Lake Mead since Feb. 1, 1935, and by Lake Mohave since Jan. 17, 1950. Many diversions upstream for irrigation, industrial, and municipal uses.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12,200	7,740	5,880	5,720	5,910	6,140	17,000	11,400	13,100	17,500	17,500	14,500
2	12,300	7,380	7,030	7,920	5,870	11,800	14,200	11,500	12,700	18,800	5,220	14,200
3	12,000	7,260	7,120	7,990	7,820	11,800	13,800	7,330	13,000	19,800	11,200	14,500
4	12,400	7,330	7,060	7,940	8,130	12,000	13,700	13,000	13,800	19,700	15,500	14,500
5	12,000	7,220	7,200	5,570	8,120	12,000	7,990	13,200	13,800	8,110	15,600	14,400
6	10,300	7,260	6,160	5,380	10,400	12,000	14,200	13,100	13,900	18,400	15,500	8,350
7	10,800	7,350	6,300	5,500	10,500	12,000	14,400	11,300	7,390	18,600	15,500	12,500
8	10,800	7,390	4,820	5,520	10,500	6,020	14,500	11,000	14,600	18,200	15,500	12,700
9	11,000	7,390	6,170	8,800	8,000	13,800	14,700	11,000	14,900	17,900	8,090	12,700
10	11,100	6,550	6,230	9,130	10,600	10,500	14,600	7,430	14,600	18,000	15,800	12,700
11	10,900	7,750	6,400	8,910	12,200	10,900	14,500	11,200	15,000	18,100	15,800	12,700
12	10,900	7,660	5,990	8,970	12,200	13,900	7,500	11,000	14,700	8,260	16,100	12,600
13	9,370	7,890	6,340	9,960	12,900	13,700	13,200	11,100	14,800	17,100	15,500	7,780
14	8,320	7,960	6,560	10,000	12,900	13,600	13,100	14,400	7,070	17,200	15,700	11,700
15	7,970	8,020	4,970	9,900	13,000	5,980	15,300	14,500	14,500	17,400	15,700	11,900
16	8,250	8,050	6,770	9,940	6,580	14,500	15,600	14,500	14,800	16,300	8,040	12,000
17	8,290	6,000	6,740	8,020	9,120	15,100	15,900	7,110	14,600	15,800	14,500	11,900
18	6,820	8,060	7,070	8,970	8,710	15,300	15,600	11,300	15,000	16,300	15,100	11,900
19	6,760	8,620	7,150	7,050	8,810	15,200	7,730	13,400	14,700	7,980	15,600	11,800
20	6,890	8,770	7,080	6,890	11,500	15,000	15,800	13,300	14,800	15,200	15,500	8,120
21	8,400	8,110	7,020	6,830	11,300	15,000	16,000	14,300	7,080	15,400	15,100	11,900
22	6,900	7,960	5,550	5,890	11,500	6,530	16,100	14,500	15,200	15,300	15,200	12,000
23	6,790	7,970	5,880	5,950	5,920	16,200	13,900	14,200	15,500	16,800	8,080	11,900
24	6,610	6,030	6,120	5,990	12,500	17,300	13,200	7,420	15,500	18,000	15,900	12,000
25	6,620	6,100	4,940	6,120	12,300	16,800	13,200	14,500	16,700	17,400	16,400	11,900
26	6,640	6,180	5,920	6,090	12,600	16,800	6,930	14,800	17,700	8,310	16,000	11,900
27	5,430	6,220	6,150	7,770	12,100	16,700	12,700	15,000	17,700	16,900	16,300	9,160
28	7,010	5,560	5,920	7,710	12,000	16,700	12,900	13,500	7,620	17,300	16,200	11,000
29	7,150	6,170	5,150	7,620	11,600	6,000	11,400	13,200	16,800	17,300	16,200	11,000
30	7,280	6,160	5,890	6,150	-----	17,400	11,100	13,300	17,200	17,300	8,040	11,100
31	7,250	-----	7,960	5,910	-----	17,900	-----	7,440	-----	17,300	14,300	-----
Total	275,450	218,110	195,540	230,110	295,590	404,570	400,750	374,230	418,760	501,960	440,670	357,310
Mean	8,885	7,270	6,308	7,423	10,190	13,050	13,360	12,070	13,960	16,190	14,220	11,910
Ac-ft	546,300	432,600	387,800	456,400	586,300	802,500	794,900	742,300	830,600	995,600	874,100	708,700

Calendar year 1963: Max 19,200 Min 4,240 Mean 11,790 Ac-ft 8,533,000

Water year 1963-64: Max 19,800 Min 4,820 Mean 11,240 Ac-ft 8,158,000

COLORADO RIVER MAIN STEM

9-4235. Colorado River at Needles, Calif.

Location.--Lat 34°51'05", long 114°36'35", in SE¹/₄SE¹/₄ sec.19, T.9 N., R.23 E., San Bernardino meridian, on right bank at Needles, 18 miles upstream from gaging station near Topock, Ariz., 31 miles downstream from Davis Dam, and 98 miles downstream from Hoover Dam.

Drainage area.--170,600 sq mi, approximately.

Records available.--April 1931 to September 1964 (elevations only).

Gage.--Water-stage recorder. Datum of gage is 400.00 ft above mean sea level, datum of 1929; gage readings have been reduced to elevations above mean sea level. Prior to May 15, 1942, at site 750 ft downstream and May 15, 1942, to Jan. 12, 1952, at present site, both at datum 66.23 ft higher.

Extremes.--Maximum elevation recorded during year, 471.46 ft July 5; minimum recorded 462.50 ft Oct. 26.

1931-64: Maximum elevation, 475.77 ft Nov. 30, 1944; minimum, about 462 ft Dec. 20, 28, 1961 (estimated on basis of records for station near Topock, Ariz., supplementary gage).

Remarks.--Flow regulated by Lake Mead since Feb. 1, 1935, and by Lake Mohave since Jan. 17, 1950.

Mean elevation, in feet, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	d 466.80	464.22	463.71	464.20	463.27	465.46	468.64	466.44	465.36	468.82	-	467.51
2	d 466.82	464.62	464.04	463.81	463.29	464.81	468.56	466.72	467.17	469.21	-	467.49
3	466.62	464.08	463.99	464.58	463.74	466.53	467.06	465.66	467.29	469.94	-	467.65
4	466.71	464.56	464.24	464.60	464.37	466.59	467.72	465.39	467.17	469.79	-	467.58
5	466.79	464.22	464.30	464.13	464.46	466.50	466.50	467.03	467.51	468.49	-	467.53
6	466.35	464.34	464.29	463.34	464.74	466.65	465.72	467.26	467.53	466.57	-	466.71
7	-	464.18	463.83	463.09	465.85	466.62	467.58	466.92	466.64	469.60	-	465.58
8	-	464.36	463.76	463.21	465.64	465.39	467.73	466.70	465.67	469.57	-	466.76
9	-	464.33	463.11	463.32	465.09	465.55	467.75	466.87	467.81	468.97	-	466.82
10	-	464.30	463.84	465.40	465.39	467.24	467.64	465.83	467.94	469.32	-	466.92
11	-	464.24	464.02	464.96	466.02	465.17	467.78	465.20	468.06	469.25	-	466.86
12	466.08	464.32	463.89	464.95	466.59	466.29	466.67	466.44	467.99	-	-	466.93
13	465.74	464.68	463.90	465.10	466.68	467.71	465.63	466.60	467.98	-	-	466.50
14	465.39	-	463.73	465.51	466.89	467.36	467.25	466.97	466.97	-	-	d 465.33
15	-	-	464.00	465.54	466.86	465.83	467.30	467.88	465.79	-	468.20	466.56
16	-	-	463.46	465.52	465.58	465.35	468.11	467.80	467.77	-	466.69	466.60
17	-	-	464.17	465.13	464.64	467.79	468.18	466.82	467.86	-	465.89	466.68
18	-	-	464.12	464.71	464.59	467.91	468.69	465.37	468.06	-	467.44	466.60
19	-	-	464.38	464.53	464.95	467.87	466.71	466.81	468.16	-	468.01	466.68
20	-	-	464.37	463.93	465.49	467.77	465.98	467.50	468.04	-	468.02	d 465.87
21	-	-	464.28	463.91	466.44	467.81	468.27	467.67	467.27	-	467.96	d 465.61
22	-	-	463.99	463.90	466.35	466.15	468.36	468.01	465.83	-	467.87	466.60
23	-	464.74	463.37	463.09	465.15	465.78	468.00	468.00	468.35	-	466.84	466.68
24	-	464.50	463.82	463.45	464.90	468.55	467.45	467.00	468.37	d 469.25	465.88	466.67
25	464.02	463.58	463.44	463.71	466.70	468.58	467.08	465.66	468.58	468.70	468.53	466.67
26	463.75	463.70	463.09	463.10	466.79	468.63	466.35	468.07	469.22	467.56	468.33	466.54
27	463.80	463.78	463.84	463.82	466.59	468.59	465.30	468.03	469.51	466.73	468.26	466.86
28	463.79	463.77	463.49	464.31	466.62	468.77	467.02	468.05	467.50	468.75	468.30	d 465.00
29	463.99	463.43	463.56	464.33	466.53	466.52	466.95	467.50	466.00	-	468.28	d 466.10
30	464.23	463.78	463.24	464.30	-----	465.82	466.29	467.46	468.80	-	467.12	d 466.17
31	464.25	-----	463.98	463.34	-----	469.01	-----	466.70	-----	-	465.61	-----

d Computed from reconstructed gage-height graph.

Note.--No gage-height record Oct. 7-11, 15-24, Nov. 14-22, July 12-23, 29-31, Aug. 1-14.

COLORADO RIVER MAIN STEM

13

9-4240. Colorado River near Topock, Ariz.

Location.--Lat 34°41'15", long 114°27'45", in SW¹/₄ NW¹/₄ sec.13, T.15 N., R.21 W., Gila and Salt River meridian, on left bank in Mohave Canyon, 2.7 miles downstream from Topock, 39.5 miles upstream from Parker Dam, and 49 miles downstream from Davis Dam.

Drainage area.--172,300 sq mi, approximately.

Records available.--January 1917 to September 1964. Daily mean elevations published since October 1938.

Gage.--Water-stage recorder. Datum of gage is 423.02 ft above mean sea level, datum of 1929; gage readings have been reduced to elevations above mean sea level. Prior to Dec. 3, 1922, at site about 1 mile upstream at different datum. Since May 1, 1939, supplementary water-stage recorder at former highway bridge at Topock, 2.7 miles upstream from base gage at datum 13.33 ft higher.

Average discharge.--17 years (1917-34), 20,260 cfs (14,670,000 acre-ft per year); 30 years (1934-64), 13,710 cfs (9,926,000 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 18,200 cfs July 5; maximum elevation, 456.93 July 5; minimum discharge, 5,160 cfs Dec. 30; minimum elevation, 450.95 ft Dec. 30.

1917-34: Maximum discharge probably exceeded 200,000 cfs June 22, 1921; minimum, 1,480 cfs Aug. 17, 1934.

1934-64: Maximum discharge, 35,700 cfs Jan. 29, 1942; maximum elevation, 457.37 ft, July 9, 1959; minimum discharge, 375 cfs Feb. 14, 1935; minimum daily, 422 cfs Feb. 14, 1935.

Discharge of about 300,000 cfs (based on determination at Lees Ferry gaging station) occurred about July 10, 1884. Discharge in excess of 400,000 cfs (estimated) probably occurred within the period 1857-68 and most likely in 1862.

Remarks.--Records excellent. Discharge measurements generally made twice a month. Many diversions above station for irrigation, municipal, and industrial uses. Flow regulated by Lake Mead since Feb. 1, 1935, and by Lake Mohave since Jan. 17, 1950.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10.800	7.240	6.580	7.400	6.590	11.600	15.400	11.900	11.100	15.400	16.300	13.300
2	11.100	7.600	6.490	6.430	6.410	9.240	15.800	12.000	12.600	16.000	16.000	13.600
3	11.200	7.200	7.080	7.420	6.500	11.300	14.700	11.700	12.800	16.800	10.600	13.700
4	11.200	7.480	7.200	7.800	7.520	11.400	14.600	10.300	12.900	17.300	12.900	13.800
5	11.500	7.360	7.280	7.740	7.720	11.600	13.600	12.000	13.300	17.100	14.000	13.800
6	11.400	7.400	7.480	6.590	7.800	11.800	11.500	12.400	13.500	14.100	14.600	13.500
7	10.700	7.360	6.830	6.220	9.270	11.900	13.200	12.600	13.500	16.200	14.700	11.100
8	10.600	7.420	7.040	6.110	9.460	11.500	13.500	12.300	11.200	16.600	14.700	12.000
9	10.500	7.520	6.090	6.110	9.510	9.560	13.700	12.200	13.200	16.800	14.500	12.200
10	10.500	7.520	6.740	8.070	8.800	12.000	13.900	11.900	13.800	16.900	11.800	12.300
11	10.500	7.120	6.950	8.390	9.820	10.700	13.900	10.600	14.200	17.000	14.200	12.300
12	10.500	7.600	6.990	8.430	10.800	11.000	13.800	11.500	14.400	16.300	14.700	12.400
13	10.300	7.600	6.870	8.670	11.000	12.500	11.000	11.500	14.600	13.400	14.800	12.300
14	9.640	7.820	6.700	9.220	11.700	12.700	12.500	11.700	14.300	15.200	14.800	10.200
15	8.870	7.880	7.040	9.510	11.800	12.300	12.600	12.900	11.600	15.600	15.000	11.400
16	8.450	7.840	6.090	9.570	11.600	9.910	13.700	13.400	13.500	15.900	14.600	11.600
17	8.390	7.900	7.040	9.570	9.440	12.600	14.100	13.300	14.000	15.600	11.800	11.600
18	8.340	6.950	7.100	8.940	9.730	13.200	14.900	10.900	14.200	15.600	13.200	11.800
19	7.560	7.840	7.360	8.850	9.440	13.700	14.200	11.700	14.500	15.200	13.900	11.800
20	7.460	8.130	7.480	8.070	9.600	13.900	11.800	12.600	14.500	12.400	14.300	11.500
21	7.440	8.430	7.460	7.720	10.700	14.100	13.900	12.900	14.300	14.100	14.500	10.100
22	7.880	8.050	7.420	7.560	10.900	13.700	14.400	13.500	11.700	14.400	14.500	11.300
23	7.360	8.000	6.500	6.740	10.700	11.000	14.600	13.800	13.900	14.700	14.200	11.400
24	7.280	8.070	6.580	6.700	8.650	14.000	14.300	13.700	14.400	15.700	11.500	11.600
25	7.120	6.930	6.630	6.760	11.200	14.700	13.800	11.200	14.800	15.900	14.000	11.700
26	7.100	6.760	5.840	6.610	11.600	15.200	13.300	13.300	15.500	15.900	14.500	11.700
27	6.930	6.780	6.340	6.590	11.800	15.500	10.800	13.700	16.200	13.200	14.800	12.200
28	6.580	6.800	6.520	7.600	11.800	15.800	12.200	14.000	15.800	15.300	15.000	10.200
29	7.140	6.340	6.290	7.700	12.000	15.100	12.500	13.700	12.800	15.800	15.200	10.900
30	7.240	6.540	5.680	7.720	-----	11.900	12.000	13.600	14.900	16.100	14.800	11.000
31	7.300	-----	6.400	6.910	-----	14.800	-----	13.300	-----	16.300	11.600	-----
Total	278,880	223,480	210,090	237,720	283,860	390,210	404,200	386,100	412,000	482,800	436,000	358,300
Mean	8,996	7,449	6,777	7,668	9,788	12,590	13,470	12,450	13,730	15,570	14,060	11,940
Ac-ft	553,200	443,300	416,700	471,500	563,000	774,000	801,700	765,800	817,200	957,600	864,800	710,700

Calendar year 1963: Max 18,200 Min 4,230 Mean 11,520 Ac-ft 8,339,000
 Water year 1963-64: Max 17,300 Min 5,680 Mean 11,210 Ac-ft 8,140,000

COLORADO RIVER MAIN STEM

9-4240. Colorado River near Topock, Ariz.--Continued

Mean elevation, in feet, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	453.81	452.29	451.78	452.19	451.77	453.96	455.72	454.24	453.85	455.78	455.95	454.70
2	453.96	452.47	451.71	451.68	451.67	452.94	455.89	454.30	454.47	456.02	455.83	454.82
3	453.99	452.27	452.01	452.20	451.72	453.84	455.45	454.13	454.56	456.37	453.50	454.85
4	454.01	452.41	452.05	452.39	452.25	453.90	455.42	453.56	454.63	456.58	454.50	454.91
5	454.12	452.35	452.07	452.36	452.35	453.97	454.99	454.28	454.80	456.50	455.02	454.90
6	454.09	452.36	452.15	451.77	452.39	454.07	454.06	454.44	454.88	455.23	455.25	454.77
7	453.76	452.32	451.80	451.56	453.07	454.13	454.78	454.52	454.86	456.13	455.31	453.75
8	453.74	452.34	451.89	451.50	453.16	453.97	454.93	454.40	453.88	456.29	455.30	454.15
9	453.69	452.37	451.35	451.50	453.18	453.11	455.03	454.37	454.74	456.35	455.21	454.22
10	453.70	452.36	451.69	452.52	452.86	454.20	455.09	454.22	455.01	456.40	454.06	454.28
11	453.70	452.15	451.80	452.67	453.32	453.63	455.11	453.67	455.18	456.44	455.09	454.26
12	453.70	452.37	451.82	452.69	453.74	453.75	455.07	454.07	455.27	456.17	455.28	454.28
13	453.63	452.36	451.76	452.80	453.82	454.40	453.84	454.07	455.34	454.93	455.34	454.22
14	453.34	452.45	451.67	453.05	454.09	454.52	454.49	454.14	455.25	455.68	455.35	453.32
15	453.00	452.47	451.85	453.18	454.15	454.36	454.54	454.68	454.09	455.85	455.41	453.84
16	452.82	452.45	451.34	453.21	454.10	453.31	455.01	454.86	454.91	455.97	455.24	453.96
17	452.79	452.48	451.87	453.21	453.10	454.48	455.21	454.85	455.12	455.82	454.02	453.91
18	452.78	452.00	451.91	452.92	453.22	454.76	455.51	453.76	455.23	455.81	454.65	453.97
19	452.41	452.45	452.05	452.88	453.08	454.96	455.24	454.14	455.34	455.60	454.97	454.01
20	452.37	452.59	452.12	452.52	453.14	455.08	454.18	454.53	455.37	454.40	455.11	453.85
21	452.37	452.73	452.12	452.35	453.64	455.15	455.12	454.65	455.28	455.14	455.19	453.26
22	452.59	452.55	452.11	452.27	453.69	455.01	455.32	454.90	454.16	455.24	455.19	453.77
23	452.34	452.53	451.64	451.85	453.62	453.84	455.41	455.00	455.11	455.35	455.09	453.84
24	452.31	452.56	451.69	451.83	452.68	455.13	455.28	454.97	455.34	455.72	453.92	453.89
25	452.23	451.99	451.73	451.86	453.79	455.45	455.04	453.87	455.49	455.80	455.00	453.96
26	452.22	451.90	451.30	451.78	453.97	455.65	454.86	454.80	455.81	455.79	455.22	453.96
27	452.13	451.91	451.59	451.77	454.05	455.78	453.74	454.97	456.11	454.64	455.34	454.16
28	451.94	451.92	451.70	452.29	454.04	455.90	454.38	455.12	455.95	455.53	455.40	453.30
29	452.24	451.67	451.58	452.34	454.11	455.62	454.48	454.97	454.65	455.75	455.49	453.60
30	452.29	451.78	451.25	452.35	-----	454.23	454.27	454.92	455.56	455.89	455.34	453.66
31	452.32	-----	451.66	451.94	-----	455.48	-----	454.79	-----	455.94	453.97	-----

9-4240.5. Chemehuevi Wash tributary near Needles, Calif.

Location---Lat 34°30'30", long 114°36'10", on right bank. on Havasu Lake road, 22 miles south of Needles, San Bernardino County.Drainage area---2.04 sq mi.Records available---December 1959 to September 1964. Peak discharges only December 1959 to September 1962.Gage---Flood-hydrograph recorder and crest-stage gage. Altitude of gage is 1,580 ft (from topographic map). December 1959 to April 1963, crest-stage gage only at same site and datum.Extremes---No flow during year.

1959-64: Maximum discharge, 114 cfs Sept. 26, 1962 (gage height, 8.51 ft, from crest-stage gage), by indirect measurement of maximum flow through culvert; no flow for most of each year.

Remarks---No flow since Sept. 26, 1962. No regulation or diversion above station.

DIVERSIONS FROM LAKE HAVASU

15

9-4241.5 (revised). Colorado River aqueduct near Parker Dam, Ariz.-Calif.

Location.--Lat 34°19'00", long 114°09'25", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.28, T.3 N., R.27 E., San Bernardino meridian, at intake pumping plant of Metropolitan Water District of Southern California on Lake Havasu, 1.8 miles upstream from Parker Dam and 154 miles downstream from Hoover Dam.

Records available.--January 1939 to September 1964 (monthly diversions only since October 1942). Published as a supplement to records for Colorado River below Parker Dam, 1942-50.

Gage.--Venturi meters in pressure lines at intake pumping plant.

Average discharge.--25 years, 538 cfs (389,500 acre-ft per year).

Extremes.--1939-64: Maximum daily diversion, 3,966 acre-ft (2,000 cfs) Dec. 15, 1960; no diversion at times.

Remarks.--Pumping began Jan. 7, 1939. Figures of monthly diversion shown represent water pumped from Lake Havasu less return surface flow from Gene and Copper Basin Reservoirs. No water returned as surface flow from these reservoirs this year. During this year 3,700 acre-ft of cooling water, which is included in the record of diversions, was returned to Lake Havasu at the pumping plant. Percolation from Gene and Copper Basin Reservoirs was measured in 4 washes between pumping plant and Copper Basin Wash by means of weirs, each about 1 mile from Colorado River. Percolation amounted to 5,120 acre-ft during the water year and was not subtracted from the diversion record.

Cooperation.--Records furnished by Metropolitan Water District of Southern California.

Monthly diversions, in acre-feet, water year October 1963 to September 1964

Month	Maximum	Minimum	Mean	Total
October.....	3,811	2,767	3,132	97,086
November.....	3,769	1,833	2,859	85,765
December.....	3,810	97	2,575	79,813
Calendar year 1963.....	3,811	0	2,896	1,057,132
January.....	3,840	1,069	2,530	78,433
February.....	3,636	1,322	2,499	72,460
March.....	3,474	2,963	3,225	99,990
April.....	3,495	0	2,726	81,775
May.....	3,593	3,300	3,392	105,140
June.....	3,445	3,129	3,353	100,585
July.....	3,481	2,702	3,298	102,248
August.....	3,501	2,829	3,205	99,348
September.....	3,499	2,965	3,288	98,626
Water year 1963-64.....	3,840	0	3,009	1,101,269

COLORADO RIVER MAIN STEM

9-4275. Lake Havasu near Parker Dam, Ariz.-Calif.

Location.--Lat $34^{\circ}19'00''$, long $114^{\circ}09'25''$, in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.28, T.3 N., R.27 E., San Bernardino meridian, at intake pumping plant for Colorado River aqueduct of Metropolitan Water District of Southern California, 1.8 miles upstream from Parker Dam on Colorado River, which is 156 miles downstream from Hoover Dam.

Drainage area.--178,800 sq mi, approximately.

Records available.--July 1938 to September 1964. Published as Parker Reservoir near Parker Dam 1938.

Gage.--Water-stage recorder. Datum of gage is 400.54 ft above mean sea level, datum of 1929. Gage readings have been reduced to elevations above mean sea level.

Extremes.--Maximum contents during year, 617,800 acre-ft June 1 (elevation, 450.46 ft); minimum, 519,800 acre-ft Feb. 11 (elevation, 445.27 ft).

1938-64: Maximum contents, 693,000 acre-ft (by temporary use of flashboards) Apr. 18, 1943, June 4, 1953; maximum elevation, 450.77 ft June 26, 1958; minimum contents, 71,400 acre-ft June 25, 1942 (elevation, 442.09 ft).

Remarks.--Lake is formed by concrete-arch dam; dam was completed and storage began July 1, 1938. Usable capacity, 619,400 acre-ft between elevation 400.54 (sill of regulating gates) and 450.54 ft (top of regulating gates) above mean sea level, based on re-survey of Lake Havasu made in April 1957 by Bureau of Reclamation between elevations 430.54 and 450.54 ft. Prior to Oct. 1, 1956, different capacity table used. Dead storage, 28,600 acre-ft below 400.54 ft (based on original survey). About 0.07 ft fall indicated between gage and Parker Dam under normal operating conditions. Drawdown below elevation 440.54 ft not legally permissible except by consent of the Metropolitan Water District of Southern California or in an emergency affecting the safety of the dam. Lake is used for flood control, power development, reregulation of river for irrigation demand, and as a basin from which water is pumped by Metropolitan Water District of Southern California to Colorado River aqueduct. Figures given herein represent usable contents. For record of diversion to Colorado River aqueduct and return flow, see record for Colorado River aqueduct near Parker Dam (sta 9-4241.5).

Contents, in acre-feet, at 2400, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	539,600	549,000	543,100	535,900	546,700	538,600	554,400	600,400	611,600	582,700	578,500	554,600
2	540,200	550,100	540,200	538,600	545,200	537,800	560,500	603,600	609,600	584,000	580,800	555,600
3	541,600	549,900	539,600	542,900	539,100	538,700	564,600	602,000	608,200	582,500	578,500	557,500
4	544,500	548,300	539,600	551,500	536,400	539,800	565,600	596,600	607,000	582,500	574,700	558,600
5	543,600	547,000	540,700	552,600	534,400	542,000	569,000	595,200	605,600	583,000	573,200	560,000
6	550,300	544,500	543,200	548,500	530,100	540,000	565,000	598,800	603,400	577,000	574,500	561,100
7	551,500	543,600	545,600	543,200	529,200	539,800	564,800	603,600	603,200	576,000	574,100	557,100
8	551,700	542,900	545,800	534,600	528,500	539,100	565,200	607,400	594,200	576,800	573,000	555,200
9	552,800	542,500	542,500	527,800	525,400	535,500	569,000	610,600	593,800	581,000	572,400	555,400
10	555,000	540,900	539,600	525,800	522,200	538,600	568,400	612,600	594,200	583,800	565,800	558,100
11	555,600	538,000	538,900	524,500	520,200	537,100	568,200	608,000	596,600	586,500	563,300	559,800
12	556,900	537,300	538,700	521,600	521,800	535,900	570,700	604,800	598,400	588,000	562,700	561,300
13	557,700	537,300	537,800	522,000	525,100	537,100	566,300	603,400	600,400	582,500	563,100	561,800
14	557,900	538,000	537,500	523,300	529,600	539,300	564,000	604,600	601,800	580,800	563,700	557,500
15	556,900	538,400	536,000	525,400	534,600	541,400	562,900	604,600	596,600	582,800	563,700	555,600
16	556,000	539,500	533,900	529,700	542,700	533,700	563,800	606,200	595,400	585,500	563,800	555,400
17	556,400	538,600	533,000	534,200	544,300	533,200	564,200	608,800	596,000	588,400	557,100	555,600
18	561,100	533,700	532,400	538,200	545,400	535,000	565,400	604,200	596,400	588,700	551,500	554,100
19	564,800	532,300	533,500	539,600	545,800	535,100	568,000	602,600	597,600	589,300	548,600	553,900
20	564,000	536,200	535,100	541,300	544,700	534,400	565,400	602,200	597,000	582,800	549,900	552,400
21	562,400	541,300	538,400	544,100	542,700	532,400	567,800	603,600	597,000	578,900	549,500	548,500
22	563,800	543,600	541,100	540,900	543,100	531,900	573,000	601,400	590,600	575,600	549,000	546,300
23	563,800	545,800	539,600	545,900	543,200	525,800	580,200	600,800	588,700	573,500	549,000	544,900
24	563,500	547,600	539,800	548,600	537,300	526,100	587,200	601,600	588,600	572,400	544,500	544,900
25	562,000	548,300	539,800	549,900	539,500	529,400	593,200	594,200	589,100	573,700	543,600	543,400
26	560,900	546,700	536,900	551,200	539,100	536,200	598,000	594,400	589,700	577,300	545,000	543,200
27	557,300	546,500	534,400	552,400	541,600	542,900	595,800	597,200	591,000	573,500	548,800	544,000
28	553,900	547,200	534,200	551,000	538,900	548,100	597,000	603,600	591,800	573,400	551,900	544,900
29	550,600	546,500	536,400	550,100	539,600	551,300	598,400	608,200	584,900	573,500	552,000	545,800
30	549,400	545,800	535,300	550,600	539,600	547,200	600,000	612,600	583,200	575,200	559,600	546,300
31	549,000	-----	534,800	549,500	-----	548,600	-----	615,200	-----	575,600	555,400	-----
(#)	+6,100	-3,200	-11,000	+14,700	-9,900	+9,000	+51,400	+15,200	-32,000	-7,600	-20,200	-9,100

Calendar year 1963.....# -5,200

Water year 1963-64.....# +3,400

Change in contents, in acre-feet.

COLORADO RIVER MAIN STEM

17

9-4275. Lake Havasu near Parker Dam, Ariz.-Calif.--Continued

Elevation, in feet, at 2400, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	446.37	446.89	446.56	446.16	446.76	446.31	447.19	449.59	450.15	448.68	448.46	447.20
2	446.40	446.95	446.40	446.31	446.68	446.27	447.51	449.75	450.05	448.75	448.58	447.25
3	446.48	446.94	446.37	446.55	446.34	446.32	447.73	449.67	449.98	448.67	448.46	447.35
4	446.64	446.85	446.37	447.03	446.19	446.38	447.78	449.40	449.92	448.67	448.26	447.41
5	446.87	446.78	446.43	447.09	446.08	446.50	447.96	449.33	449.85	448.70	448.18	447.48
6	446.96	446.64	446.57	446.86	445.84	446.39	447.75	449.51	449.74	448.38	448.25	447.54
7	447.03	446.59	446.70	446.57	445.79	446.38	447.74	449.75	449.73	448.33	448.23	447.33
8	447.04	446.55	446.71	446.09	445.75	446.34	447.76	449.94	449.28	448.37	448.17	447.23
9	447.10	446.53	446.53	445.71	445.58	446.14	447.96	450.10	449.26	448.59	448.14	447.24
10	447.22	446.44	446.37	445.60	445.40	446.31	447.93	450.20	449.28	448.74	447.79	447.38
11	447.25	446.28	446.33	445.53	445.29	446.23	447.92	449.97	449.40	448.88	447.66	447.47
12	447.32	446.24	446.32	445.37	445.38	446.16	448.05	449.81	449.49	448.96	447.63	447.55
13	447.36	446.24	446.27	445.39	445.56	446.23	447.82	449.74	449.59	448.67	447.65	447.58
14	447.37	446.28	446.25	445.46	445.81	446.35	447.70	449.80	449.66	448.58	447.68	447.35
15	447.32	446.30	446.17	445.58	446.09	446.47	447.64	449.80	449.40	448.69	447.68	447.25
16	447.27	446.36	446.05	445.82	446.54	446.04	447.69	449.88	449.34	448.83	447.69	447.24
17	447.29	446.31	446.00	446.07	446.63	446.01	447.71	450.01	449.37	448.98	447.33	447.25
18	447.54	446.04	445.97	446.29	446.69	446.11	447.77	449.78	449.39	449.00	447.03	447.17
19	447.74	445.96	446.03	446.37	446.71	446.12	447.91	449.70	449.45	449.03	446.87	447.16
20	447.70	446.18	446.12	446.46	446.65	446.08	447.77	449.68	449.42	448.69	446.94	447.08
21	447.61	446.46	446.30	446.62	446.54	445.97	447.90	449.75	449.42	448.48	446.92	446.86
22	447.69	446.59	446.45	446.44	446.56	445.94	448.17	449.64	449.10	448.31	446.89	446.74
23	447.69	446.71	446.37	446.72	446.57	445.60	448.55	449.61	449.00	448.20	446.89	446.66
24	447.67	446.81	446.38	446.87	446.24	445.62	448.92	449.65	448.99	448.14	446.64	446.66
25	447.59	446.85	446.38	446.94	446.36	445.80	449.23	449.28	449.02	448.21	446.59	446.58
26	447.53	446.76	446.22	447.01	446.34	446.18	449.47	449.29	449.05	448.40	446.67	446.57
27	447.34	446.75	446.08	447.08	446.48	446.55	449.36	449.43	449.12	448.20	446.88	446.61
28	447.16	446.79	446.07	447.00	446.33	446.84	449.42	449.75	449.16	448.19	447.05	446.66
29	446.98	446.75	446.19	446.95	446.37	447.02	449.49	449.98	448.80	448.20	447.27	446.71
30	446.91	446.71	446.13	446.98	-----	446.79	449.57	-----	450.20	448.71	448.29	447.46
31	446.89	-----	446.10	446.92	-----	446.87	-----	450.33	-----	448.31	447.24	-----

COLORADO RIVER MAIN STEM

9-4280. Colorado River below Parker Dam, Ariz.-Calif.

Location.--Lat 34°15'30", long 114°09'00", in NE¼SW¼ sec.16, T.2 N., R.27 E., San Bernardino meridian, on right bank 3.9 miles downstream from Parker Dam, 10.4 miles upstream from Headgate Rock Dam, and 11 miles northeast of Parker, Ariz.

Drainage area.--178,800 sq mi, approximately.

Records available.--February to September 1934 (gage heights and fragmentary discharge records), October 1934 to September 1964. Prior to October 1937 published as "near Parker, Ariz."

Gage.--Water-stage recorder. Datum of gage is 346.23 ft above mean sea level, datum of 1929.

Average discharge.--30 years (1934-64), 13,190 cfs (9,549,000 acre-ft per year) unadjusted.

Extremes.--Maximum discharge during year, 19,400 cfs June 7, 15, 17; maximum gage height, 22.23 ft Aug. 9; minimum daily discharge, 2,800 cfs Jan. 4.

1934-64: Maximum discharge, 42,400 cfs Feb. 8, 1937; no flow at Parker Dam for parts of several days in 1942 when gates in dam were closed; minimum daily discharge, 1,440 cfs Feb. 15, 1935.

An unregulated discharge of probably less than 1,350 cfs occurred Aug. 18, 1934 (lowest unregulated discharge since 1917 and probably since a much earlier date).

Remarks.--Records excellent except those below 4,000 cfs, which are good. Discharge measurements generally made twice a month. Flow regulated by Lake Mead since Feb. 1, 1935, Lake Mohave since Jan. 17, 1950, and by Lake Havasu since July 1, 1936. Many diversions above station. For record of diversion to Colorado River aqueduct and return flows, see record for Colorado River aqueduct near Parker Dam (sta 9-4241.5).

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,930	5,060	5,720	4,830	6,780	9,650	11,000	8,880	10,300	14,000	13,600	12,000
2	9,190	5,220	5,640	4,590	6,590	8,450	10,300	8,200	11,200	13,400	13,600	11,100
3	8,570	5,470	5,670	3,670	7,660	8,230	11,000	9,100	11,300	15,000	13,000	10,800
4	8,110	6,240	5,630	2,800	7,690	8,430	11,700	9,940	11,500	15,900	12,600	11,400
5	7,850	6,150	5,140	3,800	8,320	9,090	11,200	8,860	12,100	15,300	13,000	11,300
6	8,510	6,790	5,040	6,500	8,630	10,300	11,900	8,910	12,700	15,200	12,600	11,200
7	8,610	5,900	4,380	7,140	8,560	9,790	11,500	7,920	12,700	14,900	13,500	11,000
8	8,820	5,660	5,560	8,030	8,330	9,450	11,600	7,820	12,900	14,400	14,000	11,200
9	8,350	6,060	6,560	7,670	9,330	8,870	10,000	7,830	12,200	13,500	13,800	9,940
10	7,130	6,230	6,380	7,290	9,260	8,210	12,400	7,880	12,100	13,900	13,300	9,170
11	8,390	6,340	5,620	7,320	9,910	9,530	12,300	9,310	11,600	14,100	13,700	9,580
12	8,450	6,220	4,420	7,400	8,820	9,380	11,600	9,820	11,600	14,300	13,100	9,580
13	8,110	5,800	5,640	7,050	8,570	10,100	12,600	9,320	11,800	14,300	12,900	9,590
14	8,080	5,370	5,350	7,800	7,380	9,020	14,000	8,270	12,200	13,700	13,800	9,950
15	8,060	5,500	5,290	6,820	7,760	10,300	12,800	10,900	12,300	13,400	14,100	9,770
16	6,990	5,500	4,900	5,980	6,770	10,500	12,300	10,200	11,900	13,100	13,600	9,590
17	6,670	5,800	5,110	5,910	6,470	10,300	13,300	10,400	12,700	12,800	13,500	8,900
18	5,190	7,190	5,020	5,300	7,340	10,800	13,100	10,200	11,900	13,400	14,500	10,100
19	4,180	6,230	4,780	6,160	8,110	11,400	12,100	10,100	12,300	13,500	13,900	9,980
20	5,650	4,870	4,410	5,890	7,490	12,100	11,400	10,400	13,400	14,100	12,100	9,260
21	6,390	4,530	4,050	4,990	9,330	12,900	10,600	9,780	12,800	14,300	13,000	9,700
22	5,530	5,540	3,040	7,650	8,640	12,400	9,720	12,100	13,000	14,200	12,800	9,780
23	5,440	5,210	4,960	3,370	8,150	12,500	9,060	11,600	12,800	14,400	12,800	9,870
24	5,580	5,530	4,410	3,730	8,760	12,400	8,590	12,100	12,700	14,200	12,200	9,180
25	5,950	4,670	4,370	4,910	9,190	11,400	8,770	12,800	12,600	13,900	11,900	9,990
26	6,220	5,440	5,220	4,830	9,000	10,200	8,580	10,900	13,300	13,600	11,800	9,640
27	6,060	5,110	5,630	4,580	8,450	10,600	9,080	10,700	13,500	13,800	11,300	9,430
28	6,300	5,050	4,580	7,510	10,500	10,800	9,150	8,670	14,300	13,500	11,700	7,820
29	6,950	4,930	3,250	6,980	9,900	11,900	9,010	9,440	14,500	14,000	11,600	8,120
30	5,930	4,920	4,130	6,040	-----	12,000	8,280	9,300	13,900	13,500	11,700	8,170
31	5,810	-----	4,620	6,380	-----	11,700	-----	9,880	-----	14,000	11,900	-----
Total	221,000	168,530	154,520	182,920	241,690	322,700	328,940	301,530	374,100	435,600	400,900	297,110
Mean	7,129	5,618	4,985	5,901	8,334	10,410	10,960	9,727	12,470	14,050	12,930	9,904
Ac-ft	438,300	334,300	306,500	362,800	479,400	640,100	652,400	598,100	742,000	864,000	795,200	589,300

Calendar year 1963: Max 17,200 Min 2,350 Mean 10,020 Ac-ft 7,251,000
 Water year 1963-64: Max 15,900 Min 2,800 Mean 9,370 Ac-ft 6,802,000

Note.--Doubtful or no gage-height record Oct. 12-18, Jan. 5, 7, Feb. 16, June 30, July 1, 11-15.

9-4285.3. Arch Creek near Earp, Calif.

Location.--Lat 34°09'55", long 114°22'20", in NE $\frac{1}{2}$ sec.20, T.1 N., R.25 E., on right bank on Parker Dam road, 4 miles east of Earp.

Drainage area.--1.52 sq mi.

Records available.--January 1960 to September 1964.

Gage.--Water-stage recorder with rain-gage attachment, and crest-stage gage. Altitude of gage is 600 ft (from topographic map).

Extremes.--No flow during year.

1960-64: Maximum discharge, 5.6 cfs Aug. 18, 1961 (gage height, 3.99 ft, from crest-stage gage); no flow for most of each year. Flood of Sept. 13, 1959 reached a stage of 13.24 ft from flood marks (discharge, 674 cfs, by computation of maximum flow through culvert).

Remarks.--No flow since Sept. 17, 1963. No regulation or diversion above station. Discharge for calendar year 1963 is as follows:
Maximum daily, 0.1 cfs; minimum, zero; mean, 0.0003 cfs; total, 0.2 acre-ft. Monthly precipitation, in inches, is as follows:
October, 1.0; November, 0.3; March, 0.1; July, 0.1; August, 0.3; the water year, 1.8.

TRIBUTARIES AND DIVERSIONS BETWEEN PARKER DAM AND PALO VERDE DAM

9-4290. Palo Verde Canal near Blythe, Calif.

Location--Lat 33°43'54", long 114°30'43", in SE 1/4 NE 1/4 sec. 19, T.5 S., R.24 E., San Bernardino meridian, at canal intake structure on west side of Palo Verde Diversion Dam, 10 miles northeast of Blythe and 43 miles downstream from Headgate Rock Dam.

Records available--January 1922 to December 1923, January 1925 to September 1964 (prior to October 1950, monthly discharge only).

Gage--Recording gages above and below intakes to record head. Datum of gage is: Forebay gage, at mean sea level; tailrace gage, 274.13 ft above mean sea level, both to datum of 1929. Aug. 7, 1950, to Nov. 30, 1952, water-stage recorder on tailrace and auxiliary recorder half a mile downstream and Dec. 1, 1952, to Oct. 28, 1957, recording gage above and below former intake structure a quarter of a mile upstream, at different datums.

Average discharge--14 years (1950-64), 1,200 cfs (868,800 acre-ft per year).

Extremes--1950-64: Maximum daily discharge, 2,180 cfs Aug. 7, 1962; no flow at times in several years.

Remarks--Records excellent except those below 1,000 cfs, which are good. Discharge measurements generally made three times a month. Daily diversions computed on basis of head on intake gates and gate openings. Records published herein represent flow diverted from Colorado River during 1964 for irrigation of 83,145 acres. Return flows to Colorado River are measured by 12 wasteways and drains extending throughout the project; 4 of these are equipped with water-stage recorders and Parshall flumes, 3 are equipped with Sparling flowmeters and 1 with total flow meter on Parshall flume. Return flows have not been subtracted; combined monthly return flows are given in table below. Check measurements of return flows are made about once a month by the Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.260	952	800	786	898	1.270	1.370	1.510	1.760	2.030	1.650	1.570
2	1.280	908	861	846	889	1.310	1.300	1.370	1.860	2.040	1.600	1.640
3	1.260	932	937	813	1.130	1.230	1.320	1.350	1.860	2.160	1.560	1.630
4	1.300	952	836	894	1.170	1.280	1.090	1.480	1.800	1.800	1.530	1.620
5	1.180	925	895	798	1.130	1.180	955	1.350	1.800	1.810	1.510	1.600
6	1.070	997	811	886	1.230	1.440	1.150	1.390	1.640	1.910	1.570	1.540
7	1.130	949	744	853	1.220	1.390	1.180	1.340	1.430	1.950	1.560	1.680
8	1.170	902	755	922	1.170	1.250	1.420	1.280	1.710	2.010	1.580	1.660
9	1.150	985	787	871	1.150	1.250	1.410	1.270	1.850	2.040	1.580	1.680
10	1.150	912	773	903	1.280	1.440	1.380	1.140	1.710	1.940	1.690	1.730
11	1.120	934	846	906	1.230	1.510	1.400	1.350	1.970	1.790	1.710	1.760
12	1.170	874	1.010	867	1.290	1.590	1.340	1.380	1.940	1.660	1.710	1.630
13	1.190	895	934	1.030	1.370	1.540	1.440	1.550	1.920	1.730	1.720	1.560
14	1.170	950	933	938	1.400	1.470	1.300	1.650	1.850	1.790	1.710	1.550
15	1.080	931	827	882	1.350	1.250	1.450	1.540	1.860	1.920	1.630	1.560
16	1.070	926	926	961	1.250	1.400	1.540	1.480	1.810	1.980	1.650	1.570
17	1.070	1.000	947	971	1.380	1.340	1.650	1.420	1.840	1.940	1.690	1.520
18	704	1.040	1.040	947	1.360	1.370	1.630	1.560	1.790	2.000	1.720	1.460
19	615	992	942	952	1.540	1.410	1.460	1.570	1.790	1.760	1.680	1.400
20	665	1.030	872	1.110	1.590	1.380	1.570	1.710	1.820	1.860	1.770	1.270
21	599	679	745	1.070	1.480	1.430	1.630	1.700	1.450	1.790	1.760	1.310
22	570	758	766	1.090	1.510	1.230	1.610	1.740	1.850	1.830	1.600	1.300
23	570	706	748	1.060	1.430	1.380	1.560	1.690	1.840	1.990	1.610	1.430
24	630	679	694	1.070	1.510	1.410	1.520	1.540	1.900	2.050	1.620	1.340
25	671	718	597	1.040	1.350	1.370	1.550	1.660	1.660	1.970	2.010	1.250
26	735	721	872	921	1.400	1.350	1.380	1.630	1.930	1.820	1.600	979
27	734	830	766	1.010	1.470	1.340	1.490	1.610	1.900	1.800	1.590	832
28	810	826	769	1.030	1.470	1.230	1.600	1.700	1.820	1.830	1.520	836
29	780	823	792	1.130	1.370	1.050	1.580	1.660	1.920	1.850	1.510	827
30	923	811	872	1.170	-----	1.390	1.650	1.500	1.970	1.840	1.510	994
31	933	-----	868	1.090	-----	1.360	-----	1.380	-----	1.750	1.550	-----
Total	29,759	26,537	25,965	29,817	38,017	41,840	42,925	46,500	54,560	58,680	50,290	42,728
Mean	960	885	838	962	1,311	1,350	1,431	1,500	1,819	1,893	1,622	1,424
Ac-ft	59,030	52,640	51,500	59,140	75,410	82,990	85,140	92,230	108,200	116,400	99,750	84,750
(t)	47,130	44,790	48,030	46,510	44,330	54,410	47,260	49,930	45,260	44,240	50,440	46,280
Calendar year 1963:	Max	2,110	Min	350	Mean	1,293	Ac-ft	929,800	+572,800			
Water year 1963-64:	Max	2,160	Min	570	Mean	1,332	Ac-ft	967,200	+568,600			

† Return flows, in acre-feet, to Colorado River.

9-4291. Colorado River below Palo Verde Dam, Ariz.-Calif.

Location.--Lat 33°43'10", long 114°29'50", in NE $\frac{1}{4}$ sec. 2, T. 4 N., R. 22 W., Gila and Salt River meridian, on right bank 1.2 miles downstream from Palo Verde Diversion Dam, 9.5 miles northeast of Blythe, Calif., and 11.0 miles upstream from Ehrenberg, Ariz.

Drainage area.--182,200 sq mi, approximately.

Records available.--March 1956 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 260.00 ft above mean sea level, datum of 1929.

Average discharge.--8 years (1957-64) 9,249 cfs (6,696,000 acre-ft per year).

Extremes.--Maximum discharge during year, 15,600 cfs Aug. 8 (gage height, 16.30 ft); minimum daily, 2,420 cfs Dec. 30.

1956-64: Maximum discharge, 24,300 cfs Mar. 21, 1958; maximum gage height, 17.94 ft May 4, 1958; minimum daily discharge, 1,380 cfs Dec. 21, 1961.

Remarks.--Records excellent. Discharge measurements made two to three times a month. Many diversions above station for irrigation, municipal, and industrial uses. Flow regulated by Lake Mead, Lake Mohave, and Lake Havasu.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)
(Shifting-control method used Dec. 3-23,
Mar. 2 to Apr. 2, Aug. 30 to Sept. 30).

9.4	2,330	13.0	7,850
10.0	3,020	15.0	12,400
11.0	4,450	16.0	14,900

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,550	4,870	4,240	3,340	5,100	7,130	8,720	6,860	7,580	10,900	11,000	9,220
2	9,200	4,480	4,760	3,410	5,460	8,310	9,110	7,230	7,670	10,900	10,800	9,270
3	7,980	4,450	4,820	3,280	5,250	5,760	9,040	6,840	8,310	10,900	11,000	8,620
4	7,110	4,380	4,990	2,740	6,180	6,620	9,720	7,420	8,380	12,900	10,400	8,480
5	6,940	5,230	4,930	3,020	6,300	6,850	10,000	8,010	8,600	11,900	9,880	8,710
6	6,260	5,170	4,630	4,390	6,960	7,630	8,690	7,830	9,310	12,200	10,300	8,630
7	7,540	5,620	4,460	5,550	6,660	7,870	9,790	7,090	9,720	12,400	10,100	8,810
8	7,540	5,200	4,000	6,180	7,280	7,850	9,370	6,480	9,560	11,400	11,300	8,540
9	7,740	5,300	4,990	7,170	7,030	7,650	9,710	6,770	9,380	11,100	10,600	8,740
10	7,020	4,660	5,620	6,530	7,320	5,730	8,620	6,780	9,190	10,900	10,600	7,750
11	6,640	5,460	5,520	6,370	7,810	6,930	11,800	6,640	9,040	11,200	10,400	7,140
12	7,080	5,520	4,870	6,370	7,530	7,200	9,540	7,710	8,550	11,700	10,800	7,470
13	7,310	5,470	3,760	6,230	6,930	6,400	9,260	8,090	8,820	11,700	10,400	7,390
14	6,870	4,820	4,680	5,780	6,640	7,650	11,300	7,220	8,940	11,300	10,400	7,550
15	7,080	4,500	4,750	6,160	5,860	8,250	10,600	6,880	9,400	11,800	11,300	8,090
16	6,800	4,630	4,440	5,440	6,480	7,610	11,500	8,030	8,960	10,600	10,900	7,780
17	6,130	4,720	4,160	4,860	5,120	8,420	9,750	8,440	8,880	9,380	11,000	7,860
18	6,480	5,040	4,150	4,680	5,310	8,170	11,700	8,320	9,290	10,200	11,400	7,050
19	5,420	5,990	4,120	4,220	5,960	8,640	10,100	8,240	9,030	10,600	11,500	8,170
20	4,120	5,340	3,910	4,810	5,990	9,760	10,000	8,040	9,480	11,000	9,970	8,130
21	5,300	4,440	3,640	4,620	6,370	9,890	9,130	8,140	10,500	10,600	9,660	7,550
22	5,840	3,730	3,340	3,860	7,110	10,400	7,760	7,540	10,200	11,300	10,900	8,160
23	4,980	4,740	3,010	3,280	6,800	9,400	7,710	9,580	10,200	11,100	10,300	8,110
24	4,990	4,660	4,160	2,600	6,600	9,780	7,320	9,620	9,980	10,600	9,480	8,000
25	4,990	4,900	3,880	2,720	6,490	9,900	7,830	9,110	9,720	11,000	9,670	7,800
26	5,220	4,240	3,380	3,250	7,070	9,180	6,530	10,100	9,780	11,000	9,220	8,460
27	5,360	4,680	4,180	3,190	6,550	8,120	7,290	8,540	10,400	10,800	9,400	8,450
28	5,060	4,400	4,500	3,200	6,870	8,840	7,370	8,050	11,200	10,200	8,930	8,220
29	5,520	4,120	3,410	5,570	8,840	9,890	7,600	6,780	10,900	11,100	9,140	6,860
30	5,790	4,280	2,420	5,200	-----	9,720	7,240	7,360	11,100	10,700	8,970	7,050
31	4,880	-----	3,100	4,580	-----	9,720	-----	7,560	-----	10,500	8,920	-----
Total	198,740	145,040	130,820	142,600	189,870	255,270	274,100	241,300	282,070	342,880	318,640	242,060
Mean	6,411	4,835	4,220	4,600	6,547	8,235	9,137	7,784	9,402	11,060	10,280	8,069
Ac-ft	394,200	287,700	259,500	282,800	376,600	506,300	543,700	478,600	559,500	680,100	632,000	480,100

Calendar year 1963: Max 13,900 Min 1,580 Mean 8,251 Ac-ft 5,974,000
 Water year 1963-64: Max 12,900 Min 2,420 Mean 7,550 Ac-ft 5,481,000

Note.--Portions of Oct. 31, Nov. 1-4, 10, 30, Dec. 1-8, 21-23, 30, 31, Mar. 10 reconstructed from gage-height record for station 1.2 miles upstream, operated by Palo Verde Irrigation District.

COLORADO RIVER MAIN STEM

9-4295. Colorado River at Imperial Dam, Ariz.-Calif.

Location.--Lat 32°53'00", long 114°27'50", in W $\frac{1}{2}$ sec.9, T.15 S., R.24 E., San Bernardino meridian, near All-American Canal headworks at west end of Imperial Dam, 5 miles upstream from Laguna Dam, 15 miles northeast of Yuma, 90 miles downstream from Palo Verde Dam, and 147 miles downstream from Parker Dam.

Drainage area.--184,600 sq mi, approximately.

Records available.--Flow of Colorado River passing Imperial Dam: October 1960 to September 1964. Flow of Colorado River reaching Imperial Dam: 1903-34 (yearly discharge only), July 1934 to September 1964 (monthly discharge only since October 1942). Prior to 1943 published as "near Picacho, Calif."

Gage.--Water-stage recorder for obtaining head on gates. Datum of gage is 162.00 ft above mean sea level (U.S. Bureau of Reclamation bench mark). July 1, 1934, to Sept. 30, 1942, water-stage recorder at site 14 $\frac{1}{2}$ miles upstream at datum 167.38 ft above mean sea level, datum of 1929. Oct. 1, 1942, to Sept. 30, 1960, no gage on river at this site (see Remarks).

Average discharge (flow reaching Imperial Dam).--30 years (1934-64), 12,330 cfs (8,927,000 acre-ft per year).

Extremes (flow reaching Imperial Dam).--1934-64: Maximum discharge, 40,800 cfs Sept. 5, 1939; minimum, 538 cfs Aug. 3, 1934; minimum daily since regulation of Hoover Dam began, 1,450 cfs Feb. 17, 1935.

Remarks.--Records excellent above 500 cfs and good below. Discharge measurements generally made twice a month. Records of daily discharge show flow of Colorado River passing Imperial Dam, and include water released to river through California and Gila sluiceways, sludge from desilting basins returned to river, and leakage through dam. Records of flow reaching Imperial Dam (given in monthly and yearly summaries below) are based on combined daily discharge of Colorado River at this station, and at gaging stations on All-American Canal near Imperial Dam (sta 9-5230), and Gila Gravity Main Canal at Imperial Dam (sta 9-5225). Records for October 1942 to September 1960 were computed as combined flow of Colorado River at Yuma (sta 9-5210) and the All-American and Gila Gravity Main Canals, less flow of Gila River near Dome (drainage and waste return flows and channel losses between the gaging stations and Imperial Dam were neglected).

Flow of Colorado River regulated by many reservoirs, principally Lake Mead, since 1935. Many diversions from Colorado River and tributaries above station.

Cooperation.--Records of gate openings furnished by Bureau of Reclamation. Records of sludge return flow from desilting basins furnished by Imperial Irrigation District.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	427	783	965	689	1,170	410	501	479	626	482	840	442
2	327	934	865	849	1,330	866	495	481	492	482	841	442
3	327	1,040	863	800	1,200	1,020	495	525	492	482	1,290	442
4	717	1,140	862	689	1,110	436	495	536	492	482	1,710	442
5	475	1,160	862	688	1,130	615	848	576	492	549	1,390	442
6	620	1,060	865	436	1,130	416	560	741	492	457	1,230	442
7	444	730	1,260	311	1,130	630	520	727	492	801	882	442
8	347	872	1,360	311	1,130	635	510	856	492	551	862	442
9	347	1,150	1,000	311	1,130	708	510	708	492	738	861	442
10	347	1,780	854	311	1,120	410	510	728	492	723	861	442
11	347	1,600	850	336	1,100	422	510	516	847	457	864	442
12	347	1,170	874	1,400	1,110	395	510	494	851	675	864	442
13	508	1,230	879	1,360	1,110	395	510	494	492	690	862	442
14	837	990	1,000	1,640	1,260	395	510	494	492	561	860	442
15	559	956	880	2,220	1,500	395	510	494	492	611	829	442
16	540	905	1,120	1,920	1,660	399	510	494	492	696	853	422
17	347	861	997	2,080	1,680	395	510	494	492	748	853	402
18	1,060	862	886	2,380	1,610	395	510	494	492	747	855	402
19	829	914	882	1,860	1,210	395	510	494	492	606	854	402
20	762	1,200	884	1,560	1,140	395	510	494	492	457	856	402
21	762	1,100	899	1,130	719	395	510	494	492	457	860	402
22	920	1,580	1,010	680	410	963	641	494	492	457	861	402
23	1,300	1,800	905	649	469	573	669	494	492	457	860	402
24	1,050	1,640	1,180	450	510	509	602	494	492	457	857	402
25	1,050	1,620	2,060	450	510	495	655	494	492	457	861	402
26	1,090	1,080	1,460	450	421	495	980	494	492	646	861	402
27	934	1,160	846	670	410	495	497	494	492	572	651	402
28	1,000	1,080	875	874	410	495	479	1,120	492	887	442	800
29	976	1,340	874	718	410	495	479	1,460	492	920	442	730
30	854	1,300	878	784	-----	495	601	862	492	846	442	307
31	790	-----	785	1,210	-----	495	-----	998	-----	846	442	-----
Total	21,240	35,037	30,780	30,216	29,229	16,032	16,657	19,217	15,608	18,997	26,896	13,311
Mean	685	1,168	993	975	1,008	517	555	620	520	613	868	444
Ac-ft	42,130	69,490	61,050	59,930	57,970	31,800	33,040	38,120	30,960	37,680	53,350	26,400
(+)	7,495	5,710	5,036	5,473	7,215	9,134	10,240	8,617	9,689	11,690	11,040	9,062
(#)	460,800	339,700	309,600	336,500	415,000	561,600	609,200	529,800	576,500	719,000	678,900	539,200
Calendar year 1963:	Max	3,530	Min	292	Mean	795	Ac-ft	575,400	+9,009	+6,522,000		
Water year 1963-64:	Max	2,380	Min	307	Mean	747	Ac-ft	541,900	+8,370	+6,076,000		

+ Flow reaching Imperial Dam, in cubic feet per second (combined flow of Colorado River, All-American Canal near Imperial Dam, and Gila Gravity Main Canal at Imperial Dam).

Flow reaching Imperial Dam, in acre-feet.

9-5210. Colorado River at Yuma, Ariz.

Location.--Lat 32°43'45", long 114°37'15", in NW 1/4 sec. 35, T.16 S., R.22 E., San Bernardino meridian, on left bank 500 ft upstream from lower highway bridge, 1,800 ft downstream from upper highway bridge at Yuma, 0.4 mile upstream from Yuma Main Canal wasteway, 4.6 miles downstream from Gila River, 7.0 miles upstream from boundary between California and Mexico, and 19 miles downstream from Imperial Dam.

Drainage area.--242,900 sq mi, approximately, including all closed basins entirely within the drainage boundary.

Records available.--January 1878 to December 1901 (gage heights only), January 1902 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 102.32 ft above mean sea level, Yuma project datum, or 102.86 ft, datum of 1929, leveling of 1941 (datum was 0.07 ft lower prior to earthquake of May 18, 1940). Supplementary water-stage recorder 180 ft downstream since Oct. 30, 1953. Prior to May 1922 staff gages at several sites 600 to 1,000 ft upstream at approximately same datum. May 1922 to October 1933, water-stage recorder or automatic transmitter at site 800 ft upstream from present site at same datum. Nov. 11, 1933, to July 19, 1934, staff gage at present site and datum.

Extremes.--Maximum discharge during year, 3,060 cfs Jan. 18 (gage height, 12.90 ft); minimum daily discharge, 562 cfs Oct. 10, 11; minimum gage height, 10.38 ft Oct. 9.

1902-34: Maximum discharge, 250,000 cfs Jan. 22, 1916 (gage height, 34.0 ft); minimum daily, 18 cfs Aug. 25-27, 1934, caused by diversion at Laguna Dam.

1934-64: Maximum discharge, 34,900 cfs Sept. 7, 1939 (gage height, 24.57 ft); minimum, 41 cfs Mar. 8, 1956; minimum gage height, 8.36 ft July 16, 1947.

Remarks.--Records excellent. Discharge measurements generally made three times a month. Many diversions from Colorado River and tributaries. Principal diversions below Parker Dam are Colorado River Indian Reservation Canal, Palo Verde Canal, All-American Canal and Gila Gravity Main Canal. Return flows entering downstream but above northerly international boundary are Yuma Main Canal wasteway, Reservation Canal Main Drain No. 4, Drain 8-B, and Pilot Knob powerplant and wasteway. See monthly table below for combined flow of river, Yuma Main Canal wasteway, and Reservation Canal Main Drain No. 4. Flow of Colorado River regulated by Hoover, Davis, Parker, Headgate Rock, and to a small extent by Imperial, Palo Verde, and Laguna Dams. No regulation on Gila River below Painted Rock Dam.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	640	1,110	1,730	1,120	1,550	848	950	924	1,160	862	1,260	855
2	670	1,190	1,410	1,120	1,610	918	988	988	832	848	1,320	760
3	604	1,390	1,360	1,230	1,700	1,560	1,010	914	944	855	1,140	784
4	710	1,460	1,380	1,080	1,500	918	1,480	1,000	1,160	841	1,790	802
5	888	1,520	1,370	1,100	1,510	911	1,090	1,010	780	904	1,900	848
6	820	1,580	1,360	1,160	1,520	932	974	1,040	786	974	1,720	848
7	760	1,510	1,540	1,170	1,490	918	988	1,000	835	904	1,390	876
8	604	1,450	1,760	900	1,510	1,070	981	1,170	791	918	1,190	883
9	568	1,510	1,900	742	1,540	1,280	960	1,300	760	911	1,140	897
10	562	1,590	1,430	730	1,540	1,060	946	982	730	1,050	1,150	841
11	562	1,950	1,350	748	1,480	981	918	1,150	738	925	1,180	816
12	586	1,900	1,350	1,030	1,480	911	960	1,050	1,050	869	1,170	856
13	643	1,590	1,350	1,480	1,470	918	932	1,030	862	1,050	1,150	783
14	895	1,600	1,380	1,880	1,510	918	925	932	688	1,010	1,120	808
15	981	1,440	1,460	2,380	1,850	911	925	860	640	1,070	1,120	1,190
16	820	1,440	1,400	2,440	1,960	946	1,320	825	628	995	1,170	941
17	670	1,350	1,700	2,490	2,210	918	967	819	652	1,210	1,220	797
18	1,050	1,330	1,420	2,860	2,110	946	918	848	712	1,090	1,140	775
19	1,350	1,320	1,380	2,750	2,050	960	897	826	772	974	1,140	763
20	1,090	1,520	1,400	2,390	1,530	1,360	883	858	827	1,180	1,180	760
21	1,080	1,620	1,380	1,790	1,600	953	883	863	890	925	1,210	730
22	1,060	1,700	1,340	1,440	1,000	960	890	823	1,110	862	1,200	721
23	1,320	2,210	1,440	1,160	988	1,040	1,090	845	1,220	834	1,200	737
24	1,540	2,250	1,380	939	1,040	1,030	1,090	857	925	827	1,230	755
25	1,350	2,210	1,910	862	1,050	1,000	1,020	858	904	883	1,240	790
26	1,560	2,020	2,540	862	1,020	1,010	1,240	853	890	939	1,190	798
27	1,440	1,540	1,670	897	883	1,020	1,000	845	869	974	1,170	793
28	1,360	1,570	1,320	1,280	960	1,020	928	876	904	911	918	837
29	1,440	1,750	1,310	1,290	1,210	1,020	897	1,420	883	1,210	808	1,140
30	1,310	1,830	1,290	932	-----	981	1,060	1,500	869	1,240	802	615
31	1,180	-----	1,290	1,480	-----	967	-----	1,420	-----	1,170	784	-----
Total	30,113	48,450	46,300	43,732	42,871	31,185	30,120	30,596	25,811	30,215	37,342	24,799
Mean	971	1,615	1,494	1,411	1,478	1,006	1,004	987	860	975	1,205	827
Ac-ft	59,730	96,100	91,830	86,740	85,030	61,850	59,740	60,690	51,200	59,930	74,070	49,190
(+)	1,190	1,746	1,596	1,571	1,590	1,106	1,195	1,307	1,235	1,075	1,307	1,207
(#)	73,180	103,900	98,110	96,610	91,430	68,020	71,140	80,390	73,470	66,090	80,380	71,850

Calendar year 1963: Max 3,950 Min 562 Mean 1,277 Ac-ft 924,300 +1,502 +1,087,000
 Water year 1963-64: Max 2,860 Min 562 Mean 1,152 Ac-ft 836,100 +1,342 +974,600

+ Combined flow in cubic feet per second, of river, Yuma Main Canal Wasteway and Reservation Canal Main Drain No. 4

Combined flow in acre-feet.

COLORADO RIVER MAIN STEM

9-5220. Colorado River at northerly international boundary
above Morelos Dam, near Andrade, Calif.

Location.--Lat 32°43'00", long 114°43'00", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.21, T.8 S., R.24 W., Gila and Salt River meridian, on left bank at northerly international boundary, half a mile east of Andrade, 1.1 miles upstream from Morelos Dam, 1.1 miles downstream from Rockwood Gate, and 7.0 miles (revised) downstream from gaging station on Colorado River at Yuma, Ariz.

Drainage area.--243,000 sq mi, approximately, including all closed basins entirely within the drainage boundary.

Records available.--January 1950 to September 1964. Prior to October 1958, published as "at international boundary."

Gage.--Water-stage recorder. Datum of gage is at mean sea level, datum of 1929, leveling of 1941. Supplementary water-stage recorder 1,680 ft (revised) upstream at same datum.

Extremes.--Maximum discharge during year, 4,790 cfs Mar. 29, Aug. 2; maximum elevation, 105.93 ft Mar. 29; minimum discharge, 695 cfs Oct. 10; minimum elevation, 102.34 ft Oct. 11.

1950-64: Maximum discharge, 25,390 cfs Jan. 1, 1953; maximum elevation, 114.24 ft Jan. 28, 1958; minimum discharge, 570 cfs Feb. 24, 1956 (elevation, 103.00 ft).

Remarks.--This record shows water passing northerly international boundary. Minor diversions to the United States below this station from river and by pumping from ground water for irrigation in the floodway between river and Yuma levee. Discharge measurements generally made six times a week.

Cooperation.--Records furnished by International Boundary and Water Commission, United States Section (discharge figures rounded in accordance with Geological Survey standard practice).

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	846	1,350	1,900	1,370	1,720	2,130	3,080	1,550	1,620	2,950	3,840	2,500
2	894	1,430	1,630	1,310	1,720	2,400	3,220	1,320	1,580	3,160	4,390	2,520
3	866	1,560	1,530	1,430	1,860	2,970	3,330	1,650	1,610	3,340	4,020	2,550
4	922	1,660	1,530	1,330	1,740	3,020	3,470	1,790	1,560	3,360	4,130	2,490
5	1,320	1,770	1,540	1,350	1,740	2,090	3,430	1,830	1,520	3,520	4,370	2,500
6	1,220	1,800	1,550	1,630	1,750	2,030	3,530	1,820	1,710	3,720	4,220	2,490
7	1,190	1,740	1,630	1,850	1,720	2,060	3,980	1,460	1,810	4,000	3,900	2,510
8	822	1,660	2,090	1,770	1,700	2,640	3,560	1,560	1,840	4,130	3,730	2,490
9	731	1,670	2,000	1,980	1,740	2,800	3,350	1,640	1,800	3,980	3,680	2,440
10	720	1,750	1,640	1,850	1,720	3,290	3,400	1,520	1,800	4,080	3,490	2,170
11	786	1,980	1,490	1,840	1,710	2,590	3,470	1,480	1,940	4,070	3,610	1,940
12	834	2,100	1,470	2,030	1,640	2,120	3,450	1,300	2,260	3,940	3,630	1,630
13	920	1,870	1,530	2,520	1,650	2,050	3,200	1,270	2,640	3,740	3,530	1,540
14	1,160	1,860	1,490	2,810	1,730	2,310	3,220	1,270	2,360	3,690	3,650	1,350
15	1,310	1,680	1,620	2,320	1,980	2,280	3,190	1,220	2,040	3,730	3,640	1,360
16	1,050	1,720	1,530	2,570	2,080	2,600	3,120	1,220	1,980	3,720	3,700	1,290
17	939	1,620	1,780	2,500	2,220	2,520	3,160	1,180	2,020	3,790	3,570	1,330
18	1,380	1,560	1,590	2,680	2,190	2,570	3,080	1,190	2,050	3,730	3,620	1,340
19	3,240	1,550	1,550	3,510	2,150	2,520	2,950	1,240	2,000	3,650	3,560	1,310
20	3,290	1,700	1,530	2,630	1,680	2,590	2,700	1,230	2,130	3,350	3,540	1,340
21	2,730	1,940	1,540	2,000	2,150	2,600	2,470	1,280	2,150	3,200	3,600	1,300
22	2,230	1,990	1,500	1,670	2,120	2,620	2,500	1,280	2,050	3,230	3,600	1,330
23	2,460	2,230	1,580	1,340	2,390	3,300	2,100	1,190	2,320	3,210	3,270	1,300
24	2,610	2,490	1,510	1,170	2,310	3,410	1,910	1,240	2,270	3,210	3,040	1,300
25	1,720	2,380	1,930	1,050	2,220	3,560	1,660	1,240	2,250	3,180	3,020	1,390
26	1,940	2,210	2,600	1,130	2,160	3,340	2,320	1,260	2,270	3,250	2,950	1,340
27	1,950	1,740	1,960	1,070	1,960	4,250	2,500	1,290	2,300	3,250	2,850	1,360
28	1,780	1,800	1,560	1,340	2,010	4,310	1,570	1,390	2,560	3,240	2,720	1,370
29	1,620	1,890	1,510	1,500	2,380	4,490	1,380	1,730	2,630	3,360	2,560	1,650
30	1,570	1,980	1,490	1,210	-----	3,230	1,710	2,080	2,840	3,250	2,600	1,290
31	1,360	-----	1,520	1,520	-----	2,860	-----	1,640	-----	3,190	2,630	-----
Total	46,410	54,680	51,320	56,280	56,140	87,550	86,010	44,360	61,910	109,220	108,660	52,720
Mean	1,497	1,823	1,655	1,815	1,936	2,824	2,867	1,431	2,064	3,523	3,505	1,757
Ac-ft	92,050	108,500	101,800	111,600	111,400	173,700	170,600	87,990	122,800	216,600	215,500	104,600

Calendar year 1963: Max 9,880 Min 720 Mean 2,533 Ac-ft 1,834,000
Water year 1963-64: Max 4,490 Min 720 Mean 2,227 Ac-ft 1,617,000

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

25

9-5225. Gila Gravity Main Canal at Imperial Dam, Ariz.-Calif.

Location.--Lat 32°52'35", long 114°27'15", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.30, T.6 S., R.21 W., Gila and Salt River meridian, on right bank 3,200 ft downstream from intake at east end of Imperial Dam.

Records available.--August 1943 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 160.00 ft above mean sea level, datum of 1929.

Extremes.--1943-64: Maximum daily discharge, 2,100 cfs Apr. 11, June 1, 1963; no flow at canal intake at times in several years when intake gates were closed.

Remarks.--Records excellent except those below 100 cfs, which are fair. Discharge measurements generally made two to three times a month. Gila Gravity Main Canal diverts water from Colorado River at left end of Imperial Dam for irrigation of lands on Gila Project in Arizona. Diversion to this canal began Aug. 17, 1943. Diversion to North Gila Valley from this canal began Dec. 16, 1954. During the 1963 water year, water was used for irrigation of 83,619 acres divided as follows: North and South Gila Valleys, 7,645 acres; Yuma Mesa Division, 16,556 acres; Wellton-Mohawk Division, 56,289 acres; Yuma Mesa Auxiliary Division, 3,129 acres.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.700	929	432	514	583	702	1.530	1.670	1.690	1.880	1.310	1.640
2	1.700	645	654	572	444	1.180	1.380	1.410	1.810	1.880	1.180	1.650
3	1.720	566	758	662	845	1.320	1.330	1.140	1.830	1.890	1.350	1.610
4	1.630	836	818	725	997	1.330	1.010	1.350	1.680	1.860	1.330	1.680
5	1.540	848	818	491	848	997	756	1.590	1.780	1.510	1.340	1.630
6	1.090	1.020	658	630	681	1.010	1.240	1.540	1.680	1.940	1.380	1.300
7	1.290	984	547	674	866	950	1.450	1.650	1.420	1.960	1.380	1.600
8	1.620	860	358	702	656	672	1.460	1.630	1.820	2.000	1.370	1.690
9	1.590	840	904	858	478	1.100	1.380	1.410	1.960	1.930	1.210	1.700
10	1.600	618	1.080	948	772	1.260	1.420	1.130	1.980	1.980	1.600	1.590
11	1.530	708	1.110	782	1.030	1.340	1.190	1.540	1.860	1.990	1.600	1.690
12	1.190	860	874	457	1.010	1.230	944	1.660	1.880	1.640	1.660	1.510
13	944	848	666	584	917	1.200	1.400	1.630	1.820	1.820	1.620	1.160
14	1.050	894	469	744	826	1.040	1.500	1.570	1.550	2.000	1.720	1.580
15	1.260	782	328	721	752	780	1.610	1.770	1.740	2.020	1.590	1.820
16	1.370	656	574	634	706	1.310	1.620	1.660	1.800	1.910	1.240	1.800
17	1.330	584	664	586	992	1.480	1.750	1.240	1.800	1.960	1.620	1.750
18	684	647	687	412	1.140	1.560	1.560	1.840	1.800	1.840	1.760	1.670
19	377	725	609	330	1.140	1.350	1.360	1.790	1.920	1.560	1.760	1.560
20	362	798	609	472	929	1.210	1.820	1.800	1.790	1.690	1.730	1.320
21	420	820	496	616	824	1.070	1.860	1.730	1.460	1.850	1.880	1.600
22	387	664	598	570	672	816	1.840	1.790	1.770	1.860	1.650	1.660
23	464	428	605	550	543	1.080	1.690	1.750	1.980	1.730	1.450	1.660
24	605	320	246	744	919	1.400	1.490	1.370	1.940	1.700	1.930	1.530
25	708	769	41	607	1.140	1.230	1.350	1.740	1.840	1.700	1.900	1.520
26	683	848	433	447	1.080	1.290	1.140	1.970	1.890	1.610	1.840	1.340
27	575	715	654	641	902	1.090	1.550	1.870	1.790	1.970	1.700	1.030
28	904	561	687	746	1.000	890	1.680	1.820	1.400	2.020	1.660	1.120
29	1.070	618	628	792	672	685	1.590	1.900	1.720	2.060	1.580	1.350
30	1.110	514	683	704	-----	1.230	1.570	1.760	1.940	1.990	1.260	1.540
31	1.090	-----	677	725	-----	1.510	-----	1.470	-----	1.920	1.590	-----
Total	33,600	21,905	19,365	19,640	24,364	35,312	43,470	50,190	53,340	57,740	48,190	46,300
Mean	1,084	730	625	634	840	1,139	1,449	1,619	1,778	1,863	1,555	1,543
Ac-ft	66,640	43,450	38,410	38,960	48,330	70,040	86,220	99,590	105,800	114,500	95,580	91,830

Calendar year 1963: Max 2,100 Min 41 Mean 1,266 Ac-ft 916,200
 Water year 1963-64: Max 2,090 Min 41 Mean 1,239 Ac-ft 899,300

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

9-5230. All-American Canal near Imperial Dam, Ariz.-Calif.

Location.--Lat 32°52'15", long 114°28'50", in SE¼NW¼ sec.17, T.15 S., R.24 E., San Bernardino meridian, on left bank 6,000 ft downstream from intake at west end of Imperial Dam and 13½ miles upstream from turnout to Yuma Main Canal.

Records available.--October 1938 to September 1964. Monthly discharge only prior to October 1939, published in WSP 1313.

Gage.--Water-stage recorder. Datum of gage is 150.00 ft above mean sea level, datum of 1929 (subject to undetermined changes caused by earthquake of May 18, 1940). Since Aug. 21, 1952, auxiliary water-stage recorder 18½ miles downstream from base gage.

Average discharge.--23 years (1941-64), 7,198 cfs (5,211,000 acre-ft per year).

Extremes.--1938-64: Maximum daily discharge, 13,500 cfs Apr. 16, 1958; no flow at times in several years.

Remarks.--Records excellent. Discharge measurements generally made weekly. All-American Canal diverts water from Colorado River at Imperial Dam. Water is used for power development and for irrigation in Yuma, Coachella, and Imperial Valleys. Water can be released back to the river through Pilot Knob powerplant and wasteway for power, regulatory purposes, or for downstream use in Mexico. First diversion to All-American Canal began October 1938, but prior to October 1940 was used only for priming canal.

Cooperation.--Gage-height record furnished by Imperial Irrigation District.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,200	4,790	3,610	1,960	4,520	6,140	8,820	6,210	5,740	8,940	9,190	7,840
2	7,380	4,430	3,610	2,520	4,130	6,790	9,210	6,400	6,280	9,140	9,340	7,810
3	7,710	4,080	3,670	3,060	4,170	6,570	8,930	6,250	6,530	8,960	8,960	7,950
4	7,000	3,300	3,670	3,060	4,330	6,930	8,350	6,330	6,560	9,000	8,650	7,870
5	6,950	3,210	3,700	3,140	4,760	6,220	8,360	6,050	6,410	9,090	8,840	7,840
6	6,680	3,410	3,770	3,620	4,860	6,130	8,680	6,120	6,430	9,480	8,820	7,460
7	6,150	3,550	3,810	3,380	5,010	6,330	8,930	6,210	6,870	9,870	8,710	7,270
8	6,040	3,500	3,720	4,100	5,650	7,080	8,600	6,130	7,050	10,200	8,890	7,340
9	6,100	4,020	3,560	5,050	5,890	6,860	8,640	6,220	7,100	10,100	8,810	7,390
10	6,270	3,740	3,480	5,540	6,020	7,200	8,890	5,830	7,200	9,900	8,580	7,460
11	6,250	3,480	3,820	5,660	5,720	6,890	8,880	5,730	7,010	9,900	8,700	7,460
12	6,080	3,780	3,940	5,610	5,810	6,380	8,480	5,840	6,970	9,560	8,730	7,110
13	6,110	3,810	4,110	5,470	6,100	6,230	8,770	6,100	7,430	9,360	8,710	6,730
14	5,870	4,290	4,110	4,870	6,060	6,700	8,810	6,480	7,500	9,410	8,710	6,480
15	5,990	4,580	3,600	4,200	5,710	6,580	8,900	6,560	7,370	9,630	8,880	6,280
16	5,780	4,390	3,620	4,430	5,480	6,840	8,790	6,270	7,450	9,600	8,830	6,500
17	6,180	4,110	3,670	4,270	4,490	6,840	9,330	6,160	7,750	9,140	8,670	6,730
18	5,890	3,750	3,800	3,870	4,410	7,420	9,230	6,370	7,600	9,110	8,850	6,810
19	6,770	3,760	3,510	3,830	4,010	7,680	9,190	6,490	7,370	9,150	8,860	6,760
20	6,640	3,920	3,310	3,670	4,130	7,340	8,940	6,650	7,670	8,840	8,840	6,660
21	5,170	4,480	3,300	3,910	4,960	7,900	8,880	6,670	7,690	8,860	8,810	6,710
22	4,160	4,180	2,920	4,500	5,510	8,190	8,430	6,480	7,640	8,900	8,870	6,720
23	4,650	3,370	2,860	4,600	6,090	8,890	8,050	6,680	7,580	9,190	8,360	6,670
24	5,240	3,130	2,400	4,110	6,050	9,180	7,230	6,740	8,050	9,090	8,010	6,790
25	3,990	3,260	1,750	3,460	6,020	9,220	6,630	7,210	7,930	9,110	7,990	6,780
26	4,070	3,610	2,790	2,440	6,170	8,970	6,490	7,200	8,030	8,920	8,040	6,860
27	4,250	3,740	3,290	2,580	6,500	9,270	6,750	7,070	8,230	8,800	7,950	6,830
28	4,130	3,580	3,280	2,740	6,510	9,310	5,860	7,040	8,560	8,610	8,030	7,030
29	4,110	3,500	2,980	2,880	6,560	8,960	5,810	6,280	8,790	8,710	8,080	7,090
30	4,280	3,580	3,400	3,130	-----	8,280	6,060	6,360	8,860	8,600	8,200	7,060
31	4,390	-----	2,910	4,170	-----	8,450	-----	5,630	-----	8,670	8,170	-----
Total	177,480	114,330	105,970	119,830	155,630	231,770	246,920	197,760	221,650	285,840	267,080	212,290
Mean	5,725	3,811	3,418	3,865	5,367	7,476	8,231	6,379	7,388	9,221	8,615	7,076
Ac-ft	352,000	226,800	210,200	237,700	308,700	459,700	489,800	392,300	439,600	567,000	529,700	421,100

Calendar year 1963: Max 11,500 Min 1,600 Mean 6,962 Ac-ft 5,040,000
 Water year 1963-64: Max 10,200 Min 1,750 Mean 6,384 Ac-ft 4,635,000

9-5265. All-American Canal above Pilot Knob wasteway, Calif.

Location.--Lat 32°45'00", long 114°42'20", in NW¼SE¼ sec.24, T.16 S., R.21 E., San Bernardino meridian, near right bank on downstream side of pier of bridge on U. S. Highway 80, 1.1 miles upstream from Pilot Knob wasteway, 5 miles downstream from turnout to Yuma Main Canal, 5½ miles northwest of Yuma, and 19½ miles downstream from intake at Imperial Dam.

Records available.--October 1938 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 150.00 ft above mean sea level, datum of 1929. Prior to Oct. 3, 1961, at datum 1.48 ft lower. Auxiliary water-stage recorder, in NE¼NW¼ sec.15, T.16 S., R.22 E., on wash overshoot structure 4.4 miles upstream at same datum.

Average discharge.--23 years (1941-64), 5,362 cfs (3,882,000 acre-ft per year).

Extremes.--1938-64: Maximum daily discharge, 11,400 cfs Apr. 28, 1958; no flow (since continuous operation of canal began Sept. 18, 1940) Dec. 17-20, 1940.

Remarks.--Records excellent. Discharge measurements generally made once a week. First flow in All-American Canal at this point began Feb. 5, 1939. Water is used for power development, irrigation in Coachella and Imperial Valleys, and can be released back to Colorado River through Pilot Knob powerplant and wasteway for power, for regulatory purposes, or downstream use in Mexico.

Cooperation.--Gage-height record furnished by Imperial Irrigation District.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,240	4,000	3,240	1,680	3,500	5,720	8,250	5,070	4,680	8,100	8,310	7,010
2	6,450	3,720	3,120	2,450	3,420	6,440	8,740	5,760	4,770	8,250	8,620	7,030
3	6,730	3,400	3,240	2,790	3,570	6,120	8,240	5,140	5,150	8,190	8,280	7,200
4	6,060	2,720	3,240	2,830	3,750	6,370	7,730	5,310	5,350	8,230	7,960	7,190
5	5,910	2,720	3,220	2,830	4,020	5,420	8,020	5,040	5,120	8,300	8,100	7,130
6	5,600	2,960	3,330	3,080	3,950	5,510	8,340	5,110	5,050	8,540	8,110	6,670
7	5,070	3,090	3,320	2,230	4,220	5,690	8,530	5,090	5,590	8,890	7,880	6,490
8	5,180	2,870	3,410	3,130	4,770	6,490	8,020	5,080	5,580	9,300	8,060	6,610
9	5,270	3,370	3,500	4,520	5,100	6,210	7,800	5,180	5,660	9,180	8,000	6,530
10	5,390	3,130	3,130	4,880	5,120	6,530	8,080	4,870	5,610	9,050	7,660	6,670
11	5,460	3,020	3,240	4,960	5,050	6,100	8,260	4,940	5,410	9,080	7,790	6,540
12	5,320	3,160	3,100	5,000	5,140	5,710	7,720	5,000	5,690	8,800	7,750	5,600
13	5,260	3,180	3,370	4,750	5,350	5,500	7,740	5,170	6,500	8,520	7,830	5,450
14	4,970	3,630	3,510	4,350	5,220	5,890	7,740	5,240	6,620	8,550	7,820	5,370
15	5,040	3,930	3,190	3,630	5,010	5,990	7,830	5,390	6,490	8,770	8,100	5,270
16	4,970	3,750	3,210	3,860	5,090	6,220	7,710	5,220	6,610	8,830	8,020	5,410
17	5,290	3,660	3,100	3,770	4,050	6,200	8,290	5,210	6,920	8,370	7,810	5,540
18	4,800	3,470	3,240	3,340	3,940	6,590	8,330	5,080	6,640	8,360	7,980	5,550
19	6,010	3,480	3,010	3,190	3,560	6,880	8,570	5,170	6,430	8,430	7,950	5,540
20	5,990	3,470	3,010	3,040	3,290	6,590	8,080	5,250	6,780	8,010	7,880	5,530
21	4,700	3,890	2,890	3,120	4,070	7,290	7,950	5,390	6,920	7,960	7,820	5,420
22	3,870	3,690	2,780	3,560	4,710	7,680	7,440	5,210	6,740	7,990	8,000	5,420
23	4,260	3,130	2,640	3,840	5,590	8,330	6,910	5,600	6,290	8,280	7,660	5,330
24	4,650	2,770	2,190	3,170	5,410	8,840	5,790	5,560	7,180	8,210	7,310	5,340
25	3,310	2,890	1,600	2,670	5,410	8,760	5,610	6,000	7,100	8,320	7,270	5,330
26	3,190	3,120	2,460	1,860	5,410	8,500	5,610	6,060	7,230	8,140	7,350	5,560
27	3,300	3,240	2,750	1,860	5,690	8,980	5,830	5,960	7,440	8,020	7,390	5,550
28	3,500	3,000	2,860	1,850	5,780	9,110	4,920	5,720	7,730	7,820	7,390	5,620
29	3,700	3,000	2,610	2,040	6,010	8,680	4,660	5,190	7,970	7,790	7,370	5,640
30	3,870	3,120	2,870	2,250	-----	7,750	4,670	5,260	8,080	7,670	7,380	5,660
31	3,720	-----	2,670	3,230	-----	7,740	-----	4,850	-----	7,730	7,350	-----
Total	153,080	98,580	93,050	99,760	135,200	213,830	221,410	164,120	189,330	259,680	242,200	179,200
Mean	4,938	3,286	3,002	3,218	4,662	6,898	7,380	5,294	6,311	8,377	7,813	5,973
Ac-ft	303,600	195,500	184,600	197,900	268,200	424,100	439,200	325,500	375,500	515,100	480,400	355,400

Calendar year 1963: Max 10,600 Min 1,600 Mean 6,074 Ac-ft 4,398,000
 Water year 1963-64: Max 9,300 Min 1,600 Mean 5,600 Ac-ft 4,065,000

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

9-5270. Pilot Knob powerplant and wasteway near Pilot Knob, Calif.

Location.--Lat 32°44'15", long 114°42'55", in NW¼SW¼ sec.25, T.16 S., R.21 E.. San Bernardino meridian, 2 miles east of summit of Pilot Knob, 6 miles west of Yuma, Ariz., and 20.8 miles downstream from intake of All-American Canal at Imperial Dam.

Records available.--February 1939 to September 1964. Prior to October 1943, monthly discharge only, published in WSP 1313. Prior to October 1956, published as Pilot Knob wasteway near Pilot Knob.

Gage.--Water-stage recorder on right bank of All-American Canal, 550 ft upstream from wasteway gates and 1,800 ft from entrance to powerplant (also used as auxiliary gage for station 9-5275, All-American Canal below Pilot Knob wasteway). Datum of gage is 150.00 ft (corrected) above mean sea level, datum of 1929. Tailrace gage is on left bank 680 ft downstream from powerplant, with automatic recording equipment in control house. All bypass gates are equipped with calibrated openings, which are read on all gate changes. Datum of tailrace is at mean sea level, datum of 1929. Elevation of sill of wasteway gates is 147.88 ft, datum of 1929.

Extremes.--1939-64: Maximum daily discharge, 8,350 cfs Jan. 26, 1958; no flow for long periods.

Remarks.--Records excellent. Daily discharge computed from flowmeter equipment or from head and gate openings on wicket gates. Discharge measurements generally made three times a month during flow. Records show water released through Pilot Knob powerplant and wasteway from All-American Canal and returned to Colorado River through Rockwood gates. Pilot Knob wasteway completed in summer of 1938 and first flow occurred Feb. 5, 1939. Pilot Knob powerplant was completed in January 1957 and first flow occurred Jan. 14, 1957. There was no return flow by Pilot Knob wasteway. Leakage through turbine gates of unit No. 2, from failure to close inlet gates at forebay level, resulted in estimated leakage of 40 cfs to river for periods Apr. 24, 25, Apr. 29 to June 10.

Cooperation.--Midnight readings of flowmeter, recorder graph of forebay, and record of tailrace elevation and gate openings furnished by Imperial Irrigation District.

Discharge in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0			0	0	1,050	1,970		0	2,010	2,500	1,520
2	0			0	0	1,380	2,100		0	2,220	2,810	1,570
3	0			0	0	1,280	2,210		0	2,350	2,560	1,580
4	0			0	0	1,830	1,830		0	2,360	2,240	1,530
5	0			0	0	980	2,150		0	2,510	2,250	1,480
6	0			0	0	951	2,510		0	2,710	2,250	1,480
7	0			0	0	959	2,800		0	3,070	2,150	1,470
8	0			36	0	1,540	2,410		0	3,130	2,260	1,450
9	0			989	0	1,440	2,310		0	3,040	2,250	1,360
10	0			953	0	1,930	2,340		0	3,030	2,130	1,180
11	0			950	0	1,410	2,380		0	3,030	2,230	1,010
12	0			949	0	1,040	2,310		560	3,000	2,220	0
13	0			950	0	978	2,150		1,510	2,600	2,110	0
14	0			771	0	1,230	2,180		1,450	2,600	2,290	0
15	0			0	0	1,280	2,180		1,180	2,600	2,350	0
16	0			0	0	1,500	1,790		1,180	2,620	2,360	0
17	0			0	0	1,540	2,100		1,160	2,490	2,130	0
18	0			0	0	1,520	2,160		1,120	2,470	2,220	0
19	1,360			892	0	1,470	1,960		1,040	2,540	2,230	0
20	1,900			59	0	1,150	1,680		1,130	2,140	2,210	0
21	1,360			0	326	1,470	1,490		1,130	2,110	2,200	0
22	967			0	962	1,610	1,410		829	2,200	2,200	0
23	1,030			0	1,330	2,150	716		250	2,200	1,880	0
24	951			0	1,120	2,370	0		1,140	2,210	1,610	0
25	61			0	1,050	2,420	0		1,170	2,200	1,540	0
26	0			0	972	2,210	884		1,110	2,210	1,500	0
27	0			0	949	3,050	1,280		1,400	2,180	1,490	0
28	0			0	950	3,050	289		1,520	2,180	1,570	0
29	0			0	1,010	3,350	0		1,640	2,160	1,570	0
30	0			0	-----	1,950	0		1,910	1,890	1,620	0
31	0			0	-----	1,750	-----		-----	1,870	1,650	-----
Total	7,629	0	0	6,549	8,669	51,838	49,589	0	22,429	75,930	64,580	15,630
Mean	246	0	0	211	299	1,672	1,653	0	748	2,449	2,083	521
Ac-ft	15,130	0	0	12,990	17,190	102,800	98,360	0	44,490	150,600	128,100	31,000
(t)	0	0	0	0	0	0	0	0	0	0	0	0
Calendar year 1963:	Max 6,980	Min 0	Mean 968	Ac-ft 700,400	+138							
Water year 1963-64:	Max 3,350	Min 0	Mean 827	Ac-ft 600,700	+0							

+ Return flow, in acre-feet, by Pilot Knob wasteway (also included in daily discharge table).

9-5275. All-American Canal below Pilot Knob wasteway, Calif.

Location.--Lat 32°44'05", long 114°43'25", in NW 1/4 Sec. 26, T.16 S., R.21 E., San Bernardino meridian, on left bank 0.4 mile downstream from Pilot Knob wasteway, 6 1/2 miles west of Yuma, Ariz., 15 miles upstream from turnout to Coachella Canal, and 21.2 miles downstream from intake at Imperial Dam.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 150.00 ft above mean sea level, datum of 1929. Auxiliary water-stage recorder on right bank 0.4 mile upstream used to determine head on Pilot Knob check gates (also used as forebay gage for sta 9-5270, Pilot Knob power-plant and wasteway). Datum of auxiliary gage is 150.00 ft above mean sea level, datum of 1929.

Extremes.--1961-64: Maximum daily discharge, 7,220 cfs July 12, 1963; minimum daily, 798 cfs Dec. 15, 1961.

Remarks.--Records excellent. Discharge measurements generally made three times a month. Water is used for power development at three sites below station, and for irrigation in Coachella and Imperial Valleys.

Cooperation.--Gage-height record and log of gate operation furnished by Imperial Irrigation District.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.190	3.880	3.040	1.730	3.810	4.620	5.890	5.000	4.700	6.080	5.880	5.410
2	6.360	3.660	3.040	2.090	3.640	4.720	6.020	5.320	4.900	6.060	5.770	5.410
3	6.730	3.470	3.130	2.710	3.630	4.750	5.870	5.140	5.240	5.760	5.730	5.540
4	6.070	2.790	3.180	2.620	3.690	4.560	5.780	5.010	5.270	5.800	5.720	5.560
5	5.980	2.780	3.240	2.560	3.940	4.560	5.560	4.780	5.010	5.770	5.850	5.570
6	5.760	2.930	3.240	2.830	4.030	4.410	5.480	4.770	4.920	5.820	5.890	5.240
7	5.190	2.950	3.230	2.350	4.150	4.570	5.530	5.080	5.140	5.860	5.790	5.050
8	5.260	3.110	3.440	2.840	4.790	4.850	5.470	5.190	5.340	6.140	5.810	5.090
9	5.250	3.570	3.200	3.440	5.170	4.800	5.490	5.330	5.370	6.120	5.760	5.210
10	5.340	3.300	3.210	3.840	5.160	4.620	5.790	5.070	5.490	5.970	5.590	5.460
11	5.300	2.950	3.420	3.970	4.800	4.740	5.820	5.090	5.370	6.040	5.600	5.500
12	5.210	3.220	3.260	4.000	4.890	4.530	5.550	5.120	5.160	5.740	5.700	5.580
13	5.220	3.220	3.450	3.940	5.160	4.530	5.810	5.220	5.150	5.880	5.690	5.420
14	4.960	3.510	3.600	3.600	5.110	4.780	5.870	5.370	5.210	5.920	5.550	5.230
15	5.000	3.760	3.160	3.660	4.860	4.780	6.000	5.440	5.260	6.090	5.640	5.240
16	4.840	3.650	3.170	3.880	4.800	4.810	6.130	5.150	5.240	6.180	5.650	5.280
17	5.170	3.510	3.200	3.730	3.940	4.700	6.450	5.130	5.370	5.880	5.640	5.370
18	4.830	3.190	3.250	3.250	3.850	5.120	6.270	5.240	5.470	5.890	5.650	5.500
19	4.600	3.280	3.050	2.310	3.330	5.360	6.580	5.250	5.400	5.860	5.660	5.520
20	4.040	3.370	2.920	2.880	3.360	5.400	6.680	5.410	5.700	5.820	5.580	5.430
21	3.310	3.810	2.980	3.030	3.670	5.650	6.800	5.420	5.800	5.830	5.610	5.360
22	2.870	3.680	2.710	3.620	3.770	5.790	6.340	5.270	5.920	5.850	5.710	5.350
23	3.170	3.000	2.560	3.680	4.070	6.080	6.050	5.590	6.040	6.110	5.720	5.320
24	3.700	2.760	2.250	3.370	4.230	6.050	5.710	5.640	6.110	5.980	5.710	5.360
25	3.320	2.920	1.690	2.800	4.150	6.280	5.550	6.020	5.990	6.060	5.750	5.320
26	3.290	3.140	2.520	1.830	4.390	6.250	4.760	5.810	6.010	5.920	5.860	5.510
27	3.410	3.140	2.950	1.880	4.690	5.830	4.790	5.730	6.170	5.810	5.820	5.460
28	3.590	2.980	2.910	1.990	4.710	5.950	4.600	5.800	6.250	5.600	5.810	5.540
29	3.640	2.970	2.680	2.040	4.790	5.170	4.620	5.120	6.310	5.640	5.860	5.610
30	3.790	3.030	2.970	2.420	-----	5.770	4.640	5.220	6.210	5.860	5.710	5.600
31	3.770	-----	2.610	3.410	-----	5.840	-----	4.810	-----	5.930	5.550	-----
Total	145,160	97,530	93,260	92,300	124,580	159,870	171,900	163,540	165,520	183,270	177,260	162,040
Mean	4,683	3,251	3,008	2,977	4,296	5,157	5,730	5,275	5,517	5,912	5,718	5,401
Ac-ft	287,900	193,400	185,000	183,100	247,100	317,100	341,000	324,400	328,300	363,500	351,600	321,400

Calendar year 1963: Max 7,220 Min 1,490 Mean 5,073 Ac-ft 3,672,000
 Water year 1963-64: Max 6,800 Min 1,690 Mean 4,744 Ac-ft 3,444,000

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

Return surface flows below Imperial Dam, Ariz.-Calif.

Between Imperial Dam and the international boundary return surface flows from irrigated areas enter the Colorado River through many drains and wasteways in Arizona and California. Other return flows enter the Gila River below the gaging station near Dome (9-5205). In addition, return flows collected by the Main Drain and East Main Canal are delivered across the international boundary for use in Mexico.

Diversions for irrigation in the Gila project in Arizona are made at Imperial Dam by the Gila Gravity Main Canal (see sta 9-5225). Diversions for the Yuma project in Arizona and California are made at Imperial Dam by the All-American Canal (see sta 9-5230) and from the Yuma Main Canal (see stas 9-5240 and 9-5255).

9-5270. Pilot Knob powerplant and wasteway.--See daily table elsewhere in this report.

9-5286. Laguna Canal wasteway.

Location.--Water-stage recorder and sharp-crested weir, in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.14, T.7 S., R.22 W., 1,000 ft downstream from Laguna Dam and three-quarters of a mile upstream from outlet to Colorado River.

Records available.--Monthly discharge October 1960 to September 1964.

Remarks.--Record shows waste water from North Gila Valley Irrigation and Drainage District to Colorado River. Flow record computed from standard weir rating.

Cooperation.--Record furnished by Bureau of Reclamation.

9-5288. Levee Canal wasteway.

Location.--Water-stage recorder and sharp-crested weir, in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.4, T.8 S., R.22 W., 1,000 ft upstream from outlet to Colorado River.

Records available.--Monthly discharge October 1960 to September 1964.

Remarks.--Record shows waste water from North Gila Valley Irrigation and Drainage District returned to Colorado River.

Cooperation.--Record furnished by Bureau of Reclamation.

9-5290. North Gila Drain No. 1.

Location.--Enters Colorado River in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.9, T.8 S., R.22 W., $\frac{5}{2}$ miles downstream from Laguna Dam.

Records available.--Monthly discharge October 1960 to September 1964.

Remarks.--Record shows waste water from North Gila Valley Irrigation and Drainage District returned to Colorado River. There is no gage but, due to fairly constant drainage, flow record is computed by interpolation between discharge measurements, which are made on a weekly basis at bridge 1,000 ft above outlet.

Cooperation.--Record furnished by Bureau of Reclamation.

9-5290.5 North Gila Drain No. 3.

Location.--Enters Gila River in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.18, T.8 S., R.21 W., 10 miles upstream from mouth.

Records available.--Monthly discharge April 1962 to September 1964.

Remarks.--Record shows seepage from Gila Gravity Main Canal. There is no gage; records are computed by interpolation between discharge measurements made five to six times a year.

Cooperation.--Record furnished by Bureau of Reclamation.

9-5291. Fortuna wasteway.

Location.--Water-stage recorder and sharp-crested weir, in NE $\frac{1}{4}$ sec.30, T.8 S., R.21 W., $\frac{1}{4}$ miles upstream from outlet to Gila River.

Records available.--Monthly discharge October 1960 to September 1963. (No record computed for 1964 water year).

Remarks.--Record shows waste water spilled from Gila Gravity Main Canal; flow rarely reaches Gila River.

Cooperation.--Record furnished by Bureau of Reclamation.

Return surface flows below Imperial Dam, Ariz.-Calif.--Continued

9-5291.5 North Gila Main Canal wasteway.

Location--Water-stage recorder and sharp-crested weir, in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.15, T.8 S., R.22 W., 1 mile upstream from outlet to Gila River.

Records available--Monthly discharge October 1960 to September 1964.

Remarks--Record shows waste water from North Gila Valley Irrigation and Drainage District less flow diverted for irrigation between gage and Gila River. Flow record computed from standard weir rating occasionally checked by discharge measurements.

Cooperation--Record furnished by Bureau of Reclamation.

9-5292. Bruce Church Drain.

Location--Pump in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.21, T.8 S., R.22 W., a quarter of a mile upstream from outlet to Gila River.

Records available--Monthly discharge April 1962 to September 1964.

Remarks--Record shows seepage water from parts of secs. 15, 16, and 21 (Bruce Church Ranch). Flow determined from pump rating.

Cooperation--Record furnished by Bureau of Reclamation.

9-5292.5 Bruce Church wasteway.

Location--Water-stage recorder and sharp-crested weir, in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.20, T.8 S., R.22 W., 500 ft upstream from outlet to Gila River.

Records available--Monthly discharge October 1960 to September 1964.

Remarks--Record shows waste water from North Gila Valley Irrigation and Drainage District returned to Gila River.

Cooperation--Record furnished by Bureau of Reclamation.

9-5293. Wellton-Mohawk Main Outlet Drain.

Location--Water-stage recorder in NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.17, T.8 S., R.21 W., 8 miles upstream from outlet to Gila River, which is half a mile upstream from mouth of Gila River. Prior to Feb. 20, 1962, gage heights measured from reference point on measuring bridge.

Records available--Monthly discharge October 1960 to September 1964.

Remarks--Record shows water pumped from numerous wells in Wellton-Mohawk Irrigation and Drainage District to lower the water table. Drainage is conveyed by concrete and earth channels to Gila River. Flow records computed from discharge measurements made on a weekly basis.

Cooperation--Record furnished by Bureau of Reclamation.

9-5293.3 South Gila Pump Outlet Channel No. 2.

Location--Sparling total-flow meter, in SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.28, T.8 S., R.22 W., at outlet to Wellton-Mohawk Main Outlet Drain.

Records available--Monthly discharge January 1962 to September 1964.

Remarks--Record shows water pumped from wells in South Gila Valley Irrigation and Drainage District and conveyed by concrete channel to Gila River.

Cooperation--Record furnished by Bureau of Reclamation.

9-5293.6 South Gila Pump Outlet Channel No. 1.

Location--Sparling total-flow meter, near center of sec.30, T.8 S., R.22 W., a quarter of a mile upstream from outlet to Gila River, which is half a mile upstream from mouth of Gila River.

Records available--Monthly discharge August 1961 to September 1964.

Remarks--Record shows water pumped from wells in South Gila Valley Irrigation and Drainage District and conveyed by concrete channel to Gila River.

Cooperation--Record furnished by Bureau of Reclamation.

9-5294. South Gila Drain No. 2.

Location--Sparling total-flow meter, near center of sec.24, T.8 S., R.23 W., at outlet to Colorado River.

Records available--Monthly discharge October 1960 to September 1964.

Remarks--Record shows waste water from South Gila Valley Irrigation and Drainage District returned to Colorado River.

Cooperation--Record furnished by Bureau of Reclamation.

DIVERSIONS AND RETURN FLOWS AT AND BELOW IMPERIAL DAM

Return surface flows below Imperial Dam, Ariz.--Calif.--Continued

9-5300. Reservation Canal Main Drain No. 4.

Location--Water-stage recorder in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.26, T.16 S., R.22 E., San Bernardino meridian, 500 ft upstream from crossing of U. S. Highway 80. Drainage canal enters Yuma Main Canal wasteway 200 ft downstream from spillway structure. Prior to May 1955, it entered 500 ft upstream from outlet of Yuma Main Canal wasteway in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.26, S., R.22 E., San Bernardino meridian.

Records available--Monthly discharge January 1913 to April 1920, October 1921 to March 1925, January 1934 to September 1964. Prior to October 1955, published as California drainage canal.

Remarks--Record shows waste and drainage water from area east of Yuma Main Canal on Reservation Division. Since 1939, seepage from All-American Canal has caused large increase. Flow is not included in the record of Yuma Main Canal wasteway. Fifty-two discharge measurements made during year.

Cooperation--Record furnished by Bureau of Reclamation.

9-5305. Drain 8-B.

Location--Enters Colorado River in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.30, T.16 S., R.22 E., San Bernardino meridian, 4 miles downstream from outlet of Yuma Main Canal wasteway.

Records available--Monthly discharge March 1948 to September 1964. Prior to October 1955, published as Araz drain.

Remarks--Record shows waste and drainage water west of Yuma Main Canal on the Reservation Division. There is no gage, but due to fairly constant drainage, flow record is computed by Bureau of Reclamation by interpolation between discharge measurements, of which 52 were made during year by Imperial Irrigation District.

Cooperation--Record furnished by Bureau of Reclamation.

9-5320. Cooper wasteway.

Location--Water-stage recorder and weir, in NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.33, T.8 S., R.24 W., half a mile downstream from Morelos Dam.

Records available--Monthly discharge January 1934 to September 1964.

Remarks--Record shows waste water from Valley Division returned to Colorado River.

Cooperation--Record furnished by International Boundary and Water Commission (U. S. Section).

9-5325. Eleven Mile wasteway.

Location--Water-stage recorder and regulating gate in NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.8, T.9 S., R.24 W., $\frac{3}{4}$ miles downstream from Morelos Dam.

Records available--January 1924 to September 1964.

Remarks--Record shows waste water from Valley Division returned to Colorado River.

Cooperation--Record furnished by International Boundary and Water Commission (U. S. Section).

9-5330. Twenty-one Mile wasteway.

Location--Recording gage and flume, in NE $\frac{1}{4}$ sec.35, T.10 S., R.25 W., $1\frac{1}{2}$ miles downstream from Morelos Dam.

Records available--March 1939 to September 1964.

Remarks--Record shows waste water from Valley Division returned to Colorado River.

Cooperation--Record furnished by International Boundary and Water Commission (U. S. Section).

9-5340. Main drain.

Location--Pumping plant in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.11, T.11 S., R.25 W., half a mile west of San Luis, Ariz. Water-stage recorder at outlet, and at inlet since May 8, 1953.

Records available--Monthly discharge January 1919 to September 1964.

Remarks--Record computed from rated pumps checked by discharge measurements made once a month by International Boundary and Water Commission (U. S. Section). Flow consists mostly of drainage water from the Valley Division which is pumped across the Arizona-Sonora boundary for use in Mexico.

Cooperation--Record furnished by Yuma County Water Users' Association, and International Boundary and Water Commission (U. S. Section).

9-5345. East Main Canal wasteway.

Location--Water-stage recorder, in NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.12, T.11 S., R.25 W., a quarter of a mile east of Main drain pumping plant and a quarter of a mile west of San Luis, Ariz.

Records available--Monthly discharge January 1924 to June 1928, January 1932 to December 1933, April 1935 to September 1964. Calendar year estimates 1934 and 1935, published in WSP 1313.

Remarks--Record shows amount of unused water at the extreme end of the Valley Division which is discharged across the Arizona-Sonora boundary for use in Mexico.

Cooperation--Record furnished by International Boundary and Water Commission (U. S. Section).

Return surface flows below Imperial Dam, Ariz.-Calif. Continued

Monthly return flows, in acre-feet, water year October 1963 to September 1964

Month	Laguna Canal wasteway	Levee Canal wasteway	North Gila Drain No.1	North Gila Drain No.3	Fortuna wasteway	North Gila Main Canal wasteway	Bruce Church Drain
October.....	825	1,010	639	101	N	629	61
November.....	310	1,750	722	117		366	60
December.....	499	1,060	514	93	O	497	61
Calendar year 1963.....	6,920	17,660	7,610	1,070		7,890	723
January.....	342	1,040	448	109	R	354	61
February.....	324	982	401	63		614	58
March.....	1,150	825	474	61	E	806	61
April.....	382	1,540	583	60		776	60
May.....	235	866	653	61	C	343	61
June.....	184	530	797	76		575	60
July.....	333	885	883	92	O	396	61
August.....	111	863	843	92		606	61
September.....	279	544	893	89	R	671	60
Water year 1964.....	4,970	11,900	7,850	1,010	D	6,630	725

Month	Bruce Church wasteway	Wellton- Mohawk Main Outlet Drain	South Gila Pump Outlet Channel No. 2	South Gila Pump Outlet Channel No. 1	South Gila Drain No.2	Reservation Canal Main Drain No. 4	Drain 8-B
October.....	755	4,130	1,750	2,430		3,940	401
November.....	749	16,150	1,100	2,120		3,970	389
December.....	1,080	16,180	1,420	1,880		3,840	309
Calendar year 1963.....	9,170	200,700	25,220	29,060	O	47,020	4,290
January.....	671	17,320	1,310	2,090		3,730	248
February.....	603	15,570	1,250	1,910		3,540	240
March.....	815	17,760	1,640	2,300		3,910	260
April.....	656	16,040	949	1,560		3,820	276
May.....	331	15,390	953	2,170		3,980	244
June.....	138	13,590	459	2,140		3,830	228
July.....	364	16,870	975	1,370		4,280	313
August.....	286	17,200	621	2,450		3,920	317
September.....	441	13,810	975	1,950		3,320	272
Water year 1964.....	6,890	180,000	13,400	24,370	O	46,080	3,500

Month	Cooper, wasteway	Eleven Mile wasteway	Twenty- one Mile wasteway	Main drain	East Main Canal wasteway		
October.....	138	1,330	894	12,270	1,060		
November.....	197	870	728	11,330	894		
December.....	114	1,300	880	10,920	793		
Calendar year 1963.....	1,730	14,930	8,820	135,800	13,180		
January.....	156	1,020	588	11,200	928		
February.....	207	1,070	470	11,990	982		
March.....	142	1,150	919	12,430	1,270		
April.....	148	1,250	574	11,880	1,100		
May.....	151	900	730	11,980	922		
June.....	106	333	288	11,240	625		
July.....	93	221	127	10,870	345		
August.....	111	457	315	10,640	260		
September.....	67	192	142	9,720	301		
Water year 1964.....	1,630	10,090	6,660	136,500	9,480		

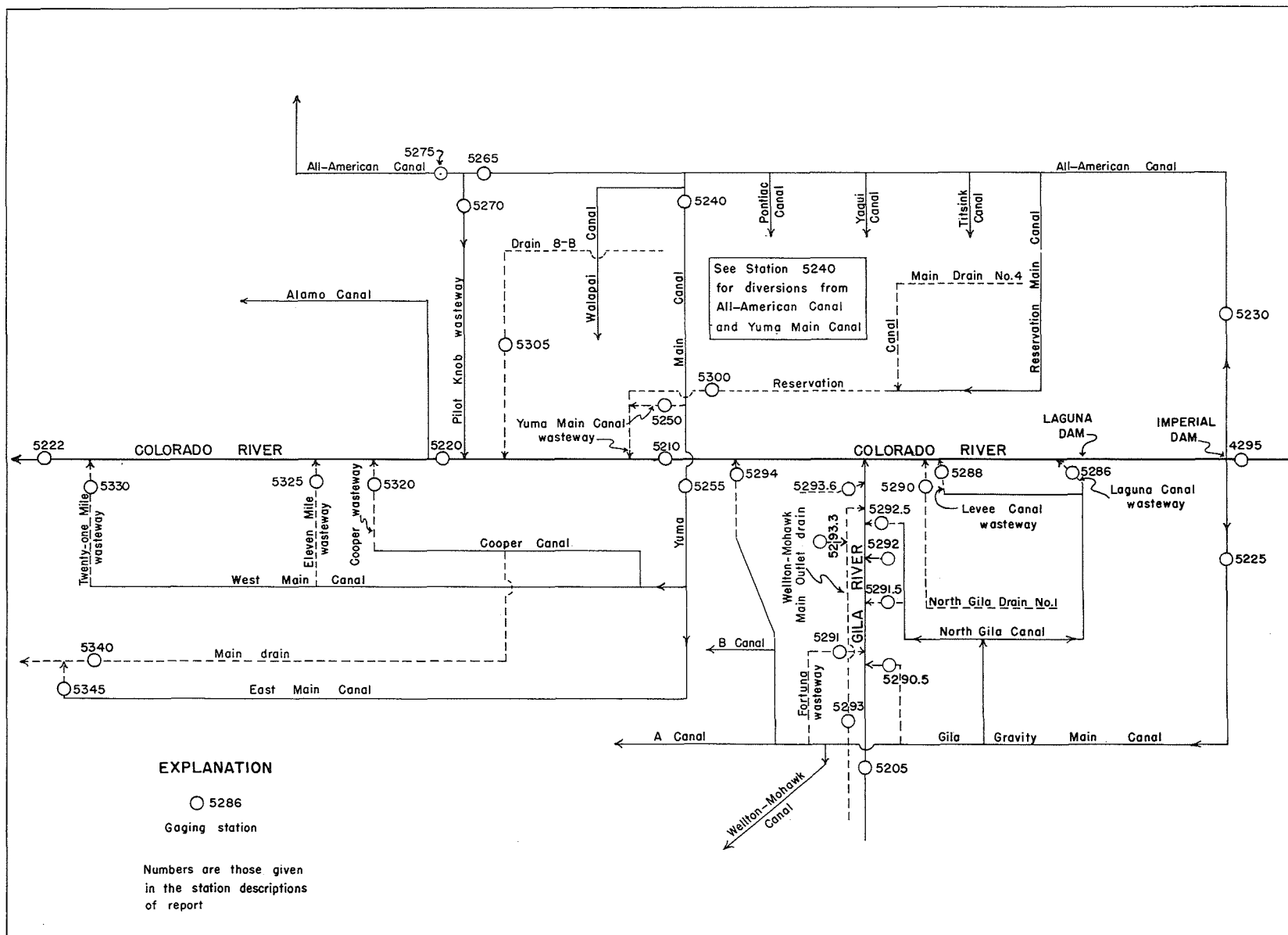


Figure 1.--Schematic diagram showing gaging stations on streams, diversions, and return flows between Imperial Dam and the southerly international boundary

10-2506. Wildrose Creek near Wildrose Station, Calif.

Location--Lat 36°15'55", long 117°10'40", in Death Valley National Monument, on left bank 0.8 mile east of road from Wildrose Station to Stovepipe Wells and 2 miles east of Wildrose Spring, Inyo County.

Drainage area--23.7 sq mi.

Records available--October 1960 to September 1964.

Gage--Water-stage recorder with rain-gage attachment since June 1964. Altitude of gage is 4,300 ft (from topographic map).

Extremes--Maximum discharge during year, 303 cfs Aug. 4 (gage height, 4.15 ft) on basis of slope-area measurement of maximum flow; no flow for most of year.

1960-64: Maximum discharge, 330 cfs Aug. 5, 1961 (gage height, 5.10 ft), on basis of slope-area measurement of maximum flow; no flow for most of each year.

Remarks--Records poor. No regulation or diversion above station. This station has been included in the nation-wide network of hydrologic bench marks. Monthly precipitation, in inches, for the period July to September is as follows: July, 1.2; August, 0.6; September, zero.

Discharge, in cubic feet per second, water year October 1963 to September 1964

July 26.....** 0.2
Aug. 4.....* 7.3

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
July 1964.....	0.2	0.2	0	0.006	0.4
August.....	7.3	7.3	0	.24	14
Calendar year 1963.....	-	.1	0	.0005	.4
Water year 1963-64.....	-	7.3	0	.02	14

Peak discharge (base, 10 cfs)--Aug. 4 (1300 hrs) 303 cfs (4.15 ft).

* Discharge measurement made on this day.

**Field estimate made on this day.

Note.--Flow occurred only on days listed above.

PANAMINT VALLEY

10-2508. Darwin Creek near Darwin, Calif.

Location.--Lat 36°19'15", long 117°31'20", in SE $\frac{1}{4}$ SW $\frac{1}{4}$, sec.34, T.18 S., R.41 E., on right bank 700 ft downstream from Darwin Falls, 1.3 miles upstream from unnamed tributary, and 5.4 miles northeast of Darwin.

Drainage area.--173 sq mi.

Records available.--October 1962 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 2,640 ft (from topographic map). U.S.W.B. non-recording rain gage at Darwin.

Extremes.--Maximum discharge during year, 70 cfs Aug. 5 (gage height, 3.02 ft), on basis of field estimate of maximum flow; minimum daily, 0.2 cfs for many days.

1962-64: Maximum discharge, that of Aug. 5, 1964; minimum daily, 0.2 cfs for many days in each year.

Revision.--The maximum discharge for the water year 1963 has been revised to 4.8 cfs Aug. 8, 1963 (gage height, 1.91 ft), superseding figure published in 1963 Report.

Remarks.--Records good except those above 1 cfs, which are poor. No regulation above station. Town of Darwin pumps water above station for municipal supply. Monthly precipitation, in inches, is as follows: October, 0.47; November, 0.14; December, 0.02; January, 0.26; March, 0.16; April, 0.04; May, 0.34; July, 0.05; August, 0.69; the water year, 2.17.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Aug. 5

Aug. 6 to Sept. 30

1.3 0.2
1.4 .4

1.4 0.3
1.6 1.2
1.8 3.1
1.9 4.6

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3
2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	.3
3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	.3
4	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	.3
5	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	** 2.3	.3
6	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	4.1	.3
7	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	.3
8	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	*.3
9	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	
10	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	
11	.3	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	
12	.3	.3	.3	.3	*.3	.3	.3	.3	.3	.2	.3	
13	.3	.3	.3	.3	.3	.3	.3	*.3	.3	.2	.3	
14	.3	*.3	.3	*.3	.3	.3	*.3	.3	.3	.2	.3	
15	.3	.3	.3	.3	.3	.3	.3	.3	*.3	.2	.3	
16	.4	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	
17	.4	.3	*.3	.3	.3	*.3	.3	.3	.3	.2	.3	a 0.3
18	.4	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	
19	.4	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	
20	.4	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	
21	.4	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	
22	.4	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	
23	.4	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	
24	*.4	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	
25	.4	.3	.3	.3	.3	.3	.3	.3	.2	.3	.3	
26	.4	.3	.3	.3	.3	.3	.3	.3	.2	.3	.3	
27	.4	.3	.3	.3	.3	.3	.3	.3	.2	.3	.3	
28	.3	.3	.3	.3	.3	.3	.3	.3	.2	*.3	.3	
29	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	.3	
30	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	.3	
31	.3	.3	.3	.3	.3	.3	.3	.3	.2	.3	.3	
Total	10.5	9.0	9.3	9.3	8.7	9.3	9.0	9.3	8.4	6.9	15.1	9.0
Mean	0.34	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.28	0.22	0.49	0.30
Max	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	4.1	-
Min	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	-
Ac-ft	21	18	18	18	17	18	18	18	17	14	30	18

Calendar year 1963: Max 0.5 Min 0.2 Mean 0.29 Ac-ft 212
 Water year 1963-64: Max 4.1 Min 0.2 Mean 0.31 Ac-ft 225

Peak discharge (base, 10 cfs).--Aug. 5 (2300 hrs) 70 cfs (3.02 ft)

* Discharge measurement made on this day.

** Field estimate made on this day.

a No gage-height record.

10-2510. Big Dip Creek near Stovepipe Wells, Calif.

Location.--Lat 36°55'05", long 117°17'35" in Death Valley at culvert on road to Scotty's Castle, 21 miles northwest of Stovepipe Wells, Inyo County.

Drainage area.--0.95 sq mi.

Records available.--Water years 1959-63 (annual maximum), April 1963 to September 1964.

Gage.--Flood-hydrograph recorder and crest-stage gage. Altitude of gage is 1,620 ft (from topographic map). January 16, 1959 to April 7, 1963, crest-stage gage only at same site and datum.

Extremes.--1963: Maximum discharge during period April to September, 18 cfs Aug. 7 (gage height, 11.62 ft, from crest-stage gage); no flow for most of period.

1963-64: Maximum discharge during water year, 8.2 cfs Apr. 1 (gage height, 10.82 ft, from crest-stage gage); no flow for most of year.

1959-64: Maximum discharge, 46 cfs Aug. 22, 1961 (gage height, 13.58 ft), by computation of maximum flow through culvert; no flow for most of each year.

Remarks.--Records poor. No regulation or diversion above station.

Discharge, in cubic feet per second, period April to September 1963 and Water Year October 1963 to September 1964

June 6, 1963.....a0.2
Aug. 7.....a.8
Apr. 1, 1964.....a.3

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
June 1963.....	0.2	0.2	0	0.007	0.4
August.....	.8	.8	0	.03	1.6
April 1964.....	.3	.3	0	.01	.6
Period April to September 1963.....	-	.8	0	-	-
Calendar year 1963.....	-	-	-	-	-
Water year 1963-64.....	-	.3	0	.0008	.6

a No gage-height record.

Note.--Flow occurred only on days listed above.

DEATH VALLEY

10-2513. Amargosa River at Tecopa, Calif.

Location.--Lat 35°50'55", long 116°13'45", in NW 1/4 sec. 9, T.20 N., R.7 E., on right bank 20 ft upstream from county road and 0.2 mile west of Tecopa.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder with rain-gage attachment and concrete-culvert control. Altitude of gage is 1,310 ft (from topographic map).

Extremes.--Maximum discharge during year, 20 cfs July 27 (gage height, 1.62 ft); no flow for many days.

1961-64: Maximum discharge, 257 cfs Feb. 10, 1963 (gage height, 3.84 ft), from rating curve extended above 8.0 cfs on basis of indirect measurement of flow through culvert at gage height 3.41 ft; no flow for many days in each year.

Flood (date unknown) reached a stage of 8.1 ft, from floodmarks (discharge, 790 cfs, based on computation of maximum flow through culvert).

Remarks.--Records good. Monthly precipitation, in inches, is as follows: November, 0.5; March, 0.1; April, 0.2; July, 0.2; the water year, 1.0.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.7	0
.8	.1
.9	.8
1.0	1.9
1.1	3.5
1.3	8.1

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.2	0.4	1.1	3.7	2.6	1.0	0.8	0.5	0	0	0.1	
2	.2	.5	1.1	3.9	3.0	1.4	1.5	.5	0	0	0	
3	.2	.5	1.1	2.4	1.3	1.2	2.1	.5	0	0	0	*
4	.2	.6	1.1	2.2	1.2	.6	7.9	.5	0	0	0	
5	.2	.6	1.1	2.4	1.7	1.1	4.1	.5	.1	0	0	
6	.3	.7	1.2	1.5	1.5	.7	1.7	.5	0	0	0	
7	.3	.8	1.2	2.1	.9	1.0	.8	.7	0	0	0	
8	.3	.7	1.1	1.7	1.0	1.2	.7	.7	0	0	0	
9	.2	.7	1.0	1.7	1.2	.9	.7	.6	0	0	0	
10	.2	.7	1.1	1.9	1.4	1.0	.8	.5	0	0	0	
11	.2	.8	1.2	1.5	1.9	.9	.6	.5	0	0	0	
12	.2	.8	.7	1.9	1.1	.8	.7	*.4	0	0	0	
13	.2	.8	.9	1.9	1.1	1.1	.6	.3	0	0	0	
14	.3	.7	1.1	2.2	.7	1.0	.6	.2	.1	0	0	
15	.3	.7	1.2	1.9	.7	1.2	.6	.3	0	0	0	
16	.3	.7	1.3	1.2	1.4	1.0	.5	.2	*0	0	0	
17	.4	.7	*1.3	1.7	1.1	1.0	.4	.1	0	0	0	
18	.6	.7	1.2	2.7	1.3	.8	.5	.2	0	0	0	
19	.5	*.7	1.4	3.3	1.2	.7	.6	.2	0	0	0	
20	.4	1.8	2.2	3.5	.8	.7	.7	.1	0	0	0	
21	.4	4.6	3.0	3.3	.7	.6	*.6	.1	0	*0	0	
22	.4	2.9	2.6	3.5	1.0	.7	.5	.1	0	0	0	
23	*.4	1.4	2.2	*3.3	1.0	1.1	.4	.1	0	0	0	
24	.4	1.3	1.9	2.2	.7	*1.2	.6	.1	0	0	0	
25	.5	1.3	1.7	1.9	1.0	1.1	.7	.1	0	0	0	
26	.5	.7	1.7	1.9	.8	1.1	.7	.1	0	0	0	
27	.6	.9	1.8	2.1	.8	1.1	.7	.1	0	8.0	0	
28	.6	1.1	2.4	1.9	.9	1.1	.7	0	0	4.5	0	
29	.6	1.0	3.5	1.9	1.0	1.1	.7	.1	0	.5	0	
30	.5	1.0	3.9	2.4	-----	1.0	.6	.1	0	.2	0	
31	.6	-----	4.1	2.7	-----	.8	-----	.1	-----	.1	0	-----
TOTAL	11.2	30.8	52.4	72.4	35.0	30.2	33.1	9.0	0.2	13.3	0.1	0
MEAN	0.36	1.03	1.69	2.34	1.21	0.97	1.10	0.29	0.007	0.43	0.003	0
MAX	0.6	4.6	4.1	3.9	3.0	1.4	7.9	0.7	0.1	8.0	0.1	0
MIN	0.2	0.4	0.7	1.2	0.7	0.6	0.4	0	0	0	0	0
AC-FT	22	61	104	144	69	60	66	18	0.4	26	0.2	0

CALENDAR YEAR 1963 MAX 1.67 MIN 0 MEAN 2.60 AC-FT 1,880
 WATER YEAR 1963-64 MAX 8.0 MIN 0 MEAN 0.79 AC-FT 571

Peak discharge (base, 15 cfs)---July 27 (2100 hrs) 20 cfs (1.62 ft).

* Discharge measurement or observation of no flow made on this day.

DEATH VALLEY

39

10-2513.5. Horse Thief Creek near Tecopa, Calif.

Location.--Lat 35°46'50", long 115°53'35", T.20 N., R.10 E., on left bank 0.6 mile northwest of Horse Thief Springs and 19.2 miles southeast of Tecopa, San Bernardino County.

Drainage area.--3.06 sq mi.

Records available.--October 1960 to September 1964.

Gage.--Water-stage recorder with rain-gage attachment. Altitude of gage is 4,600 ft (from topographic map).

Extremes.--No flow during year.

1960-64: Maximum discharge, 411 cfs Aug. 23, 1961 (gage height, 3.13 ft), from rating curve extended above 10 cfs on basis of slope-area measurement of maximum flow; no flow for most of each year.

Remarks.--No flow since Aug. 23, 1961. No regulation or diversion above station. Monthly precipitation, in inches, is as follows: October, 1.3; November, 0.8; March, 0.2; April, 0.9; July, 0.5; the water year, 3.7.

IVANPAH VALLEY

10-2523. China Spring Creek near Mountain Pass, Calif.

Location.--Lat 35°28'05", long 115°30'30", in E $\frac{1}{2}$ sec. 31, T.16 N., R.14 E., on upstream right bank of State highway culvert on U. S. Highway 466 and 91 and 2.0 miles east of Mountain Pass.

Drainage area.--0.94 sq mi.

Records available.--January 1959 to September 1964.

Gage.--Water-stage recorder with rain-gage attachment, crest-stage gage, and box-culvert control. Altitude of gage is 4,400 ft (from topographic map).

Extremes.--Maximum discharge during year, 113 cfs Aug. 5 (gage height, 2.75 ft), by computation of maximum flow through culvert; no flow for most of year.

1959-64: Maximum discharge, that of Aug. 5, 1964; no flow in most years.

Remarks.--Records poor. No regulation or diversion above station. Monthly precipitation, in inches, is as follows: October, 1.0; November, 0.8; January, 0.4; March, 0.1; April, 0.1; May, 0.3; July, 1.7; August, 3.6; the water year, 8.0.

Discharge, in cubic feet per second, water year October 1963 to September 1964

July 9.....** 0.2
Aug. 5.....* 2.4

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
July 1964.....	0.2	0.2	0	0.006	0.4
August.....	2.4	2.4	0	.08	4.8
Calendar year 1963.....	-	0	0	0	0
Water year 1963-64.....	-	2.4	0	.007	5.2

* Discharge measurement made on this day.

** Field estimate made on this day.

Note.--Flow occurred only on days listed above.

BRISTOL LAKE BASIN

10-2525.5. Caruthers Creek near Ivanpah, Calif.

Location.--Lat 35°14'35", long 115°17'55", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.6, T.13 N., R.16 E., on left bank 6.6 miles south of Ivanpah.Drainage area.--1.13 sq mi.Records available.--October 1963 to September 1964.Gage.--Water-stage recorder. Altitude of gage is 5,640 ft (from topographic map).Extremes.--Maximum discharge during year, 5 cfs (estimated) Oct. 18; no flow for most of year.Remarks.--Records poor. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Oct. 18.....* a0.2
 Mar. 25......1
 May 8......1

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	0.2	0.2	0	0.006	0.4
March 1964.....	.1	.1	0	.003	.2
May.....	.1	.1	0	.003	.2
Calendar year 1963.....	-	-	-	-	-
Water year 1963-64.....	-	.2	0	.001	.8

Peak discharge (base, 5.0 cfs).--Oct. 18 (time unknown) 5 cfs (estimated).

* Field estimate made on this day.

a No gage-height record.

Note.--Flow occurred only on days listed above.

DANBY LAKE BASIN

10-2530.8. Sunflower Wash near Essex, Calif.

Location.--Lat 34°33'00", long 115°06'25", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.5, T.5 N., R.18 E., on left bank about 0.3 mile downstream from road crossing and 14.9 miles southeast of Essex.Drainage area.--3.04 sq mi.Records available.--October 1962 to September 1964.Gage.--Flood-hydrograph recorder and crest-stage gage. Altitude of gage is 3,040 ft (from topographic map). Recording rain gage 2.3 miles upstream.Extremes.--No flow during year.

1962-64: Maximum discharge, 972 cfs (revised) Sept. 18, 1963 (gage height, 4.17 ft), on basis of slope-area measurement of maximum flow; no flow for most of each year.

Remarks.--No flow since Sept. 18, 1963. No regulation or diversion above station. Discharge for calendar year 1963 is as follows: maximum daily, 70 cfs; minimum, zero; mean, 0.21 cfs; total, 149 acre-ft. Monthly precipitation, in inches, is as follows: October, 1.07; November, 0.18; March, 0.15; July, 0.5; the water year, 1.90.

DALE LAKE BASIN

10-2533.2. Quail Wash near Joshua Tree, Calif.

Location.--Lat 34°07'05", long 116°18'30", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.1, T.1 S., R.6 E., on right bank 0.2 mile downstream from Coyote Hole Spring and 1.1 miles south of Joshua Tree.Drainage area.--100 sq mi.Records available.--March to September 1964.Gage.--Water-stage recorder. Altitude of gage is 2,920 ft (from topographic map).Remarks.--No flow since Mar. 16, 1964, date of establishment. No regulation or diversion above station.

DALE LAKE BASIN

41

10-2533.5. Fortynine Palms Creek near Twentynine Palms, Calif.

Location.--Lat 34°07'15", long 116°05'45", in Joshua Tree National Monument on left bank 50 ft upstream from North Monument boundary, 1.1 miles downstream from Fortynine Palms Oasis, and 2.6 miles southwest of Twentynine Palms, San Bernardino County.

Drainage area.--8.55 sq mi.

Records available.--October 1962 to September 1964.

Gage.--Water-stage recorder with rain-gage attachment. Altitude of gage is 2,260 ft (from topographic map).

Extremes.--Maximum discharge during year, 955 cfs Oct. 18 (gage height, 4.15 ft, from crest-stage gage), from rating curve extended above 0.2 cfs on basis of slope-area measurements at gage heights 2.55 and 4.55 ft; no flow for most of year.

1962-64: Maximum discharge: 1,240 cfs Aug. 7, 1963 (gage height, 4.55 ft from crest-stage gage), from rating curve extended above 0.2 cfs on basis of slope-area measurement at gage heights 2.55 and 4.55 ft; no flow for most of each year.

Flood in August 1961 reached a stage of 4.9 ft, from profile of floodmarks on left bank (discharge, 1,240 cfs from slope-area measurement).

Remarks.--Records poor. No regulation or diversion above station. Monthly precipitation, in inches, is as follows: October, 3.5; November, 0.7; January, 0.4; February, 0.3; March, 1.2; April, 1.4; May, 0.7; June, 0.1; July, 1.4; August, 0.2; the water year, 9.9.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Oct. 18.....69
19.....5.4
July 26......7

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	74.4	69	0	2.40	148
July 1964.....	.7	.7	0	.02	1.4
Calendar year 1963.....	-	69	0	.42	303
Water year 1963-64.....	-	69	0	.21	149

Note.--Flow occurred only on days listed above.

CHUCKWALLA VALLEY

10-2535.4. Corn Springs Wash near Desert Center, Calif.

Location.--Lat 33°37'30", long 115°19'20", on right bank 0.1 mile downstream from unnamed tributary and 7.6 miles southeast of Desert Center, San Bernardino County.

Drainage area.--24.1 sq mi.

Records available.--October 1963 to September 1964.

Gage.--Flood-hydrograph recorder and recording rain gage at site 3.2 miles upstream. Altitude of gage is 1,600 ft (from topographic map).

Extremes.--Maximum discharge during year, 600 cfs Aug. 2 (gage height, 4.02 ft), on basis of field estimate of maximum flow; no flow for most of year.

Remarks.--Records poor. No regulation or diversion above station. Monthly precipitation, in inches, is as follows: June, zero; July, zero; August, 1.7; September, zero; the water year, incomplete.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Aug. 2.....** 12

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
August 1964.....	12	12	0	0.39	24
Calendar year 1963.....	-	-	-	-	-
Water year 1963-64.....	-	12	0	.03	24

** Field estimate made on this day.

Note.--Flow occurred only on days listed above.

10-2536. Eagle Creek at Eagle Mountain, Calif.

Location.--Lat 33°51'50", long 115°29'50", on right bank in Joshua Tree National Monument, 0.6 mile from Eagle Mountain and 11.8 miles northwest of Desert Center, Riverside County.

Drainage area.--7.63 sq mi.

Records available.--October 1960 to September 1964.

Gage.--Water-stage recorder with rain-gage attachment. Datum of gage is 1,515.35 ft above mean sea level (levels by Kaiser Industries). Prior to Mar. 12, 1962, at site 0.2 mile downstream at datum 39.77 ft lower.

Extremes.--Maximum discharge during year, 1.5 cfs (estimated) Nov. 1 (gage height, 1.50 ft); no flow for most of year.

1960-64: Maximum discharge, about 380 cfs Aug. 23, 1961 (gage height, 2.81 ft, present datum), on basis of field estimate of maximum flow; no flow for most of each year.

Remarks.--Records poor. No daily discharge above 0.05 cfs since Sept. 17, 1963. No regulation or diversion above station. Monthly precipitation, in inches, is as follows: October, 0.1; November, 0.5; August, 0.1; the water year, 0.7.

SALTON SEA BASIN

10-2540.05. Salton Sea near Westmoreland, Calif.

Location.--Lat 33°11'37", long 115°49'54", in NE 1/4 Sec. 21, T.11 S., R.11 E., at outer end of third mooring pier from western shore at Sandy Beach 15.5 miles northwest of Westmoreland.

Drainage area.--8,360 sq mi, approximately.

Records available.--November 1904 to September 1964. Records prior to 1932 are published in WSP 735.

Gage.--Water-stage recorder. Datum of gage is 250.00 ft below mean sea level, datum of 1929, adjustment of 1934; gage readings have been converted to elevations below mean sea level. Prior to January 1925, staff gages at various sites along eastern shore, but all elevations have been converted to datum of 1901. Jan. 1925 to Oct. 22, 1951, staff gages and reference marks at site on western shore 22 miles northwest originally set to 1901 datum and on Mar. 2, 1956, found at mean-sea-level datum 0.91 ft lower than 1929 datum, adjustment of 1934 (levels by U.S.C. & G.S.).

Extremes.--Maximum elevation during year, 231.3 ft below mean sea level Apr. 14-17; minimum, 232.6 ft below mean sea level Oct. 1-17, Sept. 21-30.

1904-04: Maximum elevation, 195.9 ft below mean sea level (present datum) in February and March 1907; minimum since 1906, 251.6 ft below mean sea level (present datum) in November 1924.

Remarks.--Bottom of sea is 277.7 ft below mean sea level. See WSP 300, 735, and 918 for condensed history of Salton Sea. Corrected area and capacity tables for sea dated Jan. 8, 1965, based on resurveys made in 1957 above elevation -240 ft and in 1962 below -236 ft, is given below.

Elevation (feet below mean sea level)	Area (acres)	Capacity (acre-feet)	Elevation (feet below mean sea level)	Area (acres)	Capacity (acre-feet)
277.7	0	0	252	148,800	2,250,000
276	3,800	2,300	248	163,700	2,874,000
274	20,600	25,700	244	179,700	3,562,000
272	40,300	86,000	240	196,900	4,315,000
270	62,900	188,700	235	221,800	5,360,000
268	81,600	334,100	230	235,800	6,504,000
266	94,600	510,600	225	249,000	7,716,000
264	105,600	711,000	220	262,000	8,993,000
262	114,800	932,000	215	275,000	10,340,000
260	122,600	1,170,000	210	288,500	11,740,000
256	134,700	1,684,000	200	315,500	14,760,000

Month-end elevations, in feet below mean sea level, water year October 1963 to September 1964

Date	Elevation (feet)	Date	Elevation (feet)
Sept. 30, 1963.....	232.6	Apr. 30.....	231.4
Oct. 31.....	232.3	May 31.....	231.6
Nov. 30.....	232.3	June 30.....	231.8
Dec. 31.....	232.1	July 31.....	232.0
Jan. 31, 1964.....	231.9	Aug. 31.....	232.4
Feb. 29.....	231.7	Sept. 30.....	232.6
Mar. 31.....	231.4		

Inflow to Salton Sea, Calif.

Salton Sea, located near the northwest corner of Imperial County, is a closed basin consisting of 8,360 sq mi. A systematic record of inflow was not attempted until the fall of 1960. The following table shows monthly and annual inflow, in acre-feet, for the water year October 1963 to September 1964. Inflow from Imperial Valley is the sum of flows in Alamo River (see p. 44), New River (see p. 45), and about 30 drains and wasteways. About 95 percent of the inflow was measured at gaging stations; the remainder was estimated on the basis of weekly discharge measurements made on 5 drains and the relation between flows in groups of drains. Inflow from Coachella Valley is the sum of flows in Whitewater River and 18 drains. Flow in the river was measured by a gaging station (see p. 58), but that for the drains was furnished by Coachella Valley County Water District. (See pp. 47 to 59 for other flows to the sea.) Table also shows amount of flow in Alamo and New Rivers contributed by Mexico as furnished by Imperial Irrigation District.

Inflow from	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
Imperial Valley	127,300	91,890	85,610	87,160	100,200	118,000	108,500	79,260	70,880	75,280	78,490	86,470	1,109,000
Coachella Valley	12,080	8,460	9,680	8,720	9,310	10,650	10,200	11,030	9,800	10,680	11,520	10,930	123,100
Total	139,380	100,350	95,290	95,880	109,510	128,650	118,700	90,290	80,680	85,960	90,010	97,400	1,232,000

Flow from Mexico at International Boundary

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Total
Alamo River	143	185	159	126	129	148	155	141	140	164	179	202	1,870
New River	11,710	11,200	9,370	9,900	8,890	10,170	9,870	9,140	7,880	8,460	9,690	8,650	114,900

SALTON SEA BASIN

43

10-2540.5. Salt Creek near Mecca, Calif.

Location.--Lat 33°26'50", long 115°50'35", in NE 1/4 sec. 28, T. 8 S., R. 11 E., on pier of Southern Pacific Railroad bridge, 0.3 mile upstream from mouth and 16 miles southeast of Mecca.

Drainage area.--269 sq mi.

Records available.--January 1961 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 230 ft below mean sea level (from topographic map).

Extremes.--Maximum discharge during year, about 200 cfs Oct. 17 (gage height, 6.54 ft); minimum daily, 1.6 cfs July 3, 4. 1961-64; Maximum discharge, that of Oct. 17, 1963; minimum daily, 1.2 cfs July 10-12, 1961.

Remarks.--Records good except those above 25 cfs, which are poor. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-17, Apr. 23-30)

1.9	0.8	2.7	21
2.0	1.8	3.0	36
2.1	3.3	3.5	69
2.4	10	4.1	94

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	4.8	5.9	9.6	8.2	9.1	9.9	17	4.6	3.0	*1.7	2.1	2.8
2	5.2	11	9.1	*8.8	9.1	10	8.4	4.2	3.0	1.9	2.2	2.8
3	4.9	13	9.1	8.5	8.8	11	*8.2	4.2	2.8	1.6	*5.0	2.8
4	4.9	9.6	*9.4	6.1	7.4	*14	8.2	4.0	3.0	1.6	3.5	2.1
5	4.8	9.1	9.4	6.5	8.5	8.5	8.4	3.6	3.1	1.8	3.1	1.8
6	4.6	*9.4	9.4	7.2	*9.1	9.6	8.4	3.8	3.1	1.8	3.1	2.1
7	4.6	9.9	9.1	7.7	8.5	9.4	14	3.6	2.5	1.8	3.1	2.4
8	4.8	9.1	9.1	8.5	8.2	8.8	6.5	4.0	2.7	1.9	2.7	*2.7
9	5.1	9.1	A9.4	7.2	9.4	8.0	5.4	5.0	2.7	3.0	2.5	3.0
10	*5.5	9.6	A9.4	7.0	9.9	7.4	5.0	5.2	3.0	3.1	*2.1	2.8
11	5.6	9.4	A9.9	8.5	12	9.6	5.6	3.8	3.5	2.5	2.8	3.6
12	5.8	9.1	A9.9	8.0	14	24	5.6	*4.0	3.8	2.1	3.1	2.7
13	5.2	9.6	A10	8.0	13	11	5.2	5.6	3.8	1.7	3.3	2.8
14	5.5	9.9	A9.9	8.0	8.5	9.4	*4.6	3.5	2.8	1.8	3.0	3.0
15	5.6	9.9	A10	7.7	8.0	9.4	4.6	2.8	3.0	*1.9	2.7	3.0
16	6.2	9.6	A11	7.7	8.8	9.6	5.2	3.1	3.1	1.9	1.8	1.9
17	29	8.8	*15	7.4	11	9.1	5.2	2.8	*3.1	1.8	2.1	2.7
18	115	*9.1	15	8.2	9.9	8.2	5.4	2.2	3.1	1.9	2.2	2.8
19	57	9.1	9.9	8.5	*9.6	*9.4	5.0	2.8	3.3	1.9	2.2	3.1
20	25	9.1	9.6	*9.9	9.6	9.1	4.4	2.8	3.5	1.9	1.7	3.1
21	11	14	9.4	9.1	8.2	6.5	4.6	2.8	3.6	1.9	1.7	3.0
22	11	A13	8.2	9.9	7.7	8.8	4.6	2.7	2.5	1.7	1.9	*2.8
23	*8.0	A13	6.7	9.6	8.8	9.9	5.8	2.7	2.7	2.1	2.1	2.1
24	7.0	A12	7.0	8.0	10	9.9	5.8	2.8	2.7	1.7	1.7	1.7
25	6.5	A12	8.2	7.2	10	14	4.4	2.7	2.2	2.2	2.1	3.5
26	6.3	A14	8.5	7.7	9.6	9.9	4.2	3.5	2.4	2.2	2.2	4.0
27	6.3	14	8.2	8.8	8.5	9.9	13	*6.0	2.5	1.9	*1.8	3.6
28	5.6	8.8	8.5	9.9	6.3	19	22	9.6	2.4	1.9	1.7	3.6
29	6.5	8.8	8.5	12	9.9	11	*8.4	4.0	2.1	1.7	2.4	3.6
30	6.5	9.1	8.5	13	-----	9.1	5.8	3.6	1.9	1.7	2.5	3.5
31	6.3	-----	7.2	10	-----	11	-----	3.0	-----	1.9	2.1	-----
TOTAL	390.1	308.0	292.1	262.8	271.4	324.4	218.9	119.0	86.9	60.5	76.5	85.4
MEAN	12.6	10.3	9.42	8.48	9.36	10.5	7.30	3.84	2.90	1.95	2.47	2.85
MAX	115	14	15	13	14	24	22	9.6	3.8	3.1	5.0	4.0
MIN	4.6	5.9	6.7	6.1	6.3	6.5	4.2	2.2	1.9	1.6	1.7	1.7
AC-FT	774	611	579	521	538	643	434	236	172	120	152	169

CALENDAR YEAR 1963

MAX 115

MIN 2.3

MEAN 7.34

AC FT 5,310

WATER YEAR 1963-64

MAX 115

MIN 1.6

MEAN 6.82

AC-FT 4,950

* Discharge measurement made on this day.

A No gage-height record.

SALTON SEA BASIN

10-2547.3. Alamo River near Niland, Calif.

Location.--Lat 33°12'03", long 115°36'07", in NE 1/4 SW 1/4 sec. 22, T.11 S., R.13 E., on left bank 0.6 mile upstream from mouth and 5.8 miles southwest of Niland.

Records available.--January 1943 to September 1964. Monthly discharge only for January 1943 to September 1960, published in WSP 1734.

Gage.--Water-stage recorder. Altitude of gage is 235 ft below mean sea level (from topographic map).

Remarks.--Discharge measurements made once a week. Discharge represents seepage and return flow from irrigated areas.

Cooperation.--Records furnished by Imperial Irrigation District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,270	1,010	781	743	597	951	1,180	714	672	667	653	757
2	1,300	1,230	790	696	823	998	1,200	729	616	672	691	729
3	1,400	1,110	800	620	861	994	1,210	738	611	663	700	743
4	1,400	1,030	790	601	866	946	1,240	762	635	653	719	743
5	1,320	922	795	649	899	936	1,230	729	653	658	714	743
6	1,330	842	786	667	889	946	1,180	714	663	649	743	757
7	1,340	781	800	714	894	936	1,140	691	681	677	719	776
8	1,310	729	786	635	922	941	1,140	700	639	667	733	724
9	1,230	696	805	539	970	951	1,140	729	644	705	752	705
10	1,200	743	729	620	1,010	950	1,100	729	653	686	762	743
11	1,190	766	743	743	1,040	941	1,080	705	677	663	747	790
12	1,170	781	752	786	1,060	946	1,070	705	672	658	700	800
13	1,160	757	733	842	1,080	955	1,050	710	667	705	639	819
14	1,180	738	762	903	1,080	955	1,030	710	635	667	639	842
15	1,160	762	757	922	1,110	1,010	1,020	681	620	663	658	842
16	1,120	805	757	936	1,130	1,070	975	681	639	663	663	838
17	1,110	805	790	946	1,230	1,020	917	644	611	644	696	861
18	1,220	838	809	975	1,220	1,030	946	620	606	639	700	847
19	1,360	809	833	951	1,040	1,060	989	611	597	639	677	852
20	1,290	810	766	936	989	1,070	975	601	616	663	705	866
21	1,270	875	809	951	917	1,090	936	582	620	677	681	852
22	1,140	852	771	965	932	1,130	885	592	635	630	658	866
23	1,020	829	771	1,030	960	1,160	842	620	653	639	635	866
24	998	805	729	965	960	1,180	833	635	639	635	639	871
25	946	771	705	917	936	1,200	866	686	653	681	644	875
26	927	766	616	833	917	1,200	880	719	653	714	653	899
27	889	786	597	691	899	1,200	903	696	663	743	653	880
28	894	805	663	601	941	1,200	852	705	677	738	649	880
29	917	805	729	478	951	1,180	786	691	681	639	649	913
30	936	771	743	474	-----	1,180	691	691	691	577	658	936
31	917	-----	757	445	-----	1,170	-----	691	-----	616	705	-----
Total	35,914	25,029	23,454	23,774	28,123	32,506	30,286	21,211	19,372	20,590	21,234	24,615
Mean	1,159	834	757	767	970	1,049	1,010	684	646	664	685	820
Max	1,400	1,230	833	1,030	1,230	1,200	1,240	762	691	743	762	936
Min	889	696	597	445	597	936	691	582	597	577	635	705
Ac-ft	71,230	49,640	46,520	47,160	55,780	64,470	60,070	42,070	38,420	40,840	42,120	48,820
Calendar year 1963: Max	1,770	Min	474	Mean	1,000	Ac-ft	723,700					
Water year 1963-64: Max	1,400	Min	445	Mean	836	Ac-ft	607,100					

10-2555.5. New River near Westmoreland, Calif.

Location.--Lat 33°06'17", long 115°39'49", in SW 1/4 SW 1/4 sec.19, T.12 S., R.13 E., on right bank 3.5 miles upstream from mouth and 5.2 miles northwest of Westmoreland.

Records available.--January 1943 to September 1964. Monthly discharge only for January 1943 to September 1960, published in WSP 1734.

Gage.--Water-stage recorder. Altitude of gage is 220 ft below mean sea level (from topographic map).

Remarks.--Discharge measurements made once a week. Discharge represents seepage and return flow from irrigated areas.

Cooperation.--Records furnished by Imperial Irrigation District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	824	586	553	481	582	657	641	513	468	413	438	464
2	750	676	549	479	601	654	676	496	440	413	444	420
3	681	651	505	440	570	630	677	492	402	422	455	449
4	685	617	477	466	505	643	708	490	408	426	496	424
5	693	650	481	483	511	619	687	519	431	424	449	470
6	736	641	509	483	538	603	659	498	449	431	444	483
7	774	628	538	505	496	628	664	481	420	426	449	496
8	742	634	555	455	500	617	666	481	409	424	451	473
9	722	643	563	449	507	649	655	494	440	433	417	477
10	728	632	509	449	536	662	645	504	436	427	442	498
11	710	621	505	513	588	664	609	511	424	402	464	496
12	708	580	547	533	582	659	621	504	431	424	451	473
13	706	557	517	568	532	649	645	483	440	473	479	475
14	702	598	519	611	576	672	657	487	449	477	448	475
15	710	551	517	542	572	693	609	470	431	477	453	472
16	724	568	557	588	651	664	624	543	464	487	451	517
17	728	563	523	590	698	685	596	436	413	483	477	542
18	750	566	517	576	641	626	576	409	394	426	496	525
19	921	572	543	582	609	615	563	468	404	402	453	523
20	810	553	555	551	582	628	586	481	431	409	479	521
21	822	574	570	551	586	676	613	481	436	444	461	545
22	791	532	525	526	601	687	613	483	459	496	444	561
23	718	517	532	549	601	679	619	488	449	513	461	517
24	660	530	507	528	574	683	600	479	429	488	475	525
25	664	517	473	538	607	677	624	487	448	459	470	532
26	626	509	448	570	594	677	630	504	427	436	442	600
27	609	515	431	564	590	679	607	496	442	459	468	594
28	578	532	468	542	626	687	600	505	468	464	483	600
29	714	547	464	511	664	718	572	473	483	413	481	601
30	693	555	483	519	-----	695	561	446	440	417	485	600
31	609	-----	505	528	-----	657	-----	444	-----	427	448	-----
Total	22,288	17,425	15,945	16,270	16,820	20,442	18,803	15,046	13,065	13,715	14,254	15,348
Mean	719	581	514	525	580	659	627	485	436	442	460	512
Max	921	676	570	611	698	718	708	543	483	513	496	601
Min	578	509	431	440	496	603	561	409	394	402	417	420
Ac-ft	44,210	34,560	31,630	32,270	33,360	40,550	37,300	29,840	25,910	27,200	28,270	30,440
Calendar year 1963:	Max	1,180	Min	431	Mean	660	Ac-ft	477,500				
Water year 1963-64:	Max	921	Min	394	Mean	545	Ac-ft	395,500				

SALTON SEA BASIN

10-2557. San Felipe Creek near Julian, Calif.

Location.--Lat 33°07'07", long 116°26'04", in Anza Borrego State Park, on left bank at bridge on State Highway 78, in Sentenac Canyon 1.0 mile upstream from Grapevine Canyon and 10 miles northeast of Julian, San Diego County.

Drainage area.--89.3 sq mi.

Records available.--August 1958 to September 1964.

Gage.--Water-stage recorder and concrete low-water control. Datum of gage is 1,872.69 ft above mean sea level (datum of 1929).

Average discharge.--6 years, 0.27 cfs (195 acre-ft per year).

Extremes.--Maximum discharge during year, 16 cfs Oct. 18 (gage height, 1.85 ft); no flow Oct. 1-17, 20-31, June 1-7, June 12 to

Sept. 30.

1958-64: Maximum discharge, 16 cfs Sept. 13, 1961, and Oct. 18, 1964 (gage height, 1.85 ft); no flow for many days each year.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet and discharge, in cubic feet per second)

1.1	0	1.4	1.3
1.2	.2	1.5	2.6
1.3	.6	1.6	4.8

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	* 0.1	0.2	0.3	0.4	0.5	0.5	0.3	0			
2	0	.1	.2	.3	.4	.5	.5	.3	0			
3	0	.1	.2	.3	.4	* .5	* .5	.3	0			
4	0	.1	.2	.3	.4	.4	.5	.4	* 0			
5	0	.1	* .2	.3	.4	.4	.5	.6	0		(*)	
6	0	.1	.2	* .3	.4	.4	.5	.5	0	(*)		
7	* 0	.1	.2	.3	.3	.5	.5	.5	0	(*)		
8	0	.1	.2	.3	.4	.5	.5	.4	.1			
9	0	.1	.2	.3	.4	.5	.4	.4	.1			
10	0	.1	.3	.3	.4	.4	.4	.3	.1			(*)
11	0	.1	.2	.3	.4	.4	.4	* .3	.1			
12	0	.1	.2	.3	.4	.5	.4	.3	0			
13	0	.2	.2	.3	.4	.5	.4	.2	0			
14	0	.2	.2	.3	.3	.5	.4	.2	0			
15	0	* .1	.2	.3	.3	.5	.3	.2	0			
16	0	.1	.2	.3	.5	.4	.3	.2	0			
17	0	.1	.2	.4	* .4	.4	.3	.2	0			
18	3.2	.1	.3	.4	.4	.4	.3	.2	0			
19	.2	.2	.3	.4	.4	* .4	.3	.2	0			
20	0	.2	* .3	.4	.4	.4	.3	.1	0			
21	* 0	.4	.3	.4	.4	.4	.3	.1	0			
22	0	.2	.3	.8	.4	.6	.3	.1	* 0			
23	0	.2	.3	.6	.4	1.4	* .3	.1	0			
24	0	.2	.3	.4	.4	2.8	.3	.1	0			
25	0	.2	.3	.4	.4	.9	.3	.1	0			
26	0	.2	.3	.4	.5	.6	.3	.1	0			
27	0	.2	.3	.4	.5	.5	.3	.1	0			
28	0	.2	.3	* .4	.4	.5	.3	.1	0			
29	0	.2	.3	.4	.8	.5	.3	.1	0			
30	0	.2	.3	.4	-----	.5	.3	.1	0			(*)
31	0	-----	.3	* .4	-----	.5	-----	.1	-----			-----
Total	3.4	4.6	7.7	11.4	12.0	18.2	11.2	7.2	0.4	0	0	0
Mean	0.11	0.15	0.25	0.37	0.41	0.59	0.37	0.23	0.01	0	0	0
Max	3.2	0.4	0.3	0.8	0.8	2.8	0.5	0.6	0.1	0	0	0
Min	0	0.1	0.2	0.3	0.3	0.4	0.3	0.1	0	0	0	0
Ac-ft	6.7	9.1	15	23	24	36	22	14	0.8	0	0	0

Calendar year 1963: Max 3.2 Min 0 Mean 0.19 Ac-ft 138

Water year 1963-64: Max 3.2 Min 0 Mean 0.21 Ac-ft 151

Peak discharge (base, 50 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

10-2558. Coyote Creek near Borrego Springs, Calif.

Location.--Lat 33°22'25", long 116°25'39", in SE 1/4 sec. 23, T.9 S., R.5 E., on right bank 500 ft upstream from Box Canyon and 8.5 miles northwest of Borrego Springs.

Drainage area.--144 sq mi.

Records available.--October 1950 to September 1964. Monthly discharge only for October and November 1950, published in WSP 1734.

Gage.--Water-stage recorder. Altitude of gage is 1,250 ft (from topographic map).

Average discharge.--14 years, 2.25 cfs (1,630 acre-ft per year).

Extremes.--Maximum discharge during year, 426 cfs Oct. 18 (gage height, 10.64 ft) on basis of slope-area measurement of maximum flow; minimum daily, 0.9 cfs Nov. 24-27, Nov. 29 to Dec. 1, Sept. 13-18, 1950-64; Maximum discharge, 3,800 cfs July 28, 1951 (gage height, 14.14 ft, from floodmark), on basis of slope-area measurement of maximum flow; minimum daily, 0.8 cfs July 3, 4, 11, 12, 14, 1963.

Remarks.--Records poor. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	*2.3	.9	1.7	1.6	1.6	1.2	1.7	1.2	1.1	a1.2	1.4
2	1.2	2.3	1.1	1.7	1.6	1.6	1.2	1.9	1.2	1.1	a1.2	1.4
3	1.2	2.3	1.4	1.7	1.6	*1.4	*1.2	1.7	*1.2	1.1	a8	*1.4
4	1.2	a2.3	1.2	1.7	1.6	1.4	1.4	1.7	1.4	1.1	a2	1.4
5	1.2	a2.3	*1.4	1.7	1.4	1.6	1.6	1.7	1.4	1.1	*a1.3	1.4
6	1.2	a2.0	1.4	*1.7	1.4	1.7	1.4	1.7	1.4	1.1	a1.3	1.4
7	1.2	a2.0	1.4	1.7	1.4	1.7	1.2	1.6	1.6	*1.2	a1.3	1.4
8	*1.2	a1.9	1.4	1.7	1.4	1.7	1.2	*1.6	1.6	1.4	a1.3	1.2
9	1.4	a1.9	1.4	1.7	1.2	1.7	1.2	a1.6	1.4	1.4	a1.0	1.2
10	1.6	a1.8	1.6	1.7	1.2	1.7	e1.2	a1.6	1.6	1.4	a2	1.2
11	1.4	a1.8	1.6	1.6	1.2	1.7	e1.2	a1.5	1.6	1.2	a1.5	*1.1
12	1.6	a1.7	1.6	1.6	1.2	1.7	e1.2	a1.5	1.4	1.2	a1.2	1.1
13	1.7	a1.7	1.6	1.6	1.2	1.7	e1.2	a1.4	1.4	1.4	a1.2	.9
14	1.6	a1.6	1.6	1.6	1.2	1.7	e1.2	a1.4	1.4	1.2	a1.2	.9
15	1.4	*1.6	1.6	*1.6	1.2	1.7	e1.2	a1.4	1.4	1.2	a1.2	.9
16	1.6	1.6	1.6	1.6	1.2	1.7	a1.2	a1.3	1.4	1.2	a1.2	.9
17	1.9	1.6	1.6	1.6	*1.2	1.7	a1.2	a1.3	1.4	1.2	a1.2	.9
18	*1.3	1.4	*1.6	1.6	e1.2	*1.7	a1.2	a1.2	1.4	1.2	*a8	.9
19	1.6	1.4	1.6	1.6	e1.2	1.7	a1.2	a1.2	1.4	1.1	a1.9	1.1
20	a5	1.4	1.6	1.6	e1.2	1.7	a1.2	a1.2	1.4	1.1	a1.7	1.1
21	*1.9	1.2	1.6	1.6	1.4	7.7	a1.2	*1.2	1.4	*1.1	*1.6	1.1
22	2.1	1.1	1.6	1.9	1.6	1.9	*1.2	1.2	1.4	1.2	1.6	1.1
23	2.3	1.1	1.6	1.6	1.6	1.9	1.4	1.2	1.2	1.2	1.6	1.1
24	2.3	.9	1.6	1.6	1.6	1.6	1.4	1.2	*1.2	1.2	1.2	1.2
25	2.3	.9	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.2	1.2	*1.4
26	2.3	.9	1.6	1.6	1.7	1.4	1.4	1.1	1.2	a3	1.2	1.4
27	2.3	.9	1.6	1.6	1.7	1.6	1.6	1.1	1.2	a1.5	1.1	1.4
28	2.3	1.1	1.6	1.6	1.7	1.7	1.6	1.1	1.2	a1.2	1.1	1.4
29	2.3	.9	1.6	1.6	1.7	e1.4	1.6	1.1	1.2	a1.2	1.2	1.4
30	2.3	.9	1.7	1.6	-----	e1.2	1.7	1.1	1.2	a1.2	1.2	1.4
31	2.3	-----	1.7	*1.6	-----	1.2	-----	1.1	-----	a1.2	1.4	-----
Total	142.7	45.8	47.0	50.9	41.0	56.3	39.5	42.8	40.6	39.2	64.3	36.1
Mean	4.60	1.56	1.52	1.64	1.41	1.82	1.32	1.38	1.35	1.26	2.07	1.20
Max	73	2.3	1.7	1.9	1.7	7.7	1.7	1.9	1.6	3	10	1.4
Min	1.2	0.9	0.9	1.6	1.2	1.2	1.2	1.1	1.2	1.1	1.1	0.9
Ac-ft	283	93	93	101	81	112	78	85	81	78	128	72
Calendar year 1963:	Max 73		Min 0.8		Mean 1.82		Ac-ft 1,320					
Water year 1963-64:	Max 73		Min 0.9		Mean 1.77		Ac-ft 1,280					

Peak discharge (base, 50 cfs).--Oct. 18 (0930 hrs) 426 cfs (10.64 ft); Aug. 18 (1500 hrs) 154 cfs (10.39 ft).

* Discharge measurement made on this day.

a No gage-height record.

e Stage-discharge relation indefinite.

SALTON SEA BASIN

10-2558.1. Borrego Palm Creek near Borrego Springs, Calif.

Location.--Lat 33°16'44", long 116°25'45", in Anza-Borrego Desert State Park, on left bank 3.3 miles northwest of Borrego Springs, San Diego County.

Drainage area.--21.7 sq mi.

Records available.--October 1950 to September 1964. Prior to October 1960, published as "Palm Canyon Creek." Monthly discharge only for October to November 1950, published in WSP 1734.

Gage.--Water-stage recorder. Altitude of gage is 1,200 ft (from topographic map).

Average discharge.--14 years, 0.38 cfs (275 acre-ft per year); median of yearly mean discharges, 0.3 cfs (220 acre-ft per year).

Extremes.--Maximum discharge during year, 5.4 cfs Oct. 18 (gage height, 2.26 ft, from outside gage); no flow for most of year. 1950-64: Maximum discharge, about 2,000 cfs Aug. 23, 1955 (gage height, 9.9 ft, from floodmarks), on basis of velocity-area study; no flow for several months in each year.

Remarks.--Records good. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	(*)	0	0.2	0.3	0.3	2.2	0.2				
2	0		0	.2	.3	.4	3.4	.3				
3	0		0	.2	.3	* .4	* 2.2	.3	(*)			
4	0		0	.2	.3	.3	1.6	.3				
5	0		* 0	.2	.3	.3	1.4	.4			(*)	
6	0		0	.2	.3	.3	1.2	.4				
7	0		.1	.2	.3	.3	1.0	.6		(*)		
8	0		.1	.2	.3	.3	.8	* .3				
9	0		.1	.2	.2	.3	.8	.3				
10	0		.2	.2	.2	.3	.6	.2		(*)		
11	0		.2	.2	.3	.3	.6	.2				(*)
12	0		.2	.2	.3	.3	.5	.1				
13	0		.2	.2	.3	.3	.4	.1				
14	0		.2	.2	.3	.3	.4	.1				
15	0	(*)	.2	* .2	.3	.2	.3	.1				
16	0		.2	.2	.4	.2	.3	.1				
17	0		.2	.2	* .3	.2	.2	.1				
18	1.1		.2	.2	.3	* .2	.2	.1				
19	.4		.2	.2	.3	.2	.2	0				
20	0		.2	.2	.3	.2	.2	0				
21	* 0		.2	.2	.3	.2	.1	* .0				
22	0		.2	.5	.3	.4	* .1	0				
23	0		.2	.4	.3	1.8	.2	0				
24	0		.2	.3	.3	2.0	.2	0	(*)			
25	0		.2	.3	.3	1.4	.2	0				(*)
26	0		.2	.3	.3	1.2	.2	0				
27	0		* .2	.3	.3	1.1	.2	0				
28	0		.2	.2	.3	.9	.2	0				
29	0		.2	.2	.4	.9	.2	0				
30	0		.2	.2	-----	.8	.2	0				
31	0	-----	.2	* .2	-----	.7	-----	0	-----			-----
Total	1.5	0	4.7	7.1	8.7	17.0	20.3	4.2	0	0	0	0
Mean	0.05	0	0.15	0.23	0.30	0.55	0.68	0.14	0	0	0	0
Max	1.1	0	0.2	0.5	0.4	2.0	3.4	0.6	0	0	0	0
Min	0	0	0	0.2	0.2	0.2	0.1	0	0	0	0	0
Ac-ft	3.0	0	9.3	14	17	34	40	8.3	0	0	0	0

Calendar year 1963: Max 1.6 Min 0 Mean 0.08 Ac-ft 59

Water year 1963-64: Max 3.4 Min 0 Mean 0.17 Ac-ft 126

Peak discharge (base, 15 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

10-2558.5. Vallecito Creek near Julian, Calif.

Location.--Lat 32°59'10", long 116°25'10", in SW¼NE¼ sec.1, T.14 S., R.5 E., on right bank 0.2 mile downstream from Cottonwood Wash, and 12.6 miles southeast of Julian.

Drainage area.--39.7 sq mi.

Records available.--October 1963 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,950 ft above mean sea level (from topographic map). USWB non-recording rain gage at site 2.0 miles upstream.

Extremes.--Maximum discharge recorded during year, 73 cfs July 31 (gage height, 3.20 ft in gage well, 3.48 ft from floodmark), on basis of slope-area measurement of maximum flow; minimum daily, 0.1 cfs for some days.

Remarks.--Records are good except those above 1.0 cfs and period of no gage-height record, which are poor. No regulation or diversion above station. Flow is diverted for irrigation 300 ft below gage.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0.2	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.1	0.1
2			.2	.2	.3	.3	.2	.3	.2	.2	.1	.1
3			.2	.2	.3	*.3	.2	.3	*.2	.2	.1	.1
4			.2	.2	.3	.3	.2	.3	.2	.2	1.2	.1
5			.2	.2	.3	.3	.2	.3	.2	.2	a.2	.1
6		a0.2	.2	.2	.3	.3	.2	.3	.2	.2	*.1	.1
7			.2	.2	.3	.3	.2	.3	.2	.2	.2	.1
8	a0.2		.2	.2	.3	.3	*.2	.3	.2	*.2	.2	.1
9			.2	.2	.3	.3	.2	.3	.2	.2	.2	.1
10			.2	.2	.3	.3	.2	.3	.2	.2	.2	*.1
11			.2	.2	.3	.3	.2	*.3	.2	.1	.2	.1
12			*.2	.3	*.3	.3	.2	.3	.2	.1	.2	.1
13			.2	.3	.3	.3	.2	.3	.2	.1	.2	.1
14			.2	.3	.3	.3	.2	.3	.2	.1	.2	.1
15		.2	.2	*.2	.3	.3	.2	.3	.2	.1	.2	.1
16		*.2	.2	.2	.3	.3	.2	.3	.2	.1	.2	.1
17		.2	.2	.2	.3	.2	.2	.3	.2	.1	.2	.1
18	a5	.2	.2	.3	.3	.3	.2	.3	.2	.1	*.2	.1
19		.2	.2	.3	.3	*.2	.2	.3	.2	.1	.2	.1
20		.2	.2	.3	.3	.2	.2	.3	.2	.1	.2	.1
21		.2	.2	.3	.3	.2	.2	.3	.2	*.1	.1	.1
22		.2	.2	.3	.3	.2	*.2	.3	*.2	.1	.1	.1
23		.2	.2	.3	.3	.2	.2	.3	.2	.1	.1	.1
24	a.2	.2	.2	.3	.3	.2	.3	.3	.2	.1	.1	.1
25		.2	.2	.3	.3	.2	.3	.3	.2	.2	.1	*.1
26		.2	.2	.3	.3	.2	.3	.3	.2	.2	.1	.1
27		.2	.2	.3	.3	.2	.3	.3	.2	.2	.1	.1
28		.2	.2	.3	.3	.2	.3	.3	.2	.2	.1	.1
29		.2	.2	.3	.3	.2	.3	.3	.2	.2	.1	.1
30		.2	.2	.3	.3	.2	.3	.3	.2	.2	.1	.1
31		-----	.2	*.3	-----	.2	-----	.3	-----	*.4.3	.1	-----
Total	11.0	6.0	6.2	7.9	8.7	7.8	6.7	9.3	6.0	8.9	5.7	3.0
Mean	0.35	0.20	0.20	0.25	0.30	0.25	0.22	0.30	0.20	0.29	0.18	0.10
Max	-	-	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	1.2	0.1
Min	-	-	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.1	0.1	0.1
Ac-ft	22	12	12	16	17	15	13	18	12	18	11	6.0
(+)	2.8	0.3	0.3	0	0	4.0	0.2	0.6	0	1.1	1.0	0

Calendar year 1963: Max - Min - Mean - Ac-ft -
 Water year 1963-64: Max - Min - Mean 0.24 Ac-ft 172

Peak discharge (base, 15 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-18	Unknown	-	Unknown	8-4	1900	2.80	44
7-31	1400	3.20	73				

* Discharge measurement made on this day.

† Precipitation, in inches

a No gage-height record.

SALTON SEA BASIN

10-2558.85. San Felipe Creek near Westmoreland, Calif.

Location.--Lat 33°07'25", long 115°51'05", in NW 1/4 sec. 17, T. 12 S., R. 11 E., on left bank 320 ft downstream from U.S. Highway 99 and 14.6 miles northwest of Westmoreland.

Drainage area.--1,693 sq mi.

Records available.--December 1960 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 190 ft below mean sea level (from topographic map).

Extremes.--Maximum discharge during year, 7,230 cfs Oct. 19 (gage height, 11.85 ft, from profile of floodmarks), from rating curve extended above 260 cfs on basis of slope-area measurement of maximum flow; no flow for most of year.
1960-64: Maximum discharge, that of Oct. 19, 1963; no flow for some months in each year.

Remarks.--Records poor. No regulation above station. Diversion and pumping for domestic use and irrigation in Borrego Valley 25 miles upstream.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Oct. 17... 124	Feb. 16... 0.3
18... 1,770	17... 1.0
19... * 840	18... .4
20... a2	19... .2
21... a1	Aug. 3... *48
22... a.5	

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	2,737.5	1,770	0	88.3	5,430
February 1964.....	1.9	1.0	0	.07	3.8
August.....	48	48	0	1.55	95
Calendar year 1963.....	-	1,770	0	12.0	8,700
Water year 1963-64.....	-	1,770	0	7.62	5,530

Peak discharge (base, 200 cfs).--Oct. 19 (0130 hrs) 7,230 cfs (11.85 ft, from profile of flood marks); Aug. 3 (0330 hrs) 511 cfs (6.56 ft, from outside high-water mark).

* Discharge measurement made on this day.

a No gage-height record.

Note.--Flow occurred only on days listed above.

10-2560. Whitewater River at White Water, Calif.

Location.--Lat 33°56'48", long 116°38'24", in NW 1/4 NE 1/4 sec. 2, T.3 S., R.3 E., on right bank 1.5 miles north of White Water and 3 1/2 miles upstream from San Geronio River.

Drainage area.--57.4 sq mi.

Records available.--October 1948 to September 1964.

Gage.--Water-stage recorder and supplementary water-stage recorder 200 ft upstream on river; water-stage recorder and Cipolletti weir on diversion 500 ft downstream. Feb. 24, 1950, to Sept. 30, 1952, supplementary gage used as base gage. Since Apr. 13, 1960, supplementary gage 150 ft upstream at datum 5.0 ft higher.

Average discharge (river only).--16 years, 9.64 cfs (6,980 acre-ft per year).
(combined).--15 years (1949-64), 11.2 cfs (8,110 acre-ft per year); median of yearly mean discharges, 9.3 cfs (6,700 acre-ft per year).

Extremes (river only).--Maximum discharge during year, 186 cfs Oct. 18 (gage height, 7.04 ft), from rating curve extended above 10 cfs on basis of field estimate at gage height 7.04 ft; minimum daily, 2.2 cfs on some days.

1948-64: Maximum discharge, about 1,500 cfs Apr. 3, 1958 (gage height, 8.35 ft), from rating curve extended above 230 cfs on basis of slope-area measurement at gage height 7.52 ft; no flow Jan. 9, 11, 1957.

Maximum discharge known, 42,000 cfs Mar. 2, 1938, from slope-area measurement of maximum flow, at site 2.5 miles upstream (drainage area, 51.4 sq mi).

Remarks.--Records good except those above 10 cfs, which are poor. Discharge measurements made twice a month. Monthly discharge is combined with flow from infiltration line that bypasses station. No regulation above station. Water is diverted out of basin about 15 miles upstream to powerplants in San Geronio River basin and thence to an area north of Banning for irrigation. One small diversion for domestic use and one for irrigation are made 2 to 3 miles upstream.

Cooperation.--Records of bypass in infiltration line furnished by Whitewater Mutual Water Co.; records of diversion, 15 miles upstream, furnished by Southern California Edison Co.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.6	4.4	2.8	2.2	4.0	2.8	50	4.2	5.9	7.9	6.3	8.4
2	7.3	3.4	4.7	3.0	3.7	4.2	35	3.7	5.9	8.1	5.6	7.9
3	6.6	2.8	4.4	3.4	5.5	4.9	7.7	3.4	6.8	8.4	6.6	7.6
4	8.1	4.0	4.9	4.0	5.9	4.4	6.3	4.7	6.3	6.8	7.1	7.3
5	7.1	4.9	4.2	2.8	5.5	4.2	5.9	6.3	6.8	5.6	7.3	6.8
6	4.0	6.3	4.4	4.0	4.0	4.3	5.5	7.7	6.1	8.1	6.6	4.4
7	6.8	6.3	4.6	4.0	3.4	4.7	4.3	6.7	5.6	8.1	6.8	7.6
8	7.6	3.4	4.0	4.0	3.1	4.3	3.7	5.1	7.6	8.7	6.1	8.1
9	6.8	3.1	4.2	3.4	2.5	5.1	4.3	4.0	7.6	8.1	5.5	8.1
10	6.3	3.2	4.7	3.4	4.0	5.1	4.3	3.0	7.3	8.1	4.6	7.6
11	7.3	5.3	4.7	4.2	4.0	4.7	4.3	3.4	6.8	7.3	6.3	7.6
12	6.8	5.1	4.3	2.6	4.0	4.7	4.7	5.1	7.1	6.8	6.3	7.3
13	5.6	5.1	4.0	3.1	3.2	4.4	4.3	5.5	6.1	8.4	8.1	5.6
14	6.8	4.4	3.4	4.3	3.2	3.8	3.7	5.1	5.1	8.4	8.4	7.6
15	7.9	4.9	2.2	4.3	3.2	3.0	4.0	5.5	6.8	8.7	5.3	8.1
16	8.1	5.1	3.4	4.3	3.0	3.4	5.1	5.9	6.6	7.9	4.6	7.3
17	4.0	4.7	3.4	3.8	3.6	3.8	5.9	5.1	6.3	7.6	7.9	7.3
18	15	4.0	4.4	3.7	3.8	3.4	7.2	6.3	6.3	7.3	8.4	7.6
19	3	4.4	3.1	3.2	4.2	3.0	7.0	6.3	7.6	6.3	8.4	6.8
20	2.2	18	3.0	4.3	3.6	3.0	9.4	6.3	5.8	7.3	8.1	4.2
21	2.2	4.3	2.6	16	3.4	4.2	6.3	5.9	5.1	8.1	8.1	7.3
22	2.4	4.0	2.2	13	3.4	5.7	4.9	5.9	5.1	7.6	7.1	7.9
23	2.6	3.4	3.6	4.7	2.6	12	4.9	5.1	6.1	7.3	4.6	7.6
24	4.0	3.4	3.6	4.0	3.8	5.9	4.6	4.3	6.1	7.6	8.1	6.3
25	4.0	3.6	2.8	3.7	4.2	4.7	5.1	5.9	7.3	7.1	8.7	4.4
26	3.0	4.4	3.1	3.4	3.8	5.1	2.6	6.7	8.7	6.1	8.1	6.3
27	3.6	5.5	3.1	5.1	3.0	5.1	4.6	6.3	5.6	7.6	8.1	4.4
28	5.1	2.8	3.2	3.1	3.2	5.1	4.6	5.9	4.9	8.1	7.9	7.6
29	5.1	4.0	2.8	4.3	3.8	5.5	3.7	5.5	6.8	7.9	7.6	7.9
30	4.9	3.6	4.4	4.3	-----	6.7	4.0	5.1	7.6	7.3	5.3	7.6
31	5.1	-----	3.8	4.7	-----	9.4	-----	4.7	-----	7.3	-----	-----
Total	176.9	141.8	114.0	138.3	108.6	150.6	227.9	164.6	193.7	235.9	215.5	210.5
Mean	5.71	4.73	3.68	4.46	3.74	4.86	7.60	5.31	6.46	7.61	6.95	7.02
Max	15	18	4.9	16	5.9	12	50	7.7	8.7	8.7	8.7	8.4
Min	2.2	2.8	2.2	2.2	2.5	2.8	2.6	3.0	4.9	5.6	4.6	4.2
Ac-ft	351	281	226	274	215	299	452	326	384	468	427	418
(†)	368	306	279	357	296	383	506	411	440	483	457	431
(‡)	55	52	62	65	66	73	108	116	27	55	57	51

Calendar year 1963: Max 100 Min 2.2 Mean 5.75 Ac-ft 4,160 Mean † 6.57 Ac-ft † 4,760
Water year 1963-64: Max 50 Min 2.2 Mean 5.68 Ac-ft 4,120 Mean † 6.52 Ac-ft † 4,720

Peak discharge (base, 100 cfs).--Oct. 18 (time unknown) 186 cfs (7.04 ft); Apr. 1 (2230 hrs) 162 cfs (6.98 ft)

† Combined discharge of river and infiltration line.

‡ Discharge diverted from basin 15 miles upstream.

SALTON SEA BASIN

10-2565. Snow Creek near White Water, Calif.

Location.--Lat 33°52'10", long 116°40'50", in NW $\frac{1}{4}$ sec.33, T.3 S., R.3 E., on left bank 50 ft upstream from Southern Pacific Railroad diversion dam, 500 ft downstream from unnamed tributary, 2.8 miles upstream from mouth, and 4.5 miles southwest of White Water.

Drainage area.--11.0 sq mi.

Records available.--July to December 1921, May 1922 to February 1927, December 1927 to September 1931, October 1959 to September 1964. Yearly discharge only for 1930, published in WSP 1314.

Gage.--Water-stage recorder (digital). Altitude of gage is 2,100 ft (from topographic map). Prior to Dec. 16, 1927, water-stage recorder at site 500 ft upstream at different datum.

Average discharge.--12 years (1922-26, 1928-31, 1959-64), 6.33 cfs (4,580 acre-ft per year).

Extremes.--Maximum discharge during year, 118 cfs Oct. 18 (gage height, 3.37 ft); minimum daily, 2.6 cfs Aug. 22, 23.

1921-31, 1959-64: Maximum discharge, 285 cfs Dec. 2, 1961 (gage height, 3.87 ft), from rating curve extended above 65 cfs; minimum daily, 2.1 cfs June 23-27, Sept. 5-11, 1961.

Remarks.--Records good except those for period of no gage-height record, which are poor. Discharge measurements made twice a month. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.8	2.2	2.6	22
2.0	4.0	2.8	35
2.2	7.2	3.0	55
2.4	13		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3.0	4.1	4.0	3.7	3.8	3.6	27	12	9.9	3.6	3.2	2.8
2	2.9	4.2	4.0	3.6	3.8	3.9	23	12	9.6	3.5	3.2	2.7
3	3.0	4.2	4.0	3.6	3.9	3.7	13	11	9.1	3.4	3.2	2.7
4	2.9	4.2	4.0	3.6	3.9	3.5	10	10	9.1	3.5	3.2	2.7
5	3.0	4.2	4.0	3.6	3.8	3.5	8.9	9.4	9.1	3.5	3.3	2.7
6	3.0	4.7	4.0	3.6	3.7	3.4	8.4	9.4	9.1	3.3	3.3	2.7
7	2.9	6.0	4.0	3.8	3.7	3.4	7.4	9.1	8.9	3.2	3.1	2.7
8	2.9	5.0	4.0	3.8	3.6	3.4	7.2	8.6	7.9	3.6	3.0	2.7
9	2.9	4.8	4.0	3.8	3.5	3.4	7.4	8.4	7.4	3.5	3.0	2.7
10	2.9	4.7	4.2	3.8	3.6	3.4	8.6	8.6	7.2	3.6	2.9	2.8
11	2.9	4.6	4.1	3.7	3.6	3.4	11	9.9	6.8	3.5	2.9	2.7
12	3.0	4.4	4.1	3.5	3.6	3.4	13	12	6.8	3.5	2.9	2.7
13	2.9	4.2	4.1	3.5	3.6	3.4	13	14	6.7	3.5	2.9	2.7
14	2.9	4.1	4.1	3.7	3.5	3.4	12	14	6.7	3.5	2.9	2.7
15	2.9	10	4.1	3.7	3.5	3.4	13	15	6.7	3.4	2.9	2.7
16	3.0	16	4.1	3.6	3.6	3.4	14	14	6.5	3.4	2.8	2.7
17	4.7	9.6	4.0	3.6	3.6	3.4	13	13	6.4	3.3	2.8	2.8
18	4.8	8.4	3.9	3.5	3.6	3.3	12	13	5.9	3.2	2.9	2.8
19	16	6.6	3.9	3.6	3.6	3.3	11	13	5.6	3.1	2.7	2.7
20	9.6	16	3.9	3.6	3.6	3.3	10	14	5.4	3.2	2.7	2.7
21	6.8	13	3.7	9.1	3.5	3.3	9.4	15	5.1	3.1	2.7	2.7
22	5.9	6.0	3.7	11	3.5	4.3	9.4	14	5.0	3.1	2.6	2.7
23	5.3	5.0	3.7	7.1	3.5	6.8	9.6	14	4.8	3.1	2.6	2.7
24	5.2	5.0	3.7	5.4	3.5	7.0	9.4	13	4.5	3.1	2.7	2.9
25	4.7	4.0	3.7	4.7	3.4	6.7	8.6	13	4.5	3.3	2.8	3.0
26	4.6	4.0	3.8	4.5	3.4	6.5	8.2	12	4.5	4.9	2.7	3.0
27	4.6	4.0	3.8	4.2	3.4	6.5	8.2	11	4.4	4.2	2.7	2.9
28	4.6	4.0	3.7	4.1	3.4	6.8	11	11	4.0	3.4	2.7	2.9
29	4.4	4.0	3.7	3.9	3.7	7.4	13	9.6	3.9	3.4	2.8	2.8
30	4.4	4.0	3.7	3.8	-----	8.4	13	9.6	3.7	3.4	2.8	2.8
31	4.2	-----	3.7	3.8	-----	9.9	-----	9.6	-----	3.3	2.8	-----
TOTAL	180.0	183.0	121.4	134.5	104.4	142.5	342.7	362.2	195.2	106.6	89.7	82.8
MEAN	5.81	6.10	3.92	4.34	3.60	4.60	11.4	11.7	6.51	3.44	2.89	2.76
AC-FT	357	363	241	267	207	283	680	718	387	211	178	164
MAX	48	16	4.2	11	3.9	9.9	27	15	9.9	4.9	3.3	3.0
MIN	2.9	4.0	3.7	3.5	3.4	3.3	7.2	8.4	3.7	3.1	2.6	2.7

CALENDAR YEAR 1963 MAX 48 MIN 2.4 MEAN 4.41 AC-FT 3,190
 WATER YEAR 1963-64 MAX 48 MIN 2.6 MEAN 5.59 AC-FT 4,060

Peak discharge (base, 50 cfs).--Oct. 18 (0230 hrs) 118 cfs (3.37 ft)

Note.--No gage-height record Nov. 19 to Dec. 8.

10-2578. Long Creek near Desert Hot Springs, Calif.

Location--Lat 33°57'55", long 116°26'35", in SW 1/4 NE 1/4 sec. 27, T.2 S., R.5 E., on left bank, 0.4 mile downstream from Metropolitan Water District aqueduct, and 3.3 miles east of Desert Hot Springs.

Records available--April 1963 to September 1964.

Gage--Flood-hydrograph recorder and crest-stage gage. Altitude of gage is 1,520 ft (from topographic map).

Extremes--Maximum discharge during year, 5 cfs Oct. 18, on basis of field estimate of maximum flow; no flow for most of year.

1963-64: Maximum discharge, 9,270 cfs Aug. 7, 1963 (gage height, 8.0 ft, from floodmarks), on basis of field estimate of maximum flow; no flow for most of each year.

Remarks--Records poor. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Oct. 18.....**a0.2

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	0.2	0.2	0	0.006	0.4
Calendar year 1963.....	-	-	-	-	-
Water year 1963-64.....	-	.2	0	.0005	.4

**Field estimate made on this day.

a No gage-height record.

Note--Flow occurred only on day listed above.

10-2580. Tahquitz Creek near Palm Springs, Calif.

Location.--Lat 33°48'18", long 116°33'30", in NE¼SW¼SW¼ sec.22, T.4 S., R.4 E., on left bank 2.2 miles southwest of Palm Springs and 7 miles upstream from mouth.

Drainage area.--16.7 sq mi.

Records available.--October 1947 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 764.5 ft above mean sea level (levels by Riverside County Flood Control and Water Conservation District).

Average discharge.--17 years, 2.36 cfs (1,710 acre-ft per year); median of yearly mean discharges, 1.3 cfs (940 acre-ft per year).

Extremes.--Maximum discharge during year, 8.9 cfs May 22 (gage height, 1.49 ft); no flow Oct. 1-17, Oct 19 to Dec. 19, Aug. 2 to Sept. 30.

1947-64: Maximum discharge, 1,570 cfs Aug. 31, 1954 (gage height, 8.45 ft in gage well, 10.0 ft outside, from floodmarks), from rating curve extended above 70 cfs on basis of slope-area measurement of maximum flow; no flow for parts of each year.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.5	0	1.0	2.4
.6	.2	1.2	4.5
.7	.5	1.5	8.9
.8	1.0		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0		0	0.2	*0.3	0.2	1.9	4.4	4.4	0.7	0.1	
2	0		0	.2	.3	.2	2.8	4.3	4.1	.6	0	(*)
3	*0		0	.2	.3	.2	*2.0	3.8	*3.9	.5	0	
4	0		0	*.2	.3	.2	1.6	*3.8	3.7	.4	0	
5	0		*0	.2	.2	.2	1.4	3.6	3.5	.4	*0	
6	0		0	.2	.2	.2	1.4	3.5	3.4	.3	0	
7	0		0	.2	.2	.2	1.3	3.2	3.3	.3	0	
8	0		0	.2	.2	.2	1.2	3.1	3.2	.3	0	
9	0		0	.2	.2	.2	1.3	3.0	3.1	.3	0	
10	0		0	.2	.2	*.2	1.6	3.1	3.1	.2	0	
11	0		0	.2	*.2	.3	2.0	3.5	3.0	.2	0	
12	0		0	.2	.2	.3	2.5	4.5	2.9	.2	0	
13	0		0	.2	.2	.3	2.9	5.8	2.7	.2	0	
14	0		0	.2	.2	.2	3.2	6.6	2.4	*.2	0	
15	0		0	.2	.2	.2	3.6	7.5	2.3	.2	0	
16	0		0	.2	.2	.2	4.3	7.5	2.2	.2	0	
17	0		0	.2	.2	.2	4.3	7.2	*2.2	.2	0	
18	.1		0	.2	.2	.2	*4.1	*7.2	2.0	.1	0	
19	0		0	.2	.2	.2	3.9	7.5	1.9	.1	*0	
20	0		.1	.2	.2	.2	3.3	7.9	1.9	.1	0	
21	*0		.1	.3	.2	.2	3.1	7.9	1.6	.1	0	
22	0	(*)	.1	*.9	.2	.2	3.2	7.8	1.5	.1	0	
23	0		.1	.8	.2	.3	3.3	7.5	1.3	.1	0	
24	0		.1	.5	*.2	1.0	3.0	7.3	1.2	.1	0	
25	0		.2	.5	.2	.7	2.7	7.2	1.1	.1	0	
26	0		.2	.4	.2	.6	2.5	7.0	1.1	.1	0	
27	0		.2	.4	.2	.5	2.7	6.6	1.0	.1	0	
28	0		.2	.4	.2	*.5	3.6	5.7	.9	.1	0	
29	0		.2	.3	.2	.5	3.4	5.3	*.8	.1	0	
30	0		.2	.3	-----	.8	4.3	5.0	.7	.1	0	
31	*0	-----	.2	.3	-----	1.1	-----	4.6	-----	.1	0	-----
TOTAL	0.1	0	1.9	9.1	6.2	10.7	82.4	172.9	70.4	6.8	0.1	0
MEAN	0.003	0	0.06	0.29	0.21	0.35	2.75	5.58	2.35	0.22	0.003	0
MAX	0.1	0	0.2	0.9	0.3	1.1	4.3	7.9	4.4	0.7	0.1	0
MIN	0	0	0	0.2	0.2	0.2	1.2	3.0	0.7	0.1	0	0
AC-FT	0.2	0	3.8	18	12	21	163	343	140	13	0.2	0

CALENDAR YEAR 1963 MAX 1.9 MIN 0 MEAN 0.22 AC-FT 160

WATER YEAR 1963-64 MAX 7.9 MIN 0 MEAN 0.99 AC-FT 714

Peak discharge (base, 20 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

10-2585. Palm Canyon Creek near Palm Springs, Calif.

Location.--Lat 33°44'55", long 116°32'15", in S $\frac{1}{2}$ sec.11, T.5 S., R.4E., on right bank three-quarters of a mile upstream from Murray Canyon Creek and 6 miles south of Palm Springs.

Drainage area.--94.0 sq mi.

Records available.--January 1930 to January 1942, October 1947 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 700 ft (from topographic map). Prior to Jan. 14, 1942, at datum 0.2 ft higher.

Average discharge.--28 years (1930-41, 1947-64), 3.92 cfs (2,840 acre-ft per year); median of yearly mean discharges, 0.8 cfs (580 acre-ft per year).

Extremes.--Maximum discharge during year, 488 cfs Oct. 18 (gage height, 3.77 ft); no flow for most of year.

1930-42, 1947-64: Maximum discharge, 3,850 cfs Feb. 6, 1937 (gage height, 5.60 ft, datum then in use), from rating curve extended above 120 cfs on basis of velocity-area study; no flow for several months in most years.

Remarks.--Records poor. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0		0	(*)	0	3.7	0.1		(*)	0	
2	0	0		0		.3	3.9	.1			0	(*)
3	* 0	0		0		.2	* 3.4	.3	(*)		0	
4	0	0		* 0		.1	2.5	* .3			0	
5	0	0	(*)	0		0	2.3	.4			* 0	
6	0	0		0		0	2.1	.4			0	
7	0	.1		0		0	1.5	.5			0	
8	0	0		0		0	1.4	.4			0	
9	0	0		0		0	1.3	.4			0	
10	0	0		0		* 0	1.2	.3			* .4	
11	0	0		0		0	1.2	.3			0	
12	0	0		0		0	1.0	.2			0	
13	0	0		0		0	1.0	.2			0	
14	0	0		0		0	.9	.2			0	
15	0	0		0		0	.9	.2			0	
16	0	0		0		0	.8	.1			0	
17	0	0		0		0	.8	.1			0	
18	98	0		0		0	.8	* .1			0	
19	2	0		0		0	.8	0			0	
20	1	.1		0		0	.9	0			0	
21	* 0	0		0		0	* .7	0			0	
22	0	* 0		* .2		.2	.6	0			0	
23	0	0		0		3.9	.6	0			0	
24	0	0		0	(*)	7.8	.6	0			0	
25	0	0		0		3	.5	0			0	
26	0	0		0		2.5	.3	0			0	
27	0	0		0		2.5	.2	0			0	
28	0	0		0		* 2.1	.3	0			0	
29	0	0		0		2.1	.4	0			0	
30	0	0		0		2.3	.1	0			0	
31	* 0	0		0		2.5		0			0	
Total	101	0.2	0	0.2	0	29.5	36.7	4.6	0	0	0.4	0
Mean	3.26	0.007	0	0.006	0	0.95	1.22	0.15	0	0	0.01	0
Max	98	0.1	0	0.2	0	7.8	3.9	0.5	0	0	0.4	0
Min	0	0	0	0	0	0	0.1	0	0	0	0	0
Ac-ft	200	0.4	0	0.4	0	59	73	9.1	0	0	0.8	0

Calendar year 1963: Max 98 Min 0 Mean 0.33 Ac-ft 241

Water year 1963-64: Max 98 Min 0 Mean 0.47 Ac-ft 343

Peak discharge (base, 100 cfs).--Oct. 18 (0930 hrs) 488 cfs (3.77 ft)

* Discharge measurement or observation of no flow made on this day.

SALTON SEA BASIN

10-2590. Andreas Creek near Palm Springs, Calif.

Location--Lat 33°45'36", long 116°32'57", in NW 1/4 SE 1/4 sec. 3, T.5 S., R.4 E., on left bank at Bureau of Indian Affairs diversion dam, 1.1 miles above mouth and 5.1 miles south of Palm Springs.

Drainage area--8.78 sq mi.

Records available--October 1948 to September 1964.

Gage--Water-stage recorder (digital) and concrete control. Altitude of gage is 800 ft (from topographic map). Prior to Mar. 25, 1949, Reference point at same site at different datum.

Average discharge--16 years, 1.76 cfs (1,280 acre-ft per year); median of yearly mean discharges, 1.4 cfs (1,000 acre-ft per year).

Extremes--Maximum discharge during year, 14 cfs Oct. 18 (gage height, 1.90 ft); minimum daily, 0.1 cfs Sept. 2, 5, 11-14, 20.
1948-64: Maximum discharge, 1,960 cfs Aug. 31, 1954 (gage height, 7.11 ft), from rating curve extended above 80 cfs on basis of slope-area measurement of maximum flow; no flow at times in 1961, 1963.

Remarks--Records good. Discharge measurements made twice a month. No regulation above station. One small diversion for domestic use about 1 mile above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting control method used Nov. 16-22, Dec. 22 to Jan. 1, Jan. 3-15, Feb. 10.)

1.3	0
1.4	1.1
1.5	2.6
1.6	4.5
1.7	6.9

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.4	0.9	0.9	1.1	1.4	1.3	5.5	2.1	1.0	0.6	0.5	0.3
2	.4	1.0	.9	1.1	1.4	1.7	4.7	2.1	1.0	.5	.6	.1
3	.4	.9	.9	1.1	1.5	1.3	3.1	2.1	1.1	.5	.6	.2
4	.4	.6	.9	1.0	1.4	1.3	2.7	2.1	1.1	.5	.5	.2
5	.4	.6	1.0	1.1	1.5	1.3	2.6	2.1	1.0	.5	.6	.1
6	.4	.9	1.1	1.1	1.4	1.3	2.6	2.1	1.0	.5	.5	.2
7	.4	1.7	1.1	1.1	1.4	1.3	2.6	2.1	1.0	.5	.4	.2
8	.4	1.0	1.0	1.1	1.4	1.3	2.7	2.0	1.1	.7	.3	.2
9	.4	.9	1.1	1.1	1.4	1.3	2.7	1.8	1.1	.7	.3	.2
10	.3	.9	1.1	1.1	1.4	1.4	2.9	1.7	1.1	.6	.4	.2
11	.4	.9	1.0	1.1	1.3	1.3	2.9	1.7	1.0	.5	.4	.1
12	.4	.9	1.1	1.1	1.3	1.4	2.9	1.5	.9	.4	.4	.1
13	.4	.9	1.1	1.1	1.3	1.4	2.6	1.7	.9	.4	.4	.1
14	.4	.9	1.1	1.1	1.3	1.4	2.6	1.5	.7	.4	.4	.1
15	.4	.9	1.3	1.1	1.3	1.3	2.6	1.4	.7	.3	.4	.2
16	.5	1.0	1.3	1.1	1.5	1.3	2.6	1.4	.7	.3	.3	.2
17	.9	1.0	1.3	1.3	1.5	1.3	2.9	1.5	.7	.3	.3	.2
18	5.7	1.0	1.1	1.3	1.4	1.3	2.7	1.4	.7	.3	.4	.2
19	1.7	1.0	1.1	1.4	1.4	1.3	2.7	1.4	.9	.2	.4	.2
20	1.3	1.1	1.1	1.3	1.3	1.4	2.6	1.4	.7	.3	.3	.1
21	1.1	2.0	1.1	2.9	1.3	1.4	2.4	1.4	.7	.3	.2	.3
22	1.0	1.3	1.1	4.5	1.3	2.0	2.4	1.4	.7	.3	.2	.2
23	1.0	1.3	1.1	2.6	1.5	3.6	2.6	1.4	.6	.3	.2	.2
24	1.0	1.1	1.3	2.1	1.4	3.1	2.4	1.4	.6	.3	.3	.6
25	1.0	1.1	1.3	1.8	1.3	1.8	2.4	1.3	.6	.5	.4	.6
26	1.0	1.1	1.1	1.5	1.3	1.8	2.3	1.3	.7	.7	.4	.4
27	1.0	1.1	1.1	1.5	1.3	1.8	2.3	1.3	.7	.5	.2	.4
28	.9	1.1	1.1	1.5	1.1	1.8	2.4	1.3	.6	.4	.3	.4
29	.9	1.1	1.1	1.5	1.5	1.8	2.3	1.1	.6	.3	.3	.4
30	.7	1.0	1.1	1.5	-----	2.0	2.3	1.1	.6	.6	.3	.4
31	.6	-----	1.1	1.4	-----	2.3	-----	1.0	-----	.6	.3	-----
TOTAL	26.2	31.2	34.0	45.6	39.8	50.3	83.0	49.1	24.8	13.8	11.5	7.3
MEAN	0.85	1.04	1.10	1.47	1.37	1.62	2.77	1.58	0.83	0.45	0.37	0.24
AC-FT	52	62	67	90	79	100	165	97	49	27	23	14
MAX	5.7	2.0	1.3	4.5	1.5	3.6	5.5	2.1	1.1	0.7	0.6	0.6
MIN	0.3	0.6	0.9	1.0	1.1	1.3	2.3	1.0	0.6	0.3	0.2	0.1

CALENDAR YEAR 1963 MAX 9.7 MIN 0 MEAN 0.90 AC-FT 652
WATER YEAR 1963-64 MAX 5.7 MIN 0.1 MEAN 1.14 AC-FT 825

Peak discharge (base, 30 cfs)--No peak above base.

SALTON SEA BASIN

57

10-2592. Deep Creek near Palm Desert, Calif.

Location --Lat 33°37'50", long 116°23'30", in SE 1/4 sec. 19, T.6 S., R.6 E., on left bank 500 ft downstream from unnamed tributary, and 6.3 miles south of Palm Desert.

Drainage area.--30.6 sq mi.

Records available.--May 1962 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,440 ft above mean sea level (from topographic map).

Extremes.--Maximum discharge during year, 52 cfs July 26 (gage height, 2.66 ft), on basis of slope-area measurement of maximum flow; no flow for most of year.

1962-64: Maximum discharge, that of July 26, 1964; no flow for most of each year.

Remarks.--Records poor. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0					0	0.2	0.1		0		
2	0			(*)		0	.4	.1		0		
3	0					0	.4	.1		0		
4	0		(*)			.1	.4	.1		0		
5	0					.1	.4	.1		0		
6	0					.1	.3	.1		0		
7	0					.1	.2	.1		* 0		
8	0					.1	.2	.1		0		
9	0					.1	.2	.1		0		
10	0					.1	.2	0	(*)	0	(*)	(*)
11	0					.1	.2	0		0		
12	0					.1	.2	* 0		0		
13	0					.1	.2	0		0		
14	0					.1	* .1	0		0		
15	0					.1	.1	0		0		
16	0					.1	.1	0		0		
17	0					.1	.1	0		0		
18	3.6					.1	.1	0		0	(*)	
19	.5	(*)				.1	.2	0		0		
20	.4					.1	.2	0		0		
21	.3					.1	.2	0		0		
22	.2					.1	.2	0		0		
23	.1					.6	.2	0		0		
24	0					.5	.2	0		0		
25	0					* .2	.2	0		0		
26	0				(*)	.1	.1	0		* 2.8		
27	0			(*)		.1	.1	0		.1		
28	0					.1	.2	0		0		
29	0					.1	.2	0		0		
30	* 0					.1	.1	0		0		
31	0					.1		0		0		
Total	5.1	0	0	0	0	3.8	6.1	0.9	0	2.9	0	0
Mean	0.16	0	0	0	0	0.12	0.20	0.03	0	0.09	0	0
Max	3.6	0	0	0	0	0.6	0.4	0.1	0	2.8	0	0
Min	0	0	0	0	0	0	0.1	0	0	0	0	0
Ac-ft	10	0	0	0	0	7.5	12	1.8	0	5.8	0	0

Calendar year 1963: Max 3.6 Min 0 Mean 0.02 Ac-ft 11
 Water year 1963-64: Max 3.6 Min 0 Mean 0.05 Ac-ft 37

Peak discharge (base, 20 cfs).--Oct. 18 (1000 hrs) 29 cfs (2.32 ft); July 26 (1530 hrs) 52 cfs (2.66 ft).

* Discharge measurement or observation of no flow made on this day.

SALTON SEA BASIN

10-2595.4. Whitewater River near Mecca, Calif.

Location.--Lat 33°30'39", long 116°03'35", in SW¹/₄SW¹/₄ sec.33, T.7 S., R.9 E., on left bank 0.3 mile upstream from mouth and 4.3 miles south of Mecca.

Drainage area.--1,299 sq mi.

Records available.--October 1960 to September 1964 in reports of Geological Survey. May 1957 to September 1960 in reports of Coachella Valley County Water District.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Coachella Valley County Water District).

Extremes.--Maximum discharge during year, 135 cfs Feb. 11 (elevation, 230.71 ft below mean sea level); minimum daily, 80 cfs Oct. 31, Nov. 1.
1960-64: Maximum discharge, 160 cfs Oct. 3, 1962 (elevation, 232.48 ft below mean sea level); minimum daily, 37 cfs Nov. 25-29, 1960.

Remarks.--Records poor. Discharge measurements made once or twice a week. Most of the flow represents seepage and return flow from irrigated areas.

Cooperation.--Gage-height record and 55 discharge measurements furnished by Coachella Valley County Water District.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	126	80	92	112	115	108	106	101	106	98	104	120
2	125	86	92	109	116	108	107	101	104	101	105	116
3	131	84	92	107	119	106	107	100	104	99	107	114
4	129	84	96	107	119	106	107	100	107	98	106	114
5	122	86	97	106	122	106	107	98	108	99	104	115
6	122	88	98	106	120	105	106	98	107	98	105	115
7	122	89	98	106	120	105	106	98	107	99	107	115
8	122	88	99	104	125	104	105	98	106	101	105	115
9	119	90	101	104	127	104	105	97	101	103	108	114
10	119	90	99	104	129	104	105	98	100	101	112	120
11	118	90	100	104	132	104	105	99	101	99	112	123
12	118	92	101	104	129	104	105	99	100	98	107	123
13	117	101	102	104	132	104	105	100	100	94	107	123
14	116	98	103	104	128	103	103	102	101	88	114	123
15	117	98	104	104	127	105	105	102	100	89	114	121
16	116	101	103	104	129	104	105	103	101	88	115	119
17	113	99	105	105	121	102	104	102	100	89	115	117
18	118	99	105	105	117	104	104	104	100	88	117	118
19	119	102	105	104	118	104	102	104	100	87	117	118
20	109	102	105	104	115	105	102	103	99	89	116	115
21	108	102	105	107	115	106	103	104	98	89	109	113
22	105	98	105	108	115	107	105	105	99	91	108	111
23	105	98	106	106	111	107	103	106	98	92	107	116
24	104	98	107	104	111	105	101	106	98	93	106	116
25	92	92	107	107	110	105	102	106	98	95	105	117
26	89	92	105	110	109	106	99	104	99	96	106	120
27	95	92	105	108	108	106	100	102	101	97	105	122
28	93	92	107	108	108	107	102	105	99	99	108	125
29	91	92	108	109	108	107	101	105	98	97	114	124
30	88	92	108	110	-----	107	101	104	96	101	118	124
31	80	-----	108	112	-----	106	-----	104	-----	102	122	-----
Total	3,448	2,795	3,168	3,296	3,455	3,264	3,118	3,158	3,036	2,958	3,405	3,546
Mean	111	93.2	102	106	119	105	104	102	101	95.4	110	118
Max	131	102	108	112	132	108	107	106	108	103	122	125
Min	80	80	92	104	108	102	99	97	96	87	104	111
Ac-ft	6,840	5,540	6,280	6,540	6,850	6,470	6,180	6,260	6,020	5,870	6,750	7,030

Calendar year 1963: Max 142 Min 68 Mean 105 Ac-ft 75,740
 Water year 1963-64: Max 132 Min 80 Mean 106 Ac-ft 76,630

10-2596. Cottonwood Wash near Cottonwood Spring, Calif.

Location.--Lat 33°44'40", long 115°49'35", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.10, T.5 S., R.11 E., on right bank on Cottonwood Spring road, one mile northwest of Cottonwood Spring.

Drainage area.--0.71 sq mi.

Records available.--October 1959 to September 1964.

Gage.--Water-stage recorder with rain-gage attachment, crest-stage gage, and arch concrete-pipe culvert control. Altitude of gage is 3,100 ft (from topographic map).

Extremes.--Maximum discharge during year, 11 cfs Oct. 17 (gage height, 3.80 ft, from crest-stage gage) based on field estimate of maximum flow; no flow for most of year.

1959-64: Maximum discharge, that of Oct. 17, 1964; no daily flow for most of each year.

Remarks.--Records poor. No regulation or diversion above station. Monthly precipitation, in inches, is as follows: October, 1.1; November, 0.5; January, 0.1; April, 0.2; the water year, 1.9.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Oct. 17.....**0.4

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	0.4	0.4	0	0.01	0.8
Calendar year 1963.....	-	.4	0	.001	.8
Water year 1963-64.....	-	.4	0	.001	.8

**Field estimate made on this day.

Note.--Flow occurred only on day listed above.

EMERSON LAKE BASIN

10-2602. Pipes Creek near Yucca Valley, Calif.

Location.--Lat 34°10'20", long 116°32'45", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.15, T.1 N., R.4 E., on left bank 2.8 miles upstream from Antelope Wash and 6.8 miles northwest of Yucca Valley.

Drainage area.--15.1 sq mi.

Records available.--September 1958 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 4,435.40 ft above mean sea level, datum of 1929.

Remarks.--No flow since Sept. 3, 1958, date of establishment. No regulation or diversion above station.

LUCERNE LAKE BASIN

10-2604. Cushenbury Creek near Lucerne Valley, Calif.

Location.--Lat 34°21'50", long 116°50'35", in NE $\frac{1}{4}$ sec. 14, T.3 N., R.1 E., on right bank 0.3 mile upstream from San Bernardino National Forest boundary and 9 miles southeast of Lucerne Valley.

Drainage area.--6.36 sq mi.

Records available.--August 1957 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 4,750 ft (from topographic map).

Average discharge.--7 years, 0.004 cfs (2.9 acre-ft per year).

Extremes.--Maximum discharge during year, 1.0 cfs Aug. 4 (gage height, 1.27 ft); no flow for most of year.

1957-64: Maximum discharge, 35 cfs Apr. 11, 1958 (gage height, 1.90 ft), on basis of field estimate of maximum flow; no flow in most years.

Remarks.--Records poor. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Aug. 4.....*0.1

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
August 1964.....	0.1	0.1	0	0.003	0.2
Calendar year 1963.....	-	1.2	0	.004	2.8
Water year 1963-64.....	-	.1	0	.0003	.2

Peak discharge (base, 10 cfs).--No peak above base.

* Observation of no flow made on this day.

Note.--Flow occurred only on day listed above.

MOJAVE RIVER BASIN

10-2605. Deep Creek near Hesperia, Calif.

Location.--Lat 34°20'30", long 117°13'40", in SE $\frac{1}{4}$ sec.18, T.3 N., R.3 W., on right bank 0.5 mile upstream from confluence with West Fork Mojave River and 7 miles southeast of Hesperia.

Drainage area.--137 sq mi.

Records available.--October 1904 to September 1922, October 1929 to September 1964. Monthly discharge only prior to January 1930, published in WSP 1314. Combined creek and canal, October 1950 to September 1964.

Gage.--Water-stage recorder (digital) and broad-crested weir since December 1938. Altitude of gage is 3,050 ft (from topographic map). Prior to Sept. 30, 1922, staff gage and water-stage recorder at same site at different datum. December 1929 to Apr. 20, 1938, at same site at different datum. Apr. 21 to Dec. 10, 1938, at site 0.25 mile downstream at different datum.

Average discharge (creek only) --53 years, 66.1 cfs (47,850 acre-ft per year); median of yearly mean discharges, 46 cfs (33,300 acre-ft per year).

(combined).--14 years, 36.8 cfs (26,640 acre-ft per year); median of yearly mean discharges, 20 cfs (14,500 acre-ft per year).

Extremes (creek only).--Maximum discharge during year, 409 cfs Apr. 1 (gage height, 3.35 ft); minimum daily, 0.3 cfs July 19-25, July 29 to Sept. 16, Sept 21.

1904-22, 1929-64: Maximum discharge, 46,600 cfs Mar. 2, 1938, based on slope-area measurement of maximum flow; no flow July 17, 18, 1961.

(combined).--Same as creek; no diversion during year.

1950-64: Maximum discharge, 12,400 cfs Apr. 3, 1958 (gage height, 8.59 ft), from rating curve extended above 3,500 cfs on basis of slope-area measurement at gage height 11.3 ft; no flow July 17, 18, 1961.

Remarks.--Records poor. Discharge measurements made two or more times a month. Slight regulation by Lake Arrowhead (capacity, 48,000 acre-ft), used principally for recreation. Hesperia Water Co.'s canal diverts water about 2 $\frac{1}{2}$ miles above station for irrigation of about 1,500 acres and domestic use below station. No diversion since May 9, 1959.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.3	4.9	11	6.8	12	9.8	275	25	12	2.1	0.3	0.3
2	2.1	5.1	10	6.8	12	10	248	25	11	1.9	.3	.3
3	2.0	5.5	9.7	7.7	12	10	90	28	10	1.8	.3	.3
4	1.9	5.9	9.6	8.1	12	10	59	26	9.9	1.8	.3	.3
5	1.9	5.9	9.5	7.9	11	11	51	29	9.7	1.8	.3	.3
6	1.9	6.4	9.3	9.0	11	11	45	33	9.6	1.7	.3	.3
7	2.0	9.4	8.5	9.1	10	11	40	35	9.6	1.4	.3	.3
8	1.9	10	7.9	9.1	10	11	45	35	9.6	1.2	.3	.3
9	2.0	13	7.7	9.1	9.6	11	61	41	9.6	1.2	.3	.3
10	2.0	12	7.7	9.1	9.6	11	76	72	9.6	1.0	.3	.3
11	2.1	11	7.9	9.0	9.6	12	78	78	9.4	.8	.3	.3
12	2.2	11	7.5	9.4	9.6	13	83	63	9.1	.9	.3	.3
13	2.2	11	7.5	9.3	9.6	15	70	50	8.1	.6	.3	.3
14	2.4	11	7.5	9.4	9.4	14	63	40	7.5	.6	.3	.3
15	2.4	11	7.5	9.4	9.4	14	61	34	6.6	.5	.3	.3
16	2.5	13	7.3	9.4	9.3	14	57	32	5.9	.4	.3	.3
17	2.5	15	7.5	9.4	9.1	15	53	26	5.9	.5	.3	.4
18	2.6	13	7.5	9.4	9.0	15	50	24	5.9	.4	.3	.4
19	2.6	12	7.7	9.4	9.1	17	50	24	5.9	.4	.3	.4
20	2.6	23	7.7	9.4	9.3	19	41	23	6.2	.3	.3	.4
21	2.8	27	7.3	14	9.5	18	40	21	5.5	.3	.3	.3
22	2.8	18	7.1	23	9.5	19	36	20	4.9	.3	.3	.4
23	2.8	14	6.8	15	9.5	21	35	18	4.7	.3	.3	.4
24	2.8	14	6.6	14	9.6	19	36	18	4.4	.3	.3	.4
25	2.9	14	6.2	14	9.6	19	33	16	4.2	.3	.3	.5
26	2.9	14	5.9	14	9.6	22	32	16	3.9	.6	.3	.5
27	3.2	13	5.5	13	9.6	27	30	16	3.4	.5	.3	.5
28	3.4	13	5.7	13	9.7	41	32	15	3.4	.4	.3	.5
29	4.0	13	6.2	13	9.7	61	34	14	2.9	.3	.3	.6
30	4.4	13	6.2	13	-----	86	33	12	2.5	.3	.3	.6
31	4.7	-----	6.2	12	-----	127	-----	11	-----	.3	.3	-----
TOTAL	80.8	362.1	236.2	334.2	288.9	713.8	1,937	920	210.9	25.2	9.3	11.1
MEAN	2.61	12.1	7.62	10.8	9.96	23.0	64.6	29.7	7.03	0.81	0.30	0.37
AC-FT	160	718	468	663	573	1,420	3,840	1,820	418	50	18	22
MAX	4.7	27	11	23	12	127	275	78	12	2.1	0.3	0.6
MIN	1.9	4.9	5.5	6.8	9.0	9.8	30	11	2.5	0.3	0.3	0.3
CALENDAR YEAR 1963	MAX	214	MIN	0.2	MEAN	8.68	AC-FT	6,280				
WATER YEAR 1963-64	MAX	275	MIN	0.3	MEAN	14.0	AC-FT	10,170				

Peak discharge (base, 400 cfs).--Apr. 1 (1/30 hrs) 409 cfs (3.35 ft).

Note.--No gage-height record Oct. 1-26. Stage-discharge relation indefinite July 19 to Sept. 8.

10-2610. West Fork Mojave River near Hesperia, Calif.

Location.--Lat 34°20'27", long 117°14'24", in SW¹/₄SW¹/₄ sec.18, T.3 N., R.3 W., on left bank at highway bridge, 0.5 mile upstream from confluence with Deep Creek and 6.5 miles southeast of Hesperia.

Drainage area.--74.8 sq mi.

Records available.--October 1904 to September 1922, October 1929 to September 1964. Prior to February 1930, monthly discharge only, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 3,050 ft (from topographic map). Prior to June 30, 1922, staff gage and water-stage recorder several hundred feet downstream at different datum.

Average discharge.--53 years, 38.6 cfs (27,950 acre-ft per year); median of yearly mean discharges, 23 cfs (16,700 acre-ft per year).

Extremes.--Maximum discharge during year, 198 cfs Apr. 1 (gage height, 2.75 ft); no flow for most of year.

1904-22, 1929-64: Maximum discharge, 26,100 cfs Mar. 2, 1938, on basis of slope-area measurement of maximum flow; no flow for several months in each year.

Remarks.--Records poor. No regulation above station. Water diverted from Lake Gregory for domestic use and fire protection. One small diversion for irrigation above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Jan. 22.....	0.2	Apr. 5.....	a25	Apr. 13.....	0.8
23.....	.1	6.....	a15	14.....	a.5
Mar. 29.....	1.0	7.....*	a12	15.....*	a.3
30.....	1.5	8.....	a8	16.....	a.2
31.....	.8	9.....	a5	17.....	a.2
Apr. 1.....	93	10.....	a3	18.....	a.1
2.....	112	11.....	a2	19.....	a.1
3.....	52	12.....	a1	20.....	a.1
4.....	a35				

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
January 1964.....	0.3	0.2	0	0.01	0.6
March.....	3.3	1.5	0	.11	6.5
April.....	365.3	112	0	12.2	725
Calendar year 1963.....	-	32	0	.12	85
Water year 1963-64.....	-	112	0	1.01	732

Peak discharge (base, 500 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record.

Note.--Flow occurred only on days listed above.

MOJAVE RIVER BASIN

10-2615. Mojave River at lower narrows, near Victorville, Calif.

Location.--Lat 34°34'22", long 117°19'08", in SW¹/₄SW¹/₄SE¹/₄ sec.29, T.6 N., R.4 W., on left bank 1,000 ft upstream from bridge on county road, formerly U.S. Highway 66, 2,500 ft downstream from Atchison, Topeka and Santa Fe Railway bridge, and 3 miles northwest of Victorville.

Drainage area.--530 sq mi.

Records available.--February 1899 to September 1906, October 1930 to September 1964. Monthly discharge only for January to September 1906, October, November 1930, published in WSP 1314. Prior to October 1936, published as "at Victorville" and as "near Victorville" in 1937.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 2,650 ft (from topographic map). Prior to Aug. 1, 1906, staff gage and Nov. 12, 1930, to Dec. 8, 1936, water-stage recorder, at site 3.8 miles upstream at different datum. Dec. 9, 1936, to Mar. 28, 1938, water-stage recorder at present site at datum 2.00 ft higher.

Average discharge.--41 years, 72.0 cfs (52,130 acre-ft per year); median of yearly mean discharges, 39 cfs (28,200 acre-ft per year).

Extremes.--Maximum discharge during year, 717 cfs Oct. 18 (gage height, 3.73 ft); minimum daily, 8.7 cfs Aug. 21.
1930-64: Maximum discharge, 70,600 cfs Mar. 2, 1938 (gage height, 18.7 ft, present datum), from rating curve extended above 10,000 cfs on basis of slope-area measurement of maximum flow, minimum daily, 6 cfs Aug. 19, 21, 26, 1951.

Remarks.--Records good below 50 cfs and poor above. Discharge measurements made twice a month. Periodic regulation by Lake Arrowhead (capacity, 48,000 acre-ft, used principally for recreation). Diversions and pumping for irrigation of about 5,000 acres above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	29	32	34	32	30	34	20	17	12	13	11
2	17	29	32	34	32	32	32	21	17	12	14	11
3	18	29	32	34	32	32	30	21	17	11	12	11
4	18	29	32	34	32	32	29	21	17	11	12	10
5	20	29	32	34	30	32	27	23	17	11	12	10
6	21	30	32	34	30	32	30	23	16	11	12	10
7	23	30	32	36	30	32	32	23	16	11	12	10
8	24	30	32	34	32	32	32	21	17	11	11	10
9	21	30	32	34	32	30	30	20	17	11	11	10
10	21	30	30	34	32	32	30	18	17	11	11	10
11	23	32	30	34	32	32	29	18	16	11	10	10
12	23	32	30	36	30	32	29	21	16	11	10	10
13	23	32	30	36	27	30	29	18	14	11	10	11
14	23	32	30	36	26	30	29	18	14	10	10	12
15	23	32	32	36	27	30	29	18	14	11	10	12
16	26	32	32	36	29	30	29	18	14	12	9.3	12
17	38	32	34	36	29	30	29	17	16	12	9.3	12
18	135	32	32	36	30	32	29	17	16	12	9.3	12
19	24	32	32	36	30	32	29	18	16	12	9.3	12
20	24	32	32	36	30	30	29	18	14	12	9.3	12
21	26	32	32	36	30	30	29	18	13	11	8.7	12
22	26	32	30	42	30	30	30	20	16	11	9.3	12
23	23	32	30	36	30	30	32	20	17	11	10	12
24	20	32	29	34	30	36	34	20	17	11	10	12
25	20	32	29	34	30	32	30	20	16	11	10	12
26	20	32	29	34	30	32	26	20	16	12	10	12
27	21	32	32	34	30	34	23	21	16	14	10	12
28	23	32	34	32	30	32	21	20	14	13	11	12
29	24	32	34	32	30	32	20	20	13	13	11	12
30	26	32	34	32	-----	32	20	18	12	13	11	12
31	27	-----	34	32	-----	34	-----	17	-----	12	11	-----
Total	817	935	979	1,078	874	978	861	606	468	358	328.5	338
Mean	26.4	31.2	31.6	34.8	30.1	31.5	28.7	19.5	15.6	11.5	10.6	11.3
Max	135	32	34	42	32	36	34	23	17	14	14	12
Min	16	29	29	32	26	30	20	17	12	10	8.7	10
Ac-ft	1,620	1,850	1,940	2,140	1,730	1,940	1,710	1,200	928	710	652	670

Calendar year 1963: Max 242 Min 11 Mean 25.3 Ac-ft 18,330
Water year 1963-64: Max 135 Min 8.7 Mean 23.6 Ac-ft 17,090

Peak discharge (base, 200 cfs).--Oct. 18 (1445 hrs) 717 cfs (3.43 ft).

MOJAVE RIVER BASIN

63

10-2615. Mojave River at lower narrows, near Victorville, Calif.--Continued.

Records available.--Water temperatures: March 1962 to September 1964.

Extremes.--Maximum temperature during year, 78°F Oct. 2; minimum, 46°F Jan. 12-16.

1962-64: Maximum temperature, 94°F July 23, Aug. 14, 1962; minimum, 39°F Jan. 13, 1963.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	76	63	60	55	54	52	51	49	51	49	51	48	56	55	59	57	69	61	70	63	70	66		
2	78	63	61	56	53	51	51	49	51	49	51	49	56	54	58	56	68	60	70	63	70	67		
3	76	62	60	58	52	50	51	49	50	49	50	49	54	53	57	56	67	62	69	63	73	66		
4	72	64	61	58	52	50	50	48	50	49	52	48	55	53	57	55	66	62	68	63	74	69		
5	73	62	61	57	52	50	49	47	51	49	52	51	55	54	56	55	67	62	69	63	72	68		
6	73	60	59	58	52	50	48	47	51	49	52	50	54	53	56	55	68	64	70	64	74	69		
7	70	59	58	55	52	50	50	48	50	48	50	49	55	53	56	55	66	62	70	63	72	68		
8	70	59	58	54	52	50	50	49	50	48	50	48	56	54	57	56	64	62	70	64	72	67		
9	70	59	59	55	52	51	49	47	50	48	51	48	57	55	58	57	63	61	72	65	71	67		
10	71	59	59	55	52	50	48	47	51	49	53	50	58	55	59	58	63	60	72	66	73	68		
11	67	59	59	56	51	49	48	47	51	50	52	51	58	56	60	58	64	61	73	67	73	68		
12	66	57	58	55	50	48	48	46	51	49	52	51	58	56	61	59	66	62	74	67	73	68		
13	66	56	58	56	49	48	47	46	51	48	53	51	58	56	60	59	68	62	73	67	72	67		
14	68	57	58	57	49	48	47	46	50	48	53	51	59	57	60	59	72	63	72	68	71	66		
15	68	58	58	56	50	48	47	46	50	48	53	51	60	58	60	59	70	62	72	67	70	65		
16	62	59	57	55	50	48	47	46	49	48	51	51	60	58	60	59	67	62	71	66	70	63		
17	62	59	57	52	50	48	48	47	50	48	54	52	59	58	60	59	66	62	73	67	71	64		
18	60	59	56	52	50	48	49	48	51	49	55	52	58	57	62	59	68	62	72	66	72	66		
19	64	59	54	52	51	50	50	49	51	50	55	53	58	56	64	61	67	62	72	66	72	67		
20	63	59	54	53	51	50	50	49	51	50	55	52	58	56	65	60	66	64	72	65	70	66		
21	64	58	54	53	51	50	50	49	51	49	55	53	58	56	66	60	66	63	72	65	70	65		
22	66	58	53	51	51	49	50	48	51	49	54	52	58	56	69	60	68	64	71	66	69	65		
23	63	60	54	51	50	48	49	48	51	50	52	50	58	56	64	60	69	64	70	66	68	65		
24	68	59	54	53	49	48	49	48	51	49	51	50	56	55	63	61	70	64	70	67	69	66		
25	64	59	54	52	50	48	49	48	51	50	52	50	56	55	64	62	73	64	71	68	-	-		
26	63	59	53	52	50	48	49	48	50	48	53	51	57	55	64	61	71	65	71	69	-	-		
27	62	55	54	52	50	49	50	48	50	48	56	54	58	56	62	59	69	64	70	68	-	-		
28	63	60	54	52	50	48	51	49	50	49	56	54	58	57	62	60	68	63	73	69	-	-		
29	63	60	54	52	51	50	51	49	50	49	57	55	59	57	63	60	68	63	73	68	-	-		
30	62	58	54	52	51	50	51	49	-----	-----	57	55	59	57	65	60	69	62	72	68	-	-		
31	62	57	-----	-----	51	49	51	49	-----	-----	57	55	-----	-----	68	61	-----	-----	71	67	-	-		
Avg	67	59	57	54	51	49	49	48	51	49	53	51	57	56	61	59	68	62	71	66	-	-	-	-

Note.--Temperature probe covered with silt Aug. 25 to Sept. 30.

MOJAVE RIVER BASIN

10-2618. Beacon Creek at Helendale, Calif.

Location.--Lat 34°45'00", long 117°18'53", in SE $\frac{1}{4}$ sec.29, T.8 N., R.4 W., on county road (formerly U. S. Highway 66 and 91), 0.6 mile northeast of Helendale.

Drainage area.--0.72 sq mi.

Records available.--Water year 1959-60 (annual maximum), October 1960 to September 1964.

Gage.--Water-stage recorder with rain gage attachment, crest-stage gage, and corrugated-pipe culvert control. Altitude of gage is 2,470 ft (from topographic map). Jan. 13, 1959, to Sept. 30, 1960, crest-stage gage at same site and datum.

Extremes.--Maximum discharge during year, 0.3 cfs Oct. 18 (gage height, 10.44 ft); no flow for most of year.

1959-64: Maximum discharge, 28 cfs Sept. 13, 1959 (gage height, 13.12 ft, from crest-stage gage), by indirect measurement of maximum flow through culvert; no flow for most of each year.

Remarks.--Records poor. No daily discharge above 0.05 cfs since Sept. 19, 1963. No regulation or diversion above station. Discharge for calendar year 1963 is as follows: maximum daily, 0.2 cfs; minimum, zero; mean, 0.0005 cfs; total, 0.4 acre-ft. Monthly precipitation, in inches, is as follows: October, 0.5; November, 0.4; December, 0.4; January, 0.1; March, 0.1; the water year, 1.5.

10-2625. Mojave River at Barstow, Calif.

Location.--Lat 34°54'25", long 117°01'20", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.31, T.10 N., R.1 W., on left bank 75 ft upstream from bridge on U.S. Highway 91 at Barstow.

Records available.--October 1930 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 2,089.80 ft above mean sea level, unadjusted.

Average discharge.--34 years, 23.4 cfs (16,940 acre-ft per year); median of yearly mean discharges, zero.

Extremes.--Maximum discharge during year, 10 cfs (estimated) July 10; no flow for most of year.

1930-64: Maximum discharge, 64,300 cfs Mar. 3, 1938 (gage height, 8.60 ft), by slope-area measurement of maximum flow; no flow for several months in each year.

Remarks.--Records poor. Slight regulation by Lake Arrowhead (capacity, 48,000 acre-ft, used principally for recreation). Diversions and pumping for irrigation of about 15,000 acres above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

July 10.....**a0.4

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
July 1964.....	0.4	0.4	0	0.01	0.8
Calendar year 1963.....	-	.1	0	.0003	.2
Water year 1963-64.....	-	.4	0	.001	.8

Peak discharge (base, 100 cfs).--No peak above base.

**Field estimate made on this day.

a No gage-height record.

Note.--Flow occurred only on day listed above.

10-2630. Mojave River at Afton, Calif.

Location.--Lat 35°02'15", long 116°23'00", in SE $\frac{1}{4}$ sec.18, T.11 N., R.6 E., on downstream end of right pier of Union Pacific Railroad bridge, 0.3 mile west of Afton.

Records available.--October 1929 to September 1932, October 1952 to September 1964. Records for the water year 1930 incomplete, yearly estimate published in WSP 1314.

Gage.--Water-stage recorder. Datum of gage is 1,400.15 ft above mean sea level, datum of 1929, supplementary adjustment of 1943. Dec. 21, 1929, to Sept. 30, 1932, water-stage recorder at site 1.7 miles downstream at different datum.

Average discharge.--15 years, 1.94 cfs (1,400 acre-ft per year); median of yearly mean discharges, 1.2 cfs (870 acre-ft per year).

Extremes.--Maximum discharge during year, 89 cfs Aug. 4 (gage height, 4.55 ft), on basis of field estimate of maximum flow; no flow July 10-25, July 30 to Aug. 2, Aug. 27.

1929-32, 1952-64: Maximum discharge, 3,550 cfs Feb. 10, 1932 (gage height, 4.70 ft, site and datum then in use); no flow for some days in 1961-64.

Remarks.--Records good except those for period of no gage-height record and those for Aug. 4, which are poor. Natural flow affected by ground-water withdrawals, diversions, municipal use, and storage in two small reservoirs.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	A0.6	0.9	1.1	1.1	1.3	0.9	0.9	1.1	0.6	0.2	0	0.1
2	A.6	.9	1.1	1.1	1.3	.9	.9	1.2	.5	.1	0	.2
3	A.6	.9	1.1	1.1	1.2	.9	.9	1.2	.4	.1	.1	.2
4	A.6	.9	1.1	1.1	1.2	.9	.9	1.2	.5	.1	*3.6	.3
5	A.6	.9	1.1	1.1	1.2	.9	.9	1.2	.5	A.1	.8	.3
6	A.6	.9	1.1	1.1	1.2	.9	.9	1.2	.4	A.1	.3	.2
7	A.6	.9	1.1	1.1	1.2	1.1	.9	1.2	.4	A.1	.3	.2
8	A.6	.9	1.1	1.1	1.2	1.2	.9	1.2	.4	A.1	.3	.2
9	A.6	.9	1.1	1.1	1.2	1.2	.9	1.1	.4	A.1	.3	.2
10	A.6	.9	1.1	1.1	1.2	1.2	.9	.9	.5	A0	.3	*.1
11	A.6	.9	1.1	1.1	1.2	1.2	.9	.8	.5	0	.2	.1
12	A.6	.9	1.1	1.1	1.2	1.2	.9	*.8	.4	0	.2	.1
13	A.6	.9	1.1	1.1	1.2	1.2	.9	.7	.4	0	*.1	.1
14	A.6	.9	1.1	1.1	1.2	1.2	.9	.6	.3	0	.1	*.1
15	A.6	.9	1.1	1.1	1.2	1.1	.9	.6	.3	0	.1	.1
16	A.6	.9	1.1	1.1	1.2	1.1	.9	.6	.2	0	.2	.1
17	A.6	.9	*1.1	1.1	1.2	1.1	.9	.6	*.2	0	.2	.1
18	1.4	.9	1.1	1.2	1.2	1.2	.9	.6	.3	0	.2	.1
19	A1.2	*.9	1.1	1.2	1.2	1.2	.9	.5	.3	0	.3	.2
20	.9	1.2	1.1	1.2	1.2	1.2	.9	.5	.3	0	.2	.2
21	.9	1.1	1.1	1.2	1.1	1.2	*.9	.5	.3	0	.2	.2
22	*.9	1.1	1.1	1.3	.9	1.2	1.1	.5	.3	*0	.2	.2
23	.9	1.1	1.1	*1.3	.9	1.5	1.2	.5	.3	0	.1	.3
24	.9	1.1	1.1	1.3	.9	*1.2	1.2	.5	.3	0	.1	.3
25	.9	1.1	1.1	1.3	.9	1.2	1.2	.6	.2	0	.1	.3
26	.9	1.1	1.1	1.3	*.9	1.2	1.2	.6	.3	.1	.1	.3
27	.9	1.1	1.1	1.3	.9	1.1	1.2	.6	.5	.2	0	.3
28	.9	1.1	1.1	1.3	1.1	1.1	1.2	.6	.3	.2	.1	.3
29	.9	1.1	1.1	1.3	1.1	1.1	1.2	.6	.2	.1	.1	.3
30	.9	1.1	1.1	1.3	-----	.9	1.1	.6	.2	0	.1	.3
31	.9	-----	1.1	1.3	-----	.9	-----	.6	-----	0	.1	-----
TOTAL	23.6	29.3	34.1	36.5	32.9	34.4	29.5	24.0	10.7	1.6	9.0	6.0
MEAN	0.76	0.98	1.10	1.18	1.13	1.11	0.98	0.77	0.36	0.05	0.29	0.20
MAX	1.4	1.2	1.1	1.3	1.3	1.5	1.2	1.2	0.6	0.2	3.6	0.3
MIN	0.6	0.9	1.1	1.1	0.9	0.9	0.9	0.5	0.2	0	0	0.1
AC-FT	47	58	68	72	65	68	59	48	21	3.2	18	12

CALENDAR YEAR 1963 MAX 61 MIN 0 MEAN 1.06 AC-FT 771

WATER YEAR 1963-64 MAX 3.6 MIN 0 MEAN 0.74 AC-FT 539

Peak discharge (base, 100 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.
A No gage-height record.

ANTELOPE VALLEY

10-2635. Big Rock Creek near Valyermo, Calif.

Location.--Lat 34°25'15", long 117°50'19", in NW 1/4 sec. 20, T. 4 N., R. 9 W., on left bank 0.1 mile upstream from Punchbowl Canyon and 1.9 miles southwest of Valyermo.

Drainage area.--23.0 sq mi.

Records available.--January 1923 to September 1964. Monthly discharge only for October 1937 to January 1939, published in WSP 1314. Prior to October 1954, published as Rock Creek near Valyermo.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 4,050 ft (from topographic map). Prior to May 4, 1938, at same site at different datums. May 4, 1938, to Jan. 26, 1939, at site 0.2 mile downstream (below Punchbowl Canyon) at different datum.

Average discharge.--41 years, 14.9 cfs (10,790 acre-ft per year); median of yearly mean discharges, 8.3 cfs (6,000 acre-ft per year).

Extremes.--Maximum discharge during year, 13 cfs Nov. 20 (gage height, 1.80 ft); minimum daily, 1.8 cfs Sept. 16-30.

1923-64: Maximum discharge, 8,300 cfs Mar. 2, 1938, on basis of slope-area measurement of maximum flow; minimum daily, 0.7 cfs Nov. 5, 1951.

Remarks.--Records good. No regulation or diversion above station. Some infiltration into the stream bed in the immediate vicinity of station.

Cooperation.--Thirty-one discharge measurements furnished by Los Angeles County Flood Control District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.3	1.0	1.6	6.4
1.4	2.2	1.7	9.6
1.5	4.0	1.8	14

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.9	2.8	3.6	4.4	3.6	3.8	*9.7	8.3	5.9	*3.8	2.7	2.4
2	1.9	2.8	3.4	*4.2	3.6	3.8	*8.0	8.3	5.9	3.8	2.7	*2.4
3	1.9	2.8	3.4	4.0	3.6	3.8	6.4	8.3	*5.9	3.8	2.7	2.2
4	1.9	2.8	*3.6	4.0	3.6	*3.6	5.9	8.3	5.7	3.8	2.7	2.2
5	1.9	2.8	3.6	3.8	*3.6	3.6	5.6	8.0	5.7	3.8	*2.7	2.2
6	1.9	2.8	3.8	3.8	3.8	3.6	5.4	*8.0	5.7	3.6	2.7	2.1
7	1.9	*2.8	4.0	3.6	3.8	3.6	5.6	8.0	5.7	3.6	2.7	2.1
8	*1.9	2.8	4.0	*3.4	3.8	3.6	*4.9	7.7	5.7	3.6	2.7	2.1
9	2.1	2.8	5.4	3.4	3.8	3.6	4.9	7.7	5.7	3.6	2.5	1.9
10	2.1	2.8	4.9	3.4	3.8	3.6	5.2	7.7	*5.7	3.4	2.5	1.9
11	2.1	2.8	4.9	3.4	*3.8	*3.4	5.6	8.0	5.4	3.4	*2.4	1.9
12	2.2	3.0	4.9	3.4	*3.6	3.4	5.6	8.0	5.4	3.4	2.4	1.9
13	2.2	*3.0	4.7	3.2	3.6	3.4	5.6	8.0	5.4	3.4	2.4	1.9
14	2.2	*3.2	4.4	3.2	3.6	3.2	5.6	8.0	5.2	*3.2	2.4	*1.9
15	2.2	3.8	4.4	3.2	3.8	3.2	*5.9	*7.7	5.2	3.2	2.4	1.9
16	2.4	4.0	4.4	*3.2	3.8	3.4	6.2	7.7	5.2	3.2	2.4	1.8
17	2.5	4.2	4.4	3.2	3.8	*3.4	6.4	7.4	*5.2	3.2	2.4	1.8
18	2.5	4.0	*4.4	3.2	4.0	3.4	6.7	7.4	4.9	3.0	2.4	1.8
19	2.5	4.0	4.4	3.2	*4.0	3.4	7.0	7.0	4.9	3.0	*2.4	1.8
20	2.5	6.7	4.4	3.2	4.0	3.4	7.0	*7.0	4.9	2.8	2.4	1.8
21	2.5	5.7	4.4	3.6	4.0	3.4	7.4	7.0	4.7	2.8	2.2	1.8
22	2.5	*4.9	4.7	3.6	4.0	3.6	7.4	6.7	4.4	*2.8	2.2	1.8
23	*2.5	4.7	4.7	*3.6	3.8	3.8	*7.4	6.7	4.2	2.8	2.2	1.8
24	2.5	4.4	4.7	3.6	3.8	3.8	7.7	6.7	*4.0	2.8	*2.2	1.8
25	2.5	4.2	4.7	3.6	3.8	*3.8	7.7	6.7	4.0	2.8	2.2	1.8
26	2.5	*4.2	*4.7	3.6	*3.8	3.8	7.7	6.4	4.0	2.8	2.2	1.8
27	2.5	4.0	4.7	3.6	3.8	3.8	7.7	*6.4	4.0	2.8	2.2	1.8
28	2.5	3.8	4.4	3.6	3.8	3.8	8.0	6.4	4.0	2.8	2.2	1.8
29	2.5	3.8	4.4	*3.8	3.8	3.8	*8.0	6.4	4.0	2.8	2.2	1.8
30	*2.8	3.6	4.4	3.8	-----	3.8	8.3	6.2	4.0	2.7	2.2	*1.8
31	2.8	-----	4.4	3.6	-----	4.7	-----	5.9	-----	2.7	2.4	-----
TOTAL	70.8	110.0	135.2	110.4	109.6	112.3	200.1	228.0	150.6	99.2	75.0	58.0
MEAN	2.28	3.67	4.36	3.56	3.78	3.62	6.67	7.35	5.02	3.20	2.42	1.93
MAX	2.8	6.7	5.4	4.4	4.0	4.7	9.7	8.3	5.9	3.8	2.7	2.4
MIN	1.9	2.8	3.4	3.2	3.6	3.2	4.9	5.9	4.0	2.7	2.2	1.8
AC-FT	140	218	268	219	217	223	397	452	299	197	149	115

CALENDAR YEAR 1963: MAX 26 MIN 1.8 MEAN 4.20 AC-FT 3,040
 WATER YEAR 1963-64: MAX 9.7 MIN 1.8 MEAN 3.99 AC-FT 2,890

Peak discharge (base, 50 cfs).--No peak above base.

* Discharge measurement made on this day.

ANTELOPE VALLEY

67

10-2635. Big Rock Creek near Valyermo, Calif.

Records available.---January 1962 to September 1964.

Extremes.--Maximum temperature during year, 62°F Oct 1, 2, July 11-19; minimum, 43°F Feb. 16.

1962-64; Maximum temperature, 65° June 20, 21, 23, 24, 1962, Aug. 14-17, 1963; minimum, 42°F Jan. 24, 1962.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	62	59	55	53	53	50	50	47	49	46	50	45	53	48	57	51	60	54	60	55	59	54	55	52
2	62	59	56	54	52	49	49	47	48	46	47	45	48	45	56	51	60	53	61	55	59	54	55	49
3	61	59	56	53	52	49	48	46	48	44	49	45	50	45	57	50	59	54	60	54	59	54	56	50
4	60	59	56	54	52	49	48	45	48	45	51	45	55	46	54	51	59	54	60	54	59	55	56	51
5	60	57	56	54	52	49	47	46	50	46	51	46	53	47	56	51	60	54	60	54	59	55	56	51
6	60	57	55	54	52	50	48	45	52	45	49	45	53	46	53	50	60	55	60	55	58	57	56	50
7	60	57	54	52	51	50	48	46	47	44	48	45	55	46	56	51	58	55	61	54	60	55	56	50
8	60	56	55	52	52	48	47	46	48	46	50	45	56	47	58	50	58	53	61	55	60	55	55	50
9	60	56	56	54	50	48	47	45	48	45	51	45	56	47	57	51	57	53	61	56	59	55	56	52
10	60	57	56	53	50	45	47	46	49	46	51	46	56	47	58	52	58	53	60	56	60	56	57	52
11	58	57	55	53	49	48	47	45	48	46	52	46	57	48	59	52	59	53	62	57	59	55	57	53
12	57	54	55	53	50	48	47	45	48	45	51	46	56	48	60	52	60	54	62	56	58	54	58	54
13	58	54	54	53	50	48	47	44	48	45	51	46	56	48	59	53	60	55	62	57	58	53	57	53
14	58	54	56	54	51	48	46	45	48	44	51	46	57	48	59	52	60	55	62	57	57	52	55	50
15	58	54	55	54	51	49	47	45	48	44	51	46	58	48	59	52	60	56	62	56	57	52	56	50
16	—	—	54	51	51	49	50	44	47	43	49	46	57	50	59	52	60	55	62	56	57	50	56	51
17	—	—	52	50	51	49	49	46	49	44	54	45	57	50	58	52	59	55	62	56	58	52	56	53
18	—	—	52	51	50	48	49	47	50	46	55	48	56	50	60	52	59	54	62	56	58	54	55	51
19	58	56	52	51	49	47	50	46	50	46	55	48	55	48	60	54	59	54	62	56	59	55	55	51
20	57	55	52	51	50	47	49	46	48	45	54	48	57	50	60	53	60	54	61	55	58	53	55	50
21	57	55	52	51	48	47	47	46	49	44	52	48	58	51	60	53	60	55	61	55	58	53	54	51
22	58	56	52	50	48	47	47	44	50	45	48	44	57	51	60	53	60	55	61	55	58	53	54	50
23	57	56	54	51	48	46	47	45	49	45	52	45	55	49	58	54	60	55	61	55	59	54	55	50
24	56	55	53	51	49	46	48	45	50	45	52	48	56	49	58	54	61	56	61	56	58	54	54	52
25	57	54	52	50	49	46	49	46	46	45	54	47	56	50	57	54	61	56	60	57	60	55	56	52
26	58	56	52	50	49	46	48	46	48	44	55	47	57	51	58	53	61	56	60	57	58	54	56	52
27	57	56	53	50	49	47	49	46	50	44	56	48	57	51	58	52	60	56	60	55	58	53	55	51
28	57	56	53	51	50	48	49	46	49	44	56	48	55	53	58	52	59	55	60	55	58	53	55	50
29	56	55	52	51	50	48	50	46	49	44	55	49	59	52	59	52	59	54	61	56	57	52	55	50
30	56	54	52	51	48	47	49	46	-----	-----	55	49	58	52	60	53	60	54	60	55	57	52	55	50
31	55	54	-----	-----	49	46	48	46	-----	-----	54	48	-----	-----	60	54	-----	-----	60	56	56	52	-----	-----
Avg	—	—	54	52	50	48	48	46	49	45	52	46	56	49	58	52	60	54	61	56	58	54	56	51

ANTELOPE VALLEY

10-2639. Buckhorn Creek near Valyermo, Calif.

Location.--Lat 34°20'35", long 117°55'13", in SW $\frac{1}{4}$ sec.15, T.3 N., R.10 W., on right bank at culvert on State Highway 2, 8.1 miles southwest of Valyermo.

Drainage area.--0.48 sq mi.

Records available.--October 1960 to September 1964.

Gage.--Water-stage recorder with rain-gage attachment, crest-stage gage, and corrugated-pipe culvert control. Altitude of gage is 6,720 ft (from topographic map).

Extremes.--Maximum discharge during year, 1.7 cfs Apr. 9 (gage height, 1.34 ft); no flow for most of year.

1960-64: Maximum discharge, 27 cfs Feb. 11, 1962 (gage height, 2.66 ft), from rating curve extended above 5 cfs on basis of indirect measurements of flow through culvert at gage heights 1.9, 2.4 and 2.7 ft; no flow for most of each year.

Remarks.--Records good. No regulation above station. Flow of spring above station diverted to ranger station for domestic use.

Monthly precipitation, in inches, is as follows: October, 1.7; November, 3.1; December, 0.1; January, 1.2; February, 0.1; March, 0.9; April, 2.3; May, 1.1 the water year, 10.5.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Mar. 29.....0.2	Apr. 11.....1.4	Apr. 19.....0.2	Apr. 29.....0.1
30......4	12......1.2	20......2	30......1
31......5	13......9	21......3	May 1......1
Apr. 1......2	14......8	22......3	9......1
2......1	15.....*.7	23......3	10......1
8......4	16......5	24......1	11......1
9......1.1	17......4	25......1	12......1
10......1.4	18......4	28......1	

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
March 1964.....	1.1	0.5	0	0.04	2.2
April.....	11.3	1.4	0	.38	22
May.....	.5	.1	0	.02	1.0
Calendar year 1963.....	-	2.2	0	.03	24
Water year 1963-64.....	-	1.4	0	.04	25

* Discharge measurement made on this day.

Note.--Flow occurred only on days listed above.

Location.--Lat 34°27'50", long 118°01'05", in SW 1/4 sec.3, T.4 N., R.11 W., on right bank 0.3 mile upstream from Santiago Creek, 1.65 miles upstream from Little Rock Palmdale Irrigation District's dam, and 5 miles south of Little Rock.

Records available.--October 1930 to February 1938, May to September 1938, April 1939 to September 1964.

Average discharge---32 years (1930-37, 1939-64), 15.7 cfs (11,370 acre-ft per year); median of yearly mean discharges, 7.5 cfs, (5,400 acre-ft per year).

Extremes.--Maximum discharge during year, 49 cfs Apr. 1 (gage height, 4.04 ft); no flow July 15 to Sept. 30. 1930-64; Maximum discharge, 17,000 cfs (estimated) Mar. 2, 1938; no flow at times in most years.

Remarks.--Discharge measurements or observations of no flow made two or more times a month. No regulation or diversion above station.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	1.1	4.4	2.7	5.1	3.8	38	10	2.9	0.2		
2	.5	1.1	4.2	2.7	5.3	4.0	34	9.8	2.7	.2		
3	.5	1.1	3.8	2.7	5.5	3.8	22	9.5	2.5	.2		
4	.4	1.2	3.8	2.7	5.7	3.8	18	9.2	2.3	.2		
5	.4	1.2	3.6	2.7	5.7	3.8	17	9.2	2.2	.1		
6	.4	1.4	3.6	2.7	5.3	3.8	16	9.5	2.0	.1		
7	.3	3.1	3.4	2.7	4.9	3.8	15	9.5	2.0	.1		
8	.3	3.4	3.4	2.7	4.4	4.0	16	10	2.5	.1		
9	.3	2.9	3.4	2.7	4.2	4.0	19	10	2.7	.1		
10	.3	2.5	3.4	2.7	4.0	4.0	20	11	2.9	.1		
11	.3	2.3	3.4	2.7	4.0	4.0	20	11	2.7	.1		
12	.3	2.2	3.4	2.7	4.0	4.0	21	10	2.5	.1		
13	.2	1.8	3.2	2.7	4.0	4.0	20	9.8	2.0	.1		
14	.2	1.7	3.2	2.7	3.8	4.0	19	9.2	1.8	.1		
15	.2	1.8	3.2	2.7	3.8	3.8	18	8.6	1.7	0		
16	.2	3.2	3.2	2.5	3.8	3.8	18	8.1	1.2	0		
17	1.4	3.6	3.2	2.7	3.8	3.8	16	7.5	1.1	0		
18	2.2	3.4	3.2	2.7	3.8	4.0	17	7.2	1.1	0		
19	2.2	3.2	3.1	2.7	3.8	4.0	16	6.4	1.1	0		
20	2.2	9.9	3.1	2.7	3.8	4.2	15	6.0	.8	0		
21	2.0	10	3.1	5.5	3.8	4.4	14	6.0	.8	0		
22	1.8	8.4	2.9	7.2	3.8	4.4	13	5.5	.7	0		
23	1.7	7.0	2.9	5.1	3.8	4.9	13	5.1	.6	0		
24	1.7	6.7	2.9	4.2	3.8	4.9	12	4.6	.5	0		
25	1.6	6.2	2.7	4.0	3.8	4.9	12	4.4	.4	0		
26	1.6	6.0	2.7	3.8	3.8	4.9	11	4.2	.4	0		
27	1.4	5.7	2.7	3.8	3.8	5.3	11	4.2	.4	0		
28	1.2	5.1	2.7	3.8	3.8	6.2	11	4.2	.3	0		
29	1.2	5.1	2.7	3.8	3.8	7.8	11	4.0	.2	0		
30	1.1	4.6	2.7	3.8	-----	8.9	10	3.6	.2	0		
31	1.1	-----	2.7	4.4	-----	11	-----	3.2	-----	0		
Total	29.7	116.9	99.9	103.2	122.9	146.0	513	230.5	45.2	1.8	0	0
Max	0.96	3.90	3.22	3.33	4.24	4.71	17.1	7.44	1.51	0.06	0	0
Max	2.2	10	4.4	7.2	5.7	11	38	11	2.9	0.2	0	0
Min	0.2	1.1	2.7	2.5	3.8	3.8	10	3.2	0.2	0	0	0
Ac-ft	59	232	198	205	244	290	1,020	457	90	3.6	0	0
Calendar year 1963:	Max	112	Min	0	Mean	3.47	Ac-ft	2,520				
Water year 1963-64:	Max	38	Min	0	Mean	3.85	Ac-ft	2,800				

ANTELOPE VALLEY

10-2646. Oak Creek near Mojave, Calif.

Location.--Lat 35°03'00", long 118°21'25", in NW $\frac{1}{4}$ sec.15, T.11 N., R.14 W., on upstream right wingwall of culvert, 100 ft downstream from unnamed tributary, 0.1 mile west of junction of Oak Creek and Willow Springs Roads and 10.5 miles west of Mojave.

Drainage area.--15.8 sq mi.

Records available.--August 1957 to September 1964.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,100 ft (from topographic map).

Average discharge.--7 years, 0.71 cfs (514 acre-ft per year).

Extremes.--Maximum discharge during year, 0.6 cfs Apr. 1 (gage height, 0.75 ft); no flow Oct. 1-30, July 12 to Sept. 30. 1957-64: Maximum discharge, 29 cfs Feb. 11, 1962 (gage height, 1.55 ft); no flow for some months in each year.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.5 0
.6 .1
.7 .3
.8 1.0

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.1	0.2	0.2	0.2	0.2	0.4	0.4	0.2	0.1		
2	0	.1	.2	.2	.2	.2	.4	.4	.2	.1		
3	0	.1	.2	.2	.2	.2	.3	.4	.2	.1		
4	0	.1	.2	.2	.2	.2	.3	.4	.2	.1		
5	0	.1	.2	.2	.2	.2	.3	.4	.2	.1		
6	0	.2	.2	.2	.2	.2	.3	.4	.2	.1		
7	0	.1	.2	.2	.2	.2	.3	.3	.2	.1		
8	0	.1	.2	.2	.2	.2	.3	.3	.2	.1		
9	0	.1	.2	.2	.2	.2	.3	.3	.2	.1		
10	0	.1	.2	.2	.2	.2	.3	.3	.2	.1		
11	0	.1	.2	.2	*.2	.2	.3	.3	.2	.1	(*)	
12	0	.1	.2	.2	.2	.2	.3	.3	.2	0		
13	0	.1	.2	.2	.2	.2	.3	*.3	.2	0		
14	0	.1	.2	.2	.2	.2	*.3	.3	.2	0		
15	0	*.1	.2	*.2	.2	.2	.3	.3	*.2	*.0		(*)
16	0	.1	.2	.2	.2	.2	.3	.3	.2	0		
17	0	.1	*.2	.2	.2	.2	.3	.3	.2	0		
18	0	.1	.2	.2	.2	*.2	.3	.3	.2	0		
19	*.0	.1	.2	.2	.2	.2	.3	.3	.2	0		
20	0	.2	.2	.2	.2	.2	.3	.3	.1	0		
21	0	.2	.2	.2	.2	.2	.3	.3	.1	0		
22	0	.1	.2	.2	.2	.2	.3	.3	.1	0		
23	0	.1	.2	.2	.2	.2	.3	.3	.1	0		
24	0	.2	.2	.2	.2	.2	.3	.3	.1	0		
25	0	.2	.2	.2	.2	.2	.3	.2	.1	0		
26	0	.2	.2	.2	.2	.2	.3	.2	.1	0		
27	0	.2	.2	.2	.2	.2	.3	.2	.1	0		
28	0	.2	.2	.2	.2	.2	.3	.2	.1	0		
29	0	.2	.2	.2	.2	.2	.3	.2	.1	0		
30	0	.2	.2	.2	.2	.2	.3	.2	.1	0		
31	.1	-----	.2	.2	-----	.2	-----	.2	-----	0		
Total	0.1	4.0	6.2	6.2	5.8	6.2	9.2	9.2	4.9	1.1	0	0
Mean	0.003	0.13	0.20	0.20	0.20	0.20	0.31	0.30	0.16	0.04	0	0
Max	0.1	0.2	0.2	0.2	0.2	0.2	0.4	0.4	0.2	0.1	0	0
Min	0	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.1	0	0	0
Ac-ft	0.2	7.9	12	12	12	12	18	18	9.7	2.2	0	0

Calendar year 1963: Max 1.3 Min 0 Mean 0.34 Ac-ft 248

Water year 1963-64: Max 0.4 Min 0 Mean 0.14 Ac-ft 104

Peak discharge (base, 10 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

KOEHN LAKE BASIN

71

10-2647.5. Pine Tree Creek near Mojave, Calif.

Location.--Lat 35°13'50", long 118°05'05", in SE $\frac{1}{4}$ sec.14, T.31 S., R.36 E., on downstream side of city of Los Angeles aqueduct-siphon pier near right bank, 0.5 mile downstream from unnamed tributary, and 13 miles northeast of Mojave.

Drainage area.--33.5 sq mi.

Records available.--July 1958 to September 1964.

Gage.--Water-stage recorder with rain-gage attachment. Altitude of gage is 2,700 ft (from topographic map). Prior to Oct. 1, 1961, at datum 3.0 ft higher.

Average discharge.--6 years, 0.40 cfs (290 acre-ft per year).

Extremes.--Maximum discharge during year, 5.0 cfs Oct. 18 (gage height, 4.23 ft); no flow for most of year.

1958-64; Maximum discharge, about 30,000 cfs Aug. 23, 1961, on basis of field estimate of maximum flow; no flow for most of each year.

Remarks.--Records poor. No regulation or diversion above station. Monthly precipitation, in inches, is as follows: October, 1.7; November, 0.5; January, 0.4; March, 0.3; April, 0.1; the water year, 3.0.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Oct. 18..... 0.9
Nov. 20.....**.3

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	0.9	0.9	0	0.03	1.8
November.....	.3	.3	0	.01	.6
Calendar year 1963.....	-	58	0	.18	128
Water year 1963-64.....	-	.9	0	.003	2.4

Peak discharge (base, 10 cfs).--No peak above base.

**Field estimate made on this day.

Note.---Flow occurred only on days listed above.

INDIAN WELLS VALLEY

10-2648.7. Little Lake Creek near Little Lake, Calif.

Location.--Lat 35°57'35", long 117°54'50", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.6, T.23 S., R.38 E., on upstream end of right wingwall of culvert on U.S. Highway 395, 1.5 miles north of Little Lake.

Drainage area.--8.60 sq mi.

Records available.--October 1963 to September 1964.

Gage.--Water-stage recorder with rain-gage attachment and multiple culvert control. Altitude of gage is 3,260 ft (from topographic map).

Extremes.--1963-64; Maximum discharge during year, 7 cfs Aug. 4 (gage height, 2.96 ft) on basis of field estimate of maximum flow; no flow for most of year.

Remarks.--Records poor. No regulation or diversion above station. At times water is released from Los Angeles aqueduct to creek at site 1.0 mile upstream. Monthly precipitation, in inches, is as follows: October, about 1; November, 0.1; March, 0.1; July, 0.1; the water year, 1.3.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Oct. 17.....** a0.2
Aug. 4..... ** .2

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	0.2	0.2	0	0.006	0.4
August 1964.....	.2	.2	0	.006	.4
Calendar year 1963.....	-	-	-	-	-
Water year 1963-64.....	-	.2	0	.001	.8

**Field estimate made on this day.

Note.---Flow occurred only on days listed above.

INDIAN WELLS VALLEY

10-2648.78. Ninemile Creek near Brown, Calif.

Location.--Lat 35°50'35", long 117°55'35", on left bank 600 ft upstream from Los Angeles aqueduct and 6.4 miles northwest of Brown, Inyo County.

Drainage area.--10.4 sq mi.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 3,350 ft (from topographic map).

Extremes.--Maximum discharge during year, 437 cfs Oct. 17 (gage height, 6.50 ft) from rating curve extended above 20 cfs on basis of slope-area measurement of maximum flow; no flow for most of year.

1961-64: Maximum discharge, that of Oct. 17, 1963; no flow for most of each year.

Remarks.--Records poor. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Oct. 17.....* 20	Jan. 24.....0.1	Feb. 5.....0.1	Feb. 17.....0.1
18.....a 1	25......1	6......1	18......1
Dec. 18......1	26......1	7......1	19......1
Jan. 13.....*.1	27......1	8......1	20......1
14......1	28......1	9......1	21......1
15......1	29......1	10.....*.1	22......1
16......1	30......1	11......1	23......1
17......1	31......1	12......2	24......1
18......1	Feb. 1......1	13......3	25......1
19......1	2......1	14......1	26......1
21......1	3......2	15......1	27......1
22......1	4......1	16......1	28......1
23......1			

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	21	20	0	0.68	42
December.....	.1	.1	0	.003	.2
January 1964.....	1.8	.1	0	.06	3.6
February.....	3.2	.3	0	.11	6.3
Calendar year 1963.....	-	20	0	.10	72
Water year 1963-64.....	-	20	0	.07	52

Peak discharge (base, 10 cfs).--Oct. 17 (2100) 437 cfs (6.50 ft).

* Discharge measurement made on this day

a No gage-height record.

Note.--Flow occurred only on days listed above.

10-2652. Convict Creek near Mammoth Lakes, Calif.

Location.--Lat 37°36'30", long 118°50'55", in NE $\frac{1}{4}$ sec. 14, T.4 S., R.28 E., on right bank 1.1 miles downstream from Convict Lake, 2.0 miles upstream from U.S. Highway 395, and 7.0 miles southeast of Mammoth Lakes (ranger station).

Drainage area.--18.7 sq mi.

Records available.--July 1925 to September 1964. Monthly discharge only prior to October 1959, published in WSP 1314 and 1734.

Gage.--Water-stage recorder and wood control. Altitude of gage is 7,450 ft (from topographic map). Prior to Nov. 15, 1926, staff gage at same site and datum.

Average discharge.--39 years, 23.3 cfs (16,870 acre-ft per year).

Extremes.--Maximum discharge during year, 70 cfs June 7 (gage height, 2.03 ft); minimum daily, 6.8 cfs Apr. 5-8, 11-14. 1925-64: Maximum discharge, 290 cfs June 29, 1932 (gage height, 4.43 ft); minimum daily, 1.3 cfs Jan. 10, 1951.

Remarks.--Some regulation by Convict Lake above station. No diversion above station.

Cooperation.--Records furnished by city of Los Angeles, Department of Water and Power, and reviewed by Geological Survey; furnished figures rounded by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	14	14	11	11	9.1	8.7	10	33	47	26	13
2	15	14	13	11	10	9.1	8.7	9.8	34	45	26	13
3	15	14	13	11	10	*9.1	*8.7	11	37	44	25	13
4	15	14	13	11	*10	9.1	8.7	11	42	41	23	13
5	15	13	13	11	10	9.1	6.8	12	48	40	23	13
6	15	14	13	11	10	9.1	6.8	12	58	38	23	12
7	15	14	13	10	10	8.8	6.8	12	68	37	24	12
8	15	14	13	9.7	10	8.8	6.8	12	63	37	26	12
9	15	14	13	10	9.7	8.8	8.7	12	*59	36	26	*12
10	15	14	12	9.4	9.7	8.8	8.7	12	53	36	26	12
11	15	14	12	9.1	9.4	8.8	6.8	12	48	35	*26	11
12	15	14	12	9.1	9.4	9.4	6.8	*12	44	34	25	11
13	15	14	12	9.4	9.4	9.4	6.8	13	40	34	24	11
14	15	14	11	9.7	9.1	9.4	*6.8	13	39	34	23	11
15	*15	15	11	9.7	9.1	9.1	7.2	15	42	34	22	11
16	15	15	11	9.7	9.1	9.1	7.6	18	47	34	21	11
17	15	15	11	9.7	9.1	9.1	7.6	20	50	*33	20	11
18	15	15	11	9.4	9.1	9.1	7.6	22	*51	32	19	10
19	15	*14	11	11	9.1	9.1	9.6	*24	49	31	18	9.9
20	15	15	11	9.4	9.1	9.1	10	27	46	30	18	9.9
21	15	15	10	9.4	9.1	9.1	10	30	44	30	17	9.9
22	15	15	10	11	9.1	9.1	11	33	44	29	16	9.6
23	15	15	10	11	9.1	9.4	10	37	44	29	16	9.6
24	15	15	10	11	9.1	9.4	10	39	46	28	16	9.6
25	15	15	10	11	9.1	9.4	10	40	49	27	*15	9.6
26	14	15	10	11	9.1	9.4	10	44	51	27	14	9.6
27	14	14	9.7	11	9.1	9.1	10	43	53	26	14	9.6
28	14	14	9.7	11	9.1	9.1	*10	*39	53	*28	14	9.2
29	14	14	9.7	11	9.1	9.1	10	37	52	28	14	*9.2
30	14	14	9.2	11	-----	8.8	10	35	*50	28	13	9.2
31	14	-----	*9.2	11	-----	8.8	-----	34	-----	27	13	-----
Total	459	430	350.5	320.7	274.2	282.1	257.2	700.8	1,437	1,039	626	326.9
Mean	14.8	14.3	11.3	10.3	9.46	9.10	8.57	22.6	47.9	33.5	20.2	10.9
Max	15	15	14	11	11	9.4	11	44	68	47	26	13
Min	14	13	9.2	9.1	9.1	8.8	6.8	9.8	33	26	13	9.2
Ac-ft	910	853	695	636	544	560	510	1,390	2,850	2,060	1,240	648

Calendar year 1963: Max 211 Min 5.4 Mean 29.2 Ac-ft 21,180
 Water year 1963-64: Max 68 Min 6.8 Mean 17.8 Ac-ft 12,900

* Discharge measurement made on this day.

OWENS LAKE BASIN

10-2657. Rock Creek at Little Round Valley, near Bishop, Calif.

Location.--Lat 37°33'10", long 118°41'00", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.32, T.4 S., R.30 E., on right bank just upstream from diversion to Little Round Valley, 0.6 mile south of Toms Place, and 20 miles northwest of Bishop, Mono County.

Drainage area.--35.8 sq mi.

Records available.--January to December 1918, January 1920 to September 1964. Monthly discharge only prior to October 1959, published in WSP 1314 and 1734.

Gage.--Water-stage recorder and Parshall flume since May 1953. Altitude of gage is 7,450 ft (from topographic map). Prior to May 24, 1926, staff gage at same site at different datums. May 24, 1926, to May 28, 1953, water-stage recorder at same site at different datums.

Average discharge.--44 years (1920-64), 29.8 cfs (21,570 acre-ft per year).

Extremes.--Maximum discharge during year, 56 cfs June 27 (gage height, 1.70 ft); minimum daily, 9.0 cfs Sept. 28-30. 1926-64: Maximum discharge, 270 cfs July 26, 1952 (gage height, 2.93 ft, datum then in use); minimum daily, 3.2 cfs Mar. 11, 1926.

Remarks.--No regulation or diversion above station.

Cooperation.--Records furnished by city of Los Angeles, Department of Water and Power, and reviewed by Geological Survey; furnished figures rounded by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	14	13	11	11	10	11	18	35	41	30	16
2	15	14	13	11	11	10	11	18	40	41	28	17
3	15	14	13	11	12	a10	11	17	43	39	26	16
4	15	14	12	9.2	11	a10	11	17	47	39	25	14
5	15	14	12	11	11	10	11	18	51	38	24	14
6	15	15	11	9.5	14	10	10	18	52	36	25	13
7	15	14	11	10	14	10	11	18	52	36	26	13
8	15	15	11	12	13	17	11	18	50	36	26	12
9	15	15	12	13	12	12	12	19	46	36	26	12
10	15	15	13	12	12	10	13	20	39	36	26	11
11	15	14	17	14	11	10	14	22	33	34	26	11
12	16	14	25	13	a12	11	14	24	30	34	24	11
13	16	14	21	16	a12	12	15	27	29	36	23	10
14	16	14	16	19	a12	11	17	31	29	36	22	10
15	16	15	12	19	a12	11	20	35	36	36	21	10
16	15	15	12	15	a12	11	20	37	42	35	21	10
17	20	16	11	12	a12	11	20	38	45	33	21	10
18	19	16	11	11	12	11	18	39	43	32	21	9.8
19	18	15	11	13	12	10	19	42	40	33	21	9.8
20	17	15	11	13	11	11	18	46	36	33	21	9.8
21	17	a15	11	11	12	11	18	49	36	32	20	9.5
22	16	a14	12	11	11	11	19	50	38	31	19	9.5
23	15	a14	11	a11	12	11	17	50	41	31	18	9.5
24	15	a14	11	a11	11	a11	17	51	45	30	17	9.2
25	15	a14	11	a11	11	a12	17	50	49	30	16	9.2
26	15	14	1	a11	13	10	17	54	54	31	16	9.2
27	14	14	11	a12	12	11	19	47	55	34	15	9.2
28	14	14	11	a12	11	11	19	44	53	36	15	9.0
29	14	14	11	a12	11	11	20	38	49	35	15	9.0
30	14	13	11	12	-----	11	21	35	45	34	15	9.0
31	14	-----	11	12	-----	11	-----	33	-----	33	15	-----
Total	481	432	390	380.7	343	339	471	1,023	1,283	1,077	664	331.7
Mean	15.5	14.4	12.6	12.3	11.8	10.9	15.7	33.0	42.8	34.7	21.4	11.1
Max	20	16	25	19	14	17	21	54	55	41	30	17
Min	14	13	11	9.2	11	10	10	17	29	30	15	9.0
Ac-ft	954	857	774	755	680	672	934	2,030	2,540	2,140	1,320	658

Calendar year 1963: Max 193 Min 6.2 Mean 32.4 Ac-ft 23,440
 Water year 1963-64: Max 55 Min 9.0 Mean 19.7 Ac-ft 14,310

a No gage-height record.

10-2670. Pine Creek at division box, near Bishop, Calif.

Location.--Lat 37°25'00", long 118°37'15", in NW¹ sec.19, T.6 S., R.31 E., on right bank 0.25 mile upstream from division box (at Rovana), 1.9 miles west of Round Valley schoolhouse, and 13 miles northwest of Bishop.

Drainage area.--37.9 sq mi.

Records available.--October 1921 to September 1964. Prior to October 1959 monthly discharge only, published in WSP 1314 and 1734.

Gage.--Water-stage recorder and Parshall flume since November 1938. Altitude of gage is 5,280 ft (from topographic map).

Average discharge.--43 years, 43.4 cfs (31,420 acre-ft per year).

Extremes.--Maximum discharge during year, 140 cfs June 7 (gage height, 3.02 ft); minimum daily, 21 cfs Oct. 6, 7, Sept. 21, 27, 30. 1921-64: Maximum discharge, 356 cfs June 4, 1957; minimum daily, 10 cfs Jan. 8, 1930, Jan. 21, 1935.

Remarks.--No regulation or diversion above station.

Cooperation.--Records furnished by city of Los Angeles, Department of Water and Power, and reviewed by Geological Survey; furnished figures rounded by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	30	26	26	25	25	24	30	106	72	36	25
2	32	29	27	26	26	24	23	30	109	69	35	25
3	32	29	26	25	25	23	23	30	115	67	34	26
4	29	29	27	25	24	23	24	28	123	65	35	25
5	22	29	28	26	25	23	24	28	118	61	36	24
6	21	30	28	25	25	23	24	28	124	59	38	24
7	21	29	28	25	26	23	23	28	121	60	39	24
8	26	30	28	25	26	23	23	27	87	60	37	24
9	33	29	28	24	26	23	23	28	67	58	36	23
10	33	29	27	24	26	22	23	28	58	55	35	22
11	34	29	27	24	25	23	24	29	55	55	34	22
12	33	28	27	25	25	23	24	36	59	59	34	22
13	33	28	27	24	25	23	24	50	77	61	34	22
14	33	28	28	24	24	23	24	61	106	58	33	22
15	33	30	28	24	25	24	25	68	121	54	32	22
16	32	29	27	24	25	23	26	76	106	51	31	22
17	33	30	27	24	25	23	28	68	94	49	30	22
18	34	29	27	25	24	23	29	75	83	49	30	22
19	34	28	26	25	25	23	30	91	79	47	29	22
20	34	29	26	24	24	23	29	102	77	46	29	22
21	33	29	27	24	25	23	28	102	85	44	28	21
22	32	28	27	24	25	23	28	98	92	42	28	22
23	32	28	26	24	25	23	28	102	98	42	27	22
24	31	28	26	24	25	22	27	100	103	40	27	22
25	30	28	26	25	24	22	28	97	104	40	26	22
26	30	28	26	26	24	23	28	92	106	44	26	22
27	30	28	26	25	24	23	28	76	99	44	26	21
28	30	28	26	24	24	24	28	60	85	44	25	22
29	29	28	27	25	24	24	28	56	77	42	25	22
30	30	27	26	25	-----	24	29	59	74	40	24	21
31	30	-----	26	25	-----	24	-----	80	-----	37	24	-----
Total	951	861	832	765	721	718	777	1,863	2,808	1,614	963	679
Mean	30.7	28.7	26.8	24.7	24.9	23.2	25.9	60.1	93.6	52.1	31.1	22.6
Max	34	30	28	26	26	25	30	102	124	72	39	26
Min	21	27	26	24	24	22	23	27	55	37	24	21
Ac-ft	1,890	1,710	1,650	1,520	1,430	1,420	1,540	3,700	5,570	3,200	1,910	1,350
Calendar year 1963:	Max	321	Min	20	Mean	53.8	Ac-ft	38,980				
Water year 1963-64:	Max	124	Min	21	Mean	37.0	Ac-ft	26,890				

OWENS LAKE BASIN

10-2687. Silver Canyon Creek near Laws, Calif.

Location.--Lat 37°24'15", long 118°18'30", in NW $\frac{1}{4}$ sec.25, T.6 S., R.33 E., on right bank at mouth of canyon, 2.0 miles east of Laws.

Drainage area.--22.4 sq mi.

Records available.--March 1930 to September 1964. Monthly discharge only prior to October 1959, published in WSP 1314 and 1734.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 4,600 ft (from topographic map). Prior to Feb. 24, 1943, staff gage and Cipolletti weir at site $\frac{1}{2}$ miles downstream at different datum.

Average discharge.--34 years, 1.54 cfs (1,110 acre-ft per year).

Extremes.--Maximum discharge during year, 1.9 cfs Jan. 23-26, Apr. 19, May 5, 9-10, 26-28; minimum daily, 1.4 cfs July 10-14. 1930-64: Maximum discharge, 8.4 cfs Oct. 19, 1958; no flow at times in some years.

Remarks.--No regulation; occasional diversion above station.

Cooperation.--Records furnished by city of Los Angeles, Department of Water and Power, and reviewed by Geological Survey; furnished figures rounded by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.7	1.7	1.8	1.8	1.8	1.8	1.6	1.8	1.8	1.6	1.6	1.6
2	1.6	1.7	1.8	1.8	1.8	1.8	1.7	1.8	1.8	1.6	1.6	1.6
3	1.6	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.5	1.6	1.6
4	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.8	1.8	1.5	1.6	1.6
5	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.9	1.8	1.5	1.6	1.6
6	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.5	1.6	1.6
7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.5	1.6	1.6
8	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.8	1.8	1.5	1.6	1.6
9	1.7	1.8	1.8	1.8	1.8	1.8	1.6	1.9	1.8	1.5	1.6	1.6
10	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.4	1.6	1.6
11	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.4	1.6	1.6
12	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.4	1.6	1.6
13	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.8	1.7	1.4	1.6	1.6
14	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.8	1.7	1.4	1.6	1.6
15	1.7	1.8	1.8	1.8	1.8	1.8	1.7	1.8	1.7	1.5	1.6	1.6
16	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.5	1.6	1.6
17	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.6	1.6	1.6
18	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.6	1.6	1.6
19	1.7	1.8	1.8	1.8	1.8	1.8	1.9	1.8	1.6	1.6	1.6	1.6
20	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.6
21	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.6
22	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.6
23	1.7	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.6
24	1.7	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.6
25	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.8	1.6	1.5	1.6	1.6
26	1.8	1.8	1.8	1.9	1.8	1.8	1.8	1.9	1.6	1.6	1.6	1.6
27	1.7	1.8	1.8	1.8	1.8	1.7	1.8	1.9	1.6	1.6	1.6	1.6
28	1.7	1.8	1.8	1.8	1.8	1.7	1.8	1.9	1.6	1.6	1.5	1.6
29	1.7	1.8	1.8	1.8	1.8	1.7	1.8	1.8	1.6	1.5	1.5	1.5
30	1.7	1.8	1.8	1.8	-----	1.7	1.8	1.8	1.6	1.5	1.5	1.5
31	1.7	-----	1.8	1.8	-----	1.7	-----	1.8	-----	1.6	1.6	-----
Total	52.8	53.5	55.8	56.2	52.2	55.3	53.0	56.4	51.0	47.4	49.3	47.8
Mean	1.70	1.78	1.80	1.81	1.80	1.78	1.77	1.82	1.70	1.53	1.59	1.59
Max	1.8	1.8	1.8	1.9	1.8	1.8	1.9	1.9	1.8	1.6	1.6	1.6
Min	1.6	1.7	1.8	1.8	1.8	1.7	1.6	1.8	1.6	1.4	1.5	1.5
Ac-ft	105	106	111	111	104	110	105	112	101	94	98	95

Calendar year 1963: Max 2.0 Min 1.5 Mean 1.73 Ac-ft 1,250
 Water year 1963-64: Max 1.9 Min 1.4 Mean 1.72 Ac-ft 1,250

10-2760, Big Pine Creek near Big Pine, Calif.

Location.--Lat 37°08'40", long 118°18'55", in NW¹ sec.25, T.9 S., R.33 E., on left bank 0.3 mile downstream from Little Pine Creek, 0.5 mile downstream from powerhouse No. 3, and 2.2 miles southwest of Big Pine.

Drainage area.--39.0 sq mi.

Records available.--November 1907 to February 1911, January 1920 to September 1964; combined records of creek and diversions, June 1930 to September 1964. Monthly discharge only for some periods, published in WSP 1314 and 1734.

Gage.--Water-stage recorder and Parshall flume since April 1949 on creek; water-stage recorder and Parshall flume on each diversion. Altitude of gage is 4,550 ft (from topographic map). Prior to January 1923, staff gage at same site and datum.

Average combined discharge.--34 years (1930-64), 40.4 cfs (29,250 acre-ft per year), including diversion to upper and lower Giroux ditches.

Extremes (creek only).--Maximum discharge during year, 76 cfs Aug. 7 (gage height, 2.06 ft); minimum daily, 7.4 cfs Apr. 7, 8.

1907-11, 1920-64: Maximum discharge, 458 cfs July 3, 1932 (gage height, 6.55 ft); no flow Dec. 3-12, 1935.

(combined).--Maximum discharge during year, 92 cfs Aug. 7; minimum daily, 12 cfs for some days.

1907-11, 1920-64: Maximum discharge, 458 cfs July 3, 1932; minimum daily, 6.4 cfs Dec. 11, 12, 1935.

Remarks.--No regulation above station. Diversions above station for power and irrigation. For records of combined discharge of Big Pine Creek and Giroux ditches which divert above station, see following page.

Cooperation.--Records furnished by city of Los Angeles, Department of Water and Power, and reviewed by Geological Survey; furnished figures rounded by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	22	19	15	13	11	8.5	15	39	59	50	28
2	22	21	19	15	12	11	8.2	13	45	58	47	22
3	22	21	19	15	12	11	8.2	13	49	58	48	19
4	23	21	19	15	12	11	8.2	12	55	56	50	15
5	23	21	18	15	11	11	8.2	11	53	51	52	13
6	21	22	18	15	11	11	8.2	11	55	54	58	12
7	20	21	18	14	10	11	7.4	11	53	58	68	11
8	19	20	18	14	8.7	11	7.4	11	37	62	66	10
9	20	20	19	14	8.7	10	7.7	11	27	61	61	9.8
10	19	20	17	13	9.0	10	8.2	11	23	55	60	9.8
11	19	20	17	15	9.0	10	8.5	14	22	56	59	9.5
12	19	20	18	14	9.2	10	9.0	19	24	64	60	9.8
13	19	20	18	15	9.2	10	9.8	22	50	71	59	10
14	19	20	17	15	11	11	11	22	46	69	55	13
15	21	21	17	14	12	11	12	22	57	60	51	16
16	23	20	16	14	11	11	13	24	50	57	45	16
17	25	20	16	13	11	10	13	22	44	60	42	16
18	26	20	16	13	11	10	13	25	39	61	42	16
19	26	20	16	13	11	10	14	29	39	60	43	16
20	25	21	16	13	11	10	14	35	40	61	44	16
21	24	20	16	14	11	10	13	37	45	60	42	15
22	25	20	16	14	11	10	13	40	54	58	40	15
23	24	20	16	15	10	11	13	38	54	59	39	15
24	24	20	16	15	10	10	13	38	53	64	40	16
25	24	19	16	14	10	10	12	36	61	67	42	16
26	24	19	16	13	11	11	11	35	62	69	42	16
27	24	19	16	13	11	11	11	27	52	70	38	17
28	23	19	16	13	10	11	12	22	47	67	35	17
29	22	19	16	13	11	11	12	22	50	72	32	15
30	22	19	15	13	-----	11	15	23	56	70	30	14
31	22	-----	15	13	-----	10	-----	30	-----	61	28	-----
Total	692	605	525	434	307.8	327	322.5	701	1,361	1,908	1,468	443.9
Mean	22.3	20.2	16.9	14.0	10.6	10.5	10.8	22.6	45.4	61.5	47.4	14.8
Max	26	22	19	15	13	11	15	40	62	72	68	28
Min	19	19	15	13	8.7	10	7.4	11	22	51	28	9.5
Ac-ft	1,370	1,200	1,040	861	611	649	640	1,390	2,700	3,780	2,910	880
Calendar year 1963: Max	187			Min 9.0		Mean 39.0		Ac-ft 28,230				
Water year 1963-64: Max	72			Min 7.4		Mean 24.9		Ac-ft 18,030				

OWENS LAKE BASIN

10-2760. Big Pine Creek near Big Pine, Calif.--Continued.

Combined discharge, in cubic feet per second, of Big Pine Creek and upper and lower Giroux ditches,
near Big Pine, Calif., water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	31	24	21	17	15	13	14	20	48	76	66	42
2	30	23	21	17	14	13	13	18	54	75	63	36
3	30	23	21	16	14	13	13	18	58	75	64	32
4	31	23	21	16	14	13	13	17	64	73	66	28
5	31	23	20	16	12	13	13	16	65	68	68	26
6	29	24	20	17	13	13	13	16	68	71	74	25
7	28	23	20	17	13	14	12	16	66	75	84	23
8	27	23	20	16	12	14	12	16	50	79	82	22
9	28	23	21	16	12	12	12	16	40	78	77	22
10	26	23	19	15	13	12	13	16	36	72	76	22
11	26	23	19	17	13	12	13	19	35	73	74	22
12	26	22	19	16	13	12	14	25	37	81	76	22
13	26	22	20	17	12	12	14	28	43	88	74	22
14	26	22	19	16	14	14	16	29	59	85	70	22
15	26	23	20	16	14	14	17	31	70	76	66	23
16	25	22	19	17	13	14	18	33	63	73	60	23
17	27	22	19	16	13	13	18	31	57	76	57	22
18	28	22	19	16	13	13	17	34	52	76	57	22
19	28	22	19	16	13	13	18	38	52	75	57	22
20	26	23	18	15	13	13	18	44	53	76	58	22
21	25	22	18	16	13	13	16	46	58	76	56	21
22	26	22	18	15	13	13	16	49	67	75	54	21
23	25	22	18	16	12	14	16	47	67	76	53	21
24	25	22	18	18	12	13	16	47	66	81	54	22
25	25	21	18	16	12	13	16	46	74	84	56	22
26	25	21	18	15	13	14	16	44	77	86	56	22
27	25	21	18	15	13	14	16	36	69	87	52	23
28	25	21	18	15	12	13	17	31	64	84	49	23
29	24	21	18	15	13	13	17	31	67	89	46	21
30	24	21	17	15	-----	13	20	32	73	87	44	20
31	24	-----	17	15	-----	13	-----	39	-----	78	42	-----
Total	828	669	591	496	376	406	457	929	1,752	2,424	1,931	716
Mean	26.7	22.3	19.1	16.0	13.0	13.1	15.2	30.0	58.4	78.2	62.3	23.9
Max	31	24	21	18	15	14	20	49	77	89	84	42
Min	24	21	17	15	12	12	12	16	35	68	42	20
Ac-ft	1,640	1,330	1,170	984	746	805	906	1,840	3,480	4,810	3,830	1,420
Calendar year 1963:	Max	198	Min	9.9	Mean	45.3	Ac-ft	32,810				
Water year 1963-64:	Max	89	Min	12	Mean	31.6	Ac-ft	22,960				

OWENS LAKE BASIN

79

10-2775. Owens River near Big Pine, Calif.

Location.--Lat 37°00'55", long 118°13'30", in SE $\frac{1}{4}$ sec.2, T.11 S., R.34 E., on left bank 0.1 mile downstream from Little Seeley Spring, 0.15 mile downstream from Charles Butte, and 10.8 miles southeast of Big Pine.

Drainage area.--1,930 sq mi, approximately.

Records available.--January 1906 to September 1964. Monthly discharge only for some periods, published in WSP 1314. Published as "near Tinemaha" prior to 1912.

Gage.--Water-stage recorder and rock artificial control since October 1958. Altitude of gage is 3,800 ft (from topographic map). Prior to Oct. 8, 1922, staff gage at same site and datum.

Extremes.--Maximum daily discharge during year, 687 cfs Dec. 13; minimum daily, 254 cfs Mar. 28.

1906-64: Maximum discharge, about 3,220 cfs Jan. 26, 1914 (gage height, 11.2 ft), from rating curve extended above 1,100 cfs; no flow Jan. 9-13, 21-26, 1937.

Remarks.--Discharge measurements generally made once a week. Flow regulated since 1941 by Lake Crowley (capacity, 183,500 acre-ft.) and several small reservoirs (combined capacity, 41,400 acre-ft.). Diversions from both main stream and tributaries. Water imported from Mono Lake basin since 1941 for diversion to Los Angeles aqueduct which diverts 4 miles downstream.

Cooperation.--Records furnished by city of Los Angeles, Department of Water and Power, and reviewed by Geological Survey; furnished figures rounded by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	630	587	614	517	487	448	380	431	452	321	307	308
2	646	595	634	515	489	447	382	434	437	321	312	339
3	648	601	659	515	482	452	402	436	436	317	312	422
4	647	607	664	515	463	456	429	445	445	306	317	425
5	648	613	671	515	457	455	430	457	454	306	322	429
6	655	614	678	520	456	437	435	484	463	315	324	430
7	654	618	682	534	454	396	434	500	494	297	333	431
8	655	621	680	534	457	392	445	509	514	310	346	461
9	649	622	680	515	457	391	475	507	504	319	335	523
10	430	622	681	478	450	391	474	480	490	317	328	525
11	391	621	684	476	452	390	475	453	458	298	297	529
12	423	619	685	478	458	390	473	430	417	285	291	538
13	457	616	687	478	456	385	465	423	404	286	301	536
14	481	622	685	477	455	384	453	404	408	269	297	536
15	484	622	682	479	455	384	383	398	420	286	311	531
16	496	611	681	474	456	384	367	404	416	283	303	525
17	520	605	678	478	456	385	373	412	399	298	306	521
18	543	600	674	481	457	388	372	411	380	301	308	523
19	554	591	636	479	456	388	376	391	377	301	317	527
20	558	587	531	483	448	391	397	375	394	282	316	529
21	565	592	457	488	448	396	392	351	388	275	331	512
22	568	592	453	489	450	392	396	355	390	295	317	495
23	568	593	451	486	448	390	414	358	361	306	317	495
24	571	594	449	486	451	362	417	353	358	311	317	495
25	572	470	453	486	450	266	423	358	325	301	321	497
26	573	349	456	487	450	266	422	372	317	310	299	498
27	573	332	460	488	448	312	422	389	310	335	288	502
28	573	396	460	489	450	254	430	432	311	348	308	498
29	573	489	458	491	451	324	441	436	311	346	308	497
30	577	570	478	488	-----	322	439	436	302	333	307	481
31	579	-----	514	489	-----	371	-----	450	-----	313	308	-----
Total	17,471	17,171	19,355	15,308	15,257	11,789	12,616	13,084	12,135	9,491	9,704	14,558
Mean	564	572	592	494	457	380	421	422	404	306	313	485
Max	655	622	687	534	489	456	475	509	514	348	346	538
Min	391	332	449	474	448	254	367	351	302	269	288	308
Ac-ft	34,650	34,060	36,410	30,360	26,310	23,380	25,020	25,950	24,070	18,830	19,250	28,880
Calendar year 1963: Max 784 Min 20 Mean 449 Ac-ft 325,300												
Water year 1963-64: Max 687 Min 254 Mean 451 Ac-ft 327,200												

Note.--No gage-height record June 9-15, 17-22.

OWENS LAKE BASIN

10-2818. Independence Creek below Pinyon Creek, near Independence, Calif.

Location.--Lat 36°46'45", long 118°15'45", in NE $\frac{1}{4}$ sec.27, T.13 S., R.34 E., on right bank 0.2 mile downstream from Pinyon Creek and 4.0 miles southwest of Independence.

Drainage area.--18.2 sq mi.

Records available.--January 1923 to September 1964. Prior to October 1959, monthly discharge only, published in WSP 1734.

Gage.--Water-stage recorder and Parshall flume. (Cipolletti weir Oct. 30 to Apr. 29, Sept. 30). Altitude of gage is 5,300 ft (from topographic map). Prior to Sept. 12, 1934, water-stage recorder; Sept. 12, 1934, to Dec. 13, 1936, water-stage recorder and Cipolletti weir (removed during high water), at same site and datum.

Average discharge.--41 years, 12.6 cfs (9,120 acre-ft per year).

Extremes.--Maximum discharge during year, 31 cfs June 7 (gage height, 1.52 ft); minimum daily, 2.6 cfs Sept. 26-28.
1923-64: Maximum discharge, 138 cfs June 21, 1963 (gage height, 3.98 ft); minimum daily, 0.7 cfs Jan. 25, 1926, Dec. 15, 1935.

Remarks.--No regulation or diversion above station.

Cooperation.--Records furnished by city of Los Angeles, Department of Water and Power, and reviewed by Geological Survey; furnished figures rounded by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.5	8.0	6.3	4.8	4.1	3.4	3.6	6.0	19	18	10	5.5
2	8.5	7.8	6.2	4.7	4.1	3.4	3.6	6.4	22	18	9.7	5.2
3	8.3	7.8	6.2	4.7	4.0	4.0	3.6	6.2	24	17	9.3	5.0
4	8.3	7.8	6.2	5.0	3.8	3.7	3.6	6.0	25	17	8.9	4.9
5	8.3	7.8	6.2	5.3	3.8	3.5	3.6	6.0	25	16	9.5	4.5
6	8.1	8.2	6.2	4.9	3.8	3.4	3.6	5.9	28	15	10	4.4
7	8.1	7.8	6.2	4.7	4.4	3.8	3.5	6.0	29	15	9.5	4.2
8	8.1	8.0	6.2	4.7	3.7	3.8	3.5	5.9	25	15	9.1	4.2
9	7.7	7.8	6.2	5.0	3.7	3.8	3.6	5.7	23	15	8.7	4.1
10	7.5	7.6	5.8	4.9	3.8	3.4	3.6	5.7	21	14	9.3	3.9
11	7.9	7.4	5.5	4.9	3.7	3.4	3.8	5.7	19	15	9.1	3.8
12	8.1	7.4	6.2	4.9	3.9	3.4	3.8	6.6	18	15	8.7	3.6
13	7.9	7.2	6.1	4.9	4.1	3.5	3.9	8.1	18	15	8.5	3.6
14	7.7	7.4	6.1	4.5	4.7	3.5	4.1	9.7	19	14	8.1	3.5
15	7.5	7.6	5.9	4.6	4.5	3.5	4.4	11	22	14	7.9	3.5
16	7.3	7.4	5.7	4.6	3.7	3.2	4.7	14	23	13	7.7	3.3
17	8.1	7.4	5.6	4.4	4.0	3.2	5.2	14	22	13	7.3	3.3
18	10	7.4	5.6	4.4	3.6	3.2	5.3	15	21	12	7.2	3.3
19	9.1	7.2	5.5	4.2	3.6	3.2	5.7	17	20	11	7.0	3.3
20	8.5	7.8	5.5	4.0	3.6	3.2	5.5	18	19	11	6.8	3.2
21	8.1	7.4	5.4	4.2	3.6	3.2	5.5	20	19	11	6.6	3.2
22	8.1	7.2	5.4	4.1	3.5	3.2	5.5	21	19	11	6.2	3.1
23	8.1	7.2	5.4	4.9	3.6	3.5	5.5	20	19	10	6.0	2.9
24	7.9	7.4	5.7	6.3	3.5	3.4	5.5	20	19	10	5.7	2.9
25	7.9	7.1	5.5	4.8	3.5	3.7	5.4	20	20	10	5.4	2.8
26	7.9	6.8	5.2	4.4	4.4	3.5	5.3	20	20	11	5.0	2.6
27	7.7	7.0	5.2	4.4	3.8	3.4	5.3	19	20	12	5.2	2.6
28	7.7	6.6	5.0	4.4	3.4	3.4	5.7	17	20	12	5.0	2.6
29	7.5	6.4	5.0	4.4	3.4	3.5	5.8	16	19	11	5.0	2.8
30	7.9	6.3	4.9	4.4	-----	3.5	5.9	16	18	11	5.0	2.8
31	8.0	-----	4.8	4.2	-----	3.6	-----	17	-----	10	5.0	-----
Total	250.3	222.2	176.9	144.6	111.3	107.4	137.6	384.9	635	412	232.4	108.6
Mean	8.07	7.41	5.71	4.66	3.84	3.46	4.59	12.4	21.2	13.3	7.50	3.62
Max	10	8.2	6.3	6.3	4.7	4.0	5.9	21	29	18	10	5.5
Min	7.3	6.3	4.8	4.0	3.4	3.2	3.5	5.7	18	10	5.0	2.6
Ac-ft	496	441	351	287	221	213	273	763	1,260	817	461	215

Calendar year 1963: Max 111 Min 1.8 Mean 16.5 Ac-ft 11,960

Water year 1963-64: Max 29 Min 2.6 Mean 7.99 Ac-ft 5,800

Note.--No gage-height record Oct. 18, Oct. 31 to Nov. 25, Nov. 30 to Dec. 25.

10-2824.8. Mazourka Creek near Independence, Calif.

Location.--Lat 36°50'50", long 118°05'05", in NE $\frac{1}{4}$ lot 19, N $\frac{1}{2}$ sec.5, T.13 S., R.36 E., on right bank 7 miles northeast of Independence.

Drainage area.--15.6 sq mi.

Records available.--October 1960 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 4,800 ft (from topographic map).

Extremes.--Maximum discharge during year, 1.0 cfs July 26 (gage height, 1.37 ft), on basis of velocity-area study; no flow for most of year.

1960-64: Maximum discharge, that of July 26, 1964; no flow for most of each year.

Remarks.--Records poor. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

July 26.....* 0.1

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
July 1964.....	0.1	0.1	0	0.003	0.2
Calendar year 1963.....	-	0	0	0	0
Water year 1963-64.....	-	0.1	0	.0003	.2

* Discharge measurement made on this day.

Note.--Flow occurred only on day listed above.

OWENS LAKE BASIN

10-2857. Owens River at Keeler Bridge, near Lone Pine, Calif.

Location.--Lat 36°34'30", long 118°00'45", in NW $\frac{1}{4}$ sec.1, T.16 S., R.36 E., on left bank under old timber bridge, 0.5 mile upstream from bridge on State Highway 190 and 3.4 miles southeast of Lone Pine.

Records available.--January 1927 to September 1964. Monthly discharge only prior to October 1959, published in WSP 1314 and 1734.

Gage.--Water-stage recorder and Cipolletti weir. Altitude of gage is 3,600 ft (from topographic map). Prior to Oct. 19, 1930, staff gage, and Oct. 20, 1930, to Feb. 14, 1935, staff gage and Cipolletti weir, all at present site at different datum.

Extremes.--Maximum discharge during year, 11 cfs Mar. 30 (gage height 0.48 ft); no flow July 17-28, July 31 to Sept. 10. 1927-64: Maximum daily discharge, 1,200 cfs July 9, 1938 (gage height, 7.06 ft); no flow at times in some years.

Remarks.--Natural flow affected by storage in several reservoirs, many natural lakes, diversions for irrigation, and return flow from irrigated areas. Major portion of discharge from drainage is diverted out of basin through Los Angeles aqueduct. Discharge reported herein is wasted into Owens Lake.

Cooperation.--Records furnished by city of Los Angeles, Department of Water and Power, and reviewed by Geological Survey; furnished figures rounded by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	3.5	4.5	6.1	8.5	8.8	9.8	7.6	3.7	2.6		0
2	1.4	3.5	4.5	6.1	8.5	8.8	9.2	7.6	3.5	2.6		0
3	1.2	3.5	4.5	6.1	8.5	8.5	8.5	7.6	3.2	2.6		0
4	1.2	3.7	4.7	6.1	8.5	8.8	8.5	7.6	3.2	2.6		0
5	1.4	3.7	5.0	6.1	8.8	8.8	8.5	7.6	3.2	2.4		0
6	1.6	3.7	5.0	6.1	8.8	8.8	8.8	7.9	3.2	2.4		0
7	1.8	3.5	5.0	6.4	8.8	8.8	8.8	7.9	3.2	2.2		0
8	2.0	3.5	5.0	6.7	8.8	8.8	8.8	7.9	3.2	2.0		0
9	2.0	3.5	5.0	6.7	8.5	9.2	8.8	7.9	3.2	2.0		0
10	2.2	3.7	5.0	6.7	8.5	9.2	8.8	7.9	3.2	1.8		0
11	2.4	3.7	5.0	6.7	8.5	9.2	8.8	7.9	3.2	1.6		.1
12	2.4	4.0	5.3	6.7	8.5	9.2	8.8	7.6	3.2	1.4		.2
13	2.4	4.0	5.3	6.7	8.5	9.2	8.8	7.6	3.2	1.2		.3
14	2.6	4.0	5.3	6.7	8.5	9.2	8.5	7.3	3.2	.9		.3
15	2.6	4.0	5.3	6.7	8.5	9.2	8.5	7.0	3.2	.5		.4
16	2.6	4.0	5.3	6.7	8.5	8.8	8.5	6.4	3.2	.2		.4
17	2.6	4.0	5.5	6.7	8.5	8.8	8.5	5.8	3.2	0		.5
18	2.8	4.0	5.5	7.0	8.5	8.8	8.5	5.5	3.2	0		.5
19	3.0	4.0	5.5	7.0	8.2	8.8	8.5	5.0	3.2	0		.5
20	3.0	4.0	5.5	7.0	8.2	8.8	8.5	4.7	3.2	0		.5
21	3.0	4.0	5.5	7.3	8.2	8.8	8.5	4.2	3.2	0		.5
22	3.0	4.0	5.5	7.6	8.2	8.8	8.2	4.0	3.0	0		.6
23	3.2	4.0	5.5	7.9	8.5	8.8	8.2	4.0	3.0	0		.6
24	3.5	4.2	5.5	7.9	8.5	8.8	8.2	4.0	3.0	0		.6
25	3.5	4.2	5.8	7.9	8.5	8.8	8.2	4.0	2.8	0		.6
26	3.5	4.2	5.8	8.2	8.5	8.8	8.2	4.0	2.8	0		.8
27	3.5	4.2	5.8	8.5	8.8	8.8	8.2	4.0	2.8	0		.9
28	3.5	4.5	5.8	8.5	8.8	8.8	7.9	4.0	2.8	0		.9
29	3.5	4.5	5.8	8.5	8.8	9.2	7.9	4.0	2.8	.2		1.1
30	3.5	4.5	5.8	8.5	-----	11	7.6	4.0	2.6	.1		1.1
31	3.5	-----	5.8	8.5	-----	10	-----	3.7	-----	0		-----
Total	79.8	117.8	164.3	220.3	247.4	279.1	255.5	186.2	93.6	29.3	0	11.4
Mean	2.57	3.93	5.30	7.11	8.53	9.00	8.52	6.01	3.12	0.95	0	0.38
Max	3.5	4.5	5.8	8.5	8.8	11	9.8	7.9	3.7	2.6	0	1.1
Min	1.2	3.5	4.5	6.1	8.2	8.5	7.6	3.7	2.6	0	0	0
Ac-ft	158	234	326	437	491	554	507	369	186	58	0	23
Calendar year 1963:	Max 19		Min 0		Mean 5.14		Ac-ft 3,720					
Water year 1963-64:	Max 11		Min 0		Mean 4.60		Ac-ft 3,340					

10-2860. Cottonwood Creek near Olancha, Calif.

Location.--Lat 36°26'20", long 118°04'40", in Inyo National Forest, just downstream from intake to Cottonwood powerhouse, and 11.2 miles north of Olancha, Inyo County.

Drainage area.--39.9 sq mi.

Records available.--January 1906 to March 1911, January 1914 to September 1964; combined records of creek and flow through powerhouse, November 1938 to September 1964. January 1914 to September 1959 monthly discharge only, published in WSP 1314 and 1734.

Gage.--Water-stage recorder and Parshall flume (Cipolletti weir Oct. 9 to Apr. 17, June 3 to Sept. 30) on creek; water-stage recorder and Cipolletti weir on powerhouse diversion. Prior to Sept. 9, 1908, staff gage at site about 2 miles downstream at different datum. Sept. 9, 1908, to Mar. 31, 1911, and Jan. 1, 1914, to Mar. 6, 1921, staff gage and Mar. 7, 1921, to Oct. 31, 1938, water-stage recorder, at site just upstream from intake to Cottonwood powerhouse at different datum.

Average combined discharge.--54 years (1906-10, 1914-64), 22.2 cfs (16,070 acre-ft per year).

Extremes (creek only).--Maximum discharge during year, 27 cfs May 10 (gage height, 1.07 ft); no flow Jan. 11-14, Aug. 12-19. 1906-11, 1914-64; Maximum discharge observed, 434 cfs June 13, 1906 (discharge measurement); no flow for some days in 1959, 1961, 1964.

(combined).--Maximum discharge during year, 29 cfs Aug. 5; minimum daily, 3.4 cfs Feb. 27.

1906-11, 1914-64; Maximum discharge observed, 434 cfs June 13, 1906; minimum daily, 1.0 cfs July 22, 23, 1961.

Remarks.--No regulation above station. Cottonwood powerhouse (maximum capacity, 22 cfs) has diverted since Nov. 13, 1908. For records of combined discharge of Cottonwood Creek and powerhouse, see following page.

Cooperation.--Records furnished by city of Los Angeles, Department of Water and Power, and reviewed by Geological Survey; furnished figures rounded by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.4	a0.4	0.2	0.2	0.1
2	a.2	.1	.1	.1	.1	.1	.1	.2	a.2	.2	.2	.1
3	a.2	.1	.1	.1	.1	.1	.1	.1	.2	.2	.2	.1
4	a.2	.1	.1	.1	.1	.1	.1	.1	.2	.2	1.6	.1
5	a.2	.1	.1	.1	.1	.1	.1	.3	.2	.2	7.4	.1
6	a.2	.2	.1	.1	.3	.1	.1	.1	.2	.2	7.9	.1
7	a.1	.2	.1	.1	.1	.1	.1	.8	.2	.2	3.8	.1
8	a.1	.4	.1	.1	.1	.1	.1	.1	.2	.2	2.3	.2
9	a.1	.4	.1	.1	.1	.1	.1	.4	.2	.2	.9	.1
10	.2	.2	.1	.1	.1	.1	.1	6.0	.2	.2	.5	.1
11	.4	.2	.1	0	.1	.1	.1	4.8	.2	.2	.2	.1
12	.6	.1	.1	0	.1	.1	.1	5.6	.2	.2	0	.1
13	.6	.1	.1	0	.1	.1	.1	6.7	.2	.2	0	.1
14	.8	.1	.1	0	.1	.1	.1	5.0	.2	.2	0	.1
15	.4	.2	.1	.1	.1	.1	.1	12	5.2	.2	0	.1
16	.3	.3	.1	.1	.1	.1	.1	10	4.7	.2	0	.1
17	1.2	.1	.1	.1	.1	.1	.1	6.5	2.8	.2	0	.1
18	5.5	.1	.1	.1	.1	.1	.1	1.7	3.0	.2	0	.1
19	2.6	.1	.1	.1	.1	.1	.1	1.8	3.2	.2	0	.1
20	.8	.1	.1	.1	.1	.1	.1	a1.0	3.4	.2	.1	.1
21	.4	.3	.1	.1	.1	.1	.1	.7	2.8	.2	.1	.1
22	.4	.1	.1	.2	.1	.1	.1	1.8	2.5	.2	.1	.1
23	.1	.1	.1	.2	.1	.1	.1	1.1	1.8	.2	.1	.1
24	.1	.1	.1	.2	.1	.1	.1	a.5	.9	.2	.1	.1
25	a.1	.1	.1	.2	.1	.1	.1	a.5	1.7	.2	.1	.1
26	.1	.1	.1	.2	.1	.1	.1	2.8	8.4	.2	.1	.1
27	.1	.1	.1	.2	.1	.1	.1	4.5	3.3	.2	.1	.1
28	.1	.1	.1	.2	.1	.1	.1	1.9	1.6	.2	.1	.1
29	.1	.1	.1	.1	.1	.1	.1	a.5	1.0	.2	.1	.1
30	.1	.1	.1	.1	-----	.1	.1	1.6	a.8	.2	.1	.1
31	.1	-----	.1	.1	-----	.1	-----	a.6	-----	.2	.1	-----
Total	16.6	4.5	3.1	3.4	3.1	3.1	55.7	78.3	6.2	6.2	26.4	3.1
Mean	0.54	0.15	0.10	0.11	0.11	0.10	1.86	2.53	0.21	0.20	0.85	0.10
Max	5.5	0.4	0.1	0.2	0.3	0.1	12	8.4	12	0.2	7.9	0.2
Min	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	0.4	0.2	0	0.1
Ac-ft	33	8.9	6.1	6.7	6.1	6.1	110	155	0.2	12	52	6.1
Calendar year 1963: Max 132 Min 0.1 Mean 16.3 Ac-ft 11,800												
Water year 1963-64: Max 12 Min 0 Mean 0.57 Ac-ft 414												

a No gage-height record.

OWENS LAKE BASIN

10-2860. Cottonwood Creek near Olancha, Calif.--Continued.

Combined discharge, in cubic feet per second, of Cottonwood Creek and powerhouse near Olancha, Calif., water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	14	11	9.3	7.8	5.3	7.2	17	18	8.2	4.4	6.1
2	14	14	11	8.9	7.8	5.6	6.9	15	17	7.9	4.2	6.4
3	14	14	10	8.3	7.8	5.3	7.5	14	17	7.9	4.0	6.1
4	14	14	10	8.3	7.5	6.1	8.1	13	17	7.3	5.4	5.8
5	13	14	10	8.1	7.5	6.4	8.3	12	17	7.3	12	5.6
6	13	13	11	8.1	4.3	6.1	8.1	11	17	7.0	18	5.3
7	13	14	11	8.3	6.1	5.6	7.8	13	16	6.7	13	5.1
8	13	17	11	8.1	6.4	5.6	8.3	14	16	6.5	12	4.1
9	13	17	9.5	7.8	6.4	5.8	9.3	14	16	6.2	10	4.6
10	12	16	9.9	7.5	6.4	5.3	11	22	16	5.9	12	4.6
11	13	16	10	7.1	6.4	4.6	13	23	15	5.9	11	4.6
12	16	15	11	7.1	6.6	4.8	14	25	15	5.7	9.8	4.6
13	16	14	11	6.8	6.6	4.8	17	26	15	5.7	9.2	4.3
14	15	14	10	6.5	6.6	4.8	24	24	14	5.4	8.2	4.3
15	9.4	14	10	6.4	6.9	5.1	27	24	14	5.4	7.7	4.3
16	13	11	10	6.6	6.9	5.1	28	24	13	5.4	7.7	4.3
17	17	13	10	7.2	6.9	5.1	24	22	13	5.2	7.4	4.3
18	26	14	10	7.2	6.9	5.1	19	22	13	5.2	7.4	4.3
19	23	14	10	7.2	6.9	5.1	15	22	12	4.9	7.7	4.3
20	21	15	10	6.9	6.9	5.1	15	22	12	4.9	7.5	4.3
21	19	13	9.9	6.9	6.9	5.1	15	22	11	4.7	7.2	4.3
22	19	15	9.5	7.0	6.9	5.1	18	22	11	4.4	6.9	4.3
23	19	14	9.5	7.3	6.9	5.1	16	21	11	4.4	6.6	4.1
24	17	13	9.5	7.6	6.9	5.1	12	20	9.4	4.2	6.4	4.1
25	16	13	9.5	8.2	6.6	5.1	14	21	10	4.2	6.4	4.1
26	16	13	9.5	8.7	4.1	5.1	18	28	9.4	4.7	6.4	4.3
27	16	13	9.5	8.7	3.4	5.3	22	23	9.0	6.5	6.1	4.3
28	16	12	9.5	8.4	5.1	5.6	20	21	8.7	7.0	5.8	4.3
29	15	12	9.3	8.3	5.1	6.1	18	20	8.4	5.4	5.8	4.3
30	14	11	9.3	8.1	-----	6.6	19	19	8.2	4.7	5.6	4.3
31	14	-----	9.3	7.8	-----	7.2	-----	19	-----	4.4	5.3	-----
Total	483.4	416	310.7	238.7	187.5	158.1	450.5	615	399.1	179.2	247.1	139.7
Mean	15.6	13.9	10.0	7.70	6.47	5.42	15.0	19.8	13.3	5.78	7.97	4.66
Max	26	17	11	9.3	7.8	7.2	28	28	18	8.2	18	6.4
Min	9.4	11	9.3	6.4	3.4	4.6	6.9	11	8.2	4.2	4.0	4.1
Ac-ft	959	825	616	473	372	333	894	1,220	792	355	490	277
Calendar year 1963:	Max	151	Min	3.2	Mean	30.2	Ac-ft	21,890				
Water year 1963-64:	Max	28	Min	3.4	Mean	10.5	Ac-ft	7,610				

MONO LAKE BASIN

10-2870. Mono Lake near Mono Lake, Calif.

Location.--Lat 38°00', long 119°08', in NE 1/4 sec. 31, T 2 N., R. 26 E., on west bank 1 mile south of town of Mono Lake.Records available.--June 1912 to September 1964. Records prior to September 1934 are published in WSP 765.Gage.--Staff gage or reference point read once a week. (Gage readings have been reduced to elevations above mean sea level.)Extremes.--1912-64: Maximum elevation observed, 6,428.1 ft July 18, 1919, present datum; minimum observed, 6,390.56 ft Sept. 28, 1964.Remarks.--Since 1941 water diverted to Owens Lake basin via Mono tunnel (capacity, 200 cfs).Cooperation.--Records furnished by city of Los Angeles, Department of Water and Power.

Elevation, in feet, water year October 1963 to September 1964

Date	Elevation	Date	Elevation	Date	Elevation	Date	Elevation
Oct. 3	6,392.73	Jan. 13	6,392.22	Apr. 13	6,392.08	July 13	6,391.58
7	6,392.65	20	6,392.29	20	6,392.14	14	6,391.57
14	6,392.54	27	6,392.18	27	6,392.10	23	6,391.51
21	6,392.49	Feb. 3	6,392.20	May 4	6,392.05	30	6,391.42
28	6,392.47	10	6,392.22	11	6,392.06	Aug. 3	6,391.35
Nov. 6	6,392.42	17	6,392.16	18	6,392.05	6	6,391.32
14	6,392.34	28	6,392.15	25	6,392.05	10	6,391.31
18	6,392.33	Mar. 2	6,392.30	June 1	6,392.06	17	6,391.19
29	6,392.32	9	6,392.08	8	6,392.04	24	6,391.07
Dec. 2	6,392.31	16	6,392.13	15	6,391.88	31	6,391.03
9	6,392.35	23	6,392.16	22	6,391.85	Sept. 8	6,390.76
16	6,392.28	26	6,392.15	29	6,391.74	14	6,390.68
23	6,392.25	Apr. 2	6,392.31	July 2	6,391.73	21	6,390.63
Jan. 3	6,392.27	6	6,392.24	9	6,391.60	28	6,390.56
6	6,392.30						

10-2874. Rush Creek above Grant Lake, near June Lake, Calif.

Location.--Lat 37°48'20", long 119°06'30", in NE $\frac{1}{4}$ sec. 4, T.2 S., R.26 E., on left bank in narrows, 0.6 mile upstream from Grant Lake, and 2.7 miles northwest of town of June Lake.

Drainage area.--51.2 sq mi.

Records available.--December 1936 to September 1964. Monthly discharge only prior to October 1959, published in WSP 1314 and 1734.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 7,200 ft (from topographic map).

Average discharge.--27 years (1937-64), 79.4 cfs (57,480 acre-ft per year).

Extremes.--Maximum discharge during year, 147 cfs Nov. 14 (gage height, 1.79 ft); minimum daily, 8.0 cfs Aug. 25, 26. 1936-64: Maximum daily discharge, 711 cfs June 28, 1938; minimum daily, 5.5 cfs Sept. 6-8, 14, 1954.

Remarks.--Flow regulated by Gem Lake, Lake Agnew, and Waugh Lake (combined capacity, 23,400 acre-ft), and by many natural lakes. No diversion above station.

Cooperation.--Records furnished by city of Los Angeles, Department of Water and Power, and reviewed by Geological Survey; furnished figures rounded by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	96	15	98	24	31	37	37	50	109	83	101	13
2	97	14	98	17	36	37	38	52	113	82	99	26
3	98	14	98	18	32	37	41	44	112	80	98	33
4	99	28	90	18	33	37	42	52	115	78	96	34
5	99	76	79	18	33	37	40	62	113	55	95	35
6	99	98	76	17	34	37	40	60	114	44	98	38
7	99	100	91	15	36	36	40	47	112	64	67	38
8	99	98	97	14	38	38	41	45	107	61	64	38
9	100	99	100	15	38	37	41	45	104	61	57	38
10	95	99	90	16	37	37	41	40	101	61	40	38
11	101	99	91	14	32	37	38	45	101	58	23	39
12	100	99	85	13	36	39	38	52	96	59	19	37
13	99	72	83	14	39	40	37	60	97	64	17	39
14	99	106	91	24	43	45	30	68	104	70	13	40
15	93	125	96	32	46	27	35	84	108	98	13	40
16	96	106	56	34	40	33	45	96	108	104	12	40
17	87	100	46	35	36	41	45	97	104	105	12	45
18	44	97	36	30	35	35	42	101	99	104	11	74
19	27	99	21	24	35	33	41	104	97	102	12	85
20	23	101	26	28	33	38	40	107	95	101	12	90
21	22	99	36	38	34	34	47	109	95	100	10	90
22	20	98	27	41	37	30	61	112	95	99	9.3	90
23	19	101	19	29	37	42	59	107	95	99	8.9	90
24	17	101	18	38	37	51	48	105	95	99	8.4	90
25	16	99	17	37	38	53	36	109	95	100	8.0	90
26	16	98	18	36	39	46	34	120	92	104	8.0	89
27	14	98	23	29	38	36	34	112	93	104	8.4	88
28	14	98	27	27	38	27	44	101	90	105	9.3	88
29	15	98	24	33	38	24	42	97	76	105	10	88
30	16	98	21	36	-----	31	45	95	65	102	11	89
31	16	-----	26	29	-----	31	-----	100	-----	102	12	-----
Total	1,935	2,633	1,804	793	1,059	1,143	1,242	2,478	3,000	2,653	1,052.5	1,752
Mean	62.4	87.8	58.2	25.6	36.5	36.9	41.4	79.9	100	85.9	34.3	58.4
Max	101	125	100	41	46	53	61	120	115	105	101	90
Min	14	14	17	13	31	24	30	40	65	44	8.0	13
Ac-ft	3,840	5,220	3,580	1,570	2,100	2,270	2,460	4,920	5,950	5,280	2,110	3,480
Calendar year 1963:	Max	299	Min	14	Mean	92.9	Ac-ft	67,250				
Water year 1963-64:	Max	125	Min	8.0	Mean	58.9	Ac-ft	42,780				

11-100. Cottonwood Creek at Morena Dam, Calif.

Location--Lat 32°41'01", long 116°32'45", in NE¼ sec.23, T.17 S., R.4 E., on Morena Dam outlet tower.

Drainage area--120 sq mi, approximately.

Records available--January 1916, October 1936 to September 1964.

Gage--Staff gage read once daily. Datum of gage is 2,882.4 ft above mean sea level.

Average discharge--28 years (1936-64), 11.0 cfs (7,950 acre-ft per year); median of yearly mean discharges, 3.0 cfs (2,200 acre-ft per year).

Remarks--Records of discharge represent all water reaching Morena Reservoir, including precipitation on reservoir surface. Discharge computed on basis of records of storage, release (draft), spill, leakage, and evaporation. Evaporation from reservoir surface computed on basis of evaporation from Colorado land pan using a coefficient of 1.00, excepting the period January 1962 to June 1963, when the mass-transfer method was used. Prior to October 1963 a coefficient of 0.80 was used. Area and capacity tables for reservoir are based on a survey made in 1948. Dam completed and storage began in 1910. Capacity of reservoir at permanent spillway level (gage height, 157.00 ft), 50,210 acre-ft. Dead storage, 654 acre-ft below outlet No. 3 at gage height 70.5 ft. No regulation or diversion above reservoir. Water is released down Cottonwood Creek to Barrett Reservoir as required.

Cooperation--Records computed in cooperation with city of San Diego.

Monthly discharge, water year October 1963 to September 1964

Month	Gage height (feet)†	Contents (acre-feet)	Change in contents (acre-feet)	Draft (acre-feet)	Evapo-ration (acre-feet)	Spill plus leakage (acre-feet)	Discharge (acre-feet)
	Morena Reservoir						
Sept. 30.....	65.5	347	-	-	-	-	-
Oct. 31.....	65.4	342	-5	0	14	2	11
Nov. 30.....	65.4	342	0	0	7	2	9
Dec. 31.....	65.3	337	-5	0	9	2	6
Calendar year 1963.....	-	-	-139	0	259	26	146
Jan. 31.....	65.6	352	+15	0	7	2	24
Feb. 29.....	65.7	357	+ 5	0	12	2	19
Mar. 31.....	66.3	390	+33	0	13	2	48
Apr. 30.....	66.5	401	+11	0	15	2	28
May 31.....	66.2	384	-17	0	28	2	13
June 30.....	65.6	352	-32	0	34	2	4
July 31.....	64.8	312	-40	0	40	2	2
Aug. 31.....	64.1	279	-33	0	32	2	1
Sept. 30.....	63.5	252	-16	0	25	1	10
Water year 1963-64.....	-	-	-84	0	236	23	175

† Gage height at 0800 hours.

Note.--For months when inflow to the reservoir was small and other quantities were large, discordant figures of discharge may appear. This arises primarily from the difficulty of computing discharge as the residual of several larger quantities, which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

TIA JUANA RIVER BASIN

11-110. Cottonwood Creek at Barrett Dam, near Dulzura, Calif.

Location.--Lat 32°40'46", long 116°40'11", in SE 1/4 NW 1/4 sec.22, T.17 S., R.3 E., on Barrett Dam outlet tower, 7.0 miles northeast of Dulzura.

Drainage area.--250 sq mi.

Records available.--January 1906 to December 1915, October 1945 to September 1964. Published as "near Jamul" prior to October 1912 and as "near Dulzura" October 1912 to December 1915. October 1936 to September 1945, published as "near Dulzura"; records not equivalent, as they were computed to represent runoff from Cottonwood Creek Basin below Morena Dam (drainage area, 130 sq mi).

Gage.--Staff gage read once daily. Datum of gage is 1,446.12 ft above mean sea level. January 1906 to December 1915, staff gage at same site at different datum (prior to completion of dam).

Remarks.--Records of inflow represent all water reaching Barrett Reservoir, including precipitation on the reservoir and water passing down Cottonwood Creek from Morena Reservoir. Inflow computed on basis of records of storage, release (draft), spill, leakage, and evaporation. Evaporation from reservoir surface computed on basis of evaporation from Colorado land pan using a coefficient of 0.80, excepting the period January 1962 to June 1963, when the mass-transfer method was used. Area-capacity tables for reservoir are based on a resurvey made in 1948, 1951, and 1955. Barrett Dam was completed and storage began in 1922. Capacity of reservoir at top of flash gates on spillway (gage height, 168.88 ft), 44,760 acre-ft. Dead storage, 719 acre-ft below lowest outlet at gage height 58.88 ft, included in these records. Flow partly regulated by Morena Reservoir (see preceding page). Water drawn from Barrett Reservoir is diverted out of drainage basin to Lower Otay Reservoir by Dulzura conduit for municipal use.

Cooperation.--Records computed in cooperation with city of San Diego.

Monthly inflow, water year October 1963 to September 1964

Month	Gage height (feet)†	Contents (acre-feet)	Change in contents (acre-feet)	Draft (acre-feet)	Evapo-ration (acre-feet)	Spill plus leakage (acre-feet)	Inflow (acre-feet)
	Barrett Reservoir						
Sept. 30.....	66.6	1,246	-	-	-	-	-
Oct. 31.....	66.5	1,238	-8	0	19	0	11
Nov. 30.....	66.5	1,238	0	0	11	0	11
Dec. 31.....	66.4	1,231	-7	0	12	0	5
Calendar year 1963.....	-	-	-212	0	322	0	110
Jan. 31.....	66.6	1,246	+15	0	9	0	24
Feb. 29.....	66.5	1,238	-8	0	14	0	6
Mar. 31.....	66.8	1,262	+24	0	16	0	40
Apr. 30.....	66.7	1,254	-8	0	21	0	13
May 31.....	66.4	1,231	-23	0	30	0	7
June 30.....	65.9	1,191	-40	0	39	0	-1
July 31.....	65.2	1,138	-53	0	48	0	-5
Aug. 31.....	64.6	1,094	-44	0	42	0	-2
Sept. 30.....	64.1	1,057	-37	0	32	0	-5
Water year 1963-64.....	-	-	-189	0	293	0	104

† Gage height at 0800 hours.

Note.--For months when inflow to the reservoir was small and other quantities were large, discordant figures of inflow may appear. This arises primarily from the difficulty of computing inflow as the residual of several larger quantities, which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

11-120. Cottonwood Creek above Tecate Creek, near Dulzura, Calif.

Location.--Lat 32°34'30", long 116°45'10", in SW 1/4 sec.26, T.18 S., R.2 E., on right bank 0.8 mile upstream from confluence with Tecate Creek and 5.1 miles south of Dulzura.

Drainage area.--316 sq mi.

Records available.--October 1936 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 569.40 ft above mean sea level (levels by International Boundary and Water Commission).

Average discharge.--28 years, 7.81 cfs (5,650 acre-ft per year); median of yearly mean discharges, 0.9 cfs (650 acre-ft per year).

Extremes.--No flow during year.

1936-64: Maximum discharge, 4,340 cfs Feb. 7, 1937 (gage height, 9.65 ft), from rating curve extended above 1,500 cfs; no flow for part of each year.

Remarks.--No flow since Apr. 19, 1962. Flow regulated by Morena Reservoir (see p. 87) and Barrett Reservoir (see above). Water released from Barrett Reservoir through Dulzura conduit is diverted to Lower Otay Reservoir.

11-121. Miller Creek near Live Oak Springs, Calif.

Location.--Lat 32°42'15", long 116°21'48", in SW $\frac{1}{4}$ sec.10, T.17 S., R.6 E., 10 ft upstream from culvert on U. S. Highway 80, 2.0 miles northwest of Live Oak Springs.

Drainage area.--1.00 sq mi.

Records available.--October 1961 to September 1964. Discontinued as a continuous-record station; converted to a crest-stage partial-record station.

Gage.--Water stage recorder with rain-gage attachment, crest-stage gage, and box-culvert control. Altitude of gage is 4,020 ft (from topographic map).

Extremes.--Maximum discharge during year, 16 cfs Oct. 18 (gage height, 3.77 ft), by indirect measurement of maximum flow through culvert; no flow for most of year.
1961-64: Maximum discharge, that of Oct. 18, 1963; no flow for most of each year.

Remarks.--Records poor. Flow regulated by several stock ponds. No diversion above station. Monthly precipitation, in inches, is as follows: October, 1.8; November, 1.0; January, 2.5; February, 0.9; March, 3.6; April, 0.8; May, 0.7; July, 0.5; August, 0.3; the water year, 12.1.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Oct. 18.....* 0.6

Feb. 16.....0.1

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	0.6	0.6	0	0.02	1.2
February 1964.....	.1	.1	0	.003	.2
Calendar year 1963.....	-	.1	0	.002	1.4
Water year 1963-64.....	-	.6	0	.002	1.4

* Discharge measurement made on this day.

Note.--Flow occurred only on days listed above.

11-125. Campo Creek near Campo, Calif.

Location.--Lat 32°35'25", long 116°31'30", in SE $\frac{1}{4}$ sec.24, T.18 S., R.4 E., on left bank just upstream from bridge on State Highway 94, about 3.5 miles southwest of Campo.

Drainage area.--84 sq mi, approximately, of which 4 sq mi are in Mexico.

Records available.--October 1936 to September 1964.

Gage.--Water-stage recorder and broad-crested weir. Datum of gage is 2,179.08 ft above mean sea level (State Highway Department bench mark). Prior to Dec. 1, 1954, at datum 1 ft higher.

Average discharge.--28 years, 2.24 cfs 1,620 acre-ft per year; median of yearly mean discharges, 0.2 cfs (140 acre-ft per year).

Extremes.--Maximum discharge during year, 0.2 cfs Jan. 22 (gage height, 1.13 ft); no flow for most of year.

1936-64: Maximum discharge, 880 cfs Feb. 6, 1937 (gage height, 4.80 ft, present datum) from rating curve extended above 110 cfs on basis of velocity mean-depth relation and cross-sectional area at control; no flow for part of most years.

Remarks.--Records poor. No daily discharge above 0.05 cfs since May 9, 1960. Flow partly regulated since August 1956 by small conservation reservoir. No diversion above station.

11-130. Tia Juana River near Dulzura, Calif.

Location.--Lat 32°33'50", long 116°46'25", in sec.33, T.18 S., R.2 E., on left bank 0.5 mile downstream from confluence of Cottonwood and Tecate Creeks and 5.5 miles south of Dulzura.

Drainage area.--478 sq mi, of which 62 sq mi are in Mexico.

Records available.--October 1936 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 542.42 ft above mean sea level (levels by International Boundary and Water Commission). Prior to Sept. 19, 1939, at datum 2.00 ft higher.

Average discharge.--28 years, 12.5 cfs (9,050 acre-ft per year); median of yearly mean discharges, 2.0 cfs (1,400 acre-ft per year).

Extremes.--No flow during year.

1936-64: Maximum discharge, 4,700 cfs Feb. 7, 1937 (gage height, 8.50 ft, present datum), from rating curve extended above 300 cfs on basis of velocity mean-depth and area studies; no flow for part of most years.

Remarks.--No flow since May 29, 1962. Flow regulated by Morena Reservoir (see p. 87) and Barrett Reservoir (see p. 88). Water diverted from Cottonwood Creek at Barrett Dam by Dulzura conduit to Jamul Creek.

TIA JUANA RIVER BASIN

11-132. Rodriguez Reservoir at Rodriguez Dam, Baja California, Mexico

Location.--Lat 32°26'40", long 116°54'25", at Rodriguez Dam on Rio de las Palmas, a quarter of a mile upstream from Arroyo Matanuco and 10 miles southeast of Tijuana, Baja California, Mexico.

Drainage area.--988 sq mi, of which 7 sq mi are in the United States.

Records available.--April 1937 to September 1964. Published with record for Tia Juana River near Nestor, Calif., October 1953 to September 1957. Month-end contents for April 1937 to September 1950 published in WSP 1315-B and for October 1950 to September 1960 in WSP 1735.

Gage.--Staff gage read once a day. Altitude of gage is 250 ft (from topographic map).

Extremes.--Maximum contents during year, 24 acre-ft Nov. 8; reservoir dry Apr. 2 to Sept. 30.

1937-64: Reservoir spilled during March 1938, September 1940, February to May 1941, March 1942, and February, March 1944; reservoir dry Apr. 2 to Sept. 30, 1964.

Remarks.--Reservoir is formed by thin shell concrete arch dam completed in 1936; storage began in 1937. Capacity table is based on surveys made in 1927. Maximum storage at top of spillway gates (elevation, 410.10 ft), 111,070 acre-ft; at spillway lip (elevation, 380.08 ft), 74,580 acre-ft; dead storage below outlet (elevation, 267.39 ft), 1,650 acre-ft included in contents. Reservoir is used to store water for irrigation of about 3,000 acres on both banks one-half to 5½ miles downstream and for municipal supply of city of Tijuana.

Cooperation.--Records furnished by Ministry of Hydraulic Resources, Government of Mexico, through International Boundary and Water Commission, United States Section.

Month-end contents, water year October 1963 to September 1964

Month	Contents (acre- feet)	Change in contents (acre-feet)	Month	Contents (acre- feet)	Change in contents (acre-feet)
Sept. 30.....	17	-	Apr. 30.....	0	-12
Oct. 31.....	20	+3	May 31.....	0	0
Nov. 30.....	16	-4	June 30.....	0	0
Dec. 31.....	15	-1	July 31.....	0	0
	- - - - -	- - - - -	Aug. 31.....	0	0
Calendar year 1963.....	-	-5	Sept. 30.....	0	0
	- - - - -	- - - - -			
Jan. 31.....	15	0			
Feb. 29.....	14	-1	Water year 1963-64.....	-	-17
Mar. 31.....	12	-2			

11-135. Tia Juana River near Nestor, Calif.

Location.--Lat 32°33'05", long 117°05'00", on line between secs. 3 and 4, T.19 S., R.2 W., on downstream side of county highway bridge, 1.7 miles south of Nestor and 2.9 miles upstream from mouth.

Drainage area.--1,668 sq mi, of which 1,198 sq mi are in Mexico.

Records available.--October 1914 to September 1915, October 1936 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 15.14 ft above mean sea level. Oct. 1, 1914, to Sept. 30, 1915, reference point at same site at mean sea level datum. Oct. 1, 1936, to Apr. 9, 1953, water-stage recorder at different datum. Apr. 10, 1953, to Aug. 5, 1958, at site 2 miles upstream at different datum.

Average discharge.--29 years, 38.4 cfs (27,800 acre-ft per year); median of yearly mean discharges, 3.9 cfs (2,800 acre-ft per year).

Extremes.--No flow during year.

1936-64: Maximum discharge, 17,700 cfs Feb. 7, 1937 (gage height, 8.20 ft, at different datum), from rating curve extended above 2,000 cfs on basis of velocity-depth relation and cross section after peak; no flow in parts of each year.

Remarks.--No flow since Mar. 18, 1963. Flow regulated by Morena Reservoir (see p. 87) and Barrett Reservoir (see p. 88) in the United States, and Rodriguez Reservoir (see above) in Mexico. Water diverted from Cottonwood Creek at Barrett Dam by Dulzura conduit to Jamul Creek. Average discharge represents flow to the ocean regardless of upstream development. Discharge for the calendar year 1963 is as follows: maximum daily, 2.6 cfs; minimum, zero; mean, 0.008 cfs; total 5.6 acre-ft.

OTAY RIVER BASIN

11-140. Jamul Creek near Jamul, Calif.

Location.--Lat 32°38'15", long 116°53'00", in NE¼ sec.4, T.18 S., R.1 E., on right bank 300 ft upstream from county road crossing at upper end of Lower Otay Reservoir, 1.4 miles downstream from Dulzura Creek, and 5.5 miles south of Jamul.

Drainage area.--70.3 sq mi.

Records available.--April 1940 to September 1964.

Gage.--Water-stage recorder and broad-crested weir control with low-water Parshall flume. Datum of gage is 511.64 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1951, at same site at datum 1.00 ft higher.

Extremes.--No flow during year.

1940-64: Maximum discharge, 4,000 cfs Dec. 1, 1947 (gage height, 6.42 ft, present datum), from rating curve extended above 1,200 cfs; no flow at times in some years.

Remarks.--No flow since Apr. 24, 1962. No regulation above station. Water diverted from Cottonwood Creek by Dulzura conduit discharges into Jamul Creek via Dulzura Creek and is included in discharge records for this station (see p. 88).

11-150. Sweetwater River near Descanso, Calif.

Location.--Lat 32°50'05", long 116°37'20", in NW 1/4 sec. 25, T.15 S., R.3 E., on right bank at county road bridge, 0.7 mile downstream from unnamed tributary and 1.3 miles south of Descanso.

Drainage area.--45.5 sq mi.

Records available.--October 1905 to September 1927, October 1956 to September 1964. Monthly discharge only for October to December 1905, January to February 1916, February, March, June to September 1927, published in WSP 1315-B. Combined records of river and diversion October 1956 to September 1964.

Gage.--Water-stage recorder on river; water-stage recorder on concrete diversion. Datum of gage is 3,269.24 ft above mean sea level, datum of 1929. Prior to June 25, 1927, staff gages at several sites within 0.1 mile upstream at various datums.

Average discharge (creek only).--30 years, 12.0 cfs (8,690 acre-ft per year); median of yearly mean discharges, 6.9 cfs (5,000 acre-ft per year).

(combined).--8 years, 2.02 cfs (1,460 acre-ft per year).

Extremes (creek only).--Maximum discharge during year, 28 cfs Mar. 24 (gage height, 3.06 ft); no flow Oct. 1 to Jan. 21, June 24 to Sept. 30.

1905-27, 1956-64: Maximum discharge, 11,200 cfs Feb. 16, 1927 (gage height, 13.2 ft, from floodmark, site and datum then in use), on basis of slope-area measurement of maximum flow; no flow for many days in most years.

(combined).--Maximum discharge during year, 28 cfs Mar. 24; no flow Oct. 1 to Jan. 21, June 24 to Sept. 30.

1956-64: Maximum discharge, 1,290 cfs Apr. 3, 1958; no flow for many days in each year.

Remarks.--Records good. No regulation above station. Sweetwater River diversion diverts about 0.3 mile above station for irrigation below. For records of combined discharge of river and diversion, see following page.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0	0.1	0.1	1.4	0.5	0.2			
2	(*)			0	.1	.2	*1.4	.5	.1			
3				0	.1	*.2	1.0	.4	.1			
4				0	*.1	.1	.9	.5	*.1			
5				0	.1	.1	.8	1.5	.1			
6				0	.1	.1	1.1	*3.1	.1		(*)	
7				0	.1	.1	1.3	5.2	.1			
8				0	.1	.1	1.3	3.2	.1			
9				0	.1	.1	1.3	2.2	.1			
10				0	.1	.1	1.4	2.0	.1			
11				0	.2	.1	1.4	1.7	.1			
12				0	.2	.1	1.3	1.5	.1			
13				0	.2	.1	1.0	1.3	.1			
14				0	.2	.1	.8	1.0	.1		(*)	
15				0	.1	.1	.5	.9	.1			
16				0	.3	.1	.4	.7	.1			
17				0	.2	*.1	*.4	.7	.1			
18				0	*.2	.1	.4	.6	.1			
19				0	.2	.1	.8	.5	.1			
20				0	.1	.1	1.0	.3	.1			
21		(*)		0	.1	.1	.7	.3	.1			
22				*.5	.1	.6	.5	*.2	*.1			
23				.1	.1	*5.2	.6	.2	*.1			
24				.1	.1	9.7	1.3	.2	0			
25				.1	.1	2.7	1.3	.2	0			
26				.1	.1	1.4	.8	.2	0			
27				.1	.1	.9	*.6	.2	0			
28	(*)			.1	.1	.7	.5	.2	0			
29				.1	.2	.5	.5	.2	0			
30				.1	-----	.4	.5	.2	0			
31			(*)	.1	-----	.4	-----	.2	-----		(*)	-----
Total	0	0	0	1.4	3.9	24.8	27.2	30.6	2.4	0	0	0
Mean	0	0	0	0.05	0.13	0.80	0.91	0.99	0.08	0	0	0
Max	0	0	0	0.5	0.3	9.7	1.4	5.2	0.2	0	0	0
Min	0	0	0	0	0.1	0.1	0.4	0.2	0	0	0	0
Ac-ft	0	0	0	2.8	7.7	49	54	61	4.8	0	0	0

Calendar year 1963: Max 2.3 Min 0 Mean 0.05 Ac-ft 39

Water year 1963-64: Max 9.7 Min 0 Mean 0.25 Ac-ft 179

Peak discharge (base, 100 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SWEETWATER RIVER BASIN

150. Sweetwater River near Descanso, Calif.--Continued.

Combined discharge, in cubic feet per second, of Sweetwater River and Sweetwater River Diversion
near Descanso, Calif., water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0	0.1	0.3	1.6	0.9	0.4			
2				0	.1	.4	1.6	.9	.3			
3				0	.1	.3	1.2	.8	.2			
4				0	.1	.1	1.1	.9	.2			
5				0	.1	.1	1.0	1.9	.2			
6				0	.1	.1	1.4	3.5	.2			
7				0	.1	.2	1.6	5.6	.2			
8				0	.1	.1	1.6	3.6	.3			
9				0	.1	.1	1.6	2.6	.3			
10				0	.1	.1	1.7	2.4	.3			
11				0	.2	.1	1.7	2.1	.2			
12				0	.2	.1	1.6	1.9	.2			
13				0	.2	.1	1.2	1.7	.2			
14				0	.2	.1	1.1	1.4	.1			
15				0	.1	.1	.9	1.2	.1			
16				0	.3	.1	.8	1.0	.1			
17				0	.2	.1	.8	1.0	.1			
18				0	.2	.1	.8	.9	.1			
19				0	.2	.1	1.2	.8	.1			
20				0	.1	.1	1.4	.6	.1			
21				0	.1	.1	1.1	.6	.1			
22				.5	.1	.8	.9	.5	.1			
23				.1	.1	5.5	1.0	.5	.1			
24				.1	.1	9.9	1.7	.5	0			
25				.1	.1	2.9	1.7	.5	0			
26				.1	.1	1.5	1.2	.5	0			
27				.1	.1	1.0	1.0	.5	0			
28				.1	.1	.8	.9	.5	0			
29				.1	.4	.6	.9	.4	0			
30				.1	-----	.6	.9	.4	0			
31				.1	-----	.6	-----	.4	-----			
Total	0	0	0	1.4	4.1	27.1	37.2	41.0	4.2	0	0	0
Mean	0	0	0	0.05	0.14	0.87	1.24	1.32	0.14	0	0	0
Max	0	0	0	0.5	0.4	9.9	1.7	5.6	0.4	0	0	0
Min	0	0	0	0	0.1	0.1	0.8	0.4	0	0	0	0
Ac-ft	0	0	0	2.8	8.1	54	74	81	8.3	0	0	0

Calendar year 1963: Max 2.3 Min 0 Mean 0.07 Ac-ft 50
 Water year 1963-64: Max 9.9 Min 0 Mean 0.31 Ac-ft 228

Peak discharge (base, 100 cfs).--No peak above base.

11-155. Sweetwater River at Loveland Dam, near Alpine, Calif.

Location.--Lat 32°46'54", long 116°47'35", in SE 1/4 sec. 17, T.16 S., R.2 E., on upstream face near center of Loveland Dam, 4 miles southwest of Alpine.

Drainage area.--98.1 sq mi.

Records available.--October 1944 to September 1964.

Gage.--Staff gage read once daily. Datum of gage is 1,215 ft above mean sea level.

Average discharge.--20 years, 4.61 cfs (3,340 acre-ft per year); median of yearly mean discharges, 1.0 cfs (700 acre-ft per year).

Remarks.--Records of discharge represent all water reaching Loveland Reservoir, including precipitation on the reservoir. Discharge computed on the basis of records of storage, release (draft), spill, leakage, and evaporation. Evaporation from reservoir surface computed on basis of evaporation from Colorado land pan using a coefficient of 0.66, excepting the period October 1960 to June 1963, when the mass-transfer method was used, and prior to October 1960 when a coefficient of 0.80 was used. Area and capacity tables for the reservoir are dated April 1946. Loveland Dam was completed in July 1945; storage began in March 1945. Capacity of reservoir at spillway level (gage height, 140.00 ft), 25,387 acre-ft. Dead storage, 125 acre-ft below lowest outlet at gage height -1.25 ft, included in these records. One small diversion for irrigation. Water is released down Sweetwater River to Sweetwater Reservoir as required.

Cooperation.--Records of stage, draft and spill plus leakage furnished by California Water & Telephone Co.

Monthly discharge, water year October 1963 to September 1964

Month	Elevation (feet)†	Contents (acre- feet)	Change in contents (acre- feet)	Draft (acre- feet)	Evapo- ration (acre- feet)	Spill plus leakage (acre- feet)	Discharge (acre- feet)
Lake Loveland							
October.....	1,252.56	1,417	+1	0	19	0	20
November.....	1,252.58	1,418	+6	0	12	0	18
December.....	1,252.67	1,424	-9	0	14	0	5
Calendar year 1963.....	-	-	-144	0	260	0	116
January.....	1,252.54	1,415	+11	0	11	0	22
February.....	1,252.70	1,426	-6	0	15	0	9
March.....	1,252.61	1,420	+15	0	15	0	30
April.....	1,252.83	1,435	+5	0	17	0	22
May.....	1,252.91	1,440	+49	0	24	0	73
June.....	1,253.61	1,489	-26	0	29	0	3
July.....	1,253.23	1,463	-33	0	36	0	3
August.....	1,252.76	1,430	-28	0	27	0	-1
September.....	1,252.34	1,402	-30	0	25	0	-5
October.....	1,251.89	1,372	-	-	-	-	-
Water year 1963-64.....	-	-	-45	0	244	0	199

† On first day of month.

Note.--For months when inflow to the lake was small and other quantities were large, discordant figures of discharge may appear. This arises primarily from the difficulty of computing discharge as the residual of several larger quantities, which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

SWEETWATER RIVER BASIN

11-165. Sweetwater River at Sweetwater Dam, Calif.

Location.--Lat 32°41'20", long 117°00'35", in La Nacion Grant, at Sweetwater Dam, 6 miles east of National City, San Diego County, and 8 miles upstream from mouth.

Drainage area.--182 sq mi.

Records available.--October 1887 to September 1964.

Gage.--Staff gage read once daily. Datum of gage is 149.12 ft above mean sea level, datum of 1929.

Remarks.--Records of total inflow represent all water reaching Sweetwater Reservoir, including precipitation on reservoir and supplemental Colorado River water delivered through aqueduct of San Diego County Water Authority. Total inflow computed on basis of records of storage, release (draft), spill, leakage, and evaporation. Records of net inflow exclude supplemental water from Colorado River. Monthly evaporation from reservoir surface computed on basis of evaporation from Colorado land pan using coefficient of 0.80. Area and capacity tables for reservoir are dated December 1947. Capacity of reservoir at spillway level (gage height, 89.70 ft), 27,690 acre-ft. Dead storage, 4 acre-ft below lowest outlet at gage height 19.7 ft, included in these records. Diversions for irrigation. Regulation at Loveland Reservoir (see p. 93). Water is released as required for irrigation and domestic use in Chula Vista, National City, and contiguous areas.

Cooperation.--Records furnished by California Water & Telephone Co.

Monthly net inflow, water year October 1963 to September 1964

Month	Gage height (feet)†	Contents (acre- feet)	Change in contents (acre- feet)	Draft (acre- feet)	Evapo- ration (acre- feet)	Spill plus leakage (acre- feet)	Total inflow (acre- feet)	Colorado River water imported (acre- feet)	Net inflow (acre- feet)
	Sweetwater Reservoir								
October.....	42.84	2,502	-44	84	85	0	125	53	72
November.....	42.65	2,458	+61	29	50	0	140	86	54
December.....	42.91	2,519	-229	312	59	0	142	35	107
Calendar year 1963	-	-	-196	1,839	1,082	0	2,725	1,519	1,206
January.....	41.92	2,290	-23	192	45	0	214	139	75
February.....	41.82	2,267	-241	421	65	0	245	153	92
March.....	40.73	2,026	+464	0	75	0	539	456	83
April.....	42.79	2,490	-97	301	87	0	291	252	39
May.....	42.37	2,393	+152	35	109	0	296	241	55
June.....	43.02	2,545	+65	22	117	0	204	178	26
July.....	43.29	2,610	-84	46	147	0	109	82	27
August.....	42.94	2,526	+84	0	135	0	219	221	-2
September.....	43.29	2,610	+12	10	113	0	135	145	-10
October.....	43.34	2,622	-	-	-	-	-	-	-
Water year 1963-64.....	-	-	+120	1,452	1,087	0	2,659	2,041	618

† On first day of month

Note.--For months when inflow to the reservoir was small and other quantities were large, discordant figures of net inflow may appear. This arises primarily from the difficulty of computing net inflow as the residual of several larger quantities, which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

11-170. Boulder Creek at Cuyamaca Reservoir, near Julian, Calif.

Location.--Lat 32°59'20", long 116°35'10", in NE¹/₄ sec.5, T.14 S., R.4 E., on outlet tower at Cuyamaca Dam, 7 miles south of Julian.

Drainage area.--12.1 sq mi.

Records available.--October 1935 to September 1964 (inflow to Cuyamaca Reservoir; precipitation on water surface deducted October 1939 to September 1944). June 1912 to September 1926, records not equivalent as they represent only outflow (draft) from Cuyamaca reservoir.

Gage.--Staff gage read periodically. Datum of gage is 4,600.2 ft above mean sea level (Helix Irrigation District bench mark).

Average discharge.--24 years (1935-39, 1944-64), 4.19 cfs (3,030 acre-ft per year); median of yearly mean discharges, 1.4 cfs (1,000 acre-ft per year).

Remarks.--Records of discharge represent all water reaching Cuyamaca Reservoir, including precipitation on reservoir. Discharge computed on basis of records of storage, release (draft), spill, leakage, and evaporation. Monthly evaporation from lake surface computed on basis of evaporation from Colorado land pan using a coefficient of 0.80. Area and capacity tables for reservoir are based on a resurvey made in the fall of 1949. Capacity of reservoir at spillway level (gage height, 35.4 ft), 11,540 acre-ft. No dead storage. Small diversions for local use near dam. Water is released down Boulder Creek to El Capitan Reservoir.

Cooperation.--Records of reservoir operation furnished by Helix Irrigation District.

Monthly runoff, water year October 1963 to September 1964

Month	Gage height (feet)†	Contents (acre- feet)	Change in contents (acre- feet)	Draft (acre- feet)	Evapo- ration (acre- feet)	Spill plus leakage (acre- feet)	Discharge (acre- feet)
	Cuyamaca Reservoir						
Sept. 30.....	-	0	-	-	-	-	-
Oct. 31.....	-	0	0	0	0	0	0
Nov. 30.....	10.4	1	+1	0	0	0	1
Dec. 31.....	10.4	1	.0	0	0	0	0
Calendar year 1963.....	-	0	+1	0	42	0	43
Jan. 31.....	12.6	24	+23	0	0	0	23
Feb. 29.....	12.5	21	-3	0	a1	0	-2
Mar. 31.....	15.1	198	+177	0	a5	0	182
Apr. 30.....	17.4	597	+399	0	32	0	431
May 31.....	-	0	-597	757	60	0	220
June 30.....	-	0	0	6	0	0	6
July 31.....	-	0	0	0	0	0	0
Aug. 31.....	-	0	0	0	0	0	0
Sept. 30.....	-	0	0	0	0	0	0
Water year 1963-64.....	-	0	0	763	98	0	861

† Gage height at 0800 hours.

a Estimated (pan frozen).

Note.--For months when inflow to the reservoir was small and other quantities were large, discordant figures of discharge may appear. This arises primarily from the difficulty of computing discharge as the residual of several larger quantities, which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

SAN DIEGO RIVER BASIN

11-205. San Diego River at El Capitan Dam, Calif.

Location.--Lat 32°53'00", long 116°48'25", in NE 1/4 sec. 7, T.15 S., R.2 E., on outlet tower of El Capitan Dam, 7 miles east of Lakeside.

Drainage area.--188 sq mi.

Records available.--October 1945 to September 1964. October 1936 to September 1945, records not equivalent owing to exclusion of greater part of flow released from Cuyamaca Reservoir.

Gage.--Staff gage read daily. Datum of gage is 553.0 ft above mean sea level.

Remarks.--Records of total inflow represent all water reaching El Capitan Reservoir, including precipitation on reservoir, water passing down Boulder Creek from Cuyamaca Reservoir, and supplemental Colorado River water delivered through aqueduct of San Diego County Water Authority. Total inflow computed on basis of records of storage, release (draft), spill, leakage, and evaporation. Records of net inflow exclude the supplemental Colorado River water. Evaporation from reservoir surface computed on basis of evaporation from Colorado land pan using a coefficient of 0.68, excepting the period October 1957 to June 1963, when the mass-transfer method was used. Prior to October 1957 a coefficient of 0.80 was used. Area and capacity tables for reservoir are based on a resurvey completed in 1955. Dam was completed in 1935. Capacity of reservoir at spillway level (gage height, 197.00 ft), 112,810 acre-ft. Dead storage, 59.2 acre-ft below outlet at gage height 21.0 ft, included in these records. No significant diversion above reservoir. Flow partly regulated by Cuyamaca Reservoir (see preceding page). Water is released as required for municipal use and irrigation.

Cooperation.--Records computed in cooperation with city of San Diego.

Monthly net inflow, water year October 1963 to September 1964

Month	Gage height (feet)†	Contents (acre-feet)	Change in contents (acre-feet)	Draft (acre-feet)	Evaporation (acre-feet)	Spill plus leakage (acre-feet)	Total inflow (acre-feet)	Colorado River water included (acre-feet)	Net inflow (acre-feet)
	El Capitan Reservoir								
Sept. 30.....	78.62	8,343	-	-	-	-	-	-	-
Oct. 31.....	82.65	9,714	+1,371	0	116	0	1,487	1,600	-113
Nov. 30.....	83.83	10,134	+420	0	79	0	499	456	43
Dec. 31.....	83.23	9,919	-215	203	89	0	77	0	77
Calendar year 1963.....	-	-	+1,292	2,259	1,797	0	5,348	4,703	645
Jan. 31.....	78.98	8,461	-1,458	1,430	64	0	36	0	36
Feb. 29.....	78.91	8,438	-23	0	95	0	72	0	72
Mar. 31.....	79.08	8,494	+56	0	95	0	151	0	151
Apr. 30.....	79.92	8,774	+280	0	112	0	392	0	392
May 31.....	82.25	9,573	+799	0	157	0	956	0	956
June 30.....	81.95	9,468	-105	0	252	0	147	0	147
July 31.....	81.27	9,233	-235	5	306	0	76	0	76
Aug. 31.....	80.64	9,017	-216	8	275	0	67	0	67
Sept. 30.....	80.08	8,827	-190	14	239	0	63	0	63
Water year 1963-64.....	-	-	+484	1,660	1,879	0	4,023	2,056	1,967

† Gage height at 0800 hours.

Note.--For months when inflow to the reservoir was small and other quantities were large, discordant figures of inflow may appear. This arises primarily from the difficulty of computing inflow as the residual of several larger quantities, which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

11-225. San Diego River near Santee, Calif.

Location.--Lat 32°49'29", long 117°03'17", in Ex Mission San Diego Grant, on right bank/in Mission Gorge, 0.2 mile upstream from left tributary and 6 miles west of Santee, San Diego County.

Drainage area.--377 sq mi.

Records available.--May 1912 to December 1915, March 1916 to September 1964. Monthly discharge only for some periods and yearly estimates only for 1924-25, published in WSP 1315-B.

Gage.--Water-stage recorder (digital) and unfinished rubble dam control. Altitude of gage is 180 ft (from topographic map). Prior to Nov. 10, 1920, staff gage at site $1\frac{1}{2}$ miles upstream at different datum. Nov. 10, 1920, to Dec. 1, 1954, water-stage recorder at present site at datum 1.0 ft higher.

Average discharge.--51 years, 24.8 cfs (17,950 acre-ft per year); median of yearly mean discharges, 4.7 cfs (3,400 acre-ft per year).

Extremes.--Maximum discharge during year, 478 cfs Jan. 22 (gage height, 3.83 ft, from crest-stage gage); no flow for several months. 1912-64: Maximum discharge, 70,200 cfs Jan. 27, 1916 (gage height, 25.1 ft, site and datum then in use), based on slope-conveyance computation; no flow at times in most years.

Remarks.--Records fair. Discharge measurements or observations of no flow made twice a month. Flow regulated by Cuyamaca, El Capitan (see p. 95, 96) and San Vicente Reservoirs. Diversions by city of San Diego for municipal supply and by Helix Irrigation District. Average discharge represents flow to ocean during period of record, regardless of upstream development.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 27 to Nov. 10, Jan. 22, Mar. 26 to Apr. 2)

1.1	0.1	1.7	5.7
1.2	.2	1.8	9.3
1.3	.5	2.0	30
1.5	2.1	2.3	92
1.6	3.5		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.1	0	1.2	1.5	1.9	4.3	4.0	0.6				
2	.1	.1	1.2	1.8	1.7	4.2	5.0	.6				
3	.1	.1	1.1	1.5	1.6	5.4	3.4	.5				
4	.1	.1	1.1	1.1	1.7	3.5	3.1	.5				
5	0	.1	1.2	.8	3.1	2.4	3.1	1.5				
6	0	.1	1.2	.7	2.8	1.8	3.0	1.0				
7	0	.1	1.0	.6	1.8	1.4	2.4	5.4				
8	0	.1	1.0	.6	1.5	1.2	1.8	3.7				
9	0	.1	1.1	.5	2.0	1.2	1.1	1.5				
10	0	.1	2.4	.5	1.9	1.9	.8	1.2				
11	0	.1	2.7	.5	2.1	2.0	.7	2.1				
12	0	.1	2.1	.5	1.4	1.8	1.3	1.2				
13	0	.2	1.6	.8	1.1	1.4	1.2	.7				
14	0	.3	1.3	1.0	.9	1.2	.6	.5				
15	0	.5	1.1	.9	.8	1.2	.9	.4				
16	0	.6	1.1	1.8	1.1	1.1	1.2	.2				
17	0	.7	1.5	1.7	1.7	.6	.9	.2				
18	0	.9	2.7	1.8	1.3	.7	.7	.2				
19	.1	1.1	2.7	1.5	1.1	1.4	.7	.2				
20	.1	11	1.8	1.4	1.3	.9	.7	.2				
21	.1	48	1.4	6.5	1.0	.6	.6	.1				
22	0	12	1.1	87	.9	.7	.5	.1				
23	.1	3.7	.9	18	1.1	44	.5	.1				
24	.1	3.1	.9	5.9	1.8	62	.5	.1				
25	.1	2.7	1.0	3.8	2.1	15	.6	0				
26	.1	2.2	2.0	3.1	1.4	7.0	.6	0				
27	.1	1.8	1.6	2.9	1.0	5.4	.7	0				
28	0	1.5	1.1	3.1	.9	4.5	.7	0				
29	0	1.3	.9	3.9	3.0	3.5	.6	0				
30	0	1.3	.8	3.2	-----	2.8	.5	0				
31	0	-----	1.0	2.3	-----	2.2	-----	0	-----			
TOTAL	1.2	94.0	43.8	161.2	46.0	187.3	42.4	22.8	0	0	0	0
MEAN	0.04	3.13	1.41	5.20	1.59	6.04	1.41	0.74	0	0	0	0
AC-FT	2.4	186	87	320	91	372	84	45	0	0	0	0
MAX	0.1	48	2.7	87	3.1	62	5.0	5.4	0	0	0	0
MIN	0	0	0.8	0.5	0.9	0.6	0.5	0	0	0	0	0
CALENDAR YEAR 1963	MAX	108	MIN	0	MEAN	4.09	AC-FT	8960				
WATER YEAR 1963-64	MAX	87	MIN	0	MEAN	1.64	AC-FT	1,190				

SAN DIEGUITO RIVER BASIN

11-240. Santa Ysabel Creek at Sutherland Dam, Calif.

Location.--Lat 33°07'05", long 116°47'10", in NW 1/4 SW 1/4 sec. 21, T.12 S., R.2 E., on face of Sutherland Dam, 1.6 miles upstream from Black Canyon Creek and 7 miles northeast of Ramona.

Drainage area.--53.9 sq mi.

Records available.--December 1912 to September 1928, October 1936 to September 1964. Prior to October 1953, published as "near Mesa Grande."

Gage.--Water-stage recorder. Datum of gage is 1,912.00 ft above mean sea level (levels by city of San Diego). Prior to Oct. 1, 1936, water-stage recorder at same site at various datums. Oct. 1, 1936, to Sept. 30, 1953, at site 1 mile downstream at different datum. Mar. 7 to Nov 29, 1954, staff gage at present site and datum.

Average discharge.--43 years (1913-28, 1936-64), 18.1 cfs (13,130 acre-ft per year); median of yearly mean discharges, 8.8 cfs (6,400 acre-ft per year).

Remarks.--Records of discharge represent all water reaching Sutherland Reservoir including precipitation on reservoir. Discharge computed on basis of records of storage, release (draft), spill, leakage, and evaporation. Monthly evaporation from lake surface computed on basis of evaporation from Colorado land pan using coefficient of 0.80. Sutherland Dam was completed and storage began in October 1953. Area and capacity tables for the reservoir are based on an aerial survey made in 1949. Capacity of reservoir at spillway level (gage height, 145.00 ft), 29,680 acre-ft. Dead storage, 176 acre-ft below lowest outlet at gage height 28.00 ft, included in these records. Small diversion above reservoir. Water is released as required for municipal use.

Cooperation.--Records computed in cooperation with city of San Diego.

Monthly discharge, water year October 1963 to September 1964

Month	Gage height (feet)†	Contents (acre-feet)	Change in contents (acre-feet)	Draft (acre-feet)	Evaporation (acre-feet)	Spill plus leakage (acre-feet)	Discharge (acre-feet)
	Sutherland Reservoir						
Sept. 30.....	67.12	2,950	-	-	-	-	-
Oct. 31.....	66.75	2,896	-54	0	38	0	-16
Nov. 30.....	66.78	2,901	+5	0	29	0	34
Dec. 31.....	66.60	2,875	-26	0	32	0	6
Calendar year 1963.....	-	-	-237	0	573	0	336
Jan. 31.....	66.72	2,892	+17	0	26	0	43
Feb. 29.....	66.59	2,874	-18	0	39	0	21
Mar. 31.....	67.46	3,000	+126	0	34	0	160
Apr. 30.....	68.62	3,173	+173	0	37	0	210
May 31.....	68.74	3,191	+18	0	53	0	71
June 30.....	68.27	3,120	-71	0	65	0	-6
July 31.....	67.61	3,022	-98	0	90	0	-8
Aug. 31.....	66.90	2,918	-104	0	90	0	-14
Sept. 30.....	66.38	2,844	-74	0	74	0	0
Water year 1963-64.....	-	-	-106	0	607	0	501

† Gage height at 0800 hours.

a Partly estimated.

Note.--For months when discharge to the reservoir was small and other elements were large, discordant figures of discharge may appear. This arises primarily from the difficulty of computing discharge as a residual of several larger quantities which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

11-255. Santa Ysabel Creek near Ramona, Calif.

Location.--Lat 33°06'25", long 116°51'55", in SW 1/4 sec. 27, T.12 S., R.1 E., on left bank 1.6 miles downstream from Temescal Creek and 4.5 miles north of Ramona.

Drainage area.--112 sq mi.

Records available.--February 1912 to February 1923, October 1943 to September 1964. Monthly discharge only for February 1912, published in WSP 1315-B.

Gage.--Water-stage recorder and concrete cutoff wall, repaired at times. Datum of gage is 847.88 ft above mean sea level (levels by city of San Diego Water Department). Prior to Jan. 31, 1916, staff gage at site 0.5 mile upstream at different datum. Jan. 31, 1916, to Feb. 3, 1923, staff gage or water-stage recorder at present site at datum 0.3 ft higher.

Extremes.--Maximum discharge during year, 3.0 cfs Mar. 24 (gage height, 2.08 ft); no flow for most of year.

1912-23, 1943-64: Maximum discharge, 28,400 cfs Jan. 27, 1916 (gage height, 14.0 ft, datum then in use), from rating curve extended above 1,500 cfs based on slope-conveyance computation of maximum flow; no flow for parts of some years..

Remarks.--Records fair. Flow regulated since July 1954 by Sutherland Reservoir (see preceding page). Some small diversions above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Mar. 23.....*	0.2	Apr. 2.....*	1.4	May 7.....*	0.3
24.....	.5	3.....	.8	8.....	1.0
31.....	.1	4.....	.1	9.....	.6
Apr. 1.....*	.8	May 6.....	.1	10.....	.2

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
March 1964.....	0.8	0.5	0	0.03	1.6
April.....	3.1	1.4	0	.10	6.1
May.....	2.2	1.0	0	.07	4.4
Calendar year 1963.....	-	50	0	.32	233
Water year 1963-64.....	-	1.4	0	.02	12

* Discharge measurement made on this day.

Note.--Flow occurred only on days listed above.

SAN DIEGUITO RIVER BASIN

11-260. Santa Ysabel Creek near San Pasqual, Calif.

Location.--Lat 33°05'10", long 116°54'56", in NE 1/4 NW 1/4 sec. 31, T.12 S., R.1 E., on left bank 1.1 miles downstream from Clevenger Canyon and 2 miles east of San Pasqual.

Drainage-area.--128 sq mi.

Records available.--December 1905 to September 1910 and May 1911 to September 1912 (published as "near Escondido"), April 1947 to November 1955 (irrigation seasons only), April 1956 to September 1964. Records for October to December 1910, published in WSP 447, have been found to be in error and should not be used.

Gage.--Water-stage recorder and concrete control since April 1947. Altitude of gage is 510 ft (from topographic map). Dec. 17, 1905, to Sept. 30, 1912, staff gage at site a quarter of a mile downstream at different datum.

Average discharge.--12 years (1906-10, 1912, 1957-64), 18.5 cfs (13,390 acre-ft per year); median of yearly mean discharges, 10 cfs (7,200 acre-ft per year).

Extremes.--Maximum discharge during year, 0.3 cfs Mar. 24 (gage height, 0.68 ft); no flow for most of year.
1905-12, 1947-64: Maximum discharge observed, 8,000 cfs Mar. 24, 1906 (gage height, 6.3 ft, site and datum then in use); no flow at times in most years.

Remarks.--Records good. Flow regulated since July 1954 by Sutherland Reservoir (see p. 98). Small diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.4	0
.5	.1
.6	.2

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0		0	0.1	0.1				
2				0		0	.1	.1				
3				* 0		0	.1	.1				
4			(*)	0	(*)	0	.1	.1				
5				0		* 0	.1	.1				
6				0		0	.1	.1	(*)			
7				0	(*)	0	.1	.1				
8				0		0	.1	.1				
9	(*)			0		0	.1	.1				
10				0		0	.1	.1				(*)
11				0		0	.1	0				
12				0		0	.1	0				
13				0		0	.1	* 0				
14				0		0	.1	0				
15				0		0	.1	0				
16				0		0	.1	0				
17				0		0	.1	0				
18				0	(*)	0	.1	0				
19				0		0	*.1	0				
20				0		0	.1	0				
21				.1		0	.1	0	(*)			
22				.1		.1	.1	0				
23				.1		.2	.1	0				
24				0		.1	.1	0				
25				0		*.1	.1	0		(*)		
26				0		.1	.1	0				(*)
27				0		.1	.1	0				
28				0		.1	.1	0				
29				0		.1	.1	0				
30				0		.1	.1	0				
31				* 0		.1		0				
Total	0	0	0	0.3	0	1.1	3.0	1.0	0	0	0	0
Mean	0	0	0	0.01	0	0.04	0.10	0.03	0	0	0	0
Max	0	0	0	0.1	0	0.2	0.1	0.1	0	0	0	0
Min	0	0	0	0	0	0	0.1	0	0	0	0	0
Ac-ft	0	0	0	0.6	0	2.2	6.0	2.0	0	0	0	0
Calendar year 1963: Max 36 Min 0 Mean 0.26 Ac-ft 191												
Water year 1963-64: Max 0.2 Min 0 Mean 0.01 Ac-ft 11												

* Discharge measurement or observation of no flow made on this day.

11-270. Guejito Creek near San Pasqual, Calif.

Location.--Lat 33°06'57", long 116°57'08", in NW 1/4, sec. 23, T.12 S., R.1 W., on left bank 0.3 mile upstream from Rockwood Canyon Creek and 1.8 miles north of San Pasqual.

Drainage area.--22.5-sq mi.

Records available.--December 1946 to September 1964.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 560 ft (from topographic map).

Average discharge.--17 years (1947-64), 0.97 cfs (702 acre-ft per year); median of yearly mean discharges, 0.4 cfs (290 acre-ft per year).

Extremes.--Maximum discharge during year, 7.5 cfs Mar. 23 (gage height, 1.77 ft, from inside gage); no flow Oct. 1 to Jan. 21, Jan. 31 to Feb. 28, May 15 to Sept. 30.

1946-64: Maximum discharge, 1,660 cfs Apr. 3, 1958 (gage height, 5.83 ft), from rating curve extended above 440 cfs on basis of slope-area measurement of maximum flow; no flow at times in most years.

Remarks.--Records good except those for period of no gage-height record, which are poor. No regulation above station. Diversion for irrigation about a quarter of a mile upstream.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.1	0
.2	.1
.5	.7
1.0	2.4

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	(*)			0	0	0.1	0.6	0.1				
2				0	0	*.1	*.6	.1				
3				0	0	.1	.4	.1				
4				0	0	.1	.3	.1			(*)	
5				0	0	.1	.2	.1				
6				0	* 0	.1	.2	.1				
7				0	0	.1	.2	*.2				
8				0	0	.1	.1	.1				
9			(*)	* 0	0	.1	.1	.1				
10				0	0	.1	.1	.1				
11				0	0	.1	.1	.1	(*)			
12				0	0	.1	.1	.1				
13				0	0	.1	.1	.1				
14				0	0	.1	*.1	.1		(*)		(*)
15		(*)		0	0	.1	.1	0				
16				0	0	.1	.1	0				
17				0	0	*.1	.1	0				
18				0	0	.1	.1	0				
19				0	0	.1	.1	0				
20				* 0	0	.1	.1	0				
21				0	0	.1	.1	0				
22				*.1	0	.1	.1	0				
23			(*)	.1	0	1.8	.1	0				
24				.1	0	1.0	.1	0				
25				.1	0	.9	.1	0				
26				.1	0	.7	.1	0	(*)			
27				.1	0	.6	.1	0				
28				.1	0	.5	.1	* 0				
29	(*)			.1	.1	.4	.1	0				
30				.1	-----	.3	.1	0				
31		-----		0	-----	.2	-----	0	-----			
TOTAL	0	0	0	0.9	0.1	8.6	4.8	1.5	0	0	0	0
MEAN	0	0	0	0.03	0.003	0.28	0.16	0.05	0	0	0	0
AC-FT	0	0	0	1.8	0.2	17	9.5	3.0	0	0	0	0
MAX	0	0	0	0.1	0.1	1.8	0.6	0.2	0	0	0	0
MIN	0	0	0	0	0	0.1	0.1	0	0	0	0	0

Calendar year 1963: Max 22 Min 0 Mean 0.15 Ac-ft 106
 Water year 1963-64: Max 1.8 Min 0 Mean 0.04 Ac-ft 32

Peak discharge (base, 30 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.
 Note.--No gage-height record Mar. 23 to Apr. 2.

SAN DIEGUITO RIVER BASIN

11-285. Santa Maria Creek near Ramona, Calif.

Location.--Lat 33°03'08", long 116°56'41", in SE 1/4 sec. 11, T.13 S., R.1 W., on left bank 3.75 miles northwest of Ramona and 4.6 miles upstream from mouth.

Drainage area.--57.6 sq mi.

Records available.--November 1912 to September 1920, October 1946 to September 1964.

Gage.--Water-stage recorder and concrete control since October 1946. Datum of gage is 1,294.44 ft above mean sea level, datum of 1927. Prior to Oct. 1, 1946, at same site at datum 1.78 ft lower.

Average discharge.--25 years (1913-20, 1946-64), 4.13 cfs (2,990 acre-ft per year); median of yearly mean discharges, 0.1 cfs (72 acre-ft per year).

Extremes.--No flow during year.

1912-20, 1946-64: Maximum discharge, 7,140 cfs Jan. 27, 1916 (gage height, 14.1 ft, from floodmarks, present datum), from rating curve extended above 600 cfs on basis of slope-area measurement of maximum flow; no flow for several months in each year.

Remarks.--No flow since Apr. 28, 1962. City of Ramona pumps water from stream above station for municipal supply.

11-290. San Dieguito River near San Pasqual, Calif.

Location.--Lat 33°04'00", long 117°02'05", in San Bernardo Grant, on right bank 1.5 miles downstream from Bach Creek, 4.5 miles south-east of Escondido, and 5 miles west of San Pasqual, San Diego County.

Drainage area.--249 sq mi.

Records available.--April 1947 to April 1956 (irrigation seasons only), May 1956 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 325 ft (from topographic map).

Extremes.--No flow during year.

1956-64: Maximum discharge, about 3,600 cfs Apr. 3, 1958 (gage height, 7.35 ft), from field estimate of maximum flow; no flow in most months each year.

Remarks.--No flow since May 13, 1958. Flow regulated since July 1954 by Sutherland Reservoir (see p. 98). Diversions for irrigation and pumping from wells along river in San Pasqual Valley above station.

SAN DIEGUITO RIVER BASIN

103

11-300. San Dieguito River at Lake Hodges, Calif.

Location.--Lat 33°02'48", long 117°07'33", in NE 1/4 sec. 18, T.13 S., R.2 W., on right bank 800 ft upstream from Lake Hodges Dam and 6.2 miles southwest of Escondido.

Drainage area.--303 sq mi.

Records available.--January 1916 to September 1964. Published as "near Bernardo" prior to October 1920 and as "near Escondido" October 1920 to September 1925.

Gage.--Staff gage read once daily. Datum of gage is 200.0 ft above mean sea level. Prior to January 1919, staff gage at same site at different datum (prior to completion of dam).

Remarks.--Records of total inflow represent all the water reaching Lake Hodges, including precipitation on the lake and supplemental water from Colorado River delivered through aqueduct of San Diego County Water Authority. Total inflow computed on basis of records of storage, release (draft), spill, leakage, and evaporation. Records of net inflow exclude supplemental water from Colorado River. Area and capacity tables for lake are based on a resurvey in 1948. Evaporation from reservoir surface computed on basis of evaporation from Colorado land pan using a coefficient of 0.80, excepting the period October 1957 to June 1963, when the mass-transfer method was used. Lake Hodges Dam was completed and storage began Feb. 1, 1919. Capacity of lake at spillway level (gage height, 115.00 ft), 33,550 acre-ft. Dead storage, 1,160 acre-ft below lowest outlet at gage height 54.0 ft, included in these records. Water drawn from Lake Hodges passes through a conduit to San Dieguito re-regulating reservoir, from which it is released as required for municipal use. Flow regulated since July 1954 by Sutherland Reservoir (see p. 98). Diversions for irrigation above Lake Hodges.

Cooperation.--Records computed in cooperation with city of San Diego.

Monthly net inflow, water year October 1963 to September 1964

Monthly net inflow, water year October 1963 to September 1964									
Month	Gage height (feet)†	Contents (acre-feet)	Change in contents (acre-feet)	Draft (acre-feet)	Evapo- ration (acre-feet)	Spill plus leakage (acre-feet)	Total inflow (acre-feet)	Colorado River water included (acre-feet)	Net inflow (acre-feet)
	Lake Hodges								
Sept. 30.....	65.10	3,032	-	-	-	-	-	-	-
Oct. 31.....	67.30	3,529	+497	753	66	0.2	1,316	1,401	-85
Nov. 30.....	69.20	3,980	+451	369	43	.2	863	928	-65
Dec. 31.....	67.10	3,483	-497	534	51	.2	88	0	88
Calendar year 1963.....	-	-	+138	8,781	830	2.4	9,749	10,027	-278
Jan. 31.....	65.25	3,065	-418	440	38	.2	60	0	60
Feb. 29.....	62.40	2,483	-582	541	53	.2	12	0	12
Mar. 31.....	63.22	2,644	+161	556	57	.2	774	769	5
Apr. 30.....	62.44	2,491	-153	716	72	.2	635	633	2
May 31.....	62.37	2,477	-14	827	81	.2	894	918	-24
June 30.....	61.67	2,343	-134	944	87	.2	897	1,001	-104
July 31.....	61.26	2,265	-78	1,060	106	.2	1,088	1,219	-131
Aug. 31.....	61.80	2,367	+102	1,110	100	.2	1,312	1,436	-124
Sept. 30.....	62.87	2,575	+208	898	81	.2	1,187	1,238	-51
Water year 1963-64.....	-	-	-457	8,748	835	2.4	9,126	9,543	-417

† Gage height at 0800 hours.

Note.--For months when inflow to the lake was small and other quantities were large, discordant figures of net inflow may appear. This arises primarily from the difficulty of computing net inflow as the residual of several larger quantities which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

SAN LUIS REY RIVER BASIN

11-315. Agua Caliente Creek near Warner Springs, Calif.

Location.--Lat 33°17'20", long 116°39'08", in San Jose del Valle Grant, on left bank 60 ft upstream from highway bridge, 1.2 miles upstream from Canada Verde Creek and 1.2 miles northwest of Warner Springs, San Diego County.

Drainage area.--19.0 sq mi.

Records available.--February 1961 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 2,950 ft (from topographic map).

Extremes.--Maximum discharge during year, 61 cfs Apr. 1 (gage height, 3.97 ft); no flow for most of year.
1961-64: Maximum discharge, 88 cfs Mar. 6, 1962 (gage height, 3.76 ft), from rating curve extended above 10 cfs on basis of velocity-area study; no flow for most of each year.

Remarks.--Records poor. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Mar. 24.....0.5	Apr. 1.....* 27	Apr. 9.....0.1	May 3.....0.1
25......1	2.....* 15	10......1	4......1
26.....1.8	3......6.9	11......1	5......1
27.....4.6	4.....* 3.3	12......1	6......2
28.....8.6	5......2.0	13......1	7......2
29.....5.8	6.....* .8	14......1	8......1
30.....2.6	7......4	15......1	10......1
31......7	8.....* .1	28......1	

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
March 1964.....	24.7	8.6	0	0.80	49
April.....	56.3	27	0	1.88	112
May.....	0.9	.2	0	.03	1.8
Calendar year 1963.....	-	4.9	0	.02	13
Water year 1963-64.....	-	27	0	.22	163

Peak discharge (base, 50 cfs).--Apr. 1 (1400 hrs) 61 cfs (3.97 ft).

* Discharge measurement made on this day.

Note.--Flow occurred only on days listed above.

11-330. West Fork San Luis Rey River near Warner Springs, Calif.

Location.--Lat 33°17'50", long 116°45'30", in San José del Valle Grant, on left bank 0.1 mile downstream from small unnamed tributary, 2.5 miles upstream from mouth, and 7.5 miles west of Warner Springs, San Diego County.

Drainage area.--25.5 sq mi.

Records available.--January 1913 to November 1915, October 1956 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 2,800 ft (from topographic map). Prior to Oct. 1, 1956, at different datum.

Average discharge.--9 years (1913-15, 1957-64), 7.09 cfs (5,130 acre-ft per year).

Extremes.--Maximum discharge during year, 117 cfs Apr. 1 (gage height, 6.17 ft); no flow for many days.

1913-15, 1956-64: Maximum discharge, 2,060 cfs Mar. 16, 1958 (gage height, 10.77 ft), from rating curve extended above 400 cfs on basis of slope-area measurement of maximum flow; no flow at times in most years.

Remarks.--Records fair. Discharge measurements or observations of no flow generally made twice a month. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting control method used Jan. 22, Mar. 23-31, June 7 to July 13)

4.3	0	4.9	9.8
4.4	.2	5.2	23
4.5	1.0	5.5	44
4.6	2.2	5.8	71
4.8	6.6		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1			0	0	.1	0.1	63	1.0	0.4	0.1	0.1	0.1
2			0	0	.1	.1	42	.9	.4	.1	.1	.1
3			0	0	.1	.1	21	.8	.4	.1	.1	.1
4			0	0	.1	.1	14	1.1	.3	.1	.1	.1
5			0	0	.1	.1	11	2.0	.3	.1	.1	.1
6			0	0	.1	.1	9.5	4.2	.3	.1	.2	.1
7			0	.1	.1	.1	7.2	6.7	.3	.1	.1	.1
8			0	0	.1	.1	5.8	6.6	.3	.1	.1	.1
9			0	0	.1	.1	5.3	3.9	.3	.1	.1	.1
10			0	0	.1	.1	4.6	2.6	.3	.1	.1	0
11			0	0	.1	.1	4.2	2.0	.3	.1	.1	0
12			0	0	.1	.1	3.5	1.4	.3	.1	.1	0
13			0	0	.1	.1	2.8	1.0	.2	.1	.1	0
14			0	0	.1	.1	2.1	.8	.1	.1	.1	0
15			0	0	.1	.1	2.0	.7	.2	.1	.1	0
16			0	0	.1	.1	1.7	.6	.1	.1	.1	0
17			.1	0	.1	.1	1.5	.6	.2	.1	.1	0
18			.1	0	.1	.1	1.3	.6	.2	.1	.1	.1
19			.1	0	.1	.1	1.8	.5	.2	.1	.1	0
20			.1	0	.1	.1	3.3	.5	.2	.1	.1	0
21			0	0	.1	.1	2.1	.5	.2	.1	.1	0
22			0	4.2	.1	.3	1.6	.5	.2	.1	.1	0
23			0	2.6	.1	13	1.5	.5	.2	.2	.1	0
24			0	.1	.1	10	2.4	.5	.1	.2	0	.1
25			.1	.1	.1	6.8	2.2	.5	.1	.1	.1	.1
26			.1	.1	.1	10	1.7	.5	.1	.2	.1	.1
27			.1	.1	.1	12	1.4	.5	.1	.2	.1	.1
28			.1	.1	.1	12	1.1	.6	.2	.1	.1	.1
29			.1	.1	.1	12	1.1	.5	.1	.1	.1	.1
30			.1	.1	-----	14	1.1	.5	.1	.1	.1	.1
31			.1	.1	-----	14	-----	.4	-----	.1	.1	-----
TOTAL	0	0	1.1	7.7	2.9	106.2	223.8	44.0	6.7	3.5	3.1	1.7
MEAN	0	0	0.04	0.25	0.10	3.43	7.46	1.42	0.22	0.11	0.10	0.06
AC-FT	0	0	2.2	15	5.8	211	444	87	13	6.9	6.1	3.4
MAX	0	0	0.1	4.2	0.1	14	63	6.7	0.4	0.2	0.2	0.1
MIN	0	0	0	0	0.1	0.1	1.1	0.4	0.1	0.1	0	0

CALENDAR YEAR 1963 MAX 4.8 MIN 0 MEAN 0.12 AC-FT 91

WATER YEAR 1963-64 MAX 63 MIN 0 MEAN 1.10 AC-FT 794

Peak discharge (base, 100 cfs).--Apr. 1 (1145 hrs) 117 cfs (6.17 ft).

SAN LUIS REY RIVER BASIN

11-350. San Luis Rey River at Lake Henshaw, near Mesa Grande, Calif.

Location.--Lat 33°14'20", long 116°45'43", in Valle de San Jose Grant, at Henshaw Dam, 4 miles north of Mesa Grande, San Diego County.Drainage area.--206 sq mi.Records available.--October 1922 to September 1964. October 1911 to September 1922 at site 1 mile downstream published as "near Mesa Grande"; records not equivalent owing to change in natural water losses resulting from creation of Lake Henshaw. Monthly net runoff only October to December 1922, published in WSP 1315-B.Gage.--Staff gage read once daily. Datum of gage is 2,620 ft above mean sea level. Prior to June 14, 1912, staff gage at same site at different datum. June 14, 1912, to Oct. 7, 1922, water-stage recorder at site 1 mile downstream at different datum.Average discharge.--11 years (1911-22), 59.6 cfs (43,160 acre-ft per year), below damsite; 42 years (1922-64), 25.6 cfs (18,520 acre-ft per year), discharge at Lake Henshaw, exclusive of 90 percent of precipitation on lake surface; median of yearly mean discharges, 15 cfs (10,700 acre-ft per year).Remarks.--Records of net discharge represent all water reaching Lake Henshaw, exclusive of 90 percent of rainfall on water surface of lake and supplemental water obtained by pumping ground water from lake bed. Net discharge computed on basis of records of storage, release (draft), spill, leakage, evaporation, precipitation, and ground-water pumpage. Monthly evaporation from lake surface computed on basis of evaporation from a floating pan using a coefficient of 0.87, except during periods when winds swamp the floating pan. Net evaporation for these periods is computed on basis of Colorado land pan using coefficient of 0.80. Storage began on Oct. 7, 1922. Area and capacity tables for lake are based on resurvey made in October 1951. Capacity of lake at spillway level (gage height, 107.00 ft), 194,300 acre-ft. No dead storage. No flow over spillway since dam was completed. Water is released down San Luis Rey River for diversion downstream for irrigation, power, and domestic use. No diversion above Lake Henshaw.Cooperation.--Records furnished by Vista Irrigation District.

Monthly net discharge, water year October 1963 to September 1964

Month	Gage height (feet)	Contents (acre-feet)	Change in contents (acre-feet)	Draft (acre-feet)	Net evaporation (acre-feet)†	Spill plus leakage (acre-feet)	Pumped ground water (acre-feet)	Net discharge (acre-feet)
	Lake Henshaw							
Sept. 30.....	38.30	4,990	-	-	-	-	-	-
Oct. 31.....	38.83	5,370	+380	250	177	0	894	-87
Nov. 30.....	39.76	6,088	+718	19	-39	0	804	-106
Dec. 31.....	40.34	6,568	+480	14	116	0	706	-96
Calendar year 1963.....	-	-	+416	6,946	2,598	0	10,412	-452
Jan. 31.....	40.82	6,984	+416	411	-128	0	694	5
Feb. 29.....	41.00	7,145	+161	389	95	0	745	-100
Mar. 31.....	40.91	7,064	-81	1,106	-186	0	741	98
Apr. 30.....	40.80	6,967	-97	788	186	0	662	215
May 31.....	40.63	6,817	-150	632	362	0	816	28
June 30.....	40.07	6,343	-474	858	580	0	1,012	-48
July 31.....	39.38	5,787	-556	924	660	0	1,089	-61
Aug. 31.....	38.72	5,289	-498	890	566	0	1,075	-117
Sept. 30.....	38.83	5,370	+81	432	394	0	1,015	-108
Water year 1963-64.....	-	-	+380	6,713	2,783	0	10,253	-377

† During the year the amount of precipitation excluded was 1,180 acre-ft.

Note.--For months when inflow to the lake was small and other quantities were large, discordant figures of net discharge may appear. This arises primarily from the difficulty of computing net discharge as the residual of several larger quantities, which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

11-400. San Luis Rey River at Monserate Narrows, near Pala, Calif.

Location.--Lat 33°20'15", long 117°08'10", in NE $\frac{1}{4}$ sec.6, T.10 S., R.2 W., on left bank 4 miles southwest of Pala and 6 miles northeast of Bonsall.Drainage area.--373 sq mi.Records available.--December 1935 to March 1938 (fragmentary), April 1938 to November 1941, October 1946 to September 1964.Gage.--Water-stage recorder. Datum of gage is 270.82 ft above mean sea level (levels by State of California). Prior to October 1946, at same site at different datum. Oct. 22, 1946, to Nov. 30, 1954, at datum 1.0 ft higher.Average discharge.--21 years (1938-41, 1946-64), 8.08 cfs (5,850 acre-ft per year); median of yearly mean discharges, 1.8 cfs (1,300 acre-ft per year).Extremes.--No flow during year.

1935-41, 1946-64: Maximum gage height, 8.7 ft Feb. 7, 1937, datum then in use (discharge not determined); no flow at times in 1948-64.

Remarks.--No flow since Apr. 30, 1959. Flow regulated by Lake Henshaw (see above). Several diversions above station.

11-410. San Luis Rey River near Bonsall, Calif.

Location.--Lat 33°15'13", long 117°14'48", in SW¹/₄NE¹/₄ sec.1, T.11 S., R.4 W., on left bank 0.7 mile downstream from bridge on State Highway 76 and 2.8 miles southwest of Bonsall.

Drainage area.--512 sq mi.

Records available.--July 1916 to September 1918 (gage heights and discharge measurements only), October 1929 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 108.10 ft above mean sea level, datum of 1929. July 1916 to September 1918, staff gages at site 0.8 mile upstream at different datums. October 1929 to Nov. 15, 1945, water-stage recorder at present site at datum 3.44 ft higher and Nov. 16, 1945, to Sept. 16, 1946, at datum 1.44 ft higher.

Average discharge.--35 years (1929-64), 20.0 cfs (14,480 acre-ft per year); median of yearly mean discharges, 5.0 cfs (3,600 acre-ft per year).

Extremes.--Maximum discharge during year, 4.9 cfs Nov. 21 (gage height, 4.37 ft); no flow for most of year.

1929-64: Maximum discharge, 18,100 cfs Mar. 3, 1938 (gage height, 12.60 ft, datum then in use), from rating curve extended above 2,400 cfs; no flow for part of each year.

Remarks.--Records poor. Flow regulated by Lake Henshaw (see preceding page). Several diversions above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 21.....0.2

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	0.2	0.2	0	0.007	0.4
Calendar year 1963.....	-	.2	0	.0005	.4
Water year 1963-64.....	-	.2	0	.0005	.4

Note.--Flow occurred only on day listed above.

11-420. San Luis Rey River at Oceanside, Calif.

Location.--Lat 33°12'48", long 117°22'33", in SW¹/₄SE¹/₄SW¹/₄ sec.14, T.11 S., R.5 W., on right bank 0.7 mile upstream from bridge on U.S. Highway 101, 1.1 miles upstream from mouth, and 1.2 miles north of Oceanside.

Drainage area.--557 sq mi.

Records available.--April 1912 to September 1914 (published as "near Oceanside"), January 1916, October 1929 to January 1942, October 1946 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 20 ft (from topographic map). April 1912 to September 1914, staff gage at site three-quarters of a mile upstream at different datum. January 1916, staff gage a quarter of a mile downstream at different datum.

Average discharge.--32 years (1912-14, 1929-41, 1946-64), 16.7 cfs (12,090 acre-ft per year); median of yearly mean discharges, zero.

Extremes.--No flow during year.

1912-14, 1916, 1929-42, 1946-64: Maximum discharge, 95,600 cfs Jan. 27, 1916, from hydrograph based on discharge measurements; no flow for several months in each year.

Remarks.--No flow since Apr. 13, 1958. Flow regulated by Lake Henshaw (see preceding page). Several diversions for irrigation and domestic use above station. Average discharge represents flow to ocean during period of record, regardless of upstream development.

SANTA MARGARITA RIVER BASIN

11-424. Temecula Creek near Aguanga, Calif.

Location.--Lat 33°27'33", Long 116°55'22", in NE 1/4 SW 1/4 sec. 19, T. 8 S., R. 1 E., on right bank, 1.6 miles downstream from Long Canyon, and 3.5 miles northwest of Aguanga.

Drainage area.--131 sq mi.

Records available.--August 1957 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,590 ft (from topographic map).

Average discharge.--7 years, 2.60 cfs (1,880 acre-ft per year).

Extremes.--Maximum discharge during year, 86 cfs Mar. 23 (gage height, 2.35 ft); no flow Oct. 1 to Nov. 14, June 23 to Sept. 30.
1957-64: Maximum discharge, 3,540 cfs Apr. 3, 1958 (gage height, 6.57 ft), from rating curve extended above 800 cfs; no flow for several months each year.

Remarks.--Records good. No regulation above station. Pumping for irrigation above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 29 to Jan. 23, Mar. 26 to Apr. 7, May 25 to July 9)

0.7	0	1.2	3.2
.8	.1	1.3	5.2
.9	.4	1.4	8.0
1.0	.9	1.5	12
1.1	1.8	1.8	32

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	(*)	0	0.1	0.1	1.0	1.1	* 1.2	1.4	* 0.2			
2		0	* .1	.1	.9	* 1.2	2.0	1.4	.2			
3		0	.1	* .1	* .9	1.5	9.6	1.3	.1		(*)	
4		0	.1	.1	.8	1.1	6.5	1.4	.1			(*)
5		* 0	.1	.1	.8	1.1	5.0	1.5	.1			
6		0	.1	.1	.8	1.1	4.0	1.6	.1	(*)		
7		0	.1	.1	.7	1.0	3.5	2.3	.1			
8		0	.1	.1	.7	1.0	3.2	2.1	.1			
9		0	.1	.1	.7	.9	3.0	1.8	.1			
10		0	.1	.1	.7	.9	2.6	1.5	.1			
11		0	.1	.1	.7	.9	2.3	1.5	.1			
12		0	.1	.1	.7	.9	2.2	1.3	.1			
13		0	.1	.1	.7	.9	2.1	1.3	.1			
14		0	.1	.2	.7	.9	2.0	1.2	.1			
15		.1	.1	* .2	.7	.9	2.0	* 1.1	.1			
16		.1	.1	.2	.9	.9	* 1.8	1.1	.1			
17		.1	* .1	* .2	* 1.1	* .8	1.8	1.1	.1			
18		.1	.1	* .2	.9	.8	1.8	1.0	.1			
19		.1	.1	.2	.8	.8	1.8	.9	.1			
20		.2	.1	.2	.8	.8	2.0	.9	.1			
21		.1	.1	.4	.8	.8	1.8	.7	.1			
22		.1	.1	8.0	.8	1.2	1.7	.6	* .1	(*)		
23		.1	.1	6.0	.8	* 2.8	1.7	.6	0			
24		.1	.1	3.0	.8	* 2.4	1.7	.5	0		(*)	
25		.1	.1	2.2	.8	8.7	1.7	.4	0			
26		* .1	.1	1.7	.8	5.7	1.5	.4	0			
27		.1	.1	1.5	.8	4.7	1.5	.3	0			
28		.1	.1	1.4	.8	4.7	1.5	.3	0			
29		.1	.1	1.3	1.1	4.2	1.5	.2	0			
30		.1	.1	1.1	-----	3.7	* 1.5	.2	0			
31		-----	.1	1.1	-----	3.3	-----	.2	-----			
Total	0	1.7	3.1	30.4	23.5	108.5	105.3	32.1	2.4	0	0	0
Mean	0	0.06	0.10	0.98	0.81	3.50	3.51	1.04	0.08	0	0	0
Max	0	0.2	0.1	8.0	1.1	28	20	2.3	0.2	0	0	0
Min	0	0	0.1	0.1	0.7	0.8	1.5	0.2	0	0	0	0
Ac-ft	0	3.4	6.1	60	47	215	209	64	4.8	0	0	0

Calendar year 1963: Max 11 Min 0 Mean 0.31 Ac-ft 227
Water year 1963-64: Max 28 Min 0 Mean 0.84 Ac-ft 609

Peak discharge (base, 50 cfs).--Mar. 23 (0400 hrs) 86 cfs (2.35 ft).

*Discharge measurement or observation of no flow made on this day.

11-425. Temecula Creek at Vail Dam, Calif.

Location.--Lat 33°29'44", long 116°58'33", in Pauba Grant, at Vail Dam 0.2 mile downstream from Arroyo Seco, and 10 miles east of Temecula, Riverside County.

Drainage area.--320 sq mi.

Records available.--October 1948 to September 1964. January 1923 to October 1930 at site 200 ft downstream and October 1930 to September 1948 at site 500 ft downstream, published as "at Nigger Canyon, near Temecula"; records not equivalent owing to change in natural water loss resulting from creation of Vail Lake. October 1948 to September 1951, published as "at Nigger Canyon, near Temecula"; records are for draft and spill only from Vail Lake. October 1951 to September 1955, published as "at Vail Dam, near Temecula."

Gage.--Water-stage recorder with rain-gage attachment. Datum of gage is 1,350.0 ft above mean sea level (levels by Bureau of Reclamation). Water-stage recorder at site 500 ft downstream measures release and spill.

Average discharge.--25 years (1923-48), 14.5 cfs (10,500 acre-ft per year); median of yearly mean discharges, 8.3 cfs (6,010 acre-ft per year), see records available; 16 years (1948-64), 4.12 cfs (2,980 acre-ft per year); median of yearly mean discharges, 2.1 cfs (1,500 acre-ft per year).

Remarks.--Records of discharge represent all water reaching Vail Lake, including precipitation on lake surface. Discharge computed on basis of records of storage, release (draft), spill, and evaporation. Monthly evaporation from lake surface, computed on basis of evaporation from a circular, screened ground pan using coefficient of 0.98. Prior to June 1964, a Colorado land pan with a coefficient of 0.77 was used. Area-capacity tables for lake are based on a survey made in 1947. Vail Dam completed in June 1949. Capacity of lake at spillway level (gage height, 120.00 ft), 49,370 acre-ft. Dead storage, 2.4 acre-ft below lowest outlet at gage height 2.5 ft included in these records. Water is released down Temecula Creek for diversion about 1 mile below dam as required. Monthly precipitation in inches is as follows: October, 0.4; November, 0.7; January, 0.1; February, 0.4; March, 1.3; April, 0.2; May, 0.1; the water year, 3.2.

Monthly discharge, water year October 1963 to September 1964

Month	Elevation (feet)†	Contents (acre- feet)	Change in contents (acre- feet)	Draft (acre- feet)	Evapo- ration (acre- feet)	Discharge (acre- feet)
	Vail Lake					
Sept. 30.....	1,384.35	1,585	-	-	-	-
Oct. 31.....	1,384.22	1,569	-16	0	40	24
Nov. 30.....	1,384.32	1,582	+13	0	18	31
Dec. 31.....	1,384.38	1,589	+7	0	37	44
Calendar year 1963.....	-	-	-17	0	632	615
Jan. 31.....	1,384.68	1,627	+38	0	19	57
Feb. 29.....	1,384.88	1,653	+26	0	32	58
Mar. 31.....	1,385.80	1,774	+121	0	34	155
Apr. 30.....	1,386.08	1,812	+38	0	46	84
May 31.....	1,385.96	1,796	-16	0	56	40
June 30.....	1,385.53	1,738	-58	0	113	55
July 31.....	1,384.88	1,653	-85	0	124	39
Aug. 31.....	1,384.22	1,569	-84	0	119	35
Sept. 30.....	1,383.79	1,516	-53	0	88	35
Water year 1963-64.....	-	-	-69	0	726	657

† Elevation at 2400 hours.

a Circular, screened ground pan installed June 1.

Note.--For months when inflow to the lake was small and other quantities were large, discordant figures of discharge may appear. This arises primarily from the difficulty of computing discharge as the residual of several larger quantities, which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

SANTA MARGARITA RIVER BASIN

11-430. Murrieta Creek at Temecula, Calif.

Location.--Lat 33°28'47", long 117°08'35", in Temecula Grant, on right bank 0.4 mile upstream from mouth and 1.0 mile south of Temecula, Riverside County.

Drainage area.--222 sq mi.

Records available.--October 1924 to September 1964. Monthly discharge only October 1924 to September 1930, published in WSP 1315-B.

Gage.--Water-stage recorder and concrete low-water control since August 1962. Altitude of gage is 970 ft (from topographic map).

Prior to Jan. 6, 1931, staff gage and sharp-crested weir at site 0.4 mile downstream at different datum. Jan. 6, 1931, to Dec. 16, 1938, supplemental water-stage recorder and sharp-crested weir at site 0.4 mile downstream at different datum used to record low flows.

Average discharge.--40 years, 8.83 cfs (6,390 acre-ft per year); median of yearly mean discharges, 2.1 cfs (1,500 acre-ft per year).

Extremes.--Maximum discharge during year, 42 cfs Jan. 22 (gage height, 1.95 ft); minimum daily, 0.1 cfs for some days.

1930-64: Maximum discharge, 17,500 cfs Jan. 23, 1943 (gage height, 13.82 ft); minimum daily, 0.1 cfs for several days in some years.

Remarks.--Records good. Discharge measurements generally made twice a week. No regulation above station. Pumping above station for irrigation of about 2,500 acres.

Rating table (gage height, in feet, and discharge in cubic feet per second)
(Shifting-control method used Oct. 21-30, Jan. 22,23, Mar. 20, July 16,17, Aug 24-28)

0.2	0.1	.6	3.0
.3	.4	0.7	4.7
.4	.9	.9	10
.5	1.8	1.1	18

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.2	0.2	0.2	0.3	0.3	3.6	0.3	0.2	0.2	0.1	0.2
2	.2	.2	.2	.2	.3	.3	3.3	.3	.2	.2	.1	.2
3	.2	.2	.2	.2	.3	.3	.9	.3	.2	.2	.2	.2
4	.2	.2	.2	.2	.3	.3	.6	.3	.2	.2	.2	.2
5	.2	.2	.2	.2	.3	.3	.6	.3	.2	.2	.2	.2
6	.2	.2	.2	.2	.3	.3	.5	.3	.2	.2	.2	.2
7	.2	.2	.2	.2	.3	.4	.4	.3	.2	.2	.2	.2
8	.2	.2	.2	.2	.3	.4	.4	.3	.3	.2	.2	.2
9	.2	.2	.2	.2	.3	.4	.4	.3	.5	.2	.2	.2
10	.2	.2	.2	.2	.3	.5	.3	.3	.4	.2	.2	.2
11	.2	.2	.2	.2	.3	.4	.3	.3	.4	.2	.2	.2
12	.2	.2	.2	.2	.3	.4	.3	.2	.4	.2	.2	.2
13	.2	.2	.2	.2	.3	.6	.3	.2	.4	.2	.2	.2
14	.2	.2	.2	.2	.3	.7	.3	.2	.4	.2	.2	.2
15	.2	.2	.2	.2	.3	.7	.3	.3	.4	.2	.2	.2
16	.2	.2	.2	.2	.3	.4	.3	.3	.4	.2	.1	.2
17	.2	.2	.2	.2	.3	.4	.3	.3	.3	.2	.1	.2
18	.2	.2	.2	.2	.3	.3	.3	.3	.3	.2	.1	.2
19	.2	.2	.2	.2	.3	.3	.3	.3	.2	.2	.1	.2
20	.2	.4	.2	.2	.3	.4	.3	.3	.2	.2	.1	.1
21	.2	.2	.2	.4	.3	.4	.3	.4	.2	.2	.1	.1
22	.2	.2	.2	1.4	.3	.7	.3	.5	.2	.2	.1	.1
23	.2	.2	.2	5.0	.3	15	.3	.3	.2	.2	.1	.1
24	.2	.2	.2	1.5	.3	6.7	.3	.2	.2	.2	.1	.1
25	.2	.2	.2	.9	.3	1.9	.3	.3	.2	.2	.1	.2
26	.2	.2	.2	.6	.3	1.1	.3	.3	.2	.2	.1	.2
27	.2	.2	.2	.5	.3	.5	.3	.2	.2	.2	.1	.2
28	.2	.2	.2	.4	.3	.5	.3	.2	.2	.2	.1	.2
29	.2	.2	.2	.3	.3	.4	.3	.4	.2	.2	.1	.2
30	.2	.2	.2	.3		.4	.3	.3	.2	.2	.1	.2
31	.2		.2	.3		.4		.3		.1	.1	
Total	6.2	6.2	6.2	28.2	8.7	36.1	17.0	9.1	8.0	6.1	4.4	5.5
Mean	0.20	0.21	0.20	0.91	0.30	1.16	0.57	0.29	0.27	0.20	0.14	0.18
Max	0.2	0.4	0.2	14	0.3	15	3.6	0.5	0.5	0.2	0.2	0.2
Min	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.1	0.1	0.1
Ac-ft	12	12	.12	56	17	72	34	18	16	12	8.7	11
Calendar year 1963: Max	713			Min 0.1	Mean 2.45	Ac-ft 1,770						
Water year 1963-64: Max	15			Min 0.1	Mean 0.39	Ac-ft 281						

Location.--Lat 33°28'26", long 117°08'30", in Temecula Grant, on left bank at upper end of Temecula Canyon, 0.1 mile downstream from Murrieta Creek and 1.4 miles south of Temecula, Riverside County.

Drainage area.--588 sq mi.

Records available.--January 1923 to September 1964. Prior to October 1952, published as Temecula Creek at Railroad Canyon, near Temecula.

Gage.--Water-stage recorder. Altitude of gage is 950 ft (from topographic map).

Average discharge.--25 years (1923-48), 28.2 cfs (20,420 acre-ft per year), 16 years (1948-64), 9.24 cfs (6,690 acre-ft per year); median of yearly mean discharges (1923-48), 13 cfs (9,400 acre-ft per year); (1948-64), 5.5 cfs (4,000 acre-ft per year).

Extremes.--Maximum discharge during year, 44 cfs Jan. 22 (gage height, 2.27 ft); minimum daily, 1.5 cfs Aug. 7.
1923-64: Maximum discharge, 25,000 cfs Feb. 16, 1927 (gage height, 14.6 ft); from rating curve extended above 10,000 cfs;
minimum, 0.4 cfs July 16, 1925.

Remarks.--Records good. Discharge measurements generally made two or more times a week. Flow partly regulated since November 1948 by Vail Lake (see p. 109). Pumping above station for irrigation.

Discharge, in cubic feet per second, water year October 1963 to September 1964												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	2.2	2.8	2.8	3.0	3.3	9.5	3.2	2.6	2.4	1.8	2.8
2	2.7	2.3	2.8	2.8	3.2	3.5	9.5	3.2	2.6	3.0	1.8	2.8
3	2.7	2.3	2.8	2.8	3.2	3.3	4.4	2.8	2.6	2.6	1.8	2.8
4	2.8	2.4	2.8	2.8	3.2	3.3	4.0	2.8	2.7	2.0	1.8	2.4
5	3.2	2.4	2.8	2.8	3.2	3.3	4.0	3.0	2.8	2.0	1.6	2.3
6	2.8	2.4	2.8	2.8	3.3	3.3	4.0	3.0	2.8	2.0	1.6	2.3
7	2.8	2.4	2.8	2.8	3.5	3.3	3.8	2.8	2.8	2.0	1.5	3.0
8	2.8	2.4	2.8	2.8	3.5	3.3	3.7	2.8	3.0	2.0	1.8	2.4
9	2.8	2.4	2.8	2.8	3.5	3.5	3.5	2.8	3.0	2.0	1.9	3.0
10	3.0	2.4	2.8	3.0	3.3	3.5	3.5	2.8	3.0	1.8	2.1	2.1
11	3.3	2.4	2.8	3.0	3.3	3.5	3.5	2.8	2.6	1.6	2.1	2.0
12	3.5	2.4	2.8	3.0	3.3	3.7	3.5	2.8	2.7	2.0	2.1	2.4
13	3.5	2.4	2.8	3.0	3.3	4.0	3.5	2.8	2.6	2.0	2.0	3.0
14	3.3	2.4	2.8	3.0	3.3	3.7	3.3	2.7	2.4	1.9	2.0	3.3
15	3.3	2.4	2.8	2.8	3.3	3.7	3.2	2.7	2.4	1.9	2.1	3.2
16	3.5	2.6	2.8	2.8	3.5	3.5	3.2	2.8	2.4	1.9	2.4	2.0
17	3.5	2.7	2.7	2.8	3.3	3.2	3.3	2.7	2.6	1.9	2.4	1.9
18	3.3	2.7	2.7	3.0	3.3	3.2	3.3	2.7	2.6	1.9	2.4	2.3
19	2.7	2.7	2.7	3.0	3.3	3.2	3.5	2.7	2.3	2.0	2.4	2.3
20	2.6	4.0	2.7	3.0	3.3	3.2	3.3	2.7	2.8	2.0	2.4	2.8
21	2.6	2.8	2.7	4.5	3.3	3.0	3.3	2.7	2.6	1.9	2.5	2.4
22	2.6	2.7	2.7	2.0	3.3	4.8	3.2	2.7	2.3	1.9	2.6	2.0
23	2.6	2.7	2.7	1.0	3.3	1.7	3.2	2.6	2.7	1.9	2.1	1.8
24	2.6	2.7	2.7	4.8	3.3	1.2	3.0	2.6	2.0	1.9	2.5	1.8
25	2.6	2.7	2.7	4.0	3.3	6.4	3.2	2.4	1.9	2.0	2.3	2.0
26	2.6	2.7	2.7	4.0	3.3	4.4	3.2	2.4	2.0	2.0	2.1	2.4
27	2.6	2.8	2.7	3.3	3.2	4.2	3.2	2.4	2.1	2.1	2.1	2.7
28	2.6	2.8	2.7	3.2	3.2	3.8	3.2	2.4	2.4	2.1	2.2	2.7
29	2.6	2.8	2.7	3.2	3.3	3.7	3.2	2.6	2.6	2.1	2.7	1.7
30	2.6	2.8	2.7	3.0	-----	3.5	3.2	2.6	2.8	2.1	2.7	2.4
31	2.4	-----	2.7	3.0	-----	3.4	-----	2.6	-----	1.9	2.7	-----
Total	89.1	77.8	85.3	120.6	95.6	134.7	115.4	84.6	76.7	62.8	66.5	73.0
Mean	2.87	2.59	2.75	3.89	3.30	4.35	3.85	2.73	2.56	2.03	2.15	2.43
Max	3.5	4.0	2.8	20	3.5	17	9.5	3.2	3.0	3.0	2.7	3.3
Min	2.4	2.2	2.7	2.8	3.0	3.0	3.0	2.4	1.9	1.6	1.5	1.7
Ac-ft	177	154	169	239	190	267	229	168	152	125	132	145
Calendar year 1963:	Max	724	Min	1.8	Mean	5.18	Ac-ft	3,				

SANTA MARGARITA RIVER BASIN

11-445. Santa Margarita River near Fallbrook, Calif.

Location.--Lat 33°25'54", long 117°15'44", in NE 1/4 SE 1/4 NE 1/4 sec. 14, T.9.S., R.4.W., on right bank 180 ft upstream from De Luz Road, 1.3 miles northwest of Fallbrook, and 1.9 miles downstream from Sandia Canyon.

Drainage area.--644 sq mi.

Records available.--October 1924 to September 1964. Monthly discharge only for October to November 1924, published in WSP 1315-B.

Gage.--Water-stage recorder and concrete-road control since October 1955. Altitude of gage is 280 ft (from topographic map). Prior to Oct. 1, 1955, at site 1.7 miles upstream at different datum. Records equivalent except those for extreme low flows.

Average discharge.--24 years (1924-48), 35.4 cfs (25,630 acre-ft per year), 16 years (1948-64), 9.61 cfs (6,960 acre-ft per year); median of yearly mean discharges (1924-48), 17 cfs (12,300 acre-ft per year); (1948-64), 4.7 cfs (3,400 acre-ft per year).

Extremes.--Maximum discharge during year, 39 cfs Jan. 22 (gage height, 2.67 ft); no flow July 14 to Sept. 30, 1924-64; Maximum discharge, 33,100 cfs Feb. 16, 1927 (gage height, 15.6 ft, site and datum then in use), from rating curve extended above 8,800 cfs on basis of slope-area measurement of maximum flow; no flow at times during recent years.

Remarks.--Records good. Flow partly regulated since November 1948 by Vail Lake (see p. 109). Several small diversions above station for irrigation. The Fallbrook Public Utility District pumped 201 acre-ft of water from a well in the stream bed 2.1 miles upstream from the station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 31 to Nov. 20, Dec. 3 to Jan. 17)

2.0	0	2.3	5.5
2.1	.5	2.4	10
2.2	2.2	2.6	26

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	0.3	2.2	2.8	4.7	3.0	* 8.2	3.3	* 1.2	0.8		
2	1.2	.3	4.5	* 2.8	4.7	* 2.2	9.8	3.3	1.2	.7		
3	1.6	.3	2.5	2.8	3.6	3.3	8.8	3.3	1.2	.7		
4	1.8	* .4	.8	2.8	* 2.8	4.3	6.8	* 3.3	1.2	.7		
5	1.8	.4	1.8	2.8	4.0	4.4	6.4	3.6	1.2	.7		
6	1.8	.4	* 1.0	2.8	4.0	4.4	5.9	4.0	1.2	* .7		
7	* 1.8	.5	.8	3.0	4.0	4.4	5.5	4.0	1.2	.7		
8	1.0	.5	.7	3.0	4.0	4.0	5.1	3.6	1.4	.7		
9	.7	.5	.8	3.0	4.0	4.0	4.7	3.6	1.6	.6		
10	.7	.5	2.2	3.3	4.0	4.4	4.4	3.3	1.6	.4		
11	.7	.5	2.0	3.3	4.0	4.4	4.0	3.6	1.6	.3		
12	.7	.5	2.2	3.3	4.0	4.4	3.6	2.5	1.6	.2		
13	.6	.5	2.5	3.3	4.0	4.7	3.0	* 1.0	1.6	.1		
14	.6	.5	1.6	3.3	4.0	4.4	2.2	1.4	1.6	0		
15	.6	* .7	2.0	5.6	4.0	4.4	3.3	1.6	1.6	0		
16	.6	.8	* 2.5	5.9	4.0	* 4.4	3.3	1.2	1.6	0		
17	.6	.8	1.2	* 4.2	4.0	4.4	* 3.3	1.0	1.4	* 0		
18	.6	.6	1.0	3.6	4.0	4.4	3.6	1.0	1.4	0		
19	.7	.6	.8	3.6	4.0	4.4	3.6	.8	* 1.4	0		
20	1.8	4.8	2.5	3.6	* 4.0	4.4	4.0	.8	1.2	0		
21	* 1.8	6.8	2.5	5.1	4.0	4.4	4.0	.8	1.0	0		
22	.8	* 4.4	2.5	* 1.3	4.4	4.7	4.0	.8	1.0	0		
23	.7	3.3	2.5	* 2.2	4.0	7.2	4.0	.8	1.0	0		
24	.6	3.0	2.8	1.2	4.7	* 1.4	4.0	.8	.8	0		
25	.5	2.8	2.8	8.2	4.0	1.0	4.0	.8	.8	0		
26	.3	2.5	2.8	6.8	3.3	7.2	3.6	.8	.8	0		
27	.3	2.5	2.8	5.9	3.3	6.4	3.3	.8	.7	0		
28	.3	2.5	2.8	5.1	3.3	5.5	3.3	.7	.5	0		
29	.3	2.5	2.8	5.1	3.3	5.5	3.6	.7	1.0	0		
30	.3	2.2	2.8	5.1	-----	5.5	3.3	.7	1.2	0		
31	.3	-----	2.8	4.7	-----	5.1	-----	.8	-----	* 0		
Total	26.6	46.9	65.5	151.8	114.1	158.2	136.6	58.7	36.8	7.3	0	0
Mean	0.86	1.56	2.11	5.22	3.93	5.10	4.55	1.89	1.23	0.24	0	0
Max	1.8	6.8	4.5	22	4.7	14	9.8	4.0	1.6	0.8	0	0
Min	0.3	0.3	0.7	2.8	2.8	2.2	2.2	0.7	0.5	0	0	0
Ac-ft	53	93	130	321	226	314	271	116	73	14	0	0
Calendar year 1963: Max 689 Min 0.2 Mean 4.83 Ac-ft 3,500												
Water year 1963-64: Max 22 Min 0 Mean 2.22 Ac-ft 1,610												

*Discharge measurement or observation of no flow made on this day.

11-446. Santa Margarita River tributary near Fallbrook, Calif.

Location.--Lat 33°24'39", long 117°16'45", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.10, T.9 S., R.4 W., on left bank at culvert on DeLuz Road, 2.5 miles north-west of Fallbrook.

Drainage area.--0.52 sq mi.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder with rain gage attachment, crest-stage gage, and concrete-pipe culvert control. Altitude of gage is 750 ft (from topographic map).

Extremes.--Maximum discharge during year, 2.3 cfs Jan. 22 (gage height, 2.12 ft), by indirect measurement of maximum flow through culvert; no flow for most of year.
1961-64: Maximum discharge, that of Jan. 22, 1964; no flow for most of each year.

Remarks.--Records poor. No regulation or diversion above station. Monthly precipitation, in inches, is as follows: October, 0.1; November, 4.2; January, 3.6; March, 2.7; April, 0.9; May, 0.6; June, 0.6; the water year, 13.3.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 20.... 0.2	Mar. 22....*0.1
Jan. 21.... .1	23.... .2
22....* .2	24....* .1

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	0.2	0.2	0	0.007	0.4
January 1964.....	.3	.2	0	.01	.6
March.....	.4	.2	0	.01	.8
Calendar year 1963.....	-	.2	0	.002	1.4
Water year 1963-64.....	-	.2	0	.002	1.8

*Discharge measurement or observation of no flow made on this day.
Note.--Flow occurred only on days listed above.

11-449. De Luz Creek near Fallbrook, Calif.

Location.--Lat 33°22'10", long 117°19'15", in NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec 29, T.9 S., R.4 W., on left bank 0.65 mile upstream from mouth and 4.2 miles west of Fallbrook.

Drainage area.--47.5 sq mi.

Records available.--February 1951 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 150 ft (from topographic map). Prior to Dec. 23, 1958, at site 750 ft upstream at same datum.

Average discharge.--13 years, 4.72 cfs (3,420 acre-ft per year); median of yearly mean discharges, 0.8 cfs (580 acre-ft per year).

Extremes.--Maximum discharge during year, 45 cfs Jan. 22 (gage height, 5.71 ft); no flow for most of year.
1951-64: Maximum discharge, 2,800 cfs Apr. 1, 1958 (gage height, 9.95 ft, at present site, from floodmarks), from rating curve extended above 300 cfs on basis of slope-area measurement of maximum flow; no flow for several months of each year.

Remarks.--Records good. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964.

Nov. 20..... *1.5
Jan. 21..... *2.6
22..... *9.3

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	1.5	1.5	0	0.05	3.0
January 1964.....	11.9	9.3	0	.38	24
Calendar year 1963.....	-	4.0	0	.02	18
Water year 1963-64.....	-	9.3	0	.04	27

Peak discharge (base, 200 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--Flow occurred only on days listed above.

SANTA MARGARITA RIVER BASIN

11-460. Santa Margarita River at Ysidora, Calif.

Location.--Lat 33°14'38", long 117°22'56", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.3, T.11 S., R.5 W., on right bank 1 mile downstream from Ysidora and about 2.5 miles upstream from mouth.

Drainage area.--739 sq mi.

Records available.--February 1923 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 10 ft (from topographic map). Prior to Feb. 16, 1927, at site 1 mile upstream at different datum (destroyed by flood). Feb. 16, 1927, to Feb. 1, 1931, no gage in operation; records based on discharge measurements. Feb. 2, 1931, to Nov. 27, 1935, at same site at datum 1.00 ft higher.

Average discharge.--41 years, 28.6 cfs (20,710 acre-ft per year); median of yearly mean discharges, 7.8 cfs (5,600 acre-ft per year).

Extremes.--No flow during year.

1923-64: Maximum discharge, 33,600 cfs Feb. 16, 1927, on basis of slope-area measurement of maximum flow; no flow for part of most years.

Remarks.--No flow since June 1, 1958. Flow partly regulated by Vail Lake since November 1948 (see p.109). Diversions for irrigation on Santa Margarita Ranch and Pauba Ranch. Average discharge represents flow to ocean during period of record, regardless of upstream development.

LAS FLORES CREEK BASIN

11-461. Las Flores Creek near Oceanside, Calif.

Location.--Lat 33°17'32", long 117°27'21", in NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.24, T.10 S., R.6 W., on upstream side and at center of bridge on Atchison, Topeka and Santa Fe Railway, 0.5 mile upstream from mouth and 8.5 miles northwest of Oceanside.

Drainage area.--26.6 sq mi.

Records available.--May 1951 to September 1964.

Gage.--Water-stage recorder and multiple concrete culvert control. Altitude of gage is 35 ft (from topographic map).

Average discharge.--13 years, 0.75 cfs (543 acre-ft per year); median of yearly mean discharges, 0.3 cfs (220 acre-ft per year).

Extremes.--Maximum discharge during year, 102 cfs Nov. 20 (gage height, 0.88 ft); no flow for most of year.

1951-64: Maximum discharge, 960 cfs Jan. 16, 1952 (gage height, 4.75 ft), based on critical-depth determination of maximum flow; no flow for most of each year.

Remarks.--Records fair. Rising water from area, which bypasses the station 1,000 ft to the northwest, amounted to 26 acre-ft this year. No regulation above station. Some pumping above station for irrigation.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 20.....* 8.4
 21.....2.1
 Jan. 22.....3.6
 Sept. 24.....4.1

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	10.5	8.4	0	0.35	21
January 1964.....	3.6	3.6	0	.12	7.1
September.....	4.1	4.1	0	.14	8.1
Calendar year 1963.....	-	8.4	0	.04	26
Water year 1963-64.....	-	8.4	0	.05	36

* Discharge measurement made on this day.

Note.--Flow occurred only on days listed above.

11-462. San Onofre Creek near San Onofre, Calif.

Location.--Lat 33°23'23", long 117°30'50", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.16, T.9 S., R.6 W., on left bank 0.3 mile southwest of Tent Camp No. 2, 0.5 mile downstream from ford on Basillone Road, 4 miles east of San Onofre, and 5 miles upstream from mouth.

Drainage area.--34.6 sq mi.

Records available.--October 1950 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 170 ft (from topographic map). Prior to June 22, 1957, at datum 1.00 ft higher. June 22, 1957, to Oct. 7, 1960, at site 50 ft upstream at same datum.

Average discharge.--14 years, 2.30 cfs (1,670 acre-ft per year); median of yearly mean discharges, 0.4 cfs (290 acre-ft per year).

Extremes.--Maximum discharge during year, 131 cfs Jan. 22 (gage height, 2.14 ft); no flow for most of year. 1950-64: Maximum discharge, 2,680 cfs Apr. 1, 1958 (gage height, 5.90 ft), from rating curve extended above 200 cfs on basis of maximum flows for station at San Onofre; no flow for several months in each year.

Remarks.--Records good. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 20.....* 12	Jan. 25..... 0.2	Apr. 1.....* 0.1
21..... * 1.9	26..... .1	5..... .1
Jan. 14..... .3	27..... .1	24..... .1
21..... * 6.3	28..... .1	May 5..... .1
22..... 22	Mar. 23.....* .9	6..... .2
23..... .2	24..... .5	7..... .1
24..... * .2		

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	13.9	12	0	0.46	28
January 1964.....	29.5	22	0	.95	59
March.....	1.4	.9	0	.05	2.8
April.....	.3	.1	0	.01	.6
May.....	.4	.2	0	.01	.8
Calendar year 1963.....	-	30	0	.25	180
Water year 1963-64.....	-	22	0	.12	91

Peak discharge (base, 150 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

Note.--Flow occurred only on days listed above.

11-462.5. San Onofre Creek at San Onofre, Calif.

Location.--Lat 33°23'00", long 117°34'22", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.14, T.9 S., R.7 W., on left bank 0.2 mile north of San Onofre, 0.3 mile upstream from U.S. Highway 101, and 0.5 mile upstream from mouth.

Drainage area.--42.2 sq mi.

Records available.--October 1946 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 15 ft (from topographic map).

Average discharge.--18 years, 1.18 cfs (854 acre-ft per year); median of yearly mean discharges, 0.01 cfs (7.2 acre-ft per year).

Extremes.--No flow during year.

1946-64: Maximum discharge, 2,600 cfs Apr. 1, 1958 (gage height, 6.90 ft); no flow for most or all of each year.

Remarks.--No flow since Mar. 17, 1963. No regulation above station. Pumping above station for irrigation and water supply. Discharge for the calendar year 1963 is as follows: maximum daily, 5.9 cfs; minimum, zero; mean 0.03 cfs; total, 25 acre-ft.

SAN MATEO CREEK BASIN

11-463. San Mateo Creek near San Clemente, Calif.

Location.--Lat 33°28'15", long 117°28'20", in SE 1/4 sec. 23, T.8 S., R.6 W., on left bank 0.4 mile downstream from mouth of Devil Canyon and 8.6 miles northeast of San Clemente.

Drainage area.--80.8 sq mi.

Records available.--October 1952 to September 1964.

Gage.--Water-stage recorder with rain-gage attachment. Altitude of gage is 405 ft (from topographic map).

Average discharge.--12 years, 5.81 cfs (4,210 acre-ft per year); median of yearly mean discharges, 1.8 cfs (1,300 acre-ft per year).

Extremes.--Maximum discharge during year, 55 cfs Jan. 22 (gage height, 5.34 ft, from outside gage); no flow Oct. 1 to Nov. 19, Nov. 21 to Jan. 18, May 26 to Sept. 30.

1952-64: Maximum discharge, 4,800 cfs Apr. 1, 1958 (gage height, 9.10 ft), from rating curve extended above 2,000 cfs; no flow for several months in each year.

Remarks.--Records poor. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0		0	0.4	0.7	* 9.4	0.4				
2		0		0	.4	.9	10	.4	(*)			
3		0		0	.4	.8	4.2	.4				
4		0		0	.4	.7	2.6	* .4			(*)	
5		0		0	.4	.6	2.2	.7				
6		0		0	.3	* .6	2.0	.6				
7		0		0	.3	.6	1.7	.7				
8		0		0	.3	.5	1.4	.6				
9		0		* 0	.3	.5	1.2	.4				
10		0		0	.3	.5	1.1	.4				
11		0		0	.3	.5	1.0	.3				
12		0		0	.3	a .5	.9	.3				
13		* 0	(*)	0	.3	a .5	.8	.3				
14		0		0	.3	a .5	.7	.2				
15		0		0	.3	a .5	.6	.2				
16		0		0	.5	a .5	.5	.2				
17		0		0	* .4	a .5	.6	.2				
18		0		0	.4	a .5	.6	* .2				
19		a 1		.1	.4	a .5	.6	.2				
20				.1	.5	a .5	.6	.2				
21		* 0		* 7.3	.6	a .5	.6	.2				
22	(*)	0		15	.6	a .7	.5	.2				
23		0		4.0	.6	* 16	.5	.2				
24		0		* 1.9	.6	* 20	.5	.1				
25		0		1.4	.7	5.2	.5	.1			(*)	
26		0		1.0	.7	* 3.4	.5	0				
27		0		.9	.7	2.8	.5	0				
28		0		.8	.6	2.5	.5	0				
29		0		.6	.9	2.4	.5	0				
30		0		.6		2.2	.4	0	(*)			
31				.5		2.2		0				
Total	0	1	0	34.2	13.2	59.3	47.7	8.1	0	0	0	0
Mean	0	0.03	0	1.10	0.46	2.24	1.59	0.26	0	0	0	0
Max	0	1	0	15	0.9	20	10	0.7	0	0	0	0
Min	0	0	0	0	0.3	-	0.4	0	0	0	0	0
Ac-ft	0	2	0	68	26	137	95	16	0	0	0	0
(†)	0.21	2.22	0.05	1.57	0.54	1.58	0.52	0.41	0.12	0	0	0.10

Calendar year 1963: Max 91 Min 0 Mean 0.69 Ac-ft 501

Water year 1963-64: Max 20 Min 0 Mean 0.47 Ac-ft 344

Peak discharge (base, 200 cfs)---No peak above base.

* Discharge measurement or observation of no flow made on this day.

a No gage-height record.

† Precipitation, in inches.

11-463.5. Cristianitos Creek near San Clemente, Calif.

Location.--Lat 33°26'57", long 117°34'13", in SW¼NW¼ sec.25, T.8 S., R.7 W., on right bank 900 ft downstream from Talenga Canyon, 2.3 miles upstream from mouth, and 2.8 miles northeast of San Clemente.

Drainage area.--29.0 sq mi.

Records available.--October 1950 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 165 ft (from topographic map). Prior to Sept. 19, 1952, at datum 3.92 ft higher.

Average discharge.--14 years, 1.49 cfs (1,080 acre-ft per year); median of yearly mean discharges, 0.4 cfs (290 acre-ft per year).

Extremes.--Maximum discharge during year, 69 cfs Mar. 23 (gage height, 4.72 ft); no flow for most of year.

1950-64: Maximum discharge, 1,800 cfs Jan. 16, 1952 (gage height, 8.86 ft, present datum), from rating curve extended above 360 cfs on basis of slope-area measurement of maximum flow; no flow for several months in each year.

Remarks.--Records fair. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 20.....*	2.8	Mar. 22.....	0.3
21.....*	.1	23.....*	6.6
Jan. 21.....*	.1	24.....*	1.2
22.....*	3.8		

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	2.9	2.8	0	0.10	5.8
January 1964.....	3.9	3.8	0	.13	7.7
March.....	8.1	6.6	0	.26	16
Calendar year 1963.....	-	125	0	.49	352
Water year 1963-64.....	-	6.6	0	.04	30

Peak discharge (base, 100 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--Flow occurred only on days listed above.

11-463.7. San Mateo Creek at San Onofre, Calif.

Location.--Lat 33°23'46", long 117°35'21", in NW¼NW¼ sec.14, T.9 S., R.7 W., on right bank 0.3 mile upstream from U.S. Highway 101, 0.8 mile upstream from mouth, 1.3 miles northwest of San Onofre, and 2.25 miles downstream from Cristianitos Creek.

Drainage area.--132 sq mi.

Records available.--October 1946 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 20 ft (from topographic map).

Average discharge.--18 years, 4.48 cfs (3,240 acre-ft per year); median of yearly mean discharges, 0.02 cfs (14 acre-ft per year).

Extremes.--No flow during year.

1946-64: Maximum discharge, 4,650 cfs Apr. 1, 1958 (gage height, 5.62 ft); no flow for all or several months in each year.

Remarks.--No flow since Mar. 27, 1962. Minor flows regulated by percolation basins. No diversion above station.

SAN JUAN CREEK BASIN

11-465. San Juan Creek near San Juan Capistrano, Calif.

Location.--Lat 33°31'08", long 117°37'27", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 32, T.7 S., R.7 W., on right pier of bridge on State Highway 74, 2.5 miles northeast of San Juan Capistrano.

Drainage area.--106 sq mi.

Records available.--October 1928 to September 1964. Combined records of creek and diversion, October 1954 to September 1964.

Gage.--Water-stage recorder on creek; water-stage recorder and Parshall flume on diversion. Altitude of gage is 150 ft (from topographic map). Prior to Feb. 28, 1934, at site $2\frac{1}{2}$ miles downstream at different datum. Feb. 28, 1934, to Dec. 10, 1938, at present site at different datum. Dec. 11, 1938, to Dec. 17, 1941, at present site at datum 2.00 ft higher.

Average discharge (creek only).--36 years, 11.6 cfs (8,400 acre-ft per year); median of yearly mean discharges, 2.5 cfs (1,800 acre-ft per year).
(combined).--10 years, 7.05 cfs (5,100 acre-ft per year); median of yearly mean discharges, 3.0 cfs (2,200 acre-ft per year).

Extremes (creek only).--Maximum discharge during year, 13 cfs Nov. 21 (gage height, 1.82 ft); no flow July 3 to Sept. 30.
1929-64: Maximum discharge, 13,000 cfs Mar. 2, 1938, slope-area measurement, by Corps of Engineers; no flow at times in most years.
(combined).--Maximum discharge during year, 13 cfs Nov. 21; no flow July 3-28, Aug. 5-26, Aug. 30 to Sept. 23, Sept. 26-30.
1954-64: Maximum discharge, 3,920 cfs Mar. 16, 1958; no flow for many days in 1961-64.

Remarks.--Records good. No regulation above station. See following page for records of combined discharge of creek and Capistrano Water Co.'s canal, which diverts 500 ft upstream from station.

Cooperation.--Nineteen discharge measurements furnished by Orange County Flood Control District.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	* 0.2	2.2	1.3	0.4	0.9	0.3	* 0.7	0.3	0.3	* 0.1		
2	.3	2.2	1.3	.4	.9	.3	.7	.3	.3	.1		
3	* .4	2.2	* 1.2	.4	.9	* .3	.5	.3	.3	0		(*)
4	.3	2.2	1.2	.3	* .9	.3	.5	.2	.3	0		
5	.2	2.2	1.0	.3	.9	.3	.5	* .2	.3	0		
6	.2	2.4	1.0	.3	.8	.3	.4	.2	.3	0		
7	.2	2.6	1.0	.3	.4	.3	* .6	.2	.3	0		
8	* .2	2.4	1.0	.3	.2	.3	.8	.2	.3	0		
9	.2	2.4	1.0	.3	.2	.3	.4	.2	.3	0		
10	.2	2.4	.9	.3	.2	* .3	.4	.2	.3	0		
11	.1	2.4	.9	.4	* .3	.3	.4	.2	.3	0		
12	.1	2.4	.9	.4	* .3	.3	.4	* .2	.3	0		
13	.1	2.4	.9	.4	.3	.3	.4	.2	.2	0		
14	.1	2.4	.9	* .4	.3	.2	* .5	.3	.2	* 0		
15	* .1	2.4	.9	.4	.4	.2	.5	* .3	* .2	* 0		
16	.2	2.4	.9	.3	.4	.2	.5	.3	* .2	* 0		
17	.3	2.4	.9	.4	.4	* .2	.6	.3	.2	0		
18	.6	2.4	.8	.4	* .3	.3	.6	.3	.2	0	(*)	
19	.5	2.4	.8	.3	.3	.3	.7	* .3	.2	0		
20	.5	5.9	.9	.4	.3	.3	.8	.3	.2	0		
21	.6	6.9	.8	1.2	.3	.3	* .6	.3	.2	0		
22	.7	3.5	.7	* 1.4	.4	.4	.4	.3	.2	0		
23	.8	2.4	.7	1.3	.4	.8	.3	.3	.2	0		
24	.9	2.0	.7	1.2	.4	* .9	.3	.3	.2	0		
25	1.0	1.6	.6	1.0	* .4	.9	.3	.3	.2	0		
26	1.4	1.6	.6	1.0	.3	1.0	.3	* .3	.1	0		
27	1.6	1.6	.6	.9	* .3	1.0	.3	.3	.1	0		
28	* 1.8	1.6	.6	* .9	.3	.7	* .3	.4	.1	0		
29	1.8	1.6	.5	* .9	.3	.4	* .3	.4	.1	* 0		
30	2.0	1.3	.4	.9	-----	.4	.3	.4	.1	0		
31	2.2	-----	* .4	.9	-----	.4	-----	.3	-----	0		
Total	19.8	74.8	26.3	18.7	12.7	12.8	14.3	8.6	6.7	0.2	0	0
Mean	0.64	2.49	0.85	0.60	0.44	0.41	0.48	0.28	0.22	0.006	0	0
Max	2.2	6.9	1.3	1.4	0.9	1.0	0.8	0.4	0.3	0.1	0	0
Min	0.1	1.3	0.4	0.3	0.2	0.2	0.3	0.2	0.1	0	0	0
Ac-ft	39	148	52	37	25	25	28	17	13	0.4	0	0

Calendar year 1963: Max 36 Min 0 Mean 0.80 Ac-ft 580

Water year 1963-64: Max 6.9 Min 0 Mean 0.53 Ac-ft 384

Peak discharge (base, 200 cfs).--No peak above base.

* Discharge measurement or observation of no flow made this day.

SAN JUAN CREEK BASIN

119

11-465. San Juan Creek near San Juan Capistrano, Calif.--Continued.

Combined discharge, in cubic feet per second, of San Juan Creek and Capistrano Water Co.'s canal
near San Juan Capistrano, Calif., water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	2.2	1.3	1.3	0.9	0.6	1.4	0.3	0.4	0.1	1.2	0
2	.3	2.2	1.3	1.2	.9	.6	1.4	.3	.4	.1	1.1	0
3	.4	2.2	1.2	1.1	.9	.5	1.2	.3	1.0	0	1.1	0
4	.3	2.2	1.2	1.0	1.0	.5	1.1	.2	.7	0	.8	0
5	.2	2.2	1.0	1.0	1.2	.5	1.1	.2	.5	0	0	0
6	.2	2.4	1.0	1.0	1.1	.4	1.0	.2	.5	0	0	0
7	.2	2.6	1.0	1.0	1.0	.4	1.0	.2	.5	0	0	0
8	.2	2.4	1.0	1.0	1.0	.4	1.0	.2	.5	0	0	0
9	.2	2.4	1.0	1.0	1.0	.4	.8	.2	.6	0	0	0
10	.2	2.4	.9	1.0	1.0	.4	.8	.2	.5	0	0	0
11	.1	2.4	.9	1.1	1.1	.4	.8	.2	.5	0	0	0
12	.1	2.4	.9	1.1	1.1	.5	.9	.2	.5	0	0	0
13	.1	2.4	.9	1.1	1.1	.6	.8	.2	.3	0	0	0
14	.1	2.4	.9	1.2	1.1	.5	.9	.3	.2	0	0	0
15	.1	2.4	.9	1.2	1.2	.5	.9	.3	.2	0	0	0
16	.2	2.4	1.0	1.1	1.3	.5	.9	.4	.2	0	0	0
17	.3	2.4	1.3	1.2	1.2	.5	.9	.4	.2	0	0	0
18	.6	2.4	1.5	1.3	1.1	.6	.9	.4	.2	0	0	0
19	.5	2.4	1.4	1.1	1.1	.7	1.0	.4	.2	0	0	0
20	.5	6.1	1.5	1.1	1.1	.9	1.1	.4	.2	0	0	0
21	.6	7.1	1.4	1.7	1.1	.8	.8	.4	.2	0	0	0
22	.7	3.6	1.3	1.8	1.2	1.0	.6	.4	.2	0	0	0
23	.8	2.5	1.3	1.7	1.2	1.5	.5	.4	.2	0	0	0
24	.9	2.1	1.3	1.6	1.2	1.6	.4	.4	.2	0	0	.2
25	1.1	1.7	1.2	1.4	1.1	1.3	.4	.4	.2	0	0	.5
26	1.4	1.7	1.2	1.4	.9	1.2	.4	.4	.1	0	0	0
27	1.6	1.6	1.2	1.3	.8	1.1	.7	.4	.1	0	.8	0
28	1.8	1.6	1.2	1.3	.7	1.1	.4	.5	.1	0	.3	0
29	1.8	1.6	1.1	1.3	.7	1.0	.3	.5	.1	.2	.3	0
30	2.4	1.3	1.0	1.3	-----	1.0	.3	.5	.1	1.1	0	0
31	3.0	-----	1.2	1.1	-----	1.0	-----	.4	-----	1.2	0	-----
Total	21.1	75.7	35.5	38.0	30.3	23.0	24.7	10.2	9.8	2.7	5.6	0.7
Mean	0.68	2.52	1.15	1.23	1.04	0.74	0.82	0.33	0.33	0.09	0.18	0.02
Max	3.0	7.1	1.5	1.8	1.3	1.6	1.4	0.5	1.0	1.2	1.2	0.5
Min	0.1	1.3	0.9	1.0	0.7	0.4	0.3	0.2	0.1	0	0	0
Ac-ft	42	150	70	75	60	46	49	20	19	5.4	11	1.4

Calendar year 1963: Max 37 Min 0 Mean 1.04 Ac-ft 755

Water year 1963-64: Max 7.1 Min 0 Mean 0.76 Ac-ft 549

Peak discharge (base, 200 cfs).--No peak above base.

SAN JUAN CREEK BASIN

11-470. Arroyo Trabuco near San Juan Capistrano, Calif.

Location.--Lat 33°31'36", long 117°40'08", in NE 1/4 NW 1/4 sec. 36, T.7 S., R.8 W., on downstream side of right pier of county road bridge (formerly U.S. Highway 101), 1.8 miles north of San Juan Capistrano.

Drainage area.--35.7 sq mi.

Records available.--October 1930 to September 1964. Prior to October 1956, published as Trabuco Creek near San Juan Capistrano.

Gage.--Water-stage recorder. Altitude of gage is 180 ft (from topographic map).

Average discharge.--34 years, 4.49 cfs (3,250 acre-ft per year); median of yearly mean discharges, 0.4 cfs (290 acre-ft per year).

Extremes.--Maximum discharge during year, 11 cfs Nov. 20 (gage height, 2.51 ft); no flow for most of year.
1930-64: Maximum discharge, 9,240 cfs Feb. 6, 1937; no flow at times in each year.

Remarks.--Discharge measurements or observation of no flow made once a week. No regulation or diversion above station.

Cooperation.--Records furnished by Orange County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.2	0	0		0		0.1				0
2	0	.1	0	0		0		.2				0
3	0	0	0	0		0		.1				0
4	0	0	0	0		0		0				0
5	0	.5	0	0		0		.2				0
6	0	.1	0	0		0		.2				0
7	0	0	0	.3		0		0				0
8	0	0	0	.1		0		.2				0
9	0	0	0	.4		0		.1				0
10	0	0	0	.1		0		0				0
11	0	0	0	.1		0		0				0
12	0	0	0	0		0		0				0
13	0	0	0	.1		0		0				0
14	0	0	0	.1		0		0				0
15	.3	0	0	0		0		0				0
16	.2	0	0	0		0		0				0
17	.1	0	0	0		.1		.1				0
18	.2	0	0	0		0		0				0
19	0	0	0	0		0		0				.1
20	0	3.6	0	0		0		0				.1
21	0	.3	0	.2		0		0				0
22	0	0	0	.4		0		0				.1
23	0	0	0	0		0		0				0
24	.1	0	0	0		0		0				0
25	.2	0	0	0		0		0				0
26	0	0	0	0		0		0				0
27	0	0	.1	0		0		0				0
28	0	0	.2	0		0		0				0
29	.1	0	.2	0		0		0				0
30	.4	0	0	0		0		0				0
31	.3		0	0		0		0				0
Total	1.9	4.8	0.5	1.8	0	0.1	0	1.2	0	0	0	0.3
Mean	0.06	0.16	0.02	0.06	0	0.003	0	0.04	0	0	0	0.01
Max	0.4	3.6	0.2	0.4	0	0.1	0	0.2	0	0	0	0.1
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	3.8	9.5	1.0	3.6	0	0.2	0	2.4	0	0	0	0.6

Calendar year 1963: Max 3.6 Min 0 Mean 0.06 Ac-ft 42
Water year 1963-64: Max 3.6 Min 0 Mean 0.03 Ac-ft 21

121

Location.--Lat 33°37'34", long 117°41'03", in Canada de los Alisos Grant, near center of channel on upstream side of Second Street Bridge at El Toro, Orange County.

Records available.--October 1930 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 440 ft (from topographic map). Prior to July 1962, at different datum.

Extremes.--Maximum discharge during year, 67 cfs Nov. 20 (gage height, 2.37 ft); no flow for several months.

1930-64: Maximum discharge, 1,950 cfs Feb. 6, 1937; no flow for most of each year.

Remarks.--Discharge measurements or observations of no flow made weekly. No regulation or diversion above station; some pumping from wells along stream. At times since 1964 Metropolitan Water District water has been released to creek.

Cooperation.--Records furnished by Orange County Flood Control District and reviewed by Geological Survey.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0	0	0	0	0.1	2.0	2.9	0.8	0.6	0.2
2	0	0	0	0	0	0	.1	1.2	2.4	1.4	.4	.6
3	0	0	0	0	0	.1	0	.1	.8	1.4	1.8	.6
4	0	0	.1	0	0	.2	0	.6	3.2	1.5	1.6	.4
5	0	0	.1	0	0	.1	0	2.0	2.7	1.5	0	.4
6	0	0	0	.1	0	.4	.1	3.8	1.2	1.4	.2	1.0
7	0	0	0	0	0	.4	.2	3.2	2.2	.5	.5	.8
8	0	0	0	0	0	0	0	.7	1.6	.3	.4	.7
9	0	0	0	0	0	.1	.1	.8	4.5	.1	.1	.4
10	0	0	0	0	0	.3	.1	.7	4.6	.3	.3	0
11	0	0	0	.3	0	0	.2	1.1	3.5	.1	1.7	0
12	0	0	0	.3	0	0	.2	2.2	1.1	.2	0	0
13	0	0	0	.7	0	.2	.1	2.6	1.7	.8	.1	.4
14	0	0	0	.6	0	.1	.3	2.1	1.4	1.4	0	.3
15	0	0	0	.6	0	0	.4	1.5	2.4	1.4	.1	0
16	0	0	0	.4	0	.1	.6	1.2	2.5	1.1	.1	0
17	0	0	0	.2	0	.1	.6	.8	.2	.8	.2	.2
18	0	0	0	.3	0	.2	.5	.6	.5	.6	.6	.5
19	0	0	0	.2	0	.1	.3	.3	.6	.8	.2	.1
20	0	10	0	.4	0	.1	.5	.6	.7	.3	.9	1.2
21	0	.3	0	.5	0	.1	1.0	.9	.9	.3	.2	.7
22	0	.2	0	.4	0	.2	.8	.9	1.5	.6	.2	.3
23	0	0	0	.2	.1	.2	1.0	1.0	.6	.2	.9	.2
24	0	0	0	0	.2	.1	.6	.2	.3	0	.9	.1
25	.2	0	0	.1	.2	.1	.5	.2	.1	.3	.5	.4
26	0	0	0	0	.1	.1	1.0	.8	.1	.8	.2	1.7
27	0	0	0	0	0	.1	.4	1.0	.3	.7	.2	2.6
28	0	0	0	0	0	.2	.3	.7	.5	.4	.2	2.0
29	0	0	0	0	0	.2	1.7	1.4	.7	.8	.8	.6
30	0	0	0	0	0	0	2.2	3.2	1.2	0	.8	.2
31	0	0	0	0	0	.3	0	.3	0	.2	.2	0
Total	0.2	10.5	0.2	5.3	0.6	4.1	13.9	38.7	46.9	21.0	14.9	16.6
Mean	0.006	0.35	0.006	0.17	0.02	0.13	0.46	1.25	1.56	0.68	0.48	0.55
Max	0.2	10	0.1	0.7	0.2	0.4	2.2	3.8	4.6	1.5	1.8	2.6
Min	0	0	0	0	0	0	0	0.1	0.1	0	0	0
Ac-ft	0.4	21	0.4	11	1.2	8.1	28	77	93	42	30	33

Calendar year 1963:	Max	18	Min	0	Mean	0.12	Ac-ft	84
Water year 1963-64:	Max	10	Min	0	Mean	0.47	Ac-ft	345

PETERS CANYON WASH BASIN

11-485. San Diego Creek near Irvine, Calif.

Location.--Lat 33°40'20", long 117°47'10", in San Joaquin Grant, on left bank 200 ft downstream from Jeffrey Road Bridge and 1.5 miles west of Irvine, Orange County.

Drainage area.--40.3 sq mi.

Records available.--October 1949 to September 1964.

Gage.--Water-stage recorder and concrete control. Datum of gage is 102.86 ft above mean sea level (levels by Orange County Flood Control District).

Average discharge.--15 years, 1.72 cfs (1,250 acre-ft per year); median of yearly mean discharges, 0.9 cfs (650 acre-ft per year).

Extremes --Maximum discharge during year, 2,210 cfs Nov. 20 (gage height, 5.90 ft); no flow for many days.

1949-64: Maximum discharge, 4,040 cfs Jan. 18, 1952 (gage height, 7.70 ft), from rating curve extended above 1,000 cfs on basis of slope-area measurement of maximum flow; no flow for most of each year.

Remarks.--Records good except those above 100 cfs, which are poor. Discharge measurements made two or more times a month. Pumping from wells along stream causes low-flow fluctuation in discharge.

Cooperation.--Twenty-five discharge measurements furnished by Orange County Flood Control District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.05	0	1.7	27
1.1	.1	1.9	53
1.2	.6	2.1	84
1.3	2.2	2.5	180
1.4	5.6	3.0	350
1.5	11		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.8	0	0	0.4	0.1	7.7	0.2	0.6	0.3	0.3	0.3
2	.2	.7	.1	0	.4	1.4	0	.3	.4	.4	.6	.3
3	.6	.4	0	0	.4	.1	0	.4	.3	.3	.5	.4
4	.7	.6	.1	0	.4	0	0	.5	.4	.4	.2	.7
5	.4	.2	.2	0	.4	0	.2	.5	.3	.4	0	.2
6	.6	4.2	.2	.3	.3	0	.1	.1	.2	.4	0	.5
7	.8	1.4	.1	.1	0	.1	0	.4	.3	.4	.2	.6
8	1.2	.8	.2	.1	0	.1	0	.2	.4	.3	.2	.8
9	1.0	.7	.3	.2	.1	.1	.1	.1	1.7	.7	.4	.6
10	.5	.5	.1	.4	.1	.1	0	.4	0	.4	.2	1.1
11	.5	.6	.1	.4	.1	0	0	.7	.2	.5	.2	.7
12	.5	.7	.2	.2	.1	.2	0	.7	0	.7	.3	1.1
13	.8	.8	.2	.2	.1	.4	0	.6	0	.6	.3	1.0
14	1.0	.4	0	.1	.1	.1	0	.7	0	.7	.6	.6
15	.7	2.5	.2	.3	.1	.1	0	.7	.1	.3	.4	.7
16	2.1	.2	.2	.2	.1	.5	0	.5	.4	.7	.4	.5
17	.2	.1	0	.1	.3	.5	0	.4	.1	.8	.5	.3
18	4.8	.2	.3	2.9	.2	.4	0	.7	.4	1.4	.1	.2
19	1.7	.2	.4	.1	.1	.3	.1	.8	.1	.7	.6	.2
20	.6	333	.5	0	0	.1	.2	1.0	.4	.5	.1	.2
21	.6	3.0	.3	39	0	.3	.1	1.2	.2	.3	.1	.1
22	.6	.1	.1	15	0	8.5	.2	1.1	.3	.4	.2	.2
23	1.0	.1	0	0	0	27	.2	1.1	.4	.5	.6	.4
24	.8	0	0	0	0	6.7	.2	1.1	.1	0	.5	.6
25	.7	0	.5	0	0	0	.4	2.5	.4	.3	.6	.8
26	.5	0	.6	0	.1	0	.2	1.1	.4	0	.5	.5
27	.8	0	.3	0	0	.4	.5	1.1	.1	.1	.3	.1
28	.6	.2	0	0	0	0	.2	1.2	.1	.3	.1	0
29	.3	.4	0	.5	.3	0	.4	.6	.2	.6	.3	0
30	.5	0	0	.8	-----	.3	.7	.4	.2	.7	.3	0
31	.6	-----	0	1.0	-----	0	-----	.5	-----	.2	.3	-----
Total	26.1	352.8	5.2	61.9	4.1	47.8	11.5	21.8	8.7	14.3	9.9	13.7
Mean	0.84	11.8	0.17	2.00	0.14	1.54	0.38	0.70	0.29	0.46	0.32	0.46
Max	4.8	333	0.6	39	0.4	27	7.7	2.5	1.7	1.4	0.6	1.1
Min	0.2	0	0	0	0	0	0	0.1	0	0	0	0
Ac-ft	52	700	10	123	8.1	95	23	43	17	28	20	27
Calendar year 1963: Max 333 Min 0 Mean 1.95 Ac-ft 1,410												
Water year 1963-64: Max 333 Min 0 Mean 1.58 Ac-ft 1,150												

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-20	0600	5.90	2,210	3-23	2300	3.06	261
1-21	0800	3.28	342				

11-490. Big Bear Lake near Big Bear Lake, Calif.

Location.--Lat $34^{\circ}14'20''$, long $116^{\circ}58'50''$, in SW $\frac{1}{4}$ sec.22, T.2 N., R.1 W., at Big Bear Lake Dam on Bear Creek, 4 miles west of town of Big Bear Lake and $7\frac{1}{2}$ miles upstream from mouth.

Drainage area.--71.5 sq mi (revised).

Records available.--October 1950 to September 1964 in reports of Geological Survey. February 1884 to September 1950 in files of Bear Valley Mutual Water Co.

Gage.--Staff gage read once daily. Datum of gage is 6,670.9 ft above mean sea level (levels by Bear Valley Mutual Water Co.). Prior to 1912, staff gage at old dam 200 ft upstream at same datum (spillway at gage height 52.4 ft).

Extremes.--Maximum contents observed during year, 6,784 acre-ft May 31; minimum contents, 2,512 acre-ft Nov. 6.

1884-1964: Maximum contents unknown, lake spilled in 1916, 1917, 1922, 1923, 1938, 1939; lake dry October, November 1898, August to November 1899, October, November 1904.

Remarks.--Lake is formed by multiple-arch concrete dam, completed in 1912, replacing existing lower dam built in 1884; storage began in spring of 1884. Capacity, 72,200 acre-ft at elevation 6,743.2 ft (top of dam). Capacity table based on survey made in 1883. No dead storage. Water used for irrigation only.

Cooperation.--Record of contents furnished by Bear Valley Mutual Water Co.

Month-end contents, water year October 1963 to September 1964		
Month	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	2,870	-
Oct. 31.....	2,572	-298
Nov. 30.....	2,751	+179
Dec. 31.....	2,810	+59
Calendar year 1963.....		-3,528
Jan. 31.....	3,079	+269
Feb. 29.....	3,049	-30
Mar. 31.....	3,920	+871
Apr. 30.....	6,212	+2,292
May 31.....	6,784	+572
June 30.....	6,594	-190
July 31.....	5,447	-1,147
Aug. 31.....	4,302	-1,145
Sept. 30.....	2,930	-1,372
Water year 1963-64.....	-	+60

SANTA ANA RIVER BASIN

11-515. Santa Ana River near Mentone, Calif.

Location.--Lat 34°06'40", long 117°05'54", in NW¼NE¼SW¼ sec.4, T.1 S., R.2 W., on left bank near mouth of canyon, 1.8 miles upstream from Mill Creek and 3.5 miles northeast of Mentone.

Drainage area.--209 sq mi (revised), including area tributary to Baldwin Lake at head of Bear Valley.

Records available.--July 1896 to September 1964. Prior to October 1914, observed records not equivalent owing to Greenspot pipeline diversion between sites and exclusion of discharge from Warm Springs Canyon. Monthly discharge only for January 1910, January, February 1916, published in WSP 1315-B.

Gage.--Water-stage recorder on river; water-stage recorder on powerhouse diversion. Datum of gage is 1,984.28 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1914, staff gages at various sites within 1,000 ft of point 1½ miles upstream at various datums. Oct. 1, 1914, to Jan. 17, 1916, staff gage at site 10 ft upstream at different datum. Jan. 18, 1916, to Sept. 2, 1917, staff gage at same site and datum.

Average discharge (river only).--50 years (1914-64), 28.4 cfs (20,560 acre-ft per year); median of yearly mean discharges, 8.5 cfs (6,200 acre-ft per year).

(combined).--68 years, 80.8 cfs (58,500 acre-ft per year); median of yearly mean discharges, 65 cfs

(47,000 acre-ft per year).

Extremes (river only).--Maximum discharge during year, 92 cfs Apr. 2 (gage height, 6.57 ft;) no flow for most of year.

1896-1964: Maximum discharge, 52,300 cfs Mar. 2, 1938 (gage height, 14.3 ft), on basis of slope-area measurement of maximum flow; no flow at times in some years.

(combined).--Maximum discharge during year, 144 cfs Apr. 2; minimum daily, 15 cfs Oct 26, 27, 29.

1896-1964: Maximum discharge, 52,300 cfs Mar. 2, 1938; minimum daily, 3 cfs Nov. 21, 22, 1909.

Remarks.--Records good. Discharge measurements or observations of no flow made two or more times a month. Flow partly regulated by Big Bear Lake (see preceding page). For records of combined discharge of Santa Ana River and Southern California Edison Co.'s canal below powerplant No. 2, which diverts above station, see following page. Bear Valley Mutual Water Company pumped 571 acre-ft into canal below canal gage. Prior to Oct. 1, 1952, pumped water entered canal above gage.

Cooperation.--Nine discharge measurements on Southern California Edison Co.'s canal below powerplant No. 2 furnished by that agency in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 20, Jan 21, 22, Mar. 26, Apr. 1-3)

4.9	0	5.3	1.4	5.7	10
5.0	.1	5.4	2.6	5.8	14
5.1	.3	5.5	4.2	5.9	20
5.2	.7	5.6	6.7		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0		0		0	10	0.2	0.5	0.2		
2		0		0		0	19	.2	.3	.2		
3		0		0		0	4.6	.2	.3	.2		
4		0		0		0	1.9	.2	.3	.2		
5		0		0		0	1.1	.2	.3	.2		
6		0		0		0	.8	2.2	.3	.2		
7		.3		0		0	.4	2.6	.3	.2		
8		0		0		0	.3	2.0	.3	.2		
9		0		0		0	.3	2.4	.3	.1		
10		0		0		0	.3	.4	.3	.1		
11		0		0		0	.3	.4	.3	.1		
12		0		0		0	.2	.4	.3	.1		
13		0		0		0	.2	.4	.3	.1		
14		0		0		0	.2	.4	.3	.1		
15		0		0		0	.2	.4	.3	.1		
16		.4		0		0	.2	.4	.3	.1		
17		0		0		0	.2	.4	.3	.1		
18		0		0		0	.2	.3	.3	.1		
19		0		0		0	.2	.3	.3	.1		
20		14		0		0	.2	.3	.3	.1		
21		5.0		6.9		0	.2	.3	.3	.1		
22		.8		14		0	.2	.3	.3	.1		
23		.1		2.4		3.1	.2	.3	.3	.1		
24		.1		.2		1.0	.2	.3	.3	.1		
25		0		.1		1.6	.2	.3	.3	.1		
26		0		0		9.9	.2	.3	.3	.1		
27		0		0		3.5	.2	.3	.3	.1		
28		0		0		2.7	.2	.3	.3	0		
29		0		0		.8	.2	.3	.3	0		
30		0		0		.4	.2	.3	.3	0		
31		-----		0		.2	-----	.3	-----	0		
Total	0	20.7	0	23.6	0	23.2	17.6	8.8	3.5	0	0	0
Mean	0	0.69	0	0.76	0	0.75	1.43	0.57	0.29	0.11	0	0
Max	0	14	0	14	0	9.9	19	2.6	0.3	0.2	0	0
Min	0	0	0	0	0	0	0.2	0.2	0.2	0	0	0
Ac-ft	0	41	0	47	0	46	85	35	17	6.9	0	0

Calendar year 1963: Max 224 Min 0 Mean 1.25 Ac-ft 906

Water year 1963-64: Max 19 Min 0 Mean 0.38 Ac-ft 278

Peak discharge (base, 150 cfs).--No peak above base.

SANTA ANA RIVER BASIN

125

11-515. Santa Ana River near Mentone, Calif.

Combined discharge, in cubic feet per second of Santa Ana River and Southern California Edison Co.'s canal near Mentone, Calif., water year October 1963 to September 1964.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	16	18	18	22	20	78	37	27	18	18	23
2	17	16	18	18	22	23	93	37	26	18	18	22
3	17	16	17	18	22	20	61	36	26	18	18	22
4	17	16	17	18	22	20	50	36	26	16	20	21
5	17	17	17	18	22	20	46	38	26	17	24	21
6	20	19	16	18	21	20	44	42	25	18	24	21
7	22	28	16	18	20	20	40	43	25	18	22	21
8	21	21	16	18	21	20	39	47	26	22	25	21
9	21	19	18	18	20	19	40	49	26	22	24	20
10	21	18	17	18	20	20	42	47	25	23	23	20
11	22	18	17	18	20	20	43	47	24	23	23	20
12	22	17	17	18	20	20	43	47	23	22	19	19
13	22	17	16	18	19	20	42	45	23	22	18	19
14	22	17	17	18	19	20	42	44	22	22	18	19
15	22	22	18	18	19	20	42	40	22	22	18	20
16	23	23	18	18	20	20	41	39	22	22	17	19
17	25	20	19	18	20	20	40	37	22	22	16	19
18	28	19	19	19	20	20	39	35	22	21	20	20
19	22	18	19	18	20	21	41	35	22	20	21	22
20	20	36	19	18	20	21	38	35	22	22	21	22
21	18	38	19	39	20	21	35	35	22	20	22	22
22	17	30	19	44	20	24	35	35	20	20	28	22
23	16	25	19	27	19	26	38	35	20	20	28	21
24	16	22	19	24	19	23	38	34	19	20	28	21
25	16	19	19	24	20	26	36	33	19	20	29	22
26	15	19	18	24	20	36	34	32	19	25	28	22
27	15	19	18	24	20	40	35	32	19	33	23	20
28	16	18	18	23	20	43	36	32	19	23	23	20
29	15	18	18	23	21	43	38	29	18	19	23	20
30	16	18	18	23	-----	42	38	29	18	19	22	20
31	16	-----	18	22	-----	43	-----	28	-----	19	23	-----
Total	594	619	552	658	588	771	1,307	1,170	675	646	684	621
Mean	19.2	20.6	17.8	21.2	20.3	24.9	43.6	37.7	22.5	20.8	22.1	20.7
Max	28	38	19	44	22	43	93	49	27	33	29	23
Min	15	16	16	18	19	19	34	28	18	16	16	19
Ac-ft	1,180	1,230	1,090	1,310	1,170	1,530	2,590	2,320	1,340	1,280	1,360	1,230

Calendar year 1963: Max 229 Min 15 Mean 24.0 Ac-ft 17,400

Water year 1963-64: Max 93 Min 15 Mean 24.3 Ac-ft 17,630

Peak discharge (base, 150 cfs).--No peak above base.

11-540. Mill Creek near Yucaipa, Calif.

Location.--Lat 34°05'27", long 117°02'12", in NW 1/4 sec. 13, T.1 S., R.2 W., on left bank 50 ft downstream from bridge on State Highway 190-D, 3.9 miles north of Yucaipa, and 5.3 miles upstream from mouth.

Drainage area.--38.1 sq mi.

Records available.--January 1919 to September 1938, October 1947 to September 1964. Monthly figures only for April and May 1923, published in WSP 1315-B. Prior to October 1954, published as "near Craftonville."

Gage.--Water-stage recorder on creek; water-stage recorder and sharp-crested weir on power canal No. 1; water-stage recorder and Parshall flume on power canals Nos. 2 and 3. Datum of gage is 2,916.36 ft above mean sea level (Southern California Edison Co. bench mark). Prior to August 1926, at site 100 ft upstream at different datums. August 1926 to Mar. 2, 1938, at site 500 ft downstream at different datum (destroyed by flood).

Average discharge (creek only).--36 years, 10.1 cfs (7,310 acre-ft per year); median of yearly mean discharges, 0.9 cfs (650 acre-ft per year).

(combined).--36 years, 30.4 cfs (22,000 acre-ft per year); median of yearly mean discharges, 21 cfs (15,200 acre-ft per year).

Extremes (creek only).--Maximum discharge during year, 135 cfs Oct. 18 (gage height, 6.70 ft); no flow Nov. 5, Apr. 22.

1919-38, 1947-64: Maximum discharge, 18,100 cfs Mar. 2, 1938, on basis of slope-area measurement of maximum flow; no flow at times in some years.

(combined).--Maximum discharge during year, 148 cfs Oct. 18; minimum daily, 5.3 cfs Sept. 30.

1919-38, 1947-64: Maximum discharge, 18,100 cfs Mar. 2, 1938; minimum daily, 2.7 cfs Feb. 23, 1949.

Remarks.--Records (creek) poor; records (combined) good. No regulation above station. Discharge measurements generally made two or more times a month. Mill Creek power canals Nos. 1, 2, and 3 divert from points 100 ft, 3 miles, and 6 miles above station, respectively. Combined flow of Mill Creek and Mill Creek power canals Nos. 1, 2, and 3 is given on following page.

Cooperation.--Gage-height record and 13 discharge measurements for Mill Creek power canals Nos. 2 and 3 furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.5	0.4	0.2	a 0.1	0.1	2.4	0.1	0.1	e 0.1	a 0.1	a 0.1
2	.2	1.5	.4	.1	a .1	3.4	11	.1	.1	e .1	a .1	a .1
3	.1	.4	.2	.1	a .1	1.7	4.6	.1	.1	e .1	a .1	a .1
4	.1	.2	.2	.1	.1	.1	3.1	.1	.1	e .1	a .1	.1
5	.1	0	.4	.1	a .1	.1	1.7	.1	.2	e .1	a .1	.1
6	.1	6.3	.4	.1	a .1	e .1	2.7	.1	.2	e .1	a .1	.1
7	.1	10	e .3	.1	a .1	e .1	2.3	.1	.2	e .1	a .1	.1
8	.1	3.1	e .3	.1	a .1	e .1	2.2	.1	.2	e .1	a .1	.1
9	.1	1.9	e .2	.1	a .1	e .1	2.3	.1	.2	e .1	a .1	.1
10	.1	.6	e .2	.1	a .1	.1	1.8	.1	.2	.1	a .1	.1
11	.1	.1	e .1	.1	a .1	.1	.7	.1	.2	.1	a .1	.1
12	.1	.1	.1	.1	.1	.1	e .6	.1	.2	.1	a .1	.1
13	.1	.1	.1	.1	.1	.1	e .5	.1	.1	.1	a .1	.1
14	.1	.1	e .1	.1	e .1	.1	e .4	.1	.1	.1	a .1	.1
15	.1	15	e .1	.1	e .1	.1	e .3	.1	a .1	.1	a .1	.1
16	.5	8.8	e .1	.1	e .1	e .1	e .2	.1	a .1	.1	a .1	.1
17	3.9	2.9	e .1	.1	e .1	e .1	e .2	.1	a .1	.1	a .1	.1
18	30	1.7	e .1	.4	e .1	.1	e .1	.1	.1	.1	a .1	.1
19	10	.8	.1	.2	.1	.1	e .1	.1	e .1	.1	a .1	.1
20	4.5	11	.2	.2	e .1	.1	.4	.1	e .1	.1	a .1	.1
21	2.1	1.4	.2	4.2	e .1	.1	.1	.1	e .1	.1	a .1	.1
22	1.3	.8	.2	5.8	.1	.1	0	.1	e .1	.1	a .1	.1
23	1.0	.6	.2	.5	.1	1.4	.1	.1	e .1	.1	a .1	.2
24	.8	e .5	.2	.1	e .1	.3	.1	.1	e .1	.1	a .1	.2
25	.6	e .5	.3	e .1	e .1	.2	.1	.1	.1	.1	a .1	.2
26	.5	e .5	.2	e .1	e .1	e .2	.1	.1	e .1	1.7	.1	.2
27	.3	e .4	.2	e .1	e .1	e .2	.1	.1	e .1	5.4	.1	.2
28	.2	e .4	.2	e .1	.1	e .2	.1	.1	e .1	.1	.1	.2
29	.1	e .4	.2	.1	.1	e .2	.1	.1	e .1	.1	a .1	.2
30	.1	.4	.2	a .1	-----	e .2	.1	.1	e .1	a .1	a .1	.2
31	.1	-----	.2	a .1	-----	5.4	-----	.1	-----	a .1	a .1	-----
Total	57.8	71.0	6.4	13.9	2.9	15.4	60.1	3.1	3.8	10.0	3.1	3.8
Mean	1.86	2.37	0.21	0.45	0.10	0.50	2.00	0.10	0.13	0.32	0.10	0.13
Max	30	15	0.4	5.8	0.1	5.4	24	0.1	0.2	5.4	0.1	0.2
Min	0.1	0	0.1	0.1	0.1	0.1	0	0.1	0.1	0.1	0.1	0.1
Ac-ft	115	141	13	28	5.8	31	119	6.1	7.5	20	6.1	7.5

Calendar year 1963: Max 41 Min 0 Mean 0.81 Ac-ft 585
 Water year 1963-64: Max 30 Min 0 Mean 0.69 Ac-ft 500

Peak discharge (base, 50 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-18	0400	6.70	135	1-22	0630	6.38	61
11-15	1800	6.45	74	4-1	1800	6.54	94
11-20	0700	6.40	64				

a No gage-height record.

e Stage-discharge relation indefinite.

SANTA ANA RIVER BASIN

127

540. Mill Creek near Yucaipa, Calif.--Continued.

Combined discharge, in cubic feet per second, of Mill Creek and Mill Creek power canals Nos. 1, 2, and 3, near Yucaipa, Calif., water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	12	12	12	12	12	39	20	22	16	15	14
2	11	12	13	12	12	17	23	19	22	16	15	13
3	11	12	13	12	12	14	16	19	22	16	15	13
4	11	12	13	12	12	12	14	19	22	16	15	13
5	12	12	13	11	12	12	14	19	22	16	14	13
6	12	19	13	12	9.7	14	14	19	22	16	15	13
7	13	23	13	12	8.8	12	14	18	22	15	14	13
8	11	17	13	11	8.5	12	15	20	21	15	13	13
9	13	15	13	11	8.4	12	16	19	21	15	13	12
10	11	14	13	11	8.4	12	16	20	22	15	13	12
11	12	12	13	11	8.4	11	17	20	21	15	13	12
12	12	13	13	11	8.3	11	18	20	20	15	14	12
13	11	12	13	11	8.3	12	18	20	20	15	14	12
14	12	12	13	11	10	12	18	19	18	14	14	12
15	11	26	13	11	12	12	18	18	18	15	14	12
16	13	23	12	11	11	11	18	18	18	14	14	12
17	16	17	11	11	11	10	17	17	18	15	14	12
18	38	16	11	12	12	11	16	19	18	16	14	13
19	21	14	13	11	11	11	16	20	18	15	14	12
20	14	26	14	11	11	12	14	21	16	15	14	12
21	13	16	12	15	12	12	13	21	16	15	14	12
22	14	15	10	14	12	13	17	20	18	15	13	12
23	13	12	12	12	12	13	20	20	17	14	13	12
24	13	12	14	13	12	11	19	20	17	14	13	11
25	13	10	14	12	12	11	19	19	17	13	13	11
26	11	12	14	12	12	11	19	20	17	16	13	12
27	9.6	12	14	12	12	12	18	20	17	15	13	12
28	9.7	13	14	12	12	13	19	19	16	18	14	12
29	9.9	12	14	12	12	15	20	21	16	15	14	12
30	10	12	12	12	-----	16	20	23	16	15	13	12
31	11	-----	12	12	-----	20	-----	22	-----	15	14	-----
Total	403.2	445	397	365	314.8	389	535	609	570	470	428	361.3
Mean	13.0	14.8	12.8	11.8	10.9	12.5	17.8	19.6	19.0	15.2	13.8	12.0
Max	38	26	14	15	12	20	39	23	22	18	15	14
Min	9.6	10	10	11	8.3	10	19	17	16	13	13	5.3
Ac-ft	800	883	787	724	624	772	1,060	1,210	1,130	932	849	717

Calendar year 1963: Max 49 Min 8.7 Mean 13.6 Ac-ft 9,830
 Water year 1963-64: Max 39 Min 5.3 Mean 14.4 Ac-ft 10,490

Peak discharge (base, 50 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-18	0400	-	148	1-22	0630	-	69
11-15	1800	-	76	4-1	1800	-	109
11-20	0700	-	79				

SANTA ANA RIVER BASIN

11-550. Mill Creek near Mentone, Calif.

Location.--Lat 34°05'14", long 117°06'46", in NE 1/4 sec. 17, T.1 S., R.2 W., on downstream side of right pier of Bear Valley Mutual Water Co.'s pipeline crossing, 0.4 mile upstream from mouth, and 1.6 miles northeast of Mentone.

Drainage area.--46.3 sq mi.

Records available.--February 1939 to September 1964. Monthly discharge only for February 1939, published in WSP 1315-B.

Gage.--Water-stage recorder and broad-crested weir. Altitude of gage is 1,780 ft (from topographic map).

Average discharge.--25 years, 2.75 cfs (1,990 acre-ft per year); median of yearly mean discharges, 0.5 cfs (360 acre-ft per year).

Extremes.--Maximum discharge during year, 44 cfs Oct. 18 (gage height, 4.18 ft); no flow for many days.

1939-64: Maximum discharge, 1,500 cfs Dec. 23, 1945 (gage height, 6.5 ft), on basis of slope-area measurement of maximum flow; no flow for parts of each year.

Remarks.--Records good. Discharge measurements or observations of no flow made twice a month. No regulation above station. The Zanja and Mill Creek spreading grounds divert most of low streamflow above station. Pumping from wells along stream above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.2	0
3.3	.5
3.4	2.0
3.5	4.5
3.6	7.8

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0	0.4	0	0.2	6.7	0	0	0	0	0
2	0	.2	0	.5	0	.9	5.0	.2	.1	0	0	.1
3	0	0	.4	1.6	0	0	1.6	.2	.1	0	0	0
4	0	.2	.5	.6	0	0	3.3	.4	0	0	0	0
5	0	.4	.1	1.3	0	.1	3.9	.2	0	0	0	0
6	0	2.3	.4	1.2	0	.1	1.8	.8	0	0	0	0
7	0	4.5	.4	0	.1	0	1.1	.4	0	0	0	0
8	0	.1	.1	0	.4	0	.7	.3	0	0	0	0
9	0	0	.1	0	.2	0	.5	.2	0	0	0	0
10	.1	0	0	0	.1	.1	.7	.2	0	0	0	0
11	.1	0	0	0	0	0	.7	.1	0	0	0	.1
12	.1	0	0	0	.4	0	.8	.5	0	0	.1	.3
13	.1	0	0	0	.2	.3	1.2	0	0	0	.1	.2
14	.1	0	0	0	.1	0	0	0	0	0	0	.2
15	.1	4.9	0	0	.1	0	0	0	0	0	0	.1
16	.2	5.1	0	0	.4	.7	0	0	0	.1	0	0
17	1.6	0	.1	0	.1	1.2	0	0	0	.1	0	0
18	7.4	0	.1	.1	.1	0	.3	0	.1	.1	0	0
19	0	0	.1	.2	0	0	.1	.1	.1	.1	0	0
20	0	4.6	.1	0	0	0	0	0	.1	.1	0	.1
21	0	1.2	.1	1.0	0	.1	.1	0	0	0	0	.1
22	0	.2	0	2.3	0	1.3	0	.2	0	0	0	.1
23	0	0	0	0	0	1.4	0	.1	0	.1	0	.1
24	0	0	0	0	0	.7	0	.3	.1	.1	0	.2
25	0	0	.1	0	0	0	.1	.3	0	0	0	.2
26	0	0	.1	0	.1	.8	.1	.3	0	0	0	.2
27	0	0	.1	0	0	.4	0	.3	0	3.9	0	.2
28	0	.1	0	0	.2	0	0	.3	0	2.1	0	.1
29	0	0	0	0	.3	0	0	.4	0	0	0	.4
30	0	0	.8	0	-----	.1	.5	.1	0	0	0	1.3
31	0	-----	.4	0	-----	.4	-----	0	-----	0	0	-----
Total	9.8	23.8	4.0	9.2	2.8	8.8	29.2	5.9	0.5	6.7	0.2	4.0
Mean	0.32	0.79	0.13	0.30	0.10	0.28	0.97	0.19	0.02	0.22	0.006	0.13
Max	7.4	5.1	0.8	2.3	0.4	1.4	6.7	0.8	0.1	3.9	0.1	1.3
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	19	47	7.9	18	5.6	17	58	12	1.0	13	0.4	7.9

Calendar year 1963: Max 7.4 Min 0 Mean 0.21 Ac-ft 148
 Water year 1963-64: Max 7.4 Min 0 Mean 0.29 Ac-ft 207

Peak discharge (base, 50 cfs) --No peak above base.

11-555. Plunge Creek near East Highlands, Calif.

Location.--Lat 34°07'06", long 117°08'27", in SW 1/4 NE 1/4 sec. 1, T.1 S., R.3 W., on left bank at mouth of canyon at crossing of North Fork ditch siphon, 1.8 miles northeast of East Highlands.

Drainage area.--17.1 sq mi.

Records available.--January 1919 to September 1964; combined records of creek and diversions, March 1951 to September 1963.

Gage.--Water-stage recorder and since December 1938 broad-crested weir on creek; water-stage recorder and weir on upper diversion; water-stage recorder and concrete-lined canal on middle diversion; water-stage recorder and sharp-crested weir on lower diversion. Altitude of gage is 1,590 ft (from topographic map).

Average discharge (creek only).--45 years, 5.40 cfs (3,910 acre-ft per year); median of yearly mean discharges, 3.6 cfs (2,600 acre-ft per year).

(combined).--13 years, 5.22 cfs (3,780 acre-ft per year); median of yearly mean discharges, 3.5 cfs (2,500 acre-ft per year).

Extremes (creek only).--Maximum discharge during year, 48 cfs Apr. 1 (gage height, 1.04 ft); no flow for much of year.

1919-64: Maximum discharge, 5,340 cfs Mar. 2, 1938, on basis of slope-area measurement of maximum flow; no flow for part of each year.

(combined).--Maximum discharge during year, 48 cfs Apr. 1; minimum daily, 0.3 cfs for some days.

1951-64: Maximum discharge, 1,720 cfs Apr. 3, 1958; minimum daily, 0.1 cfs Nov. 4, 1953, Nov. 3, 1959, and Nov. 14, 1961.

Remarks.--Records good. Discharge measurements made two or more times a month during periods of flow. No regulation above station. Diversions for irrigation are made at sites 0.5, 1.0, and 2.5 miles above station. Water has been diverted above station for irrigation during entire period of record. Combined discharge of Plunge Creek and upper, middle, and lower diversions is given on following page.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.1	0	0.3	1.8	0.5	6.3	0.8	24
.2	.4	.4	3.7	.6	10		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0	0	0.1	0	24					
2	0	0	0	0	.2	.7	21					
3	0	0	0	0	.6	.4	13					
4	0	0	0	0	.2	0	8.7					
5	0	0	.1	0	.8	0	8.0					
6	0	0	.1	0	1.8	0	7.2					
7	0	.1	0	0	1.8	0	6.0					
8	0	0	0	0	1.8	0	5.4					
9	0	0	0	0	1.6	0	4.8					
10	0	0	0	0	1.6	0	4.6					
11	0	0	0	0	1.6	0	4.6					
12	0	0	0	0	.4	0	4.4					
13	0	0	0	0	0	0	4.1					
14	0	0	.1	0	0	0	2.1					
15	0	.3	.3	0	0	0	1.2					
16	0	.4	.1	0	0	0	1.0					
17	0	0	0	0	0	0	.8					
18	.7	0	0	0	0	0	.1					
19	.1	0	0	0	0	0	.2					
20	0	9.4	0	0	0	0	.6					
21	0	5.1	0	6.0	0	0	.1					
22	0	1.2	0	11	0	1.5	.1					
23	0	.1	0	4.8	0	4	.1					
24	0	0	0	3.0	0	4.5	.1					
25	0	0	0	2.4	0	6.9	.1					
26	0	0	0	.9	0	7.2	.1					
27	0	0	0	.1	0	7.2	0					
28	0	0	0	.1	0	6.9	0					
29	0	0	0	.1	0	5.7	0					
30	0	0	0	.1	-----	5.4	0					
31	0	-----	0	.1	-----	5.1	-----					
Total	0.8	16.6	0.7	28.6	12.5	55.5	122.4	0	0	0	0	0
Mean	0.03	0.55	0.02	0.92	0.43	1.79	4.08	0	0	0	0	0
Max	0.7	9.4	0.3	11	1.8	7.2	24	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	1.6	33	1.4	57	25	110	243	0	0	0	0	0

Calendar year 1963: Max 37 Min 0 Mean 0.43 Ac-ft 311

Water year 1963-64: Max 24 Min 0 Mean 0.65 Ac-ft 471

Peak discharge (base, 130 cfs).--No peak above base.

11-555. Plunge Creek near East Highlands, Calif.--Continued.

Combined discharge, in cubic feet per second, of Plunge Creek and diversions
near East Highlands, Calif., water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0.7	1.1	1.4	2.1	1.6	2.4	3.5	2.0	0.8	0.5	0.4
2	.4	.7	1.1	1.4	2.1	3.0	2.1	3.4	1.9	.8	.5	.4
3	.4	.7	1.1	1.3	2.6	2.7	1.3	3.4	1.9	.7	.5	.4
4	.4	.7	1.0	1.4	1.9	2.1	9.6	3.4	1.9	.7	.5	.3
5	.4	.7	1.0	1.2	1.9	1.9	9.1	3.9	1.8	.7	.5	.3
6	.4	.8	1.0	1.3	1.8	1.9	8.1	4.8	1.8	.7	.5	.4
7	.4	2.2	1.0	1.3	1.8	2.1	6.7	4.8	1.9	.7	.4	.3
8	.4	1.1	1.0	1.2	1.8	2.0	6.1	4.6	2.1	.6	.4	.3
9	.4	.9	1.3	1.2	1.6	1.9	5.4	4.9	2.8	.6	.5	.3
10	.4	.8	2.1	1.2	1.6	1.8	5.2	4.7	2.4	.6	.5	.3
11	.5	.7	1.5	1.2	1.6	1.7	5.2	4.1	2.1	.6	.5	.3
12	.5	.7	1.4	1.2	1.9	1.7	5.0	3.6	1.9	.5	.5	.3
13	.5	.7	1.4	1.2	1.9	2.1	4.7	3.4	1.8	.5	.5	.3
14	.5	.7	1.3	1.2	1.9	1.8	5.1	3.2	1.6	.5	.5	.3
15	.5	2.0	1.4	1.2	1.9	1.7	5.0	3.3	1.6	.5	.4	.3
16	.6	2.7	1.3	1.2	1.7	1.6	4.7	3.6	1.6	.5	.4	.3
17	.9	1.4	1.3	1.2	1.9	1.7	4.9	3.7	1.6	.4	.4	.3
18	3.7	1.2	1.2	1.2	1.8	1.6	4.5	3.6	1.7	.4	.4	.4
19	1.4	1.1	1.3	1.2	1.7	1.6	5.1	3.4	1.6	.4	.4	.4
20	.9	1.3	1.3	1.2	1.7	1.6	4.8	3.1	1.6	.4	.4	.4
21	.8	6.7	1.3	7.9	1.7	1.6	4.8	3.1	1.6	.4	.3	.4
22	.9	3.3	1.3	1.1	1.7	3.5	4.3	3.0	1.5	.5	.3	.3
23	.8	2.5	1.4	4.8	1.6	5.3	4.2	2.9	1.3	.5	.3	.3
24	.8	2.1	1.5	3.0	1.6	6.2	4.2	2.8	1.1	.5	.3	.3
25	.7	1.7	1.5	2.4	1.6	7.1	4.0	2.7	1.1	.5	.3	.4
26	.7	1.6	1.5	2.6	1.6	7.3	3.8	2.6	1.1	.6	.3	.4
27	.7	1.4	1.5	2.6	1.6	7.3	3.5	2.6	1.0	.6	.4	.4
28	.7	1.3	1.5	2.6	1.6	7.8	3.7	2.6	.9	.5	.4	.3
29	.7	1.2	1.5	2.6	1.7	6.5	3.8	2.4	.8	.5	.4	.3
30	.7	1.1	1.5	2.4	-----	5.9	3.7	2.3	.8	.5	.4	.3
31	.7	-----	1.5	2.3	-----	5.5	-----	2.1	-----	.5	.4	-----
Total	22.2	56.4	41.1	69.1	51.9	102.1	197.2	105.5	48.8	17.2	13.0	10.1
Mean	0.72	1.88	1.33	2.23	1.79	3.29	6.57	3.40	1.63	0.55	0.42	0.34
Max	3.7	13	2.1	11	2.6	7.8	24	4.9	2.8	0.8	0.5	0.4
Min	0.4	0.7	1.0	1.2	1.6	1.6	3.5	2.1	0.8	0.4	0.3	0.3
Ac-ft	44	112	82	137	103	203	391	209	97	34	26	20

Calendar year 1963: Max 39 Min 0.3 Mean 1.71 Ac-ft 1,240
 Water year 1963-64: Max 24 Min 0.3 Mean 2.01 Ac-ft 1,460

Peak discharge (base, 130 cfs).--No peak above base.

11-558 (revised). City Creek near Highland, Calif.

Location.--Lat 34°08'38", long 117°11'16", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.27, T.1 N., R.3 W., on right bank 0.6 mile upstream from Highland Avenue and 1.5 miles northeast of Highland.

Drainage area.--19.5 sq mi.

Records available.--October 1919 to September 1964; combined records of creek and canal, June 1924 to September 1964.

Gage.--Water-stage recorder on creek; water-stage recorder on canal. Altitude of gage is 1,580 ft (from topographic map). Prior to Mar. 1, 1939; at site a quarter of a mile downstream at different datum.

Average discharge (creek only).--45 years, 7.63 cfs (5,520 acre-ft per year); median of yearly mean discharges, 4.8 cfs (3,500 acre-ft per year).

(combined).--40 years, 9.15 cfs (6,620 acre-ft per year); median of yearly mean discharges, 6.4 cfs (4,600 acre-ft per year).

Extremes (creek only).--Maximum discharge during year, 64 cfs Apr. 1 (gage height, 2.95 ft); no flow July 1 to Aug. 31, Sept. 3-14, 22-24.

1919-64: Maximum discharge, 6,900 cfs Mar. 2, 1938, on basis of slope-area measurement of maximum flow; no flow for several months in some years.

(combined).--Maximum discharge during year, 64 cfs Apr. 1; no flow July 29-30, Aug. 3-13, Sept. 3-5, 8-13.

1924-64: Maximum discharge, 6,900 cfs Mar. 2, 1938; no flow at times in some years.

Remarks.--Records good. Discharge measurements made twice a month. No regulation above station. City Creek Water Co.'s canal has diverted above station for irrigation throughout period of record. Combined discharge of City Creek and canal is given on following page.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.6	0	2.0	2.6	2.5	21
1.7	.2	2.1	4.5	2.8	46
1.8	.6	2.2	7.2		
1.9	1.4	2.3	11		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.1	2.4	0.3	0.8	0.2	39	0.5	0.3			0.1
2	.1	.1	2.4	.2	2.1	.9	33	.4	.2			.1
3	.1	.1	2.4	.2	1.5	.2	16	.4	.2			0
4	.1	.1	2.4	.2	.5	.3	12	.4	.2			0
5	.1	.1	2.2	.2	.5	.3	11	.9	.1			0
6	.1	.1	2.1	.2	.4	.2	9.6	1.8	.3			0
7	.1	.3	1.8	.2	.4	.3	7.6	1.8	.3			0
8	.1	.1	1.3	.2	.4	.3	6.6	1.7	.2			0
9	.1	.1	2.8	.2	.4	.4	5.8	2.2	.7			0
10	.1	.1	4.1	.2	.4	.4	5.5	1.7	.3			0
11	.1	.1	2.8	.2	.4	.3	5.2	1.1	.4			0
12	.1	.1	2.6	.2	.4	.3	4.8	.7	.4			0
13	.1	.1	2.5	.2	.3	.4	2.7	.6	.3			0
14	.1	.1	2.5	.2	.3	.3	1.1	.5	.2			0
15	.1	.3	2.4	.2	.3	.3	.9	.4	.2			.1
16	.1	.6	2.4	.2	.3	.3	.5	.4	.2			.1
17	2.0	.1	2.2	.2	.3	.3	.4	.5	.4			.1
18	3.5	.1	1.1	.4	.3	.3	.5	.4	.1			.1
19	2.5	.1	.3	.7	.2	.3	1.0	.3	.1			.1
20	2.2	15	.3	.4	.2	.3	.7	.3	.1			.1
21	1.8	8.9	.3	8.4	.2	.3	.6	.3	.1			.1
22	.6	5.5	.3	13	.2	1.2	.5	.3	.1			0
23	.1	4.5	.3	5.5	.2	7.5	.5	.3	.1			0
24	.1	3.9	.3	4.3	.2	9.0	.6	.2	.1			0
25	.1	3.1	.3	3.9	.2	7.2	.5	.2	.1			.1
26	.1	2.6	.4	3.7	.2	8.2	.6	.2	.1			.1
27	.1	2.5	.4	2.6	.2	9.0	.3	.2	.1			.1
28	.2	2.4	.3	.8	.2	9.6	.4	.2	.1			.1
29	.2	2.4	.3	.8	.2	10	.6	.2	.1			.1
30	.2	2.4	.9	.7	-----	9.0	.5	.4	.1			.1
31	.2	-----	.8	.7	-----	9.0	-----	.5	-----			-----
Total	15.5	56.0	47.6	49.4	12.2	86.6	169.0	20.0	6.2	0	0	1.5
Mean	0.50	1.87	1.54	1.59	0.42	2.79	5.63	0.65	0.21	0	0	0.05
Max	3.5	15	4.1	13	2.1	10	39	2.2	0.7	0	0	0.1
Min	0.1	0.1	0.3	0.2	0.2	0.2	0.3	0.2	0.1	0	0	0
Ac-ft	31	111	94	98	24	172	335	40	12	0	0	3.0

Calendar year 1963: Max 75 Min 0 Mean 1.36 Ac-ft 986

Water year 1963-64: Max 39 Min 0 Mean 1.27 Ac-ft 920

Peak discharge (base, 150 cfs).--No peak above base.

11-558 (revised). City Creek near Highland, Calif.--Continued.

Combined discharge, in cubic feet per second, of City Creek and City Creek Water Co.'s canal near Highland, Calif., water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	1.3	2.4	2.1	2.9	2.4	3.9	3.5	1.9	0.5	0.1	0.2
2	.9	1.5	2.4	2.0	3.0	4.7	3.3	3.4	1.8	.5	.1	.2
3	1.1	1.5	2.4	1.9	3.3	3.2	1.6	3.3	1.8	.5	0	0
4	1.1	1.5	2.4	1.9	2.7	2.9	1.2	3.4	2.0	.5	0	0
5	1.2	1.5	2.2	1.9	2.7	2.8	1.1	4.4	1.9	.5	0	0
6	1.2	2.2	2.1	2.0	2.6	2.8	9.6	6.0	1.9	.5	0	.1
7	1.1	3.8	2.1	1.9	2.6	3.1	7.6	6.0	2.2	.5	0	.1
8	1.0	2.3	2.2	1.9	2.6	2.9	6.6	5.8	2.6	.4	0	0
9	1.0	1.8	3.0	1.9	2.5	2.7	5.8	6.4	3.9	.4	0	0
10	1.0	1.7	4.1	1.9	2.5	2.7	5.5	5.6	2.8	.4	0	0
11	1.1	1.6	2.8	1.8	2.6	2.6	5.3	4.8	2.4	.4	0	0
12	1.2	1.6	2.6	1.8	2.7	2.8	5.0	4.1	2.2	.3	0	0
13	1.0	1.6	2.5	1.8	2.6	3.4	4.6	3.8	2.0	.3	0	0
14	1.0	1.6	2.5	1.8	2.6	2.8	3.9	3.7	1.7	.2	.1	.1
15	1.1	3.1	2.4	1.8	2.6	2.6	3.6	3.5	1.6	.2	.2	.2
16	1.7	4.9	2.4	1.8	2.6	2.5	3.3	3.4	1.7	.2	.2	.2
17	3.1	3.1	2.2	1.9	2.5	2.5	3.3	3.4	1.8	.2	.1	.2
18	3.8	2.8	2.3	2.0	2.5	2.4	3.4	3.1	1.5	.1	.1	.3
19	2.5	2.6	2.3	2.3	2.3	2.3	4.8	2.8	1.6	.1	.1	.2
20	2.2	1.7	2.3	2.2	2.2	2.4	4.1	2.6	1.6	.1	.1	.2
21	1.8	8.9	2.2	9.2	2.3	2.5	3.8	2.5	1.5	.1	.1	.2
22	1.4	5.5	2.2	1.3	2.3	4.3	3.5	2.5	1.5	.1	.1	.1
23	1.5	4.5	2.2	5.5	2.3	10	3.5	2.5	1.2	.1	.1	.1
24	1.5	3.9	2.2	4.3	2.3	9.1	3.8	2.4	1.0	.1	.1	.1
25	1.5	3.6	2.1	3.9	2.4	7.3	3.6	2.2	.9	.1	.1	.2
26	1.4	3.3	2.2	3.7	2.4	8.3	3.3	2.1	.8	.2	.1	.2
27	1.3	3.1	2.2	3.5	2.3	9.0	3.1	2.4	.8	.2	.1	.2
28	1.3	2.9	2.1	3.4	2.3	9.6	3.5	2.4	.7	.1	.1	.2
29	1.3	2.6	2.0	3.4	2.7	10	3.7	2.4	.7	0	.1	.2
30	1.3	2.4	2.3	3.2	-----	9.0	3.6	2.2	.7	0	.2	.2
31	1.3	-----	2.2	3.1	-----	9.0	-----	2.1	-----	.1	.1	-----
Total	44.7	99.7	73.5	94.8	73.9	144.6	222.8	108.7	50.7	7.9	2.3	3.7
Mean	1.44	3.32	2.37	3.06	2.55	4.66	7.43	3.51	1.69	0.25	0.07	0.12
Max	3.8	17	4.1	13	3.3	10	39	6.4	3.9	0.5	0.2	0.3
Min	0.8	1.3	2.0	1.8	2.2	2.3	3.1	2.1	0.7	0	0	0
Ac-ft	89	198	146	188	147	287	442	216	101	16	4.6	7.3
Calendar year 1963:	Max 75	Min 0	Mean 2.73	Ac-ft 1,980								
Water year 1963-64:	Max 39	Min 0	Mean 2.53	Ac-ft 1,840								

Peak discharge (base, 150 cfs).--No peak above base.

11-562. Santa Ana River at Waterman Avenue at San Bernardino, Calif.

Location.--Lat 34°04'14", long 117°16'41", in San Bernardino Grant on downstream end of fifth pier from left bank of south bound traffic bridge on Waterman Avenue, 0.1 mile upstream from San Timoteo Creek and 2.7 miles southeast of San Bernardino, San Bernardino County.

Drainage area.--332 sq mi (revised).

Records available.--October 1954 to December 1961, January to September 1964. Prior to January 1964, published as "near San Bernardino." Records, except Extremes, for October 1928 to September 1937 at site 1.6 miles upstream not equivalent owing to discharge of Mission ditch.

Gage.--Water-stage recorder. Altitude of gage is 995 ft (from topographic map). Prior to Jan. 21, 1964 at same site at different datum.

Average discharge.--7 years (1954-61), 4.57 cfs (3,310 acre-ft per year).

Extremes.--Maximum discharge during period January to September, 420 cfs Jan. 22 (gage height, 2.35 ft); no flow for many days.

1928-37, 1954-61, 1964: Maximum discharge, 11,200 cfs Feb. 6, 1937 (gage height, 4.80 ft, site and datum then in use); no flow for most of each year.

Maximum discharge known, about 75,700 cfs Mar. 2, 1938 from combined discharges of Santa Ana River near Mentone Mill Creek near Yucaipa, and Plunge Creek near East Highlands.

Remarks.--Records poor. Flow partly regulated by Big Bear Lake (see p. 123). Natural flow of stream affected by ground-water withdrawals and diversions for domestic use and irrigation above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 9 to Sept. 30)

1.2	0
1.3	2.1
1.4	12
1.5	32
1.6	58

Discharge, in cubic feet per second, January to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				-	0	0	* 7.4	0	0	0	0	0.2
2				-	0	15	* 1.3	0	0	* 0	0	.7
3				-	0	0	0	0	0	0	0	.4
4				-	0	0	0	0	0	0	0	.2
5				-	* 0	0	0	* 0	0	0	0	.1
6				-	0	0	0	1.1	0	0	0	0
7				-	0	0	0	.1	0	0	0	0
8				-	0	0	0	0	0	0	0	* 0
9				-	0	0	0	0	.1	0	0	.1
10				-	0	0	0	0	0	0	0	0
11				-	0	0	0	0	* .1	0	0	0
12				-	* 0	0	0	0	0	0	0	.2
13				-	0	0	0	0	0	0	.6	1.2
14				-	0	0	0	0	0	0	1.3	1.5
15				-	0	0	* 0	0	0	0	.6	.1
16				-	1.3	0	0	0	0	* 0	1.1	0
17				-	0	0	0	1.1	0	0	.3	0
18				-	0	0	0	2.7	0	0	.4	0
19				-	0	0	0	* .4	0	0	.3	0
20				-	0	0	0	2.7	0	0	.5	0
21				* -	0	0	0	1.6	0	0	.9	* 0
22				* 54	0	23	0	0	0	0	.4	0
23				* 0	0	25	0	3.2	0	0	0	0
24				0	0	11	0	0	0	0	0	0
25				0	0	.1	0	1.0	0	.2	0	0
26				0	0	0	0	2.4	0	1.7	0	0
27				0	0	0	0	0	0	0	* 0	0
28				0	0	0	.4	0	0	.2	0	0
29				0	7.0	0	0	0	0	* 1	0	0
30				0	-----	0	0	0	0	.1	0	0
31		-----		0	-----	0	-----	0	-----	.8	.2	-----
Total				-	8.3	74.1	9.1	16.3	0.2	3.1	6.6	4.7
Mean				-	0.29	2.39	0.30	0.53	0.007	0.10	0.21	0.16
Max				-	7.0	25	7.4	3.2	0.1	1.7	1.3	1.5
Min				-	0	0	0	0	0	0	0	0
Ac-ft				-	16	147	18	32	0.4	6.1	13	9.3

Calendar year 1963: Max

Min

Mean

Ac-ft

Water year 1963-64: Max

Min

Mean

Ac-ft

Peak discharge (base, 350 cfs).--Jan. 22 (0715 hrs) 420 cfs (2.35 ft).

* Discharge measurement or observation of no flow made on this day.

SANTA ANA RIVER BASIN

11-565. Little San Geronio Creek near Beaumont, Calif.

Location.--Lat 34°01'45", long 116°56'40", in NW $\frac{1}{4}$ SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.1, T.2 S., R.1 W., on downstream side of left abutment of bridge on Oak Glen Road, 3.0 miles upstream from Wallace Creek and 7 miles north of Beaumont.

Drainage area.--3.23 sq mi.

Records available.--October 1948 to September 1964.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,320 ft (from topographic map).

Average discharge.--16 years, 0.06 cfs (43 acre-ft per year).

Extremes.--Maximum discharge during year, 3.5 cfs Apr. 1 (gage height, 1.30 ft); no flow for most of year.

1948-64: Maximum discharge, 319 cfs Aug. 23, 1955 (gage height, 2.18 ft), from rating curve extended above 1 cfs on basis of slope-area measurement of maximum flow; no flow for several months in each year.

Remarks.--Records good. No regulation above station. Several small diversions above station for irrigation.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Oct. 18.....0.2 Apr. 1.....0.3
19......1 2......1

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	0.3	0.2	0	0.01	0.6
April 1964.....	.4	.3	0	.01	.8
Calendar year 1963.....	-	.3	0	.002	1.4
Water year 1963-64.....	-	.3	0	.002	1.4

Peak discharge (base, 10 cfs).--No peak above base.

Note.--Flow occurred only on days listed above.

11-570. San Timoteo Creek near Redlands, Calif.

Location.--Lat 34°01'59", long 117°12'29", in NE $\frac{1}{4}$ sec. 5, T.2 S., R.3 W., on downstream side of right abutment of county highway bridge, 2.0 miles southwest of Redlands and 3.4 miles downstream from Yucaipa Creek.

Drainage area.--119 sq mi.

Records available.--October 1926 to September 1964.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 1,280 ft (from topographic map). Prior to Oct. 30, 1934 at site 2 miles upstream at different datum.

Average discharge.--38 years, 1.30 cfs (941 acre-ft per year); median of yearly mean discharges, 0.4 cfs (290 acre-ft per year).

Extremes.--Maximum discharge during year, 97 cfs Jan. 22 (gage height, 1.55 ft); no flow for most of year.

1926-64: Maximum discharge, 7,460 cfs Mar. 2, 1938, result of slope-area measurement of maximum flow; no flow for several months in each year.

Remarks.--Records fair. No regulation above station. Low flow normally diverted above station for irrigation. At times small amounts of irrigation waste water passes station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Oct. 13.....	0.1	Nov. 20.....	* 1.2
14.....	.1	Jan. 21.....	6.4
18.....	.1	22.....	* 14
Nov. 12.....	.1	Mar. 23.....	* 1.6
13.....	.1	24.....	1.0
14.....	.1		

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	0.3	0.1	0	0.01	0.6
November.....	1.5	1.2	0	.05	3.0
January 1964.....	20.4	14	0	.66	40
March.....	2.6	1.6	0	.08	5.2
Calendar year 1963.....	-	19	0	.07	48
Water year 1963-64.....	-	14	0	.07	49

Peak discharge (base, 50 cfs).--Jan. 22 (1130 hrs) 97 cfs (1.55 ft).

*Discharge measurement made on this day.

Note.--Discharge occurred only on days listed above.

SANTA ANA RIVER BASIN

11-575. San Timoteo Creek near Loma Linda, Calif.

Location.--Lat 34°04'03", long 117°16'42", in San Bernardino Grant, on right bank 100 ft downstream from Waterman Avenue bridge, 0.2 mile upstream from mouth, and 1.5 miles northwest of Loma Linda, San Bernardino County.

Drainage area.--125 sq mi.

Records available.--October 1954 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,010 ft (from topographic map). Prior to Apr. 10, 1958, at site 100 ft upstream at datum 4.51 ft higher. Apr. 10, 1958, to June 12, 1961, at site 100 ft upstream at datum 3.51 ft higher.

Average discharge.--10 years, 1.33 cfs (963 acre-ft per year). Median of yearly mean discharges, 1.1 cfs (800 acre-ft per year).

Extremes.--Maximum discharge during year, 123 cfs Jan. 22 (gage height, 3.15 ft), from rating curve extended above 40 cfs on basis of slope-area measurement at gage height 4.37 ft; minimum daily, 0.2 cfs Feb. 8.

1954-64; Maximum discharge, 1,050 cfs Apr. 1, 1958 (gage height, 8.74 ft, present datum), from rating curve extended above 400 cfs; minimum daily, 0.2 cfs at times in some years.

Remarks.--Records poor. No regulation above station. Minor diversions above station by pumping. Loma Linda sewage disposal plant discharges into stream above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.5	0.7	0.5	0.5	1.7	0.8	*2.5	1.2	0.6	1.2	0.5	0.6
2	.5	.7	*.5	.7	2.1	*3.6	*1.6	.5	*.8	*1.0	.6	.6
3	.8	.7	.6	*.7	2.2	1.5	1.0	.6	1.1	1.0	.6	1.3
4	.7	*.8	.6	.5	2.4	1.4	.7	1.0	.8	1.1	.9	.6
5	.6	.8	.6	.5	.8	1.2	.7	*1.1	.7	.7	1.6	.3
6	.6	.9	.7	.7	.8	1.2	*.9	1.3	.6	.8	1.6	.7
7	.7	.5	.5	.8	.4	.9	.7	1.5	1.1	.9	1.1	.9
8	.8	.6	.6	.9	.2	1.2	.8	.8	1.2	.6	.8	*.9
9	.7	.5	.7	.9	.3	1.2	.9	.7	1.2	.8	1.0	.5
10	*.6	.6	.6	.9	.4	1.9	.8	1.0	1.4	.7	.7	.7
11	.6	.6	*.6	1.0	.4	1.4	.7	.8	*1.2	.4	*.7	.8
12	.6	.6	.6	1.1	*.7	1.4	.9	1.0	1.2	.6	.8	.8
13	.8	*.9	.6	1.1	.5	*1.2	1.1	*1.3	1.0	.5	1.4	1.1
14	1.1	.8	.4	*1.1	.7	.5	1.1	1.2	1.8	.5	1.6	1.2
15	1.2	1.3	.6	1.0	.4	.5	*1.3	1.3	1.4	.7	.8	1.2
16	1.7	.4	1.0	1.0	.6	.7	1.1	1.0	.8	*.9	1.0	1.2
17	1.4	.5	.7	1.0	.9	1.1	1.3	1.6	*.7	.9	1.1	1.2
18	1.1	.5	.7	.8	.6	*1.4	.8	2.4	.6	.6	.7	.7
19	1.0	.5	*.6	.8	*.6	1.4	1.0	*1.9	.6	1.1	.6	.3
20	1.0	*20	.7	.5	2.2	1.0	1.3	1.5	.4	.8	.6	.5
21	1.0	*1.7	.6	*11	.8	.9	1.0	.8	.7	1.4	.6	*.5
22	.9	.7	.7	*22	.4	6.0	1.1	1.0	.9	1.1	.3	.7
23	.9	.5	.7	*.9	1.1	*4.8	.9	.5	.9	.8	.6	.8
24	*1.0	.5	.7	.9	1.9	2.4	1.1	.9	.8	1.2	.7	.6
25	.8	.6	.5	1.1	1.6	*.9	.9	.8	.9	.7	.7	.5
26	.7	.7	.6	1.4	1.6	.8	1.1	*1.0	1.2	.7	.8	.4
27	.7	.5	.7	1.4	1.5	.8	1.5	1.2	1.1	1.0	*1.1	.5
28	.6	.5	.7	1.8	1.6	.7	1.7	1.2	1.2	.6	.9	.6
29	*.5	.5	.7	*2.6	*1.6	.7	.9	1.1	1.0	*.7	.4	.5
30	.6	.4	1.2	1.7	-----	.9	*1.5	.5	1.7	.9	.4	.8
31	.6	-----	.9	1.9	-----	1.0	-----	.9	-----	1.0	.5	-----
TOTAL	25.3	39.5	20.4	63.2	31.0	45.4	32.9	33.6	29.6	25.9	25.7	22.0
MEAN	0.82	1.32	0.66	2.04	1.07	1.46	1.10	1.08	0.99	0.84	0.83	0.73
MAX	1.7	20	1.2	2.2	2.4	6.0	2.5	2.4	1.8	1.4	1.6	1.3
MIN	0.5	0.4	0.4	0.5	0.2	0.5	0.7	0.5	0.4	0.4	0.3	0.3
AC-FT	50	78	40	125	61	90	65	67	59	51	51	44

Calendar year 1963: Max 54 Min 0.4 Mean 1.24 Ac-ft 897

WATER YEAR 1963-64 MAX 22 MIN 0.2 MEAN 1.08 AC-FT 781

Peak discharge (base, 50 cfs).--Nov. 20 (0530 hrs) 89 cfs (2.95 ft); Jan. 22 (0600 hrs) 123 cfs (3.15 ft).

* Discharge measurement made on this day.

11-585. East Twin Creek near Arrowhead Springs, Calif.

Location.--Lat 34°10'45", long 117°15'53", in NW¹/₄NE¹/₄ sec.14, T.1 N., R.4 W., on right bank 100 ft upstream from Del Rosa Water Co.'s diversion dam, 0.5 mile south of Arrowhead Springs, and 1.0 mile downstream from Strawberry Creek.

Drainage area.--8.76 sq mi (revised).

Records available.--December 1919 to September 1964. Prior to October 1952, published as Strawberry Creek near Arrowhead Springs.

Gage.--Water-stage recorder and broad-crested weir since September 1938. Altitude of gage is 1,590 ft (from topographic map).

Average discharge.--44 years (1920-64), 4.29 cfs (3,110 acre-ft per year); median of yearly mean discharges, 2.9 cfs (2,100 acre-ft per year).

Extremes.--Maximum discharge during year, 19 cfs Apr. 1 (gage height, 2.38 ft); minimum daily, 0.1 cfs July 12-17.

1919-64: Maximum discharge, 3,360 cfs Mar. 2, 1938, based on rainfall-runoff studies; practically no flow at times in 1929, 1931-35.

Remarks.--Records good. Discharge measurements made two or more times a month. No regulation above station. One small diversion for domestic use above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 17-20, 29, 30)

1.3	0	1.7	2.2
1.4	.2	1.9	4.8
1.5	.6	2.0	6.6
1.6	1.2		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0.6	1.0	1.0	1.4	1.0	1.2	1.6	0.6	0.2	0.2	0.2
2	.4	.6	1.0	1.1	1.4	1.7	9.0	1.6	.6	.2	.2	.2
3	.5	.8	1.0	1.1	1.4	1.0	4.7	1.6	.6	.2	.2	.2
4	.4	.9	1.0	1.1	1.3	1.0	3.1	1.6	.6	.2	.2	.2
5	.5	.8	1.0	1.0	1.3	.9	3.1	1.8	.6	.2	.2	.2
6	.6	1.2	1.0	1.0	1.2	1.0	2.6	2.3	.7	.2	.2	.2
7	.4	1.3	1.0	1.0	1.2	1.0	2.1	2.0	.9	.2	.2	.2
8	.4	1.0	1.0	1.0	1.2	1.0	1.7	1.8	1.1	.2	.2	.2
9	.4	.8	1.2	1.0	1.2	1.0	1.4	1.6	1.9	.2	.2	.2
10	.6	.6	1.4	1.0	1.2	1.0	1.2	1.5	1.2	.2	.2	.2
11	.4	.6	1.2	.9	1.2	1.0	1.2	1.2	1.1	.2	.2	.2
12	.4	.7	1.2	.9	1.2	1.2	1.2	1.2	1.0	.1	.2	.2
13	.5	.7	1.2	.9	1.2	1.3	1.0	1.2	.9	.1	.2	.2
14	.4	.8	1.2	1.0	1.2	1.1	1.0	1.2	.8	.1	.2	.2
15	.4	2.3	1.2	.9	1.2	1.0	1.0	1.2	.8	.1	.2	.2
16	1.2	1.4	1.2	.9	1.2	.9	1.0	1.3	.8	.4	.2	.2
17	1.6	1.1	1.2	1.0	1.1	.8	1.1	1.2	1.0	.4	.2	.2
18	1.7	1.0	1.2	1.0	1.0	.8	1.2	1.1	.6	.2	.2	.2
19	1.2	1.0	1.2	1.0	1.0	.7	1.5	1.0	.8	.2	.2	.2
20	1.2	5.9	1.2	1.0	1.0	.7	1.2	1.0	.9	.2	.2	.2
21	1.0	3.0	1.1	3.8	1.0	.8	1.2	.8	.9	.2	.2	.2
22	.9	2.8	1.1	5.4	1.0	1.8	1.2	.8	.6	.2	.2	.2
23	.7	2.6	1.1	2.4	1.0	4.0	1.3	1.0	.5	.2	.2	.2
24	.6	2.0	1.1	1.7	1.0	3.5	1.4	.8	.4	.2	.2	.2
25	.7	1.0	1.1	1.7	1.0	2.5	1.2	.7	.3	.2	.2	.2
26	.7	1.0	1.1	1.7	1.0	2.8	1.2	.7	.3	.2	.2	.2
27	.7	1.0	1.0	1.7	1.0	2.8	1.2	.8	.3	.2	.2	.2
28	.7	1.0	1.0	1.6	1.0	2.9	1.4	.8	.3	.2	.2	.2
29	.8	1.0	1.0	1.6	1.1	2.1	1.6	.8	.2	.2	.2	.2
30	.6	1.0	1.0	1.5	-----	1.5	1.6	.7	.2	.2	.2	.2
31	.6	-----	1.0	1.4	-----	1.7	-----	.7	-----	.2	.2	-----
Total	21.6	40.5	34.2	44.3	33.2	46.5	65.6	37.6	21.5	5.6	6.2	6.0
Mean	0.70	1.35	1.10	1.43	1.14	1.50	2.19	1.21	0.72	0.18	0.20	0.20
Max	1.7	5.9	1.4	5.4	1.4	4.0	12	2.3	1.9	0.2	0.2	0.2
Min	0.4	0.6	1.0	0.9	1.0	0.7	1.0	0.7	0.2	0.1	0.2	0.2
Ac-ft	43	80	68	88	66	92	130	75	43	11	12	12

Calendar year 1963: Max 15 Min 0.1 Mean 1.10 Ac-ft 795

Water year 1963-64: Max 12 Min 0.1 Mean 0.99 Ac-ft 720

Peak discharge (base, 40 cfs).--No peak above base.

SANTA ANA RIVER BASIN

11-586 (revised). Waterman Canyon Creek near Arrowhead Springs, Calif.

Location.--Lat 34°11'35", long 117°16'25", in NE 1/4 NW 1/4 sec. 11, T.1 N., R.4 W., on left bank 0.8 mile northwest of Arrowhead Springs and 1.3 miles north of San Bernardino National Forest boundary.

Drainage area.--4.65 sq mi (revised).

Records available.--November 1911 to October 1914 (published as "near San Bernardino"), December 1919 to September 1964.

Gage.--Water-stage recorder and broad-crested weir since September 1938. Datum of gage is 2,045.46 ft above mean sea level. Prior to December 1919, staff gage at site 300 ft downstream at different datum.

Average discharge.--46 years (1912-14, 1920-64), 2.47 cfs (1,790 acre-ft per year); median of yearly mean discharges, 1.7 cfs (1,200 acre-ft per year).

Extremes.--Maximum discharge during year, 46 cfs Apr. 1 (gage height, 2.73 ft); no flow July 10 to Sept. 30.

1920-64: Maximum discharge, 2,350 cfs Mar. 2, 1938, based on rainfall-runoff studies; no flow at times in some summers.

Remarks.--Records good. Discharge measurements or observations of no flow generally made twice a month. No regulation above station. One small diversion for domestic use above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.5	0	2.0	3.5
1.6	.2	2.1	5.2
1.7	.6	2.2	7.6
1.8	1.3	2.4	16
1.9	2.2		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.2	0.3	0.5	0.6	0.5	1.2	0.9	0.4	0.1		
2	.3	.2	.3	.5	.6	1.1	5.9	.9	.3	.1		
3	.3	.2	.3	.5	.6	.7	2.7	.9	.3	.1		
4	.3	.2	.4	.5	.6	.6	2.0	.9	.3	.1		
5	.4	.2	.4	.5	.6	.5	2.0	1.0	.3	.1		
6	.4	.6	.4	.5	.6	.6	1.6	1.6	.3	.1		
7	.4	.4	.4	.4	.6	.6	1.3	1.2	.5	.1		
8	.3	.3	.4	.4	.6	.6	1.2	1.0	.5	.1		
9	.3	.2	.5	.4	.6	.6	1.1	.9	1.4	.1		
10	.3	.2	.6	.4	.6	.5	1.0	.9	.7	0		
11	.3	.2	.6	.4	.6	.5	.9	.8	.5	0		
12	.3	.2	.5	.4	.7	.6	.9	.7	.5	0		
13	.3	.2	.5	.4	.6	.6	.8	.7	.5	0		
14	.3	.3	.5	.4	.6	.5	.7	.7	.4	0		
15	.3	1.7	.4	.4	.6	.5	.6	.6	.4	0		
16	.6	.8	.4	.4	.6	.4	.6	.6	.5	0		
17	1.0	.5	.4	.4	.6	.4	.6	.6	.5	0		
18	1.8	.5	.4	.5	.5	.3	.8	.6	.5	0		
19	.7	.4	.4	.5	.5	.3	1.0	.5	.5	0		
20	.6	3.8	.4	.5	.5	.4	.9	.5	.5	0		
21	.5	1.1	.4	3.8	.5	.4	.7	.5	.5	0		
22	.4	.7	.4	4.1	.5	1.1	.7	.5	.3	0		
23	.4	.6	.4	1.1	.5	2.0	.8	.5	.3	0		
24	.3	.6	.4	.9	.5	1.7	.9	.5	.2	0		
25	.3	.5	.4	.7	.5	1.1	.9	.5	.2	0		
26	.3	.5	.4	.7	.5	1.0	.7	.5	.2	0		
27	.3	.4	.4	.7	.5	.9	.7	.5	.2	0		
28	.3	.3	.4	.7	.5	.9	.9	.5	.2	0		
29	.3	.3	.4	.7	.6	.7	.9	.5	.2	0		
30	.2	.3	.4	.6		.7	.9	.4	.1	0		
31	.2		.4	.6		.8		.4		0		
Total	13.0	16.6	12.9	23.5	16.4	22.1	46.7	21.8	12.2	0.9	0	0
Mean	0.42	0.55	0.42	0.76	0.57	0.71	1.56	0.70	0.41	0.03	0	0
Max	1.8	3.8	0.6	4.1	0.7	2.0	12	1.6	1.4	0.1	0	0
Min	0.2	0.2	0.3	0.4	0.5	0.3	0.6	0.4	0.1	0	0	0
Ac-ft	26	33	26	47	33	44	93	43	24	1.8	0	0

Calendar year 1963: Max 15 Min 0 Mean 0.54 Ac-ft 395

Water year 1963-64: Max 12 Min 0 Mean 0.51 Ac-ft 371

Peak discharge (base, 35 cfs).--Apr. 1 (0900 hrs) 46 cfs (2.73 ft).

Note.--No gage-height record Oct. 1, 2, 20-29, and Nov. 9-11.

[illegible]

SANTA ANA RIVER BASIN

11-590. (revised). Warm Creek Floodway near San Bernardino, Calif.--Continued.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0			0	0.3	0	1.2		0			0
2	0			0	0	0	0		0			0
3	0			0	0	0	0		0			0
4	0			0	0	0	0		0			4.2
5	0			0	0	0	0		0			.2
6	0			0	0	0	0		0			0
7	0			0	0	0	0		0			0
8	0			0	0	0	0		0			0
9	0			0	84	4.0	0		0			0
10	0			.6	112	0	0		a 1			0
11	0			0	0	0	0		a 3			0
12	0			0	0	0	0		a 2			0
13	0			0	0	0	0		0			0
14	0			0	a 1	0	a 10		0			0
15	0			0	0	.6	a 3		0			0
16	0			0	0	13	0		0			0
17	0			0	0	19	a 20		0			83
18	0			0	0	0	0		0			151
19	0			0	0	0	0		0			4.5
20	0			0	0	0	0		0			0
21	0			0	0	0	a 5		0			0
22	0			0	0	0	0		0			0
23	0			0	0	0	0		0			0
24	0			0	0	0	0		0			0
25	0			0	0	0	0		0			0
26	0			0	0	0	a 25		0			0
27	0			0	0	0	0		0			0
28	0			0	0	8.9	0		0			0
29	0			0	0	0	0		0			0
30	0			0	-----	0	0		0			0
31	0			1.0	-----	0	-----		-----			-----
Total	0	0	0	1.6	197.3	45.5	64.2	0	6	0	0	242.9
Mean	0	0	0	0.05	7.05	1.47	2.14	0	0.20	0	0	8.10
Max	0	0	0	1.0	112	19	25	0	3	0	0	151
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	3.2	391	90	127	0	12	0	0	482

Calendar year 1962: Max 124 Min 0 Mean 1.80 Ac-ft 1,300
 Water year 1962-63: Max 151 Min 0 Mean 1.53 Ac-ft 1,110

a No gage-height record.

11-590. (revised). Warm Creek Floodway near San Bernardino, Calif.--Continued.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0	0	0	0	* 37	0	0		0	0
2	0	0	0	0	0	23	0.1	0	0	(*)	0	0
3	0	0	0	0	0	0	0	0	0		0	0
4	0	0	0	0	0	* 0	0	0	0		0	0
5	0	0	0	0	* 0	0	0	0	0		0	0
6	0	4.2	0	0	0	0	0	1.9	0		0	.1
7	0	0	0	0	0	.1	0	0	0		0	0
8	0	0	0	0	0	0	0	0	0		0.1	0
9	0	0	4.5	0	0	0	0	0	.1		0	0
10	0	0	0	0	0	0	0	0	0		0	0
11	0	0	0	0	0	0	0	0	* 0		0	0
12	0	0	0	0	0	.7	0	0	0		0	0
13	0	0	0	0	0	.1	0	0	0		0	0
14	0	0	0	0	0	0	0	0	0		0	0
15	0	8.3	0	0	0	0	0	0	0		0	0
16	7.1	0	0	0	.9	0	0	0	0		0	0
17	17	0	0	0	0	0	0	0	0		0	0
18	21	0	0	0	0	0	0	0	0		0	0
19	0	0	0	0	0	0	0	* 0	0		0	0
20	0	126	0	0	0	0	* 0	0	0		0	0
21	0	0	0	37	0	0	0	0	0		0	0
22	0	0	0	50	0	50	0	0	0		.1	0
23	0	0	0	0	0	40	0	0	0		0	0
24	0	0	0	0	0	3.7	0	0	0		0	0
25	0	0	0	0	0	0	0	0	0		0	.1
26	0	0	0	0	.2	0	0	0	0		0	0
27	0	0	0	0	0	0	0	0	0		* 0	0
28	0	0	0	0	0	0	1.0	0	0		0	0
29	0	0	0	0	.8	0	0	0	0	(*)	0	0
30	0	0	0	0	-----	* 0	0	0	0		0	0
31	0	-----	0	0	-----	.2	-----	0	-----		0	-----
Total	45.1	138.5	4.5	87	1.9	117.8	38.1	1.9	0.1	0	0.2	0.2
Mean	1.45	4.62	0.15	2.81	0.07	3.80	1.27	0.06	0.003	0	0.006	0.007
Max	21	126	4.5	50	0.9	50	37	1.9	0.1	0	0.1	0.1
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	89	275	8.9	173	3.8	234	76	3.8	0.2	0	0.4	0.4
Calendar year 1963:	Max 151	Min 0	Mean 2.04	Ac-ft 1,480								
Water year 1963-64:	Max 126	Min 0	Mean 1.19	Ac-ft 864								

* Discharge measurement or observation of no flow made on this day.

SANTA ANA RIVER BASIN

11-604. Warm Creek near San Bernardino, Calif.

Location--Lat 34°04'50", long 117°17'50", in San Bernardino Grant, on right bank 265 ft downstream from State Highway 395 bridge, 0.1 mile downstream from Lytle Creek (east channel), and 1.9 miles southeast of San Bernardino, San Bernardino County.

Drainage area--84.5 sq mi.

Records available--February to September 1964.

Gage--Water stage recorder. Altitude of gage is 975 ft (from topographic map).

Extremes--Maximum discharge during period, 732 cfs (gage height, 5.82 ft), from rating curve extended above 320 cfs; no flow for most of year.

Remarks--Records good except those above 100 cfs, which are poor.

Discharge, in cubic feet per second, period February to September 1964

Feb. 26.....	0.4	Apr. 1.....*	54
29.....	.3	2.....*	5.6
Mar. 2.....*	9.8	3.....*	.7
22.....	60	27.....	.5
23.....*	46	May 5.....	.1
24.....	9.4	6.....	1.7

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
February 1964.....	-	-	-	-	-
March.....	125.2	60	0	4.04	248
April.....	60.8	54	0	2.03	121
May.....	1.8	1.7	0	.06	3.6
Calendar year 1963.....	-	-	-	-	-
Period February to September 1964.....	-	60	0	-	373

* Discharge measurement or observation of no flow made on this day.

Note.--Flow occurred only on days listed above.

11-605. Meeks and Daley Canal near Colton, Calif.

Location.--Lat 34°04'47", long 117°18'00", in San Bernardino Grant, at point of diversion from Warm Creek and 1.5 miles northeast of Colton, San Bernardino County.

Records available.--September 1920 to September 1964. Published as Warm Creek and Meeks and Daley Canal near Colton, October 1950 to September 1961.

Gage.--Water-stage recorder. Altitude of gage is 965 ft (from topographic map).

Extremes.--1920-64: Maximum daily discharge, 25 cfs Mar. 2, 1938; no flow at times in most years.

Remarks.--Records good. Discharge measurements or observations of no flow generally made twice a month. Canal diverts water from right bank of Warm Creek 1.6 miles northeast of Colton for irrigation in vicinity of Colton, Riverside and Corona.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	0.8	0	9.5	0	20	0	17	18	14	15	15
2	17	0	0	15	0	19	0	15	18	14	15	15
3	17	6.0	0	17	0	19	0	15	17	14	15	15
4	17	15	0	15	0	19	0	15	17	14	15	15
5	17	15	0	15	0	19	0	16	17	14	14	15
6	17	15	0	12	0	19	.3	16	17	14	14	15
7	17	15	0	7.3	0	19	0	16	17	14	15	15
8	17	15	0	4.0	0	19	0	11	18	14	15	14
9	17	15	0	1.0	0	19	0	3.0	18	14	15	14
10	16	15	0	2.3	1.3	17	0	3.0	18	14	15	15
11	16	15	0	3.0	3.8	14	0	2.7	18	14	15	15
12	16	15	0	5.4	3.8	14	0	3.2	18	14	15	15
13	16	15	0	8.7	3.8	9.4	.7	5.6	18	14	15	15
14	15	15	0	16	3.8	3.0	2.9	15	18	14	15	15
15	15	15	3.8	19	4.0	2.7	9.8	17	18	14	15	14
16	15	14	10	18	4.0	5.0	21	17	17	14	15	15
17	15	14	10	18	13	16	21	17	17	14	15	15
18	16	15	10	14	20	19	20	17	17	14	15	14
19	16	15	10	3.2	20	19	19	17	16	14	15	15
20	16	4.7	10	3.5	18	19	19	17	16	14	15	15
21	16	0	10	3.0	17	19	19	17	16	14	15	15
22	9.7	0	10	1.4	17	18	19	17	16	13	15	14
23	0	0	10	0	18	7.0	19	17	16	13	15	14
24	0	0	10	0	19	1.3	19	17	15	15	15	14
25	0	0	9.9	0	20	0	18	17	15	15	15	14
26	0	0	9.9	0	20	0	18	17	15	15	15	14
27	0	0	9.9	0	20	0	18	17	15	15	15	14
28	1.6	0	9.5	0	20	0	18	17	14	15	15	14
29	2.2	0	9.5	0	20	0	17	17	14	15	15	14
30	2.2	0	9.5	0	-----	0	17	18	14	15	15	14
31	1.1	-----	9.5	0	-----	.2	-----	17	-----	15	15	-----
Total	352.8	249.5	161.5	211.3	266.5	355.6	295.7	443.5	498	440	462	437
Mean	11.4	8.32	5.21	6.82	9.19	11.5	9.86	14.3	16.6	14.2	14.9	14.6
Max	17	15	10	19	20	20	21	18	18	15	15	15
Min	0	0	0	0	0	0	0	2.7	14	13	14	14
Ac-ft	700	495	320	419	529	705	587	880	988	873	916	867

Calendar year 1963: Max 20 Min 0 Mean 10.9 Ac-ft 7,860
 Water year 1963-64: Max 21 Min 0 Mean 11.4 Ac-ft 8,280

SANTA ANA RIVER BASIN

11-620. Lytle Creek near Fontana, Calif.

Location (revised).--Lat $34^{\circ}12'44''$, long $117^{\circ}27'26''$, in SE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.36, T.2 N., R.6 W., on right bank 75 ft upstream from highway bridge, 0.7 mile upstream from right tributary, and 8 miles north of Fontana. Prior to Nov. 20, 1963, at site 75 ft downstream at datum 4.58 ft lower.

Drainage area.--46.3 sq mi.

Records available.--October 1918 to September 1964. Combined records of Lytle Creek and diversions, October 1898 to December 1899, October 1904 to September 1964 (published as "at mouth of canyon near Rialto" 1898-99, as "near San Bernardino" 1904-18, and as Lytle Creek and Fontana pipe line near Fontana 1919-31). Monthly discharge only for some periods published in WSP 1315-B.

Gage.--Water-stage recorder on creek and dual Arch-culvert control (since 1964), effective at higher stages; water-stage recorders and sharp-crested weirs on conduit and infiltration line. Altitude of gage is 2,380 ft (from topographic map). October 1918 to Mar. 22, 1938, at site 1 mile downstream at different datum. Prior to Nov. 20, 1963, at site 75 feet downstream at datum 4.58 ft lower.

Average discharge (creek only).--46 years, 9.96 cfs (7,210 acre-ft per year); median of yearly mean discharges, 1.7 cfs (1,200 acre-ft per year).

(combined).--61 years, 40.7 cfs (29,470 acre-ft per year); median of yearly mean discharges, 32 cfs (23,200 acre-ft per year).

Extremes (creek only).--Maximum discharge during year, 277 cfs Apr. 1 (gage height, 2.90 ft), from rating curve extended above 35 cfs; 1918-64: Maximum discharge, 25,200 cfs Mar. 2, 1938, on basis of slope-area measurement of maximum flow; no flow in parts of each year.

(combined).--Maximum discharge during year, 280 cfs Apr. 1; minimum daily, 6.0 cfs Nov. 7. 1898-99, 1904-64: Maximum discharge, 25,200 cfs Mar. 2, 1938; minimum daily, that of Nov. 7, 1963.

Remarks.--Combined records good; creek records poor. No regulation above station. Southern California Edison Co.'s Lytle Creek conduit diverts 2.3 miles upstream for power development, and Fontana Union Water Co. collects water from an infiltration line upstream for irrigation. For records of combined discharge of Lytle Creek and diversions, see following page.

Cooperation.--Records of discharge through infiltration line furnished by Fontana Union Water Co.; water-stage recorder graph for Lytle Creek conduit furnished by Southern California Edison Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 6..... a0.5	Nov. 23..... 0.1
7..... a1	Jan. 21..... 28
20..... a*20	22..... 20
21..... * 2.2	Apr. 1.....* 116
22..... .2	Apr. 2..... * 3.8

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	24.0	20	0	0.80	48
January 1964.....	48	28	0	1.55	95
April.....	119.8	116	0	3.99	238
Calendar year 1963.....	-	72	0	.54	393
Water year 1963-64.....	-	116	0	.52	381

Peak discharge (base, 200 cfs).--Apr. 1 (0500 hrs) 277 cfs (2.90 ft)

* Discharge measurement or observation of no flow made on this day.
a No gage-height record.

Note.--Flow occurred in Lytle Creek only on days listed above.

11-620. Lytle Creek near Fontana, Calif.--Continued.

Combined discharge, in cubic feet per second, of Lytle Creek, Southern California Edison Co.'s Lytle Creek conduit, and Fontana Union Water Co.'s infiltration line, near Fontana, Calif., water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	14	16	14	14	12	122	16	12	11	9.3	9.2
2	12	14	16	14	14	14	17	16	12	10	9.3	8.8
3	12	14	16	14	14	14	22	16	12	10	9.3	8.6
4	13	14	16	14	14	14	22	16	12	10	9.1	8.8
5	13	13	14	14	14	12	20	16	12	11	9.1	9.0
6	12	10	14	14	14	12	20	17	12	11	9.3	9.4
7	12	6.0	14	14	14	12	20	17	12	10	9.1	9.2
8	12	10	14	14	14	12	18	16	13	9.9	9.1	9.0
9	12	11	14	14	14	12	18	15	14	9.7	9.3	9.1
10	12	13	14	13	14	12	18	15	13	9.7	9.3	9.1
11	13	13	14	12	14	12	18	15	12	9.9	8.9	9.1
12	13	13	14	12	14	14	18	15	12	9.9	8.7	8.9
13	12	13	14	12	14	14	17	15	12	9.7	8.7	9.3
14	13	13	14	12	14	12	16	15	12	9.9	8.7	8.9
15	13	15	15	12	14	12	16	15	12	9.9	8.7	8.4
16	13	14	15	12	14	12	16	15	12	9.9	8.4	8.4
17	14	13	15	12	14	12	16	15	12	9.9	8.7	8.4
18	14	13	15	12	14	12	17	15	12	9.9	8.7	8.7
19	14	13	15	14	14	12	17	14	12	9.7	8.3	8.4
20	13	25	15	13	12	12	17	14	12	9.7	8.3	8.7
21	13	10	15	34	12	12	16	14	12	9.7	8.3	8.9
22	13	15	14	26	12	14	15	14	12	9.9	8.3	8.4
23	14	14	14	16	12	16	16	14	11	9.8	7.9	8.4
24	14	13	14	16	14	14	16	13	11	9.7	7.9	8.4
25	14	12	14	16	14	14	16	13	11	9.5	7.9	8.7
26	14	14	14	16	14	14	16	13	11	9.5	7.9	8.9
27	14	15	14	14	12	14	16	14	10	9.4	8.3	9.1
28	14	16	14	14	12	14	16	13	11	9.2	7.9	9.3
29	14	16	14	14	12	14	16	13	11	9.1	8.6	9.1
30	14	16	14	14	-----	14	16	13	11	9.3	9.0	8.9
31	14	-----	14	14	-----	14	-----	12	-----	9.3	9.2	-----
Total	407	405.0	449	456	392	404	624	454	355	305.1	269.5	265.5
Mean	13.1	13.5	14.5	14.7	13.5	13.0	20.8	14.6	11.8	9.84	8.69	8.85
Max	14	25	16	34	14	16	122	17	14	11	9.3	9.4
Min	12	6.0	14	12	12	12	15	12	10	9.1	7.9	8.4
Ac-ft	807	803	891	904	778	801	1,240	900	704	605	535	527

Calendar year 1963: Max 75 Min 6.0 Mean 16.6 Ac-ft 12,030
 Water year 1963-64: Max 122 Min 6.0 Mean 13.1 Ac-ft 9,500

Peak discharge (base, 200 cfs).--Apr. 1 (0500 hrs) 280 cfs.

SANTA ANA RIVER BASIN

11-630. Cajon Creek near Keenbrook, Calif.

Location.--Lat 34°16'03", long 117°27'30", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T.2 N., R.6 W., on right bank 1,600 ft upstream from Lone Pine Creek and 1.2 miles north of Keenbrook.

Drainage area.--40.6 sq mi.

Records available.--December 1919 to September 1964.

Gage.--Water-stage recorder (digital). Altitude of gage is 2,630 ft (from topographic map). Prior to Oct. 24, 1935, water-stage recorder at site 1,300 ft downstream at different datum.

Average discharge.--44 years (1920-64), 8.43 cfs (6,100 acre-ft per year); median of yearly mean discharges, 5.6 cfs (4,100 acre-ft per year).

Extremes.--Maximum discharge during year, 184 cfs Jan. 22 (gage height, 2.92 ft); minimum daily, 1.5 cfs for some days.
1919-64: Maximum discharge, 14,500 cfs Mar. 2, 1938 (gage height, 19.3 ft), result of slope-area measurement of maximum flow; minimum, 0.05 cfs June 25, 1920.

Remarks.--Records good below 10 cfs and poor above. Discharge measurements generally made twice a month. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.2	1.8	2.7	2.4	1.7	1.9	9.9	2.7	1.9	1.9	1.6	1.9
2	2.2	1.9	2.7	2.5	1.7	2.0	3.6	2.5	2.0	1.7	1.6	1.9
3	2.3	2.0	2.8	2.5	1.9	1.9	3.1	2.4	2.0	1.9	1.7	1.8
4	2.3	1.9	2.4	2.7	2.0	1.9	2.7	2.5	1.9	1.9	1.7	1.7
5	2.2	1.7	2.4	2.5	1.9	1.9	2.7	2.6	2.0	1.9	1.8	1.6
6	2.1	2.6	2.3	2.6	2.0	2.0	2.6	3.4	2.1	1.9	1.8	1.7
7	2.1	1.9	2.4	2.7	1.9	2.3	2.5	2.9	2.3	1.9	1.6	1.7
8	2.1	1.8	2.2	2.7	2.0	2.2	2.3	2.6	2.3	1.9	1.6	1.6
9	2.0	1.8	2.6	2.7	2.0	2.0	2.2	2.4	2.4	1.7	1.6	1.6
10	2.0	1.9	2.6	2.5	2.0	2.1	2.2	2.3	2.2	1.7	1.6	1.6
11	2.1	1.8	2.5	2.7	2.0	2.1	2.4	2.1	2.1	1.9	1.7	1.6
12	2.1	1.7	2.4	2.5	2.0	2.1	2.2	2.0	2.1	1.7	1.6	1.6
13	2.1	1.7	2.3	2.6	2.0	2.1	2.1	2.0	2.0	1.6	1.6	1.7
14	2.0	1.9	2.3	2.7	2.1	2.0	2.0	2.0	1.8	1.5	1.7	1.7
15	2.1	2.5	2.3	2.7	2.1	1.9	2.1	2.0	1.8	1.6	1.7	1.6
16	2.5	2.0	2.3	2.6	2.2	1.9	2.0	2.0	2.0	1.6	1.6	1.6
17	2.6	2.0	2.4	2.5	2.1	2.0	2.2	1.9	2.0	1.6	1.5	1.6
18	4.4	2.1	2.5	2.6	2.0	2.0	2.3	2.0	1.9	1.6	1.5	1.6
19	2.4	2.1	2.3	2.7	2.0	1.9	2.4	1.8	1.9	1.6	1.5	1.6
20	2.3	1.3	2.5	2.6	2.0	2.0	2.3	1.8	2.0	1.6	1.5	1.6
21	2.0	4.6	2.3	1.5	2.0	2.0	2.2	1.7	1.9	1.6	1.6	1.6
22	2.0	4.0	2.5	2.8	2.0	3.1	2.2	1.8	1.8	1.6	1.6	1.6
23	2.0	3.8	2.4	2.8	1.9	4.3	2.4	1.9	1.7	1.6	1.6	1.6
24	1.9	3.7	2.3	2.2	1.9	3.2	2.4	1.9	1.8	1.6	1.6	1.6
25	1.9	3.3	2.4	2.0	2.1	2.5	2.3	1.8	1.8	1.6	1.6	1.6
26	1.8	3.2	2.4	1.9	2.0	2.2	2.3	2.0	1.7	1.6	1.7	1.6
27	1.9	3.3	2.3	1.7	2.0	2.2	2.2	2.1	1.7	1.6	1.8	1.6
28	1.7	3.1	2.4	1.8	1.9	2.1	2.6	2.1	1.7	1.5	1.9	1.6
29	1.9	2.9	2.3	1.9	2.0	2.1	2.7	2.1	1.7	1.5	1.9	1.6
30	1.8	2.9	2.5	1.8	-----	2.1	2.6	2.0	1.7	1.5	1.9	1.6
31	1.8	-----	2.4	1.8	-----	2.4	-----	1.9	-----	1.6	2.0	-----
TOTAL	66.8	84.9	75.1	112.9	57.4	68.4	79.7	67.2	58.2	52.0	51.7	49.3
MEAN	2.16	2.83	2.42	3.64	1.98	2.21	2.66	2.17	1.94	1.68	1.67	1.64
AC-FT	132	168	149	224	114	136	158	133	115	103	103	98
MAX	4.4	13	2.8	28	2.2	4.3	9.9	3.4	2.4	1.9	2.0	1.9
MIN	1.7	1.7	2.2	1.7	1.7	1.9	2.0	1.7	1.7	1.5	1.5	1.6

CALENDAR YEAR 1963 MAX 62 MIN 1.6 MEAN 2.61 AC-FT 1,890
WATER YEAR 1963-64 MAX 28 MIN 1.5 MEAN 2.25 AC-FT 1,630

Peak discharge (base, 140 cfs).--Jan. 22 (0430 hrs) 184 cfs (2.92 ft).

11-635. Lone Pine Creek near Keenbrook, Calif.

Location.--Lat 34°15'59", long 117°27'47", in SE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.12, T.2 N., R.6 W., on right bank 50 ft upstream from The Atchison, Topeka and Santa Fe Railway Co. bridge, 150 ft upstream from mouth, and 1.1 miles north of Keenbrook.

Drainage area.--15.1 sq mi.

Records available.--December 1919 to September 1938, June 1949 to September 1964.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,605.92 ft above mean sea level, datum of 1929, supplementary adjustment of 1946. Prior to Mar. 2, 1938, water-stage recorder (destroyed by flood) and Mar. 2 to Sept. 30, 1938, staff gage, at same site at datum 0.98 ft higher.

Average discharge.--33 years (1920-38, 1949-64), 1.15 cfs (833 acre-ft per year); median of yearly mean discharges, 0.5 cfs (360 acre-ft per year).

Extremes.--Maximum discharge during year, 25 cfs Jan. 22 (gage height, 2.49 ft); minimum daily, 0.1 cfs for most of year.

1919-38, 1949-64: Maximum discharge, 6,180 cfs Mar. 2, 1938, on basis of slope-area measurement of maximum flow; minimum daily, 0.1 cfs at times in some years.

Remarks.--Records good except those for Jan. 21, 22, which are fair. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	* 0.1	* 0.1	0.1	0.1
2	.1	.1	.1	.1	.1	* .1	.2	.1	.1	.1	.1	.1
3	.1	.1	.1	.1	* .1	.1	.2	.1	.1	.1	.1	* .1
4	.1	* .1	.1	.1	.1	.1	.2	* .1	.1	.1	* .1	.1
5	* .1	.1	* .1	.1	.1	.1	.2	.1	.1	.1	.1	.1
6	.1	.1	.1	.1	.1	.1	.2	.2	.1	.1	.1	.1
7	.1	.1	.1	.1	.1	.1	* .2	.2	.1	.1	.1	.1
8	.1	.1	.1	.1	.1	.1	.2	.2	.1	.1	.1	.1
9	.1	.1	.1	.1	.1	.1	.2	.1	.1	.1	.1	.1
10	.1	.1	.1	.1	.1	.1	.2	.1	.1	.1	.1	.1
11	.1	.1	.1	.1	.1	.1	.2	.1	.1	.1	.1	.1
12	.1	.1	.1	.1	.1	.1	.2	.1	.1	.1	.1	.1
13	.1	.1	.1	.1	.1	.1	.2	.1	.1	* .1	.1	.1
14	.1	.1	.1	.1	.1	.1	.2	.1	.1	.1	.1	.1
15	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
16	.1	.1	.1	.1	.1	.1	.1	.1	* .1	.1	.1	* .1
17	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
18	.1	.1	.1	.2	* .1	.1	.1	* .1	.1	.1	.1	.1
19	.1	.1	.1	.2	.1	.1	.1	.1	.1	.1	* .1	.1
20	.1	* .2	.1	.2	.1	* .1	.1	.1	.1	.1	.1	.1
21	.1	.1	.1	* .8	.1	.1	* .1	.1	.1	.1	.1	.1
22	.1	.1	.1	2.3	.1	.1	.1	.1	.1	.1	.1	.1
23	.1	.1	.1	.2	.1	.1	.1	.1	.1	.1	.1	.1
24	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
25	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
26	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
27	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
28	.1	.1	* .1	.1	.1	.1	.1	.1	.1	.1	.1	.1
29	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
30	.1	.1	.1	.1	-----	.1	.1	.1	.1	.1	.1	.1
31	.1	-----	.1	.1	-----	.1	-----	.1	-----	.1	.1	-----
Total	3.1	3.1	3.1	6.4	2.9	3.1	4.5	3.4	3.0	3.1	3.1	3.0
Mean	0.10	0.10	0.10	0.21	0.10	0.10	0.15	0.11	0.10	0.10	0.10	0.10
Max	0.1	0.2	0.1	2.3	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.1
Min	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Ac-ft	6.1	6.1	6.1	13	5.8	6.1	8.9	6.7	6.0	6.1	6.1	6.0

Calendar year 1963: Max 9.0 Min 0.1 Mean 0.18 Ac-ft 130
 Water year 1963-64: Max 2.3 Min 0.1 Mean 0.11 Ac-ft 83

Peak discharge (base, 80 cfs).--No peak above base.

*Discharge measurement made on this day.

SANTA ANA RIVER BASIN

11-636.8. Devil Canyon Creek near San Bernardino, Calif.

Location.--Lat 34°12'12", long 117°20'02", in Muscupiabe Grant, on right bank 1.0 mile downstream from confluence of East Fork and West Fork and 7.0 miles northwest of San Bernardino, San Bernardino County.

Drainage area.--5.61 sq mi (revised).

Records available.--November 1911 to September 1912, October 1913 to September 1914, December 1919 to September 1964. Monthly figures only for January 1914, published in WSP 1315-B.

Gage.--Water-stage recorder and broad-crested weir since July 1925 (affected by debris in most years) on creek; flow meter on diversion. Altitude of gage is 1,900 ft (from topographic map). Prior to December 1919, staff gage at site 500 ft downstream at different datum.

Average discharge (creek only).--45 years (1913-14, 1920-64), 1.56 cfs (1,130 acre-ft per year); median of yearly mean discharges, 0.6 cfs (430 acre-ft per year).
(combined).--31 years (1913-14, 1934-64), 3.18 cfs (2,300 acre-ft per year); median of yearly mean discharges, 2.1 cfs (1,500 acre-ft per year).

Extremes.--Maximum discharge during year, 15 cfs Apr. 1 (gage height, 1.93 ft); no flow for most of year.
1913-14, 1919-64: Maximum discharge, 3,320 cfs Mar. 2, 1938, by rainfall-runoff studies; no flow at times in most years.

Remarks.--Records good. No regulation above station. City of San Bernardino diverts above station for municipal supply.

Cooperation.--Records of diversion furnished by city of San Bernardino.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							5.0					
2							4.0					
3							1.0					
4		(*)	(*)		(*)		.2					(*)
5	(*)						.2					
6							.1					
7							*0	(*)				
8							0					
9							0					
10							0					
11							0		(*)			
12							0					
13				(*)		(*)	0					
14							0					
15							0					
16							0					
17							0					
18							0		(*)			
19							0					
20		(*)					0					
21							*0					
22							0					
23							0					
24							0					
25							0	(*)				
26						(*)	0					
27							0			(*)		
28			(*)				0					
29				(*)	(*)		0					
30							0		(*)			
31							0					
Total	0	0	0	0	0	0	10.5	0	0	0	0	0
Mean	0	0	0	0	0	0	0.35	0	0	0	0	0
Max	0	0	0	0	0	0	5.0	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	21	0	0	0	0	0
(†)	40	49	52	54	51	56	99	69	51	30	25	23

Calendar year 1963: Max 5.0 Min 0 Mean 0.02 Ac-ft 12 Meant 0.84 Ac-ft† 607
Water year 1963-64: Max 5.0 Min 0 Mean 0.03 Ac-ft 21 Meant 0.82 Ac-ft† 599

Peak discharge (base, 25 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

† Combined discharge of Devil Canyon Creek and city of San Bernardino diversion.

11-660.5. Santa Ana River at Colton, Calif.

Location.--Lat 34°03'45", long 117°18'30", in San Bernardino Grant, on right bank 60 ft downstream from Southern Pacific Railroad bridge, 200 ft downstream from Warm Creek, and 1 mile southeast of Colton, San Bernardino County.

Drainage area.--722 sq mi.

Records available.--December 1961 to September 1964.

Gage.--Water-stage recorder (digital). Altitude of gage is 940 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,380 cfs Mar. 22 (gage height, 9.27 ft); minimum daily, 10 cfs Nov. 17, 19, July 5, Aug. 8. 1961-64: Maximum discharge, 1,950 cfs Sept. 18, 1963 (gage height, 10.03 ft); minimum daily, 7.2 cfs Mar. 1-4, Apr. 7, 1962.

Remarks.--Records poor. Discharge measurements generally made once a week. Flow partly regulated by Big Bear Lake (see p. 123). Natural streamflow affected by ground-water withdrawals or diversions for domestic use and irrigation above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	17	13	18	18	15	134	19	17	15	12	21
2	15	16	14	17	17	82	26	18	17	15	11	20
3	17	15	15	18	19	19	17	18	18	13	14	21
4	17	18	15	17	19	22	17	18	18	11	12	20
5	16	20	16	16	19	22	17	20	19	10	13	19
6	16	21	16	15	18	22	16	22	20	15	15	17
7	18	18	16	17	19	22	21	20	18	15	13	20
8	19	17	16	18	17	20	21	19	17	15	10	22
9	20	16	20	18	16	22	21	18	19	16	11	22
10	19	15	14	17	17	22	21	16	19	17	14	19
11	17	17	15	16	17	21	20	18	20	15	16	18
12	15	16	14	15	19	21	19	20	19	12	19	16
13	16	16	16	17	16	23	18	20	18	16	19	17
14	15	15	16	18	17	20	19	19	17	14	20	20
15	15	25	17	17	18	18	18	18	17	14	17	19
16	20	11	18	17	17	18	19	17	18	16	17	18
17	51	10	18	18	20	19	20	19	17	18	20	18
18	65	11	18	17	19	17	20	22	17	16	20	17
19	20	10	19	15	19	16	16	20	16	15	20	15
20	19	254	18	20	19	15	18	22	16	16	19	13
21	18	32	17	113	18	14	20	20	13	15	19	18
22	17	14	16	217	17	76	20	19	17	15	19	17
23	18	14	17	20	16	100	20	18	18	14	15	18
24	18	12	17	18	18	50	20	17	17	17	20	19
25	17	16	15	17	22	25	18	18	16	14	21	18
26	16	16	17	17	22	21	16	19	14	15	21	18
27	15	18	17	19	24	18	18	18	13	18	20	16
28	17	16	16	19	20	18	20	18	14	16	21	19
29	17	13	15	22	18	18	20	17	17	17	17	20
30	18	12	16	20	-----	18	20	14	16	17	15	20
31	16	-----	17	18	-----	20	-----	15	-----	16	20	-----
Total	591	721	504	841	535	834	690	576	512	468	520	555
Mean	19.1	24.0	16.3	27.1	18.4	26.9	23.0	18.6	17.1	15.1	16.8	18.5
Max	65	254	20	217	24	100	134	22	20	18	21	22
Min	14	10	13	15	16	14	16	14	13	10	10	13
Ac-ft	1,170	1,430	1,000	1,670	1,060	1,650	1,370	1,140	1,020	928	1,030	1,100
Calendar year 1963: Max	446	Min	7.4	Mean	21.8	Ac-ft	15,790					
Water year 1963-64: Max	254	Min	10	Mean	20.1	Ac-ft	14,570					

Note.--During the year, except over rises, silt in the stream affected instrumentation all or part of most days.

11-665. Santa Ana River at Riverside Narrows, near Arlington, Calif.

Location.--Lat 33°57'53", long 117°27'55", in SW 1/4 SW 1/4 sec. 25, T.2 S., R.6 W., on right bank at downstream side of bridge on Pedley Road, 1.8 miles downstream from Union Pacific Railroad bridge, 3.3 miles northwest of Arlington, and 12 miles upstream from Temescal Creek.

Drainage area.--851 sq mi (revised).

Records available.--October 1927 to September 1964. Monthly discharge only for October 1927 to January 1929, published in WSP 1315-B.

Gage.--Water-stage recorder (digital). Datum of gage is 666.87 ft above mean sea level (levels by Riverside County Engineer). Prior to Nov. 15, 1943, at site 1 1/2 miles upstream at different datum. During this period temporary stations were maintained at different sites and datums within a quarter of a mile of the permanent gage. Nov. 15, 1943, to Aug. 31, 1954, at datum 3.00 ft higher. Sept. 1, 1954, to Jan. 17, 1955, at datum 2.00 ft higher.

Extremes.--Maximum discharge during year, 388 cfs Nov. 20 (gage height, 4.47 ft); minimum daily, 13 cfs Aug. 21.

1927-64: Maximum discharge, 100,000 cfs Mar. 2, 1938, on basis of slope-area measurement of maximum flow; minimum daily, 13 cfs July 28-30, Aug. 10, 1962, Aug. 21, 1964.

Remarks.--Records fair except those above 50 cfs, which are poor. Flow partly regulated by Big Bear Lake (see p. 123). Natural streamflow affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. At times, since April 1946, effluent from city of Riverside disposal plant is released to river 0.6 mile upstream.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	21	21	23	22	26	20	48 70 22	23	18	18	16	* 18
2	21	22	23	22	26	16 38 22	14 36	23	18	* 17	16	18
3	* 22	22	23	23	26	1 23 22	7 29	23	18	17	16	18
4	21	22	23	22	26	22	4 26	23	18	17	16	17
5	21	22	22	22	25	21	3 25	23	18	17	16	17
6	21	26	22	23	25	21	2* 24	23	18	17	16	17
7	21	26	22	23	24	21	1 23	23	18	17	16	17
8	21	23	22	23	24	21	1 23 22	23	18	17	16	17
9	21	22	23	23	24	21	22	22	18	17	16	17
10	20	22	24	23	24	21	21	22	18	16	17	16
11	21	22	23	23	* 24	21	21	22	18	17	17	16
12	21	* 22	22	23	24	21	21	22	19	17	17	14
13	21	22	22	23	24	3 25 22	* 22	22	20	17	17	14
14	21	22	22	* 23	23	22	23	* 22	19	17	17	* 16
15	21	32	22	23	23	22	* 22	21	19	17	17	17
16	22	24	22	23	23	* 22	* 22	21	20	* 16	15	17
17	25	23	22	23	23	22	20	21	19	17	* 14	17
18	32	22	* 22	29	23	21	18	21	* 18	17	14	17
19	23	22	23	27	23	21	18	21	19	17	14	17
20	23	176 23	23	26	23	22	17	21	20	17	14	17
21	22	153 57	23	53 * 79 26	23	22	17	21	20	17	13	17
22	21	14 37	23	8 * 111	23	8 30 22	17	20	21	17	15	17
23	21	6 29	* 23	2 * 35	22	55 80	17	20	21	17	14	16
24	21	4 27	23	4 30	22	55 77	17	20	21	17	14	16
25	21	3 26	23	3 29	21	10 32	17	* 20	20	17	14	16
26	20	* 26	23	2 28	20	8 30	17	20	20	17	14	16
27	20	2 25	22	1 27 26	20	6 28	17	20	20	17	14	16
28	21	24 23	22	26	20	3 25	26	20	19	* 16	16	16
29	* 21	23	22	* 26	23	2 24	22	20	19	16	17	17
30	21	22 23	22	26	-----	1 23	* 23	18	18	16	18	17
31	21	-----	22	15 26	-----	1 * 23 22	-----	18	-----	16	18	-----
Total	670	912	697	912	677	842	693	659	570	522	484	498
Mean	21.6	30.4	22.5	29.4	23.3	27.2	23.1	21.3	19.0	16.8	15.6	16.6
Max	32	176	24	111	26	80	70	23	21	18	18	18
Min	20	21	22	22	20	20	17	18	18	16	13	14
Ac-ft	1,330	1,810	1,380	1,810	1,340	1,670	1,370	1,310	1,130	1,040	960	988

Calendar year 1963: Max 477 Min 14 Mean 26.0 Ac-ft 18,820
 Water year 1963-64: Max 176 Min 13 Mean 22.2 Ac-ft 16,140

Peak discharge (base, 500 cfs).--No peak above base.

* Discharge measurement made on this day.

436

311

341

159

11-665.5. Sheehan ditch at Riverside Narrows, near Arlington, Calif.

Location.--Lat 33°57'52", long 117°27'54", in Jurupa Grant on left bank of ditch near left side of Santa Ana River channel. Under north-bound lane of highway bridge on Pedley Road, 0.6 mile downstream from sewage disposal plant, and 3.2 miles northwest of Arlington, Riverside County.

Records available.--October 1947 to September 1964. Monthly discharge only for October 1947 to September 1963, published on following page.

Gage.--Water-stage recorder (digital). Datum of gage is 673.16 ft above mean sea level (levels by Riverside County engineer).

Extremes.--1947-64: Maximum daily discharge, 18 cfs Nov. 20, 1963; no flow at times in some years.

Remarks.--Discharge reported herein, is the effluent from city of Riverside sewage disposal plant and is used for irrigation of about 160 acres 1.5 miles downstream. The unused portion of flow is returned to the river.

Cooperation.--Records October 1947 to February 1964 furnished by city of Riverside.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	15	12	12	14	13	15	* 15	15	* 15	15	* 15
2	16	15	15	14	12	* 14	15	15	15	15	13	15
3	16	13	15	14	14	14	15	13	15	15	15	16
4	16	16	14	14	14	14	14	15	* 15	14	16	16
5	15	15	15	13	14	14	12	14	15	13	16	15
6	13	15	14	15	14	14	15	14	14	16	16	13
7	16	15	14	14	14	14	14	15	13	15	16	14
8	15	15	13	14	14	13	14	14	15	16	15	16
9	16	15	15	15	12	15	14	14	14	16	14	16
10	15	13	15	14	14	14	14	14	15	16	16	16
11	15	15	14	14	14	14	14	14	15	15	15	* 16
12	15	14	14	13	14	14	13	14	15	14	16	16
13	13	15	14	14	14	15	15	14	14	16	15	14
14	15	15	14	14	14	14	15	* 14	13	16	16	16
15	15	15	13	14	14	13	* 15	14	15	16	14	16
16	15	15	15	14	12	* 15	15	14	15	* 16	13	16
17	15	13	14	14	15	14	15	14	14	16	* 15	16
18	15	15	15	14	14	15	15	* 14	* 15	15	15	15
19	15	15	15	12	14	14	13	14	15	13	15	15
20	13	18	14	15	14	14	16	* 14	14	16	15	14
21	16	15	14	14	14	14	14	14	13	16	15	16
22	15	14	13	14	14	13	14	14	16	15	14	16
23	15	14	14	14	12	15	14	14	15	16	13	16
24	15	13	14	14	14	15	15	13	15	16	16	16
25	15	14	11	14	14	15	15	* 15	16	15	15	16
26	15	15	14	12	* 14	15	13	15	16	14	15	16
27	13	14	14	15	14	15	15	14	15	16	15	14
28	15	12	14	14	14	14	14	15	13	* 16	15	16
29	15	13	12	14	14	12	15	14	15	16	14	15
30	15	13	15	14	-----	15	14	14	16	16	13	16
31	15	-----	14	14	-----	* 14	-----	13	-----	16	15	-----
Total	464	434	433	430	399	438	431	438	441	476	461	463
Mean	15.0	14.5	14.0	13.9	13.8	14.1	14.4	14.1	14.7	15.4	14.9	15.4
Max	16	18	15	15	15	15	16	15	16	16	16	16
Min	13	12	12	12	12	12	12	13	13	13	13	13
Ac-ft	920	861	859	853	791	869	855	869	875	944	914	918

Calendar year 1963: Max - Min - Mean 14.5 Ac-ft 10,510
 Water year 1963-64: Max 18 Min 12 Mean 14.5 Ac-ft 10,530

* Discharge measurement made on this day.

SANTA ANA RIVER BASIN

11-665.5. Sheehan ditch at Riverside Narrows near Arlington, Calif.--Continued.

Monthly and yearly discharge, in acre-feet													
Water year	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	The year
1948	0	0	0	0	0	0	262	333	310	379	332	322	1,940
1949	325	306	330	295	246	0	182	314	313	333	343	322	3,310
1950	324	304	314	314	284	305	304	324	322	343	343	322	3,800
1951	324	304	314	314	297	333	319	318	324	353	360	342	3,900
1952	352	325	176	0	240	366	349	365	356	391	391	374	3,680
1953	385	359	375	379	345	389	382	357	398	451	438	423	4,681
1954	428	400	411	429	400	447	443	452	446	501	464	467	5,290
1955	475	441	469	477	142	0	0	0	0	0	0	0	2,000
1956	0	0	0	0	0	258	527	555	580	610	609	614	3,750
1957	596	572	587	598	536	599	588	614	634	691	698	665	7,380
1958	658	623	647	642	592	657	665	672	662	687	697	711	7,910
1959	706	671	695	676	613	685	668	699	681	714	714	700	8,220
1960	704	675	702	681	596	671	662	693	704	655	756	742	8,240
1961	745	699	703	729	483	755	732	758	766	815	834	789	8,810
1962	839	795	183	757	743	814	807	826	826	870	898	861	9,220
1963	833	850	832	832	768	826	836	895	884	950	951	930	10,390

Note.--During periods of no flow, effluent was released direct to river.

11-670. Day Creek near Etiwanda, Calif.

Location.--Lat 34°11'05", long 117°32'20", in NW 1/4 SW 1/4 sec. 8, T.1 N., R.6 W., on left bank 0.5 mile downstream from confluence of two main forks and 4 miles north of Etiwanda.

Drainage area.--4.59 sq mi (revised).

Records available.--October 1927 to September 1964. Combined records of creek and diversion, October 1950 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder and broad-crested weir since September 1938 (affected by debris at times); water-stage recorder and Parshall flume on diversion. Altitude of gage is 2,870 ft (from topographic map). Prior to Jan. 7, 1929, at site 125 ft downstream at different datum. Jan. 7, 1929, to Mar. 2, 1938, at site 200 ft upstream at different datum (destroyed by flood). May 2 to Sept. 2, 1938, at site 200 ft downstream at different datum.

Average discharge (creek only).--37 years, 3.28 cfs (2,370 acre-ft per year); median of yearly mean discharges, 1.9 cfs (1,400 acre-ft per year).
(combined).--14 years, 2.89 cfs (2,090 acre-ft per year); median of yearly mean discharges, 2.0 cfs (1,400 acre-ft per year).

Extremes (creek only).--Maximum discharge during year, 16 cfs Apr. 1 (gage height, 1.47 ft); minimum daily, 0.1 cfs for several months.

1927-64: Maximum discharge, 4,200 cfs Mar. 2, 1938, based on rainfall-runoff studies; no flow Oct. 5 to Nov. 1, 1950.

(combined).--Maximum discharge during year, 16 cfs Apr. 1; minimum daily, 0.4 cfs for some days.

1950-64: Maximum discharge, 367 cfs Feb. 16, 1959; minimum daily, 0.3 cfs on several days in 1961 and 1963.

Remarks.--Records good. No regulation above station. Etiwanda Water Co. has diverted water above station during entire period of record. For records of combined discharge of creek and Etiwanda Water Co.'s diversion, see following page. In addition, an infiltration gallery, unwatering the gravel in the bed of the stream at gaging station, produced 372 acre-ft during year.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-7)

0.3	0	0.7	1.9
.4	.2	.8	2.8
.5	.6	1.0	5.2
.6	1.2	1.2	8.8

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.2	0.3	0.3	0.4	0.5	0.6	8.8	0.2	0.1	0.2	0.1	0.1
2	.2	.3	.3	*.4	.5	.5	6.9	.2	.1	.2	.1	*.1
3	.2	.3	.3	.4	1.0	.5	4.3	.2	.1	.1	.1	.1
4	.2	*.2	.3	.4	1.7	.5	4.0	.2	.1	.1	*.1	.1
5	.2	.2	*.3	.4	.9	.5	1.7	.2	.1	.1	.1	.1
6	.2	.2	.3	*.4	.6	.3	.6	.2	.1	*.1	.1	.1
7	.2	.2	.3	.4	.7	.2	.6	.2	.1	.1	.1	.1
8	*.2	.2	.3	.4	.7	.2	.5	.2	.1	.1	.1	.1
9	.2	.1	.4	.4	.9	.2	.5	.2	.1	.1	.1	.1
10	.1	.1	.4	.4	*.7	.2	.4	.2	.1	.1	.1	.1
11	.1	.5	.4	.5	.3	.2	.5	.2	.2	.1	.1	.1
12	.1	.9	.4	.4	.3	.2	.4	.2	.2	.1	.1	.1
13	.1	1.0	.4	.4	A.3	.2	.4	*.2	.2	.1	*.1	.1
14	.1	.9	.4	.5	A.3	.2	.4	.2	.2	.1	.1	.1
15	.1	2.8	.4	.5	A.3	.2	.3	.2	*.2	.1	.1	.1
16	.1	2.6	.4	.5	A.3	*.2	*.3	.2	.2	.1	.1	.1
17	.1	1.1	.4	.4	A.3	.2	.3	.2	.2	*.1	.1	.1
18	.1	.4	.4	.4	A.3	.2	.2	.2	.2	.1	.1	.1
19	.1	.4	*.4	.4	A.3	.2	.2	.2	.2	.1	.1	.1
20	.1	2.0	.4	.4	A.5	.2	.2	A.2	.2	.1	.1	.1
21	.1	1.2	.4	3.1	A.5	.2	.2	A.2	.2	.1	.1	.1
22	.1	.3	.4	2.5	A.6	.2	.2	A.2	.2	.1	.1	.1
23	.1	.3	.4	1.7	A.6	.2	.2	A.2	.2	.1	.1	.1
24	.1	.3	.4	1.7	A.6	.2	.2	A.2	.2	.1	.1	.1
25	.1	1.3	.4	1.7	A.6	.2	.2	*.2	.2	.1	.1	.1
26	.1	1.0	.4	1.7	*.6	.2	.2	.2	.2	.1	.1	.1
27	.1	.3	.4	1.7	.6	.2	.2	.2	.2	.1	.1	.1
28	.1	.3	.4	*.9	.6	.2	*.2	.2	.2	.1	.1	.1
29	.1	.3	.4	.5	.7	.2	.2	.1	.2	.1	.1	.1
30	.1	.3	.4	.5	-----	*.3	.2	.1	.2	.1	.1	.1
31	.1	-----	.4	.5	-----	.3	-----	.1	-----	.1	.1	-----
TOTAL	4.0	20.3	11.6	24.9	16.8	8.1	33.5	5.9	5.0	3.3	3.1	3.0
MEAN	0.13	0.68	0.37	0.80	0.58	0.26	1.12	0.19	0.17	0.11	0.10	0.10
MAX	0.2	2.8	0.4	3.1	1.7	0.6	8.8	0.2	0.2	0.2	0.1	0.1
MIN	0.1	0.1	0.3	0.4	0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.1
AC-FT	7.9	40	23	49	33	16	66	12	9.9	6.5	6.1	6.0

CALENDAR YEAR 1963 MAX 21 MIN 0.1 MEAN 0.54 AC-FT 395

WATER YEAR 1963-64 MAX 8.8 MIN 0.1 MEAN 0.38 AC-FT 275

Peak discharge (base, 25 cfs).--No peak above base.

* Discharge measurement made on this day.

A No gage-height record.

SANTA ANA RIVER BASIN

11-670. Day Creek near Etiwanda, Calif.--Continued

Combined discharge, in cubic feet per second, of Day Creek and Etiwanda Water Co.'s diversion
near Etiwanda, Calif., water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	1.6	1.3	0.9	1.5	1.3	9.4	1.9	1.2	0.9	0.6	0.6
2	.9	1.3	1.3	.9	1.5	1.6	8.0	1.9	1.2	.9	.6	.6
3	.8	1.2	1.3	1.0	1.7	1.4	5.4	1.9	1.3	.8	.6	.5
4	.9	1.1	1.3	1.0	1.8	1.3	4.8	2.0	1.3	.8	.6	.5
5	.9	1.1	1.3	1.0	1.4	1.6	4.5	1.9	1.2	.8	.5	.5
6	.9	1.1	1.3	1.1	1.3	1.7	4.3	2.4	1.2	.8	.6	.5
7	.8	1.1	1.3	1.1	1.3	1.7	3.6	2.2	1.4	.8	.5	.4
8	.8	1.1	1.3	1.0	1.2	1.7	3.1	2.2	1.5	.8	.5	.4
9	.8	1.0	1.4	1.0	1.3	1.5	2.9	2.2	1.6	.7	.5	.4
10	.7	1.0	1.4	1.1	1.5	1.5	2.6	2.1	1.4	.7	.5	.4
11	.7	2.0	1.4	.9	1.3	1.5	2.7	1.9	1.4	.7	.5	.4
12	.7	1.9	1.3	.8	1.3	1.5	2.6	1.8	1.3	.7	.5	.4
13	.7	3.0	1.3	1.1	1.3	1.5	2.6	1.9	1.3	.7	.5	.4
14	.7	1.9	1.3	1.2	1.3	1.4	2.6	2.0	1.2	.7	.6	.5
15	.7	5.8	1.3	1.2	1.2	1.4	2.4	2.0	1.2	.7	.6	.4
16	1.1	5.6	1.2	1.2	1.2	1.3	2.4	2.0	1.3	.7	.5	.4
17	1.1	3.1	1.2	1.0	1.1	1.3	2.3	2.0	1.3	.7	.5	.4
18	1.2	2.4	1.2	1.1	1.1	1.3	2.2	1.8	1.3	.7	.5	.6
19	1.0	2.4	1.2	1.1	1.0	1.3	2.2	1.7	1.3	.7	.5	.5
20	1.0	5.0	1.2	1.0	1.1	1.3	2.2	1.7	1.2	.7	.5	.5
21	.9	2.2	1.1	4.9	1.0	1.4	2.1	1.6	1.2	.7	.5	.5
22	.9	1.3	1.1	4.9	1.0	1.6	2.1	1.6	1.1	.7	.5	.4
23	.9	1.3	1.1	3.3	1.0	1.6	2.1	1.5	1.0	.7	.5	.4
24	.9	1.3	1.1	3.2	1.0	1.4	2.0	1.5	1.0	.7	.4	.4
25	.9	4.3	1.1	3.0	1.1	1.5	2.0	1.4	.9	.7	.4	.4
26	.9	4.0	1.1	3.0	1.1	1.6	2.0	1.5	.9	.7	.4	.5
27	.9	2.3	1.0	3.0	1.1	1.7	2.0	1.5	.9	.6	.5	.5
28	.9	2.3	1.0	2.2	1.1	1.7	1.9	1.5	.9	.6	.5	.4
29	.9	1.3	1.0	1.7	1.3	1.6	1.9	1.4	.9	.6	.5	.5
30	.9	1.3	.9	1.6	-----	1.7	1.9	1.3	.9	.6	.5	.5
31	1.0	-----	.9	1.6	-----	2.0	-----	1.2	-----	.6	.6	-----
Total	27.3	66.3	37.2	53.1	36.1	46.9	92.8	55.5	35.8	22.2	16.0	13.8
Mean	0.88	2.21	1.20	1.71	1.24	1.51	3.09	1.79	1.19	0.72	0.52	0.46
Max	1.2	5.8	1.4	4.9	1.8	2.0	9.4	2.4	1.6	0.9	0.6	0.6
Min	0.7	1.0	0.9	0.8	1.0	1.3	1.9	1.2	0.9	0.6	0.4	0.4
Ac-ft	54	132	74	105	72	93	184	110	71	44	32	27

Calendar year 1963: Max 22 Min 0.3 Mean 1.62 Ac-ft 1,180

Water year 1963-64: Max 9.4 Min 0.4 Mean 1.37 Ac-ft 998

Peak discharge (base, 25 cfs).--No peak above base.

11-680. Santa Ana River at Auburndale Bridge, near Corona, Calif.

Location--Lat 33°55'25", long 117°35'50", in La Sierra (Yorba) Grant, on right bank just downstream from Auburndale Bridge on River Road, 1.7 miles upstream from Temescal Creek, and 3.8 miles northwest of Corona, Riverside County.

Drainage area--1,003 sq mi.

Records available--May 1930 to November 1964 (irrigation seasons only).

Gage--Water-stage recorder. Altitude of gage is 500 ft (from topographic map). Prior to May 1946, at various sites within 1,000 ft of bridge and at different datums. May 1946 to Sept. 12, 1961, at site 100 ft upstream at different datum.

Remarks--Records poor. Flow partly regulated by Big Bear Lake (see p. 123). The natural flow is affected by ground-water withdrawals, diversions for irrigation, and return flow from irrigated areas. Water diverted into Durkee ditch, a quarter of a mile above station, bypasses station; discharge measurements of flow in ditch are given below.

Cooperation--Twenty-four discharge measurements furnished by Orange County Flood Control District.

Discharge measurements, in cubic feet per second, April to December 1964

Date	Discharge	Date	Discharge	Date	Discharge
Apr. 30	3.01	July 16	2.34	Oct. 5	1.39
May 14	2.89	Aug. 28	2.31	Nov. 19	2.03
25	2.77	Sept. 17	1.57	Dec. 3	2.37
June 18	2.81	Oct. 1	1.89	Dec. 2	2.61
July 1	2.46	Nov. 14	1.29		

Discharge in cubic feet per second, May to November 1964

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1					a 32	28	* 16	15	* 18	17	26	
2					a 32	36	16	15	* 18	16	24	† 29
3					a 32	30	* 17	15	17	16	* 24	
4					a 33	28	18	16	17	15	25	† 25
5					a 33	* 26	17	16	17	* 15	25	
6					*a 33	25	16	15	a 17	15	* 26	
7					34	22	16	15	a 18	14	26	
8					* 32	22	16	16	a 18	14	25	
9					32	25	17	16	a 19	* 13	26	
10				† 41	34	25	17	16	a 20	13	49	
11					36	27	17	17	* 20	13	53	
12					37	34	16	16	19	13	50	
13			† 44		32	34	16	16	19	13	43	
14		† 31			* 32	31	17	* 16	19	13	26	
15					46	38	17	16	19	14	30	
16					50	38	* 17	16	19	14	37	
17					41	* 38	17	* 16	19	16	58	
18					40	* 30	17	16	19	16	179	
19					42	* 34	18	15	19	* 16	56	
20					36	36	17	23	19	16	* 53	
21					35	30	17	28	19	21	45	
22					* 33	27	17	24	19	30	42	
23					30	30	16	21	18	* 25	40	
24					28	* 25	16	19	18	25	38	
25					* 28	26	16	19	* 18	24	37	
26					32	23	16	19	18	24	36	
27					34	23	16	19	18	24	35	
28					35	21	* 16	18	18	28	a 34	
29					32	20	* 16	18	19	27	a 33	
30					30	18	16	18	18	24	a 32	
31				† 32	32	- - - -	* 15	18	- - - -	25	- - - -	
Total					1,068	850	512	543	553	569	1,233	
Mean					34.5	28.3	16.5	17.5	18.4	18.4	41.1	
Max					50	38	18	28	20	30	179	
Min					28	18	15	15	17	13	24	
Ac-ft					2,120	1,690	1,020	1,080	1,100	1,130	2,450	

Calendar year 1963: Max Min Mean Ac-ft
Irrigation season: Max 179 Min. 13 Mean Ac-ft 10,590

* Discharge measurement made on this day.

† Result of discharge measurement.

a No gage-height record.

SANTA ANA RIVER BASIN

11-690. Lake Hemet near Idyllwild, Calif.

Location--Lat 33°39'55", long 116°42'20", in NE $\frac{1}{4}$ sec.7, T.6 S., R.3 E., on upstream face near right end of dam on South Fork San Jacinto River, 5 miles southeast of Idyllwild and 6.5 miles upstream from mouth.

Drainage area--65.6 sq mi (revised).

Records available--October 1961 to September 1964.

Gage--Staff gage read once daily. Datum of gage is 4,201.5 ft above mean sea level (levels by Lake Hemet Municipal Water District).

Extremes--Maximum contents observed during the year, 1,661 acre-ft July 11-13 (elevation, 4,289.1 ft); minimum 412 acre-ft Oct. 17-19 (elevation, 4,271.1 ft).
1961-64: Maximum contents, 2,025 acre-ft June 18, 1962 (elevation 4,292.5 ft); minimum; 264 acre-ft Nov. 19, 1962, Nov. 19, 1963 (elevation, 4,266.9 ft).

Remarks--Lake is formed by single-arch dam. Dam was completed to a height of 110 ft in 1893; raised to 122.5 ft in 1895, and to 135 ft in 1923. Capacity table is dated February 1932 (furnished by Lake Hemet Water Co.). Lowest sluice gate silted (elevation, 4,222.6 ft). Capacity below spillway level (elevation, 4,333.0 ft), 11,882 acre-ft. Water is released from lake to South Fork San Jacinto River for domestic use and irrigation in the Hemet-San Jacinto Valley.

Cooperation--Elevations furnished by Lake Hemet Municipal Water District.

Month-end elevation and contents, water year October 1963 to September 1964

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	4,272.42	467	-
Oct. 31.....	4,271.92	446	-21
Nov. 30.....	4,271.75	439	-7
Dec. 31.....	4,276.75	677	+238
Calendar year 1963.....	-	-	+295
Jan. 31.....	4,279.25	825	+148
Feb. 29.....	4,280.75	925	+100
Mar. 31.....	4,283.25	1,111	+186
Apr. 30.....	4,287.00	1,445	+334
May 31.....	4,288.67	1,616	+171
June 30.....	4,289.00	1,650	+34
July 31.....	4,287.33	1,478	-172
Aug. 31.....	4,284.17	1,186	-292
Sept. 30.....	4,280.75	925	-261
Water year 1963-64.....	-	-	+458

† Elevation at 0800 hours.

11-693. South Fork San Jacinto River tributary near Valle Vista, Calif.

Location.--Lat 33°43'20", long 116°48'00", in W $\frac{1}{2}$ sec.20, T.5 S., R.2 E., 6 ft upstream from private-road culvert, 0.3 mile above mouth and 5.6 miles southeast of Valle Vista.

Drainage area.--2.20 sq mi.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder with rain-gage attachment, crest-stage gage, and corrugated-pipe culvert control. Altitude of gage is 2,320 ft (from topographic map).

Extremes.--Maximum discharge during year, 5.1 cfs Apr. 1 (gage height, 3.65 ft); no flow for most of year.

1961-64: Maximum discharge observed, 5.6 cfs Aug. 22, 1961 (gage height, 3.8 ft, from floodmarks), by indirect measurement of maximum flow through culvert; no flow for most of each year.

Remarks.--Records good. No regulation or diversion above station. Monthly precipitation, in inches, is as follows: October, 1.0; November, 2.1; January, 2.7; February, 0.7; March, 2.9; April, 1.4; May, 0.9; August, 0.3; September, 0.2; the water year, 12.2.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Mar. 30.....	0.5	May 11.....*	0.1	May 17.....	0.1	May 28.....	0.1
Apr. 1.....*	2.2	12.....	.1	18.....	.1	29.....	.1
2.....	.2	13.....	.1	19.....*	.1	30.....	.1
May 7.....	a.1	14.....	.1	20.....	.1	31.....	.1
8.....	a.1	15.....	.1	21.....	.1	June 19.....	.1
9.....	a.1	16.....	.1	22.....	.1	20.....	.1
10.....	a.1						

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
March 1964.....	0.5	0.5	0	0.02	1.0
April.....	2.4	2.2	0	.08	4.8
May.....	2.0	.1	0	.06	4.0
June.....	.2	.1	0	.007	.4
Calendar year 1963.....	-	0	0	0	0
Water year 1963-64.....	-	2.2	0	.01	10

Peak discharge (base, 10 cfs).--No peak above base.

* Discharge measurement made on this day.

a No gage-height record

Note.--Flow occurred only on days listed above.

SANTA ANA RIVER BASIN

11-695. San Jacinto River near San Jacinto, Calif.

Location.--Lat 33°44'15", long 116°49'35", in SW 1/4 sec. 13, T.5 S., R.1 E., on downstream side of right pier of bridge on State Highway 74, 1 mile downstream from North Fork, and 8.2 miles southeast of San Jacinto.

Drainage area.--141 sq mi.

Records available.--October 1920 to February 1927, March 1927 to September 1964; combined records of river and diversions, October 1948 to September 1964. Monthly discharge only for October 1920 and July to September 1926, published in WSP 1315-B.

Gage.--Water-stage recorder on river; water-stage recorders on canals; staff gage on pipeline. Datum of gage is 1,982.75 ft above mean sea level (Corps of Engineers bench mark). Prior to Feb. 15, 1927, water-stage recorder at site about 150 ft upstream at different datum. Feb. 15, 1927, to December 1929, staff gage at same site at different datum. December 1929 to Feb. 6, 1937, water-stage recorder at same site at different datum. Feb. 7, 1937, to Jan. 23, 1948, staff gage at same site at various datums.

Average discharge (river only).--43 years (1920-26, 1927-64), 16.8 cfs (12,160 acre-ft per year); median of yearly mean discharges, 5.4 cfs (3,900 acre-ft per year).
(combined).--16 years (1948-64), 14.1 cfs (10,210 acre-ft per year); median of yearly mean discharges, 8.1 cfs (5,900 acre-ft per year).

Extremes (river only).--Maximum discharge during year 129 cfs Apr. 1 (gage height, 4.78 ft); no flow for many days.
1920-64: Maximum discharge, 45,000 cfs Feb. 16, 1927, on basis of slope-area measurement of maximum flow; no flow for several months in each year.
(combined).--Maximum discharge during year, 129 cfs Apr. 1; minimum daily, 0.2 cfs Oct. 1-4.
1948-64: Maximum discharge, 1,780 cfs Mar. 22, 1958; no flow at times in 1951, 1952, and 1957.

Remarks.--Records fair. Flow partly regulated by Lake Hemet (see p. 156). Lake Hemet Municipal Water District's upper and lower canals divert water above station for irrigation. Fairview Land and Water Co.'s pipeline diverts water above station for domestic use. For records of combined daily discharge of San Jacinto River and diversions, see following page. Diversion above station began prior to 1920.

Cooperation.--Records of Fairview Land and Water Co.'s pipeline furnished by Lake Hemet Municipal Water District.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	*0	0.5	0.2	0.6	0.5	*85	1.3	0.2		0	
2	0	0	.5	.2	.6	.5	68	1.2	.3		0	(*)
3	*0	0	.2	.2	.8	.5	35	.9	.3		0	
4	0	0	.2	.2	.8	.5	26	1.1	*.3		*0	
5	0	0	.3	.2	.8	.5	27	*1.8	.3		1.8	
6	0	0	.6	.2	.8	.4	20	2.4	.3	(*)	.6	
7	0	.1	*1.0	.2	.9	*.4	14	3.4	.3		0	
8	0	0	1.0	.2	*.8	.4	*11	3.2	.3		0	
9	0	0	1.0	.2	.8	.4	22	3.8	.3		0	
10	0	0	.8	.2	.7	.4	30	7.0	.3		0	
11	0	0	.7	.2	.6	.4	30	9.8	.3		0	
12	0	0	.8	.2	.6	.4	25	8.0	.3		0	
13	0	0	.3	.2	.6	.4	22	6.7	.3		0	
14	0	0	.3	.3	.5	.4	16	3.8	.2		0	
15	0	0	.3	.2	.5	.4	14	2.6	.2		0	
16	0	*.6	.2	*.3	.5	.4	12	1.5	*.2		0	
17	0	.7	.2	.2	.5	.4	10	.8	.2		0	
18	1.6	.2	.2	.3	.5	.4	8	.6	.2		0	
19	0	0	.1	.2	.5	.4	8	*.6	.2		0	
20	0	2.1	.1	.2	.5	.5	*6.7	.5	.2		*0	
21	0	6.7	*.1	.4	.5	.5	6.1	.4	.1		0	
22	0	*3.0	.2	7.0	*.5	.7	2.4	.4	.1		0	
23	0	1.5	.1	*.9	.5	*3.2	1.8	.4	.1	(*)	0	
24	0	1.3	.1	.8	.5	3.8	1.6	.4	.1		0	
25	0	1.1	.1	.7	.5	3.4	1.5	.4	.1		0	
26	0	.9	.1	.6	.5	5.3	1.3	.3	.1		0	
27	0	.8	*.1	.8	.5	6.7	1.2	.3	.1		0	
28	0	.7	.1	.8	.5	9.1	1.6	.3	.1		0	
29	0	.5	.1	.6	.6	12	2.2	.2	0		0	
30	0	.5	.1	.6		18	1.8	.2	0		0	
31	0	-----	.2	.6	-----	28	-----	.2	-----		0	-----
Total	1.6	20.7	10.6	18.1	17.5	99.3	511.2	64.5	6.0	0	2.4	0
Mean	0.05	0.69	0.34	0.58	0.60	3.20	17.0	2.08	0.20	0	0.08	0
Max	1.6	6.7	1.0	7.0	0.9	28	85	9.8	0.3	0	1.8	0
Min	0	0	0.1	0.2	0.5	0.4	1.2	0.2	0	0	0	0
Ac-ft	3.2	41	21	36	35	197	1,010	128	12	0	4.8	0

Calendar year 1963: Max 28 Min 0 Mean 0.46 Ac-ft 330
Water year 1963-64: Max 85 Min 0 Mean 2.05 Ac-ft 1,490

Peak discharge (base, 100 cfs).--Apr. 1 (2000 hrs) 129 cfs (4.78 ft).

* Discharge measurement or observation of no flow made on this day.

11-695. San Jacinto River near San Jacinto, Calif.--Continued.

Combined discharge, in cubic feet per second, of San Jacinto River, Lake Hemet Water Co.'s upper and lower canals, and Fairview Land and Water Co.'s pipeline, near San Jacinto, Calif., water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.6	1.6	1.4	4.4	4.0	90	22	12	2.6	3.5	4.1
2	.2	.6	1.6	1.4	4.4	4.7	74	21	12	2.5	3.5	3.8
3	.2	.7	1.8	1.4	3.6	4.5	45	19	11	2.3	3.7	3.3
4	.2	.8	1.6	1.3	3.5	4.0	34	20	12	2.1	3.7	3.3
5	.4	.8	1.4	1.3	3.5	3.8	34	21	11	2.1	6.2	3.4
6	.9	1.0	1.0	1.4	3.4	4.2	31	21	11	2.0	5.0	3.4
7	.8	2.1	1.2	1.4	3.3	4.2	26	22	11	1.9	3.9	3.8
8	.9	2.0	1.2	1.4	3.0	4.1	24	22	11	1.9	3.7	3.8
9	1.0	1.5	1.2	1.0	3.0	3.9	28	22	11	1.5	3.9	3.8
10	1.1	1.2	1.0	1.2	2.9	3.9	30	22	11	1.3	4.0	3.4
11	1.6	1.1	.9	1.4	3.0	3.7	36	22	10	1.2	4.0	3.4
12	1.9	1.0	1.6	1.4	3.3	4.1	39	22	9.7	1.1	4.0	3.4
13	1.9	.9	1.8	1.3	3.2	5.2	36	22	8.7	.7	4.0	3.4
14	1.8	.7	1.8	1.7	2.9	4.7	32	22	7.7	.4	4.2	3.4
15	1.9	.8	1.8	1.6	2.9	4.4	33	22	7.2	.3	4.2	3.4
16	2.0	1.8	1.0	1.5	3.1	4.2	32	22	6.7	.3	4.0	3.3
17	2.6	2.1	1.3	1.6	3.2	3.9	30	21	6.5	.3	3.9	3.1
18	5.7	1.6	1.7	1.8	3.1	3.9	28	21	6.2	.3	4.0	3.1
19	3.6	1.4	1.6	4.5	3.1	4.1	28	21	5.8	.5	4.0	3.1
20	3.1	3.6	1.6	3.0	3.1	4.2	28	20	5.6	1.8	3.9	3.1
21	2.8	8.1	1.5	5.4	2.9	4.3	30	20	5.4	2.6	3.5	3.0
22	1.9	3.9	1.6	17	3.1	5.5	25	19	4.8	2.9	3.5	3.1
23	1.2	2.4	1.6	8.4	3.1	11	24	18	4.5	2.9	3.7	3.3
24	1.0	2.3	1.6	6.0	3.1	10	22	17	4.2	2.9	3.9	3.6
25	.6	2.1	1.5	5.2	3.3	9.1	21	16	3.7	3.0	3.8	4.0
26	.5	2.0	1.5	4.7	3.5	12	20	15	3.5	3.5	3.9	3.8
27	.4	2.0	1.3	4.4	3.5	13	19	15	3.5	4.4	4.1	3.6
28	.6	1.9	1.3	4.6	3.2	16	22	14	3.2	4.2	4.1	3.3
29	.7	1.6	1.3	4.6	3.9	19	25	14	2.9	3.5	3.9	3.5
30	.7	1.6	1.3	4.4	-----	24	23	14	2.7	3.4	3.9	3.5
31	.6	-----	1.4	4.4	-----	34	-----	13	-----	3.7	4.1	-----
Total	43.0	54.2	44.6	102.1	95.5	241.6	969	602	225.5	64.1	123.7	103.5
Mean	1.39	1.81	1.44	3.29	3.29	7.79	32.3	19.4	7.52	2.07	3.99	3.45
Max	5.7	8.1	1.8	17	4.4	34	90	22	12	4.4	6.2	4.1
Min	0.2	0.6	0.9	1.0	2.9	3.7	19	13	2.7	0.3	3.5	3.0
Ac-ft	85	108	88	203	189	479	1,920	1,190	447	127	245	205

Calendar year 1963: Max 33 Min 0.2 Mean 3.00 Ac-ft 2,170

Water year 1963-64: Max 90 Min 0.2 Mean 7.29 Ac-ft 5,290

Peak discharge (base, 100 cfs).---Apr. 1 (2000 hrs) 129 cfs.

SANTA ANA RIVER BASIN

11-700. Bautista Creek near Hemet, Calif.

Location.--Lat 33°41'40", long 116°51'00", in NE 1/4 SW 1/4 sec. 35, T.5 S., R.1 E., on left bank a quarter of a mile upstream from unnamed tributary, 6 miles upstream from mouth, and 8 miles southeast of Hemet.

Drainage area.--39.4 sq mi.

Records available.--October 1947 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 2,250 ft (from topographic map).

Average discharge.--17 years, 0.51 cfs (369 acre-ft per year); median of yearly mean discharges, 0.01 cfs (7 acre-ft per year).

Extremes.--Maximum discharge during year, 18 cfs Mar. 23 (gage height, 2.66 ft); no flow for most of year.

1947-64: Maximum discharge, 1,440 cfs Apr. 3, 1958 (gage height, 4.65 ft); no flow for most of each year.

Remarks.--Records poor. No regulation above station. One diversion above station for irrigation of about 15 acres.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 20.....	0.1	Mar. 24.....	2.1
Jan. 22.....*	1.9	25.....	.1
Mar. 23.....*	2.8		

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	0.1	0.1	0	0.003	0.2
January 1964.....	1.9	1.9	0	.06	3.8
March.....	5.0	2.8	0	.16	9.9
Calendar year 1963.....	-	.7	0	.003	2.0
Water year 1963-64.....	-	2.8	0	.02	14

Peak discharge (base, 20 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--Flow occurred only on days listed above.

11-705. San Jacinto River near Elsinore, Calif.

Location.--Lat 33°39'51", long 117°17'35", in SE 1/4 sec. 9, T.6 S., R.4 W., on right bank 2 miles east of Elsinore and 2.1 miles downstream from Railroad Canyon Dam.

Drainage area.--728 sq mi (revised).

Records available.--January 1916 to September 1964. Monthly figures 1927-50, adjusted for diversion, published in WSP 1315-B.

Gage.--Water-stage recorder. Altitude of gage is 1,270 ft (from topographic map). Prior to Feb. 13, 1916, staff gage at site 0.75 mile downstream at different datum. Feb. 13, 1916, to Oct. 27, 1921, staff gage at present site at different datum.

Average discharge (river only).--37 years (1927-64), 9.05 cfs (6,550 acre-ft per year); median of yearly mean discharges, 0.1 cfs (72 acre-ft per year), since construction of Railroad Canyon Reservoir.

(combined).--37 years (1927-64), 11.1 cfs (8,040 acre-ft per year); median of yearly mean discharges, 1.1 cfs (800 acre-ft per year), since construction of Railroad Canyon Reservoir.

Extremes.--Maximum discharge during year, 308 cfs Mar. 23 (gage height, 4.85 ft); no flow for most of year.

1916-64: Maximum discharge, 16,000 cfs Feb. 17, 1927 (gage height, 11.8 ft), from rating curve extended above 2,000 cfs on basis of slope-area measurement of maximum flow; no flow for several months in most years.

Remarks.--Records good. Flow partly regulated by Lake Hemet (see p. 158) and regulated since 1928 by Railroad Canyon Reservoir (capacity, 12,000 acre-ft) 2.1 miles above station. Diversion for irrigation and domestic use above Railroad Canyon Reservoir. Temescal Water Co. diverts from Railroad Canyon Reservoir for irrigation below station in vicinity of Corona. Except for minimal quantities, discharge during the year was imported Colorado River water, released at a site 15 miles upstream. Zero discharge for the 1964 water year was used to compute Average discharge.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 3-16, 24-29, Mar. 27 to Apr. 1)

2.0	0	3.0	21
2.1	.1	3.3	39
2.2	.4	3.6	66
2.3	1.1	4.0	117
2.4	2.2	4.5	205
2.5	3.9	5.0	325
2.7	8.9		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					0.2	236	* 2.0	0.2	0.1			
2					23	256	2.1	.2	0	(*)		
3	(*)		(*)		*104	293	1.5	.2	0			(*)
4					*122	278	1.3	.2	0			
5					*141	*275	1.2	.2	0			
6					*121	272	1.1	.3	0			
7					*149	272	1.0	.4	0			
8				(*)	138	270	.8	.3	0			
9					*138	267	*.8	.2	0			
10					136	269	.8	.1	.2			
11					*148	268	.7	.1	.3			
12					183	*265	.6	.1	.2			
13					*197	264	.6	.1	.1			
14					205	267	*.6	.1	.1			
15					236	265	.6	.1	0			
16					232	268	.5	.1	0			
17					222	271	.4	.1	0			
18					236	280	.4	.1	0			
19					238	290	.4	.1	0			
20					*250	300	.4	0	0			
21					241	300	.3	0	0			
22					177	300	.3	0	0			
23					221	293	.3	0	0			
24					243	302	.4	0	0			
25					275	300	.3	0	0			
26					272	*298	.3	0	0			
27					*272	242	.2	*0	.2			
28	(*)			(*)	270	195	0	0	.2			
29					259	195	*.2	0	0	(*)		
30					228	228	.2	0	0			
31					-----	*157	-----	.1	-----			-----
Total	0	0	0	0	5,449.2	2,246	38.5	3.3	1.4	0	0	0
Mean	0	0	0	0	188	266	1.28	0.11	0.05	0	0	0
Max	0	0	0	0	272	302	20	0.4	0.3	0	0	0
Min	0	0	0	0	0.2	167	0.2	0	0	0	0	0
Ac-ft	0	0	0	0	10,810	16,360	76	6.5	2.8	0	0	0
Calendar year 1963: Max	0		Min 0		Mean 0		Ac-ft 0		Meant 0.39		Ac-ft† 279	
Water year 1963-64: Max	302		Min 0		Mean 37.5		Ac-ft 27,260		Meant 0		Ac-ft† 0	

* Discharge measurement or observation of no flow made on this day.

† Combined discharge.

Note.--No diversion by Temescal Water Co. during water year; therefore, no combined discharge is published.

SANTA ANA RIVER BASIN

11-710. Elsinore Lake at Elsinore, Calif.

Location (revised).--Lat 33°40'10", long 117°22'20", in Elsinore State Park, near northwest shore at Elsinore, Riverside County.

Drainage area.--768 sq mi.

Records available.--December 1915 to September 1964.

Gage.--Staff gage read occasionally. Gage heights have been reduced to elevations above mean sea level. Prior to Feb. 13, 1951, staff gage at numerous sites on northeast shore at various datums. Feb. 13, 1951, to Aug. 4, 1964, staff gages at various sites, at datum 10.2 ft higher.

Extremes.--Maximum elevation observed during year, 1,234.1 ft Apr. 1; lake dry Oct. 1 to Feb. 1.

1915-64: Maximum elevation observed, 1,265.6 ft Mar. 20-25, 1916, during period of overflow; maximum observed since cessation of overflow in June 1917, 1,259.8 ft May 6, 11-20, 1922; lake dry during parts of water years 1951, 1954-59, and all of 1960-63.

Remarks.--Lake replenished with imported Colorado River water during year. Elsinore Lake overflows into Temescal Creek, which is its outlet, only during and after years of unusually heavy rainfall. Elevation at which lake is dry, about 1,223.0 ft. There has been no outflow since June 30, 1917. History of lake prior to 1916 is published in WSP 441. Summary of high stages that have occurred from 1916 to 1942 is contained in WSP 961. Flow partly regulated by Lake Hemet (see p.156) and regulated since 1928 by Railroad Canyon Reservoir (capacity, 12,000 acre-ft).

Cooperation.--Two elevations furnished by Elsinore State Park Ranger.

Elevation, in feet, water year October 1963 to September 1964

Date	Elevation	Date	Elevation	Date	Elevation
Oct. 28	Dry	Mar. 12	1,229.8	June 15	1,232.4
Dec. 3	Dry	26	1,233.0	July 15	1,231.5
31	Dry	Apr. 1	1,234.1	29	1,231.0
Jan. 29	Dry	9	1,233.6	Aug. 4	1,231.0
Feb. 13	1,223.7	14	1,233.6	18	1,230.7
27	1,226.7	24	1,233.4	Sept. 3	1,230.2
Mar. 5	1,228.4	May 26	1,233.2		

11-720. Temescal Creek near Corona, Calif.

Location.--Lat 33°50'29", long 117°30'37", in El Sobrante de San Jacinto Grant, on left bank 0.2 mile downstream from unnamed tributary and 3.8 miles southeast of Corona, Riverside County.

Drainage area.--164 sq mi (not including 768 sq mi above Elsinore Lake).

Records available.--October 1927 to September 1964. Monthly discharge only for the period October 1927 to January 1929, published in WSP 1315-B.

Gage.--Water-stage recorder and incomplete masonry-dam control (ineffective due to sand fill). Altitude of gage is 730 ft (from topographic map). Prior to Feb. 11, 1943, at datum 6.00 ft higher.

Average discharge.--37 years, 2.89 cfs (2,090 acre-ft per year); median of yearly mean discharges, 0.05 cfs (36 acre-ft per year).

Extremes.--Maximum discharge during year, 103 cfs Nov. 20 (gage height, 7.97 ft); no flow for most of year.

1927-64: Maximum discharge, 14,900 cfs Mar. 2, 1938, on basis of slope-area measurement of maximum flow; no flow at times in most years.

Remarks.--Records poor. Flow regulated by Elsinore Lake and several storage reservoirs. Many diversions above station for irrigation. No water wasted from Lake Mathews during year.

Discharge, in cubic feet per second, water year, October 1963 to September 1964

Nov. 20.....*15	Mar. 24..... 0.4
Jan. 21.....* 1.5	25..... .1
22.....* 4.2	Apr. 1..... .3
Mar. 22..... 3.7	11..... .1
23..... 8	

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	15	15	0	0.50	30
January 1964.....	5.7	4.2	0	.18	11
March.....	5.0	3.7	0	.16	9.9
April.....	.4	.3	0	.01	.8
Calendar year 1963.....	-	15	0	.10	74
Water year 1963-64.....	-	15	0	.07	52

*Discharge measurement made on this day.

Note.--Flow occurred only on days listed above.

11-730. San Antonio Creek near Claremont, Calif.

Location.--Lat 34°12'58", long 117°40'04", in SE 1/4 SW 1/4 sec. 36, T.2 N., R.8 W., on right bank 0.5 mile upstream from Southern California Edison Co.'s Sierra powerplant and 8.8 miles northeast of Claremont.

Drainage area.--16.5 sq mi (revised).

Records available.--January 1917 to September 1963; combined records of creek and conduit, March 1901 to December 1916 (fragmentary, published as "near Upland"), January 1917 to September 1964.

Gage.--Water-stage recorder and broad-crested weir since January 1939 on creek; water-stage recorder and sharp-crested weir on conduit; water-stage recorder and combination rectangular-V-notch weir on river pickup. Altitude of gage is 3,400 ft (from topographic map). Prior to Aug. 24, 1907, staff gage at site 0.5 mile upstream, just above intake to Sierra powerplant, at different datum. Aug. 24, 1907, to Jan. 24, 1917, hook gage and rectangular weir in powerplant tailrace 0.5 mile downstream at different datum; flow in natural channel estimated. Jan. 25, 1917, to Jan. 9, 1939, water-stage recorder at site 50 ft downstream at different datum.

Average discharge (creek only).--47 years (1917-64), 8.50 cfs (6,150 acre-ft per year); median of yearly mean discharges, 2.2 cfs (1,600 acre-ft per year).

(combined).--59 years (1901-2, 1903-4, 1905-9, 1910-15, 1916-64), 21.3 cfs (15,420 acre-ft per year); median of yearly mean discharges, 16 cfs (11,600 acre-ft per year).

Extremes (creek only).--Maximum discharge during year, 9.1 cfs Jan. 21 (gage height, 1.58 ft); minimum daily, 0.1 cfs Aug. 18-26, Sept. 10-13.

1917-64: Maximum discharge, 21,400 cfs Mar. 2, 1938, on basis of slope-area measurement and rainfall-runoff studies; no flow Aug. 24-27, 31, Sept. 1, Oct. 17-21, 1951.

(combined).--Maximum discharge during year, 21 cfs Jan. 21; minimum daily, 0.3 cfs Dec. 12-17.

1917-64: Maximum discharge, 21,400 cfs Mar. 2, 1938; minimum daily, 0.3 cfs Dec. 8-19, 1954, Dec. 12-17, 1964.

Remarks.--Records good. No regulation above station. Discharge measurements generally made two or more times a month. For records of combined discharge of San Antonio Creek and Southern California Edison Co.'s Sierra conduit, which diverts above station, see following page.

Cooperation.--Twenty six discharge measurements furnished by Los Angeles County Flood Control District. Gage-height record for conduit and records of river pickup furnished by Southern California Edison Co.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.0	0.1	1.3	2.1
1.1	.4	1.4	3.9
1.2	1.1		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.3	0.4	0.4	0.4	0.5	0.4	2.9	0.6	0.4	0.2	0.2	0.2
2	.3	.4	.4	*.4	.5	.4	3.0	.6	.4	*.2	.2	*.2
3	.3	.4	.4	.4	.5	.4	2.1	.6	.4	.2	*.2	.2
4	.3	.4	*.4	.4	.4	.4	1.6	.6	*.4	.2	.2	.2
5	.3	.4	.4	.3	.4	.4	1.3	.6	.3	.3	.2	.2
6	.3	.6	.4	.3	.4	.4	1.2	1.2	.3	*.3	.2	.2
7	.3	*.5	.4	.3	.5	.4	1.1	*1.1	.3	.2	.2	.2
8	*.3	.4	.4	.3	.5	.4	1.0	.9	.4	.2	.2	.2
9	.3	.4	.4	.4	.5	.4	*1.0	.8	A.4	.2	.2	.2
10	*.3	.4	.4	.4	*.5	.4	1.0	.8	A.4	.2	.2	*.1
11	.3	.4	.4	.4	.5	.4	.9	.7	A.4	.2	.2	.1
12	.3	.4	.3	.4	.4	*.4	.8	.7	A.4	.2	.2	.1
13	.3	.4	.3	*.4	*.4	.4	.8	*.6	A.4	.2	*.2	.1
14	.3	.4	.3	.4	.4	.4	.8	.6	A.4	.2	.2	.2
15	.3	.7	.3	.4	.4	.4	.8	.6	*.4	.2	.2	*.2
16	.3	.8	.3	*.4	.4	*.4	*.8	.6	.4	*.2	.2	.2
17	.4	.7	.3	.4	.4	.4	.8	.6	.4	*.3	.2	.2
18	.4	.7	.3	.4	.4	.4	.8	.6	*.4	.3	.1	.2
19	.4	.6	*.3	.4	.4	.4	.8	.6	.4	.3	.1	.2
20	.4	1.4	.3	.4	.4	.4	.8	.6	.4	.3	*.1	.2
21	.4	*1.1	.3	2.1	.4	.4	.8	*.6	.4	.3	.1	.2
22	.4	1.0	.3	2.3	.4	.6	.7	.6	.4	.3	.1	.2
23	.4	.9	.3	.9	.4	.6	*.7	.6	.3	.3	.1	.2
24	*.4	.9	.3	.7	.4	.6	.7	.6	.3	.3	.1	*.2
25	.4	.6	.3	.6	*.4	.7	.6	*.6	.3	.3	.1	.2
26	.4	.6	.3	.6	.4	*.8	.6	.6	.3	.3	.1	.2
27	.4	.5	.3	.6	*.4	.8	.6	.6	.3	.3	*.2	.2
28	*.4	.5	.4	*.6	.4	.8	*.6	.6	.2	.3	.2	.2
29	.4	.4	.4	.6	.4	.8	.7	.5	.2	.2	.2	.2
30	.4	.4	.4	.6	-----	*.8	.6	.5	.2	*.2	.2	.2
31	.4	-----	*.4	.6	-----	1.0	-----	.4	-----	.2	.2	-----
TOTAL	10.8	17.7	10.8	17.8	12.4	15.9	30.9	20.2	10.6	7.6	5.3	5.6
MEAN	0.35	0.59	0.35	0.57	0.43	0.51	1.03	0.65	0.35	0.25	0.17	0.19
MAX	0.4	1.4	0.4	2.3	0.5	1.0	3.0	1.2	0.4	0.3	0.2	0.2
MIN	0.3	0.4	0.3	0.3	0.4	0.4	0.6	0.4	0.2	0.2	0.1	0.1
AC-FT	21	35	21	35	25	32	61	40	21	15	11	11

CALENDAR YEAR 1963

MAX 8.2

MIN 0.2

MEAN 0.54

AC-FT 392

WATER YEAR 1963-64

MAX 3.0

MIN 0.1

MEAN 0.45

AC-FT 328

Peak discharge (base, 50 cfs).--No peak above base.

* Discharge measurement made on this day.

A No gage-height record.

SANTA ANA RIVER BASIN

11-730. San Antonio Creek near Claremont, Calif.--Continued.

Combined discharge, in cubic feet per second, of San Antonio Creek and Southern California Edison Co.'s
Sierra conduit near Claremont, Calif., water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.0	5.6		6.7	6.8	6.1	12	13	12	9.2	7.1	5.9
2	5.0	5.6		6.7	6.7	6.3	11	13	12	9.2	7.1	6
3	5.2	5.6		6.7	6.6	6.0	10	13	12	9.2	7.1	6
4	5.2	5.6		6.7	6.6	6.0	9.3	13	12	9.2	7.1	6
5	5.2	5.6	6	6.6	6.6	6.1	9.1	13	12	9.3	7.1	5.9
6	5.2	6.0		6.6	6.6	6.1	8.6	13	11	9.0	7.1	5.9
7	5.2	5.7		6.6	6.4	6.0	8.5	13	11	8.9	7.1	5.6
8	5.2	5.6		6.6	6.4	6.0	8.5	13	12	8.6	6.8	5.9
9	5.2	5.6		6.7	6.4	6.0	8.6	13	12	8.6	6.8	5.6
10	3.7	5.6		6.7	6.4	6.0	8.7	13	12	8.6	6.8	5.5
11	5.2	5.6		6.7	6.4	6.0	8.7	13	11	8.6	6.8	5.5
12	5.2	5.6		6.7	6.3	6.0	8.6	13	11	8.3	6.8	5.5
13	5.2	5.6		6.7	6.3	6.0	8.6	13	11	8.3	6.8	5.5
14	5.2	5.3	6.5	6.7	6.3	6.0	9.0	13	10	8.3	6.5	5.6
15	5.2	6.4		6.7	6.3	6.0	9.0	13	10	8.3	6.5	5.6
16	5.5	6.0		6.4	6.0	6.0	9.0	13	10	8.0	6.5	5.6
17	5.8	5.9		6.4	6.0	5.8	9.3	13	10	8.1	6.5	5.6
18	6.1	5.9		6.4	6.0	5.8	9.3	13	10	8.1	6.4	5.6
19	5.6	5.8	6.6	6.4	6.1	5.8	9.3	13	10	8.1	6.1	5.4
20	5.6		6.6	6.4	6.1	5.8	9.3	13	10	7.8	6.1	5.4
21	5.6		6.6	9.6	6.1	5.8	9.4	13	10	7.8	6.1	5.4
22	5.6		6.6	8.9	6.1	6.2	9.7	13	10	7.8	6.1	5.4
23	5.6		6.6	7.5	6.1	6.2	10	13	9.9	7.8	6.1	5.4
24	5.6		6.6	7.3	6.1	6.1	10	13	9.6	7.8	5.8	5.4
25	5.6	6	6.6	6.9	6.1	6.5	10	13	9.7	7.8	5.8	5.4
26	5.6		6.6	6.9	6.1	6.9	12	13	9.7	7.8	6.1	5.4
27	5.6		6.6	6.9	6.1	6.8	12	14	9.7	7.5	5.9	5.4
28	5.6		6.7	6.9	6.1	6.8	13	14	9.6	7.5	6.2	5.4
29	5.6		6.7	6.9	6.1	6.8	13	14	9.6	7.4	6.2	5.4
30	5.6		6.7	6.9		6.8	13	12	9.6	7.1	5.9	5.1
31	5.6		6.7	6.9		7.5		12		7.1	5.9	
Total	166.3	174.6	198.2	213.7	182.2	192.2	296.5	404	318.4	255.1	201.2	167.3
Mean	5.36	5.82	6.39	6.89	6.28	6.20	9.88	13.0	10.6	8.23	6.49	5.58
Max	6.1	-	6.7	9.6	6.8	7.5	13	14	12	9.3	7.1	6
Min	3.7	5.3	-	6.4	6.0	5.8	8.5	12	9.6	7.1	5.8	5.1
Ac-ft	330	346	393	424	361	381	588	801	632	506	399	332

Calendar year 1963: Max 15 Min 3.7 Mean 6.70 Ac-ft 4,850

Water year 1963-64: Max 13 Min 3.7 Mean 7.57 Ac-ft 5,490

Peak discharge (base, 50 cfs).--No peak above base.

Note.--Conduit broken Nov. 20 to Dec. 18; Sept. 2-4; discharge estimated.

11-734.7 (revised). Cucamonga Creek near Upland, Calif.

Location.--Lat 34°10'26", long 117°37'51", in SW 1/4 sec. 17, T.1 N., R.7 W., on right bank 0.5 mile downstream from unnamed tributary on left and 5.3 miles north of Upland.

Drainage area.--10.1 sq mi.

Records available.--October 1927 to September 1964. Monthly discharge only for October to December 1928, published in WSP 1315-B.

Gage.--Water-stage recorder (digital) and broad-crested weir since December 1938. Altitude of gage is 2,360 ft (from topographic map). Prior to Jan. 17, 1935, and Apr. 15, 1935, to Nov. 11, 1936, at site 2,500 ft downstream at different datums. Jan. 18 to Apr. 14, 1935, at site 1,200 ft downstream at different datum. Nov. 12, 1936, to Dec. 13, 1938, at site 300 ft downstream at different datum.

Average discharge.--37 years, 6.79 cfs (4,920 acre-ft per year); median of yearly mean discharges, 4.5 cfs (3,300 acre-ft per year).

Extremes.--Maximum discharge during year, 49 cfs Apr. 1 (gage height, 2.77 ft); minimum daily, 0.5 cfs Aug. 12-13, 16-25, Sept. 25. 1927-64: Maximum discharge, 10,300 cfs Mar. 2, 1938, based on rainfall-runoff study; minimum daily, 0.3 cfs Oct. 5, 6, 1962.

Remarks.--Records fair. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.0	1.4	1.9	1.4	2.1	1.7	17	2.1	2.1	1.3	0.8	*0.9
2	1.1	1.7	1.8	1.4	2.1	2.1	13	2.3	2.1	1.3	.8	.8
3	1.1	1.9	1.7	1.4	2.1	1.7	11	2.2	2.1	1.3	.8	*.8
4	1.1	*2.0	*1.8	1.4	2.0	1.7	8.1	2.4	2.0	1.2	*.7	.7
5	1.2	2.0	1.8	1.4	1.8	1.7	7.4	2.3	2.0	1.3	.7	.7
6	1.2	3.1	1.8	1.5	1.8	1.7	6.7	3.2	2.3	*1.2	.7	.7
7	1.1	2.9	1.8	1.4	1.9	1.7	5.9	2.7	2.6	1.1	.6	.7
8	*.8	2.2	1.8	1.5	1.9	1.7	5.2	2.7	2.8	1.1	.5	.7
9	1.0	2.0	1.8	1.5	1.7	1.6	4.8	2.6	3.1	1.1	.6	.6
10	2.0	1.8	1.8	1.5	1.7	1.5	4.5	2.7	2.8	1.1	.6	.6
11	2.0	1.8	1.8	1.5	1.7	1.4	4.4	2.5	2.4	1.1	.6	.6
12	2.3	1.9	1.8	1.5	1.7	1.4	4.2	2.5	2.3	1.0	.5	.6
13	2.3	2.0	1.7	*1.5	1.7	1.4	4.1	*2.5	2.2	.9	*.5	.7
14	2.3	2.1	1.7	1.5	1.5	1.4	4.0	2.4	2.0	.9	.6	.8
15	2.3	3.9	1.7	1.5	1.5	1.2	3.9	2.4	*1.9	.9	.6	*.8
16	3.1	3.9	1.7	1.5	1.5	*1.2	*3.9	2.6	2.0	.9	.5	.8
17	3.4	3.1	1.7	1.5	*1.8	1.3	3.8	2.6	2.0	*.9	.5	.8
18	4.4	3.0	1.7	1.7	1.8	1.5	3.9	2.5	2.1	.7	.5	.8
19	3.9	2.9	*1.6	1.7	1.8	1.5	4.0	2.4	2.2	.6	.5	.7
20	3.6	11	1.6	1.7	1.5	1.5	3.8	2.5	2.2	.6	.5	.7
21	3.5	6.6	1.6	8.1	1.6	1.6	3.2	2.5	2.2	.6	.5	*.7
22	2.9	5.0	1.6	9.0	1.6	2.9	3.1	2.5	1.7	.7	.5	.6
23	2.8	4.3	1.6	3.9	1.8	3.2	3.1	2.6	1.6	.7	.5	.6
24	2.6	3.4	*1.6	3.0	1.9	2.7	2.7	2.7	1.5	.7	.5	.6
25	2.3	2.7	1.4	2.7	1.8	3.0	2.6	2.5	1.5	.7	.5	.5
26	2.1	2.4	1.5	2.6	*1.8	3.3	2.4	*2.5	1.5	.7	.6	.7
27	2.0	2.3	1.5	2.4	1.8	3.2	2.2	2.7	1.5	.8	.8	.6
28	1.9	2.2	1.5	*2.4	1.6	3.1	*2.3	2.5	1.5	.7	.8	.6
29	1.8	2.0	1.5	2.4	1.8	3.2	2.3	2.4	1.4	.7	.9	.6
30	1.8	2.1	1.7	2.4	-----	*3.1	2.3	2.3	1.4	.6	.9	.6
31	1.6	-----	*1.6	2.1	-----	4.7	-----	2.3	-----*	.7	1.0	-----
TOTAL	66.5	89.6	52.1	71.0	51.3	64.9	149.8	77.6	61.0	28.1	19.6	20.6
MEAN	2.15	2.99	1.68	2.29	1.77	2.09	4.99	2.50	2.03	.91	.63	.69
AC-FT	132	178	103	141	102	129	297	154	121	56	39	41
MAX	4.4	11	1.9	9.0	2.1	4.7	17	3.2	3.1	1.3	1.0	0.9
MIN	0.8	1.4	1.4	1.4	1.5	1.2	2.2	2.1	1.4	0.6	0.5	0.5

CALENDAR YEAR 1963 MAX 16 MIN 0.8 MEAN 2.30 AC-FT 1,660
 WATER YEAR 1963-64 MAX 17 MIN 0.5 MEAN 2.05 AC-FT 1,490

Peak discharge (base, 80 cfs).--No peak above base.

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 6-24.

SANTA ANA RIVER BASIN

11-740. Santa Ana River below Prado Dam, Calif.

Location.--Lat 33°53'00", long 117°38'40", in La Sierra Grant, on left bank of outlet channel, 2,500 ft downstream from axis of Prado Dam and 4.5 miles west of Corona, Riverside County.

Drainage area.--1,486 sq mi, (not including 768 sq mi above Elsinore Lake).

Records available.--May 1930 to November 1939 (irrigation seasons only), March 1940 to September 1964. Published as "at Santa Fe Railroad Bridge, near Prado" May 1930 to November 1931, as "at Atchison, Topeka, & Santa Fe Railroad Bridge, near Prado" May 1932 to November 1939, and as "below Prado Dam, near Prado" March 1940 to September 1950.

Gage.--Water-stage recorder and concrete control since August 1944. Datum of gage is approximately 449 ft above mean sea level (Corps of Engineers Survey). Prior to Mar. 18, 1940, water-stage recorder at about same site at various datums.

Extremes.--Maximum discharge during year, 493 cfs Nov. 21 (gage height, 3.52 ft); minimum daily, 17 cfs Aug. 24, 25.
1940-64: Maximum discharge, 2,260 cfs Dec. 24, 1940 (gage height, 3.20 ft); minimum daily, 12 cfs for some days in 1960.
Flood of Mar. 2, 1938, 100,000 cfs, result of slope-area measurement at site 2.5 miles downstream.

Remarks.--Records good. Discharge measurements generally made three or more times a month. Flow regulated since 1941 by Prado Reservoir (capacity, 222,800 acre-ft) and Big Bear Lake (see p. 123). Natural streamflow affected by extensive ground-water withdrawals, diversion for irrigation, and return flow from irrigated areas. Santa Ana River Development Co. pumps water from wells in Prado Reservoir into conduit which passes through dam and is released to river immediately downstream from gage. No water pumped in 1964.

Cooperation.--Nineteen discharge measurements furnished by Orange County Flood Control District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 13-18, Jan. 2-23, Feb. 4 to Mar. 23)

1.9	14
2.1	40
2.3	85
2.6	175
2.9	280
3.2	389

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	42	48	50	58	52	117	40	32	23	20	21
2	38	42	48	50	62	52	155	40	35	22	20	21
3	40	44	44	50	52	65	85	40	35	21	20	21
4	38	44	42	50	48	54	72	38	35	21	20	21
5	37	44	42	50	48	52	65	40	35	21	20	21
6	37	44	42	50	46	50	62	44	37	21	20	22
7	37	50	46	50	48	50	58	48	37	20	21	22
8	37	50	50	48	50	46	56	50	35	20	21	22
9	44	48	54	50	50	44	54	52	37	22	21	22
10	48	46	54	50	52	44	54	52	35	23	21	22
11	46	40	52	48	50	44	54	46	35	23	22	22
12	34	41	56	46	50	46	54	42	35	22	22	22
13	35	44	70	46	50	50	52	40	34	21	21	21
14	37	46	60	47	50	48	52	42	34	22	21	21
15	40	48	52	46	50	46	48	44	34	22	22	22
16	52	72	48	46	50	44	44	54	38	22	22	23
17	52	60	50	46	50	44	44	48	40	22	21	23
18	52	52	46	50	48	46	44	48	35	22	22	27
19	37	52	46	52	50	44	44	50	35	25	22	26
20	40	294	46	48	48	42	44	48	40	25	21	27
21	40	377	46	116	48	40	38	40	38	26	20	27
22	40	123	44	282	54	44	37	37	35	26	18	27
23	42	82	44	215	54	218	37	35	35	26	18	26
24	42	70	44	95	48	214	37	37	32	25	17	26
25	40	56	44	85	46	140	37	35	30	25	17	27
26	42	68	46	78	44	92	40	35	30	23	18	28
27	42	62	46	75	42	82	37	35	27	22	18	28
28	42	60	46	75	42	75	42	35	25	22	18	28
29	44	54	44	70	48	70	48	35	25	21	18	28
30	46	50	44	68	---	62	48	35	23	20	20	28
31	44	---	48	68	---	68	46	35	---	20	21	---
Total	1,291	2,205	1,492	2,200	1,446	2,058	1,657	1,300	1,013	696	623	722
Mean	41.6	73.5	48.1	71.0	49.9	66.7	55.2	41.9	33.8	22.5	20.1	24.1
Max	52	377	70	282	68	218	155	54	40	26	22	28
Min	34	40	42	46	42	40	37	35	23	20	17	21
Ac-ft	2,560	4,370	2,960	4,360	2,870	4,100	3,290	2,580	2,010	1,380	1,240	1,430
Calendar year 1963: Max	542	Min	16	Mean	52.0	Ac-ft	37,630					
Water year 1963-64: Max	377	Min	17	Mean	45.7	Ac-ft	33,150					

11-757.2. Carbon Creek below Carbon Canyon Dam, Calif.

Location.--Lat 33°54'50", long 117°50'30", in SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.17, T.3 S., R.9 W., on right wall of outlet channel, 250 ft downstream from toe of Carbon Canyon Dam and 2.4 miles northwest of Yorba Linda.

Drainage area.--19.4 sq mi (revised).

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 398.29 ft above mean sea level, datum of 1958 (Corps of Engineers bench mark).

Extremes.--Maximum discharge during year, 27 cfs Oct. 17 (gage height, 0.52 ft); no flow for most of year.

1961-64: Maximum discharge, 81 cfs Feb. 13, 1962 (gage height, 0.89 ft); no flow for most of each year.

Remarks.--Records good. Flow regulated by Carbon Canyon flood-control reservoir (capacity, 7,030 acre-ft). No diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Oct. 15.....0.1	Oct. 23.....5.2	Jan. 27.....0.7
16......7	24.....2.0	Mar. 25.....3.8
17.....4.7	25......4	Apr. 1......5
18.....2.1	Nov. 20......1	2.....1.2
22.....3.6	27.....2.6	

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	18.8	5.2	0	0.61	37
November.....	2.7	2.6	0	.09	5.4
January 1964.....	.7	.7	0	.02	1.4
March.....	3.8	3.8	0	.12	7.5
April.....	1.7	1.2	0	.06	3.4
Calendar year 1963.....	-	5.2	0	.09	65
Water year 1963-64.....	-	5.2	0	.08	55

Note.--Flow occurred only on days listed above.

SANTA ANA RIVER BASIN

11-758. Santiago Creek at Modjeska, Calif.

Location.--Lat 33°42'32", long 117°38'05", in SE 1/4 sec. 29, T.5 S., R.7 W., on right bank at Santiago Canyon road bridge, 0.3 mile west of Modjeska and 0.4 mile downstream from Harding Creek.

Drainage area.--12.5 sq mi.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 1,258.77 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 17 cfs Apr. 2 (gage height, 2.03 ft); no flow Oct. 1 to Nov. 19, Dec. 13 to Jan. 20, June 11 to Sept. 30.

1961-64: Maximum discharge, 302 cfs Feb. 11, 1962 (gage height, 3.53 ft); no flow for several months in each year.

Remarks.--Records good. Slight regulation by Modjeska Reservoir on Harding Creek. No diversion above station.

Cooperation.--Two discharge measurements furnished by Orange County Flood Control District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.3	0	1.7	3.1
1.4	.2	1.8	5.6
1.5	.5	1.9	8.8
1.6	1.4	2.1	18

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.1	0	0.9	0.2	* 6.5	0.8	0.1			
2	(*)	0	.1	0	.9	.3	14	.7	.1	(*)		(*)
3		0	* .1	0	.8	.3	9.6	.6	.1			
4		0	.1	0	.6	.3	7.1	.6	.1			
5		* 0	.1	0	.6	.3	5.6	.6	.1			
6		0	.1	0	.7	.3	4.5	.8	.1			
7		0	.1	0	.4	.3	3.7	.8	.1			
8		0	.1	0	.4	.3	3.1	.8	.1			
9		0	.1	* 0	.4	.3	2.9	.6	.1			
10		0	.1	0	.4	.3	2.5	.6	* .1			
11		0	.1	0	.4	.3	2.1	.6	0			
12		0	.1	0	* .4	.3	1.8	.6	0			
13		0	0	0	.4	.3	1.6	* .6	0			
14		0	0	0	.4	.3	* 1.4	.5	0			
15		0	0	0	.4	.3	1.1	* .5	0	(*)		
16		0	0	0	.4	.3	1.0	.5	* 0			
17		0	0	0	.4	* .2	.8	.5	0			
18		0	* 0	0	.4	.2	.8	.4	0		(*)	
19		0	0	0	.3	.2	.9	.4	0			
20		* 1.6	0	0	.5	.2	.9	.4	0			
21		.5	0	.4	.3	.2	.9	.4	0			
22		.2	0	.34	.3	.3	.9	.4	0			
23		.2	0	* 3.3	.4	1.5	.9	.3	0			
24		.2	0	2.5	.2	4.7	.9	.3	0			
25		.2	0	1.9	* .2	4.0	.9	.3	0			
26		.2	0	1.8	.2	3.7	.8	* .2	0			
27		.2	0	1.5	.2	3.3	.8	.2	0			
28		.2	0	1.4	.2	2.9	* .8	.2	0			
29		.2	0	1.4	.2	2.3	.8	.2	0	(*)		
30		.2	* 0	* 1.2	-----	2.1	.8	.2	0			
31		-----	0	1.0	-----	1.9	-----	.2	-----			
Total	0	3.9	1.2	198	123	324	804	148	1.0	0	0	0
Mean	0	0.13	0.04	0.64	0.42	1.05	2.68	0.48	0.03	0	0	0
Max	0	1.6	0.1	3.4	0.9	4.7	14	0.8	0.1	0	0	0
Min	0	0	0	0	0.2	0.2	0.8	0.2	0	0	0	0
Ac-ft	0	7.7	2.4	39	24	64	159	29	2.0	0	0	0

Calendar year 1963: Max 15 Min 0 Mean 0.22 Ac-ft 161

Water year 1963-64: Max 14 Min 0 Mean 0.45 Ac-ft 327

Peak discharge (base, 100 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

11-760. Santiago Creek at Santiago Dam, near Villa Park, Calif.

Location.--Lat 33°47'10", long 117°43'33", near west corner of lot 70 of Lomas de Santiago Grant, on upstream face near left end of Santiago Dam, 0.3 mile upstream from Fremont Canyon, and 5.7 miles southeast of Villa Park, Orange County.

Drainage area.--63.1 sq mi (revised).

Records available.--October 1931 to September 1960, October 1961 to September 1964.

Gage.--Staff gage read on last day of each month. Datum of gage is at mean sea level.

Average discharge.--32 years, 15.9 cfs (11,520 acre-ft per year); median of yearly mean discharges, 9.4 cfs (6,800 acre-ft per year).

Remarks.--Records of total inflow represents all water reaching Santiago Reservoir, including precipitation on the reservoir and supplemental Colorado River water delivered through aqueduct of Metropolitan Water District of Southern California. Total inflow computed on basis of records of storage, release (draft), spill, leakage and evaporation. Monthly evaporation from lake surface computed on basis of evaporation from Class A pan using coefficient of 0.80. Records of net inflow exclude supplemental water from Colorado River. This earth-fill dam was completed in December 1931. Area and capacity tables for the reservoir are dated December 1930. Capacity of reservoir at spillway level (gage height, 790.0 ft), 25,000 acre-ft. Dead storage below lowest outlet included in these records. Minor diversions in basin above this reservoir.

Cooperation.--Records of reservoir operation and draft furnished by Serrano and Carpenter Irrigation Districts and Irvine Co.

Revisions.--Revised figures of net inflow for the water year 1962, published in the 1962 State Report, are given below; records for water years 1962-63, not previously published.

Monthly net inflow, water years October 1961 to September 1964

Month	Elevation (feet)†	Contents in (acre- feet)	Change in Contents (acre- feet)	Draft (acre- feet)	Evapo- ration (acre- feet)	Spill, waste, and leakage (acre- feet)	Total inflow (acre- feet)	Colorado River water imported (acre- feet)	Net inflow (acre- feet)
Santiago Reservoir									
Sept. 30.....	725.4	2,252	-	-	-	-	-	-	-
Oct. 31.....	724.8	2,176	-76	193	54	0	171	24	147
Nov. 30.....	724.8	2,176	0	19	42	0	61	0	61
Dec. 31.....	733.2	3,393	+1,217	30	30	0	1,277	1,300	-23
Calendar year 1961.....	-	-	-	-	-	-	-	-	-
Jan. 31.....	734.8	3,665	+272	105	62	0	439	296	143
Feb. 28.....	750.4	7,318	+3,653	24	70	0	3,747	0	3,747
Mar. 31.....	754.5	8,588	+1,270	34	77	0	1,381	0	1,381
Apr. 30.....	755.1	8,783	+195	149	134	0	381	0	478
May 31.....	754.8	8,685	-98	582	133	0	617	164	453
June 30.....	753.5	8,268	-417	700	138	0	421	0	421
July 31.....	748.3	6,748	-1,520	1,831	172	0	483	0	483
Aug. 31.....	741.9	5,154	-1,594	1,877	154	0	437	0	437
Sept. 30.....	735.5	3,792	-1,362	1,543	93	0	274	0	274
Water year 1961-62.....	-	-	+1,540	7,087	1,159	0	9,786	1,784	8,002
Oct. 31.....	726.4	2,384	-1,408	1,661	57	0	310	0	310
Nov. 30.....	722.2	1,868	-516	872	37	0	393	144	249
Dec. 31.....	722.5	1,902	+34	381	36	0	451	295	156
Calendar year 1962.....	-	-	-1,491	9,759	1,163	0	9,431	899	8,532
Jan. 31.....	721.4	1,779	-123	383	33	0	293	89	204
Feb. 28.....	723.8	2,056	+277	100	42	0	419	252	167
Mar. 31.....	726.8	2,438	+382	69	44	0	495	327	168
Apr. 30.....	735.6	3,811	+1,373	56	57	0	1,486	1,537	-51
May 31.....	738.5	4,385	+574	384	72	0	1,030	1,015	15
June 30.....	736.1	3,904	-481	479	87	0	85	0	85
July 31.....	732.7	3,312	-592	725	106	0	239	0	239
Aug. 31.....	730.0	2,900	-412	912	93	0	593	414	179
Sept. 30.....	729.8	2,870	-30	653	79	0	702	514	188
Water year 1962-63.....	-	-	-922	6,675	743	0	6,496	4,587	1,909
Oct. 31.....	729.3	2,795	-75	370	45	0	340	128	212
Nov. 30.....	729.3	2,795	0	69	37	0	106	5	101
Dec. 31.....	729.5	2,825	+30	665	43	0	738	612	126
Calendar year 1963.....	-	-	+923	4,865	738	0	6,526	4,893	1,633
Jan. 31.....	731.4	3,110	+285	806	43	0	1,134	1,014	120
Feb. 29.....	742.9	5,400	+2,290	171	85	0	2,546	2,563	-17
Mar. 31.....	748.9	6,912	+1,512	752	112	0	2,376	2,301	75
Apr. 30.....	749.2	6,992	+80	670	106	0	856	774	82
May 31.....	748.8	6,885	-107	807	128	0	828	655	173
June 30.....	749.2	6,992	+107	1,058	127	0	1,292	1,161	131
July 31.....	749.1	6,966	-26	1,109	183	0	1,266	1,084	182
Aug. 31.....	747.5	6,532	-434	931	150	0	647	459	188
Sept. 30.....	744.2	5,712	-820	1,530	116	0	826	633	193
Water year 1963-64.....	-	-	+2,842	8,938	1,175	0	12,955	11,389	1,566

† At 1700 hrs.

Note.--For months when inflow to the reservoir was small and other quantities were large, discordant figures of net inflow may appear. This arises primarily from the difficulty of computing net inflow as the residual of several larger quantities, which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

SANTA ANA RIVER BASIN

11-775. Santiago Creek at Santa Ana, Calif.

Location.--Lat 33°46'09", long 117°52'54", in NE¼SW¼NW¼ sec.1, T.5 S., R.10 W., on left bank at end of Baker Street, Santa Ana, 2,400 ft upstream from mouth.

Drainage area.--95.0 sq mi (revised).

Records available.--October 1928 to September 1964. Monthly discharge only October to December 1928, published in WSP 1315-B.

Gage.--Water-stage recorder. Altitude of gage is 110 ft (from topographic map). Prior to June 22, 1948, at datum 0.96 ft higher.

Average discharge.--36 years, 4.27 cfs (3,090 acre-ft per year); median of yearly mean discharges, 0.7 cfs (510 acre-ft per year).

Extremes.--Maximum discharge during year, 621 cfs Nov. 20 (gage height, 4.50 ft); no flow for most of year.

1928-64: Maximum discharge, 4,400 cfs Mar. 2, 1938 (gage height, 8.36 ft, present datum), from rating curve extended above 1,200 cfs; maximum gage height, 9.85 ft Jan. 16, 1952; no flow for most of each year.

Remarks.--Records poor. Flow regulated by Santiago Reservoir. Diversions above station by Irvine Co. and Serrano and Carpenter Irrigation Districts. In each winter season, some water originally diverted from Santa Ana River by Santa Ana Valley Irrigation Co.'s canal is occasionally wasted into Santiago Creek 3 miles above station.

Cooperation.--Two discharge measurements furnished by Orange County Flood Control District.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Oct. 18.....	7.1	Jan. 21.....	*17
Nov. 6.....	6.3	22.....	*16
15.....	6.9	Mar. 22.....	6.2
19.....	1.9	23.....	11
20.....	*162	24.....	3.7
21.....	3.8	Apr. 1.....	5.4

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	7.1	7.1	0	0.23	14
November.....	180.9	162	0	6.03	359
January 1964.....	33	17	0	1.06	65
March.....	20.9	11	0	.67	41
April.....	5.4	5.4	0	.18	11
Calendar year 1963.....	-	162	0	.85	617
Water year 1963-64.....	-	162	0	.68	490

*Discharge measurement made on this day.

Note.--Flow occurred only on days listed above.

11-780. Santa Ana River at Santa Ana, Calif.

Location---Lat 33°44'56", long 117°54'30", in NW¹SW¹SE¹ sec.10, T.5 S., R.10 W., on center pier of Fifth Street Bridge in Santa Ana, 1.8 miles downstream from Santiago Creek.

Drainage area---1,685 sq mi, (not including 768 sq mi above Elsinore Lake).

Records available---January 1923 to September 1964.

Gage---Water-stage recorder. Datum of gage is 71.20 ft above mean sea level (Orange County bench mark). Jan. 3, 1923, to Jan. 24, 1929, at same site at different datum. Jan. 25, 1929, to June 20, 1948, at site 450 ft upstream at different datum. June 21, 1948, to May 2, 1960, at same site at different datum. Feb. 28, 1961, to Oct. 1, 1961, at same site at datum 2.00 ft higher.

Average discharge---17 years (1923-40), 23.4 cfs (16,940 acre-ft per year); median of yearly mean discharges, 3.1 cfs (2,200 acre-ft per year); 24 years (1940-64), 13.0 cfs (9,410 acre-ft per year); median of yearly mean discharges, 1.5 cfs (1,100 acre-ft per year).

Extremes---Maximum discharge during year, 1,000 cfs Nov. 20 (gage height, 3.31 ft), from rating curve extended above 260 cfs on basis of slope-area measurement of 4,720 cfs; no flow for most of year.

1923-1964: Maximum discharge, 46,300 cfs Mar. 3, 1938 (gage height, 10.20 ft, former site and datum), on basis of slope-area measurement of maximum flow; no flow for several months each year.

Remarks---Records poor. Natural flow affected by ground-water withdrawals, diversions, importation from Metropolitan Water District, municipal use, return flow from irrigation, Prado flood-control reservoir (capacity, 222,800 acre-ft) since 1940, three small flood-control reservoirs (combined capacity, 31,900 acre-ft), Big Bear Lake (see p.123), and Santiago Reservoir (capacity, 25,000 acre-ft). Flows up to 100 cfs can be diverted from Carbon Creek to Coyote Creek, 1.5 miles upstream from mouth of Carbon Creek.

Cooperation---Two discharge measurements furnished by Orange County Flood Control District.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 15..... * 8.8	Nov. 25..... a5	Mar. 22..... 6.1
16..... 3.6	26..... * 2.9	23.....* 15
20.....* 273	Jan. 18..... .2	24..... 8.2
21..... 9.7	19..... 3.3	31..... * .2
22..... * 24	21.....* 35	Apr. 1..... 14
23..... a10	22.....* 41	2..... .1
24..... a 7.5	23..... * .2	

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	344.5	273	0	11.5	683
January 1964.....	79.7	41	0	2.57	158
March.....	29.4	15	0	.95	58
April.....	14.1	14	0	.47	28
Calendar year 1963.....	-	273	0	2.65	1,910 ²
Water year 1963-64.....	-	273	0	1.28	927

* Discharge measurement or observation of no flow made on this day.

a No gage-height record.

Note---Flow occurred only on days listed above.

SAN GABRIEL RIVER BASIN

11-805. East Fork San Gabriel River near Camp Bonita, Calif.

Location.--Lat 34°14'08", long 117°48'16", in NE 1/4 sec. 27, T.2 N., R.9 W., on right bank 1,600 ft upstream from mouth of Graveyard Canyon, 2.5 miles upstream from confluence with West Fork, and 2.5 miles west of Camp Bonita.

Drainage area.--84.6 sq mi (revised).

Records available.--December 1932 to September 1964. Prior to 1940, published as San Gabriel River near Camp Bonita.

Gage.--Water-stage recorder. Datum of gage is 1,567.04 ft above mean sea level (levels by Los Angeles County Flood Control District). Prior to Dec. 10, 1938, at site 0.6 mile downstream at different datum.

Average discharge.--31 years (1933-64), 64.2 cfs (46,480 acre-ft per year); median of yearly mean discharges, 41 cfs (29,700 acre-ft per year).

Extremes.--Maximum discharge during year, 202 cfs Jan. 22 (gage height, 8.91 ft); minimum daily, 5.0 cfs Sept. 22-23.

1932-64: Maximum discharge, 46,000 cfs Mar. 2, 1938, from rating curve extended above 21,300 cfs (computed by Geological Survey); minimum, 1.5 cfs Oct. 1, 1934.

Remarks.--Discharge measurements made one or more times a week. No regulation or diversion above station.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	11	19	15	19	15	102	42	30	15	9.3	8.0
2	10	11	18	14	19	17	95	41	29	15	9.3	8.0
3	10	11	18	14	20	15	71	40	29	15	9.3	7.2
4	10	12	17	14	20	15	58	41	29	15	9.3	6.7
5	10	12	17	13	20	15	53	41	28	14	9.3	6.3
6	9.9	16	16	14	19	15	48	45	27	14	8.9	7.2
7	9.3	20	16	14	18	16	42	42	28	12	8.9	7.2
8	8.9	17	16	15	17	15	40	40	29	12	8.4	6.7
9	9.3	15	16	15	17	15	42	41	28	12	8.4	5.9
10	9.9	15	17	15	17	15	45	42	28	12	8.9	5.9
11	9.9	14	16	15	17	15	46	45	27	12	8.9	5.9
12	10	14	16	15	17	15	50	46	25	11	8.4	5.4
13	9.9	13	15	14	18	15	50	48	23	11	8.4	5.4
14	9.9	13	15	14	18	15	49	48	22	10	8.4	5.9
15	9.9	19	15	14	18	14	49	45	21	11	8.4	6.7
16	10	24	15	14	18	14	50	44	22	11	8.4	6.3
17	15	20	15	14	17	14	50	41	23	11	8.0	6.3
18	15	18	15	14	16	13	51	40	24	10	7.6	6.7
19	14	17	15	14	16	13	53	39	24	10	7.2	6.3
20	13	47	15	14	15	14	48	39	23	9.9	7.2	5.9
21	12	34	15	35	16	15	45	39	22	9.9	7.6	5.9
22	11	29	15	55	16	22	41	38	20	9.9	7.2	5.0
23	12	25	15	27	15	26	44	36	20	10	6.3	5.0
24	12	23	15	21	15	23	42	35	20	10	6.3	5.4
25	11	20	15	20	15	20	40	33	19	9.9	6.3	6.3
26	10	20	15	19	15	20	40	33	18	9.9	6.7	6.7
27	10	20	15	20	15	20	38	33	16	12	7.6	6.7
28	10	19	15	19	15	20	41	33	15	9.9	8.0	5.9
29	11	19	15	19	17	21	44	32	15	9.9	8.4	5.9
30	12	19	15	19	-----	23	42	32	15	9.9	7.6	6.3
31	11	-----	15	19	-----	27	-----	30	-----	9.3	7.6	-----
Total	335.9	567	487	558	495	532	1,509	1,224	699	353.5	250.5	189.0
Mean	10.8	18.9	15.7	18.0	17.1	17.2	50.3	39.5	23.3	11.4	8.08	6.30
Max	15	47	19	55	20	27	102	48	30	15	9.3	8.0
Min	8.9	11	15	13	15	13	38	30	15	9.3	6.3	5.0
Ac-ft	666	1,120	966	1,110	982	1,060	2,990	2,430	1,390	701	497	375

Calendar year 1963: Max 186 Min 4.7 Mean 17.6 Ac-ft 12,730
 Water year 1963-64: Max 102 Min 5.0 Mean 19.7 Ac-ft 14,290

11-820. West Fork San Gabriel River at Camp Rincon, Calif.

Location.--Lat 34°14'30", long 117°51'50", in SE $\frac{1}{4}$ sec.19, T.2 N., R.9 W., on right bank 0.2 mile upstream from Camp Rincon, 0.5 mile downstream from North Fork, and 6 miles downstream from Cogswell Dam.

Drainage area.--104 sq mi (revised).

Records available.--October 1927 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 1,474.94 ft above mean sea level (levels by Los Angeles County Flood Control District). Prior to Nov. 19, 1930, at site $\frac{1}{2}$ miles downstream at different datum. Aug. 27, 1938, to July 3, 1941; at datum 6.41 ft higher.

Average discharge.--37 years, 59.7 cfs (43,220 acre-ft per year); median of yearly mean discharges, 32 cfs (23,200 acre-ft per year).

Extremes.--Maximum discharge during year, 414 cfs June 24 (gage height, 8.84 ft); minimum daily, 1.9 cfs Sept. 12-13. 1927-64: Maximum discharge, 34,000 cfs (estimated) Mar. 2, 1938; no flow at times in 1928-29.

Remarks.--Discharge measurements made twice a week. Flow regulated by Cogswell flood-control reservoir (capacity, 10,630 acre-ft). No diversion above station.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.3	6.9	11	8.7	12	9.5	195	34	18	5.6	2.9	3.3
2	5.6	7.6	11	9.1	11	10	94	33	18	5.3	2.9	3.1
3	5.6	7.2	11	8.7	11	9.8	63	32	18	5.0	2.9	2.9
4	5.9	7.2	11	8.7	11	9.5	53	33	18	5.3	2.9	2.7
5	6.2	7.2	11	8.7	11	9.5	48	33	17	5.6	2.9	2.5
6	5.9	12	10	8.7	11	9.5	44	35	13	5.6	2.9	2.5
7	5.3	11	10	8.7	11	9.5	42	35	13	5.3	2.9	2.5
8	5.3	9.5	9.8	8.7	10	9.5	42	34	14	4.7	2.5	2.3
9	5.0	8.7	9.8	8.7	10	9.5	41	34	16	4.4	2.7	2.1
10	5.0	8.0	11	8.7	10	9.1	40	33	15	4.1	2.7	2.1
11	7.9	7.6	10	8.7	10	9.5	39	32	14	4.1	2.7	2.1
12	7.6	7.6	10	9.1	9.8	9.8	38	32	13	3.8	2.7	1.9
13	6.2	7.6	10	9.1	9.8	10	37	30	12	3.8	2.7	1.9
14	5.6	7.6	10	9.1	9.8	9.8	36	28	12	3.8	2.7	2.1
15	5.6	14	10	9.1	9.8	9.1	34	29	11	3.8	2.7	2.5
16	9.0	14	10	9.1	9.8	8.0	32	30	12	3.8	2.5	2.5
17	8.7	11	10	9.1	9.8	9.3	34	30	15	3.8	2.3	2.5
18	9.1	11	10	8.7	9.8	16	34	30	15	3.5	2.3	2.7
19	8.7	11	10	8.7	9.8	17	34	28	15	3.5	2.3	2.7
20	8.4	42	10	8.7	9.5	17	33	27	15	3.3	2.3	2.5
21	8.0	24	9.8	59	9.5	18	31	27	14	3.3	2.3	2.7
22	7.6	19	9.5	92	9.1	24	30	27	14	3.3	2.3	2.5
23	7.2	17	9.1	28	9.1	33	30	27	13	3.5	2.1	2.3
24	6.9	15	9.1	20	9.1	29	30	27	43	3.3	2.1	2.1
25	6.9	13	9.5	17	9.1	26	29	27	9.0	3.3	2.1	2.1
26	6.5	13	9.5	15	9.1	25	28	23	6.9	3.5	2.1	2.5
27	6.5	12	9.5	14	9.1	24	27	17	9.4	3.8	2.5	2.5
28	6.5	12	9.5	14	9.1	24	30	16	7.6	3.1	2.9	2.5
29	6.5	11	9.5	13	9.8	24	30	18	6.5	2.9	2.9	2.5
30	6.9	11	9.1	13	-----	23	31	18	5.6	2.9	3.1	2.3
31	6.9	-----	9.1	13	-----	29	-----	17	-----	2.9	3.3	-----
Total	208.3	365.7	308.8	474.8	288.9	489.9	1,309	876	423.0	123.9	81.1	73.4
Mean	6.72	12.2	9.96	15.3	9.96	15.8	43.6	28.3	14.1	4.00	2.62	2.45
Max	9.1	42	11	92	12	33	195	35	43	5.6	3.3	3.3
Min	5.0	6.9	9.1	8.7	9.1	8.0	27	16	5.6	2.9	2.1	1.9
Ac-ft	413	725	612	942	573	972	2,600	1,740	839	246	161	146

Calendar year 1963: Max 276 Min 2.5 Mean 16.4 Ac-ft 11,870
 Water year 1963-64: Max 195 Min 1.9 Mean 13.7 Ac-ft 9,970

SAN GABRIEL RIVER BASIN

11-835. San Gabriel River near Azusa, Calif.

Location.--Lat 34°10'11", long 117°53'16", in SW 1/4 sec.13, T.1 N., R.10 W., on right bank 1.1 miles downstream from Morris Dam and 2.7 miles northeast of Azusa.

Drainage area.--214 sq mi (revised).

Records available.--May to November 1894, September 1895 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 867.59 ft above mean sea level (from Los Angeles County Flood Control District bench mark). Prior to August 1917, staff gages and August 1917 to Sept. 30, 1937, water-stage recorders at several sites from 1½ to 2 miles downstream at different datum. Oct. 1, 1937, to Feb. 21, 1938, water-stage recorder at site half a mile downstream at different datum. Feb. 22, 1938, to Feb. 7, 1939, water-stage recorder at site a quarter of a mile upstream at different datum. Datum lowered 4.35 ft May 9, 1950.

Average discharge (combined).--69 years (1895-1964), 145 cfs (105,000 acre-ft per year), adjusted for diversions, importations, and regulation and evaporation in Cogswell, San Gabriel, and Morris Reservoirs; median of yearly mean discharges, 96 cfs (69,500 acre-ft per year).

Extremes.--Maximum discharge during year, 50 cfs Aug. 26 (gage height, 4.87 ft); no flow for most of year.

1894, 1895-1964: Maximum discharge, 65,700 cfs Mar. 2, 1938, by computation of maximum flow over Morris Dam; no flow for several months in most years.

Remarks.--Records poor. Flow regulated by Cogswell and San Gabriel flood-control reservoirs (combined capacity, 54,500 acre-ft) and by Morris Reservoir (capacity, 35,000 acre-ft). Azusa Canal diverts above high-water level of Morris Reservoir or from San Gabriel Reservoir about 5 miles above station. The Metropolitan Water District of Southern California reports a release of 518 acre-ft of Colorado River water into San Gabriel River below Morris Dam and above station during the water year. They also furnished records of combined discharge for San Gabriel River computed on basis of flow in river above Morris Reservoir plus Azusa canal, adjusted for storage and evaporation in Cogswell, San Gabriel, and Morris Reservoirs, as shown in table below. These figures of discharge are equivalent to combined records of San Gabriel River and Southern California Edison Co.'s canal as published from 1894 to 1933.

Month	Combined discharge (acre-feet)	Month	Combined discharge (acre-feet)
October.....	964	April.....	5,580
November.....	2,070	May.....	3,400
December.....	1,690	June.....	1,840
		July.....	942
Calendar year 1963.....	24,570	August.....	583
		September.....	504
January.....	2,590	Water year 1963-64.....	24,000
February.....	1,770		
March.....	2,070		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Jan. 19.....	0.8	Aug. 27.....	0.4
22.....	.5	Sept. 29.....	a20
Aug. 25.....	17	30.....	a20
26.....	22		

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
January 1964.....	1.3	0.8	0	0.04	2.6
August.....	39.4	22	0	1.27	78
September.....	40	20	0	1.33	79
Calendar year 1963.....	-	27	0	.98	712
Water year 1963-64.....	-	22	0	.22	160

a No gage height record.

Note.--Flow occurred only on days listed above.

SAN GABRIEL RIVER BASIN

175

11-845. Fish Creek near Duarte, Calif.

Location.--Lat $34^{\circ}10'100''$, long $117^{\circ}55'25''$, in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 15, T.1 N., R.10 W., on left bank 0.8 mile upstream from mouth of canyon and $\frac{3}{4}$ miles northeast of Duarte.

Drainage area.--6.36 sq mi (revised).

Records available.--July to September 1916, July 1917 to September 1964.

Gage.--Water-stage recorder and broad-crested weir since July 1917, restored in December 1938. Altitude of gage is 1,000 ft (from topographic map). Prior to July 28, 1917, staff gage at same site at different datum. July 28, 1917, to Mar. 2, 1938, water-stage recorder at same site at different datum (destroyed by flood of Mar. 2, 1938). Mar. 3 to Dec. 7, 1938, staff gage at same site at different datum. Dec. 7, 1938, to Oct. 3, 1951, water-stage recorder at same site at datum 1 ft higher.

Average discharge.--47 years (1917-64), 3.73 cfs (2,700 acre-ft per year); median of yearly mean discharges, 2.1 cfs (1,500 acre-ft per year).

Extremes.--Maximum discharge during year, 178 cfs Jan. 21 (gage height, 3.50 ft); no flow July 14 to Aug. 31, Sept. 10-30. 1916-64: Maximum discharge, 2,100 cfs Mar. 2, 1938, and Jan. 23, 1943; maximum gage height, about 14.5 ft Feb. 11, 16, 1959 (from debris wave); no flow at times in some years.

Remarks.--Records good except those above 10 cfs, which are poor. No regulation or diversion above station.

Cooperation.--Nine discharge measurements furnished by Los Angeles County Flood Control District.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.4	0.5	0.5	1.2	0.9	2.5	1.5	0.4	0.2		* 0.1
2	.4	.5	* .5	.5	1.1	1.0	* 8.1	1.2	.4	.2		.1
3	.4	.6	.5	.4	1.0	.7	5.8	1.2	.5	.1		.1
4	.4	.7	.5	.4	.9	.6	4.7	1.2	.5	.1		.1
5	.4	.5	.5	.4	.8	.6	3.9	1.2	.5	.1		.1
6	.4	1.2	.5	.5	.8	.6	3.5	1.3	.5	.1		.1
7	* .4	.8	.5	.5	.7	.6	2.7	1.1	.5	* .1		.1
8	.4	.7	.5	.5	.7	.5	2.1	1.0	.7	.1		.1
9	.4	.6	.5	* .5	.7	.5	* 1.6	.9	1.0	.1		.1
10	.4	.5	.5	.5	* .6	.5	1.5	.8	.7	.1		0
11	.4	.4	.5	.5	.6	.5	1.4	.7	.6	.1		0
12	.4	.4	.5	.5	.6	* .8	1.3	* .7	.5	.1		0
13	.4	.4	.5	* .5	.6	.7	1.2	.7	.5	.1		0
14	.4	* .4	.5	.5	.6	.5	1.1	.7	.5	0	(*)	0
15	.4	1.5	.5	.6	.6	.5	.9	.7	.5	0		0
16	1.1	1.2	.5	.7	.6	.4	.9	.7	.5	0		* 0
17	.5	.9	* .5	.7	.6	* .3	.9	.7	* .6	0		0
18	.5	.8	.5	.7	.6	.3	1.0	.7	.6	0		0
19	.4	.8	.5	.8	.6	.4	1.1	.6	.6	0		0
20	.5	3.5	.5	.8	* .6	.4	1.0	.5	.6	* 0		0
21	.5	1.6	.5	48	.6	.4	.9	* .5	.6	0		0
22	.4	.9	.5	32	.6	2.4	.8	.5	.5	0		0
23	.4	.8	.5	* 4.2	.6	3.3	* 1.0	.6	.5	0		0
24	* .4	.8	.5	3.8	.6	2.9	1.0	.6	.4	0		0
25	.4	.6	.5	3.3	.7	2.2	.9	.6	.4	0		0
26	.4	.5	.5	2.5	* .7	* 1.8	1.0	* .6	.3	0		0
27	.4	.5	.4	1.5	.6	1.6	1.3	.6	.2	0		0
28	.4	.5	.4	* 1.3	.6	1.5	1.5	.6	.2	0		0
29	.4	.5	.4	1.3	1.1	1.4	1.5	.5	.2	0		0
30	.4	.5	.4	1.3	-----	1.3	1.5	.5	.2	0		0
31	* .4	-----	* .5	1.3	-----	1.7	-----	.5	-----	* 0		-----
Total	13.4	24.0	15.1	111.5	20.6	31.8	81.1	24.2	14.7	1.5	0	0.9
Mean	0.43	0.80	0.49	3.60	0.71	1.03	2.70	0.78	0.49	0.05	0	0.03
Max	1.1	3.5	0.5	48	1.2	3.3	25	1.5	1.0	0.2	0	0.1
Min	0.3	0.4	0.4	0.4	0.6	0.3	0.8	0.5	0.2	0	0	0
Ac-ft	27	48	30	221	41	63	161	48	29	3.0	0	1.8

Calendar year 1963: Max 71 Min 0 Mean 1.25 Ac-ft 905

Water year 1963-64: Max 48 Min 0 Mean 0.93 Ac-ft 673

Peak discharge (base, 60 cfs).--Jan. 21 (0600 hrs) 178 cfs (3.50 ft); Apr. 1 (0830 hrs) 79 cfs (2.94 ft).

* Discharge measurement or observation of no flow made on this day.

11-865. Little Dalton Creek near Glendora, Calif.

Location.--Lat 34°10'03", long 117°50'15", in NE 1/4 sec. 17, T.1 N., R.9 W., on left bank 0.2 mile upstream from Angeles National Forest boundary and 2.6 miles northeast of Glendora.

Drainage area.--2.72 sq mi (revised).

Records available.--December 1938 to September 1964. January 1929 to November 1938, at site 0.8 mile downstream; records not equivalent because diversion was not included.

Gage.--Water-stage recorder. Datum of gage is 1,334.38 ft above mean sea level (levels by Los Angeles County Flood Control District).

Average discharge.--26 years, 0.62 cfs (449 acre-ft per year); median of yearly mean discharges, 0.3 cfs (220 acre-ft per year).

Extremes.--Maximum discharge during year, 28 cfs Jan. 21 (gage height, 2.35 ft); no flow for most of year.

1938-64: Maximum discharge, 1,700 cfs Nov. 20, 1961 (gage height, 5.24 ft); no flow at times in each year.

Flood of Mar. 2, 1938, 960 cfs (estimated). Flood of February 1914, 1,020 cfs, result of slope-area measurement.

Remarks.--Discharge measurements made once a week during periods of flow. No regulation above station. Prior to December 1938, diversion by Glendora Irrigating Company then in use.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0		0	0	0	2.8	0				
2		0		0	0	.1	.4	0				
3		0		0	0	0	.3	0				
4		0		0	0	0	.3	0				
5		0		0	0	0	.2	0				
6		0		0	0	0	.1	.1				
7		0		0	0	0	.1	0				
8		0		0	0	0	.1	0				
9		0		0	0	0	.1	0				
10		0		0	0	0	0	0				
11		0		0	0	0	0	0				
12		0		0	0	0	0	0				
13		0		0	0	0	0	0				
14		0		0	0	0	0	0				
15		0		0	0	0	0	0				
16		0		0	0	0	0	0				
17		0		0	0	0	0	0				
18		0		0	0	0	0	0				
19		0		0	0	0	.3	0				
20		.4		0	0	0	0	0				
21		.1		2.9	0	0	0	0				
22		0		2.6	0	.6	0	0				
23		0		.8	0	.8	.1	0				
24		0		.5	0	.5	0	0				
25		0		.4	0	.3	0	0				
26		0		.2	0	.2	0	0				
27		0		.1	0	0	0	0				
28		0		.1	0	0	0	0				
29		0		.1	.1	0	.1	0				
30		0		.1	0	0	0	0				
31		-----		0	-----	.4	-----	0	-----			-----
Total	0	0.5	0	7.8	0.1	2.9	4.9	0.1	0	0	0	0
Mean	0	0.02	0	0.25	0.003	0.09	0.16	0.003	0	0	0	0
Max	0	0.4	0	2.9	0.1	0.8	2.8	0.1	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	1.0	0	15	0.2	5.8	9.7	0.2	0	0	0	0

Calendar year 1963: Max 15 Min 0 Mean 0.14 Ac-ft 101
 Water year 1963-64: Max 2.9 Min 0 Mean 0.04 Ac-ft 32

11-867.5. San Gabriel River above Whittier Narrows Dam, Calif.

Location.--Lat 34°02'00", long 118°02'14", in La Puente Grant, on downstream side of bridge near center, on San Gabriel River Parkway, 0.8 mile downstream from San Jose Flood channel, 1 $\frac{1}{4}$ miles upstream from axis of Whittier Narrows Dam, and 1.8 miles south of El Monte.

Drainage area.--353 sq mi.

Records available.--October 1955 to September 1957, October 1963 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 220 ft (from topographic map).

Extremes.--Maximum discharge during year, 3,120 cfs (gage height, 6.18 ft); no flow for several months.

1955-57, 1963-64: Maximum discharge, about 12,000 cfs Jan. 26, 1956 (gage height, 8.16 ft. from flood marks) on basis of maximum discharge for station at Pico; no flow for part of each year.

Remarks.--Records good. Flow regulated by San Gabriel, Cogswell, and Santa Fe flood control reservoirs (combined capacity, 90,300 acre-ft), several small flood-control reservoirs (combined capacity, 19,100 acre-ft), and Morris Reservoir (capacity, 35,000 acre-ft). Many diversions above station for irrigation, power development, and ground-water replenishment. Colorado River water was released to the San Gabriel River at a site 4.2 miles upstream from gage and 460 ft downstream from San Bernardino Road for ground-water replenishment. San Jose flood channel diverts all discharge above 200 cfs from San Jose Creek to the San Gabriel River above station. At times water is diverted from San Gabriel River below Santa Fe Dam to Rio Hondo.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	* 0	271	150	170	3.0	3.6	* 180	186	0	0.3		
2	0	285	150	170	2.7	2.9	8.3	182	0	0		
3	0	271	150	156	2.4	4.7	3.6	178	0	0		
4	0	254	138	170	2.7	3.9	2.4	178	0	0		
5	0	250	138	170	2.7	3.0	2.2	182	0	0		
6	0	164	142	170	2.7	2.7	1.9	182	0	0		
7	170	10	142	* 170	2.2	2.7	2.0	182	0	0		
8	220	50	142	166	2.7	2.4	1.0	174	0	0		
9	250	170	154	162	2.2	2.4	1.5	174	15	0		
10	238	170	152	162	2.4	2.4	1.5	174	1.3	0		
11	208	170	162	162	* 2.7	2.7	1.3	174	.9	0		
12	220	170	158	166	3.3	7.2	1.2	178	0	0		
13	232	170	158	166	3.0	12	1.3	182	.4	0		
14	238	170	158	170	3.0	4.3	* 1.3	182	.8	0		
15	257	100	158	174	3.0	3.0	1.1	182	.9	0		
16	226	80	162	178	2.7	2.7	1.4	186	.9	0		
17	182	150	156	182	2.4	2.4	1.9	190	.8	0		
18	208	150	170	107	2.4	2.7	.8	* 190	.6	0		
19	150	130	170	15	2.4	2.4	2.9	186	.8	0		
20	150	882	170	6.1	2.7	1.9	2.2	186	.8	* 0		
21	150	80	166	332	2.2	1.7	2.4	178	.5	0		
22	160	80	166	417	2.7	221	51	182	.4	0		
23	160	180	170	6.6	1.3	147	170	182	.6	0		
24	100	180	170	3.6	1.5	18	178	182	.8	0		
25	50	180	170	1.9	1.9	4.3	182	* 186	.6	0		
26	150	170	170	2.7	* 3.0	2.4	182	186	.4	0		
27	180	160	170	2.7	3.3	1.5	186	100	.5	0		
28	232	160	170	2.7	3.3	.9	220	0	.6	0		
29	271	160	170	2.7	6.1	1.3	208	.1	.3	0		
30	271	160	170	2.7	-----	.6	* 190	0	* .5	* 0		
31	264	-----	170	3.0	-----	* 8.4	-----	0	-----	0		
Total	4,987	5,607	4,972	3,779.7	78.6	505.2	1,789.2	4,824.1	28.4	0.3	0	0
Mean	161	187	160	122	2.71	16.3	59.6	156	0.95	0.01	0	0
Max	271	882	170	417	6.1	221	220	190	15	0.3	0	0
Min	0	10	138	1.9	1.3	0.6	0.8	0	0	0	0	0
Ac-ft	9,890	11,120	9,860	7,500	156	1,000	3,550	9,570	56	0.6	0	0
(†)	11,820	10,930	12,290	7,080	0	0	4,040	12,810	0	0	0	0

Calendar year 1963: Max - Min - Mean - Ac-ft - Ac-ft + -
 Water year 1963-64: Max 882 Min 0 Mean 72.6 Ac-ft 52,700 Ac-ft + 58,970

* Discharge measurement or observation of no flow made on this day.

† Colorado River water released to San Gabriel River at site 4.2 miles upstream.

Note.--No gage-height record Oct. 19-27, Nov. 7-19, Nov. 21 to Dec. 3.

Location.--Lat 34°01'25", long 118°02'05", in Paso de Bartolo Grant, on downstream side of Workman Mill Road Bridge, 3 miles north of Whittier, Los Angeles County.

Records available.--January 1929 to September 1964.

Gage.--Water-stage recorder on creek; water-stage recorder on flood channel. Datum of gage is 214.85 ft above mean sea level (levels by Los Angeles County Flood Control District). Prior to Sept. 27, 1937, at datum 2.0 ft higher. Since Sept. 13, 1955, supplementary water-stage recorder on San Jose flood channel 1.2 miles upstream.

Extremes.--Maximum discharge during year, 1,250 cfs Jan. 22; minimum daily, 0.2 cfs Oct. 6.
1929-64: Maximum discharge, 13,100 cfs Jan. 1, 1934; no flow at times.

Remarks.--Discharge measurements made once a week. One small diversion for ground-water recharge. San Jose flood channel $1\frac{1}{2}$ miles upstream diverts all flows in excess of 200 cfs from San Jose Creek to San Gabriel River above Whittier Narrows Reservoir. Records published herein represent combined flow of San Jose Creek and San Jose flood channel.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.1	0.6	4.1	5.0	4.4	2.5	152	3.5	2.0	2.0	3.4	3.2
2	2.3	1.4	4.8	6.4	4.1	17	8.1	3.6	1.6	1.9	3.2	3.4
3	1.4	1.8	10	5.5	4.6	4.3	5.9	3.6	1.4	1.7	3.1	3.4
4	.9	2.1	4.9	5.3	3.8	3.7	5.7	3.4	1.3	1.5	2.4	3.2
5	1.7	2.5	5.1	5.0	3.5	3.1	5.4	2.9	1.4	1.6	1.9	3.1
6	.2	4.4	5.1	5.3	3.5	3.4	5.2	2.7	1.4	1.4	1.6	3.0
7	.3	4.6	4.7	6.4	3.1	3.6	5.0	2.6	1.5	2.4	1.5	2.6
8	1.3	1.9	4.6	6.1	3.6	3.7	5.2	2.6	4.4	2.4	1.9	2.4
9	1.4	2.2	4.6	5.3	3.6	3.7	4.9	2.8	15	2.1	1.8	2.1
10	.8	2.2	4.6	5.3	3.8	4.1	4.4	3.0	4.9	2.2	1.9	2.1
11	1.3	.8	4.4	5.0	4.1	4.2	3.9	3.0	4.4	2.2	2.2	2.5
12	1.4	.5	4.4	4.7	4.4	5.9	3.7	2.9	3.3	2.4	2.2	2.8
13	1.3	1.0	5.0	4.1	4.1	7.8	3.5	2.9	3.6	2.6	2.1	2.7
14	1.2	2.2	3.6	4.2	4.1	3.5	3.4	3.1	3.8	3.1	2.2	2.7
15	1.2	38	4.2	4.4	4.2	3.2	3.2	3.0	3.5	3.3	2.4	2.8
16	14	7.0	4.9	3.6	4.4	2.9	3.0	3.0	3.2	3.6	2.5	2.7
17	7.3	4.7	5.5	4.1	4.4	2.6	3.1	2.8	3.1	3.1	2.6	2.8
18	32	3.3	4.6	5.5	4.6	2.8	2.7	2.6	2.8	2.9	2.4	2.8
19	5.0	6.8	4.7	4.0	4.7	2.6	3.7	2.4	2.8	3.0	2.2	3.1
20	4.8	498	4.7	4.0	4.6	2.6	3.7	2.2	2.8	3.1	2.2	3.4
21	4.3	26	4.4	150	4.1	3.1	4.0	1.9	2.7	2.8	2.3	3.7
22	3.2	6.1	4.1	297	4.0	194	4.1	2.1	2.2	2.6	2.5	3.7
23	2.2	4.4	3.6	11	3.5	112	4.2	2.1	2.5	2.8	2.9	3.3
24	2.2	4.0	3.8	8.2	3.3	27	4.3	2.5	2.4	3.0	3.2	3.0
25	1.1	3.7	3.8	6.3	3.2	7.6	4.5	2.9	2.4	2.6	3.3	3.0
26	1.9	3.2	3.5	6.6	3.5	5.6	4.5	3.5	2.3	2.7	3.2	3.0
27	1.9	3.2	4.0	6.2	3.0	5.5	4.7	3.3	2.3	3.2	3.2	2.9
28	.5	3.3	3.8	5.6	3.0	5.2	9.6	3.6	2.2	3.2	3.2	3.1
29	1.0	3.3	4.1	5.2	3.6	4.7	5.9	3.6	2.3	3.0	3.2	3.2
30	1.1	3.7	4.2	5.1	-----	4.5	4.4	2.9	2.2	2.8	3.4	3.2
31	.5	-----	4.6	4.7	-----	15	-----	2.1	-----	3.0	3.2	-----
Total	101.8	686.5	142.4	605.1	112.8	471.4	285.9	89.1	91.7	80.2	79.3	88.7
Mean	3.28	22.9	4.59	19.5	3.89	15.2	9.53	2.87	3.06	2.59	2.56	2.96
Max	32	498	10	297	4.7	194	152	3.6	15	3.6	3.4	3.7
Min	0.2	0.5	3.5	3.6	3.0	2.5	2.7	1.9	1.3	1.4	1.4	2.1
Ac-ft	202	1,360	282	1,200	224	935	567	177	182	159	157	176
Calendar year 1963:	Max	584	Min	0.1	Mean	10.4	Ac-ft	7,520				
Water year 1963-64:	Max	498	Min	0.2	Mean	7.75	Ac-ft	5,620				

Location--Lat 34°00'25", long 118°04'05", in Paso de Bartolo Grant, in downstream end of mid-span pier of Beverly Boulevard bridge, 0.7 mile downstream from San Jose Creek, and 0.8 mile northeast of Pico, Los Angeles County.

Records available.--October 1928 to September 1964. Since 1954, Colorado River water released to San Gabriel River above station.
Records since 1954 not equivalent.

Extremes.--Maximum discharge during year, 3,380 cfs Jan. 22 (gage height, 8.69 ft); no flow for many days. 1928-64: Maximum discharge, 22,700 cfs Mar. 2, 1938; no flow for periods each year.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964													
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	
1	0	225	128	141		0	181	171	3.3	7.2	9.0	0	
2	0	235	126	141		18	2.7	159	12	4.2	8.6	.3	
3	0	230	110	133		0	0	150	12	0	8.6	7.6	
4	0	215	113	141		0	0	155	12	0	8.6	7.9	
5	0	205	106	152		0	0	160	11	0	3.5	9.0	
6	0	150	106	159		0	0	160	11	0	0	9.9	
7	18	4.4	110	156		0	0	155	11	0	.3	9.9	
8	175	22	106	159		0	0	150	12	0	7.6	9.4	
9	200	145	113	152		0	0	145	21	0	8.3	9.4	
10	200	145	137	156		0	0	147	12	0	9.0	9.9	
11	200	140	137	156		0	0	152	11	0	9.4	10	
12	200	130	126	144		0	0	155	11	0	9.4	9.4	
13	200	145	123	130		.5	0	155	11	0	9.4	7.6	
14	200	140	130	141		0	0	150	11	0	8.6	10	
15	200	154	133	144		0	0	145	11	0	9.4	4.2	
16	164	29	133	133		0	0	150	11	0	8.6	2.0	
17	119	135	137	144		0	0	150	10	0	8.6	0	
18	152	135	144	85		0	0	150	11	0	9.0	3.1	
19	122	132	145	2.5		0	0	150	10	0	7.2	8.6	
20	128	881	145	0		0	0	155	10	0	6.6	9.0	
21	129	65	145	366		0	0	155	10	0	7.6	9.0	
22	129	26	145	530		227	16	155	9.9	0	8.3	9.0	
23	126	150	145	3.8		236	130	155	9.4	0	7.6	9.0	
24	95	155	145	0		31	148	160	9.4	0	8.3	9.0	
25	19	155	145	0		0	144	160	9.0	0	9.0	9.9	
26	125	149	145	0		0	141	160	8.6	0	5.1	9.9	
27	127	121	145	0		0	152	109	8.6	0	0	10	
28	155	120	145	0		0	157	2.0	8.6	.5	0	11	
29	225	125	140	0		0	157	0	8.6	7.6	0	11	
30	224	126	137	0	-----	0	171	0		8.3	0	12	
31	223	-----	137	0	-----		-----	0	-----	8.3	0	-----	
Total	3,865	4,789	4,082	3,469	3	0	512.5	1,419	4,120	3,150	36.1	195.6	237.0
Mean	125	160	132	112	0	0	16.5	47.3	133	10.5	1.16	6.31	7.90
Max	225	881	145	530	0	0	236	181	171	21	8.3	9.4	12
Min	0	4.4	106	0	0	0	0	0	0	0	0	0	0
Ac-ft	7,670	9,500	8,100	6,880	0	0	1,020	2,820	8,170	625	72	388	470
Calendar year 1963:	Max	1,080	Min	0	Mean	70.0	Ac-ft	50,680					
Water year 1963-64:	Max	881	Min	0	Mean	63.0	Ac-ft	45,720					

11-880. San Gabriel River at Spring Street, near Los Alamitos, Calif.

Location.--Lat 33°48'38", long 118°05'24", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec.24, T.4 S., R.12 W., on downstream side of Spring Street bridge, 1.2 miles upstream from Coyote Creek, and 1.2 miles northwest of Los Alamitos.

Drainage area.--472 sq mi (revised).

Records available.--October 1927 to September 1951, October 1952 to September 1964. Monthly discharge only for October 1927 to September 1936, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 12.25 ft above mean sea level, datum of 1929, supplementary adjustment of 1934. Prior to October 1952, at datum 4.44 ft higher.

Average discharge.--36 years, 22.4 cfs (16,220 acre-ft per year); median of yearly mean discharges, 2.5 cfs (1,800 acre-ft per year).

Extremes.--Maximum discharge during year, 2,570 cfs Jan. 22 (gage height, 6.29 ft); no flow for most of year. 1936-51, 1952-64: Maximum discharge, 27,000 cfs (estimated) Mar. 2, 1938; no flow for several months in each year.

Remarks.--Flow regulated by San Gabriel and Cogswell flood-control reservoirs (combined capacity, 54,500 acre-ft), Morris Reservoir (capacity, 35,000 acre-ft), Santa Fe flood-control reservoir since October 1942 (capacity, 36,800 acre-ft), Whittier Narrows flood-control reservoir since January 1956 (capacity, 36,160 acre-ft), and several small flood-control reservoirs (combined capacity, 19,100 acre-ft). Many diversions for irrigation, power development, and ground-water replenishment. Average discharge represents flow to ocean during period of record, regardless of upstream development. The Los Angeles County Flood Control District reported no water diverted from San Gabriel River below Santa Fe Dam and above Whittier Narrows Dam to Rio Hondo during year.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 6.....3.9	Nov. 19..... 1.1	Jan. 21.....155	Mar. 23.....145
15.....4.7	20.....751	22.....383	24..... 11
16..... .2	21.....117	23..... .4	Apr. 1..... 16
18.....1.7	22..... .6	Mar. 22..... .6	2..... .1

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	880.2	751	0	29.3	1,750
January 1964.....	542	383	0	17.5	1,080
March.....	156.6	145	0	5.05	311
April.....	16.1	16	0	.54	32
Calendar year 1963.....	-	1,530	0	9.88	7,160
Water year 1963-64.....	-	751	0	4.36	3,170

Note.--Flow occurred only on days listed above.

SAN GABRIEL RIVER BASIN

11-885. Brea Creek below Brea Dam, near Fullerton, Calif.

Location.--Lat 33°53'16", long 117°55'32", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 28, T.3 S., R.10 W., on right bank 0.2 mile downstream from Brea Dam and 1 mile north of Fullerton.

Drainage area.--21.5 sq mi (revised).

Records available.--January 1942 to September 1964.

Gage.--Water-stage recorder and V-notch sharp-crested weir since October 1946. Datum of gage is 197.70 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--22 years, 0.64 cfs (463 acre-ft per year); median of yearly mean discharges, 0.3 cfs (220 acre-ft per year).

Extremes.--Maximum discharge during year, 221 cfs Nov. 20 (gage height, 2.98 ft); no flow for most of year.

1942-64: Maximum discharge, 655 cfs Feb. 29, 1944 (gage height, 5.10 ft); no flow for parts of most years.

Remarks.--Records fair. Flow regulated by Brea flood-control reservoir (capacity, 4,100 acre-ft). No diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.1	0	1.0	11
.3	.1	1.2	18
.5	.5	1.7	40
.7	1.2	2.1	74
.8	2.0		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0	0		0	7.4					
2	0	0	0	0		.1	.2					
3	0	0	*0	0		0	0			(*)		(*)
4	*0	0	0	0		0	0					
5	0	0	0	0		.1	0					
6	0	.6	0	0		0	0					
7	0	0	0	0		0	0					
8	0	1.0	0	0		0	0					
9	0	0	0	0		0	0					
10	0	0	0	0		0	0					
11	0	0	0	0		0	0					
12	0	0	0	0		.1	0					
13	0	0	0	0		.1	0					
14	0	0	0	0		0	0					
15	0	1.3	0	0		0	0					
16	.3	.1	0	0		0	0					
17	.1	0	0	0		0	0					
18	2.0	0	0	.2		0	0					
19	0	1.1	.3	0		0	0					
20	0	7.4	0	0		0	0					
21	0	1.9	0	5.8		0	0					
22	0	.2	0	3.4		11	0					
23	0	0	0	.3		10	0					
24	0	0	0	0		3.0	0					
25	0	0	0	0	(*)	.1	0					
26	0	0	0	0		0	0	(*)				
27	0	0	0	0		0	0					
28	0	.6	0	0		0	0					
29	0	0	0	0		0	0			(*)		
30	0	0	*0	*0	-----	0	0					-----
31	*0	-----	0	0	-----	.1	-----		-----			-----
Total	2.4	80.8	0.3	9.7	0	24.6	7.6	0	0	0	0	0
Mean	0.08	2.69	0.01	0.31	0	0.79	0.25	0	0	0	0	0
Max	2.0	7.4	0.3	5.8	0	11	7.4	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	4.8	160	0.6	19	0	49	15	0	0	0	0	0

Calendar year 1963: Max 85 Min 0 Mean 0.63 Ac-ft 458

Water year 1963-64: Max 74 Min 0 Mean 0.34 Ac-ft 248

* Observation of no flow made on this day.

Location.--Lat 33°52'25", long 117°55'30", in SE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.28, T.3 S., R.10 W., between Malden Avenue and Spadra Road at Fullerton.

Records available.--October 1930 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 160 ft (from topographic map). From Oct. 1, 1930, to Sept. 30, 1935, at site a quarter of a mile upstream at different datum. Oct. 1, 1935, to Jan. 19, 1940, at site a quarter of a mile downstream at different datum.

Average discharge.--34 years, 1.08 cfs (782 acre-ft per year); median of yearly mean discharges, 0.4 cfs (290 acre-ft per year).

Extremes.--Maximum discharge during year, 144 cfs Nov. 20 (gage height, 0.75 ft); no flow for most of year.
1930-64: Maximum discharge, 3,700 cfs Mar. 14, 1941 (gage height, 5.45 ft); no flow for most of each year.

Remarks.--Discharge measurements or observations of no flow made once a week. Flow regulated by Brea flood-control reservoir since January 1942 (capacity, 4,100 acre-ft). No diversion above station.

Cooperation.--Records furnished by Orange County Flood Control District and reviewed by Geological Survey.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0	0	0	0	8.6	0.6				
2	0	0	.3	.3	0	2.0	1.5	.4				
3	0	0	.1	.1	0	0	.9	.8				
4	0	0	0	0	0	0	.6	1.0				
5	0	0	0	0	0	0	.3	1.1				
6	0	2.8	0	0	0	0	0	1.7				
7	0	.1	0	0	0	.4	0	1.2				
8	0	.1	0	0	0	0	0	.8				
9	0	.1	0	0	0	0	0	.9				
10	0	.1	0	0	0	0	0	.2				
11	0	0	0	0	0	0	0	0				
12	0	0	0	0	0	1.0	0	0				
13	0	0	0	0	0	.2	0	0				
14	.8	0	0	0	0	0	0	0				
15	0	2.3	0	0	0	0	0	0				
16	1.6	.2	0	0	0	.2	0	0				
17	0	0	0	0	0	.5	0	0				
18	0	0	0	2.3	0	0	0	0				
19	0	2.4	.5	0	0	0	.4	0				
20	0	62	0	0	0	0	0	0				
21	0	3.2	0	0	0	0	0	0				
22	0	.4	0	6.3	0	18	0	0				
23	0	0	0	.7	0	17	0	0				
24	0	0	0	.2	0	5.0	0	0				
25	0	0	0	0	0	1.2	0	0				
26	0	0	0	0	0	.9	0	0				
27	0	0	0	0	0	.8	0	0				
28	0	1.6	0	0	0	.6	1.0	0				
29	0	0	0	.1	.2	.3	1.1	0				
30	0	0	0	0	0	0	.8	0				
31	0	-----	0	0	-----	1.0	-----	0	-----			-----
Total	2.4	75.3	0.9	10.0	0.2	49.1	15.2	8.7	0	0	0	0
Mean	0.08	2.51	0.03	0.32	0.007	1.58	0.51	0.28	0	0	0	0
Max	1.6	62	0.5	6.3	0.2	18	8.6	1.7	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	4.8	149	1.8	20	0.4	97	30	17	0	0	0	0
Calendar year 1963; Max	81	Min	0	Mean	0.71	Ac-ft	517					
Water year 1963-64; Max	62	Min	0	Mean	0.44	Ac-ft	320					

11-895. Fullerton Creek below Fullerton Dam, near Brea, Calif.

Location.--Lat 33°53'45", long 117°53'07", in NE¼NW¼SW¼ sec.24, T.3 S., R.10 W., on left bank of outlet channel of Fullerton Dam, 1.6 miles southeast of Brea.

Drainage area.--3.18 sq mi (revised).

Records available.--October 1941 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 250 ft (from topographic map). V-notch sharp-crested weir used Oct. 25, 1946, to Feb. 2, 1956.

Average discharge.--13 years (1941-54), 0.19 cfs (138 acre-ft per year); median of yearly mean discharges, 0.02 cfs (14 acre-ft per year); 10 years (1954-64), 0.45 cfs (326 acre-ft per year); median of yearly mean discharges, 0.4 cfs (290 acre-ft per year).

Extremes.--Maximum discharge during year, 15 cfs Nov. 20 (gage height, 0.59 ft); no flow for most of year.
1941-64: Maximum discharge, 298 cfs Mar. 16, 1943 (gage height, 3.80 ft); no flow at times each year.

Remarks.--Records good below 2 cfs and fair above. Flow regulated by Fullerton flood-control reservoir (capacity, 706 acre-ft), re-survey of 1962. Small tributary formerly entering below station diverted into reservoir since December 1954.

Discharge, in cubic feet, per second, water year October 1963 to September 1964

Oct. 16.....a0.1	Nov. 15.....0.1	Jan. 22.....0.8
18.....a.3	20.....7.0	Mar. 22......6
Nov. 2......1	21......1	23......2
3......1	Jan. 21......8	Apr. 1......2

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1963.....	0.4	0.3	0	0.01	0.8
November.....	7.4	7.0	0	.25	15
January 1964.....	1.6	.8	0	.05	3.2
March.....	.8	.6	0	.03	1.6
April.....	.2	.2	0	.007	.4
Calendar year 1963.....	-	22	0	.13	94
Water year 1963-64.....	-	7.0	0	.03	21

a No gage-height record.

Note.--Flow occurred only on days listed above.

SAN GABRIEL RIVER BASIN

11-902. Fullerton Creek at Richman Avenue at Fullerton, Calif.

Location.--Lat 33°51'45", long 117°55'55", in NW 1/4 Sec. 33 T.3 S., R.10 W., on right bank 125 ft east of Richman Avenue, in Fullerton.

Records available.--October 1959 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 126.4 ft above mean sea level (levels by Orange County Flood Control District).

Average discharge.--5 years, 0.79 cfs (572 acre-ft per year).

Extremes.--Maximum and minimum discharges for the water years 1960-64 are contained in the following table:

Water year	Date	Maximum		Minimum
		Discharge (cfs)	Gage height (feet)	
1960	Jan. 12, 1960	430	3.62	No flow for many days.
1961	Jan. 26, 1961	128	1.92	No flow for some days.
1962	Feb. 19, 1962	540	4.09	No flow for some days.
1963	Feb. 9, 1963	394	3.45	No flow for many days.
1964	Nov. 20, 1963	433	3.62	No flow for many days.

1959-64: Maximum discharge, 540 cfs Feb. 19, 1962 (gage height, 4.09 ft); no flow for many days in each year.

Remarks.--Flow regulated by Brea flood-control reservoir (capacity, 4,100 acre-ft). No diversion above station.

Cooperation.--Records furnished by Orange County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1959 to September 1960

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0.1	0.3	0.1	4.1	9.6	0.1	0	0	0.5	0	1.1
2		.6	.3	.1	3.9	.3	.1	0	.1	.2	.1	.7
3		.3	.4	.1	.3	.3	.1	0		.1	.9	.1
4		.2	.3	.1	.2	.2	.1	.1	0	.1	.8	0
5		.1	.2	.1	.1	.2	.2	0	0	.4	.5	0
6		.1	.1	.1	.1	.1	.2	0	.2	1.2	.1	.5
7		.1	.1	.2	.1	.1	.5	0	.2	.6	0	1.4
8	0	.4	.5	4.0	.1	.5	.5	0	.1	.7	.4	1.0
9	.1	.2	.5	.5	.1	.6	.6	0	.2	.5	.5	1.2
10	.1	.2	15	4.6	.1	.5	.5	0	.1	0	.4	1.2
11	.1	.1	21	.2	.1	.6	0	.1	.5	.4	.5	.5
12	.1	.2	36	.1	.2	.5	0	.1	1.1	.4	.4	.4
13	.1	.1	.7	.1	.2	.5	0	.1	1.4	.1	1.2	.1
14	.1	.2	8.9	.1	.2	.7	.1	1.0	.8	0	.9	.9
15	.1	0	1.5	.1	.2	2.1	0	.5	.8	.2	1.2	.2
16	.1	.1	.6	.8	.2	2.5	.1	.5	.4	1.0	1.3	.3
17	.2	.3	.5	.4	.2	2.0	.1	.4	.2	1.2	.8	.8
18	.2	.5	.4	.2	.2	2.5	.1	.1	.2	.8	.1	.1
19	.1	.5	.1	.1	.2	2.4	.1	0	1.0	1.0	.2	.2
20	.1	.5	.1	.1	.2	2.5	.1	.3	.5	.1	.5	.5
21	.2	2.0	.1	.1	.2	2.6	.1	1.1	.5	.1	1.1	.1
22	0	.3	.1	.1	.2	2.4	0	.6	.5	.2	1.0	.1
23	.1	.1	.1	.2	.2	2.4	0	.5	0	1.0	1.1	.1
24	.3	12	.1	.1	.2	2.4	.1	.6	0	1.1	.5	.5
25	.2	2.7	1.5	.1	.2	2.5	.6	.5	.1	.7	.2	.2
26	0	.2	.3	.1	.2	2.6	.3	.1	.6	.7	.4	.4
27	.1	.2	.2	.1	.3	2.0	.3	.2	.5	.5	.4	.4
28	.1	.1	.1	3.3	1.1	.1	.3	.8	.4	.1	.5	.5
29	.1	.1	.1	5.2	.2	0	0	.4	.3	.4	.6	.6
30	.4	.1	.1	-----	.2	0	0	.9	.1	.5	.6	.6
31	-----	.1	.2	-----	.1	-----	.1	-----	0	.6	-----	-----
Total	10	4.4	22.9	89.5	66.3	16.1	54.2	2.5	9.5	13.4	14.4	20.3
Mean	-	0.15	0.74	2.89	2.29	0.52	1.81	0.08	0.32	0.43	0.46	0.68
Max	-	0.6	12	36	41	9.6	20	0.6	1.1	1.4	1.2	1.4
Min	-	0	0	0.1	0.1	0.1	0	0	0	0	0	0
Ac-ft	20	8.7	45	178	132	32	108	5.0	19	27	29	40

Calendar year 1959: Max - Min - Mean - Ac-ft -
 Water year 1959-60: Max 41 Min 0 Mean 0.88 Ac-ft 644

Note.--No gage-height record Oct. 1-31.

Discharge, in cubic feet per second, water year October 1960 to September 1961

Discharge, in cubic feet per second, water year October -960 to September -961												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	1.2	0.3	0.3	0.3	0.4	1.6	0.1	0.2	0.1	0.2	0.3
2	.1	.7	.6	.4	.3	.4	1.4	.2	.2	0	.1	.4
3	.5	5.2	.3	.3	.3	.4	1.6	.1	.2	0	.2	.1
4	1.4	.6	.2	.4	.3	.6	2.2	.1	0	0	.2	.3
5	.6	2.3	.2	.6	.3	.3	1.9	.1	0	.2	.1	.3
6	.5	5.4	.1	.4	.2	.3	1.9	.2	.1	.3	.1	.3
7	.3	0	.1	.4	.2	.4	1.6	0	.1	.3	.1	.6
8	0	0	.1	.2	.2	.4	.3	.1	0	.4	.2	1.0
9	0	0	.2	.3	.3	.4	0	.1	.1	.1	.2	.6
10	2.8	.2	.3	.3	.3	.5	.1	.1	.4	.2	.1	.2
11	1.5	2.0	.2	.3	.3	.5	0	0	0	.3	.1	.2
12	.7	1.3	.4	.2	.3	.4	.1	.1	.2	.1	.1	.2
13	.4	.5	.4	.2	.9	.7	.2	.1	.2	.3	.1	.2
14	.5	.3	.3	.2	.9	.7	0	0	.2	.2	.1	.1
15	.1	.2	.3	.2	.6	2.4	.2	.2	.3	.2	.1	.1
16	0	.2	.3	.2	.3	.3	.1	.2	.1	.1	.1	.2
17	.1	.2	.2	.3	.3	.3	.1	.2	.1	.1	.1	0
18	.2	.3	.2	.2	.3	.3	.1	.2	0	.1	.1	.3
19	.2	.3	.2	.2	.3	.2	0	.2	0	.1	.1	.1
20	.2	.2	.2	.2	.4	.3	0	.2	0	.1	.1	.4
21	.4	.3	.2	.2	.4	.2	.1	0	.3	0	.1	.4
22	.1	.5	.2	.2	.4	.2	.3	.1	.1	0	.1	.2
23	0	.5	.1	.2	.4	.3	0	.2	.1	0	.1	.3
24	.1	.4	.3	.3	.4	.3	0	.1	0	.1	.1	.1
25	.3	.6	.2	.7	.5	.8	.1	.2	0	.2	.1	.1
26	.5	8.3	.1	17	.4	.1	0	.1	0	.4	.3	.4
27	1.8	.6	.2	1.5	.4	.1	.1	.1	.2	.4	.1	.2
28	.8	.3	.4	.4	.4	1.8	.1	0	.2	.2	.4	.2
29	.1	.2	.4	.3	-	0	.1	0	.2	.2	.3	.3
30	0	.2	.3	.2	-	.2	0	.1	.1	.1	.2	.3
31	.3	-	.3	.2	-	1.6	-	.1	-	.2	.3	-
Total	14.7	33.0	7.8	27.0	10.6	15.8	14.2	3.5	3.6	5.0	4.6	8.4
Mean	0.47	1.10	0.25	0.87	0.38	0.51	0.47	0.11	0.12	0.16	0.15	0.28
Max	2.8	8.3	0.6	17	0.9	2.4	2.2	0.2	0.4	0.4	0.4	1.0
Min	0	0	0.1	0.2	0.2	0	0	0	0	0	0.1	0
Ac-ft	29	65	15	54	21	31	28	6.9	7.1	9.9	9.1	17
Calendar year 1960:	Max	41	Min	0	Mean	0.93	Ac-ft	679				
Water year 1960-61:	Max	17	Min	0	Mean	0.41	Ac-ft	293				

Discharge, in cubic feet per second, water year October 1961 to September 1962

[illegible]

11-902. Fullerton Creek at Richman Avenue at Fullerton, Calif.--Continued

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0.1	0	0.8	0.1	0	0	0.1	0.2	0.1	0.1
2			.1	.1	.1	.1	0	.1	0	.3	.1	.2
3			0	.1	0	.1	0	0	.1	.2	.1	.1
4			0	.1	.1	0	.1	0	.2	.1	.1	7.8
5			0	.1	.1	0	.1	0	.1	.1	0	.1
6			0	.1	.1	0	.1	0	.1	.2	0	0
7			0	.1	.1	0	0	.1	.1	.1	.2	0
8			0	.1	.1	0	.3	.1	.1	.1	.1	0
9			0	.1	7.3	0	0	.1	0	.1	.2	0
10			0	.1	5.9	0	0	0	.1	.1	.2	.1
11			0	0	7.2	0	0	0	.6	.1	.1	.1
12			0	.1	.1	0	0	0	0	.4	.1	.2
13			0	.2	.1	.1	.1	0	.1	.2	.1	.1
14			0	.3	4.0	.1	1.8	0	.1	.1	.1	.3
15			.2	0	.1	.1	.3	0	.1	.1	.1	.1
16			.1	0	0	1.3	0	.1	0	.1	.1	.1
17			.4	0	0	3.8	3.4	.1	.2	.1	.2	17
18			.1	0	0	.2	0	.1	.1	.1	.1	9.0
19			.1	0	0	0	0	0	.2	.1	.5	1.0
20			0	0	0	0	1.2	.1	.2	.1	.2	.1
21			.2	.1	0	0	1.0	0	.1	.1	.3	0
22			.1	.1	0	0	0	.1	.2	.1	.1	0
23			0	.1	0	1.4	0	.2	.1	0	.2	0
24			0	.1	0	0	0	0	.2	0	.1	0
25			0	.1	0	0	.1	.2	.1	.1	.1	0
26			0	.1	0	0	1.5	0	.1	.1	.1	0
27			0	.1	0	0	0	.1	.1	.1	.1	0
28			0	.1	0	10	0	.1	.1	.1	.1	0
29			0	.1	-----	.1	0	0	.1	.1	.1	0
30			0	.1	-----	0	0	.1	.1	.1	.1	0
31		-----	0	5.1	-----	0	-----	.1	-----	.2	.1	-----
Total	0	0	1.4	7.6	14.9	17.4	23.5	1.7	3.7	3.9	4.1	36.4
Mean	0	0	0.05	0.25	5.18	0.56	0.78	0.05	0.12	0.13	0.13	1.21
Max	0	0	0.4	5.1	7.3	10	15	0.2	0.6	0.4	0.5	17
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	2.8	15	287	35	47	3.4	7.3	7.7	8.1	72

Calendar year 1962: Max 91 Min 0 Mean 1.21 Ac-ft 878

Water year 1962-63: Max 73 Min 0 Mean 0.67 Ac-ft 485

Discharge, in cubic feet per second, water year October 1963 to September 1964

[illegible]

11-907. Coyote Creek at Los Alamitos, Calif.

Location.--Lat 33°48'38", long 118°04'28", in NW 1/4 SW 1/4 sec. 19, T. 4 S., R. 11 W., on right bank about 250 ft downstream from center line of Spring Street, 0.5 mile northwest of Los Alamitos, Orange County.

Records available.--October 1963 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 7.37 ft above mean sea level (levels by Los Angeles County Flood Control District).

Extremes.--Maximum discharge during year not determined, occurred Nov. 15 during period of construction; no flow Jan. 25, Feb. 15-17.

Remarks.--Flows up to 100 cfs can be diverted from present Carbon Creek channel to Coyote Creek through the original Carbon Creek channel. Discharge measurements generally made once a week. No regulation or diversion above station.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	0.2	0.4	0.2	2.7	2.0	92	1.8	1.6	1.6	2.3	1.2
2	.6	.4	.7	.2	3.5	2.7	3.9	2.5	2.0	2.0	3.1	1.6
3	.6	.4	.4	.2	2.7	1.2	2.0	3.2	1.6	2.3	3.9	2.0
4	.9	.2	.2	.2	1.6	.8	1.2	3.8	.8	2.3	1.6	1.6
5	.6	.2	.2	.4	2.0	.4	1.6	4.4	.8	.8	1.6	1.6
6	.6	182	.2	.3	2.3	.4	1.6	5.1	1.2	2.7	.8	1.2
7	.6	.9	.2	.4	3.1	.8	2.0	5.8	1.2	2.7	.4	1.6
8	.6	.6	.1	.3	3.1	3.1	2.0	5.3	.4	2.0	.8	.4
9	.7	.3	.2	.4	3.5	.8	1.2	4.8	16	.8	1.2	.4
10	.9	.2	.2	.6	3.1	.4	2.3	4.3	6.0	.8	1.6	1.2
11	.7	.2	.2	1.2	3.1	.4	4.4	3.8	.8	.4	.8	1.2
12	.6	.2	.2	1.2	3.1	.4	6.0	3.3	.8	.4	.8	1.2
13	.7	.2	.4	.8	1.6	.8	4.4	2.8	1.2	1.6	.8	1.2
14	.6	.2	.4	.8	.4	.8	4.4	2.3	.8	1.6	.8	1.6
15	.7	1,190	.3	1.2	0	.8	6.0	3.9	1.2	1.2	.8	.4
16	130	0.9	.2	1.2	0	.8	6.6	6.0	1.6	2.3	1.2	1.6
17	.4	.2	.3	1.2	0	.8	6.0	7.1	1.6	2.3	.8	2.0
18	4.0	0	.2	1.6	.8	1.2	3.5	2.7	3.1	.8	3.1	3.9
19	.2	265	.2	.8	.8	2.0	5.5	1.2	2.7	.8	1.2	3.4
20	.4	800	.4	1.6	.8	1.6	5.0	.4	5.0	.2	.8	2.9
21	.2	2.9	.2	288	.4	1.2	4.4	.4	5.0	.2	3.1	2.3
22	.2	1.1	.5	.85	.8	197	3.5	.8	3.5	.2	6.0	1.8
23	.4	.6	.3	5.5	.8	175	1.6	.4	2.7	.4	2.3	1.3
24	.4	.2	.3	.4	.8	50	.4	.4	2.7	.2	3.5	.8
25	.4	.2	.1	0	.8	3.1	.2	.8	2.7	.2	3.1	1.8
26	.6	.7	.2	.8	1.2	2.7	.2	.2	1.6	.8	2.3	2.9
27	.4	.6	.1	1.2	.8	1.6	.2	1.2	1.6	.4	1.6	3.1
28	.2	.2	.2	1.6	.8	.8	.4	1.2	2.0	.8	2.0	5.0
29	.2	.2	.4	2.7	1.2	.4	3.1	.8	2.7	.8	1.6	6.0
30	.3	.4	.2	2.3	-----	.4	1.2	.8	1.6	.8	3.1	3.5
31	.2	-----	.4	2.3	-----	2.7	-----	1.6	-----	.8	2.7	-----
Total	148.8	2,449.4	8.5	404.6	45.8	457.1	176.8	83.1	76.5	35.2	59.7	60.7
Mean	4.80	81.6	0.27	13.1	1.58	14.7	5.89	2.68	2.55	1.14	1.93	2.02
Max	130	1,190	0.7	288	3.5	197	92	7.1	16	2.7	6.0	6.0
Min	0.2	0.2	0.1	0	0	0.4	0.2	0.2	0.4	0.2	0.4	0.4
Ac-ft	295	4,860	17	803	91	907	351	165	152	70	118	120

Calendar year 1963: Max - Min - Mean - Ac-ft -
 Water year 1963-64: Max 1,190 Min 0 Mean 10.9 Ac-ft 7,950

Note.--No gage-height record Oct. 1 to Jan. 10, Jan. 27, 28, Mar. 3-5, 14-16, Apr. 30 to May 14, Sept. 24-28.

LOS ANGELES RIVER BASIN

11-924.5. Los Angeles River at Sepulveda Dam, Calif.

Location.--Lat 34°09'42", long 118°27'57", in Ex Mission de San Fernando Grant, on right bank of outlet channel of Sepulveda Dam, 200 ft upstream from Sepulveda Boulevard in city of Los Angeles, and 1.85 miles southwest of Van Nuys, Los Angeles County.

Drainage area.--158 sq mi.

Records available.--January 1929 to February 1938, May 1938 to September 1964. Monthly discharge only for January 1929 to September 1940 and May 1943 to September 1950, published in WSP 1315-B. Records for May 1943 to September 1950, published in WSP 981, 1011, 1041, 1061, 1091, 1121, 1151, and 1181, have been found to be unreliable and should not be used. Equivalent daily discharge, published as "below Sepulveda Dam," 1943-45, and as "below Sepulveda Boulevard" (in reports of Los Angeles County Flood Control District), 1946-50, supersede the discredited records.

Gage.--Water-stage recorder. Altitude of gage is 670 ft (from topographic map). Prior to Aug. 23, 1941, at site 1 mile downstream at different datum; Aug. 23, 1941, to Sept. 30, 1950, at site 900 ft downstream at different datum; Oct. 1, 1950, to Aug. 29, 1953, at site 800 ft upstream at datum 5.99 ft higher.

Average discharge.--34 years (1929-37, 1938-64), 22.2 cfs (16,070 acre-ft per year); median of yearly mean discharges, 17 cfs (12,300 acre-ft per year).

Extremes.--Maximum discharge during year, 5,650 cfs Jan. 22 (gage height, 5.79 ft); minimum daily 2.8 cfs for some days.

1929-37, 1938-64: Maximum discharge, 13,400 cfs Feb. 12, 1962 (gage height, 10.00 ft); no flow Sept. 19, 20, 1930.

Flood of Mar. 2, 1938, amounted to 12,000 cfs (estimated).

Remarks.--Records good. Discharge measurements generally made three or more times a month. Flow regulated since December 1941 by Sepulveda flood-control reservoir (capacity, 17,400 acre-ft). Some diversion above station. City of Los Angeles at times discharges imported Owens River water into Los Angeles River from upstream distributing reservoirs.

Cooperation.--Twenty-three discharge measurements furnished by Los Angeles County Flood Control District. Records of released water from reservoirs furnished by City of Los Angeles.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 30, 31, July 6 to Sept. 12, Sept. 23-30)

0.2	2.8	0.6	50	1.5	440
.3	8.9	.7	72	2.0	800
.4	19	.8	104	2.5	1,250
0.5	32	1.0	176		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	9.7	6.0	5.4	16	8.9	603	9.7	8.9	16	25	31
2	26	9.7	6.7	5.4	8.9	33	17	6.7	8.9	18	25	31
3	26	18	3.2	4.2	8.1	8.9	8.9	6.0	8.9	19	26	32
4	30	16	3.7	5.4	10	12	8.9	10	8.9	20	30	32
5	28	8.1	3.7	2.8	9.7	9.7	6.7	7.4	8.9	20	31	32
6	28	364	3.7	2.8	9.7	9.7	10	7.4	7.4	20	32	32
7	22	12	3.7	3.2	8.9	8.9	14	7.4	5.4	20	34	32
8	18	6.7	3.7	3.7	8.9	6.7	12	6.7	5.4	19	34	32
9	14	12	6.7	4.2	9.7	7.4	8.1	8.9	14	20	36	28
10	10	10	3.7	5.8	21	9.7	8.1	9.7	7.4	24	39	28
11	16	12	3.2	2.8	8.9	8.9	8.1	14	7.4	24	42	30
12	16	12	3.2	3.2	6.7	24	8.1	22	7.4	24	44	30
13	16	10	2.8	3.7	7.4	14	8.9	6.7	6.0	24	44	30
14	19	3.7	3.2	2.8	6.7	4.8	8.9	6.7	5.4	24	42	30
15	30	193	3.2	6.7	7.4	4.8	8.1	6.7	5.4	26	37	30
16	112	13	3.2	5.0	5.4	4.2	8.9	5.4	6.0	26	34	30
17	11	4.2	5.4	9.1	8.1	4.2	10	4.8	7.4	28	32	30
18	43	4.2	3.7	9.4	8.1	6.0	8.9	4.8	7.4	30	30	32
19	2.8	19	3.7	3.7	7.4	6.0	12	6.0	7.4	31	28	31
20	3.2	1,070	4.8	4.6	6.0	6.7	6.7	7.4	6.0	32	25	31
21	2.8	31	3.2	507	6.0	6.7	8.9	8.9	5.4	32	25	31
22	8.9	6.7	2.8	804	8.1	427	12	8.9	6.0	32	24	36
23	8.9	5.4	2.8	14	10	199	6.7	8.9	8.1	32	25	37
24	8.9	4.8	3.7	6.0	9.7	31	6.7	8.1	8.1	32	26	39
25	8.9	4.8	3.7	3.7	12	6.0	7.4	9.7	14	32	28	42
26	9.7	4.8	3.7	3.7	12	7.4	6.0	10	21	31	31	44
27	8.9	4.8	4.2	4.2	12	12	6.7	9.7	16	26	31	44
28	8.9	7.4	4.2	5.4	12	9.7	36	9.7	16	24	31	44
29	12	5.4	3.7	3.7	8.9	9.7	8.1	9.7	16	24	31	44
30	10	5.4	3.2	4.2	-----	9.7	7.4	8.9	16	25	31	44
31	8.9	-----	4.2	10	-----	246	-----	8.9	-----	25	31	-----
Total	593.8	1,887.8	120.6	1,459.8	273.7	1,162.7	891.2	265.8	276.5	780	984	1,019
Mean	19.2	62.9	3.89	47.1	9.44	37.5	29.7	8.57	9.22	25.2	31.7	34.0
Max	112	1,070	6.7	804	21	427	603	22	21	32	44	44
Min	2.8	3.7	2.8	2.8	5.4	4.2	6.0	4.8	5.4	16	24	28
Ac-ft	1,180	3,740	239	2,900	543	2,310	1,770	527	548	1,550	1,950	2,020
(†)	350	0	0	0	0	0	0	60	140	1,030	1,570	1,730

Calendar year 1963: Max 1,680

Min 2.0

Mean 32.9

Ac-ft 23,790

Ac-ft † 4,060

Water year 1963-64: Max 1,070

Min 2.8

Mean 26.5

Ac-ft 19,280

Ac-ft † 4,880

† Release, in acre-feet, from city of Los Angeles distributing reservoirs. This is included in flow that passes station.

LOS ANGELES RIVER BASIN

193

11-930. Pacoima Creek near San Fernando, Calif.

Location.--Lat 34°20'07", long 118°23'50" (revised), in SE 1/4 sec. 24, T.3 N., R.15 W., on right bank 500 ft downstream from Pacoima Dam, a third of a mile upstream from mouth of canyon, and 4 miles northeast of San Fernando.

Drainage area.--28.5 sq mi:

Records available.--March to July 1916 (fragmentary), December 1916 to September 1964.

Gage.--Water-stage recorder and flume or weir control since June 1937. Altitude of gage is 1,650 ft (from topographic map). Prior to September 1929, at site 0.5 mile downstream at different datum. September 1929 to Mar. 23, 1933, records based on outflow from Pacoima Dam. Mar. 24, 1933, to Feb. 1, 1935, at site 450 ft downstream at different datum.

Average discharge.--47 years (1917-64), 8.35 cfs (6,050 acre-ft per year); median of yearly mean discharges, 4.1 cfs (3,000 acre-ft per year).

Extremes.--Maximum discharge during year, 117 cfs June 15 (gage height, 1.37 ft); no flow for most of year.
1916-64: Maximum discharge, 2,440 cfs Mar. 3, 1938; no flow for several months in most years.

Remarks.--Flow regulated since February 1929 by Pacoima flood-control reservoir (capacity, 4,710 acre-ft). Flow passing over Pacoima Dam spillway enters creek below station. No diversion above station.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0						0	18	0.5	0.4	
2		0						0	18	.2	.4	
3		0						0	18	.2	.4	
4		0						0	17	.3	.4	
5		0						0	17	.4	.4	
6		0						0	17	.4	.4	
7		0						0	17	.5	.4	
8		0						0	17	.5	.3	
9		0						0	17	.5	.3	
10		0						0	16	.5	.3	
11		0						0	16	.5	.3	
12		0						0	10	.5	.4	
13		0						0	0	.5	.4	
14		0						0	0	.5	.2	
15		.1						0	9.2	.5	.1	
16		0						0	1.3	.5	0	
17		0						0	1.0	.5	0	
18		0						0	.9	.5	0	
19		0						0	.9	.5	0	
20		0						0	.8	.5	0	
21		0						0	.8	.5	0	
22		0						0	.7	.5	0	
23		0						0	.7	.5	0	
24		0						0	.7	.5	0	
25		0						0	.7	.5	0	
26		0						7.2	1.3	.5	0	
27		0						13	1.3	.5	0	
28		0						16	1.0	.5	0	
29		0						18	.9	.4	0	
30		0						19	.8	.4	0	
31								19		.4	0	
Total	0	0.1	0	0	0	0	0	92.2	221.0	14.2	5.1	0
Mean	0	0.003	0	0	0	0	0	2.97	7.37	0.46	0.16	0
Max	0	0.1	0	0	0	0	0	19	18	0.5	0.4	0
Min	0	0	0	0	0	0	0	0	0	0.2	0	0
Ac-ft	0	0.2	0	0	0	0	0	183	438	28	10	0

Calendar year 1963: Max 20 Min 0 Mean 0.27 Ac-ft 192

Water year 1963-64: Max 19 Min 0 Mean 0.91 Ac-ft 659

LOS ANGELES RIVER BASIN

11-940. Tujunga Creek below Mill Creek, near Colby Ranch, Calif.

Location.--Lat 34°18'33", long 118°08'40", on left bank 500 ft downstream from Mill Creek and 2 miles west of Colby Ranch, Los Angeles County.

Drainage area.--64.9 sq mi.

Records available.--January 1948 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 2,650 ft (from topographic map).

Average discharge.--16 years, 6.07 cfs (4,390 acre-ft per year); median of yearly mean discharges, 2.3 cfs (1,700 acre-ft per year).

Extremes.--Maximum discharge during year, 93 cfs Apr. 1 (gage height, 6.43 ft); no flow Oct. 1-13, June 25 to Sept. 30.

1948-64: Maximum discharge, 2,860 cfs Feb. 11, 1962 (gage height, 10.90 ft); no flow at times in most years.

Maximum discharge recorded since November 1930, 14,800 cfs Jan. 23, 1943, but was exceeded by flood of Mar. 2, 1938.

Remarks.--Discharge measurements generally made once a week during period of flow. No regulation or diversion above station.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.3	0.6	0.8	1.7	1.6	55	2.6	0.4			
2	0	.3	.6	.8	1.6	1.9	18	2.5	.3			
3	0	.3	.6	.8	1.6	1.7	7.3	2.4	.4			
4	0	.3	.6	.8	1.6	1.5	5.5	2.4	.4			
5	0	.3	.6	.8	1.6	1.5	4.7	2.5	.4			
6	0	.8	.6	.8	1.6	1.5	4.2	2.5	.4			
7	0	.7	.6	.8	1.5	1.5	3.7	2.4	.4			
8	0	.6	.6	.8	1.5	1.4	3.4	2.1	.6			
9	0	.6	.6	.8	1.5	1.4	3.2	2.0	.6			
10	0	.4	.7	.9	1.4	1.4	3.0	1.9	.6			
11	0	.4	.7	.9	1.4	1.4	2.8	1.9	.6			
12	0	.4	.7	.9	1.4	1.5	2.7	1.7	.4			
13	0	.4	.7	.9	1.4	1.6	2.6	1.7	.4			
14	.1	.4	.7	.9	1.3	1.4	2.4	1.7	.3			
15	.2	.6	.7	.9	1.3	1.4	2.2	1.6	.3			
16	.6	.6	.7	.9	1.4	1.3	2.2	1.6	.3			
17	.4	.4	.7	.9	1.4	1.2	2.2	1.7	.3			
18	.4	.4	.7	.9	1.3	1.2	2.7	1.7	.3			
19	.3	.5	.7	1.0	1.2	1.3	3.0	1.2	.3			
20	.2	5.6	.7	1.0	1.2	1.3	2.6	1.1	.3			
21	.2	.9	.7	8.8	1.2	1.3	2.4	1.0	.2			
22	.2	.6	.7	13	1.2	3.0	2.2	.9	.2			
23	.2	.6	.8	4.0	1.3	5.1	2.2	1.0	.1			
24	.2	.6	.8	2.7	1.4	4.2	2.2	.9	.1			
25	.2	.6	.8	2.4	1.5	3.6	2.1	.9	0			
26	.2	.6	.8	2.2	1.5	3.4	2.1	.9	0			
27	.2	.6	.8	2.1	1.5	3.4	2.0	.9	0			
28	.2	.6	.8	2.0	1.5	3.1	3.1	1.0	0			
29	.2	.6	.8	1.8	1.7	3.0	3.2	.9	0			
30	.2	.6	.8	1.8	-----	2.8	3.0	.7	0			
31	.2	-----	.8	1.8	-----	3.5	-----	.6	-----			
Total	4.4	20.6	21.7	59.9	41.7	65.4	157.9	48.9	8.6	0	0	0
Mean	0.14	0.69	0.70	1.93	1.44	2.11	5.26	1.58	0.29	0	0	0
Max	0.6	5.6	0.8	13	1.7	5.1	55	2.6	0.6	0	0	0
Min	0	0.3	0.6	0.8	1.2	1.2	2.0	0.6	0	0	0	0
Ac-ft	8.7	41	43	119	83	130	313	97	17	0	0	0
Calendar year 1963:	Max	95	Min	0	Mean	1.60	Ac-ft	1,160				
Water year 1963-64:	Max	55	Min	0	Mean	1.17	Ac-ft	852				

11-955. Tujunga Creek near Sunland, Calif.

Location.--Lat 34°18'02", long 118°16'02", near center of SW $\frac{1}{4}$ sec. 32, T.3 N., R.13 W., on left bank 1,000 ft upstream from Gold Canyon, 2 miles upstream from mouth of canyon, and 4 miles northeast of Sunland.

Drainage area.--106 sq mi.

Records available.--October 1916 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 1,571.80 ft above mean sea level (levels by Los Angeles County Flood Control District). Prior to Oct. 1, 1932, at site 1,000 ft upstream at different datum.

Average discharge.--47 years, 25.5 cfs (18,460 acre-ft per year); median of yearly mean discharges, 12 cfs (8,700 acre-ft per year).

Extremes.--Maximum discharge during year, 166 cfs Jan. 22 (gage height, 11.66 ft); minimum daily, 0.2 cfs Sept. 9, 20.

1916-64: Maximum discharge, 50,000 cfs (estimated) Mar. 2, 1938; minimum, 0.1 cfs at times during summers of 1919, 1924, 1928-31, 1960.

Remarks.--Discharge measurements made one or more times a week. Flow regulated since July 1931 by Big Tujunga flood-control reservoir (capacity, 4,240 acre-ft). Several small diversions above station for irrigation.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.5	4.4	1.3	1.2	2.6	1.5	20	1.7	6.5	5.0	9.0	1.3
2	6.0	4.7	1.3	1.2	2.3	1.7	10	1.5	7.0	5.0	9.0	1.0
3	6.0	5.5	1.3	1.0	2.3	1.5	6.0	1.3	7.0	5.0	9.0	.5
4	6.5	6.0	1.3	1.2	2.0	1.5	4.7	1.5	7.0	5.5	9.0	.5
5	6.0	6.0	1.3	1.2	2.0	1.5	4.4	1.7	7.0	5.5	9.5	.3
6	6.0	6.0	1.3	1.0	2.0	1.5	4.1	1.8	7.0	5.5	9.0	.5
7	5.5	5.0	1.3	1.0	2.0	1.3	3.8	2.6	7.0	5.5	8.0	.5
8	5.5	3.5	1.3	1.0	2.0	1.3	3.5	1.8	7.0	5.5	8.0	.5
9	5.5	1.8	1.2	1.0	2.0	1.3	3.2	1.5	7.5	5.5	7.5	.2
10	5.5	1.5	1.2	1.0	2.0	1.2	2.9	1.3	7.0	5.5	8.0	.3
11	5.5	1.3	1.2	1.0	2.0	1.3	2.9	1.3	6.5	5.0	8.0	.3
12	5.5	1.3	1.2	1.0	2.0	1.5	2.6	1.2	6.5	5.0	6.5	.3
13	5.5	1.3	1.2	1.0	2.0	1.5	2.0	1.2	6.5	5.0	5.8	.3
14	5.0	1.3	1.2	1.0	2.0	1.5	1.8	1.0	6.0	4.7	13	.3
15	5.5	1.7	1.2	1.0	1.8	1.3	1.8	1.0	6.0	4.4	14	.3
16	7.5	2.0	1.2	1.0	1.8	1.0	1.8	1.0	6.5	4.4	9.5	.5
17	7.0	1.7	1.2	1.0	1.7	1.0	2.0	1.0	6.5	4.4	9.0	.3
18	7.0	1.5	1.2	1.0	1.5	1.0	2.3	1.0	6.5	4.4	8.5	.3
19	7.0	1.5	1.2	1.0	1.5	1.3	2.9	1.0	6.5	4.4	8.0	.3
20	7.0	9.7	1.2	1.2	1.5	1.2	2.6	.8	6.5	4.4	7.0	.2
21	6.5	4.7	1.2	14	1.5	1.2	2.0	1.6	6.5	4.4	7.0	.6
22	6.5	2.9	1.2	44	1.5	5.2	2.0	4.1	6.5	4.4	6.0	.5
23	6.5	2.3	1.2	7.5	1.5	7.8	2.0	6.0	6.5	5.5	4.4	.3
24	6.0	1.8	1.2	4.7	1.5	6.5	2.0	7.0	6.5	9.5	7.3	.3
25	5.0	1.3	1.2	4.1	1.5	3.8	2.0	7.0	5.5	9.5	2.7	.5
26	5.0	1.3	1.2	3.5	1.5	3.2	1.8	7.0	5.0	9.5	9.1	.6
27	5.0	1.3	1.2	3.2	1.5	2.6	1.7	7.0	5.0	9.5	6.3	.6
28	5.0	1.3	1.2	3.2	1.5	2.0	2.0	7.0	5.0	9.5	1.8	.6
29	5.0	1.3	1.2	2.9	1.5	1.8	2.0	7.0	5.0	9.5	1.3	.5
30	5.5	1.3	1.2	2.9	-----	1.8	1.8	7.0	5.0	9.0	1.3	.5
31	5.0	-----	1.2	2.6	-----	3.0	-----	6.5	-----	9.0	1.3	-----
Total	181.5	87.2	38.0	113.6	52.5	65.8	104.6	94.4	190.5	188.9	223.8	13.7
Mean	5.85	2.91	1.23	3.66	1.81	2.12	3.49	3.05	6.35	6.09	7.22	0.46
Max	7.5	9.7	1.3	44	2.6	7.8	20	7.0	7.5	9.5	14	1.3
Min	5.0	1.3	1.2	1.0	1.5	1.0	1.7	0.8	5.0	4.4	1.3	0.2
Ac-ft	360	173	75	225	104	131	207	187	378	375	444	27

Calendar year 1963: Max 94 Min 0.9 Mean 3.87 Ac-ft 2,800
 Water year 1963-64: Max 44 Min 0.2 Mean 3.70 Ac-ft 2,690

LOS ANGELES RIVER BASIN

11-965. Little Tujunga Creek near San Fernando, Calif.

Location.--Lat 34°16'30", long 118°22'20", in Tujunga Grant, on downstream side of Foothill Boulevard Bridge, 4 miles east of San Fernando, Los Angeles County.

Drainage area.--21.1 sq mi.

Records available.--October 1928 to September 1964. Monthly discharge for April 1931, published in WSP 1315-B.

Gage.--Water-stage recorder and concrete control since May 1940. Datum of gage is 1,067.89 ft above mean sea level (levels by Los Angeles County Flood Control District).

Average discharge.--36 years, 2.24 cfs (1,620 acre-ft per year); median of yearly mean discharges, 0.6 cfs (430 acre-ft per year).

Extremes.--Maximum discharge during year, 256 cfs Jan. 22 (gage height, 4.20 ft); no flow for most of year.
1928-64: Maximum discharge, 8,500 cfs (estimated) Mar. 2, 1938; no flow for several months each year.

Remarks.--No regulation or diversion above station.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 20....	2.8	Mar. 22.....	11
Jan. 21.....	* 1.6	31.....	.3
22.....	* 20	Apr. 1.....	* 5.1

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	2.8	2.8	0	0.09	5.6
January 1964.....	21.6	20	0	.70	43
March.....	11.3	11	0	.36	22
April.....	5.1	5.1	0	.17	10
Calendar year 1963.....	-	9.8	0	.07	51
Water year 1963-64.....	-	20	0	.11	81

* Discharge measurement made on this day.

Note.--Flow occurred only on days listed above.

11-970. Tujunga Creek below Hansen Dam, Calif.

Location.--Lat 34°15'10", long 118°23'20", in Ex Mission San Fernando Grant, in city of Los Angeles, on left bank of outlet channel of Hansen Dam, 0.1 mile upstream from Glen Oaks Boulevard, and 3 miles southeast of San Fernando, Los Angeles County.

Drainage area.--150 sq mi.

Records available.--May 1932 to February 1938, August 1940 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 943.32 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Prior to Aug. 25, 1944, at site 0.1 mile downstream at different datum. Aug. 25, 1944, to Sept. 30, 1951, at site 0.3 mile upstream at different datum. Oct. 1, 1951, to Sept. 30, 1953, at present site at datum 1.00 ft higher.

Extremes.--No flow during year.

1940-64: Maximum discharge, 3,130 cfs Feb. 12, 1962 (gage height, 3.86 ft); no flow for parts of each year.
Maximum discharge known since May 1932, 54,000 cfs (estimated) Mar. 2, 1938.

Remarks.--No flow since May 9, 1962. Flow regulated since July 1931 by Big Tujunga flood-control reservoir (capacity, 4,240 acre-ft) and since September 1940 by Hansen flood-control reservoir (capacity, 33,373 acre-ft). Several small diversions for domestic use and irrigation. Water reported herein is that which passed Hansen Dam. No water diverted from outlet channel upstream from gage to spreading grounds during year.

11-975. Los Angeles River at Los Angeles, Calif.

Location.--Lat 34°04'55", long 118°13'35", on right bank near Figueroa Street, Los Angeles, 800 ft upstream from Arroyo Seco.Drainage area.--514 sq mi.Records available.--October 1929 to September 1964.Gage.--Water-stage recorder. Datum of gage is 292.58 ft above mean sea level (levels by Los Angeles County Flood Control District). Prior to May 26, 1938, at site 150 ft downstream at different datum. May 26, 1938, to Dec. 8, 1939, at site 350 ft downstream at different datum.Average discharge.--35 years, 56.2 cfs (40,690 acre-ft per year); median of yearly mean discharges, 31 cfs (22,400 acre-ft per year).Extremes.--Maximum discharge during year, 12,250 cfs Jan. 22 (gage height, 5.43 ft); no flow for several months.
1929-64: Maximum discharge, 67,000 cfs Mar. 2, 1938; no flow at times in some years.Remarks.--Discharge measurements generally made two or more times a month. Flow regulated since September 1940 by Hansen flood-control reservoir and since December 1941 by Sepulveda flood-control reservoir (combined capacity, 49,400 acre-ft) and several small flood-control reservoirs. City of Los Angeles at times discharges imported Owens River water into Los Angeles River from upstream distributing reservoirs. Excess treated sewage effluent from Los Angeles Bureau of Sanitation is released to channel about 8 miles upstream. Many diversions above station for domestic use and irrigation.Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0	0.1	0.2	0.2	0	1.320	0.3	0			
2	.1	0	.1	.2	.1	56	33	.2	0			
3	.1	0	.1	.1	.1	2.5	1.9	.2	0			
4	.1	0	.1	.1	.1	.3	.4	.2	0			
5	0	0	.1	.1	0	.1	.2	.2	.1			
6	0	536	.1	.1	0	.1	.1	.3	.1			
7	0	31	.1	.1	0	.1	.1	.2	.1			
8	0	.6	0	0	0	.1	0	.2	.2			
9	0	.2	0	0	0	.1	0	.2	50			
10	0	.1	0	0	0	.1	0	.2	.3			
11	0	.1	0	0	0	.1	0	.2	.2			
12	0	.1	0	0	0	1.7	0	.2	.1			
13	0	.1	0	0	0	38	0	.1	.1			
14	0	.1	.1	0	0	.6	0	.1	.1			
15	0	343	.1	0	0	.2	0	0	.1			
16	254	39	.1	0	0	.1	.1	0	.1			
17	12.6	.6	.2	0	0	.1	.2	.1	.1			
18	188	.2	.2	.1	0	.1	2.3	0	.1			
19	3.4	39	.2	.1	0	.1	.2	0	.1			
20	.1	1,950	.2	.1	0	.1	.1	.1	.1			
21	.1	57	.2	1.460	0	.1	.1	.1	.1			
22	.1	4.6	.2	1.800	0	1.020	.1	.1	.1			
23	0	.8	.2	29	0	514	.1	.1	.1			
24	0	.2	.2	4.6	0	103	.1	.1	.1			
25	0	.1	.2	2.5	0	10		.1	0			
26	0	.1	.2	.4	0	.4	.1	.1	0			
27	0	.1	.2	.8	0	.2		.1	.1			
28	0	.1	.2	1.2	0	.1	9.5	.1	0			
29	0	.1	.2	1.0	0	.1	19	.1	0			
30	0	.1	.2	.2		.1	.5	.1	0			
31	0		.2	.2		284		.1				
Total	458.7	3,003.3	4.0	3,301.1	0.5	2,032.5	1,388.3	4.1	52.4	0	0	0
Mean	14.8	100	0.13	106	0.02	65.6	46.3	0.13	1.75	0	0	0
Max	254	1,950	0.2	1,800	0.2	1,020	1,320	0.3	50	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	910	5,960	7.9	6,550	1.0	4,030	2,750	8.1	104	0	0	0

Calendar year 1963: Max 3,750 Min 0 Mean 41.8 Ac-ft 30,290
 Water year 1963-64: Max 1,950 Min 0 Mean 28.0 Ac-ft 20,320

Note.--No gage-height record Dec. 14-26, June 1-3.

LOS ANGELES RIVER BASIN

11-980. Arroyo Seco near Pasadena, Calif.

Location.--Lat 34°13'20", long 118°10'36", near north line of sec.31, T.2 N., R.12 W., on right bank 1.5 miles upstream from Millard Canyon and 5.5 miles northwest of Pasadena.

Drainage area.--16.0 sq mi.

Records available.--December 1910 to September 1964.

Gage.--Water-stage recorder and broad-crested weir since November 1938. Datum of gage is 1,397.88 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1916, staff gage at different datum. Oct. 1, 1916, to Oct. 19, 1945, water-stage recorder at datum 4.00 ft lower.

Average discharge.--50 years (1913-15, 1916-64), 8.43 cfs (6,100 acre-ft per year); median of yearly mean discharges, 4.5 cfs (3,300 acre-ft per year).

Extremes.--Maximum discharge during year, 182 cfs Jan. 21 (gage height, 2.94 ft); minimum daily, 0.1 cfs Aug. 3-6, 8, 17-27, Sept 1-10. 1910-64: Maximum discharge, 8,620 cfs Mar. 2, 1938 (gage height, 9.42 ft, present datum), on basis of slope-area measurement of maximum flow; no flow at times in some years.

Remarks.--Records good. Discharge measurements made two or more times a month. Minor regulation by debris dam 1.5 miles upstream. No diversion above station.

Cooperation.--Fifteen discharge measurements furnished by Los Angeles County Flood Control District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 1-6, May 25-28, June 14-17)

0.5	0	1.2	17
.6	.7	1.6	34
.7	2.5	2.0	61
.9	7.6	2.5	113

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7	0.6	1.1	0.6	2.5	1.1	6.8	2.3	1.0	0.5	0.6	0.1
2	.7	.6	1.1	.6	2.5	1.9	24	1.9	1.0	.5	.4	.1
3	.7	.7	1.1	.6	2.3	1.5	12	1.7	1.0	.5	.1	.1
4	.7	.7	1.1	.6	2.3	1.3	7.9	4.1	1.0	.5	.1	.1
5	.6	.7	1.1	.6	2.5	1.1	6.3	4.4	1.0	.4	.1	.1
6	.6	2.2	1.1	.8	2.3	1.1	5.7	4.2	1.0	.4	.1	.1
7	.6	1.7	1.1	.8	2.1	1.1	6.0	3.0	1.0	.4	.2	.1
8	.5	1.5	1.1	.8	2.1	1.1	6.0	2.1	1.3	.4	.1	.1
9	.5	1.3	1.1	1.0	1.9	1.1	5.0	1.7	2.1	.4	.2	.1
10	.5	1.0	1.1	1.0	1.5	1.1	4.7	1.5	1.3	.4	.2	.1
11	.6	.8	1.1	1.0	1.5	1.1	4.2	1.7	1.1	.3	.2	.2
12	.6	.8	1.0	1.0	1.5	1.7	3.7	1.9	1.1	.3	.2	.2
13	.7	.8	.8	1.0	1.5	1.9	3.2	1.9	1.1	.3	.2	.3
14	1.0	.8	.8	1.0	1.5	1.1	3.2	1.7	1.1	.4	.2	.3
15	1.1	3.3	.8	1.0	1.5	1.0	2.5	1.7	1.1	.4	.2	.3
16	2.0	2.3	.8	1.0	1.5	.7	2.3	1.7	1.1	.4	.2	.3
17	.8	1.7	1.0	1.0	1.5	.7	2.5	1.7	1.1	.4	.1	.3
18	1.0	1.5	1.1	1.1	1.5	.8	3.4	1.9	1.1	.4	.1	.3
19	1.0	1.6	1.1	1.1	1.3	1.0	5.7	1.9	1.1	.4	.1	.3
20	1.1	21	1.1	1.3	1.3	1.0	3.4	1.9	1.0	.4	.1	.3
21	1.1	6.6	1.0	35	1.3	1.1	3.0	1.9	.8	.5	.1	.3
22	1.1	3.4	.8	41	1.3	11	2.7	1.7	.7	.5	.1	.3
23	1.0	2.5	.8	7.9	1.5	15	3.0	1.5	.7	.5	.1	.2
24	.8	2.1	.8	4.4	1.7	7.4	2.3	1.5	.6	.6	.1	.2
25	.8	1.5	1.0	4.0	1.7	4.0	2.1	1.3	.6	.6	.1	.2
26	.8	1.3	1.1	3.7	1.7	3.2	1.9	1.3	.6	.6	.1	.2
27	.8	1.3	1.1	3.7	1.5	3.4	1.7	1.3	.5	.6	.1	.2
28	.7	1.1	1.0	3.4	1.3	3.4	2.5	1.2	.5	.5	.2	.2
29	.7	1.1	1.0	3.2	1.3	3.0	2.5	1.3	.5	.5	.2	.2
30	.7	1.1	.8	2.7	-----	2.5	2.3	1.3	.5	.6	.3	.2
31	.7	-----	.8	2.5	-----	5.8	-----	1.1	-----	.6	.3	-----
Total	25.2	67.6	30.8	129.4	49.9	83.2	203.7	60.3	28.6	14.2	5.4	6.0
Mean	0.81	2.25	0.99	4.17	1.72	2.68	6.79	1.95	0.95	0.46	0.17	0.20
Max	2.0	21	1.1	41	2.5	15	68	4.4	2.1	0.6	0.6	0.3
Min	0.5	0.6	0.8	0.6	1.3	0.7	1.7	1.1	0.5	0.3	0.1	0.1
Ac-ft	50	134	61	257	99	165	404	120	57	28	11	12

Calendar year 1963: Max 98 Min 0.1 Mean 2.60 Ac-ft 1,880

Water year 1963-64: Max 68 Min 0.1 Mean 1.92 Ac-ft 1,400

Peak discharge (base, 150 cfs).--Jan. 21 (0600 hrs) 182 cfs (2.94 ft).

11-985. Los Angeles River near Downey, Calif.

Location.--Lat 33°56'57", long 118°10'24", in San Antonio Grant, on right bank 400 ft downstream from Firestone Boulevard Bridge, 1 mile upstream from Rio Hondo, and 2.5 miles west of Downey, Los Angeles County.

Drainage area.--599 sq mi.

Records available.--March 1928 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 96.12 ft above mean sea level (levels by Los Angeles County Flood Control District). Prior to Apr. 11, 1938, at site 1,600 ft downstream at different datum. Apr. 11, 1938, to Nov. 3, 1949, at site 400 ft upstream at datum 0.96 ft lower, and Nov. 4, 1949, to Dec. 11, 1956, at site 400 ft upstream at datum 2.25 ft higher.

Average discharge.--36 years, 92.9 cfs (67,260 acre-ft per year); median of yearly mean discharges, 55 cfs (39,800 acre-ft per year).

Extremes.--Maximum discharge during year, 11,400 cfs Jan. 21 (gage height, 4.62 ft); minimum daily, 2.6 cfs Mar. 28, 29. 1928-64: Maximum discharge, 79,700 cfs Mar. 2, 1938, on basis of slope-area measurements; no flow for parts of some years.

Remarks.--Discharge measurements made once a week. Flow regulated since July 1941 by Hansen flood-control reservoir and since December 1941 by Sepulveda flood-control reservoir (combined capacity, 49,400 acre-ft), and several small flood-control reservoirs. City of Los Angeles stores imported Owens River water in San Fernando and Chatsworth Reservoirs and at times discharges imported water into Los Angeles River. Many diversions for domestic use and irrigation above station.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.7	9.0	a 8.0	7.5	7.5	10	1,540	a 9.2	a 8.3	10	10	a 12
2	8.0	9.0	a 8.0	9.0	7.5	119	a 9.3	a 6.4	a 13	12	11	a 10
3	8.5	10	a 9.4	9.5	9.0	18	a 12	a 7.8	a 9.2	9.5	14	a 10
4	9.5	11	a 8.9	8.5	12	11	a 6.9	a 12	14	7.5	13	a 9.2
5	9.0	8.5	a 8.4	9.0	12	15	a 5.3	a 15	14	8.5	13	a 7.4
6	8.5	784	8.0	10	10	15	a 5.8	a 12	12	8.5	12	a 7.3
7	12	107	7.5	10	9.5	12	a 4.9	a 11	13	8.0	12	a 5.8
8	14	14	7.0	9.5	9.5	9.0	a 5.4	a 12	18	7.5	10	a 5.9
9	11	10	8.0	9.0	8.5	9.0	a 9.4	a 10	151	7.5	a 11	a 7.9
10	11	9.0	8.5	9.0	9.0	9.0	a 6.9	a 13	13	7.5	a 12	a 7.9
11	12	8.5	8.0	7.5	9.0	10	a 5.9	a 8.4	12	5.8	a 14	a 9.2
12	9.5	8.5	7.5	8.0	9.0	46	a 6.3	a 12	10	6.1	a 14	a 7.9
13	9.0	8.5	7.0	10	8.5	77	a 7.3	a 12	9.0	8.0	a 14	a 9.8
14	11	8.0	6.4	10	8.0	a 12	a 5.9	a 12	8.5	10	a 14	a 10
15	12	561	6.1	10	7.5	a 11	a 6.4	a 10	10	9.5	a 11	a 12
16	370	a 8.5	7.0	8.5	8.0	a 8.3	a 11	a 8.4	10	10	a 12	a 12
17	43	8.5	8.5	9.0	10	a 7.4	a 6.9	a 8.8	11	9.5	a 13	a 12
18	385	8.0	8.5	58	10	a 13	a 6.9	a 9.8	12	8.0	a 15	a 12
19	a 20	199	8.0	10	12	a 12	32	a 13	14	8.0	a 14	a 7.9
20	a 7.5	2,810	8.0	8.0	14	a 10	a 8.8	a 12	13	10	a 14	a 15
21	a 8.0	144	7.0	1,980	16	a 7.4	a 6.9	a 13	13	10	a 13	a 8.8
22	a 8.5	31	7.5	1,960	10	1,330	a 7.9	a 9.2	17	9.5	a 12	a 6.9
23	a 8.5	a 15	7.5	43	10	1,210	a 6.9	a 6.9	14	10	a 12	a 5.4
24	8.5	a 12	7.0	15	11	358	a 6.4	a 6.8	14	9.5	a 14	a 3.4
25	8.5	a 10	5.5	10	12	a 2.4	a 5.4	a 9.8	14	8.5	a 16	a 3.9
26	9.5	a 11	6.7	8.5	12	a 11	a 5.3	a 6.9	60	9.0	a 20	a 5.4
27	15	a 10	8.0	8.5	15	a 4.9	a 8.3	a 6.9	7.5	10	a 17	a 7.3
28	8.0	a 9.5	8.0	10	15	a 2.6	36	a 6.9	6.1	10	a 16	a 8.8
29	9.0	a 8.0	8.0	9.5	13	a 2.6	40	a 5.9	7.5	12	a 12	a 9.2
30	9.5	a 9.0	10	7.5	-----	a 4.1	a 9.4	a 4.4	8.0	12	a 10	-----
31	9.5	-----	10	7.5	-----	204	-----	a 4.9	-----	11	a 12	-----
Total	1,079.7	4,936.0	241.9	4,289.5	304.5	3,592.3	1,919.5	296.4	546.1	282.9	407	259.5
Mean	34.8	165	7.80	138	10.5	116	64.0	9.56	18.2	9.13	13.1	8.65
Max	385	2,810	10	1,980	16	1,330	1,540	15	161	12	20	15
Min	6.7	8.0	5.5	7.5	7.5	2.6	4.9	4.4	6.1	5.8	10	3.4
Ac-ft	2,140	9,790	480	8,510	604	7,130	3,810	588	1,080	561	807	515
Calendar year 1963:	Max 4,080	Min 4.3	Mean 71.0	Ac-ft 51,380								
Water year 1963-64:	Max 2,810	Min 2.6	Mean 49.6	Ac-ft 36,020								

a No gage-height record.

LOS ANGELES RIVER BASIN

11-1000. Santa Anita Creek near Sierra Madre, Calif.

Location.--Lat 34°11'30", long 118°00'59", in SW 1/4 sec.10, T.1 N., R.11 W., on right bank at head of Hermita Falls, 0.9 mile upstream from Big Santa Anita Dam, and 3 miles northeast of Sierra Madre.

Drainage area.--9.71 sq mi.

Records available.--July 1916 to September 1964.

Gage.--Water-stage recorder (digital). Datum of gage is 1,475.3 ft above mean sea level (levels by U.S. Forest Service). Prior to Mar. 2, 1938, at same site at datum 0.4 ft lower (destroyed by flood). Mar. 18 to Sept. 27, 1938, at same site at datum 0.7 ft higher.

Average discharge.--48 years, 5.51 cfs (3,990 acre-ft per year); median of yearly mean discharges, 3.4 cfs (2,500 acre-ft per year).

Extremes.--Maximum discharge during year, 64 cfs Apr. 1 (gage height, 1.94 ft); minimum daily, 0.2 cfs Aug. 21-26, Sept. 12. 1916-64: Maximum discharge, about 5,200 cfs Mar. 2, 1938, based on inflow to Big Santa Anita flood-control reservoir; practically no flow Aug. 18 to Sept. 14, 1929.

Remarks.--Records good. Debris dams above station built in December 1959 cause little or no regulation. No diversion above station.

Cooperation.--Three discharge measurements furnished by Los Angeles County Flood Control District.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.0	* 1.0	1.2	1.1	1.8	1.4	37	* 2.1	1.4	0.8	0.5	* 0.5
2	1.1	1.0	* 1.2	1.1	1.6	1.8	* 12	1.9	1.4	.8	.4	.4
3	1.0	1.0	1.2	1.1	1.7	1.4	6.7	1.8	1.4	.7	.4	.4
4	1.1	.9	1.2	* 1.2	1.7	1.3	4.7	1.9	1.4	.8	.4	.4
5	1.0	.9	1.2	1.2	1.7	1.2	3.7	1.9	1.4	.7	.4	.3
6	1.0	1.6	1.3	1.2	1.6	* 1.2	3.4	2.2	1.4	.8	.4	.4
7	1.0	1.3	1.2	* 1.2	1.6	1.2	3.1	1.9	1.5	*.7	.4	.4
8	1.0	1.1	1.2	* 1.1	1.4	1.2	2.8	1.8	1.8	.7	.3	.3
9	* 1.0	1.0	1.3	1.1	1.4	1.2	2.7	1.6	1.9	.7	.3	.4
10	1.0	.9	* 1.3	1.0	* 1.4	1.4	2.4	1.5	1.7	.7	.3	.4
11	1.1	.9	1.2	1.0	1.5	* 1.3	2.2	1.5	1.6	.6	.4	.3
12	1.0	.8	1.2	1.0	1.4	1.6	2.2	* 1.5	1.5	.6	.4	.2
13	1.0	.8	1.2	* 1.0	1.3	1.6	2.0	1.5	1.4	.6	.4	.3
14	1.0	.9	1.2	1.1	1.3	1.4	* 1.9	1.6	1.3	.6	*.4	.4
15	1.0	2.2	1.2	1.4	1.3	1.4	1.8	1.5	1.3	.6	.4	*.4
16	1.8	1.7	1.2	1.3	1.2	1.8	1.8	1.5	1.4	.6	.3	.3
17	1.5	1.3	1.2	1.2	1.4	2.2	1.8	1.5	* 1.4	.6	.3	.4
18	1.3	1.1	1.2	1.2	1.3	2.2	1.9	1.6	1.3	.6	.2	.4
19	1.3	1.1	1.2	1.3	* 1.3	2.4	2.4	1.6	1.3	.5	.3	.4
20	1.3	5.6	1.2	1.3	1.3	2.4	2.1	1.5	1.3	*.5	.3	.3
21	1.2	2.6	1.2	1.2	1.3	2.5	2.0	1.5	1.3	.5	.2	.4
22	1.2	1.9	1.2	1.6	1.3	5.7	1.9	1.5	1.2	.5	.2	.3
23	1.2	1.7	1.2	* 5.0	1.2	6.7	2.0	1.6	1.1	.5	.2	.3
24	1.1	1.6	1.2	3.7	1.3	5.3	1.8	1.5	1.1	.5	.2	.3
25	1.1	1.5	1.2	3.0	1.3	3.9	1.7	1.6	.9	.5	.2	.3
26	1.0	1.4	1.2	2.7	* 1.3	3.5	1.7	* 1.6	.9	.4	.2	.3
27	1.0	1.4	1.2	2.5	1.2	3.2	1.8	1.6	.9	.4	.3	.4
28	1.0	1.3	1.2	2.4	1.2	3.0	2.3	1.5	.8	*.4	.3	.4
29	1.0	1.3	1.1	* 2.3	1.4	2.8	2.2	1.5	.9	.4	.3	.3
30	1.0	1.2	1.1	2.1	-----	2.7	2.1	1.5	.8	.5	.3	.4
31	1.0	-----	1.1	1.9	-----	3.8	-----	1.4	-----*	.5	.5	-----
TOTAL	34.3	43.0	37.2	76.7	40.7	74.7	118.1	50.7	39.0	18.3	10.1	10.7
MEAN	1.11	1.43	1.20	2.47	1.40	2.41	3.94	1.64	1.30	.59	.33	.36
AC-FT	68	85	74	152	81	148	234	101	77	36	20	21
MAX	1.8	5.6	1.3	16	1.8	6.7	37	2.2	1.9	0.8	0.5	0.5
MIN	1.0	0.8	1.1	1.0	1.2	1.2	1.7	1.4	0.8	0.4	0.2	0.2

CALENDAR YEAR 1963 MAX 84 MIN 0.6 MEAN 2.24 AC-FT 1,620

WATER YEAR 1963-64 MAX 37 MIN 0.2 MEAN 1.51 AC-FT 1,100

Peak discharge (base, 40 cfs).--Jan. 22 (0515 hrs) 46 cfs (1.76 ft); Apr. 1 (0845 hrs) 64 cfs (1.94 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 24 to Jan. 7.

LOS ANGELES RIVER BASIN

201

11-1010. Eaton Creek near Pasadena, Calif.

Location.--Lat 34°11'37", long 118°06'13", in SW 1/4 Sec. 2, T.1 N., R.12 W., on right bank at mouth of canyon just upstream from bridge on old Mount Wilson toll road, and 4.5 miles northeast of Pasadena.

Drainage area.--6.47 sq mi.

Records available.--March 1918 to September 1964. Combined monthly records of creek and diversions, July 1923 to September 1964.

Gage.--Water-stage recorder and broad-crested weir since October 1938; flow meter on each diversion. Altitude of gage is 1,230 ft (from topographic map). Prior to Oct. 28, 1938, water-stage recorder at site 75 ft downstream at different datum. Oct. 28, 1938, to Nov. 4, 1959, at same site at datum 1.00 ft higher.

Average discharge (creek only).--46 years, 2.04 cfs (1,480 acre-ft per year); median of yearly mean discharges, 0.8 cfs (580 acre-ft per year). (combined).--41 years, 3.17 cfs (2,290 acre-ft per year); median of yearly mean discharges, 1.9 cfs (1,400 acre-ft per year).

Extremes (creek only).--Maximum discharge during year, 56 cfs Apr. 1 (gage height, 2.32 ft); no flow for most of year. 1918-64: Maximum discharge, 2,400 cfs Mar. 2, 1938, from record of inflow to Eaton flood-control reservoir; no flow at times during each year. Flood of January 1916, 1,500 cfs, from slope-area measurement, by local engineering student.

Remarks.--Records fair. No regulation above station. Water diverted during period of record, at sites 300 ft and 1.2 miles upstream for municipal supply. In addition, 72 acre-ft was diverted from two infiltration galleries, one 800 ft upstream and the other 500 ft downstream from station.

Cooperation.--Records of diversions furnished by city of Pasadena.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0		0	28					(*)
2				*0		0	9.5					
3				0		0	*3.7					
4				0		0	.6					
5				0		0	.6					
6				0		0	*0					
7	(*)			0		0	0					
8				0		0	0					
9				0		0	0					
10				0		0	0					
11				0		0	0					
12				0		0	0					
13				0		0	0					
14				0		0	0					
15				0		0	0					
16				0		0	0					
17				0		0	0					
18				0		0	0					
19				0		0	0					
20				0		0	0					
21				4.6		0	0					
22				*5.9		.1	0					
23				.4		.4	0					
24				0		0	0					
25				0		*.1	0					
26				0	(*)	0	0					
27				0		0	0					
28				0		0	0	(*)				
29		(*)		*0		0	*0		(*)	(*)		
30	(*)			0		0	0					
31				0		0	0					
Total	0	0	0	10.9	0	0.6	42.4	0	0	0	0	0
Mean	0	0	0	0.35	0	0.02	1.41	0	0	0	0	0
Max	0	0	0	5.9	0	0.4	28	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	22	0	1.2	84	0	0	0	0	0
(+)	1.9	3.0	3.3	5.7	3.8	3.6	16.7	4.9	3.0	9.9	5.7	4.8

Calendar year 1963: Max 30 Min 0 Mean 0.19 Ac-ft 137 Mean† 0.94 Ac-ft† 684
 Water year 1963-64: Max 28 Min 0 Mean 0.15 Ac-ft 107 Mean† 0.66 Ac-ft† 479

Peak discharge (base, 55 cfs).--Apr. 1 (0815) 56 cfs (2.32 ft).

* Discharge measurement or observation of no flow made on this day.

† Combined discharge for creek and diversion by city of Pasadena.

LOS ANGELES RIVER BASIN

11-1012.5. Rio Hondo above Whittier Narrows Dam, Calif.

Location--Lat 34°03'30", long 118°04'15", in Portrero Grande Grant, on right bank 0.3 mile downstream from Garvey Avenue, 0.4 mile downstream from Rubio Wash, and 2.2 miles west of El Monte, Los Angeles County.

Drainage area---91.2 sq mi.

Records available---February 1956 to September 1964.

Gage---Water-stage recorder. Altitude of gage is 220 ft (from topographic map).

Average discharge---8 years, 21.1 cfs (15,280 acre-ft per year).

Extremes---Maximum discharge during year, 4,400 cfs Jan. 21 (gage height, 3.65 ft); minimum daily, 0.2 cfs Mar. 15, June 14, 28.
1956-64: Maximum discharge, 8,150 cfs Jan. 6, 1959 (gage height, 4.90 ft, from floodmark); no flow on many days in most years.

Remarks---Records good. Discharge measurements made three or more times a month. Flow regulated by Big Santa Anita, Sawpit, and Eaton flood-control reservoirs (combined capacity, 1,700 acre-ft), and Sierra Madre, Las Flores, and Rubio debris basins. Many diversions above station for domestic use and irrigation. No water diverted during year from San Gabriel River below Santa Fe Dam to Rio Hondo above station.

Cooperation---Twenty-seven discharge measurements furnished by the Los Angeles County Flood Control District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.07	0.2	1.8	27
1.1	.4	1.9	57
1.2	1.6	2.0	107
1.3	3.4	2.1	220
1.5	8.2	2.2	420
1.6	11	2.3	750
1.7	15		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.3	1.2	0.4	0.7	0.6	0.6	326	2.3	0.9	1.4	2.4	2.1
2	2.6	1.0	.8	1.2	.6	22	2.1	1.0	1.4	1.4	1.3	2.1
3	2.1	1.0	1.3	.8	.6	.9	1.0	.4	1.2	.7	2.1	1.9
4	3.2	.8	.8	.7	.6	.7	.7	3.4	1.3	.4	2.1	1.9
5	2.1	.7	.9	.5	.6	.9	1.6	2.1	1.3	.4	2.1	1.0
6	2.1	113	.9	.6	.6	1.2	.7	4.6	.6	.9	2.3	.7
7	2.1	1.2	.7	.7	.5	2.1	.9	1.8	.5	1.3	1.9	.8
8	2.1	.7	.5	.6	.4	.4	1.3	2.3	4.4	1.4	2.1	1.9
9	2.3	.7	.8	.6	.4	.8	1.3	1.2	14	1.6	2.3	1.9
10	2.4	.7	.9	.6	.8	1.0	1.6	.5	.9	1.4	2.1	2.3
11	2.4	.9	.4	1.9	.8	1.2	.8	1.8	.7	1.6	1.9	1.9
12	1.8	1.2	.7	.4	.4	33	.6	1.9	.8	.8	1.9	1.9
13	.9	1.2	.4	.4	.8	3.2	1.2	1.9	.7	1.2	2.1	1.2
14	1.4	.9	.4	.4	1.6	.6	1.2	2.1	.2	1.6	1.9	2.1
15	2.3	117	.4	.4	1.8	.2	1.2	1.3	.7	2.1	1.9	2.1
16	123	1.2	.5	.4	.8	.4	1.3	.8	1.0	1.9	.9	2.1
17	10	.6	.6	.4	.8	1.3	1.3	.5	.8	1.9	1.6	2.3
18	64	1.0	.6	3.3	1.6	.8	1.3	.9	.8	1.6	1.6	2.3
19	1.0	72	.8	.5	1.4	.8	7.5	1.0	.9	1.4	1.4	2.1
20	1.0	545	.8	.4	1.4	.8	.9	1.0	.6	2.1	1.8	2.1
21	1.0	3.5	.8	524	.8	.5	.9	1.0	.6	2.4	1.8	2.1
22	1.2	1.0	.7	319	.7	272	1.9	1.2	.7	2.3	1.8	2.1
23	1.6	.7	1.3	2.0	.5	56	1.3	.7	1.2	2.4	.8	2.1
24	1.8	.7	.7	.9	1.0	8.9	1.3	.6	1.4	2.4	1.6	2.1
25	1.8	.9	.7	.7	1.2	2.3	1.2	1.3	1.2	2.4	1.9	2.1
26	1.9	1.0	1.2	.6	.9	.7	.4	1.6	1.2	1.6	1.8	2.1
27	2.1	1.2	.8	.6	.9	.9	1.3	1.3	.6	1.6	1.8	1.0
28	1.6	1.2	.9	.7	1.2	.8	7.0	1.2	.2	1.9	1.6	1.3
29	2.1	.8	1.2	.7	1.2	.6	4.7	.8	.7	3.0	1.6	1.8
30	2.1	.9	1.2	.8	-----	.9	3.1	.5	1.0	2.4	1.0	1.9
31	1.8	-----	1.3	.7	-----	44	-----	.5	-----	2.3	2.4	-----
Total	250.1	873.9	24.4	866.2	25.5	460.5	377.6	43.5	42.5	51.8	55.8	55.3
Mean	8.07	29.1	0.79	27.9	0.88	14.9	12.6	1.40	1.42	1.67	1.80	1.84
Max	123	545	1.3	524	1.8	272	326	4.6	14	3.0	2.4	2.3
Min	0.9	0.6	0.4	0.4	0.4	0.2	0.4	0.4	0.2	0.4	0.8	0.7
Ac-ft	496	1,730	48	1,720	51	913	749	86	84	103	111	110
Calendar year 1963:	Max	1,080	Min	0.1	Mean	13.0	Ac-ft	9,420				
Water year 1963-64:	Max	545	Min	0.2	Mean	8.54	Ac-ft	6,200				

11-1015. Rio Hondo near Montebello, Calif.

Location.--Lat 34°02'00", long 118°04'18", in Potrero Grande Grant, on right bank 900 ft upstream from Mission Bridge and 2 miles northeast of Montebello, Los Angeles County.

Drainage area.--116 sq mi (excluding area above Santa Fe Dam).

Records available.--October 1928 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 190.77 ft above mean sea level (levels by Los Angeles County Flood Control District). Prior to Oct. 23, 1956, at datum 3.86 ft higher. Oct. 23, 1956, to Sept. 17, 1962, at site 67 ft upstream at datum 2.06 ft higher.

Average discharge.--29 years (1928-57), 51.5 cfs (37,280 acre-ft per year); median of yearly mean discharges, 36 cfs (26,100 acre-ft per year).

Extremes.--Maximum discharge during year, 6,200 cfs Jan. 21 (gage height, 8.95 ft); no flow for some days.

1928-64: Maximum discharge, 28,000 cfs Mar. 2, 1938 (gage height, 16.69 ft, present datum), from rating curve extended above 9,000 cfs on basis of slope-area measurement and runoff from contributing stream; no flow for some days in 1964.

Remarks.--Discharge measurements made once a week. Flow regulated by Big Santa Anita, Sawpit, and Eaton flood-control reservoirs (combined capacity, 1,700 acre-ft) and Sierra Madre, Las Flores, and Rubio debris basins. Many diversions above station for domestic use and irrigation. At times flow is diverted from San Gabriel River below Santa Fe Dam to Rio Hondo above station. Since 1957, at times imported Colorado River water has been released to Rio Hondo 1.6 miles above station for ground-water recharge.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.6	2.1	110	147	190	159	400	3.3	105	1.8	1.8	1.8
2	3.6	2.6	124	143	171	202	57	2.4	1.8	1.8	.3	3.0
3	3.2	2.6	137	139	133	154	187	1.8	1.8	1.8	.6	.3
4	3.6	2.6	141	139	58	173	190	3.2	2.4	.6	1.8	.3
5	1.6	2.1	143	139	88	196	201	4.4	1.8	.6	1.8	.4
6	1.6	186	143	139	88	219	205	5.7	1.2	.6	2.4	0
7	19	5.8	143	153	88	221	207	3.6	.3	1.5	1.5	0
8	2.6	1.6	141	157	88	214	205	3.3	8.3	1.8	2.1	0
9	2.1	1.0	141	151	87	210	190	3.3	34	1.8	1.2	0
10	2.1	.5	143	145	87	214	205	2.4	2.4	1.8	1.5	.1
11	2.1	1.0	135	159	86	233	214	3.0	1.5	1.8	1.5	.2
12	2.1	4.7	139	151	86	298	219	3.9	2.7	.6	1.2	.2
13	1.0	4.2	141	157	85	230	219	3.3	2.7	.6	1.2	0
14	.6	5.2	147	151	86	102	212	3.6	.9	1.2	1.8	0
15	2.1	172	145	139	88	2.5	205	3.0	.9	1.8	2.1	0
16	281	4.7	139	137	87	2.7	205	2.4	2.1	2.1	.6	0
17	123	.5	155	145	88	3.0	223	2.7	2.1	2.1	.3	0
18	234	1.0	170	88	92	3.1	223	2.1	2.1	2.4	.9	0
19	112	58	168	7.0	96	3.0	238	2.7	2.1	0	.9	0
20	105	794	161	4.7	96	2.7	214	2.7	1.8	.9	.9	0
21	109	91	155	686	96	2.4	212	2.1	1.5	2.1	1.2	0
22	105	132	161	454	96	472	101	2.4	1.5	2.4	.9	0
23	107	70	168	9.1	104	164	4.9	2.1	2.7	2.4	.6	0
24	100	74	168	7.2	124	21	3.9	1.5	3.0	2.4	.3	0
25	83	93	168	5.5	157	5.2	3.9	1.8	2.4	2.4	.3	0
26	81	94	168	4.6	140	2.4	3.3	2.1	2.1	1.5	1.2	0
27	90	112	168	92	132	123	4.2	94	1.8	1.2	1.2	0
28	31	112	168	210	142	226	10	207	.6	1.5	1.2	0
29	1.6	112	168	214	143	226	6.8	210	.9	2.1	1.2	0
30	2.1	109	168	214	-----	226	3.3	203	1.5	1.8	.3	0
31	2.6	-----	157	216	-----	294	-----	205	-----	2.1	0	-----
Total	1,618.2	2,251.2	4,683	4,723.1	3,112	4,604.0	4,572.3	993.8	195.9	49.5	34.8	6.3
Mean	52.2	75.4	151	152	107	149	152	32.1	6.53	1.60	1.12	0.21
Max	281	794	170	686	190	472	400	210	105	2.4	2.4	3.0
Min	0.6	0.5	110	4.6	58	2.4	3.3	1.5	0.3	0	0	0
Ac-ft	3,210	4,490	9,290	9,370	6,170	9,130	9,070	1,970	389	98	69	12
(†)	2,410	2,220	9,490	7,130	6,260	7,260	8,920	2,000	227	0	0	0

Calendar year 1963: Max 1,170 Min 0.5 Mean 54.0 Ac-ft 39,100 Ac-ft† 26,940

Water year 1963-64: Max 794 Min 0 Mean 73.4 Ac-ft 53,270 Ac-ft† 45,920

† Colorado River water, in acre-ft, released to Rio Hondo via Alhambra Wash 1.6 miles upstream for ground-water recharge in Rio Hondo basin.

LOS ANGELES RIVER BASIN

11-1020. Mission Creek near Montebello, Calif.

Location--Lat $34^{\circ}01'45''$, long $118^{\circ}04'07''$, in La Merced Grant, on upstream side of right abutment of San Gabriel Boulevard Bridge, 2 miles northeast of Montebello, Los Angeles County.

Drainage area--4.16 sq mi.

Records available--October 1929 to September 1964. Yearly estimate for 1938, published in WSP 1315-B. Prior to October 1944, published as Rio Hondo Slough near Montebello.

Gage--Water-stage recorder. Altitude of gage is 195 ft (from topographic map). Prior to Nov. 3, 1938, at datum 6.30 ft higher.

Average discharge--35 years, 13.0 cfs (9,410 acre-ft per year); median of yearly mean discharges, 14 cfs (10,100 acre-ft per year).

Extremes--Maximum discharge during year, 1.0 cfs Nov. 20 (gage height, 5.80 ft); no flow for most of year. 1929-64: Maximum discharge not determined, occurred Mar. 2, 1938; no flow at times in some years.

Remarks--Flow is almost entirely from ground-water seepage. Flow partially regulated above station by Legg Lake. No diversion above station.

Cooperation--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 20.....0.1

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	0.1	0.1	0	0.003	0.2
Calendar year 1963.....	-	3.5	0	.66	476
Water year 1963-64.....	-	.1	0	.0003	.2

Note.--Flow occurred only on day listed above.

11-1022.5. Mission Creek below Whittier Narrows Dam, Calif.

Location--Lat $34^{\circ}01'15''$, long $118^{\circ}04'15''$, near north boundary of Paso de Bartolo Grant, on left bank about 500 ft downstream from axis of Whittier Narrows Dam, and 1.4 miles north of Pico, Los Angeles County.

Records available--December 1955 to September 1964.

Gage--Water-stage recorder and Parshall flume. Datum of gage is 187.1 ft above mean sea level (Corps of Engineers Survey).

Extremes--No flow during year.

1955-64: Maximum daily discharge, 18 cfs Jan. 6, 1959; no flow for many days in most years.

Remarks--No flow since May 26, 1963. Flow is almost entirely from ground-water seepage. At times flow regulated or diverted above station by Whittier Narrows Dam. Discharge for calendar year 1963 is as follows: maximum daily, 3.1 cfs; minimum, zero; mean, 0.36 cfs; 263 acre-ft.

11-1025. Rio Hondo near Downey, Calif.

Location--Lat 33°56'46", long 118°09'44", in San Antonio Grant, on left bank 700 ft upstream from Stewart and Gray Road Bridge, 1.0 mile upstream from mouth, and 1.5 miles west of Downey, Los Angeles County.

Drainage area--143 sq mi (excluding area above Santa Fe Dam).

Records available--March 1928 to September 1964.

Gage--Water-stage recorder. Datum of gage is 91.4 ft above mean sea level (levels by Los Angeles County Flood Control District). Prior to Oct. 31, 1951, at site 700 ft downstream at datum 1.5 ft lower.

Extremes--Maximum discharge during year, 2,060 cfs Jan. 22 (gage height, 2.64 ft); no flow for most of year. 1928-64: Maximum discharge, 24,400 cfs Mar. 3, 1938 (gage height, 12.0 ft, present datum), from rating curve extended above 10,000 cfs on basis of slope-area measurement; no flow for part of each year.

Remarks--Flow regulated since January 1956 by Whittier Narrows flood-control reservoir (capacity, 36,160 acre-ft). There are several small flood-control reservoirs (combined capacity, 1,700 acre-ft) and several small debris basins above Whittier Narrows Dam. Many diversions above station for domestic use and irrigation. At times, flow is diverted from San Gabriel River below Santa Fe Dam and above Whittier Narrows Dam to Rio Hondo above station. Since 1937 much of flow in Rio Hondo has been diverted to percolation basin from a site 5.5 miles upstream.

Cooperation--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0		0		0	* 56	0	0.1	0	0.4	
2	0	0		0		* 6.6	.1	0	.1	.2	.3	
3	0	0		0		.1	0	0	.3	.3	.1	
4	0	0		0		.1	.1	0	*.3	.3	.1	
5	0	0		0		0	.1	0	1.3	.3	0	
6	0	* 36		0		0	0	0	.4	.2	*.0	
7	0	0		0		.4	0	0	0	.2	0	
8	0	0		0		.5	0	0	0	.5	.2	
9	0	0		0		0	0	0	39	.1	.3	
10	0	0		0		0	.1	0	2.0	.1	.1	(*)
11	0	0		0		0	0	0	*.6	.2	0	
12	0	0		0		3.1	0	0	.6	.4	0	
13	0	0		0		2.1	0	0	.2	.3	0	
14	0	0		0		0	0	0	.5	.1	0	
15	.1	* 32		0		0	0	0	.4	.4	0	
16	* 23	.1		0		0	0	0	.3	*.5	.1	
17	.1	0		0		0	0	0	.4	.5	0	
18	39	0		4.5		0	0	0	.3	.4	0	
19	.1	24		0		0	.4	0	.3	.3	0	
20	0	190		0		0	0	0	.5	.3	0	
21	0	2.5		* 136		0	0	0	1.3	.4	0	
22	0	0		110		* 109	0	0	.6	.4	0	
23	0	0		.1		* 23	0	0	.2	*.4	0	
24	0	0		0		2.0	0	0	.2	.2	0	
25	0	0		0		0	0	0	.2	.2	0	
26	0	0		0		* 0	0	0	.2	.2	0	
27	0	0		0		0	0	0	.3	.2	* 0	
28	0	0		0		0	.4	0	.5	0	0	
29	0	0		0		0	.2	0	.2	0	0	
30	0	0		0		0	0	0	.2	.1	0	
31	0			0		8.5		.1		.2	0	
Total	52.3	284.6	0	250.6	0	155.4	57.4	0.1	51.5	7.9	1.6	0
Mean	2.01	9.49	0	8.08	0	5.01	1.91	0.003	1.72	0.25	0.05	0
Max	39	190	0	136	0	109	56	0.1	39	0.5	0.4	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	124	564	0	497	0	308	114	0.2	102	16	3.2	0
Calendar year 1963:	Max 620	Min 0	Mean 5.47	Ac-ft 3,930								
Water year 1963-64:	Max 190	Min 0	Mean 2.38	Ac-ft 1,730								

* Discharge measurement or observation of no flow made on this day.

LOS ANGELES RIVER BASIN

11-1030. Los Angeles River at Long Beach, Calif.

Location.--Lat 33°49'05", long 118°12'15", in Los Cerritos Grant, on right bank 5,000 ft upstream from Willow Street, 3.4 miles north of Long Beach, Los Angeles County, and 3.7 miles upstream from mouth.

Drainage area.--832 sq mi.

Records available.--December 1928 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 11.91 ft above mean sea level (levels by Los Angeles County Flood Control District). Prior to Oct. 31, 1931, at site 3 miles downstream at different datum. Oct. 31, 1931, to Jan. 19, 1956, at site 2 miles downstream at different datum.

Average discharge.--35 years (1929-64), 135 cfs (97,740 acre-ft per year); median of yearly mean discharges, 84 cfs (60,800 acre-ft per year).

Extremes.--Maximum discharge during year, 15,980 cfs Jan. 22 (gage height, 5.84 ft); minimum daily, 5.3 cfs Mar. 29.
1928-64: Maximum discharge, 99,000 cfs Mar. 2, 1938, on basis of records for stations upstream; no flow at times in 1929-30, 1934.

Remarks.--Discharge measurements made once a week. Flow regulated since September 1940 by Hansen flood-control reservoir and since December 1941 by Sepulveda flood-control reservoir (combined capacity, 49,400 acre-ft), and several small flood-control reservoirs. City of Los Angeles stores imported Owens River water in San Fernando and Chatsworth reservoirs and at times discharges imported water into Los Angeles River above station. Many diversions above station for domestic use and irrigation. Average discharge represents flow to the ocean, regardless of upstream development.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	7.6	10	11	12	13	2,000	14	11	19	15	16
2	10	7.2	10	11	12	181	99	11	18	17	12	15
3	10	7.2	11	12	9.5	40	16	10	13	15	14	15
4	10	7.6	10	12	14	19	12	15	14	12	19	14
5	10	9.5	12	10	14	18	8.0	19	15	8.5	19	12
6	8.0	1,070	13	12	13	15	8.5	16	11	12	18	10
7	7.6	157	12	11	12	12	9.5	15	9.0	11	19	8.5
8	9.5	16	11	12	13	13	10	16	14	12	15	10
9	10	14	12	11	11	10	13	15	374	11	14	12
10	9.5	12	14	10	11	13	12	15	42	11	15	12
11	10	11	13	10	12	13	10	13	28	9.5	19	14
12	9.5	12	12	9.5	11	17	9.0	17	23	7.2	19	12
13	9.0	13	10	9.5	11	169	10	17	18	8.5	19	12
14	11	12	7.2	11	10	17	10	16	13	14	19	13
15	15	814	5.7	11	10	14	11	15	15	14	15	17
16	621	198	6.8	11	7.6	11	15	13	18	17	15	17
17	98	15	6.4	10	9.0	12	12	12	17	18	15	16
18	491	14	7.2	159	11	18	12	12	18	15	20	16
19	27	105	6.0	21	12	17	32	18	16	14	19	12
20	7.6	4,150	8.0	10	12	15	12	17	15	14	19	18
21	10	241	9.0	2,430	14	12	12	18	12	17	18	12
22	12	42	8.5	2,230	11	1,450	12	14	15	17	16	12
23	11	19	9.0	54	9.0	1,500	12	12	17	16	15	10
24	9.5	15	9.0	32	10	320	11	9.5	19	15	17	8.0
25	8.0	12	7.2	22	13	38	10	12	18	15	21	8.5
26	9.5	14	7.2	14	14	15	8.0	12	41	12	25	10
27	22	12	9.5	10	16	9.5	11	12	38	14	22	10
28	9.5	11	9.5	16	16	7.2	32	12	10	16	21	12
29	12	10	8.5	15	16	5.3	44	10	11	16	16	14
30	11	11	9.0	12	-----	6.8	20	9.0	15	18	13	14
31	8.5	-----	10	11	-----	130	-----	7.6	-----	17	15	-----
Total	1,516.7	7,039.1	293.7	5,220.0	346.1	4,130.8	2,493.0	424.1	898.0	432.7	538	382.0
Mean	48.9	235	9.47	168	11.9	133	83.1	13.7	29.9	14.0	17.4	12.7
Max	621	4,150	14	2,430	16	1,500	2,000	19	374	19	25	18
Min	7.6	7.2	5.7	9.5	7.6	5.3	8.0	7.6	9.0	7.2	12	8.0
Ac-ft	3,010	13,960	583	10,350	686	8,190	4,940	841	1,780	858	1,070	758
Calendar year 1963:	Max	5,480	Min	1.2	Mean	96.6	Ac-ft	69,910				
Water year 1963-64:	Max	4,150	Min	5.3	Mean	64.8	Ac-ft	47,030				

11-1035. Ballona Creek near Culver City, Calif.

Location.--Lat 33°59'48", long 118°24'07", in La Ballona Grant, on downstream side of Sawtelle Boulevard Bridge, 1.7 miles south of Culver City, Los Angeles County, and 4 miles upstream from mouth.

Drainage area.--89.5 sq mi, excludes that of Sepulveda Creek. Prior to January 1951, 111 sq mi, change due to tributary channel realignment.

Records available.--February 1928 to September 1964 (after December 1950, flow of Sepulveda Creek excluded).

Gage.--Water-stage recorder. Datum of gage is 11.06 ft above mean sea level (levels by Los Angeles County Flood Control District). Prior to May 14, 1936, at site 1 mile downstream at different datum. May 14, 1936, to Oct. 23, 1961, at datum 0.2 ft higher.

Average discharge.--22 years (1928-50), 35.2 cfs (25,480 acre-ft per year); 14 years (1950-64), 37.1 cfs (26,860 acre-ft per year); median of yearly mean discharges, 30 cfs (21,700 acre-ft per year).

Extremes.--Maximum discharge during year, 6,420 cfs Jan. 22 (gage height, 6.70 ft); minimum daily, 3.9 cfs Mar. 15. 1928-64: Maximum discharge, 19,000 cfs Mar. 2, 1938 (gage height, 15.4 ft, present datum); no flow in parts of some years.

Remarks.--Discharge measurements generally made once a week. No regulation above station. Occasional discharge of imported Owens River water from several distribution reservoirs of the City of Los Angeles Department of Water and Power into the creek above station. Some small pumping diversions above station for irrigation.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	12	4.6	4.6	8.8	4.6	21.4	8.1	8.8	12	12	9.5
2	10	13	6.7	6.7	7.4	11.7	8.1	7.4	8.8	13	10	9.5
3	9.5	9.5	6.7	6.7	8.8	4.6	7.4	6.0	10	10	14	10
4	8.8	15	7.4	6.0	8.8	6.7	9.5	8.1	9.5	6.7	13	13
5	5.3	13	7.4	6.0	14	9.5	9.5	7.4	9.5	6.7	13	8.8
6	4.6	395	7.4	7.4	10	9.5	10	7.4	9.5	9.5	15	7.4
7	7.4	8.1	7.4	8.8	8.8	9.5	12	8.1	8.8	6.0	16	9.5
8	7.4	7.4	6.0	8.8	8.1	8.8	10	9.5	10	6.0	10	13
9	9.5	6.0	7.4	8.8	7.4	12	10	8.8	248	8.1	10	13
10	12	6.0	7.4	9.5	14	14	8.8	9.5	9.8	8.1	18	14
11	10	7.4	8.8	12	8.8	13	12	13	9.8	6.0	16	14
12	8.8	8.8	13	8.8	8.8	6.7	7.4	13	9.8	5.3	15	9.5
13	8.8	7.4	8.1	13	8.8	22	7.4	12	9.8	9.5	14	6.7
14	13	7.4	34.3	14	8.8	6.7	8.1	10	9.8	10	16	10
15	15	419	11	13	7.4	3.9	8.1	10	9.8	9.5	15	8.8
16	320	9.5	8.1	13	6.7	7.4	8.1	10	9.8	15	12	8.1
17	8.8	7.4	8.1	12	7.4	9.5	8.8	8.1	9.8	10	16	12
18	103	7.4	8.8	5.7	9.5	12	15	9.5	9.8	9.5	16	15
19	8.8	382	8.1	6.0	9.5	12	37	9.5	9.8	8.8	13	9.5
20	7.4	789	8.8	34	8.8	12	12	8.8	9.8	13	13	7.4
21	8.1	6.7	8.1	704	8.8	8.1	9.5	10	9.8	14	14	10
22	8.8	7.4	6.7	539	9.5	640	9.5	10	9.8	12	12	6.7
23	8.1	6.7	7.4	10	8.1	242	8.8	6.7	9.8	9.5	9.5	8.8
24	8.8	5.3	8.1	10	10	33	8.8	6.0	16	9.5	14	9.5
25	9.5	5.3	6.0	7.4	10	8.1	8.1	8.8	9.8	12	16	8.8
26	8.8	6.7	8.1	7.4	8.8	7.4	6.9	8.8	12	9.5	13	7.4
27	7.4	6.7	8.1	6.7	8.8	7.4	12	9.5	8.8	15	13	6.0
28	9.5	4.6	8.1	10	8.1	7.4	19	7.4	8.1	17	13	8.1
29	9.5	6.7	8.1	9.5	8.1	6.7	8.8	8.1	12	12	12	9.5
30	9.5	6.7	8.1	8.8	-----	8.1	7.4	7.4	12	14	6.0	9.5
31	10	-----	8.1	8.8	-----	101	-----	7.4	-----	14	8.8	-----
Total	692.1	2,193.1	579.1	1,577.7	260.8	1,430.9	522.0	274.3	538.8	321.2	408.3	293.0
Mean	22.3	73.1	18.7	50.9	8.99	46.2	17.4	8.85	18.0	10.4	13.2	9.77
Max	320	789	343	704	14	640	214	13	248	17	18	15
Min	4.6	4.6	4.6	4.6	6.7	3.9	6.9	6.0	8.1	5.3	6.0	6.0
Ac-ft	1,370	4,350	1,150	3,130	517	2,840	1,040	544	1,070	637	810	581
Calendar year 1963:	Max 1,940	Min 4.6	Mean 36.7	Ac-ft 26,560								
Water year 1963-64:	Max 789	Min 3.9	Mean 24.8	Ac-ft 18,040								

Note.--No gage-height record Apr. 12-16, June 10-23, 25.

TOPANGA CREEK BASIN

11-1040. Topanga Creek near Topanga Beach, Calif.

Location.--Lat 34°03'50", long 118°35'10", in Boca de Santa Monica Grant, on downstream side of right abutment of highway bridge, 1.7 miles north of Topanga Beach, Los Angeles County.

Drainage area.--18.0 sq mi.

Records available.--January 1930 to September 1938, October 1939 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 265.60 ft above mean sea level (levels by Los Angeles County Flood Control District). Prior to June 5, 1940, at different datum. June 5, 1940, to Dec. 9, 1941, at site 400 ft upstream at different datum.

Average discharge.--33 years, 4.87 cfs (3,530 acre-ft per year); median of yearly mean discharges, 1.6 cfs (1,200 acre-ft per year).

Extremes.--Maximum discharge during year, 196 cfs Jan. 21 (gage height, 4.15 ft from floodmarks); minimum daily, 0.01 cfs Aug. 19-23, Sept. 18-20, 22-28.

1930-38, 1939-64: Maximum discharge, 7,960 cfs Mar. 2, 1938; no flow at times in some years.

Remarks.--Discharge measurements made once a week. No regulation or diversion above station.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.05	0.07	0.07	0.04	0.2	0.05	6.9	0.1	0.07	0.04	0.02	0.02
2	.05	.07	.07	.04	.2	.2	1.0	.2	.07	.04	.02	.02
3	.05	.07	.07	.04	.1	.07	.7	.1	.07	.04	.02	.02
4	.07	.07	.07	.04	.1	.07	.5	.1	.07	.04	.02	.02
5	.07	.07	.07	.04	.1	.07	.5	.07	.07	.04	.02	.02
6	.07	.9	.07	.05	.1	.07	.5	.07	.07	.04	.02	.04
7	.05	.1	.07	.05	.1	.07	.4	.07	.07	.04	.02	.04
8	.05	.05	.07	.07	.1	.07	.3	.1	.1	.04	.02	.04
9	.05	.05	.07	.07	.1	.07	.2	.07	.1	.04	.02	.04
10	.05	.07	.1	.07	.1	.07	.2	.07	.1	.04	.02	.02
11	.05	.1	.1	.07	.1	.07	.2	.07	.07	.04	.02	.02
12	.05	.07	.07	.07	.1	.1	.2	.1	.07	.04	.02	.02
13	.05	.07	.07	.07	.1	.2	.2	.1	.07	.04	.02	.02
14	.05	.07	.1	.07	.1	.1	.1	.1	.05	.04	.02	.02
15	.05	.7	.1	.07	.1	.1	.1	.1	.05	.04	.02	.02
16	.2	.2	.1	.07	.1	.07	.1	.1	.05	.04	.02	.02
17	.07	.1	.1	.07	.1	.05	.1	.1	.05	.04	.02	.02
18	.07	.1	.1	.1	.1	.05	.1	.07	.05	.04	.02	.02
19	.07	.5	.1	.1	.1	.07	.1	.07	.05	.04	.01	.01
20	.05	12	.1	.1	.1	.07	.1	.07	.05	.02	.01	.01
21	.05	.4	.1	17	.1	.07	.1	.07	.05	.02	.01	.02
22	.05	.2	.1	8.7	.1	7.9	.1	.07	.07	.02	.01	.01
23	.05	.2	.07	.7	.05	2.0	.1	.07	.07	.02	.01	.01
24	.05	.1	.07	.4	.05	.8	.1	.07	.07	.02	.02	.01
25	.05	.1	.07	.2	.05	.4	.1	.05	.07	.02	.02	.01
26	.05	.1	.1	.2	.05	.3	.1	.05	.07	.02	.02	.01
27	.05	.1	.1	.2	.05	.2	.1	.07	.07	.02	.02	.01
28	.05	.1	.1	.2	.05	.2	.1	.07	.05	.02	.02	.01
29	.05	.1	.05	.2	.05	.1	.1	.07	.05	.02	.02	.02
30	.05	.1	.05	.2	-----	.1	.1	.07	.04	.02	.02	.02
31	.1	-----	.05	.2	-----	2.5	-----	.07	-----	.02	.02	-----
Total	1.87	16.93	2.53	29.50	2.75	16.26	13.5	2.56	1.96	1.00	0.57	0.56
Mean	0.060	0.564	0.082	0.952	0.095	0.525	0.45	0.083	0.065	0.032	0.018	0.019
Max	0.2	12	0.1	17	0.2	7.9	6.9	0.2	0.1	0.04	0.02	0.04
Min	0.05	0.05	0.05	0.04	0.05	0.05	0.1	0.05	0.04	0.02	0.01	0.01
Ac-ft	3.7	34	5.0	59	5.5	32	27	5.1	3.9	2.0	1.1	1.1

Calendar year 1963: Max 66 Min 0.02 Mean 0.663 Ac-ft 481
 Water year 1963-64: Max 17 Min 0.01 Mean 0.246 Ac-ft 179

209

Location.--Lat 34°04'38", long 118°42'03", in SW_{1/4} sec.18, T.1 S., R.17 W., on right bank 700 ft downstream from Cold Creek, 0.2 mile downstream from Crater Camp, and 6 miles southwest of Calabasas.

Records available.--January 1931 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 432.82 ft above mean sea level (levels by Los Angeles County Flood Control District). Prior to Nov. 16, 1954 at same site at datum 2.31 ft lower.

Average discharge.--33 years, 17.2 cfs (12,450 acre-ft per year); median of yearly mean discharges, 5.9 cfs (4,300 acre-ft per year).

Extremes.--Maximum discharge during year, 65 cfs Jan. 22 (gage height, 2.73 ft); minimum daily, 0.02 cfs July 25.
1931-64: Maximum discharge, 13,600 cfs Mar. 15, 1952 (gage height, 16.8 ft, present datum); no flow at times in some years.

Remarks.--Discharge measurements made once a week. Flow regulated by many small recreational reservoirs. Small diversions above station for domestic use.

Cooperation.--Records furnished by Los Angeles County Flood Control District and reviewed by Geological Survey.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.2	0.4	0.4	1.0	0.8	5.5	0.6	0.4	0.2	0.06	0.06
2	.2	.2	.4	.4	1.0	.8	2.0	.6	.4	.2	.06	.06
3	.2	.3	.4	.3	.8	.6	1.5	.6	.4	.2	.06	.06
4	.2	.3	.4	.3	.8	.6	1.4	.6	.3	.2	.06	.06
5	.2	.3	.4	.4	.8	.6	1.2	.6	.3	.2	.06	.06
6	.2	.7	.4	.4	.8	.6	1.2	.6	.2	.2	.06	.06
7	.06	.2	.4	.5	.8	.6	1.0	.6	.4	.2	.06	.06
8	.06	.2	.4	.5	.8	.6	1.0	.6	.3	.3	.06	.06
9	.06	.2	.5	.5	.8	.6	1.0	.6	.3	.3	.06	.06
10	.06	.2	.5	.5	.8	.6	1.0	.5	.2	.3	.06	.06
11	.06	.06	.5	.5	.8	.6	.8	.5	.2	.3	.06	.06
12	.06	.06	.5	.5	.8	.8	.8	.5	.2	.2	.06	.06
13	.06	.2	.5	.5	.8	.8	.8	.5	.2	.2	.06	.06
14	.2	.2	.5	.5	.8	.8	.8	.5	.2	.2	.06	.06
15	.2	.3	.5	.4	1.0	.6	.6	.5	.3	.2	.06	.06
16	.4	.2	.4	.4	1.0	.5	.6	.4	.3	.3	.06	.06
17	.2	.2	.4	.4	1.0	.5	.6	.4	.3	.3	.06	.06
18	.2	.2	.4	.4	1.0	.5	.6	.4	.3	.3	.06	.06
19	.3	.2	.4	.4	1.0	.6	.6	.4	.3	.3	.06	.06
20	.2	4.2	.4	.4	.8	.6	.6	.4	.2	.2	.06	.06
21	.2	.5	.4	9.2	.8	.6	.6	.4	.2	.2	.06	.06
22	.06	.5	.4	17	.8	4.5	.6	.4	.2	.2	.06	.06
23	.06	1.0	.3	2.6	.8	2.3	.8	.4	.2	.2	.06	.06
24	.06	.5	.4	1.7	.8	1.5	.6	.4	.2	.06	.06	.06
25	.03	.4	.4	1.5	.8	1.0	.6	.4	.2	.02	.06	.06
26	.03	.4	.4	1.4	.8	1.0	.6	.4	.2	.03	.06	.06
27	.06	.4	.4	1.2	.8	.8	.6	.4	.2	.03	.06	.06
28	.06	.4	.4	1.0	.8	.8	.6	.4	.2	.06	.06	.06
29	.2	.4	.4	1.0	.8	.8	.6	.4	.2	.06	.06	.06
30	.2	.4	.4	1.0	-----	.8	.6	.4	.2	.06	.06	.06
31	.2	-----	.4	1.0	-----	2.0	-----	.4	-----	.06	.06	-----
Total	4.48	13.52	13.0	47.2	24.6	28.8	29.8	14.8	7.7	5.78	1.86	1.80
Mean	0.145	0.451	0.42	1.52	0.85	0.93	0.99	0.48	0.26	0.186	0.060	0.060
Max	0.4	4.2	0.5	17	1.0	4.5	5.5	0.6	0.4	0.3	0.06	0.06
Min	0.03	0.06	0.3	0.3	0.8	0.5	0.6	0.4	0.2	0.02	0.06	0.06
Ac-ft	8.9	27	26	94	49	57	59	29	15	11	3.7	3.6
Calendar year 1963:	Max	24	Min	0.03	Mean	0.991	Ac-ft	717				
Water year 1963-64:	Max	17	Min	0.02	Mean	0.528	Ac-ft	383				

SANTA CLARA RIVER BASIN

11-1085. Santa Clara River at Los Angeles-Ventura County Line, Calif.

Location--Lat 34°23'59", long 118°42'14", in San Francisco Grant, on downstream end of old diversion weir on right bank, 0.8 mile west of Los Angeles-Ventura County Line.

Drainage area--644 sq mi (revised).

Records available--October 1952 to September 1964.

Gage--Water-stage recorder. Datum of gage is 794.93 ft above mean sea level, datum of 1929.

Average discharge--12 years, 12.1 cfs (8,760 acre-ft per year); median of yearly mean discharges, 6.0 cfs (4,300 acre-ft per year).

Extremes--Maximum discharge during year, 536 cfs Jan. 22 (gage height, 6.78 ft), from rating curve extended above 12 cfs on basis of slope-area measurement of maximum flow; no flow for some days.

1952-64: Maximum discharge, 9,100 cfs Feb. 11, 1962 (gage height, 9.65 ft), from rating curve extended above 2,200 cfs on basis of slope-area measurement of maximum flow; no flow at times in some years.

Remarks--Records fair. Discharge measurements generally made twice a week. No regulation above station. Flow affected by pumping from wells along stream for irrigation.

Cooperation--Water-stage recorder graph and 57 discharge measurements furnished by Ventura County Water Resources Division; 21 discharge measurements furnished by Los Angeles County Flood Control District.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 21, Apr. 1)

Oct. 1 to Jan. 21

Jan. 21 to Apr. 1

Apr. 1 to Sept. 30

4.0	0.2	3.8	1.2	4.3	16	3.5	0	4.0	11
4.1	.7	3.9	2.5	4.5	30	3.6	.2	4.1	17
4.2	1.8	4.0	4.5	4.8	58	3.7	1.2	4.3	35
4.3	3.6	4.1	7.4	5.1	98	3.8	3.2	4.5	60
						3.9	6.5	4.7	92

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0.6	1.0	1.2	1.9	1.8	84	1.9	1.1	0.4	0	
2	.4	.7	1.0	1.2	1.8	1.9	2.3	1.7	1.1	.4	0	
3	.5	.8	1.0	1.2	1.6	1.8	2.1	1.5	1.4	.3	0	
4	.6	.8	1.0	1.4	1.6	1.8	1.9	1.5	1.2	.3	0	
5	.6	.8	1.1	1.4	1.6	1.8	1.7	1.5	1.1	.3	0	
6	.5	1.4	1.4	1.4	1.6	1.8	1.7	1.5	1.1	.2	0	
7	.5	.9	1.4	1.4	1.6	1.8	1.7	1.5	1.1	.2	0	
8	.4	.8	1.1	1.2	1.6	1.8	1.7	1.4	1.1	.2	0	
9	.4	.7	1.4	1.2	1.6	1.8	1.7	1.4	1.1	.2	0	
10	.4	.6	1.4	1.2	1.6	1.8	1.5	1.2	.9	.2	0	
11	.4	.6	1.4	1.2	1.6	1.8	1.5	1.2	.9	.2	0	
12	.5	.6	1.4	1.2	1.6	1.8	1.4	1.2	.9	.5	0	
13	.5	.7	1.4	1.2	1.8	1.6	1.2	1.2	.9	.6	0	
14	.5	.8	1.4	1.2	1.8	1.6	1.2	1.2	.9	.5	0	
15	.5	1.5	1.4	1.2	1.8	1.8	1.4	1.2	.9	.2	0	
16	.8	1.1	1.4	1.2	1.8	1.8	1.4	1.2	.9	.2	.2	
17	.7	1.1	1.5	1.1	1.8	1.8	1.4	1.1	.7	.2	.2	
18	.8	1.1	1.2	1.1	1.6	1.8	1.4	.9	.6	.1	.1	
19	.8	1.4	1.2	1.1	1.6	1.9	1.4	.8	.6	.1	0	
20	.7	3.0	1.2	1.1	1.6	1.9	1.2	.7	.6	.1	0	
21	.8	1.5	1.2	26	1.6	1.9	1.2	.8	.6	.1	0	
22	.7	1.2	1.2	88	1.8	3.3	1.4	.9	.6	.1	0	
23	.6	1.2	1.2	2.7	1.8	5.5	1.4	.9	.6	.1	0	
24	.5	1.2	1.2	2.4	1.8	1.9	1.4	1.1	.6	0	0	
25	.5	1.1	1.2	2.2	1.8	2.0	1.5	1.2	.5	0	0	
26	.5	1.1	1.2	2.2	1.8	2.0	1.5	1.2	.4	0	0	
27	.6	1.1	1.2	2.0	1.8	1.9	1.7	1.2	.4	0	0	
28	.6	1.1	1.2	2.0	1.9	1.8	2.1	1.1	.4	0	0	
29	.7	1.0	1.1	2.0	1.9	1.6	2.1	1.1	.4	.1	0	
30	.7	1.0	1.1	2.0	-----	1.6	2.1	1.1	.4	0	0	
31	.7	-----	1.2	2.0	-----	1.9	-----	1.1	-----	0	0	
Total	17.8	31.5	38.3	157.9	49.7	61.3	130.2	37.5	24.0	5.6	0.5	0
Mean	0.57	1.05	1.24	5.09	1.71	1.98	4.34	1.21	0.80	0.18	0.02	0
Max	0.8	3.0	1.5	88	1.9	5.5	84	1.9	1.4	0.6	0.2	0
Min	0.4	0.6	1.0	1.1	1.6	1.6	1.2	0.7	0.4	0	0	0
Ac-ft	35	62	76	313	99	122	258	74	48	11	1.0	0

Calendar year 1963: Max 94 Min 0.2 Mean 2.60 Ac-ft 1,880
Water year 1963-64: Max 88 Min 0 Mean 1.51 Ac-ft 1,100

Peak discharge (base, 750 cfs)--No peak above base.

11-1096. Piru Creek above Lake Piru, Calif.

Location.--Lat 34°31'40", long 118°45'21", in SE 1/4 sec. 10, T.5 N., R.18 W., on right bank at Blue Point, 1.0 mile downstream from Agua Blanca Creek, 4.6 miles upstream from Santa Felicia Dam, and 8.0 miles northeast of Piru.

Drainage area.--372 sq mi (revised).

Records available.--October 1955 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 1,063.62 ft above mean sea level (levels by Ventura County Water Resources Division).

Average discharge.--9 years, 36.1 cfs (26,140 acre-ft per year).

Extremes.--Maximum discharge during year, 318 cfs Nov. 20 (gage height, 3.26 ft); no flow July 30 to Sept. 30.

1955-64: Maximum discharge, 12,200 cfs Feb. 10, 1962 (gage height, 12.20 ft), from rating curve extended above 4,000 cfs on basis of slope-area measurement of maximum flow; no flow for several months in each year.

Remarks.--Records good. No regulation or diversion above station.

Cooperation.--Sixteen discharge measurements furnished by the Ventura County Water Resources Division.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 19, Apr. 7-15)

1.0	0	1.6	16
1.1	.3	1.8	32
1.2	1.4	2.1	65
1.3	3.5	2.5	135
1.4	6.6	3.0	255

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.2	1.4	9.2	6.3	13	9.7	*184	13	2.8	0.3		
2	.2	1.4	9.2	6.0	12	10	*137	13	2.6	.3		
3	.2	1.8	8.8	6.3	12	9.2	65	12	2.6	.3		
4	.3	2.0	8.8	6.3	12	9.2	42	13	2.6	.4		
5	.3	2.0	8.8	6.3	12	9.2	34	15	2.4	.4		
6	.4	6.5	8.4	6.3	11	9.2	32	16	2.0	.4		
7	.5	7.9	8.4	6.3	11	9.2	*30	19	2.0	.4		
8	.5	5.4	8.4	6.3	11	9.2	27	14	2.4	.4		
9	.5	4.1	8.4	6.3	10	9.2	25	12	2.6	.4		
10	*.5	3.5	7.8	7.0	10	9.2	23	11	2.8	.4		
11	.6	3.3	A 7.4	7.0	10	9.2	22	9.7	2.6	.4		
12	.8	3.1	A 7.4	6.6	10	9.2	21	9.2	2.4	.3		
13	.8	3.1	A 7.4	*6.6	9.7	9.7	19	8.8	2.0	.4		
14	.8	3.1	A 7.0	7.0	9.7	9.7	19	8.8	1.6	.4		
15	.8	5.9	A 7.0	7.0	10	8.8	17	8.4	*1.3	.3		
16	*1.3	8.4	A 7.0	7.0	9.7	*8.4	16	7.9	1.3	.3		
17	1.3	5.7	A 7.0	7.0	*10	8.4	16	7.5	1.3	.3		
18	1.3	*5.4	A 7.0	7.5	10	8.4	16	*7.0	1.3	.2		
19	1.4	5.8	A 7.0	7.5	9.7	8.4	16	7.0	1.2	.2		
20	1.4	*139	6.6	7.5	9.7	8.4	*16	6.3	1.2	*.2		
21	1.3	*59	6.6	*59	9.7	8.4	15	6.0	1.1	.2		
22	1.3	23	6.6	*92	9.7	12	14	5.7	1.0	.2		
23	1.3	16	6.6	32	9.7	*19	14	5.4	.9	.2		
24	1.4	14	6.6	20	9.7	17	14	5.1	.6	.2		
25	1.3	12	6.6	18	9.2	14	14	4.8	.5	.2		
26	1.3	*11	6.6	17	*9.2	13	13	4.8	.5	.2		
27	1.3	11	6.3	16	9.2	13	13	*4.8	.4	.1		
28	1.4	10	6.3	15	9.2	12	13	5.1	.3	.1		
29	*1.4	9.2	6.3	*15	9.2	12	*14	4.8	*.3	.1		
30	1.4	9.2	*6.3	14	-----	*11	14	3.8	.3	*0		
31	1.4	-----	6.0	13	-----	16	-----	3.1	-----	0		
TOTAL	28.9	393.2	227.8	445.1	297.3	329.3	915	272.0	46.9	8.2	0	0
MEAN	0.93	13.1	7.35	14.4	10.3	10.6	30.5	8.77	1.56	0.26	0	0
MAX	1.4	139	9.2	92	13	19	184	19	2.8	0.4	0	0
MIN	0.2	1.4	6.0	6.0	9.2	8.4	.13	3.1	0.3	0	0	0
AC-FT	57	780	452	883	590	653	1,810	540	93	16	0	0

CALENDAR YEAR 1963 MAX 261 MIN 0 MEAN 10.7 AC-FT 7,720
WATER YEAR 1963-64 MAX 184 MIN 0 MEAN 8.10 AC-FT 5,870

Peak discharge (base, 800 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.
A No gage-height record.

SANTA CLARA RIVER BASIN

11-1097. Lake Piru near Piru, Calif.

Location.--Lat 34°27'52", long 118°44'57", in Temescal Grant, at Santa Felicia Dam on Piru Creek, on left bank 1,000 ft upstream from left end of dam, 0.5 mile downstream from Santa Felicia Canyon, and 4.2 miles northeast of Piru, Ventura County.

Drainage area.--425 sq mi (revised).

Records available.--May 1955 to September 1964.

Gage.--Staff gage read once daily. Datum of gage is mean sea level (levels by United Water Conservation District). Prior to Jan. 27, 1956, reference point at intake tower at same datum.

Extremes.--Maximum contents observed during year, 13,543 acre-ft Apr. 6 (elevation, 952.35 ft); minimum contents, 6,353 acre-ft Sept. 30 (elevation, 928.95 ft).

1955-64: Maximum contents observed, 78,483 acre-ft May 19, 1958 (elevation, 1,035.30 ft); lake dry Oct. 25 to Nov. 20, 1961.

Remarks.--Lake is formed by earth-fill dam. Storage began May 20, 1955. Capacity table is based on surveys made in 1949 and 1956. Dead storage below two 24-inch sluice gates (elevation, 880.0 ft), 74 acre-ft, included in contents. Capacity below spillway level (elevation, 1,055.0 ft), 101,225 acre-ft. Water is released from outlet to Piru Creek for ground-water recharge, domestic use and irrigation on the Oxnard plain.

Cooperation.--Elevations furnished by United Water Conservation District.

Month-end elevation and contents, water year October 1963 to September 1964

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	950.25	12,648	-
Oct. 31.....	949.20	12,220	-428
Nov. 30.....	950.10	12,586	+366
Dec. 31.....	949.85	12,483	-103
Calendar year 1963.....	-	-	-11,829
Jan. 31.....	951.30	13,089	+606
Feb. 29.....	951.85	13,325	+236
Mar. 31.....	951.40	13,132	-193
Apr. 30.....	933.15	7,344	-5,788
May 31.....	934.25	7,618	+274
June 30.....	933.50	7,431	-187
July 31.....	931.95	7,052	-379
Aug. 31.....	930.40	6,686	-366
Sept. 30.....	928.95	6,353	-333
Water year 1963-64.....	-	-	-6,295

† Elevation at 0800 hours.

SANTA CLARA RIVER BASIN

213

11-1098. Piru Creek below Santa Felicia Dam, Calif.

Location.--Lat 34°27'37", long 118°45'04", in Temescal Grant, on right bank 750 ft downstream from Santa Felicia Dam, 1 mile upstream from Lime Canyon, and 4 miles northeast of Piru, Ventura County.

Drainage area.--425 sq mi (revised).

Records available.--October 1955 to September 1964.

Gage.--Water-stage recorder and concrete control. Datum of gage is 858.8 ft above mean sea level (levels by United Water Conservation District). Supplemental water-stage recorder at site 1½ miles downstream.

Extremes.--Maximum discharge during year, 380 cfs Apr. 13 (gage height, 3.35 ft); minimum daily, 0.1 cfs Mar. 24. 1955-64: Maximum discharge, 544 cfs Aug. 18, 1958 (gage height, 3.66 ft); no flow at times in most years.

Remarks.--Records excellent. Flow regulated by Lake Piru (see preceding page). No diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.0	0	1.8	18
1.1	.2	2.1	42
1.2	.8	2.4	83
1.3	1.8	2.8	173
1.4	3.3	3.2	320
1.5	5.6	3.5	460
1.6	8.7		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	7.5	7.5	7.2	7.5	0.9	7.8	88	9.1	6.8	9.1	7.8	7.2
2	7.5	7.5	7.2	7.5	.9	7.8	3.4	7.8	6.8	9.1	8.1	7.2
3	7.5	7.5	7.2	7.5	.9	7.8	4.9	6.5	6.5	9.1	8.1	7.2
4	7.5	7.5	7.2	7.5	.9	7.8	4.9	6.5	6.5	9.1	8.1	7.2
5	7.5	7.2	7.2	7.5	.9	7.8	4.9	6.5	6.2	9.1	8.4	7.5
6	7.5	7.2	7.2	7.5	.9	7.8	111	6.5	6.2	9.1	8.4	7.5
7	7.5	8.1	7.2	7.5	.9	7.8	*300	6.5	6.2	8.7	8.4	7.5
8	7.5	7.8	6.8	7.5	.9	7.8	336	6.5	6.2	7.8	8.4	7.5
9	7.5	7.2	6.8	7.2	.9	7.8	*376	6.5	6.2	6.8	8.4	7.5
10	7.5	7.2	7.2	7.2	.9	7.8	372	6.5	6.2	7.2	8.4	7.5
11	7.5	7.2	7.2	6.8	.9	7.8	372	6.5	6.2	7.8	8.4	7.5
12	7.5	7.2	6.8	6.8	7.0	7.8	372	6.5	6.5	7.8	8.4	7.5
13	7.5	6.5	6.8	6.8	7.8	7.8	376	6.5	6.5	7.8	8.4	7.5
14	7.2	7.2	6.8	6.8	7.8	7.8	376	6.5	6.5	7.8	8.4	7.5
15	7.5	7.2	7.2	6.8	7.8	7.8	376	6.5	6.8	7.8	8.4	7.5
16	7.2	7.2	7.2	6.8	7.8	7.8	376	6.8	7.2	7.8	8.1	7.5
17	7.2	7.2	7.2	6.8	7.8	7.8	*158	6.8	7.2	7.8	8.1	7.5
18	7.2	7.2	7.2	6.8	7.8	7.8	5.2	6.8	7.2	8.1	8.1	7.5
19	7.2	7.2	7.2	6.8	7.8	8.1	10	6.8	6.8	8.1	8.1	7.5
20	7.2	3.4	7.2	6.8	7.8	8.1	10	6.8	6.8	7.8	8.1	7.5
21	7.2	2.1	7.2	3.4	7.8	8.1	10	6.8	6.8	7.8	8.1	7.5
22	7.2	5.4	7.2	.9	7.8	8.1	5.9	7.2	7.2	7.8	7.8	7.5
23	7.2	6.5	7.5	.9	8.1	6.3	4.5	7.2	7.2	7.8	7.8	7.5
24	7.2	6.5	7.5	.9	8.1	.1	4.5	6.8	6.8	7.8	7.8	7.5
25	7.2	6.5	7.5	.9	7.8	2.1	4.5	6.5	6.5	7.8	7.8	7.5
26	7.2	6.5	7.5	.9	*7.8	4.7	4.5	6.5	6.5	7.8	7.5	7.5
27	7.2	6.5	7.5	.9	7.8	4.2	4.5	6.5	6.5	7.8	*7.5	7.5
28	7.5	6.5	7.5	.9	7.8	4.2	4.5	6.5	6.8	7.8	7.5	7.5
29	*7.5	6.5	7.5	*.9	7.8	4.2	*4.5	6.5	7.8	8.4	7.5	7.5
30	7.5	6.8	*7.5	.9	-----	*93	4.5	6.8	9.1	7.8	7.5	7.5
31	7.5	-----	7.5	.9	-----	*300	-----	6.8	-----	7.8	7.5	-----
TOTAL	228.6	202.0	223.9	154.8	150.1	591.6	4,084.2	209.5	202.7	250.1	249.3	223.8
MEAN	7.37	6.73	7.22	4.99	5.18	19.1	136	6.76	6.76	8.07	8.04	7.46
MAX	7.5	8.1	7.5	7.5	8.1	300	376	9.1	9.1	9.1	8.4	7.5
MIN	7.2	2.1	6.8	0.9	0.9	0.1	3.4	6.5	6.2	6.8	7.5	7.2
AC-FT	453	401	444	307	298	1,170	8,100	416	402	496	494	444

CALENDAR YEAR 1963 MAX 308 MIN 0.2 MEAN 27.7 AC-FT 20,070

WATER YEAR 1963-64 MAX 376 MIN 0.1 MEAN 18.5 AC-FT 13,420

* Discharge measurement made on this day.

SANTA CLARA RIVER BASIN

11-1105. Hopper Creek near Piru, Calif.

Location.--Lat 34°24'03", long 118°49'32", in NE 1/4 sec. 25, T.4 N., R.19 W., on downstream end of center pier of bridge on State Highway 126, 1 mile upstream from mouth and 2.1 miles southwest of Piru.

Drainage area.--23.6 sq mi.

Records available.--October 1930 to September 1932, October 1933 to September 1936, October 1937 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 590 ft (from topographic map).

Average discharge.--32 years, 4.60 cfs (3,330 acre-ft per year); median of yearly mean discharges, 1.8 cfs (1,300 acre-ft per year).

Extremes.--Maximum discharge during year, 307 cfs Nov. 20 (gage height, 3.72 ft), from rating curve extended above 100 cfs on basis of slope-area measurement at gage height 8.66 ft; no flow Oct. 1 to Nov. 3, May 11-16, May 18 to Sept. 30.
1930-32, 1933-36, 1937-64: Maximum discharge, 8,000 cfs Mar. 2, 1938, on basis of slope-area measurement of maximum flow; no flow for several months in most years.

Remarks.--Records good. Discharge measurements generally made once a week. No regulation above station. Some pumping along stream for irrigation.

Cooperation.--Water-stage recorder graph and 43 discharge measurements furnished by Ventura County Water Resources Division.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 13 to May 2, May 5-19)

1.7	0	2.3	7.0
1.8	.1	2.4	12
1.9	.3	2.5	18
2.0	.8	2.7	38
2.1	2.0	3.0	95
2.2	4.0		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.4	0.4	0.4	0.2	38	0.3				
2		0	.4	.4	.4	.5	3.2	.2				
3		0	.4	.4	.4	.2	1.7	.2				
4		.1	.4	.4	.4	.2	1.0	.2				
5		.1	.4	.4	.4	.2	.9	.3				
6		4.9	.4	.4	.3	.2	.8	.3				
7		2.3	.4	.5	.3	.2	.7	.4				
8		.8	.4	.5	.3	.2	.6	.3				
9		.5	.4	.5	.3	.2	.5	.1				
10		.4	.6	.5	.3	.2	.4	.1				
11		.3	.6	.5	.3	.2	.3	0				
12		.2	.6	.5	.3	.2	.2	0				
13		.2	.6	.5	.3	.3	.1	0				
14		.3	.6	.5	.3	.2	.1	0				
15		3.9	.6	.5	.4	.2	.1	0				
16		3.0	.6	.5	.4	.1	.1	0				
17		1.2	.6	.5	.4	.1	.1	.1				
18		.9	.6	.5	.3	.1	.2	0				
19		1.0	.6	.5	.2	.1	.2	0				
20		92	.6	.6	.2	.1	.2	0				
21		4.2	.6	36	.2	.2	.2	0				
22		1.6	.6	46	.2	5.9	.2	0				
23		1.1	.5	4.6	.2	2.4	.2	0				
24		1.0	.5	2	.2	1.3	.1	0				
25		.8	.5	1.5	.2	.8	.1	0				
26		.6	.5	1	.2	.6	.1	0				
27		.6	.5	.8	.2	.5	.1	0				
28		.5	.4	.7	.2	.4	.2	0				
29		.4	.4	.6	.2	.4	.3	0				
30		.4	.4	.6		.3	.3	0				
31			.4	.4		.8		0				
Total	0	123.3	15.5	103.7	8.4	17.5	51.2	2.5	0	0	0	0
Mean	0	4.11	0.50	3.35	0.29	0.56	1.71	0.08	0	0	0	0
Max	0	92	0.6	46	0.4	5.9	38	0.4	0	0	0	0
Min	0	0	0.4	0.4	0.2	0.1	0.1	0	0	0	0	0
Ac-ft	0	245	31	206	17	35	102	5.0	0	0	0	0

Calendar year 1963: Max 92 Min 0 Mean 1.30 Ac-ft 644
Water year 1963-64: Max 92 Min 0 Mean 0.88 Ac-ft 641

Peak discharge (base, 90 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-20	0630	3.72	307	4-1	0300	3.24	151
1-21	0500	3.50	235				

11-1115. Sespe Creek near Wheeler Springs, Calif.

Location.--Lat 34°34'40", long 119°15'25", in SW 1/4 sec. 30, T.6 N., R.22 W., on right bank at Sespe Gorge, 1.6 miles upstream from Tule Creek, 5 miles upstream from Cold Springs damsite, and 5 miles northeast of Wheeler Springs.

Drainage area.--49.5 sq mi (revised).

Records available.--January 1948 to September 1964. Monthly discharge only for January to July 1948 and yearly estimate for water year 1948 (incomplete), published in WSP 1315-B.

Gage.--Water-stage recorder with thermograph attachment. Datum of gage is 3,500.65 ft above mean sea level (levels by Ventura County Water Resources Division).

Average discharge.--17 years (1947-64), 7.42 cfs (5,370 acre-ft per year); median of yearly mean discharges, 2.3 cfs (1,700 acre-ft per year).

Extremes.--Maximum discharge during year, 376 cfs Apr. 1 (gage height, 5.61 ft); no flow Aug. 2 to Sept. 30.

1948-64: Maximum discharge, about 3,800 cfs Feb. 10, 1962 (gage height, 10.6 ft, from floodmarks), on basis of field estimate of maximum flow; no flow for many days in most years.

Remarks.--Records good except those above 10 cfs, which are poor. No regulation or diversion above station. For records of water temperatures, see following page.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.2	0.5	1.3	1.0	1.4	1.0	116	1.4	0.7	0.4	0.1	
2	.1	.5	1.2	1.0	1.4	1.0	*11	1.4	.7	.4	0	
3	.1	.6	1.2	1.1	1.4	1.0	7.5	1.4	.7	.3	0	
4	.2	.6	1.1	1.1	1.4	1.0	6.0	1.9	.7	.3	0	
5	.2	.6	1.1	1.2	1.4	1.0	5.3	1.9	.7	.3	0	
6	.2	1.1	1.1	1.2	1.4	1.0	4.2	1.8	.6	.2	0	
7	.2	.7	1.1	1.3	1.4	1.0	3.7	1.6	.6	.2	0	
8	.2	.7	1.1	1.5	1.3	1.0	3.5	1.4	.6	.2	0	
9	.2	.7	1.1	1.6	1.3	1.0	3.3	1.3	.7	.2	0	
10	.2	.7	1.1	1.6	1.3	1.0	3.1	1.3	.6	.1	0	
11	.2	.7	1.1	1.8	1.2	1.0	2.9	1.2	.6	.1	0	
12	.2	.7	1.1	1.8	1.2	1.0	2.9	1.2	.5	.1	0	
13	.2	.7	1.1	1.8	1.2	1.0	2.7	1.1	.5	.1	0	
14	.2	.7	1.1	1.6	1.2	1.0	2.5	1.1	.4	.1	0	
15	.2	1.1	1.1	1.8	1.2	1.0	2.3	1.1	.4	.1	0	
16	.3	.8	1.1	1.8	1.2	1.0	2.3	1.1	.4	.1	0	
17	.3	.8	1.0	1.6	1.2	1.0	2.5	1.1	.5	.1	0	
18	.3	.8	1.0	1.6	1.1	1.0	2.5	1.0	*.6	.1	0	
19	.3	8.6	1.0	1.6	1.1	1.0	2.5	1.0	.6	.1	0	
20	.3	34	1.0	1.8	1.1	1.0	2.2	1.0	.6	.1	0	
21	.3	*2.9	1.0	19	1.1	1.0	2.0	1.0	.6	.1	0	
22	.3	1.8	1.0	5.3	1.1	1.3	1.9	1.0	.6	.1	0	
23	.3	1.6	1.0	2.7	1.1	1.8	1.9	1.0	.6	.1	0	
24	.3	1.5	1.0	2.5	1.1	1.8	1.9	1.0	.5	.1	0	
25	.3	1.5	1.0	2.0	1.1	2.0	1.9	1.0	.5	.1	0	
26	.3	*1.4	1.0	1.9	*1.0	2.0	1.8	1.0	.5	.1	0	
27	.4	1.4	1.0	1.6	1.0	1.8	1.6	*1.1	.5	.1	*0	
28	.4	1.4	1.0	1.6	1.0	1.5	2.2	1.1	.5	.1	0	
29	*.4	1.3	1.0	1.5	1.0	1.4	*1.8	1.0	*.5	.1	0	
30	.4	1.3	1.0	*1.4	-----	*1.3	1.5	.9	.5	*.1	0	
31	.4	-----	*1.0	1.4	-----	32	-----	.8	-----	.1	0	-----
TOTAL	8.1	71.7	33.0	70.7	34.9	67.9	207.4	37.2	17.0	4.7	0.1	0
MEAN	0.26	2.39	1.06	2.28	1.20	2.19	6.91	1.20	0.57	0.15	0.003	0
MAX	0.4	34	1.3	19	1.4	32	116	1.9	0.7	0.4	0.1	0
MIN	0.1	0.5	1.0	1.0	1.0	1.0	1.5	0.8	0.4	0.1	0	0
AC-FT	16	142	65	140	69	135	411	74	34	9.3	0.2	0

CALENDAR YEAR 1963 MAX 138 MIN 0.1 MEAN 2.75 AC-FT 1,990

WATER YEAR 1963-64 MAX 116 MIN 0 MEAN 1.51 AC-FT 1,100

Peak discharge (base, 50 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-20	0300	4.55	100	4-1	0300	5.61	376
1-21	0400	4.39	69				

* Discharge measurement or observation of no flow made on this day.

Note.--Stage-discharge relation indefinite July 19-29.

SANTA CLARA RIVER BASIN

11-1115. Sespe Creek near Wheeler Springs, Calif.--Continued.

Records available.--Water temperatures: February 1962 to September 1964.

Extremes.--Maximum temperature during year, 84°F Aug. 11; minimum, 36°F Mar. 3.

1962-64: Maximum temperature, that of Aug. 11, 1964; minimum, 35°F Mar. 16, 1963.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	67	59	51	48	44	42	43	41	46	42	45	39	48	44	57	53	66	57	69	58	74	60	61	56
2	67	59	51	48	43	42	43	42	46	42	45	40	48	42	58	51	67	58	70	60	75	60	76	54
3	66	58	52	50	42	41	42	39	44	40	44	36	50	42	55	50	66	58	70	59	77	61	73	53
4	60	56	50	48	42	41	42	38	45	41	48	40	51	44	54	49	66	58	70	59	77	63	75	52
5	62	57	52	49	41	40	41	39	46	42	50	44	49	45	51	47	68	58	70	58	80	63	75	54
6	61	54	52	49	43	41	41	40	44	41	48	41	49	43	51	49	70	61	70	58	78	66	73	52
7	60	52	49	45	44	43	42	41	43	38	44	40	52	44	55	47	66	59	70	60	83	65	72	51
8	59	54	51	47	43	41	42	41	45	41	47	39	54	45	58	51	60	56	72	62	80	63	72	47
9	61	54	52	49	43	42	42	39	44	38	48	40	57	43	60	52	56	53	71	61	80	65	72	48
10	59	50	51	48	42	41	41	41	44	38	50	42	58	49	62	53	60	53	71	59	80	64	73	51
11	58	53	52	48	41	39	41	39	45	41	50	42	59	50	63	54	63	53	74	63	84	65	75	54
12	57	50	52	48	39	37	40	38	45	39	47	44	60	51	64	56	66	56	75	64	83	63	76	54
13	57	49	52	49	40	37	39	38	44	40	50	44	60	51	64	56	68	59	75	66	79	60	73	52
14	57	49	52	48	41	38	39	38	44	38	52	42	60	51	64	54	70	61	74	61	80	60	72	52
15	53	48	52	50	42	39	39	38	43	37	52	45	60	52	64	54	67	60	76	64	75	56	76	53
16	56	52	50	47	42	39	40	38	42	38	51	44	58	52	62	54	68	59	74	64	75	56	72	52
17	54	52	47	44	42	39	41	39	45	38	54	44	58	51	62	55	67	58	73	62	77	56	72	52
18	55	53	46	44	42	39	42	41	46	39	55	45	55	51	64	55	67	58	73	62	76	60	75	52
19	56	52	46	43	43	41	42	41	47	40	55	45	52	50	64	55	67	58	74	63	77	62	73	52
20	58	54	46	45	45	42	43	41	46	40	54	44	56	49	64	55	67	57	73	60	76	58	71	51
21	56	52	46	45	43	42	43	40	46	38	50	44	58	50	65	54	69	58	73	61	76	54	73	52
22	58	53	45	44	42	41	40	39	47	40	46	37	53	50	65	56	70	60	73	61	78	55	71	50
23	57	52	46	44	41	38	40	39	47	40	42	39	55	52	63	56	70	60	75	62	79	61	73	50
24	57	52	48	46	41	38	41	39	47	40	44	40	55	49	64	56	72	61	77	64	79	59	69	52
25	56	52	48	46	42	39	42	40	47	42	50	40	55	49	58	57	72	61	77	64	79	60	71	51
26	57	53	48	46	43	40	44	42	46	39	52	42	57	50	62	54	72	62	77	65	83	59	71	52
27	54	52	44	43	45	42	44	41	46	39	52	42	59	52	58	53	70	60	78	69	83	60	69	51
28	56	53	45	43	45	43	44	41	46	38	54	44	59	56	61	53	68	58	78	66	78	58	67	47
29	55	51	45	43	46	43	44	41	46	40	55	45	61	53	63	54	67	56	78	66	79	59	65	45
30	55	51	44	43	45	43	45	43	-----	-----	55	45	61	55	55	56	68	56	78	66	77	51	68	48
31	54	50	-----	43	40	44	40	-----	-----	-----	50	45	-----	-----	56	56	-----	-----	77	62	67	56	-----	-----
Avg	58	53	49	46	43	40	42	40	45	40	50	42	56	49	61	53	67	58	74	62	78	60	72	51

11-1130. Sespe Creek near Fillmore, Calif.

Location.--Lat 34°27'03", long 118°55'30", in NE 1/4 NE 1/4 sec. 12, T.4 N., R.20 W., on right bank 0.1 mile downstream from Little Sespe Creek and 3.5 miles north of Fillmore.

Drainage area.--251 sq mi (revised).

Records available.--September 1911 to September 1913, October 1927 to September 1964; combined records of creek and canal, October 1927 to September 1964. Published as "at Sespe," prior to 1935.

Gage.--Water-stage recorder; water-stage recorder and Parshall flume on canal. Altitude of gage is 580 ft (from topographic map). Prior to Sept. 30, 1913 staff gage, and Oct. 1, 1927, to Nov. 4, 1934, water-stage recorder, at site 3 miles downstream at different datum. Nov. 5, 1934, to Mar. 2, 1938, water-stage recorder at same site at different datum (destroyed by flood; reestablished at present datum Feb. 2, 1939). Prior to Jan. 17, 1946, staff gage read once daily on Fillmore Irrigation Co.'s canal.

Average discharge (creek only).--39 years, 90.3 cfs (65,370 acre-ft per year); median of yearly mean discharges, 45 cfs (32,600 acre-ft per year). (combined).--37 years, 95.6 cfs (69,210 acre-ft per year); median of yearly mean discharges, 49 cfs (35,500 acre-ft per year).

Extremes (creek only).--Maximum discharge during year, 2,590 cfs Apr. 1 (gage height, 6.71 ft); minimum daily, 0.1 cfs for many days. 1927-64: Maximum discharge, 56,000 cfs Mar. 2, 1938, on basis of slope-area measurement of maximum flow; no flow at times in some years.

(combined).--Maximum discharge during year, 2,590 cfs Apr. 1; minimum daily, 1.6 cfs Aug. 9, 20. 1927-64: Maximum discharge, 56,000 cfs Mar. 2, 1938; minimum daily, 1.1 cfs July 31, Aug. 2, 1951.

Remarks.--Records good. No regulation above station. Fillmore Irrigation Co. has diverted water 1 mile upstream since September 1911. For records of combined discharge of Sespe Creek and Fillmore Irrigation Co.'s canal, see following page.

Cooperation.--Six discharge measurements furnished by Ventura County Water Resources Division.

Discharge, in cubic feet per second, water year October 1963 to September 1964												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.3	1.3	0.4	2.2	6.4	*1.130	11	0.2	0.4	0.1	0.1
2	.3	.3	1.3	.4	2.1	6.3	*282	9.7	.2	.4	.1	.1
3	.3	.3	1.2	.4	2.1	6.0	133	9.3	.2	.4	.1	.1
4	.3	.3	1.0	.6	2.0	2.5	94	8.1	.2	.4	.1	.1
5	.3	.3	9.7	.4	2.0	1.3	80	10	.2	.4	.1	.1
6	.3	1.6	9.3	.5	1.8	1.1	74	1.3	.2	.4	.1	.1
7	.3	4.6	9.3	.6	1.7	1.7	62	1.3	.2	.3	.1	.2
8	.3	2.4	8.9	.7	1.7	2.4	*48	11	.2	.3	.1	.2
9	.3	1.8	8.9	.7	1.6	2.3	46	6.1	.3	.2	.1	.1
10	.3	1.4	8.9	.6	1.5	1.4	45	5.8	.2	.2	.2	.1
11	.3	1.4	8.9	.6	1.5	1.4	44	5.8	.2	.2	.2	.1
12	.3	1.0	7.1	.6	1.5	9.2	39	2.2	.2	.2	.2	.1
13	.2	.6	6.1	.7	1.8	14	34	2.0	.2	.3	.2	.2
14	.2	.7	6.1	1.0	1.8	7.1	31	1.8	.2	.3	.3	.2
15	.3	*11	6.1	1.2	1.7	6.0	29	1.7	.2	.3	.3	.2
16	.4	6.1	6.4	.4	1.7	1.2	28	1.6	.2	.3	.3	.2
17	.4	3.0	6.4	2.2	1.4	1.4	28	1.4	.2	.3	.3	.2
18	.3	2.2	6.1	3.9	1.0	2.3	28	1.0	.2	.3	.2	.2
19	.3	1.5	7.4	3.9	9.7	2.6	27	.4	.2	.3	.2	.2
20	.3	*567	6.1	6.8	5.8	2.4	24	.4	.3	.3	.1	.2
21	.3	9.6	6.1	*263	3.7	2.4	21	.4	.3	.3	.1	.2
22	.2	*42	5.8	*254	3.7	14	20	.3	.3	.3	.1	.1
23	.2	3.2	2.4	100	4.9	*17	16	.3	.3	.3	.1	.1
24	.3	2.4	1.0	51	6.7	17	14	.3	.3	.3	.1	.1
25	.2	2.0	.9	40	5.5	15	14	.3	.3	.3	.1	.1
26	.2	1.7	1.0	3.5	3.7	13	13	.3	.3	.3	.1	.1
27	.2	1.6	1.1	3.3	*5.2	10	12	.3	.3	.3	.1	.1
28	.3	1.4	2.2	2.9	6.4	9.3	13	*.2	.3	.3	*.1	.1
29	.3	1.4	2.2	*2.6	6.7	9.7	*15	.2	*.4	.3	.1	.1
30	*.3	1.4	*2.0	2.4	-----	*12	13	.2	.4	*.2	.1	.1
31	.3	-----	.8	2.3	-----	7.6	-----	.2	-----	.2	.1	-----
Total	8.8	924.7	195.2	904.6	373.0	274.2	2,457	118.3	7.4	9.3	4.5	4.1
Mean	0.28	30.8	6.30	29.2	12.9	8.85	81.9	3.82	0.25	0.30	0.15	0.14
Max	0.4	567	13	263	22	76	1,130	13	0.4	0.4	0.3	0.2
Min	0.2	0.3	0.8	0.4	3.7	1.1	12	0.2	0.2	0.2	0.1	0.1
Ac-ft	17	1,830	387	1,790	740	544	4,870	235	15	18	8.9	8.1
Calendar year 1963: Max	1,320	Min	0.2	Mean	20.6	Ac-ft	14,900					
Water year 1963-64: Max	1,130	Min	0.1	Mean	14.4	Ac-ft	10,460					

Peak discharge (base, 1,300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-20	0430	6.73	2,410	4-1	0930	6.71	2,590
1-21	0500	5.70	1,340				

* Discharge measurement made on this day.

SANTA CLARA RIVER BASIN

11-1130. Sespe Creek near Fillmore, Calif.--Continued

Combined discharge, in cubic feet per second, of Sespe Creek and Fillmore Irrigation Co.'s canal near Fillmore, Calif., water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.5	3.9	14	9.7	24	14	1,130	18	8.3	3.2	2.2	2.7
2	3.7	3.9	13	9.7	23	14	282	17	7.8	3.1	2.2	2.5
3	3.8	4.2	13	9.4	23	14	133	16	7.5	3.0	2.2	2.3
4	3.8	4.4	12	9.5	22	12	95	16	7.2	3.0	2.1	2.2
5	3.8	4.5	12	9.4	22	12	81	19	7.0	3.0	2.0	2.2
6	3.8	18	12	9.5	20	12	75	22	6.6	3.0	1.9	2.2
7	3.7	5.0	12	9.6	20	11	64	22	6.5	3.0	1.9	2.4
8	3.5	2.9	12	9.6	20	12	50	20	6.5	2.9	1.7	2.3
9	3.5	2.2	12	9.5	19	11	48	17	6.9	2.8	1.6	2.0
10	3.4	1.8	12	9.4	18	11	47	16	6.6	2.6	1.7	2.0
11	3.6	2.0	12	9.5	18	11	46	15	6.6	2.6	1.7	2.0
12	3.7	2.2	12	9.5	18	16	41	14	6.8	2.6	1.7	2.0
13	3.4	2.3	11	9.6	19	19	36	14	6.5	2.6	1.7	2.1
14	3.4	2.5	11	9.1	19	14	33	14	6.2	2.5	1.8	2.2
15	3.7	12	12	9.3	19	14	31	13	5.6	2.6	1.9	2.4
16	6.2	6.9	12	9.7	19	10	30	13	5.4	2.6	1.9	2.6
17	6.2	3.8	12	9.2	18	10	29	12	5.3	2.6	1.7	2.6
18	5.1	3.0	12	9.9	16	10	29	13	5.1	2.6	1.7	2.8
19	4.7	16	12	10	17	11	28	12	5.0	2.6	1.7	2.8
20	4.7	568	12	12	14	10	27	11	5.0	2.6	1.6	2.7
21	4.4	97	12	265	14	11	25	10	4.8	2.5	1.7	2.7
22	4.2	43	11	255	14	20	24	10	4.7	2.6	1.7	2.5
23	4.1	33	9.9	101	14	18	21	10	4.7	2.7	1.8	2.3
24	4.2	25	9.9	52	15	20	20	9.7	4.4	2.6	1.9	2.3
25	4.1	21	9.8	41	15	19	20	9.8	4.1	2.5	1.9	2.3
26	4.0	18	9.8	36	13	17	19	9.7	3.9	2.5	1.9	2.5
27	4.0	17	9.9	34	14	14	18	9.6	3.7	2.4	2.2	2.6
28	4.1	15	9.7	30	14	13	19	10	3.5	2.5	2.2	2.6
29	4.0	15	9.4	28	15	14	22	9.7	3.5	2.5	2.4	2.6
30	4.2	15	9.5	27	-----	16	19	9.5	3.3	2.4	2.5	2.6
31	4.1	-----	9.9	26	-----	78	-----	9.0	-----	2.3	2.7	-----
Total	126.6	968.5	352.8	1,088.1	516	488	2,542	421.0	169.0	83.0	598	72.0
Mean	4.08	32.3	11.4	35.1	17.8	15.7	84.7	13.6	5.63	2.68	1.93	2.40
Max	6.2	568	14	265	24	78	1,130	22	8.3	3.2	2.7	2.8
Min	3.4	1.8	9.4	9.1	13	10	18	9.0	3.3	2.3	1.6	2.0
Ac-ft	251	1,920	700	2,160	1,020	968	5,040	835	335	165	119	143

Calendar year 1963: Max 1,320 Min 1.8 Mean 24.9 Ac-ft 18,020
 Water year 1963-64: Max 1,130 Min 1.6 Mean 18.8 Ac-ft 13,660

Peak discharge (base, 1,300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-20	0430	-	2,410	4-1	0930	-	2,590
1-21	0500	-	1,340				

11-1135. Santa Paula Creek near Santa Paula, Calif.

Location.--Lat $34^{\circ}23'44''$, long $119^{\circ}04'32''$, in NW $\frac{1}{4}$ SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.27, T.4 N., R.21 W., on right bank 65 ft upstream from Santa Paula Water Works diversion dam, 200 ft upstream from Mud Creek, and 3 miles north of Santa Paula. Prior to Dec. 5, 1963, at site 50 ft downstream.

Drainage area.--40.0 sq mi.

Records available.--October 1927 to September 1964. March 1912 to September 1913, at site 2.5 miles upstream; records not equivalent.

Gage.--Water-stage recorder (digital) and concrete diversion dam control. Altitude of gage is 650 ft (from topographic map). Oct. 1, 1927, to Feb. 19, 1931, water-stage recorder at site 500 ft downstream at different datum. Feb. 20, 1931, to Dec. 5, 1963, water-stage recorder at site 50 ft downstream at same datum.

Average discharge.--37 years, 17.7 cfs (12,810 acre-ft per year); median of yearly mean discharges, 8.7 cfs (6,300 acre-ft per year).

Extremes.--Maximum discharge during year, 572 cfs Apr. 1 (gage height, 3.54 ft); minimum daily, 0.1 cfs Aug. 20-27, Sept. 3-4, 23-25. 1927-64: Maximum discharge, 13,500 cfs Mar. 2, 1938 (gage height, 10.56 ft), from rating curve extended above 2,100 cfs on basis of slope-area measurement of maximum flow; no flow at times in 1949, 1951-52.

Remarks.--Records good. No regulation above station. Diversion above station for irrigation of about 60 acres by Santa Paula Water Works began prior to October 1927; 322 acre-ft was diverted during year.

Cooperation.--Four discharge measurements furnished by Ventura County Water Resources Division; record of diversion furnished by Santa Paula Water Works.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 19, Nov. 22 to Dec. 4, Mar. 15-31, Aug. 1 to Sept. 30)

1.4	0.1	1.8	5.4	2.4	61
1.5	.5	1.9	9.1	2.7	136
1.6	1.3	2.0	22	3.0	255
1.7	2.8	2.2	31		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.4	1.3	4.5	2.7	6.4	3.2	239	4.1	2.1	1.6	0.4	0.4
2	.7	1.4	4.3	2.7	5.8	4.5	* 59	4.0	2.0	.8	.8	.3
3	.7	1.7	4.4	2.7	5.8	3.6	32	3.7	2.0	.7	.6	.1
4	.6	1.8	4.4	2.4	5.7	3.1	21	3.9	2.2	.7	.3	* .1
5	.5	1.8	* 4.4	2.2	5.4	2.9	16	4.4	2.1	.7	.2	.2
6	.5	4.0	4.3	2.3	5.3	2.8	12	4.8	2.1	.5	.4	.4
7	.5	2.0	4.0	2.4	5.1	2.8	9.0	4.6	2.2	.4	.4	.4
8	.7	1.8	4.1	2.2	5.1	2.9	7.4	4.1	2.3	.3	.4	.8
9	* 1.0	1.7	4.1	2.5	4.9	2.7	6.6	3.8	2.8	.5	.4	.9
10	.7	1.6	4.1	2.5	4.7	2.7	6.0	3.6	2.8	.4	.6	.9
11	1.0	1.5	4.1	2.5	4.6	2.5	5.8	2.8	2.5	.4	.9	.9
12	1.2	1.5	4.1	2.5	4.5	3.1	5.3	2.4	2.3	.6	1.0	.9
13	1.2	1.6	3.8	2.4	4.4	3.9	4.8	2.5	2.3	.5	1.0	1.0
14	1.2	1.6	4.1	2.5	4.6	3.6	4.5	2.5	2.2	.4	1.0	.6
15	1.3	3.3	4.1	2.4	4.8	3.3	4.4	2.5	2.4	.5	1.0	.7
16	1.7	2.3	* 4.3	2.4	4.5	3.8	4.3	2.4	2.9	.5	1.0	.7
17	1.3	2.1	4.3	2.4	4.2	3.1	4.3	2.5	2.8	.5	.6	.6
18	1.3	2.0	3.8	3.5	3.8	2.1	4.4	2.4	2.7	.3	.3	.6
19	1.4	2.0	3.8	2.6	3.9	2.0	4.4	2.4	2.7	.5	.2	.6
20	1.4	* 83	3.8	3.2	3.6	2.2	4.2	2.4	2.7	.5	.1	.5
21	1.0	* 11	3.8	* 72	* 3.8	2.3	3.7	2.3	2.7	.4	.1	.4
22	.7	* 10	3.6	* 64	3.9	6.2	3.8	2.4	2.6	.5	.1	.3
23	.8	7.1	3.6	17	3.2	5.2	3.6	2.5	2.5	.5	.1	.1
24	.8	5.4	3.1	12	3.0	3.6	3.3	2.7	2.3	.7	.1	.1
25	.7	4.7	2.7	9.5	3.3	3.1	3.4	2.7	2.2	.8	.1	.1
26	.8	* 5.1	2.7	9.0	2.8	2.7	3.2	2.6	2.3	1.0	.1	.3
27	.9	4.6	2.7	8.2	3.2	2.7	3.0	* 2.6	2.3	.4	* .1	.4
28	1.0	4.5	2.7	7.9	3.0	2.5	3.5	2.2	2.3	.4	.2	.3
29	* 1.2	4.3	2.5	* 7.3	3.1	2.5	3.4	2.0	2.1	.7	.2	.3
30	1.6	4.5	* 2.5	7.1	-----	2.4	* 3.9	2.1	* 1.8	.4	.4	.4
31	1.5	-----	2.7	6.5	-----	* 9.9	-----	2.2	-----	* .2	.4	-----
TOTAL	30.3	181.2	115.4	271.5	126.4	103.9	489.2	92.1	71.2	17.3	13.5	14.3
MEAN	.98	6.04	3.72	8.76	4.36	3.35	16.3	2.97	2.37	.56	.44	.48
AC-FT	60	359	229	539	251	206	970	183	141	34	27	28
MAX	1.7	83	4.5	72	6.4	9.9	239	4.8	2.9	1.6	1.0	1.0
MIN	0.4	1.3	2.5	2.2	2.8	2.0	3.0	2.0	1.8	0.2	0.1	0.1

CALENDAR YEAR 1963 MAX 150 MIN 0.2 MEAN 4.73 AC-FT 3,420
WATER YEAR 1963-64 MAX 239 MIN 0.1 MEAN 4.17 AC-FT 3,030

Peak discharge (base, 200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-20	0445	3.26	396	4-1	0415	3.54	572
1-21	0445	3.01	270				

* Discharge measurement made on this day.

VENTURA RIVER BASIN

11-1145. Matilija Creek above reservoir, near Matilija Hot Springs, Calif.

Location.--Lat $34^{\circ}29'41''$, long $119^{\circ}19'48''$, in SW $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 19, T.5 N., R.23 W., on left bank 1.6 miles upstream from Matilija Dam and 1.7 miles northwest of Matilija Hot Springs.

Drainage area.--50.7 sq mi.

Records available.--May 1948 to September 1964. Published as "near Matilija" prior to October 1953.

Gage.--Water-stage recorder. Datum of gage is 1,160.20 ft above mean sea level (levels by Ventura County Water Resources Division).

Average discharge.--16 years, 18.6 cfs (13,470 acre-ft per year); median of yearly mean discharges, 7.2 cfs (5,200 acre-ft per year).

Extremes.--Maximum discharge during year, 344 cfs Apr. 1 (gage height, 3.94 ft); minimum daily, 0.7 cfs Sept. 9-13, 24, 25.
1948-64: Maximum discharge, 8,800 cfs Jan. 15, 1952 (gage height, 12.1 ft), from rating curve extended above 5,000 cfs on basis of slope-area measurement of maximum flow; minimum daily, 0.3 cfs Oct. 17-20, 25, 27, 1951.

Remarks.--Records good. Discharge measurements made five or more times a month. No regulation or diversion above station.

Cooperation.--Fifty-seven discharge measurements furnished by Ventura County Water Resources Division.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.9	2.1	4.0	4.5	6.8	4.5	15.3	6.3	3.4	2.3	1.2	1.0
2	1.9	2.1	4.0	4.5	6.3	4.5	32	5.8	3.4	2.3	1.2	.8
3	1.9	2.1	4.0	4.5	6.3	4.5	20	5.8	3.4	2.1	1.0	.8
4	2.1	2.1	4.0	4.5	5.8	4.5	20	5.8	3.4	2.1	1.0	.8
5	1.9	2.1	4.0	4.5	5.8	4.5	14	6.3	3.4	1.9	.9	.8
6	1.7	3.0	4.5	4.0	5.8	4.5	13	6.3	3.4	1.9	.9	.8
7	1.5	2.3	4.5	4.0	5.8	4.5	12	5.8	3.1	1.9	.9	.8
8	1.7	2.1	4.5	4.0	5.4	4.5	12	4.9	3.1	1.9	.9	.8
9	1.5	2.1	4.5	4.0	5.4	4.5	11	4.9	3.1	1.9	.9	.7
10	1.5	2.1	4.5	4.0	5.4	4.5	11	4.5	3.1	1.7	.9	.7
11	1.7	2.1	4.5	4.0	4.9	4.9	10	4.5	2.8	1.7	1.0	.7
12	1.7	2.1	4.5	4.0	4.9	4.9	10	4.5	2.8	1.7	1.0	.7
13	1.5	2.5	4.5	4.0	4.9	4.9	9.3	4.5	2.8	1.5	1.0	.7
14	1.5	2.5	4.5	4.0	4.9	4.9	8.6	4.5	2.8	1.5	1.0	.8
15	1.9	3.6	4.5	4.0	4.9	4.5	8.1	4.0	2.8	1.5	1.0	.9
16	2.8	3.1	4.5	4.0	4.9	4.5	8.1	4.0	2.8	1.4	1.0	.9
17	2.3	2.8	4.5	4.0	4.9	4.0	8.1	4.0	2.5	1.4	1.0	.9
18	2.3	2.8	4.5	4.0	4.9	4.0	8.1	3.6	2.5	1.2	1.0	1.0
19	2.3	5.6	4.5	4.0	4.9	4.0	8.1	3.6	2.5	1.2	1.0	1.0
20	2.3	33	4.5	4.9	4.9	4.0	8.1	3.6	2.5	1.2	1.0	1.0
21	2.1	11	4.5	24	4.9	4.0	7.7	3.4	2.5	1.4	1.0	1.0
22	2.1	7.2	4.5	29	4.9	5.4	7.7	3.4	2.3	1.4	1.0	.9
23	2.1	5.8	4.5	12	4.9	5.8	7.2	3.4	2.3	1.4	.9	.8
24	2.1	5.4	4.5	9.3	4.9	4.9	7.2	3.4	2.3	1.2	.9	.7
25	2.1	4.9	4.5	8.6	4.5	4.9	7.2	3.4	2.3	1.2	.9	.7
26	2.1	4.5	4.5	8.1	4.5	4.5	7.2	3.4	2.3	1.0	.9	.8
27	2.1	4.5	4.5	8.1	4.5	4.5	6.8	3.6	2.3	1.0	1.2	.8
28	2.1	4.5	4.5	7.7	4.5	4.0	7.2	3.6	2.3	1.0	1.2	.8
29	2.1	4.0	4.5	7.7	4.5	4.0	7.2	3.6	2.3	1.0	1.2	.9
30	2.1	4.0	4.5	7.2	-----	4.0	7.2	3.4	2.3	1.2	1.2	.9
31	2.1	-----	4.5	7.2	-----	17	-----	3.4	-----	1.2	1.2	-----
Total	61.0	138.0	137.0	212.3	149.9	152.6	457.1	135.2	82.8	47.3	31.4	24.9
Mean	1.97	4.60	4.42	6.85	5.17	4.92	15.2	4.36	2.76	1.53	1.01	0.83
Max	2.8	33	4.5	29	6.8	17	153	6.3	3.4	2.3	1.2	1.0
Min	1.5	2.1	4.0	4.0	4.5	4.0	6.8	3.4	2.3	1.0	0.9	0.7
Ac-ft	121	274	272	421	297	303	907	268	164	94	62	49

Calendar year 1963: Max 205 Min 1.5 Mean 7.37 Ac-ft 5,330

Water year 1963-64: Max 153 Min 0.7 Mean 4.45 Ac-ft 3,230

Peak discharge (base, 200 cfs).--Apr. 1 (0330 hrs) 344 cfs (3.94 ft).

11-1150. Matilija Reservoir at Matilija Hot Springs, Calif.

Location--Lat 34°29'02", long 119°18'28", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 29, T.5 N., R.23 W., on upstream face near right end of Matilija Dam on Matilija Creek, 0.2 mile west of Matilija Hot Springs.

Drainage area--54.4 sq mi.

Records available--March 1948 to September 1964. Prior to October 1953, published as "at Matilija."

Gage--Water-stage recorder. Datum of gage is at mean sea level (levels by Ventura County Water Resources Division). Prior to Oct. 1, 1954, at datum 1,000 ft higher.

Extremes--Maximum contents during year, 3,749 acre-ft Apr. 6 (elevation, 1,093.69 ft); minimum, 2,038 acre-ft Sept. 30 (elevation, 1,069.29 ft).

1948-64: Maximum contents, 7,399 acre ft Apr. 3, 1958 (elevation, 1,128.10 ft); minimum, 54 acre-ft (sluice gate open) July 27, 1951, to Jan. 11, 1952.

Remarks--Reservoir is formed by concrete dam, completed in 1948. Storage began Mar. 14, 1948. Capacity table for reservoir is based on surveys made in 1948. Dead storage below sluice gate (elevation, 1,000.0 ft), 54 acre-ft included in contents. Capacity below outlet gate (elevation, 1,025.0 ft), 250 acre-ft; below spillway level (elevation, 1,125.0 ft), 7,020 acre-ft. Water released from reservoir passes down natural channel of Matilija Creek or is diverted through pipeline to Ventura River basin and Ojai Valley for irrigation.

Cooperation--Gage-height record furnished by Ventura River Municipal Water District.

Month-end elevation and contents, water year October 1963 to September 1964

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)
Sept. 30.....	1,085.25	3,089	-
Oct. 31.....	1,084.81	3,057	-32
Nov. 30.....	1,086.11	3,154	+97
Dec. 31.....	1,086.10	3,153	-1
Calendar year 1963.....	-	-	-2,631
Jan. 31.....	1,087.86	3,286	+133
Feb. 29.....	1,087.56	3,263	-23
Mar. 31.....	1,088.43	3,328	+65
Apr. 30.....	1,093.61	3,742	+414
May 31.....	1,090.73	3,506	-236
June 30.....	1,084.83	3,058	-448
July 31.....	1,078.36	2,613	-445
Aug. 31.....	1,072.96	2,265	-348
Sept. 30.....	1,069.29	2,038	-227
Water year 1963-64.....	-	-	-1,051

† Elevation at 2400 hours.

VENTURA RIVER BASIN

11-1155. Matilija Creek at Matilija Hot Springs, Calif.

Location.--Lat 34°28'58", long 119°18'03", in SW¹/₄ NW¹/₄ SW¹/₄ sec.28, T.5 N., R.23 W., on right bank 0.2 mile east of Matilija Hot Springs, 0.2 mile upstream from North Fork, and 0.45 mile downstream from Matilija Dam.

Drainage area.--54.6 sq mi.

Records available.--October 1927 to September 1964. Combined monthly records for creek and diversion since May 1951. Prior to October 1953, published as "at Matilija."

Gage.--Water-stage recorder. Altitude of gage is 900 ft (from topographic map). Prior to Feb. 11, 1939, at site 0.6 mile upstream at different datum.

Extremes.--Maximum discharge during year, 49 cfs Apr. 8 (gage height, 2.24 ft); minimum daily, 0.9 cfs Sept. 12, 13. 20-25.

1927-64: Maximum discharge, 15,900 cfs Mar. 2, 1938, on basis of slope-area measurement of maximum flow; minimum daily, 0.1 cfs for several days in some years of regulated flow.

Remarks.--Records good. Flow regulated since March 1948 by Matilija Reservoir (see preceding page); water diverted at dam by Matilija conduit to Ventura River basin and Ojai Valley for irrigation since May 1951. Combined monthly discharge of creek and Matilija conduit diversion is given below.

Cooperation.--Records of diversion from Matilija Reservoir and nine discharge measurements furnished by Ventura River Municipal Water District.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*1.4	1.9	4.4	3.8	10	3.3	4.6	6.4	3.4	1.8	1.0	1.2
2	1.4	1.9	4.4	3.8	9.9	3.3	5.1	6.4	3.4	1.8	1.0	1.2
3	1.4	1.9	4.4	3.8	9.9	3.3	8.7	6.4	3.4	1.9	1.1	1.2
4	1.5	1.9	4.4	3.8	8.2	3.3	11	6.4	3.4	1.9	1	1.2
5	1.4	1.9	4.4	3.8	6.2	3.3	11	6.4	3.4	1.9	1	1.2
6	1.4	1.9	4.4	3.5	6.2	3.3	11	6.4	3.4	1.9	1	1.3
7	1.4	1.8	4.4	3.4	6.2	3.3	11	6.4	3.4	1.9	1	1.3
8	1.5	1.8	4.4	3.4	6.2	3.3	13	5.2	3.4	1.9	1	1.3
9	*1.6	1.8	4.4	3.4	6.2	3.3	*11	4.4	3.4	2.0	1	1.3
10	1.6	1.7	*4.1	3.4	6.2	3.3	11	4.4	3.4	1.9	1	1.3
11	*1.6	1.7	3.8	3.4	6.2	3.3	11	4.4	3.4	2.0	1	1.1
12	1.6	1.7	3.8	3.7	*5.4	3.3	11	3.7	3.1	2.0	1	.9
13	1.6	1.7	3.8	3.8	5.0	3.3	11	2.7	2.8	2.0	1	.9
14	1.6	*1.7	3.8	3.8	5.0	3.3	9.6	3.7	2.9	1.6	1	1.2
15	1.6	1.8	3.8	3.8	5.0	3.3	9.3	4.1	3.0	1.2	1	4.2
16	1.7	1.8	3.8	*3.8	5.0	3.3	7.8	4.1	3.0	1.3	1	2.3
17	*1.7	1.8	3.8	3.8	4.8	2.7	7.0	4.1	2.8	1.2	1	1.1
18	1.7	1.8	3.8	4.6	4.8	2.6	7.0	4.1	2.4	1.2	1	1.1
19	1.7	2.0	3.8	6.4	4.8	2.7	7.0	4.1	2.5	1.2	1.0	1.0
20	1.7	5.0	3.8	6.6	4.8	2.8	7.0	4.1	2.9	1.2	1.0	.9
21	1.7	*7.7	3.8	6.7	4.8	2.8	7.0	3.5	2.8	1.3	1.0	.9
22	1.7	6.6	3.8	8.0	4.6	2.9	7.0	3.5	2.7	1.3	1.1	.9
23	*1.7	5.4	3.8	9.6	4.6	2.9	7.0	3.5	2.7	1.3	1.1	.9
24	1.7	5.4	3.8	*9.6	4.6	2.9	7.0	3.5	2.7	1.3	1.1	.9
25	1.7	5.4	3.8	9.6	4.6	2.8	7.0	3.5	2.7	1.3	1.1	.9
26	1.8	*5.4	3.8	9.9	*4.6	2.7	7.0	*3.5	2.7	1.3	*1.2	1.0
27	1.8	4.8	3.8	9.9	4.6	2.7	6.4	3.5	2.7	1.3	1.2	1.0
28	1.9	4.4	3.8	10	3.3	2.7	6.4	3.5	2.7	1.3	1.2	1.0
29	1.9	4.4	3.8	*11	3.3	2.7	*6.4	3.5	*2.3	1.1	1.2	1.0
30	1.9	4.4	3.8	10	-----	*2.7	6.4	3.5	1.8	*1.2	1.2	1.0
31	1.9	-----	3.8	10	-----	3.3	-----	3.5	-----	1.0	1.2	-----
Total	50.8	93.4	123.5	184.1	165.0	94.7	252.7	136.4	88.6	47.5	32.7	36.7
Mean	1.64	3.11	3.98	5.94	5.69	3.05	8.42	4.40	2.95	1.53	1.05	1.22
Max.	1.9	7.7	4.4	11	10	3.3	13	6.4	3.4	2.0	1.2	4.2
Min	1.4	1.7	3.8	3.4	3.3	2.6	4.6	2.7	1.8	1.0	1	0.9
Ac-ft.	101	185	245	365	327	188	501	271	176	94	65	73
Ac-ft†	128	197	245	373	328	195	501	489	564	512	399	287

Calendar year 1963: Max 60 Min 1.4 Mean 9.64 Ac-ft 6,980 Meant 11.3 Ac-ft† 8,200
 Water year 1963-64: Max 13 Min 0.9 Mean 3.57 Ac-ft 2,590 Meant 5.83 Ac-ft† 4,220

* Discharge measurement made on this day.

† Combined discharge of creek and diversion.

Note.--Stage-discharge relation indefinite Aug. 4-18.

11-1160. North Fork Matilija Creek at Matilija Hot Springs, Calif.

Location--Lat 34°29'33", long 119°18'20", in NE 1/4 sec. 29, T.5 N., R.23 W., on right bank at bridge on U. S. Highway 399, 0.7 mile north of Matilija Hot Springs and 0.8 mile upstream from mouth.

Drainage area--15.6 sq mi.

Records available--October 1928 to September 1932, October 1933 to September 1964. Prior to October 1953, published as "at Matilija."

Gage--Water-stage recorder. Datum of gage is 1,142.02 ft above mean sea level (levels by Ventura County Water Resources Division). Prior to Nov. 12, 1948, at site 0.3 mile downstream at different datum.

Average discharge--35 years, 8.58 cfs (6,210 acre-ft per year); median of yearly mean discharges, 3.9 cfs (2,800 acre-ft per year).

Extremes--Maximum discharge during year, 563 cfs Apr. 1 (gage height, 3.55 ft); minimum daily, 0.2 cfs for many days.

1928-32, 1933-64: Maximum discharge, 5,580 cfs Mar. 2, 1938; minimum daily, 0.1 cfs for several days in some years.

Remarks--Records good. Discharge measurements generally made once a week. No regulation or diversion above station.

Cooperation--Gage-height record and 65 discharge measurements furnished by Ventura County Water Resources Division.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 3-8, 13-20, Dec. 5-29, Jan. 17-22, Mar. 22-31)

0.3	0	0.8	9.3
.4	.4	1.0	20
.5	1.4	1.3	45
.6	3.0	1.6	80
.7	5.7	1.9	127

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	0.6	1.2	1.2	2.1	1.5	127	2.1	0.9	0.4	0.2	0.4
2	.5	.6	1.1	1.2	2.1	1.5	12	2.0	1.0	.4	.2	.3
3	.6	.7	1.2	1.2	2.1	1.6	7.4	1.8	1.1	.4	.2	.2
4	.8	.7	1.2	1.2	2.1	1.5	5.4	2.0	1.1	.4	.2	.2
5	.8	.7	1.1	1.2	2.1	1.5	4.8	2.1	1.0	.4	.2	.2
6	.6	2.0	1.1	1.2	2.0	1.4	4.3	2.1	1.0	.4	.2	.3
7	.5	.9	1.1	1.2	2.0	1.2	3.6	2.1	1.0	.4	.2	.4
8	.5	.9	1.1	1.2	2.0	1.2	3.6	2.0	1.1	.4	.2	.3
9	.5	.9	1.1	1.2	2.0	1.4	3.0	1.8	1.4	.4	.2	.2
10	.5	.8	1.2	1.2	1.8	1.2	2.8	1.8	1.4	.4	.2	.2
11	.5	.8	1.2	1.4	1.8	1.2	2.8	1.8	1.1	.4	.2	.2
12	.5	.8	1.2	1.4	1.8	1.4	2.8	1.6	1.0	.4	.2	.2
13	.5	.8	1.2	1.4	1.8	1.4	2.6	1.6	.9	.4	.2	.2
14	.5	.8	1.2	1.4	1.6	1.2	2.4	1.6	.8	.4	.3	.3
15	.6	2.0	1.2	1.4	1.6	1.1	2.4	1.6	.8	.4	.3	.4
16	.9	1.4	1.2	1.4	1.6	1.1	2.2	1.5	.9	.4	.2	.5
17	.9	1.2	1.2	1.4	1.6	1.1	2.2	1.5	a .9	.4	.2	.3
18	.9	1.1	1.2	1.4	1.6	1.1	2.2	1.5	a .9	.4	.2	.3
19	.9	3.3	1.2	1.4	1.6	1.1	2.2	1.4	a .8	.4	.2	.3
20	.9	17	1.4	2.1	1.5	1.1	2.2	1.4	a .8	.4	.2	.3
21	.9	2.6	1.4	23	1.5	1.1	2.4	1.2	a .8	.4	.2	.3
22	.8	2.1	1.4	18	1.5	2.7	2.4	1.4	.8	.4	.2	.2
23	.8	1.8	1.4	5.1	1.5	2.2	2.4	1.2	.7	.3	.2	.2
24	.8	1.6	1.4	3.3	1.5	2.1	2.4	1.2	.6	.3	.2	.2
25	.7	1.5	1.4	2.8	1.5	1.8	2.4	1.1	.5	.2	.2	.2
26	.7	1.4	1.4	a 2.5	1.5	1.6	2.2	1.1	.5	.2	.2	.3
27	.7	1.4	1.4	2.4	1.5	1.5	2.0	1.1	.5	.2	.2	.3
28	.7	1.2	1.4	2.4	1.5	1.4	2.1	1.1	.5	.2	.3	.3
29	.7	1.2	1.3	2.4	1.5	1.4	2.2	1.0	.4	.2	.3	.3
30	.8	1.2	1.2	2.2	-----	1.4	2.1	1.0	.4	.2	.3	.3
31	.9	-----	1.2	2.1	-----	21	-----	.9	-----	.2	.4	-----
Total	21.4	54.0	38.5	92.9	50.3	64.0	220.5	47.6	25.6	10.8	6.9	8.3
Mean	0.69	1.80	1.24	3.00	1.73	2.06	7.35	1.54	0.85	0.35	0.22	0.28
Max	0.9	.17	1.4	23	2.1	21	127	2.1	1.4	0.4	0.4	0.5
Min	0.5	0.6	1.1	1.2	1.5	1.1	2.0	0.9	0.4	0.2	0.2	0.2
Ac-ft	42	107	76	184	100	127	437	94	51	21	14	16

Calendar year 1963: Max 117 Min 0.3 Mean 2.59 Ac-ft 1,870

Water year 1963-64: Max 127 Min 0.2 Mean 1.75 Ac-ft 1,270

Peak discharge (base, 40 cfs)

a No gage-height record.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-20	0200	1.42	47	4-1	0230	3.55	563
1-21	0400	1.95	120				

VENTURA RIVER BASIN

11-1165.5. Ventura River near Meiners Oaks, Calif.

Location.--Lat 34°27'45", long 119°17'20", in Santa Ana Grant, on right bank 500 ft downstream from Robles diversion dam, 1,500 ft downstream from Los Padres National Forest boundary, and 1.1 miles northwest of Meiners Oaks, Ventura County.

Drainage area.--76.4 sq mi.

Records available.--May 1959 to September 1964.

Gage.--Water-stage recorder and concrete control. Datum of gage is 744.60 ft above mean sea level (Bureau of Reclamation bench mark).

Extremes.--Maximum discharge during year, 40 cfs Apr. 1 (gage height, 1.62 ft); no flow for most of year.

1959-64: Maximum discharge, 7,590 cfs Feb. 10, 1962 (gage height, 7.1 ft), from rating curve extended above 50 cfs on basis of slope-area measurement of maximum flow; no flow for several months in each year.

Remarks.--Records good. Flow regulated by Matilija Reservoir (see p. 221). Flows up to 500 cfs diverted since May 1959 at Robles diversion dam to Casitas Reservoir on Coyote Creek. Flow reported herein is that released through gates in Robles diversion dam.

Cooperation.--Five discharge measurements furnished by Ventura River Municipal Water District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.0	0	1.4	13
1.1	.3	1.5	22
1.2	1.8	1.6	36
1.3	5.7		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	(*)	0	0.6	0	5.7	0.2	* 23	3.3				
2		0	.6	0	5.7	.7	16	2.6				
3		0	.6	0	5.7	.9	* 16	2.6				
4		0	.7	0	5.2	.2	17	4.2				
5		0	.9	0	3.3	0	16	4.7				
6		0	.7	0	2.3	0	14	4.2				
7		0	.6	0	2.0	0	13	4.2				
8		0	.4	0	2.0	0	14	1.8				
9		0	.3	0	2.6	0	13	.6				
10		0	* .2	0	2.6	0	8.9	.6				
11		0	.1	0	2.6	0	7.5	.6				
12		0	.1	0	* 1.8	0	7.5	.2				
13		0	.1	0	.7	0	6.9	.1				
14		0	.1	0	.9	0	6.9	0				
15		0	.1	0	.7	0	5.7	0				
16		0	0	0	.3	0	3.7	0				
17		0	0	0	.1	0	4.7	.4				
18		0	0	0	.3	0	4.2	.1				
19		0	0	0	.4	0	3.0	.1				
20		* 1.4	0	0	.6	0	4.7	.4				
21		4.7	0	* 12	0	0	3.7	.3				
22		3.0	0	* 17	0	0	3.0	0				
23		1.6	0	9.6	0	.8	2.3	0				
24		1.0	0	8.2	.3	.3	2.6	.1				
25		1.0	0	5.7	0	0	3.3	0				
26		* 1.0	0	5.2	* 0	0	3.7	* 0			(*)	
27		1.0	0	5.7	0	0	3.3	0				
28		.7	0	5.7	4.0	0	3.3	0				
29		.7	0	5.7	.6	0	5.2	0		(*)		
30	*	.7	* 0	5.7	-----	0	* 4.7	0		(*)		
31		-----	0	5.7	-----	* 3.8	-----	0		-----		
Total	0	29.4	6.1	86.2	50.4	6.9	240.8	31.1	0	0	0	0
Mean	0	0.98	0.20	2.78	1.74	0.22	8.03	1.00	0	0	0	0
Max	0	14	0.9	17	5.7	3.8	23	4.7	0	0	0	0
Min	0	0	0	0	0	0	2.3	0	0	0	0	0
Ac-ft	0	58	12	171	100	14	478	62	0	0	0	0

Calendar year 1963: Max 22 Min 0 Mean 2.93 Ac-ft 2,120

Water year 1963-64: Max 23 Min 0 Mean 1.23 Ac-ft 895

* Discharge measurement or observation of no flow made on this day.

11-1175. San Antonio Creek at Casitas Springs, Calif.

Location.--Lat 34°22'49", long 119°18'13", in Santa Ana Grant, on downstream side of bridge on U. S. Highway 399, 0.2 mile upstream from mouth, and 0.9 mile north of Casitas Springs, Ventura County.

Drainage area.--51.2 sq mi.

Records available.--October 1949 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 307.25 ft above mean sea level (levels by Ventura County Water Resources Division). Prior to Jan. 30, 1962, at datum 0.30 ft higher.

Average discharge.--15 years, 5.46 cfs (3,950 acre-ft per year); median of yearly mean discharges, 1.4 cfs (1,000 acre-ft per year).

Extremes.--Maximum discharge during year, 155 cfs Nov. 20 (gage height, 5.65 ft); no flow Oct. 1 to Nov. 19, May 24 to Sept. 30, 1949-64; Maximum discharge, 5,240 cfs Apr. 3, 1958 (gage height, 12.80 ft, present datum), from rating curve extended above 2,000 cfs on basis of slope-area measurement of maximum flow; no flow for several months in each year.

Remarks.--Records poor. Discharge measurements made one or more times a week when there is flow. No regulation above station; pumping from wells along creek for irrigation.

Cooperation.--Water-stage recorder graph, 36 discharge measurements, and 7 observations of no flow furnished by Ventura County Water Resources Division.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.3	0.3	0.6	0.4	1.8	0.4				
2		0	.3	.3	.6	.4	2.4	.4				
3		0	.3	.3	.6	.4	1.6	.3				
4		0	.3	.3	.6	.3	1.2	.3				
5		0	.3	.3	.6	.3	1.0	.2				
6		0	.3	.3	.6	.3	.8	.2				
7		0	.3	.3	.6	.3	.8	.2				
8		0	.3	.2	.6	.3	.7	.2				
9		0	.3	.2	.6	.3	.7	.2				
10		0	.3	.2	.6	.3	.7	.1				
11		0	.3	.2	.6	.3	.6	.1				
12		0	.3	.2	.6	.3	.6	.1				
13		0	.3	.2	.6	.3	.6	.1				
14		0	.3	.3	.6	.2	.6	.1				
15		0	.3	.2	.5	.2	.6	.1				
16		0	.3	.2	.5	.2	.6	.1				
17		0	.3	.2	.5	.2	.5	.1				
18		0	.3	.2	.5	.2	.5	.1				
19		0	.3	.2	.5	.2	.5	.1				
20		32	.3	.4	.5	.2	.5	.1				
21		2.5	.3	17	.5	.2	.4	.1				
22		2	.3	13	.5	.8	.4	.1				
23		1	.3	1.8	.5	1.1	.4	.1				
24		.5	.3	1.4	.5	.6	.4	0				
25		.2	.3	1.1	.4	.5	.4	0				
26		.1	.3	.9	.4	.5	.4	0				
27		.1	.3	.8	.4	.4	.4	0				
28		.2	.3	.7	.4	.4	.4	0				
29		.2	.3	.7	.4	.4	.4	0				
30		.3	.3	.7	-----	.4	.4	0				
31		-----	.3	.7	-----	.6	-----	0				
Total	0	39.1	9.3	43.8	15.4	11.5	37.5	3.8	0	0	0	0
Mean	0	1.30	0.30	1.41	0.53	0.37	1.25	0.12	0	0	0	0
Max	0	32	0.3	17	0.6	1.1	18	0.4	0	0	0	0
Min	0	0	0.3	0.2	0.4	0.2	0.4	0	0	0	0	0
Ac-ft	0	78	18	87	31	23	74	7.5	0	0	0	0

Calendar year 1963: Max 191 Min 0 Mean 1.62 Ac-ft 1,170

Water year 1963-64: Max 32 Min 0 Mean 0.44 Ac-ft 318

Peak discharge (base, 200 cfs).--No peak above base.

Note.---No gage-height record Nov. 21 to Jan. 6.

VENTURA RIVER BASIN

11-1176. Coyote Creek near Oak View, Calif.

Location--Lat 34°25'00", long 119°22'00", in Santa Ana Grant, on right bank 1,000 ft downstream from Los Padres National Forest boundary, 0.6 mile upstream from Poplin Creek, and 4.2 miles west of Oak View, Ventura County.

Drainage area--13.2 sq mi.

Records available--October 1958 to September 1964.

Gage--Water-stage recorder. Altitude of gage is 560 ft (from topographic map).

Average discharge--6 years, 2.60 cfs (1,880 acre-ft per year).

Extremes--Maximum discharge during year 302 cfs Apr. 1 (gage height, 4.79 ft); no flow July 26 to Sept. 19.

1958-64: Maximum discharge, 1,700 cfs Feb. 9, 1962 (gage height, 7.45 ft in gage well, 7.81 ft from outside gage), on basis of slope-area measurement of maximum flow; no flow at times in most years.

Remarks--Records good. No regulation or diversion above station.

Cooperation--Three discharge measurements furnished by Ventura River Municipal Water District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 19, Dec. 27 to Jan. 19, Apr. 1, June 19 to Sept. 30)

1.62	0	2.3	4.0
1.7	.1	2.5	8.4
1.8	.2	2.7	15
1.9	.5	3.0	32
2.0	.9	3.3	58
2.1	1.6		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	* 0.1	0.2	0.6	0.4	0.8	0.5	* 52	0.7	0.3	0.1		0
2	.1	.2	.5	.4	.8	.6	4.0	.7	.3	.1		0
3	.1	.2	.5	.5	.8	.5	* 2.3	.7	.3	.1		0
4	.1	.2	.5	.5	.7	.5	1.6	.7	.3	.1		0
5	.1	.2	.5	.5	.7	.5	1.4	.7	.3	.1		0
6	.1	.3	.5	.4	.7	.5	1.4	.6	.3	.1		0
7	.1	.2	.5	.4	.6	.5	1.2	.6	.2	.1		0
8	.1	.2	.5	.4	.6	.4	1.1	.6	.2	.1		0
9	.1	.2	.5	.4	.6	.4	1.0	.6	.2	.1		0
10	.1	.2	.5	.4	.6	.4	1.0	.6	.2	.1		0
11	.1	.2	.5	.4	.6	.4	1.0	.6	.2	.1		0
12	.1	.2	.4	.4	* .6	.4	1.0	.6	.2	.1		0
13	.1	.2	.4	.4	.5	.4	.9	.6	.2	.1		0
14	.1	.2	.4	.4	.5	.4	.9	.5	.2	.1		0
15	.1	.3	.4	.4	.5	.4	.8	.5	.2	.1		0
16	.2	.2	.4	.4	.5	.4	.8	.5	.2	.1		0
17	.2	.2	.4	.4	.5	.4	.8	.4	.2	.1		0
18	.2	.2	.4	.4	.5	.4	.8	.4	.2	.1		0
19	.2	.4	.4	.4	.5	.4	.7	.4	.2	.1		0
20	.2	4.8	.4	.6	.5	.4	.7	.4	.2	.1		.1
21	.2	.7	.4	2.7	.5	.4	.7	.4	.2	.1		.1
22	.2	.6	.4	* 5.7	.5	.8	.7	.4	.2	.1		.1
23	.2	.6	.4	1.6	.5	.7	.7	.4	.1	.1		.1
24	.2	.6	.4	1.0	.5	.6	.7	.4	.1	.1		.1
25	.2	.6	.4	.9	.5	.6	.7	.4	.1	.1		.1
26	.2	.6	.4	.9	.5	.6	.7	.4	.1	0		.1
27	.2	* .6	.4	.9	* .5	.6	.7	.4	.1	0		.1
28	.2	.6	.4	.9	.5	.6	.7	* .4	.1	0	(*)	.1
29	.2	.6	.4	* .9	.5	.6	.7	.4	.1	0		.1
30	* .2	.6	* .4	.9	-----	* .6	* .7	.3	* .1	0		.1
31	.2	-----	.4	.9	-----	.9	-----	.3	-----	* 0		.1
Total	4.7	15.1	13.6	25.8	16.6	15.8	82.4	15.6	5.8	2.5	0	1.1
Mean	0.15	0.50	0.44	0.83	0.57	0.51	2.75	0.50	0.19	0.08	0	0.04
Max	0.2	4.8	0.6	5.7	0.8	0.9	52	0.7	0.3	0.1	0	0.1
Min	0.1	0.2	0.4	0.4	0.5	0.4	0.7	0.3	0.1	0	0	0
Ac-ft	9.3	30	27	51	33	31	163	31	12	5.0	0	2.2

Calendar year 1963: Max 88 Min 0.1 Mean 1.13 Ac-ft 820

Water year 1963-64: Max 52 Min 0 Mean 0.54 Ac-ft 394

Peak discharge (base, 150 cfs)--Apr. 1 (0400 hrs) 302 cfs (4.79 ft).

* Discharge measurement or observation of no flow made on this day.

11-1178. Santa Ana Creek near Oak View, Calif.

Location.--Lat 34°25'25", long 119°20'25", in Santa Ana Grant, on downstream end of right abutment of bridge, 400 ft upstream from unnamed tributary, and 3.0 miles northwest of Oak View, Ventura County.

Drainage area.--9.11 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 610 ft (from topographic map).

Average discharge.--6 years, 2.27 cfs (1,640 acre-ft per year).

Extremes.--Maximum discharge during year, 202 cfs Apr. 1 (gage height, 3.95 ft); no flow for much of year.

1958-64: Maximum discharge, 2,200 cfs Feb. 9, 1962 (gage height, 6.77 ft); no flow for part of each year.

Remarks.--Records good. No regulation or diversion above station.

Cooperation.--Five discharge measurements furnished by Ventura River Municipal Water District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 27-29, Dec. 6)

2.0	0	2.6	7.7
2.1	.1	2.8	17
2.2	.5	2.9	24
2.3	1.2	3.0	32
2.4	2.5	3.1	42
2.5	4.7		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	(*)	0	0	0.1	0.6	0.1	* 38					
2		0	0	.1	.5	.1	* 3.6					
3		0	0	.1	.4	.1	* 2.0					
4		0	0	.1	.5	.1	1.6					
5		0	0	.1	.5	.1	1.2					
6		0	0	.1	.5	.1	.6					
7		0	0	.1	.5	.1	.4					
8		0	.1	.1	.5	.1	.2					
9		0	.1	.1	.5	.1	*.1		(*)			
10		0	.2	.1	*.5	.1	.1					
11		0	.3	.1	.5	.1	.1					
12		0	.3	.1	.5	.2	.1					
13		0	.4	.1	.5	.1	.1					
14		0	.4	.1	.5	.1	.1					
15		0	.4	.1	.5	.1	.1					
16		0	.4	0	.4	0	.1					
17		0	.4	0	.3	0	.1					
18		0	.4	0	.2	0	.1					
19		.2	.4	0	.2	0	.1					
20		* 8.4	.4	.1	.1	0	.1					
21		.8	.4	* 6.8	.1	0	.1					
22		*.3	.4	6.3	.1	.1	.1					
23		.2	.4	1.6	.1	.2	.1					
24		.1	.3	* 1.1	.1	.1	.1					
25		.1	.1	1.0	.1	.1	.1					
26		0	.1	.9	.1	0	.1					
27		* 0	.1	.7	*.1	0	.1				(*)	
28		0	.1	.7	.1	0	.1		(*)			
29		0	.1	*.6	.1	0	.1					
30	(*)	0	*.1	.6	-----	0	*.1		(*)	(*)		
31		-----	.1	.6	-----	.6	-----		-----	-----		
Total	0	10.1	6.4	22.5	9.6	2.7	49.8	0	0	0	0	0
Mean	0	0.34	0.21	0.73	0.33	0.09	1.66	0	0	0	0	0
Max	0	8.4	0.4	6.8	0.6	0.6	38	0	0	0	0	0
Min	0	0	0	0	0.1	0	0.1	0	0	0	0	0
Ac-ft	0	20	13	45	19	5.4	99	0	0	0	0	0

Calendar year 1963: Max 100 Min 0 Mean 0.95 Ac-ft 690

Water year 1963-64: Max 38 Min 0 Mean 0.28 Ac-ft 201

Peak discharge (base, 150 cfs).--Apr. 1 (0330 hrs) 202 cfs (3.95 ft).

* Discharge measurement or observation of no flow made on this day.

VENTURA RIVER BASIN

11-1185. Ventura River near Ventura, Calif.

Location.--Lat 34°21'05", long 119°18'23", in southeast corner of Santa Ana Grant, on right bank 500 ft downstream from county highway bridge at Foster Memorial Park, 0.2 mile downstream from Coyote Creek, and 5 miles north of Ventura, Ventura County.

Drainage area.--188 sq mi.

Records available.--September 1911 to January 1914, October 1929 to September 1964; combined records of river and diversion, October 1932 to September 1964.

Gage.--Water-stage recorder on river; water-stage recorder and Parshall flume on diversion. Altitude of gage is 200 ft (from topographic map). Prior to Jan. 18, 1914, chain gage at site 370 ft upstream at different datum (destroyed by flood). October 1929 to Nov. 2, 1949, at site 370 ft upstream at present datum.

Average discharge (river only).--37 years (1911-13, 1929-64), 55.6 cfs (40,250 acre-ft per year); median of yearly mean discharges, 22 cfs (15,900 acre-ft per year).
(combined) --32 years, 65.3 cfs (47,280 acre-ft per year); median of yearly mean discharges, 27 cfs (19,500 acre-ft per year).

Extremes (river only).--Maximum discharge during year, 132 cfs Nov. 20 (gage height, 7.83 ft); no flow for many days.
 1911-14, 1929-64: Maximum discharge, 39,200 cfs Mar. 2, 1938 (gage height, 19.2 ft), from rating curve extended above 7,700 cfs on basis of slope-area and contracted opening measurement of maximum flow; no flow at times in many years.
(combined).--Maximum discharge during year, 132 cfs Nov. 20; minimum daily 1.1 cfs Nov. 19.
 1932-64: Maximum discharge, 39,200 cfs Mar. 2, 1938; minimum daily, 0.1 cfs Sept. 3, 4, 13, 1961.

Remarks.--Combined records good; river records fair. Flow partly regulated since March 1948 by Matilija Reservoir (see p. 221) and since October 1959 by Casitas Reservoir (capacity, 267,000 acre-ft). Water diverted since May 1951 through pipeline at dam (Matilija Reservoir) to Ojai Valley for irrigation. Water diverted to Casitas Reservoir on Coyote Creek since January 1959. Diversion by City of Ventura for municipal supply began prior to 1911. For records of combined discharge of river and Ventura City diversion, see following page. Average discharge (river only) represents flow to ocean, regardless of upstream development.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	1.2	0.2	0.2	0.2	3.0	0.3	0.1			
2		0	1.1	.2	.2	.3	.7	.3	.1			
3		0	1.0	.2	.2	.2	.8	.4	.1			
4		0	.7	.2	.2	.2	.9	1.0	.1			
5		0	.4	.2	.2	.2	1.0	1.0	.1			
6		0	.3	.2	.2	.2	.8	.8	.1			
7		* 0	.2	.1	.2	.2	.7	.7	.1			
8		0	.2	.1	.2	.2	.6	.7	* .1			
9		0	.2	0	.3	.2	.5	.7	.1			
10		0	.2	0	.4	.3	.4	.7	0			
11		0	.1	0	.6	.2	.4	.6	0			
12		0	.1	0	.6	.3	.4	.6	0			
13		0	.2	0	.6	.2	.4	.6	0			
14		0	.3	0	.5	.2	.3	.7	.1			
15		0	.3	0	.5	.2	.3	.6	.1			
16		0	.2	0	.5	.2	.3	.5	.2			
17		0	.2	0	.8	.2	.3	.4	.2			
18		0	.2	0	.8	.2	.3	.3	.1			
19		.1	.2	0	.7	.2	.3	.3	.1			
20		24	.1	0	.6	.2	.4	.2	.1			
21		3.1	.1	2.9	.4	.2	1.0	.2	.1			
22		.6	.1	7.2	.3	.2	.8	.2	0			
23		.7	.1	.4	.2	1	.3	.2	0			
24		.8	.2	.4	.2	.5	.3	.2	0			
25		1	.3	.3	.2	.3	.3	.2	0			
26		1	.4	.3	.2	.2	.3	.2	0			
27		1.2	.3	.2	* .2	.1	.3	.1	0		(*)	
28		1.2	.2	.2	.2	.1	.3	* .1	0			
29		1.3	.2	* .2	.2	.1	* .3	.1	0			
30	(*)	1.3	* .2	.2	-----	.1	.3	.1	* 0	(*)		
31		-----	.2	.2	-----	* .4	-----	.1	-----			
Total	0	36.3	9.7	13.9	10.6	9.3	17.0	13.1	1.9	0	0	0
Mean	0	1.21	0.31	0.45	0.37	0.30	0.57	0.42	0.06	0	0	0
Max	0	24	1.2	7.2	0.8	2	3.0	1.0	0.2	0	0	0
Min	0	0	0.1	0	0.2	0.1	0.3	0.1	0	0	0	0
Ac-ft	0	72	19	28	21	18	34	126	3.8	0	0	0

Calendar year 1963: Max 205 Min 0 Mean 3.34 Ac-ft 2,420
 Water year 1963-64: Max 24 Min 0 Mean 0.31 Ac-ft 222

Peak discharge (base, 500 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record Nov. 25, 26, Mar. 17-30.

1185. Ventura River near Ventura, Calif.--Continued

Combined discharge, in cubic feet per second, of Ventura River and Ventura City diversion
near Ventura, Calif., water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.7	4.4	4.6	5.0	3.6	3.4	7.5	6.4	8.6	7.6	6.3	4.9
2	5.6	4.4	3.0	4.3	3.5	6.9	6.4	7.9	8.3	7.5	6.4	4.9
3	5.4	4.4	3.2	4.5	3.6	6.5	5.4	5.8	8.3	7.5	6.2	4.7
4	5.4	4.3	5.3	4.2	4.8	5.9	4.8	5.8	8.3	7.5	6.0	4.5
5	5.6	4.3	5.5	4.1	5.8	4.6	3.7	7.1	7.5	6.8	6.0	4.1
6	5.4	4.3	2.4	4.3	6.1	4.2	7.0	7.4	6.5	7.0	5.9	4.1
7	5.4	4.2	1.5	4.7	4.6	4.8	8.2	7.3	8.0	7.3	5.8	4.0
8	5.3	4.1	1.5	3.9	5.1	5.9	6.8	7.1	8.7	7.5	5.8	4.4
9	5.3	3.5	1.4	2.6	3.9	6.2	5.6	8.5	8.5	7.3	5.8	4.5
10	5.3	2.7	3.6	2.4	4.6	4.5	5.5	9.8	7.6	7.4	5.7	4.3
11	5.2	3.9	4.2	2.6	4.5	4.3	5.5	7.8	7.5	7.6	5.9	4.5
12	5.1	4.2	2.0	2.6	6.6	4.9	5.5	7.9	8.0	7.3	5.7	4.4
13	5.0	2.1	2.5	2.2	5.0	3.5	6.5	6.9	7.2	7.2	5.4	4.3
14	4.9	2.2	3.6	2.1	4.0	6.3	6.4	8.8	7.3	7.0	5.7	4.2
15	5.1	3.1	3.6	2.0	5.5	6.1	5.5	10	7.9	7.2	5.7	4.1
16	5.1	4.0	3.6	2.1	3.3	5.4	5.4	9.9	7.6	6.7	5.6	4.0
17	5.1	4.3	3.7	2.2	4.9	5.6	5.4	9.7	7.7	7.2	5.4	3.9
18	5.1	1.9	3.6	1.9	7.7	6.2	5.3	9.4	8.5	7.2	4.7	3.9
19	5.1	1.1	5.0	1.8	7.7	6.3	5.4	9.3	8.6	7.2	5.4	3.9
20	5.1	2.7	4.1	1.9	7.8	5.9	5.1	9.2	8.2	7.0	5.2	3.9
21	4.0	5.9	3.4	4.6	6.0	6.5	4.4	9.1	8.3	7.0	4.8	3.8
22	3.0	4.9	3.4	8.6	5.3	8.0	6.4	9.1	7.2	7.0	4.8	3.4
23	4.4	4.6	1.4	2.6	5.1	5.4	8.5	9.1	7.5	6.4	4.7	3.8
24	5.0	4.5	3.9	3.1	3.1	2.7	7.3	9.1	8.2	7.0	4.7	3.8
25	5.1	3.0	2.9	3.0	3.7	4.2	6.7	7.7	7.9	6.9	4.7	3.7
26	5.0	2.6	2.8	3.0	6.0	6.6	6.3	7.7	8.1	7.0	4.6	3.7
27	4.9	3.8	6.0	2.9	5.2	6.2	7.8	8.7	7.8	6.7	5.3	3.7
28	4.7	3.4	4.7	2.9	5.2	5.8	9.3	8.7	7.0	6.4	5.3	3.6
29	4.9	4.1	2.9	3.4	4.4	5.1	6.9	8.5	7.9	6.4	5.1	3.5
30	4.8	4.7	5.4	3.6	-----	3.4	6.3	8.7	7.8	6.4	5.1	3.5
31	4.7	-----	6.2	3.4	-----	2.9	-----	8.6	-----	6.4	5.0	-----
Total	155.7	135.9	110.9	102.5	146.6	164.2	186.8	257.0	236.5	218.6	168.7	122.0
Mean	5.02	4.53	3.58	3.31	5.06	5.30	6.23	8.29	7.88	7.05	5.44	4.07
Max	5.7	2.7	6.2	8.6	7.8	8.0	9.3	10	8.7	7.6	6.4	4.9
Min	3.0	1.1	1.4	1.8	3.1	2.7	3.7	5.8	6.5	6.4	4.6	3.4
Ac-ft	309	270	220	203	291	326	371	510	469	434	332	242

Calendar year 1963: Max 208 Min 1.1 Mean 9.17 Ac-ft 6,640
Water year 1963-64: Max 27 Min 1.1 Mean 5.48 Ac-ft 3,980

Peak discharge (base, 500 cfs).--No peak above base.

CARPINTERIA CREEK BASIN

11-1195. Carpinteria Creek near Carpinteria, Calif.

Location.--Lat 34°24'04", long 119°29'08", in El Rincon Grant, on left bank at upstream side of bridge on State Highway 150, 200 ft downstream from Gobernador Creek, and 1.8 miles northeast of Carpinteria, Santa Barbara County.

Drainage area.--13.1 sq mi.

Records available.--January 1941 to September 1964.

Gage.--Water-stage recorder and box-culvert control. Altitude of gage is 130 ft (from topographic map). Prior to July 1, 1958, at datum 2.00 ft higher.

Average discharge.--23 years, 1.77 cfs (1,280 acre-ft per year); median of yearly mean discharges, 0.2 cfs (140 acre-ft per year).

Extremes.--Maximum discharge during year, 89 cfs Apr. 1 (gage height, 4.55 ft); no flow for most of year.

1941-64: Maximum discharge, 2,440 cfs Jan. 15, 1952 (gage height, 9.75 ft, present datum), from rating curve extended above 500 cfs on basis of slope-area measurement of maximum flow; no flow at times in each year.

Remarks.--Records good. No regulation above station. Gobernador Land and Water Co. diverts from Gobernador Creek 1.8 miles above station. Small lake three-quarters of a mile southeast of station and outside the drainage area stores storm runoff and surplus water diverted by Gobernador Land and Water Co. from Gobernador Creek. At times this lake is drained by pumping water into Gobernador Creek 1,000 ft above station. No pumping occurred this year.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 19.....	0.8	Apr 1.....*	19
20.....*	3.0	2.....	.7
Jan. 21.....	.3	3.....	.1
22.....	2.1		

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	3.8	3.0	0	0.13	7.5
January 1964.....	2.4	2.1	0	.08	4.8
April.....	19.8	19	0	.66	39
Calendar year 1963.....	-	31	0	.24	174
Water year 1963-64.....	-	19	0	.07	51

Peak discharge (base, 25 cfs).--Nov. 19 (2400 hrs) 26 cfs (3.79 ft); Apr. 1 (0130 hrs) 89 cfs (4.55 ft).

* Discharge measurement made on this day.

Note.--Flow occurred only on days listed above.

11-1200, Atascadero Creek near Goleta, Calif.

Location.--Lat 34°25'29", long 119°48'39", in La Goleta Grant, on downstream side of left-bank abutment of private road bridge 400 ft downstream from Maria Ygnacio Creek, 1.3 miles upstream from mouth, and 1.3 miles southeast of Goleta, Santa Barbara County.

Drainage area.--18.8 sq mi (revised).

Records available.--October 1941 to September 1964. Prior to October 1947, published as Alascadero Creek near Goleta.

Gage.--Water-stage recorder. Altitude of gage is 20 ft (from topographic map).

Average discharge.--23 years, 2.63 cfs (1,900 acre-ft per year); median of yearly mean discharges, 0.8 cfs (580 acre-ft per year).

Extremes.--Maximum discharge during year, 529 cfs Mar. 22 (gage height, 8.50 ft), from rating curve extended above 150 cfs; no flow for many days.

1941-64: Maximum discharge, about 4,500 cfs Jan. 15, 1952 (gage height, 10.85 ft), estimated on basis of records for nearby streams; no flow for many days in each year.

Remarks.--Records fair. Discharge measurements generally made twice a month. No regulation above station. Small diversions for irrigation above station. At times low flow results from return irrigation waste water. At other times Lake Cachuma water is wasted to channel.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0	0.1	0.1	0	0	37	0	0	0.1	0	0
2	.1	0	.1	0	0	.3	18	0	0	.4	0	.1
3	.1	0	.2	0	0	.2	.2	0	0	.2	0	0
4	.1	0	.2	.1	0	.1	.1	0	0	0	0	0
5	.1	0	.1	.1	0	0	0	0	0	0	0	0
6	.1	17	.1	.1	.1	0	0	0	0	0	0	0
7	.1	1.1	.1	.1	.1	0	0	0	0	0	0	0
8	0	.3	.1	.1	0	0	0	0	0	.1	0	0
9	0	.1	.1	.1	0	0	0	0	0	.1	0	0
10	0	0	.1	.1	0	1.4	0	.2	0	.1	0	0
11	.1	0	0	.1	0	.5	0	.1	0	0	0	0
12	1.2	0	0	.1	0	.5	0	.2	0	0	0	0
13	.5	0	0	0	0	1.9	0	.1	0	0	0	0
14	.2	0	0	0	0	.3	0	.1	0	0	0	0
15	.5	2.4	0	0	0	.1	0	.1	0	0	0	0
16	10	1.0	.1	0	0	.1	.1	.1	0	0	0	0
17	1.0	.2	.1	0	0	.1	.3	.1	0	0	0	0
18	.3	.1	.1	0	0	.6	.1	.1	.1	0	0	0
19	.1	28	0	0	0	.3	0	.2	.1	0	0	0
20	.1	35	0	.3	0	.2	0	0	.1	0	0	0
21	.1	1.1	0	19	0	.2	0	0	.1	0	0	0
22	0	.6	0	5.2	0	44	0	.1	.4	0	0	0
23	0	.5	0	.2	0	3.4	0	0	.5	0	0	.1
24	0	.3	0	0	0	.3	0	0	.1	0	.1	.1
25	0	.3	0	0	0	.2	0	0	0	0	.1	.2
26	0	.2	0	0	0	.1	0	.1	0	0	0	.1
27	.1	.2	0	0	0	0	0	0	0	0	0	.1
28	0	.2	0	0	0	0	0	0	.1	0	0	0
29	0	.2	.1	0	0	0	0	0	0	0	0	0
30	0	.1	.1	0	0	0	0	0	0	0	0	.2
31	0	-----	.1	0	-----	5.0	-----	0	-----	0	.1	-----
Total	14.9	88.9	1.8	25.7	0.2	59.8	55.8	1.5	1.5	1.0	0.3	0.9
Mean	0.48	2.96	0.06	0.83	0.007	1.93	1.86	0.05	0.05	0.03	0.01	0.03
Max	10	35	0.2	19	0.1	44	37	0.2	0.5	0.4	0.1	0.2
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	30	176	3.6	51	0.4	119	111	3.0	3.0	2.0	0.6	1.8

Calendar year 1963: Max 300 Min 0 Mean 2.37 Ac-ft 1,720

Water year 1963-64: Max 44 Min 0 Mean 0.69 Ac-ft 501

Peak discharge (base, 60 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-19	2300	7.82	345	3-22	1700	8.50	529
1-21	0200	6.98	148	4-1	0100	6.80	122

SAN JOSE CREEK BASIN

11-1205. San Jose Creek near Goleta, Calif.

Location.--Lat 34°27'33", long 119°48'29", in La Goleta Grant, on left pier of Patterson Avenue Bridge, 1.1 miles downstream from unnamed tributary, and 1.7 miles northeast of Goleta, Santa Barbara County.

Drainage area.--5.51 sq mi.

Records available.--January 1941 to September 1964.

Gage.--Water-stage recorder and concrete low-water control since October 1962. Altitude of gage is 100 ft (from topographic map). Prior to Dec. 24, 1955, at datum 5.50 ft higher. Dec. 24, 1955, to Jan. 10, 1960, at datum 1.5 ft higher.

Average discharge.--23 years, 1.54 cfs (1,110 acre-ft per year); median of yearly mean discharges, 0.8 cfs (580 acre-ft per year).

Extremes.--Maximum discharge during year, 148 cfs Nov. 20 (gage height, 3.37 ft), from rating curve extended above 40 cfs on basis of slope-area measurement at gage height 3.94 ft; no flow July 11-12, Aug. 6 to Sept. 17, Sept. 19-30.

1941-64: Maximum discharge, 1,960 cfs Apr. 4, 1941, from rating curve extended above 850 cfs; maximum gage height, 12.74 ft, present datum, Jan. 21, 1943; no flow at times in each year.

Remarks.--Records good. No regulation above station. Many small diversions for irrigation above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.5	0	2.0	5.4
1.6	.2	2.1	9.0
1.7	.6	2.2	14
1.8	1.5	2.4	26
1.9	3.0		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.2	0.2	0.4	0.3	0.5	0.2	18	0.3	0.2	0.1	0.1	0
2	*.2	.2	.4	.4	.5	.3	2.3	.3	.2	.1	.1	0
3	.2	.3	.4	.3	.5	.3	1.3	.3	.2	.1	.1	0
4	.2	.3	.4	.2	.4	.2	1.0	.3	.2	.1	.1	0
5	.2	.3	.4	.2	.4	.2	.9	.3	.2	.1	.1	0
6	.2	1.0	.4	.2	.4	.2	.7	.3	.2	.1	0	0
7	.2	.4	.4	.2	.4	.2	.6	.3	.2	.1	0	0
8	.2	.3	.4	.2	.4	.2	.6	.3	.2	.1	0	0
9	.1	.3	.4	.2	.4	.2	.5	.2	.2	.1	0	0
10	.1	.3	.4	.3	.4	.2	.5	.1	.2	.1	0	0
11	.1	.3	.4	.4	*.4	.2	.5	*.1	.2	0	0	0
12	.1	.3	.4	.4	.4	.3	.5	.1	*.2	0	0	0
13	.1	.3	.4	.4	.4	.3	.4	.1	.2	*.1	0	0
14	.1	*.3	.4	.4	.4	.3	.4	.1	.2	.1	0	0
15	*.1	.6	.4	.4	.4	.2	.4	.1	.2	.1	0	0
16	.4	.5	*.4	.4	.4	*.2	*.4	.1	.2	.1	0	0
17	.3	.5	.4	*.4	.4	.1	.4	.1	.1	.1	0	*.0
18	.3	.4	.4	.4	.4	.1	.4	.1	.1	.1	*.0	.1
19	.3	1.3	.4	.4	.4	.1	.3	.1	.1	.1	0	0
20	.3	*22	.3	.5	.3	.1	.3	.2	.1	.1	0	0
21	.2	1.2	.3	*9.9	.2	.1	.3	.1	.1	.1	0	0
22	.1	.7	.3	4.2	.2	4.3	.3	.2	.1	.1	0	0
23	.1	.6	.3	1.5	.2	*2.1	.3	.2	.1	.1	0	0
24	.1	.5	.3	1.0	.3	1.2	.3	.2	.1	.1	0	0
25	.1	.5	.3	.8	.3	.9	.3	.2	.1	.1	0	0
26	.1	.5	.3	.7	.3	.6	.3	.2	.1	.1	0	0
27	.1	*.5	.3	.6	*.3	.5	.3	.2	.1	.1	0	0
28	.1	.5	.3	.5	.1	.5	.3	*.2	.1	.1	*.0	0
29	.1	.5	.3	.5	.2	.5	.3	.2	.1	.1	0	0
30	*.1	.4	.3	.5	-----	.5	*.3	.2	*.1	.1	0	0
31	.2	-----	*.3	*.5	-----	1.1	-----	.2	-----	*.1	0	-----
TOTAL	5.2	36.0	11.2	27.3	10.3	16.4	33.4	5.9	4.6	2.9	0.5	0.1
MEAN	0.17	1.20	0.36	0.88	0.36	0.53	1.11	0.19	0.15	0.09	0.02	0.003
MAX	0.4	22	0.4	9.9	0.5	4.3	18	0.3	0.2	0.1	0.1	0.1
MIN	0.1	0.2	0.3	0.2	0.1	0.1	0.3	0.1	0.1	0	0	0
AC-FT	10	71	22	54	20	33	66	12	9.1	5.8	1.0	0.2

CALENDAR YEAR 1963: MAX 55 MIN 0 MEAN 0.88 AC-FT 632

WATER YEAR 1963-64 MAX 22 MIN 0 MEAN 0.42 AC-FT 304

Peak discharge (base, 100 cfs).--Nov. 20 (0200 hrs) 148 cfs (3.37 ft); Apr. 1 (0100 hrs) 102 cfs (3.08 ft).

* Discharge measurement or observation of no flow made on this day.

11-1210. Santa Ynez River at Jameson Lake, near Montecito, Calif.

Location.--Lat 34°29'32", long 119°30'25", on upstream side of Juncal Dam, 6.5 miles north of Carpinteria, and 8 miles northeast of Montecito, Santa Barbara County.

Drainage area.--13.8 sq mi (not including Alder Creek).

Records available.--December 1930 to September 1964. Prior to October 1938, published as "at Juncal Reservoir, near Montecito."

Gage.--Water-stage recorder on lake; water-stage recorder and sharp-crested weir on outlet conduit. Datum of gage is 2,021.6 ft above mean sea level (Bureau of Reclamation bench mark), or 2,000 ft above arbitrary datum (called sea level) generally used for works in this vicinity.

Average discharge.--33 years (1931-64), 5.35 cfs (3,870 acre-ft per year); median of yearly mean discharges, 2.2 cfs (1,600 acre-ft per year).

Remarks.--Records of total inflow represent all water reaching Jameson Lake, including precipitation on the lake. Net discharge computed on basis of records of storage, diversion (draft) to the city of Montecito, spill and release to river, and evaporation. Records of net discharge exclude precipitation on lake surface. Monthly evaporation from lake surface computed on basis of evaporation from Colorado land pan using coefficient of 0.80. Area and capacity tables are based on surveys made in 1961. Lake capacity at spillway level (gage height, 223.82 ft) 6,596 acre-ft. Dead storage, 220 acre-ft, below lowest outlet at gage height 139.0 ft, included in these records. There is no regulation or diversion above station. At times flow of Alder Creek, which enters Santa Ynez River 2 miles downstream from Juncal Dam, is diverted at elevation 2,250 ft through a tunnel to Jameson Lake, and is included in these records.

Cooperation.--Reservoir-operation records and related data furnished by Montecito County Water District.

Monthly net discharge, water year October 1963 to September 1964

Month	Gage height (feet)†	Contents (acre- feet)	Change in contents (acre- feet)	Draft (acre- feet)	Spill and release (acre- feet)	Evapo- ration (acre- feet)	Total inflow (acre- feet)	Rain on reser- voir (acre- feet)	Net discharge (acre- feet)
	Jameson Lake								
Sept. 30.....	205.95	4,324	-	-	-	-	-	-	-
Oct. 31.....	204.42	4,153	-171	146	0	15	-10	10	-20
Nov. 30.....	203.98	4,105	-48	86	0	6	44	56	-12
Dec. 31.....	203.14	4,013	-92	93	0	6	7	0	7
Calendar year 1963.....	-	-	-1,134	1,267	0	311	444	277	167
Jan. 31.....	203.14	4,013	0	98	0	8	106	44	62
Feb. 29.....	202.54	3,949	-64	92	0	16	44	0	44
Mar. 31.....	201.58	3,846	-103	154	0	18	69	36	33
Apr. 30.....	201.79	3,868	22	153	0	25	200	20	180
May 31.....	200.65	3,748	-120	144	0	39	63	0	63
June 30.....	198.94	3,571	-177	153	0	46	22	0	22
July 31.....	196.02	3,281	-290	249	0	53	12	0	12
Aug. 31.....	193.08	3,003	-278	226	0	42	-10	0	-10
Sept. 30.....	190.45	2,768	-235	202	0	29	-4	0	-4
Water year 1963-64.....	-	-	-1,556	1,796	0	303	543	166	377

† Gage height at 2400 hours.

Note.--For months when inflow to the lake was small and other quantities were large, discordant figures of net discharge may appear. This arises primarily from the difficulty of computing net discharge as the residual of several larger quantities, which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

SANTA YNEZ RIVER BASIN

11-1220. Santa Ynez River above Gibraltar Dam, near Santa Barbara, Calif.

Location.--Lat 34°31'37", long 119°41'10", on upstream side of Gibraltar Dam, 7 miles north of Santa Barbara, Santa Barbara County.

Drainage area.--216 sq mi.

Records available.--April 1920 to September 1964. November 1903 to November 1918 (fragmentary) at river station at damsite; records not equivalent because records since April 1920 are based on operation of Gibraltar reservoir, and since December 1930, Jameson Lake. Prior to October 1945, published as "near Santa Barbara."

Gage.--Water-stage recorder on reservoir; water-stage recorder and sharp-crested weir on diversion. Spill and release measured at river gaging station below dam (see following page). Datum of reservoir gage is mean sea level (datum of 1929). Prior to August 1916, staff gage 900 ft downstream at different datum. August 1916 to June 1918, water-stage recorder at Gibraltar damsite at different datum. June to November 1918, staff gage at several sites and datums near dam. Apr. 1, 1920, to Oct. 1, 1955, at datum 21.82 ft higher. Since Oct. 1, 1955, supplemental gage 15 ft to right of spillway, used for elevation above 1,386 ft.

Remarks.--Records of total inflow represent all water reaching Gibraltar Reservoir, including precipitation on reservoir. Total inflow computed on basis of records of storage, diversion (draft) to city of Santa Barbara, spill and release to river, and evaporation. Records of net inflow exclude precipitation on reservoir surface. Monthly evaporation from reservoir surface computed on basis of evaporation from Colorado Land pan using coefficient of 0.80. Area and capacity tables are based on surveys made in 1956. Reservoir capacity at spillway level (elevation, 1,399.82 ft), 14,777 acre-ft. Dead storage, 716 acre-ft, below lowest outlet at elevation 1,333.86 ft, included in these records. Flow regulated by Jameson Lake since December 1930 (see preceding page).

Cooperation.--Reservoir-operation records and related data furnished by city of Santa Barbara.

Monthly net inflow, water year October 1963 to September 1964

Month	Elevation (feet)†	Contents (acre- feet)	Change in contents (acre- feet)	Draft (acre- feet)	Spill and release (acre- feet)	Evapo- ration (acre- feet)	Total inflow (acre- feet)	Rain on reser- voir (acre- feet)	Net inflow (acre- feet)
	Gibraltar Reservoir								
Sept. 30.....	1,385.69	9,579	-	-	-	-	-	-	-
Oct. 31.....	1,383.92	9,055	-524	443	4	66	-11	22	-33
Nov. 30.....	1,383.12	8,828	-227	289	5	32	99	73	26
Dec. 31.....	1,381.52	8,391	-437	398	6	29	-4	0	-4
Calendar year 1963.....	-	-	-285	4,420	89	1,115	5,339	602	4,737
Jan. 31.....	1,382.07	8,538	+147	310	7	26	490	97	393
Feb. 29.....	1,381.17	8,297	-241	296	4	50	109	1	108
Mar. 31.....	1,380.50	8,123	-174	373	0	59	258	75	183
Apr. 30.....	1,383.89	9,047	+924	288	2	59	1,273	50	1,223
May 31.....	1,383.23	8,859	-188	243	0	112	167	3	164
June 30.....	1,381.80	8,466	-393	262	8	142	19	0	19
July 31.....	1,379.94	7,979	-487	321	8	164	6	0	6
Aug. 31.....	1,378.63	7,654	-325	162	4	139	-20	0	-20
Sept. 30.....	1,376.77	7,216	-438	323	5	95	-15	0	-15
Water year 1963-64.....	-	-	-2,363	3,708	53	973	2,371	321	2,050

† Elevation at 1800 hours.

Note.--For months when inflow to the reservoir was small and other quantities were large, discordant figures of net inflow may appear. This arises primarily from the difficulty of computing net inflow as the residual of several larger quantities, which are not susceptible to measurement with a precision necessary to produce a final answer within desirable limits of accuracy.

11-1230. Santa Ynez River below Gibraltar Dam, near Santa Barbara, Calif.

Location.--Lat 34°31'28", long 119°41'11", in southwest portion of Los Padres National Forest, on left bank 700 ft downstream from Gibraltar Dam, and 7 miles north of Santa Barbara, Santa Barbara County.

Drainage area.--216 sq mi.

Records available.--April 1920 to September 1964 (monthly discharge only prior to October 1941).

Gage.--Water-stage recorder; water-stage recorder and combination sharp-crested weir on "Release to river gage." Altitude of gage is 1,250 ft (from topographic map). Water-stage recorder on Gibraltar Reservoir used as supplementary gage. Prior to Apr. 17, 1952, water-stage recorder on Gibraltar Reservoir used as principal gage. Apr. 17 to Oct. 15, 1952, staff gage and Oct. 16, 1952, to May 20, 1958, water-stage recorder, at same site at datum 5.00 ft higher.

Extremes.--Maximum discharge during year, 6.8 cfs Apr. 1 (gage height, 4.77 ft); no flow Feb. 23 to Mar. 30, Apr. 2 to June 19, 1920-64: Maximum discharge, 35,500 cfs Mar. 2, 1938, computed from spillway rating; no flow at times in most years.

Remarks.--Records good. Flow regulated by Jameson Lake and Gibraltar Reservoir (see pp. 233, 234). City of Santa Barbara diverted 3,710 acre-ft during the water year from Gibraltar Reservoir; Montecito County Water District diverted 1,800 acre-ft during the water year from Jameson Lake.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	* 0.07	0.08	0.09	0.10	0.08	0	0.9		0	0.39	0.07	0.07
2	.07	.09	.09	* .10	.08	* 0	0		0	.39	.07	.07
3	.07	.09	.09	.10	.09	0	0		0	.39	.07	.07
4	.07	.09	.09	.10	.09	0	0		0	.39	.07	.07
5	.07	.09	.09	.10	.09	0	0		0	.39	.07	.08
6	.07	.09	* .09	.11	.09	0	0		0	.19	.07	.08
7	.07	.09	.08	.13	.09	0	0		0	.10	.07	.08
8	.07	.08	.08	.10	.09	0	0		0	.10	.07	.07
9	.07	.08	.08	.10	.09	0	0		0	.09	.07	.08
10	.07	.08	.08	.10	.10	0	0		0	.09	.07	.08
11	.07	.08	.08	.10	.10	0	0		0	.09	.07	.08
12	.07	.08	.08	.10	.10	0	0		0	.09	.07	.08
13	.07	.08	.08	.10	.10	0	0		0	.09	.07	.08
14	.07	.08	.08	.10	.10	0	0		0	.09	.07	.08
15	.07	.08	.08	.10	.10	0	0		0	.09	.07	.08
16	.07	.08	.08	.10	.10	0	0		0	.09	.07	.08
17	.07	.08	.09	.10	.10	0	0		0	.09	.07	.08
18	.07	.08	.10	.10	.10	0	0		0	.07	.07	.08
19	.07	.09	.10	.10	.10	0	0		0	.07	.07	.08
20	.07	.09	.10	.10	.10	0	0		.27	.07	.07	.07
21	.08	.09	.10	.3	.10	0	0		.37	.07	.07	.07
22	.08	.09	.10	.5	.06	0	0		* .35	.07	.07	.07
23	.08	.09	.09	.09	0	0	0		.37	.07	.07	.08
24	.08	.09	.09	.09	0	0	0		.39	.07	.07	.08
25	.08	.09	.10	.08	0	0	0		.37	.07	.07	.08
26	.08	.11	.09	.08	0	* 0	0	(*)	.39	.07	*.07	.08
27	.08	.10	.09	.09	0	0	0		.39	.07	.09	.08
28	* .08	.08	.09	* .09	0	0	* 0		.39	.07	.09	.08
29	.08	.08	.09	.09	0	0	0		.37	* .07	.07	.08
30	.07	.09	.09	.09	-----	0	0		.35	.07	.07	.08
31	.07	-----	.09	.08	-----	.1	-----		-----	.07	.07	-----
Total	2.26	2.59	2.75	3.62	2.05	0.1	0.9	0	4.01	4.13	2.21	2.32
Mean	0.073	0.086	0.089	0.117	0.071	0.003	0.03	0	0.134	0.133	0.071	0.077
Max	0.08	0.11	0.10	0.5	0.10	0.1	0.9	0	0.39	0.39	0.09	0.08
Min	0.07	0.08	0.08	0.08	0	0	0	0	0	0.07	0.07	0.07
Ac-ft	4.5	5.1	5.5	7.2	4.1	0.2	1.8	0	8.0	8.2	4.4	4.6

Calendar year 1963: Max 1.7 Min 0 Mean 0.123 Ac-ft 89

Water year 1963-64: Max 0.9 Min 0 Mean 0.074 Ac-ft 54

* Discharge measurement or observation of no flow made on this day.

Note.--Discharge Oct. 1 to Jan. 20, Jan. 23 to Feb. 22, June 20 to Sept. 30 obtained from unpublished records for supplementary gage on outlet channel below dam.

SANTA YNEZ RIVER BASIN

11-1235. Santa Ynez River below Los Laureles Canyon, near Santa Ynez, Calif.

Location.--Lat 34°32'37", long 119°51'50", in San Marcos Grant, on left bank 0.3 mile downstream from Los Laureles Canyon Creek and 13.3 miles east of Santa Ynez, Santa Barbara County.

Drainage area.--277 sq mi.

Records available.--April 1947 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 787.8 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 250 cfs Jan. 21 (gage height, 5.92 ft); no flow for several months.

1947-64: Maximum discharge, 33,000 cfs Jan. 15, 1952 (gage height, 15.6 ft), from rating curve extended above 6,400 cfs on basis of slope-area measurement of maximum flow for station below Gibraltar Dam; no flow for several months in each year.

Remarks.--Records good. Flow regulated by Jameson Lake and Gibraltar Reservoir (see pp. 233, 234). Water diverted out of basin from these reservoirs to cities of Montecito and Santa Barbara for municipal supply. Flow affected by intermittent pumping for irrigation and from infiltration gallery in river bed at station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 2, 25-27)

4.6	0
4.7	.6
4.8	2.6
4.9	6.5
5.0	13
5.2	35

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	(*)	0		0	0.2	0	24	0.2				
2		0		* 0	.2	* 0	1.4	.2				
3		0		0	.2	0	.6	.2				
4		0		0	.2	0	.4	.2				
5		0		0	.2	0	.3	.2				
6		0	(*)	0	.2	0	.2	.2				
7		0		0	.2	0	.2	.1				
8		0		0	.2	0	.2	.1				
9		0		0	.2	0	.2	0				
10		0		0	.2	0	.2	0				
11		0		0	*.2	0	.1	*.1				
12		0		0	.2	0	.1	.1				
13		0		0	.2	0	.1	0				
14		0		0	.2	0	.1	0				
15		0		0	.2	0	.1	0				
16		0		0	.2	0	*.2	0				
17		0		0	.1	0	.2	0				
18		0		0	.1	0	.2	0				
19		6.0		0	.1	0	.2	.1				
20		19		0	.1	0	.2	.1				
21		.2		* 23	.1	0	.2	.1				
22		0		6.8	.1	6.1	.2	.1	(*)	(*)		
23		0		1.6	.1	1.6	.2	.1				
24		0		.8	.1	.3	.2	.1				
25		0		.6	.1	.1	.2	.1				
26		0		.5	.1	* 0	.2	*.1				
27		0		.3	0	0	.2	0				
28	(*)	0		*.3	0	0	*.3	0				
29		0		.3	0	0	.2	0				
30		0		.3	-----	0	.2	0				
31		-----		.3	-----	4.1	-----	0	-----			-----
Total	0	25.2	0	34.8	4.2	12.2	31.3	2.4	0	0	0	0
Mean	0	0.84	0	1.12	0.14	0.39	1.04	0.08	0	0	0	0
Max	0	19	0	23	0.2	6.1	24	0.2	0	0	0	0
Min	0	0	0	0	0	0	0.1	0	0	0	0	0
Ac-ft	0	50	0	69	8.3	24	62	4.8	0	0	0	0
Calendar year 1963:	Max	64	Min	0	Mean	1.55	Ac-ft	1,120				
Water year 1963-64:	Max	24	Min	0	Mean	0.30	Ac-ft	218				

* Discharge measurement on observation of no flow made on this day.

11-1245. Santa Cruz Creek near Santa Ynez, Calif.

Location.--Lat 34°35'48", long 119°54'28", in San Marcos Grant, on right bank 0.6 mile downstream from Pine Canyon and 9.9 miles east of Santa Ynez, Santa Barbara County.

Drainage area.--73.9 sq mi.

Records available.--October 1941 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 786.63 ft above mean sea level (levels by Bureau of Reclamation). Prior to Jan. 22, 1943, at site 1.9 miles downstream at different datum (destroyed by flood). Jan. 22, 1943, to Sept. 26, 1952, at site 1.7 miles downstream at different datum.

Average discharge.--23 years, 12.4 cfs (8,980 acre-ft per year); median of yearly mean discharges, 5.5 cfs (4,000 acre-ft per year).

Extremes.--Maximum discharge during year, 145 cfs Apr. 1 (gage height, 4.50 ft); no flow Oct. 1 to Nov. 19, Nov. 23 to Jan. 20, June 18 to Sept. 30.
1941-64: Maximum discharge, 4,520 cfs Feb. 9, 1962 (gage height, 9.75 ft), from rating curve extended above 2,100 cfs; no flow at times since 1953.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.7	0	3.2	7.8
2.8	.2	3.3	12
2.9	1.0	3.5	22
3.0	2.5	3.7	37
3.1	4.7	4.0	67

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	(*)	0		0	0.9	0.9	67	1.9	0.1			(*)
2		0		* 0	.9	* 1.1	26	1.6	.1			
3		0		0	.8	1.1	11	1.5	.1			
4		0		0	.8	1.1	7.1	1.9	.1			
5		0		0	.7	1.0	5.8	2.5	.1			
6		0	(*)	0	.7	1.0	5.2	2.7	.1			
7		0		0	.7	1.0	4.4	2.5	.1			
8		0		0	.7	1.0	3.7	2.2	.1			
9		0		0	.5	1.0	3.3	1.6	.1			
10		0		0	.5	1.0	3.1	1.4	.1			
11		0		0	.5	1.0	2.9	* 1.1	* .1			
12		0		0	.5	1.1	2.7	.9	.1			
13		0		0	.5	1.5	2.2	.9	.1			
14		0		0	.5	1.5	2.0	.8	.1	(*)		
15		0		0	.7	1.2	1.9	.8	.1			
16		0		0	.7	* 1.0	* 1.9	.7	.1			
17		0		0	.7	.9	1.9	.6	.1			
18		0		0	.7	.9	2.0	.6	0			
19		0		0	.7	.8	2.2	.5	0			
20		8.7		0	.6	.8	2.2	.5	0			
21		3.2		3.1	.6	.8	2.2	.4	0			
22		.2		13	.6	1.5	2.0	.3	* 0	(*)		
23		0		7.8	.6	5.6	2.0	.3	0			
24		0		4.2	.6	4.7	2.0	.3	0			
25		0		2.9	.6	3.3	1.9	.2	0			
26		0		2.5	.7	* 2.7	1.9	* .2	0			
27		0		2.2	.8	2.3	1.9	.2	0			
28	(*)	0		* 1.9	.8	2.3	* 1.9	.1	0			
29		0		1.5	.9	2.5	2.0	.1	0			
30		0		1.4	-----	2.2	2.0	.1	0			
31		-----		1.2	-----	2.9	-----	.1	-----			
Total	0	12.1	0	41.7	19.5	51.7	178.3	29.5	1.7	0	0	0
Mean	0	0.40	0	1.35	0.67	1.67	5.94	0.95	0.06	0	0	0
Max	0	8.7	0	13	0.9	5.6	67	2.7	0.1	0	0	0
Min	0	0	0	0	0.5	0.8	1.9	0.1	0	0	0	0
Ac-ft	0	24	0	83	39	103	354	59	3.4	0	0	0

Calendar year 1963: Max 223 Min 0 Mean 3.14 Ac-ft 2,470
Water year 1963-64: Max 67 Min 0 Mean 0.91 Ac-ft 665

Peak discharge (base, 100 cfs).--Apr. 1 (0800 hrs) 145 cfs (4.50 ft).

* Discharge measurement or observation of no flow made on this day.

SANTA YNEZ RIVER BASIN

11-1255. Lake Cachuma near Santa Ynez, Calif.

Location.--Lat 34°34'57", long 119°58'47", at Cachuma Dam on Santa Ynez River, in Lomas de la Purification Grant, on upstream face near left end of dam, 6.1 miles east of Santa Ynez, Santa Barbara County.

Drainage area.--417 sq mi.

Records available.--November 1952 to September 1964. Prior to October 1960, published as Cachuma Reservoir near Santa Ynez.

Gage.--Staff gage read once daily. Datum of gage is at mean sea level, datum of 1929 (Bureau of Reclamation bench mark).

Extremes.--Maximum contents during year, 171,654 acre-ft Oct. 1 (elevation, 738.58 ft); minimum, 141,506 acre-ft Sept. 30 (elevation, 726.93 ft).
1952-64: Maximum contents, 206,863 acre-ft Apr. 17, 1958 (elevation, 750.64 ft); minimum, since initial filling in April, 1958, 129,268 acre-ft Feb. 6, 1962 (elevation, 721.75 ft).

Remarks.--Reservoir is formed by earth-fill dam. Storage began November 1952. Capacity table is based on surveys made in January 1953. Dead storage below outlet gate to river (elevation, 600 ft), 3,114 acre-ft, included in contents. Capacity below sill of inlet to Tecolote Tunnel (elevation, 660 ft), 32,514 acre-ft; below spillway level (elevation, 720 ft), 125,292 acre-ft; below top of 4 radial gates (elevation, 750 ft), 204,874 acre-ft. Water is released from outlet to Santa Ynez River to satisfy downstream water rights, and from the inlet to Tecolote Tunnel for use by city of Santa Barbara and nearby communities.

Cooperation.--Reservoir elevations and releases through Tecolote Tunnel furnished by Bureau of Reclamation.

Month-end elevation and contents, water year October 1963 to September 1964

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents (acre-feet)	Diversion through Tecolote tunnel (acre-feet)‡
Sept. 30.....	738.61	171,736	-	-
Oct. 31.....	737.98	170,011	-1,725	711
Nov. 30.....	737.83	169,604	-407	349
Dec. 31.....	737.45	168,574	-1,030	344
Calendar year 1963.....	-	-	-16,816	10,127
Jan. 31.....	737.09	167,597	-977	967
Feb. 29.....	736.52	166,063	-1,534	759
Mar. 31.....	735.82	164,186	-1,877	1,358
Apr. 30.....	735.08	162,217	-1,969	1,092
May 31.....	733.73	158,666	-3,551	2,108
June 30.....	732.37	155,137	-3,529	1,841
July 31.....	730.41	150,135	-5,002	2,693
Aug. 31.....	728.45	145,237	-4,898	2,787
Sept. 30.....	726.93	141,506	-3,731	2,344
Water year 1963-64.....	-	-	-30,230	17,353

† Elevation at 0845 hours.

‡ Tecolote Tunnel diverts water out of Santa Ynez River basin to Santa Barbara and nearby communities for municipal use and irrigation.

11-1260. Santa Ynez River near Santa Ynez, Calif.

Location.--Lat 34°35'30", long 119°59'45", on boundary between Canada de los Pinos and Lomas de la Purification Grants on right bank, 1.1 miles downstream from Cachuma Dam, and 5 miles southeast of Santa Ynez, Santa Barbara County.

Drainage area.--422 sq mi.

Records available.--December 1928 to September 1931, October 1932 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 552.9 ft, datum of 1929. Prior to Oct. 1, 1955, at site 2.1 miles downstream at different datum.

Extremes.--Maximum discharge during year, 33 cfs Feb. 20; maximum gage height, 1.75 ft Apr. 23; no flow for many days.

1928-31, 1932-64: Maximum discharge, 43,700 cfs Mar. 2, 1938 (gage height, 17.90 ft, site and datum then in use), from rating curve extended above float measurement of 34,100 cfs; no flow at times in some years.

Remarks.--Records good. Flow regulated by Jameson Lake since December 1930, Gibraltar Reservoir, and Lake Cachuma since November 1952 (see pp. 233, 234, 238). Water diverted out of basin from Jameson Lake, Gibraltar Reservoir, and Lake Cachuma to cities of Montecito, Santa Barbara, and to the Santa Ynez valley for municipal supply. Some water pumped from wells along river banks for irrigation.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0			0	1.6	0	8.0	0	0.8	10	0	(*)
2	*0			0	1.6	*.3	5.9	0	3.5	*7.1	0	
3	0			0	11	12	*5.9	0	4.2	4.4	0	
4	0	(*)		0	1.6	14	5.9	0	4.4	15	0	
5	0			0	.6	9.5	5.9	*0	4.7	16	.1	
6	0		(*)	0	.1	.3	9.7	0	4.7	12	1.1	
7	.5			*0	0	0	21	.2	5.0	2.2	1.9	
8	0			0	.9	0	21	2.7	8.6	1.1	2.0	
9	0			0	4.0	0	21	4.4	15	.6	2.2	
10	0			0	4.4	0	*21	3.0	15	.4	2.8	
11	0			0	*2.2	0	21	*3.0	*15	.2	2.8	
12	0			0	.7	0	22	3.5	16	.1	3.0	
13	0			0	.2	0	17	4.2	16	.1	3.2	
14	0			0	.1	0	9.2	4.2	16	0	3.7	
15	0			0	.2	0	*7.6	3.0	11	*1.2	3.7	
16	0			0	.2	0	7.2	1.0	1.2	3.2	3.7	
17	0			0	.2	0	6.8	.8	.4	4.0	3.5	
18	0			0	.2	.9	7.2	5.7	2.9	4.7	.3	
19	0			0	11	1.8	7.2	11	16	5.0	0	
20	0			0	18	2.2	15	11	17	5.9	0	
21	0			0	1.6	3.0	27	12	18	6.2	0	
22	0			0	.8	4.0	28	12	13	6.5	0	
23	0			0	.6	4.0	26	12	3.2	6.5	0	
24	0			0	.4	1.5	26	12	2.8	6.5	0	
25	0			0	.4	1.0	26	12	2.2	6.5	0	
26	0			0	.4	1.0	26	12	.8	7.2	0	
27	0			0	.1	.5	17	*12	1.9	5.7	0	
28	0			2.0	0	0	2.0	8.5	1.9	.9	0	
29	0			8.4	0	0	.6	1.3	1.1	0	0	
30	0			12	-----	0	.1	.6	9.2	*0	0	
31	0			*15	-----	3.4	-----	.8	-----	0	0	
Total	0.5	0	0	37.4	91.9	59.4	424.2	152.9	231.5	139.2	34.0	0
Mean	0.02	0	0	1.21	3.17	1.92	14.1	4.93	7.72	4.49	1.10	0
Max	0.5	0	0	15	18	14	28	12	18	16	3.7	0
Min	0	0	0	0	0	0	0.1	0	0.4	0	0	0
Ac-ft	1.0	0	0	74	182	118	841	303	499	276	67	0
Calendar year 1963:	Max 50		Min 0		Mean 2.00		Ac-ft 1,450					
Water year 1963-64:	Max 28		Min 0		Mean 3.20		Ac-ft 2,320					

* Discharge measurement or observation of no flow made on this day.

SANTA YNEZ RIVER BASIN

11-1265. Santa Agueda Creek near Santa Ynez, Calif.

Location.--Lat 34°35'40", long 120°01'30", in Canada de los Pinos Grant, on left downstream wingwall of highway bridge, 0.8 mile upstream from mouth, and 3.5 miles southeast of Santa Ynez, Santa Barbara County.

Drainage area.--55.8 sq mi.

Records available.--October 1940 to September 1964. Monthly discharge only for January 1941 and yearly estimate for water year 1941 (incomplete) published in WSP 1315-B.

Gage.--Water-stage recorder. Altitude of gage is 520 ft (from topographic map). Prior to Oct. 1, 1955, at datum 1.00 ft higher.

Average discharge.--24 years, 3.37 cfs (2,440 acre-ft per year); median of yearly mean discharges, 0.6 cfs (430 acre-ft per year).

Extremes.--No flow during year.

1940-64: Maximum discharge, 5,760 cfs Feb. 19, 1958 (gage height, 6.14 ft). from rating curve extended above 2,000 cfs; no flow at times in most years.

Remarks.--No flow since Apr. 26, 1963. No regulation above station. Small diversions for irrigation above station.

11-1280. Santa Ynez River at Grand Avenue, near Santa Ynez, Calif.

Location.--Lat 34°35'06", long 120°06'00", in Canada de los Pinos Grant, on downstream side of first pier from right bank of highway bridge, 0.2 mile downstream from Zanja de Cota Creek, and 2.2 miles southwest of Santa Ynez, Santa Barbara County.

Drainage area.--513 sq mi.

Records available.--October 1954 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 420 ft (from topographic map).

Extremes.--Maximum discharge during year, 25 cfs Jan. 20 (gage height, 2.45 ft); no flow for many days.

1954-64: Maximum discharge, about 6,000 cfs Mar. 21, 1958; no flow at times in most years.

Remarks.--Records fair. Flow regulated by Jameson Lake, Gibraltar Reservoir and Lake Cachuma (see pp. 233, 234, 238). Water diverted out of basin from Jameson Lake, Gibraltar Reservoir, and Lake Cachuma to cities of Montecito, Santa Barbara and Goleta for municipal supply. Some water for irrigation pumped from wells along banks of river in valley upstream.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	1.0	2.0	1.8	2.8	3.1	*3.0	1.2	1.2	0.7	0.1	(*)
2	*0	1.8	2.0	1.8	2.8	*3.1	1.5	1.2	.1	*.7	.1	
3	0	1.8	2.0	2.0	2.5	2.5	2.0	2.5	.3	.8	.2	
4	0	*1.8	2.0	2.0	2.5	1.8	1.8	2.8	.3	1.0	.1	
5	.1	1.0	2.0	2.0	2.5	1.5	1.5	2.5	.1	1.3	0	
6	.2	1.2	*2.0	2.0	2.5	.7	1.5	3.0	.3	4.9	0	
7	.2	1.2	2.0	*2.2	2.2	.7	1.2	3.0	.6	2.0	0	
8	.3	2.0	2.0	2.2	2.2	.7	1.5	3.0	.3	1.2	0	
9	.3	2.2	2.0	2.2	2.0	.7	1.2	3.0	.1	1.2	0	
10	.3	2.0	2.0	2.5	*2.0	.6	1.5	3.0	.1	1.0	0	
11	.3	1.8	2.0	2.5	2.2	.6	2.2	2.8	.2	1.0	0	
12	.3	1.8	1.8	2.5	2.2	.3	3.0	*3.0	.4	1.0	0	
13	.3	*1.5	1.8	2.5	2.2	.2	5.3	3.4	.8	1.0	0	
14	*.3	1.2	1.8	2.5	2.8	.1	4.5	3.0	1.8	1.0	0	
15	.3	1.2	1.8	2.5	3.1	0	*3.4	4.1	*3.4	*.7	0	
16	.6	1.0	1.8	*2.5	2.8	*.1	2.8	5.3	2.8	*.7	0	
17	.4	1.0	1.3	2.5	2.8	.2	2.8	4.9	.7	.6	0	
18	.4	.8	*1.0	2.5	2.8	.3	3.0	3.7	.2	.6	0	
19	.4	1.0	1.2	2.5	2.8	.3	3.7	2.5	0	1.8	0	
20	.4	2.2	1.2	3.4	3.1	.3	3.7	1.2	0	2.5	0	
21	.4	2.2	1.2	8.2	3.1	.2	11	.4	0	2.2	0	
22	.3	2.0	1.2	6.1	2.8	.2	18	.3	3.7	1.0	0	
23	.4	2.0	1.2	3.7	3.1	.6	18	.1	4.5	1.3	0	
24	.6	2.0	1.2	3.1	3.1	1.2	16	.7	1.3	1.0	0	
25	.6	2.0	1.2	3.1	2.8	1.5	17	.8	.3	.3	0	
26	.6	2.0	1.3	3.4	2.5	1.2	19	.8	.1	1.0	0	
27	1.0	2.0	1.5	3.1	2.2	1.2	22	*1.8	0	.3	0	
28	1.0	2.0	2.0	3.1	2.8	1.0	*8.6	2.0	.6	.3	0	
29	.8	2.0	1.8	3.1	2.8	1.0	3.4	1.8	1.3	.3	0	
30	.8	2.0	1.8	3.1	-----	.8	1.5	2.5	.3	*.3	0	
31	.7	-----	1.8	*2.8	-----	.6	-----	3.0	-----	.2	0	-----
Total	12.5	49.7	51.9	89.4	76.0	27.3	185.6	73.3	25.8	33.9	0.5	0
Mean	0.40	1.66	1.67	2.88	2.62	0.88	6.19	2.36	0.86	1.09	0.02	0
Max	1.0	2.2	2.0	8.2	3.1	3.1	22	5.3	4.5	4.9	0.2	0
Min	0	0.8	1.0	1.8	2.0	0	1.2	0.1	0	0.2	0	0
Ac-ft	25	99	103	177	151	54	368	145	51	67	1.0	0

Calendar year 1963: Max 27 Min 0 Mean 2.81 Ac-ft 2,030
 Water year 1963-64: Max 22 Min 0 Mean 1.71 Ac-ft 1,240

* Discharge measurement or observation of no flow made on this day.

SANTA YNEZ RIVER BASIN

241

11-1284. Alisal Creek near Solvang, Calif.

Location.--Lat 34°34'55", long 120°08'40", in Nojoqui Grant, on right bank at footbridge, 0.3 mile upstream from mouth, and 1.1 miles southwest of Solvang, Santa Barbara County.

Drainage area.--11.5 sq mi.

Records available.--October 1954 to September 1955, October 1955 to September 1956 (monthly discharge only), October 1956 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 380 ft (from topographic map). Prior to Dec. 25, 1955, at site 50 ft upstream at different datum (destroyed by flood). Oct. 1, 1956, to Jan. 23, 1961, at datum 1.0 ft higher.

Average discharge.--10 years, 5.30 cfs (3,840 acre-ft per year); median of yearly mean discharges, 1.9 cfs (1,400 acre-ft per year).

Extremes.--Maximum discharge during year, 152 cfs Nov. 19 (gage height, 3.23 ft); no flow for most of year.

1954-64: Maximum discharge, 2,960 cfs Feb. 9, 1962 (gage height, 8.15 ft), from rating curve extended above 1,000 cfs; no flow for several months in each year.

Remarks.--Records good. No regulation or diversion above station. At times waste irrigation water pumped from Santa Ynez River causes minor flow.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0		0	0	0	*1.0	0				
2	(*)	0		0	0	*0	*1.6	0				
3		0		0	0	0	1.1	0				
4		*0		0	0	0	*.9	.1				
5		0		0	0	0	.6	0				
6		0	(*)	0	0	0	.8	0				
7		0		*0	0	0	.5	0				
8		0		0	0	0	.4	0				
9		0		0	0	0	.4	0				
10		0		0	0	0	.4	0				
11		0		0	0	0	.3	*0				
12		0		0	0	0	.3	0				
13		0		0	0	0	.2	0				
14		0		0	0	0	.2	0				
15		0		0	0	0	*.2	0				
16		0		0	0	0	.1	0				
17		0		0	0	0	.1	0				
18		0		0	0	0	.1	0				
19		4.2		0	0	0	.1	0				
20		*12		.6	0	0	.1	0				
21		0		*12	0	0	.1	0				
22		0		2.1	0	0	.1	0				
23		0		0	0	0	.1	0				
24		0		0	0	0	.1	0				
25		0		0	0	0	.1	0				
26		0		0	0	0	.1	*0				
27		0		0	.1	0	.1	0				
28		0		0	0	0	.1	0				
29		0		0	0	0	*.1	0				
30		0		0	0	0	.1	0				
31		-----		*0	-----	0	-----	0	(*)	(*)	(*)	-----
Total	0	16.2	0	14.7	0.1	0.5	19.4	0.1	0	0	0	0
Mean	0	0.54	0	0.47	0.003	0.02	0.65	0.003	0	0	0	0
Max	0	12	0	12	0.1	0.5	10	0.1	0	0	0	0
Min	0	0	0	0	0	0	0.1	0	0	0	0	0
Ac-ft	0	32	0	29	0.2	1.0	38	0.2	0	0	0	0

Calendar year 1963: Max 135 Min 0 Mean 2.24 Ac-ft 1,620

Water year 1963-64: Max 12 Min 0 Mean 0.14 Ac-ft 100

Peak discharge (base, 100 cfs).--Nov. 19 (2400 hrs) 152 cfs (3.23 ft).

* Discharge measurement or observation of no flow made on this day.

SANTA YNEZ RIVER BASIN

11-1285. Santa Ynez River at Solvang, Calif.

Location.--Lat 34°35'05", long 120°08'35", in San Carlos de Jonata Grant, on downstream side of right abutment of Mission Bridge, 25 ft downstream from Alisal Creek, and 0.9 mile south of Solvang, Santa Barbara County.

Drainage area.--579 sq mi.

Records available.--October 1928 to November 1936, June 1937 to November 1940 (irrigation seasons only), October 1946 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 350 ft (from topographic map). Various datums used during period of record. July 29 to Sept. 30, 1953, auxiliary water-stage recorder 750 ft upstream at different datum. Oct. 1, 1953, to Jan. 26, 1955, water-stage recorder on center bridge pier at same datum.

Extremes.--Maximum discharge during year, 150 cfs Nov. 20 (gage height, 5.08 ft); no flow for many months.

1928-36, 1946-64: Maximum discharge, 37,000 cfs Jan. 15, 1952 (gage height, 14.80 ft, datum then in use), from rating curve extended above 10,000 cfs; no flow for several months in many years.

Remarks.--Records good. Flow regulated by Jameson Lake, Gibraltar Reservoir, and since November 1952 by Lake Cachuma (see pp. 233, 234, 238). Water diverted out of basin from Jameson Lake, Gibraltar Reservoir, and Lake Cachuma to cities of Montecito, Santa Barbara, and Goleta for municipal supply. Some water for irrigation pumped from wells along banks of river in valley upstream.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0	2.8	2.9	2.9	* 1.4	3.1	0.8			
2	(*)	0	0	2.6	2.9	* 3.5	* 4.1	2.6	.6			
3		0	0	2.4	2.8	2.8	2.9	3.1	0			
4		* 0	0	2.6	2.6	2.4	2.6	4.1	0			
5		0	0	2.6	2.6	2.5	2.6	3.9	0			
6		0	* 0	2.8	2.4	2.0	2.3	3.9	0			
7		0	0	* 2.8	2.4	1.7	2.0	3.9	0			
8		0	0	2.4	2.4	1.5	1.8	3.5	0			
9		0	0	2.3	2.4	1.2	* 2.0	3.1	0			
10		0	0	2.2	* 2.4	1.2	2.2	3.7	0			
11		0	0	2.2	2.6	.7	2.3	* 3.5	0			
12		0	0	2.4	2.6	.6	2.4	2.6	0			
13		0	0	2.4	2.8	.4	3.3	2.6	0			
14		0	2.0	2.4	2.8	0	3.9	2.4	0			
15		0	2.4	2.4	3.3	0	* 3.3	2.0	0			
16		0	2.6	2.3	3.1	0	2.9	2.4	0			
17		0	1.8	* 2.2	2.9	0	2.4	2.9	0			
18		0	* 1.7	2.3	2.9	0	2.9	3.3	0			
19		.4	1.6	2.3	2.8	0	3.3	2.4	0			
20		* 1.6	1.8	4.4	2.8	0	3.1	1.6	0			
21		0	2.2	* 2.5	2.6	0	4.6	1.0	0			
22		0	2.3	* 1.1	2.6	.1	1.2	.3	0			
23		0	2.4	6.0	2.8	0	14	0	0			
24		0	2.6	4.6	2.8	0	14	0	0			
25		0	2.6	4.6	2.9	0	16	0	0			
26		0	2.6	4.6	2.8	0	18	* 0	0			
27		0	2.6	3.9	2.6	0	19	0	0			
28		0	2.6	3.9	2.6	0	12	0	0			
29		0	2.6	3.5	2.9	0	* 5.4	0	0			
30		0	2.6	3.5	-----	0	4.4	0	* 0	(*)	(*)	-----
31		-----	2.6	* 3.1	-----	1.1	-----	.2	-----	-----	-----	-----
Total	0	16.4	41.6	124.5	79.0	24.4	185.7	62.1	1.4	0	0	0
Mean	0	0.55	1.34	4.02	2.72	0.79	6.19	2.00	0.05	0	0	0
Max	0	16	2.6	25	3.3	3.5	19	4.1	0.8	0	0	0
Min	0	0	0	2.2	2.4	0	1.8	0	0	0	0	0
Ac-ft	0	33	83	247	157	48	368	123	2.8	0	0	0

Calendar year 1963: Max 199 Min 0 Mean 5.09 Ac-ft 3,680
 Water year 1963-64: Max 25 Min 0 Mean 1.46 Ac-ft 1,060

* Discharge measurement or observation of no flow made on this day.

11-1305. Santa Ynez River near Buellton, Calif.

Location.--Lat 34°36'50", long 120°14'30", in Santa Rosa Grant, on left bank 0.5 mile downstream from Canada de los Palos Blancos and 3 miles west of Buellton, Santa Barbara County.

Drainage area.--668 sq mi.

Records available.--June 1948 to September 1952 (irrigation seasons only); October 1952 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 250 ft (from topographic map). Prior to Apr. 25, 1950, at same site at different datum. Apr. 25, 1950, to Sept. 22, 1957, at site 200 ft upstream at datum 3 ft higher. Sept. 23, 1957, to Mar. 28, 1962, at site 200 ft upstream at datum 1 ft higher.

Extremes.--Maximum discharge during year, 5.9 cfs Mar. 31 (gage height, 2.17 ft); no flow Oct. 1 to Nov. 5, July 3, July 10 to Sept. 30, 1952-64: Maximum discharge, 10,600 cfs Mar. 22, 1958 (gage height, 11.10 ft, present datum), from rating curve extended above 400 cfs on basis of maximum flows for station at Buellton; no flow for many days in each year.

Remarks.--Records good. Flow regulated by Jameson Lake, Gibraltar Reservoir, and since November 1952 by Lake Cachuma (see pp. 233, 234, 238). Water diverted out of basin from Jameson Lake, Gibraltar Reservoir, and Lake Cachuma to cities of Montecito, Santa Barbara, and Goleta for municipal supply. Some water pumped from wells along banks of river for irrigation in valley upstream.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.8	1.2	1.8	1.0	4.0	1.4	0.5	0.2		
2	(*)	0	.8	1.2	1.9	1.2	*3.4	1.6	.3	*.2		
3		0	.8	1.2	1.8	1.4	3.8	1.8	.2	0		
4		0	.8	1.2	1.9	1.4	3.6	1.4	.3	.1		
5		0	*.8	1.2	1.9	1.4	3.4	1.5	.6	.3		
6		.1	.8	* 1.2	1.9	1.4	3.6	2.0	.6	.2		
7		.2	.8	1.4	1.9	1.2	3.6	1.8	.5	.1		
8		.2	.7	1.2	1.9	1.1	3.6	1.9	.4	.1		
9		.2	.8	.8	1.9	1.0	3.8	1.9	.5	.1		
10		.3	.8	.7	* 2.1	1.1	3.8	1.6	.6	0		
11		.4	.8	1.0	2.2	1.1	3.4	1.6	.5	0		
12		.4	.8	1.0	2.2	1.0	2.8	* 1.0	*.4	0		
13		*.6	.8	.9	2.4	1.0	2.0	1.2	.3	* 0		
14		.6	.8	1.1	2.6	1.2	2.0	1.5	.6	* 0		
15		.6	.9	1.0	2.8	1.6	*1.9	1.6	.8	0		
16		.7	1.0	* 1.1	2.8	* 1.4	1.9	1.2	.6	0		
17		.7	*1.0	1.1	2.6	1.4	1.6	.8	.5	0		
18		.8	1.0	1.5	2.8	1.2	1.4	.7	.5	0		
19		1.0	1.1	1.1	2.8	.7	1.4	.6	.6	0		
20		1.1	1.0	1.6	2.8	.4	.9	.4	.7	0		
21		*.8	1.0	2.1	2.6	.4	.9	.5	.7	0		
22		.7	1.0	2.1	2.6	.6	1.1	.6	.6	0		
23		.7	1.0	1.6	2.4	1.4	1.1	.7	.7	0		
24		.8	1.1	1.6	2.2	1.9	1.1	.9	.6	0		
25		.8	1.1	1.8	1.8	2.2	1.1	1.0	.3	0		
26		.8	1.2	1.9	1.4	2.6	1.1	*.7	.2	0		
27		.8	1.2	1.6	1.4	3.0	1.0	.6	.2	0		
28		.8	1.2	1.6	*1.5	2.8	.7	.6	.2	0		
29		.8	1.2	1.6	1.5	2.4	*.8	.4	.2	* 0		
30	(*)	.8	1.2	* 1.6	-----	1.9	1.2	.2	.2	0		
31		-----	1.2	1.8	-----	2.8	-----	.2	-----	0	(*)	-----
Total	0	15.7	29.5	42.0	62.4	45.2	56.0	33.9	13.9	1.3	0	0
Mean	0	0.52	0.95	1.35	2.15	1.46	2.20	1.09	0.46	0.04	0	0
Max	0	1.1	1.2	2.1	2.8	3.0	4.0	2.0	0.8	0.3	0	0
Min	0	0	0.7	0.7	1.4	0.4	0.7	0.2	0.2	0	0	0
Ac-ft	0	31	.59	.83	124	90	131	67	28	2.6	0	0

Calendar year 1963: Max 311 Min 0 Mean 7.14 Ac-ft 5,170

Water year 1963-64: Max 4.0 Min 0 Mean 0.85 Ac-ft 616

* Discharge measurement or observation of no flow made on this day.

SANTA YNEZ RIVER BASIN

11-1310. Santa Ynez River at Santa Rosa damsite, near Buellton, Calif.

Location.--Lat 34°36'35", long 120°18'20", in Santa Rosa Grant, on left bank 1.1 miles downstream from Santa Rosa Creek and 6½ miles west of Buellton, Santa Barbara County.

Drainage area.--700 sq mi.

Records available.--October 1954 to September 1964 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 200 ft (from topographic map). Prior to Oct. 1, 1957, at datum 2.00 ft higher.

Extremes.--Maximum discharge during year, 8.2 cfs Apr. 10 (gage height, 2.65 ft); no flow Oct. 1 to Nov. 5, May 30, 31, July 17 to Sept. 30.

1954-64: Maximum discharge, about 7,500 cfs Mar. 22, 1958 (gage height, 9.09 ft), from rating curve extended above 400 cfs on basis of maximum discharge for station at Buellton; no flow for several months in each year.

Remarks.--Records good. Flow regulated by Jameson Lake, Gibraltar Reservoir, and Lake Cachuma (see pp. 233, 234, 238). Water diverted out of basin from Jameson Lake, Gibraltar Reservoir, and Lake Cachuma to cities of Montecito, Santa Barbara, and Goleta for municipal supply. Water pumped from wells along banks of river for irrigation in valley upstream.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.1	0
2.2	.1
2.3	.8
2.4	2.4
2.5	4.8

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.8	0.6	0.9	0.3	1.9	0.6	0.1			
2	(*)	0	.8	.6	.9	.4	*1.9	.6	.1	(*)		
3		0	.8	.6	.8	.4	1.9	.6	.1			
4		0	.8	.7	.8	.2	2.2	.6	.1			
5		0	*1.1	.7	.8	.2	2.2	.7	.1			
6		.5	1.1	*.7	.8	.2	2.4	.8	.1			
7		.4	1.1	.7	.8	.2	2.4	.8	.1			
8		.3	1.1	.6	.8	.1	2.4	.8	.1			
9		.4	1.1	.5	.8	.1	2.6	.8	.1			
10		.5	1.1	.7	*.8	.1	4.0	.8	.1			
11		.5	.9	.6	.8	.1	4.2	.9	.1			
12		.6	.9	.6	.8	.2	3.2	*.9	*.1			
13		.7	.9	.6	.7	.3	2.8	.9	.1			
14		.7	.9	.7	.7	.3	2.1	.9	.1			
15		.7	.9	.7	.7	.3	*1.9	.8	.1			
16		.7	.9	*.7	.6	*.3	1.4	.7	.1			
17		.7	*.9	.8	.6	.2	1.2	.5	0			
18		.8	.9	.8	.6	.2	1.2	.4	0			
19		1.2	.9	.8	.6	.3	1.2	.3	0			
20		2.1	.8	.9	.6	.3	1.0	.3	0			
21		1.1	.8	2.3	.6	.3	.9	.2	0			
22		.8	.8	2.1	.6	.9	.9	.2	0			
23		.9	.8	1.4	.6	1.1	.9	.2	0			
24		.9	.8	1.1	.5	.8	.8	.2	0			
25		.8	.8	1.1	.4	.7	.7	.2	0			
26		.8	.8	1.2	.3	.6	.7	*.2	0			
27		.8	.7	1.1	.2	.6	.7	.1	0			
28		.8	.6	1.1	*.2	.6	.7	.1	0			
29		.8	.6	.9	.2	.6	.7	.1	0	(*)		
30	(*)	.8	.6	*.9	-----	.7	*.7	0	0			
31		-----	.6	.9	-----	1.1	-----	0	-----		(*)	-----
Total	0	19.3	26.6	27.7	18.5	12.7	51.8	15.2	1.6	0	0	0
Mean	0	0.64	0.86	0.89	0.64	0.41	1.73	0.49	0.05	0	0	0
Max	0	2.1	1.1	2.3	0.9	1.1	4.2	0.9	0.1	0	0	0
Min	0	0	0.6	0.5	0.2	0.1	0.7	0	0	0	0	0
Ac-ft	0	38	53	55	37	25	103	30	3.2	0	0	0

Calendar year 1963: Max 4.35 Min 0 Mean 7.82 Ac-ft 5,660
 Water year 1963-64: Max 4.2 Min 0 Mean 0.47 Ac-ft 344

* Discharge measurement or observation of no flow made on this day.

11-1315. Santa Ynez River at Cooper's Reef, near Lompoc, Calif.

Location.--Lat 34°36'48", long 120°21'20", near boundary of Canada de Salsipuedes Grant, on right bank 0.6 mile upstream from Canada de la Vina, and 6 miles east of Lompoc, Santa Barbara County.

Drainage area.--708 sq mi.

Records available.--October 1954 to September 1964.

Gage.--Water-stage recorder (digital). Altitude of gage is 200 ft (from topographic map).

Extremes.--Maximum discharge during year, 2.6 cfs June 17 (gage height, 1.86 ft); no flow for several months.

1954-64: Maximum discharge, 6,260 cfs Mar. 22, 1958 (gage height, 8.44 ft); maximum stage, 8.75 ft Feb. 11, 1962; no flow for several months in some years.

Remarks.--Records good. Discharge measurements or observations of no flow made bi-weekly. Flow regulated by Jameson Lake, Gibraltar Reservoir, and Lake Cachuma (see pp. 233, 234, 238). Water diverted out of basin from Jameson Lake, Gibraltar Reservoir, and Lake Cachuma to cities of Montecito, Santa Barbara, and Goleta for municipal supply. Water pumped from wells along banks of river for irrigation in valley upstream.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.1	0.1			
2	.2	.2	.2	.2	.3	.3	.2	.1	0			
3	.2	.2	.2	.2	.3	.3	.2	.1	0			
4	.2	.2	.2	.2	.3	.3	.2	.1	0			
5	.2	.2	.2	.2	.3	.3	.1	.1	0			
6	.2	.4	.2	.3	.3	.3	.1	.1	0			
7	.2	.2	.2	.3	.3	.4	.1	.1	.1			
8	.2	.2	.2	.3	.4	.4	.1	.1	0			
9	.2	.2	.3	.3	.3	.4	.1	.1	0			
10	.2	.2	.2	.3	.3	.4	.1	.1	0			
11	.2	.2	.2	.3	.3	.7	.1	.1	0			
12	.2	.2	.2	.3	.3	.3	.2	0	0			
13	.2	.2	.2	.3	.3	.3	.1	.1	0			
14	.2	.2	.2	.3	.3	.4	.2	.1	0			
15	.3	.3	.2	.3	.4	.4	.1	.1	0			
16	.3	.2	.2	.3	.4	.4	.1	.1	0			
17	.2	.2	.2	.3	.3	.3	.1	.1	.2			
18	.2	.2	.2	.3	.3	.3	.1	.1	0			
19	.2	.3	.2	.4	.3	.3	.1	.1	0			
20	.2	.4	.2	.3	.3	.3	.1	0	0			
21	.2	.3	.2	.4	.2	.2	.1	0	0			
22	.2	.3	.2	.3	.2	.4	.1	0	0			
23	.2	.3	.2	.3	.2	.4	.1	0	0			
24	.1	.3	.2	.2	.2	.3	.1	0	0			
25	.1	.2	.2	.3	.2	.2	.1	0	0			
26	.1	.2	.2	.3	.2	.2	.1	0	0			
27	.2	.2	.2	.3	.2	.2	.1	0	0			
28	.2	.2	.2	.3	.3	.1	.1	0	0			
29	.2	.2	.2	.3	.3	.1	.1	.5	0			
30	.2	.3	.2	.3	-----	.1	.1	.2	0			
31	.2	-----	.2	.3	-----	.3	-----	.1	-----			
TOTAL	6.1	7.1	6.4	8.9	8.3	9.6	3.7	2.6	0.3	0	0	0
MEAN	0.20	0.24	0.21	0.29	0.29	0.31	0.12	0.08	0.01	0	0	0
AC-FT	12	14	13	18	16	19	7.3	5.2	0.6	0	0	0
MAX	0.3	0.4	0.3	0.4	0.4	0.7	0.3	0.5	0.2	0	0	0
MIN	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0	0	0	0	0
CALENDAR YEAR 1963	MAX 372		MIN 0.1		MEAN 7.96		AC-FT 5,770					
WATER YEAR 1963-64	MAX 0.7		MIN 0		MEAN 0.14		AC-FT 105					

Note.--No gage-height record Dec. 22 to Jan. 6, Feb. 24-28.

SANTA YNEZ RIVER BASIN

11-1325. Salsipuedes Creek near Lompoc, Calif.

Location.--Lat 34°35'20", long 120°24'27", in W $\frac{1}{2}$ sec.24, T.6 N., R.34 W., on right bank at highway bridge on Jalama Road, 0.4 mile downstream from El Jaro Creek and 4.4 miles southeast of Lompoc.

Drainage area.--47.1 sq mi.

Records available.--January 1941 to September 1964.

Gage.--Water-stage recorder (digital) and concrete low-water control. Altitude of gage is 240 ft (from topographic map).

Average discharge.--23 years, 8.24 cfs (5,970 acre-ft per year); median of yearly mean discharges, 3.0 cfs (2,200 acre-ft per year).

Extremes.--Maximum discharge during year, 134 cfs Nov. 20 (gage height, 2.31 ft); no flow for some days.

1941-64: Maximum discharge, 11,400 cfs Mar. 15, 1952 (gage height, 20.8 ft); no flow at times in some years.

Remarks.--Records good. Discharge measurements or observations of no flow made twice a month. No regulation above station. Small diversions for irrigation above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.0	0
1.1	0.3
1.2	1.6
1.3	4.9
1.4	10
1.5	16
1.6	24

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.5	1.2	1.6	1.6	2.1	1.6	17	1.2	0.6	0.2	0.1	0.1
2	.6	1.2	1.7	1.4	1.6	2.0	3.5	1.1	.6	.2	.1	0
3	.7	1.2	1.7	1.6	1.5	1.9	2.4	.9	.6	.2	.1	0
4	.8	1.1	1.5	1.7	1.3	1.6	2.1	.9	.6	.2	.1	0
5	.8	1.3	1.6	1.9	1.5	1.6	2.0	.9	.5	.2	.1	0
6	.8	5.5	1.6	2.0	1.6	1.6	1.7	1.2	.5	.1	0	0
7	.8	2.1	1.7	2.1	1.6	1.6	1.6	1.0	.5	.1	0	0
8	.8	1.3	1.9	1.9	1.6	1.9	1.6	1.0	.5	.1	0	0
9	.8	1.1	2.5	1.9	1.6	1.8	1.7	.9	.5	.1	0	0
10	.8	1.0	2.5	2.0	1.6	1.8	1.9	.9	.5	.1	0	.1
11	.8	.8	2.1	2.1	1.8	1.9	1.9	.9	.5	.1	.1	.2
12	.9	.9	1.9	1.9	1.9	2.5	1.8	.9	.5	0	.1	.2
13	.6	1.1	1.9	1.9	1.7	2.3	1.9	.8	.4	0	.1	.2
14	.6	1.3	1.9	2.0	1.9	1.7	1.9	.9	.4	0	.1	.2
15	.8	2.8	1.9	1.8	1.6	1.5	1.9	.9	.4	0	.1	.2
16	2.0	2.2	1.9	1.7	2.0	1.2	1.9	.7	.4	0	.1	.2
17	1.6	1.6	1.9	1.9	1.8	1.2	2.0	.5	.4	0	.1	.2
18	1.2	1.6	2.0	1.9	1.6	1.3	1.9	.5	.4	0	.1	.2
19	1.0	5.3	2.0	1.8	1.6	1.2	2.0	.5	.4	0	.1	.1
20	.8	20	2.0	2.2	1.7	1.2	2.0	.7	.3	.1	.1	.1
21	.6	3.0	2.0	14	1.6	1.3	2.0	.6	.3	0	.1	.1
22	.6	2.4	2.1	5.8	1.7	4.7	1.9	.6	.3	0	.1	.1
23	.7	1.9	1.4	3.4	1.9	7.0	1.8	.6	.3	0	.1	.1
24	.8	2.0	1.0	2.4	1.6	3.2	1.7	.6	.2	.1	.1	0
25	1.2	1.9	1.2	2.4	1.6	2.6	1.6	.6	.2	.1	.1	0
26	1.3	1.8	1.4	2.7	1.5	2.1	1.6	.7	.2	.1	.1	.1
27	1.1	1.9	1.5	2.7	1.5	2.1	1.4	.6	.2	.1	.1	.1
28	1.2	1.9	1.4	2.4	1.6	2.1	1.5	.6	.2	.1	.1	.1
29	1.3	1.6	1.5	2.4	1.8	2.1	1.6	.6	.2	.1	.1	.1
30	1.1	1.6	1.6	2.4	-----	2.1	1.4	.6	.2	.1	.1	.1
31	1.3	-----	1.6	2.4	-----	4.9	-----	.6	-----	.1	.1	-----
TOTAL	28.9	74.6	54.5	80.3	48.4	67.6	71.2	24.0	11.8	2.5	2.6	2.8
MEAN	0.93	2.49	1.76	2.59	1.67	2.18	2.37	0.77	0.39	0.08	0.08	0.09
AC-FT	57	148	108	159	96	134	141	48	23	5.0	5.2	5.6
MAX	2.0	20	2.5	14	2.1	7.0	17	1.2	0.6	0.2	0.1	0.2
MIN	0.5	0.8	1.0	1.4	1.3	1.2	1.4	0.5	0.2	0	0	0

CALENDAR YEAR 1963 MAX 399 MIN 0.5 MEAN 7.50 AC-FT 5,430
 WATER YEAR 1963-64 MAX 20 MIN 0 MEAN 1.28 AC-FT 930

Peak discharge (base, 100 cfs).--Nov. 20 (0030 hrs) 134 cfs (2.31 ft).

11-1345. Santa Ynez River at 13th Street, near Lompoc, Calif.

Location.--Lat 34°40'06", long 120°28'29", in Lompoc Grant, on right bank at 13th Street crossing, 2.3 miles northwest of Lompoc, Santa Barbara County.

Drainage area.--820 sq mi.

Records available.--October 1954 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 60 ft (from topographic map). Prior to Nov. 27, 1956, at various sites within 300 ft at same datum. Prior to Oct. 1, 1962, at datum 1.00 ft higher.

Extrêmes.--No flow during year.

1954-64: Maximum discharge, 6,670 cfs Feb. 11, 1962 (gage height, 8.92 ft, present datum), from rating curve extended above 500 cfs on basis of measurements at station at H Street one mile upstream; no flow for several months in each year.

Remarks.--No flow since May 31, 1963. Flow regulated by Jameson Lake, Gibraltar Reservoir, and Lake Cachuma (see pp. 233, 234, 238). Water diverted out of basin from Jameson Lake, Gibraltar Reservoir, and Lake Cachuma to cities of Montecito, Santa Barbara, and Goleta for municipal supply. Water pumped from wells along bank of river for irrigation in valley upstream.

SANTA YNEZ RIVER BASIN

11-1355. Santa Ynez River at barrier, near Surf, Calif.

Location.--Lat 34°41'20", long 120°35'05", in Lompoc Grant, on upstream side at center of salt-water barrier, 1.0 mile upstream from mouth, and 1.2 miles east of Surf, Santa Barbara County.

Drainage area.--895 sq mi.

Records available.--October 1946, April 1947 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder and compound broad-crested weir. Datum of gage is 5.5 ft above mean sea level, datum of 1929.

Average discharge.--17 years (1947-64), 45.3 cfs (32,800 acre-ft per year); median of yearly mean discharges, 2.0 cfs (1,400 acre-ft per year).

Extremes.--Maximum discharge during year, 6.5 cfs Apr. 2 (gage height 1.13 ft); no flow for most of year.

1947-64: Maximum discharge, 36,000 cfs Jan. 16, 1952 (gage height, 6.50 ft, from rating curve extended above 200 cfs on basis of weir formula; no flow for several months in each year.

Remarks.--Records poor. Flow regulated by Jameson Lake, Gibraltar Reservoir, and since November 1952 by Lake Cachuma (see pp. 233, 234, 238). Water diverted out of basin from Jameson Lake, Gibraltar Reservoir, and Lake Cachuma to cities of Montecito, Santa Barbara, and Goleta for municipal supply. Some water pumped from wells along banks of river for irrigation in valley upstream. Flow from Arguello drainage ditch bypasses station; this flow amounted to 134 acre-ft during water year. Average discharge represents flow to the ocean, regardless of upstream development.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0			0		0	1.8	0.1	0	0	0.1	
2	0			0		0	3.9	.1	0	* 0	0	
3	0			0		0	1.5	0	.1	0	0	
4	* 0			0		0	.7	0	.5	0	0	
5	0		(*)	0		0	.6	.1	.1	0	0	
6	0			* 0		0	.5	0	.1	0	0	
7	0			0		0	.4	0	.1	0	0	
8	0			0		0	.3	0	.1	0	0	
9	0			0	(*)	0	.3	0	.1	0	0	
10	0			0		0	.4	0	.4	0	0	
11	0			0		0	.2	0	.5	0	0	
12	0			0		0	.2	* 0	*.2	0	0	
13	0			0		0	.2	.1	.2	0	0	
14	* 0			0		0	*.2	.1	.2	* 0	0	
15	0			0		0	.2	0	.2	0	0	
16	.1			* 0		* 0	.2	0	.3	0	0	
17	.2		(*)	0		0	.2	0	.4	.2	0	
18	.5			0		0	.2	0	.4	.3	0	
19	0			1		0	.2	0	.2	.3	0	
20	0			1		.1	.3	.1	.1	.2	0	
21	0			3		.1	.2	0	0	.2	0	
22	0			2		.3	.2	0	0	.1	0	
23	0			1		.7	.3	0	0	.1	0	
24	0			.5		.3	.2	.1	0	.2	0	
25	0			.5		.2	.2	0	0	.2	0	
26	0			0	(*)	.1	.2	* 0	0	.2	0	
27	0			0		.1	.1	0	0	.2	0	
28	0			0		.1	.1	0	0	.1	0	
29	0			* 0		.1	*.1	0	0	* 0	0	
30	* 0		(*)	0		*.3	.2	0	0	0	0	
31	0			0		.5	.5	0	0	.1	* 0	
Total	0.8	0	0	9.0	0	2.9	14.3	0.7	3.9	2.4	0.1	0
Mean	0.03	0	0	0.29	0	0.09	0.48	0.02	0.13	0.08	0.003	0
Max	0.5	0	0	3	0	0.7	3.9	0.1	0.5	0.3	0.1	0
Min	0	0	0	0	0	0	0.1	0	0	0	0	0
Ac-ft	1.6	0	0	18	0	5.8	28	1.4	7.7	4.8	0.2	0
(†)	17	12	12	15	14	18	12	12	8.9	4.0	3.2	6.0

Calendar year 1963: Max 480

Water year 1963-64: Max 3.9

Min 0

Mean 6.74

Min 0

Ac-ft 4,880

Ac-ft 68

* Discharge measurement or observation of no flow made on this day.

† Discharge, in acre-feet, from Arguello drainage ditch; this is not included in discharge that passes station.

Note.--Backwater from ocean lagoon Oct. 18-30, Dec. 28 to Jan. 31.

11-1361. San Antonio Creek near Casmalia, Calif.

Location--Lat 34°46'56", long 120°31'47", in Jesus Maria Grant, on Camp Cook Military Reservation on downstream side of left center pile bent of San Antonio Road bridge, 0.7 mile east of junction of San Antonio Road with Lompoc-Casmalia Road, and 3.8 miles south of Casmalia, Santa Barbara County.

Drainage area--135 sq mi.

Records available--October 1955 to September 1964.

Gage--Water-stage recorder (digital). Altitude of gage is 160 ft (from topographic map). Prior to June 27, 1958, at datum 2.00 ft higher.

Average discharge--9 years, 6.39 cfs (4,630 acre-ft per year).

Extremes--Maximum discharge during year, 326 cfs Nov. 20 (gage height, 6.73 ft); minimum daily, 0.4 cfs Aug. 23, 26, 29, Sept. 4. 1955-64: Maximum discharge, 1,300 cfs Feb. 19, 1962 (gage height, 9.35 ft); minimum daily, 0.1 cfs June 19, 20, 1957.

Remarks--Records good. No regulation above station. Discharge measurements made twice a month. Flow affected by pumping from wells along stream for irrigation above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.0	2.0	3.5	4.2	4.0	4.0	28	3.0	2.0	0.8	0.7	0.6
2	1.2	2.1	3.5	4.2	4.0	5.8	8.8	4.3	1.9	.9	.6	.7
3	1.6	2.5	3.5	4.0	3.9	5.0	5.4	5.2	1.8	.8	.6	.5
4	1.9	2.7	3.7	3.9	3.8	4.2	4.6	5.2	1.8	.8	.6	.4
5	2.5	2.8	3.8	3.9	3.8	4.1	4.2	3.7	1.7	.8	.7	.5
6	2.1	11	3.8	3.8	3.8	3.9	4.0	3.4	1.8	.8	.6	.6
7	1.8	6.6	3.8	4.1	3.8	3.8	3.8	3.5	1.7	.9	.6	.7
8	1.8	3.9	4.0	5.6	3.7	3.6	3.5	3.1	1.7	.9	.5	.6
9	1.9	2.9	5.0	4.4	3.7	3.5	3.5	2.8	1.8	.9	.5	.6
10	1.8	2.7	4.7	3.8	3.7	3.5	3.4	2.8	2.0	.6	.6	.6
11	2.8	2.6	3.9	3.9	3.8	3.4	3.4	2.9	1.7	.6	.5	.6
12	4.6	2.5	3.7	3.8	3.5	4.0	3.3	2.7	1.5	.5	.6	.7
13	2.4	2.8	3.8	3.9	3.4	4.3	3.2	2.6	1.4	.6	.6	.8
14	1.8	2.9	3.8	4.1	3.4	3.7	3.1	2.6	1.5	.6	.6	.7
15	1.8	6.9	3.8	4.0	3.5	3.4	2.9	2.7	1.3	.5	.6	.7
16	6.1	6.4	3.9	3.8	3.8	3.5	2.8	2.6	1.4	.6	.6	.5
17	4.1	3.8	3.9	4.0	3.5	3.4	2.8	2.7	1.2	.6	.6	.6
18	3.0	3.2	3.9	4.7	3.5	3.3	2.9	2.8	1.1	.6	.5	.8
19	2.0	3.3	3.9	4.6	3.6	3.2	3.0	2.6	1.1	.6	.5	.9
20	2.9	27	3.9	5.1	3.7	3.0	3.0	2.2	1.1	.6	.5	.7
21	2.4	6.9	3.7	13	3.4	3.1	3.0	1.8	1.1	.7	.5	.6
22	2.1	4.0	3.5	22	3.3	7.0	2.9	1.8	1.2	.6	.5	.6
23	2.2	4.0	3.5	9.1	3.4	12	3.1	1.9	.9	.6	.4	.6
24	2.3	4.0	3.4	5.9	3.4	8.6	2.9	2.0	.8	.7	.6	.5
25	2.0	3.9	3.7	4.9	3.6	6.3	2.8	1.9	.8	.7	.5	.5
26	2.0	3.7	3.8	4.9	3.6	4.8	2.7	2.0	.8	.7	.4	.5
27	2.0	3.7	3.8	4.6	3.5	4.1	2.9	2.0	1.2	.7	.5	.6
28	2.2	3.7	3.8	4.5	3.6	3.8	3.0	1.8	1.0	.7	.5	.6
29	2.2	3.7	4.2	4.4	4.1	3.8	3.3	1.9	.9	.7	.4	.7
30	2.5	3.5	4.2	4.2	-----	3.7	3.2	1.7	.8	.6	.5	.6
31	2.3	-----	4.1	4.1	-----	5.5	-----	1.8	-----	.6	.6	-----
TOTAL	73.3	141.7	119.5	165.4	105.8	139.3	129.4	84.0	41.0	21.3	17.0	18.6
MEAN	2.37	4.72	3.86	5.34	3.65	4.49	4.31	2.71	1.37	0.69	0.55	0.62
AC-FT	145	281	237	328	210	276	257	167	81	42	34	37
MAX	6.1	27	5.0	22	4.1	12	28	5.2	2.0	0.9	0.7	0.9
MIN	1.0	2.0	3.4	3.8	3.3	3.0	2.7	1.7	0.8	0.5	0.4	0.4

CALENDAR YEAR 1963 MAX 60 MIN 0.2 MEAN 3.75 AC-FT 2,710
 WATER YEAR 1963-64 MAX 28 MIN 0.4 MEAN 2.89 AC-FT 2,100

Peak discharge (base, 50 cfs)--Nov. 20 (0615 hrs) 326 cfs (6.73 ft).

SANTA MARIA RIVER BASIN

11-1366.5. Aliso Canyon Creek near New Cuyama, Calif.

Location.--Lat 34°59'00", long 119°46'30", in Cuyama Grant, at culvert on State Highway 166, 5.8 miles northwest of New Cuyama, Santa Barbara County.

Drainage area.--16.1 sq mi.

Records available.--Water year 1960-63 (annual maximum), October 1963 to September 1964.

Gage.--Water-stage recorder with rain-gage attachment and arch-culvert control. Altitude of gage is 1,880 ft (from topographic map). Sept. 30, 1959 to July 24, 1963, crest-stage gage at same site at different datum. July 25 to Nov. 5, 1963, crest-stage at same site and datum.

Extremes.--No flow during year.

1959-64: Maximum discharge, 78 cfs Feb. 10, 1962 (gage height, 3.00 ft, datum then in use), from computation of maximum flow through culvert; no flow for most of each year.

Remarks.--No flow since June 12, 1963. No regulation or diversion above station. Monthly precipitation, in inches, is as follows: November, 0.3; January, 0.6; February, 0.1; March, 0.5; May, 0.4; August, 0.2; the water year, incomplete.

11-1368. Cuyama River below Buckhorn Canyon, near Santa Maria, Calif.

Location.--Lat 35°01'20", long 120°13'10", in SW $\frac{1}{4}$ sec. 14, T.11 N., R.32 W., on downstream side of second pier from right abutment of bridge on State Highway 166, 0.7 mile downstream from Buckhorn Canyon and 13 miles northeast of Santa Maria.

Drainage area.--884 sq mi.

Records available.--October 1903 to December 1905 (published as Santa Maria River near Santa Maria), October 1959 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 760 ft (from topographic map). Prior to October 1959, at different site and datum.

Average discharge.--7 years, 20.7 cfs (14,990 acre-ft per year).

Extremes.--Maximum discharge during year, 1.1 cfs Jan. 21 (gage height, 3.14 ft); no flow for most of year.

1903-05, 1959-64: Maximum discharge observed, about 10,000 cfs Mar. 13, 1905 (gage height, 10.0 ft, site and datum then in use); no flow at times in most years.

Remarks.--Records good. No regulation above station. Pumping from wells along stream for irrigation in upper Cuyama Valley.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 20.....*0.1
Jan. 21......2
22......3

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	0.1	0.1	0	0.003	0.2
January 1964.....	.5	.3	0	.02	1.0
Calendar year 1963.....	-	5.9	0	.34	245
Water year 1963-64.....	-	.3	0	.002	1.2

* Discharge measurement made on this day.

Note.--Flow occurred only on days listed above.

11-1374. Alamo Creek near Nipomo, Calif.

Location.--Lat 35°02'55", long 120°18'05", in Huasna Grant, on right bank 3.2 miles upstream from mouth and 10 miles east of Nipomo, San Luis Obispo County.

Drainage area.--83.3 sq mi.

Records available.--March 1959 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 650 ft (from topographic map).

Average discharge.--5 years, 3.12 cfs (2,260 acre-ft per year).

Extremes.--No flow during year.

1959-64: Maximum discharge, 1,630 cfs Feb. 9 (gage height, 4.80 ft); no flow for all or part of each year.

Remarks.--No flow since May 12, 1962. No regulation or diversion above station.

11-1379. Huasna River near Arroyo Grande, Calif.

Location.--Lat 35°04'40", long 120°22'15", in Huasna Grant, on right bank 300 ft downstream from mouth of Huasna Creek and 12 miles southeast of Arroyo Grande, San Luis Obispo County.

Drainage area.--10⁴ sq mi.

Records available.--June 1959 to September 1964.

Gage.--Water-stage recorder and crest-stage gage. Altitude of gage is 640 ft (from topographic map).

Average discharge.--5 years, 6.89 cfs (4,990 acre-ft per year).

Extremes.--Maximum discharge during year, 5.3 cfs Mar. 22 (gage height, 3.10 ft); no flow Oct. 1-11, May 11 to Sept. 30.

1959-64: Maximum discharge, 2,100 cfs Feb. 10, 1962 (gage height, 6.90 ft, from crest-stage gage); no flow for many days in each year.

Remarks.--Records good. No regulation above station. Some diversions by pumping for irrigation above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.4	0.4	0.6	0.4	0.6	0.8	0.1				
2	0	.4	.4	.6	.4	.6	.3	.1				
3	0	.4	.4	.4	.4	.4	.3	.1				
4	0	.4	.4	.4	.4	.4	.3	.1				
5	0	.8	.6	.4	.4	.4	.3	.1				
6	0	1.0	.6	.6	.4	.4	.3	.1				
7	0	.6	.6	.6	.4	.4	.3	.1				
8	0	.4	.6	.6	.4	.4	.3	.1				
9	0	.4	.6	.4	.4	.4	.3	.1				
10	0	.4	.6	.4	*.4	.4	.4	.1				
11	0	.4	.6	.4	.4	.6	.4	* 0				
12	.1	*.4	.6	.4	.4	.8	.4	0	(*)			
13	.2	.4	.6	.4	.4	.6	.4	0				
14	*.2	.8	.4	.4	.4	.4	*.4	0				
15	.8	1.2	.4	*.4	.4	.4	.4	0				
16	.6	.8	*.4	.4	.4	.4	.4	0				
17	.6	.6	.4	.4	.4	*.4	.4	0				
18	.4	.8	.4	.4	.4	.4	.4	0				
19	.4	1.0	.4	.4	.4	.4	.4	0				
20	.4	1.0	.4	.8	.4	.4	.4	0				
21	.4	.6	.8	2.0	.4	.4	.4	0				
22	.4	.6	.8	2.0	.4	2.0	.4	0				
23	.4	.6	.8	1.0	.4	2.0	.4	0				
24	.4	.6	.6	.6	.4	1.0	.4	0				
25	.4	.6	.6	.6	.4	.6	.4	0			(*)	
26	.4	*.4	.6	.6	*.4	.4	.4	0				
27	.4	.4	.6	.4	.4	.4	.3	0		(*)		
28	.4	.4	.6	.4	.4	.4	.3	* 0				
29	*.3	.4	.6	*.4	.4	.4	*.2	0				
30	.2	.4	*.4	.4	-----	*.4	.2	0	(*)			
31	.3	-----	.6	.4	-----	.4	-----	0	-----			-----
Total	7.7	17.6	16.8	18.2	11.6	17.8	11.0	1.0	0	0	0	0
Mean	0.25	0.59	0.54	0.59	0.40	0.57	0.37	0.03	0	0	0	0
Max	0.8	1.2	0.8	2.0	0.4	2.0	0.8	0.1	0	0	0	0
Min	0	0.4	0.4	0.4	0.4	0.4	0.2	0	0	0	0	0
Ac-ft	15	35	33	36	23	35	22	2.0	0	0	0	0

Calendar year 1963: Max 57 Min 0 Mean 2.32 Ac-ft 1,680

Water year 1963-64: Max 2.0 Min 0 Mean 0.28 Ac-ft 201

Peak discharge (base, 40 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SANTA MARIA RIVER BASIN

11-1381. Cuyama River below Twitchell Dam, Calif.

Location.--Lat 34°56'40", long 120°17'30", in Suey Grant, on left bank 3.5 miles upstream from mouth, 4 miles northeast of Garey, Santa Barbara County, and 4.4 miles downstream from Twitchell Dam.

Drainage area.--1,132 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 390 ft (from topographic map).

Extremes.--Maximum discharge during year, 107 cfs May 27 (gage height, 3.91 ft); no flow Oct. 1 to May 6, June 6 to Sept. 30.
1958-64: Maximum discharge, 548 cfs Feb. 10, 1962 (gage height, 5.76 ft); no flow for part of each year.

Remarks.--Records good. Flow regulated since February 1959 by Twitchell Reservoir (capacity, 240,000 acre-ft). Some pumping from wells along stream for irrigation above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.2	0	2.8	5.6
2.3	.1	2.9	8.8
2.4	.4	3.0	13
2.5	1.0	3.2	24
2.6	1.9	3.4	40
2.7	3.4	3.7	76

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								0	0.5			
2			(*)					0	.3			(*)
3	(*)							0	.3			
4								0	.2			
5								0	.1			
6								0	0			
7								* 23	0			
8								42	0			
9								47	0			
10								48	0			
11								* 48	0			
12								48	0			
13								51	0			
14								51	0			
15				(*)				51	* 0			
16								58	0			
17								58	0			
18								57	0			
19								* 55	0			
20								48	0			
21								* 12	0			
22								2.3	0			
23								1.2	0			
24								.8	0			
25								* .7	0			
26								18	0			
27				(*)	(*)		(*)	75	0			
28	(*)							11	0	(*)		
29								2.4	* 0			
30								1.2	0			
31						(*)		.6				
Total	0	0	0	0	0	0	0	840.2	1.4	0	0	0
Mean	0	0	0	0	0	0	0	27.1	0.05	0	0	0
Max	0	0	0	0	0	0	0	75	0.5	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	0	0	0	0	1,670	2.8	0	0	0
Calendar year 1963:	Max	43	Min	0	Mean	3.36	Ac-ft	2,440				
Water year 1963-64:	Max	75	Min	0	Mean	2.30	Ac-ft	1,670				

* Discharge measurement or observation of no flow made on this day.

SANTA MARIA RIVER BASIN

253

11-1385. Sisquoc River near Sisquoc, Calif.

Location.--Lat 34°50'25", long 120°10'00", in sec.20, T.9 N., R.31 W., on left bank 2.2 miles upstream from La Brea Creek and 7 miles east of Sisquoc.

Drainage area.--281 sq mi.

Records available.--October 1943 to September 1964. October 1929 to September 1933, at site 0.2 mile downstream; low-flow records not equivalent owing to diversion immediately upstream. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder (digital). Datum of gage is 624.30 ft above mean sea level, datum of 1929 (Corps of Engineers bench mark). Prior to Aug. 24, 1951, at site 0.2 mile downstream at datum 3.70 ft lower; during this period, a supplementary gage at site 200 ft downstream from present site at different datums was generally used for periods of low flow.

Average discharge.--21 years (1943-64), 26.8 cfs (19,400 acre-ft per year); median of yearly mean discharges, 12 cfs (8,700 acre-ft per year).

Extremes.--Maximum discharge during year, 338 cfs Apr. 1 (gage height, 3.66 ft); minimum daily, 0.6 cfs Aug. 8-9.

1929-33, 1943-64: Maximum discharge, 7,640 cfs Apr. 3, 1958 (gage height, 10.62 ft), from rating curve extended above 1,400 cfs on basis of slope-area measurement at gage height 10.08 ft; minimum daily since 1943, 0.4 cfs for several days in 1947, 1951, 1957, and 1961.

Maximum discharge known, 11,000 cfs Mar. 2, 1938 (gage height, 8.1 ft, from high-water mark in gage well at site in use 1929-33), from rating curve extended above 2,800 cfs.

Remarks.--Records good. Discharge measurements generally made two times a month. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.1	1.6	2.0	2.1	2.5	1.9	115	4.1	2.2	1.6	1.1	1.2
2	1.3	1.7	2.0	2.0	2.5	2.1	115	4.4	2.2	1.6	.9	1.0
3	1.3	1.9	2.0	2.1	2.3	1.9	48	4.2	2.1	1.5	.9	.9
4	1.5	1.8	2.1	2.1	2.7	1.9	27	4.7	2.0	1.7	.9	.9
5	1.5	1.7	1.9	2.1	2.5	1.8	20	5.1	2.0	1.6	.8	1.0
6	1.5	2.8	1.7	2.2	2.5	1.9	18	5.5	2.0	1.6	.8	1.1
7	1.3	2.0	1.9	2.2	2.5	2.1	14	5.8	1.9	1.6	.8	1.1
8	1.3	1.8	1.9	1.9	2.5	1.8	10	5.4	2.0	1.7	.6	1.1
9	1.3	1.7	2.3	1.9	2.5	1.8	7.9	5.2	2.6	1.7	.6	1.2
10	1.3	1.6	2.3	2.0	2.3	1.8	7.0	4.6	2.2	1.6	.7	1.2
11	1.7	1.6	2.2	2.1	2.2	1.7	6.6	4.4	2.0	1.6	.7	1.2
12	1.6	1.6	2.2	2.1	2.3	2.1	5.7	4.4	1.9	1.5	.8	1.2
13	1.5	1.7	2.0	2.1	2.1	1.9	4.7	4.2	1.8	1.5	.8	1.2
14	1.4	1.7	2.0	1.9	2.2	1.7	3.9	4.2	1.7	1.6	.9	1.2
15	2.1	2.3	2.0	2.0	2.4	1.7	3.5	4.2	1.9	1.8	1.0	1.2
16	3.3	2.0	2.1	1.8	2.4	1.6	3.5	3.8	2.1	1.7	1.1	1.1
17	2.1	1.8	2.0	1.8	2.1	1.6	3.5	3.6	2.1	1.7	1.0	1.1
18	2.0	1.9	2.1	1.9	2.1	1.6	3.5	3.4	1.8	1.6	1.0	1.3
19	1.9	2.4	2.1	1.8	2.0	1.6	3.5	3.3	2.1	1.6	1.1	1.2
20	2.0	5.5	2.1	2.1	2.0	1.7	3.5	3.1	2.3	1.6	1.0	1.3
21	2.1	3.9	2.1	3.9	1.7	1.8	3.5	2.7	2.3	1.5	1.1	1.3
22	1.8	2.6	2.2	75	1.7	3.1	3.5	2.7	2.3	1.4	1.2	1.3
23	1.8	2.3	2.1	40	1.7	3.9	3.5	2.8	2.2	1.4	1.1	1.0
24	1.8	2.2	2.0	19	1.8	3.0	3.5	2.7	2.1	1.4	1.1	1.1
25	1.8	2.1	2.1	11	1.7	3.1	3.8	2.7	2.1	1.3	1.1	1.0
26	1.6	2.1	2.1	7.4	1.7	2.3	3.8	2.7	2.3	1.3	1.0	1.1
27	1.5	2.1	2.1	4.6	1.7	2.0	3.9	2.5	2.1	1.3	1.1	1.1
28	1.6	2.0	2.0	3.2	1.8	2.0	4.2	2.4	1.7	1.3	1.0	1.2
29	1.6	2.0	2.1	3.2	1.9	1.9	4.2	2.3	1.7	1.3	1.0	1.1
30	1.7	1.9	2.1	3.0	-----	1.9	3.9	2.2	1.7	1.2	1.0	1.2
31	1.7	-----	2.1	2.7	-----	2.5	-----	2.0	-----	1.1	1.1	-----
TOTAL	52.0	64.3	63.8	213.2	62.3	63.7	461.6	115.3	61.4	46.9	29.3	34.1
MEAN	1.68	2.14	2.06	6.88	2.15	2.06	15.4	3.72	2.05	1.51	0.95	1.14
AC-FT	103	128	127	423	124	126	916	229	122	93	58	68
MAX	3.3	5.5	2.3	75	2.7	3.9	115	5.8	2.6	1.7	1.2	1.3
MIN	1.1	1.6	1.7	1.8	1.7	1.6	3.5	2.0	1.7	1.1	0.6	0.9

CALENDAR YEAR 1963 MAX 246 MIN 1.1 MEAN 7.78 AC-FT 5,640
 WATER YEAR 1963-64 MAX 115 MIN 0.6 MEAN 3.46 AC-FT 2,520

Peak discharge (base, 100 cfs).--Jan. 22 (1130 hrs) 240 cfs (3.48 ft); Apr. 1 (1500 hrs) 338 cfs (3.66 ft)

SANTA MARIA RIVER BASIN

11-1390. La Brea Creek near Sisquoc, Calif.

Location.--Lat 34°51'10", long 120°11'55", in SE $\frac{1}{4}$ sec.13, T.9 N., R.32 W., on right bank 2,100 ft upstream from mouth and 5.5 miles east of Sisquoc.

Drainage area.--93.8 sq mi.

Records available.--October 1943 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 550 ft (from topographic map).

Average discharge.--21 years, 4.20 cfs (3,040 acre-ft per year); median of yearly mean discharges, 0.2 cfs (140 acre-ft per year).

Extremes.--No flow during year.

1943-64: Maximum discharge, 3,320 cfs Jan. 15, 1952 (gage height, 5.94 ft); no flow for most of each year.

Remarks.--No flow since May 7, 1962. Perennial low flow from basin above sinks beneath stream bed before reaching station. No regulation or diversion above station.

SANTA MARIA RIVER BASIN

255

11-1395. Tepusquet Creek near Sisquoc, Calif.

Location.--Lat 34°52'20", long 120°14'35", in NE¼ sec.9, T.9 N., R.32 W., on downstream wingwall of right bridge abutment, 1.1 miles upstream from mouth and 3 miles east of Sisquoc.

Drainage area.--28.6 sq mi.

Records available.--October 1943 to September 1964.

Gage.--Water-stage recorder (digital). Concrete control since July 1957. Altitude of gage is 500 ft (from topographic map). Prior to Dec. 9, 1948, at same site at datum 0.9 ft higher.

Average discharge.--21 years, 1.16 cfs (840 acre-ft per year); median of yearly mean discharges, 0.4 cfs (290 acre-ft per year).

Extremes.--Maximum discharge during year, 2.6 cfs Jan. 22 (gage height, 1.98 ft); no flow for many days.

1943-64: Maximum discharge, 500 cfs Feb. 9, 1962 (gage height, 4.25 ft), from rating curve extended above 220 cfs; no flow at times in some years.

Remarks.--Records good. Discharge measurements generally made two times a month. No regulation above station. Some diversion by pumping from wells along stream to irrigate about 100 acres above gage.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to July 12

July 13 to Sept. 30

1.7 0
1.8 .2
1.9 1.0

1.5 0
1.6 .1

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.2	0.2	0.2	0.2	0.3	0.2	0.6	0.2	0.3	0.1	0.1	0
2	.2	.2	.2	.2	.3	.3	.1	.2	.1	0	0	0
3	.2	.2	.2	.2	.3	.2	.3	.2	.2	.1	0	0
4	.2	.2	.2	.2	.2	.2	.3	.3	.2	0	0	0
5	.2	.3	.2	.2	.3	.2	.3	.3	.2	0	0	0
6	.2	.5	.2	.2	.3	.1	.3	.4	.2	0	0	0
7	.2	.3	.2	.3	.3	.2	.3	.3	.1	0	0	0
8	.2	.3	.2	.2	.3	.2	.3	.3	.2	0	0	0
9	.2	.2	.3	.2	.2	.2	.3	.2	.3	0	0	0
10	.2	.2	.3	.2	.2	.2	.3	.2	.2	0	0	0
11	.3	.2	.3	.2	.2	.2	.3	.1	.3	0	0	0
12	.2	.2	.3	.2	.2	.3	.2	.1	.3	0	0	.1
13	.1	.2	.3	.2	.1	.3	.2	.1	.2	.1	0	0
14	.1	.2	.3	.2	.2	.3	.2	.1	.1	.1	0	0
15	.5	.5	.3	.2	.1	.2	.2	.1	.2	.1	0	.1
16	.3	.2	.2	.2	.2	.2	.2	.1	.2	.1	0	.1
17	.3	.3	.2	.2	.2	.2	.3	.1	.2	.1	0	.1
18	.2	.3	.3	.3	.2	.2	.3	.1	.3	.1	0	.1
19	.2	.3	.3	.2	.1	.1	.3	.1	.2	.1	0	0
20	.2	.6	.3	.3	.1	.1	.2	.2	.2	.1	0	0
21	.2	.3	.3	.9	.1	.1	.3	.2	.2	.1	0	0
22	.2	.3	.2	.8	.2	.3	.3	.2	.2	.1	0	0
23	.2	.3	.2	.4	.2	.3	.3	.2	.2	.1	0	.1
24	.2	.3	.2	.3	.2	.2	.3	.2	.2	.1	0	0
25	.2	.2	.2	.3	.2	.2	.3	.3	.2	.1	0	0
26	.1	.2	.2	.3	.2	.2	.3	.3	.2	0	0	0
27	.2	.2	.2	.3	.2	.2	.2	.3	.2	.1	0	.1
28	.2	.2	.2	.3	.2	.2	.3	.2	.1	.1	0	.1
29	.2	.2	.2	.3	.2	.2	.2	.2	.1	.1	0	.1
30	.2	.2	.2	.3	-----	.2	-----	.2	.1	.1	0	.1
31	.2	-----	.2	.3	-----	.4	-----	.2	-----	.1	0	-----
TOTAL	6.5	8.0	7.3	8.8	6.0	6.6	8.4	6.1	6.0	2.1	0.1	1.0
MEAN	0.21	0.27	0.24	0.28	0.21	0.21	0.28	0.20	0.20	0.07	0.003	0.03
AC-FT	13	16	14	17	12	13	17	12	12	4.2	0.2	2.0
MAX	0.5	0.6	0.3	0.9	0.3	0.4	0.6	0.4	0.3	0.1	0.1	0.1
MIN	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0	0	0

CALENDAR YEAR 1963 MAX 2.3 MIN 0.1 MEAN 0.37 AC-FT 268
WATER YEAR 1963-64 MAX 0.9 MIN 0 MEAN 0.18 AC-FT 132

Peak discharge (base, 10 cfs).--No peak above base.

SANTA MARIA RIVER BASIN

11-1400. Sisquoc River near Garey, Calif.

Location--Lat $34^{\circ}53'38''$, long $120^{\circ}18'20''$, in SW $\frac{1}{4}$ sec.36, T.10 N., R.33 W., near right bank on downstream side of county road bridge, 0.6 mile northeast of Garey and 3.7 miles downstream from Tepusquet Creek.

Drainage area--472 sq mi.

Records available--October 1940 to September 1964. Records for water year 1941 incomplete, yearly estimate and monthly discharge only for October 1940 and January 1941, published in WSP 1315-B.

Gage--Water-stage recorder. Datum of gage is 360.8 ft above mean sea level (Santa Barbara County bench mark). Prior to Aug. 27, 1954, at site 3 miles upstream at different datum. Aug. 28, 1954, to Nov. 1, 1956, at site 0.7 mile upstream at different datum. Nov. 1, 1956, to Sept. 30, 1959, at same site at different datums. Since Oct. 1, 1959, supplementary gage near left bank at same datum.

Average discharge--24 years, 31.2 cfs (22,590 acre-ft per year); median of yearly mean discharges, 5.7 cfs (4,100 acre-ft per year).

Extremes--No flow during year.

1940-64: Maximum discharge, 13,000 cfs Jan. 23, 1943 (gage height, 8.46 ft. site and datum then in use), from rating curve extended above 2,000 cfs on basis of records for upstream stations; no flow for several months in each year.

Remarks--No flow since Apr. 29, 1963. No regulation above station. Pumping from wells along stream for irrigation of about 7,000 acres above station. Discharge for the calendar year 1963 is as follows: Maximum daily, 70 cfs; minimum, zero; mean, 0.38 cfs; total, 276 acre-feet.

11-1410. Santa Maria River at Guadalupe, Calif.

Location.--Lat $34^{\circ}58'35''$, long $120^{\circ}34'15''$, in Guadalupe Grant, on downstream side of fifth bridge pier from left bank on State Highway 1, 0.5 mile north of Guadalupe, Santa Barbara County, and 4.5 miles upstream from mouth.

Drainage area.--1,742 sq mi.

Records available.--October 1940 to September 1964. Monthly discharge only, October 1940 to January 1941, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 64.92 ft above mean sea level, datum of 1929, supplementary adjustment of 1934 (Corps of Engineers bench mark). Supplementary water-stage recorder near right bank at same datum. Jan. 19, 1941, to Aug. 11, 1955 at site 100 ft upstream at same datum. Oct. 5, 1945, to Aug. 11, 1955, supplementary gage near right bank 100 ft upstream at same datum.

Average discharge.--24 years, 32.2 cfs (23,310 acre-ft per year); median of yearly mean discharges, 1.8 cfs (1,300 acre-ft per year).

Extremes.--No flow during year.

1940-64: Maximum discharge, 32,800 cfs Jan. 16, 1952 (gage height, 8.18 ft); no flow for several months of each year.

Remarks.--No flow since Mar. 21, 1962. Flow of Cuyama River regulated since February 1959 by Twitchell Reservoir (capacity, 240,000 acre-ft). Several small surface diversions and extensive pumping from wells for irrigation along stream above station.

ARROYO GRANDE BASIN

11-1413. Arroyo Grande near Arroyo Grande, Calif.

Location.--Lat $35^{\circ}11'10''$, long $120^{\circ}29'55''$, in NW $\frac{1}{4}$ sec. 32, T.31 S., R.14 E., on downstream side of county road bridge, 0.9 mile downstream from Lopez Canyon Creek, and $6\frac{1}{4}$ miles northeast of Arroyo Grande.

Drainage area.--68.3 sq mi.

Records available.--July 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 360 ft (from topographic map). Prior to Feb. 18, 1964, at same site at datum 4.00 ft higher.

Average discharge.--6 years, 2.38 cfs (1,720 acre-ft per year).

Extremes.--No flow during year.

1958-64: Maximum discharge, 1,280 cfs Feb. 9, 1962 (gage height, 8.50 ft, present datum); no flow for most of each year.

Remarks.--No flow since June 5, 1963. No regulation or diversion above station. Discharge for the calendar year 1963 is as follows: maximum daily, 38 cfs; minimum, zero; mean, 0.84 cfs; total, 607 acre-ft.

ARROYO GRANDE BASIN

11-1415. Arroyo Grande at Arroyo Grande, Calif.

Location.--Lat 35°07'30", long 120°34'05", in Pismo Grant, on left bank at Arroyo Grande, San Luis Obispo County, 0.7 mile upstream from U.S. Highway 101.

Drainage area.--102 sq mi.

Records available.--October 1939 to September 1964. Records for water year 1940 incomplete, yearly estimate published in WSP 1315-B.

Gage.--Water-stage recorder (digital) and broad-crested weir. Datum of gage is 97.77 ft above mean sea level, datum of 1929, supplementary adjustment of 1934. Prior to July 10, 1947, at datum 0.50 ft higher.

Average discharge.--25 years, 19.7 cfs (14,260 acre-ft per year); median of yearly mean discharges, 9.2 cfs (6,700 acre-ft per year).

Extremes.--Maximum discharge during year, 28 cfs Feb. 17 (gage height, 1.93 ft); no flow for many days.
1939-64: Maximum discharge, 5,370 cfs Jan. 15, 1952 (gage height, 11.97 ft); no flow for several days in some years.

Remarks.--Records good. Discharge measurements made twice a month. Many small and intermittent diversions by pumping from stream for irrigation of about 4,000 acres above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.0	2.4	5.4	6.0	6.9	5.4	7.6	1.4	2.5	0.1	0	0.1
2	2.1	2.3	4.7	5.6	6.9	6.4	7.3	1.3	1.9	.1	0	0
3	1.3	3.7	5.3	5.0	6.8	5.5	7.1	1.1	1.9	.1	0	0
4	1.9	4.1	4.7	3.7	6.8	5.3	7.2	1.7	1.5	.1	0	.1
5	2.3	5.6	5.0	4.4	6.8	4.4	7.3	1.2	1.7	.1	0	.1
6	2.0	6.5	4.9	5.3	5.4	4.8	6.8	3.8	1.1	.1	.1	.1
7	1.5	5.9	4.7	5.7	5.2	4.8	6.4	4.2	.4	.1	.1	.1
8	2.9	5.7	4.3	4.1	4.8	5.0	6.6	4.6	1.0	.1	.1	.1
9	2.4	5.4	5.3	4.4	5.9	5.6	6.5	4.5	1.5	.1	.1	.1
10	2.5	5.0	5.3	4.9	6.1	4.6	5.4	3.9	1.7	.1	.1	.1
11	3.9	5.1	5.3	5.0	5.8	5.4	5.2	3.5	1.1	.1	.1	.1
12	4.9	5.3	5.1	4.7	4.8	6.6	4.9	3.4	.5	.1	.1	.1
13	4.5	5.6	5.2	5.1	4.6	6.4	4.1	2.6	.6	0	0	.1
14	3.1	5.9	5.2	5.3	5.0	5.0	3.4	1.9	.8	0	0	.1
15	5.5	6.8	4.4	5.9	5.3	5.1	2.3	2.4	1.1	0	0	.1
16	7.0	5.2	3.9	5.9	11	3.9	2.8	3.1	1.0	0	0	.1
17	6.4	5.2	4.8	6.0	12	5.0	2.8	4.0	.6	0	0	.1
18	6.4	5.0	4.7	6.6	4.4	4.9	3.4	2.3	.6	0	0	0
19	6.5	6.3	4.9	5.9	3.2	3.8	3.5	2.1	.2	0	0	0
20	6.2	7.3	4.5	6.6	2.6	3.9	3.5	1.6	.6	0	0	0
21	6.2	6.1	4.3	7.4	2.7	4.6	3.5	1.3	1.5	0	0	0
22	5.8	5.2	3.9	7.2	3.8	7.7	3.0	1.4	.9	0	0	0
23	6.1	4.9	3.5	6.8	3.4	8.0	3.5	2.7	.6	0	0	0
24	5.6	4.8	2.8	6.8	3.6	7.5	3.4	3.3	.4	.1	0	0
25	5.3	4.8	3.5	6.6	3.0	7.1	1.8	3.7	.4	.1	0	0
26	4.9	4.8	4.0	6.6	3.1	7.1	2.0	2.9	.5	.1	0	0
27	4.4	4.8	3.5	6.7	3.0	6.9	1.3	3.0	.7	.1	0	0
28	4.6	4.5	3.6	6.8	3.6	6.3	1.0	1.9	.3	0	0	0
29	3.6	4.9	3.8	6.8	3.8	5.9	1.0	2.0	.2	0	0	0
30	2.8	5.9	3.9	6.8	-----	7.1	1.6	2.3	.2	0	0	0
31	2.7	-----	4.9	6.8	-----	7.2	-----	2.3	-----	0	.1	-----
TOTAL	126.3	155.0	139.3	181.4	150.3	177.2	126.2	81.4	28.0	1.6	0.8	1.5
MEAN	4.07	5.17	4.49	5.85	5.18	5.72	4.21	2.63	0.93	0.05	0.03	0.05
AC-FT	251	307	276	360	298	351	250	161	56	3.2	1.6	3.0
MAX	7.0	7.3	5.4	7.4	12	8.0	7.6	4.6	2.5	0.1	0.1	0.1
MIN	1.0	2.3	2.8	3.7	2.6	3.8	1.0	1.1	0.2	0	0	0

CALENDAR YEAR 1963 MAX 46 MIN 0.4 MEAN 8.03 AC-FT 5,810
WATER YEAR 1963-64 MAX 12 MIN 0 MEAN 3.19 AC-FT 2,820

Peak discharge (base, 40 cfs).--No peak above base.

SANTA ROSA CREEK BASIN

259

11-1422. Santa Rosa Creek near Cambria, Calif.

Location--Lat 35°34'35", long 120°59'50", in NE¼ sec.21, T.27 S., R.9 E., on left bank 4.8 miles east of Cambria.Drainage area--12.5 sq mi.Records available--August 1957 to September 1964.Gage--Water-stage recorder (digital). Datum of gage is 264.03 ft above mean sea level, datum of 1929, supplementary adjustment of 1960.Average discharge--7 years, 9.11 cfs (6,600 acre-ft per year).Extremes--Maximum discharge during year, 544 cfs Nov. 19 (gage height, 5.16 ft); no flow July 15 to Sept. 30.

1957-64: Maximum discharge, 2,520 cfs Feb. 1, 1960 (gage height, 10.36 ft). from rating curve extended above 390 cfs on basis of slope-area measurement of maximum flow; no flow at times in each year.

Flood of December 1955 reached a stage of 15.2 ft (from floodmarks).

Remarks--Records fair. No regulation; small diversions above station for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.3	0.6	2.5	1.1	3.0	2.1	21	1.8	0.7	0.2		
2	.3	.6	2.2	1.3	2.9	2.7	6.9	1.9	.7	.2		
3	.4	.7	2.2	1.6	2.7	1.7	4.5	1.9	.6	.2		
4	.4	.7	2.1	1.5	2.5	1.5	3.5	2.1	.6	.2		
5	.4	7.4	1.8	1.4	2.4	1.4	3.0	2.0	.5	.2		
6	.4	24	2.0	1.6	2.3	1.4	2.8	2.1	.5	.2		
7	.4	4.6	2.0	1.4	2.2	1.4	2.5	2.3	.5	.2		
8	.4	2.3	2.0	1.4	2.1	1.4	2.1	1.8	.5	.1		
9	.4	1.6	3.2	1.3	2.0	1.3	1.8	1.7	.6	.1		
10	.4	1.2	2.5	1.3	1.8	1.3	1.7	1.4	a.6	.1		
11	1.0	1.1	2.2	1.3	1.8	1.3	1.7	1.4	a.6	.1		
12	.7	1.1	2.2	1.2	1.8	3.5	1.7	1.3	a.6	.1		
13	.6	1.2	2.4	1.2	1.7	2.2	1.5	1.3	a.5	.1		
14	.5	30	2.3	1.1	1.7	1.7	1.4	1.3	a.5	.1		
15	1.2	54	2.2	1.0	1.9	1.5	*1.4	1.2	a.4	0		(*)
16	1.9	16	2.4	1.0	1.8	1.4	1.6	1.2	*a.4	0		
17	.9	8.7	*2.4	1.0	*1.8	1.3	1.7	1.4	*.3	0		
18	.7	6.0	2.2	1.5	1.9	1.3	1.8	1.0	.3	0		
19	.7	87	2.1	1.2	1.8	*1.2	1.8	.8	.3	0	(*)	
20	.7	*63	1.9	*9.5	1.7	1.3	1.8	*.8	.3	0		
21	.7	21	2.0	37	1.7	1.4	1.7	.8	.3	*0		
22	.7	12	1.7	41	1.8	3.7	1.9	.8	.3	0		
23	*.7	9.4	1.7	17	1.7	5.0	1.9	.8	.3	0		
24	.7	8.7	1.7	10	1.7	3.8	1.8	.8	.3	0		
25	.6	6.5	1.6	7.0	1.5	2.7	1.9	.7	.2	0		
26	.6	5.3	1.6	5.8	1.4	2.0	1.8	.7	.2	0		
27	.5	4.2	1.4	5.5	1.4	1.8	1.8	.8	.2	0		
28	.5	3.5	1.2	4.4	1.5	1.7	1.8	.7	.2	0		
29	.6	3.1	1.1	3.8	1.4	1.6	2.0	.7	.2	0		
30	.7	2.6	1.2	3.4	-----	1.6	1.9	.7	.2	0		
31	.6	-----	1.2	3.2	-----	3.9	-----	.7	-----	0		-----
TOTAL	19.6	388.1	61.2	172.0	55.9	62.1	84.7	38.9	12.4	2.1	0	0
MEAN	0.63	12.9	1.97	5.55	1.93	2.00	2.82	1.26	0.41	0.07	0	0
AC-FT	39	770	121	341	111	123	168	77	25	4.2	0	0
MAX	1.9	87	3.2	41	3.0	5.0	21	2.3	0.7	0.2	0	0
MIN	0.3	0.6	1.1	1.0	1.4	1.2	1.4	0.7	0.2	0	0	0

CALENDAR YEAR 1963 MAX 518 MIN 0.2 MEAN 16.3 AC-FT 11,800
WATER YEAR 1963-64 MAX 87 MIN 0 MEAN 2.45 AC-FT 1,780

Peak discharge (base 300 cfs)--Nov. 19 (2000) 544 cfs (5.16 ft).

* Discharge measurement or observation of no flow made on this day.
a No gage height record.

11-1425. Arroyo de la Cruz near San Simeon, Calif.

Location--Lat 35°43'25", long 121°17'00", in Piedra Blanca Grant, on right bank 1.7 miles upstream from mouth and 7 miles northwest of town of San Simeon, San Luis Obispo County.

Drainage area--41.4 sq mi.

Records available--October 1950 to September 1964.

Gage--Water-stage recorder. Altitude of gage is 22 ft (from topographic map).

Average discharge--14 years, 51.2 cfs (37,070 acre-ft per year); median of yearly mean discharges, 37 cfs (26,800 acre-ft per year).

Extremes--Maximum discharge during year, 14,100 cfs Nov. 19 (gage height, 11.51 ft); no flow for several months.

1950-64: Maximum discharge, 17,700 cfs Dec. 23, 1955 (gage height, 12.40 ft), from rating curve extended above 7,600 cfs on basis of slope-area measurement of maximum flow; no flow for several months in each year.

Remarks--Records fair. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1		0	25	3.4	26	5.0	171	5.9				
2		0	21	3.1	25	7.9	47	5.9				
3		0	19	2.8	22	7.6	30	5.5				
4		0	18	2.6	21	5.2	22	5.5				
5		0	16	2.5	19	4.7	18	6.2				
6		126	15	2.5	18	4.5	15	6.6				
7		18	12	2.5	17	4.3	13	5.5				
8		7.9	11	2.3	15	4.1	11	4.7				
9		4.5	12	2.0	14	3.8	9.9	4.3				
10		2.5	12	2.0	13	3.6	9.0	3.6				
11		1.3	10	1.9	13	3.4	7.9	2.9				
12		.9	9.0	1.7	11	19	6.2	2.6				
13		.8	8.3	1.7	11	16	6.2	2.3				
14		412	7.6	1.6	9.5	8.6	5.2	1.9				(*)
15		449	7.2	1.4	9.9	6.2	4.7	1.7	(*)			
16		90	7.2	1.3	9.5	4.5	4.7	1.7				
17		42	*6.9	1.4	*8.3	3.6	*5.0	1.4			(*)	
18		26	6.6	2.2	7.9	3.4	5.2	1.3				
19		*2,110	6.2	4.3	7.6	*3.1	5.2	*1.3				
20		1,170	5.9	*378	6.9	2.9	5.0	1.3		(*)		
21		206	5.5	740	6.2	3.1	5.0	1.2				
22	(*)	112	4.7	427	5.9	13	5.5	1.0				
23		82	4.5	146	5.9	57	5.2	.8				
24		74	4.3	88	5.5	32	5.5	.8				
25		60	4.1	66	5.5	20	5.5	.6				
26		52	4.1	55	5.2	14	5.9	.4				
27		44	4.1	46	5.0	10	6.2	.3				
28		37	3.6	40	5.0	8.6	6.2	.1				
29		33	3.1	36	4.7	7.6	5.2	0				
30		28	3.4	32	-----	6.9	5.5	0				
31		-----	3.4	29	-----	9.5	-----	0	-----			-----
TOTAL	0	5,188.9	280.7	2,126.2	333.5	303.1	457.9	77.3	0	0	0	0
MEAN	0	173	9.05	68.6	11.5	9.78	15.3	2.49	0	0	0	0
MAX	0	2,110	25	740	26	57	171	6.6	0	0	0	0
MIN	0	0	3.1	1.3	4.7	2.9	4.7	0	0	0	0	0
AC-FT	0	10,290	557	4,220	661	601	908	153	0	0	0	0
CALENDAR YEAR 1963: MAX 6,870 MIN 0 MEAN 98.5 AC-FT 71,300												
WATER YEAR 1963-64: MAX 2,110 MIN 0 MEAN 24.0 AC-FT 17,390												

Peak discharge (base, 1,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-14	2100	5.91	1,810	1-21	0030	6.72	2,700
11-19	2100	11.51	14,100				

* Discharge measurement or observation of no flow made on this day.

11-1430. Big Sur River near Big Sur, Calif.

Location.--Lat 36°14'45", long 121°46'20", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.29, T.19 S., R.2 E., on right bank at downstream side of bridge, 0.4 mile upstream from Post Creek and 2.6 miles southeast of Big Sur.

Drainage area.--46.5 sq mi.

Records available.--March 1950 to September 1964. Prior to October 1959, published as Sur River at Big Sur.

Gage.--Water-stage recorder. Altitude of gage is 400 ft (from topographic map). Prior to Oct. 1, 1951, wire-weight gage at site 0.9 mile downstream at different datum.

Average discharge.--14 years, 89.1 cfs (64,510 acre-ft per year); median of yearly mean discharges, 58 cfs (42,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,470 cfs Jan. 20 (gage height, 6.48 ft); minimum daily, 9.0 cfs Aug. 24-30.

1950-64: Maximum discharge, 5,680 cfs Apr. 2, 1958 (gage height, 11.56 ft), from rating curve extended above 1,400 cfs on basis of slope-area measurement at gage height 11.05 ft; minimum, 3.7 cfs Oct. 7, 1961.

Remarks.--Records good. No regulation or diversion above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 17 to Sept. 30)

2.5	9.0	3.8	152
2.6	12	4.3	280
2.9	30	4.8	470
3.3	70	5.3	720

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	19	22	60	32	104	45	63	29	22	17	13	11
2	20	22	57	32	98	49	54	29	21	16	13	11
3	20	22	55	32	91	44	51	30	21	16	12	11
4	20	25	53	32	85	42	49	30	21	16	12	11
5	21	208	51	31	81	41	47	31	20	17	12	11
6	21	204	49	31	77	41	45	38	20	17	12	11
7	21	71	48	31	73	40	44	32	21	17	12	11
8	21	52	47	31	70	39	42	30	22	16	12	11
9	21	44	51	30	66	39	41	29	30	16	11	11
10	22	39	46	30	64	38	39	28	25	16	11	11
11	56	36	45	30	62	38	38	27	23	16	11	11
12	28	35	44	30	59	47	36	27	22	15	11	10
13	24	32	43	30	57	42	35	26	20	15	11	9.9
14	23	219	42	30	56	39	34	26	19	15	11	*9.9
15	35	251	41	29	56	38	33	26	*19	15	11	9.9
16	35	125	41	29	55	35	31	27	19	16	11	9.9
17	27	88	*40	30	*54	35	31	30	19	15	*11	9.6
18	26	71	38	37	53	35	32	28	19	15	11	9.9
19	24	*308	37	41	51	*34	33	*27	19	15	11	9.6
20	24	437	37	*366	50	34	33	25	19	*15	11	9.9
21	23	210	37	699	49	35	*32	25	19	15	11	9.9
22	*22	144	36	585	48	48	31	24	18	14	10	9.9
23	22	125	35	350	47	76	32	24	18	14	9.9	9.9
24	22	114	36	259	46	69	34	24	17	14	9.0	9.9
25	22	97	36	217	46	60	31	24	17	14	9.0	9.9
26	21	87	36	197	45	55	31	24	17	14	9.0	10
27	21	80	35	170	44	54	30	34	17	14	9.0	10
28	21	73	35	152	44	54	29	27	17	14	9.0	10
29	21	68	35	136	45	51	29	25	17	13	9.0	11
30	22	63	34	123	-----	49	29	23	17	13	9.0	11
31	22	-----	32	112	-----	54	-----	22	-----	13	10	-----
TOTAL	747	3,372	1,312	3,964	1,776	1,400	1,119	851	595	468	333.9	311.1
MEAN	24.1	112	42.3	128	61.2	45.2	37.3	27.5	19.8	15.1	10.8	10.4
MAX	56	437	60	699	104	76	63	38	30	17	13	11
MIN	19	22	32	29	44	34	29	22	17	13	9.0	9.6
AC-FT	1,480	6,690	2,600	7,860	3,520	2,780	2,220	1,690	1,180	928	662	617

CALENDAR YEAR 1963 MAX 3,830

MIN 18

MEAN 144

AC-FT 104,100

WATER YEAR 1963-64 MAX 699

MIN 9.0

MEAN 44.4

AC-FT 32,230

Peak discharge (base, 700 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11- 5	2130	5.64	924	11-19	1930	5.71	966
11-14	1730	5.31	726	1-20	2300	6.48	1,470

11-1432. Carmel River at Robles del Rio, Calif.

Location--Lat 36°28'28", long 121°43'40", in Los Laureles Grant, on downstream side of county road bridge at Robles del Rio, Monterey County, 0.2 mile downstream from Hitchcock Canyon and 11 miles southeast of town of Carmel.

Drainage area--193 sq mi.

Records available--August 1957 to September 1964.

Gage--Water-stage recorder. Altitude of gage is 270 ft (from topographic map).

Average discharge--7 years, 65.2 cfs (47,200 acre-ft per year).

Extremes--Maximum discharge during year, 995 cfs Jan. 21 (gage height, 6.60 ft); no flow July 9 to Sept. 30.

1957-64: Maximum discharge, 7,100 cfs Apr. 2, 1958 (gage height, 10.50 ft); no flow at times each year.

Flood of Dec. 23, 1955, reached a stage of 11.7 ft, from floodmarks (discharge, 6,930 cfs on basis of slope-area measurement of maximum flow).

Remarks--Records fair. Flow regulated by Los Padres Reservoir (capacity, 3,000 acre-ft) and San Clemente Reservoir (capacity, 1,600 acre-ft). No diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 19, 20, Jan. 21-23)

1.8	0	2.2	5.4	3.5	150
1.9	.1	2.3	10	4.0	233
2.0	.7	2.6	34	4.5	340
2.1	2.3	3.0	82	5.4	610

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.4	3.1	34	19	124	33	92	11	5.4	0.4		
2	1.0	3.1	31	16	117	37	89	17	3.4	.3		
3	.8	4.3	30	16	109	33	79	23	1.9	.3		
4	.6	4.3	30	16	104	30	70	23	1.5	.3		
5	.6	5.7	25	16	99	28	64	23	1.5	.2		
6	.6	41	23	16	92	26	59	30	1.5	.2		
7	.6	17	23	18	86	27	52	29	1.5	.2		
8	.6	12	23	19	79	24	45	23	1.7	.1		
9	.5	10	30	17	74	24	44	20	2.5	*0		
10	.5	10	27	16	70	24	33	17	18	0		
11	.6	8.6	23	17	66	25	17	18	7.2	0		
12	.5	8.2	23	16	63	28	16	16	2.1	0		
13	.5	8.2	20	16	59	28	19	14	1.7	0		
14	.6	8.6	19	16	56	26	14	13	1.5	0		
15	1.7	18	19	18	57	24	16	11	1.5	0		
16	3.7	17	18	16	54	46	16	7.7	1.7	0		
17	3.7	21	18	16	48	7.7	16	8.2	1.7	0		
18	4.0	38	17	19	45	*3.4	19	11	*1.5	0		
19	4.0	67	19	23	43	2.5	20	*13	1.4	0		
20	3.7	352	17	29	*38	2.3	19	6.8	1.2	0		
21	4.3	204	17	*592	38	2.3	*18	7.2	1.1	0		
22	4.0	131	16	514	37	3.1	16	10	1.0	*0		
23	4.3	102	17	335	36	15	19	10	.8	0		
24	3.7	95	*17	256	34	47	30	5.9	.8	0		
25	3.4	73	15	233	31	64	23	5.0	.7	0		
26	3.4	61	15	213	30	55	16	5.4	.7	0		
27	2.8	*52	15	197	30	52	17	5.9	.7	0		
28	*3.1	46	14	176	30	51	15	8.6	.6	*0		
29	3.4	41	14	161	37	57	8.6	10	.5	0		
30	3.4	37	16	147	-----	61	10	8.6	.4	0		
31	3.1	-----	18	137	-----	65	-----	6.8	-----	0		
TOTAL	69.1	1,499.1	643	3,316	1,786	951.3	971.6	418.1	67.7	2.0	0	0
MEAN	2.23	50.0	20.7	107	61.6	30.7	32.4	13.5	2.26	0.06	0	0
MAX	4.3	352	34	592	124	65	92	30	18	0.4	0	0
MIN	0.5	3.1	14	16	30	2.3	8.6	5.0	0.4	0	0	0
AC-FT	137	2,970	1,280	6,580	3,540	1,890	1,930	829	134	4.0	0	0

CALENDAR YEAR 1963: MAX 3,670 KIN 0 MEAN 114 AC-FT 82,210
WATER YEAR 1963-64: MAX 592 MIN 0 MEAN 26.6 AC-FT 19,290

Peak discharge (base, 1,000 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

11-1432.5. Carmel River near Carmel, Calif.

Location.--Lat 36°32'20", long 121°52'25", in Canada de la Segunda Grant, on right bank 0.3 mile downstream from Potrero Canyon and 3 miles east of Carmel, Monterey County.

Drainage area.--246 sq mi.

Records available.--August 1962 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 45 ft (from topographic map).

Extremes.--Maximum discharge during year, 800 cfs Jan. 22 (gage height 6.89 ft); no flow July 9 to Sept. 30.
1962-64: Maximum discharge, 7,360 cfs Jan. 31, 1963 (gage height, 14.72 ft); no flow at times in each year.

Remarks.--Records poor. Flow regulated by Los Padres Reservoir (capacity, 3,000 acre-ft) and San Clemente Reservoir (capacity, 1,600 acre-ft). No diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 21 to Feb. 11)

3.5	0	4.1	23
3.6	.1	4.4	56
3.7	.7	5.0	152
3.8	2.4	6.0	410
3.9	6.4	7.0	800

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.7	1.7	53	15	131	39	78	17	3.6	0.2		
2	1.0	1.9	51	16	122	39	*90	17	3.6	.2		
3	1.3	1.9	47	13	113	40	83	22	3.3	.2		
4	1.5	*1.7	47	13	105	38	78	29	2.7	.2		
5	1.5	2.4	42	12	98	*36	71	30	*2.7	.2		
6	1.5	3.3	41	*13	*95	34	69	37	2.7	.2		
7	1.7	3.3	38	13	90	31	64	*41	2.7	.2		
8	1.9	2.7	36	13	84	30	59	40	3.0	.1		
9	1.7	2.7	37	13	80	29	56	33	3.6	*0		
10	1.7	2.7	42	13	75	28	51	30	4.4	0		
11	3.3	2.4	39	12	74	27	36	26	7.9	0		
12	1.9	3.0	36	12	68	28	28	25	5.4	0		
13	1.7	3.0	34	12	65	32	30	23	4.4	0		
14	*1.9	3.0	32	12	63	28	26	22	3.6	0		
15	2.4	4.4	31	11	63	26	23	18	3.0	0		
16	2.7	14	28	11	61	29	22	15	2.4	0		
17	2.4	16	27	11	60	32	21	13	1.9	0		
18	2.7	23	25	12	56	*18	23	12	*1.7	0		
19	2.7	33	25	13	53	14	24	*15	1.3	0		
20	2.7	250	24	18	*48	12	23	12	1.0	0		
21	2.7	211	23	*482	48	11	*22	9.4	1.0	0		
22	3.0	143	22	676	44	11	19	8.7	.9	0		
23	2.7	109	22	435	44	19	22	9.4	.8	0		
24	3.0	104	*20	305	42	34	28	8.7	.5	0		
25	2.7	92	19	263	38	59	33	5.4	.5	0		
26	2.4	*77	19	237	37	55	26	3.6	.5	0		
27	2.4	69	19	209	34	56	23	3.0	.4	0		
28	*2.4	64	19	188	35	53	23	2.4	.5	0		
29	2.4	60	18	171	38	56	19	2.1	.4	*0		
30	2.1	56	16	154	-----	59	18	2.4	.4	0		
31	1.7	-----	16	141	-----	61	-----	3.0	-----	0		
TOTAL	66.4	1,361.1	948	3,519	1,964	1,064	1,188	535.1	70.8	1.5	0	0
MEAN	2.14	45.4	30.6	114	67.7	34.3	39.6	17.3	2.36	0.05	0	0
MAX	3.3	250	53	676	131	61	90	41	7.9	0.2	0	0
MIN	0.7	1.7	16	11	34	11	18	2.1	0.4	0	0	0
AC-FT	132	2,700	1,880	6,980	3,900	2,110	2,360	1,060	140	3.0	0	0

CALENDAR YEAR 1963: MAX 5,000 MIN 0.2 MEAN 135 AC-FT 97,390
WATER YEAR 1963-64: MAX 676 MIN 0 MEAN 29.3 AC-FT 21,270

Peak discharge (base, 1,200 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SALINAS RIVER BASIN

11-1435. Salinas River near Pozo, Calif.

Location.--Lat 35°18'20", Long 120°24'20", in SW¼SE¼ sec.18, T.30 S., R.15 E., on right bank 0.4 mile downstream from highway bridge, 1.5 miles downstream from Pozo Creek, 1.7 miles west of Pozo, and 7 miles upstream from Salinas Dam.

Drainage area.--74.1 sq mi.

Records available.--July 1942 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 1,347.78 ft above mean sea level datum of 1929, supplementary adjustment of 1960.

Average discharge.--22 years, 13.4 cfs (9,700 acre-ft per year); median of yearly mean discharge, 6.0 cfs (4,300 acre-ft per year).

Extremes.--Maximum discharge during year, 34 cfs Nov. 19 (gage height, 3.53 ft); maximum gage height, 3.77 ft May 12 (backwater from beaver dam); no flow Aug. 5 to Sept. 30.

1942-64: Maximum discharge, 7,210 cfs Jan. 21, 1943 (gage height, 13.35 ft); no flow at times.

Remarks.--Records poor. No regulation or diversion above station. Water is stored in Salinas Reservoir below station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.9	0.9	1.1	1.4	1.7	6.4	1.2	0.5	0.4	0.1	
2	.1	.9	.9	1.1	1.4	2.0	2.0	1.2	.5	.4	.1	
3	.2	.9	.9	1.1	1.4	1.4	2.0	1.2	.9	.4	.1	
4	.2	.9	.9	1.1	1.1	1.1	1.7	1.4	.9	.4	.1	
5	.5	1.4	.7	1.4	1.1	1.1	1.7	1.4	.7	.4	0	
6	.5	2.7	.7	1.4	1.1	1.1	1.7	1.4	.7	.4	0	
7	.5	1.7	.7	1.4	1.1	1.1	1.4	1.4	.5	.4	0	
8	.5	1.7	.9	1.7	1.1	1.1	1.4	1.2	.5	.4	0	
9	.5	1.7	1.1	1.7	1.1	1.1	1.4	1.1	.9	.4	0	
10	.7	1.7	1.4	1.7	1.1	1.1	1.4	1.0	1.1	.4	0	
11	.9	1.7	1.4	1.7	1.1	1.1	1.7	1.0	1.1	.4	0	
12	.7	1.4	1.4	1.7	1.1	1.7	1.4	1.0	.9	.2	0	
13	.7	1.7	1.4	1.7	.9	1.4	1.4	1.0	.9	.2	*0	
14	.5	2.0	1.4	1.7	1.1	1.4	1.4	1.0	.5	.4	0	
15	.9	3.2	1.1	1.7	1.1	1.4	1.4	.9	.5	.4	0	
16	1.1	2.3	1.1	1.7	1.4	1.4	*1.4	.9	*.5	.4	0	(*)
17	1.1	2.3	1.1	1.7	1.4	1.4	1.4	.9	.5	.2	0	
18	.9	2.3	1.1	1.7	*1.4	1.4	1.4	.9	.5	.2	*0	
19	.9	4.4	*1.1	1.7	1.4	1.4	1.4	.9	.5	.2	0	
20	.9	2.7	1.1	2.0	1.1	*1.4	1.4	*.9	.5	.2	0	
21	.9	*1.4	.9	*4.2	1.1	1.4	1.3	.9	.5	.1	0	
22	.9	1.1	.9	8.2	1.1	3.2	1.2	.5	.4	*.1	0	
23	*.9	1.1	.9	2.3	1.1	1.4	1.2	.5	.4	.1	0	
24	.9	1.1	1.1	2.0	1.1	1.1	1.2	.4	.4	.1	0	
25	.7	1.1	1.1	2.0	1.1	.9	1.2	.5	.2	.1	0	
26	.7	.9	1.1	1.7	1.1	.5	1.2	.7	.4	.1	0	
27	.7	.9	1.1	1.4	1.1	.5	1.2	.9	.4	.1	0	
28	.7	.9	1.1	1.4	1.1	.9	1.2	.9	.4	.1	0	
29	.7	.9	1.1	1.4	1.4	1.1	1.2	.7	.4	.1	0	
30	.7	.9	1.1	1.4	-----	1.1	1.2	.7	.4	.1	0	
31	.9	-----	1.1	1.4	-----	2.3	-----	.5	-----	.1	0	-----
Total	21.1	48.8	32.8	58.4	34.1	41.2	47.5	29.1	17.5	7.9	0.4	0
Mean	0.68	1.63	1.06	1.88	1.18	1.33	1.58	0.94	0.58	0.25	0.01	0
Max	1.1	4.4	1.4	8.2	1.4	3.2	6.4	1.4	1.1	0.4	0.1	0
Min	0.1	0.9	0.7	1.1	0.9	0.5	1.2	0.4	0.2	0.1	0	0
Ac-ft	42	97	65	116	68	82	94	58	35	16	0.8	0

Calendar year 1963: Max 397 Min 0.1 Mean 9.65 Ac-ft 6,990

Water year 1963-64: Max 8.2 Min 0 Mean 0.93 Ac-ft 674

Peak discharge (base, 100 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

Note.--Stage-discharge relation indefinite Mar. 3-16, Apr. 21 to May 20.

11-1440. Toro Creek near Pozo, Calif.

Location.--Lat 35°19'20", long 120°25'20", in SE¼ sec.12, T.30 S., R.14 E., on left bank 300 ft upstream from mouth and 3 miles northwest of Pozo.

Drainage area.--9.61 sq mi.

Records available.--June 1942 to September 1964. Prior to October 1961 low-water records only. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,312.99 ft above mean sea level, datum of 1929, supplementary adjustment of 1960. Prior to Dec. 8, 1961, at site 250 ft downstream at datum 11.83 ft lower.

Extremes.--Maximum discharge during year, 11 cfs Jan. 20 (gage height, 3.80 ft); no flow at times.

1961-64: Maximum discharge, 31 cfs Feb. 9, 1962 (gage height, 4.24 ft).

1942-64: No flow at times in most years.

Remarks.--Records fair. Small diversions above station for irrigation and stock reservoir.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1, to Dec. 11, Dec. 16-18,
May 10-19, June 11 to July 21)

3.1	0
3.2	.2
3.3	.7
3.4	1.7

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0	0.2	0.2	0.2	0.2	0.2	0.5	0.1	0.1	0.1	0.1	0
2	0	.2	.2	.2	.2	.3	.3	.4	.1	.1	.1	0
3	0	.2	.2	.2	.2	.2	.2	.2	.1	.1	.1	0
4	.1	.2	.2	.2	.2	.2	.2	.1	.1	.1	.1	0
5	.2	.3	.2	.2	.2	.2	.2	.1	.1	.1	0	0
6	.2	.3	.2	.2	.2	.2	.2	.2	.1	0	0	0
7	.1	.2	.2	.2	.2	.2	.2	.1	.2	.1	0	0
8	.1	.2	.2	.2	.2	.2	.2	.1	.1	.1	0	.2
9	.2	.2	.2	.2	.2	.2	.2	.1	.3	0	0	.1
10	.2	.2	.2	.2	.2	.2	.2	.1	.3	0	0	0
11	.2	.2	.2	.2	.2	.2	.2	.1	.2	0	0	0
12	.1	.2	.2	.2	.2	.2	.2	.1	.2	0	0	0
13	.1	.2	.2	.2	.2	.2	.2	0	.2	0	0	0
14	.1	.3	.2	.2	.2	.2	.2	.1	.2	0	0	0
15	.2	.5	.2	.2	.2	.2	.2	.1	0	0	0	0
16	.2	.3	.2	.2	.2	.2	*.2	.1	**.1	0	0	*0
17	.1	.3	.2	.2	.2	.2	.2	.1	.2	0	0	0
18	.1	.3	.2	.2	*.2	.2	.2	.1	.1	0	*0	0
19	.1	.6	*.2	.2	.2	.2	.2	.1	.2	0	0	0
20	.1	.6	.2	.6	.1	*.2	.2	*.1	.2	0	0	0
21	.1	*.2	.6	*1.6	.1	.2	.1	.1	.2	0	0	0
22	.1	.2	.2	.8	.2	.5	.1	.1	.2	*.1	0	0
23	*.1	.2	.2	.4	.2	.6	.2	.1	.1	.1	0	0
24	.1	.2	.2	.4	.2	.3	.2	.1	0	.1	0	0
25	.1	.2	.2	.4	.2	.3	.2	.1	0	.1	0	0
26	.1	.2	.2	.3	.2	.3	.1	.1	0	0	0	0
27	.1	.2	.2	.3	.2	.3	.1	.2	.1	.1	0	0
28	.1	.2	.2	.3	.2	.2	.1	.2	0	.1	0	0
29	.1	.2	.2	.3	.2	.2	.1	.2	.1	.1	0	0
30	.1	.2	.2	.3	-----	.2	.1	.1	.1	.1	0	0
31	.2	-----	.2	.3	-----	.5	-----	.1	-----	.1	0	-----
TOTAL	3.6	7.7	6.6	9.8	5.6	7.8	5.7	3.8	3.9	1.6	0.4	0.3
MEAN	0.12	0.26	0.21	0.32	0.19	0.25	0.19	0.12	0.13	0.05	0.01	0.01
MAX	0.2	0.6	0.6	1.6	0.2	0.6	0.5	0.4	0.3	0.1	0.1	0.2
MIN	0	0.2	0.2	0.2	0.1	0.2	0.1	0	0	0	0	0
AC-FT	7.1	15	13	19	11	15	11	7.5	7.7	3.2	0.8	0.6

Calendar year 1963: Max 4.3 Min 0 Mean 0.23 Ac-ft 166

Water year 1963-64: Max 1.6 Min 0 Mean 0.16 Ac-ft 111

Peak discharge (base, 10 cfs).--Jan. 20 (2400) 11 cfs (3.80 ft).

* Discharge measurement or observation of no flow made on this day.

** Field estimate made on this day.

Note.--No gage-height record Feb. 27 to Mar. 19.

11-1445. Salinas Reservoir near Pozo, Calif.

Location.--Lat 35°20'15", long 120°30'05", in NW¼NW¼ sec.8, T.30 S., R.14 E., at left end of dam on Salinas River, 2 miles upstream from Pilitas Creek and 7.5 miles northwest of Pozo.

Drainage area.--112 sq mi.

Records available.--December 1941 to September 1964.

Gage.--Water-stage-recorder. Datum of gage is at mean sea level (levels by Corps of Engineers). Prior to Mar. 9, 1942, staff gage at same site and datum.

Extremes.--Maximum contents during year, 22,600 acre-ft Oct. 1-3; maximum elevation, 1,296.33 ft Oct. 1; minimum contents, 17,200 acre-ft Sept. 28-30.

1941-64; Maximum contents, 30,900 acre-ft Apr. 3, 1958 (elevation, 1,306.92 ft); minimum, 1,730 acre-ft Nov. 6-10, 1943.

Remarks.--Reservoir is formed by concrete-arch dam, outlet closed Dec. 6, 1941. Usable capacity, 26,000 acre-ft between elevations 1,220.3 (bottom of outlet pipe) and 1,301.0 ft (spillway crest) above mean sea level. Water diverted at dam into pipeline to small reservoir 10 miles below, from which it is pumped to Camp San Luis Obispo and city of San Luis Obispo for water supply; water is also released down natural channel of river. Figures given herein represent usable contents.

Capacity table (elevation, in feet, and contents, in acre-feet)

1,288 17,100
1,297 23,100

Contents, in acre-feet at 2400 hours, water year October 1963 to September 1964												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22,600	21,100	21,000	20,800	20,900	20,700	20,600	20,300	20,200	19,800	18,800	17,900
2	22,600	21,100	21,000	20,800	20,900	20,700	20,600	20,300	20,200	19,800	18,800	17,900
3	22,600	21,000	21,000	20,700	20,900	20,700	20,600	20,300	20,200	19,800	18,800	17,800
4	22,500	21,000	21,000	20,700	20,900	20,600	20,600	20,300	20,200	19,800	18,700	17,800
5	22,500	21,100	21,000	20,700	20,900	20,600	20,600	20,300	20,200	19,800	18,700	17,800
6	22,500	21,100	21,000	20,700	20,900	20,600	20,600	20,300	20,100	19,700	18,700	17,800
7	22,500	21,100	21,000	20,700	20,900	20,600	20,600	20,300	20,100	19,700	18,600	17,700
8	22,400	21,000	20,900	20,700	20,900	20,600	20,600	20,300	20,100	19,700	18,600	17,700
9	22,400	21,000	20,900	20,700	20,900	20,600	20,600	20,300	20,100	19,600	18,600	17,700
10	22,400	21,000	20,900	20,700	20,800	20,600	20,600	20,300	20,100	19,600	18,500	17,700
11	22,400	21,000	20,900	20,700	20,800	20,600	20,600	20,300	20,100	19,600	18,500	17,600
12	22,400	21,000	20,900	20,700	20,800	20,600	20,600	20,300	20,100	19,500	18,500	17,600
13	22,400	21,000	20,900	20,600	20,800	20,600	20,600	20,300	20,100	19,500	18,400	17,600
14	22,300	21,000	20,900	20,600	20,800	20,600	20,500	20,300	20,100	19,500	18,400	17,600
15	22,300	21,000	20,900	20,600	20,800	20,500	20,500	20,300	20,100	19,400	18,400	17,600
16	21,900	21,000	20,900	20,600	20,800	20,500	20,500	20,300	20,000	19,400	18,300	17,500
17	21,400	21,000	20,900	20,600	20,800	20,500	20,500	20,300	20,000	19,400	18,300	17,500
18	21,400	21,000	20,900	20,600	20,800	20,500	20,500	20,300	20,000	19,300	18,300	17,500
19	21,300	21,100	20,900	20,600	20,800	20,500	20,400	20,300	20,000	19,300	18,300	17,500
20	21,300	21,100	20,900	20,700	20,800	20,500	20,400	20,300	20,000	19,200	18,200	17,400
21	21,300	21,100	20,800	20,800	20,800	20,500	20,400	20,300	20,000	19,200	18,200	17,400
22	21,300	21,100	20,800	20,900	20,700	20,500	20,400	20,300	20,000	19,200	18,200	17,400
23	21,300	21,100	20,800	20,900	20,700	20,600	20,400	20,200	20,000	19,100	18,100	17,400
24	21,200	21,100	20,800	20,900	20,700	20,600	20,400	20,200	20,000	19,100	18,100	17,400
25	21,200	21,100	20,800	20,900	20,700	20,600	20,400	20,200	19,900	19,100	18,100	17,300
26	21,200	21,100	20,800	20,900	20,700	20,600	20,400	20,200	19,900	19,000	18,000	17,300
27	21,200	21,000	20,800	20,900	20,700	20,600	20,400	20,200	19,900	19,000	18,000	17,300
28	21,200	21,000	20,800	20,900	20,700	20,600	20,300	20,200	19,900	19,000	18,000	17,200
29	21,100	21,000	20,800	20,900	20,700	20,600	20,300	20,200	19,900	18,900	18,000	17,200
30	21,100	21,000	20,800	20,900	-----	20,600	20,300	20,200	19,900	18,900	17,900	17,200
31	21,100	-----	20,800	20,900	-----	20,600	-----	20,200	-----	18,900	17,900	-----
(+)	1,294.13	1,294.05	1,293.68	1,293.87	1,293.54	1,293.45	1,293.05	1,292.87	1,292.38	1,290.95	1,289.36	1,288.17
(+)	- 1,500	- 100	- 200	+100	- 200	- 100	- 300	- 100	- 300	- 1,000	- 1,000	- 700
(++)	380	232	250	259	292	272	238	0	0	427	538	391

Calendar year 1963..... ++ 2,600 ++ 3,620

Water year 1963-64..... +- 5,400 ++ 3,280

+ Elevation, in feet, at end of month.

+ Change in contents, in acre-ft.

++ Diversion, in acre-feet, for municipal supply; furnished by county of San Luis Obispo.

11-1450. Salinas River above Pilitas Creek, near Santa Margarita, Calif.

Location.--Lat 35°20'55", long 120°30'40", in NE¼ sec.6, T.30 S., R.14 E., on downstream side of right bank bridge pier, 200 ft upstream from Pilitas Creek, 2 miles downstream from Salinas Dam, and 6 miles southeast of Santa Margarita.

Drainage area.--114 sq mi.

Records available.--July 1942 to September 1964.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,148.66 ft above mean sea level, datum of 1929, supplementary adjustment of 1960.

Average discharge.--22 years, 12.3 cfs (8,900 acre-ft per year).

Extremes.--Maximum discharge during year, 347 cfs Oct. 16 (gage height, 3.62 ft); no flow during several months.

1942-64: Maximum discharge, 4,720 cfs Apr. 3, 1958 (gage height, 8.68 ft); no flow at times during 1944, 1947-64.

Remarks.--Records fair. Flow regulated by Salinas Reservoir beginning in 1941 and water diverted to Camp San Luis Obispo and city of San Luis Obispo (see preceding page).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.1	0.2	0.1	0	0.2	0.1	0.6	0		0		
2	.1	.2	.1	0	.2	.1	.3	0		0		
3	.1	.2	.1	0	.1	.1	.2	0		0		
4	.1	.1	.1	0	.1	0	.2	0		.4		
5	.2	.2	.1	0	.1	0	.2	0		.3		
6	.2	.6	0	0	.1	0	.2	0		.4		
7	.2	.3	0	0	.1	0	.2	.1		.2		
8	.2	.2	0	0	.1	0	.1	0		0		
9	.2	.1	0	0	.1	0	.1	0		0		
10	.2	.1	0	0	.1	0	.1	0		0		
11	.3	.1	0	0	.1	0	.1	0		0		
12	.4	.1	0	0	.1	0	.1	0		0		
13	.3	0	0	0	.1	.1	.1	0		0		
14	.2	.1	0	0	.1	0	.1	0		0		
15	.7	.3	0	0	.1	0	0	0		.1		
16	*208	.2	0	0	.1	0	*0	0	(*)	.1		(*)
17	235	.1	0	0	.1	0	0	0		0		
18	1.3	.1	*0	0	**1	0	0	0		0	(*)	
19	.5	.2	0	0	.1	0	0	0		0		
20	.3	.8	0	.1	.1	*0	0	*0		.1		
21	.3	*.4	0	*.6	0	0	0	0		.1		
22	.2	.2	0	3.1	0	.2	0	0		*.1		
23	*.2	.2	0	.6	0	.3	0	0		.1		
24	.2	.2	0	.4	0	.2	0	0		0		
25	.2	.2	0	.3	0	.2	0	0		0		
26	.2	.1	0	.2	.1	.2	0	0		0		
27	.2	.1	0	.2	0	.1	0	0		0		
28	.2	.1	0	.2	0	.1	0	0		0		
29	.2	.1	0	.2	.1	.1	0	0		0		
30	.2	.1	0	.2	-----	.1	0	0		0		
31	.2	-----	0	.2	-----	.2	-----	0	-----	0		-----
TOTAL	450.9	5.9	0.5	6.3	2.4	2.1	2.6	0.1	0	1.9	0	0
MEAN	14.5	0.20	0.02	0.20	0.08	0.07	0.09	0.003	0	0.06	0	0
MAX	235	0.8	0.1	3.1	0.2	0.3	0.6	0.1	0	0.4	0	0
MIN	0.1	0	0	0	0	0	0	0	0	0	0	0
AC-FT	894	12	1.0	12	4.8	4.2	5.2	0.2	0	3.8	0	0

CALENDAR YEAR 1963 MAX 235 MIN 0 MEAN 1.71 AC-FT 1,240
WATER YEAR 1963-64 MAX 235 MIN 0 MEAN 1.29 AC-FT 937

* Discharge measurement or observation of no flow made on this day.

** Field estimate made on this day.

11-1470. Jack Creek near Templeton, Calif.

Location--Lat 35°34', long 120°48', in Paso de Robles Grant, on left bank 1.4 miles upstream from mouth, 1.8 miles northwest of Oakdale School, and 5.6 miles west of Templeton, San Luis Obispo County.

Drainage area--25.3 sq mi.

Records available--October 1949 to September 1964.

Gage--Water-stage recorder. Altitude of gage is 980 ft (from topographic map).

Average discharge--15 years, 12.4 cfs (8,980 acre-ft per year); median of yearly mean discharges, 7.5 cfs (5,400 acre-ft per year).

Extremes--Maximum discharge during year, 450 cfs Nov. 19 (gage height, 4.65 ft); no flow for several months.

1949-64: Maximum discharge, 5,040 cfs Jan. 25, 1956 (gage height, 9.56 ft), from rating curve extended above 1,500 cfs on basis of slope-area measurement of maximum flow; no flow for several months in each year.

Remarks--Records fair. No regulation; small diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.4	0	1.9	1.6	2.5	18
1.5	.1	2.0	2.6	2.8	39
1.6	.2	2.1	4.1	3.1	74
1.7	.5	2.2	6.2	3.4	117
1.8	.9	2.3	9.0		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.1	1.5	1.1	3.4	1.7	3.7	1.4	0.6			
2	0	.1	1.5	1.1	3.2	2.0	1.5	1.4	.5			
3	0	.1	1.4	1.0	2.8	*1.8	8.7	1.4	*.5			
4	0	.1	1.3	1.0	*2.5	1.6	6.2	1.5	.5			
5	0	.8	1.3	1.0	2.4	1.5	5.2	*1.5	.5			
6	0	.7	1.2	1.0	2.3	1.5	4.5	1.5	.5			
7	0	.4	1.1	1.0	2.1	1.5	3.8	1.5	.5			
8	0	.3	1.1	*1.0	2.1	1.6	3.5	1.4	.5			
9	0	.3	1.3	1.0	2.1	1.6	3.2	1.4	.7			
10	0	.2	1.3	1.0	2.0	1.6	2.9	1.3	.7			
11	.2	.2	1.2	1.1	2.0	1.6	2.6	1.3	.6			
12	.1	.2	1.1	1.1	1.8	2.0	2.4	1.1	.5			
13	.1	.2	1.2	1.1	1.7	1.8	2.2	1.3	.4			
14	.1	.8	1.2	1.1	1.7	1.6	2.0	1.3	.4			
15	.2	2.0	1.2	1.1	1.8	1.6	1.9	1.2	.4			(*)
16	.2	3.5	1.1	1.1	1.8	1.6	1.8	1.0	.4			
17	.1	1.3	1.1	1.1	1.7	1.6	1.6	1.0	.4			
18	.1	.9	*1.1	1.1	1.6	1.6	1.7	1.0	.3		(*)	
19	.1	7.1	1.1	1.1	1.6	1.6	1.6	.9	.3			
20	.1	*10.7	1.1	5.0	1.6	1.6	1.5	.9	.3			
21	.1	18	1.1	9.9	1.6	1.6	1.5	.8	.3	(*)		
22	.1	8.4	1.1	9.7	1.7	2.4	1.5	.8	.2			
23	.1	5.2	1.1	28	1.7	3.8	1.5	.9	.2			
24	*.1	4.5	1.1	15	1.7	4.1	1.6	.8	.2			
25	.1	3.4	1.1	10	1.6	3.7	1.6	.8	.1			
26	.1	2.6	1.1	8.7	1.5	3.2	1.6	.8	.2			
27	0	2.3	1.2	6.5	1.5	2.9	1.6	1.0	.1			
28	0	2.0	1.1	5.4	1.5	2.5	1.4	.8	.1			
29	.1	1.8	1.1	4.7	1.7	2.3	1.0	.7	.1			
30	.1	1.6	1.1	4.1	-----	*2.2	1.3	.6	.1			
31	.1	-----	1.1	3.5	-----	2.9	-----	.6	-----			
Total	2.2	258.0	36.6	307.0	56.7	64.6	123.9	33.9	11.1	0	0	0
Mean	0.07	8.60	1.18	9.90	1.96	2.08	4.13	1.09	0.37	0	0	0
Max	0.2	10.7	1.5	9.9	3.4	4.1	3.7	1.5	0.7	0	0	0
Min	0	0.1	1.1	1.0	1.5	1.5	1.0	0.6	0.1	0	0	0
Ac-ft	4.4	51.2	7.3	60.9	11.2	12.8	24.6	6.7	2.2	0	0	0

Calendar year 1963: Max 9.05 Min 0 Mean 18.5 Ac-ft 13,390
 Water year 1963-64: Max 10.7 Min 0 Mean 2.44 Ac-ft 1,770

Peak discharge (base, 500 cfs)--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SALINAS RIVER BASIN

269

11-1470.7. Santa Rita Creek near Templeton, Calif.

Location.--Lat 35°31'26", long 120°45'54", in Asuncion Grant, on left bank 1.6 miles upstream from Paso Robles Creek and 4 miles west of Templeton, San Luis Obispo County.

Drainage area.--18.2 sq mi.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder and tipping-bucket rain gage. Altitude of gage is 860 ft (from topographic map). Auxiliary tipping-bucket rain gage 5.3 miles west of gage. Altitude of gage is 1,270 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,250 cfs Nov. 20 (gage height, 7.73 ft); no flow for several months.
1961-64: Maximum discharge, 2,320 cfs Feb. 9, 1962 (gage height, 9.15 ft); no flow for several months in each year.

Remarks.--Records fair. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.4	0	4.0	24
3.5	.2	4.3	55
3.6	1.5	4.6	96
3.7	4.7	5.0	167
3.8	9.6	5.5	285

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	2.7	1.9	3.9	1.9	3.3	1.5	0.6	0.1		
2		0	2.7	1.5	3.5	3.5	9.6	1.5	.6	.1		
3		0	*2.4	1.5	3.5	*1.9	6.7	1.5	*.6	.1		
4		0	2.4	1.5	*3.1	1.7	5.2	1.5	.6	0		
5		.3	2.4	1.5	3.1	1.7	4.7	*1.7	.5	0		
6		*5.4	2.4	1.3	3.1	1.5	3.9	1.7	.5	0		
7	(*)	1.1	2.4	1.3	2.7	1.5	3.9	1.7	.5	0		
8		.6	2.4	*1.1	2.4	1.5	3.5	1.5	.5	0		
9		.4	2.7	1.1	2.4	1.3	3.1	1.3	.6	0		
10		.3	2.7	1.1	2.1	1.3	2.7	1.3	.4	0		
11		.3	2.4	1.1	2.1	1.3	2.7	1.3	.3	0		
12		.2	2.4	1.0	2.1	2.7	2.4	1.1	.4	0		
13		.2	2.4	1.0	2.1	2.1	2.1	1.1	.3	0		
14		9.6	2.1	1.0	2.1	1.7	2.1	1.1	.3	0		
15		4.2	2.1	1.0	2.1	1.5	2.1	1.1	.2	0		(*)
16		6.7	2.1	1.0	2.1	1.5	2.1	1.1	.3	0		
17		2.4	2.1	1.1	1.9	1.5	2.1	1.3	.2	0		
18		1.9	2.1	1.7	1.9	1.5	2.1	1.1	.2	0		
19		9.9	2.1	2.1	1.9	1.5	2.1	1.1	.2	0		
20		27.5	2.1	5.1	1.9	1.5	2.1	1.0	.2	0	(*)	
21		2.9	2.1	4.1	1.5	1.5	1.9	1.0	.2	*0		
22		1.3	1.9	5.3	1.5	3.5	1.9	.8	.2	0		
23		8.6	1.9	1.8	1.5	7.6	1.9	.8	.2	0		
24		7.6	1.9	1.0	1.5	5.2	1.9	.8	.1	0		
25		6.2	1.9	7.6	1.5	3.9	1.9	.8	.1	0		
26		5.2	1.9	6.7	1.5	3.1	1.9	.8	.1	0		
27		4.3	1.9	5.7	1.5	2.7	1.7	1.3	.1	0		
28		3.9	1.9	4.7	1.5	2.4	1.7	1.3	.1	0		
29		3.5	1.9	4.3	1.5	2.1	1.7	1.0	.2	0		
30		3.1	1.9	4.3	-----	*2.1	1.7	.8	.2	0		
31		-----	1.9	4.3	-----	3.1	-----	.7	-----	0		-----
Total	0	529.8	68.2	189.5	63.5	71.8	116.4	36.6	9.5	0.3	0	0
Mean	0	17.7	2.20	6.11	2.19	2.32	3.88	1.18	0.32	0.01	0	0
Max	0	27.5	2.7	5.3	3.9	7.6	3.3	1.7	0.6	0.1	0	0
Min	0	0	1.9	1.0	1.5	1.3	1.7	0.7	0.1	0	0	0
Ac-ft	0	1,050	135	376	126	142	231	73	1.9	0.6	0	0
(†)	1.5	8.0	0.2	3.7	0	4.6	0.1	0.6	0.3	0	0	0
(‡)	2.2	11.5	0.2	3.9	0	4.0	0.2	1.1	0.7	0	0	0

Calendar year 1963: Max 607 Min 0 Mean 17.4 Ac-ft 12,560

Water year 1963-64: Max 275 Min 0 Mean 2.97 Ac-ft 2,150

Peak discharge (base, 400 cfs).--Nov. 20 (0130) 1,250 cfs (7.73 ft).

* Discharge measurement or observation of no flow made on this day.

† Precipitation, in inches.

‡ Precipitation, in inches, at auxiliary gage.

SALINAS RIVER BASIN

11-1475. Salinas River at Paso Robles, Calif.

Location.--Lat 35°37'40", long 120°41'05", in Paso de Robles Grant, on downstream side of left pier of bridge on State Highway 41 at Paso Robles, San Luis Obispo County, 3.5 miles upstream from Huerfuer Creek.

Drainage area.--389 sq mi.

Records available.--October 1939 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 670.61 ft above mean sea level (levels by Corps of Engineers). Prior to June 14, 1951, wire-weight gage at same site and datum.

Average discharge.--25 years, 91.5 cfs (66,240 acre-ft per year); median of yearly mean discharges, 45 cfs (32,600 acre-ft per year).

Extremes.--Maximum discharge during year, 237 cfs Jan. 22 (gage height, 8.12 ft); no flow for several months.

1939-64: Maximum discharge, 14,200 cfs Mar. 9, 1943 (gage height, 16.2 ft, from stage graph); from rating curve extended above 6,000 cfs on basis of velocity-area studies; maximum gage height, 17.24 ft Apr. 3, 1958; no flow for several months in each year.

Remarks.--Records poor. Flow regulated by Salinas Reservoir beginning in 1941 (see p. 266). Small diversions above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 20, 21, Jan. 2-21)

Oct. 1 to Jan. 21

Jan. 22 to Sept. 30

6.8	0	7.2	15	6.3	0	7.0	16
6.9	.4	7.3	28	6.4	.2	7.2	31
7.0	2.1	7.7	110	6.5	.9	7.4	56
7.1	6.8			6.6	2.0	7.7	115
				6.7	4.1	8.0	197
				6.8	6.9		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0		0	1.6	3.7	*3.4	0				(*)
2		0		.9	1.5	4.7	4.5	0				
3		0		1.9	1.4	4.9	2.5	0				
4		0	(*)	3.0	1.3	*3.3	1.7	0		(*)		
5		0		3.0	1.2	2.6	1.4	*.2				
6		*0		4.0	*9.8	2.8	1.2	.8				
7		0		*4.5	8.1	2.6	9.8	.9		(*)		
8	(*)	0		2.1	8.5	2.6	9.0	.8				
9		0		1.8	9.8	2.0	7.7	.6				
10		0		2.6	1.0	1.8	6.9	.6				
11		0		3.0	9.4	1.9	6.1	.5				
12		0		3.5	6.9	2.8	4.9	.3				
13		0		4.5	6.6	1.8	4.7	0				
14		0		4.9	6.3	1.6	3.1	0				
15		0		3.0	6.6	1.5	2.0	0				
16		0		3.0	6.6	1.3	*1.0	0				
17		0		4.5	6.6	.9	.7	0				
18		0	(*)	4.5	6.3	.6	.4	0				
19		0		4.9	*7.7	.2	.2	0				
20		*48		12	6.6	**1	0	0				
21		2.2		9.5	5.5	0	0	*0				
22		0		*17.4	5.5	.7	0	0				
23		0		10.6	5.2	.3	0	0				
24		0		5.9	5.5	2.0	0	0				
25		0		4.3	4.9	5.8	0	0				
26		0		3.3	4.4	6.3	0	0				
27		0		2.8	4.1	6.9	0	0				
28		0		2.5	3.9	5.8	0	0				
29		0		2.2	3.5	5.2	0	0				
30		0		1.8	-----	5.2	0	0				
31		-----		1.7	-----	9.2	-----	0				
Total	0	50.2	0	691.6	228.3	91.1	203.5	4.7	0	0	0	0
Mean	0	1.67	0	22.3	7.87	2.94	6.78	0.15	0	0	0	0
Max	0	48	0	17.4	16	9.2	4.5	0.9	0	0	0	0
Min	0	0	0	0	3.5	0	0	0	0	0	0	0
Ac-ft	0	100	0	1,370	453	181	404	9.3	0	0	0	0

Calendar year 1963: Max 1,610 Min 0 Mean 56.3 Ac-ft 40,760
Water year 1963-64: Max 174 Min 0 Mean 3.47 Ac-ft 2,520

Peak discharge (base, 1,100 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

** Field estimate made on this day.

11-1476. Huerhuero Creek near Creston, Calif.

Location.--Lat 35°35'00", long 120°33'15", in NE¼ sec.15, T.27 S., R.13 E., on left bank 1 mile northwest of Geneseo School and 4.6 miles northwest of Creston.

Drainage area.--101 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 930 ft (from topographic map).

Average discharge.--6 years, 0.52 cfs (376 acre-ft per year). 5 years, 0.61 cfs; figure published in 1963 Report in error.

Extremes.--Maximum discharge during year, 36 cfs Jan. 22 (gage height, 2.68 ft); no flow for several months.

1958-64: Maximum discharge, 808 cfs Feb. 9, 1962 (gage height, 5.75 ft), from rating curve extended above 140 cfs on basis of slope-area measurement of maximum flow; no flow for several months in each year.

Remarks.--Records fair. No regulation; small diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 22 to Feb. 9, Mar. 8-31, Apr. 13-17)

1.9	0	2.2	2.2
2.0	.1	2.3	5.0
2.1	.7	2.4	10

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1				0	0.2	0.3	*0.5	0.1				(*)
2				0	.2	.3	.3	.1				
3				0	.2	.3	.2	.1				
4				0	.2	*.3	.2	.1				
5			(*)	0	.2	.3	.2	*.1	(*)		(*)	
6		(*)		0	.2	.3	.2	.1				
7				*0	*.2	.3	.2	.1		(*)		
8				0	.2	.3	.2	.1				
9	(*)			0	.2	.3	.2	.1				
10				0	.2	.3	.2	.1				
11				0	.2	.3	.2	0				
12				0	.2	.4	.2	0				
13				0	.2	.3	.2	0				
14				0	.3	.2	.2	0				
15				0	.3	.2	.2	0				
16				0	.3	.2	*.2	0				
17				0	.2	.2	.2	0		(*)	(*)	
18			(*)	0	*.2	.2	.2	0				
19				0	.2	.2	.2	0				
20				.1	.2	*.2	.2	0				
21		(*)		*.3	.2	.2	.1	*0				
22				9.7	.2	.4	.1	0				
23				.6	.2	.4	.1	0				
24				.3	.2	.4	.1	0				
25				.3	.3	.3	.1	0				
26				.3	.3	.2	.1	0				
27				.2	.3	.2	.1	0				
28				.2	.3	.2	.1	0				
29				.2	.3	.2	.1	0				
30				.2	-----	.2	.1	0				
31		-----		.2	-----	.4	-----	0	-----			-----
TOTAL	0	0	0	12.6	6.6	8.5	5.4	1.0	0	0	0	0
MEAN	0	0	0	0.41	0.23	0.27	0.18	0.03	0	0	0	0
MAX	0	0	0	9.7	0.3	0.4	0.5	0.1	0	0	0	0
MIN	0	0	0	0	0.2	0.2	0.1	0	0	0	0	0
AC-FT	0	0	0	25	13	17	11	2.0	0	0	0	0

CALENDAR YEAR 1963: MAX 1.6 MIN 0 MEAN 0.14 AC-FT 100
WATER YEAR 1963-64: MAX 9.7 MIN 0 MEAN 0.09 AC-FT 68

Peak discharge (base, 40 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

SALINAS RIVER BASIN

11-1477. Cholame Creek tributary near Cholame, Calif.

Location.--Lat 35°45'10", long 120°15'50", in Cholame Grant, on right bank at culvert on State Highway 41, 2.8 miles northeast of Cholame, San Luis Obispo County.

Drainage area.--9.26 sq mi (revised).

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder, crest-stage gage, and tipping-bucket rain gage. Datum of gage is 1,213 ft above mean sea level (by vertical angles).

Average discharge.--6 years, 0.09 cfs (65 acre-ft per year).

Extremes.--Maximum discharge during year, 14 cfs Jan. 22 (gage height, 3.48 ft); no flow for several months.

1958-64: Maximum discharge, 118 cfs Feb. 9, 1962 (gage height, 4.99 ft), by indirect measurement of maximum flow through culvert; no flow for most of each year.

Remarks.--Records fair. No regulation; small diversions above station for irrigation.

Revisions (water years).--1963 Report: 1962(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.4	0	2.7	1.1
2.5	.1	2.8	2.0
2.6	.5	3.0	4.5

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0	0		0	0	0.1	*0.1	0				(*)
2	0	0		.1	0	.1	.1	0				
3	0	0		.1	0	.1	.1	0				
4	0	0		.1	0	*.1	.1	.1	(*)		(*)	
5	0	0	(*)	.1	0	.1	.1	*0				
6	0	*.1		.1	0	.1	.1	.1				
7	0	0		*0	*0	.1	.1	0		(*)		
8	*0	0		0	0	0	.1	0				
9	0	0		0	0	0	.1	0				
10	0	0		0	0	0	.1	0				
11	.1	0		0	0	0	.1	0				
12	.1	0		0	0	0	.1	0				
13	0	0		0	0	0	.1	0				
14	0	.1		0	0	0	.1	0				
15	.1	.1		0	0	0	.1	0				
16	.1	.1		0	0	0	.1	0				
17	.1	.1		0	0	0	.1	0				
18	0	.1		0	0	0	.1	0				
19	0	.1		0	0	0	.1	0				
20	0	.1		.1	0	0	.1	0				
21	0	.1		.1	0	0	.1	0				
22	0	.1		2.6	0	.1	.1	0				
23	0	.1		.1	0	.1	.1	0				
24	0	.1		0	0	.1	.1	0				
25	0	.1		0	0	.1	.1	0				
26	0	.1		0	0	.1	.1	0				
27	0	.1		0	.1	.1	0	0				
28	0	0		0	.1	.1	0	0				
29	0	0		0	.1	.1	0	0				
30	0	0		0	-----	.1	0	0				
31	0	-----		0	-----	.1	-----	0	-----			-----
TOTAL	0.5	1.5	0	3.4	0.3	1.7	2.6	0.2	0	0	0	0
MEAN	0.02	0.05	0	0.11	0.01	0.05	0.09	0.006	0	0	0	0
MAX	0.1	0.1	0	2.6	0.1	0.1	0.1	0.1	0	0	0	0
MIN	0	0	0	0	0	0	0	0	0	0	0	0
AC-FT	1.0	3.0	0	6.7	0.6	3.4	5.2	0.4	0	0	0	0
(†)	1.2	1.2	0	-	-	-	0	0.3	0	0	0	0

CALENDAR YEAR 1963: MAX 0.2 MIN 0 MEAN 0.03 AC-FT 20
WATER YEAR 1963-64: MAX 2.6 MIN 0 MEAN 0.03 AC-FT 20

Peak discharge (base, 10 cfs).--Jan. 22 (0100) 14 cfs (3.48 ft).

* Discharge measurement or observation of no flow made on this day.

† Precipitation, in inches.

11-1478. Cholame Creek near Shandon, Calif.

Location.--Lat 35°41'20", long 120°20'03", in SE¼ sec.3, T.26 S., R.15 E., on left bank 500 ft upstream from highway bridge, 2.6 miles downstream from White Canyon, and 3.5 miles northeast of Shandon.

Drainage area.--227 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 1,069.0 ft above mean sea level (planetable survey).

Average discharge.--6 years, 1.49 cfs (1,080 acre-ft per year).

Extremes.--No flow during year.

1958-64: Maximum discharge, 1,100 cfs Feb. 9, 1962 (gage height, 6.90 ft), but may have been higher Feb. 16, 1959; no flow for many months in each year.

Remarks.--No flow since Feb. 16, 1963. Observations of no flow generally made once a month. No regulation; small diversions above station. Figures of discharge for calendar year 1963 are as follows: maximum daily, 233 cfs; minimum, zero; mean, 1.72 cfs; total, 1,240 acre-ft.

11-1485. Estrella River near Estrella, Calif.

Location.--Lat 35°42'35", long 120°38'20", in NW¼NW¼ sec.36, T.25 S., R.12 E., on right bank 0.2 mile downstream from mouth of Ranchito Canyon and 1.9 miles northwest of Estrella.

Drainage area.--924 sq mi (revised), not including Carrizo Plains.

Records available.--October 1954 to September 1964. Prior to October 1962, published as Estrella Creek near Estrella.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 710 ft (from topographic map).

Average discharge.--10 years, 13.2 cfs (9,560 acre-ft per year); median of yearly discharges, 3.2 cfs (2,300 acre-ft per year).

Extremes.--Maximum discharge during year, 48 cfs Nov. 19 (gage height, 2.29 ft); no flow for several months.

1954-64: Maximum discharge, 8,850 cfs Apr. 6, 1958 (gage height, 7.20 ft), from rating curve extended above 2,000 cfs on basis of slope-area measurement of maximum flow; no flow for several months in each year.

Remarks.--Records fair. No regulation; pumpage from wells along river for irrigation above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.8	0	2.0	6.8
1.9	1.1	2.1	15

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0		0	3.4	2.8	*4.7	0.1				(*)
2		0		0	3.4	3.4	4.7	0				
3		0		0	3.4	3.4	4.7	.1				
4		0	(*)	0	3.4	*4.0	4.7	.1			(*)	
5		0		0	*3.4	4.0		*0				
6		*0		0	3.4	3.4	3.4	.2				
7	(*)	0		*0	3.4	3.4	2.8	.5		(*)		
8		0		0	3.4	2.8	2.2	.6				
9		0		0	4.0	2.8	1.7	.6				
10		0		0	4.0	2.2	1.7	.6				
11		0		0	4.0	2.8	1.4	.2				
12		0		0	3.4	2.8	1.4	.4				
13		0		0	3.4	3.4	1.1	.2				
14		0		.2	3.4	2.8	1.1	.1				
15		0		.7	4.0	2.8	.8	0				
16		0		.9	3.4	2.2	.6	0				
17		0		1.1	3.4	2.2	.6	0				
18		0		1.4	3.4	2.2	.6	0				
19		1.3		1.7	3.4	2.8	.5	0				
20		7.8		2.8	2.8	3.4	.5	0				
21		0		6.1	2.2	3.4	.6	0				
22		0		9.0	2.8	4.0	.6	0				
23		0		9.0	2.8	5.4	.6	0				
24		0		11	3.4	5.4	.6	0				
25		0		9.0	3.4	5.4	.5	0				
26		0		8.2	3.4	4.7	.4	0				
27		0		6.8	2.8	4.0	.2	0				
28		0		5.4	2.8	2.8	.2	0				
29		0		4.7	2.8	2.2	.2	0				
30		0		4.7	-----	2.2	.1	0				
31		-----		4.0	-----	3.4	-----	0	-----			-----
Total	0	9.1	0	86.7	96.2	102.5	47.2	3.7	0	0	0	0
Mean	0	0.30	0	2.80	3.32	3.31	1.57	0.12	0	0	0	0
Max	0	7.8	0	11	4.0	5.4	4.7	0.6	0	0	0	0
Min	0	0	0	0	2.2	2.2	0.1	0	0	0	0	0
Ac-ft	0	18	0	172	191	203	.94	7.3	0	0	0	0

Calendar year 1963: Max 270 Min 0 Mean 4.23 Ac-ft 3,060

Water year 1963-64: Max 11 Min 0 Mean 0.94 Ac-ft 685

Peak discharge (base, 200 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

11-1488. Nacimiento River near Bryson, Calif.

Location.--Lat 35°48'06", long 121°06'50", in NW¼ sec.33, T.24 S., R.8 E., on right bank 0.6 mile upstream from Turtle Creek, 1.6 miles west of Bryson, and 10 miles southwest of Lockwood.

Drainage area.--140 sq mi.

Records available.--October 1955 to September 1964. Records for February to April 1901, published in WSP 66 and 75, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Altitude of gage is 860 ft (from topographic map).

Average discharge.--9 years, 148 cfs (107,100 acre-ft per year).

Extremes.--Maximum discharge during year, 6,070 cfs Jan. 21 (gage height, 11.71 ft); no flow for several months.

1955-64: Maximum discharge, 30,300 cfs Dec. 23, 1955 (gage height, 24.63 ft), from rating curve extended above 13,000 cfs on basis of slope-area measurement of maximum flow; no flow at times in each year.

Remarks.--Records fair. No storage or diversion above station.

Revisions (water years).--1962 Report; 1961.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0	0.9	30	12	98	24	446	18	8.3	0.3		
2	0	1.0	28	12	86	27	194	18	*7.9	.3		
3	0	1.2	26	11	78	29	136	18	7.2	.2		
4	0	1.2	*25	11	69	*25	103	18	6.8	.2		
5	0	*43	25	11	*64	25	82	19	6.0	.2		
6	0	434	24	11	60	23	69	*20	5.7	.1		
7	0	53	23	11	55	22	60	21	5.3	.1		
8	0	25	22	11	50	22	53	18	5.3	.1		
9	0	15	22	*11	47	21	47	17	5.7	.1		
10	*0	11	23	11	44	21	43	16	6.8	0		
11	0	9.4	22	11	41	21	40	15	6.4	0		
12	0	8.3	21	11	37	28	36	13	5.3	0		
13	0	7.5	20	11	35	33	33	13	5.0	0		
14	0	261	18	10	34	26	30	14	4.1	0		
15	0	439	18	10	36	23	28	13	3.8	0		
16	0	118	18	10	36	22	26	12	3.3	0		
17	0	62	17	10	34	21	25	12	3.0	0		
18	0	43	17	11	33	20	25	12	2.8	0		(*)
19	.2	708	17	14	31	19	25	12	2.8	0		
20	.7	892	16	888	30	19	24	11	2.3	0	(*)	
21	.7	212	16	2,220	29	18	23	11	2.3	0		
22	.7	108	16	1,700	28	28	22	10	1.9	0		
23	.7	75	15	763	27	206	21	9.8	1.4	*0		
24	.8	69	14	455	26	176	21	9.4	1.2	0		
25	.8	55	13	321	25	123	21	9.0	.9	0		
26	.8	47	13	269	25	93	21	9.8	.7	0		
27	.9	43	13	212	25	78	20	10	.5	0		
28	.9	38	13	176	24	69	19	11	.5	0		
29	.9	35	13	147	24	58	18	11	.4	0		
30	1.0	33	13	126	-----	53	18	10	.4	0		
31	1.0	-----	12	111	-----	*57	-----	9.0	-----	0		-----
TOTAL	10.1	3,848.5	583	7,598	1,231	1,430	1,729	420.0	114.0	1.6	0	0
MEAN	0.33	128	18.8	245	42.4	46.1	57.6	13.5	3.80	0.05	0	0
MAX	1.0	892	30	2,220	98	206	446	21	8.3	0.3	0	0
MIN	0	0.9	12	10	24	18	18	9.0	0.4	0	0	0
AC-FT	20	7,630	1,160	15,070	2,440	2,840	3,430	833	226	3.2	0	0

CALENDAR YEAR 1963: MAX 13,600 MIN 0 MEAN 203 AC-FT 147,000
 WATER YEAR 1963-64: MAX 2,220 MIN 0 MEAN 46.4 AC-FT 33,650

Peak discharge (base, 4,000 cfs).--Jan. 21 (0030) 6,070 cfs (11.71 ft).

* Discharge measurement or observation of no flow made on this day.

11-1494. Nacimiento River below Nacimiento Dam, near Bradley, Calif.

Location.--Lat 35°45'41", long 120°51'16", in NE¼NE¼ sec.14, T.25 S., R.10 E., on left bank 2.2 miles below Nacimiento Dam and 7.6 miles southwest of Bradley.

Drainage area.--322 sq mi.

Records available.--October 1957 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 597 ft above mean sea level (Corps of Engineers bench mark).

Average discharge.--7 years, 229 cfs (165,800 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 618 cfs Jan. 27, 28 (gage height, 5.97 ft); minimum, 0.1 cfs Feb. 28 to Mar. 10. 1957-64: Maximum discharge, 5,220 cfs Apr. 7, 1958 (gage height, 10.28 ft); no flow many days each year except 1964.

Remarks.--Records good. Flow regulated by Nacimiento Dam (usable capacity, 340,000 acre-ft). No diversion above station.

Cooperation.--Two discharge measurements furnished by Monterey County Flood Control and Water Conservation District.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	375	158	150	152	610	0.1	144	291	414	482	518	522
2	378	158	150	150	610	*.1	142	294	*414	482	518	*514
3	381	158	148	152	*610	.1	142	297	414	478	537	518
4	378	160	146	152	610	.1	142	*297	410	478	562	518
5	378	162	*146	150	610	.1	142	294	414	478	*562	522
6	381	*162	148	152	606	.1	140	219	414	478	558	522
7	381	162	146	150	432	.1	140	196	414	*478	554	522
8	384	160	146	*152	12	.1	140	294	418	470	554	518
9	*348	160	146	152	5.9	.1	140	297	418	466	554	518
10	273	160	148	150	4.5	64	140	297	414	462	554	522
11	276	160	150	150	*1.9	148	140	297	414	462	550	486
12	273	160	148	148	2.9	150	140	363	410	466	550	466
13	273	160	150	148	3.7	150	140	422	410	462	550	462
14	270	162	150	148	3.9	148	140	418	406	462	550	462
15	276	164	150	148	4.5	148	223	414	406	466	546	454
16	276	162	150	146	4.5	148	288	418	402	462	546	*450
17	276	162	150	146	3.9	233	288	418	398	491	546	458
18	273	162	152	146	3.9	312	291	414	398	530	546	462
19	276	164	150	146	3.9	312	291	418	398	526	538	466
20	276	162	150	146	3.7	312	291	418	398	522	538	466
21	276	160	150	148	1.2	315	291	422	398	522	534	466
22	273	160	152	146	.6	312	291	418	398	522	538	429
23	276	158	154	144	.4	312	291	418	394	522	534	402
24	276	158	152	144	.2	245	291	418	394	518	*534	402
25	279	158	152	142	.2	146	291	418	394	518	530	406
26	279	156	150	142	.2	146	291	422	390	518	534	398
27	282	154	150	326	.2	146	291	422	394	518	530	394
28	279	154	152	614	.1	146	291	418	394	518	530	390
29	279	154	152	610	.1	146	291	418	394	514	522	*390
30	279	150	152	610	-----	146	291	418	439	518	522	384
31	221	-----	150	610	-----	*148	-----	418	-----	518	522	-----
TOTAL	9,401	4,780	4,640	6,620	4,150.4	4,333.9	6,554	11,386	12,173	15,307	16,761	13,889
MEAN	303	159	150	214	143	140	218	367	406	494	541	463
MAX	384	164	154	614	610	315	291	422	439	530	562	522
MIN	221	150	146	142	0.1	0.1	140	196	390	462	518	384
AC-FT	18,650	9,480	9,200	13,130	8,230	8,600	13,000	22,580	24,140	30,360	33,240	27,550

CALENDAR YEAR 1963 MAX 514 MIN 0 MEAN 187 AC-FT 135,100
 WATER YEAR 1963-64 MAX 614 MIN 0.1 MEAN 301 AC-FT 218,200

* Discharge measurement made on this day.

11-1497. San Antonio River at Sam Jones Bridge, near Lockwood, Calif.

Location.--Lat 35°54'45", long 121°07'50", in Los Ojitos Grant, on downstream side of Sam Jones Bridge, 300 ft downstream from China Gulch and 3.5 miles southwest of Lockwood, Monterey County.

Drainage area.--211 sq mi.

Records available.--June 1958 to September 1959, February 1961 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 860 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,380 cfs Nov. 20 (gage height, 4.85 ft); minimum daily 0.1 cfs Aug. 27.

1958-59, 1961-64: Maximum discharge, 14,400 cfs Jan. 31, 1963 (gage height, 8.70 ft); no flow July 15 to Nov. 1, 1961.

Revisions.--The maximum discharge for the water year 1959 has been revised to 2,450 cfs Feb. 16, 1959 (gage height, 5.45 ft), superseding figure published in 1961 Report.

Remarks.--Records poor prior to Dec. 1, fair thereafter. No regulation; some pumping above station.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1959, superseding figures published in 1961 Report, are given herewith:

1959	1959-Con.
Jan. 9..... 511	Feb. 18.....1,240
10..... 668	19..... 638
Feb. 11..... 582	21..... 952
16.....1,120	22..... 624
17..... 636	

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
January 1959.....	2,891.8	668	3.2	93.3	5,740
February.....	9,177	1,240	12	328	18,200
Water year 1958-59.....	-	1,240	0.5	43.5	31,520

Revised peak discharge.--Jan. 9 (2400) 1,240 cfs (4.75 ft); Feb. 11 (0600) 823 cfs (4.27 ft); Feb. 16 (1400) 2,450 cfs (5.45 ft); Feb. 21 (1500) 1,140 cfs (4.60 ft).

Rating tables, except period of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)

(Shifting-control method used Oct. 3-11, Nov. 4-6, 15-24, Sept. 1-3, 7-9)

Oct. 1 to Nov. 5		Nov. 6 to Sept. 30	
2.0	0.2	1.6	0
2.1	.5	1.7	.6
2.2	1.4	1.8	1.8
2.3	5.5	1.9	3.6
2.4	14	2.0	6.1
		2.2	14
		2.4	25
		2.6	43
		2.9	88
		3.3	185
		3.7	345
		4.2	670

SALINAS RIVER BASIN

11-1497. San Antonio River at Sam Jones Bridge, near Lockwood, Calif.--Continued.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	e1.4	33	16	70	27	*39	13	4.4	2.2	1.3	0.5
2	.4	e1.4	31	16	69	27	38	13	*4.4	2.2	1.3	.4
3	.4	e1.4	29	15	64	27	31	13	4.4	2.0	1.3	.4
4	.4	1.4	27	15	58	*25	28	13	3.9	2.2	1.2	.3
5	.6	*1.4	*26	15	57	24	27	13	3.9	2.2	1.0	.3
6	.8	144	24	15	*55	24	25	*13	3.6	1.8	.8	.3
7	1.0	47	23	15	54	23	24	13	3.4	1.8	.7	.4
8	1.0	29	23	15	51	23	23	13	3.4	1.7	.6	.4
9	1.3	23	23	*14	48	23	22	12	3.4	1.7	.6	.4
10	*1.8	19	23	14	47	22	22	12	3.4	1.7	.5	.4
11	8.8	18	22	14	44	22	21	11	3.1	1.7	.5	.3
12	3.4	16	21	14	42	23	21	10	2.9	1.6	.5	.3
13	2.2	15	21	14	40	25	20	9.6	2.7	1.6	.5	.3
14	1.8	42	20	14	39	23	*19	9.2	2.3	1.6	.6	.3
15	3.9	319	20	14	39	21	19	8.4	2.3	1.6	1.0	.3
16	e 7.0	100	20	14	38	21	19	8.1	2.3	1.4	.7	.2
17	e 5.0	66	19	14	36	20	18	7.7	2.2	1.3	.5	*.3
18	e 2.5	41	19	15	34	20	18	7.7	*2.2	1.3	.5	.4
19	e 1.9	68	19	16	*34	19	18	8.1	2.3	1.2	*.5	.3
20	e 1.7	502	*18	21	33	18	18	7.3	2.3	1.2	.5	.3
21	e 1.6	119	17	481	32	*17	17	*6.9	2.2	1.2	.5	.2
22	e 1.6	*94	17	*663	32	19	17	6.5	2.2	1.2	.5	.2
23	e 1.6	83	17	275	31	31	16	6.1	2.0	*1.1	.4	.2
24	e 1.5	70	17	196	30	41	16	5.9	1.8	1.3	.2	.2
25	e 1.5	61	17	155	29	35	15	5.1	1.8	1.2	.2	.2
26	e 1.5	54	16	133	28	31	15	5.1	1.8	1.2	.2	.3
27	e 1.5	49	16	115	27	29	15	5.9	1.8	1.3	.1	.4
28	e 1.4	43	16	102	27	27	15	5.4	2.0	1.3	.2	.5
29	e 1.4	41	16	92	27	25	14	5.4	2.0	1.3	.2	.5
30	e 1.4	35	16	84	-----	24	13	5.1	2.2	1.3	.2	.5
31	e 1.4	-----	16	77	-----	26	-----	4.6	-----	1.3	.4	-----
Total	62.7	2105.0	642	2673	1215	762	623	277.1	82.6	47.7	18.2	10.0
Mean	2.02	70.2	20.7	86.2	41.9	24.6	20.8	8.94	2.75	1.54	0.59	0.33
Max	8.8	319	33	663	70	41	39	13	4.4	2.2	1.3	0.5
Min	0.4	1.4	16	14	27	17	13	4.6	1.8	1.1	0.1	0.2
Ac-ft	124	4180	1270	5300	2410	1510	1240	550	164	95	36	20

Calendar year 1963: Max 7.480 Min 0.1 Mean 125 Ac-ft 90,580
 Water year 1963-64: Max 663 Min 0.1 Mean 233 Ac-ft 16,900

Peak discharge (base, 300 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-6	0700	3.66	325	11-20	0200	4.85	1,380
11-15	0100	4.21	678	1-21	0600	4.84	1,360

* Discharge measurement made on this day.
 e Stage-discharge relation indefinite.

SALINAS RIVER BASIN

279

11-1500. San Antonio River at Pleyto, Calif.

Location.--Lat 35°51'55", long 120°59'30", in Pleyto Grant, on downstream side of left abutment of highway bridge at old townsite of Pleyto, Monterey County, 1.1 miles downstream from Copperhead Creek, and 15 miles west of Bradley.

Drainage area.--284 sq mi.

Records available.--April to September 1922, October 1929 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 712.10 ft above mean sea level, datum of 1929, supplementary adjustment of 1960. Prior to May 10, 1939, at datum 1.00 ft higher. April to September 1922, staff gage at same site at different datum.

Average discharge.--35 years (1929-64), 80.2 cfs (58,060 acre-ft per year); median of yearly mean discharges, 47 cfs (34,000 acre-ft per year).

Extremes.--Maximum discharge during year, 630 cfs Jan. 22 (gage height, 2.71 ft); no flow for several months.

1929-64: Maximum discharge, 19,100 cfs Apr. 3, 1958 (gage height, 6.44 ft), from rating curve extended above 4,500 cfs; no flow several months each year except possibly 1942-43.

Remarks.--Records poor. No regulation; diversion for irrigation of about 500 acres above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	33	14	100	25	33	9.6	0.5			
2		0	32	14	95	25	36	9.6	*.4			
3		0	30	13	80	25	33	8.8	.2			
4		0	*27	13	72	*25	25	9.6	.2			
5		*0	26	13	*68	25	23	10	.1			
6		0	25	14	61	25	22	*10	.1			
7		0	24	14	55	24	e22	11	.1			
8		0	23	14	52	23	e21	12	.1			
9		0	23	*13	49	23	e20	12	.1			
10	(*)	0	22	13	47	23	e20	10	.1			
11		0	20	13	45	23	e19	10	0			
12		0	20	13	43	24	e18	9.6	0			
13		0	19	12	40	24	18	8.8	0			
14		0	19	12	37	24	*18	8.8	0			
15		77	18	12	34	23	18	7.6	0			
16		107	18	11	34	22	16	7.1	0			
17		70	18	11	33	21	15	6.2	0			(*)
18		40	18	12	33	20	15	5.4	*0			
19		46	18	12	*33	19	14	5.0	0		(*)	
20		263	*17	17	33	18	14	4.0	0			
21		171	17	217	33	*17	14	*4.0	0			
22		*105	16	*469	32	19	14	3.4	0			
23		83	16	308	30	26	13	2.6	0	(*)		
24	(*)	74	16	216	32	34	12	2.4	0			
25		63	16	180	30	36	11	1.9	0			
26		54	15	161	30	32	11	1.4	0			
27		50	14	146	27	25	11	1.4	0			
28		45	15	131	25	23	10	1.0	0			
29		42	15	118	26	22	10	.8	0			
30		37	15	112	-----	21	10	.7	0			
31		-----	14	102	-----	*24	-----	.6	-----			
Total	0	1,327	619	2,420	1,309	740	536	195.3	1.9	0	0	0
Mean	0	44.2	20.0	78.1	45.1	23.9	17.9	6.30	0.06	0	0	0
Max	0	263	33	469	100	36	36	12	0.5	0	0	0
Min	0	0	14	11	25	17	10	0.6	0	0	0	0
Ac-ft	0	2,630	1,230	4,800	2,600	1,470	1,060	387	3.8	0	0	0

Calendar year 1963: Max 6,110 Min 0 Mean 122 Ac-ft 88,660

Water year 1963-64: Max 469 Min 0 Mean 19.5 Ac-ft 14,180

Peak discharge (base, 470 cfs).--Jan. 22 (1400) 630 cfs (2.71 ft).

* Discharge measurement or observation of no flow made on this day.

e Stage-discharge relation indefinite.

SALINAS RIVER BASIN

11-1505. Salinas River near Bradley, Calif.

Location.--Lat 35°55'40", long 120°52'00", in NE¼ sec.15, T.23 S., R.10 E., on left bank 6 miles northwest of Bradley and 7 miles downstream from San Antonio River.

Drainage area.--2,536 sq mi (revised).

Records available.--October 1948 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Altitude of gage is 450 ft (from topographic map).

Average discharge.--16 years, 369 cfs (267,100 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 708 cfs Jan. 31, Feb. 1 (gage height, 4.61 ft); minimum daily, 27 cfs Mar. 10. 1948-64: Maximum discharge, 28,400 cfs Apr. 3, 1958 (gage height, 12.53 ft); no flow at times in 1951, 1954-55, 1957.

Remarks.--Records poor. Flow partly regulated by Salinas Reservoir (see p. 266), and Nacimiento Reservoir beginning in November 1956 (usable capacity, 340,000 acre-ft). Several small diversions above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	400	216	206	170	700	47	211	318	412	478	520	532
2	400	168	196	170	693	*45	200	318	418	478	520	*532
3	390	160	*191	170	693	40	200	317	412	484	520	532
4	390	160	187	170	*686	36	200	317	*406	484	560	539
5	390	160	187	170	686	34	200	*316	400	490	*567	539
6	390	*169	182	170	686	34	200	316	394	497	574	532
7	*389	169	182	*178	679	34	187	195	394	484	553	511
8	382	169	182	173	382	31	191	285	388	*466	539	490
9	382	169	187	173	228	29	187	316	412	466	518	490
10	306	169	178	173	169	27	178	310	424	466	511	497
11	277	169	173	173	130	134	173	310	442	466	504	490
12	272	169	178	173	110	216	164	310	424	472	504	484
13	272	173	173	178	92	211	169	376	418	490	518	478
14	272	178	169	178	85	206	*173	394	400	490	518	478
15	272	191	173	178	82	200	187	*406	394	484	511	472
16	277	182	173	178	78	196	283	400	376	472	504	466
17	277	178	173	182	72	206	328	406	382	472	504	*478
18	277	178	173	182	69	328	327	406	*376	520	504	472
19	277	178	169	178	*64	346	326	410	382	539	*504	472
20	277	277	*169	206	61	346	325	410	382	539	490	490
21	272	322	169	283	58	*346	324	410	380	539	490	484
22	272	*299	169	*424	55	352	323	410	380	539	478	478
23	272	277	164	539	52	358	322	410	380	*546	478	430
24	*272	261	164	472	49	346	321	410	380	553	478	430
25	272	250	170	430	52	222	320	410	380	553	490	430
26	277	244	170	406	49	178	320	410	380	546	497	436
27	277	239	170	394	49	173	320	410	380	525	504	430
28	277	228	170	561	49	173	320	410	380	520	497	406
29	277	217	170	665	49	173	319	410	388	520	497	400
30	277	211	170	700	-----	*173	319	410	382	520	504	400
31	277	-----	170	700	-----	182	-----	410	-----	520	518	-----
Total	9,591	6,130	5,457	9,097	6,907	5,422	7,617	11,346	11,846	15,618	15,874	14,298
Mean	309	204	176	293	238	175	254	366	395	504	512	477
Max	400	322	206	700	700	358	328	410	442	553	574	539
Min	272	160	164	170	49	27	164	195	376	466	478	400
Ac-ft	19,020	12,160	10,820	19,040	13,700	10,750	15,110	22,500	23,500	30,980	31,490	28,360

Calendar year 1963: Max 7,780 Min 14 Mean 377 Ac-ft 273,200
 Water year 1963-64: Max 700 Min 27 Mean 326 Ac-ft 236,400

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-6; Dec. 25 to Jan. 6, Apr. 18 to May 4. Stage-discharge relation indefinite May 19-31, June 21-28, July 28 to Aug. 3.

11-1508. Cow Creek near San Ardo, Calif.

Location.--Lat 36°10'40", long 120°47'45", in San Lorenzo Grant, on right bank at culvert on Peach Tree Valley Road and 12.5 miles northeast of San Ardo, Monterey County.

Drainage area.--4.80 sq mi.

Records available.--October 1960 to September 1964, discontinued as a continuous-record station; converted to a crest-stage partial-record station.

Gage.--Water-stage recorder, crest-stage gage, and tipping-bucket rain gage. Altitude of gage is 1,340 ft (from topographic map).

Extremes.--Maximum discharge during year, 7.5 cfs Nov. 19 (gage height, 0.75 ft); no flow most of year.

1960-64: Maximum discharge, 213 cfs Feb. 15, 1962 (gage height, 6.96 ft, from crest-stage gage), by indirect measurement of maximum flow through culvert; no flow most of each year.

Remarks.--Records good. No regulation or diversion above station. Monthly precipitation, in inches, is as follows: October, 1.6; November, 3.2; December, 0.1; January, 1.4; March, 1.3; April, 0.2; May, 0.4; the water year, 8.2.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Nov. 19..... 0.7
20..... .3

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
November 1963.....	1.0	0.7	0	0.03	2.0
Calendar year 1963.....	-	34	0	.17	123
Water year 1963-64.....	-	.7	0	.003	2.0

Peak discharge (base, 5 cfs).--Nov. 19 (2200) 7.5 cfs (0.75 ft).

Note.--Flow occurred only on days listed above. Observations of no flow generally made once a month.

SALINAS RIVER BASIN

11-1513. San Lorenzo Creek below Bitterwater Creek, near King City, Calif.

Location.--Lat 36°16'05", long 121°03'50", in NW¼ sec.24, T.19 S., R.8 E., on left bank 1.2 miles downstream from Bitterwater Creek, 5 miles northeast of King City, and 10 miles upstream from mouth.

Drainage area.--233 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 480 ft (from topographic map).

Average discharge.--6 years, 4.98 cfs (3,610 acre-ft per year).

Extremes.--Maximum discharge during year, 820 cfs Nov. 20 (gage height, 6.10 ft); minimum, 0.1 cfs for many days in several months. 1958-64; Maximum discharge, 2,130 cfs Feb. 10, 1963 (gage height, 8.13 ft), from rating curve extended above 800 cfs; no flow Sept. 15 to Oct. 4, 1961.

Remarks.--Records good, except those above 2.0 cfs, which are poor. No regulation; small diversions above station.

Revisions (water years).--1962 Report: 1961.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.1	0.1	0.6	1.1	2.1	0.7	0.4	0.2	0.2	0.1	0.1	0.1
2	.1	.1	.6	1.1	2.0	1.0	.2	.2	.2	.1	.1	.1
3	.1	.1	.7	1.0	1.6	.8	.2	.2	*.2	.1	** .1	.1
4	.2	.1	*.8	1.0	1.6	.6	.2	.2	.1	.1	.1	.1
5	.2	.2	.8	1.0	1.5	*.6	.2	.2	.1	.1	.1	.1
6	.2	.2	.8	1.0	*1.3	.7	.2	*.2	.1	*.1	.1	.1
7	*.2	*.1	.8	1.2	1.2	.9	.2	.2	.1	.1	.1	.1
8	.2	.1	1.0	*1.2	1.2	.8	.3	.2	.2	.1	.1	.1
9	.2	.1	1.2	1.1	1.2	.7	.2	.2	.2	.1	.1	.1
10	.2	.1	1.5	1.1	1.1	.8	.2	.2	.2	.1	.1	*.1
11	.4	.1	1.5	1.1	1.0	a.7	.2	.2	.2	.1	.1	.1
12	.2	.1	1.2	1.2	.9	a.7	.2	.2	.1	.1	.1	.1
13	.2	.1	1.2	1.2	.8	a.7	.1	.2	.1	.1	.1	.1
14	.1	.1	1.2	1.3	.8	a.6	.1	.2	.1	.1	.1	.1
15	.2	.2	1.2	1.2	1.0	a.5	.1	.2	.1	.1	.1	.1
16	.2	.1	1.2	1.2	1.0	a.5	.1	.2	.1	.1	.1	.1
17	.2	.1	1.1	1.2	.9	a.5	.1	.2	.1	.1	.1	.1
18	.2	.1	1.1	1.5	.8	a.4	.1	.2	.1	.1	.1	.1
19	.1	.6	1.1	1.5	.8	a.4	.2	.2	.1	.1	.1	.1
20	.1	170	1.1	1.7	.7	a.4	.2	.2	.1	.1	.1	.1
21	.1	17	1.1	15	.6	a.4	.2	.2	.1	.1	.1	.1
22	.1	4.1	1.1	102	.6	a.4	.2	.2	.1	.1	.1	.1
23	.1	2.4	1.1	27	.6	a.8	.2	.2	.1	.1	.1	.1
24	.1	2.1	1.1	11	.6	a.9	.2	.2	.1	.1	.1	.1
25	.1	1.6	1.1	11	.7	a.7	.2	.2	.1	.1	.1	.1
26	.1	1.3	1.2	9.6	.7	a.5	.2	.2	.1	.1	.1	.1
27	.1	1.1	1.1	7.4	.6	a.4	.2	.2	.1	.1	.1	.1
28	.1	1.0	1.2	4.9	.6	a.3	.2	.2	.1	.1	.1	.1
29	.1	.9	1.2	3.6	.7	a.3	.2	.2	.1	.1	.1	.1
30	.1	.6	1.2	2.8	-----	.3	.2	.2	.1	.1	.1	.1
31	.1	-----	1.1	2.4	-----	*.3	-----	.2	-----	.1	.1	-----
TOTAL	4.7	204.8	33.2	220.6	29.2	18.3	5.7	6.2	3.7	3.1	3.1	3.0
MEAN	0.15	6.83	1.07	7.12	1.01	0.59	0.19	0.20	0.12	0.10	0.10	0.10
MAX	0.4	170	1.5	102	2.1	1.0	0.4	0.2	0.2	0.1	0.1	0.1
MIN	0.1	0.1	0.6	1.0	0.6	0.3	0.1	0.2	0.1	0.1	0.1	0.1
AC-FT	9.3	406	66	438	58	36	11	12	7.3	6.1	6.1	6.0

CALENDAR YEAR 1963 MAX 518 MIN 0.1 MEAN 8.33 AC-FT 6,030
 WATER YEAR 1963-64 MAX 170 MIN 0.1 MEAN 1.46 AC-FT 1,060

Peak discharge (base, 200 cfs).--Nov. 20 (0830) 820 cfs (6.10 ft); Jan. 22 (1300) 225 cfs (4.92 ft).

* Discharge measurement made on this day.

** Field estimate made on this day.

a No gage-height record.

11-1518.7. Arroyo Seco near Greenfield, Calif.

Location.--Lat 36°14'15", long 121°28'50", in NE¼SE¼ sec.36, T.19 S., R.4 E., on right bank 0.6 mile downstream from Rocky Creek and 14.5 miles southwest of Greenfield.

Drainage area.--113 sq mi.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 780 ft (from topographic map).

Extremes.--Maximum discharge during year, 3,310 cfs Jan. 20 (gage height, 7.50 ft); minimum, 0.4 cfs Aug. 29.
1961-64: Maximum discharge, 10,400 cfs Jan. 31, 1963 (gage height, 11.35 ft); no flow Oct. 1-5, 1961).

Remarks.--Records good. No regulation; small diversion for fishponds above station by pumping.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	6.2	14	54	26	139	40	*94	27	19	7.4	1.6	0.9
2	6.2	15	50	26	130	*46	76	28	19	6.7	1.5	*1.2
3	6.2	16	*48	25	122	41	67	29	19	6.2	1.4	1.4
4	6.2	*18	45	26	111	39	60	*32	*19	6.0	1.4	1.2
5	7.4	226	43	26	103	36	58	32	18	6.2	1.4	1.0
6	7.7	301	41	26	*96	35	57	37	18	6.5	*1.3	1.0
7	7.4	81	40	*26	89	35	54	35	18	6.0	1.1	1.0
8	7.4	50	38	26	84	33	51	32	19	*5.5	1.1	1.0
9	7.7	39	42	25	79	33	48	31	25	4.8	1.0	1.0
10	8.0	35	41	25	75	32	44	29	24	4.8	.9	1.1
11	25	31	37	25	71	32	43	27	22	4.3	.8	1.0
12	21	29	35	25	66	38	41	27	21	3.7	.8	1.0
13	15	26	35	25	64	35	38	26	19	3.4	.8	1.0
14	13	221	33	25	61	32	36	26	16	3.1	.7	.9
15	13	263	33	25	61	30	35	26	14	2.9	.6	.8
16	20	124	32	25	58	28	33	27	14	2.8	.7	.8
17	19	84	32	26	56	27	32	32	14	2.8	.7	.8
18	17	66	32	31	54	26	32	28	14	2.9	.7	.8
19	16	494	32	32	51	25	32	27	14	2.9	.7	.8
20	15	443	32	481	49	25	32	26	14	2.6	.7	1.6
21	15	204	31	1,060	48	27	31	26	13	2.4	.7	1.4
22	15	140	30	804	46	41	31	25	11	2.4	.6	1.4
23	15	117	29	397	44	94	31	25	9.0	2.2	.6	1.3
24	16	110	29	295	42	83	32	23	9.0	2.1	.6	1.3
25	16	90	29	265	41	71	32	21	9.0	2.0	.6	1.4
26	15	80	29	263	40	65	31	22	8.0	1.9	.5	1.5
27	15	73	29	234	40	65	29	25	7.4	1.7	.6	1.4
28	15	67	29	207	39	63	28	26	7.4	1.7	.5	1.2
29	14	61	28	184	41	61	27	24	7.4	1.8	.4	1.2
30	14	57	27	166	-----	58	27	22	7.4	1.8	.5	1.4
31	14	-----	27	150	-----	57	-----	21	-----	1.7	.6	-----
TOTAL	408.4	3,575	1,092	5,002	2,000	1,353	1,262	844	448.6	113.2	26.1	33.8
MEAN	13.2	119	35.2	161	69.0	43.6	42.1	27.2	15.0	3.65	0.84	1.13
MAX	25	494	54	1,060	139	94	94	37	25	7.4	1.6	1.6
MIN	6.2	14	27	25	39	25	27	21	7.4	1.7	0.4	0.8
AC-FT	810	7,090	2,170	9,920	3,970	2,680	2,500	1,670	890	225	52	67

Calendar year 1963: Max 7,360 Min 6.2 Mean 191 Ac-ft 138,500
Water year 1963-64: Max 1,060 Min 0.4 Mean 44.1 Ac-ft 32,040

Peak discharge (base, 1,000 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11- 5	2200	5.55	1,420	1-20	2400	7.50	3,310
11-19	1930	5.90	1,700				

SALINAS RIVER BASIN

11-1520. Arroyo Seco near Soledad, Calif.

Location.--Lat 36°16'50", long 121°19'20", in SW 1/4 sec. 16, T.19 S., R.6 E., on left bank just downstream from bridge, 1.5 miles downstream from Vaquero Creek, and 10 miles south of Soledad.

Drainage area.--244 sq mi.

Records available.--November 1901 to September 1964. Records for water year 1902 incomplete, yearly estimate published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 342.20 ft above mean sea level (Corps of Engineers benchmark). Prior to June 16, 1929, staff gage, and June 16, 1929, to Dec. 2, 1941, water-stage recorder, at site 1 mile upstream at different datum. Dec. 3, 1941, to Sept. 30, 1959, at datum 2.00 ft higher.

Average discharge.--63 years, 161 cfs (116,600 acre-ft per year); median of yearly mean discharges, 122 cfs (88,300 acre-ft per year).

Extremes.--Maximum discharge during year, 4,850 cfs Jan. 21 (gage height, 10.34 ft); no flow July 21 to Sept. 30. 1901-64: Maximum discharge, 28,300 cfs Apr. 3, 1958 (gage height, 16.40 ft, present datum), from rating curve extended above 12,000 cfs on basis of slope-area measurement at gage height 16.30 ft; no flow at times during several years.

Remarks.--Records good. No regulation or large diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3.0	13	65	30	148	47	*95	31	20	3.8		
2	3.0	14	60	30	138	*49	84	32	19	4.0		(*)
3	3.0	14	*57	30	*124	49	71	33	19	3.4		
4	3.2	*15	55	30	116	45	66	*34	*18	3.4		
5	3.2	18	53	28	110	43	60	34	17	4.2		
6	3.2	544	52	28	100	41	57	38	17	4.0	(*)	
7	4.6	118	47	*28	93	41	55	40	16	3.6		
8	5.9	74	46	28	89	41	52	36	16	*3.2		
9	6.2	55	47	27	84	40	51	33	18	2.9		
10	6.5	42	52	27	79	39	49	29	23	2.9		
11	14	38	46	27	75	38	46	27	21	2.5		
12	23	35	43	27	72	40	44	25	18	2.5		
13	18	33	42	27	68	43	42	25	16	2.2		
14	14	88	41	27	66	40	41	25	14	2.1		
15	14	370	40	27	65	37	39	25	14	1.8		
16	16	162	39	27	65	35	38	23	12	1.2		
17	20	108	37	27	60	34	36	25	12	.7		
18	18	86	37	29	62	34	37	27	11	.5		
19	15	402	36	34	57	33	37	24	11	.4		
20	15	759	36	80	56	32	37	23	11	.2		
21	14	255	36	1,680	55	32	37	22	10	0		
22	14	175	34	1,230	52	36	36	22	9.6	0		
23	14	132	34	440	51	82	35	21	8.4	0		
24	14	126	34	314	50	91	36	20	7.4	0		
25	14	110	34	283	49	77	37	20	6.2	0		
26	14	97	34	275	47	71	36	19	5.0	0		
27	14	86	34	258	46	68	34	20	4.6	0		
28	14	82	34	238	46	66	34	24	4.4	0		
29	14	77	33	215	-----	68	32	23	4.0	0		
30	14	71	32	188	-----	65	32	22	4.0	0		
31	13	-----	31	166	-----	62	-----	21	-----	0		-----
TOTAL	361.8	4,199	1,301	5,905	2,172	1,519	1,386	823	386.6	49.5	0	0
MEAN	11.7	140	42.0	190	74.9	49.0	46.2	26.5	12.9	1.60	0	0
MAX	23	759	65	1,680	148	91	95	40	23	4.2	0	0
MIN	3.0	13	31	27	46	32	32	19	4.0	0	0	0
AC-FT	718	8,330	2,580	11,710	4,310	3,010	2,750	1,630	767	98	0	0

Calendar year 1963: Max 14,500 Min 3.0 Mean 278 Ac-ft 201,000

Water year 1963-64: Max 1,680 Min 0 Mean 49.5 Ac-ft 35,900

Peak discharge (base, 1,400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-6	0300	8.73	1,850	1-21	0330	10.34	4,850
11-19	2300	9.15	2,480				

* Discharge measurement or observation of no flow made on this day.

11-1525. Salinas River near Spreckels, Calif.

Location.--Lat 36°37'50", long 121°40'40", in El Toro Grant, on first pier near left end of bridge on Salinas-Monterey highway, 0.5 mile upstream from Toro Creek, 2 miles west of Spreckels, Monterey County, and 4 miles south of Salinas.

Drainage area.--4,157 sq mi (revised).

Records available.--January 1900 to August 1901, October 1929 to September 1964. Records for water year 1930 incomplete, yearly estimate published in WSP 1315-B. Published as "near Salinas" 1900-1901.

Gage.--Water-stage recorder. Datum of gage is 19.87 ft above mean sea level, datum of 1929, supplementary adjustment of 1955. 1900-1901, May 10 to July 29, 1940, staff gages at same site at different datum. Mar. 17, 1941, to June 30, 1961, supplementary wire-weight or staff gages and since July 1, 1961, auxiliary water-stage recorder at site 80 ft upstream at same datum.

Average discharge.--35 years (1929-64), 404 cfs (292,500 acre-ft per year); median of yearly mean discharges, 168 cfs (122,000 acre-ft per year).

Extremes.--Maximum discharge during year, 609 cfs Jan. 23 (gage height, 10.25 ft); minimum daily, 0.7 cfs Aug. 19-22. 1900-1901, 1929-64: Maximum discharge, 75,000 cfs Feb. 12, 1938 (gage height, 25.0 ft), from rating curve extended above 26,000 cfs on basis of velocity-area studies; maximum gage height, 26.85 ft Jan. 16, 1952, from floodmarks; no flow at times in 1929-40.

Remarks.--Records poor. Large withdrawals from ground water and small surface-water diversions for municipal use and irrigation of about 95,000 acres above station. Low flow represents waste water from Spreckels sugar refinery. Flow partly regulated by Nacimiento Reservoir beginning in November 1956 (usable capacity, 340,000 acre-ft).

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.6	4.0	6.3	4.5	36.0	6.4	6.9	5.4	1.6	1.2	1.2	1.2
2	2.8	4.4	6.0	4.5	39.0	6.4	* 6.9	5.3	1.5	1.2	1.1	1.1
3	2.8	4.9	5.7	4.1	40.3	6.0	6.9	5.3	1.3	1.1	1.1	*1.0
4	3.1	4.9	5.3	3.9	41.6	5.8	6.9	5.3	1.2	1.2	1.1	.9
5	3.3	3.3	5.3	3.7	42.5	*5.8	6.7	5.4	1.1	1.2	1.2	1.2
6	3.4	2.4	5.2	*3.7	43.7	5.8	6.7	5.8	1.0	1.2	*1.2	1.3
7	4.0	1.9	4.9	3.9	*43.7	5.6	6.4	*5.4	1.0	1.2	a 1.2	1.4
8	4.2	*2.9	4.9	4.0	43.4	5.6	6.4	5.3	*.9	1.2	a 1.1	1.5
9	4.2	1.4	5.5	3.9	43.1	5.6	6.4	5.1	1.3	*1.2	a 1.1	1.6
10	4.3	8.6	5.8	3.8	37.8	5.6	6.2	4.9	1.1	1.2	a 1.1	1.6
11	*8.1	6.4	5.6	3.9	26.5	5.6	6.0	4.9	1.2	1.2	a 1.0	1.8
12	2.2	5.3	5.1	3.9	20.1	6.2	6.0	4.7	1.2	1.2	a 1.0	2.1
13	2.5	4.0	4.9	3.9	16.1	5.8	6.0	4.7	1.2	1.1	a .9	2.2
14	2.0	3.4	5.0	4.0	13.6	5.8	5.8	4.7	1.2	1.2	a .9	2.2
15	1.4	3.9	5.0	3.9	11.6	6.0	5.8	4.5	1.2	1.2	a .9	2.4
16	2.0	4.9	4.9	3.4	9.7	6.0	5.8	4.7	1.2	1.2	a .8	2.4
17	2.1	6.7	4.9	3.2	8.1	6.2	6.0	4.3	1.2	1.4	a .8	2.7
18	2.2	8.9	4.9	3.6	6.8	* 6.7	6.0	4.2	*1.3	1.4	a .8	2.1
19	2.3	1.1	4.9	3.6	5.8	5.8	5.8	*4.0	1.2	1.3	a .7	2.8
20	2.3	2.3	4.9	3.7	*4.7	5.8	6.0	3.9	1.2	1.4	a .7	3.0
21	2.2	9.8	4.7	5.1	3.7	6.4	*6.0	3.9	1.1	1.3	*.7	*3.0
22	2.3	15.1	4.7	30.9	2.8	7.2	5.8	3.6	1.1	1.2	.7	2.7
23	2.5	12.3	4.6	*5.16	2.2	7.9	5.8	3.3	1.1	1.2	.8	2.7
24	2.6	13.1	4.6	34.5	1.7	7.4	5.8	3.1	1.2	1.2	.8	3.0
25	2.9	11.0	4.7	30.8	1.3	6.7	5.6	3.0	1.1	1.2	.9	3.0
26	3.0	9.2	4.9	29.3	1.0	6.9	5.8	2.8	1.2	1.2	1.0	3.1
27	3.1	*8.2	*5.2	26.8	8.1	6.9	5.8	2.7	1.1	1.3	1.0	3.3
28	*3.2	7.6	5.1	24.2	7.4	6.9	5.8	2.3	1.2	1.3	1.0	3.3
29	3.3	7.0	4.9	21.3	6.9	6.9	5.6	2.1	1.1	1.2	1.0	3.4
30	3.5	6.7	4.6	20.9	-----	6.7	5.1	1.8	1.2	* 1.2	1.0	3.3
31	3.7	-----	4.5	31.3	-----	7.2	-----	1.7	-----	1.2	1.2	-----
Total	555.8	1,387.1	1,575	3,838	5,490.4	195.6	182.7	128.1	35.5	38.0	30.0	67.3
Mean	17.9	46.2	50.8	124	189	6.31	6.09	4.13	1.18	1.23	0.97	2.24
Max	37	15.1	6.3	51.6	43.7	7.9	6.9	5.8	1.6	1.4	1.2	3.4
Min	2.6	3.4	4.5	3.2	6.9	5.6	5.1	1.7	0.9	1.1	0.7	0.9
Ac-ft	1,100	2,750	3,120	7,610	10,890	388	362	254	70	75	60	133

Calendar year 1963: Max 6,590 Min 1.4 Mean 252 Ac-ft 182,400

Water year 1963-64: Max 516 Min 0.7 Mean 36.9 Ac-ft 26,810

* Discharge measurement made on this day.

a No gage-height record.

SALINAS RIVER BASIN

11-1525.4. El Toro Creek near Spreckels, Calif.
(Formerly published as Toro Creek near Spreckels)

Location.--Lat 36°35'00", long 121°42'50", in El Toro Grant, on right bank 0.3 mile downstream from San Benancio Gulch and 4.7 miles southwest of Spreckels, Monterey County.

Drainage area.--31.9 sq mi.

Records available.--October 1961 to September 1964. Prior to October 1962, published as Toro Creek near Spreckels.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 210 ft (from topographic map).

Extremes.--1962-63: Maximum discharge during year, 64 cfs Mar. 28 (gage height, 4.10 ft), from rating curve extended above 2 cfs; no flow for many days.

1963-64: Maximum discharge during year, 1.8 cfs Nov. 19 (gage height, 3.32 ft); no flow for many days.

1961-64: Maximum discharge, that of Mar. 28, 1964; no flow for many days.

Revisions.--The maximum discharge for the water year 1962 has been revised to 22 cfs Mar. 6, 1962 (gage height, 3.72 ft), superseding figure published in 1962 Report.

Remarks.--Records good except those above 1 cfs, which are poor. No regulation or diversion above station except for minor stock ponds.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1962, superseding figures published in 1962 Report, are given herewith:

Mar. 6, 1962.....13
Mar. 7, 1962.....5.7

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
March 1962.....	27.7	13	0.1	0.89	55
Water year 1961-62.....	-	13	0	0.16	117

Revised peak discharge.--1961-62: Feb. 9 (0600) 6.1 cfs (3.43 ft); Feb. 13 (1900) 4.2 cfs (3.37 ft); Feb. 18 (1600) 4.8 cfs (3.39 ft); Mar. 6 (0400) 22 cfs (3.72 ft).

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.0	0	3.4	5.0
3.1	.2	3.6	13
3.2	1.0	3.8	28
3.3	2.5		

11-1525.4. El Toro Creek near Spreckels, Calif.--Continued.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0.1	0.1	0.4	0.1	0.1	0.1	0.1	0.1		0
2	0	0	.1	.1	.2	.1	.1	.1	.1	.1		0
3	0	0	.1	.1	.2	.1	.1	.1	0	.1		0
4	0	0	.1	.1	.1	.1	.1	.1	0	.1		.1
5	0	.1	0	.1	.1	.1	.1	.1	.1	.1		0
6	0	0	0	.1	.1	.1	.2	.1	.1	.1		0
7	0	0	0	.1	.1	.1	.2	.1	.1	.1		0
8	0	0	0	.1	.1	.1	.1	.1	0	.1		.1
9	0	*0	.1	.1	.6	.1	.2	.1	0	.1		.1
10	0	.1	.1	.1	.3	.1	.3	.1	0	0		.1
11	0	.1	.1	.1	.2	.1	.2	.1	0	.1		0
12	0	.1	.1	.1	.4	*.1	.1	.2	0	0		.1
13	.1	.1	.1	.1	1.0	.1	.1	.1	0	0		.1
14	.1	.1	.1	.1	.2	.1	.9	.1	0	0		.1
15	0	.1	.1	.1	*.1	.1	.7	0	0	0		.1
16	0	.1	.3	.1	.1	.9	.2	0	0	0		.1
17	0	.1	.1	.1	.1	.1	.2	0	0	0		.1
18	0	.1	.1	.1	.1	.1	.3	.1	.1	0		.1
19	0	.1	.1	.1	.1	.1	*.3	.1	.1	0		.1
20	0	.1	.1	.1	.1	.1	2.8	.1	0	0		*.1
21	0	.1	.1	.1	.1	.1	10	.1	0	0		.1
22	0	.1	.1	.1	.1	.2	4.0	.1	.1	0		.1
23	.1	*.1	.1	.1	.1	.1	1.7	*.1	.1	0		.1
24	.1	.1	.1	*.1	.1	.1	.6	.1	.1	0		.1
25	.1	0	.1	.1	.1	.1	.3	.1	.1	0		.1
26	.1	0	.1	.1	.1	.1	5.4	.1	.1	*0	(*)	.1
27	.1	.1	.1	.1	.1	.6	1.0	.1	*.1	0		.1
28	.1	.1	*.1	.2	.1	21	.2	.1	.1	0		.1
29	0	0	.1	.1	-----	1.2	.1	.2	.1	0		.1
30	0	0	.1	.6	-----	.2	.1	.1	.1	0		0
31	0	-----	.1	1.0	-----	.1	-----	.1	-----	0		-----
Total	0.8	1.8	2.9	4.6	5.4	26.6	30.7	3.0	1.6	1.0	0	2.2
Mean	0.03	0.06	0.09	0.15	0.19	0.86	1.02	0.10	0.05	0.03	0	0.07
Max	0.1	0.1	0.3	1.0	1.0	21	10	0.2	0.1	0.1	0	0.1
Min	0	0	0	0.1	0.1	0.1	0.1	0	0	0	0	0
Ac-ft	1.6	3.6	5.8	9.1	11	53	61	6.0	3.2	2.0	0	4.4

Calendar year 1962: Max 13 Min 0 Mean 0.16 Ac-ft 116

Water year 1962-63: Max 21 Min 0 Mean 0.22 Ac-ft 161

Peak discharge (base, 5 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
3-28	0800	4.10	64	4-26	1100	3.58	11
4-21	0400	3.65	14				

* Discharge measurement or observation of no flow made on this day.

** Field estimate made on this day.

SALINAS RIVER BASIN

11-1525.4. El Toro Creek near Spreckels, Calif.--Continued.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.1	0	0.1	0.1	0.1	0.2	0.1	0.1	0		
2	.1	.1	0	0	.1	.1	.2	.1	.1	.1		
3	.1	.1	0	0	.1	.1	.2	.1	.1	0		(*)
4	.1	.1	0	0	.1	.1	.1	.1	.1	0		
5	.1	.1	0	0	.1	.1	.1	.2	0	0		
6	.1	.1	0	0	.1	.1	.1	.2	0	0		
7	0	.1	0	0	.1	.1	.1	.2	.1	0		
8	0	.1	0	0	.1	.1	.1	.2	.1	0		
9	0	0	.1	0	.1	.1	.1	.2	.1	*0		
10	0	0	.1	0	.1	.1	.1	.2	.1	0		
11	.2	0	0	0	.1	.1	.1	.2	.1	0		
12	.1	0	0	0	.1	.1	.1	.2	.2	0		
13	.1	0	0	0	.1	.1	.1	.2	.3	0		
14	.1	.1	0	0	.1	.1	.1	.2	.1	0		
15	.1	.1	0	0	.1	.1	.1	.2	.1	0		
16	.1	0	0	0	.1	.1	.1	.2	.2	0		
17	.1	0	0	0	.1	.1	.1	.2	.2	0		
18	.1	0	0	.1	.1	*.1	.1	.2	.2	0		
19	.1	.2	0	.1	.1	.1	.1	*.2	*.1	0		
20	0	*.1	0	.1	*.1	.1	.1	.2	0	0		
21	0	.1	0	*.3	.1	.2	*.1	.2	0	0		
22	0	0	0	.2	.1	.3	.1	.2	0	0		
23	0	.1	0	.1	.1	*.5	.1	.1	0	0		
24	0	.1	*0	.1	.1	.3	.2	.2	0	0		
25	0	.1	0	.1	.1	.2	.1	.2	0	0		
26	0	.1	0	.1	.1	.2	.1	.2	.1	0		
27	0	0	0	.1	.1	.2	.1	.1	0	0		
28	0	0	0	.1	.1	.2	.1	.1	0	0		
29	*.1	0	.1	.1	.1	.2	.1	.1	.1	0		
30	.1	0	.1	.1	-----	.1	.1	.1	0	0		
31	.1	-----	0	.1	-----	.2	-----	.2	-----	0		
Total	1.9	1.8	0.4	1.8	2.9	4.6	3.4	5.3	2.4	0.1	0	0
Mean	0.06	0.06	0.01	0.06	0.10	0.15	0.11	0.17	0.08	0.003	0	0
Max	0.2	0.2	0.1	0.3	0.1	0.5	0.2	0.2	0.3	0.1	0	0
Min	0	0	0	0	0.1	0.1	0.1	0.1	0	0	0	0
Ac-ft	3.8	3.6	0.8	3.6	5.8	9.1	6.7	11	4.8	0.2	0	0

Calendar year 1963: Max 21 Min 0 Mean 0.22 Ac-ft 158

Water year 1963-64: Max 0.5 Min 0 Mean 0.07 Ac-ft 49

Peak discharge (base, 5 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

** Field estimate made on this day.

11-1529. Cedar Creek near Bell Station, Calif.

Location.--Lat 37°03'00", long 121°19'35", in San Luis Gonzaga Grant, on left bank 0.5 mile upstream from Hagerman Canyon and 1.3 miles northwest of Bell Station, Santa Clara County.

Drainage area.--12.8 sq mi.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 390 ft (from topographic map):

Extremes.--Maximum discharge during year, 378 cfs Jan. 22 (gage height, 3.38 ft); no flow for several months.

1961-64; Maximum discharge, 3,490 cfs Jan. 31, 1963 (gage height, 6.85 ft), from rating curve extended above 260 cfs; no flow for several months in each year.

Remarks.--Records fair. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 13-20)

1.1	0	1.6	4.4
1.2	.1	1.7	7.8
1.3	.4	1.9	19
1.4	.9	2.2	49
1.5	2.2	2.6	113

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0	0	0.3	0.1	0.4	0.1	0.2	0.1				
2	0	0	.3	.1	.4	.1	.2	.1				
3	0	0	.2	.1	.3	.1	.2	.1				
4	0	0	.2	.1	.3	.1	.2	.1				
5	0	.2	.2	.1	.3	.1	.1	.1				
6	0	.2	.2	.1	.2	.1	.1	0				
7	0	.1	.2	.1	.2	.1	.1	0				
8	0	.1	.2	.1	.2	.1	.1	0				
9	0	.1	.2	.1	.2	.1	.1	0				
10	0	.1	.2	.1	.2	.1	.1	0				
11	.1	.1	.2	.1	.2	.1	.1	0				
12	0	.1	.2	.1	.2	.1	.1	0				
13	0	0	.2	.1	.2	.1	.1	0				
14	0	.1	.2	.1	.2	.1	.1	0				
15	0	.1	.2	.1	.2	.1	.1	0				
16	0	.1	.2	.1	.1	.1	*.1	0				
17	0	.1	.2	.1	.1	*.1	.1	0		(*)		
18	0	.1	.2	.1	.1	.1	.1	0				(*)
19	0	.3	.2	.1	.1	.1	.1	0				
20	0	3.8	.2	*.2	.1	.1	.1	0			(*)	
21	0	*.5	.2	81	*.1	.1	.1	*0				
22	0	.4	.2	98	.1	.2	.1	0				
23	*0	.4	.2	13	.1	.2	.1	0		(*)		
24	0	.5	.2	3.5	.1	.2	.1	0				
25	0	.6	.2	1.7	.1	.2	.1	0				
26	0	.5	*.2	1.0	.1	.2	.1	0				
27	0	.4	.2	.7	.1	.2	.1	0				
28	0	.4	.2	.6	.1	.2	.1	0				
29	0	.3	.2	.5	.1	.2	.1	0				
30	0	.3	.1	.5	-----	.2	.1	0				
31	0	-----	.1	.4	-----	.2	-----	0	-----			-----
TOTAL	0.1	9.9	6.2	203.0	5.1	4.1	3.4	0.5	0	0	0	0
MEAN	0.003	0.33	0.20	6.55	0.18	0.13	0.11	0.02	0	0	0	0
MAX	0.1	3.8	0.3	98	0.4	0.2	0.2	0.1	0	0	0	0
MIN	0	0	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0
AC-FT	0.2	20	12	403	10	8.1	6.7	1.0	0	0	0	0

CALENDAR YEAR 1963: MAX 832 MIN 0 MEAN 7.48 AC-FT 5420
WATER YEAR 1963-64: MAX 98 MIN 0 MEAN 0.63 AC-FT 461

Peak discharge (base, 100 cfs).--Jan. 22 (0200) 378 cfs (3.38 ft).

* Discharge measurement or observation of no flow made on this day.

PAJARO RIVER BASIN

11-1530. Pacheco Creek near Dunneville, Calif.

Location.--Lat 36°58'50", long 121°22'45", in Ausaymas y San Felipe Grant, on right bank 350 ft downstream from private road bridge and 3.3 miles northeast of Dunneville, Santa Clara County.

Drainage area.--146 sq mi.

Records available.--October 1939 to September 1964. Monthly discharge only prior to January 1940, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 230.70 ft above mean sea level, datum of 1929. Prior to Nov. 17, 1950, staff gage, at site 350 ft upstream at datum 6.00 ft higher. Nov. 17, 1950, to Aug. 18, 1960, staff gage, at site 350 ft upstream at datum 4.00 ft higher.

Average discharge.--25 years, 32.9 cfs (23,820 acre-ft per year).

Extremes.--Maximum discharge during year, 574 cfs Jan. 22 (gage height, 6.96 ft); no flow Jan. 9-17, Mar. 2 to Sept. 30.

1940-64: Maximum discharge, 12,600 cfs Dec. 23, 1955 (gage height, 21.0 ft, present site and datum, from floodmarks), from rating curve extended above 820 cfs on basis of slope-area measurement of maximum flow; no flow at times.

Remarks.--Records poor. Flow regulated by Pacheco Lake (capacity, 6,150 acre-ft). Small diversions above station for irrigation.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.0	4.6	3.2	0.5	3.0	0.1						
2	5.0	5.0	2.7	.5	2.4	0						
3	5.4	5.0	2.7	.4	2.1	0						
4	5.4	5.9	2.7	.3	1.8	0						
5	5.9	7.9	2.4	.3	1.8	0						
6	5.9	14	2.1	.3	1.6	0						
7	6.7	13	2.1	.2	1.3	0						
8	6.7	9.0	2.4	.1	1.3	0						
9	6.7	7.1	2.1	0	1.0	0						
10	5.9	5.4	1.6	0	1.0	0						
11	9.0	3.8	1.3	0	1.0	0						
12	9.0	3.5	1.3	0	.9	0						
13	7.9	3.2	1.0	0	.9	0						
14	7.1	3.0	1.0	0	.9	0						
15	7.5	2.7	.9	0	.9	0						
16	9.0	2.4	.7	0	.7	0	(*)					
17	9.6	2.4	.7	0	.5	*0			(*)			
18	8.5	2.1	.7	.1	.5	0						(*)
19	7.5	3.0	.7	.1	*.5	0						
20	7.1	4.6	.5	*.1	.5	0					(*)	
21	7.5	*4.2	.5	.4	.4	0		(*)				
22	7.5	4.2	.5	284	.4	0						
23	*7.5	5.9	.5	95	.3	0						
24	7.5	6.7	.5	46	.3	0						
25	7.5	6.7	.5	29	.2	0						
26	7.5	6.3	*.5	19	.2	0						
27	7.1	5.9	.4	14	.1	0						
28	7.1	4.6	.3	11	.1	0						
29	6.7	4.2	.3	7.5	.1	0						
30	6.3	3.8	.3	5.4	-----	0						
31	5.4	-----	.5	3.8	-----	0	-----		-----			-----
Total	218.4	160.1	37.6	518.0	26.7	0.1	0	0	0	0	0	0
Mean	7.05	5.34	1.21	16.7	0.92	0.003	0	0	0	0	0	0
Max	9.6	14	3.2	284	3.0	0.1	0	0	0	0	0	0
Min	5.0	2.1	0.3	0	0.1	0	0	0	0	0	0	0
Ac-ft	433	318	75	1,030	53	0.2	0	0	0	0	0	0

Calendar year 1963: Max 3,630 Min 0 Mean 40.9 Ac-ft 29,600
 Water year 1963-64: Max 284 Min 0 Mean 2.63 Ac-ft 1,910

* Discharge measurement or observation of no flow made on this day.

11-1535. Llagas Creek near Morgan Hill, Calif.

Location.--Lat 37°06'50", long 121°41'25", in Las Uvas Grant, on right bank 500 ft upstream from Llagas Avenue Bridge, 0.3 mile downstream from Chesbro Dam, 0.3 mile upstream from small tributary, and 2.3 miles west of Morgan Hill, Santa Clara County.

Drainage area.--19.6 sq mi.

Records available.--October 1951 to September 1964.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 445 ft (from topographic map).

Average discharge.--13 years, 15.0 cfs (10,860 acre-ft per year); median of yearly mean discharges, 10 cfs (7,200 acre-ft per year).

Extremes.--Maximum discharge during year, 47 cfs Oct. 5-8 (gage height, 1.65 ft); no flow Sept. 28.

1951-64: Maximum discharge, 3,190 cfs Apr. 2, 1958 (gage height, 8.45 ft), from rating curve extended above 1,600 cfs on basis of computation of maximum flow over dam; no flow at times in most years.

Remarks.--Records good. Flow regulated by Chesbro Reservoir (see p. 304). No diversion above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 31				Apr. 1 to Sept. 30			
0.9	0.7	1.2	11	0.82	0	1.2	7.5
1.0	2.6	1.4	24	.9	.6	1.3	12
1.1	5.9	1.7	52	1.0	2.2	1.4	17
				1.1	4.3	1.5	25

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	44	41	11	3.4	1.6	2.1	*2.0	3.0	23	19	1.2	*1.1
2	44	41	11	*3.4	1.6	2.1	2.0	3.2	*23	15	1.2	1.1
3	44	40	11	3.4	1.6	1.7	1.8	3.2	23	7.5	1.2	1.1
4	46	40	10	3.4	1.6	*1.7	2.0	*3.2	23	9.3	1.2	1.1
5	47	40	10	3.4	*1.7	1.7	2.0	3.2	23	8.9	1.2	1.2
6	47	*39	*11	3.7	1.7	1.7	2.0	3.4	23	9.3	1.1	1.2
7	47	39	10	3.7	1.7	1.7	2.0	3.4	23	*8.9	1.2	1.2
8	47	38	10	3.1	1.7	1.7	2.0	3.4	23	8.4	1.2	1.2
9	46	25	11	2.8	1.7	1.7	2.0	3.6	23	4.6	1.4	1.2
10	46	14	11	2.8	2.1	1.7	2.0	3.6	23	2.2	1.4	1.2
11	45	14	11	2.6	2.1	1.7	2.0	3.4	23	2.2	1.4	1.2
12	45	13	11	2.6	1.7	1.7	2.0	3.4	23	2.2	1.2	1.2
13	45	11	11	2.3	1.7	1.7	2.0	3.4	22	1.7	1.4	1.2
14	45	11	11	2.1	1.7	1.7	2.2	3.4	22	1.4	1.4	1.2
15	45	11	5.1	2.1	2.1	1.7	2.2	3.4	22	1.4	1.4	1.1
16	44	11	2.1	2.1	2.1	1.7	2.2	3.4	22	1.4	1.5	1.1
17	44	12	1.6	2.3	2.3	1.7	2.2	3.2	21	1.5	*1.5	1.1
18	44	11	1.3	2.6	2.3	1.6	2.4	3.0	21	1.7	1.4	1.1
19	43	11	1.5	2.3	2.1	1.6	2.4	3.0	21	1.7	1.4	1.1
20	43	11	1.6	3.2	2.1	1.6	2.4	3.0	21	1.7	1.4	1.1
21	44	12	1.6	3.0	2.1	1.7	2.4	7.2	21	1.7	1.4	1.1
22	45	13	1.6	2.6	2.1	2.1	2.6	9.3	21	1.5	1.4	1.1
23	45	12	1.6	1.6	2.1	2.1	2.6	9.3	20	1.4	1.4	1.2
24	45	12	1.6	1.5	2.1	1.7	2.6	9.3	20	1.4	1.4	1.2
25	44	12	1.7	1.5	2.3	1.6	2.4	8.0	20	1.4	1.2	1.2
26	44	12	1.7	1.5	2.1	1.6	3.2	8.4	19	1.5	1.2	1.2
27	43	12	1.7	1.5	2.1	1.6	3.2	16	19	1.4	1.2	.5
28	43	11	1.6	1.5	2.1	1.6	2.8	23	19	1.4	1.2	0
29	43	11	2.3	1.5	2.1	1.6	2.8	24	19	1.4	1.1	.3
30	42	11	3.1	1.5	-----	1.6	2.8	24	19	1.4	1.1	.9
31	42	-----	3.4	1.5	-----	1.7	-----	24	-----	1.2	1.1	-----
TOTAL	1,381	591	185.1	76.5	56.3	53.4	69.2	228.3	645	125.7	40.0	31.7
MEAN	44.5	19.7	5.97	2.47	1.94	1.72	2.31	7.36	21.5	4.05	1.29	1.06
MAX	47	41	11	3.7	2.3	2.1	3.2	24	23	19	1.5	1.2
MIN	42	11	1.3	1.5	1.6	1.6	1.8	3.0	19	1.2	1.1	0
AC-FT	2,740	1,170	367	152	112	106	137	453	1,280	249	79	63

CALENDAR YEAR 1963: MAX 566 MIN 0.5 MEAN 32.6 AC-FT 23,580
 WATER YEAR 1963-64: MAX 47 MIN 0 MEAN 9.52 AC-FT 6,910

* Discharge measurement made on this day.

Note.--Computed from once-daily staff-gage readings Oct. 27 to Nov. 2, Nov. 16 to Jan. 5, furnished by South Santa Clara Valley Water Conservation District.

PAJARO RIVER BASIN

11-1537. Pajaro River near Gilroy, Calif.

Location.--Lat 36°56'55", long 121°30'40", on boundary between Las Animas and Llano del Tequisquita Grants, on center pier on downstream side of highway bridge on Bolsa Road, 0.9 mile downstream from Magas Creek, and 4.7 miles southeast of Gilroy, Santa Clara County.

Drainage area.--399 sq mi.

Records available.--March 1959 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 123.88 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--5 years, 24.5 cfs (17,740 acre-ft per year).

Extremes.--Maximum discharge during year, 552 cfs Jan. 22 (gage height, 7.91 ft); minimum daily, 0.9 cfs Sept. 28.
1959-64: Maximum discharge, 5,320 cfs Feb. 1, 1963 (gage height, 13.81 ft), from rating curve extended above 2,100 cfs; no flow for many days in 1962-63.

Remarks.--Records fair. Flow regulated by Pacheco Lake (capacity, 6,150 acre-ft), Chesbro Reservoir (see p. 304), and San Felipe Lake. Many diversions above station for irrigation.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	2.9	a 8.0	8.9	14	12	13	8.6	3.7	4.0	3.8	2.2
2	1.9	3.0	a 8.0	8.7	14	13	13	7.5	4.5	4.8	2.9	1.9
3	1.9	3.0	a 8.0	8.6	13	12	13	10	4.5	4.7	2.4	1.9
4	1.8	3.0	a 8.0	8.9	13	12	13	8.8	5.0	6.8	3.3	2.4
5	2.2	3.4	7.9	9.0	13	12	13	6.2	4.2	4.5	3.8	1.8
6	2.2	10	8.0	9.4	14	12	13	5.3	3.9	3.1	4.3	2.1
7	1.8	4.4	8.0	9.9	13	12	14	5.0	3.6	3.4	3.4	1.9
8	2.1	3.4	8.7	10	14	12	13	4.6	3.7	4.3	3.5	1.5
9	2.3	3.3	9.0	9.7	14	12	12	4.4	4.3	3.2	3.5	1.5
10	2.2	3.4	8.6	10	14	13	13	4.3	4.5	3.3	3.9	1.6
11	3.4	3.4	8.2	9.7	14	13	13	4.6	5.9	3.5	4.0	2.3
12	4.0	3.6	8.0	9.6	14	14	14	4.5	4.6	5.2	3.6	1.9
13	1.9	3.7	8.0	9.7	13	12	13	4.6	5.5	4.6	3.4	1.9
14	1.5	4.9	7.9	11	13	12	13	6.1	4.2	5.8	3.0	1.6
15	1.6	11	8.0	10	14	12	*13	6.4	3.4	3.8	2.6	1.5
16	3.1	6.1	8.6	11	14	*12	12	5.8	*3.3	3.8	2.4	1.5
17	2.9	5.0	8.5	10	13	13	12	6.0	3.7	3.8	2.5	1.5
18	2.0	5.0	8.3	12	15	13	11	*6.0	4.1	4.3	3.5	*1.8
19	1.8	5.9	8.2	11	*14	12	11	5.6	3.7	3.8	3.9	1.8
20	1.7	22	8.2	12	14	12	9.7	5.1	3.6	2.7	*3.8	1.7
21	1.7	*12	8.2	46	12	12	10	4.8	2.9	2.3	3.5	1.3
22	*1.9	7.8	8.2	*295	13	14	10	5.5	3.2	3.9	4.5	2.2
23	2.2	a 22	8.0	8.7	13	16	11	5.8	3.4	3.9	3.9	1.9
24	2.1	a 25	8.5	62	14	13	9.9	5.5	4.6	*4.9	3.1	1.1
25	2.2	a 15	8.5	47	13	12	9.9	6.4	5.2	4.0	3.1	1.4
26	2.3	a 11	8.3	36	13	12	8.3	6.0	4.7	4.2	3.0	1.0
27	2.4	a 9.0	*8.5	29	13	12	7.9	5.5	4.5	3.7	1.9	1.1
28	2.6	a 8.3	8.9	23	12	12	9.3	5.8	4.4	3.7	1.7	.9
29	2.6	a 8.1	9.0	19	12	12	9.2	7.3	5.2	3.9	1.6	1.2
30	2.8	a 8.0	8.6	17	-----	13	8.7	4.9	4.3	3.9	1.7	1.1
31	2.8	-----	8.7	15	-----	13	-----	3.9	-----	3.8	2.3	-----
Total	69.9	236.6	257.5	875.1	389	388	345.9	180.8	126.3	125.6	97.8	49.5
Mean	2.25	7.89	8.31	28.2	13.4	12.5	11.5	5.83	4.21	4.05	3.15	1.65
Max	4.0	25	9.0	295	15	16	14	10	5.9	6.8	4.5	2.4
Min	1.5	2.9	7.9	8.6	12	12	7.9	3.9	2.9	2.3	1.6	0.9
Ac-ft	139	469	511	1,740	772	770	686	359	251	249	194	98

Calendar year 1963: Max 4,170 Min 0.1 Mean 76.8 Ac-ft 55,600

Water year 1963-64: Max 295 Min 0.9 Mean 8.58 Ac-ft 6,240

Peak discharge (base, 300 cfs).--Jan. 22 (0630) 552 cfs (7.91 ft).

* Discharge measurement made on this day.

a No gage-height record.

11-1539. Uvas Creek above Uvas Reservoir, near Morgan Hill, Calif.

Location.--Lat 37°05'34", long 121°43'02", in Las Uvas Grant on left bank 0.6 mile downstream from Little Uvas Creek, 0.9 mile upstream from Hay Canyon and 4.4 miles southwest of Morgan Hill, Santa Clara County.

Drainage area.--21.0 sq mi.

Records available.--July 1961 to September 1964.

Gage.--Water-stage recorder with rain gage attachment. Altitude of gage is 500 ft (from topographic map).

Extremes.--Maximum discharge during the year, 2,460 cfs Jan. 20 (gage height, 10.48 ft); minimum daily, 0.1 cfs several days in August and September.

1961-64: Maximum discharge, 6,580 cfs Oct. 13, 1962 (gage height, 13.18 ft); no flow July 12 to Oct. 22, 1961.

Remarks.--Records good. Minor regulation and diversion above station affects low flows.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*1.4	2.0	8.4	3.3	18	7.2	*7.9	3.0	1.7	0.6	0.4	0.5
2	.8	2.0	7.7	*3.2	17	8.4	6.8	2.7	1.6	.6	.4	*.4
3	.7	2.1	7.2	2.9	16	7.2	6.4	3.3	*1.6	1.2	.4	.2
4	.5	3.0	6.8	3.0	15	*6.8	6.2	3.0	1.0	1.0	.4	.1
5	.3	50	*6.6	2.9	14	6.4	5.9	*3.0	1.1	1.0	.2	.2
6	.8	*25	6.4	2.9	*13	6.6	5.7	3.0	1.6	1.1	.1	.3
7	.8	7.7	5.7	2.9	13	6.6	5.1	2.7	2.0	*.7	*.2	.4
8	.9	5.0	5.5	2.9	13	6.4	4.9	2.8	4.2	.4	.3	.4
9	1.1	4.3	5.9	2.7	13	6.4	4.8	3.2	6.0	.5	.3	.2
10	1.5	4.0	5.5	2.9	12	6.4	4.6	3.5	3.8	.7	.4	.1
11	6.3	3.7	5.3	3.3	11	6.2	4.8	2.8	2.7	.7	.2	.1
12	2.5	3.5	5.3	3.2	11	11	4.6	3.0	1.7	.5	.2	.1
13	2.0	3.3	4.8	3.2	10	7.4	4.5	2.8	1.7	.7	.2	.3
14	1.7	61	4.6	3.5	10	6.6	4.0	2.2	1.8	.6	.2	.4
15	2.0	56	4.9	3.3	11	6.4	3.5	2.3	2.2	.4	.2	.4
16	3.2	16	4.8	3.3	9.9	5.9	3.7	2.8	2.2	.4	.3	.3
17	2.3	10	4.6	3.5	9.6	5.7	4.1	4.5	2.3	.5	.3	.3
18	2.0	7.5	4.5	9.6	9.4	5.5	4.0	3.3	2.2	.4	.3	.2
19	1.9	73	4.3	11	8.6	5.1	4.0	2.7	1.8	.7	.1	.2
20	1.9	111	4.3	346	8.4	5.1	3.8	2.0	1.5	.8	.2	.3
21	2.0	32	4.3	414	8.2	5.3	4.1	2.0	1.7	.5	.1	.3
22	1.9	20	4.1	249	7.9	12	4.1	2.1	1.8	.4	.1	.2
23	2.0	26	4.1	101	7.9	13	3.5	2.3	.7	.4	.1	.1
24	1.7	33	4.0	63	7.7	9.6	3.2	2.4	.8	.4	.2	.1
25	1.8	21	3.8	47	7.4	8.4	2.4	2.1	.5	.4	.2	.1
26	1.7	16	3.8	39	7.2	7.2	2.8	2.1	.4	.5	.2	.2
27	1.7	14	3.8	31	6.8	7.0	2.6	2.1	.5	.5	.2	.3
28	1.5	12	3.8	27	6.4	6.6	2.7	1.8	.5	.4	.2	.3
29	1.9	10	3.7	24	6.6	6.4	2.7	1.8	.7	.4	.2	.2
30	2.1	9.4	3.7	21	-----	6.2	2.3	1.6	.8	.4	.3	.1
31	2.1	-----	3.3	20	-----	6.6	-----	1.6	-----	.4	.4	-----
Total	55.0	643.5	155.5	1,455.5	309.0	221.6	129.7	80.5	53.1	18.2	7.5	7.3
Mean	1.77	21.4	5.02	47.0	10.7	7.15	4.32	2.60	1.77	0.59	0.24	0.24
Max	6.3	111	8.4	414	18	13	7.9	4.5	6.0	1.2	0.4	0.5
Min	0.3	2.0	3.3	2.7	6.4	5.1	2.3	1.6	0.4	0.4	0.1	0.1
Ac-ft	109	1,280	308	2,890	613	440	257	160	105	36	15	14
(†)	1.6	8.0	0	6.6	0	2.5	0.1	0.4	0.9	0	0	0

Calendar year 1963: Max 3,390 Min 0.3 Mean 45.0 Ac-ft 32,590
 Water year 1963-64: Max 414 Min 0.1 Mean 8.57 Ac-ft 6,230

Peak discharge (base, 220 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-5	1930	5.76	297	1-20	2200	10.48	2,460
11-19	2200	5.72	289				

* Discharge measurement made on this day.
 † Precipitation, in inches.

PAJARO RIVER BASIN

11-1541. Bodfish Creek near Gilroy

Location.--Lat 37°00'15", long 121°40'00", in Las Animas Grant, on left bank just upstream from Whitehurst Creek, 2.7 miles upstream from mouth and 5.1 miles west of west city limits of Gilroy, Santa Clara County.

Drainage area.--7.40 sq mi.

Records available.--October 1959 to September 1964.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 360 ft (from topographic map).

Average discharge.--5 years, 2.68 cfs (1,940 acre-ft per year).

Extremes.--Maximum discharge during year, 236 cfs Jan. 22 (gage height, 4.87 ft), no flow for many days.

1959-64: Maximum discharge, 1,240 cfs Jan. 31, 1963 (gage height, 8.25 ft), from rating curve extended above 580 cfs; no flow for many days in each year.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.3	0	3.0	17
2.4	.3	3.3	35
2.5	1.0	3.6	60
2.6	2.7	3.9	91
2.7	5.5		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.3	0.3	0.8	0.5	2.2	1.7	1.0	0.5	0.2	0.2	0.1	0
2	.3	.4	.8	.5	2.0	1.2	1.0	.4	.1	.2	.1	.1
3	.3	.5	.8	.5	1.8	.9	.9	.5	.1	.2	0	0
4	.3	.6	.8	.5	1.7	.8	.8	.5	.2	.2	.1	0
5	.3	4.8	.8	.5	1.7	.8	.8	.5	.1	.2	0	0
6	.3	1.7	.8	.5	1.7	.8	.8	.4	.2	.2	.1	0
7	.3	.8	.8	.5	1.5	.7	.4	.4	.2	.2	.1	0
8	.3	.6	1.0	.5	1.5	.7	.7	.4	.3	.2	0	0
9	.3	.5	2.2	.5	1.3	.8	.6	.4	.4	.1	0	0
10	.3	.5	1.1	.6	1.2	.8	.6	.3	.3	.1	0	0
11	.9	.5	1.0	.6	1.2	.9	.6	.3	.3	.2	0	0
12	.4	.5	.9	.6	1.2	1.3	.6	.3	.3	.1	0	0
13	.3	.6	.9	.6	1.1	1.0	.6	.3	.3	.1	.1	0
14	.2	3.1	.9	.7	1.1	.9	.5	.3	.2	.1	.2	0
15	.3	3.3	.9	.6	1.2	.9	*.5	.3	.2	.1	.2	0
16	.5	1.0	.9	.6	1.1	*.8	.5	.4	*.2	.1	.1	0
17	.3	.8	.9	.7	1.1	.8	.5	.4	.2	.1	0	0
18	.3	.7	.8	1.7	1.1	.7	.5	*.3	.2	.1	0	*0
19	.3	3.6	.8	8.3	*1.1	.6	.5	.3	.2	.1	0	0
20	.3	*5.5	.8	38	1.1	.5	.5	.3	.2	.1	*0	0
21	.2	1.7	.7	89	1.1	.5	.4	.3	.2	.1	0	0
22	*.3	1.2	.6	82	1.0	1.5	.3	.3	.2	.1	0	0
23	.4	4.4	.6	*18	1.0	2.2	.3	.3	.2	0	0	0
24	.4	4.7	.6	9.8	1.0	2.5	.4	.3	.2	*0	0	0
25	.4	1.8	.5	6.6	1.0	3.0	.3	.3	.2	0	0	0
26	.3	1.3	.5	4.9	.9	1.5	.4	.3	.2	0	0	0
27	.3	1.1	*.5	4.1	.9	1.3	.5	.2	.2	0	0	0
28	.3	1.0	.5	3.3	.9	1.2	.5	.1	.2	0	.1	0
29	.2	.9	.5	3.0	.9	1.2	.5	.1	.2	0	0	0
30	.2	.9	.5	2.5	-----	1.1	.5	.3	.2	.1	.1	0
31	.3	-----	.5	2.4	-----	1.0	-----	.3	-----	.1	.1	-----
TOTAL	10.1	49.3	24.7	283.1	36.6	34.6	17.4	10.3	6.4	3.3	1.4	0.1
MEAN	0.33	1.64	0.80	9.13	1.26	1.12	0.58	0.33	0.21	0.11	0.05	0.003
MAX	0.9	5.5	2.2	89	2.2	3.0	1.0	0.5	0.4	0.2	0.2	0.1
MIN	0.2	0.3	0.5	0.5	0.9	0.5	0.3	0.1	0.1	0	0	0
AC-FT	20	98	49	562	73	69	35	20	13	6.5	2.8	0.2

CALENDAR YEAR 1963: MAX 505 MIN 0.2 MEAN 7.30 AC-FT 5,280
 WATER YEAR 1963-64: MAX 89 MIN 0 MEAN 1.30 AC-FT 949

Peak discharge (base, 150 cfs).--Jan. 22 (0100) 236 cfs (4.87 ft).

* Discharge measurement or observation of no flow made on this day.

11-1542. Uvas Creek near Gilroy, Calif.

Location.--Lat 36°59'35", long 121°34'20", in Las Animas Grant, on left bank 400 ft upstream from county road bridge, 0.4 mile south-west of Gilroy, Santa Clara County, and 3.9 miles downstream from Bodfish Creek.

Drainage area.--71.2 sq mi.

Records available.--January 1959 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 190 ft (from topographic map).

Average discharge.--5 years, 24.5 cfs (17,740 acre-ft per year).

Extremes.--Maximum discharge during year, 994 cfs Jan. 22 (gage height, 6.80 ft); no flow for several months.

1959-64: Maximum discharge, 7,180 cfs Feb. 1, 1963 (gage height, 17.66 ft), from rating curve extended above 2,500 cfs; no flow for several months in each year.

Remarks.--Records fair. Flow regulated by Uvas Reservoir (see p. 304). Diversion above station for irrigation and municipal supply of city of Gilroy.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.9	0	15	2.0	3.0	0	5.9	5.0		
2		0	.7	0	13	4.1	2.4	0	6.2	4.4		(*)
3		0	.6	0	12	3.0	2.0	.5	6.6	2.6		
4		0	.6	0	12	4.1	.9	2.4	7.5	.7		
5		0	.6	0	11	6.6	.8	2.4	7.5	.1		
6		0	.4	0	9.2	4.4	.4	2.2	7.0	0		
7		0	.3	0	8.8	2.8	0	2.0	7.5	0		
8		0	.3	0	7.9	1.5	0	1.1	8.8	0		
9		0	.6	0	7.0	.9	0	1.3	11	0		
10		0	.3	0	7.0	.8	0	1.7	8.4	0		
11		0	.2	0	6.2	.8	0	2.2	7.5	0		
12		0	.1	0	5.5	2.0	0	1.5	6.2	0		
13		0	.1	0	5.2	1.7	0	1.1	5.9	0		
14		0	.1	0	4.8	.8	*0	1.3	5.5	0		
15		0	0	0	5.2	.4	0	2.8	5.0	0		
16		.3	0	0	4.8	*.3	0	5.2	*6.6	0		
17		0	0	0	3.7	.1	0	6.2	5.9	0		
18		0	0	0	4.1	0	0	*7.9	5.5	0		(*)
19		.3	0	0	*3.7	0	0	7.9	5.9	0		
20		*18	0	40	3.7	0	0	9.2	5.9	0	(*)	
21		10	0	412	3.0	0	0	8.8	5.9	0		
22	(*)	4.8	0	*466	2.6	.2	0	9.2	5.9	0		
23		3.4	0	138	2.4	7.5	0	6.6	5.9	*0		
24		9.7	0	75	2.2	8.8	0	4.8	5.5	0		
25		5.9	0	49	1.7	8.8	0	3.4	5.0	0		
26		2.8	0	36	1.5	7.5	0	3.4	5.0	0		
27		1.5	*0	27	1.7	6.2	0	5.2	5.5	0		
28		1.5	0	23	2.0	4.4	0	5.9	5.5	0		
29		1.5	0	20	1.7	3.4	0	5.9	5.9	0		
30		1.3	0	18	-----	3.0	0	5.5	5.9	0		
31		-----	0	16	-----	3.4	-----	5.5	-----	0		
Total	0	61.0	5.8	1,320	168.6	89.5	9.5	123.1	192.3	12.8	0	0
Mean	0	2.03	0.19	42.6	5.81	2.89	0.32	3.97	6.41	0.41	0	0
Max	0	18	0.9	466	15	8.8	3.0	9.2	11	5.0	0	0
Min	0	0	0	0	1.5	0	0	0	5.0	0	0	0
Ac-ft	0	121	12	2,620	334	178	19	244	381	25	0	0

Calendar year 1963: Max 3,910 Min 0 Mean 80.3 Ac-ft 58,110
 Water year 1963-64: Max 466 Min 0 Mean 5.41 Ac-ft 3,930

* Discharge measurement or observation of no flow made on this day.

PAJARO RIVER BASIN

11-1565. San Benito River near Willow Creek School, Calif.

Location.--Lat 36°36'50", long 121°12'50", in SW¼ sec.21, T.15 S., R.7 E., on right bank 1.7 miles downstream from Willow Creek, 1.8 miles northwest of Willow Creek School, and 10.4 miles northwest of San Benito.

Drainage area.--251 sq mi.

Records available.--October 1939 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 878.57 ft above mean sea level, datum of 1929, supplementary adjustment of 1943. Prior to Jan. 28, 1948, at same site at different datum. Jan. 28, 1948, to Nov. 10, 1955, at site 0.9 mile upstream at different datum.

Average discharge.--25 years, 23.1 cfs (16,720 acre-ft per year); median of yearly mean discharges, 11 cfs (8,000 acre-ft per year).

Extremes.--Maximum discharge during year, 305 cfs Jan. 21 (gage height, 3.25 ft); no flow for many days.

1939-64; Maximum discharge, 8,210 cfs Apr. 3, 1958 (gage height, 8.35 ft), from rating curve extended above 600 cfs on basis of slope-area measurement of maximum flow; no flow at times in 1947, 1956, 1959, 1961-64.

Flood of February 1938 reached a stage of about 9.0 ft (former datum) from floodmarks.

Remarks.--Records fair. Flow regulated by Hernandez Dam beginning in December 1961 (capacity, 18,700 acre-ft). Small diversions above station for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.2	0.1	13	4.0	9.2	4.3	6.4	2.9	1.0	0.1	0	0.1
2	.2	.1	11	4.0	8.1	4.0	7.0	3.6	*.9	.1	0	.1
3	.2	.1	*9.2	4.3	7.5	4.3	6.4	3.6	.8	.1	*0	.1
4	.2	.1	7.5	4.3	6.4	4.3	6.1	*4.0	.8	.1	0	.1
5	.2	** .1	6.4	4.3	*6.1	*4.3	6.1	4.0	.7	.1	0	.1
6	.2	.2	5.7	*4.7	6.1	4.3	5.7	4.3	.6	*.1	0	.1
7	.2	.1	5.4	4.7	6.1	4.3	6.1	4.3	.5	.1	0	.1
8	.2	.1	4.7	4.3	5.7	4.7	6.1	4.7	.6	.1	0	.1
9	.2	.1	5.0	4.3	5.4	4.7	5.7	6.1	.8	.1	0	.1
10	.2	.1	5.4	4.3	5.4	4.7	5.7	6.4	1.0	0	0	.1
11	.4	.1	5.7	4.3	5.0	4.7	5.7	7.0	.9	0	0	.1
12	.3	.1	5.7	4.3	4.7	5.0	5.7	6.4	.8	0	0	0
13	.2	.1	5.4	4.3	4.7	5.0	4.7	6.1	.5	0	0	0
14	.2	.2	5.0	4.3	5.0	4.6	3.6	6.4	.4	0	0	.1
15	*.2	.3	5.0	4.0	5.0	4.6	3.3	7.0	.3	0	0	0
16	.3	.2	4.7	4.0	5.0	4.0	2.9	6.4	.3	0	0	0
17	.2	.1	4.7	4.0	4.7	2.9	3.3	6.1	.2	0	0	0
18	.2	.1	4.3	4.0	4.7	2.5	3.6	5.4	.2	0	0	0
19	.2	.1	4.3	4.0	4.0	2.3	4.0	4.0	.2	0	0	0
20	.2	.2	4.3	6.3	3.3	2.3	4.3	2.9	.2	0	0	0
21	.2	24	4.0	115	3.3	2.5	4.0	2.9	.2	0	0	0
22	.2	28	4.0	33	2.9	4.3	3.6	2.7	.1	0	0	0
23	.2	26	4.7	17	2.9	16	3.6	2.5	.1	0	0	0
24	.2	30	4.7	15	3.3	14	3.6	2.3	.1	0	0	0
25	.1	24	4.7	14	3.6	7.0	4.0	2.0	.1	0	0	0
26	.1	19	4.3	14	4.0	7.0	4.0	1.8	.1	0	0	0
27	.1	18	4.7	14	4.0	7.0	3.6	1.8	.1	0	0	0
28	.1	18	4.3	13	4.3	6.4	3.3	1.8	.1	0	.1	0
29	.1	16	4.3	12	4.3	6.4	2.9	1.8	.1	0	.1	0
30	.1	15	4.3	12	-----	6.4	2.7	1.8	.1	0	.1	0
31	.1	-----	4.0	10	-----	*6.0	-----	1.4	-----	0	*.1	-----
TOTAL	5.9	220.6	170.4	355.7	144.7	164.8	137.7	124.4	12.8	0.9	0.4	1.2
MEAN	0.19	7.35	5.50	11.5	4.99	5.32	4.59	4.01	0.43	0.03	0.01	0.04
MAX	0.4	30	13	115	9.2	16	7.0	7.0	1.0	0.1	0.1	0.1
MIN	0.1	0.1	4.0	4.0	2.9	2.3	2.7	1.4	0.1	0	0	0
AC-FT	12	438	338	706	287	327	273	247	25	1.8	0.8	2.4

Calendar year 1963: Max 123 Min 0 Mean 16.2 Ac-ft 11,700

Water year 1963-64: Max 115 Min 0 Mean 3.66 Ac-ft 2,660

* Discharge measurement made on this day.

** Field estimate made on this day.

11-1567. Pescadero Creek near Paicines, Calif.

Location--Lat 36°41'40", long 121°18'35", in SE¼ sec.21, T.14 S., R.6 E., on left bank just downstream from Cienega Valley Road bridge, 1.5 miles upstream from mouth, and 3 miles southwest of Paicines.

Drainage area--38.3 sq mi.

Records available--July 1959 to September 1964.

Gage--Water-stage recorder and, since Sept. 10, 1963, concrete control. Altitude of gage is 720 ft (from topographic map).

Average discharge--5 years, 0.42 cfs (304 acre-ft per year).

Extremes--Maximum discharge during year, 3.1 cfs Jan. 22 (gage height, 5.12 ft); no flow for several months. 1959-64; Maximum discharge, 15 cfs Feb. 9, 1960 (gage height, 4.68 ft); no flow at times in each year.

Remarks--Records poor. No regulation; small diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 26-28)

4.9 0
5.0 .7
5.1 2.5

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.1	0.3	0.4	0.4	0.4	0.2				
2		0	.1	.3	.4	.4	*.4	.2				
3		0	*.2	.3	.4	*.4	.4	.2	(*)			
4		0	.2	.3	.4	.4	.4	*.2			(*)	
5		0	.2	.4	*.4	.4	.4	.2				
6		0	.2	*.4	.3	.4	.4	.2		(*)		
7		0	.2	.4	.3	.4	.4	.2				
8		0	.2	.4	.3	.4	.4	.2				
9		0	.3	.4	.3	.4	.4	.1				
10	(*)	0	.3	.4	.3	.4	.3	.1				
11		0	.3	.4	.3	.5	.3	.1				
12		0	.3	.4	.3	.5	.3	.1				
13		*0	.3	.4	.3	.5	.3	.1				
14		0	.3	.5	.3	.5	.2	.1				
15		0	.3	.5	.4	.4	.2	.1				
16		.1	.3	.5	.4	.4	.2	.1				
17		.1	.3	.7	.4	.4	.2	.1				
18		.1	.3	.7	.4	.4	.2	.1				
19		.1	.3	.5	.5	.4	.3	.1				
20		.2	.3	.7	.5	.4	.2	.1				
21		.1	.3	1.6	.5	.4	.2	.1				
22		.1	.3	1.8	.4	.5	.2	.1				
23		.2	.3	1.0	.4	1.2	.2	.1				
24		.2	.3	.7	.4	.8	.2	.1				
25		.1	.3	.7	.4	.7	.2	.1				
26		.1	.3	.7	.4	.4	.1	.1				
27		.1	.3	.7	.4	.4	.1	.1				
28		.1	.3	.5	.4	.4	.1	.1				
29		.1	.3	.4	.4	.4	.2	.1				
30		.2	.3	.4	-----	.4	.2	0				
31		-----	.3	.4	-----	.4	-----	0			(*)	-----
Total	0	1.9	8.3	17.8	11.0	14.4	8.0	3.7	0	0	0	0
Mean	0	0.06	0.27	0.57	0.38	0.46	0.27	0.12	0	0	0	0
Max	0	0.2	0.3	1.8	0.5	1.2	0.4	0.2	0	0	0	0
Min	0	0	0.1	0.3	0.3	0.4	0.1	0	0	0	0	0
Ac-ft	0	3.8	1.6	35	22	29	16	7.3	0	0	0	0

Calendar year 1963: Max 2.0 Min 0 Mean 0.24 Ac-ft 172

Water year 1963-64: Max 1.8 Min 0 Mean 0.18 Ac-ft 129

Peak discharge (base, 50 cfs)--No peak above base.

* Discharge measurement or observation of no flow made on this day.

11-1575. Tres Pinos Creek near Tres Pinos, Calif.

Location.--Lat 36°45'13", long 121°17'03", in Santa Ana y Quien Sabe Grant, on right bank 3.5 miles southeast of Tres Pinos, San Benito County, and 6.2 miles upstream from mouth.

Drainage area.--206 sq mi.

Records available.--October 1939 to September 1964. Yearly estimate only for 1940 and monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Concrete control since June 3, 1954 (control ineffective since 1955 due to gravel fill). Altitude of gage is 570 ft (from topographic map).

Average discharge.--25 years, 13.2 cfs (9,560 acre-ft per year), unadjusted.

Extremes.--Maximum discharge during year, 43 cfs Jan. 23 (gage height, 4.53 ft); minimum daily, 0.1 cfs for many days.

1939-64: Maximum discharge, 8,060 cfs Apr. 4, 1941 (gage height, 7.75 ft), from rating curve extended above 3,500 cfs; no flow at times in 1952, 1957-61.

Flood in February 1938 reached a stage of about 9.0 ft, from floodmarks.

Remarks.--Records poor. No regulation; diversions above station for irrigation can divert total flow in summer months, and since 1962, diversions into basin above station from San Benito River for percolation and irrigation.

Revisions (water years).--1963 Report: 1962.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.5	0.6	1.2	1.6	1.2	1.4	0.3	0.2	0.3	0.3	0.5	0.1
2	.6	.6	1.2	1.5	1.2	1.4	*.3	.2	*.3	.3	.6	.1
3	.6	.6	*1.5	1.5	1.2	*1.2	.2	.2	.3	.3	*.5	.1
4	.6	.6	1.5	1.5	1.2	1.2	.2	*.2	.3	.3	.5	.1
5	.6	*.6	1.6	1.5	*1.4	1.2	.2	.2	.3	.3	.5	.1
6	.6	.6	1.6	*1.4	1.2	1.2	.2	.2	.3	*.5	.5	.1
7	.6	.6	1.6	1.4	1.2	1.1	.2	.2	.3	.6	.5	.1
8	.6	.6	1.6	1.4	1.4	1.1	.2	.2	.3	.6	.5	.1
9	.6	.6	1.6	1.2	1.4	1.0	.2	.2	.5	.6	.5	.1
10	*.5	1.0	1.6	1.2	1.2	1.0	.2	.2	.4	.6	.5	.1
11	.6	1.2	1.6	1.2	1.2	.9	.1	.2	.3	.6	.4	.1
12	.6	1.5	1.6	1.1	1.4	.9	.1	.2	.3	.6	.3	.1
13	.6	1.6	1.6	1.1	1.2	.9	.1	.2	.3	.6	.2	.1
14	.6	1.5	1.6	1.2	1.2	.8	.1	.2	.3	.6	.2	.1
15	.7	1.5	1.6	1.2	1.2	.5	.1	.2	.3	.6	.1	.1
16	.8	1.6	1.5	1.1	1.1	.1	.1	.2	.3	.5	.1	.1
17	.7	1.6	1.5	1.1	1.2	.3	.1	.2	.3	.5	.1	.1
18	.6	1.6	1.5	1.1	1.2	.5	.2	.2	.3	.5	.1	.1
19	.6	1.7	1.5	1.1	1.2	.5	.2	.2	.3	.5	.1	.1
20	.5	1.5	1.5	1.2	1.2	.6	.2	.2	.3	.6	.1	.1
21	.5	1.6	1.5	1.5	1.2	.6	.2	.2	.3	.5	.1	.1
22	.6	1.5	1.6	1.6	1.2	.7	.2	.2	.3	.5	.1	.1
23	.6	1.6	1.6	2.6	1.2	.8	.2	.2	.2	.5	.1	.1
24	.6	1.6	1.6	1.4	1.1	.8	.2	.2	.2	.5	.1	.1
25	.6	1.4	1.5	1.2	1.1	.8	.2	.2	.2	.5	.1	.1
26	.6	1.5	1.5	1.2	1.2	.7	.2	.3	.3	.5	.1	.1
27	.6	1.4	1.5	1.2	1.2	.7	.2	.3	.3	.5	.1	.2
28	.6	1.4	1.5	1.1	1.2	.4	.2	.3	.3	.5	.1	.2
29	.6	1.4	1.5	1.1	1.2	.3	.2	.3	.3	.5	.1	.3
30	.6	1.4	1.6	1.1	-----	.3	.2	.3	.3	.5	.1	.3
31	.6	-----	1.6	1.1	-----	.3	-----	.3	-----	.5	*.1	-----
Total	18.6	36.5	47.5	40.7	35.3	24.2	5.5	6.8	9.0	15.5	7.9	3.6
Mean	0.60	1.22	1.53	1.31	1.22	0.78	0.18	0.22	0.30	0.50	0.25	0.12
Max	.08	1.7	1.6	2.6	1.4	1.4	0.3	0.3	0.5	0.6	0.6	0.3
Min	0.5	0.6	1.2	1.1	1.1	0.1	0.1	0.2	0.2	0.3	0.1	0.1
Ac-ft	37	72	94	81	70	48	11	13	18	31	16	7.1

Calendar year 1963: Max 20 Min 0.3 Mean 3.62 Ac-ft 2,620
 Water year 1963-64: Max 2.6 Min 0.1 Mean 0.69 Ac-ft 498

Peak discharge (base, 450 cfs).--No peak above base.

* Discharge measurement made on this day.

11-1585. San Benito River near Hollister, Calif.

Location--Lat 36°47'17", long 121°22'11", in SW¼ sec.24, T.13 S., R.5 E., on left bank 1,500 ft downstream from Bird Creek, 0.9 mile downstream from Tres Pinos Creek, 2.7 miles west of Tres Pinos, and 4.8 miles southeast of Hollister.

Drainage area--586 sq mi.

Records available--October 1949 to September 1964.

Gage--Water-stage recorder. Altitude of gage is 370 ft (from topographic map).

Average discharge--15 years, 26.1 cfs (18,900 acre-ft per year); median of yearly mean discharges, 5.8 cfs (4,200 acre-ft per year).

Extremes--Maximum discharge during year, 44 cfs Jan. 24 (gage height, 3.11 ft); no flow for several months.

1949-64: Maximum discharge, 11,600 cfs Apr. 3, 1958 (gage height, 16.30 ft), from rating curve extended above 1,200 cfs on basis of flood-routing study; no flow for parts of each year.

Remarks--Records poor. Flow regulated by Hernandez Dam beginning in December 1961 (capacity, 18,700 acre-ft). Several small diversions above station for irrigation.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	1.4	0.2	5.2	0.2	0.2	0.1	0.1			0.4
2	0	0	1.2	.2	4.8	.2	*.2	.1	*.1			.2
3	0	.1	*.6	.2	3.9	*.3	.2	.1	.1		(*)	.1
4	0	0	.5	.2	*3.4	.3	.2	*.2	.1			0
5	0	**1	.4	.1	2.3	.3	.2	.1	.1			.1
6	0	.2	.3	*.1	1.9	.3	.2	.1	.1	(*)		.1
7	0	.2	.2	.1	1.6	.2	.2	.1	.1			.2
8	0	.1	.2	.1	1.4	.2	.2	.1	.2			.2
9	0	.1	.3	.1	1.2	.3	.2	.1	.2			.2
10	*0	.1	.3	.1	1.0	.3	.2	.1	.2			.2
11	.1	.1	.3	.1	1.0	.3	.2	.1	.2			.2
12	.1	.1	.3	.1	.8	.4	.2	.1	.2			.1
13	.1	.2	.3	.2	.8	.2	.2	.1	.2			.1
14	0	.2	.2	.2	.8	.2	.2	.1	.1			.1
15	.2	.2	.2	.2	.6	.2	.2	.1	.1			.1
16	.4	.2	.2	.2	1.0	.2	.1	.1	.1			.1
17	.3	.2	.2	.2	1.0	.2	.1	.1	.1			.2
18	.1	.2	.2	.2	.8	.2	.1	.1	.1			.2
19	.2	.2	.3	.1	1.0	.1	.1	.1	.1			.1
20	.2	.4	.2	.2	.8	.1	.1	.1	.1			0
21	.1	.2	.2	.8	.5	.1	.1	.1	.1			0
22	.1	.2	.2	7.3	.4	.2	.1	.2	.1			0
23	.1	.2	.2	38	.3	.2	.1	.2	.1			0
24	.2	.4	.2	22	.2	.2	.1	.2	0			0
25	.1	.2	.2	7.7	.2	5.7	.1	.2	0			0
26	0	.2	.2	13	.2	5.2	.1	.2	0			0
27	0	.3	.2	11	.2	1.0	.1	.2	0			0
28	0	1.6	.2	9.1	.2	.5	.1	.1	0			0
29	0	1.9	.2	7.7	.2	.5	.1	.1	0			0
30	0	1.7	.2	6.1	-----	.3	.1	.1	0			0
31	0	-----	.2	5.2	-----	.2	-----	.1	-----		(*)	-----
Total	2.3	9.8	10.0	131.0	37.7	18.8	4.5	3.8	2.9	0	0	2.9
Mean	0.07	0.33	0.32	4.23	1.30	0.61	0.15	0.12	0.10	0	0	0.10
Max	0.4	1.9	1.4	38	5.2	5.7	0.2	0.2	0.2	0	0	0.4
Min	0	0	0.2	0.1	0.2	0.1	0.1	0.1	0	0	0	0
Ac-ft	4.6	19	20	260	75	37	8.9	7.5	5.8	0	0	5.8

Calendar year 1963: Max 100 Min 0 Mean 5.58 Ac-ft 4,040
 Water year 1963-64: Max 38 Min 0 Mean 0.61 Ac-ft 444

* Discharge measurement or observation of no flow made on this day.

** Field estimate made on this day.

Note.--No gage-height record Apr. 11 to May 3, May 5-15.

11-1590. Pajaro River at Chittenden, Calif.

Location.--Lat 36°54'01", long 121°35'48", in Salsipuedes Grant, on downstream side of right bank pier of State highway bridge, 0.6 mile downstream from Pescadero Creek, 0.6 mile southeast of Chittenden, Santa Cruz County, and 2.3 miles downstream from San Benito River.

Drainage area.--1,186 sq mi.

Records available.--October 1939 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B. Prior to October 1954, published as "near Chittenden".

Gage.--Water-stage recorder. Datum of gage is 82.28 ft (revised) above mean sea level, datum of 1929, supplementary adjustment of 1955. Prior to May 13, 1949, wire-weight gage on former bridge 100 ft downstream at same datum except that water-stage recorder, also 100 ft downstream and at same datum, was used Dec. 20, 1946, to June 11, 1947, June 21 to Sept. 23, 1947, and Dec. 19, 1947, to May 6, 1948.

Average discharge.--25 years, 146 cfs (105,700 acre-ft per year); median of yearly mean discharges, 75 cfs (54,300 acre-ft per year).

Extremes.--Maximum discharge during year, 1,460 cfs Jan. 22 (gage height, 9.24 ft); minimum, 0.8 cfs Sept. 25.
1939-64: Maximum discharge, 24,000 cfs Dec. 24, 1955 (gage height, 32.46 ft) from rating curve extended above 8,300 cfs on basis of slope-conveyance study; maximum gage height, 33.11 ft Apr. 3, 1958; no flow at times in July, August 1948.
Flood in February 1938 reached a stage of 31.3 ft, from floodmarks.

Remarks.--Records fair. Flow regulated by Pacheco Lake (capacity, 6,150 acre-ft), Chesbro and Uvas Reservoirs (see p. 304), and San Felipe Lake. Many diversions above station for irrigation.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.6	7.5	18	20	45	25	25	16	6.5	4.8	2.5	2.3
2	4.3	7.8	17	20	44	25	25	16	6.1	4.5	2.5	2.0
3	4.2	8.4	17	20	40	24	24	17	6.5	5.0	2.2	1.9
4	4.2	8.9	17	20	38	23	23	19	6.7	5.5	1.7	1.8
5	4.3	11	18	20	36	23	24	18	6.7	7.0	2.2	1.8
6	4.3	16	18	21	35	24	24	16	6.3	5.5	2.6	1.7
7	4.2	19	18	22	33	24	23	15	6.1	3.5	2.8	1.4
8	4.3	15	19	21	30	22	22	15	6.1	3.8	2.6	1.3
9	4.3	13	20	21	30	22	22	13	6.3	4.8	2.5	1.1
10	4.6	12	20	21	29	21	22	12	5.2	4.0	2.5	1.1
11	6.5	11	19	21	28	20	22	10	5.0	4.3	*2.6	1.0
12	6.3	11	19	20	28	22	22	9.5	5.7	4.6	2.1	1.1
13	6.5	11	19	20	27	22	22	8.4	6.7	5.0	1.8	1.3
14	5.9	13	19	21	26	20	22	7.8	5.7	4.6	1.4	1.8
15	5.4	17	19	21	26	20	*22	8.1	4.6	6.0	1.4	2.6
16	5.4	20	19	21	26	21	23	8.9	4.2	3.5	1.4	2.3
17	5.4	17	19	22	25	*21	22	9.5	*3.7	3.5	1.8	2.2
18	6.1	15	20	23	25	21	21	9.8	3.6	3.5	1.8	*1.8
19	5.9	15	20	24	26	22	21	9.8	3.4	4.0	1.7	1.4
20	5.7	22	19	28	26	20	21	8.4	3.1	3.4	1.8	1.3
21	5.7	30	19	294	*25	20	20	*7.5	3.6	2.5	2.2	1.3
22	*5.9	*24	19	*996	24	23	20	7.5	4.3	2.0	2.1	1.1
23	6.1	21	19	381	25	30	20	6.7	4.6	2.2	1.7	1.0
24	6.1	30	19	215	26	30	19	7.5	4.5	*2.7	1.9	.9
25	6.3	33	19	155	26	30	19	8.4	4.2	3.2	2.3	.8
26	6.5	27	19	118	25	25	18	9.5	4.3	3.0	2.4	.9
27	6.5	22	*20	91	25	24	17	9.5	4.6	3.0	2.8	1.0
28	7.0	19	20	75	27	24	16	8.4	4.6	2.5	3.0	1.1
29	7.0	18	20	63	27	23	16	7.8	5.0	2.5	3.0	1.1
30	7.3	18	20	54	-----	23	17	8.4	5.0	2.5	2.7	1.0
31	7.5	-----	20	49	-----	23	-----	7.8	-----	2.5	2.7	-----
Total	174.3	512.6	588	2,918	853	717	634	336.2	152.9	119.4	68.7	43.4
Mean	5.62	17.1	19.0	94.1	29.4	23.1	21.1	10.8	5.10	3.85	2.22	1.45
Max	7.5	33	20	996	45	30	25	19	6.7	7.0	3.0	2.6
Min	4.2	7.5	17	20	24	20	16	6.7	3.1	2.0	1.4	0.8
Ac-ft	346	1,020	1,170	5,790	1,690	1,420	1,260	667	303	237	136	86

Calendar year 1963: Max 9,580 Min 1.2 Mean 163 Ac-ft 117,900
Water year 1963-64: Max 996 Min 0.8 Mean 19.4 Ac-ft 14,120

Peak discharge (base, 400 cfs).--Jan. 22 (0900) 1,460 cfs (9.24 ft).

* Discharge measurement made on this day.

Note.--No gage-height record June 15, 16, July 2-10, July 15 to Aug. 10.

11-1591.5. Corralitos Creek near Corralitos, Calif.

Location.--Lat 37°00'20", long 121°48'25", in Los Corralitos Grant, on left bank 0.5 mile downstream from Mormon Gulch, 1.2 miles upstream from Corralitos, Santa Cruz County, and 7 miles northwest of Watsonville.

Drainage area.--10.6 sq mi.

Records available.--October 1957 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 310 ft (from topographic map).

Average discharge.--7 years, 8.53 cfs (6,180 acre-ft per year).

Extremes.--Maximum discharge during year, 299 cfs Jan. 20 (gage height, 3.74 ft); no flow June 25 to July 6, July 26-28.

1957-64: Maximum discharge, 1,970 cfs Apr. 2, 1958 (gage height, 7.55 ft), from rating curve extended above 430 cfs on basis of estimate of maximum flow over dam; maximum gage height, 7.62 ft Jan. 31, 1963; no flow at times.

Remarks.--Records good except those for period of no gage-height record, which are poor. No regulation; Watsonville Water Works can divert up to 8.0 cfs daily above station for municipal supply, domestic use, and irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.4	0	1.1	10
.5	.1	1.3	19
.6	.3	1.5	31
.7	.9	2.0	70
.8	2.2	3.0	184
.9	4.2		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.1	2.6	0.6	6.2	5.5	3.6	0.6	*0.2	0	0.1	0.1
2	.3	.2	3.5	1.7	5.9	*3.8	1.6	.4	.1	0	.1	.1
3	.3	.2	2.6	.8	*5.3	2.2	1.4	.8	.4	0	.1	.1
4	.4	3.6	2.4	.9	4.8	2.2	1.1	.6	.1	0	.1	*.1
5	.4	18	2.2	1.0	5.5	1.8	1.0	.4	.1	0	.1	.1
6	.3	11	2.1	.6	5.5	3.6	1.0	.4	.1	0	.1	.1
7	.3	4.6	2.2	.6	4.0	2.6	.9	*.5	.1	.1	**1	.1
8	.3	2.1	3.1	.6	3.6	1.1	.9	.4	2.7	.1	.1	.1
9	.3	1.8	3.0	*.6	3.4	1.1	.8	.3	2.8	.1	.1	.1
10	6.0	1.4	1.5	.6	3.0	1.1	.9	.2	.3	*.1	.1	.1
11	3.0	1.4	1.1	.6	2.8	2.0	.8	.1	.2	.1	.1	.1
12	1.4	1.5	1.1	.6	2.6	7.9	.6	.1	.1	.1	.1	.1
13	1.0	1.6	1.1	1.4	2.6	3.5	.6	.1	.1	.1	.1	.1
14	.7	26	1.0	1.9	2.6	1.6	.5	.1	.1	.1	.1	.1
15	.6	21	1.0	.6	3.8	1.4	.6	.1	.5	.1	.1	.1
16	2.0	6.9	1.0	.6	2.6	1.1	.5	.6	1.1	.1	.1	.2
17	.6	3.6	1.0	3.1	2.6	1.0	.4	.4	.7	.1	.1	.1
18	.4	3.2	1.0	9.8	2.6	.9	.5	.2	.1	.1	.1	.1
19	.2	*29	1.1	21	2.6	.7	.5	.2	.1	.1	.1	.1
20	.2	51	1.2	96	2.4	.7	.5	.1	.1	.1	.1	.2
21	.2	14	1.0	*113	2.2	2.4	.4	.1	.1	.1	.1	.1
22	.2	7.0	.9	83	2.2	9.4	.8	.1	.1	.1	.1	.1
23	.3	16	*.8	37	2.1	9.7	.6	.1	.2	.1	.1	.1
24	*.4	16	.8	*26	1.9	8.2	.6	.1	.2	.1	.1	.1
25	.3	9.3	.9	18	1.9	5.4	.6	.3	0	.1	.1	.1
26	.2	7.2	1.0	15	1.9	3.6	.6	.5	0	0	.1	.2
27	.2	7.9	.7	11	1.9	3.0	.6	.5	0	0	.1	.1
28	.2	5.2	1.3	9.7	1.9	2.4	.6	.4	0	0	.1	.1
29	.2	3.4	1.3	8.8	1.9	1.9	.7	.3	0	.1	.2	.1
30	.1	3.0	1.2	7.6	-----	*1.8	.6	.3	0	.1	.2	.1
31	.1	-----	.5	7.0	-----	3.4	-----	.2	-----	.1	.1	-----
Total	21.4	277.2	46.2	479.7	92.3	97.0	24.8	9.5	10.6	2.2	3.3	3.3
Mean	0.69	9.24	1.49	15.5	3.18	3.13	0.83	0.31	0.35	0.07	0.11	0.11
Max	6.0	51	3.5	113	6.2	9.7	3.6	0.8	2.8	0.1	0.2	0.2
Min	0.1	0.1	0.5	0.6	1.9	0.7	0.4	0.1	0	0	0.1	0.1
Ac-ft	42	550	92	951	183	192	49	19	21	4.4	6.5	6.5

Calendar year 1963: Max 997 Min 0.1 Mean 17.3 Ac-ft 12,520
 Water year 1963-64: Max 113 Min 0 Mean 2.92 Ac-ft 2,120

Peak discharge (base, 200 cfs).--Jan. 20 (2200) 299 cfs (3.74 ft)

* Discharge measurement made on this day.

** Field estimate made on this day.

Note.--No gage-height record Oct. 1-23.

PAJARO RIVER BASIN

11-1592. Corralitos Creek at Freedom, Calif.

Location.--Lat 36°56'22", long 121°46'10", in Los Corralitos Grant, on right bank just upstream from Green Valley Road bridge, 0.25 mile north of Freedom, Santa Cruz County, and 2.3 miles north of Watsonville.

Drainage area.--27.8 sq mi.

Records available.--October 1956 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 80 ft (from topographic map).

Average discharge.--8 years, 12.5 cfs (9,050 acre-ft per year).

Extremes.--Maximum discharge during year, 702 cfs Jan. 20 (gage height, 5.54 ft); no flow for many days.

1956-64: Maximum discharge, 2,680 cfs Apr. 2, 1958 (gage height, 12.59 ft), from rating curve extended above 610 cfs on basis of contracted-opening measurement at gage height 15.6 ft; no flow at times.

Flood of Dec. 22, 1955, reached a stage of 15.6 ft, from floodmarks (discharge, 3,620 cfs on basis of contracted-opening measurement of maximum flow).

Remarks.--Records poor. No regulation; Watsonville Water Works can divert up to 8.0 cfs daily above station for municipal supply, domestic use, and irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 14 to Jan. 20, May 16 to July 5)

2.4	0	3.0	16
2.5	.2	3.2	34
2.6	.9	3.5	78
2.7	2.4	3.8	142
2.8	4.9	4.2	262

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.2	0.4	2.7	0.3	6.9	1.1	2.7	0.3	*0.1	0		
2	.2	.3	2.7	.5	5.9	*4.7	.8	.2	.1	0		
3	.2	.3	2.1	.3	4.9	1.5	.7	.3	.1	0		
4	.3	.6	2.0	.2	*4.2	1.4	.6	.3	.1	0		
5	.3	14	2.0	.4	4.4	1.2	.6	.3	.1	.2		
6	.2	20	1.7	.3	4.4	.9	1.0	.3	.2	0		
7	.1	54	1.5	.2	3.4	1.8	.6	*.3	.1	0		
8	.2	30	1.4	.2	2.9	1.1	.6	.3	.1	0		
9	.2	26	3.9	*.2	2.4	.8	.6	.3	.2	0		
10	1.0	22	1.4	.2	2.0	.8	.6	.2	.2	*0		
11	11	22	1.1	.2	1.8	1.1	.5	.2	.2	0		
12	1.2	22	.8	.2	1.7	4.1	.5	.2	.2	0		
13	.2	22	.8	.2	1.7	2.7	.4	.2	.2	0		
14	.2	80	.8	.2	1.4	.8	.4	.2	.2	0		
15	.3	84	.8	.2	2.1	.7	.5	.2	.2	0		
16	1.2	8.0	.6	.2	2.1	.7	.5	.2	.2	0		
17	.6	4.7	.5	.3	1.2	.7	.4	.2	.2	0		
18	.2	3.4	.5	7.4	1.1	.7	.3	.2	.2	0		
19	.2	*25	.4	21	1.2	.6	.3	.4	.2	0		
20	.1	75	.4	135	1.1	.6	.3	.1	.2	0		
21	.1	20	.4	*251	1.1	.7	.3	.1	.2	0		
22	.1	11	.3	*177	1.1	8.7	.3	.1	.1	0		
23	.3	22	*.3	63	.9	11	.3	.1	.1	0		
24	*.3	25	.3	*40	.9	8.5	.3	.1	.1	0		
25	.3	15	.3	28	.8	5.4	.3	.1	.1	0		
26	.3	10	.3	22	.8	3.2	.6	.1	0	0		
27	.2	10	.3	16	.8	2.7	.3	.2	0	0		
28	.2	6.9	.4	14	.9	2.0	.3	.1	0	0		
29	.2	4.2	.4	11	-----	1.1	.3	.1	0	0		
30	.2	3.4	.3	9.5	-----	*.8	.2	.1	0	0		
31	.2	-----	.3	8.0	-----	.9	-----	.1	-----	0		
TOTAL	20.5	641.2	31.7	807.2	65.0	73.0	16.1	6.1	3.9	0.2	0	0
MEAN	0.66	21.4	1.02	26.0	2.24	2.35	0.54	0.20	0.13	0.006	0	0
MAX	11	84	3.9	251	6.9	11	2.7	0.4	0.2	0.2	0	0
MIN	0.1	0.3	0.3	0.2	0.8	0.6	0.2	0.1	0	0	0	0
AC-FT	41	1,270	63	1,600	129	145	32	12	7.7	0.4	0	0

CALENDAR YEAR 1963 MAX 1,490 MIN 0 MEAN 30.8 AC-FT 22,300
WATER YEAR 1963-64 MAX 251 MIN 0 MEAN 4.55 AC-FT 3,300

Peak discharge (base, 350 cfs).--Jan. 20 (2400) 702 cfs (5.54 ft).

* Discharge measurement or observation of no flow made on this day.

11-1594. Green Valley Creek near Corralitos, Calif.

Location.--Lat 36°58'37", long 121°46'31", in Los Corralitos Grant, on right bank at culvert on Green Valley road and 1.9 miles south-east of Corralitos, Santa Cruz County.

Drainage area.--7.05 sq mi.

Records available.--Water years 1961-63 (annual maximum), October 1963 to September 1964.

Gage.--Water-stage recorder, crest-stage gage, and tipping-bucket rain gage. Altitude of gage is 165 ft (from topographic map). Aug. 31, 1960 to Oct. 4, 1963, crest-stage only.

Extremes.--Maximum discharge during year, 236 cfs Jan. 21 (gage height, 2.15 ft) from rating curve extended above 61 cfs as explained below; no flow for many days.

1960-64: Maximum discharge 1,050 cfs Jan. 31, 1963 (gage height, 6.35 ft), by computation of maximum flow through culvert.

1963-64: No flow for many days.

Remarks.--Records poor. No regulation; pumpage from wells along creek for irrigation affects flow at this station.

Rating table (gage-height, in feet, and discharge, in cubic feet per second)

(Shifting-control method used Jan. 24-28, Feb. 3 to Mar. 30, May 7-9, June 4 to Aug. 27)

0.0	0	0.5	18
.1	.6	.8	45
.2	2.7	1.2	93
.3	6.4		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.1	0.2	0.2	2.4	0.7	0.7	0.2	* 0	0.1	0	
2	.1	.1	.1	.2	2.2	*.7	.5	.1	0	0	0	
3	*.1	.1	.1	.2	* 1.9	.5	.4	.2	0	.1	0	
4	.1	.4	.1	.2	1.9	.5	.4	.2	0	.1	0	
5	.1	2.0	.1	.2	1.7	.3	.3	.2	.2	0	0	
6	.1	1.2	.1	.1	1.4	.3	.3	.2	.6	0	0	
7	0	.1	0	.1	1.4	.2	.2	*.3	.3	.1	* 0	
8	0	.1	0	.1	1.2	.1	.2	.3	1.7	0	0	
9	0	.1	.1	*.1	1.0	.1	.2	.2	.9	0	0	
10	.3	.1	0	.1	.9	.1	.2	.2	.5	* 0	0	
11	1.1	.1	0	.1	.6	.2	.2	.1	.1	0	0	
12	.1	.2	0	.1	.5	.7	.2	.1	.1	.1	0	
13	.1	.2	0	.1	.5	.2	.2	.1	.1	0	0	
14	.1	3.5	0	.1	.6	.1	.1	.1	0	.1	0	
15	.3	5.5	0	.1	.9	.1	.1	.1	.1	.1	.3	
16	.2	.7	0	.1	.6	.1	.1	.7	.2	0	.2	
17	.1	.3	0	.2	.5	.1	.1	.8	.2	0	.7	
18	.1	.2	0	.5	.5	.1	.1	.2	1.1	0	1.0	
19	.1	*7.9	0	14	.4	.1	.1	.2	1.7	0	1.0	
20	.1	*1.1	.1	61	.3	.1	.1	.1	.9	0	.5	
21	.1	.5	.1	*83	.3	.1	.1	.1	2.2	0	.5	
22	.1	.2	.1	51	.2	.9	.1	.1	1.0	0	.9	
23	.2	9.9	*.1	17	.1	1.4	.1	.1	0	0	.4	
24	*.1	3.4	.1	*11	.1	1.2	.1	.1	0	.5	.4	
25	0	1.2	.1	9.8	0	1.0	.1	.1	0	.9	.7	
26	0	.9	.1	7.0	0	.9	.1	.1	0	.7	.7	
27	0	.7	.1	5.2	0	.6	.1	0	0	0	.1	
28	0	.5	.1	4.4	0	.5	.1	0	0	0	0	
29	0	.4	.1	4.0	0	.5	.1	0	0	0	0	
30	0	.3	.1	3.4	-----	*.4	.1	0	.1	0	0	
31	.1	-----	.1	3.0	-----	.6	-----	0	-----	0	0	
Total	3.8	51.9	2.0	276.6	22.1	13.4	5.7	5.2	12.0	2.8	7.4	0
Mean	0.12	1.73	0.06	8.92	0.76	0.43	0.19	0.40	0.40	0.09	0.24	0
Max	1.1	11	0.2	83	2.4	1.4	0.7	0.8	2.2	0.9	1.0	0
Min	0	0.1	0	0.1	0	0.1	0.1	0	0	0	0	0
Ac-ft	7.5	103	4.0	549	44	27	11	10	24	5.6	15	0
(†)	23	57	0.2	53	0.1	23	0.3	0.2	0.2	0	0.2	0

Calendar year 1963: Max - Min - Mean - Ac-ft -
 Water year 1963-64: Max 83 Min 0 Mean 1.10 Ac-ft 800

Peak discharge (base, 100 cfs).--Jan. 21 (1730) 236 cfs (2.15 ft).

* Discharge measurement or observation of no flow made on this day.

† Precipitation, in inches.

Note.--No gage-height record Oct. 1, 2, Mar. 31 to May 6, May 10-31.

PAJARO RIVER BASIN

Reservoirs in Pajaro River basin, Calif.

11-1534.8. Chesbro Reservoir.--Lat 37°07'00", long 121°41'34", near southwest boundary of Ojo de Agua de la Coche Grant, at left end of dam on Llagas Creek and 2.5 miles west of Morgan Hill, Santa Clara County. Drainage area, 19.4 sq mi. Records available, December 1955 to September 1964. Monthly contents prior to October 1959 published in WSP 1735. Staff gage read once daily. Datum of gage is at mean sea level (levels by South Santa Clara Valley Water Conservation District). Maximum contents during year, 3,000 acre-ft Oct. 1 (elevation, 502.5 ft); minimum observed, 121 acre-ft Sept. 29 (elevation, 470.7 ft). Maximum contents observed during period 1955-64, 7,950 acre-ft Apr. 3, 1958 (elevation, 526.8 ft); no contents at times in 1957, 1960-62.

Reservoir is formed by earth- and rock-fill dam completed in 1955. Capacity, 7,500 acre-ft between elevations 465 (elevation of outlet gates) and 525 ft (crest of spillway). Reservoir is used for flood control and water released down Llagas Creek for irrigation. Record of contents furnished by South Santa Clara Valley Water Conservation District.

11-1540.2. Uvas Reservoir.--Lat 37°04'02", long 121°41'25", in Las Uvas Grant, at center of dam on Uvas Creek and 4.8 miles southwest of Morgan Hill, Santa Clara County. Drainage area, 30.4 sq mi (revised). Records available, December 1957 to September 1964. Monthly contents prior to October 1959 published in WSP 1735. Staff gage read once daily. Datum of gage is at mean sea level (levels by South Santa Clara Valley Water Conservation District). Maximum contents observed during year, 6,120 acre-ft Apr. 6 (elevation, 472.1 ft); minimum observed, 384 acre-ft Sept. 30 (elevation, 424.6 ft). Maximum contents observed during period 1957-63, 10,760 acre-ft Feb. 1, 1963 (elevation, 489.6 ft); no contents May 18 to Nov. 30, 1961.

Reservoir is formed by earth- and rock-fill dam completed in 1957. Capacity, 10,000 acre-ft between elevations 410 (hydraulic gate valves) and 487.5 ft (crest of spillway). Water released down Uvas Creek for irrigation; at times, diverted into Llagas Creek 3.6 miles below Chesbro Reservoir for ground-water recharge by percolation. Record of contents furnished by South Santa Clara Valley Water Conservation District.

Month-end contents, in acre-feet, water year October 1963 to September 1964

Date	Chesbro Reservoir	Uvas Reservoir
Sept. 30.....	3,000	1,370
Oct. 31.....	656	908
Nov. 30.....	378	2,120
Dec. 31.....	270	2,070
Jan. 31.....	1,900	5,450
Feb. 29.....	2,170	5,880
Mar. 31.....	2,280	6,100
Apr. 30.....	2,240	5,820
May 31.....	1,730	3,550
June 30.....	420	1,340
July 31.....	250	664
Aug. 31.....	184	502
Sept. 30.....	121	384

Note.--Contents at 0800 hours on first day of following month.

11-1597. Aptos Creek at Aptos, Calif.

Location.--Lat 36°58'35", long 121°54'05", in Aptos Grant, on left bank at Aptos, Santa Cruz County, 0.6 mile upstream from mouth.Drainage area.--12.2 sq mi.Records available.--October 1958 to September 1964.Gage.--Water-stage recorder. Altitude of gage is 10 ft (from topographic map).Average discharge.--6 years, 6.75 cfs (4,890 acre-ft per year).Extremes.--Maximum discharge during year, 262 cfs Jan. 21 (gage height, 5.30 ft); minimum, 0.8 cfs Sept. 18-21.

1958-64: Maximum discharge, 2,110 cfs Jan. 31, 1963 (gage height, 10.82 ft), from rating curve extended above 980 cfs; minimum, 0.3 cfs July 25, 1959, Oct. 8, 1961.

Remarks.--Records good. No regulation; small diversions above station for irrigation.Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 27-30, Jan. 2-18)

3.3	0.4	3.8	16
3.4	1.2	4.0	30
3.5	3.0	4.3	64
3.6	5.5	4.6	112
3.7	9.6		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.0	2.1	5.3	3.0	5.5	5.1	3.8	2.1	1.8	1.7	1.1	1.2
2	2.0	2.1	5.3	3.0	5.3	*4.0	*3.0	2.0	1.8	1.7	1.1	1.2
3	*2.0	2.3	5.0	2.8	5.0	3.0	2.3	2.3	1.8	1.7	1.1	1.0
4	1.8	4.7	5.0	2.8	5.0	3.0	2.8	2.1	*1.8	1.5	1.1	1.0
5	2.0	12	*4.8	2.8	4.8	3.0	2.8	2.1	1.7	1.5	1.1	1.0
6	2.1	*8.0	4.8	2.8	4.5	3.0	2.5	*2.1	1.7	*1.5	1.1	1.0
7	2.1	4.3	4.8	2.8	3.8	3.0	2.5	2.0	1.8	1.5	*.9	1.0
8	2.1	3.3	5.0	3.0	3.8	2.8	2.5	2.1	2.5	1.5	.9	1.0
9	2.8	3.0	5.0	3.0	3.8	2.8	2.5	2.1	3.8	1.4	.9	1.0
10	3.4	2.8	4.8	3.0	*3.8	2.8	2.3	2.1	2.5	1.4	.9	1.0
11	14	2.5	4.5	3.0	3.8	3.0	2.3	2.0	2.3	1.3	.9	1.0
12	3.5	2.5	4.3	3.0	4.0	5.9	2.3	2.0	2.3	1.3	1.0	1.0
13	2.8	2.5	4.0	3.3	4.0	3.3	2.3	2.0	2.1	1.3	1.0	1.0
14	2.5	11	4.0	3.3	4.3	2.8	2.1	1.8	2.0	1.3	1.0	1.0
15	3.4	12	3.5	3.3	4.8	2.5	2.1	1.8	2.0	1.2	1.0	1.0
16	3.5	4.5	3.5	3.3	4.3	2.5	2.1	2.0	2.0	1.2	1.0	1.0
17	2.8	3.5	3.5	3.8	4.3	2.5	2.1	2.3	2.0	1.2	1.0	1.0
18	2.5	3.0	3.3	8.9	4.0	2.3	2.1	2.1	2.0	1.2	.9	.8
19	2.5	14	3.3	18	4.0	2.3	2.1	2.0	2.0	1.2	1.0	.8
20	2.3	34	3.0	42	4.0	2.3	2.1	2.0	2.0	1.2	1.0	.8
21	2.3	*11	3.0	*103	4.0	2.5	2.1	1.8	2.0	1.2	1.0	.8
22	2.3	8.4	3.0	*54	4.0	9.2	2.1	1.8	2.0	1.2	1.0	1.0
23	2.8	14	2.8	*24	4.0	8.4	2.1	2.0	2.0	1.2	1.0	1.0
24	2.5	13	2.8	16	3.8	5.5	2.1	2.0	2.0	1.2	1.1	1.0
25	2.3	9.2	2.5	12	3.8	4.5	2.1	2.0	2.0	1.2	1.1	1.0
26	2.3	8.0	2.5	9.6	3.8	3.8	2.1	2.0	1.8	1.2	1.2	1.0
27	2.1	7.1	2.3	8.4	3.8	3.5	2.1	2.0	1.8	1.2	1.2	1.0
28	2.1	6.7	2.3	7.6	3.8	3.3	2.1	2.0	1.8	1.2	*1.1	1.0
29	2.1	6.3	2.3	6.7	3.8	3.0	2.1	1.8	1.8	1.2	1.0	1.0
30	2.1	5.5	*2.4	6.3	-----	3.0	2.0	1.8	1.8	1.2	1.1	1.0
31	2.1	-----	2.8	5.5	-----	3.5	-----	1.8	-----	1.1	1.4	-----
TOTAL	87.1	223.3	115.4	374.0	121.6	112.1	70.2	62.0	60.9	40.9	32.2	29.6
MEAN	2.81	7.44	3.72	12.1	4.19	3.62	2.34	2.00	2.03	1.32	1.04	0.99
MAX	14	34	5.3	103	5.5	9.2	3.8	2.3	3.8	1.7	1.4	1.2
MIN	1.8	2.1	2.3	2.8	3.8	2.3	2.0	1.8	1.7	1.1	0.9	0.8
AC-FT	173	443	229	742	241	222	139	123	121	81	64	59

CALENDAR YEAR 1963: MAX 861 MIN 1.8 MEAN 19.5 AC-FT 14,110
WATER YEAR 1963-64: MAX 103 MIN 0.8 MEAN 3.63 AC-FT 2,640

Peak discharge (base, 100 cfs).--Jan. 21 (0100) 262 cfs (5.30 ft).

* Discharge measurement made on this day.

SOQUEL CREEK BASIN

11-1598, West Branch Soquel Creek near Soquel, Calif.

Location.--Lat 37°03'05", long 121°56'20", in NW¼ sec.23, T.10 S., R.1 W., on left bank 0.5 mile upstream from Soquel Creek and 4.5 miles north of Soquel.

Drainage area.--12.2 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 220 ft (from topographic map).

Average discharge.--6 years, 10.6 cfs (7,670 acre-ft per year).

Extremes.--Maximum discharge during the year, 510 cfs Jan. 20 (gage height, 5.10 ft), minimum, 0.8 cfs Sept. 22.

1958-64: Maximum discharge, 4,120 cfs Jan. 31, 1963 (gage height, 10.88 ft), from rating curve extended above 740 cfs on basis of slope-area measurement at gage height 7.96 ft; minimum, 0.4 cfs July 16, 1961.

Remarks.--Records good. No regulation; small diversions above station for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.7	2.0	5.1	2.9	6.7	5.2	7.0	3.2	2.1	1.7	1.1	1.6
2	1.9	2.5	5.1	2.9	6.4	*5.1	*4.8	3.4	2.0	1.6	1.1	1.4
3	*2.0	2.5	4.8	2.9	6.1	4.2	4.8	3.8	2.0	1.6	1.3	1.1
4	1.9	7.5	*4.5	2.9	5.8	4.2	4.5	3.4	*2.0	1.6	1.1	1.0
5	1.9	40	4.5	2.9	5.8	4.0	4.5	3.2	2.0	1.6	1.0	1.0
6	1.7	*11	4.2	2.7	5.8	4.0	4.2	*2.9	2.0	*1.6	1.0	1.0
7	1.7	5.1	4.2	2.7	5.4	4.0	4.0	2.9	2.0	1.6	*1.0	1.1
8	1.7	3.8	4.2	2.7	5.4	3.8	4.0	2.9	3.4	1.5	1.0	1.1
9	2.5	3.8	4.8	2.7	5.4	3.8	4.0	3.2	3.8	1.5	.9	1.1
10	6.4	3.4	4.2	2.7	*5.4	4.0	4.0	2.9	2.3	1.5	.9	1.0
11	22	3.4	4.0	2.7	5.4	4.5	3.8	2.9	2.0	1.5	1.0	1.1
12	3.4	3.4	4.0	2.7	5.4	11	3.8	2.7	1.9	1.3	1.0	1.1
13	2.7	2.9	4.0	2.7	5.1	4.8	3.8	2.5	1.9	1.3	1.0	1.1
14	2.3	50	4.0	2.7	5.1	4.2	3.6	2.5	1.9	1.4	1.1	1.1
15	3.7	25	4.0	2.7	6.1	4.0	3.6	2.5	1.9	1.5	1.1	1.1
16	3.4	8.2	3.8	2.7	5.8	3.8	3.6	3.2	1.9	1.4	1.0	1.1
17	2.7	6.4	3.8	3.8	5.1	3.8	3.6	4.0	1.9	1.4	1.0	1.0
18	2.3	5.4	3.8	7.3	5.1	3.6	3.6	3.2	1.7	1.5	1.0	1.0
19	2.1	74	3.8	11	5.1	3.6	3.2	2.9	1.7	1.5	1.1	1.0
20	2.1	65	3.8	106	5.1	3.6	3.4	2.7	1.7	1.4	1.1	.9
21	2.0	15	3.8	124	4.5	3.8	3.2	2.7	1.7	1.4	1.0	.9
22	2.1	11	3.4	*70	4.5	12	3.2	2.7	1.7	1.4	1.0	.9
23	2.7	25	3.4	32	4.2	11	3.2	2.7	1.7	1.4	1.0	.9
24	2.1	20	3.2	*18	4.2	6.7	3.2	2.3	1.6	1.3	1.0	.9
25	2.1	12	3.2	14	4.0	5.1	3.2	2.3	1.6	1.4	1.0	.9
26	2.0	9.2	3.2	12	4.0	4.8	3.2	2.3	1.6	1.3	1.0	1.0
27	2.0	7.8	3.2	11	4.0	4.8	3.4	2.5	1.6	1.3	*1.0	1.1
28	2.0	6.7	5.2	9.2	4.0	4.5	3.4	2.3	1.6	1.3	1.1	1.3
29	2.0	6.1	2.9	8.2	3.6	4.5	3.2	2.3	1.7	1.3	1.0	1.3
30	2.0	5.4	*2.9	7.8	-----	4.2	3.2	2.1	1.7	1.3	1.0	1.1
31	2.0	-----	3.2	7.0	-----	5.8	-----	2.1	-----	1.3	1.6	-----
TOTAL	93.1	443.5	120.2	485.5	148.7	156.4	114.2	87.2	58.6	44.7	32.5	32.2
MEAN	3.00	14.8	3.88	15.7	5.13	5.05	3.81	2.81	1.95	1.44	1.05	1.07
MAX	22	74	5.1	124	6.7	12	7.0	4.0	3.8	1.7	1.6	1.6
MIN	1.7	2.0	2.9	2.7	3.8	3.6	3.2	2.1	1.6	1.3	0.9	0.9
AC-FT	185	880	238	963	295	310	227	173	116	89	64	64

CALENDAR YEAR 1963: MAX 1,910 MIN 1.5 MEAN 29.2 AC-FT 21,130
 WATER YEAR 1963-64: MAX 124 MIN 0.9 MEAN 4.96 AC-FT 3,600

Peak discharge (base, 300 cfs).--Jan. 20 (2300) 510 cfs (5.10 ft).

* Discharge measurement made on this day.

11-1600. Soquel Creek at Soquel, Calif.

Location.--Lat 36°59'29", long 121°57'17", in NE¼ sec.10, T.11 S., R.1 W., on left bank 0.2 mile upstream from highway bridge in town of Soquel and 0.4 mile downstream from Bates Creek.

Drainage area.--40.2 sq mi.

Records available.--May 1951 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 40 ft (from topographic map).

Average discharge.--13 years, 43.4 cfs (31,420 acre-ft per year); median of yearly mean discharges, 27 cfs (19,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,390 cfs Jan. 21 (gage height, 7.55 ft); minimum daily, 0.1 cfs Aug. 12, 19.

1951-64: Maximum discharge, 15,800 cfs Dec. 23, 1955 (gage height, 22.33 ft), from rating curve extended above 2,900 cfs on basis of slope-area measurement of maximum flow; minimum daily, 0.1 cfs Aug. 12, 19, 1964.

Remarks.--Records fair. No regulation; small diversion above station for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3.5	1.9	20	9.2	25	15	19	8.3	4.8	1.4	1.7	4.4
2	3.7	2.2	18	9.2	24	*17	*14	7.8	4.8	1.3	1.9	4.4
3	*4.4	2.7	17	9.2	22	14	13	9.2	4.8	1.7	1.7	3.2
4	4.4	12	15	9.2	20	13	13	8.3	*5.1	2.2	1.9	3.0
5	4.4	79	*14	9.2	19	12	12	7.4	4.8	2.7	1.9	3.2
6	4.0	*52	13	8.7	18	12	12	*7.4	5.5	*3.2	1.4	3.2
7	4.0	15	12	8.7	*18	12	11	7.0	5.9	3.2	*1.3	3.0
8	4.4	9.7	12	8.7	19	12	11	7.0	9.7	2.7	1.1	2.7
9	5.5	7.4	13	8.7	18	12	11	6.3	13	2.7	1.0	3.0
10	9.6	6.3	12	8.7	17	11	11	5.5	5.5	1.9	.7	3.0
11	58	5.5	12	8.7	17	12	11	5.1	4.4	.7	.4	3.0
12	8.5	5.5	11	8.7	16	25	11	4.4	2.7	1.1	.1	3.2
13	4.0	4.8	11	8.7	16	15	11	4.0	.6	1.3	.4	3.5
14	3.5	77	11	8.7	16	13	10	3.7	1.1	1.4	.8	3.0
15	5.7	100	11	6.7	17	12	9.7	3.7	1.3	1.3	1.3	3.5
16	7.8	25	11	8.7	16	12	9.7	4.8	1.9	1.1	1.4	3.5
17	4.8	16	11	10	15	12	9.7	10	2.2	1.0	1.3	3.5
18	3.7	13	10	21	15	11	9.7	6.3	2.7	.8	.7	3.2
19	3.5	116	10	39	15	11	10	5.5	2.7	.8	.1	3.2
20	3.5	217	10	224	14	11	9.7	4.4	3.0	.6	.4	3.0
21	2.4	*54	10	460	13	11	10	3.7	3.0	.7	1.0	1.9
22	2.4	38	10	*276	13	30	11	3.7	3.0	.4	2.2	1.9
23	2.7	59	10	128	13	28	11	3.7	2.4	1.1	1.7	1.1
24	2.4	69	9.7	*60	13	23	9.2	3.7	1.9	1.0	1.4	1.0
25	2.2	41	9.7	57	13	18	9.2	3.7	2.7	1.0	1.9	1.7
26	1.9	34	9.7	45	12	16	9.3	5.5	3.2	1.0	1.9	3.2
27	1.9	30	10	30	12	16	7.8	5.9	2.4	1.1	1.9	3.2
28	1.9	27	9.7	33	12	15	7.4	5.3	1.7	1.4	*1.7	3.0
29	1.9	25	9.7	31	12	14	8.7	6.3	3.0	1.9	1.7	3.0
30	1.9	23	*9.2	28	-----	14	8.3	5.5	2.4	1.9	2.2	3.0
31	1.9	-----	9.2	27	-----	16	-----	5.1	-----	1.9	3.7	-----
TOTAL	173.9	1,166.0	360.9	1,638.7	470	465	320.4	179.2	112.2	46.5	42.8	88.7
MEAN	5.61	38.9	11.6	52.9	16.2	15.0	10.7	5.78	3.74	1.50	1.38	2.96
MAX	58	217	20	460	25	30	19	10	13	3.2	3.7	4.4
MIN	1.9	1.9	9.2	8.7	12	11	7.4	3.7	0.6	0.4	0.1	1.0
AC-FT	345	2,320	716	3,250	932	922	636	355	223	92	85	176

CALENDAR YEAR 1963: MAX 4,150 MIN 1.9 MEAN 78.5 AC-FT 56,860

WATER YEAR 1963-64: MAX 460 MIN 0.1 MEAN 13.8 AC-FT 10,050

Peak discharge (base, 750 cfs).--Jan. 21 (0030) 1,390 cfs (7.55 ft).

* Discharge measurement made on this day.

SAN LORENZO RIVER BASIN

11-1603. Zayante Creek at Zayante, Calif.

Location.--Lat 37°05'10", long 122°02'45", in SE¼ sec.2, T.10 S., R.2 W., on left bank at Zayante Road bridge in town of Zayante, 0.4 mile upstream from Lompico Creek, 2.0 miles east of Ben Lomond, and 3.2 miles upstream from mouth.

Drainage area.--11.1 sq mi.

Records available.--October 1957 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 390 ft (from topographic map).

Average discharge.--7 years, 9.53 cfs (6,900 acre-ft per year).

Extremes.--Maximum discharge during year, 560 cfs Jan. 20 (gage height, 4.10 ft); no flow Aug. 20-27.

1957-64: Maximum discharge, 3,700 cfs Apr. 2, 1958 (gage height, 7.70 ft), from rating curve extended above 350 cfs on basis of slope-area measurement of maximum flow; no flow at times, caused by filling of pools upstream.

Remarks.--Records fair. No known regulation; only small diversion above station for individual use.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	1.1	2.9	2.2	5.2	2.9	3.5	1.8	1.0	1.0	0.3	0.5
2	*.9	1.6	2.2	2.4	4.9	3.1	2.4	1.6	.9	.8	.3	.4
3	.9	2.0	2.2	2.7	4.6	*2.4	2.1	2.2	.9	.9	.3	*.2
4	.9	9.6	2.1	2.9	4.6	2.2	2.0	1.9	.9	.8	.3	.2
5	.8	2.3	2.2	2.7	4.6	2.2	2.0	1.8	*.9	1.0	.2	.2
6	.8	6.4	*2.5	2.7	*4.3	2.4	*2.1	1.8	1.0	.8	*.2	.4
7	.8	*3.0	3.3	2.9	4.3	2.2	2.0	*1.6	1.0	*.7	.2	.4
8	.7	2.2	3.2	2.9	4.6	2.1	2.0	1.5	2.8	.6	.2	.5
9	.9	2.1	2.9	2.9	4.3	2.1	2.0	1.4	3.3	.6	.2	.5
10	3.9	2.0	2.7	3.1	4.0	2.1	1.9	1.4	1.9	.6	.2	.5
11	1.4	1.9	2.6	3.1	4.0	2.2	1.9	1.3	1.6	.5	.2	.4
12	1.4	1.9	2.6	3.1	3.8	4.1	1.9	1.2	1.3	.4	.2	.5
13	1.2	1.8	2.4	3.1	3.8	2.2	1.8	1.2	1.3	.5	.2	.4
14	.9	2.2	2.4	3.3	3.6	2.1	1.6	1.2	1.1	.6	.2	.5
15	1.2	1.2	2.6	3.2	4.0	2.1	1.6	1.2	1.1	.7	.3	.4
16	1.1	4.6	2.4	3.4	3.6	1.9	1.6	1.8	1.1	.8	.3	.4
17	1.0	3.5	2.4	3.9	3.5	2.3	1.5	2.1	1.1	.4	.2	.5
18	.9	3.1	2.4	4.0	3.5	2.0	1.5	1.6	1.0	.3	.2	.5
19	.9	6.6	2.4	6.6	3.5	1.8	1.6	1.5	1.0	.3	.1	.4
20	.9	3.5	2.4	7.1	3.3	1.8	1.8	1.4	1.0	.3	0	.3
21	.8	1.0	2.4	*1.0	3.3	1.9	1.5	1.3	.9	.3	0	.3
22	.9	5.8	2.2	5.4	2.9	9.9	1.6	1.3	.9	.3	0	.3
23	1.2	9.5	2.4	2.3	2.6	7.0	1.9	1.2	.8	.3	0	.3
24	1.0	9.5	2.2	*1.6	2.6	4.3	1.8	1.1	.8	.3	0	.4
25	1.0	6.4	2.2	1.2	2.6	3.3	1.8	1.1	.8	.3	0	.4
26	1.0	5.2	2.2	1.0	2.4	2.9	1.8	1.1	.8	.3	0	.5
27	1.0	4.6	2.2	8.0	2.4	2.7	1.9	1.2	.7	.3	0	.5
28	1.1	4.3	2.2	7.0	2.4	2.4	1.9	1.1	.9	.3	.1	.4
29	1.1	3.6	2.2	6.4	2.4	2.4	1.6	1.1	1.0	.3	.1	.4
30	1.1	3.5	2.1	6.1	-----	2.0	1.5	1.0	1.0	.3	.1	.4
31	1.1	-----	*2.1	5.5	-----	3.3	-----	1.0	-----	.3	.5	-----
Total	46.3	267.2	75.2	390.1	105.6	88.3	56.1	44.0	34.8	15.9	5.1	12.0
Mean	1.49	8.91	2.43	12.6	3.64	2.85	1.87	1.42	1.16	0.51	0.16	0.40
Max	14	66	3.3	11.0	5.2	9.9	3.5	2.2	3.3	1.0	0.5	0.5
Min	0.7	1.1	2.1	2.2	2.4	1.8	1.5	1.0	0.7	0.3	0	0.2
Ac-ft	91	530	149	774	209	175	111	87	69	32	10	24

Calendar year 1963: Max 1,400 Min 0.7 Mean 18.1 Ac-ft 13,090

Water year 1963-64: Max 110 Min 0 Mean 3.12 Ac-ft 2,260

Peak discharge (base, 100 cfs).--Nov. 19 (1600) 220 cfs (3.20 ft); Jan. 20 (2230) 560 cfs (4.10 ft).

* Discharge measurement made on this day.

11-1605, San Lorenzo River at Big Trees, Calif.

Location.--Lat 37°01'40", long 122°03'30", in Canada del Rincon Grant, on right bank 0.5 mile south of Big Trees station on Southern Pacific Railroad, 1.6 miles downstream from Zayante Creek, and 4 miles north of Santa Cruz, Santa Cruz County.

Drainage area.--111 sq mi.

Records available.--October 1936 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 217.0 ft above mean sea level (levels by Topographic Division).

Average discharge.--28 years, 134 cfs (97,010 acre-ft per year); median of yearly mean discharges, 95 cfs (68,800 acre-ft per year).

Extremes.--Maximum discharge during year, 2,660 cfs Jan. 21 (gage height, 7.29 ft); minimum recorded, 8.7 cfs Aug. 10.

1937-64: Maximum discharge, 30,400 cfs Dec. 23, 1955 (gage height, 22.55 ft), from rating curve extended above 11,000 cfs on basis of slope-area measurement of maximum flow; minimum, 0.8 cfs June 25, 1939.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation; many small diversions above station for domestic supply.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	21	23	59	36	95	a58	59	30	24	17	14	a15
2	*26	23	57	35	90	a62	48	30	23	17	12	a14
3	23	23	56	35	85	*46	46	33	23	17	12	*13
4	21	78	56	34	82	45	43	32	24	17	12	13
5	21	226	55	34	80	45	43	30	*24	17	12	13
6	21	165	*53	34	*78	44	41	30	24	17	*13	13
7	21	*58	51	35	73	44	*40	*29	22	*16	13	16
8	21	46	52	35	73	43	40	29	33	16	12	15
9	21	42	57	34	71	43	39	29	36	16	12	14
10	32	39	54	34	69	43	38	28	30	16	11	13
11	125	37	49	34	66	49	38	27	26	15	a10	13
12	39	37	48	33	64	70	37	27	26	14	a10	13
13	27	36	46	33	62	52	36	27	25	15	a10	13
14	26	199	46	33	61	49	35	27	23	15	a10	13
15	33	185	44	33	64	46	34	27	23	14	a10	15
16	31	73	44	33	59	45	33	27	23	14	a10	14
17	27	58	43	42	57	44	33	30	23	14	a10	14
18	25	51	43	67	56	43	34	25	22	14	a10	14
19	25	675	43	97	55	41	34	27	21	14	a10	13
20	25	436	43	455	54	41	33	23	20	13	a10	13
21	23	121	43	1,150	52	43	33	26	20	14	a10	13
22	23	84	41	677	52	130	33	26	20	14	a10	12
23	25	190	41	340	50	116	33	26	20	14	a10	12
24	25	178	40	219	49	81	34	25	19	14	a10	13
25	24	109	39	177	48	68	32	24	19	14	a10	16
26	24	86	39	162	a48	58	31	25	19	14	a10	12
27	23	73	38	131	a47	55	31	28	18	14	a10	12
28	23	68	38	121	a47	51	31	29	18	14	a10	12
29	23	64	37	114	a46	48	31	26	17	14	a12	13
30	23	61	37	107	-----	46	29	23	17	14	a14	12
31	23	-----	*36	101	-----	52	-----	23	-----	14	a18	-----
TOTAL	870	3,544	1,428	4,505	1,833	1,701	1,102	848	682	462	347	401
MEAN	28.1	118	46.1	145	63.2	54.9	36.7	27.4	22.7	14.9	11.2	13.4
MAX	125	675	59	1,150	95	130	59	33	36	17	18	16
MIN	21	23	36	33	46	41	29	23	17	13	10	12
AC-FT	1,730	7,030	2,830	8,940	3,640	3,370	2,190	1,680	1,350	916	688	795

CALENDAR YEAR 1963: MAX 7,400 MIN 21 MEAN 181 AC-FT 131,100

WATER YEAR 1963-64: MAX 1,150 MIN 10 MEAN 48.4 AC-FT 35,160

Peak discharge (base, 1,400 cfs).--Nov. 19 (1930) 2,110 cfs (6.51 ft); Jan. 21 (0030) 2,660 cfs (7.29 ft).

* Discharge measurement made on this day.

a No gage-height record.

SAN LORENZO RIVER BASIN

11-1615, Branciforte Creek at Santa Cruz, Calif.

Location.--Lat 36°58'00", long 122°01'00", on right bank in Santa Cruz, Santa Cruz County, 15 ft downstream from Market Street bridge and 1.0 mile upstream from mouth.

Drainage area.--17.3 sq mi.

Records available.--January 1940 to September 1943, March 1952 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 11.22 ft above mean sea level (levels by Corps of Engineers). Jan. 3 to Nov. 14, 1940, staff gage at site 15 ft upstream at datum 3.90 ft higher. Nov. 15, 1940, to Nov. 25, 1941, staff gage at site 150 ft, downstream and Nov. 26, 1941, to Sept. 30, 1943, water-stage recorder at site 75 ft downstream, both at datum 4.52 ft higher. Mar. 16 to July 27, 1952, staff gages at site 150 ft downstream at present datum.

Average discharge.--15 years, 20.5 cfs (14,840 acre-ft per year); median of yearly mean discharges, 16 cfs (11,600 acre-ft per year).

Extremes.--Maximum discharge during year, 903 cfs Jan. 20 (gage height, 9.05 ft); minimum, 0.3 cfs July 22, Aug. 19, 1940-43, 1952-64; Maximum discharge, 8,100 cfs Dec. 22, 1955 (gage height, 22.04 ft), from rating curve extended above 2,000 cfs on basis of slope-area measurement of maximum flow; minimum, 0.1 cfs Aug. 18, 1954, Sept. 17, 1955.

Remarks.--Records fair. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.2	1.6	7.1	3.3	9.1	6.6	7.7	2.8	1.4	1.0	0.9	2.6
2	1.4	1.8	6.5	3.3	8.4	6.7	5.8	2.6	1.4	1.0	.8	2.0
3	*1.4	2.0	6.1	3.0	8.1	* 4.5	5.5	3.3	1.4	.8	.8	1.4
4	1.6	1.5	5.8	3.0	7.4	4.0	5.3	2.6	1.6	.8	.9	1.4
5	1.4	3.8	*5.8	3.0	7.1	4.3	5.0	2.6	*1.4	.8	.8	1.4
6	1.6	*1.5	5.5	2.8	6.8	3.8	*4.8	*2.4	1.2	1.0	*.8	1.6
7	1.6	5.0	5.3	3.0	*6.1	4.0	4.5	2.4	1.4	*1.2	.8	1.6
8	1.8	3.3	5.8	3.0	6.1	4.0	4.5	2.4	3.5	1.0	.8	2.0
9	2.2	3.0	6.1	3.0	5.8	3.5	4.5	2.4	4.3	.8	.9	1.6
10	2.1	2.4	5.0	3.0	5.5	3.8	4.5	2.4	2.4	.9	1.4	1.4
11	2.4	2.2	4.8	3.0	5.5	4.2	4.3	2.4	2.2	.8	1.0	1.6
12	2.8	2.2	4.8	3.0	5.3	11	4.3	2.4	1.8	.8	1.2	1.4
13	1.8	2.0	4.8	3.0	5.3	4.0	4.3	2.4	2.0	1.0	1.2	1.4
14	1.8	4.7	4.8	3.3	5.3	3.5	4.0	2.4	1.8	1.0	1.4	1.4
15	3.7	2.5	4.3	3.0	6.1	3.0	3.5	2.4	1.4	.9	1.4	1.2
16	3.3	9.9	4.3	3.0	5.0	2.8	3.5	2.4	1.6	.8	1.4	.8
17	2.2	7.1	4.3	6.2	5.0	2.8	3.3	2.6	1.4	.8	1.2	.8
18	2.0	6.1	4.3	1.3	5.0	2.6	3.3	2.4	1.4	.8	.8	1.0
19	1.8	199	4.3	3.4	5.0	2.4	3.3	2.4	1.4	1.2	.8	.9
20	1.8	109	4.3	157	4.5	2.4	3.3	2.2	1.4	.9	.9	.8
21	1.8	*2.4	4.3	216	4.3	2.8	3.3	2.2	1.2	.9	1.2	.9
22	1.8	1.6	4.0	*121	4.3	31	3.3	2.0	1.4	.7	.9	.8
23	1.8	7.4	3.8	* 7.4	4.3	20	3.3	1.8	1.4	.6	.9	.9
24	1.8	4.0	4.0	4.0	4.3	1.2	3.3	1.8	1.4	.9	1.2	.9
25	1.8	1.8	3.8	2.8	4.3	9.5	3.0	1.6	1.4	.9	1.0	1.0
26	1.8	1.3	3.8	2.1	4.0	8.4	3.0	1.6	1.4	.9	1.2	1.4
27	1.6	1.1	3.8	1.6	4.0	7.4	3.0	1.6	1.0	.9	1.0	1.4
28	1.6	9.1	3.5	1.4	4.0	7.1	3.0	1.6	.9	.9	*1.2	1.4
29	1.6	8.4	3.5	1.2	4.3	6.5	3.0	1.6	1.2	1.0	1.0	1.4
30	1.6	7.7	3.5	1.1	-----	5.8	2.8	1.6	1.2	1.0	1.2	1.2
31	1.6	-----	* 3.3	9.9	-----	8.9	-----	1.6	-----	1.0	2.8	-----
Total	80.3	717.8	145.3	821.8	160.2	203.3	120.2	68.9	48.9	28.0	33.8	39.6
Mean	2.59	23.9	4.69	26.5	5.52	6.56	4.01	2.22	1.63	0.90	1.09	1.32
Max	2.4	199	7.1	216	9.1	31	7.7	3.3	4.3	1.2	2.8	2.6
Min	1.2	1.6	3.3	2.8	4.0	2.4	2.8	1.6	0.9	0.6	0.8	0.8
Ac-ft	159	1,420	288	1,630	318	403	238	137	97	56	67	79

Calendar year 1963: Max 1,220 Min 1.2 Mean 28.2 Ac-ft 20,450

Water year 1963-64: Max 216 Min 0.6 Mean 6.74 Ac-ft 4,890

Peak discharge (base, 600 cfs).--Jan. 20 (2300) 903 cfs (9.05).

* Discharge measurement made on this day.

11-1619. Scott Creek above Little Creek, near Davenport, Calif.

Location.--Lat 37°03'50", long 122°13'45", in Agua Puerco y las Trancas Grant, on right bank 600 ft upstream from Little Creek, 2.0 miles upstream from mouth, and 4.2 miles north of Davenport, Santa Cruz County.

Drainage area.--25.0 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 30 ft (from topographic map).

Average discharge.--6 years, 19.9 cfs (14,410 acre-ft per year).

Extremes.--Maximum discharge during year, 720 cfs Jan. 20 (gage height, 5.30 ft); minimum, 0.3 cfs Sept. 21, 22.

1958-64: Maximum discharge, 1,970 cfs Feb. 13, 1962 (gage height, 9.36 ft), from rating curve extended above 650 cfs on basis of slope-area measurement at gage height 7.35 ft; minimum, 0.2 cfs Sept. 16, 1962.

Remarks.--Records fair. No regulation; small diversions above station for irrigation.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.3	2.3	1.7	8.1	30	14	18	8.7	5.4	2.4	1.6	1.1
2	*2.4	2.6	1.6	8.4	27	16	15	8.1	5.2	2.6	1.5	*.8
3	2.4	2.7	1.5	8.4	24	*13	14	9.0	4.9	3.2	1.4	.9
4	2.4	7.1	14	8.1	25	13	13	8.4	4.7	3.7	1.3	.9
5	2.6	19	13	8.1	22	12	13	8.1	*4.7	3.8	1.2	.9
6	2.7	26	*13	8.1	20	14	*12	8.7	4.7	3.5	*1.1	.9
7	2.7	*10	13	9.7	*19	13	12	*8.1	4.9	*3.4	.9	1.0
8	2.9	7.5	13	9.0	19	12	11	8.1	9.0	3.0	1.0	1.0
9	3.2	6.9	16	8.7	18	12	11	7.5	15	3.0	.9	1.0
10	6.7	6.1	15	8.7	18	12	11	7.5	9.7	3.0	1.0	1.0
11	14	5.6	13	8.7	17	12	10	7.2	8.1	2.7	1.0	.9
12	4.2	5.4	13	8.7	17	20	9.7	6.9	6.9	2.6	.9	.8
13	3.0	5.8	12	8.7	16	15	9.3	6.6	6.6	2.7	.9	.7
14	2.4	46	12	9.0	16	13	9.0	6.6	5.8	2.7	.9	.9
15	4.4	56	12	8.4	18	12	8.7	6.3	5.6	2.7	1.2	.9
16	5.2	20	11	8.1	16	11	8.4	6.3	5.8	2.6	1.1	.9
17	3.7	15	11	10	16	11	8.4	8.1	5.6	2.6	1.0	.9
18	3.0	11	10	21	15	10	8.4	7.2	5.2	2.3	.9	.8
19	2.7	139	13	30	14	10	8.4	6.3	4.5	2.2	.9	.7
20	2.6	115	12	139	14	9.3	8.1	5.8	4.7	2.2	.9	.6
21	2.6	47	10	225	13	10	8.1	5.8	3.4	2.1	.9	.6
22	2.6	32	9.3	*134	13	20	7.8	6.1	3.8	1.9	.9	.6
23	2.9	43	8.7	*95	13	26	8.1	6.1	3.7	1.9	.8	.7
24	2.4	43	8.7	79	12	23	8.1	5.8	3.5	1.9	.9	.8
25	2.4	33	9.0	67	12	20	8.1	5.6	3.4	1.6	.8	.8
26	2.3	27	9.0	59	12	18	8.1	5.6	3.2	1.7	.7	.9
27	2.2	24	8.7	53	12	17	7.8	6.6	2.7	1.7	.7	1.1
28	2.2	21	8.4	45	12	15	7.8	6.6	3.0	1.7	.8	1.2
29	2.2	19	8.1	41	12	14	7.5	5.6	3.2	1.7	.9	1.2
30	2.3	18	*7.8	37	-----	14	7.2	5.4	3.2	1.7	.8	1.1
31	2.3	-----	7.8	34	-----	16	-----	5.4	-----	1.7	1.0	-----
TOTAL	101.9	816.0	359.5	1,205.9	492	447.3	297.0	214.1	160.1	76.5	30.8	26.6
MEAN	3.29	27.2	11.6	38.9	17.0	14.4	9.90	6.91	5.34	2.47	0.99	0.89
MAX	14	139	17	225	30	26	18	9.0	15	3.8	1.6	1.2
MIN	2.2	2.3	7.8	8.1	12	9.3	7.2	5.4	2.7	1.6	0.7	0.6
AC-FT	202	1,620	713	2,390	976	887	589	425	318	152	61	53

CALENDAR YEAR 1963 MAX 1,030 MIN 2.2 MEAN 49.9 AC-FT 36,100
 WATER YEAR 1963-64 MAX 225 MIN 0.6 MEAN 11.6 AC-FT 8,390

Peak discharge (base, 300 cfs).--Nov. 19 (1900) 605 cfs (4.84 ft); Jan. 20 (2300) 720 cfs (5.30 ft).

* Discharge measurement made on this day.

PESCADERO CREEK BASIN

11-1625. Pescadero Creek near Pescadero, Calif.

Location.--Lat 37°15'40", long 122°19'40", in SW¼ sec.5, T.8 S., R.4 W., on left bank at downstream side of highway bridge, 3.0 miles east of Pescadero and 5.3 miles upstream from mouth.

Drainage area.--45.9 sq mi.

Records available.--April 1951 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 62.3 ft above mean sea level, datum of 1929.

Average discharge.--13 years, 40.4 cfs (29,250 acre-ft per year); median of yearly mean discharges, 23 cfs (16,700 acre-ft per year).

Extremes.--Maximum discharge during year, 1,170 cfs Jan. 20 (gage height, 9.06 ft); minimum, 0.2 cfs Aug. 3, Sept. 12.
1951-64: Maximum discharge, 9,420 cfs Dec. 23, 1955 (gage height, 21.27 ft), from rating curve extended above 2,700 cfs on basis of slope-area measurement of maximum flow; no flow at times.

Remarks.--Records fair except those for period of no gage-height record, which are poor. Small diversions above station by pumping.
Minor regulation in San Mateo County Memorial Park.

Revisions (water years).--1962 Report: 1961.

Rating table (gage-height, in feet, and discharge, in cubic feet per second)
(Shifting-control method-used Oct. 1-10, May 31, June 24 to July 3,
July 8 to Sept. 30)

1.8	0.2	2.6	30
1.9	1.2	3.0	58
2.0	3.0	4.0	156
2.1	5.5	5.0	283
2.2	9.0	6.0	442
2.4	18		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*3.3	4.3	11	5.3	23	10	A14	5.3	3.5	2.3	1.7	1.1
2	3.3	4.3	9.8	5.5	21	14	A10	5.5	*4.0	2.1	1.7	1.2
3	3.3	4.5	9.0	5.5	19	10	*9.8	6.2	3.3	2.1	1.4	*1.1
4	3.3	6.2	8.7	5.3	19	9.0	9.0	8.3	3.3	2.8	1.4	1.0
5	3.5	22	8.3	5.0	17	*8.3	8.7	5.9	3.5	3.0	1.6	.9
6	3.8	54	*7.6	*5.3	16	8.0	8.7	5.5	3.3	3.0	*1.2	1.1
7	3.8	12	7.6	6.6	*15	8.3	8.0	5.3	3.5	2.8	1.1	1.1
8	4.0	*7.3	8.0	6.2	14	7.3	7.3	5.3	4.8	2.5	1.1	3.1
9	4.3	6.2	12	5.5	13	7.3	6.6	5.0	9.2	2.3	1.2	1.2
10	5.4	5.5	11	5.3	13	7.6	7.3	5.0	6.9	2.3	1.1	1.1
11	20	5.0	8.7	5.3	12	8.3	6.6	5.0	5.3	2.1	1.1	.9
12	10	4.5	7.6	5.0	12	18	6.2	5.0	5.0	2.3	1.1	.6
13	5.5	4.5	7.3	5.0	11	11	6.2	5.0	4.8	*2.1	1.2	1.2
14	4.8	18	7.3	5.9	11	9.0	6.2	5.0	3.8	2.3	1.1	3.6
15	6.2	45	6.9	5.5	13	8.0	6.9	5.0	3.8	2.5	1.2	1.1
16	11	16	6.9	5.0	12	7.3	5.5	5.0	3.3	1.9	1.2	1.0
17	6.9	11	6.9	5.8	12	6.6	5.0	5.9	3.5	1.7	1.2	.9
18	5.5	8.7	6.9	16	12	6.2	5.0	5.9	3.8	1.7	1.2	.9
19	5.0	78	6.9	20	12	5.9	5.3	5.3	3.5	1.7	1.1	.7
20	4.8	*93	6.9	169	11	5.9	5.5	5.3	3.0	1.9	1.1	.6
21	4.5	33	11	415	11	6.6	5.3	5.0	2.8	1.7	1.1	.5
22	4.5	22	6.6	*223	10	15	5.3	5.0	2.8	1.7	1.0	.5
23	5.5	29	6.2	123	9.8	28	5.9	4.3	2.6	1.6	1.0	.4
24	5.9	48	6.2	82	9.8	21	5.5	4.0	2.6	1.4	.9	.4
25	4.8	30	5.9	62	9.8	19	5.3	4.0	2.3	1.7	.9	.4
26	4.8	22	5.9	50	9.4	13	5.3	4.0	2.3	1.7	1.1	.4
27	4.5	18	5.9	41	9.4	12	5.0	3.6	2.1	1.6	1.0	.5
28	4.3	16	6.2	35	9.4	11	*5.0	7.3	2.3	1.6	.8	.6
29	4.3	13	5.9	31	10	10	5.0	5.0	2.5	1.4	.6	.7
30	4.5	12	5.9	28	-----	9.4	5.0	3.5	2.3	1.1	.9	.7
31	4.3	-----	5.9	25	-----	9.8	-----	2.5	-----	1.1	1.1	-----
TOTAL	169.6	653.0	236.9	1,413.0	376.6	330.8	200.4	157.9	109.7	62.0	35.4	29.5
MEAN	5.47	21.8	7.64	45.6	13.0	10.7	6.68	5.09	3.66	2.00	1.14	0.98
MAX	20	93	12	415	23	28	14	8.3	9.2	3.0	1.7	3.6
MIN	3.3	4.3	5.9	5.0	9.4	5.9	5.0	2.5	2.1	1.1	0.6	0.4
AC-FT	336	1,300	470	2,800	747	656	397	313	218	123	70	59

CALENDAR YEAR 1963 MAX 2,930 MIN 2.8 MEAN 58.5 AC-FT 42,370
WATER YEAR 1963-64 MAX 415 MIN 0.4 MEAN 10.3 AC-FT 7,490

Peak discharge (base, 500 cfs).--Jan. 20 (2330) 1,170 cfs (9.06).

* Discharge measurement made on this day.

A No gage-height record.

11-1625.4. Butano Creek near Pescadero, Calif.

Location.--Lat 37°14'01", long 122°21'56", in Butano Grant, on right bank 0.15 mile below unnamed tributary and 1.7 miles southeast of Pescadero, San Mateo County.

Drainage area.--18.3 sq mi.

Records available.--Occasional low-flow measurements, water years 1957, 1959-62, and annual maximum, water years 1959-62. June 1962 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 70 ft (from topographic map). February 1957 to June 23, 1962, crest-stage gage at site 250 ft downstream at same datum.

Extremes.--1962: Maximum discharge during period June to September, 4.0 cfs Aug. 24 (gage height, 4.43 ft); no flow for part of each day Aug. 10, 20, 22, Aug. 27 to Sept. 2, Sept. 11-13, 18-23, 25, 26.

1962-63: Maximum discharge during water year, 1,340 cfs Jan. 31 (backwater from mud flow); maximum gage height, 16.21 ft Jan. 31; no flow for part of June 30.

1963-64: Maximum discharge during water year, 705 cfs Jan. 21, 1964 (gage height, 12.00 ft); no flow July 29 to Aug. 1.

1959-64: Maximum discharge, 1,600 cfs Feb. 13, 1962 (gage height, 10.04 ft, from floodmarks), by slope-area measurement of maximum flow.

1962-64: Minimum discharge, no flow at times in 1962-64.

Remarks.--Small diversions above station for irrigation.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, June to September 1962

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									-	0.9	1.6	0.5
2									-	.9	1.6	.8
3									-	1.1	1.6	.9
4									-	1.1	1.6	1.0
5									-	1.2	2.1	1.2
6									-	*1.2	1.6	1.2
7									-	1.6	1.4	1.1
8									-	2.1	1.2	1.0
9									-	2.1	1.4	1.4
10									-	2.1	1.2	.9
11									-	2.1	1.6	.8
12									-	1.8	1.8	1.0
13									-	1.8	1.4	.7
14									-	1.8	.9	1.0
15									-	1.8	.6	1.2
16									-	1.6	.4	1.0
17									-	1.6	.6	.8
18									-	1.5	.7	.5
19									-	1.4	1.4	.3
20									-	1.4	1.3	.4
21									-	1.3	1.9	.3
22									-	1.4	1.4	.3
23									1.6	1.2	2.3	.3
24									1.6	1.1	2.1	.5
25									1.3	.9	1.9	.4
26									1.3	1.1	2.6	.3
27									1.1	1.1	1.4	.4
28									1.1	.9	.3	.5
29									1.1	1.2	.3	.6
30									.9	1.1	.3	.7
31										1.4	.4	
Total									-	43.8	40.9	22.0
Mean									-	1.41	1.32	0.73
Max									-	2.1	2.6	1.4
Min									-	0.9	0.3	0.3
Ac-ft									-	87	81	4.4

* Discharge measurement made on this day.

11-1625.4. Butano Creek near Pescadero, Calif.--Continued.

Discharge, in cubic feet per second, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a0.8	a 6.2	0.2	8.1	*552	25	46	*40	14	6.9	2.7	3.5
2	a .8	a 5.4	.4	7.9	167	24	40	37	14	6.4	3.0	3.0
3	.8	a 5.0	1.0	7.6	107	22	36	36	13	5.9	3.0	2.5
4	.7	a 5.0	1.1	7.2	96	21	*33	34	13	5.3	3.0	2.6
5	.7	a 4.3	1.4	6.8	73	19	21	32	13	5.1	3.1	2.9
6	.7	3.7	1.7	6.6	47	*19	65	31	13	4.9	2.9	3.3
7	.7	3.4	2.1	6.4	42	18	106	29	*11	4.9	2.7	3.2
8	.5	3.4	2.6	6.0	37	18	*45	29	11	4.3	3.0	3.4
9	.5	3.1	3.1	5.8	124	17	35	27	11	4.1	2.8	3.2
10	1.6	2.6	3.7	5.6	209	17	32	26	10	4.0	3.0	3.0
11	4.1	2.3	4.5	5.4	118	*17	27	26	9.4	3.5	3.4	3.2
12	15	2.3	5.4	5.4	105	17	26	23	9.1	3.4	3.6	3.7
13	685	2.1	7.7	5.4	223	17	26	22	9.3	3.1	3.7	3.6
14	*241	1.8	8.9	5.4	136	17	98	20	10	3.4	3.3	3.4
15	*63	1.6	50	5.4	103	17	107	19	11	4.5	3.2	3.5
16	33	1.4	89	5.4	87	33	81	*18	11	4.4	3.1	2.8
17	23	1.6	134	5.4	75	22	66	18	11	4.0	3.4	3.2
18	19	1.4	90	5.4	64	18	57	17	10	3.9	3.5	3.4
19	16	1.2	53	5.2	54	17	95	17	9.7	3.9	3.3	2.8
20	14	1.1	41	5.0	*48	17	84	17	9.5	3.7	3.2	3.0
21	13	1.1	36	5.0	43	16	79	16	9.1	3.4	3.4	3.1
22	11	.9	33	4.9	39	19	68	15	8.4	3.2	3.4	3.4
23	a 11	.7	32	4.5	36	23	61	15	7.7	3.1	3.6	3.3
24	a 9.7	.5	31	4.3	33	19	55	15	7.1	2.6	3.7	3.2
25	a 9.0	.5	31	4.3	31	18	55	15	*8.0	*3.0	4.1	3.3
26	a 8.5	.5	31	4.3	29	18	52	15	7.9	*3.0	4.1	2.9
27	a 8.1	*1.7	25	4.3	27	49	47	15	6.2	2.8	3.0	2.4
28	a 7.6	.3	20	4.2	26	180	44	15	5.7	2.9	2.8	2.0
29	a 7.2	.2	15	4.8	-----	81	56	15	5.7	2.8	3.2	2.9
30	a 6.8	.2	11	*333	-----	59	54	15	2.6	2.9	3.0	2.2
31	a 6.6	-----	8.3	*884	-----	52	-----	15	-----	2.7	2.8	-----
Total	1,219.4	65.5	774.1	1,379.0	2,731	926	1,697	684	291.4	122.0	100.0	91.9
Mean	39.3	2.18	25.0	44.5	97.5	29.9	56.6	22.1	9.71	3.94	3.23	3.06
Max	685	6.2	134	884	552	180	107	40	14	6.9	4.1	3.7
Min	0.5	0.2	0.2	4.2	26	16	21	15	2.6	2.6	2.7	2.0
Ac-ft	2,420	130	1,540	2,740	5,420	1,840	3,370	1,360	578	242	198	182

Calendar year 1962: Max - Min - Mean - Ac-ft -
 Water year 1962-63: Max 884 Min 0.2 Mean 27.6 Ac-ft 20,020

* Discharge measurement made on this day.

11-1625.4. Butano Creek near Pescadero, Calif.--Continued.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	2.8	9.5	5.9	8.4	4.5	5.8	2.5	1.2	0.9	0	0.6
2	2.5	3.0	9.0	5.9	8.0	6.2	*4.9	2.4	1.4	1.1	.2	.6
3	2.3	3.2	8.7	5.9	7.6	4.4	4.4	3.4	1.2	1.6	.1	.6
4	2.5	5.7	8.4	5.9	7.5	4.3	4.3	3.2	1.2	2.2	.1	.6
5	3.0	15	8.1	5.9	7.5	4.2	4.3	2.7	1.0	2.2	.1	.7
6	3.4	*27	8.1	5.9	7.4	4.1	4.2	*2.8	1.0	1.9	.1	.8
7	2.6	17	7.9	7.6	7.2	4.0	4.1	2.3	1.2	1.7	.1	.8
8	*2.2	15	7.9	6.6	7.2	3.6	4	2.5	2.5	1.7	.3	.7
9	2.9	14	9.5	5.9	7.1	3.6	3.8	2.3	5.5	*1.5	.3	1.0
10	2.9	13	8.4	5.9	7.0	3.6	3.5	2.0	*2.9	1.1	.4	1.0
11	16	13	7.9	5.9	7.0	3.8	3.5	1.9	1.9	1.2	.2	.8
12	5.7	13	7.6	5.7	7.0	*8.4	3.5	1.5	1.6	1.4	.1	.8
13	4.1	13	7.4	5.9	*7.1	5.0	3.5	1.6	1.5	1.1	.2	.6
14	3.5	28	7.1	6.1	7.0	4.3	3.4	1.6	1.4	.9	.3	.9
15	5.7	38	6.9	5.9	7.8	4.0	3.3	1.4	1.4	.8	.5	1.1
16	7.9	21	6.9	5.7	6.9	3.7	3.1	1.8	1.2	.8	.7	.9
17	5.0	19	6.9	6.1	6.4	3.5	2.9	2.6	1.7	.7	.3	*.9
18	4.1	18	6.9	11	5.9	3.6	2.9	1.7	1.3	.6	.3	.9
19	3.7	65	7.1	12	5.7	3.4	2.9	1.9	1.3	.9	.2	.7
20	3.5	54	7.4	57	5.3	3.4	2.8	1.3	1.4	.8	.3	.6
21	3.4	24	7.1	*242	5.1	3.5	2.6	1.3	1.5	.9	.4	.4
22	3.4	17	6.9	*65	5.0	9.1	2.6	1.6	1.0	1.1	.5	.6
23	3.7	19	6.9	34	4.9	11	2.6	1.5	1.0	.8	.5	.4
24	3.5	18	6.9	23	4.8	*9.4	2.8	1.3	.9	.8	.5	.4
25	3.2	15	6.9	17	4.8	8.1	2.7	1.3	.9	.9	.7	.4
26	3.2	13	6.9	14	4.8	7.1	2.5	1.1	.9	1.3	.7	.6
27	3.2	12	6.6	12	4.8	6.6	2.5	2.5	.9	1.2	*.7	.6
28	3.0	11	6.4	11	4.3	6.1	2.5	1.8	1.5	.6	.5	.8
29	3.0	11	6.4	9.9	4.3	5.4	2.4	1.2	1.2	*0	.4	1.0
30	3.0	10	6.4	9.4	-----	5.1	2.3	1.1	1.4	0	.5	.9
31	2.8	-----	6.1	8.8	-----	4.9	-----	1.3	-----	0	.6	-----
Total	121.3	547.7	231.1	628.8	183.8	161.9	100.6	59.4	45.0	32.7	10.8	21.7
Mean	3.91	18.3	7.45	20.3	6.34	5.22	3.35	1.92	1.50	1.05	0.35	0.72
Max	16	65	9.5	242	8.4	11	5.8	3.4	5.5	2.2	0.7	1.1
Min	2.2	2.8	6.1	5.7	4.3	3.4	2.3	1.1	0.9	0	0	0.4
Ac-ft	241	1,090	458	1,250	365	321	200	118	89	65	21	43

Calendar year 1963: Max 884 Min 2.0 Mean 24.4 Ac-ft 17,720
 Water year 1963-64: Max 242 Min 0 Mean 5.86 Ac-ft 4,260

* Discharge measurement made on this day.

11-1626. Purisima Creek near Half Moon Bay, Calif.

Location.--Lat 37°26'06", long 122°22'23", in Canada de Verde y Arroyo de la Purisima Grant, on left bank 15 ft downstream from county road bridge, 3.6 miles southeast of Half Moon Bay, San Mateo County, and 4.0 miles upstream from mouth.

Drainage area.--4.83 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 380 ft (from topographic map).

Average discharge.--6 years, 2.12 cfs (1,530 acre-ft per year).

Extremes.--Maximum discharge during year, 142 cfs Jan. 20 (gage height, 4.77 ft); minimum, 0.3 cfs Sept. 22-25.
1958-64: Maximum discharge, 301 cfs Jan. 31, 1963 (gage height, 5.31 ft), from rating curve extended above 65 cfs on basis of slope-area measurement at gage-height 5.28 ft; minimum, 0.2 cfs Dec. 29, 30, 1959, Sept. 3-5, 1961.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.3	0.1	3.7	9.3
3.4	0.8	3.8	14
3.5	2.8	4.0	28
3.6	5.6	4.2	47

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*1.0	1.1	1.4	0.8	3.1	1.6	1.3	1.1	1.0	1.0	0.7	0.6
2	1.0	1.1	1.3	.8	2.8	1.6	1.3	1.1	*.8	1.0	.6	.6
3	1.1	1.1	1.3	.8	2.5	1.4	*1.3	1.3	.8	1.0	.6	*.6
4	1.1	1.4	1.3	.8	2.5	1.3	1.3	1.1	1.0	1.3	.6	.7
5	1.1	2.4	1.1	.8	2.3	*1.3	1.3	1.1	1.0	1.3	.6	.7
6	1.1	1.8	*1.1	*1.0	2.3	1.3	1.3	1.1	1.0	1.3	*.6	.7
7	1.1	1.3	1.1	1.4	2.0	1.3	1.3	1.1	1.1	1.1	.6	.7
8	1.1	*1.3	1.3	1.1	2.0	1.3	1.1	1.1	1.8	1.1	.6	.7
9	1.4	1.3	1.4	1.1	1.8	1.3	1.1	1.1	2.0	1.1	.6	.7
10	1.4	1.3	1.3	1.1	1.8	1.3	1.1	1.1	1.4	1.0	.6	.7
11	2.5	1.3	1.3	1.1	1.8	1.8	1.1	1.1	1.1	.8	.6	.7
12	1.4	1.3	1.3	1.0	*1.8	2.5	1.1	1.0	1.1	.8	.6	.7
13	1.4	1.3	1.1	1.0	1.8	1.8	1.0	1.0	1.1	*.7	.6	.7
14	1.4	4.6	1.1	1.0	1.6	1.6	.8	1.0	1.1	.7	.6	.7
15	2.5	3.9	1.1	1.0	2.0	1.4	.8	1.0	1.1	.7	.6	.7
16	1.8	2.0	1.1	1.0	1.6	1.4	.8	1.0	1.0	.7	.6	.6
17	1.6	1.6	1.1	1.4	1.6	1.3	.8	1.0	1.0	.8	.6	.7
18	1.4	1.6	1.0	2.8	1.4	1.3	1.0	1.0	1.1	.7	.6	.7
19	1.4	10	1.3	4.9	1.4	1.3	1.0	1.0	1.1	.7	.6	.7
20	1.3	*6.3	1.3	26	1.3	1.0	1.0	1.0	1.0	.8	.6	.4
21	1.3	3.1	1.1	34	1.3	1.1	1.0	.8	1.0	.8	.6	.4
22	1.3	2.3	1.1	*19	1.3	2.5	1.0	.8	.8	.8	.6	.3
23	1.3	4.5	1.0	12	1.3	2.3	1.0	.8	1.0	.7	.6	.3
24	1.3	5.3	1.0	8.9	1.3	2.3	1.0	.8	.8	.7	.6	.3
25	1.1	3.6	.8	7.5	1.3	2.0	1.0	.8	.8	.7	.6	.3
26	1.1	2.8	.8	6.0	1.3	1.8	1.0	.8	.8	.7	.6	.4
27	1.1	2.0	.8	5.0	1.3	1.6	1.0	1.1	.8	.6	.6	.4
28	1.1	1.8	.8	4.2	1.3	1.4	*1.0	1.0	.8	.6	.6	.4
29	1.1	1.6	.8	3.9	1.3	1.3	1.0	1.0	.8	.6	.6	.6
30	1.1	1.6	.8	3.4	-----	1.3	1.0	1.0	1.0	.6	.4	.6
31	1.1	-----	.8	3.1	-----	1.3	-----	1.0	-----	.6	.6	-----
TOTAL	41.0	76.6	34.1	157.9	51.1	48.0	31.8	31.2	31.2	26.0	18.3	17.3
MEAN	1.32	2.55	1.10	5.09	1.76	1.55	1.06	1.01	1.04	0.84	0.59	0.58
MAX	2.5	10	1.4	34	3.1	2.5	1.3	1.3	2.0	1.3	0.7	0.7
MIN	1.0	1.1	0.8	0.8	1.3	1.0	0.8	0.8	0.8	0.6	0.4	0.3
AC-FY	81	152	68	313	101	95	63	62	62	52	36	34

Calendar year 1963: Max 122 Min 0.8 Mean 5.12 Ac-ft 3,710
Water year 1963-64: Max 34 Min 0.3 Mean 1.54 Ac-ft 1,120

Peak discharge (base, 20 cfs).--Nov. 19 (1600) 27 cfs (3.99 ft); Jan. 20 (2030) 142 cfs (4.77 ft).

* Discharge measurement made on this day.

11-1627.2. Colma Creek at South San Francisco, Calif.

Location.--Lat 37°39'14", long 122°25'31", in Buri Buri Grant, on left bank in Orange Memorial Park, 1.0 mile southwest of South San Francisco Post Office, San Mateo County.

Drainage area.--10.9 sq mi.

Records available.--October 1963 to September 1964.

Gage.--Water-stage recorder and staff gage read once daily with additional readings during high water. Water-stage recorder and tipping-bucket rain gage 3.5 miles upstream. Datum of gage is 12.3 ft above mean sea level (levels by Corps of Engineers).

Extremes.--Maximum discharge during year, 1,050 cfs Jan. 20 (gage height, 8.00 ft), from rating curve extended above 120 cfs on basis of slope-area measurement of maximum flow; no flow Oct. 5, 26.

Remarks.--Records poor. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-10, June 8)

3.6	0	4.2	51
3.7	.3	4.5	110
3.8	2.4	5.0	226
3.9	8.9	6.0	486
4.0	20		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*0.1	0.4	0.3	2.0	0.3	7.6	1.0	0.3	0.1	0.1	a.0.1	0.1
2	.2	1.3	.3	*.4	.2	.2	.1	.1	.1	.1	a.1	.1
3	.1	.1	.3	.2	.2	.2	.1	1.3	.1	.1	.1	.1
4	.1	1.3	.6	.3	.2	.2	.1	.1	.1	.5	.1	.1
5	0	3.5	.2	.3	.2	.1	.1	.1	1.1	a.1	.1	a.1
6	.1	*3.5	.3	4.3	.2	.1	.1	.1	a.1	.1	.1	a.1
7	.2	.4	.3	1.1	.2	.1	.1	.1	.1	.1	.2	a.1
8	.1	.4	8.6	.1	.3	.1	.1	.2	*7.8	.1	a.1	.1
9	.1	.2	.9	.4	.2	.1	.1	.1	.4	.2	a.1	a.1
10	29	.2	.8	.2	.2	.1	.1	.1	.1	.1	.1	.1
11	1.3	.2	.4	.2	.2	2.4	.1	.1	.1	a.1	.1	.1
12	.1	.1	.6	.2	.2	1.4	.1	.3	.1	a.1	.1	a.1
13	.1	.2	.3	1.2	.2	.8	.1	.1	a.1	.1	.1	a.1
14	.1	4.5	.2	.4	1.3	.1	.1	.1	a.1	.1	.1	.1
15	27	.9	.2	.3	a.3	.1	.1	.1	.1	.1	a.1	.2
16	.1	.2	.2	.8	.2	.1	.1	a.1	.2	.1	a.1	.1
17	.1	.1	.1	2.0	.2	.1	.1	a.1	.1	.1	.1	.1
18	.1	.1	1.4	1.8	.2	.1	.1	.1	.1	a.1	.1	.1
19	.1	*4.2	1.2	2.0	.2	.1	.1	.1	.1	a.1	*.1	a.1
20	.1	.8	2.3	*2.36	.2	.1	.1	1.1	a.1	.1	.1	a.1
21	.1	.2	.3	7.0	.1	3.8	.1	.2	a.1	.1	.1	a.1
22	3.8	.2	.3	2.7	.1	2.9	.1	.1	.1	.1	a.1	.1
23	.9	3.9	.3	8.0	.2	.4	.1	a.1	.1	.1	a.1	.1
24	.2	.4	.8	2.0	.2	2.5	.1	a.1	.1	.1	.1	.1
25	.2	.1	.6	1.6	.2	.1	.1	.1	.1	a.1	.1	.2
26	0	.1	.3	1.0	.2	.1	.1	.1	.1	a.1	.1	a.2
27	.1	.2	.3	1.6	.2	.1	.1	5.0	a.1	.1	.1	a.1
28	.1	.1	.3	.4	2.2	.1	.1	.1	a.1	.2	.1	.1
29	.2	.1	.3	.4	.2	.1	.1	.1	.1	.2	a.1	.2
30	.2	.3	.3	.4	-----	.1	.1	a.1	.1	.1	a.1	.1
31	.2	-----	.3	.4	-----	*8.7	-----	.1	-----	.1	*.2	-----
Total	65.1	184.8	34.4	430.0	20.7	80.7	3.9	10.8	12.1	3.8	3.3	3.4
Mean	2.10	6.16	1.11	13.9	0.71	2.60	0.13	0.35	0.40	0.12	0.11	0.11
Max	29	4.5	1.2	2.36	1.3	2.9	1.0	5.0	7.8	0.5	0.2	0.2
Min	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Ac-ft	129	367	68	853	41	160	7.7	21	24	7.5	6.5	6.7
(+)	1.1	3.3	0.6	4.5	0.3	1.7	0	0.2	0.4	0.1	0	0

Calendar year 1963: Max - Min - Mean - Ac-ft -
Water year 1963-64: Max 236 Min 0 Mean 2.33 Ac-ft 1,690

Peak discharge (base, 400 cfs).--Nov. 5 (1600) 623 cfs (6.49 ft); Jan. 20 (1830) 1,050 cfs (8.00 ft).

* Discharge measurement made on this day.

† Precipitation, in inches.

a No gage-height record.

REDWOOD CREEK BASIN

11-1628. Redwood Creek at Redwood City, Calif.

Location.--Lat 37°26'58", long 122°13'57", in Pulgas Grant, at Menlo Country Club, on right bank 200 ft upstream from Alameda de las Pulgas bridge and 2.5 miles south of Redwood City Post Office, San Mateo County.

Drainage area.--1.82 sq mi.

Records available.--September 1959 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 83.92 ft above mean sea level, datum of 1929.

Average discharge.--5 years, 0.64 cfs (463 acre-ft per year).

Extremes.--Maximum discharge during year, 118 cfs Jan. 20 (gage height, 4.20 ft); no flow for many days.

1959-64: Maximum discharge, 644 cfs Jan. 31, 1963 (gage-height, 9.36 ft), from rating curve extended above 170 cfs on basis of slope-area measurement of maximum flow and computation of maximum flow through culvert.

Remarks.--Records good except those for period of fragmentary or no gage-height record, which are fair. Low flow at times affected by return flow from urban irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.8	0	1.4	3.0
1.0	.1	1.6	6.2
1.1	.3	2.0	16
1.2	.9	3.0	50
1.3	1.8		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*0	0	0.1	0.1	0.3	0.4	0.3	0.1	0			0
2	0	0	0	.1	.3	.2	.1	0	0			0
3	.1	0	0	.1	.3	.1	*.1	.1	*0			0
4	.2	.1	*.1	.1	.3	.1	.1	0	0			0
5	.1	*.7	.1	.1	.3	*.1	.1	0	0			0
6	.1	0	.1	.1	.3	.1	.1	0	0		(*)	0
7	.1	0	.1	*.1	*.2	.1	.1	0	0			.6
8	.1	0	.1	.1	.3	.1	.1	0	.3			*f. 5
9	.1	0	.1	.1	.3	.1	.1	0	.1			0
10	.2	0	.1	.1	.3	.1	.1	0	0			0
11	.2	0	.1	.1	.2	.8	.1	0	0			0
12	.1	0	.1	.1	.2	.6	.1	0	0			0
13	0	0	0	.1	.2	.2	.1	0	0	(*)		0
14	0	.2	0	.1	.2	.1	.1	0	0			0
15	.2	0	0	.1	.3	.1	.1	0	0			0
16	.1	0	0	0	.2	.1	.1	0	0			0
17	.1	0	0	.2	.2	.1	.1	0	0			0
18	0	0	0	.5	.2	.1	.1	0	0			0
19	0	6.0	.1	.8	.1	.1	.1	0	0			0
20	0	.4	.1	14	.2	.1	.1	0	0			0
21	.1	0	.1	23	.2	.1	.1	0	0			0
22	0	0	.1	11	.1	.9	.1	0	0			0
23	0	2.9	.1	3.5	.1	.5	.1	0	0			0
24	0	.7	.1	1.5	.2	.3	.1	0	0			0
25	0	.1	.1	1.0	.1	.2	.1	0	0			0
26	0	.1	.1	.7	.1	.2	.1	0	0			0
27	0	.1	.1	.4	.1	.1	.1	0	0			0
28	0	.1	.1	.4	.1	.1	.1	0	0			0
29	0	.1	.1	.4	.1	.1	*.1	0	0			0
30	0	.1	.1	.3	-----	.1	0	0	0			0
31	0	-----	.1	.3	-----	.3	-----	0	-----			-----
TOTAL	1.8	11.5	2.3	59.5	6.0	6.6	3.1	0.2	0.4	0	0	1.1
MEAN	0.66	0.39	0.07	1.92	0.21	0.21	0.10	0.006	0.01	0	0	0.04
MAX	0.2	6.0	0.1	23	0.3	0.9	0.3	0.1	0.3	0	0	0.6
MIN	0	0	0	0	0.1	0.1	0	0	0	0	0	0
AC-FT	3.6	23	4.6	118	12	13	6.1	0.4	0.8	0	0	2.2

CALENDAR YEAR 1963 MAX 181 MIN 0 MEAN 1.26 AC-FT 913
 WATER YEAR 1963-64 MAX 23 MIN 0 MEAN 0.25 AC-FT 184

Peak discharge (base, 50 cfs).--Jan. 20 (2200) 118 cfs (4.20 ft).

* Discharge measurement or observation of no flow made on this day.

f Fragmentary gage-height record.

Note.--No gage-height record Sept. 9-30.

ATHERTON DRAINAGE CHANNEL BASIN

319

11-1629. Sharon Creek near Menlo Park, Calif.

Location.--Lat 37°25'45", long 122°13'02", in Pulgas Grant, at Atherton City boundary, 900 ft upstream from Atherton drainage channel and 2.6 miles southwest of Menlo Park, San Mateo County.

Drainage area.--0.38 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder and concrete control. Datum of gage is 146.18 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 0.076 cfs (55 acre-ft per year).

Extremes.--Maximum discharge during year, 48.3 cfs Jan. 20 (gage height, 2.74 ft), from rating curve extended above 21 cfs as explained below; minimum, 0.01 cfs for many days.
1958-64: Maximum discharge, 68.0 cfs Jan. 31, 1963 (gage height, 3.07 ft), from rating curve extended above 21 cfs on basis of slope-area measurement of maximum flow; maximum gage height, 3.10 ft Mar. 5, 1962, from floodmarks; no flow at times in 1958-63.
Flood of Apr. 2, 1958, reached a stage of about 4.2 ft, from floodmarks.

Remarks.--Records good. Low flow affected by runoff from urban irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation indefinite May 16, 27, June 8, July 13, 18, 29)

1.0	0	1.5	1.8
1.1	.1	1.6	3.1
1.2	.2	1.7	4.8
1.3	.5	1.8	7.2
1.4	1.0		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.01	0.01	0.01	0.15	0.01	0.25	0.07	0.05	0.01	0.01	0.01	0.01
2	.01	.01	.01	.12	.01	.03	.01	.02	.02	.01	.01	.01
3	.01	.01	.01	.12	.01	.01	.02	.10	.01	.02	.01	.02
4	*.01	.05	.01	.10	.01	.01	.01	.01	.01	.01	.01	*.02
5	.01	*1.19	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
6	.01	.02	.01	.01	.01	.01	.01	.01	.02	.01	.01	.02
7	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.03
8	.01	.01	.05	.08	.01	.01	.02	.01	.56	.01	.01	.02
9	.01	.01	.02	.12	.01	.01	.01	.01	.05	.01	.01	.01
10	.24	.01	.01	.11	.01	.01	.02	.01	.02	.01	.01	.02
11	*.11	.01	.02	.01	.01	.55	.01	.02	.01	.01	.05	*.01
12	.01	.01	.17	.01	.01	.14	.02	.02	.01	.03	.01	.03
13	.01	.01	.14	*.03	.01	.02	.01	.02	.01	.11	.01	.01
14	.01	.49	.16	.01	.01	.01	.01	.01	.01	.01	.01	.03
15	.08	.07	.16	.01	.10	.01	.07	.02	.01	.01	.01	.02
16	.01	.01	.08	.09	.01	.01	.01	.15	.01	.02	.01	.02
17	.01	.01	.09	*.45	.01	.01	.01	.02	.02	.01	.01	.02
18	.01	.01	.15	.31	.01	.01	.01	.02	.01	.08	.01	.02
19	.01	*3.81	.20	.43	.01	.01	.01	.02	.01	.01	.02	.02
20	.01	.15	.16	6.92	.01	.01	.01	.02	.01	.01	.02	.03
21	.01	.57	.16	4.34	.01	.03	.01	.02	.01	.01	*.01	.04
22	*.01	.06	.16	*3.81	.01	.38	.01	.02	.01	.01	.01	.01
23	.01	1.99	.5	1.60	.01	.12	.01	.01	.01	.01	.01	.02
24	.01	.08	.14	.06	.01	.09	.02	.02	.01	.05	.01	.02
25	.01	.02	.15	.04	.01	.01	.04	.12	.01	.01	.01	*.02
26	.01	.01	.14	.03	.01	.01	.02	.02	.01	.01	.01	.02
27	.01	.01	.14	.02	.23	.01	.02	.27	.01	.02	.01	.02
28	.01	.01	.16	.02	.02	.01	.02	.02	.01	.02	*.01	.02
29	.01	.01	.15	.02	.01	.01	.02	.02	.01	.05	.01	.02
30	.01	.01	.06	.02	-----	.01	.02	.01	.01	.01	.02	.01
31	.01	-----	.03	.01	-----	.19	-----	.02	-----	*.02	*.08	-----
Total	0.71	8.68	2.82	19.07	0.61	2.01	0.55	1.11	0.93	0.63	0.45	0.59
Mean	0.023	0.289	0.091	0.615	0.021	0.065	0.018	0.036	0.031	0.020	0.015	0.020
Max	0.24	3.81	0.20	6.92	0.23	0.55	0.07	0.27	0.56	0.11	0.08	0.04
Min	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cfsm	0.061	0.761	0.239	1.62	0.055	0.171	0.047	0.095	0.082	0.053	0.039	0.053
In.	0.07	0.85	0.28	1.87	0.06	0.20	0.05	0.11	0.09	0.06	0.04	0.06
Ac-ft	1.4	17	5.6	38	1.2	4.0	1.1	2.2	1.8	1.2	0.9	1.2

Calendar year 1963 Max 19.2 Min 0 Mean 0.199 Cfsm 0.524 In. 7.13 Ac-ft 144
Water year 1963-64 Max 6.92 Min 0.01 Mean 0.104 Cfsm 0.274 In. 3.74 Ac-ft 76

Peak discharge (base, 9 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-5	1630	2.31	12.5	11-23	1600	1.99	13.5
11-19	1530	2.35	19.1	1-20	2015	2.74	48.3

SAN FRANCISQUITO CREEK BASIN

11-1629.4, San Francisquito Creek below Ladera damsite, near Stanford University, Calif.

Location--Lat 37°24'24", long 122°12'11", on north boundary of El Corte de Madera Grant, 1.2 miles upstream from Los Trancos Creek, 0.5 mile northwest of Ladera School, and 2.3 miles southwest of Stanford University Post Office, Santa Clara County.

Drainage area--28.5 sq mi.

Records available--October 1961 to September 1964. Prior to October 1962, published as "below Ladera damsite."

Gage--Water-stage recorder (digital) and concrete control. Altitude of gage is 180 ft (from topographic map).

Extremes--Maximum discharge during year, 981 cfs Jan. 21 (gage height, 9.70 ft); no flow at times.

1961-64: Maximum discharge, 2,880 cfs Jan. 31, 1963 (gage height, 16.04 ft), from rating curve extended above 620 cfs; no flow at times in each year.

Remarks--Records good. Flow regulated by Searsville Lake (capacity, 952 acre-ft). Small diversions from Searsville Lake for irrigation on Stanford University Campus.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0	0.2	0.6	1.1	4.8	1.2	3.7	0.5	0.1	0	0	
2	0	.3	.8	1.2	4.0	1.3	2.9	.4	.1	0	0	
3	0	.3	1.3	1.0	1.4	1.0	2.4	.6	*.1	0	0	
4	0	.3	*2.7	.7	1.2	1.3	2.4	.7	.1	0	0	(*)
5	0	*1.1	3.4	.9	1.2	1.4	2.0	.6	.1	0	0	
6	0	.5	1.8	.8	1.4	*1.4	1.8	.4	.1	0	0	
7	0	.4	1.4	*.7	*1.2	1.5	*1.7	.5	.1	0	*0	
8	0	.3	1.2	.7	1.4	1.5	1.5	.5	.1	0	0	
9	0	.3	2.9	.6	2.4	1.1	1.3	.5	.5	0	0	
10	0	.2	2.4	.7	2.7	1.0	1.1	.5	.2	0	0	
11	0	.3	1.7	.6	1.3	1.2	1.2	.5	.1	0	0	
12	0	.2	1.5	.7	1.2	2.9	1.1	.4	.1	.1	0	
13	0	.2	1.2	.7	1.1	1.1	1.1	.3	.1	.1	0	
14	0	.5	1.2	.8	1.1	1.1	.9	.4	.1	*.1	0	
15	0	2.4	1.2	.9	1.2	1.1	.9	.3	.1	.1	0	
16	0	.4	1.5	.9	1.1	1.1	.9	.4	.1	.1	0	
17	0	.2	1.4	1.4	1.1	1.2	.8	.4	.1	.1	0	
18	0	.2	1.2	6.4	1.2	1.2	.8	.5	.1	.1	0	
19	0	31	1.7	12	1.5	1.2	.8	.5	.1	.1	0	
20	0	5.9	2.1	138	1.7	1.3	.7	.3	.1	.1	0	
21	.1	1.0	2.0	*376	1.7	1.4	.7	.4	.1	.1	0	
22	.1	.8	1.7	194	1.9	12	.7	.3	.1	.1	0	
23	.1	11	1.5	*70	2.1	14	.5	.3	.1	.1	0	
24	.1	4.8	1.4	28	1.0	8.5	.6	.3	.1	.1	.1	
25	.2	1.1	1.4	17	.9	6.1	.6	.3	.1	.1	.1	
26	.2	1.0	1.1	13	.9	3.8	.4	.3	.1	.1	0	
27	.2	.7	.9	10	.9	1.0	.6	.3	.1	0	0	
28	.2	.5	1.0	6.9	.9	1.1	.6	.2	0	0	0	
29	.2	.4	1.1	1.6	.9	1.4	*.6	.2	0	0	0	
30	.2	.4	1.0	1.5	-----	1.6	.5	.3	0	0	0	
31	.2	-----	1.0	2.7	-----	2.1	-----	.1	-----	0	0	-----
TOTAL	1.8	66.9	47.3	891.5	45.4	79.1	35.8	12.2	3.2	1.5	0.2	0
MEAN	0.06	2.23	1.53	28.8	1.57	2.55	1.19	0.39	0.11	0.05	0.006	0
AC-FT	3.6	133	94	1,770	90	157	71	24	6.3	3.0	0.4	0
MAX	0.2	31	3.4	376	4.8	14	3.7	0.7	0.5	0.1	0.1	0
MIN	0	0.2	0.6	0.6	0.9	1.0	0.4	0.1	0	0	0	0

CALENDAR YEAR 1963: MAX 1,560 MIN 0 MEAN 22.6 AC-FT 16,320
 WATER YEAR 1963-64: MAX 376 MIN 0 MEAN 3.24 AC-FT 2,350

Peak discharge (base, 600 cfs)--Jan. 21 (0045) 981 cfs (9.70 ft).

* Discharge measurement or observation of no flow made on this day.

Note--No gage-height record Sept. 7-30.

SAN FRANCISQUITO CREEK BASIN

321

11-1629.5. San Francisquito Creek tributary near Stanford University, Calif.

Location.--Lat 37°24'43", long 122°11'52", in Pulgas Grant, on left bank 130 ft upstream from mouth, 200 ft downstream from ranch road bridge, 0.4 mile west of gate at Alpine Road, and 1.8 miles southwest of Stanford University Post Office, Santa Clara County.

Drainage area.--0.26 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder and concrete control. Datum of gage is 174.73 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 0.043 cfs (31 acre-ft per year).

Extremes.--Maximum discharge during year, 32.9 cfs Jan. 20 (gage height, 2.81 ft); no flow for many days.

1958-64: Maximum discharge, 39.2 cfs Mar. 5, 1962 (gage height, 2.98 ft), from rating curve extended above 16 cfs on basis of slope-area measurement of maximum flow; no flow for many days in each year.

Flood of Apr. 2, 1958, reached a stage of 3.2 ft, from floodmarks.

Remarks.--Records fair. Flow affected by construction of Stanford Linear Accelerator.

Revisions (water years).--1963 Report: 1962.

Discharge, in cubic feet per second, October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	*0	0	0	0.01	0.12	0.04	0.04	0.32	0.29	0.08	0
2	0	0	0	0	.01	.03	.01	.04	.29	.36	.11	0
3	0	.06	0	*0	.01	.01	.01	.09	.28	.22	.08	0
4	*0	.01	0	0	.01	0	.01	.04	.33	.36	.07	*0
5	0	.55	0	0	.01	0	.02	.03	.28	.40	.06	0
6	0	.02	*0	0	.01	.01	.01	.02	.37	.44	.06	0
7	0	0	0	0	.01	.01	0	.02	.48	.41	*.05	0
8	0	*0	0	0	.01	0	0	.02	.83	.26	.13	.01
9	0	0	.02	0	.01	0	.05	.03	.29	.37	.05	.05
10	.14	0	0	*0	.01	0	.01	.02	.25	.36	.06	.05
11	.12	0	0	0	.01	.23	.02	.04	.36	.34	.05	*.03
12	0	0	0	0	.01	.06	.01	.03	.37	.41	.05	.03
13	0	0	*a0	0	0	.01	.07	.02	.42	.34	.05	.03
14	0	.19	a0	0	0	.01	.01	.11	.45	.36	*.05	.03
15	.03	.14	a0	0	.07	.01	0	.04	.41	.29	.03	.03
16	0	0	a0	0	.01	.01	0	.02	.37	.31	.03	.03
17	.04	0	a0	*.14	.01	.01	0	.04	.34	.28	.05	.04
18	0	0	a0	.19	.01	.01	0	.04	.34	.31	.02	*.04
19	0	1.96	a .04	.25	.01	.01	0	.05	.40	.30	.02	.04
20	0	.04	0	3.00	.01	.01	.06	.03	.43	.25	.02	.14
21	0	.07	0	2.62	.01	.02	0	.04	.48	.26	*.01	.04
22	*0	*0	0	1.61	.01	.02	0	.04	.38	.15	.01	.04
23	0	.81	0	.23	0	.06	.01	.03	.39	.10	.02	.03
24	0	.02	0	.07	.01	.09	.02	.03	.29	.18	.01	.03
25	0	0	0	.04	.01	.04	.03	.04	.40	.19	.01	*.03
26	*0	.01	0	.04	0	.01	.04	.04	.37	.21	0	.03
27	0	.07	0	.06	.02	.01	.05	.18	.40	.16	0	.03
28	0	0	0	.02	.01	.01	.06	.05	.49	.12	*0	.04
29	0	0	0	.02	.01	.01	.03	.03	.40	.13	0	.03
30	0	0	0	.01	-----	.01	.02	.18	.35	.10	0	.04
31	0	-----	0	.01	-----	.09	-----	.39	-----	*.05	*.08	-----
Total	0.33	3.95	0.06	8.31	0.32	0.92	0.59	1.82	11.56	8.31	1.26	0.89
Mean	0.011	0.132	0.002	0.268	0.011	0.030	0.020	0.059	0.385	0.268	0.041	0.030
Max	0.14	1.96	0.04	3.00	0.07	0.23	0.07	0.39	0.83	0.44	0.13	0.14
Min	0	0	0	0	0	0	0	0.02	0.25	0.05	0	0
Cfsm	0.042	0.508	0.008	1.031	0.042	0.112	0.077	0.227	1.481	1.031	0.158	0.115
In.	0.05	0.56	0.01	1.19	0.05	0.13	0.08	0.26	1.65	1.19	0.18	0.13
Ac-ft	0.7	7.8	0.1	16	0.6	1.8	1.2	3.6	23	16	2.5	1.8

Calendar year 1963: Max 11.9 Min 0

Mean 0.093

Cfsm 0.358

In. 4.85

Ac-ft 67

Water year 1963-64: Max 3.00 Min 0

Mean 0.105

Cfsm 0.404

In. 5.48

Ac-ft 75

Peak discharge (base, 5 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11- 5	1730	1.85	5.58	1-20	1945	2.81	32.9
11-19	1515	2.21	13.9	1-21	1600	2.20	13.6

* Discharge measurement or observation of no flow made on this day.
a No gage-height record.

SAN FRANCISQUITO CREEK BASIN

11-1632. Los Trancos Creek tributary near Stanford University, Calif.

Location.--Lat 37°24'18", long 122°11'09", in El Corte de Madera Grant, on right bank 350 ft east of wooden water tanks, 0.4 mile east of Ladera, 0.6 mile upstream from mouth, and 1.7 miles southwest of Stanford University Post Office, Santa Clara County.

Drainage area.--0.47 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder and concrete control. Datum of gage is 269.13 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 0.030 cfs (22 acre-ft per year).

Extremes.--Maximum discharge during year, 8.30 cfs Jan. 20 (gage height, 1.70 ft, from floodmarks); no flow for most of year.

1958-64: Maximum discharge, 66.2 cfs Jan. 31, 1963 (gage height, 2.63 ft), from rating curve extended above 8 cfs on basis of slope-area measurement of maximum flow; no flow for many months in each year.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge,
in cubic feet per second)

1.0	0
1.1	.1
1.2	.4
1.3	1.0
1.4	2.0

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		*0		0		0.01		(*)		(*)	(*)	
2		0		0		0	(*)					
3		0		*0		0	(*)					
4	(*)	0		0		0						(*)
5		0		0		0						
6		0	(*)	0		*0			(*)			
7		0		0	(*)	0		(*)			(*)	
8		*0		0		0				(*)	(*)	
9		0		0		0						
10		0		*0		0	(*)		(*)		(*)	
11	(*)	0		0		*0						
12		0		0		*0						
13		0	(*)	0		0						
14		0		0	(*)	0		(*)				
15	(*)	*0		0		0				(*)		
16		0		0		0						
17		0		0		0			(*)		(*)	
18		0		0		0						(*)
19		0		0		0						
20		*0.01	(*)	.94		*0						
21	(*)	0		1.17	(*)	0					(*)	
22		*0		*.85		0		(*)				
23		0		.32		0						
24		0		.04		0	(*)		(*)			
25	(*)	0		.02		0						(*)
26		0		.01		0						
27		0	(*)	.01		*0		(*)				
28		0		.01	(*)	0						
29		*0		.01		0		(*)			(*)	
30		0		0		0						
31		-----		0	-----	0	-----		-----		-----	
Total	0	0.01	0	3.38	0	0.01	0	0	0	0	0	0
Mean	0	0.0003	0	0.109	0	0.0003	0	0	0	0	0	0
Max	0	0.01	0	1.17	0	0.01	0	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Cfsm	0	0.0006	0	0.232	0	0.0006	0	0	0	0	0	0
In.	0	0.0008	0	0.27	0	0.0008	0	0	0	0	0	0
Ac-Ft	0	0	0	6.7	0	0	0	0	0	0	0	0

Calendar year 1963: Max 16.9 Min 0 Mean 0.083 Cfsm 0.177 In. 2.40 Ac-ft 60
 Water year 1963-64: Max 1.17 Min 0 Mean 0.009 Cfsm 0.019 In. 0.27 Ac-ft 6.7

Peak discharge (base, 6 cfs).--Jan. 20 (2015) 8.30 cfs (1.70 ft); Jan. 21 (1930) 7.49 cfs (1.67 ft).

* Discharge measurement or observation of no flow made on this day.

11-1645, San Francisquito Creek at Stanford University, Calif.

Location.--Lat 37°25'24", long 122°11'18", in San Francisquito Grant at golf course, on right bank 1.1 miles downstream from Los Trancos Creek and 1.1 miles west of Stanford University Post Office, Santa Clara County.

Drainage area.--37.5 sq mi.

Records available.--October 1930 to September 1941, October 1950 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 120 ft (from topographic map).

Average discharge.--25 years, 17.0 cfs (12,310 acre-ft per year).

Extremes.--Maximum discharge during year, 948 cfs Jan. 21 (gage height, 4.92 ft); no flow at times.

1930-41, 1950-64: Maximum discharge, 5,560 cfs Dec. 22, 1955 (gage height, 13.60 ft); no flow at times in each year.

Remarks.--Records good except those for period of no gage-height record, which are poor. Flow regulated by Searsville Lake (capacity, 952 acre-ft). Diversions above station to Los Trancos and Lagunita Canals for irrigation on Stanford University campus below station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.15	0	0.6	4.4	1.6	64
.2	.1	.7	7.2	2.0	118
.3	.4	1.0	19	3.0	320
.4	1.1	1.3	37	4.0	610
.5	2.4				

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.1	0.1	0.1	0.4	0.2	1.0	0.1	0.1			
2	0	.1	.1	.1	.5	.3	.3	.1	.1			
3	0	.1	.1	.1	.1	.1	.2	.1	*.1			
4	0	.2	.1	.1	.1	.1	.2	.1	.1			
5	0	*2.1	.2	.1	.1	.1	.1	.1	.1			
6	0	.8	.2	.1	.1	*.2	.1	.1	.1			
7	0	.2	.2	*.1	.1	.2	*.1	.1	.1			
8	.1	.3	.1	.1	.1	.2	.1	.1	.1			
9	.1	.2	.3	.2	.1	.1	.1	.1	.1			
10	.1	.2	.5	.2	.1	.1	.1	.1	.1			
11	.5	.2	.5	.1	.1	.1	.1	.1	.1			
12	.1	.2	.5	.1	.1	.2	.1	.1	.1			
13	.1	.2	.3	.1	.1	.1	.1	.1	.1			
14	.1	.6	.2	.1	.1	.1	.1	.1	.1			
15	.1	1.4	.2	.1	.1	.1	.1	.1	.1			
16	.2	.5	.1	.1	.1	.1	.1	.1	.1			
17	.1	.3	.1	.1	.1	.1	.1	.1	.1			
18	.1	.2	.1	1.0	.1	.1	.1	.1	.1			
19	.1	3.1	.2	3.3	.1	.1	.2	.1	.1			
20	.1	7.5	.2	11.3	.1	.1	.2	.1	0			
21	.1	1.0	.2	41.2	.1	.3	.2	.1	0			
22	.1	.7	.1	21.1	.1	2.0	.2	.1	0			
23	.1	9.7	.2	6.5	.2	5.0	.2	.1	0			
24	.1	5.0	.1	20	.2	1.0	.2	.1	0			
25	.1	1.1	.1	9.2	.1	.7	.1	.1	0			
26	.1	.7	.1	6.4	.1	.5	.1	.1	0			
27	.1	.1	.1	3.1	0	.2	.1	.1	0			
28	.1	.1	.1	1.4	0	.1	.1	.1	0			
29	.1	.1	.1	.2	.1	.1	*.1	.1	0			
30	.1	.1	.1	.1	-----	.1	.1	.1	0			
31	.1	-----	.1	.1	-----	.2	-----	.1	-----			
Total	2.9	65.0	5.6	84.7	3.6	12.9	4.9	3.1	2.0	0	0	0
Mean	0.09	2.17	0.18	2.73	0.12	0.42	0.16	0.10	0.07	0	0	0
Max	0.5	31	0.5	41.2	0.5	5.0	1.0	0.1	0.2	0	0	0
Min	0	0.1	0.1	0.1	0	0.1	0.1	0.1	0	0	0	0
Ac-ft	5.8	129	1.1	1.680	7.1	26	9.7	6.1	4.0	0	0	0

Calendar year 1963: Max 1,420 Min 0 Mean 20.1 Ac-ft 14,580

Water year 1963-64: Max 412 Min 0 Mean 2.59 Ac-ft 1,880

Peak discharge (base, 700 cfs).--Jan. 21 (0100) 948 cfs (4.92 ft).

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record Mar. 13 to Apr. 6.

MATADERO CREEK BASIN

11-1660. Matadero Creek at Palo Alto, Calif.

Location.--Lat 37°25'10", long 122°08'10", in Rinconada de San Francisquito Grant, on right bank on Ash Street, 150 ft upstream from Lambert Avenue Bridge, and 2.1 miles southeast of post office at Palo Alto, Santa Clara County.

Drainage area.--7.24 sq mi.

Records available.--July 1952 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 25 ft (from topographic map). Prior to Sept. 25, 1958, at site 150 ft downstream at different datum.

Average discharge.--12 years, 1.20 cfs (869 acre-ft per year); median of mean annual discharges, 0.5 cfs (360 acre-ft per year).

Extremes.--Maximum discharge during year, 223 cfs Jan. 20 (gage height, 2.34 ft), from rating curve extended above 92 cfs on basis of critical-depth determination at gage height 2.85 ft; no flow for most of year.
1952-64: Maximum discharge, 854 cfs Dec. 22, 1955 (gage height, 9.60 ft), from rating curve extended above 390 cfs on basis of slope-area measurement of maximum flow; maximum gage height, 9.88 ft Dec. 23, 1955, site and datum then in use (backwater from culvert); no flow for many months in each year.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge in cubic feet per second)
(Shifting-control method used Nov. 19)

0.1	0	0.5	3.9
.2	.1	.6	6.9
.3	.5	.8	16
.4	1.7	1.0	29

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0		0	0	0.3	0.1	0	0		0	
2	0	0		0	0	*0	0	0	0		0	
3	0	0		0	0	0	0	0	*0		0	
4	0	0	(*)	0	0	0	0	0	0		0	
5	0	*4.2		0	0	0	0	0	0		0	
6	0	0		0	0	0	0	0	0		0	
7	0	0		0	*0	0	*0	0	0		*0	
8	0	0		0	0	0	0	0	0		0	
9	0	0		0	0	0	0	0	.9		0	
10	.2	0		0	0	0	0	0	.1		0	
11	1.3	0		0	0	.5	0	0	0		0	
12	0	0		0	0	.2	0	0	0		0	
13	0	0		.1	0	0	0	0	0		0	
14	0	.9		0	0	0	0	0	0		0	
15	.3	0		0	.4	0	0	0	0	(*)	0	(*)
16	0	0		0	0	0	0	0	0		0	
17	0	0		.1	0	0	0	0	0		0	
18	0	0		.3	0	0	0	0	0		0	
19	0	*1.7		.1	0	0	0	0	*0		0	
20	0	.7		29	0	0	0	*0	0		0	
21	0	0		*29	0	.5	0	0	0		0	
22	0	0		17	0	.6	0	0	0		0	
23	0	3.8		6.7	0	.3	0	0	0		0	
24	0	.2		.9	0	.2	0	0	0		0	
25	0	0		.3	0	.2	0	0	0		0	
26	0	0		.1	0	0	0	0	0		0	
27	0	0		0	0	.1	0	0	0		0	
28	0	0		0	0	0	0	.9	0		0	
29	0	0		0	0	0	*0	0	0		0	
30	0	0		0	-----	0	0	0	0		0	
31	0	-----		0	-----	.1	-----	0	-----		*2	-----
Total	1.8	26.8	0	83.6	0.4	3.0	0.1	1.1	1.0	0	0.2	0
Mean	0.06	0.89	0	2.70	0.01	0.10	0.003	0.04	0.03	0	0.006	0
Max	1.3	17	0	29	0.4	0.6	0.1	0.9	0.9	0	0.2	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	3.6	53	0	166	0.8	6.0	0.2	2.2	2.0	0	0.4	0

Calendar year 1963: Max 200 Min 0 Mean 1.44 Ac-ft 1,040

Water year 1963-64: Max 29 Min 0 Mean 0.32 Ac-ft 234

Peak discharge (base, 50 cfs).--Nov. 19 (1630) 102 cfs (1.65 ft); Jan. 20 (2030) 223 cfs (2.34 ft).

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record Apr. 17-19, Aug. 7-30.

11-1664.8. Stevens Creek Reservoir near Monte Vista, Calif.

Location.--Lat 37°17'55", long 122°04'34", in NW¼ sec.27, T.7 S., R.2 W., at center of dam on Stevens Creek, 2.0 miles southwest of Monte Vista.

Drainage area.--17.3 sq mi.

Records available.--December 1935 to September 1964. Monthly contents prior to October 1959 published in WSP 1735.

Gage.--Staff gage read once daily. Datum of gage is at mean sea level (levels by Santa Clara Valley Water Conservation District).

Extremes.--Maximum contents observed during year, 2,380 acre-ft Oct. 1 (elevation, 519.03 ft); minimum observed, 97 acre-ft Sept. 30 (elevation, 466.40 ft).

1935-64: Maximum contents observed, 4,100 acre-ft Dec. 26, 1955 (elevation, 538.61 ft); maximum elevation, 539.48 ft Jan. 31, 1963; no contents for part of most years.

Remarks.--Reservoir is formed by earth-fill dam completed in 1936. Capacity, 3,860 acre-ft between elevations 444.9 (invert of outlet tunnel) and 537.14 ft (crest of spillway). Water released down Stevens Creek for irrigation and ground-water recharge by percolation.

Cooperation.--Record of contents furnished by Santa Clara Valley Water Conservation District.

Month-end contents, in acre-feet, water year October 1963 to September 1964

Date	Contents†
Sept.30.....	2,380
Oct. 31.....	1,810
Nov. 30.....	1,900
Dec. 31.....	1,650
Jan. 31.....	2,140
Feb. 29.....	2,070
Mar. 31.....	2,120
Apr. 30.....	1,840
May 31.....	1,340
June 30.....	758
July 31.....	300
Aug. 31.....	125
Sept.30.....	97

† Contents at 0800 hours on first day of following month.

GUADALUPE RIVER BASIN

11-1669. Alamitos Creek near New Almaden, Calif.

Location--Lat 37°13'21", long 121°51'00", in Pueblo Lands of San Jose Grant, on left bank at Greystone bridge, 1.1 miles downstream from Arroyo Calero, 3.4 miles southwest of Edenvale, and 3.5 miles northwest of New Almaden, Santa Clara County.

Drainage area--31.9 sq mi.

Records available--April 1958 to September 1964.

Gage--Water-stage recorder. Altitude of gage is 247 ft (from topographic map). Prior to July 15, 1958, staff gage at same site and datum.

Average discharge--6 years, 15.5 cfs (11,220 acre-ft per year).

Extremes--Maximum discharge during year, 710 cfs Jan. 20 (gage height, 5.00 ft); no flow May 19 to Sept. 30.
1958-64: Maximum discharge, 4,300 cfs Apr. 2, 1958 (gage height, 9.67 ft), from rating curve extended above 330 cfs on basis of computed outflow from Almaden and Calero Reservoirs; no flow for parts of each year.

Remarks--Records good. Flow regulated by Calero and Almaden Reservoirs (see p. 331); water released during summer. Small diversions above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 18 to May 18)

1.8	0	2.2	3.8	2.6	22
1.9	.2	2.3	6.3	2.8	40
2.0	.8	2.4	9.8	3.0	69
2.1	2.0	2.5	15	3.3	140

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*24	30	27	24	18	19	*23	0.4				
2	24	30	27	26	19	20	32	.6				(*)
3	23	30	27	*26	19	19	31	1.1	(*)			
4	24	30	26	26	17	*18	22	1.3				
5	26	28	*26	26	*17	15	14	*1.3				
6	26	*8.4	24	24	17	14	11	1.3			(*)	
7	26	8.2	23	23	15	12	13	1.1		(*)		
8	26	16	22	30	12	9.1	13	.7				
9	26	17	17	26	7.4	8.1	11	.6				
10	26	17	16	21	7.0	6.7	26	.8				
11	26	16	5.4	19	7.9	7.4	31	.7				
12	19	16	4.2	17	15	9.1	32	.6				
13	19	19	3.8	17	14	14	29	.2				
14	21	22	3.4	18	14	21	26	.2				
15	24	22	3.4	19	15	21	26	.1				
16	23	22	3.4	19	13	21	29	.1				
17	23	23	3.2	22	13	21	28	.1				
18	20	22	3.2	23	13	22	17	.1				
19	26	23	3.2	22	11	24	1.7	0				
20	28	32	3.2	111	10	27	1.1	0				
21	29	17	4.9	137	14	27	.8	0				
22	29	14	12	*66	15	25	.6	0				
23	28	14	17	25	17	19	.5	0				
24	27	13	23	15	17	21	.5	0				
25	28	13	24	11	17	16	.5	0				
26	30	15	22	9.5	18	18	.6	0				
27	31	26	19	8.4	18	19	.6	0				
28	32	26	20	12	14	22	.6	0				
29	30	27	21	17	13	22	.5	0				
30	27	27	20	15	-----	22	.4	0				
31	30	-----	19	17	-----	22	-----	0				
Total	801	623.6	473.3	871.9	417.3	561.4	422.4	11.3	0	0	0	0
Mean	25.8	20.8	15.3	28.1	14.4	18.1	14.1	0.36	0	0	0	0
Max	32	32	27	137	19	27	32	1.3	0	0	0	0
Min	19	8.2	3.2	8.4	7.0	6.7	0.4	0	0	0	0	0
Ac-ft	1,590	1,240	939	1,730	828	1,110	838	22	0	0	0	0
Calendar year 1963:	Max	16.70	Min	3.2	Mean	39.8	Ac-ft	28,810				
Water year 1963-64:	Max	137	Min	0	Mean	11.4	Ac-ft	8,300				

* Discharge measurement or observation of no flow made on this day.

11-1676.6. Ross Creek at San Jose, Calif.

Location.--Lat 37°14'55", long 121°54'49", in SE¼ sec.12, T.8 S., R.1 E., on left bank 100 ft downstream from Lone Hill Creek, 500 ft upstream from Harwood Avenue, and at south city limits of San Jose.

Drainage area.--5.70 sq mi.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 210 ft (from topographic map).

Extremes.--Maximum discharge during year, 512 cfs Jan. 20 (gage height, 6.24 ft); no flow for many days.

1961-64: Maximum discharge, 530 cfs Oct. 13, 1962 (gage height, 6.30 ft); no flow for many days in each year.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Low flow at times affected by return flow from urban irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 15, July 2-7)

Oct. 1 to July 16

July 17 to Sept. 30

2.4	0	2.9	4.9	2.14	0
2.5	.1	3.0	7.9	2.3	.1
2.6	.4	3.2	16	2.4	.4
2.7	1.1	3.5	33	2.5	.8
2.8	2.6	4.0	74		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0	0	0	0	0.7	1.3	0.1	0	0.1	0.1	0
2	0	0	0	*0	0	0	0	0.1	0	0	0.1	*.1
3	.1	0	0	0	0	0	0	0	*0	.1	.2	.1
4	0	0	*0	0	0	0	0	.1	.1	.1	.2	.1
5	.1	19	0	0	*0	*0	0	0	0	.1	*.1	.1
6	.1	.8	0	0	0	0	0	*.1	.1	0	0	0
7	0	*0	0	0	0	0	0	0	.1	.1	0	0
8	.1	0	0	0	0	0	0	0	.1	*.1	0	0
9	0	0	.1	0	0	0	0	.1	.1	.1	0	0
10	.1	0	0	*0	0	0	0	.1	0	.1	.1	.1
11	6.8	0	0	0	0	0	0	.1	0	.1	0	0
12	0	0	0	0	0	.4	0	0	0	.1	.1	0
13	0	0	0	0	0	0	0	.1	.1	.1	0	0
14	0	3.1	0	0	0	0	0	.1	0	.1	0	0
15	0	.2	0	0	.2	0	.1	0	0	.1	.1	.1
16	0	0	0	0	0	0	0	.1	0	.1	0	0
17	0	0	0	0	0	0	.1	.1	0	.1	0	0
18	0	0	0	0	0	0	.1	0	0	.2	0	0
19	0	26	0	0	0	0	.1	.1	0	.1	.1	0
20	0	2.4	0	65	0	0	.1	0	.1	.2	0	.1
21	.5	.1	0	*52	0	0	0	.1	0	.1	0	0
22	0	0	0	13	0	2.2	.1	0	0	.1	.1	0
23	.1	1.2	0	2.9	0	.2	0	.1	0	.1	0	0
24	0	.2	0	.9	0	1.1	.1	0	0	*0	.1	0
25	0	0	0	.8	0	0	.1	0	0	.1	0	0
26	0	0	0	.3	0	0	.1	0	0	.1	.1	0
27	0	0	0	.2	0	0	.1	.1	0	.2	.2	.1
28	0	0	0	.1	0	.1	0	0	.1	.1	0	.1
29	0	0	0	0	0	0	.1	0	.1	.1	.2	.1
30	0	0	0	0	0	0	0	0	0	.1	.1	0
31	0	-----	0	-----	-----	*0	-----	.1	-----	0	.6	-----
Total	8.0	53.0	0.1	135.2	0.2	4.7	2.4	1.6	0.9	3.0	2.5	1.0
Mean	0.26	1.77	0.003	4.36	0.007	0.15	0.08	0.05	0.03	0.10	0.08	0.03
Max	6.8	26	0.1	65	0.2	2.2	1.3	0.1	0.1	0.2	0.6	0.1
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	1.6	105	0.2	268	0.4	9.3	4.8	3.2	1.8	6.0	5.0	2.0

Calendar year 1963: Max 295 Min 0 Mean 2.97 Ac-ft 2,150

Water year 1963-64: Max 65 Min 0 Mean 0.58 Ac-ft 422

Peak discharge (base, 75 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-5	1730	4.72	162	1-20	2100	6.24	512
11-19	1700	5.03	214				

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record July 9-16, Sept. 3-30.

11-1680. Los Gatos Creek at Los Gatos, Calif.

Location.--Lat 37°12'30", long 121°59'15", in NE¼ sec.29, T.8 S., R.1 W., on left bank 0.3 mile downstream from Trout Creek, 0.5 mile downstream from Lexington Reservoir, and 1.0 mile south of Los Gatos.

Drainage area.--38.6 sq mi.

Records available.--October 1929 to September 1944, October 1953 to September 1964. Yearly estimate for water year 1930 (incomplete) and monthly discharge only for June to September 1944, published in WSP 1315-B.

Gage.--Water-stage recorder. Altitude of gage is 420 ft, revised (from topographic map). Prior to Oct. 1, 1943, water-stage recorder, with concrete control after October 1934, at site 1 mile downstream and October 1943 to May 1944 at site 0.5 mile downstream at different datums.

Average discharge.--26 years, 46.6 cfs (33,740 acre-ft per year), adjusted for diversion.

Extremes.--Maximum discharge during year, 198 cfs July 8 (gage height, 5.32 ft); minimum daily, 0.1 cfs Mar. 30, 31.

1929-44, 1953-64: Maximum discharge, 7,110 cfs Feb. 27, 1940 (gage height, 14.71 ft, site and datum then in use), from rating curve extended above 2,300 cfs; no flow for part of some years.

Remarks.--Records good. Flow regulated by Lexington Reservoir and Lake Elsman (see p. 331). Several diversions for irrigation above station and diversion by San Jose Water Works.

Cooperation.--One discharge measurement furnished by Santa Clara Valley Water Conservation District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 14 to May 13, July 8 to Aug. 1)

3.0	0.1	3.7	9.3
3.1	.4	3.9	16
3.2	.9	4.2	34
3.3	1.8	4.6	69
3.4	3.0	5.1	146
3.5	4.6		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a70	39	21	57	71	35	0.2	1.3	a1.1	0.2	0.4	4.5
2	*74	33	27	62	a38	15	8.5	1.3	a1.1	.3	.4	.9
3	109	30	40	69	a22	30	13	1.5	a1.1	.3	.4	.5
4	137	27	*48	67	a30	29	9.0	1.5	*1.1	.3	.4	.3
5	109	11	70	66	*29	*34	7.7	1.4	1.1	.3	.4	.3
6	97	1.0	80	70	21	38	7.7	*1.5	1.1	.3	*.4	.3
7	88	*.3	79	*80	21	38	7.7	1.5	1.1	.4	.4	.3
8	84	.3	48	75	21	36	7.5	1.5	1.9	*1.4	.4	.3
9	74	.3	36	53	21	28	5.6	1.6	2.8	.9	.4	.3
10	65	.2	52	38	15	16	4.6	1.6	4.0	*.8	.4	.3
11	77	.2	81	49	6.3	12	4.0	1.6	11	.7	.4	.3
12	55	.2	69	58	6.3	9.4	3.3	1.6	20	.6	.4	.3
13	55	19	56	54	12	26	3.2	7.4	19	.6	.4	.3
14	67	40	56	2.7	18	30	8.7	9.9	18	.6	.4	.3
15	61	41	56	.7	17	24	9.2	15	15	.5	.4	.3
16	61	42	68	1.5	17	5.7	6.1	8.8	1.9	.5	.4	.3
17	62	43	73	2.4	22	4.6	3.3	3.5	1.5	.5	.4	.2
18	60	28	56	14	27	2.5	1.6	3.5	1.1	.6	.4	.3
19	65	16	58	5.9	33	.4	1.5	3.5	.3	.6	.4	.2
20	66	2.5	67	15	40	.3	1.5	3.3	.2	.7	.4	.2
21	64	.6	67	16	39	.3	1.4	2.1	.2	.6	.3	.3
22	64	.4	67	8.0	39	.7	1.4	a1.3	.3	.6	.3	.3
23	75	1.1	67	2.3	38	1.1	1.3	a1.3	.3	.6	.3	.3
24	102	1.1	66	.9	38	.8	1.3	a1.3	.3	.4	.3	.3
25	34	.7	65	.8	38	.6	1.3	a1.3	.3	.4	.3	.3
26	1.3	28	64	.7	36	.4	1.3	a1.3	.3	.4	.3	.3
27	1.0	52	61	.7	35	.3	1.3	a1.3	.3	.4	*.4	.4
28	.6	29	57	.6	24	.2	1.3	a1.3	.3	.4	.3	.4
29	15	29	56	54	33	.2	1.3	a1.2	.3	.4	.3	.4
30	48	24	57	81	-----	.1	1.3	a1.2	.2	.4	.3	.4
31	54	-----	58	80	-----	*.1	-----	a1.2	-----	.4	.9	-----
Total	1,994.9	539.9	1,826	1,085.2	777.9	387.2	127.1	87.6	107.2	28.7	12.0	14.1
Mean	64.4	18.0	58.9	35.0	26.8	12.5	4.24	2.83	3.57	0.93	0.39	0.47
Max	137	52	81	81	71	38	13	15	20	14	0.9	4.5
Min	0.6	0.2	21	0.6	3.3	0.1	0.2	1.2	0.2	0.2	0.3	0.2
Ac-ft	3,960	1,070	3,620	2,150	1,540	768	252	174	213	57	24	28
(†)	92	238	151	262	251	198	161	291	733	781	506	505

Calendar year 1963: Max 1.130 Min 0.2 Mean 102 Ac-ft 74,090 † 9,120
Water year 1963-64: Max 1.37 Min 0.1 Mean 19.1 Ac-ft 13,860 † 4,170

* Discharge measurement made on this day.

† Diversion, in acre-feet, furnished by San Jose Water Works.

a No gage-height record.

11-1690. Guadalupe River at San Jose, Calif.

Location.--Lat 37°20'00", long 121°54'00", at San Jose, Santa Clara County, on right bank 100 ft downstream from Los Gatos Creek.Drainage area.--146 sq mi.Records available.--October 1929 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B. Prior to 1945, published as Guadalupe Creek at San Jose.Gage.--Water-stage recorder and concrete control. Datum of gage is 72.00 ft above mean sea level (levels by Corps of Engineers).Extremes.--Maximum discharge during year, 1,980 cfs Jan. 20 (gage height, 5.10 ft); no flow for many days.
1929-64: Maximum discharge, 9,150 cfs Apr. 2, 1958 (gage height, 16.55 ft); no flow for many days in each year.Remarks.--Records good. Flow regulated by Calero, Almaden, Guadalupe and Lexington Reservoirs, and Lake Elman (see p. 331) with water released during summer for percolation in spreading basins on tributaries. Diversions by San Jose Water Works for urban use (see Los Gatos Creek at Los Gatos, preceding page). Diversion of 3,110 acre-ft into Alamitos Percolation Ponds from Coyote Creek basin during year.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 20

Jan. 21 to Sept. 30

0.45	0	1.6	36	0.45	0	1.4	19	2.3	169
.5	.1	1.8	64	.5	.1	1.6	31	2.6	280
.6	1.2	2.0	105	.6	.9	1.8	52	3.0	490
1.0	8.6	2.5	270	.9	6.0	2.0	88	3.5	805
1.4	21	3.0	510	1.2	13				

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	0	0	0	0.1	9.9	0	0		0	0.1
2	0	0	0	0	7.1	3.4	4.5	0	0		0	.1
3	0	0	0	0	3.1	1.7	11	3.8	*0		0	.1
4	0	0	*0	0	*1.9	0	7.6	.8	0		0	.1
5	0	119	.3	0	.4	*0	4.9	.1	0		0	.1
6	0	70	14	.4	.6	0	1.7	*.2	0		0	0
7	0	*2.9	.2	*.2	.5	0	.3	.1	0	(*)	0	0
8	0	.1	7.1	0	.1	0	.1	0	6.4		0	0
9	0	0	3.6	3.2	.1	0	.1	0	1.4		0	0
10	6.7	0	.2	4.8	0	0	.2	0	0		*0	.1
11	63	0	0	2.9	0	0	0	0	0		0	.1
12	7.6	0	0	2.1	0	1.6	0	0	0		0	.1
13	2.4	0	0	2.2	0	0	0	0	0		0	0
14	0	32	0	1.0	0	0	.3	0	0		0	0
15	2.2	10	0	0	4.3	0	.1	0	0		0	0
16	2.1	0	0	*0	.8	0	.2	0	0		0	0
17	0	0	0	0	.3	0	0	0	0		0	.1
18	0	0	1.1	4.6	0	0	0	0	0		.1	0
19	0	149	3.0	1.8	.3	0	0	0	0		.2	0
20	0	91	.4	279	1.2	0	0	0	0		.2	0
21	0	12	0	*544	1.1	1.8	1.0	0	0		.2	0
22	0	2.0	0	222	0	12	.8	0	0		0	0
23	9.8	25	0	51	0	4.1	0	0	0		0	.2
24	3.1	2.2	0	*14	.8	16	0	0	0		0	.1
25	.5	0	0	6.4	.9	.8	0	0	0		0	.2
26	0	0	0	4.2	.6	.3	0	0	*0		0	.2
27	0	0	0	0	0	.2	0	.7	0		.3	0
28	0	0	0	.1	.3	0	0	0	0		.3	0
29	0	0	0	3.7	0	0	0	0	0		.1	0
30	3.1	0	0	5.2	-----	.1	0	0	0		.1	.2
31	.3	-----	.6	.3	-----	4.7	-----	0	-----		*.4	-----
Total	100.8	515.2	30.5	1153.1	24.4	46.8	42.7	5.7	7.8	0	1.9	1.8
Mean	3.25	17.2	0.98	37.2	0.84	1.51	1.42	0.18	0.26	0	0.06	0.06
Max	63	149	14	544	7.1	16	11	3.8	6.4	0	0.4	0.2
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	200	1020	60	2290	48	93	85	11	15	0	3.8	3.6

Calendar year 1963: Max 4,370 Min 0 Mean 81.4 Ac-ft 58,910
Water year 1963-64: Max 544 Min 0 Mean 5.28 Ac-ft 3,830

* Discharge measurement or observation of no flow made on this day.

GUADALUPE RIVER BASIN

11-1695. Saratoga Creek at Saratoga, Calif.

Location.--Lat 37°15'15", long 122°02'25", in Quito Grant, on right bank on downstream side of private road bridge, 0.5 mile southwest of Saratoga, Santa Clara County, and 0.7 mile downstream from diversion dam.

Drainage area.--9.22 sq mi.

Records available.--October 1933 to September 1964. Prior to October 1951, published as Campbell Creek at Saratoga.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 500 ft (from topographic map).

Average discharge.--31 years, 9.41 cfs (6,810 acre-ft per year), combined flow of Saratoga Creek and diversion by San Jose Water Works.

Extremes.--Maximum discharge during year, 338 cfs Jan. 20 (gage height, 3.84 ft); no flow for many days.

1933-64: Maximum discharge, 2,730 cfs Dec. 22, 1955 (gage height, 6.40 ft), from rating curve extended above 510 cfs on basis of slope-area measurement of maximum flow; no flow for part of each water year except possibly 1941, 1943, 1945.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Water is diverted for municipal use by San Jose Water Works at diversion dam above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 21 to Mar. 2, Aug. 29 to Sept. 2, Sept. 18, 19)

Oct. 1 to Sept. 30

1.1	0	1.6	6.0
1.2	.1	1.8	14
1.3	.4	2.0	26
1.4	1.4	2.2	41
1.5	3.3	2.5	70

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	a0.1	0.1	a0.5	1.0	3.1	0.1	0		0	0.1
2	*.1	0	a.1	.1	a.5	*1.2	1.1	.1	0		0	.2
3	.1	0	a.1	.1	a.4	.1	.1	.9	*0		0	*.1
4	0	2.2	*.1	.1	a.3	.2	0	.1	0		0	.1
5	.1	20	.1	.1	*.3	*.4	.1	.1	0		0	.1
6	.1	6.9	.1	*.1	0	.5	.1	.1	0		*0	.1
7	0	*2.3	.1	.1	.1	.8	.5	*0	0		0	.2
8	0	.1	.2	.1	.1	.2	1.9	.1	1.0	(*)	0	.2
9	.1	0	4.0	.1	0	0	1.0	0	2.1		0	.2
10	.1	0	3.2	.1	0	.1	.1	0	.7		0	.2
11	6.9	0	.5	0	.1	.7	.1	0	0		0	.2
12	2.1	0	.3	0	0	3.6	.1	0	0		0	.2
13	1.9	0	.3	0	0	.1	.1	0	0		0	.2
14	.9	9.2	.3	.1	0	.1	.1	0	0		0	.1
15	1.2	6.7	.2	0	.2	.1	.1	0	0		.1	.1
16	1.0	2.5	.1	0	0	1.0	.1	0	0		.2	.1
17	.1	.3	.1	.4	0	.1	.1	.1	0		.2	.2
18	0	0	1.4	2.9	0	0	.1	0	0		.2	.1
19	0	26	1.7	4.0	0	0	.1	0	0		.1	.1
20	0	11	.2	52	0	0	.1	0	0		.1	.1
21	0	3.6	.1	63	0	0	.1	0	0		.1	.1
22	0	3.3	.1	34	0	5.2	.1	0	0		.1	.1
23	.7	11	.1	9.4	0	4.0	.1	0	0		.1	0
24	0	8.6	.1	a6.0	0	4.8	.1	1.0	0		.1	0
25	0	6.4	.1	a4.0	0	2.6	.1	.8	0		0	0
26	0	2.8	.2	a3.5	0	.3	.1	.9	0		0	.1
27	0	a.5	.1	a1.0	0	.2	0	1.3	0		0	.1
28	0	a.3	.1	a.8	0	.4	0	.2	0		0	.1
29	.3	a.3	.1	a.8	0	.2	0	.5	0		0	.1
30	.8	a.2	2.0	a.6		.2	0	.3	0		0	.1
31	0		1.2	a.6		*.5		0			.1	
Total	16.5	124.2	17.4	184.1	2.5	28.6	9.6	6.6	3.8	0	1.4	3.6
Mean	0.53	4.14	0.56	5.94	0.09	0.92	0.32	0.21	0.13	0	0.05	0.12
Max	6.9	26	4.0	63	0.5	5.2	3.1	1.3	2.1	0	0.2	0.2
Min	0	0	0.1	0	0	0	0	0	0	0	0	0
Ac-ft	33	24.6	35	365	5.0	57	19	13	7.5	0	2.8	7.1
(†)	92	85	129	103	181	131	108	80	63	35	7.7	0

Calendar year 1963: Max 651 Min 0 Mean 12.7 Ac-ft 9,180 †1,990
Water year 1963-64: Max 63 Min 0 Mean 1.09 Ac-ft 790 †1,010

Peak discharge (base, 110 cfs).--Jan. 20 (2200) 338 cfs (3.84 ft).

* Discharge measurement or observation of no flow made on this day.

† Diversion, in acre-feet, furnished by San Jose Water Works.

a No gage-height record.

Reservoirs in Guadalupe River basin, Calif.

- 11-1666.71 Almaden Reservoir.--Lat 37°09'54", long 121°49'39", in San Vicente Grant, at center of dam on Alamitos Creek, 0.7 mile southwest of New Almaden, Santa Clara County, and 7 miles south of Edenvale. Drainage area, 12.0 sq mi. Records available, January 1936 to September 1964. Monthly contents prior to October 1959, published in WSP 1735. Staff gage read once daily. Datum of gage is at mean sea level (levels by Santa Clara Valley Water Conservation District). Maximum contents observed during year, 913 acre-ft Jan. 23 (elevation, 586.36 ft); no contents Sept. 15-30. Maximum contents observed during period 1936-64, 2,150 acre-ft Jan. 31, 1963 (elevation, 610.24 ft, from floodmarks); no contents for part of each year except 1942, 1943, 1962-63.
- Reservoir is formed by earth-fill dam completed in 1936. Capacity, 1,960 acre-ft between elevations 533.1 (invert of outlet tunnel) and 607 ft (crest of spillway). Water released down Alamitos Creek for ground-water recharge by percolation and minor irrigation. Up to 100 cfs diverted to Calero Reservoir at times. Record of contents furnished by Santa Clara Valley Water Conservation District.
- 11-1667.4. Calero Reservoir.--Lat 37°11'00", long 121°47'28", in San Vicente Grant, at center of dam on Arroyo Calero, 1.7 miles northeast of New Almaden, Santa Clara County, and 6 miles southeast of Edenvale. Drainage area, 6.95 sq mi. Records available, January 1936 to September 1964. Monthly contents prior to October 1959, published in WSP 1735. Staff gage read once daily. Datum of gage is at mean sea level (levels by Santa Clara Valley Water Conservation District). Maximum contents observed during year, 3,740 acre-ft Oct. 1 (elevation, 460.16 ft); minimum observed, 157 acre-ft Sept. 30 (elevation, 414.79 ft). Maximum contents observed during period 1936-64, 9,760 acre-ft Mar. 28, 1963 (elevation, 460.16 ft); no contents for part of each year except 1942-45, 1963-64.
- Reservoir is formed by earth-fill dam completed to crest elevation 482.55 ft in 1936 and raised to 483.90 ft in 1962. Capacity, 9,630 acre-ft between elevations 393.7 (center of outlet tunnel) and 483.90 (crest of spillway). Water released down Arroyo Calero for ground-water recharge by percolation and minor irrigation. Up to 100 cfs diverted from Almaden Reservoir to Calero Reservoir at times. Record of contents furnished by Santa Clara Valley Water Conservation District.
- 11-1673.7. Guadalupe Reservoir.--Lat 37°11'57", long 121°52'42", in Los Capitancillos Grant, at center of dam on Guadalupe Creek, 3.6 miles northwest of New Almaden, Santa Clara County, and 5.0 miles southeast of Los Gatos. Drainage area, 5.94 sq mi. Records available, January 1936 to September 1964. Monthly contents prior to October 1959, published in WSP 1735. Staff gage read once daily. Datum of gage is at mean sea level (levels by Santa Clara Valley Water Conservation District). Maximum contents observed during year, 874 acre-ft Feb. 5 (elevation 565.41 ft); no contents Sept. 16-30. Maximum contents observed during period 1936-64, 3,610 acre-ft; Feb. 1, 1963 (elevation, 619.26 ft, from floodmarks); no contents for part of each year except 1941-43, 1962-63.
- Reservoir is formed by earth-fill dam completed in 1936. Capacity, 3,460 acre-ft between elevations 506.8 (invert of outlet tunnel) and 617.0 ft (crest of spillway). Water released down Guadalupe Creek for irrigation and ground-water recharge by percolation. Record of contents furnished by Santa Clara Valley Water Conservation District.
- 11-1679.5. Lake Elsmán.--Lat 37°07'51", long 121°55'47", in SE¼ sec.23, T.9 S., R.1 W., at center of Austrian Dam on Los Gatos Creek and 7.3 miles southeast of Los Gatos. Drainage area, 9.78 sq mi. Records available, February 1951 to September 1964. Monthly contents prior to October 1959, published in WSP 1735. Staff gage read once daily. Datum of gage is at mean sea level (levels by San Jose Water Works). Maximum contents observed during year, 3,980 acre-ft Nov. 8 (elevation, 1,085.9 ft); minimum observed, 494 acre-ft Dec. 21 (elevation, 1,014.6 ft). Maximum contents observed during period 1951-64, 6,640 acre-ft Jan. 31, 1963 (elevation, 1,115.1 ft); minimum observed, 169 acre-ft Dec. 29, 1956 (elevation, 996.8 ft).
- Reservoir is formed by earth-fill dam completed in 1951. Usable capacity, 6,090 acre-ft between elevations 944 (elevation of outlet gates) and 1,110 ft (crest of spillway). Dead storage, 60 acre-ft. Water released down Los Gatos Creek for domestic and industrial use. Record of contents furnished by San Jose Water Works.
- 11-1679.8. Lexington Reservoir.--Lat 37°12'06", long 121°59'17", in SE¼ sec.29, T.8 S., R.1 W., at center of dam on Los Gatos Creek and 1.7 miles south of Los Gatos. Drainage area, 37.0 sq mi. Records available, December 1952 to September 1964. Monthly contents prior to October 1959, published in WSP 1735. Staff gage read once daily. Datum of gage is at mean sea level (levels by Santa Clara Valley Water Conservation District). Maximum contents observed during year, 4,260 acre-ft Oct. 1 (elevation 588.24 ft); no contents July 13 to Sept. 30. Maximum contents observed during period 1952-64, 22,760 acre-ft Apr. 13, 1958 (elevation, 652.96); no contents for part of each year except 1963.
- Reservoir is formed by earth-fill dam completed in 1952. Capacity, 21,430 acre-ft between elevations 519 (invert at outlet tunnel) and 650 ft (crest of spillway). Dead storage, 31 acre-ft. Water released down Los Gatos Creek for irrigation and ground-water recharge by percolation. Record of contents furnished by Santa Clara Valley Water Conservation District.

Month-end contents, in acre-feet, water year October 1963 to September 1964

Date	Almaden Reservoir†	Calero Reservoir†	Guadalupe Reservoir†	Lake Elsmán††	Lexington Reservoir†
Sept. 30.....	424	3,740	531	3,700	4,260
Oct. 31.....	363	2,190	189	3,850	317
Nov. 30.....	431	1,550	201	2,150	3,590
Dec. 31.....	113	1,120	43	506	1,780
Jan. 31.....	377	2,190	848	1,790	2,070
Feb. 29.....	132	2,140	762	2,290	740
Mar. 31.....	182	1,130	540	2,670	363
Apr. 30.....	219	220	349	2,930	262
May 31.....	213	198	226	2,950	225
June 30.....	206	181	142	2,530	125
July 31.....	118	173	84	1,970	0
Aug. 31.....	66	163	44	1,620	0
Sept. 30.....	0	157	0	1,310	0

† Contents at 0800 hours on first day of following month.

†† Contents at 0800 hours on last day of month.

COYOTE CREEK BASIN

11-1698. Coyote Creek near Gilroy, Calif.

Location.--Lat 37°04'40", long 121°29'36", in NE¼SE¼ sec.11, T.10 S., R.4 E., on left bank 0.7 mile downstream from Bear Creek, 5.0 miles upstream from Coyote Creek Dam and 6.4 miles northeast of Gilroy. Prior to Nov. 14, 1963, at site 0.4 mile downstream.

Drainage area.--109 sq mi.

Records available.--October 1960 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 790 ft (from topographic map). Altitude of gage, at former site, is 780 ft (from topographic map); figure published in 1961-63 Reports is in error. Prior to Nov. 14, 1963, at site 0.4 mile downstream at different datum.

Extremes.--Maximum discharge during year, 2,290 cfs Jan. 21 (gage height, 6.80 ft), from rating curve extended above 780 cfs on basis of floodmarks and rating at former site downstream; no flow at times.

1960-64: Maximum discharge, 10,100 cfs Jan. 31, 1963 (gage height, 12.60 ft), from rating curve extended above 3,200 cfs on basis of slope-area measurement of maximum flow, site and datum then in use; no flow at times in each year.

Remarks.--Records good except those above 400 cfs, which are fair. No regulation or diversion above station.

Cooperation.--Four discharge measurements furnished by Santa Clara Valley Water Conservation District.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 9, Nov. 15 to Jan. 19)

Oct. 1 to Nov. 13

Nov. 14 to Sept. 30

4.2	0	2.4	0	2.9	9.4	4.0	127
4.3	.1	2.5	.2	3.0	15	4.5	270
4.5	.2	2.6	.8	3.3	37	5.0	530
4.6	.6	2.7	2.4	3.6	67	6.0	1,390
		2.8	5.3				

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0	6.5	2.9	18	4.6	6.5	2.2	1.0	0.3	0.1	(*)
2	.1	0	5.0	*2.6	15	6.1	6.5	2.0	*1.0	.3	.1	
3	.1	0	5.0	2.6	13	*6.1	*6.1	2.2	1.0	.3	.1	
4	.1	0	5.0	2.9	12	5.3	6.1	*2.9	1.0	.3	.1	
5	.1	*0	4.3	2.6	*12	4.6	5.3	2.6	.9	.3	.1	
6	0	.1	*4.0	2.6	11	4.6	5.0	2.6	.9	*.3	.1	
7	0	.1	4.0	3.7	10	5.0	4.6	2.9	.8	.3	.1	
8	0	0	3.7	3.7	9.4	5.0	4.3	2.6	.8	.3	.1	
9	0	0	4.3	3.4	9.0	4.3	4.3	2.2	.8	.3	.1	(*)
10	0	.5	6.1	3.1	8.6	4.3	4.0	2.0	.8	*.3	.1	
11	.4	.5	5.7	2.9	8.6	4.3	4.0	1.8	.7	.2	0	
12	.1	.5	4.3	2.9	8.2	5.0	3.7	1.8	.6	.2	0	
13	.1	.5	4.0	2.9	7.8	5.3	3.7	1.7	.6	.3	0	
14	.1	.5	3.7	3.1	7.4	5.0	3.7	1.7	.6	.3	0	
15	.1	*4.0	3.7	3.1	7.8	4.0	3.4	1.5	.6	.3	0	
16	.1	5.3	3.4	3.4	7.8	3.7	3.4	1.5	.6	.3	0	
17	.1	2.4	3.4	3.4	6.9	3.7	3.4	1.3	.5	.2	0	(*)
18	0	1.3	3.4	5.0	6.1	*3.4	3.1	1.2	.5	.2	0	
19	0	3.2	3.4	9.3	6.1	3.1	3.1	1.2	.5	.2	0	
20	0	98	3.4	103	6.1	3.1	3.1	1.0	.5	.2	0	
21	0	35	3.4	*1,000	5.7	3.7	3.1	1.0	.5	.2	0	
22	0	18	3.1	*824	5.3	6.9	2.9	1.0	.5	.2	0	
23	0	14	3.1	*246	5.3	13	2.9	1.0	.4	.1	0	
24	0	60	2.9	*136	5.0	12	2.9	1.0	.4	.1	0	
25	0	33	2.9	109	5.0	15	2.9	1.0	.4	.1	0	
26	0	19	2.9	78	*4.6	13	2.9	1.2	.4	.1	0	
27	0	12	2.9	56	4.6	10	2.6	1.2	.4	.1	0	
28	0	9.4	2.9	*41	4.6	8.6	2.6	1.2	.3	.1	0	
29	0	8.2	2.9	31	4.6	7.4	2.4	1.2	.3	.1	0	
30	0	6.9	2.9	24	-----	6.9	2.2	1.0	.3	.1	0	
31	0	-----	2.9	20	-----	6.5	-----	1.0	-----	.1	0	-----
Total	1.5	332.4	119.1	2,734.1	235.5	193.5	114.7	50.7	18.6	6.7	1.0	0
Mean	0.05	11.1	3.84	88.2	8.12	6.24	3.82	1.64	0.62	0.22	0.03	0
Max	0.4	98	6.5	1,000	18	15	6.5	2.9	1.0	0.3	0.1	0
Min	0	0	2.9	2.6	4.6	3.1	2.2	1.0	0.3	0.1	0	0
Ac-ft	3.0	659	236	5,420	467	384	228	101	37	13	2.0	0

Calendar year 1963: Max 5,490 Min 0 Mean 73.9 Ac-ft 53,500
Water year 1963-64: Max 1,000 Min 0 Mean 10.4 Ac-ft 7,550

Peak discharge (base, 90 cfs).--Nov. 20 (0700) 154 cfs (4.12 ft); Jan. 21 (0100) 2,290 cfs (6.80 ft).

* Discharge measurement or observation of no flow made on this day.

11-1700. Coyote Creek near Madrone, Calif.

Location.--Lat 37°10'06", long 121°38'55", near southeast corner of La Laguna Seca Grant, on right bank 1.2 miles downstream from Anderson Dam and 1.8 miles northeast of Madrone, Santa Clara County.

Drainage area.--196 sq mi.

Records available.--October 1902 to September 1912, December 1916 to September 1964. Records for water years 1917-19 incomplete, yearly estimates published in WSP 1315-B. Published as Coyote River near Madrone 1902-12, 1916-26.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 375 ft (from topographic map). Prior to Mar. 1, 1950, staff gages and water-stage recorders at various sites within 1.4 miles upstream at different datums.

Average discharge.--58 years, 67.5 cfs (48,870 acre-ft per year); median of yearly mean discharges, 55 cfs (39,800 acre-ft per year).

Extremes.--Maximum discharge during year, 217 cfs Mar. 25 (gage height, 2.94 ft); no flow Sept. 24.

1902-12, 1916-64; Maximum discharge, 25,000 cfs probably Mar. 7, 1911 (record furnished by Duryea, Haehl & Gilman); no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by Coyote and Anderson Lakes (see p. 335); water released during summer. Water is diverted to Main Avenue percolation ponds by Santa Clara Valley Water Conservation District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.0	0	1.6	1.6	2.2	31
1.1	.1	1.7	2.2	2.3	46
1.2	.3	1.8	3.0	2.5	93
1.3	.5	1.9	4.2	2.7	153
1.4	.8	2.0	9.1		
1.5	1.1	2.1	18		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	59	24	22	9.2	6.2	7.7	108	a113	63	1.2	*0.6
2	83	59	24	23	14	6.2	7.5	105	*113	70	1.3	.8
3	80	59	24	*30	15	*6.2	*7.2	105	113	75	1.7	.8
4	77	59	24	37	*15	6.2	7.0	*105	113	75	1.3	.7
5	83	*46	27	37	16	6.2	6.7	105	119	75	1.3	.4
6	83	23	*30	37	14	6.2	7.0	105	122	*75	1.4	.6
7	80	22	31	37	10	6.2	7.0	102	119	77	1.2	.4
8	80	22	32	37	11	7.6	8.0	102	119	75	1.4	*.7
9	83	22	32	36	11	7.6	8.8	a102	119	70	1.8	.8
10	83	23	32	36	9.1	7.6	8.8	a102	.86	72	*2.0	.7
11	85	31	32	36	9.1	7.6	8.5	a102	70	72	1.4	.7
12	80	36	32	36	9.1	8.3	8.5	a110	67	72	1.1	.7
13	75	36	32	36	9.1	19	8.5	a116	67	72	1.1	.7
14	75	36	32	37	9.1	32	8.5	a116	67	72	1.4	.7
15	67	36	32	37	9.1	34	8.5	a114	70	72	1.0	1.1
16	65	36	22	37	9.1	53	8.8	a113	61	102	.9	.8
17	61	36	9.9	37	9.1	7.5	9.3	a113	54	119	1.3	.7
18	59	36	9.1	37	8.3	8.0	11.3	11.3	54	125	2.5	.7
19	59	32	8.3	37	8.3	8.1	11.9	11.3	54	125	1.3	.4
20	59	26	7.6	22	8.3	8.1	11.9	11.3	54	122	1.0	.3
21	59	27	7.6	9.1	7.0	8.1	11.3	a113	54	122	.8	.1
22	59	27	7.6	7.2	6.2	8.1	8.4	a113	52	125	.8	.3
23	59	26	7.6	4.6	6.8	8.0	4.4	a112	54	125	.3	.1
24	61	26	7.6	4.4	6.8	8.0	7.9	a110	56	131	.2	0
25	61	26	7.6	4.4	6.8	7.7	10.8	a110	54	70	.1	.1
26	61	24	7.6	4.4	6.2	7.0	11.0	11.0	56	2.0	.2	.3
27	61	24	7.6	4.4	6.2	7.7	10.8	11.0	56	1.6	.2	.3
28	61	24	7.6	4.4	6.2	7.7	11.0	11.0	54	1.7	.4	.6
29	59	24	7.6	4.4	6.2	7.7	11.0	a112	54	1.7	.6	.6
30	59	24	7.6	4.4	-----	7.7	10.8	a112	54	1.6	.5	1.0
31	59	-----	14	4.4	-----	7.7	-----	a113	-----	1.7	.9	-----
Total	2,156	987	586.9	740.1	271.3	1,391.1	2,688	3,389	2,298	2,263.3	32.6	16.7
Mean	69.5	32.9	18.9	23.9	9.36	44.9	89.6	109	76.6	73.0	1.05	0.56
Max	85	59	32	37	16	81	11.9	11.6	122	131	2.5	1.1
Min	59	22	7.6	4.4	6.2	6.2	4.4	10.2	52	1.6	0.1	0
Ac-ft	4,280	1,960	1,160	1,470	538	2,760	5,330	6,720	4,560	4,490	65	33
(†)	148	368	350	248	142	386	382	402	364	108	0	0
Calendar year 1963:	Max 164	Min 0.5	Mean 51.9	Ac-ft 37,590	† 2,360							
Water year 1963-64:	Max 131	Min 0	Mean 46.0	Ac-ft 33,370	† 2,900							

* Discharge measurement made on this day.

† Diversion, in acre-feet, to Main Avenue percolation ponds, furnished by Santa Clara Valley Water Conservation District.

a No gage-height record.

COYOTE CREEK BASIN

11-1721. Upper Penitencia Creek at San Jose, Calif..

Location.--Lat 37°23'43", long 121°49'38", on north boundary of San Jose Pala Grant, on left bank at downstream side of county road bridge, 0.1 mile upstream from Dutard Creek, near northeast limits of San Jose, Santa Clara County.

Drainage area.--21.5 sq mi.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder and, since Sept. 12, 1963, concrete control. Altitude of gage is 270 ft (from topographic map). Prior to Aug. 3, 1962, at site 0.4 mile downstream at different datum.

Extremes.--Maximum discharge during year, 86 cfs Jan. 21 (gage height, 4.00 ft); no flow for several days in August and September. 1961-64: Maximum discharge, 295 cfs Mar. 28, 1963 (gage height, 3.53 ft); maximum gage height, 4.00 ft Jan. 21, 1964; no flow at times in each year. Maximum stage known since at least 1935, 5.37 ft Apr. 2, 1958, site and datum then in use, from information furnished by Santa Clara Valley Water Conservation District.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Flow partly regulated by Cherry Flat Reservoir (capacity, 500 acre-ft).

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*0.1	0.3	0.6	0.2	2.9	0.7	1.8	0.5	0.2	0.2	0.1	0.2
2	.1	.4	.5	.2	2.1	.9	1.5	.5	.2	.1	.1	*.1
3	.1	.4	.5	*.3	1.6	1.0	1.0	.6	*.1	.1	.1	.1
4	.1	.4	.5	.3	1.5	*.6	.7	.7	.9	.2	.1	0
5	.1	1.1	*.4	.3	1.4	.6	.7	*.7	.8	.2	.1	.1
6	.1	.7	.4	.3	*1.4	.9	.7	.6	.3	*.2	.1	.1
7	.1	*.3	.4	.3	1.3	1.0	.6	.6	.2	.1	.1	.1
8	.1	.3	.4	.3	1.2	1.0	.6	.5	.4	.2	.1	.1
9	.1	.2	.5	.3	1.0	1.0	.5	.5	.4	.1	.1	0
10	.3	.2	.6	.3	1.0	1.2	.5	.4	.3	.1	*.1	.1
11	1.4	.2	.4	.3	1.0	1.0	.6	.4	.3	.1	.1	.1
12	.1	.2	.4	.3	1.0	1.3	.5	.3	.3	.1	.1	.1
13	.1	.2	.4	.3	.9	1.8	.5	.3	.3	.1	.1	.1
14	.1	1.0	.4	.3	.9	1.0	.5	.3	.3	.1	.1	.4
15	.3	2.0	.4	.3	1.0	1.0	.5	.3	.3	.1	.1	0
16	.2	1.0	.3	.3	1.0	1.0	.5	.3	.2	.1	.1	0
17	.1	.5	.3	.3	.9	.8	.5	.4	.2	.1	.1	0
18	.2	.3	.3	.5	.8	.6	.5	.3	.2	.1	.1	.1
19	.3	1.0	.3	.9	.8	1.6	.5	.3	.2	.1	0	0
20	.3	4.0	.3	6.6	.8	1.6	.5	.3	.1	.1	0	.1
21	.3	2.0	.3	4.4	.9	1.0	.5	.3	.1	.1	.1	0
22	.3	1.5	.3	*5.7	.8	2.2	.5	.3	.1	.1	0	0
23	.4	1.0	.3	2.7	.7	3.8	.5	.3	.1	.1	.1	0
24	.3	3.0	.3	*1.9	.7	4.5	.6	.2	.6	.1	.1	0
25	.3	2.0	.3	1.9	.7	3.8	.5	.2	.3	.1	.1	0
26	.3	1.5	.3	1.4	.7	1.8	.5	.2	.3	.1	.1	0
27	.3	1.0	.3	1.0	.6	1.4	.5	.1	.2	.1	.1	.1
28	.3	.8	.3	*7.7	.7	1.4	.4	.1	.2	.1	.1	.1
29	.3	.7	.3	5.6	.7	1.0	.4	.2	.2	.1	.1	.1
30	.3	.6	.2	4.3	-----	1.0	.5	.2	.1	.1	.1	.1
31	.3	-----	.2	3.5	-----	*1.0	-----	.3	-----	.1	.2	-----
Total	7.7	28.8	11.4	224.0	31.0	43.5	18.6	11.2	8.4	3.6	2.9	2.2
Mean	0.25	0.96	0.37	7.23	1.07	1.40	0.62	0.36	0.28	0.12	0.09	0.07
Max	1.4	4.0	0.6	5.7	2.9	4.5	1.8	0.7	0.9	0.2	0.2	0.4
Min	0.1	0.2	0.2	0.2	0.6	0.6	0.4	0.1	0.1	0.1	0	0
Ac-ft	15	57	23	444	61	86	37	22	17	7.1	5.8	4.4

Calendar year 1963: Max 123 Min 0 Mean 3.83 Ac-ft 2,770

Water year 1963-64: Max 57 Min 0 Mean 1.07 Ac-ft 779

Peak discharge (base, 30 cfs).--Jan. 21 (1900) 86 cfs (4.00 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 8 to Dec. 18, Jan. 12-15, July 10 to Aug. 9.

Reservoirs in Coyote Creek basin, Calif.

11-1698.5, Coyote Lake,--Lat 37°07'06", long 121°32'55", in SE¼ sec.29, T.9 S., R.4 E., at center of dam on Coyote Creek, 3.8 miles northeast of San Martin. Drainage area, 120 sq mi. Records available, February 1936 to September 1964. Monthly contents prior to October 1959, published in WSP 1735. Staff gage read once daily. Datum of gage is at mean sea level (levels by Santa Clara Valley Water Conservation District). Maximum contents observed during year, 6,220 acre-ft Mar. 24 (elevation, 739.18 ft); no contents Oct. 1 to Dec. 15, Apr. 7 to May 5, July 14 to Sept. 30. Maximum contents observed during period 1936-64, 28,120 acre-ft Dec. 8, 1950 (elevation, 782.5 ft); no contents at times.

Reservoir is formed by rock- and earth-fill dam completed in 1936. Capacity, 24,510 acre-ft between elevations 693.3 (invert of outlet tunnel) and 777 ft (crest of spillway). Water released down Coyote Creek for storage in Anderson Lake. Record of contents furnished by Santa Clara Valley Water Conservation District.

11-1699.2, Anderson Lake,--Lat 37°09'56", long 121°37'42", in southeast corner of La Laguna Seca Grant, at center of dam on Coyote Creek, 2.5 miles northeast of Madrone, Santa Clara County. Drainage area, 195 sq mi (revised). Records available, December 1950 to September 1964. Monthly contents prior to October 1959, published in WSP 1735. Staff gage read once daily. Datum of gage is at mean sea level (levels by Santa Clara Valley Water Conservation District). Maximum contents observed during year, 28,170 acre-ft Oct. 1 (elevation, 552.70 ft); minimum observed, 841 acre-ft Sept. 30 (elevation, 457.76 ft). Maximum contents during period 1950-64, 95,990 acre-ft Apr. 3, 1958 (elevation, 628.67 ft, from floodmarks); no contents at times in 1960-62.

Reservoir is formed by earth- and rock-fill dam completed in 1950. Capacity, 91,310 acre-ft between elevations 439 (invert of outlet tunnel) and 625 ft (crest of spillway). Water released down Coyote Creek for irrigation and ground-water recharge by percolation. Record of contents furnished by Santa Clara Valley Water Conservation District.

Month-end contents, in acre-feet, water year October 1963 to September 1964

Date	Coyote Lake†	Anderson Lake†
Sept. 30.....	0	28,170
Oct. 31.....	0	24,480
Nov. 30.....	0	23,140
Dec. 31.....	228	21,840
Jan. 31.....	5,500	21,680
Feb. 29.....	5,960	21,070
Mar. 31.....	2,830	21,280
Apr. 30.....	0	18,230
May 31.....	225	10,840
June 30.....	317	5,570
July 31.....	0	1,070
Aug. 31.....	0	953
Sept. 30.....	0	841

† Contents at 0800 hours on first day of following month.

11-1740. San Antonio Creek near Sunol, Calif.

Location.--Lat 37°34'39", long 121°51'24", in Valle de San Jose Grant, on right bank 0.4 mile upstream from Calaveras Road Bridge, 0.85 mile above mouth, and 2 miles southeast of Sunol, Alameda County.

Drainage area.--37.0 sq mi.

Records available.--January 1912 to September 1930, February 1960 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder and concrete control. Datum of gage is 271.56 ft above mean sea level (levels by city of San Francisco). Prior to Feb. 8, 1960, at site 0.6 mile upstream at different datum.

Average discharge.--22 years, 9.99 cfs (7,230 acre-ft per year); median of yearly mean discharge, 7.6 cfs (5,500 acre-ft per year).

Extremes.--Maximum discharge during year, 207 cfs Jan. 22 (gage height, 4.42 ft); no flow Aug. 31.

1912-30, 1960-64: Maximum daily discharge, 1,460 cfs Jan. 3, 1916; no flow for part of most years.

Flood of Dec. 23, 1955, discharge 5,810 cfs (by slope-area measurement of maximum flow).

Remarks.--Records good. Regulation due to construction of Turner Dam 0.5 mile upstream. No diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.5	0	3.0	2.0	3.6	32
2.6	.1	3.1	3.4	3.8	56
2.7	.2	3.2	6.0	4.0	92
2.8	.6	3.3	10	4.2	142
2.9	1.1	3.4	16	4.5	234

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*0.2	0.4	1.2	0.7	11	2.1	2.2	2.8	0.7	0.4	0.2	0.2
2	.2	.4	2.4	.7	9.2	2.1	2.2	2.7	.7	.4	.2	.2
3	.2	.4	2.2	.7	8.8	1.7	2.4	2.4	.6	.4	.2	.2
4	.2	*.4	1.5	.7	7.2	1.8	2.1	1.6	.5	.4	.2	.1
5	.3	1.3	1.6	.6	5.2	1.9	2.2	1.2	.3	.4	.2	.1
6	.2	.9	1.8	.6	3.7	2.8	2.2	1.2	.3	.4	.2	.1
7	.2	.5	1.6	.7	3.9	1.3	2.1	1.0	.2	.4	.2	.1
8	.3	.4	1.2	.9	3.9	.2	2.2	1.0	*.3	.4	.2	.2
9	.3	4.0	1.1	.9	3.4	.1	2.2	1.1	.6	.4	.1	.2
10	.3	1.4	1.7	.7	4.4	.1	2.2	1.3	.3	.4	.2	.2
11	.8	1.0	1.9	.6	4.2	.2	2.1	1.0	.3	.4	.1	.2
12	.4	.9	2.0	.6	*2.7	.2	2.1	1.0	.3	.4	.1	.1
13	.4	.8	1.9	*.9	2.8	.2	2.1	*.9	.3	*.3	*.1	.1
14	.4	1.5	1.9	1.3	3.5	.2	*1.9	1.0	.3	.4	.1	.1
15	.5	1.2	1.1	.7	2.1	.2	1.9	1.0	.3	.4	.1	.1
16	.5	.9	1.0	.8	1.7	.3	1.9	1.0	.4	.4	.1	.1
17	.5	.8	.8	2.3	2.9	*.3	2.2	1.0	.4	.4	.1	*.1
18	.5	.8	*.7	1.7	3.4	.4	2.2	1.1	.3	.4	.1	.1
19	.4	5.6	.8	1.0	3.0	.4	2.5	1.0	.3	.4	.1	.1
20	.5	*3.2	1.8	9.5	3.1	.5	2.2	1.1	.3	.4	.1	.2
21	.4	1.4	1.2	.63	2.0	.6	2.0	1.1	.3	.3	.1	.3
22	.4	1.3	1.0	172	1.4	1.3	2.0	1.1	.3	.3	.1	.1
23	.5	3.5	.9	53	1.4	1.2	1.8	.8	.3	.3	.1	.1
24	.4	9.3	.9	33	1.6	1.7	1.6	.8	.3	.3	.1	.1
25	.5	4.7	.8	38	1.7	2.2	1.1	.8	.3	.3	.1	.2
26	.5	2.4	.8	35	2.2	2.7	1.1	.9	.4	.3	.2	.2
27	.4	1.9	.8	33	2.4	3.0	1.2	.8	.3	.3	.1	.1
28	.4	1.4	.8	31	2.4	3.0	1.3	.7	.3	.3	.1	.1
29	.4	1.2	.8	28	2.2	2.8	1.3	.7	.4	.3	.1	.1
30	.4	1.5	.8	22	-----	2.7	2.4	.5	.4	.3	.1	.1
31	.4	-----	.7	14	-----	2.8	-----	.5	-----	.3	0	-----
TOTAL	12.0	55.4	39.7	548.6	107.4	41.0	58.9	35.1	11.0	11.2	4.0	4.2
MEAN	0.39	1.85	1.28	17.7	3.70	1.32	1.96	1.13	0.37	0.36	0.13	0.14
MAX	0.8	9.3	2.4	172	11	3.0	2.5	2.8	0.7	0.4	0.2	0.3
MIN	0.2	0.4	0.7	0.6	1.4	0.1	1.1	0.5	0.2	0.3	0	0.1
AC-FT	24	110	79	1,090	213	81	117	70	22	22	7.9	8.3

CALENDAR YEAR 1963 MAX 390 MIN 0 MEAN 10.0 AC-FT 7,260
 WATER YEAR 1963-64 MAX 172 MIN 0 MEAN 2.54 AC-FT 1,840

* Discharge measurement made on this day.

11-1760. Arroyo Mocho near Livermore, Calif.

Location--Lat 37°37'24", long 121°42'13", NW¼SE¼ sec.36, T.3 S., R.2 E., on right bank 100 ft downstream from Mines Road bridge, 2.4 miles upstream from unnamed tributary, and 5.2 miles southeast of Livermore.

Drainage area--38.2 sq mi.

Records available--January 1912 to September 1930, October 1963 to September 1964. Records for water year 1914 incomplete, yearly estimate and monthly discharge only for some months, published in WSP 1315-B.

Gage--Water-stage recorder, and since Aug. 5, 1964, concrete control. Altitude of gage is 750 ft (from topographic map); January 1912 to October 1914, at present site at different datum. November 1914 to September 30, 1930, at site 1 mile upstream at different datum.

Average discharge--19 years, 4.10 cfs (2,970 acre-ft per year); median of yearly mean discharges, 2.3 cfs (1,700 acre-ft per year).

Extremes--Maximum discharge during year 33 cfs Jan. 21 (gage height, 2.59 ft); no flow for many days.

1912-30, 1963-64: Maximum daily discharge, 1,000 cfs Jan. 25, 1914 (estimated); no flow for parts of most year.

Flood of Dec. 23, 1955, discharge 1,880 cfs (by slope-area measurement of maximum flow).

Remarks--Records good except those for period of no gage-height record, which are poor. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1				0.3	1.3	0.7	0.6	0.3	0.1	0.1		
2				.3	1.3	.7	.5	.3	.1	.1		
3				.3	*1.1	.7	.5	.3	.1	.1		
4				.3	1.0	.7	.5	.3	.1	.1	(*)	
5				.3	1.0	.7	.5	.3	.1	.2		
6				.3	1.0	.7	.5	.3	.1	.2		
7				.3	1.0	.8	.5	.3	.1	.2		
8				.3	.8	1.0	.5	.3	.1	.2		
9				.3	.8	1.0	.4	.3	*.1	.1		
10				.3	.8	.8	.4	.3	.1	.1		
11				.3	.8	.7	.3	.3	.1	.1		
12				.3	.8	.8	.3	.3	.1	.1		
13				.3	.8	.8	.3	.3	.1	.1	(*)	
14				.3	*.7	.8	.3	.3	.1	.1	(*)	
15				*.3	.7	.7	.3	.3	.1	.1		(*)
16				.3	.7	.6	*.3	.3	.2	*.1		
17				.4	.8	.6	.3	.2	.1	.1		
18				.5	.7	*.6	.3	*.2	.2	.1		
19				.6	.7	.6	.3	.2	.2	.1		
20				3.4	.7	.6	.3	.1	.3	.1		
21				*20	.7	.7	.3	.1	.3	.1		
22				22	.7	.8	.3	.1	.3	.1		
23				9.8	.6	1.5	.3	.1	.3	0		
24				9.1	.6	1.5	.3	.1	.2	0		
25				10	.6	1.1	.3	.1	.2	0		
26				7.7	.6	.8	.3	.1	.2	0	(*)	
27				5.6	.6	.7	.3	.1	.2	0		
28				*3.7	.6	.7	.3	.1	.2	0		
29				2.5	.6	.6	.3	.1	.2	0		
30				2.0	-----	.6	.3	.1	.2	0		
31		-----		1.7	-----	.6	-----	.1	-----	0		-----
TOTAL	-	-	-	103.8	23.1	24.2	10.9	6.6	4.9	2.6	0	0
MEAN	0	0.50	0.32	3.35	0.80	0.78	0.36	0.21	0.16	0.08	0	0
MAX	-	-	-	22	1.3	1.5	0.6	0.3	0.3	0.2	0	0
MIN	-	-	-	0.3	0.6	0.6	0.3	0.1	0.1	0	0	0
AC-FT	0	30	20	206	46	48	22	13	9.7	5.2	0	0

Calendar year 1963: Max - Min - Mean - Ac-ft -
 Water year 1963-64: Max 22 Min 0 Mean 0.55 Ac-ft 400

Peak discharge (base, 30 cfs)--Jan. 21 (0430) 33 cfs (2.59 ft).

* Discharge measurement or observation of no flow made on this day.

Note--No gage-height record Oct. 1 to Jan. 8.

ALAMEDA CREEK BASIN

11-1762. Arroyo Mocho near Pleasanton, Calif.

Location.--Lat 37°41'19", long 121°52'41", in Santa Rita Grant, on left bank 320 ft downstream from Santa Rita Road, 0.7 mile upstream from Tassajara Creek, and 1.8 miles north of Pleasanton, Alameda County.

Drainage area.--143 sq mi.

Records available.--September 1962 to September 1964.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 328.55 ft above mean sea level (levels by Alameda County Flood Control and Water Conservation District).

Extremes.--Maximum discharge during year, about 150 cfs Jan. 21 (gage height, 3.07 ft, backwater from road crossing), from rating curve extended above 49 cfs as explained below; no flow for many days.

1962-64: Maximum discharge, 1,760 cfs Feb. 1, 1963 (gage height 8.60 ft), from rating curve extended above 49 cfs on basis of slope-area measurement of maximum flow; no flow for many days in each year.

Remarks.--Records good except those above 75 cfs, which are fair. Natural flow of stream affected by imported water from Delta-Mendota Canal by way of Arroyo Las Positas and South Bay Aqueduct. During periods of high flows, no water imported.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1962-63, superseding figures published in 1963 Report, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1962		1962-Con.		1962-Con.		1962-Con.		1962-Con.	
Sept. 1	26	Sept. 12	15	Sept. 23	38	Oct. 3	12	Oct. 13	137
2	41	13	14	24	25	4	12	14	53
3	41	14	13	25	46	5	12	15	50
4	31	15	25	26	13	6	23	16	.1
5	.4	16	39	27	12	7	36	17	0
6	13	17	27	28	12	8	26	18	0
7	14	18	.1	29	23	9	.1	19	10
8	24	19	13	30	36	10	13	20	24
9	39	20	14	Oct. 1	26	11	14	21	38
10	29	21	13	2	13	12	13	22	25
11	.5	22	25						

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
September 1962.....	662.0	46	0.1	22.1	1,310
October.....	860.1	137	0	27.7	1,710

Revised peak discharge.--1962-63: Oct. 13 (2000) 230 cfs (3.21 ft).

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.05	0	1.6	9.5
1.1	.1	1.7	14
1.2	.6	1.8	21
1.3	1.6	2.0	38
1.4	3.3	2.5	98
1.5	5.9		

11-1762, Arroyo Mocho near Pleasanton, Calif.--Continued.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*40	22	13	0	0.7	27	1.4	0.1	47	41	43	41
2	36	1.2	13	15	1.8	27	5.4	0	48	43	43	44
3	31	0	6.4	39	0	27	13	0	*48	39	43	28
4	27	0	.3	40	0	29	14	0	48	41	42	33
5	27	*0	7.1	39	1.1	28	12	23	41	41	41	40
6	24	2.7	14	39	1.6	29	11	41	47	39	40	44
7	27	0	14	40	1.6	31	9.5	40	47	38	33	38
8	28	0	13	40	2.6	31	26	42	43	40	.6	43
9	28	0	13	42	2.8	28	27	44	39	39	.1	43
10	27	0	13	16	2.0	27	27	45	45	29	0	39
11	28	0	13	43	1.6	28	27	42	46	38	0	43
12	27	0	13	41	3.6	31	27	29	38	39	0	41
13	27	.4	13	41	*13	27	25	47	45	*39	0	45
14	27	.7	13	25	13	13	8.4	46	44	39	.1	40
15	22	.2	13	.7	15	12	12	45	44	38	26	*44
16	25	0	7.8	*.3	13	12	10	47	45	41	30	40
17	18	0	.4	.3	11	11	*13	48	45	*38	25	42
18	26	0	.1	.3	14	13	13	47	43	40	36	37
19	27	18	*.1	0	13	15	6.4	46	49	41	39	45
20	27	20	*.2	4.3	13	13	.1	*48	45	38	*39	40
21	27	12	0	c75	13	17	0	43	48	39	35	45
22	18	16	0	43	13	15	0	35	42	34	37	31
23	17	18	0	6.2	12	18	0	49	38	1.0	40	27
24	27	19	0	1.1	10	*17	.3	48	36	34	40	31
25	27	12	0	.1	15	4.7	.8	42	39	38	39	26
26	27	13	0	0	18	2.1	1.2	47	39	40	40	32
27	27	13	0	0	24	2.4	2.2	48	41	38	40	30
28	28	14	0	0	27	2.7	.2	42	42	37	40	26
29	28	*13	0	.1	27	.7	0	33	40	37	39	31
30	28	13	0	.3	-----	.4	0	47	40	38	41	30
31	28	-----	0	1.9	-----	1.3	-----	47	-----	39	43	-----
TOTAL	831	208.2	180.4	593.6	283.4	540.3	292.9	1,161.1	1,302	1,156.0	914.8	1,119
MEAN	26.8	6.94	5.82	19.1	9.77	17.4	9.76	37.5	43.4	37.3	29.5	37.3
AC-FT	1,650	413	358	1,180	562	1,070	581	2,300	2,580	2,290	1,810	2,220
MAX	40	22	14	75	27	31	27	49	49	43	43	45
MIN	17	0	0	0	0	0.4	0	0	36	1.0	0	26

CALENDAR YEAR 1963: MAX 926 MIN 0 MEAN 19.2 AC-FT 13,940
 WATER YEAR 1963-64: MAX 75 MIN 0 MEAN 23.4 AC-FT 17,010

Peak discharge (base, 100 cfs).--Jan. 21 (0100) about 150 cfs (3.07 ft).

* Discharge measurement or observation of no flow made on this day.
 c Backwater from road crossing.

ALAMEDA CREEK BASIN

11-1764. Arroyo Valle above Lang Canyon, near Livermore, Calif.

Location.--Lat 37°33'00", long 121°39'57", in SE¼ sec.29, T.4 N., R.3 E., on left bank 700 ft upstream from unnamed tributary, 1,200 ft upstream from Lang Canyon, and 10.5 miles southeast of Livermore.

Drainage area.--126 sq mi.

Records available.--October 1963 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 800 ft (from topographic map).

Extremes.--Maximum discharge during year, 256 cfs Jan. 21 (gage height, 3.73 ft); no flow Oct. 1-21, June 28 to Sept. 30.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.68	0.	2.4	14
1.9	.2	2.5	22
2.0	.6	2.7	45
2.1	1.5	3.0	93
2.2	4.1	3.5	198
2.3	8.2		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	A0	0.1	1.9	1.4	16	3.4	7.0	1.5	0.6			
2	A0	.1	1.7	1.4	13	4.1	6.6	1.5	.6			
3	A0	.1	1.7	1.4	*12	3.8	4.9	2.4	.5			
4	A0	.1	1.5	1.4	9.9	3.1	3.8	2.6	.5			
5	A0	*1.3	1.5	1.4	8.2	2.9	3.8	2.4	.4			
6	A0	3.8	1.5	1.4	7.4	3.4	3.4	2.1	.4			
7	A0	3.4	1.4	1.4	7.0	4.1	3.1	2.1	.4			
8	A0	1.9	1.4	1.5	6.2	3.4	2.9	1.9	.8			
9	A0	1.5	1.9	1.5	5.7	3.1	2.9	1.5	*2.9			
10	A0	1.4	1.9	1.5	5.3	3.1	2.6	1.4	1.7			
11	A0	1.3	1.7	1.5	5.3	2.9	2.6	1.3	1.2			
12	A0	1.2	1.5	1.5	4.5	4.1	2.4	1.2	.9			
13	A0	1.1	1.4	1.5	4.1	4.1	2.1	1.2	.6			
14	*0	1.2	1.4	*1.7	*4.1	3.8	1.9	1.1	.5		(*)	
15	0	1.5	1.4	1.7	4.9	3.1	1.9	1.0	.4			(*)
16	0	1.5	1.4	1.7	4.9	2.9	*1.9	1.1	.4	(*)		
17	0	1.5	1.4	1.7	4.1	2.6	1.9	1.1	.3			
18	0	1.3	1.4	3.1	3.8	*2.4	1.9	*1.3	.3			
19	0	2.7	1.4	4.9	3.4	2.1	1.9	1.2	.3			
20	0	9.4	*1.4	30	3.4	2.1	1.9	1.1	.2			
21	*0	*5.3	1.4	*161	3.1	2.6	1.9	1.0	.2			
22	.1	2.4	1.4	181	3.1	7.4	1.7	.8	.2			
23	.1	7.1	1.4	*143	3.1	11	1.9	.8	.2			
24	.1	15	1.3	99	2.9	11	2.4	.8	.1			
25	.1	6.2	1.3	101	2.9	12	2.1	.7	.1			
26	.1	3.8	1.3	82	2.9	12	2.1	.7	.1			
27	.1	3.1	1.4	*62	2.9	12	1.9	.7	.1			
28	.1	2.4	1.4	44	2.9	9.9	1.7	.7	0			
29	.1	2.1	1.4	34	3.1	7.4	1.5	.7	0			
30	.1	1.9	1.4	27	-----	5.7	1.5	.7	0			
31	.1	-----	1.4	20	-----	5.7	-----	.6	-----			-----
TOTAL	1.0	85.7	45.9	1,017.6	160.1	161.2	80.1	39.2	14.9	0	0	0
MEAN	0.03	2.86	1.48	32.8	5.52	5.20	2.67	1.26	0.50	0	0	0
MAX	0.1	15	1.9	181	16	12	7.0	2.6	2.9	0	0	0
MIN	0	0.1	1.3	1.4	2.9	2.1	1.5	0.6	0	0	0	0
AC-FT	2.0	170	91	2,020	318	320	159	78	30	0	0	0

CALENDAR YEAR 1963: MAX - MIN - MEAN - AC-FT -
 WATER YEAR 1963-64: MAX 181 MIN 0 MEAN 4.39 AC-FT 3,190

* Discharge measurement or observation of no flow made on this day.

A No gage-height record.

11-1765. Arroyo Valle near Livermore, Calif.

Location.--Lat 37°37'24", long 121°45'28", in Valle de San Jose Grant, on right bank 900 ft downstream from highway bridge, 1.1 miles upstream from Dry Creek, 4.1 miles south of Livermore, Alameda County, and 6.9 miles southeast of Pleasanton.

Drainage area.--147 sq mi.

Records available.--January 1912 to September 1930, October 1957 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B. Published as Arroyo del Valle near Livermore, 1912-29.

Gage.--Water-stage recorder with thermograph attachment and concrete control. Altitude of gage is 500 ft (from topographic map). Prior to November 1914, at site 900 ft upstream at different datum. Nov. 1, 1914, to Sept. 30, 1930, at site 300 ft upstream at different datum.

Average discharge.--25 years, 30.0 cfs (21,720 acre-ft per year); median of yearly mean discharges, 21 cfs (15,200 acre-ft per year).

Extremes.--Maximum discharge during year, 288 cfs Jan. 21 (gage height, 3.74 ft); no flow Nov. 1-4, Aug. 5 to Sept. 30.

1912-30, 1957-64: Maximum discharge, 12,200 cfs Apr. 2, 1958 (gage height, 10.91 ft); no flow at times in each year.

Flood of Dec. 23, 1955, reached a stage of 13.93 ft, from floodmarks (discharge, 18,200 cfs on basis of contracted-opening and slope-area measurement of maximum flow).

Remarks.--Records good except those for period of indefinite stage-discharge relation, which are fair. No regulation or diversion above station.

Rating table, except period of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)

2.0	0	2.4	8.2	3.3	137
2.1	.3	2.6	21	3.6	230
2.2	1.6	2.8	41	4.0	420
2.3	4.2	3.0	71		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		e0	0.2	0.9	2.0	3.8	5.4	1.1	0.8	0.7	0.1	
2		0	.2	.9	1.8	4.6	5.8	1.1	.6	.6	.1	
3		0	.2	.9	1.5	4.2	5.4	1.1	.9	.6	.1	
4		0	.2	1.1	1.3	3.8	3.8	1.1	.7	.6	.1	
5		*.1	.2	1.1	1.1	3.5	3.8	.8	.7	.5	0	
6		.3	.2	1.1	8.8	3.5	3.8	.7	.6	.5	0	
7		.2	.2	1.1	7.8	3.8	2.7	.7	.8	.5	0	
8		.2	.2	1.2	7.0	4.2	2.4	.7	.7	.5	0	
9		.2	.2	1.2	6.2	3.8	2.0	.4	*.7	.4	0	
10		.2	.2	1.2	5.8	3.5	2.0	.8	.6	.5	0	
11		.2	.2	1.2	5.8	3.5	1.8	.8	.6	.5	0	
12		.2	.2	1.4	5.4	4.2	1.8	.7	.5	.4	0	
13		.2	.2	1.2	5.0	4.2	1.6	.9	.5	.4	0	
14		.2	.2	*1.4	*5.0	4.2	1.6	.9	.6	.4	*0	
15	e0.1	.4	.2	1.4	5.4	3.8	1.6	.9	.7	.3	0	(*)
16		.3	.2	1.4	5.4	3.5	*1.6	.9	.7	*.4	0	
17		.3	.2	1.4	5.0	3.5	1.4	.9	.6	.4	0	
18		.3	.1	1.8	4.6	*3.5	1.8	*.9	.5	.4	0	
19		.6	.1	1.8	4.2	2.9	1.6	.9	.5	.4	0	
20		.6	*.1	2.6	3.8	2.9	1.4	1.2	.5	.4	0	
21		*.3	.1	181	3.8	2.9	1.2	.9	.5	.4	0	
22		.2	.2	233	3.5	3.5	1.2	3.5	.4	.3	0	
23		.4	.4	196	3.5	6.6	1.2	.9	.4	.3	0	
24		.4	.7	122	3.5	8.2	2.0	.9	.3	.2	0	
25		.3	.8	127	3.2	8.2	1.4	.6	.3	.2	0	
26		.3	.8	105	3.2	8.8	1.1	.6	.3	.2	0	
27		.2	.9	82	2.9	9.9	1.2	.7	.4	.2	0	
28		.2	1.1	58	2.9	9.4	1.2	.7	.5	.2	0	
29		.2	1.1	44	2.9	7.8	1.1	.8	.6	.1	0	
30		.2	1.1	33	-----	6.6	1.1	.7	.6	.1	0	
31		-----	.9	26	-----	5.8	-----	.9	-----	.2	0	-----
Total	3.1	7.2	11.8	1,233.3	191.6	152.6	66.0	28.7	17.1	11.8	0.4	0
Mean	0.1	0.24	0.38	39.8	6.61	4.92	2.20	0.93	0.57	0.38	0.01	0
Max	-	0.6	1.1	233	20	9.9	5.8	3.5	0.9	0.7	0.1	0
Min	-	0	0.1	0.9	2.9	2.9	1.1	0.4	0.3	0.1	0	0
Ac-ft	6.1	1.4	2.3	2,450	380	303	131	57	34	23	0.8	0
Calendar year 1963:	Max	3,560	Min	0	Mean	35.1	Ac-ft	25,440				
Water year 1963-64:	Max	233	Min	0	Mean	4.71	Ac-ft	3,420				

Peak discharge (base, 200 cfs), Jan. 21 (0600) 288 cfs (3.74 ft).

* Discharge measurement or observation of no flow made on this day.
e Stage-discharge relation indefinite.

11-1765. Arroyo Valle near Livermore, Calif.--Continued.

Records available.--Water temperatures: October 1963 to September 1964.

Extremes.--Maximum temperature recorded during year, 86°F July 28; minimum, 42°F Dec. 11, 12.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	78	61	-	-	53	48	51	46	52	48	52	48	59	55	66	58	73	62	76	64	78	64		
2	72	63	-	-	51	48	52	48	51	47	55	48	61	52	67	56	74	60	76	62	78	63		
3	74	62	-	-	52	48	52	46	52	47	57	48	63	53	66	58	74	60	76	62	78	64		
4	66	62	-	-	50	46	52	47	52	47	59	49	63	54	64	57	72	62	74	63	81	64		
5	67	63	57	56	48	47	52	45	52	47	56	51	63	55	60	57	76	64	79	63	-	-		
6	73	61	58	56	49	47	50	47	51	46	54	50	63	54	66	55	70	64	80	63	-	-		
7	74	62	58	54	50	46	52	50	51	45	56	48	66	56	69	55	74	62	79	65	-	-		
8	68	62	60	56	50	45	52	47	51	45	57	47	68	56	72	56	63	59	78	63	-	-		
9	68	61	63	57	52	49	51	45	51	45	56	51	66	57	75	58	64	60	79	60	-	-		
10	67	60	63	57	50	44	51	46	51	46	59	50	69	57	76	60	66	60	84	63	-	-		
11	66	62	61	54	48	42	49	44	50	46	55	51	68	57	79	62	75	58	83	68	-	-		
12	67	59	59	56	48	42	49	44	50	48	57	52	70	57	76	62	76	61	84	67	-	-		
13	69	57	60	58	47	43	49	44	50	45	58	52	72	58	74	61	78	62	84	68	-	-		
14	67	59	62	55	47	44	53	47	54	45	61	50	74	60	74	60	77	64	80	67	-	-		
15	63	59	61	56	47	44	53	46	54	50	63	53	76	61	74	59	66	62	80	68	-	-		
16	62	60	57	51	46	44	52	47	54	48	64	52	72	60	70	60	66	58	84	65	-	-		
17	66	57	56	51	48	44	53	51	54	47	65	52	68	57	73	62	74	60	82	66	-	-		
18	67	57	55	49	46	43	52	51	55	48	64	53	66	55	74	60	74	59	80	65	-	-		
19	65	60	54	51	47	44	54	51	56	49	64	52	68	57	74	61	77	59	80	64	-	-		
20	63	60	54	53	51	47	55	51	56	49	63	53	68	58	76	64	74	60	78	66	-	-		
21	66	56	55	48	50	48	51	46	56	48	57	52	69	57	72	62	80	62	80	65	-	-		
22	67	61	53	49	52	45	46	44	56	48	52	51	66	57	72	62	84	65	80	64	-	-		
23	65	60	55	50	50	44	47	44	56	48	54	50	61	54	76	63	85	67	84	64	-	-		
24	64	55	54	53	50	44	50	47	56	48	57	51	65	54	78	63	86	68	84	68	-	-		
25	66	57	56	50	51	47	50	47	55	48	59	49	67	55	78	64	86	68	83	68	-	-		
26	66	56	56	48	52	48	51	47	55	46	61	51	71	56	75	63	78	66	82	68	-	-		
27	65	53	55	48	52	47	51	47	56	46	62	52	73	58	68	63	80	62	78	70	-	-		
28	66	55	54	49	52	48	49	47	52	50	63	52	72	60	75	61	78	63	86	71	-	-		
29	61	56	54	51	52	49	52	48	56	47	65	56	70	60	77	62	78	64	82	70	-	-		
30	63	54	54	48	52	50	52	51	-----	-----	64	55	68	56	77	63	80	65	76	68	-	-		
31	63	53	-----	-----	52	46	52	46	-----	-----	59	56	-----	-----	75	63	-----	-----	74	64	-	-		
Avg	67	59	-	-	50	46	51	47	53	47	59	51	68	57	73	60	75	62	80	66	-	-		

11-1766. Arroyo Valle at Pleasanton, Calif.

Location.--Lat 37°40'02", long 121°53'02", in Valle de San Jose Grant, on right bank 0.4 mile northwest of Pleasanton, Alameda County, and 5.8 miles west of Livermore.

Drainage area.--171 sq mi.

Records available.--October 1957 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 350 ft (from topographic map).

Average discharge.--7 years, 27.6 cfs (19,980 acre-ft per year).

Extremes.--Maximum discharge during year, 217 cfs Jan. 23 (gage height, 7.66 ft); no flow for several months.
1957-64: Maximum discharge, 11,300 cfs Apr. 3, 1958 (gage height, 25.36 ft); no flow for several months in each year.

Remarks.--Records good. No regulation; pumping for irrigation above station during periods of low flow.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0	11							(*)
2				0	5.8							
3				0	2.4							
4				0	1.5							
5		(*)		0	1.1							
6				0	.1							
7				0	0				(*)			
8				*0	0							
9				0	0							
10				0	0							
11				0	0							
12				0	*0							
13				*0	0			(*)		(*)	(*)	
14				0	0							
15				0	0							(*)
16				0	0							
17				0	0	(*)	(*)					
18			(*)	0	0							
19				0	0							
20		(*)		0	0							
21				*0	0							
22				106	0							
23				200	0							
24				108	0				(*)			
25				82	0							
26				78	0			(*)				
27				*61	0							
28				46	0							
29				33	0				(*)			
30				22	-----		(*)					
31		-----		*17	-----		-----		-----			-----
Total	0	0	0	753	21.9	0	0	0	0	0	0	0
Mean	0	0	0	24.3	0.76	0	0	0	0	0	0	0
Max	0	0	0	200	11	0	0	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	1,490	43	0	0	0	0	0	0	0

Calendar year 1963: Max 4,360 Min 0 Mean 31.3 Ac-ft 22,630
Water year 1963-64: Max 200 Min 0 Mean 2.12 Ac-ft 1,530

Peak discharge (base, 200 cfs).--Jan. 23 (1000) 217 cfs (7.66 ft).

* Discharge measurement or observation of no flow made on this day.

11-1790, Alameda Creek near Niles, Calif.

Location.--Lat 37°35'14", long 121°57'35", in NW¼ sec.15, T.4 S., R.1 W, on right bank 0.3 mile downstream from railroad bridge and 1.2 miles northeast of Niles.

Drainage area.--633 sq mi.

Records available.--January 1891 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B. Published as "at Niles Dam" 1891-1900, and as "at Sunol Glen" 1901-21.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 85.65 ft above mean sea level, datum of 1929. Prior to 1901, staff gage at site 1 mile upstream at different datum. 1901 to Sept. 30, 1916, staff gage to 1914 and water-stage recorder thereafter at site 4.5 miles upstream at different datum. Oct. 1, 1916, to Dec. 17, 1923, at site 800 ft upstream at different datum.

Average discharge.--73 years, 121 cfs (87,600 acre-ft per year).

Extremes.--Maximum discharge during year, 1,850 cfs Jan. 22 (gage height, 5.89 ft); minimum daily, 1.7 cfs Aug. 13, 14. 1891-1964: Maximum discharge, 29,000 cfs Dec. 23, 1955 (gage height, 14.9 ft); no flow at times.

Remarks.--Records good. Flow regulated by Calaveras Reservoir (usable capacity, 96,800 acre-ft, most of which is diverted for San Francisco water supply) beginning in 1916 although dam not completed until 1925. Natural flow of stream affected by imported water from Delta-Mendota Canal beginning in 1962. Other diversions from ground water basin for irrigation of 9,000 acres above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.2	1.5	2.8	19	3.7	180
2.3	2.6	3.0	34	4.0	300
2.4	4.0	3.2	57	4.5	600
2.5	6.0	3.4	95	5.0	980
2.6	9.0				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*38	28	16	2.7	28	34	5.9	3.4	43	37	38	37
2	38	19	16	2.6	20	36	6.1	4.0	43	39	40	33
3	32	6.5	17	26	15	34	11	5.5	45	40	39	36
4	27	3.8	9.6	41	12	35	17	5.7	45	37	40	20
5	27	3.5	5.3	42	9.9	36	19	10	44	41	38	32
6	24	12	11	43	9.9	36	17	32	38	40	37	34
7	26	9.0	17	44	9.2	37	16	42	45	39	37	38
8	27	4.4	17	44	8.7	38	22	41	45	39	18	32
9	27	3.5	18	45	9.1	36	33	45	39	39	4.8	37
10	27	2.6	17	38	9.6	35	34	45	40	32	3.4	36
11	34	2.8	16	31	9.2	35	34	45	40	34	2.5	34
12	30	*2.7	16	44	8.7	41	34	33	*44	40	2.2	37
13	28	2.4	17	44	13	38	33	36	36	38	1.7	36
14	28	2.8	16	45	19	27	25	44	43	38	1.7	*39
15	28	4.2	17	17	19	21	20	43	44	40	3.4	35
16	23	5.5	17	6.1	21	19	18	43	44	*35	23	37
17	29	3.7	12	*4.9	18	18	17	46	44	39	24	34
18	20	3.1	5.9	6.4	*18	19	17	44	45	35	*24	36
19	28	4.7	4.8	8.5	20	18	17	43	44	37	31	31
20	29	83	4.4	21	19	*16	9.0	*44	44	37	33	38
21	29	22	4.0	460	19	21	*5.6	45	48	35	33	34
22	29	22	3.2	749	18	26	4.8	33	48	37	30	37
23	16	26	2.7	392	23	40	4.0	43	41	21	33	24
24	24	49	*2.6	195	18	32	3.9	47	34	10	35	23
25	28	24	2.8	141	20	21	4.0	46	39	35	34	27
26	29	17	3.1	128	22	11	3.7	39	37	36	33	24
27	29	17	3.0	103	26	8.5	3.9	45	39	38	34	28
28	28	17	3.0	84	34	7.6	4.8	43	40	34	35	26
29	29	*17	2.6	63	33	8.0	4.0	31	40	35	35	23
30	29	16	2.5	48	-----	5.8	3.3	40	39	34	33	27
31	29	-----	2.4	36	-----	5.3	-----	43	-----	36	35	-----
TOTAL	869	434.2	301.9	2,955.2	509.3	795.2	447.0	1,109.6	1,260	1,107	811.7	965
MEAN	28.0	14.5	9.74	95.3	17.6	25.7	14.9	35.8	42.0	35.7	26.2	32.2
AC-FT	1,720	861	599	5,860	1,010	1,580	887	2,200	2,500	2,200	1,610	1,910
MAX	38	83	18	749	34	41	34	47	48	41	40	39
MIN	16	2.4	2.4	2.6	8.7	5.3	3.3	3.4	34	10	1.7	20

CALENDAR YEAR 1963: MAX 7,890 MIN 1.8 MEAN 88.8 AC-FT 64,290
 WATER YEAR 1963-64: MAX 749 MIN 1.7 MEAN 31.6 AC-FT 22,940

* Discharge measurement made on this day.

11-1805. Dry Creek at Union City, Calif.

Location.--Lat 37°36'22", long 122°01'22", in Arroyo de la Alameda Grant, on right bank 900 ft downstream from bridge on State Highway 9 in Decoto District in Union City, Alameda County, and 1.7 miles upstream from mouth.

Drainage area.--9.41 sq mi.

Records available.--October 1916 to September 1919 (published as "near Decoto"), April 1959 to September 1964.

Gage.--Water-stage recorder and concrete control. Datum of gage is 85.12 ft above mean sea level, datum of 1929. Prior to Apr. 1, 1959, at site 1.4 miles downstream at different datum.

Average discharge.--8 years, 1.05 cfs (760 acre-ft per year).

Extremes.--Maximum discharge during year, 54 cfs Jan. 20 (gage height, 2.44 ft); no flow most of year.

1916-19, 1959-64: Maximum discharge, 930 cfs Oct. 13, 1962 (gage height, 5.27 ft from outside gage), from rating curve extended above 140 cfs on basis of slope-area measurement of maximum flow; no flow most of each year.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--1963 Report: 1962(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.1	0	1.6	2.0	2.0	13
1.2	.1	1.7	3.6	2.1	20
1.3	.3	1.8	5.6	2.2	28
1.4	.6	1.9	8.6	2.3	38
1.5	1.1				

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0		0	0.8	0.1						
2	0	0		0	1.0	.1						
3	0	0		0	.8	0						
4	0	*0		0	.5	0						
5	0	0		0	.4	0						
6	0	0		0	.3	0						
7	0	0		0	.3	0						
8	0	0		*0	.3	0				(*)		
9	0	0		0	.3	0						
10	.1	0		0	.3	0						
11	0	0		0	.2	.1						
12	0	0		0	*.1	.1						
13	0	0		*0	.1	0						
14	0	.1		0	.1	0	(*)	(*)		(*)	(*)	(*)
15	0	0		0	.1	0						
16	0	0		0	.1	0						
17	0	0		0	.1	*0						
18	0	0	(*)	0	.1	0						
19	0	.6		.3	0	0						
20	0	*.2		7.2	0	0						
21	0	0		26	0	0						
22	0	0		*29	0	.6						
23	0	1.1		13	0	.8						
24	0	.6		7.6	0	.6						
25	0	.1		5.2	0	.4						
26	0	0		4.2	0	.2						
27	0	0		2.8	0	.1						
28	0	0		2.0	0	0						
29	0	0		1.6	0	0						
30	0	0		1.1	-----	0						
31	*0	-----		1.0	-----	0	-----		-----			-----
Total	0.1	2.7	0	101.0	5.9	3.1	0	0	0	0	0	0
Mean	0.003	0.09	0	3.26	0.20	0.10	0	0	0	0	0	0
Max	0.1	1.1	0	29	1.0	0.8	0	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0.2	5.4	0	200	12	6.1	0	0	0	0	0	0
Calendar year 1963:	Max 64	Min 0	Mean 2.16	Ac-ft 1,560								
Water year 1963-64:	Max 29	Min 0	Mean 0.31	Ac-ft 224								

* Discharge measurement or observation of no flow made on this day.

11-1807. Patterson Creek at Union City, Calif.

Location.--Lat 37°35'03", long 122°02'56", in Portero de Los Cerritos Grant, on right bank 75 ft upstream from bridge on State Highway 17 (Nimitz Freeway), 0.3 mile below effluence, and 1.9 miles southeast of Alvarado District in Union City, Alameda County.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 4.13 ft above mean sea level, datum of 1929.

Average discharge.--6 years, 20.3 cfs (14,700 acre-ft per year).

Extremes.--Maximum discharge during year, 1,100 cfs Jan. 22 (gage height, 10.46 ft); no flow most of year.

1958-64: Maximum discharge, 10,500 cfs Feb. 1, 1963 (gage height, 20.4 ft, from floodmarks); no flow for most of each year.

Remarks.--Records good. This stream is a distributary of Alameda Creek (see Remarks for Alameda Creek near Niles).

Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1963, superseding figures published in 1963 Report, are given herewith:

Oct. 13, 1962.....656

Oct. 14, 1962.....723

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
October 1962	1,644.5	723	0	53.0	3,260
Calendar year 1962	-	2,340	0	35.8	25,900
Water year 1962-63	-	7,340	0	59.1	42,800

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0		0	14							
2		0		0	8.8							
3		0		0	9.0							
4		*0		0	0							
5		0		0	0							
6		0		0	0							
7		0		0	0							
8		0		0	0							
9		0		0	0							
10	(*)	0		0	0							
11		0		0	0							
12		0		0	*0							
13		0		0	0							
14		0		*0	0		(*)	(*)		(*)	(*)	(*)
15		0		0	0							
16		0		0	0							
17		0		0	0	(*)						
18		0	(*)	0	0							
19		0		0	0							
20		*0		.9	0							
21		0		394	0							
22		0		*742	0							
23		0		369	0							
24		19		*110	0							
25		5.5		107	0							
26		0		107	0							
27		0		91	0							
28		0		*68	0							
29		0		44	0							
30		0		30	-----							
31		-----		*19	-----							
Total	0	24.5	0	2,081.9	31.8	0	0	0	0	0	0	0
Mean	0	0.82	0	67.2	1.10	0	0	0	0	0	0	0
Max	0	19	0	742	14	0	0	0	0	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	49	0	4,130	63	0	0	0	0	0	0	0

Calendar year 1963: Max 7,340 Min 0 Mean 54.7 Ac-ft 39,590

Water year 1963-64: Max 742 Min 0 Mean 5.84 Ac-ft 4,240

* Discharge measurement or observation of no flow made on this day.

11-1807.5. Alameda Creek at Union City, Calif.

Location.--Lat 37°35'46", long 122°03'15", in Arroyo de la Alameda Grant, on left bank 5 ft downstream from bridge on Baker Road, 1 mile downstream from Dry Creek, and 1.4 miles east of Alvarado District in Union City, Alameda County.

Drainage area.--653 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Alameda County Flood Control and Water Conservation District).

Average discharge.--6 years, 1.39 cfs (1,010 acre-ft per year).

Extremes.--Maximum discharge during year, 187 cfs Jan. 22 (gage height, 11.11 ft); no flow for most of year.
1958-64; Maximum discharge, 1,770 cfs Feb. 1, 1963 (gage height, 19.25 ft, from floodmarks); no flow for most of each year.

Remarks.--Records fair. For total flow in Alameda Creek, add flow of Patterson Creek at Union City (see Remarks for Alameda Creek, near Niles). Diversion of 6,000 acre-ft to percolation ponds during the year between stations near Niles and at Union City.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Jan. 22..... 40
23..... 10

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
January 1964.....	50	40	0	1.6	99
Calendar year 1963.....	-	1,280	0	4.91	3,560
Water year 1963-64.....	-	40	0	.14	99

Note.--Flow occurred only on days listed above. Observations of no flow generally made once a month.

SAN LORENZO CREEK BASIN

11-1810, San Lorenzo Creek at Hayward, Calif.

Location.--Lat 37°41'11", long 122°03'44", in San Lorenzo Grant, on right bank at bridge on B Street, just outside city limits of Hayward, Alameda County, 0.5 mile downstream from Crow Creek.

Drainage area.--37.5 sq mi.

Records available.--October 1939 to September 1940, October 1946 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder and concrete control (control ineffective since 1952 due to gravel fill). Datum of gage is 133.16 ft above mean sea level, datum of 1929. January to September 1940 wire-weight gage on bridge at present site and datum.

Average discharge.--19 years, 14.0 cfs (10,140 acre-ft per year); median of yearly mean discharges, 5.2 cfs (3,800 acre-ft per year).

Extremes.--Maximum discharge during year, 768 cfs Jan. 20 (gage height, 8.58 ft); no flow July 8-19, July 21 to Sept. 15. 1939-40, 1946-64: Maximum discharge, 7,460 cfs Oct. 13, 1962 (gage height, 19.73 ft, from floodmarks), from rating curve extended above 2,700 cfs on basis of slope-area measurement of maximum flow; maximum gage height, 20.82 ft, from floodmarks, Dec. 22, 1955; no flow at times each year.

Remarks.--Records good. Flow partly regulated by Cull Creek Reservoir beginning in October 1962 (capacity, 310 acre-ft). A few very small diversions above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.5	0.7	2.0	1.7	8.6	4.2	1.9	1.3	1.1	0.1		0
2	1.5	.7	1.9	1.7	8.6	5.0	1.7	1.2	1.2	.1		0
3	*1.6	.7	1.9	1.5	7.3	3.7	1.6	1.6	1.2	.1		0
4	1.6	1.1	1.9	1.4	7.3	3.4	1.5	3.9	1.1	.1		0
5	1.6	4.6	1.9	1.3	7.0	3.4	1.5	1.9	1.1	.1		0
6	1.7	3.0	1.9	1.4	6.7	3.4	1.6	1.3	.7	.1		0
7	1.3	*1.3	1.9	1.6	5.8	3.7	1.6	1.3	.8	.1		0
8	.8	1.2	2.4	1.5	6.1	2.8	1.6	1.6	4.9	0		0
9	.7	1.3	3.6	1.4	5.8	3.0	1.6	1.5	2.3	0		0
10	2.5	1.1	2.2	1.5	5.8	3.0	1.5	1.0	1.3	0		0
11	7.7	1.0	1.9	1.5	5.5	3.2	1.4	3.9	1.1	0		0
12	1.7	1.0	1.7	1.5	4.8	2.8	1.3	1.4	*.9	0		0
13	1.2	1.0	1.9	1.9	5.0	3.0	1.3	.9	.8	0		0
14	1.1	8.8	1.7	1.6	4.8	2.5	1.1	.9	.7	0	(*)	0
15	2.2	5.0	1.9	1.2	5.2	2.3	1.1	.9	.7	*0		0
16	1.6	1.9	1.9	*1.2	4.5	2.0	1.2	1.0	.5	0		1.6
17	1.1	1.6	1.9	2.1	4.3	1.9	1.9	1.4	.5	0		*7.6
18	1.1	1.5	1.9	7.1	*4.3	2.1	1.5	1.2	.4	0		6.9
19	1.1	34	2.2	14	4.3	1.5	1.4	*1.1	.4	0		4.8
20	1.0	19	2.2	109	3.7	*1.7	1.4	.9	.3	.1		4.8
21	1.0	2.5	1.9	189	3.4	3.2	1.3	.7	.3	0		4.9
22	1.1	6.3	1.9	*149	3.4	11	1.5	2.1	.2	0		3.7
23	1.5	30	1.9	57	3.7	5.0	1.4	2.7	.2	0		3.4
24	1.9	13	*1.7	*31	3.7	3.9	1.2	1.1	.1	0		3.0
25	4.9	3.9	1.6	23	3.7	2.5	1.0	1.1	.1	0		2.6
26	.9	3.0	1.6	19	3.2	2.2	.9	.8	.1	0		2.5
27	.8	*3.8	1.6	16	3.2	1.6	.9	.8	.1	0		2.2
28	1.1	2.6	1.5	13	3.4	1.7	.9	.7	.1	0		1.5
29	1.6	2.6	1.7	11	3.2	1.9	1.0	.7	.1	0		.7
30	1.3	2.2	1.7	10	-----	1.9	1.0	.7	.1	0		.3
31	.7	-----	1.5	*9.3	-----	1.6	-----	.7	-----	0		-----
TOTAL	51.4	160.4	59.4	683.4	146.3	95.1	40.8	42.3	23.4	0.8	0	50.5
MEAN	1.66	5.35	1.92	22.0	5.04	3.07	1.36	1.36	0.78	0.03	0	1.68
MAX	7.7	34	3.6	189	8.6	11	1.9	3.9	4.9	0.1	0	7.6
MIN	0.7	0.7	1.5	1.2	3.2	1.5	0.9	0.7	0.1	0	0	0
AC-FT	102	318	118	1,360	290	189	81	84	46	1.6	0	100

CALENDAR YEAR 1963: MAX 806 MIN 0.6 MEAN 17.6 AC-FT 12,760
 WATER YEAR 1963-64: MAX 189 MIN 0 MEAN 3.70 AC-FT 2,690

Peak discharge (base, 350 cfs).--Jan. 20 (2130) 768 cfs (8.58 ft).

* Discharge measurement or observation of no flow made on this day.

11-1820.3. Rheem Creek at San Pablo, Calif.

Location.--Lat 37°58'32", long 122°21'00", in San Pablo Grant, on left bank 0.6 mile downstream from San Pablo Avenue in San Pablo, Contra Costa County, and 0.9 mile upstream from mouth.

Drainage area.--0.99 sq mi (revised).

Records available.--December 1960 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 21.37 ft above mean sea level (levels by Corps of Engineers).

Extremes.--Maximum discharge during year, 346 cfs Jan. 20 (gage height, 3.54 ft), from rating curve extended above 140 cfs on basis of slope-area measurements at gage heights 3.30 and 3.54 ft; no flow for many days.
1960-64: Maximum discharge, that of Jan. 20, 1964; no flow at times in each year.

Remarks.--Records poor. Continuous leakage and infrequent releases from off-stream North Reservoir affect flow.

Revisions (water years).--1962 Report: 1961(M).

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 23 to Mar. 15, Mar. 23 to June 9)

0.0	0	0.4	9.5
.1	.6	.6	20
.2	2.4	1.0	49
.3	5.5	1.5	97

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.1	0	0	0.4	1.9	0.9	0.1	0	0	0	0
2	*1	.1	0	.1	.3	0	0	0	0	.3	0	.2
3	.3	.1	0	0	.3	0	0	.1	0	.4	.1	.1
4	.1	15	0	0	.3	0	0	0	0	.1	.1	.1
5	.4	15	0	0	.3	0	.1	0	0	0	.1	0
6	.1	*1.6	0	0	.2	0	.1	0	0	.1	0	0
7	.3	1.2	0	0	.1	0	0	0	0	.2	.2	0
8	.1	.9	.6	0	.1	0	0	0	9.2	.2	0	0
9	1.1	.7	.3	0	.1	0	0	0	.4	1.0	0	.1
10	12	.6	.1	0	.1	0	0	0	*0	.4	0	0
11	3.5	.6	.1	0	0	3.6	0	0	0	.2	.4	.1
12	1.0	.6	0	0	0	.6	0	0	.1	0	.2	0
13	1.0	.9	0	.7	*0	.3	0	0	.2	0	.1	0
14	1.2	*12	0	0	.1	0	0	0	.2	*.4	.1	.1
15	7.0	3.2	0	*0	1.5	0	*.1	0	.1	.3	0	.1
16	1.8	2.4	0	0	0	*0	0	.2	.2	.1	0	0
17	.3	2.0	.1	2.7	.1	0	0	0	.2	.3	*0	0
18	.1	1.8	.1	3.1	.1	0	0	0	.6	0	.4	.1
19	.1	*5.3	*1.5	3.2	0	0	0	*.1	.2	0	.4	.1
20	0	.2	.4	*5.4	0	0	0	0	.1	0	.4	.1
21	0	0	.1	*28	0	.2	.1	0	.4	.4	.2	0
22	.8	0	.1	9.9	0	4.9	0	0	.4	0	0	0
23	.7	19	.1	1.9	0	.1	0	0	0	.4	.1	.1
24	.2	.6	.1	1.0	0	.1	*.1	0	0	.4	.1	.1
25	.2	.3	.1	.9	0	0	.1	0	0	.1	.1	0
26	.2	*.1	.1	.7	0	.1	.1	0	0	.1	.2	0
27	.2	0	.1	.4	.1	.1	.1	0	0	.2	.2	0
28	.2	0	.1	.4	0	.1	.3	0	0	.4	.3	0
29	.2	0	0	.4	0	.1	.2	0	0	.1	.1	0
30	.2	0	0	.4	-----	.1	.1	0	0	.2	.1	.1
31	.2	-----	.1	.4	-----	.9	-----	0	-----	.2	*.1	-----
Total	33.7	84.3	4.1	108.2	4.1	13.1	2.3	0.5	12.3	6.5	4.0	1.4
Mean	1.09	2.81	0.13	3.49	0.14	0.42	0.08	0.02	0.41	0.21	0.13	0.05
Max	12	19	1.5	54	1.5	4.9	0.9	0.2	9.2	1.0	0.4	0.2
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	67	167	8.1	215	8.1	26	4.6	1.0	24	13	7.9	2.8

Calendar year 1963: Max 85 Min 0 Mean 1.68 Ac-ft 1,220

Water year 1963-64: Max 54 Min 0 Mean 0.75 Ac-ft 544

Peak discharge (base, 150 cfs, revised).--Nov. 5 (1615) 255 cfs (2.84 ft); Jan. 20 (1800) 346 cfs (3.54 ft).

* Discharge measurement or observation of no flow made on this day.

PINOLE CREEK BASIN

11-1821. Pinole Creek at Pinole, Calif.

Location.--Lat 37°58'21", long 122°14'43", in Pinole Grant, on left bank 0.2 mile downstream from county bridge on Pinole Valley Road, 0.8 mile upstream from Pinole city boundary, Contra Costa County.

Drainage area.--10.0 sq mi.

Records available.--December 1938 to September 1964. Monthly discharge only for water years 1939-59, published in WSP 1735.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 170 ft (from topographic map).

Average discharge.--25 years (1939-64), 3.48 cfs (2,520 acre-ft per year); median of yearly mean discharges, 1.5 cfs (1,100 acre-ft per year).

Extremes.--Maximum discharge during year, 390 cfs Jan. 20 (gage height, 4.85 ft); no flow June 23 to Sept. 30. 1938-64; Maximum discharge, 1,660 cfs Apr. 2, 1958 (gage height, 11.63 ft); no flow at times.

Remarks.--No storage or diversion above station except for minor stock ponds.

Cooperation.--Records furnished by East Bay Municipal Utility District and reviewed by Geological Survey.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.8	0	1.8	4.6
1.0	.1	2.0	10
1.2	.6	2.3	24
1.4	1.3	2.5	41
1.6	2.6	2.8	74

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.4	0.6	0.6	1.3	1.0	1.0	0.3	0.2			
2	.3	.4	.6	.6	1.3	1.1	.7	.4	.2			
3	.4	.4	.6	.6	1.1	.8	.6	.4	.2			
4	.5	.5	.6	.6	1.1	.8	.6	.4	.2			
5	.4	.5	.6	.6	1.1	.8	.6	.4	.2			
6	.4	.5	.6	.6	1.1	.8	.5	.5	.2			
7	.4	.5	.6	.6	1.0	.8	.5	.4	.3			
8	.3	.5	.6	.6	1.0	.8	.5	.3	.4			
9	.4	.5	.6	.6	1.0	.8	.5	.4	1.0			
10	.4	.5	.6	.6	1.0	.8	.5	.3	.4			
11	.4	.5	.6	.6	1.0	.9	.5	.3	.3			
12	.4	.5	.6	.6	.9	2.0	.5	.3	.2			
13	.4	.5	.6	.6	.8	1.0	.4	.2	.2			
14	.4	1.6	.6	.6	.8	.8	.4	.2	.1			
15	.4	1.3	.6	.6	1.1	.8	.4	.3	.1			
16	.4	.7	.6	.6	1.0	.8	.4	.2	.2			
17	.4	.6	.6	.6	.9	.8	.5	.4	.2			
18	.4	.6	.6	1.1	.9	.8	.5	.4	.2			
19	.4	1.2	.7	1.6	.8	.7	.4	.3	.1			
20	.4	1.3	.8	71	.8	.7	.4	.3	.1			
21	.4	.7	.7	*56	.8	.9	.4	.4	.1			
22	.4	.6	.6	30	.8	2.3	.4	.4	.1			
23	.4	3.0	.6	6.3	.8	1.5	.4	.3	0			
24	.4	1.3	.6	3.9	.8	1.0	.4	.3	0			
25	.4	.8	.6	3.0	.8	.8	.4	.3	0			
26	.4	.8	.6	2.3	.8	.8	.4	.3	0			
27	.4	.7	.6	1.9	.8	.8	.4	.3	0			
28	.4	.6	.6	1.7	.8	.8	.4	.3	0			
29	.4	.6	.6	1.5	.8	.7	.4	.3	0			
30	.4	.6	.6	1.5	-----	.7	.4	.3	0			
31	.4	-----	.6	1.4	-----	.7	-----	.3	-----			
Total	12.2	23.2	19.0	193.4	27.2	28.8	14.4	10.2	5.2	0	0	0
Mean	0.39	0.77	0.61	6.24	0.94	0.93	0.48	0.33	0.17	0	0	0
Max	0.5	3.0	0.8	71	1.3	2.3	1.0	0.5	1.0	0	0	0
Min	0.3	0.4	0.6	0.6	0.8	0.7	0.4	0.2	0	0	0	0
Ac-ft	24	46	38	384	54	57	29	20	10	0	0	0

Calendar year 1963: Max 352 Min 0.2 Mean 6.34 Ac-ft 4,590
 Water year 1963-64: Max 71 Min 0 Mean 0.91 Ac-ft 662

Peak discharge (base, 80 cfs).--Jan. 20 (2100) 390 cfs (4.85 ft).

* Discharge measurement made on this day.

11-1825. San Ramon Creek at San Ramon, Calif.

Location.--Lat 37°46'20", long 121°59'40", in sec.8, T.2 S., R.1 W., on right bank 0.2 mile downstream from Bollinger Creek and 1.0 mile southwest of San Ramon.

Drainage area.--5.89 sq mi.

Records available.--October 1952 to September 1964.

Gage.--Water-stage recorder, tipping-bucket rain gage, and concrete control. Altitude of gage is 530 ft (from topographic map).

Average discharge.--12 years, 2.63 cfs (1,900 acre-ft per year); median of yearly mean discharges, 1.1 cfs (800 acre-ft per year).

Extremes.--Maximum discharge during year, 480 cfs Jan. 20 (gage height, 5.57 ft), from rating curve extended above 90 cfs as explained below; no flow for several months.

1952-64: Maximum discharge, 1,600 cfs Oct. 13, 1962, (gage height, 16.98 ft), from rating curve extended above 90 cfs on basis of indirect measurements of maximum flow through culvert at gage heights 12.09 and 16.98 ft; no flow for parts of each year.

Remarks.--Records good. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.1	0.4	0.3	1.4	2.6	0.7	0.5	0.1	0		
2	* 0	.1	.3	.3	1.2	1.2	.7	.3	.1	0		
3	0	.1	.3	.3	1.1	.8	.7	.6	.1	0		
4	0	.4	.3	.3	1.1	.9	.6	.3	.2	.1		
5	.1	1.5	.3	.3	1.2	.8	.6	.3	.2	.1		
6	.1	* .8	.3	.3	1.1	.9	.6	.3	.2	0		
7	.1	.5	.3	.3	1.0	.9	.6	.2	.2	0		
8	.1	.5	.4	.3	1.0	.7	.6	.2	.3	0		
9	.1	.4	.4	.3	1.0	.8	.5	.2	.3	0		
10	.1	.4	.3	.3	1.0	.8	.5	.2	* .2	0		
11	.7	.4	.3	.3	.9	1.1	.5	.1	.2	0		
12	.2	.4	.3	.3	.9	1.5	.5	.2	.1	0		
13	.1	.4	.3	.3	.8	.9	.5	.2	.1	0		
14	.1	1.2	.3	.3	.8	.8	.4	* .2	.1	* 0	(*)	
15	.1	1.0	.3	.3	1.0	.7	.4	.2	.2	0		
16	.2	.5	.3	* .3	.8	.6	.4	.2	.2	0		(*)
17	.1	.4	.3	.5	* .8	.6	* .4	.2	.2	0		
18	.1	.4	.3	1.0	.7	.6	.4	.2	.2	0		
19	.1	2.9	.4	1.6	.6	* .6	.4	.1	.2	0		
20	.1	1.1	.4	57	.6	.6	.4	.1	.2	0		
21	.1	.5	.4	* .42	.6	.8	.4	.1	.2	0		
22	.1	.5	.3	.23	.6	2.7	.4	.1	.1	0		
23	.2	2.5	* .4	* 8.1	.7	1.7	.5	.1	.1	0		
24	.1	.9	.4	4.1	.8	1.0	.5	.1	0	0		
25	.1	.5	.4	3.0	.8	.8	.4	.1	0	0		
26	.1	.4	.4	2.4	.8	.8	.4	.1	0	0		
27	.1	* .4	.4	2.2	.8	.7	.4	.1	0	0		
28	.1	.4	.3	1.8	.8	.7	.4	.1	0	0		
29	.1	.4	.3	1.7	.9	.7	.3	.1	0	0		
30	.1	.4	.3	1.5	-----	.7	.3	.2	0	0		
31	.1	-----	.3	1.4	-----	.8	-----	.2	-----	0	-----	-----
Total	3.6	20.4	10.4	156.1	25.8	29.8	14.4	6.1	4.0	0.2	0	0
Mean	0.12	0.68	0.34	5.04	0.89	0.96	0.48	0.20	0.13	0.006	0	0
Max	0.7	2.9	0.4	57	1.4	2.7	0.7	0.6	0.3	0.1	0	0
Min	0	0.1	0.3	0.3	0.6	0.6	0.3	0.1	0	0	0	0
Ac-ft	7.1	40	21	310	51	59	29	1.2	7.9	0.4	0	0
(†)	1.5	5.5	0.5	5.4	0.1	2.4	0.3	0.7	0.4	0	0	0

Calendar year 1963: Max 327 Min 0 Mean 4.62 Ac-ft 3,340

Water year 1963-64: Max 57 Min 0 Mean 0.74 Ac-ft 537

Peak discharge (base, 100 cfs).--Jan. 20 (2030) 480 cfs (5.57 ft).

* Discharge measurement or observation of no flow made on this day.

† Precipitation, in inches.

PACHECO CREEK BASIN

11-1830. San Ramon Creek at Walnut Creek, Calif.

Location.--Lat 37°53'04", long 122°03'00", on boundary between Arroyo de las Nueces y Bolbones and San Ramon Grants, on left bank at town of Walnut Creek, Contra Costa County, 0.3 mile downstream from small tributary, and 1.2 miles upstream from confluence with Las Trampas Creek.

Drainage area.--50.8 sq mi.

Records available.--October 1952 to September 1964.

Gage.--Water-stage recorder and, since Dec. 4, 1962, concrete control. Altitude of gage is 170 ft (from topographic map).

Average discharge.--12 years, 13.1 cfs (9,480 acre-ft per year); median of yearly mean discharges, 4.3 cfs (3,100 acre-ft per year).

Extremes.--Maximum discharge during year, 2,130 cfs Jan. 20 (gage height, 7.82 ft); minimum daily 0.1 cfs Oct. 1-10.

1952-64: Maximum discharge, 7,980 cfs Jan. 31, 1963 (gage height 14.40 ft), from rating curve extended above 2,200 cfs on basis of computed discharge at gage height 13.16 ft; maximum gage height, 14.55 ft Dec. 23, 1955; no flow at times in most years.

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation; pumping for irrigation above station during periods of low flow.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.82	0	1.4	4.2	2.5	67
1.0	.2	1.6	9.5	3.0	137
1.1	.6	1.8	17	3.5	240
1.2	1.3	2.0	27	4.0	375
1.3	2.5	2.2	40	5.0	740

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.1	1.4	2.3	2.9	5.9	5.9	2.6	1.6	1.1	1.0	0.7	0.6
2	*.1	1.1	2.2	2.2	5.6	7.2	2.6	1.8	1.2	1.2	.7	.6
3	.1	.9	1.7	2.1	5.4	5.6	2.6	2.5	1.0	1.2	.5	.6
4	.1	1.3	1.9	2.1	5.6	4.0	2.8	2.1	1.1	1.3	.7	.6
5	.1	4.4	1.8	2.1	5.2	3.6	2.2	1.8	1.1	1.2	.8	.6
6	.1	13	1.7	2.1	4.9	3.1	1.8	1.8	1.0	1.1	.7	.5
7	.1	8.1	1.8	2.1	4.4	3.2	1.7	1.7	1.1	1.1	.6	.5
8	.1	*4.9	2.1	2.2	4.4	2.6	1.8	1.6	1.7	1.1	.8	.5
9	.1	2.9	2.9	2.2	4.7	2.9	1.7	1.5	2.9	1.1	1.0	.5
10	.1	1.9	2.9	2.1	4.4	2.5	1.6	1.2	*2.2	1.0	.9	.5
11	2.7	2.0	2.9	1.9	4.4	3.5	1.7	1.0	1.8	1.2	.6	.5
12	2.5	1.2	2.6	1.9	4.2	5.6	1.8	.9	1.5	1.0	.6	.5
13	1.1	1.6	2.6	2.2	4.2	4.0	1.6	1.0	1.3	.9	.6	.5
14	.8	4.1	2.1	2.3	3.8	3.2	1.5	*1.1	.9	.9	.6	.5
15	.9	7.0	1.9	2.3	5.6	2.5	1.6	1.3	1.2	*.8	.6	.5
16	1.1	6.4	3.2	2.2	4.7	2.3	1.6	1.6	1.1	.8	.7	*.5
17	1.6	3.6	2.3	2.6	*4.2	2.2	1.6	1.7	1.1	.7	*.7	.6
18	1.6	2.5	2.3	4.8	4.2	2.2	1.8	1.6	1.3	.8	.7	.6
19	1.6	18	2.5	11	4.0	*2.2	1.7	1.5	1.4	.7	.6	.5
20	1.6	19	2.8	360	3.8	2.1	*1.8	1.4	1.3	.7	.5	.5
21	1.7	6.9	2.8	410	3.8	2.1	1.8	1.4	1.1	.7	.6	.6
22	1.7	3.8	2.5	171	3.8	6.0	1.8	1.4	1.0	.7	.6	.6
23	1.8	18	*2.3	*32	3.4	7.7	2.4	2.1	1.0	.8	.6	.6
24	1.7	16	2.3	18	3.4	6.4	2.1	3.1	1.1	.8	.6	.5
25	1.9	7.2	2.3	12	3.4	5.9	1.9	1.5	.9	.8	.6	.5
26	2.1	4.7	2.3	10	3.2	3.6	1.9	1.4	1.0	.8	.6	.4
27	1.6	*2.9	2.2	8.3	3.2	2.5	1.6	1.4	1.0	.7	.6	.6
28	1.4	2.6	2.2	7.5	3.1	2.5	1.5	1.3	.9	.8	.6	.6
29	1.1	2.6	2.2	7.2	2.9	2.6	1.5	1.3	1.0	.8	.6	.8
30	1.6	2.5	2.5	6.9	-----	2.2	1.5	1.3	.9	.8	.6	.7
31	1.1	-----	3.6	6.1	-----	2.2	-----	1.2	-----	.8	.6	-----
TOTAL	34.2	172.5	73.7	1,102.3	123.8	114.1	56.1	48.1	37.2	28.3	20.2	16.4
MEAN	1.10	5.75	2.38	35.6	4.27	3.68	1.87	1.55	1.24	0.91	0.65	0.55
MAX	2.7	19	3.6	410	5.9	7.7	2.8	3.1	2.9	1.3	1.0	0.8
MIN	0.1	0.9	1.7	1.9	2.9	2.1	1.5	0.9	0.9	0.7	0.5	0.4
AC-FT	68	342	146	2,190	246	226	111	95	74	56	40	33

CALENDAR YEAR 1963: MAX 2,950 MIN 0 MEAN 24.8 AC-FT 17,950

WATER YEAR 1963-64: MAX 410 MIN 0.1 MEAN 4.99 AC-FT 3,630

Peak discharge (base, 500 cfs).--Jan. 20 (2300) 2,130 cfs (7.82 ft).

* Discharge measurement made on this day.

** Field estimate made on this day.

Note.--No gage height record Aug. 21 to Sept. 16.

11-1835. Walnut Creek at Walnut Creek, Calif.

Location.--Lat 37°54'21", long 122°03'22", in Arroyo de las Nueces y Bolbones Grant, on right bank at Southern Pacific Railroad bridge at town of Walnut Creek, Contra Costa County, 0.7 mile downstream from confluence of San Ramon and Las Trampas Creeks.

Drainage area.--79.2 sq mi.

Records available.--October 1952 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 120 ft (from topographic map). Prior to June 20, 1957, at site 0.6 mile upstream at different datum.

Average discharge.--12 years, 26.2 cfs (18,970 acre-ft per year); median of yearly mean discharges, 10 cfs (7,200 acre-ft per year).

Extremes.--Maximum discharge during year, 2,760 cfs Jan. 20 (gage height, 6.95 ft); minimum, 0.6 cfs Sept. 20.

1952-64: Maximum discharge, 12,200 cfs Apr. 2, 1958 (gage height, 20.2 ft); no flow July 29 to Nov. 7, 1954, part of July 10, 1957, Oct. 1, 1962.

Remarks.--Records good. Flow slightly regulated by storage in Lafayette Reservoir (capacity, 4,240 acre-ft). Some small diversions for irrigation above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.4	1.2	2.2	45
1.5	2.6	2.5	84
1.6	5.0	3.0	190
1.7	8.6	3.5	345
1.8	14	4.0	565
2.0	26	5.0	1,170

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.9	4.4	5.3	7.4	11	28	10	5.9	3.4	2.8	2.1	2.4
2	*1.5	4.4	5.3	6.3	10	15	7.4	4.4	3.9	3.4	1.8	4.9
3	1.4	4.1	4.1	5.6	9.6	9.1	7.0	11	2.8	3.2	1.9	8.2
4	1.7	25	4.7	5.3	9.1	8.2	6.6	5.6	2.4	3.2	2.3	2.0
5	1.8	56	4.7	6.3	11	7.0	6.8	4.7	3.0	3.7	2.3	1.8
6	2.3	25	5.3	5.6	8.6	9.3	5.3	4.7	2.6	3.2	2.1	1.6
7	1.6	11	4.7	5.6	9.1	7.0	5.6	4.7	2.4	3.2	1.8	2.2
8	2.1	*7.8	5.6	7.6	8.2	5.3	5.0	4.7	9.8	2.4	1.6	1.8
9	2.9	5.3	9.1	6.6	8.6	12	5.9	4.4	10	3.0	1.9	1.8
10	9.9	4.1	6.6	6.5	8.2	7.0	5.9	3.2	*5.0	3.0	2.1	1.3
11	41	7.8	6.3	5.3	8.6	15	5.9	3.9	4.1	2.4	2.1	2.2
12	6.3	7.0	5.9	5.9	7.4	25	5.9	3.9	3.4	2.3	1.6	2.3
13	5.3	5.9	5.9	8.2	8.2	9.6	4.7	3.9	3.2	2.4	1.8	2.0
14	4.7	45	5.0	6.6	7.4	8.2	4.7	*3.4	2.6	2.6	1.8	2.8
15	14	21	5.0	7.4	14	6.3	4.7	5.0	3.2	*2.4	1.9	4.4
16	10	11	6.5	*5.6	8.6	5.9	4.4	9.9	3.0	2.8	2.1	*1.8
17	7.0	6.6	5.6	15	*8.2	6.3	3.9	4.7	3.4	2.3	*1.8	1.4
18	7.4	5.0	5.6	28	7.4	6.3	3.9	3.4	3.9	2.3	2.1	1.9
19	7.5	51	13	47	7.8	*5.6	5.3	4.1	3.2	2.6	1.8	1.4
20	7.7	36	11	548	6.6	7.0	*3.7	3.7	3.0	2.4	1.6	1.3
21	6.5	11	6.3	567	7.0	7.8	4.4	3.0	3.0	2.4	1.5	1.4
22	4.5	7.8	5.9	227	6.3	38	4.4	3.9	3.2	1.6	1.6	1.4
23	8.0	76	*5.6	*49	6.6	18	20	3.4	2.3	1.6	1.7	1.3
24	5.6	27	5.3	30	5.9	15	8.5	5.6	3.0	2.3	1.7	1.3
25	6.6	12	5.3	20	7.0	11	9.4	3.0	3.2	2.1	1.5	1.4
26	6.2	*8.6	6.6	18	7.4	7.8	4.7	3.4	2.4	1.5	2.0	1.8
27	4.9	7.0	6.6	15	17	6.6	4.7	4.1	1.8	2.1	1.9	3.1
28	5.1	6.3	6.6	13	7.4	7.8	4.4	4.1	2.8	2.1	1.7	1.7
29	3.7	5.6	5.9	13	7.0	7.4	4.7	3.9	3.0	2.1	1.8	2.3
30	5.6	5.3	5.9	13	-----	6.3	5.1	3.7	2.4	1.8	1.4	1.3
31	4.1	-----	3.2	11	-----	7.0	-----	3.9	-----	1.9	2.7	-----
TOTAL	199.8	510.0	193.4	1,715.8	249.2	335.8	182.9	141.2	105.4	77.1	58.0	66.5
MEAN	6.45	17.0	6.24	55.3	8.59	10.8	6.10	4.55	3.51	2.49	1.87	2.22
MAX	41	76	13	567	17	38	20	11	10	3.7	2.7	8.2
MIN	1.4	4.1	4.1	5.3	5.9	5.3	3.7	3.0	1.8	1.5	1.4	1.3
AC-FT	396	1,010	384	3,400	494	666	363	280	209	153	115	132

CALENDAR YEAR 1963: MAX 3,540 MIN 0.9 MEAN 41.0 AC-FT 29,710

WATER YEAR 1963-64: MAX 567 MIN 1.3 MEAN 10.5 AC-FT 7,600

Peak discharge (base, 600 cfs).--Jan. 20 (2200) 2,760 cfs (6.95).

* Discharge measurement made on this day.

11-4560. Napa River near St. Helena, Calif.

Location.--Lat 38°29'40", long 122°25'50", in SE¼ sec.32, T.8 N., R.5 W., on right bank 0.2 mile upstream from highway bridge, 1.3 miles northeast of Zinfandel, and 2.5 miles east of St. Helena.

Drainage area.--81.4 sq mi (revised).

Records available.--October 1929 to September 1932, October 1939 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 200 ft (from topographic map). Prior to Nov. 22, 1958, at datum 1.00 ft higher.

Average discharge.--28 years, 86.3 cfs (62,480 acre-ft per year); median of yearly mean discharges, 66 cfs (47,800 acre-ft per year).

Extremes.--Maximum discharge during year, 5,020 cfs Jan. 20 (gage height, 9.52 ft); no flow Oct. 1, 2, July 21, Aug. 26-30.
1929-32, 1939-64: Maximum discharge, 12,600 cfs Dec. 22, 1955 (gage height, 16.17 ft, present datum); no flow at times in 1947-49, 1952-57, 1959-64.

Remarks.--Records good. No regulation; small diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 2 to Nov. 5, June 26 to July 7)

0.2	0	0.8	7.8	2.5	192
.3	.4	1.0	15	3.0	335
.4	1.0	1.2	26	4.0	750
.5	2.0	1.5	47	6.0	1,870
.6	3.5	2.0	102		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*0	3.2	34	12	72	27	*17	7.1	3.4	1.4	0.5	*0.2
2	0	9.4	31	12	65	28	15	7.3	3.4	.8	.4	.2
3	1.8	5.9	30	11	56	*21	14	7.8	2.6	.4	*.3	.2
4	1.9	*20	28	11	51	19	14	7.8	2.3	.6	.3	.2
5	1.8	39	26	11	49	18	14	*7.3	1.8	.7	.4	.2
6	2.3	73	24	11	45	18	13	7.3	1.9	.8	.3	.4
7	2.4	*26	23	13	40	18	12	6.8	2.3	*.9	.3	.6
8	2.9	31	24	11	39	16	13	6.1	3.7	.5	.4	.4
9	2.8	55	24	11	37	16	12	5.9	7.1	.5	.6	.4
10	3.4	24	21	11	36	16	12	5.0	*5.9	.4	.6	.3
11	6.6	13	18	11	33	26	11	5.0	4.6	.4	.6	.2
12	5.0	9.7	18	11	31	53	10	4.4	4.3	.3	.6	.2
13	3.2	8.1	18	12	30	32	10	4.1	3.2	.4	.7	.2
14	2.6	183	16	13	29	27	10	3.7	2.4	.3	.4	.2
15	3.5	118	16	11	32	22	9.1	3.7	2.3	.2	.3	.2
16	5.2	50	16	11	28	20	9.1	4.4	2.3	.3	.2	.2
17	4.1	33	16	13	27	20	9.1	6.4	2.0	.4	.3	.3
18	3.2	26	15	23	25	20	9.1	4.8	1.7	.3	.4	.3
19	3.0	162	17	150	25	18	9.4	4.6	1.4	.3	.4	.3
20	2.9	*200	19	1,360	23	18	9.4	3.9	1.3	.2	.3	.2
21	2.8	81	17	1,170	22	18	9.4	4.3	1.4	0	.2	.2
22	2.9	49	15	*781	22	30	8.8	4.4	1.6	.3	.2	.2
23	3.4	405	14	391	21	31	8.8	3.9	1.7	.9	.2	.1
24	3.7	258	14	264	21	27	8.4	3.9	1.2	.9	.3	.1
25	3.0	115	13	209	20	21	8.4	3.7	1.3	.6	.2	.1
26	3.0	76	13	166	19	22	9.1	3.5	1.0	.3	0	.2
27	3.0	58	13	134	18	20	7.6	3.5	.8	.2	0	.2
28	3.0	49	13	113	18	18	7.3	3.7	.7	.3	0	.2
29	3.4	42	13	97	18	17	7.1	4.1	.6	.2	0	.2
30	3.2	38	13	87	-----	16	7.6	3.5	.8	.1	0	.2
31	3.2	-----	*12	77	-----	16	-----	3.7	-----	.4	.1	-----
Total	93.2	2,260.3	584	5,218	952	689	314.7	155.6	71.0	14.3	9.5	7.1
Mean	3.01	75.3	18.8	168	32.8	22.2	10.5	5.02	2.37	0.46	0.31	0.24
Max	6.6	405	34	1,360	72	53	17	7.8	7.1	1.4	0.7	0.6
Min	0	3.2	12	11	18	16	7.1	3.5	0.6	0	0	0.1
Ac-ft	185	4,480	1,160	10,350	1,890	1,370	624	309	141	28	19	14

Calendar year 1963: Max 7.160 Min 0 Mean 11.5 Ac-ft 83,420
Water year 1963-64: Max 1,360 Min 0 Mean 28.3 Ac-ft 20,570

Peak discharge (base, 2,300 cfs).--Jan. 20 (2000) 5,020 cfs (9.52 ft).

* Discharge measurement or observation of no flow made on this day.

11-4560. Napa River near St. Helena, Calif.--Continued

Records available.--Water temperatures: October 1961 to September 1964.Extremes.--Maximum temperature recorded during year, 76°F July 11; minimum recorded, 50°F Feb. 6-8, 11-14, 16, 17.
1961-64: Maximum temperature, 82°F June 17, 1963; minimum recorded, 41°F Jan. 22, 1962.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1									-	-	53	53	58	57					-	-	70	64	62	59
2									-	-	53	51	59	56					-	-	70	62	64	58
3									-	-	55	51	60	55					-	-	71	62	66	56
4									-	-	56	54	60	58					-	-	70	62	66	58
5									53	51	56	54	60	58					-	-	67	64	63	59
6									52	50	56	54	61	58					-	-	70	64	63	60
7									51	50	54	52	62	58					-	-	71	65	62	59
8									51	50	54	51	62	58					72	70	67	65	61	58
9									52	51	56	54	61	59					72	70	66	65	62	58
10									52	51	56	54	62	59					73	70	66	65	61	55
11									52	50	55	54	62	59					76	71	66	65	61	55
12									52	50	54	52	63	59					75	72	66	64	60	56
13									52	50	54	52	65	61					74	72	66	64	61	57
14									52	50	53	51	65	62					74	71	66	65	62	56
15									52	51	57	54	65	63					77	71	66	64	62	56
16									52	50	58	53	-	-					74	69	67	63	62	55
17									52	50	59	55	-	-					74	70	65	63	60	56
18									54	52	59	56	-	-					76	69	65	64	59	56
19									54	52	60	55	-	-					76	69	66	64	62	58
20									55	52	60	57	-	-					76	69	68	64	62	58
21									55	52	60	57	-	-					-	-	68	64	60	58
22									55	53	57	54	-	-					69	64	68	65	61	57
23									56	53	54	52	-	-					69	65	68	64	63	57
24									56	53	54	52	-	-					70	66	66	64	63	58
25									55	52	56	52	-	-					72	66	66	64	62	58
26									54	51	57	54	-	-					72	65	-	-	60	58
27									54	52	58	54	-	-					71	62	-	-	58	58
28									53	53	59	56	-	-					72	66	-	-	58	54
29									53	51	59	56	-	-					75	64	-	-	56	54
30									-	-	60	54	-	-					75	64	-	-	57	54
31									-	-	58	57	-	-					70	62	-	-	-	-
Avg									-	-	56	54	-	-					-	-	-	-	61	57

11-4570. Dry Creek near Napa, Calif.

Location.--Lat 38°21'23", long 122°21'50", in Napa Grant, on right bank 3.7 miles upstream from mouth and 5.5 miles northwest of Napa, Napa County.

Drainage area.--17.4 sq mi.

Records available.--January 1951 to September 1964.

Gage.--Water-stage recorder and, since June 14, 1955, concrete control. Altitude of gage is 190 ft (from topographic map). Prior to June 14, 1955, at site 350 ft downstream at different datum.

Average discharge.--13 years, 19.8 cfs (14,330 acre-ft per year); median of yearly mean discharges, 14 cfs (10,100 acre-ft per year).

Extremes.--Maximum discharge during year, 1,140 cfs Jan. 20 (gage height, 5.57 ft); no flow Oct. 1, 2, June 24, June 30 to Sept. 30. 1951-64: Maximum discharge, 3,460 cfs Feb. 24, 1958 (gage height, 8.11 ft); no flow for many days in each year.

Remarks.--Records good. No regulation; several small diversions for irrigation above station. Occasional diversion around station through 6-inch pipe for domestic use on farm below station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 3)

2.2	0	3.0	22
2.3	.1	3.3	51
2.4	.8	3.6	106
2.5	2.7	4.0	242
2.6	5.3	4.5	470
2.8	12		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*0	1.6	5.6	2.5	13	5.3	4.3	1.8	0.4			(*)
2	0	1.8	5.6	2.5	11	*5.0	4.3	1.8	.4			
3	.1	2.3	5.3	2.5	10	4.5	4.0	2.0	.4			
4	.2	9.8	5.0	2.5	9.3	4.3	4.0	*2.2	.4			
5	.4	19	4.5	2.5	8.9	4.0	3.7	1.8	.4		(*)	
6	.4	*12	4.5	2.5	8.5	4.0	3.5	1.8	.4			
7	.4	4.3	4.3	2.5	8.2	4.0	3.5	1.6	.8			
8	.8	3.5	4.0	2.5	7.9	4.0	3.5	1.4	1.0	(*)		
9	.8	4.8	4.5	2.5	7.5	4.0	3.5	1.4	*1.6			
10	1.0	3.5	4.0	2.5	7.2	4.0	3.5	1.2	1.0			
11	2.0	2.7	3.7	2.5	6.9	5.5	3.2	1.0	.8			
12	1.6	2.7	3.5	2.5	6.9	8.8	3.0	1.0	.5			
13	1.0	2.9	3.5	2.5	6.6	5.6	2.7	.9	.4			
14	.9	29	3.5	2.5	6.3	5.0	2.7	.9	.3			
15	1.6	20	3.2	2.5	6.6	4.5	2.5	.8	.2			
16	2.0	9.5	3.0	2.2	5.9	4.3	2.5	.9	.2			
17	1.6	5.9	3.0	2.7	5.6	4.0	2.5	1.0	.2			
18	1.4	4.5	3.0	4.5	5.9	3.5	2.7	1.0	.2			
19	1.4	25	4.0	33	5.3	3.5	2.5	.9	.2			
20	1.6	*28	4.3	268	5.0	3.2	1.8	.8	.1			
21	1.4	9.3	3.7	222	4.8	3.5	2.5	.8	.1			
22	1.4	6.6	3.2	*127	4.8	8.7	2.5	.6	.1			
23	1.6	53	3.2	78	4.5	7.9	2.5	.8	.1			
24	1.6	33	3.0	*57	4.5	6.3	2.2	.8	0			
25	1.4	17	2.7	44	4.5	5.3	2.5	.6	.1			
26	1.4	13	2.7	34	4.5	5.3	2.2	.5	.1			
27	1.4	9.3	2.5	26	4.5	5.0	2.2	.6	.1			
28	1.4	8.2	2.5	21	4.3	4.8	2.0	.6	.1			
29	1.4	6.6	2.5	18	4.5	4.5	2.0	.5	.1			
30	1.6	6.3	*2.5	16	-----	4.5	1.8	.5	0			
31	1.6	-----	2.5	14	-----	*4.3	-----	.4	-----			-----
TOTAL	35.4	355.1	113.0	1,004.9	193.4	151.1	86.3	32.9	10.7	0	0	0
MEAN	1.14	11.8	3.65	32.4	6.67	4.87	2.88	1.06	0.36	0	0	0
MAX	2.0	53	5.6	268	13	8.8	4.3	2.2	1.6	0	0	0
MIN	0	1.6	2.5	2.2	4.3	3.2	1.8	0.4	0	0	0	0
AC-FT	70	704	224	1,990	384	300	171	65	21	0	0	0

CALENDAR YEAR 1963: MAX 1,340 MIN 0 MEAN 24.0 AC-FT 17,360
WATER YEAR 1963-64: MAX 268 MIN 0 MEAN 5.42 AC-FT 3,930

Peak discharge (base, 450 cfs).--Jan. 20 (1800) 1,140 cfs (5.57 ft).

* Discharge measurement or observation of no flow made on this day.

11-4580. Napa River near Napa, Calif.

Location.--Lat 38°22'06", long 122°18'08", in Yajome Grant, on left bank at downstream side of Oak Knoll Avenue bridge, 0.4 mile downstream from Dry Creek and 5 miles north of Napa, Napa County.

Drainage area.--218 sq mi.

Records available.--October 1929 to September 1932, October 1959 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 24.72 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--8 years, 114 cfs (82,530 acre-ft per year).

Extremes.--Maximum discharge during year, 5,260 cfs Jan. 20 (gage height, 16.15 ft); no flow for many days.
1929-32, 1959-64: Maximum discharge, 16,900 cfs Jan. 31, 1963 (gage height, 27.59 ft); no flow at times in each year.

Remarks.--Records good except those for period of no gage-height record, which are poor. Flow slightly regulated by Lake Hennessey beginning in December 1945 (capacity, 31,000 acre-ft). Numerous diversions for irrigation above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 6-14, Jan. 21 to Feb. 27, Mar. 22 to Apr. 4, June 23-25, July 3, 7-12)

3.1	0	3.7	12	6.0	430
3.2	.2	4.0	29	7.0	750
3.3	.7	4.3	56	9.0	1,520
3.4	2.0	4.6	96	11.0	2,380
3.5	4.3	5.0	168		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	7.5	58	21	110	35	30	7.4	2.0	a0.6		*0.1
2	.7	7.7	54	21	106	44	28	8.9	1.4	a.8		.2
3	.7	10	50	*19	98	35	27	10	.9	1.0		.2
4	1.6	41	48	19	*92	*31	27	*11	1.0	1.8	(*)	0
5	2.0	87	45	18	*89	30	26	9.7	.6	2.8		0
6	2.8	126	42	18	83	31	25	8.5	.7	1.8		0
7	2.4	*54	39	19	77	31	24	11	.5	1.4		0
8	2.4	24	39	19	75	28	23	9.3	.4	*.2		0
9	3.0	61	43	18	72	28	23	7.5	.61	.1		0
10	4.9	41	38	18	71	28	22	6.8	*8.9	.4		0
11	15	21	34	18	67	30	22	5.7	6.4	.4		0
12	16	14	31	18	63	60	21	6.4	5.4	.2		0
13	12	10	33	17	60	42	20	5.7	5.4	0		0
14	10	114	31	19	58	38	19	4.0	4.6	0		.2
15	12	244	29	17	60	33	19	3.0	3.0	0		.2
16	12	83	28	17	56	31	18	3.5	2.8	0		.1
17	10	55	28	18	53	31	16	5.7	3.4	0		.2
18	10	41	28	33	50	30	17	7.1	3.8	0		.2
19	9.7	135	34	169	50	28	16	3.0	3.5	0		.3
20	9.3	319	38	1,350	48	29	16	2.6	3.2	0		.1
21	8.5	*120	35	2,340	45	29	16	2.0	2.8	.1		0
22	8.5	78	31	1,430	43	39	14	1.9	2.4	0		0
23	8.5	425	28	*723	42	48	14	1.7	1.4	0		0
24	8.5	401	27	442	41	40	12	1.9	.9	0		0
25	8.5	160	27	330	39	35	12	2.7	1.0	.1		0
26	8.2	109	26	257	36	33	12	2.7	a.6	.1		0
27	7.8	89	26	201	35	34	12	1.9	a.5	0		0
28	7.8	79	25	166	35	31	9.6	2.4	a.5	0		0
29	7.8	71	25	143	34	31	8.2	1.9	a.4	0		0
30	7.8	63	24	132	-----	30	6.4	3.0	a.4	0		0
31	7.8	-----	23	119	-----	*30	-----	2.2	-----	0		0
Total	226.6	3,090.2	1,067	8,149	1,788	1,053	555.2	161.1	74.9	11.8	0	1.8
Mean	7.31	103	34.4	263	61.7	34.0	18.5	5.20	2.50	0.38	0	0.06
Max	16	425	58	2,340	110	60	30	11	8.9	2.8	0	0.3
Min	0.4	7.5	23	17	34	28	6.4	1.7	0.4	0	0	0
Ac-ft	449	6,130	2,120	16,160	3,550	2,090	1,100	320	149	23	0	3.6

Calendar year 1963: Max 11,100 Min 0.2 Mean 253 Ac-ft 183,400

Water year 1963-64: Max 2,340 Min 0 Mean 44.2 Ac-ft 32,090

Peak discharge (base, 2,500 cfs)--Jan. 20 (2300) 5,260 cfs (16.15 ft).

* Discharge measurement or observation of no flow made on this day.

a No gage-height record.

NAPA RIVER BASIN

11-4582. Redwood Creek near Napa, Calif.

Location.--Lat 38°19'05", long 122°20'35", in Napa Grant, on right bank 2.9 miles upstream from confluence with Browns Valley Creek and 3.4 miles northwest of Napa, Napa County.

Drainage area.--9.81 sq mi.

Records available.--July 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 170 ft (from topographic map).

Average discharge.--6 years, 6.84 cfs (4,950 acre-ft per year).

Extremes.--Maximum discharge during year, 1,190 cfs Jan. 20 (gage height, 9.22 ft), from rating curve extended above 270 cfs as explained below; no flow for many days.

1958-64: Maximum discharge, 1,330 cfs Jan. 31, 1963 (gage height, 9.90 ft), from rating curve extended above 270 cfs on basis of slope-area measurement at gage height 8.60 ft; no flow for many days in each year.

Remarks.--Records good except those for period of no gage-height record, which are poor. Small storage and release affects summer flow.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.4	3.0	1.1	6.7	2.8	*1.8	0.5	a0.3	0	1.7	*0.1
2	0	.4	2.9	1.0	6.5	*2.6	1.6	.5	a.3	0	.2	.1
3	0	.4	2.3	1.0	5.6	2.0	1.6	.6	a.3	0	.1	.1
4	0	2.1	2.1	1.1	5.4	1.8	1.5	*.9	a.3	0	*.2	.1
5	0	2.4	1.9	.9	*5.0	1.7	1.6	.8	a.3	0	.2	.1
6	0	*8.6	1.9	.9	4.5	1.7	1.4	.8	a.3	0	.2	.1
7	0	2.5	1.8	.9	4.3	1.9	1.3	.7	a.2	*0	.2	.1
8	0	1.9	1.8	1.0	4.2	1.5	1.2	.7	a.1	0	.2	.1
9	0	3.8	1.8	.9	3.9	1.5	1.2	.6	*.2	0	.1	.1
10	0	2.5	1.5	.9	3.8	1.5	1.2	.6	.3	0	.1	0
11	0	1.2	1.3	.9	3.5	1.6	1.2	.6	.3	0	.2	0
12	0	1.1	1.2	.9	3.2	4.4	1.2	.5	.3	0	.1	2.8
13	.1	.9	3.5	.9	3.0	3.8	1.2	.5	.3	0	.2	3.4
14	.2	46	5.5	1.0	2.9	2.6	1.0	.5	.3	0	.1	.2
15	.5	16	1.1	1.0	3.0	2.1	.9	.5	.3	0	.1	1.3
16	1.0	6.0	1.1	.9	2.8	1.9	.9	.5	.2	0	.1	.2
17	.8	3.8	1.0	1.8	2.6	1.7	.9	.5	.2	0	.2	.4
18	.8	2.9	1.0	5.1	2.5	1.6	.9	.5	.2	0	.1	.6
19	.8	37	1.6	71	2.3	1.4	.8	a.5	.2	0	.1	.2
20	.7	*18	2.3	289	2.1	1.4	.8	a.5	.1	0	0	.1
21	.7	7.4	1.9	175	2.1	1.4	.6	a.4	.1	0	0	.1
22	.7	5.4	1.2	*111	1.9	3.6	.5	a.4	.1	0	0	.1
23	.8	7.4	1.1	44	1.9	4.2	.7	a.4	.1	0	0	.1
24	.8	2.4	1.1	26	1.9	3.6	.9	a.4	.1	0	0	.1
25	.8	10	1.2	21	1.9	2.9	.9	a.4	.1	0	0	.1
26	.8	7.0	1.1	17	1.8	2.4	.8	a.4	.1	0	0	0
27	.8	5.6	1.1	14	1.8	2.1	.7	a.4	.1	0	0	0
28	2.2	4.3	1.1	12	1.6	1.9	.6	a.4	.1	*0	0	1.4
29	4.3	4.0	1.1	10	1.6	1.9	.6	a.4	.1	.1	0	.2
30	.5	3.3	*1.1	9.0	-----	1.7	.5	a.4	.1	.2	.8	.1
31	.5	-----	1.1	8.0	-----	1.7	-----	a.4	-----	.6	.9	-----
Total	17.8	343.4	53.7	829.2	94.3	68.9	31.0	16.2	6.0	0.9	6.1	12.3
Mean	0.57	11.4	1.73	26.7	3.25	2.22	1.03	0.52	0.20	0.03	0.20	0.41
Max	4.3	7.4	5.5	289	6.7	4.4	1.8	0.9	0.3	0.6	1.7	3.4
Min	0	0.4	1.0	0.9	1.6	1.4	0.5	0.4	0.1	0	0	0
Ac-ft	35	681	107	1,640	187	137	61	32	1.2	1.8	1.2	2.4
Calendar year 1963: Max 775 Min 0 Mean 15.1 Ac-ft 10,950												
Water year 1963-64: Max 289 Min 0 Mean 4.04 Ac-ft 2,930												

Peak discharge (base, 200 cfs).--Nov. 14 (1730) 235 cfs (4.37 ft); Jan. 20 (1700) 1,190 cfs (9.22 ft).

* Discharge measurement or observation of no flow made on this day.

a No gage-height record.

11-4585. Sonoma Creek at Boyes Hot Springs, Calif.

Location.--Lat 38°18'49", long 122°29'09", in Agua Caliente Grant, on left bank 10 ft downstream from county highway bridge at Boyes Hot Springs, Sonoma County, and 2.2 miles northwest of Sonoma.

Drainage area.--62.2 sq mi.

Records available.--February 1955 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 75 ft (from topographic map).

Average discharge.--9 years, 65.4 cfs (47,350 acre-ft per year).

Extremes.--Maximum discharge during year, 4,360 cfs Jan. 20 (gage height, 11.69 ft); no flow Sept. 14-20, 22-30.

1955-64: Maximum discharge, 8,880 cfs Dec. 22, 1955 (gage height, 17.10 ft), from rating curve extended above 4,100 cfs on basis of slope-area measurement of maximum flow; no flow at times in each year.

Remarks.--Records good. Some regulation during summer months at swimming pools above station. No diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.1	1.4	18	12	39	15	12	5.7	2.4	1.9	0.4	0.4
2	1.1	1.5	18	12	32	18	11	6.0	2.0	1.7	.4	.4
3	1.2	1.7	16	12	28	12	9.0	6.4	1.9	1.6	.3	.3
4	1.3	12	15	12	26	11	7.4	5.2	2.1	1.3	.3	.3
5	1.4	35	15	12	23	*11	7.8	5.2	2.1	1.3	.3	.3
6	1.6	13	14	12	22	10	7.4	6.0	2.7	1.3	.4	.3
7	1.4	3.4	14	14	20	10	7.4	4.7	3.2	1.2	.4	.3
8	1.2	15	14	13	18	8.6	*7.4	4.9	4.0	1.1	.4	.2
9	1.2	12	15	13	18	7.8	7.1	4.7	5.7	.9	.5	.2
10	1.5	4.0	14	13	17	8.2	7.1	4.4	4.2	.8	.6	.2
11	2.9	2.9	14	13	17	15	6.7	*4.2	2.3	.8	.6	.1
12	1.9	2.5	13	13	15	*35	6.7	2.7	2.3	.9	.6	.1
13	1.7	2.5	13	13	15	18	6.4	2.5	3.2	1.0	.6	.1
14	1.5	115	13	13	15	14	5.4	2.4	2.4	1.0	.6	0
15	*1.9	66	14	11	18	12	4.9	2.1	2.0	1.1	.6	0
16	2.1	29	14	11	16	11	5.2	2.7	1.9	1.1	.6	0
17	1.7	20	14	13	15	11	5.4	3.2	1.9	1.4	.6	0
18	1.6	*17	14	20	15	10	5.7	3.4	1.9	1.1	.5	0
19	1.6	114	18	117	14	9.5	6.4	3.0	1.9	1.1	.4	0
20	1.5	100	18	1,200	14	8.6	5.7	2.9	1.8	1.1	.5	0
21	1.4	35	16	677	13	10	4.9	1.9	1.7	1.0	.5	.1
22	1.4	25	15	436	13	40	4.7	1.8	*1.7	1.0	.5	0
23	1.5	287	*14	230	12	32	4.7	2.5	1.6	.8	.6	0
24	1.5	117	14	147	12	18	5.4	2.5	1.4	.7	.6	0
25	1.4	52	14	114	12	15	4.7	1.7	1.2	.6	.5	0
26	1.4	37	14	96	11	14	5.7	1.5	1.2	.6	.5	0
27	1.3	31	13	*81	11	13	7.1	2.5	1.5	.6	.4	0
28	1.5	26	13	67	11	12	6.7	2.9	1.5	.5	.4	0
29	1.3	22	13	57	11	11	5.4	2.7	1.5	*.4	.4	0
30	1.4	20	13	50	-----	11	5.2	2.9	1.7	.4	.4	0
31	1.4	-----	13	43	-----	11	-----	2.5	-----	.4	*.4	-----
TOTAL	46.9	1,219.9	450	3,547	503	442.7	196.6	107.7	66.9	30.7	14.8	3.3
MEAN	1.51	40.7	14.5	114	17.3	14.3	6.55	3.47	2.23	0.99	0.48	0.11
MAX	2.9	287	18	1,200	39	40	12	6.4	5.7	1.9	0.6	0.4
MIN	1.1	1.4	13	11	11	7.8	4.7	1.5	1.2	0.4	0.3	0
AC-FT	93	2,420	893	7,040	998	878	390	214	133	61	29	6.5

CALENDAR YEAR 1963 MAX 3,330 MIN 0.6 MEAN 72.1 AC-FT 52,190
 WATER YEAR 1963-64 MAX 1,200 MIN 0 MEAN 18.1 AC-FT 13,160

Peak discharge (base, 1,400 cfs)--Jan. 20 (1800) 4,360 cfs (11.69 ft).

* Discharge measurement made on this day.

NOVATO CREEK BASIN

11-4595. Novato Creek near Novato, Calif.

Location.--Lat 38°06'45", long 122°35'05", in Novato Grant, on right bank 500 ft downstream from highway bridge and 1 mile west of U. S. Highway 101 in Novato, Marin County.

Drainage area.--17.5 sq mi.

Records available.--October 1946 to September 1964. Records of diversions for water years 1952-53, estimated.

Gage.--Water-stage recorder. Altitude of gage is 45 ft (from topographic map).

Average discharge.--18 years, 10.4 cfs (7,530 acre-ft per year), adjusted for diversion.

Extremes.--Maximum discharge during year, 1,330 cfs Jan. 20 (gage height, 8.74 ft); no flow Oct. 1-10, 13, July 6 to Sept. 30. 1946-64: Maximum discharge, that of Jan. 20, 1964; no flow for several months in each year.

Remarks.--Records fair. Flow regulated by Stafford Lake beginning Dec. 1, 1951 (capacity, 4,500 acre-ft since Oct. 18, 1954); contents, 3,350 acre-ft Sept. 30, 1963, and 3,150 acre-ft Sept. 30, 1964. Diversion from Stafford Lake for municipal water supply began Apr. 25, 1952, and amounted to 1,900 acre-ft for water year 1964.

Cooperation.--Record of diversions furnished by North Marin County Water District.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 11 to Nov. 5, Mar. 23 to Apr. 7, May 5 to June 8, July 6)

0.0	0	0.5	2.5	1.5	41
.1	.1	.7	5.7	2.0	84
.2	.3	.9	11	2.5	142
.3	.8	1.2	23	3.0	217
.4	1.5				

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0.2	0.8	0.7	5.3	1.8	1.1	0.3	0.1	0.3		
2	0	.2	.7	.6	5.0	*1.2	*.6	.3	.1	.2		(*)
3	0	.3	.7	*.6	5.0	1.1	.7	.3	.3	.2		
4	0	1.0	.8	.7	5.7	1.1	.7	.3	.2	.2		
5	0	8.1	.8	.6	5.7	1.0	.6	*.3	.2	.1	(*)	
6	0	1.2	.6	.6	*2.9	1.0	.6	.2	.4	0		
7	0	.6	.6	.7	7.1	1.0	.5	.2	.3	0		
8	0	*.4	.8	.5	4.8	.9	.5	.2	8.8	0		
9	0	.3	.8	.5	2.4	.9	.5	.3	.9	*0		
10	0	.3	.6	.5	2.4	.9	.5	.2	.6	0		
11	.6	.3	.6	.5	2.3	3.1	.4	.2	*.5	0		
12	.1	.2	.7	.5	2.1	1.7	.4	.2	.5	0		
13	0	.3	.5	.5	2.0	1.2	.4	.2	.5	0		
14	.2	1.9	.5	.5	2.1	1.0	.3	.2	.4	0		
15	.6	*1.1	.5	.5	2.6	.9	.3	.2	.5	0		
16	.5	.6	.5	.5	3.1	.9	.3	.3	.4	0		
17	.3	.4	.5	.7	2.6	.9	.3	.2	.4	0		
18	.3	.5	.6	.9	2.5	.9	.3	.2	.4	0		
19	.3	8.7	2.2	8.5	2.0	.8	.3	*.1	.4	0		
20	.3	2.0	1.5	16.3	1.7	.8	.3	.1	.4	0		
21	.3	*.8	.8	11.9	1.7	.9	.3	.1	.3	0		
22	.3	.6	.7	8.0	1.7	1.7	.3	.1	.2	0		
23	.3	1.4	.7	3.6	1.7	1.0	.3	.1	.2	0		
24	.2	2.5	.9	2.2	1.6	.9	.3	.1	.1	0		
25	.2	1.2	.9	1.7	1.7	.8	.3	.1	.1	0		
26	.2	1.0	1.2	1.3	1.5	.7	.3	.2	.1	0		
27	.2	.9	.8	1.0	1.5	.7	.3	.1	.2	0		
28	.2	.9	.8	8.9	1.6	.7	.3	.1	.1	0		
29	.2	.8	.8	7.5	1.5	.7	.3	.1	.1	0		
30	.2	.8	.7	6.4	-----	.7	.3	.1	.2	0		
31	.2	-----	.7	5.7	-----	1.1	-----	.1	-----	0		
Total	5.7	52.1	24.3	50.6	109.9	33.0	12.6	5.7	17.9	1.0	0	0
Mean	0.18	1.74	0.78	16.4	3.79	1.06	0.42	0.18	0.60	0.03	0	0
Max	0.6	1.4	2.2	16.3	2.9	3.1	1.1	0.3	8.8	0.3	0	0
Min	0	0.2	0.5	0.5	1.5	0.7	0.3	0.1	0.1	0	0	0
Ac-ft	1.1	103	48	1,010	218	65	25	11	36	2.0	0	0

Calendar year 1963: Max 32.3 Min 0 Mean 9.64 Ac-ft 6,980
Water year 1963-64: Max 16.3 Min 0 Mean 2.10 Ac-ft 1,530

* Discharge measurement or observation of no flow made on this day.

11-4600. Corte Madera Creek at Ross, Calif.

Location.--Lat 37°57'45", long 122°33'20", in Punta de Quentin Grant, on left bank behind fire station at Ross, Marine County, 1.7 miles southwest of San Rafael and 4 miles upstream from mouth.

Drainage area.--18.1 sq mi.

Records available.--February 1951 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 8 ft (from topographic map).

Average discharge.--13 years, 25.5 cfs (18,460 acre-ft per year); median of yearly mean discharges, 19 cfs (13,800 acre-ft per year).

Extremes.--Maximum discharge during year, 1,040 cfs Jan. 20 (gage height, 10.07 ft); minimum daily, 0.2 cfs Sept. 22-30.

1951-64: Maximum discharge, 3,620 cfs Dec. 22, 1955 (gage height, 17.45 ft), from rating curve extended above 1,600 cfs; no flow at times in most years.

Remarks.--Records good except those for period of no gage-height record, which are poor. Flow regulated by Phoenix Lake (capacity, 612 acre-ft). Diversion on tributary above station by Marin Municipal Water District.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	0.5	4.7	3.1	1.5	1.8	9.3	4.2	0.9	0.9	0.4	0.4
2	.4	.7	4.4	*3.1	1.3	6.6	*7.0	3.8	.8	.9	.5	*.4
3	.4	.7	5.8	2.9	1.1	5.8	8.2	5.0	.9	1.0	.5	.4
4	.4	2.5	1.0	2.9	1.1	*7.0	8.2	3.8	.9	1.1	.5	.4
5	.8	3.5	5.5	2.9	1.1	1.2	8.8	3.0	.9	1.1	*.4	.4
6	.6	6.8	4.0	3.4	*1.1	8.2	8.2	2.0	1.0	1.0	.4	.3
7	.6	2.1	4.0	5.1	1.1	7.6	6.6	*2.0	1.0	.9	.4	.3
8	.6	*1.9	4.4	3.1	9.4	7.6	5.8	2.0	2.4	.8	.4	.3
9	.7	1.9	5.1	2.9	8.8	7.0	5.0	1.8	5.0	*.7	.4	.3
10	1.8	1.9	3.7	2.9	8.2	7.6	5.0	1.8	2.0	.7	.4	.3
11	3.4	1.9	4.0	2.9	8.8	2.9	4.6	2.7	*2.0	.6	.4	.3
12	.3	2.1	4.0	2.9	8.2	1.3	3.8	3.8	1.9	.6	.4	.3
13	.3	5.9	3.4	3.7	8.2	1.0	4.6	2.7	1.5	.7	.4	.3
14	.3	6.4	3.4	2.9	7.6	7.6	7.0	2.2	1.3	.6	.5	.3
15	6.9	*2.3	3.7	2.6	9.8	6.6	6.6	2.0	1.4	.8	.5	.3
16	.7	7.5	3.7	2.6	7.0	5.8	5.4	3.9	1.3	.8	.4	.3
17	.4	5.4	3.4	1.6	8.3	4.2	5.4	1.6	1.3	.8	.4	.3
18	.4	4.7	3.1	1.9	6.6	3.8	6.2	1.4	1.7	.7	.5	.3
19	.4	11.1	1.2	7.3	8.1	3.4	6.6	*1.3	1.8	.8	.5	.3
20	.4	3.4	4.7	3.10	7.0	3.4	7.0	1.2	1.6	.8	.4	.3
21	.4	1.3	3.7	*30.1	6.2	3.8	3.4	1.2	1.6	.8	.4	.3
22	1.2	*8.5	3.7	20.7	6.2	1.9	3.0	1.2	1.5	.9	.4	.2
23	1.1	11.2	3.4	10.2	5.8	4.2	3.6	1.2	1.3	.8	.4	.2
24	.4	4.4	3.6	6.4	5.8	5.4	3.4	1.2	1.3	.9	.4	.2
25	.4	1.9	4.4	5.0	5.8	4.2	3.0	1.2	1.3	.9	.4	.2
26	.4	1.2	3.4	3.8	6.2	4.6	2.7	1.0	1.1	.9	.4	.2
27	.4	8.5	3.4	2.9	6.2	4.2	2.7	1.0	.9	1.8	.4	.2
28	.4	7.1	3.1	2.4	6.6	5.0	2.2	1.0	1.1	1.6	.4	.2
29	.4	5.8	3.1	2.0	6.6	4.2	2.0	1.0	1.1	3.6	.4	.2
30	.4	5.4	3.4	1.9	-----	3.8	2.4	.9	1.0	.5	.4	.2
31	.5	-----	3.1	1.5	-----	8.2	-----	.9	-----	.5	.4	-----
Total	42.3	571.3	135.3	1,336.9	244.4	240.8	157.7	64.0	65.4	29.5	13.1	8.6
Mean	1.36	19.0	4.36	43.1	8.43	7.77	5.26	2.06	2.18	0.95	0.42	0.29
Max	1.8	11.2	1.2	31.0	1.5	2.9	9.3	5.0	2.4	3.6	0.5	0.4
Min	0.3	0.5	3.1	2.6	5.8	3.4	2.0	0.9	0.8	0.5	0.4	0.2
Ac-ft	84	1,130	268	2,650	485	478	313	127	130	59	26	17

Calendar year 1963: Max 1,620 Min 0.1 Mean 28.8 Ac-ft 20,810
 Water year 1963-64: Max 310 Min 0.2 Mean 7.95 Ac-ft 5,770

Peak discharge (base, 1,000 cfs).--Jan. 20 (1830) 1,040 cfs (10.07 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Aug. 21 to Sept. 30.

WALKER CREEK BASIN

11-4608. Walker Creek near Tomales, Calif.

Location.--Lat 38°12'35", long 122°51'35", in Nicasio Grant, on left bank 1,300 ft upstream from Chileno Creek, and 3.5 miles south-east of Tomales, Marin County.

Drainage area.--37.1 sq mi.

Records available.--June 1959 to September 1964.

Average discharge.--5 years, 27.0 cfs (19,550 acre-ft per year).

Gage.--Water-stage recorder and concrete control. Altitude of gage is 70 ft (from topographic map).

Extremes.--Maximum discharge during year, 3,430 cfs Jan. 20 (gage height, 18.52 ft); no flow for several months.

1959-64: Maximum discharge, 3,430 cfs Jan. 31, 1961, Feb. 13, 1962, Jan. 20, 1964; maximum gage height, 18.52 ft Jan. 20, 1964; no flow for several months in each year.

Flood of Feb. 24, 1958, reached a stage of 19.8 ft, from floodmarks.

Remarks.--Records good. No regulation; small diversions above station for irrigation and stock watering.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 26 to Feb. 5, May 11-31)

4.2	0	4.7	5.5	6.0	146
4.3	.1	4.9	14	7.0	312
4.4	.3	5.1	29	9.0	680
4.5	1.0	5.5	73	11.0	1,120
4.6	3.0				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1		0	11	6.3	39	7.5	5.9	0.8	0.3	0.1		(*)
2		.1	10	6.3	36	15	5.0	.8	.3	.1		
3		.1	10	5.9	31	8.7	4.3	.9	.2	.1		
4		9.9	10	5.5	27	6.3	3.8	.9	.2	.1		
5		13	10	5.0	25	*5.5	3.5	.9	.2	.1		
6		17	8.3	5.5	22	5.0	*3.3	.9	.3	.1		
7		5.5	7.9	8.3	19	4.8	2.8	.8	.3	.1		
8		3.8	8.3	7.1	18	4.0	2.4	.8	4.8	.1		
9		4.0	13	5.9	17	4.0	2.4	.7	9.1	.1		
10		3.3	10	7.1	15	4.0	2.2	.7	3.0	.1		
11		2.0	7.9	6.3	14	4.8	2.0	.7	1.4	.1		
12		1.4	6.7	5.5	13	15	1.8	.7	.8	.1		
13		1.2	6.3	5.5	13	10	1.6	*.7	.6	.1		
14		22	5.5	6.7	13	7.5	1.6	.6	.4	.1		
15	(*)	37	5.3	5.9	15	5.9	1.6	.6	.4	.1		
16		18	5.0	5.9	12	5.3	1.2	.7	.3	0		
17		12	4.8	7.5	12	4.8	1.2	.8	.3	0		
18		*8.7	4.8	23	12	4.5	1.2	.7	.3	0		
19		34	7.9	64	11	4.3	1.4	.7	*.2	0		
20		50	13	919	11	4.0	1.4	.6	.2	0		
21		27	11	867	10	4.5	1.4	.5	.2	0		
22		18	9.5	601	9.5	8.7	1.2	.5	.1	0		
23		105	*7.9	268	8.7	12	1.2	.4	.1	0		
24		77	7.1	156	8.3	10	1.0	.4	.1	0		
25		45	12	111	7.9	7.5	1.0	.4	.1	0		
26		31	10	87	6.7	5.5	.9	.4	.1	0		
27		23	9.1	72	6.3	5.3	.9	.4	.1	0		
28		19	7.9	*63	6.3	5.0	.9	.3	.1	*0		
29		14	7.9	56	5.9	4.8	.9	.3	.1	0		
30		13	7.5	50	-----	4.8	.9	.3	.1	0		
31		-----	6.7	43	-----	5.0	-----	.3	-----	0		-----
TOTAL	0	615.0	262.3	3,486.2	444.6	204.0	60.9	19.2	24.7	1.5	0	0
MEAN	0	20.5	8.46	112	15.3	6.58	2.03	0.62	0.82	0.05	0	0
MAX	0	105	13	919	39	15	5.9	0.9	9.1	0.1	0	0
MIN	0	0	4.8	5.0	5.9	4.0	0.9	0.3	0.1	0	0	0
AC-FT	0	1,220	520	6,910	882	405	121	38	49	3.0	0	0
CALENDAR YEAR 1963	MAX	2,210	MIN	0	MEAN	42.3	AC-FT	30,650				
WATER YEAR 1963-64	MAX	919	MIN	0	MEAN	14.0	AC-FT	10,150				

Peak discharge (base, 1,000 cfs).--Jan. 20 (2000) 3,430 cfs (18.52 ft).

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record Oct. 1-14.

11-4609.2. Salmon Creek at Bodega, Calif.

Location.--Lat 38°20'54", long 122°58'45", in Estero Americano Grant, on left bank 100 ft upstream from private road bridge, 0.3 mile upstream from unnamed tributary, and 0.4 mile northwest of Bodega, Sonoma County.

Drainage area.--15.7 sq mi.

Records available.--July 1962 to September 1964.

Gage.--Water-stage recorder (digital) and thermograph recorder. Altitude of gage is 80 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,220 cfs Jan. 20 (gage height, 14.25 ft); no flow Oct. 1-8, June 26 to Sept. 30. 1962-64: Maximum discharge, 1,430 cfs Jan. 31, 1963 (gage height, 15.56 ft); no flow for many days in each year.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 9 to Nov. 3, Nov. 7, 11-13,
May 3 to June 25)

3.6	0	4.1	1.9	5.5	62
3.7	.1	4.3	4.8	6.0	102
3.8	.2	4.5	9.4	7.0	214
3.9	.5	4.7	15	9.0	470
4.0	1.0	5.0	29		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0	0.9	5.2	4.1	15	5.0	3.8	1.1	0.2			(*)
2	0	1.0	4.6	4.0	14	5.9	3.1	1.0	.3			
3	0	1.2	4.1	3.5	12	4.0	2.8	1.1	.3			
4	0	5.6	4.0	3.5	11	*3.8	2.7	1.3	.2			
5	0	4.0	3.8	3.2	10	3.5	2.5	1.0	.4			
6	0	6.3	3.5	3.4	9.1	3.5	*2.3	.9	.5			
7	0	3.1	3.2	4.0	8.0	3.4	2.4	.7	.6			
8	0	8.7	3.8	3.4	7.5	3.1	2.1	.6	.9			
9	.1	8.7	6.5	4.1	7.1	3.1	2.1	.7	2.0			
10	.1	4.3	4.4	6.5	6.8	3.1	1.9	.7	1.1			
11	.7	2.9	3.5	4.1	6.3	8.3	1.8	*.6	.8			
12	.7	2.4	3.2	3.8	5.9	14	1.7	.5	.6			
13	.4	2.3	3.2	3.8	5.4	9.0	1.5	.5	.5			
14	*.3	32	2.9	5.4	5.2	5.3	1.4	.5	.4			
15	.3	17	2.9	4.0	9.5	4.6	1.2	.5	.4			
16	.6	6.5	2.9	5.2	6.5	4.1	1.2	.5	.4			
17	.6	4.3	2.8	12	5.6	3.8	1.0	.4	.3			
18	.5	3.5	2.9	25	5.2	3.5	.9	.3	.3			
19	.4	69	6.4	105	5.0	3.2	1.0	.4	*.2			
20	.4	33	11	391	4.4	2.9	.9	.3	.1			
21	.4	11	7.4	246	4.1	3.2	1.0	.4	.1			
22	.4	*6.0	5.6	153	4.1	13	1.0	.3	.2			
23	.5	206	4.8	79	4.0	9.5	1.0	.2	.1			
24	.6	54	*5.0	56	4.0	5.5	.9	.2	.1			
25	.5	21	8.7	48	3.8	4.4	1.0	.4	.1			
26	.6	13	6.3	38	3.5	4.1	.8	.3	0			
27	.8	9.7	5.2	29	3.4	3.8	.9	.3	0			
28	.8	8.2	4.8	*23	3.7	3.5	1.0	.3	0			
29	.9	6.8	4.6	22	3.5	3.5	1.3	.3	0	(*)		
30	.9	5.9	4.3	21	-----	3.4	1.1	.2	0			
31	.9	-----	4.1	17	-----	3.4	-----	.3	-----			
TOTAL	12.4	558.3	145.6	1,331.0	193.6	154.4	46.3	16.8	11.1	0	0	0
MEAN	0.40	18.6	4.70	42.9	6.68	4.98	1.61	0.54	0.37	0	0	0
AC-FT	25	1,110	289	2,640	384	306	96	33	22	0	0	0
MAX	0.9	206	11	391	15	14	3.8	13	2.0	0	0	0
MIN	0	0.9	2.8	3.2	3.4	2.9	0.8	0.2	0	0	0	0

CALENDAR YEAR 1963 MAX 797 MIN 0 MEAN 19.2 AC-FT 13,860
WATER YEAR 1963-64 MAX 391 MIN 0 MEAN 6.75 AC-FT 4,900

Peak discharge (base, 750 cfs).--Nov. 23 (0730) 764 cfs (11.17 ft); Jan. 20 (1830) 1,220 cfs (14.25 ft).

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record July 29 to Sept. 1.

SALMON CREEK BASIN

11-4609.2. Salmon Creek at Bodega, Calif.

Records available.--October 1963 to September 1964.Extremes.--Maximum temperature during year, 65°F Apr. 14; minimum, 33°F Jan. 13-15.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	-	-	51	41	50	44	48	41	54	49	53	45	56	49	56	51	58	53						
2	-	-	51	46	46	43	50	40	59	48	54	45	56	46	55	48	57	52						
3	-	-	50	44	48	42	48	36	55	43	56	44	60	45	55	51	58	52						
4	-	-	57	50	44	42	47	37	54	41	58	46	58	46	56	47	61	56						
5	-	-	55	53	45	41	47	33	54	43	57	48	57	48	53	49	61	58						
6	-	-	58	49	47	42	44	37	54	42	56	47	57	49	55	45	60	58						
7	-	-	55	46	48	38	50	42	51	40	55	42	58	45	56	48	60	57						
8	-	-	56	53	44	40	49	39	52	40	55	41	58	50	55	51	57	54						
9	62	56	60	54	49	41	45	38	54	41	55	46	59	48	60	51	57	52						
10	57	52	62	52	48	38	46	36	54	46	56	44	60	48	62	54	60	54						
11	61	54	59	49	45	34	45	35	53	44	51	46	58	48	64	54	60	53						
12	60	52	58	52	45	35	45	34	53	41	51	44	62	47	61	54	60	55						
13	60	52	57	54	42	35	41	33	51	41	54	45	63	48	59	55	63	54						
14	58	54	57	53	40	35	44	33	50	40	56	44	65	50	58	51	62	56						
15	58	56	57	49	40	36	44	33	51	42	60	48	64	50	58	51	60	56						
16	63	56	55	45	41	36	41	34	50	40	64	49	61	52	56	54	58	54						
17	58	55	54	46	42	36	44	39	53	40	64	48	58	49	61	55	59	55						
18	61	56	53	45	40	36	46	42	55	42	64	49	58	48	61	54	58	55						
19	61	55	53	48	42	39	49	45	60	43	63	46	57	50	60	52	59	54						
20	59	55	55	48	47	41	50	46	60	47	60	50	57	52	61	55	59	53						
21	60	54	52	44	45	38	46	42	59	44	58	50	58	50	60	52	60	52						
22	60	55	48	43	46	36	47	41	59	46	51	45	58	51	59	52	62	52						
23	61	54	52	46	46	38	44	39	58	44	50	43	54	46	58	55	62	53						
24	56	50	55	46	43	38	45	42	54	48	53	43	54	44	59	55	63	54						
25	59	52	54	44	47	42	47	44	57	45	55	42	56	47	58	53	61	53						
26	59	51	54	44	51	45	52	42	56	40	56	43	56	48	59	55	-	-						
27	59	48	54	45	50	47	51	43	55	44	59	44	58	51	60	54	-	-						
28	56	46	53	46	52	47	51	45	54	42	62	49	57	54	59	53	-	-						
29	56	48	52	45	50	46	50	47	54	42	56	50	58	52	60	53	-	-						
30	54	46	51	44	52	44	54	47	-----	-----	57	47	55	49	60	54	-	-						
31	53	44	-----	-----	50	43	54	46	-----	-----	55	49	-----	-----	58	55	-----	-----						
Avg	-	-	55	47	46	40	47	40	55	43	57	46	58	49	58	52	-	-						

RUSSIAN RIVER BASIN

365

11-4609.4. Russian River near Redwood Valley, Calif.

Location.--Lat 39°19'10", long 123°13'20", in NW¼ sec.20, T.17 N., R.12 W., on left bank 600 ft upstream from Rocky Creek and 3.8 miles north of town of Redwood Valley.

Drainage area.--14.1 sq mi.

Records available.--August 1963 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 800 ft (from topographic map).

Extremes.--Maximum discharge during period, 1,500 cfs Jan. 20 (gage height, 7.22 ft); no flow Sept. 30 to Oct. 5, 1963, Aug. 9 to Sept. 30, 1964.

Remarks.--Records good. No regulation or diversion above station.

Discharge, in cubic feet per second, 1963

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	0.1	7	-	0.1	13	†0.1	0.1	19	-	0.1	25	0.1	0.1
2	-	.1	8	-	.1	14	-	.1	20	.1	.1	26	.1	.1
3	-	.1	9	-	.1	15	-	.1	21	.1	.1	27	.1	.1
4	-	.1	10	-	.1	16	-	.1	22	.1	.1	28	.1	.1
5	-	.1	11	-	.1	17	-	.1	23	.1	.1	29	.1	.1
6	-	.1	12	-	.1	18	-	.1	24	*.1	.1	30	.1	0
												31	.1	-
Total.....													-	2.9
Mean.....													-	0.10
Max.....													-	0.1
Min.....													-	0
Ac-ft.....													-	5.8

* Discharge measurement made on this day.

† Result of discharge measurement.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0	1.0	11	7.0	25	9.8	11	3.0	0.7	0.1	0.1	
2	0	1.3	9.1	6.5	21	8.4	9.1	2.7	.7	.1	.1	
3	0	10	8.0	6.0	18	6.5	8.0	5.7	*.7	.1	.1	
4	0	*46	7.3	5.7	17	6.0	7.7	3.8	.8	.1	.1	
5	0	12	6.7	5.0	15	5.2	7.0	3.2	1.4	.1	.1	
6	.1	*35	6.5	5.7	14	5.5	6.5	3.0	1.4	.1	.1	
7	.1	12	5.7	6.0	12	5.2	6.2	2.6	1.3	.1	.1	
8	.1	108	9.8	5.0	11	4.8	5.7	2.4	1.3	.1	.1	
9	.2	83	11	7.3	11	4.8	5.5	2.3	1.5	*.1	0	
10	.3	20	8.0	7.3	10	4.6	5.2	2.1	1.4	.1	0	
11	.5	10	7.0	6.5	9.4	6.2	5.0	2.0	1.1	.1	0	
12	.3	7.0	*6.5	6.0	8.7	4.3	4.8	1.8	.7	.1	0	
13	.2	6.7	6.0	8.0	8.0	2.9	4.4	1.3	.5	.1	0	
14	.2	129	5.7	*8.4	8.0	1.9	4.2	1.8	.5	.1	0	
15	25	49	5.0	7.0	9.8	1.6	4.0	1.7	.4	.1	0	
16	4.4	23	4.6	11	8.0	13	3.8	2.0	.4	.1	0	
17	2.0	15	4.6	7.1	7.3	12	3.8	2.4	.4	.1	0	
18	1.4	9.8	4.6	110	*7.0	10	3.6	1.8	.3	.1	0	
19	1.1	96	9.5	225	6.7	9.4	3.5	1.8	.3	.1	*0	
20	.8	44	32	*721	6.5	8.7	3.3	1.7	.3	.1	0	
21	.7	21	13	*298	6.0	9.8	3.3	1.5	.2	.1	0	
22	2.0	45	11	190	6.0	17	3.3	1.5	.2	.1	0	
23	3.5	444	9.4	136	5.7	18	4.0	1.4	.2	.1	0	
24	2.1	121	9.1	136	5.5	*23	3.8	1.5	.2	.1	0	
25	1.7	51	8.7	156	5.2	17	3.3	1.1	.1	.1	0	
26	1.4	32	8.0	122	5.2	15	3.2	1.3	.1	.1	0	
27	1.1	23	9.4	88	5.0	13	3.0	1.4	.1	.1	0	
28	1.0	18	9.1	60	5.2	11	2.9	1.3	.1	.1	0	
29	1.0	15	8.4	47	5.2	9.8	2.7	1.1	.1	.1	0	
30	.8	12	7.7	36	-----	9.4	*2.6	1.0	.1	.1	0	
31	.8	-----	7.3	30	-----	10	-----	.8	-----	.1	0	-----
TOTAL	52.8	1,499.8	269.7	2,534.4	282.4	435.9	144.4	63.3	17.5	3.1	0.8	0
MEAN	1.70	50.0	8.70	81.8	9.74	14.1	4.81	2.04	0.58	0.10	0.03	0
MAX	25	444	32	721	25	62	11	5.7	1.5	0.1	0.1	0
MIN	0	1.0	4.6	5.0	5.0	4.6	2.6	0.8	0.1	0.1	0	0
AC-FT	105	2,970	535	5,030	560	865	286	126	35	6.1	1.6	0

CALENDAR YEAR 1963 MAX - MIN - MEAN - AC-FT -
WATER YEAR 1963-64 MAX 721 MIN 0 MEAN 14.5 AC-FT 10,520

Peak discharge (base, 600 cfs).--Nov. 23 (1200) 832 cfs (5.63 ft); Jan. 20 (1500) 1,500 cfs (7.22 ft).

* Discharge measurement or observation of no flow made on this day.

RUSSIAN RIVER BASIN

11-4610. Russian River near Ukiah, Calif.

Location.--Lat 39°12'07", long 123°11'55", in Yokayo Rancho Grant, on left bank 200 ft downstream from York Creek, 0.7 mile upstream from East Fork, and 3.6 miles north of Ukiah, Mendocino County.

Drainage area.--99.7 sq mi (revised).

Records available.--August 1911 to September 1913, October 1952 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 612.02 ft above mean sea level (levels by Corps of Engineers). Prior to October 1952, staff gage at bridge 0.6 mile downstream at different datum. Oct. 1, 1952, to Feb. 16, 1959, at datum 2.00 ft higher. Feb. 17, 1959, to Sept. 30, 1961, at datum 1.00 ft higher.

Average discharge.--14 years, 167 cfs (120,900 acre-ft per year); median of yearly mean discharges, 146 cfs (106,000 acre-ft per year).

Extremes.--Maximum discharge during year, 8,850 cfs Jan. 20 (gage height, 13.28 ft); no flow July 27, Sept. 16-30. 1911-13, 1952-64; Maximum discharge, 18,900 cfs Dec. 21, 1955 (gage height, 21.0 ft, present datum), from rating curve extended above 13,000 cfs on basis of slope-area measurement of maximum flow; no flow at times in 1911, 1952-53, 1960-61, 1964.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation; small diversions above station for irrigation.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.2	0.5	96	44	186	49	59	17	6.7	1.2	0.2	0.1
2	.3	.6	76	43	163	68	49	16	5.2	.9	.2	.1
3	1.0	.9	64	40	140	46	45	28	*5.5	1.2	.2	.1
4	.5	152	54	36	124	41	42	33	6.2	1.1	.2	.1
5	.6	*41	47	33	112	38	39	22	6.2	1.1	.2	.1
6	1.0	*117	41	32	105	37	37	19	11	.8	.2	.1
7	1.1	78	38	51	95	35	34	17	12	.5	.2	.1
8	.7	554	48	43	88	33	32	15	13	.6	.2	.1
9	1.7	469	117	45	82	31	31	15	14	*.8	.2	.1
10	2.4	174	67	74	79	31	29	15	12	1.1	.2	.1
11	7.6	77	*50	54	75	146	28	14	10	1.4	.2	.1
12	7.6	40	45	47	69	221	27	13	9.6	.7	.3	.1
13	5.5	29	41	55	65	176	24	12	15	.5	.2	.1
14	3.4	467	38	*81	62	116	23	12	17	.7	.2	.1
15	33	323	36	60	72	92	22	12	11	.5	.2	.1
16	17	172	34	89	61	78	22	13	9.1	.7	.2	0
17	2.4	106	31	387	54	69	21	13	5.9	.7	.2	0
18	1.4	75	31	762	52	61	21	14	5.9	.5	.2	0
19	1.0	235	70	1,740	*49	54	20	13	7.6	.5	*.2	0
20	.7	274	249	3,640	46	48	20	12	5.5	.7	.2	0
21	.6	133	113	*1,850	43	54	19	11	6.7	.7	.2	0
22	.6	121	80	*1,200	43	93	19	9.1	7.6	.5	.2	0
23	1.7	1,970	68	802	41	111	22	10	7.2	.5	.2	0
24	2.6	861	59	820	40	119	24	11	3.1	.2	.2	*0
25	2.3	446	57	811	38	*97	22	9.6	.8	.1	.1	0
26	1.4	293	47	633	37	80	20	9.1	.8	.1	.1	0
27	1.0	219	64	474	36	72	18	8.1	.9	0	.1	0
28	.7	170	76	356	37	62	17	8.6	1.4	.7	.1	0
29	.7	137	65	305	38	54	*16	9.6	2.0	.6	.1	0
30	.6	115	56	266	-----	50	15	8.6	1.1	.2	.1	0
31	.5	-----	48	214	-----	49	-----	9.6	-----	.2	.1	-----
Total	101.8	7,850.0	2,006	15,087	2,132	2,311	817	429.3	220.0	20.0	5.6	1.5
Mean	3.28	262	64.7	487	73.5	74.5	27.2	13.8	7.33	0.65	0.18	0.50
Max	33	1,970	249	3,640	186	221	59	33	17	1.4	0.3	0.1
Min	0.2	0.5	31	32	36	31	15	8.1	0.8	0	0.1	0
Ac-ft	202	15,570	3,980	29,920	4,230	4,580	1,620	852	436	40	11	3.0

Calendar year 1963: Max 4,790 Min 0.1 Mean 170 Ac-ft 123,200
 Water year 1963-64: Max 3,640 Min 0 Mean 84.6 Ac-ft 61,440

Peak discharge (base, 4,000 cfs).--Jan. 20 (1500) 8,850 cfs (13.28 ft).

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record Oct. 1, Dec. 18, 19, Aug. 20 to Sept. 30.

11-4615. East Fork Russian River near Calpella, Calif.

Location.--Lat 39°14'35", long 123°08'10", in NW¼ sec.13, T.16 N., R.12 W., on left bank 0.5 mile downstream from Cold Creek and 3.6 miles east of Calpella.

Drainage area.--93.0 sq mi.

Records available.--October 1941 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Altitude of gage is 800 ft (from topographic map). Prior to May 28, 1957, at site 0.9 mile downstream at different datum.

Average discharge.--23 years, 324 cfs (234,600 acre-ft per year).

Extremes.--Maximum discharge during year, 8,340 cfs Jan. 20 (gage height, 12.85 ft), from rating curve extended above 3,200 cfs; minimum daily, 17 cfs June 23, 29, July 3.

1941-64: Maximum discharge, 13,300 cfs Dec. 21, 1955 (gage height, 15.06 ft, site and datum then in use), from rating curve extended above 8,600 cfs; minimum daily, 3.8 cfs Oct. 30, 31, 1959.

Remarks.--Records good. Flow greatly affected by diversion from Eel River through Potter Valley powerhouse (see p. 396). Small diversion for irrigation above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.5	15	3.0	495
.7	26	4.0	900
1.0	52	6.0	2,020
1.5	120	8.0	3,500
2.0	216		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	192	229	358	325	409	349	231	44	66	21	133	142
2	174	227	355	322	403	349	220	45	53	20	129	152
3	167	231	349	319	397	340	162	99	*50	17	125	148
4	202	*371	346	319	394	337	149	99	68	24	136	136
5	210	279	325	319	391	337	140	87	61	37	121	134
6	236	385	319	319	385	337	140	85	43	101	114	156
7	231	316	319	319	376	337	138	83	51	97	110	159
8	231	512	331	316	376	337	136	83	60	110	122	135
9	234	451	355	322	373	334	136	76	72	*123	143	118
10	242	253	334	322	367	334	138	76	73	126	110	163
11	258	249	289	319	364	411	112	69	71	140	91	177
12	236	231	*319	316	361	421	105	48	66	125	111	178
13	234	258	319	*322	358	379	99	39	71	114	115	181
14	231	489	319	328	358	361	103	37	70	101	121	176
15	347	436	319	319	364	355	100	38	47	107	113	172
16	272	376	316	331	352	349	85	40	24	116	123	175
17	240	349	316	512	349	349	75	56	26	122	127	166
18	238	334	316	651	*346	328	74	54	23	121	114	178
19	231	534	328	1,120	331	210	63	61	18	111	*109	182
20	231	406	413	3,080	331	206	56	66	23	104	123	202
21	231	340	349	1,580	340	208	56	58	25	93	116	187
22	234	359	340	1,080	340	245	56	49	23	109	127	185
23	265	1,870	334	772	337	253	60	47	17	136	132	178
24	242	653	334	706	337	*256	55	43	20	119	115	*178
25	236	436	331	734	337	231	47	49	29	102	108	190
26	234	397	272	602	337	225	49	74	20	104	106	185
27	234	382	227	542	337	225	51	48	19	90	105	190
28	231	370	331	499	337	223	32	61	24	95	110	181
29	231	355	328	467	337	216	32	66	17	106	117	176
30	231	364	325	427	-----	208	*35	56	19	107	123	182
31	229	-----	325	415	-----	210	-----	67	-----	126	128	-----
Total	7,235	12,442	10,141	18,324	10,424	9,260	2,935	1,903	1,249	3,024	3,677	5,062
Mean	233	415	327	591	359	299	97.8	61.4	41.6	97.5	119	169
Max	347	1,870	413	3,080	409	421	231	99	73	140	143	202
Min	167	227	227	316	331	206	32	37	17	17	91	118
Ac-ft	14,350	24,680	20,110	36,350	20,680	18,370	5,820	3,770	2,480	6,000	7,290	10,040

Calendar year 1963: Max 3,960 Min 132 Mean 369 Ac-ft 266,800

Water year 1963-64: Max 3,080 Min 17 Mean 234 Ac-ft 169,900

Peak discharge (base, 3,300 cfs).--Jan. 20 (1600) 8,340 cfs (12.85 ft).

* Discharge measurement made on this day.

RUSSIAN RIVER BASIN

11-4620. East Fork Russian River near Ukiah, Calif.

Location.--Lat 39°11'45", long 123°11'30", in Yokayo Rancho Grant, on right bank of outlet channel, 500 ft downstream from Coyote Dam, 1,300 ft upstream from mouth, and 3.2 miles northeast of Ukiah, Mendocino County.

Drainage area.--105 sq mi.

Records available.--August 1911 to September 1913, October 1951 to June 1956, October 1957 to September 1964.

Gage.--Water-stage recorder (digital) and concrete control. Datum of gage is 614.43 ft above mean sea level (levels by Corps of Engineers). Prior to October 1951, staff gage at site half a mile upstream at different datum. October 1951 to June 1956, water-stage recorder at site 1.0 mile upstream at different datum.

Average discharge.--13 years (1911-13, 1951-55, 1957-64), 327 cfs (236,700 acre-ft per year).

Extremes.--Maximum discharge during year, 4,380 cfs Nov. 24 (gage height, 9.16 ft); minimum daily, 13 cfs Dec. 4. 1911-13, 1951-56, 1957-64: Maximum discharge, 13,300 cfs Dec. 21, 1955 (gage height, 16.86 ft, site and datum then in use), from rating curve extended above 1,700 cfs on basis of maximum flow at station upstream which was defined to 8,600 cfs; no flow Aug. 13-15, 1913.

Remarks.--Records excellent. Flow affected by diversion from Bel River through Potter Valley powerhouse (see p. 396) and since November 1958 by storage in Lake Mendocino (capacity, 122,500 acre-ft). Small diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 23-26, June 13 to Sept. 30)

0.9	11	3.0	445
1.0	17	4.0	820
1.2	35	5.0	1,290
1.5	74	7.0	2,550
2.0	175	9.0	4,220

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	240	295	14	88	43	128	210	88	148	260	241	240
2	240	367	14	110	43	128	210	87	148	273	240	238
3	240	365	14	124	43	128	208	86	150	278	240	237
4	240	367	13	124	43	132	208	88	*164	278	240	236
5	240	*366	21	124	43	132	208	88	170	278	240	235
6	238	340	44	1,050	43	132	161	88	170	249	240	235
7	240	379	58	1,860	43	132	119	89	173	235	240	235
8	240	381	58	1,110	43	134	106	88	173	*235	240	235
9	238	379	58	86	43	240	106	88	173	235	243	235
10	238	379	58	86	50	295	106	89	173	235	242	235
11	238	379	*58	86	100	298	105	89	173	235	240	233
12	238	379	79	86	84	412	106	88	158	235	238	230
13	235	379	89	86	65	418	104	89	152	235	248	228
14	235	380	89	*86	65	298	105	89	152	235	248	228
15	255	379	89	86	65	300	104	89	150	234	248	228
16	265	379	1,370	86	65	300	102	91	150	233	248	217
17	265	379	2,340	86	950	300	120	90	150	233	247	198
18	265	379	1,290	86	1,830	300	128	89	150	233	246	198
19	265	379	56	88	1,560	273	128	91	161	235	*245	199
20	265	379	56	59	455	200	111	91	164	235	245	198
21	263	879	56	996	68	164	92	91	164	235	245	197
22	263	1,550	56	2,310	68	164	86	93	164	235	245	195
23	263	594	56	2,640	70	168	91	93	164	235	244	196
24	260	2,130	76	2,590	70	168	91	93	166	240	241	*220
25	260	4,100	88	1,680	83	*168	91	95	166	243	240	229
26	258	1,650	88	514	95	199	89	93	194	243	240	230
27	258	16	88	1,910	95	213	88	93	210	243	240	229
28	260	15	88	1,220	104	215	86	127	210	243	240	228
29	258	15	88	42	126	213	*86	143	239	243	240	228
30	260	14	88	42	-----	213	86	143	260	243	240	228
31	260	-----	88	43	-----	213	-----	148	-----	242	240	-----
TOTAL	7,783	18,372	6,728	19,584	6,455	6,778	3,641	2,987	5,139	7,544	7,514	6,698
MEAN	251	612	217	632	223	219	121	96.4	171	243	242	223
AC-FT	15,440	36,440	13,340	38,840	12,800	13,440	7,220	5,920	10,190	14,960	14,900	13,290
MAX	265	4,100	2,340	2,640	1,830	418	210	148	260	278	248	240
MIN	235	14	13	42	43	128	86	86	148	233	238	195

CALENDAR YEAR 1963 MAX 4,100 MIN 13 MEAN 374 AC-FT 270,900
WATER YEAR 1963-64 MAX 4,100 MIN 13 MEAN 271 AC-FT 196,800

* Discharge measurement made on this day.

11-4625. Russian River near Hopland, Calif.

Location.--Lat 39°01'35", long 123°07'45"--in Rancho de Sanel Grant, on right bank at abandoned highway bridge, 0.2 mile downstream from McNab Creek, 4 miles north of Hopland, Mendocino County, and 17 miles upstream from Sulphur Creek.

Drainage area.--362 sq mi.

Records available.--October 1939 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder (digital). Datum of gage is 497.43 ft above mean sea level, datum of 1929. Prior to Sept. 9, 1943, wire-weight gage at same site and datum.

Average discharge.--25 years, 694 cfs (502,400 acre-ft per year).

Extremes.--Maximum discharge during year, 17,000 cfs Jan. 20 (gage height, 17.72 ft); minimum daily, 119 cfs May 27.
1939-64: Maximum discharge, 45,000 cfs Dec. 22, 1955 (gage height, 27.00 ft); minimum daily, 26 cfs Dec. 18, 1943, June 26, 1949.

Flood in December 1937 reached a stage of 30.0 ft, from floodmarks.

Remarks.--Records good. Small diversions for irrigation above station. Flow also affected by diversion into basin (see Remarks for East Fork Russian River stations) and since November 1958 by storage in Lake Mendocino (capacity, 122,500 acre-ft).

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Nov. 13, Nov. 17, 18, Jan. 13,
Jan. 23 to Mar. 11, Apr. 22, Apr. 26 to May 9)

4.6	115	7.0	1,000
4.9	148	8.0	1,660
5.2	216	10.0	3,650
5.5	304	13.0	7,900
6.0	500		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	224	265	211	173	655	357	358	130	151	239	211	242
2	224	357	181	179	595	419	341	130	*148	248	212	241
3	225	369	162	196	541	360	329	140	148	262	211	241
4	226	456	149	193	496	342	323	150	153	265	212	239
5	229	*439	140	189	464	335	317	140	165	267	213	238
6	234	473	142	685	435	331	289	134	170	249	211	240
7	230	473	153	1,840	407	328	227	131	174	217	211	242
8	230	846	158	1,520	387	324	195	129	178	*214	211	238
9	236	940	235	280	368	375	183	127	179	217	211	235
10	240	595	203	244	353	473	179	127	177	216	210	233
11	246	491	177	219	391	550	176	126	174	216	208	231
12	242	451	*172	203	411	912	169	123	169	215	204	230
13	242	439	186	200	349	816	167	122	155	215	211	227
14	242	879	183	227	342	572	163	121	156	215	216	228
15	302	879	178	*206	357	521	161	121	154	213	221	228
16	310	622	928	206	342	493	161	121	152	211	222	225
17	282	527	2,310	331	852	473	167	123	152	208	223	197
18	278	487	1,800	1,070	2,210	459	185	122	149	207	222	194
19	274	670	270	2,610	*2,130	433	185	121	151	207	224	191
20	273	825	366	7,430	1,110	363	179	121	159	208	*224	189
21	272	780	266	5,820	379	307	143	121	160	204	224	191
22	275	1,550	213	5,280	324	346	135	121	160	202	222	186
23	279	4,080	188	4,840	301	402	142	120	156	202	222	185
24	274	2,740	180	4,690	289	*391	146	120	153	204	223	195
25	271	4,960	191	4,180	283	362	140	120	151	209	224	*218
26	268	3,090	183	2,360	298	352	135	120	158	212	225	221
27	268	558	187	2,840	295	368	135	119	186	213	223	226
28	266	378	202	2,830	295	358	132	123	191	213	222	226
29	267	297	193	995	328	348	*130	145	204	212	234	225
30	265	248	185	863	-----	340	129	147	236	209	238	224
31	262	-----	178	735	-----	340	-----	150	-----	210	241	-----
TOTAL	7,956	30,164	10,470	53,634	15,987	13,150	5,821	3,965	4,969	6,799	6,786	6,626
MEAN	257	1,005	338	1,730	551	424	194	128	166	219	219	221
AC-FT	15,780	59,830	20,770	106,400	31,710	26,080	11,550	7,860	9,860	13,490	13,460	13,140
MAX	310	4,960	2,310	7,430	2,210	912	358	150	236	267	241	242
MIN	224	248	140	173	283	307	129	119	148	202	204	185

CALENDAR YEAR 1963 MAX 10,500 MIN 121 MEAN 748 AC-FT 541,400
WATER YEAR 1963-64 MAX 7,430 MIN 119 MEAN 454 AC-FT 329,900

Peak discharge (base, 9,600 cfs).--Jan. 20 (2000) 17,000 cfs (17.72 ft).

* Discharge measurement made on this day.

RUSSIAN RIVER BASIN

11-4627, Feliz Creek near Hopland, Calif.

Location.--Lat 38°58'20", long 123°08'30", in Rancho de Sanel Grant, on left bank just upstream from county road bridge, 0.1 mile upstream from Johnson Creek, and 1.4 miles west of Hopland, Mendocino County.

Drainage area.--31.1 sq mi.

Records available.--August 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 500 ft (from topographic map).

Average discharge.--6 years, 37.7 cfs (27,290 acre-ft per year).

Extremes.--Maximum discharge during year, 2,710 cfs Jan. 20 (gage height, 13.60 ft); no flow Oct. 1-6, July 10 to Sept. 30.

1958-64: Maximum discharge, 2,910 cfs Jan. 31, 1963 (gage height, 13.43 ft); maximum gage height, that of Jan. 20, 1964; no flow for several months in each year.

Flood of Dec. 23, 1955, reached a stage of 13.60 ft, from floodmarks, (discharge, 2,710 cfs on basis of slope-area measurement of maximum flow).

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 4, 5, Nov. 19, 20, Jan. 20 to Feb. 20,
Mar. 1-3, Mar. 11 to Apr. 3)

4.4	0	4.9	8.7	5.7	91
4.5	.3	5.0	14	6.0	145
4.6	1.0	5.2	29	8.0	705
4.7	2.3	5.4	51	10.0	1,370
4.8	4.9				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0	3.9	13	7.2	46	17	15	4.4	2.0	0.2		
2	0	3.9	12	7.2	39	18	12	4.1	2.0	.1		
3	0	4.1	11	7.2	34	12	11	6.4	1.9	.1		
4	0	35	9.8	6.8	30	10	10	8.3	*2.0	.4		
5	0	*36	9.2	6.4	28	9.2	9.2	5.3	2.0	.4		
6	0	*57	8.3	6.8	25	8.7	8.7	4.4	2.2	.4		
7	.5	17	7.9	8.7	22	8.3	8.3	4.1	2.2	.2		
8	.9	60	8.3	7.6	20	7.9	7.9	4.1	2.3	*.1		
9	.9	45	14	7.6	19	7.6	7.9	3.9	2.8	.1		
10	1.8	18	9.8	7.9	18	7.6	7.6	3.3	2.3	0		
11	3.6	12	8.3	7.6	17	105	7.2	2.8	1.9	0		
12	2.2	9.2	7.9	7.2	15	81	6.8	2.8	1.0	0		
13	2.0	8.7	*7.6	7.9	14	45	6.4	2.0	1.0	0		
14	2.0	225	7.2	11	14	31	6.0	1.5	.9	0		
15	7.2	78	7.2	*8.7	18	25	5.7	1.8	1.0	0		
16	6.8	29	6.8	9.2	14	20	5.7	1.8	.9	0		
17	4.6	19	6.8	28	12	18	5.7	3.1	1.3	0		
18	3.9	14	7.2	70	12	17	5.7	2.6	1.3	0		
19	3.6	*158	12	312	*11	15	5.7	2.0	1.4	0		
20	3.6	80	21	1,060	11	14	5.3	1.9	.9	0	(*)	
21	3.6	31	13	527	10	16	4.9	1.8	.5	0		
22	3.9	23	11	*363	10	23	4.9	1.5	.7	0		
23	5.3	526	10	215	9.8	*25	5.3	1.5	1.3	0		
24	4.9	192	9.2	200	9.2	20	6.0	2.3	.4	0		
25	4.4	72	9.2	213	8.7	18	5.3	2.3	.3	0		(*)
26	4.1	44	8.7	148	8.3	15	4.6	2.6	.2	0		
27	4.1	29	8.7	107	7.9	14	4.4	2.6	.4	0		
28	3.9	23	9.2	84	8.3	13	*4.1	2.6	1.0	0		
29	3.9	18	8.7	71	7.9	13	4.1	1.7	.7	0		
30	3.6	15	7.9	62	-----	12	3.9	1.5	.2	0		
31	3.6	-----	7.6	52	-----	13	-----	1.7	-----	0		-----
TOTAL	88.9	1,883.8	298.5	3,637.0	499.1	659.3	205.3	92.7	39.0	2.0	0	0
MEAN	2.87	62.9	9.63	117	17.2	21.3	6.84	2.99	1.30	0.06	0	0
MAX	7.2	526	21	1,060	46	105	15	8.3	2.8	0.4	0	0
MIN	0	3.9	6.8	6.4	7.9	7.6	3.9	1.5	0.2	0	0	0
AC-FT	176	3,740	592	7,210	990	1,310	407	184	77	4.0	0	0

CALENDAR YEAR 1963 MAX 1,690 MIN 0 MEAN 56.5 AC-FT 40,910
WATER YEAR 1963-64 MAX 1,060 MIN 0 MEAN 20.2 AC-FT 14,690

Peak discharge (base, 2,000 cfs).--Jan. 20 (1500) 2,710 cfs (13.60 ft).

* Discharge measurement or observation of no flow made on this day.

RUSSIAN RIVER BASIN

371

11-4630. Russian River near Cloverdale, Calif.

Location.--Lat 38°52'55", long 123°03'15", in SW¼ sec.14, T.12 N., R.11 W., on left bank at Lambert Ranch, 400 ft downstream from Cummysky Creek and 5 miles northwest of Cloverdale.

Drainage area.--502 sq mi.

Records available.--July 1951 to September 1964.

Gage.--Water-stage recorder (digital). Datum of gage is 373.44 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--13 years, 953 cfs (689,900 acre-ft per year).

Extremes.--Maximum discharge during year, 16,600 cfs Jan. 20 (gage height, 18.23 ft); minimum daily, 114 cfs May 26, 28.

1951-64: Maximum discharge, 53,000 cfs Dec. 22, 1955 (gage height, 30.9 ft, from floodmarks), from rating curve extended above 21,000 cfs on basis of determination of maximum flow at upstream and downstream stations; minimum daily, 81 cfs Nov. 24, 1958.

Remarks.--Records good. Small diversions for irrigation above station. Flow also affected by diversion into basin (see Remarks for East Fork Russian River stations) and since November 1958 by storage in Lake Mendocino (capacity, 122,500 acre-ft).

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-22, Nov. 28 to Dec. 16, Feb. 21 to
Mar. 10, Mar. 24 to Apr. 10, July 3 to Aug. 21)

5.8	114	9.0	1,970
6.0	152	10.0	2,950
7.0	600	12.0	5,420
8.0	1,200	15.0	10,300

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	222	189	298	232	718	325	436	146	152	239	224	232
2	219	238	264	232	613	381	420	146	*149	244	227	232
3	216	271	242	249	509	345	360	155	148	264	226	232
4	212	570	225	249	425	325	387	173	152	270	226	230
5	212	546	209	242	366	316	370	161	166	274	226	228
6	216	768	203	486	322	311	360	151	171	272	226	230
7	216	* 558	206	2,040	284	307	298	146	179	*235	226	231
8	216	948	209	2,020	261	302	260	142	183	227	227	230
9	222	1,380	257	498	244	316	245	139	187	228	229	228
10	222	852	253	350	230	431	235	137	187	230	227	227
11	242	619	228	302	232	618	228	136	184	230	225	225
12	219	507	216	268	259	1,190	222	131	179	231	221	224
13	212	464	* 225	257	218	1,020	216	128	163	229	222	223
14	206	1,360	225	284	208	738	212	125	162	227	227	218
15	293	1,440	219	268	218	648	203	122	161	226	227	218
16	307	934	564	* 253	207	606	200	121	156	224	229	217
17	249	721	2,430	345	389	576	198	129	157	224	230	204
18	235	615	2,340	1,250	2,050	564	209	126	156	221	229	195
19	228	1,620	528	3,130	2,180	a 520	212	122	154	223	230	193
20	225	1,540	510	9,140	* 1,290	a 430	206	119	166	224	* 229	193
21	222	1,040	414	9,370	447	a 380	184	119	169	220	230	195
22	222	1,880	320	6,850	360	a 430	170	118	171	216	228	191
23	232	5,400	280	5,640	325	* a 500	168	117	167	215	228	188
24	219	3,190	260	5,210	302	480	173	117	162	215	227	189
25	212	4,900	264	5,100	284	453	165	117	156	220	226	* 209
26	206	3,670	257	2,950	289	431	157	114	156	225	227	213
27	200	846	253	2,930	289	447	155	115	188	227	228	217
28	198	552	268	3,500	284	431	* 150	114	199	228	228	220
29	195	420	260	1,260	302	425	148	137	206	227	228	218
30	192	345	249	1,060	-----	414	147	147	233	222	231	219
31	189	-----	242	853	-----	414	-----	151	-----	223	232	-----
TOTAL	6,876	38,383	12,918	66,818	14,105	15,074	7,094	4,121	5,119	7,180	7,046	6,469
MEAN	222	1,279	417	2,155	486	486	236	133	171	232	227	216
AC-FT	13,640	76,130	25,620	132,500	27,980	29,900	14,070	8,170	10,150	14,240	13,980	12,830
MAX	307	5,400	2,430	9,370	2,180	1,190	436	173	233	274	232	232
MIN	189	189	203	232	207	302	147	114	148	215	221	188

CALENDAR YEAR 1963 MAX 16,200 MIN 138 MEAN 979 AC-FT 708,600
WATER YEAR 1963-64 MAX 9,370 MIN 114 MEAN 522 AC-FT 379,200

Peak discharge (base, 12,400 cfs)--Jan. 20 (2315) 16,600 cfs (18.23 ft).

* Discharge measurement made on this day.
a No gage-height record.

RUSSIAN RIVER BASIN

11-4632. Big Sulphur Creek near Cloverdale, Calif.

Location (revised).--Lat 38°49'21", long 122°59'07", in SW¼SW¼ sec.4, T.11 N., R.10 W., on right bank 0.5 mile downstream from unnamed tributary, 1.9 miles upstream from mouth, and 2.0 miles northeast of Cloverdale.

Drainage area.--82.3 sq mi.

Records available.--July 1957 to September 1964.

Gage.--Water-stage recorder (digital). Altitude of gage is 380 ft (from topographic map).

Average discharge.--7 years, 169 cfs (122,400 acre-ft per year).

Extremes.--Maximum discharge during year, 5,830 cfs Jan. 20 (gage height, 11.21 ft); minimum, 1.8 cfs Sept. 24.

1957-64: Maximum discharge, 9,960 cfs Feb. 24, 1958 (gage height, 14.46 ft), from rating curve extended above 2,900 cfs on basis of slope-area measurement at gage height 22.2 ft; minimum, that of Sept. 24, 1964.

Flood of Dec. 22, 1955, reached a stage of 22.2 ft, from floodmarks, present datum (discharge, 20,000 cfs on basis of slope-area measurement of maximum flow).

Remarks.--Records good except those for period of no gage height record, which are fair. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	6.9	11	97	40	154	73	62	27	16	8.6	4.0	3.0
2	6.9	13	89	39	143	75	54	27	*16	8.3	4.0	3.2
3	6.9	16	84	37	126	61	51	31	16	8.2	3.8	3.5
4	6.9	314	78	37	119	57	49	32	16	7.9	3.8	3.3
5	7.7	321	75	36	112	56	47	28	16	8.0	3.8	3.2
6	9.2	366	72	36	103	56	46	26	17	7.5	3.5	3.2
7	9.2	*146	67	37	97	55	44	26	17	*7.5	3.3	3.2
8	8.9	239	67	36	93	54	43	25	18	7.3	3.3	3.0
9	13	239	75	35	91	54	41	25	20	6.9	3.3	2.8
10	17	124	66	37	85	53	41	24	18	6.7	3.2	3.5
11	65	80	62	34	82	95	40	23	17	6.5	3.0	3.8
12	24	61	60	33	78	140	39	22	15	6.1	3.2	3.7
13	15	54	*58	34	77	91	38	22	14	5.9	3.0	3.7
14	13	838	57	36	73	78	36	22	14	5.8	2.8	3.5
15	36	359	55	*33	78	70	36	21	13	5.8	3.0	3.3
16	61	175	54	32	72	66	35	23	12	5.8	a2.9	3.2
17	26	119	52	42	69	64	35	28	12	5.7	a2.8	2.8
18	19	95	51	112	66	61	34	25	12	5.5	a2.8	3.0
19	15	1,170	60	327	65	58	34	22	12	5.2	a2.8	3.0
20	14	653	66	3,230	*62	58	33	21	11	5.1	*a2.8	3.0
21	13	239	57	1,680	61	60	32	20	11	5.0	3.0	2.8
22	14	160	53	1,010	60	72	32	20	10	4.7	3.3	2.3
23	27	1,080	50	520	60	*73	31	20	10	4.9	3.3	2.2
24	19	510	49	355	60	73	33	20	9.9	4.7	3.3	1.9
25	15	278	48	550	58	66	30	19	9.3	4.5	3.3	*2.2
26	14	190	46	438	57	63	30	19	9.3	4.5	3.2	2.5
27	13	160	46	323	56	59	28	19	8.9	4.5	3.3	2.3
28	12	137	45	260	56	57	*28	19	8.8	4.3	3.2	2.5
29	12	119	43	228	57	54	28	18	8.6	4.4	3.2	2.6
30	12	105	42	200	-----	53	27	18	8.6	4.3	2.8	2.6
31	12	-----	40	172	-----	54	-----	17	-----	4.0	2.8	-----
TOTAL	543.6	8,371	1,864	10,019	2,370	2,059	1,137	709	396.4	184.1	99.8	88.8
MEAN	17.5	279	60.1	323	81.7	66.4	37.9	22.9	13.2	5.94	3.22	2.96
AC-FT	1,080	16,600	3,700	19,870	4,700	4,080	2,260	1,410	786	365	198	176
MAX	65	1,170	97	3,230	154	140	62	32	20	8.6	4.0	3.8
MIN	6.9	11	40	32	56	53	27	17	8.6	4.0	2.8	1.9

CALENDAR YEAR 1963 MAX 5,820 MIN 6.9 MEAN 209 AC-FT 151,400
 WATER YEAR 1963-64 MAX 3,230 MIN 1.9 MEAN 76.1 AC-FT 55,200

Peak discharge (base, 3,200 cfs)--Jan. 20 (1954) 5,830 cfs (11.21 ft).

* Discharge measurement made on this day.
 a No gage-height record.

RUSSIAN RIVER BASIN

373

11-4639. Maacama Creek near Kellogg, Calif.

Location.--Lat 38°38'25", long 122°45'45", in SW¼ sec.9, T.9 N., R.8 W., on right bank 0.5 mile downstream from Redwood Creek, and 4.4 miles west of Kellogg.

Drainage area.--43.4 sq mi.

Records available.--Occasional low-flow measurements and annual maximum, water years 1958-60. December 1960 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 200 ft (from topographic map). Prior to Dec. 20, 1960, crest-stage gage only at site 700 ft upstream at different datum.

Extremes.--Maximum discharge during year, 3,180 cfs Jan. 20 (gage height, 11.90 ft); no flow for many days in August and September. 1958-64: Maximum discharge, 8,100 cfs Feb. 24, 1958 (gage height, 20.6 ft, from floodmarks, site and datum then in use), from rating curve extended above 1,900 cfs. 1960-64: No flow for many days in August and September 1964.

Remarks.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.8	3.6	44	16	78	37	23	8.2	4.0	1.2	0.1	0
2	1.5	4.0	40	15	68	30	18	8.2	3.6	1.1	.1	*0
3	1.7	4.3	37	14	61	23	17	13	3.4	.9	.2	0
4	1.8	97	35	14	57	*21	16	15	3.6	1.1	.2	0
5	2.5	91	34	13	54	18	15	10	4.3	.9	.2	0
6	2.7	146	31	14	50	18	*14	9.0	4.8	.8	.2	0
7	2.5	51	29	17	46	18	14	8.4	5.2	1.0	.1	0
8	2.5	197	31	14	44	16	13	8.2	6.0	.9	.1	0
9	2.9	115	34	14	43	16	13	7.9	7.9	.8	.1	.1
10	4.0	57	28	17	41	16	13	7.6	6.8	.7	.1	.1
11	8.7	41	26	14	39	32	12	7.3	5.7	.7	.1	.1
12	4.3	33	24	13	37	50	12	*6.8	4.8	.5	.1	.1
13	3.3	33	23	15	35	46	11	7.0	2.9	.5	.1	.1
14	*2.9	543	22	16	34	32	11	6.8	2.9	.5	.1	.1
15	5.7	195	22	14	37	27	10	6.0	2.9	.4	.1	.1
16	7.0	89	21	14	32	24	11	7.0	2.9	.6	.1	0
17	4.5	64	20	21	30	23	11	12	2.7	.4	.1	0
18	3.8	52	20	37	29	21	11	8.4	2.7	.3	.1	0
19	3.6	610	25	147	27	19	10	7.3	2.5	.4	.1	.1
20	3.6	313	33	1,160	25	18	10	6.5	2.4	.3	.1	0
21	3.6	*142	25	808	25	20	10	5.5	2.2	.2	.1	0
22	4.0	99	22	479	25	33	10	5.2	1.8	.2	.1	0
23	5.7	522	21	239	23	30	10	5.5	*1.5	.2	.1	0
24	4.5	232	*20	184	23	28	12	5.7	1.7	.2	.1	0
25	4.3	135	21	192	23	26	10	5.7	1.2	.2	.1	0
26	4.0	99	19	157	22	23	10	5.7	1.8	.2	.1	0
27	3.8	78	18	132	21	22	10	5.7	1.7	.2	.1	0
28	3.6	65	18	112	22	21	9.0	5.2	1.5	.2	.1	.1
29	3.8	56	17	103	21	20	8.7	4.8	1.7	.2	0	.1
30	3.8	50	17	*96	-----	18	8.2	4.5	1.5	*.2	0	.2
31	3.8	-----	16	85	-----	21	-----	4.0	-----	.1	0	-----
TOTAL	116.2	4,216.9	793	4,186	1,072	767	362.9	228.1	98.6	16.1	3.2	1.2
MEAN	3.75	141	25.6	135	37.0	24.7	12.1	7.36	3.29	0.52	0.10	0.04
MAX	8.7	610	44	1,160	78	50	23	15	7.9	1.2	0.2	0.2
MIN	1.5	3.6	16	13	21	16	8.2	4.0	1.2	0.1	0	0
AC-FT	230	8,360	1,570	8,300	2,130	1,520	720	452	196	32	6.3	2.4

CALENDAR YEAR 1963 MAX 4,110 MIN 1.4 MEAN 90.1 AC-FT 65,190
 WATER YEAR 1963-64 MAX 1,160 MIN 0 MEAN 32.4 AC-FT 23,520

Peak discharge (base, 1,300 cfs).--Nov. 19 (1200) 2,390 cfs (10.58 ft); Jan. 20 (1800) 3,180 cfs (11.90 ft).

* Discharge measurement or observation of no flow made on this day.

RUSSIAN RIVER BASIN

11-4639.4. Franz Creek near Kellogg, Calif.

Location.--Lat 38°36'30", long 122°41'35", in Mallacomes Grant, on left bank, at downstream side of highway bridge, 100 ft downstream from Bidwell Creek, and 2 miles south of Kellogg, Sonoma County.

Drainage area.--15.7 sq mi (revised).

Records available.--Occasional low-flow measurements, water years 1957-62, and annual maximum, water years 1956, 1958-62, October 1963 to September 1964.

Gages.--Water-stage recorder. Altitude of gage is 350 ft (from topographic map). Oct. 25, 1957 to Sept. 30, 1962, crest-stage gage only, at site 75 ft downstream at same datum.

Extremes.--Maximum discharge during year, 1,740 cfs Jan. 20 (gage height, 5.65 ft); no flow July 8 to Sept. 30. 1955-64: Maximum discharge, 4,130 cfs Dec. 22, 1955 (gage height, 7.8 ft, present datum), by slope-area measurement of maximum flow.

Remarks.--Small diversions above station for irrigation and stock ponds.

Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.7	1.1	3.1	1.6	5.2	4.1	1.4	1.0	0.1		
2	.1	.7	9.9	2.9	14	4.4	3.5	1.4	1.0	.1		
3	.2	.8	9.1	2.8	12	3.6	3.3	1.8	.8	.1		
4	.2	1.5	8.6	2.8	11	3.1	3.2	1.8	.7	.1		
5	.3	4.0	7.8	2.7	10	2.9	2.8	1.5	.6	.1		
6	.4	2.6	7.4	2.9	9.1	2.8	2.8	*1.5	.6	.1		
7	.3	8.4	7.1	3.2	7.6	2.8	2.7	1.5	.8	.1		
8	.2	1.2	7.1	2.8	7.5	2.6	*2.9	1.5	*1.0	0		
9	.1	9.7	7.2	2.8	7.0	2.7	2.4	1.5	1.5	0		
10	.3	5.5	6.3	3.1	6.8	2.6	2.2	1.4	1.1	0		
11	1.9	4.5	5.9	2.8	6.3	9.8	2.1	1.2	.9	0		
12	.8	*4.0	5.8	2.8	6.2	10	1.9	1.1	.7	0		
13	.4	4.3	5.7	3.4	5.3	6.2	1.8	1.1	.6	0		
14	.3	13.0	5.3	4.1	5.2	4.7	1.6	1.2	.3	0		
15	1.0	4.5	5.0	3.8	5.6	4.1	1.5	1.2	.2	0		
16	1.8	1.8	*4.8	3.8	5.3	3.8	1.5	1.3	.2	0		
17	.9	1.1	4.1	5.4	5.3	3.7	1.5	1.6	.2	0		
18	.6	8.2	3.6	1.0	5.2	3.5	1.5	1.6	.3	0		
19	.6	14.4	4.0	3.3	4.7	3.3	1.5	1.6	.3	0		
20	.6	8.1	5.0	4.02	4.4	3.1	1.4	1.4	.3	*0		
21	.6	2.9	4.1	3.14	4.1	3.2	1.3	1.2	.3	0		
22	.6	1.9	3.9	*2.05	4.2	9.4	1.4	1.1	.5	0		
23	1.0	17.3	3.6	.95	3.7	7.6	1.5	1.1	.4	0		
24	.8	7.5	3.6	*.58	*3.7	5.7	1.5	1.1	.4	0		
25	.7	3.7	3.6	4.5	3.6	4.8	1.5	1.1	.3	0		
26	.7	2.5	3.5	3.6	3.4	4.5	1.5	1.2	.1	0		
27	.7	2.0	3.3	*3.0	3.4	4.2	1.5	1.3	.2	0		
28	.7	1.7	3.3	2.6	3.4	3.9	1.4	1.1	.1	0		
29	.7	1.4	3.3	2.2	3.5	3.8	1.2	1.1	.1	0		
30	.7	1.2	3.2	2.0	-----	3.6	1.3	1.0	.1	0		
31	.7	-----	3.1	1.7	-----	3.8	-----	1.0	-----	0		
Total	19.0	989.8	169.2	1,368.2	187.5	1,394	60.3	40.9	15.6	0.7	0	0
Mean	0.61	33.0	5.46	44.1	6.47	4.50	2.01	1.32	0.52	0.02	0	0
Max	1.9	17.3	11	4.02	16	10	4.1	1.8	1.5	0.1	0	0
Min	0.1	0.7	3.1	2.7	3.4	2.6	1.2	1.0	0.1	0	0	0
Ac-ft	38	1,960	336	2,710	372	276	120	81	31	1.0	0	0

Calendar year 1963: Max - Min - Mean - Ac-ft -
 Water year 1963-64: Max 4.02 Min 0 Mean 8.17 Ac-ft 5,920

* Discharge measurement or observation of no flow made on this day.

11-4640. Russian River near Healdsburg, Calif.

Location.--Lat 38°36'48", long 122°50'07", in Sotoyome Grant, on left bank 2 miles east of Healdsburg, Sonoma County, and 3.5 miles upstream from Dry Creek.

Drainage area.--793 sq mi.

Records available.--October 1939 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 76.84 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--25 years, 1,375 cfs (995,500 acre-ft per year).

Extremes.--Maximum discharge during year, 22,100 cfs Jan. 21 (gage height, 14.11 ft); minimum daily, 110 cfs June 27.
1939-64: Maximum discharge, 67,000 cfs Feb. 28, 1940 (gage height, 30.0 ft); minimum daily, 38 cfs July 2, 1950.
Flood in December 1937 reached a stage of 30.8 ft, from floodmarks.

Remarks.--Records good except those for periods of indefinite stage-discharge relation, which are fair. Several small diversions for irrigation above station. Flow also affected by diversion into basin (see Remarks for East Fork Russian River stations) and since November 1958 by storage in Lake Mendocino (capacity, 122,500 acre-ft).

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	186	344	652	406	1,180	470	517	*188	*150	170	190	180
2	190	350	605	396	1,060	535	508	186	150	200	190	180
3	193	386	566	392	947	*517	486	183	150	202	190	*180
4	200	730	526	392	870	482	474	190	150	218	190	178
5	208	715	490	392	812	470	474	198	150	235	185	178
6	219	1,360	470	392	757	462	*462	193	155	241	185	180
7	227	940	454	924	709	458	438	186	170	244	185	180
8	236	838	446	1,540	668	450	414	183	195	215	185	182
9	247	1,500	454	1,040	636	446	389	177	220	205	182	185
10	268	1,120	474	562	610	470	372	175	230	198	180	178
11	313	793	454	494	585	540	361	170	220	200	178	175
12	333	663	434	454	585	1,110	347	*166	210	198	172	175
13	316	605	418	430	571	1,010	333	164	195	200	168	175
14	316	1,850	414	422	548	884	323	160	185	198	168	172
15	344	2,710	410	418	544	721	313	158	170	192	178	220
16	*454	1,490	403	406	535	674	303	156	166	190	178	200
17	410	1,120	1,150	410	512	636	293	156	162	190	180	188
18	375	*975	1,900	729	1,100	615	287	156	154	188	180	175
19	361	3,660	1,190	1,840	1,710	595	277	158	148	190	175	168
20	354	4,180	663	8,820	1,510	571	274	154	146	192	172	162
21	350	1,860	636	17,700	857	526	268	152	146	192	170	160
22	347	1,760	558	10,500	600	526	262	148	142	188	175	158
23	358	5,830	504	*7,760	535	595	250	135	*140	185	175	158
24	361	5,420	*470	6,330	504	585	247	135	134	180	175	156
25	350	4,620	462	6,420	478	562	238	141	127	178	178	156
26	347	4,580	458	4,630	466	530	233	132	117	180	175	158
27	344	1,940	442	3,270	466	522	224	127	110	182	172	160
28	340	1,080	434	4,430	462	522	216	139	124	188	172	164
29	340	864	430	2,240	458	508	206	141	146	188	175	166
30	340	739	422	1,600	-----	494	195	140	*154	190	175	208
31	344	-----	414	1,360	-----	490	-----	145	-----	*190	175	-----
Total	9,571	55,022	17,803	87,099	21,275	17,976	9,984	4,992	4,816	6,107	5,528	5,255
Mean	309	1,834	574	2,810	734	580	333	161	161	197	178	175
Max	454	5,830	1,900	17,700	1,710	1,110	517	198	230	244	190	220
Min	186	344	403	392	458	446	195	127	110	170	168	156
Ac-ft	18,980	109,100	35,310	172,800	42,200	35,650	19,800	9,900	9,550	12,110	10,960	10,420

Calendar year 1963: Max 31,600 Min 155 Mean 1,483 Ac-ft 1,074,000
Water year 1963-64: Max 17,700 Min 110 Mean 671 Ac-ft 486,800

Peak discharge (base, 19,000 cfs).--Jan. 21 (0500) 22,100 cfs (14.11 ft).

* Discharge measurement made on this day.

Note.--Stage-discharge relation indefinite May 30 to June 22, Sept. 15, 16.

RUSSIAN RIVER BASIN

11-4645. Dry Creek near Cloverdale, Calif.

Location.--Lat 38°44'59", long 123°05'28", in NE¼NE¼ sec.5, T.10 N., R.11 W., on left bank 500 ft downstream from Smith Creek and 5 miles southwest of Cloverdale.

Drainage area.--87.8 sq mi.

Records available.--October 1941 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Altitude of gage is 320 ft (from topographic map).

Average discharge.--23 years, 151 cfs (109,300 acre-ft per year); median of yearly mean discharges, 138 cfs (99,900 acre-ft per year).

Extremes.--Maximum discharge during year, 4,720 cfs Jan. 20 (gage height, 9.55 ft); minimum, 0.1 cfs Sept. 17-24.

1941-64: Maximum discharge, 17,700 cfs Jan. 31, 1963 (gage height, 17.91 ft); minimum, 0.1 cfs several days in 1944, 1949, 1951-53, 1962, 1964.

Flood in December 1937 reached a stage of about 18 ft, from floodmarks.

Remarks.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.1	3.3	143	48	189	59	48	17	8.7	3.0	0.8	0.4
2	.9	3.9	131	48	175	56	37	17	8.3	3.3	.8	*.3
3	.9	5.0	116	47	163	*43	34	23	8.0	3.3	.8	.3
4	.9	126	103	47	152	36	33	24	8.3	3.0	.8	.3
5	1.1	86	94	46	145	34	31	20	8.7	3.3	.6	.2
6	1.7	145	82	45	137	33	29	17	9.8	3.3	.5	.2
7	2.5	66	77	47	129	32	*27	17	9.8	3.3	.5	.3
8	2.8	95	77	46	123	32	27	15	12	3.0	.5	.3
9	7.6	108	82	47	118	31	26	15	15	2.8	.5	.2
10	19	63	68	47	112	31	25	15	12	2.2	.5	.2
11	37	40	60	45	104	94	24	14	9.2	1.9	.5	.3
12	15	27	56	44	99	*133	23	*13	8.3	1.9	.5	.3
13	8.7	26	54	46	94	88	22	12	7.2	2.0	.5	.9
14	*6.9	270	56	47	90	71	21	12	6.9	2.0	.6	.4
15	67	143	54	45	95	63	21	12	6.5	1.9	.6	.3
16	43	79	50	46	84	56	21	14	6.1	1.7	.6	.2
17	15	55	45	67	76	53	21	17	6.1	1.7	.5	.1
18	8.0	43	46	88	73	49	21	13	5.7	1.6	.5	.1
19	6.1	519	58	172	67	47	21	11	5.4	1.6	.5	.1
20	4.7	382	76	1,610	61	45	20	11	5.4	1.2	.4	.1
21	4.4	*238	63	1,150	56	46	19	11	5.0	1.2	.4	.1
22	5.7	204	56	787	53	72	19	10	5.0	1.1	.4	.1
23	16	997	*54	554	50	74	19	11	*3.3	1.2	.4	.1
24	7.2	443	55	444	49	60	20	10	2.2	.9	.5	.1
25	5.7	270	54	405	47	50	19	9.8	3.0	.9	.6	.2
26	4.7	224	53	346	44	46	18	9.8	3.3	.9	.5	.2
27	4.4	*204	52	298	41	44	18	10	3.3	.9	.4	.2
28	3.9	182	52	267	41	40	17	9.8	3.3	.8	.4	.2
29	3.9	165	50	*243	39	38	17	9.2	3.6	.8	.4	.2
30	3.6	152	49	219	-----	37	16	8.7	3.3	*.9	.4	.2
31	3.3	-----	48	202	-----	39	-----	8.7	-----	.8	.4	-----
TOTAL	312.7	5,364.2	2,114	7,593	2,706	1,632	714	417.0	202.7	58.4	16.3	7.1
MEAN	10.1	179	68.2	245	93.3	52.6	23.8	13.5	6.76	1.88	0.53	0.24
MAX	67	997	143	1,610	189	133	48	24	15	3.3	0.8	0.9
MIN	0.9	3.3	45	44	39	31	16	8.7	2.2	0.8	0.4	0.1
AC-FT	620	10,640	4,190	15,060	5,370	3,240	1,420	827	402	116	32	14

CALENDAR YEAR 1963 MAX 8,880 MIN 0.9 MEAN 165 AC-FT 119,800
 WATER YEAR 1963-64 MAX 1,610 MIN 0.1 MEAN 57.8 AC-FT 41,930

Peak discharge (base, 3,300 cfs).--Jan. 20 (1600), 4,720 cfs (9.55 ft).

* Discharge measurement made on this day.

11-4652. Dry Creek near Geyserville, Calif.

Location.--Lat 38°41'55", long 122°57'25", in Tzabaco Grant, on left bank pier of bridge, 0.3 mile downstream from Pena Creek and 3 miles west of Geyserville, Sonoma County.

Drainage area.--162 sq mi.

Records available.--October 1959 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 160 ft (from topographic map).

Average discharge.--5 years, 241 cfs (174,500 acre-ft per year).

Extremes.--Maximum discharge during year, 10,200 cfs Jan. 20 (gage height, 9.78 ft); no flow Sept. 21-30.

1959-64: Maximum discharge, 25,800 cfs Jan. 31, 1963 (gage height, 16.50 ft); no flow at times in each year.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation; small diversion above station for orchard irrigation in summer.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	16	211	74	328	98	81	30	15	5.2	1.3	0.5
2	.1	16	192	71	293	114	69	30	14	4.8	1.3	*.4
3	.1	18	169	68	265	*83	66	36	14	5.0	1.3	.4
4	.1	377	152	65	241	75	63	38	14	4.8	1.2	.4
5	.8	330	141	60	229	71	60	33	14	4.5	1.2	.4
6	3.0	611	126	59	211	68	58	29	14	4.8	1.0	.3
7	5.0	226	122	59	192	66	*58	26	15	5.0	.8	.4
8	6.0	*300	134	59	179	65	55	27	15	5.0	.8	.4
9	16	395	150	58	169	62	53	27	18	4.7	.8	.4
10	50	202	118	60	159	62	50	26	17	4.2	.8	.3
11	120	139	107	59	*143	131	49	24	15	3.6	.8	.3
12	40	*105	98	57	136	293	47	*23	14	3.2	.8	.4
13	18	107	95	57	128	136	45	23	13	3.0	.8	.9
14	*15	1,080	93	57	122	110	43	23	12	3.1	.9	.6
15	224	646	88	53	134	97	41	22	11	3.2	1.0	.4
16	253	307	83	51	120	88	40	23	10	3.1	1.0	.3
17	112	197	80	87	112	83	40	27	9.7	2.8	1.0	.2
18	68	150	77	244	105	78	39	25	*8.8	2.7	.9	.2
19	47	*1,930	114	482	102	75	38	21	8.5	2.5	.8	.1
20	30	1,270	152	3,990	97	72	38	20	8.2	2.4	.8	.1
21	25	650	128	3,180	93	74	37	20	8.2	2.0	.7	*0
22	25	473	107	*2,170	90	100	35	19	8.2	1.8	.7	0
23	78	2,250	*98	1,430	87	124	36	18	7.6	1.8	.7	0
24	60	986	95	1,070	87	102	37	18	6.7	1.9	.7	0
25	39	605	100	944	83	88	36	18	6.4	1.6	.8	0
26	29	477	92	775	80	81	34	18	6.4	1.5	.9	0
27	26	*388	87	635	78	75	33	18	5.8	1.4	.8	0
28	23	328	83	543	78	72	30	16	5.0	1.4	.7	0
29	20	276	81	*473	75	72	33	15	5.4	1.3	.7	0
30	18	244	77	421	-----	71	30	15	5.8	*1.4	.6	0
31	16	-----	75	363	-----	72	-----	15	-----	1.3	.6	-----
Total	1,367.2	15,099	3,525	17,774	4,216	2,858	1,374	723	3,257	95.0	27.2	7.4
Mean	44.1	503	114	573	145	92.2	45.8	23.3	10.9	3.06	0.88	0.25
Max	253	2,250	211	3,990	328	293	81	38	18	5.2	1.3	0.9
Min	0.1	16	75	51	75	62	30	15	5.0	1.3	0.6	0
Ac-ft	2,710	29,950	6,990	35,250	8,360	5,670	2,730	1,430	646	188	54	15

Calendar year 1963: Max 15,300 Min 0.1 Mean 375 Ac-ft 271,400
 Water year 1963-64: Max 3,990 Min 0 Mean 129 Ac-ft 93,990

Peak discharge (base, 4,500 cfs).--Jan. 20 (1800) 10,200 cfs (9.78 ft).

* Discharge measurement or observation of no flow made on this day.

Note.--No gage-height record Oct. 1-13, June 28 to Sept. 30.

RUSSIAN RIVER BASIN

11-4658. Santa Rosa Creek near Santa Rosa, Calif.

Location.--Lat 38°27'25", long 122°37'50", in Los Guilicos Grant, on left bank 500 ft downstream from highway bridge, 1,500 ft upstream from unnamed tributary, and 4.6 miles east of Santa Rosa, Sonoma County.

Drainage area.--12.5 sq mi.

Records available.--July 1959 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 335 ft (from topographic map).

Average discharge.--5 years, 13.3 cfs (9,630 acre-ft per year).

Extremes.--Maximum discharge during year, 1,040 cfs Jan. 20 (gage height, 8.95 ft), from rating curve extended above 390 cfs as explained below; no flow for many days in August and September.

1959-64: Maximum discharge, 3,200 cfs Feb. 8, 1960 (gage height, 13.35 ft, from floodmarks), from rating curve extended above 390 cfs on basis of slope-area measurements at gage heights 11.0 and 13.35 ft; no flow at times in each year.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 11-31)

3.6	0	4.1	3.2	5.0	46
3.7	.1	4.2	5.0	5.5	104
3.8	.8	4.4	11	6.0	192
3.9	1.0	4.6	20	7.0	450
4.0	1.9				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.5	0.8	7.0	2.6	15	8.6	4.2	2.1	1.0	0.2	0.1	0
2	.5	.9	6.1	2.6	13	6.4	3.8	2.1	.9	.2	.1	0
3	.5	1.0	5.8	2.5	12	4.8	3.5	2.8	.9	.2	.1	0
4	.5	13	5.8	2.5	12	4.4	3.4	2.5	.8	.2	.1	0
5	.6	29	5.3	2.3	11	*4.2	3.2	2.2	.9	.2	.1	0
6	.6	14	5.0	2.6	9.8	4.2	3.1	2.0	1.1	.2	0	0
7	.6	5.8	4.6	2.8	9.5	4.0	3.1	1.9	1.2	.2	0	0
8	.6	25	4.6	2.5	9.2	3.8	*3.1	1.9	2.3	.1	0	.1
9	.6	17	4.8	2.5	8.5	3.8	3.1	1.8	2.8	.1	0	.1
10	.7	7.5	4.2	2.8	8.1	3.7	2.9	1.7	1.7	.1	0	.1
11	2.0	4.8	4.0	2.5	7.8	4.0	2.8	*1.6	1.4	.1	.1	.1
12	.8	3.7	3.8	2.3	7.2	15	2.8	1.5	1.4	.1	.1	.1
13	.7	3.5	3.7	2.6	7.0	11	2.5	1.4	1.2	.1	0	.1
14	.7	77	3.7	2.8	6.7	7.2	2.3	1.4	1.0	.1	0	.1
15	*.9	32	3.5	2.3	7.5	6.1	2.2	1.4	.9	.1	.1	.1
16	1.1	16	3.5	2.3	6.4	5.0	2.2	1.5	.9	.1	.1	0
17	.8	11	3.4	3.1	6.1	4.8	2.3	1.9	.9	.1	.1	0
18	.8	*8.5	3.2	8.1	5.8	4.4	2.3	1.6	.9	.1	.1	0
19	.7	25	4.0	69	5.6	4.0	2.3	1.4	.8	.1	0	0
20	.7	29	4.2	278	5.0	3.8	2.3	1.3	.7	.1	0	0
21	.8	15	3.7	179	5.0	4.0	2.3	1.1	.6	.1	0	0
22	.8	12	3.5	119	4.8	9.7	2.3	1.3	*.5	.1	0	0
23	1.1	74	*3.2	64	4.6	9.5	2.2	1.1	.3	.1	0	0
24	.9	30	3.2	45	4.6	7.0	2.3	1.2	.3	.1	0	0
25	.8	20	3.2	36	4.6	5.6	2.2	1.1	.2	.1	.1	0
26	.8	15	3.1	30	4.2	5.6	2.2	1.3	.2	.1	.1	0
27	.8	12	3.1	*26	4.2	4.8	2.2	1.3	.2	.1	0	0
28	.8	9.8	2.9	22	4.6	4.6	2.1	1.2	.2	.1	.1	0
29	.8	8.5	2.9	20	4.6	4.2	2.1	1.1	.2	*.1	0	0
30	.8	7.5	2.8	17	-----	4.0	1.9	1.1	.2	.1	0	0
31	.8	-----	2.6	16	-----	4.0	-----	1.0	-----	.1	*0	-----
TOTAL	24.1	528.3	124.4	972.7	214.4	176.2	79.2	48.8	26.6	3.8	1.4	0.8
MEAN	0.78	17.6	4.01	31.4	7.39	5.68	2.64	1.57	0.89	0.12	0.05	0.03
MAX	2.0	77	7.0	278	15	15	4.2	2.8	2.8	0.2	0.1	0.1
MIN	0.5	0.8	2.6	2.3	4.2	3.7	1.9	1.0	0.2	0.1	0	0
AC-FT	48	1,050	247	1,930	425	349	157	97	53	7.5	2.8	1.6

CALENDAR YEAR 1963 MAX 771 MIN 0.3 MEAN 19.1 AC-FT 13,840

WATER YEAR 1963-64 MAX 278 MIN 0 MEAN 6.01 AC-FT 4,370

Peak discharge (base, 500 cfs).--Jan. 20 (1700) 1,040 cfs (8.95 ft).

* Discharge measurement or observation of no flow made on this day.

11-4670. Russian River near Guerneville, Calif.

Location.--Lat 38°30'00", long 122°56'05", in NE¼ sec.35, T.8 N., R.10 W., on left bank 0.6 mile downstream from Hobson Creek and 3.4 miles east of Guerneville.

Drainage area.--1,340 sq mi.

Records available.--October 1939 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B. Prior to October 1954, published as "at Guerneville".

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 30 ft, revised (from topographic map). Prior to Oct. 1, 1954, wire-weight gage at bridge 5.3 miles downstream at different datum. Supplementary water-stage recorder 2.1 miles downstream used during periods of low flow 1948-54.

Average discharge.--25 years, 2,182 cfs (1,580,000 acre-ft per year); median of yearly mean discharges, 1,840 cfs (1,330,000 acre-ft per year).

Extremes.--Maximum discharge during year, 33,400 cfs Jan. 21 (gage height, 29.88 ft); minimum daily, 52 cfs May 30.

1939-64: Maximum discharge, 90,100 cfs Dec. 23, 1955 (gage height, 49.7 ft, from floodmarks); minimum daily, that of May 30, 1964.

Remarks.--Records good. Many diversions above station for irrigation. Flow also affected by diversion into basin (see Remarks for East Fork Russian River stations), since November 1958 by storage in Lake Mendocino (capacity, 122,500 acre-ft), and by diversion at Wohler pumping plant beginning in May 1959.

Rating tables (gage-height, in feet, and discharge, in cubic feet per second)
(Shifting control method used Oct. 1 to Nov. 14, Nov. 27 to
Jan. 20, Aug. 6 to Sept. 30)

Oct. 1 to Jan. 21				Jan. 21 to Sept. 30			
3.5	85	12.0	4,570	3.0	45	6.0	1,600
4.0	185	17.0	10,300	3.2	96	10.0	4,550
5.0	480	23.0	19,800	3.5	195	16.0	10,600
8.0	1,770	30.0	33,700	4.0	420	24.0	22,500

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	188	293	1,190	536	2,980	602	712	*255	*96	126	149	166
2	180	299	1,040	*526	2,630	744	717	255	105	149	152	170
3	180	320	916	515	2,300	*722	668	262	114	173	146	*170
4	182	639	836	518	2,040	646	634	271	114	181	159	166
5	192	920	772	512	1,820	602	618	284	114	199	133	166
6	205	1,850	720	504	1,650	574	590	255	126	211	142	170
7	210	1,570	676	761	1,460	568	*574	235	152	211	139	177
8	210	976	656	1,700	1,330	546	519	235	163	199	149	181
9	218	1,800	664	1,530	1,220	524	480	223	199	177	152	181
10	235	1,600	676	780	1,120	530	453	211	239	163	152	181
11	272	1,040	644	652	1,040	651	426	199	231	163	149	173
12	302	808	610	592	992	1,830	410	*188	219	163	149	173
13	290	688	588	554	968	1,940	390	181	199	159	146	173
14	*272	2,430	578	550	884	1,660	375	173	184	166	142	177
15	278	*4,680	568	550	884	1,270	365	159	170	159	142	163
16	341	2,400	554	532	866	1,110	355	156	156	156	156	191
17	377	2,050	964	540	794	998	340	173	152	149	159	203
18	338	1,110	2,180	898	1,280	932	335	188	139	146	156	207
19	323	5,670	1,910	2,110	2,830	884	340	170	126	149	152	203
20	317	9,140	1,040	10,400	2,820	827	340	149	123	149	149	163
21	305	3,790	940	31,300	1,840	772	335	133	120	146	146	139
22	302	2,610	804	22,500	1,050	788	325	126	123	139	149	126
23	305	8,420	712	*15,100	832	1,030	311	120	117	136	156	117
24	320	11,100	656	11,400	734	968	316	108	*108	129	159	114
25	317	6,680	636	10,400	678	872	316	114	99	129	163	111
26	314	6,380	616	8,760	629	805	302	108	96	136	159	114
27	311	4,050	592	6,820	607	756	288	88	88	139	159	133
28	302	2,300	578	7,170	590	744	275	62	86	*146	156	146
29	299	1,750	571	5,680	580	722	271	58	102	149	159	156
30	299	1,440	560	4,170	-----	690	263	52	117	149	159	166
31	296	-----	546	3,500	-----	678	-----	65	-----	149	163	-----
Total	8,480	88,803	24,993	152,060	39,448	26,985	12,643	5,256	4,177	4,895	4,701	4,876
Mean	274	2,960	806	4,905	1,360	870	421	170	139	158	152	163
Max	377	11,100	2,180	31,300	2,980	1,940	717	284	239	211	163	207
Min	180	293	546	504	580	524	263	52	86	126	133	111
Ac-ft	16,820	176,000	49,570	301,600	78,240	53,520	25,080	10,430	8,280	9,710	9,320	9,670

Calendar year 1963: Max 63,400 Min 128 Mean 2,562 Ac-ft 1,855,000

Water year 1963-64: Max 31,300 Min 52 Mean 1,031 Ac-ft 748,200

Peak discharge (base, 23,000 cfs).--Jan. 21 (0900) 33,400 cfs (29.88 ft).

* Discharge measurement made on this day.

11-4670. Russian River near Guerneville, Calif.--Continued

Records available.--Water temperatures: January to September 1964.

Extremes.--Maximum temperature during period, 83°F June 24; minimum, 46°F Jan. 10-13, 23-26.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1							-	-	51	50	51	50	53	51	60	58	70	66	75	72	78	73	71	67
2							-	-	51	50	50	49	53	50	60	58	72	66	76	71	77	72	71	67
3							-	-	51	50	51	50	54	50	59	58	71	68	76	71	78	72	73	67
4							-	-	50	50	54	50	56	53	59	57	72	69	76	71	79	73	74	68
5							-	-	50	50	54	53	58	56	60	58	72	70	78	71	80	74	73	68
6							-	-	51	50	54	53	59	56	60	56	71	68	78	72	79	73	72	66
7							-	-	50	50	53	51	59	56	61	57	71	66	78	73	80	73	70	67
8							-	-	50	50	53	50	61	57	63	60	70	66	78	72	78	73	70	66
9							-	-	51	50	53	51	62	58	65	61	66	64	78	72	78	72	70	66
10							47	46	51	50	53	51	62	58	68	62	66	63	80	73	77	72	71	65
11							47	46	50	50	53	52	63	58	72	66	70	64	81	74	77	72	70	66
12							47	46	51	50	52	49	63	57	73	67	72	66	81	74	78	72	70	65
13							48	47	50	50	49	49	64	58	71	67	74	67	80	74	78	72	70	66
14							48	48	50	50	52	49	65	60	70	66	76	70	79	74	76	72	72	65
15							48	48	50	50	52	50	66	61	69	65	75	70	79	74	74	71	72	66
16							48	48	50	49	54	52	66	61	68	66	74	70	80	74	76	69	71	66
17							48	48	50	49	55	53	65	61	66	64	74	68	81	74	76	70	71	66
18							48	48	51	50	56	54	63	61	66	63	74	68	80	74	77	70	72	66
19							48	48	51	49	56	54	62	59	68	64	74	69	80	74	77	70	73	66
20							48	48	50	50	56	54	60	58	69	65	75	69	80	74	78	72	73	67
21							48	48	50	50	54	52	61	58	71	66	76	70	80	75	76	72	71	67
22							48	47	51	49	52	50	61	59	72	66	78	71	80	74	76	72	70	65
23							47	46	51	50	50	48	60	57	71	66	79	72	81	74	76	72	70	65
24							46	46	52	51	48	48	57	56	71	65	83	74	82	75	75	72	72	66
25							47	46	52	50	51	48	58	56	70	65	82	76	80	75	73	70	71	67
26							47	46	51	50	52	50	60	56	69	66	80	75	78	74	73	69	70	68
27							47	47	52	50	54	51	62	57	68	64	80	73	78	74	73	68	68	66
28							48	47	52	51	55	52	62	59	68	64	79	73	77	74	73	68	67	63
29							48	48	51	50	54	53	63	59	71	64	76	73	78	74	73	68	67	64
30							49	48	-----	-----	54	53	62	58	72	65	76	72	77	73	73	68	68	63
31							50	49	-----	-----	53	53	-----	-----	72	67	-----	-----	77	72	72	68	-----	-----
Avg							-	-	51	50	53	51	61	57	67	63	74	69	79	73	76	71	71	66

11-4672. Austin Creek near Cazadero, Calif.

Location--Lat 38°30'05", long 123°04'05", on left bank 0.6 mile downstream from confluence of Big Austin and East Austin Creeks, 2.3 miles southeast of Cazadero, Sonoma County, and 3.4 miles upstream from mouth.

Drainage area--63.1 sq mi.

Records available--May 1959 to September 1964.

Gage--Water-stage recorder and crest-stage gage. Altitude of gage is 40 ft (from topographic map).

Average discharge--5 years, 157 cfs (113,700 acre-ft per year).

Extremes--Maximum discharge during year, 6,150 cfs Jan. 20 (gage height, 12.45 ft); minimum daily, 0.6 cfs many days in August and September.

1959-64: Maximum discharge, 15,100 cfs Feb. 13, 1962 (gage height, 20.6 ft, crest-stage gage); no flow Aug. 19 to Sept. 17, 1959.

Remarks--Records good except those for periods of no gage-height record or indefinite stage-discharge relation, which are poor. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	14	109	45	185	76	46	17	9.2	3.0	1.3	0.6
2	2.0	15	99	43	167	67	39	16	8.8	3.1	1.2	.6
3	2.0	15	92	42	154	*52	36	21	8.6	2.9	1.2	*.6
4	2.0	432	84	40	143	51	36	19	8.4	2.6	1.1	.6
5	2.0	351	*80	39	136	51	32	17	8.4	2.6	1.1	.6
6	5.0	391	75	39	126	48	31	16	8.8	2.7	1.0	.6
7	7.2	*155	71	39	116	39	*30	16	9.6	2.7	1.0	.6
8	7.5	237	71	37	110	37	28	15	10	2.6	1.0	.6
9	10	248	71	37	105	36	28	15	11	2.5	1.0	.6
10	16	137	64	38	101	35	27	14	9.6	2.4	1.0	.6
11	*55	87	61	36	94	139	26	14	8.6	2.4	1.0	.6
12	24	62	56	35	88	*166	24	*14	8.2	2.4	1.0	.6
13	17	149	56	36	84	99	23	12	7.8	2.4	.9	.6
14	15	1,740	55	37	80	78	22	12	7.2	2.3	.8	.6
15	a180	570	51	34	92	69	22	12	6.6	2.2	.9	.6
16	a100	265	50	35	78	62	21	16	6.4	2.0	.8	.6
17	a37	158	47	124	72	57	21	22	6.0	1.9	.8	.6
18	a25	117	47	161	69	54	20	16	5.7	1.9	.8	.6
19	a20	1,440	68	484	67	49	20	14	5.4	2.0	.7	.6
20	a17	*716	87	2,740	62	46	20	12	5.2	1.9	.7	.6
21	a16	300	71	2,070	58	46	20	12	4.9	1.8	.7	.6
22	a16	177	62	1,080	57	80	20	11	4.7	1.7	.6	.6
23	25	2,110	59	711	55	76	20	11	4.5	1.6	.6	.6
24	18	663	*56	544	54	64	20	10	4.3	1.6	.6	.6
25	17	371	61	477	51	57	19	10	4.1	1.5	.6	.7
26	16	255	55	384	49	54	19	10	3.8	1.4	.6	.6
27	15	196	52	322	48	51	18	9.9	3.5	1.4	.6	.6
28	15	164	51	273	46	48	18	9.9	3.3	*1.3	.6	.6
29	15	146	50	250	45	45	18	9.9	3.1	1.3	.7	.6
30	15	126	48	224	-----	43	17	9.4	3.0	1.3	.7	.7
31	15	-----	46	*200	-----	45	-----	9.4	-----	1.3	.7	-----
Total	728.7	11,807	2,005	10,656	2,592	1,920	741	422.5	198.7	64.7	26.3	18.2
Mean	23.5	394	64.7	344	89.4	61.9	24.7	13.6	6.62	2.09	0.85	0.61
Max	180	2,110	109	2,740	185	166	46	22	11	3.1	1.3	0.7
Min	2.0	14	46	34	45	35	17	9.4	3.0	1.3	0.6	0.6
Ac-ft	1,450	23,420	3,980	21,140	5,140	3,810	1,470	838	394	128	52	36

Calendar year 1963: Max 6,820 Min 1.9 Mean 206 Ac-ft 149,000

Water year 1963-64: Max 2,740 Min 0.6 Mean 35.2 Ac-ft 61,860

Peak discharge (base, 4,000 cfs)--Nov. 19 (1100) 4,350 cfs (10.65 ft); Jan. 20 (1600) 6,150 cfs (12.45 ft).

* Discharge measurement made on this day.

a No gage-height record.

Note--Stage-discharge relation indefinite Oct. 1-9, June 1 to Sept. 30.

GUALALA RIVER BASIN

11-4675. South Fork Gualala River near Annapolis, Calif.

Location.--Lat 38°42'14", long 123°25'13", in German Grant, on left bank 2,700 ft downstream from Wheatfield Fork Gualala River and 3.1 miles southwest of Annapolis, Sonoma County.

Drainage area.--161 sq mi.

Records available.--October 1950 to September 1964.

Gage.--Water-stage recorder (digital). Altitude of gage is 70 ft (from topographic map). Prior to Aug. 30, 1962, at site 1,700 ft upstream at different datum.

Average discharge.--14 years, 420 cfs (304,100 acre-ft per year).

Extremes.--Maximum discharge during year, 15,000 cfs Jan. 20 (gage height, 13.60 ft), from rating curve extended above 5,400 cfs on basis of slope-area measurement at gage height 12.13 ft; minimum, 2.6 cfs Sept. 28, 29.

1950-64: Maximum discharge, 55,000 cfs Dec. 22, 1955 (gage height, 24.57 ft, site and datum then in use), from rating curve extended above 13,000 cfs on basis of slope-area measurement of maximum flow; minimum, 0.4 cfs Sept. 13, 1951.

Remarks.--Records good. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.3	19	245	100	322	109	111	38	21	11	4.9	3.1
2	5.9	21	220	100	290	163	*98	38	21	12	4.9	3.1
3	6.3	22	202	93	260	103	90	50	20	9.8	4.3	3.1
4	6.3	884	186	90	240	93	82	57	20	9.3	4.3	3.0
5	6.3	278	170	85	215	85	80	*45	20	10	4.3	2.9
6	11	640	160	85	206	83	74	41	22	10	4.0	2.8
7	11	310	149	93	190	80	67	37	24	9.7	4.0	2.9
8	11	1,160	149	85	178	78	63	36	25	9.2	4.3	2.8
9	15	985	170	83	163	74	59	34	30	9.1	4.0	2.8
10	23	405	146	98	160	72	59	33	27	9.0	4.0	2.8
11	78	220	132	85	149	124	57	32	21	8.6	4.0	2.8
12	45	153	123	83	146	503	56	29	21	9.0	3.7	2.8
13	25	123	117	83	135	245	52	28	20	8.7	3.4	3.0
14	19	2,650	111	100	132	182	50	28	19	8.3	3.7	2.8
15	272	1,250	103	90	146	156	49	27	*18	7.7	3.4	2.8
16	161	503	100	88	129	135	49	29	18	7.0	3.4	2.8
17	56	300	*95	142	123	126	47	39	17	6.9	3.4	2.9
18	38	225	98	623	117	117	45	36	17	7.3	3.4	2.9
19	30	3,060	135	1,540	111	108	44	32	16	7.3	3.4	3.0
20	27	2,750	202	*7,220	108	103	44	29	15	*6.7	3.4	3.0
21	24	901	178	4,520	103	103	42	28	15	6.1	3.4	2.8
22	*24	*580	153	2,850	100	161	42	25	14	6.0	3.4	2.8
23	33	3,660	135	1,700	100	210	42	27	13	6.0	2.8	2.9
24	36	2,000	132	1,210	95	163	42	25	13	5.6	2.8	3.3
25	29	1,030	160	982	*90	139	41	22	13	5.3	2.8	2.9
26	27	708	139	788	85	126	39	24	12	5.2	2.8	2.8
27	23	524	132	628	83	117	38	24	11	5.1	3.1	2.7
28	22	412	129	524	83	111	38	23	11	5.1	*3.1	2.6
29	21	328	123	468	83	103	38	22	11	5.1	3.3	2.6
30	21	280	117	426	-----	100	37	22	11	4.9	3.4	2.9
31	20	-----	105	358	-----	100	-----	21	-----	4.9	3.3	-----
Total	1,133.1	26,381	4,516	25,420	4,342	4,172	1,675	981	536	235.9	112.4	86.4
Mean	36.6	879	146	820	150	135	55.8	31.6	17.9	7.61	3.63	2.88
Max	272	3,660	245	7,220	322	503	111	57	30	12	4.9	3.3
Min	5.9	19	95	83	83	72	37	21	11	4.9	2.8	2.6
Ac-ft	2,250	52,330	8,960	50,420	8,610	8,280	3,320	1,950	1,060	468	223	171

Calendar year 1963: Max 13,000 Min 5.9 Mean 422 Ac-ft 305,300

Water year 1963-64: Max 7,220 Min 2.6 Mean 190 Ac-ft 138,000

Peak discharge (base, 10,000 cfs).--Jan 20 (1800) 15,000 cfs (13.60 ft).

* Discharge measurement made on this day.

11-4676. Garcia River near Point Arena, Calif.

Location.--Lat 38°55'35", long 123°37'45", in SW¼SW¼ sec.3, T.12 N., R.16 W., on left bank 0.9 mile downstream from North Fork Garcia River and 3.5 miles northeast of town of Point Arena.

Drainage area.--98.5 sq mi.

Records available.--Occasional low-flow measurements, water years 1951-56, and annual maximum, water years 1952-56. August 1962 to September 1964.

Gage.--Water-stage recorder (digital) and thermograph recorder. Altitude of gage is 50 ft (from topographic map). July 17, 1951, to Jan. 31, 1956, crest-stage gage only, at site 15 ft upstream at different datum.

Extremes.--Maximum discharge during year, 12,100 cfs Jan. 20 (gage height, 11.46 ft), from rating curve extended above 3,600 cfs on basis of slope-area measurement at gage height 15.11 ft; minimum, 11 cfs Sept. 21, 24, 27.
1951-56, 1962-64: Maximum discharge, 26,300 cfs Dec. 22, 1955 (gage height, 20.75 ft, from gage; 20.78 ft, from high-water profile, site and datum then in use), from rating curve extended above 4,200 cfs on basis of slope-area measurement of maximum flow.

A discharge of 10.1 cfs was measured on Sept. 25, 1951.

Remarks.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	16	27	218	96	285	123	99	49	33	24	17	12
2	16	34	202	99	265	141	* 88	48	32	24	16	13
3	16	42	186	90	235	111	84	57	32	24	16	12
4	15	700	170	85	218	99	82	59	32	23	16	12
5	17	330	162	82	206	96	80	*51	32	23	16	12
6	21	402	150	90	194	93	77	48	34	23	16	12
7	24	300	138	120	182	90	74	46	35	22	16	12
8	20	955	147	102	170	88	69	45	36	22	15	12
9	31	901	206	99	162	85	67	44	41	22	15	12
10	55	527	162	111	154	82	66	44	36	22	15	12
11	159	360	144	99	150	162	65	43	34	22	15	12
12	71	280	135	93	141	305	63	42	32	21	15	13
13	41	240	129	99	135	198	61	41	31	21	14	12
14	30	2,150	123	117	132	162	60	40	30	21	14	12
15	188	1,200	117	99	141	141	59	39	29	20	14	12
16	175	590	114	102	126	129	58	42	*28	20	14	12
17	83	408	*105	226	120	120	57	54	28	20	14	12
18	55	315	105	597	117	114	57	45	28	20	14	12
19	42	646	123	1,240	114	105	54	41	27	19	14	12
20	34	646	154	6,480	108	102	53	40	27	19	14	12
21	32	464	138	*3,540	105	105	53	39	26	*18	13	11
22	*48	*372	126	1,860	102	123	53	38	26	18	13	12
23	144	2,470	120	1,230	99	135	52	38	26	18	13	12
24	90	1,530	117	865	96	126	51	37	25	18	13	11
25	63	772	126	764	*96	114	51	36	25	18	13	12
26	51	548	114	660	90	108	51	36	24	17	13	12
27	42	420	117	562	88	102	50	36	24	17	13	11
28	38	342	114	457	90	99	50	35	24	16	*13	12
29	32	290	111	414	88	96	49	34	24	17	13	12
30	30	250	105	354	-----	93	46	34	24	17	12	12
31	29	-----	99	315	-----	93	-----	33	-----	17	12	-----
TOTAL	1,708	18,511	4,277	21,147	4,209	3,740	1,879	1,314	885	623	441	359
MEAN	55.1	617	138	682	145	121	62.6	42.4	29.5	20.1	14.2	12.0
AC-FT	3,390	36,720	8,480	41,940	8,350	7,420	3,730	2,610	1,760	1,240	875	712
MAX	188	2,470	219	6,480	285	305	99	59	41	24	17	13
MIN	15	27	99	82	88	82	46	33	24	16	12	11

CALENDAR YEAR 1963 MAX 12,000 MIN 15 MEAN 343 AC-FT 248,600
WATER YEAR 1963-64 MAX 6,480 MIN 11 MEAN 161 AC-FT 117,200

Peak discharge (base, 5,000 cfs).--Jan. 20 (1800) 12,100 cfs (11.46 ft).

* Discharge measurement made on this day.

11-4676. Garcia River near Point Arena, Calif.--Continued.

Records available.--Water temperatures: October 1963 to September 1964.

Extremes.--Maximum temperature during year, 72°F June 22; minimum, 44°F Jan. 11, 15, Feb. 14.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	65	58	59	52	52	49	51	47	53	50	51	47	57	52	60	54	64	58	65	59	69	61	66	58
2	65	59	58	55	52	50	52	49	52	48	51	46	57	50	58	52	66	56	67	59	68	59	66	58
3	66	59	56	53	52	50	50	46	51	47	52	45	58	49	56	52	65	57	62	58	69	59	66	57
4	65	59	57	54	52	50	50	46	51	47	54	48	59	51	58	51	64	59	66	58	69	60	66	58
5	61	60	57	55	53	50	49	45	51	47	54	49	57	51	56	52	64	60	68	58	69	60	65	58
6	66	60	56	54	55	52	50	47	51	47	54	49	59	50	60	51	62	59	68	59	68	61	65	58
7	66	60	55	53	53	50	52	49	51	46	53	47	60	51	60	52	66	59	69	60	69	60	65	58
8	66	60	57	55	52	50	50	47	51	46	54	47	60	53	60	54	62	58	68	61	68	60	66	57
9	65	62	58	57	52	50	50	48	52	47	54	50	60	52	63	54	61	57	68	59	69	60	66	57
10	62	59	57	55	50	48	49	46	52	48	55	48	61	53	63	54	62	58	69	59	-	-	66	57
11	63	59	56	53	50	46	48	44	51	47	50	48	60	52	63	55	67	58	70	60	-	-	65	58
12	64	59	57	54	50	46	50	46	50	45	50	48	60	51	63	53	66	59	70	60	-	-	64	58
13	64	57	57	55	50	47	48	46	50	45	53	49	61	51	63	55	68	59	70	61	-	-	64	58
14	62	59	57	56	51	49	48	45	49	44	54	48	62	52	63	53	67	59	71	60	-	-	65	57
15	61	59	56	53	51	48	48	44	50	46	56	50	61	52	64	53	68	60	69	63	-	-	66	57
16	63	58	53	52	51	48	49	46	50	45	56	49	59	51	58	56	66	59	69	61	-	-	66	57
17	63	59	54	51	50	47	49	48	50	45	57	50	59	51	63	56	67	59	69	60	-	-	66	60
18	64	60	54	52	50	46	49	47	52	45	57	50	60	51	64	57	67	58	69	60	-	-	64	58
19	62	59	54	53	52	50	52	49	53	46	57	49	62	51	64	56	67	58	69	60	-	-	65	57
20	62	58	54	52	53	50	52	51	53	47	56	50	58	54	65	58	68	58	69	60	-	-	64	58
21	64	60	52	50	51	49	51	49	53	47	55	51	61	51	65	56	68	59	69	61	-	-	65	57
22	62	59	52	50	50	47	50	48	53	47	52	49	57	52	65	56	72	59	69	60	-	-	67	57
23	61	57	54	52	50	47	49	48	54	47	52	48	58	50	62	56	71	61	70	59	-	-	68	59
24	59	56	54	53	49	46	50	49	52	48	55	49	58	51	66	57	70	60	70	60	-	-	68	60
25	62	58	54	52	52	49	52	50	53	46	56	48	60	51	65	57	70	59	70	60	-	-	67	60
26	61	56	54	52	52	50	51	50	53	45	54	49	61	52	64	58	68	60	70	60	-	-	64	60
27	61	54	54	52	53	51	51	49	53	46	58	51	63	54	66	56	67	58	70	61	-	-	64	59
28	60	53	54	52	54	52	51	49	50	47	59	51	60	53	66	57	68	58	68	61	66	62	64	57
29	60	55	53	50	54	52	50	49	52	46	58	52	61	53	66	57	66	59	70	60	67	58	63	58
30	59	53	52	50	54	51	51	48	-----	-----	57	51	60	52	64	57	67	59	68	60	65	59	64	57
31	59	52	-----	-----	52	49	51	47	-----	-----	54	52	-----	-----	66	57	-----	-----	68	58	65	58	-----	-----
Avg	63	58	55	53	52	49	50	47	52	46	54	49	60	52	63	55	66	58	68	59	-	-	65	58

11-4678. Rancheria Creek near Boonville, Calif.

Location.--Lat 38°59'35", long 123°26'00", in SE¼ sec.7, T.13 N., R.14 W., on left bank at county road bridge, 100 ft downstream from Minnie Creek and 3.7 miles west of Boonville.

Drainage area.--65.6 sq mi.

Records available.--August 1959 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 427 ft above mean sea level, unadjusted (by Topographic Division).

Average discharge.--5 years, 120 cfs (86,880 acre-ft per year).

Extremes.--Maximum discharge during year, 6,920 cfs Jan. 20 (gage height, 12.65 ft); minimum, 0.8 cfs Sept. 16-19.
1959-64: Maximum discharge 13,900 cfs Jan. 31, 1963 (gage height, 18.30 ft), from rating curve extended above 4,200 cfs; minimum, 0.8 cfs Sept. 16-19, 1964.

Remarks.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3.0	19	67	32	149	47	38	19	11	4.4	3.0	1.3
2	3.0	20	61	32	133	54	34	19	10	4.4	3.3	1.3
3	3.0	23	54	31	118	40	32	22	10	4.1	2.8	1.3
4	3.0	118	49	30	107	37	31	24	10	4.1	2.8	1.3
5	3.3	102	47	30	97	34	30	21	10	4.1	2.8	1.3
6	4.4	188	45	29	91	34	30	*19	10	3.8	2.5	1.3
7	3.8	95	42	32	82	33	29	19	10	3.8	2.5	1.3
8	3.5	*130	42	32	77	30	28	17	11	3.8	2.5	1.3
9	5.3	152	57	30	73	30	27	17	12	3.8	2.5	1.3
10	8.5	95	46	30	70	29	27	17	11	3.5	2.3	1.0
11	14	65	41	30	67	105	26	16	10	3.5	2.3	1.0
12	9.7	52	38	28	61	140	26	15	9.3	3.5	2.5	1.0
13	8.3	49	37	30	58	71	26	14	9.0	3.3	2.3	.9
14	7.6	531	36	33	57	56	25	14	8.6	3.3	2.3	.9
15	29	305	35	30	62	49	24	14	8.6	3.3	2.3	.9
16	33	179	33	30	56	46	23	16	7.9	3.0	2.3	.8
17	25	135	33	56	50	42	23	18	*7.6	3.0	2.3	.8
18	23	109	*33	170	47	40	23	17	7.6	3.0	2.0	.8
19	22	377	39	397	46	38	22	15	6.9	3.0	2.0	.9
20	21	291	48	2,800	44	37	22	14	6.9	2.8	1.8	.9
21	21	*185	43	1,650	42	40	22	14	6.5	*2.8	1.8	.9
22	22	155	40	1,160	41	52	21	13	6.2	2.8	1.8	.9
23	*28	1,150	38	722	40	56	21	12	5.6	2.8	1.5	.9
24	24	445	37	*565	38	49	22	11	5.6	2.3	1.5	.9
25	22	242	38	520	37	43	21	12	5.0	1.3	*1.5	.9
26	22	173	37	417	37	40	20	12	4.7	2.5	1.3	.9
27	21	133	36	329	35	39	20	12	4.7	2.8	1.3	.9
28	20	105	36	274	*34	*38	19	12	4.7	3.0	1.3	1.0
29	20	88	35	239	34	37	19	12	4.4	3.0	1.3	1.0
30	20	76	34	200	-----	35	18	11	4.4	3.0	1.3	1.0
31	20	-----	33	173	-----	35	-----	11	-----	3.0	1.3	-----
TOTAL	473.4	5,787	1,290	10,161	1,883	1,456	749	479	239.2	100.8	65.0	30.9
MEAN	15.3	193	41.6	328	64.9	47.0	25.0	15.5	7.97	3.25	2.10	1.03
MAX	33	1,150	67	2,800	149	140	38	24	12	4.4	3.3	1.3
MIN	3.0	19	33	28	34	29	18	11	4.4	1.3	1.3	0.8
AC-FT	939	11,480	2,560	20,150	3,730	2,890	1,490	950	474	200	129	61

CALENDAR YEAR 1963 MAX 7,970 MIN 3.0 MEAN 172 AC-FT 124,600
WATER YEAR 1963-64 MAX 2,800 MIN 0.8 MEAN 62.1 AC-FT 45,050

Peak discharge (base, 2,000 cfs)--Nov. 23 (1400) 2,040 cfs (7.82 ft); Jan. 20 (1500) 6,920 cfs (12.65 ft).

* Discharge measurement made on this day.

NAVARRO RIVER BASIN

11-4680. Navarro River near Navarro, Calif.

Location.--Lat 39°10'15", long 123°39'55", in SE¼ sec.7, T.15 N., R.16 W., on left bank 2.7 miles downstream from North Fork, 5.4 miles upstream from mouth, and 6.6 miles west of Navarro.

Drainage area.--303 sq mi.

Records available.--October 1950 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 20 ft (from topographic map).

Average discharge.--14 years, 503 cfs (364,200 acre-ft per year); median of yearly mean discharges, 445 cfs (322,200 acre-ft per year).

Extremes.--Maximum discharge during year, 17,900 cfs Jan. 20 (gage height, 25.80 ft); minimum, 5.0 cfs Aug. 29.

1950-64: Maximum discharge, 64,500 cfs Dec. 22, 1955 (gage height, 40.60 ft), from rating curve extended above 19,000 cfs on basis of slope-area measurement of maximum flow; minimum, 4.7 cfs Aug. 26, 27, 1959.

Flood in December 1937 reached a stage of 38.2 ft, from floodmarks.

Remarks.--Records good except those for period of no gage-height record, which are poor. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	11	43	202	112	529	140	184	61	36	24	8.9	6.3
2	11	45	187	117	476	170	168	63	36	24	9.2	6.4
3	11	48	171	115	438	150	148	78	36	21	9.2	6.5
4	11	188	158	110	402	130	144	110	35	19	9.0	6.2
5	12	187	151	106	375	120	136	90	36	19	8.9	6.8
6	14	369	146	106	348	110	127	74	36	18	8.8	6.5
7	17	321	136	136	330	108	122	68	36	17	8.5	6.5
8	18	331	134	148	320	102	117	*66	40	15	8.1	6.3
9	23	574	187	144	285	100	112	63	45	15	8.1	6.4
10	30	360	176	144	270	100	110	59	48	14	7.8	7.1
11	66	225	151	136	260	160	103	57	45	13	7.9	6.9
12	74	168	139	132	250	500	101	55	40	13	7.8	6.7
13	50	139	134	129	230	350	99	52	33	13	7.4	6.5
14	40	663	129	146	220	250	95	50	33	12	7.3	6.9
15	78	1,340	122	141	230	210	88	48	30	12	7.7	9.3
16	202	627	117	136	220	190	82	48	27	12	7.5	8.2
17	108	431	115	161	205	170	80	59	*27	12	7.8	7.0
18	72	345	*112	586	190	160	80	61	27	12	8.4	7.1
19	57	789	122	1,930	170	150	78	55	27	11	8.9	7.1
20	48	1,270	146	7,020	160	140	76	50	26	11	9.0	6.7
21	43	*646	156	*7,140	150	145	74	48	26	*10	8.1	6.5
22	45	469	141	3,820	140	170	72	45	26	10	7.6	7.1
23	*72	2,290	134	2,940	130	250	72	45	25	9.6	7.3	7.6
24	78	2,180	129	2,080	125	210	74	43	24	9.7	7.1	7.7
25	66	993	132	1,650	125	195	74	38	23	9.8	6.9	7.9
26	59	609	129	1,380	120	185	72	40	24	9.6	6.9	7.9
27	52	438	127	1,080	*110	174	70	42	24	8.8	6.5	7.6
28	50	342	127	862	108	163	66	42	24	8.4	*5.8	7.5
29	47	279	122	726	115	156	63	42	24	8.9	5.8	8.3
30	45	228	120	638	-----	146	61	38	24	9.5	5.7	7.7
31	43	-----	117	581	-----	*144	-----	36	-----	9.5	5.5	-----
TOTAL	1,553	16,937	4,369	34,652	7,031	5,448	2,948	1,726	943	410.8	239.4	213.2
MEAN	50.1	565	141	1,118	242	176	98.3	55.7	31.4	13.3	7.72	7.11
AC-FT	3,080	33,590	8,670	68,730	13,950	10,810	5,850	3,420	1,870	815	475	423
MAX	202	2,290	202	7,140	529	500	184	110	48	24	9.2	9.3
MIN	11	43	112	106	108	100	61	36	23	8.4	5.5	6.2

CALENDAR YEAR 1963 MAX 15,000 MIN 11 MEAN 503 AC-FT 364,400
 WATER YEAR 1963-64 MAX 7,140 MIN 5.5 MEAN 209 AC-FT 151,700

Peak discharge (base, 7,000 cfs).--Jan. 20 (2100) 17,900 cfs (25.80 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Feb. 8 to Mar. 26.

11-4680.1. Albion River near Comptche, Calif.

Location.--Lat 39°15'40", long 123°37'00", in SW¼ sec.11, T.16 N., R.16 W., on right bank 2,000 ft downstream from Morrison Gulch and 1.7 miles west of Comptche.

Drainage area.--14.4 sq mi (revised).

Records available.--July 1961 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 130 ft, revised, (from topographic map).

Extremes.--Maximum discharge during year, 831 cfs Jan. 20 (gage height, 7.87 ft) from rating curve extended above 390 cfs; no flow Oct. 1-5, Aug. 1 to Sept. 30.

1961-64: Maximum discharge, 960 cfs Feb. 13, 1962 (gage height, 8.30 ft), from rating curve extended above 390 cfs; no flow for many days in each year.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.6	0	2.4	3.8	3.6	61
1.8	.2	2.5	5.6	4.0	95
1.9	.3	2.6	8.0	4.5	143
2.0	.6	2.8	15	5.0	206
2.1	1.0	3.0	24	6.0	374
2.2	1.6	3.3	31	7.0	586
2.3	2.5				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0	0.3	9.8	7.3	17	6.9	13	1.3	0.6	0.2		
2	0	.6	8.0	9.2	16	7.3	*10	1.3	.6	.2		
3	0	.9	7.0	7.5	14	5.1	9.2	3.2	.5	.2		
4	0	7.8	6.1	6.8	12	4.5	8.3	2.8	.5	.2		
5	0	3.0	5.5	6.1	11	4.1	7.3	1.8	.6	.2		
6	.1	11	4.9	9.5	9.8	4.3	6.3	*1.6	.8	.2		
7	.1	6.3	4.3	19	8.9	4.0	5.5	1.5	.8	.2		
8	.1	36	7.5	17	8.0	3.4	4.9	1.3	.7	.1		
9	.1	33	13	18	7.5	3.4	4.1	1.2	.8	.1		
10	.4	16	8.9	16	7.0	3.1	3.8	1.2	.7	.1		
11	1.2	9.8	8.0	14	6.3	16	3.4	1.1	.6	.1		
12	.4	6.5	7.3	12	5.9	23	3.1	1.1	.5	.1		
13	.3	5.1	6.8	14	5.5	18	2.8	1.0	.5	.1		
14	.2	57	6.3	14	5.3	15	2.6	.9	.4	.1		
15	2.7	49	5.9	12	7.3	12	2.4	.9	.4	.1		
16	1.3	30	5.5	15	5.7	10	2.3	1.0	*.4	.1		
17	.6	19	4.7	30	4.9	8.9	2.2	1.2	.4	.1		
18	.5	13	4.7	92	4.5	7.8	2.1	1.1	.4	.1		
19	.4	47	*7.0	279	4.3	6.8	1.8	.9	.3	.1		
20	.4	*49	12	462	3.8	6.1	1.8	.8	.3	.1		
21	.3	30	9.2	*305	3.5	7.5	1.7	.8	.3	.1		
22	.5	26	8.6	219	3.4	14	1.6	.7	.2	*.1		
23	1.3	217	8.3	175	3.2	12	1.6	.7	.2	.1		
24	*.6	123	8.3	111	3.1	10	1.6	.7	.2	.1		
25	.5	57	8.6	72	3.0	8.9	1.5	.7	.2	.1	(*)	
26	.4	36	7.8	51	2.8	7.8	1.5	.9	.2	.1		
27	.4	25	9.2	39	*2.7	7.3	1.3	.8	.2	.1		
28	.4	18	9.2	31	*3.0	6.5	1.3	.7	.2	.1		
29	.3	15	8.3	28	3.1	6.1	1.3	.6	.2	.1		
30	.3	12	8.0	23	-----	5.5	1.2	.6	.2	.1		
31	.3	-----	7.3	19	-----	9.8	-----	.6	-----	.1		-----
TOTAL	14.1	959.3	236.0	2,133.4	192.5	265.1	111.5	35.0	12.9	3.8	0	0
MEAN	0.45	32.0	7.61	68.8	6.04	8.55	3.72	1.13	0.43	0.12	0	0
MAX	2.7	217	13	462	17	23	13	3.2	0.8	0.2	0	0
MIN	0	0.3	4.3	6.1	2.7	3.1	1.2	0.6	0.2	0.1	0	0
AC-FT	28	1,900	468	4,230	382	526	221	69	26	7.5	0	0

CALENDAR YEAR 1963 MAX 426 MIN 0 MEAN 18.3 AC-FT 13,280

WATER YEAR 1963-64 MAX 462 MIN 0 MEAN 10.8 AC-FT 7,860

Peak discharge (base, 350 cfs).--Nov. 23 (1300) 354 cfs (5.90 ft); Jan. 20 (1700) 831 cfs (7.87 ft).

* Discharge measurement or observation of no flow made on this day.

BIG RIVER BASIN

11-4680.7. South Fork Big River near Comptche, Calif.

Location.--Lat 39°13'45", long 123°27'55", in sec.19, T.16 N., R.14 W., on left bank 250 ft downstream from Daugherty Creek and 7.2 miles east of Comptche.

Drainage area.--36.2 sq mi (revised).

Records available.--August 1960 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 500 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,540 cfs Jan. 20 (gage height, 10.12 ft); minimum, 0.7 cfs Aug. 28 to Sept. 2, Sept. 4-6, 23-27.

1960-64: Maximum discharge 2,930 cfs Jan. 31, 1963 (gage height, 10.77 ft); minimum, 0.6 cfs many days in September 1960.

Remarks.--Records good. No regulation or diversion above station.

Revisions (water years).--1962-Report: 1961(M).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.0	4.3	20	12	92	13	29	9.5	4.9	2.0	1.2	0.7
2	2.1	4.9	18	12	86	13	26	8.9	4.7	2.1	1.2	.7
3	2.1	4.9	17	11	75	14	24	15	4.3	2.1	1.2	.8
4	2.2	10	15	11	68	14	23	12	4.3	2.1	1.1	.7
5	2.4	7.7	15	10	62	14	21	10	4.1	2.1	1.1	.7
6	2.7	14	14	12	59	14	20	*8.9	3.8	1.8	1.0	.7
7	2.7	8.9	12	18	54	14	19	8.6	3.6	1.6	1.0	.8
8	2.8	45	15	15	51	14	18	8.0	3.6	1.9	1.0	.8
9	3.0	35	24	16	48	14	17	7.7	3.6	1.8	1.0	.8
10	3.4	15	18	17	43	14	17	7.4	3.6	1.8	1.0	.8
11	5.2	10	15	15	40	23	17	6.9	3.3	1.7	1.0	.8
12	4.0	8.3	15	15	38	23	15	6.7	3.1	1.6	1.1	.8
13	4.0	15	15	17	38	36	14	6.4	3.1	1.5	1.1	.8
14	4.0	109	12	18	36	31	15	6.4	3.1	1.5	1.0	.8
15	7.7	84	12	16	35	26	13	6.2	2.8	1.6	1.0	.9
16	5.4	59	11	18	31	24	13	6.4	*3.0	1.7	.9	.9
17	4.7	48	11	54	28	23	13	6.4	2.8	1.5	.9	.9
18	4.5	41	11	134	26	23	12	6.2	2.8	1.5	.9	.8
19	4.3	114	*12	516	23	24	12	5.9	2.7	1.4	.9	.8
20	4.3	*92	19	1,170	20	24	11	5.9	2.5	1.4	.9	.8
21	4.5	65	15	726	18	26	11	5.7	2.5	1.4	.8	.8
22	5.7	57	14	499	17	35	11	5.7	2.4	*1.4	.8	.8
23	6.9	348	14	*378	15	38	11	5.4	2.2	1.4	.8	.7
24	5.9	165	13	290	14	34	12	5.2	2.1	1.4	.8	.7
25	5.2	83	13	229	12	29	10	5.2	2.0	1.4	*.8	.7
26	4.9	57	13	176	11	*29	9.5	5.4	2.1	1.3	.8	.7
27	4.7	40	14	140	*10	28	9.2	5.4	2.1	1.2	.8	.7
28	4.5	33	14	121	11	26	8.6	5.4	2.1	1.2	.7	.8
29	4.5	28	13	108	12	24	8.3	5.2	2.1	1.3	.7	.8
30	4.5	24	12	102	-----	23	8.3	5.2	2.0	1.2	.7	.8
31	4.5	-----	12	97	-----	25	-----	5.2	-----	1.2	.7	-----
TOTAL	129.3	1,630.0	448	4,973	1,073	727	447.9	218.4	91.3	49.1	28.9	23.3
MEAN	4.17	54.3	14.5	160	37.0	23.5	14.9	7.05	3.04	1.58	0.93	0.78
MAX	7.7	348	24	1,170	92	38	29	15	4.9	2.1	1.2	0.9
MIN	2.0	4.3	11	-10	10	13	8.3	5.2	2.0	1.2	0.7	0.7
AC-FT	256	3,230	889	9,860	2,130	1,440	888	433	181	97	57	46

CALENDAR YEAR 1963 MAX 1,240 MIN 1.0 MEAN 47.5 AC-FT 34,380

WATER YEAR 1963-64 MAX 1,170 MIN 0.7 MEAN 26.9 AC-FT 19,510

Peak discharge (base, 700 cfs).--Nov. 23 (1200) 788 cfs (6.72 ft); Jan. 20 (1600) 2,540 cfs (10.12 ft).

* Discharge measurement made on this day.

11-4685. Noyo River near Fort Bragg, Calif.

Location.--Lat 39°25'31", long 123°44'10", in SW¼ sec.10, T.18 N., R.17 W., on right bank 0.7 mile downstream from South Fork and 3.5 miles east of Fort Bragg.

Drainage area.--106 sq mi.

Records available.--August 1951 to September 1964.

Gage.--Water-stage recorder (digital). Datum of gage is 12.1 ft above mean sea level (planetable survey).

Average discharge.--13 years, 214 cfs (154,900 acre-ft per year); median of yearly mean discharges, 180 cfs (130,000 acre-ft per year).

Extremes.--Maximum discharge during year, 6,570 cfs Jan. 20 (gage height, 17.72 ft, from recorded range in stage); minimum, 0.2 cfs Sept. 28.

1951-64: Maximum discharge, 22,000 cfs Dec. 22, 1955 (gage height, 25.64 ft), from rating curve extended above 3,600 cfs on basis of slope-conveyance study; minimum, 0.2 cfs Sept. 28, 1964.

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	5.4	13	122	83	238	67	*120	40	20	12	5.5	2.2
2	5.1	18	109	86	212	80	109	37	21	12	5.0	1.9
3	5.4	21	98	84	190	70	99	46	20	12	4.8	1.8
4	5.4	140	90	81	167	66	94	56	20	12	4.8	1.8
5	6.0	81	84	78	151	64	89	46	22	11	4.8	1.9
6	6.6	113	77	78	142	63	83	41	24	10	4.7	1.6
7	6.6	106	72	98	131	61	78	*37	25	11	4.7	1.4
8	6.9	328	76	108	120	58	75	35	23	10	4.5	1.4
9	9.1	443	110	106	113	62	71	32	23	9.8	4.2	1.4
10	13	228	99	105	109	57	69	31	23	9.8	4.0	1.3
11	26	128	90	100	105	78	65	30	22	9.7	4.0	1.3
12	21	88	83	97	99	256	63	29	20	8.9	4.1	1.3
13	15	69	79	95	94	246	59	29	19	8.2	3.8	1.3
14	12	516	74	106	91	218	58	28	19	8.0	3.8	1.3
15	32	617	73	104	97	181	55	27	18	7.7	3.7	1.3
16	38	393	69	100	88	151	53	28	17	7.6	3.5	1.1
17	23	263	66	125	83	132	51	30	*16	8.1	3.5	1.1
18	18	186	65	330	78	119	51	29	16	7.9	3.5	1.2
19	15	283	*69	1,250	75	121	49	28	16	7.6	3.3	1.0
20	18	479	111	4,000	74	100	47	26	16	7.1	3.3	.8
21	16	*329	117	3,250	71	104	45	25	15	6.7	3.3	.6
22	15	244	111	*2,030	69	116	45	25	15	6.5	3.0	.6
23	26	1,430	100	1,560	67	137	44	24	14	*6.5	3.0	.6
24	*24	1,340	94	1,110	65	127	44	24	14	6.7	2.9	.5
25	20	708	98	845	65	117	42	23	13	6.5	2.9	.5
26	18	425	95	671	*62	110	41	24	13	5.9	*2.9	.4
27	16	296	92	518	59	106	38	24	12	5.7	2.7	.3
28	15	220	92	408	60	100	37	23	11	5.6	2.7	.2
29	13	170	90	352	62	95	36	22	12	5.6	2.4	.7
30	13	141	89	309	-----	92	35	21	12	5.4	2.6	.6
31	12	-----	87	263	-----	94	-----	21	-----	5.4	2.2	-----
TOTAL	475.5	9,816	2,781	18,530	3,037	3,448	1,845	941	531	256.9	114.1	33.4
MEAN	15.3	327	89.7	598	105	111	61.5	30.4	17.7	8.29	3.68	1.11
AC-FT	943	19,470	5,520	36,750	6,020	6,840	3,660	1,870	1,050	510	226	66
MAX	38	1,430	122	4,000	238	256	120	56	25	12	5.5	2.2
MIN	5.1	13	65	78	59	57	35	21	11	5.4	2.2	0.2

CALENDAR YEAR 1963 MAX 3,110 MIN 5.1 MEAN 190 AC-FT 137,300
 WATER YEAR 1963-64 MAX 4,000 MIN 0.2 MEAN 114 AC-FT 82,920

Peak discharge (base, 2,400 cfs).--Jan. 20 (time unknown) 6,570 cfs (17.72 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 23 to Jan. 21.

PUDDING CREEK BASIN

11-4685.4 Pudding Creek near Fort Bragg, Calif.

Location.--Lat 39°27'25", long 123°43'20", in NE¼NW¼, sec.2, T.18 N., R.17 W., on right bank at old town site of Glenblair, 0.7 mile downstream from Little Valley Creek, and 4.5 miles east north-east of Fort Bragg.

Drainage area.--12.5 sq mi.

Records available.--October 1963 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 105 feet (from topographic map).

Extremes.--Maximum discharge during year, 830 cfs Jan. 20 (gage height, 5.90 ft), from rating curve extended above 200 cfs on basis of slope-area measurement of maximum flow; no flow Aug. 27.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.5	0	2.2	11
1.6	.1	2.6	30
1.7	.5	2.9	53
1.8	1.3	3.4	113
1.9	2.7	4.2	267
2.0	4.8	5.1	530

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.1	0.9	11	8.2	21	7.3	*21	2.7	1.0	0.4	0.2	0.2
2	.1	2.0	10	17	18	9.6	14	2.5	1.0	.4	.2	.2
3	.1	2.2	8.9	12	16	6.1	11	6.4	1.0	.4	.2	.2
4	.1	26	7.9	10	14	5.3	9.6	4.8	1.0	.4	.2	.2
5	.2	12	7.3	9.3	13	5.1	8.2	3.5	1.1	.4	.2	.2
6	.3	*29	6.7	19	12	5.6	7.0	2.9	1.4	.3	.2	.2
7	.3	19	6.1	40	10	5.1	6.1	*2.3	1.6	.3	.2	.2
8	.3	86	8.6	27	9.6	4.4	5.6	2.2	1.4	.3	.2	.2
9	.4	71	21	23	8.9	4.1	5.1	2.0	1.3	.3	.1	.2
10	1.6	29	13	20	8.6	3.9	4.8	1.9	1.2	.3	.1	.2
11	3.3	16	10	16	7.9	33	4.4	1.7	1.1	.3	.1	.2
12	1.4	10	8.9	13	7.0	61	3.9	1.6	.9	.2	.1	.2
13	.8	8.2	7.9	16	6.4	41	3.7	1.6	.8	.2	.1	.3
14	.7	133	7.3	18	6.4	26	3.5	1.5	.7	.2	.2	.3
15	7.7	130	7.0	14	11	19	3.3	1.5	.7	.2	.2	.3
16	4.6	66	6.4	15	7.9	14	3.1	1.6	.7	.2	.2	.3
17	1.7	32	5.8	35	6.7	12	2.9	2.0	*.7	.2	.2	.3
18	1.3	21	5.8	104	6.1	9.6	2.9	1.7	.7	.2	.2	.3
19	1.0	61	7.6	326	5.8	8.2	2.7	1.6	.6	.2	.2	.3
20	.7	66	*17	*502	5.3	7.0	2.7	1.5	.6	.2	.2	.2
21	.7	35	12	293	4.8	9.3	2.5	1.4	.5	.2	.2	.2
22	1.0	25	10	*200	4.4	14	2.5	1.3	.5	.2	.2	.2
23	4.8	143	9.3	147	4.4	14	2.5	1.3	.5	*.2	.2	.2
24	*2.5	150	8.6	98	4.1	11	2.3	1.2	.4	.2	.2	.2
25	1.9	76	9.3	67	3.9	8.6	2.3	1.1	.4	.1	.2	.2
26	1.5	42	8.2	47	*3.7	7.6	2.2	1.3	.4	.1	*.1	.2
27	1.2	28	13	33	3.5	7.0	2.2	1.3	.4	.1	0	.2
28	1.0	21	12	*27	3.7	6.7	2.0	1.1	.4	.1	.1	.2
29	.9	16	10	30	3.9	6.1	2.0	1.0	.4	.1	.1	.2
30	.8	13	9.6	26	-----	5.8	2.0	1.0	.4	.1	.1	.2
31	.7	-----	8.2	22	-----	7.3	-----	1.0	-----	.1	.1	-----
TOTAL	43.7	1,369.3	294.4	2,234.5	238.0	384.7	148.0	60.5	23.8	7.1	5.0	6.7
MEAN	1.41	45.6	9.50	72.1	8.21	12.4	4.93	1.95	0.79	0.23	0.16	0.22
MAX	7.7	150	21	502	21	61	21	6.4	1.6	0.4	0.2	0.3
MIN	0.1	0.9	5.8	8.2	3.5	3.9	2.0	1.0	0.4	0.1	0	0.2
AC-FT	87	2,720	584	4,430	472	763	294	120	47	14	9.9	13

CALENDAR YEAR 1963 MAX - MIN - MEAN - AC-FT -
 WATER YEAR 1963-64 MAX 502 MIN 0 MEAN 13.2 AC-FT 9,550

Peak discharge (base, 500 cfs).--Jan. 20 (1600) 830 cfs (5.90 ft).

* Discharge measurement made on this day.

11-4688.5. Dunn Creek near Rockport, Calif.

Location.--Lat 39°47'56", long 123°49'11"; in SE¼ sec.35, T.23 N., R.18 W., on State Highway 1, on right bank just upstream from highway culvert 4.2 miles north of Rockport.

Drainage area.--1.88 sq mi.

Records available.--August 1961 to September 1964, discontinued as a continuous-record station; converted to crest-stage partial-record station.

Gage.--Water-stage recorder and tipping-bucket rain gage. Altitude of gage is 350 ft (from topographic map).

Extremes.--Maximum discharge during year, 95 cfs Jan. 20 (gage height, 6.49 ft), from rating curve extended above 10 cfs on basis of indirect measurement of maximum flow through culvert at gage height 4.89 ft; minimum, 0.2 cfs Sept. 16-30.
1961-64: Maximum discharge, that of Jan. 20, 1964.

Remarks.--Records fair. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.6	1.6	3.6	2.5	5.8	1.4	*2.7	1.1	0.6	0.4	0.3	0.3
2	.7	1.8	3.3	2.5	5.3	1.3	2.5	1.2	.6	.4	.3	.3
3	.7	2.0	3.2	2.4	5.0	1.2	2.4	1.4	.6	.4	.3	.3
4	.7	2.3	2.9	2.3	4.7	1.1	2.3	1.2	.6	.4	.3	.3
5	.7	2.5	2.8	2.2	4.4	1.2	2.1	1.1	.7	.4	.3	.3
6	.8	3.1	2.8	2.8	4.1	1.2	2.0	1.0	.7	.4	.3	.3
7	.8	2.5	2.7	3.7	3.8	1.2	1.9	*.8	.7	.4	.3	.3
8	.8	6.0	3.1	3.6	3.6	1.2	1.8	.8	.7	.4	.3	.3
9	.9	9.4	3.1	3.2	3.5	1.2	1.8	.8	.7	.4	.3	.3
10	1.1	5.2	2.8	2.8	3.3	1.2	1.7	.8	.6	.4	.3	.3
11	.9	4.0	2.7	2.6	3.1	1.7	1.6	.7	.6	.4	.3	.3
12	.9	3.3	2.5	2.5	3.1	2.1	1.5	.7	.6	.4	.3	.3
13	.9	3.3	2.5	2.5	2.8	1.9	1.5	.7	.6	.4	.3	.3
14	.9	13	2.4	2.5	2.7	1.8	1.4	.7	.6	.4	.3	.3
15	1.2	12	2.3	2.4	2.7	1.8	1.4	.7	.6	.4	.3	.3
16	1.1	7.6	2.3	2.4	2.5	1.6	1.3	.7	*.6	.4	.3	.2
17	1.2	5.9	2.2	3.3	2.3	1.5	1.2	.8	.6	.4	.3	.2
18	1.1	5.3	2.2	6.7	2.2	1.6	1.2	.7	.6	.4	.3	.2
19	1.1	7.9	2.4	23	2.2	1.5	1.3	.7	.6	.3	.3	.2
20	1.1	*9.4	*2.9	62	2.0	1.5	1.3	.7	.5	.3	.3	.2
21	1.2	7.4	2.7	42	1.9	1.9	1.3	.7	.5	.3	.3	.2
22	1.2	6.2	2.6	*27	1.9	2.2	1.3	.7	.5	*.3	.3	.2
23	1.4	9.4	2.5	20	1.8	2.4	1.2	.7	.5	.3	.3	.2
24	1.2	12	2.4	13	1.7	2.3	1.2	.7	.5	.3	.3	.2
25	*1.2	8.8	2.4	11	1.6	2.2	1.2	.7	.5	.3	*.3	.2
26	1.3	6.9	2.3	9.2	*1.5	2.1	1.2	.7	.5	.3	.3	.2
27	1.4	5.8	2.4	8.2	1.5	2.1	1.2	.6	.4	.3	.3	.2
28	1.5	4.9	2.6	7.0	1.6	2.0	1.1	.6	.4	.3	.3	.2
29	1.6	4.1	2.6	6.9	1.5	1.9	1.0	.6	.4	.3	.3	.2
30	1.6	3.8	2.6	6.7	-----	2.0	1.0	.6	.4	.3	.3	.2
31	1.6	-----	2.5	6.4	-----	2.2	-----	.6	-----	.3	.3	-----
TOTAL	33.4	177.4	82.3	295.3	84.1	52.5	46.6	24.5	17.0	11.1	9.3	7.5
MEAN	1.08	5.91	2.65	9.53	2.90	1.69	1.55	0.79	0.57	0.36	0.30	0.25
MAX	1.6	13	3.6	62	5.8	2.4	2.7	1.4	0.7	0.4	0.3	0.3
MIN	0.6	1.6	2.2	2.2	1.5	1.1	1.0	0.6	0.4	0.3	0.3	0.2
AC-FT	66	352	163	586	167	104	.92	49	34	22	18	15
(†)	8.0	14.1	3.3	12.7	0.7	6.0	0.3	1.2	1.0	0	0.1	0

CALENDAR YEAR 1963 MAX 71 MIN 0.4 MEAN 3.40 AC-FT 2,460
WATER YEAR 1963-64 MAX 62 MIN 0 MEAN 2.30 AC-FT 1,650

Peak discharge (base, 20 cfs).--Jan. 20 (1500) 95 cfs (6.49 ft).

* Discharge measurement made on this day.

† Precipitation, in inches.

Note.--No gage-height record Aug. 26 to Sept. 30.

MATTOLE RIVER BASIN

11-4690. Mattole River near Petrolia, Calif.

Location.--Lat 40°18'40", long 124°16'10", in NW¼ sec.11, T.2 S., R.2 W., on right bank 0.2 mile downstream from Clear Creek, 1.2 miles southeast of Petrolia, and 1.3 miles upstream from North Fork.

Drainage area.--240 sq mi.

Records available.--October 1911 to December 1913, October 1950 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder (digital). Altitude of gage is 40 ft (from topographic map). November 1911 to December 1913, staff or chain gages at several sites upstream within 0.7 mile of present site at various datums. Dec. 11, 1950, to July 14, 1955, water-stage recorder at site 0.7 mile upstream at datum 7.48 ft higher.

Average discharge.--16 years, 1,343 cfs (972,300 acre-ft per year).

Extremes.--Maximum discharge during year, 43,200 cfs Jan. 20 (gage height, 21.85 ft); minimum, 23 cfs Sept. 20-23, 25, 27-30. 1911-13, 1950-64: Maximum discharge, 90,400 cfs Dec. 22, 1955 (gage height, 29.60 ft), from rating curve extended above 24,000 cfs on basis of slope-area measurement of maximum flow; minimum observed, 20 cfs Sept. 1, 2, 15-30, Oct. 27-31, 1913.

Remarks.--Records good. Small diversions for irrigation above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	39	349	1,250	847	2,240	824	514	217	112	68	43	29
2	39	420	1,090	866	1,950	902	443	215	107	68	43	30
3	39	444	986	751	1,740	641	413	289	105	68	43	29
4	39	2,090	882	694	1,560	560	392	242	107	66	42	*29
5	433	2,300	817	642	1,410	530	376	208	120	66	41	28
6	554	4,140	761	1,160	1,290	581	354	196	145	65	41	29
7	198	2,740	662	1,770	1,160	539	339	178	139	61	40	29
8	114	8,080	753	1,290	1,060	477	331	171	127	61	40	28
9	202	11,100	*1,020	1,200	977	466	320	165	121	61	38	28
10	556	4,910	797	1,210	915	434	312	159	116	59	39	28
11	1,920	2,860	706	1,070	880	1,610	296	152	108	57	39	28
12	753	2,030	651	988	796	2,390	288	148	104	57	38	28
13	378	2,970	612	1,070	746	2,090	276	145	101	57	38	28
14	260	7,060	574	1,140	709	1,690	264	143	98	54	37	26
15	1,830	6,720	541	976	832	1,380	257	141	95	54	37	26
16	1,270	4,100	514	1,090	728	1,160	252	149	94	55	36	26
17	660	3,030	488	3,460	648	998	244	201	93	54	36	26
18	446	2,390	471	5,940	604	884	238	170	93	52	35	26
19	349	3,820	583	10,400	567	792	232	151	90	51	34	25
20	285	3,600	1,430	31,000	535	735	225	148	86	51	33	25
21	285	2,850	1,070	*11,800	508	785	223	143	84	51	34	24
22	1,230	2,710	895	7,280	485	842	221	136	82	49	34	24
23	2,340	8,900	794	5,070	463	841	223	132	80	49	33	24
24	1,170	7,840	797	4,740	445	751	214	129	*78	49	33	24
25	916	4,800	898	6,460	423	658	210	127	76	47	33	24
26	745	3,470	783	5,210	404	608	204	126	73	47	32	24
27	608	2,680	920	3,880	*392	*565	*197	125	72	46	31	23
28	*513	2,130	1,060	2,990	401	534	194	*122	72	45	31	23
29	452	1,730	1,060	2,940	407	501	188	119	72	44	31	23
30	402	1,480	*979	*2,640	-----	477	188	116	70	44	30	24
31	354	-----	897	2,310	-----	471	-----	114	-----	44	30	-----
TOTAL	19,379	113,943	25,761	122,884	25,275	26,716	8,428	4,977	2,920	1,700	1,125	788
MEAN	625	3,798	831	3,964	872	862	281	161	97.3	54.8	36.3	26.3
AC-FT	38,440	226,000	51,100	243,700	50,130	52,990	16,720	9,870	5,790	3,370	2,230	1,560
MAX	2,340	11,100	1,430	31,000	2,240	2,390	514	289	145	68	43	30
MIN	39	349	471	642	392	434	188	114	70	44	30	23

CALENDAR YEAR 1963: MAX 17,200 MIN 39 MEAN 1,584 AC-FT 1,146,000
 WATER YEAR 1963-64: MAX 31,000 MIN 23 MEAN 967 AC-FT 701,900

Peak discharge (base, 10,000 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-9	0500	13.40	14,000	11-23	1800	12.18	11,500
11-14	1600	12.00	11,100	1-20	0800	21.85	43,200

11-4700. Lake Pillsbury near Potter Valley, Calif.

Location.--Lat 39°24'30", long 122°57'30", on line between secs.14 and 23, T.18 N., R.10 W., at Scott Dam near right bank of Eel River, 0.3 mile downstream from Rice Fork, and 10.2 miles northeast of town of Potter Valley.

Drainage area.--289 sq mi.

Records available.--October 1922 to September 1928 (daily gage heights only), October 1928 to September 1964. Month-end contents only for some periods, published in WSP 1315-B. Prior to October 1953, published as "at Hullville."

Gage.--Water-stage recorder and wire-weight gage. Datum of gage is 81.7 ft below mean sea level (river-profile survey). Prior to Jan. 26, 1950, staff gage at same site and datum.

Extremes.--Maximum contents during year, 74,700 acre-ft May 26 to June 1; maximum gage height, 1,904.46 ft May 27-31; minimum contents, 34,700 acre-ft Nov. 4 (gage height, 1,800.10 ft).

1922-64: Maximum contents, 95,600 acre-ft May 13, 16, 1925 (gage height, 1,910.8 ft); minimum, 10 acre-ft Dec. 9, 10, 1931 (gage height, 1,822.5 ft).

Remarks.--Reservoir is formed by concrete overflow type dam; storage began in December 1921. Usable capacity, 86,400 acre-ft between gage heights 1,822.4 (sill of outlet gate) and 1,910.0 ft (top of spillway gates); dead storage, 397 acre-ft; spillway at gage height 1,900.0 ft. Water is released down Eel River to Van Arsdale Reservoir, from which it is diverted through tunnel to Potter Valley powerhouse; part is then used for irrigation and remainder flows into East Fork Russian River. Records given herein represent total contents.

Cooperation.--Water-stage-recorder graph and wire-weight gage readings furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Capacity table (gage height, in feet, and contents, in acre-feet)

1,880	34,500	1,893	53,300
1,883	38,400	1,895	56,700
1,886	42,500	1,897	60,200
1,889	46,900	1,900	65,800
1,891	50,000	1,905	75,800

Contents, in acre-feet, at 2400 hours, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46,200	35,900	60,400	52,600	67,200	64,200	65,700	72,600	74,700	73,000	64,000	54,600
2	45,800	35,500	60,200	52,300	67,100	64,100	65,900	72,700	74,600	72,900	63,700	54,300
3	45,300	35,100	60,000	51,900	67,000	63,900	66,100	73,000	74,600	72,700	63,400	53,900
4	44,800	34,700	59,800	51,600	66,800	63,700	66,400	73,100	74,600	72,600	63,100	53,600
5	44,400	35,000	59,600	51,200	66,700	63,500	66,600	73,200	74,600	72,400	62,700	53,300
6	44,100	35,800	59,400	50,800	66,600	63,200	66,900	73,300	74,600	72,000	62,500	53,000
7	43,800	36,600	59,200	50,300	66,600	62,300	67,100	73,500	74,500	71,700	62,200	52,700
8	43,400	37,500	59,200	49,800	66,500	62,700	67,400	73,600	74,500	71,300	61,900	52,400
9	43,000	38,400	59,100	49,400	66,500	62,400	67,600	73,700	74,500	71,000	61,600	52,100
10	42,700	39,200	59,000	49,200	66,500	62,300	67,800	73,800	74,500	70,800	61,300	51,700
11	42,400	39,300	58,600	49,000	66,500	62,300	68,100	73,900	74,500	70,500	61,000	51,400
12	42,000	39,400	58,100	48,800	66,400	62,300	68,400	74,000	74,500	70,200	60,700	51,000
13	41,700	40,100	57,600	48,600	66,400	62,400	68,600	74,100	74,400	69,900	60,400	50,600
14	41,400	40,800	57,300	48,400	66,300	62,400	68,800	74,200	74,400	69,600	60,100	50,200
15	41,100	42,500	57,000	48,200	66,300	62,500	69,100	74,300	74,300	69,300	59,800	49,800
16	40,900	42,900	56,600	48,000	66,200	62,500	69,400	74,300	74,300	69,000	59,400	49,400
17	40,600	43,300	56,300	47,800	66,200	62,500	69,700	74,400	74,200	68,700	59,100	49,000
18	40,400	43,800	56,000	48,900	66,100	62,500	70,000	74,500	74,200	68,400	58,700	48,600
19	40,100	44,200	55,700	55,200	66,000	62,700	70,200	74,500	74,100	68,000	58,400	48,200
20	39,800	45,500	55,600	66,000	65,700	62,800	70,400	74,600	74,000	67,700	58,100	47,800
21	39,500	45,900	55,500	68,700	65,700	63,000	70,700	74,600	74,000	67,400	57,700	47,400
22	39,100	47,800	55,400	68,500	65,600	63,300	70,900	74,600	73,900	67,100	57,400	47,000
23	38,800	53,100	55,200	68,300	65,500	63,600	71,100	74,600	73,800	66,800	57,100	46,600
24	38,500	57,200	54,900	68,100	65,400	63,800	71,300	74,600	73,700	66,500	56,800	46,200
25	38,100	58,400	54,600	68,000	65,200	64,000	71,500	74,600	73,600	66,200	56,600	45,800
26	37,800	59,700	54,400	67,800	65,000	64,200	71,700	74,700	73,500	65,900	56,300	45,400
27	37,400	60,100	54,300	67,600	64,800	64,300	71,900	74,700	73,400	65,600	56,000	45,000
28	37,100	60,300	54,000	67,500	64,600	64,600	72,100	74,700	73,300	65,300	55,800	44,600
29	36,700	60,500	53,600	67,400	64,500	64,800	72,300	74,700	73,200	65,000	55,500	44,300
30	36,400	60,500	53,300	67,300	-----	65,100	72,500	74,700	73,100	64,700	55,200	43,900
31	36,000	-----	53,000	67,300	-----	65,200	-----	74,700	-----	64,300	54,900	-----
(†)	1,881.15	1,897.15	1,892.84	1,900.79	1,899.32	1,899.73	1,903.39	1,904.46	1,903.70	1,899.26	1,894.00	1,887.00
(‡)	-10,500	+24,500	-7,500	+14,300	-2,800	+700	+7,300	+2,200	-1,600	-8,800	-9,400	-11,000

Calendar year 1963..... * -12,500

Water year 1963-64..... * -2,600

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

Note.--Computed from occasional wire-weight gage readings Oct. 1 to Mar. 29, Aug. 6 to Sept. 30.

11-4705. Eel River below Scott Dam, near Potter Valley, Calif.

Location.--Lat 39°24'30", long 122°58'15", in SE¼ sec.15, T.18 N., R.10 W., on left bank 0.4 mile upstream from Soda Creek, 0.7 mile downstream from Scott Dam, and 9.7 miles northeast of town of Potter Valley.

Drainage area.--290 sq mi.

Records available.--October 1922 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B. Prior to October 1929, published as South Eel River at Hullville, and October 1929 to September 1953 as "at Hullville".

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 1,740 ft (from topographic map). Prior to Dec. 15, 1930, at datum 3.00 ft higher.

Average discharge.--42 years, 511 cfs (369,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,600 cfs Jan. 21 (gage height, 8.20 ft); minimum daily, 21 cfs Apr. 16, 22-26.

1922-64: Maximum discharge, 41,100 cfs Dec. 11, 1937 (gage height, 22.9 ft, from floodmarks), from rating curve extended above 2,900 cfs on basis of computed flow over Scott Dam; minimum daily, 0.1 cfs Sept. 8, 1924.

Remarks.--Records good. Flow regulated by Lake Pillsbury (see preceding page). No diversion above station.

Cooperation.--Water-stage-recorder graph and 12 discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 21				Jan. 22 to Sept. 30			
3.2	120	6.0	930	2.2	14	5.0	520
3.5	170	7.0	1,570	2.8	63	6.0	940
4.0	262	8.0	2,400	3.5	151	7.0	1,570
5.0	515			4.0	245	8.0	2,400

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	258	242	282	315	1,040	293	123	56	65	63	150	157
2	181	242	288	*313	920	293	106	56	65	63	150	157
3	246	244	301	313	840	290	*67	56	65	63	148	156
4	254	242	310	313	770	290	67	56	65	63	148	156
5	258	244	295	317	700	295	67	56	64	135	148	156
6	254	246	295	322	628	298	69	56	64	176	148	156
7	252	246	299	322	600	298	72	54	64	176	148	156
8	250	181	303	320	571	298	72	54	*64	172	148	156
9	248	122	303	320	550	298	73	55	64	161	148	174
10	250	162	*301	320	529	303	59	55	64	148	148	195
11	250	195	301	310	520	308	48	*55	64	148	148	201
12	248	220	299	310	520	308	50	55	63	148	148	207
13	248	244	303	310	481	273	53	55	63	148	148	207
14	246	195	310	310	451	239	61	55	63	*148	*148	207
15	248	183	310	310	409	239	54	60	63	147	148	207
16	248	252	310	310	460	253	21	67	63	145	148	205
17	246	274	310	320	421	268	22	67	63	145	148	205
18	246	284	310	301	379	193	23	67	63	145	*148	205
19	246	228	315	179	315	122	23	67	63	148	148	205
20	246	179	322	139	293	122	23	67	63	151	148	205
21	244	244	320	*2,010	320	122	22	67	63	151	148	205
22	244	278	320	2,020	290	122	21	66	63	151	148	205
23	242	206	320	1,400	283	122	21	66	63	151	151	205
24	242	145	320	1,900	288	122	21	66	63	150	153	205
25	240	179	320	1,700	295	122	21	66	63	150	153	205
26	240	202	252	1,610	295	122	21	66	63	150	153	205
27	242	233	231	1,400	*293	122	22	66	63	148	151	207
28	*244	240	317	1,300	293	122	22	66	63	148	151	209
29	244	262	315	1,250	293	122	22	65	63	150	151	209
30	242	276	315	1,170	-----	123	38	65	63	150	154	209
31	242	-----	315	1,100	-----	123	-----	65	-----	150	157	-----
TOTAL	7,589	6,690	9,412	22,834	14,047	6,625	1,384	1,893	1,905	4,342	4,634	5,737
MEAN	245	223	304	737	484	214	46.1	61.1	63.5	140	149	191
MAX	258	284	322	2,020	1,040	308	123	67	65	176	157	209
MIN	181	122	231	139	283	122	21	54	63	63	148	156
AC-FT	15,050	13,270	18,670	45,290	27,860	13,140	2,750	3,750	3,780	8,610	9,190	11,380

CALENDAR YEAR 1963 MAX 18,200 MIN 122 MEAN 725 AC-FT 525,200
WATER YEAR 1963-64 MAX 2,020 MIN 21 MEAN 238 AC-FT 172,700

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 11-19, Jan. 24 to Feb. 19.

11-4705. Eel River below Scott Dam, near Potter Valley, Calif.--Continued

Records available.--Water temperatures: October 1963 to September 1964.

Extremes.--Maximum temperature during year, 67°F Sept. 18-26; minimum recorded, 40°F Jan. 22, 23.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	-	-	57	57	46	46	46	46	-	-	41	41	47	46	57	56	58	56	60	56	57	56	60	58
2	-	-	57	57	46	46	46	46	-	-	41	41	48	46	57	55	59	56	60	56	57	56	61	59
3	63	62	57	57	46	46	46	46	-	-	41	41	49	47	58	56	59	56	60	56	57	56	61	59
4	62	62	57	57	46	46	46	46	-	-	43	41	49	47	59	56	58	57	60	56	57	56	62	60
5	62	62	57	56	46	46	46	46	-	-	43	43	49	47	58	56	59	58	58	56	57	56	62	60
6	62	62	56	55	46	46	46	46	-	-	43	43	49	47	60	56	59	58	58	57	57	56	62	60
7	62	62	55	54	46	46	46	46	-	-	43	43	49	47	60	56	60	57	58	57	57	56	62	61
8	62	62	54	54	46	46	46	46	-	-	43	43	50	48	60	56	58	56	58	57	58	56	63	61
9	62	62	54	54	46	46	46	46	-	-	43	43	50	48	61	57	-	-	58	57	58	56	63	61
10	62	62	54	53	46	46	46	46	-	-	43	43	52	48	61	57	-	-	58	57	58	56	65	62
11	62	62	53	53	46	45	-	-	-	-	43	43	54	49	61	58	60	56	58	57	58	56	65	63
12	62	62	53	53	45	45	-	-	-	-	43	43	54	49	60	56	60	56	59	57	58	56	66	64
13	62	62	53	53	45	45	-	-	-	-	43	43	54	49	59	56	60	56	59	57	58	57	66	64
14	62	62	53	53	45	45	-	-	-	-	44	43	53	50	59	55	60	56	58	56	59	56	66	65
15	62	62	53	52	45	45	-	-	-	-	45	44	-	-	59	55	60	56	57	56	59	56	66	65
16	62	62	52	52	45	45	-	-	-	-	45	44	-	-	56	55	57	55	57	56	60	56	66	65
17	62	61	52	52	46	45	-	-	-	-	45	44	-	-	59	56	59	55	57	56	59	56	66	66
18	61	61	52	51	46	46	-	-	-	-	45	44	-	-	59	56	60	55	57	56	58	56	67	66
19	61	60	51	51	46	46	-	-	-	-	46	44	-	-	59	56	60	55	57	55	58	57	67	66
20	60	60	51	50	46	46	42	42	42	42	45	44	-	-	59	56	60	55	57	55	58	57	67	66
21	60	60	50	50	46	46	42	41	42	42	45	44	-	-	59	56	61	55	56	55	59	57	67	66
22	60	60	50	50	46	46	41	40	42	42	45	45	-	-	59	56	61	56	56	55	59	57	67	66
23	60	60	50	49	46	46	40	40	42	42	45	44	-	-	59	56	61	56	57	55	60	57	67	66
24	60	60	49	48	46	46	-	-	42	42	45	45	-	-	59	56	61	56	57	55	60	58	67	66
25	60	60	48	47	46	46	-	-	42	42	46	45	-	-	60	56	60	56	57	55	60	58	67	66
26	60	59	47	47	46	46	-	-	42	42	46	45	-	-	58	57	60	56	57	55	59	57	67	66
27	59	59	47	46	46	46	-	-	42	42	46	45	-	-	58	56	60	55	57	56	60	58	66	66
28	59	58	46	46	46	46	-	-	42	41	47	46	-	-	58	56	60	56	57	56	60	58	66	66
29	58	58	46	46	46	46	-	-	41	41	47	46	-	-	60	56	60	56	57	56	60	58	66	66
30	58	58	46	46	46	46	-	-	-	-	47	46	-	-	60	56	60	56	57	56	60	58	66	66
31	58	57	-	-	46	46	-	-	-	-	46	46	-	-	60	56	-	-	57	56	60	58	-	-
Avg	-	-	52	51	46	46	-	-	-	-	44	44	-	-	59	56	-	-	58	56	59	57	65	64

EEL RIVER BASIN

11-4710. Potter Valley powerhouse tailrace near Potter Valley, Calif.

Location (revised).--Lat 39°21'42", long 123°07'38", in SW¼NW¼ sec.6, T.17 N., R.11 W., on right bank 100 ft downstream from powerhouse of Pacific Gas & Electric Co. 1.8 miles southwest of Van Arsdale Dam, 2.9 miles northwest of town of Potter Valley.

Records available.--December 1909 to September 1964. Prior to October 1922, monthly discharge only, published in WSP 1315-B. Prior to October 1931, published as Snow Mountain Water and Power Co.'s tailrace near Potter Valley.

Gage.--Water-stage recorder and concrete Parshall flume. Altitude of gage is 1,020 ft revised (from topographic map). No gage prior to Dec. 1, 1922. Dec. 1, 1922, to Sept. 30, 1923, float gage and Oct. 1, 1923, to Apr. 12, 1950, water-stage recorder, at site 50 ft upstream at different datum.

Average discharge.--54 years (1910-64), 195 cfs (141,200 acre-ft per year).

Extremes.--1922-64: Maximum daily discharge, 348 cfs Apr. 24, 1953; no flow at times in several years.

Remarks.--Records excellent. Water is diverted from Eel River above Van Arsdale Dam. After passing through powerhouse, part of it is used for irrigation in Potter Valley and remainder flows into East Fork Russian River. Water for irrigation diverted from tailrace is included in figures of discharge.

Cooperation.--Water-stage-recorder graph and 10 discharge measurements furnished by Pacific Gas and Electric Co. in connection with a Federal Power Commission project.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	217	216	300	306	300	301	182	54	67	63	149	144
2	162	215	303	306	299	301	161	58	67	61	154	140
3	*221	216	302	*303	300	301	*109	87	66	58	152	150
4	218	292	300	305	299	301	102	67	66	58	152	143
5	217	247	292	306	299	301	98	64	59	69	149	136
6	218	298	300	306	298	301	98	63	54	147	148	141
7	217	286	299	306	298	301	97	64	64	149	146	145
8	217	296	299	307	298	301	97	63	*66	156	148	143
9	220	292	300	309	299	301	97	59	66	162	146	165
10	238	195	*300	309	299	301	96	61	66	160	177	217
11	222	209	266	309	299	300	73	60	64	158	146	202
12	218	197	299	309	299	298	67	*67	66	150	143	190
13	218	242	300	306	302	299	68	54	65	147	141	190
14	218	249	300	306	300	299	65	66	65	*145	*140	183
15	254	303	300	306	300	299	70	59	65	148	142	186
16	240	314	302	305	300	299	43	60	67	146	141	187
17	222	309	302	303	300	299	43	66	66	148	*143	187
18	221	306	302	303	300	257	44	67	65	148	140	181
19	216	298	303	302	286	154	38	68	63	145	142	182
20	216	271	306	300	288	154	37	73	62	145	143	181
21	216	279	309	300	299	156	37	59	60	145	143	182
22	217	303	307	284	299	175	46	70	59	147	142	180
23	243	310	305	302	299	170	42	65	61	147	143	178
24	221	305	306	302	299	174	46	65	64	147	143	180
25	217	305	305	302	298	164	34	67	65	157	141	180
26	217	303	218	302	298	167	33	87	64	146	141	180
27	217	303	197	300	299	167	32	62	64	146	142	180
28	217	292	306	300	*299	166	33	62	63	144	142	180
29	*217	287	306	300	298	162	40	65	63	148	144	182
30	215	300	305	300	-----	156	31	67	63	145	143	181
31	215	-----	305	300	-----	155	-----	69	-----	127	144	-----
Total	6,802	8,238	9,144	9,404	8,651	7,480	2,059	2,018	1,915	4,162	4,510	5,196
Mean	219	275	295	303	298	241	68.6	65.1	63.8	134	145	173
Max	254	314	309	309	302	301	182	87	67	162	177	217
Min	162	195	197	284	286	154	31	54	54	58	140	136
Ac-ft	13,490	16,340	18,140	18,650	17,160	14,840	4,080	4,000	3,800	8,260	8,950	10,310

Calendar year 1963: Max 314 Min 146 Mean 258 Ac-ft 186,800
 Water year 1963-64: Max 314 Min 31 Mean 190 Ac-ft 138,000

* Discharge measurement made on this day.

11-4715. Eel River at Van Arsdale Dam, near Potter Valley, Calif.

Location (revised).--Lat 39°23'20", long 123°06'55", in NW¼ sec.30, T.18 N., R.11 W., on left bank 1,000 ft downstream from Van Arsdale Dam and 4.6 miles north of town of Potter Valley.

Drainage area.--349 sq mi.

Records available.--November 1909 to September 1922 (combined monthly discharge only, of Eel River at this station and Snow Mountain Water & Power Co.'s tailrace near Potter Valley), October 1922 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B. Prior to October 1929, published as South Eel River at Van Arsdale Dam, near Potter Valley.

Gage.--Water-stage recorder. Altitude of gage is 1,400 ft (from topographic map). Nov. 18, 1909, to Mar. 3, 1927, recorder in reservoir 800 ft upstream from Van Arsdale Dam at different datum. Oct. 1, 1927, to Feb. 28, 1937, staff gage at present site and datum.

Average discharge.--55 years (1909-64), 607 cfs (439,400 acre-ft per year), combined flow of Eel River at Van Arsdale Dam and Potter Valley powerhouse tailrace.

Extremes.--Maximum discharge during year, 4,710 cfs Jan. 20 (gage height, 11.70 ft); minimum daily, 0.3 cfs Nov. 10. 1909-64: Maximum discharge, 48,600 cfs Dec. 22, 1955 (gage height, 31.4 ft, from floodmarks), from rating curve extended above 11,000 cfs on basis of computed flow over Van Arsdale Dam; no flow Nov. 1, 1945, Sept. 13, 14, 1953.

Remarks.--Records good. Flow regulated by Lake Pillsbury (see p. 393). Water is diverted from Van Arsdale Reservoir through tunnel to Potter Valley powerhouse (see preceding page), after which part is used for irrigation and remainder flows into East Fork Russian River. Records given herein show only flow passing dam down Eel River.

Cooperation.--Water-stage-recorder graph and 10 discharge measurements furnished by Pacific Gas & Electric Co. in connection with a Federal Power Commission project.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 8 to Sept. 30)

5.3	0.3	5.8	18	7.5	555
5.4	1.2	6.1	52	8.0	870
5.5	3.0	6.5	131	9.0	1,700
5.6	6.2	7.0	300	10.0	2,700
5.7	11				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.8	1.6	1.6	3.5	640	14	15	2.8	2.4	2.1	2.6	1.9
2	2.8	1.7	1.7	*3.5	610	17	4.8	3.0	2.4	2.4	2.6	2.1
3	*2.8	1.9	1.3	2.6	522	5.5	*5.1	3.0	2.6	2.4	2.6	2.1
4	1.2	1.9	3.5	1.9	440	3.5	4.8	2.6	2.4	2.4	2.4	2.1
5	1.7	1.2	4.4	1.1	385	3.2	4.4	3.0	1.9	2.1	2.1	1.9
6	3.8	3.1	1.9	1.6	327	3.2	4.1	3.2	2.6	2.8	1.7	1.9
7	3.2	1.4	.6	3.8	270	3.5	3.8	3.2	3.2	3.7	1.6	1.9
8	2.1	1.7	1.6	4.4	233	3.5	3.5	3.2	*4.1	25	1.4	1.9
9	2.6	1.4	13	5.1	195	3.2	3.2	3.2	3.5	5.7	1.6	1.7
10	2.4	.3	5.1	10	166	2.8	3.2	3.5	2.8	2.4	1.6	1.6
11	1.3	.4	34	6.2	134	45	2.4	3.2	2.6	2.1	1.6	1.4
12	1.7	.9	2.4	4.8	101	99	1.9	*3.5	2.6	1.9	1.4	1.2
13	1.7	3.5	1.4	7.7	79	67	3.0	3.0	2.4	*1.7	1.4	1.1
14	1.6	102	1.2	12	58	7.2	2.4	2.4	2.1	2.1	*1.4	.8
15	2.8	3.5	1.3	7.2	66	3.5	3.5	1.4	2.1	2.6	1.4	.8
16	2.1	3.5	1.2	15	47	2.6	4.4	2.1	1.9	2.6	1.3	.8
17	1.7	1.2	1.4	117	20	4.1	4.1	2.4	1.6	2.6	1.1	.8
18	1.2	.6	1.4	212	4.1	7.2	3.8	2.4	1.6	2.4	*.9	.8
19	1.9	33	.8	431	6.8	9.2	3.2	2.4	1.7	2.1	.9	.8
20	2.4	1.2	54	2,100	13	5.1	3.5	1.7	1.9	2.1	.9	.6
21	2.4	.4	27	*2,420	42	7.7	3.5	1.4	2.1	1.9	.8	.6
22	3.8	1.6	16	2,230	12	8.2	3.5	1.4	2.4	1.9	2.1	.5
23	3.8	748	15	1,220	3.5	3.8	3.0	1.6	2.4	1.8	2.4	1.0
24	1.9	189	12	849	2.4	9.6	2.8	1.9	2.8	1.9	2.4	2.1
25	1.7	53	11	1,130	3.2	4.1	3.2	1.9	2.6	1.9	2.4	1.7
26	1.3	1.4	58	1,490	3.5	5.8	2.6	1.3	2.4	2.1	2.4	1.6
27	1.1	.7	18	1,250	*3.5	4.4	2.4	.7	2.1	2.1	2.1	1.4
28	1.4	1.2	8.7	1,030	3.2	4.4	2.4	1.7	2.1	2.4	2.1	1.3
29	*1.9	1.6	7.7	870	3.0	4.1	1.9	1.9	2.1	2.6	2.1	1.3
30	1.9	2.4	5.5	807	-----	4.4	1.2	2.6	2.1	2.6	1.9	1.3
31	1.9	-----	4.4	670	-----	9.7	-----	2.4	-----	2.6	1.9	-----
TOTAL	66.9	1,225.6	317.1	16,916.4	4,393.2	375.5	110.6	74.0	71.5	97.0	55.1	41.0
MEAN	2.16	40.9	10.2	546	151	12.1	3.69	2.39	2.38	3.13	1.78	1.37
MAX	3.8	748	58	2,420	640	99	15	3.5	4.1	25	2.6	2.1
MIN	1.1	0.3	0.6	1.1	2.4	2.6	1.2	0.7	1.6	1.7	0.8	0.5
AC-FT	133	2,430	629	33,550	8,710	745	219	147	142	192	109	81

CALENDAR YEAR 1963: MAX 17,600 MIN 0.3 MEAN 510 AC-FT 369,300
WATER YEAR 1963-64: MAX 2,420 MIN 0.3 MEAN 64.9 AC-FT 47,090

* Discharge measurement made on this day.

EEL RIVER BASIN

11-4718. Tomki Creek near Willits, Calif.

Location.--Lat 39°25'10", long 123°13'40", in NE¼ sec.18, T.18 N., R.12 W., on left bank 500 ft upstream from Halfmile Creek, 5.8 miles upstream from mouth, and 6.8 miles east of Willits.

Drainage area.--43.4 sq mi.

Records available.--July 1963 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,590 ft (from topographic map).

Extremes.--1963: Maximum daily discharge during period July to September, 0.8 cfs July 19-23; no flow Aug. 16 to Sept. 30.
1963-64: Maximum discharge during water year, 4,630 cfs Jan. 20 (gage height, 9.64 ft); no flow Oct. 1-9, July 7 to Sept. 30.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 19 to Nov. 22, 1963)

3.17	0	3.6	18	4.5	295
3.2	.2	3.7	28	5.0	515
3.3	1.8	3.8	45	6.0	1,100
3.4	5.6	4.0	100	8.0	2,800
3.5	11				

Discharge, in cubic feet per second, 1963

Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.	Day	July	Aug.	Sept.
1	-	0.4		9	-	0.2		17	-	0		25	0.6	0	
2	-	.3		10	-	.2		18	-	0		26	.5	0	
3	-	.3		11	-	.1		19	0.8	0		27	.5	0	
4	-	.3		12	-	.1		20	.8	0		28	.4	0	
5	-	.3		13	-	.1		21	.8	0		29	.4	0	
6	-	*.2		14	-	.1		22	.8	0		30	.4	0	
7	-	.2		15	-	.1		23	.8	0		31	.4	0	
8	-	.2		16	-	0	(*)	24	.6	0					
Total.....												-	3.1	0	
Mean.....												-	0.10	0	
Max.....												-	0.4	0	
Min.....												-	0	0	
Ac-ft.....												-	6.1	0	

Peak discharge (base, 4,000 cfs).--No peak above base.

* Discharge measurement or observation of no flow made on this day.

11-4718. Tomki Creek near Willits, Calif.--Continued.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0	2.2	40	25	167	31	55	9.6	2.2	0.6		
2	0	3.2	33	24	139	42	38	9.0	1.8	.5		
3	0	13	*28	22	114	27	33	20	1.5	.5	(*)	
4	0	144	26	21	100	23	28	19	1.5	.5		
5	0	*60	23	20	91	21	26	13	1.8	.4		
6	0	*199	21	21	79	20	24	11	2.9	.1		
7	0	60	19	26	68	19	21	10	2.9	0		
8	0	340	26	22	60	17	20	9.0	2.5	0		(*)
9	0	376	55	24	50	17	19	9.0	2.5	0		
10	.2	118	33	33	43	17	17	8.4	2.5	0		
11	3.2	65	26	27	40	179	17	7.2	2.2	0		
12	1.5	43	24	25	37	271	16	6.6	1.8	0		
13	.9	35	22	30	*31	247	15	6.1	1.5	0		
14	.8	346	21	*43	31	151	15	5.6	1.5	0		
15	22	283	20	35	42	104	13	5.6	1.3	0		
16	13	147	19	50	33	76	13	6.1	1.3	0		
17	5.6	94	18	288	28	63	13	7.2	1.3	0		
18	4.0	65	17	479	26	*50	13	6.1	1.1	0		
19	2.9	*314	23	912	25	40	12	5.2	1.1	0		
20	2.2	*222	175	*2,380	23	37	*11	5.2	1.1	0		
21	2.2	111	79	*1,020	22	43	11	4.8	1.1	0		
22	4.0	120	60	621	21	68	11	4.8	.9	0		
23	12	1,220	48	470	20	118	11	4.4	.8	0		
24	8.4	480	42	470	20	125	11	4.0	.6	0		
25	5.2	251	38	632	19	85	10	4.0	.5	0		
26	3.6	151	33	520	18	68	9.0	4.0	.5	0		
27	3.2	104	37	403	17	60	9.0	4.0	1.1	0		
28	*2.9	76	37	315	17	50	9.0	*4.4	1.1	0		
29	2.5	60	33	287	17	43	8.4	4.0	*1.3	0		
30	2.2	48	30	243	-----	37	8.4	3.2	1.1	0		
31	2.2	-----	26	199	-----	40	-----	2.5	-----	0		-----
TOTAL	104.7	5,550.4	1,132	9,687	1,398	2,189	516.8	223.0	45.3	2.6	0	0
MEAN	3.38	185	36.5	312	48.2	70.6	17.2	7.19	1.51	0.08	0	0
MAX	22	1,220	175	2,380	167	271	55	20	2.9	0.6	0	0
MIN	0	2.2	17	20	17	17	8.4	2.5	0.5	0	0	0
AC-FT	208	11,010	2,250	19,210	2,770	4,340	1,030	442	90	5.2	0	0

CALENDAR YEAR 1963 MAX - MIN - MEAN - AC-FT -
WATER YEAR 1963-64 MAX 2,380 MIN 0 MEAN 57.0 AC-FT 41,360

Peak discharge (base, 4,000 cfs).--Jan. 20 (1300) 4,630 cfs (9.64 ft).

* Discharge measurement or observation of no flow made on this day.

EEL RIVER BASIN

11-4722. Outlet Creek near Longvale, Calif.

Location.--Lat 39°37'05", long 123°21'20", in NE¼ sec.1, T.20 N., R.14 W., on right bank 0.2 mile downstream from Bloody Run Creek, 0.9 mile upstream from mouth, and 8.2 miles downstream from Longvale.

Drainage area.--161 sq mi (revised).

Records available.--October 1956 to September 1964.

Gage.--Water-stage recorder (digital). Altitude of gage is 1,020 ft (from topographic map).

Average discharge.--8 years, 398 cfs (288,100 acre-ft per year).

Extremes.--Maximum discharge during year, 13,600 cfs Jan. 20 (gage height, 14.31 ft); minimum, 0.7 cfs Aug. 25 to Sept. 12, Sept. 14. 1956-64: Maximum discharge, 26,500 cfs Feb. 8, 1960 (gage height, 20.27 ft), from rating curve extended above 9,900 cfs; no flow Aug. 15-17, 1959.

Remarks.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	2.1	7.4	172	142	436	223	209	39	16	4.3	1.4	0.7
2	2.1	9.4	144	154	366	254	176	43	15	4.3	1.3	.7
3	2.1	20	*127	133	314	166	148	88	16	4.2	1.3	.7
4	2.1	745	112	116	272	131	131	116	15	4.2	*1.2	.7
5	2.1	283	101	101	242	114	118	78	17	4.0	1.2	.7
6	3.1	1,010	90	120	222	107	110	66	20	3.8	1.1	.7
7	3.5	377	80	317	198	105	103	57	22	3.8	1.1	.7
8	3.1	2,310	134	198	184	96	94	48	22	3.5	1.0	.7
9	3.6	2,040	424	213	172	89	87	42	20	3.3	1.0	.7
10	5.8	649	222	282	162	87	85	38	18	3.3	1.0	.7
11	17	298	152	205	150	643	80	34	17	3.3	1.0	*.7
12	11	209	123	174	*141	*1,250	74	32	16	2.9	1.0	.7
13	7.0	178	108	205	131	912	69	30	15	2.7	1.0	.8
14	5.8	2,060	98	*338	125	460	66	28	13	2.6	1.0	.7
15	39	1,590	90	242	164	308	64	26	12	2.2	1.0	.8
16	55	685	81	425	152	245	60	26	11	2.2	.9	.8
17	25	398	76	1,680	133	209	57	30	11	2.2	.9	.8
18	15	279	73	2,580	122	*184	53	31	11	2.1	.8	.8
19	11	1,240	137	4,950	114	164	51	30	10	1.9	.8	.8
20	9.0	1,100	1,280	8,840	107	148	47	28	9.6	1.9	.8	.8
21	7.8	492	468	5,440	101	182	44	26	9.0	1.9	.8	.8
22	8.6	629	308	3,230	96	251	43	24	8.5	1.8	.8	.8
23	30	5,050	233	2,020	92	388	43	23	7.7	1.7	.8	.8
24	25	2,830	196	1,980	87	341	44	22	7.0	1.7	.8	.8
25	19	1,380	198	2,270	83	254	43	*21	6.5	1.6	.7	.8
26	14	599	170	1,460	78	209	43	20	5.7	1.4	.7	.8
27	14	424	288	978	76	186	41	21	5.4	1.4	.7	.8
28	*12	328	292	710	76	166	38	20	5.1	1.5	.7	.9
29	10	259	224	*796	81	152	37	19	*4.9	1.6	.7	.9
30	8.2	207	196	675	-----	137	36	17	4.8	1.6	.7	1.0
31	7.8	-----	158	500	-----	133	-----	17	-----	1.5	.7	-----
TOTAL	380.8	27,685.8	6,555	41,474	4,677	8,294	2,294	1,140	371.2	80.4	28.9	23.1
MEAN	12.3	923	211	1,338	161	268	76.5	36.8	12.4	2.59	0.93	0.77
AC-FT	755	54,910	13,000	82,260	9,280	16,450	4,550	2,260	736	159	57	46
MAX	55	5,050	1,280	8,840	436	1,250	209	116	22	4.3	1.4	1.0
MIN	2.1	7.4	73	101	76	87	36	17	4.8	1.4	0.7	0.7

CALENDAR YEAR 1963 MAX 11,900 MIN 2.0 MEAN 444 AC-FT 321,300
 WATER YEAR 1963-64 MAX 8,840 MIN 0.7 MEAN 254 AC-FT 184,500

Peak discharge (base, 5,000 cfs).--Nov. 23 (1300) 7,140 cfs (10.21 ft); Jan. 20 (1200) 13,600 cfs (14.31 ft).

* Discharge measurement made on this day.

11-4725, Eel River above Dos Rios, Calif.

Location.--Lat 39°41'20", long 123°21'30", in SW¼ sec.7, T.21 N., R.13 W., on left bank 1.8 miles upstream from Middle Fork and 2.1 miles south of Dos Rios.

Drainage area.--705 sq mi.

Records available.--December 1950 to September 1964.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 950 ft (from topographic map).

Average discharge.--13 years (1951-64), 1,382 cfs (1,001,000 acre-ft per year); median of yearly mean discharges, 1,240 cfs (898,000 acre-ft per year).

Extremes.--Maximum discharge during year, 27,800 cfs Jan. 20 (gage height, 23.25 ft); minimum daily, 0.9 cfs Aug. 31.
1950-64: Maximum discharge, 123,000 cfs Dec. 22, 1955 (gage height, 45.4 ft, from floodmarks), from rating curve extended above 27,000 cfs on basis of slope-area measurement of maximum flow; minimum daily, 0.8 cfs Sept. 11, 1955.

Remarks.--Records good. Flow regulated by Lake Pillsbury (see p. 393) and by diversion through Potter Valley powerhouse (see p. 396).

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.1	26	368	252	1,830	389	458	87	42	16	4.1	1.0
2	4.9	29	311	262	1,670	509	413	92	41	16	3.9	1.1
3	4.7	43	274	242	1,440	347	331	129	41	16	3.7	1.8
4	4.7	1,190	250	231	1,240	270	296	181	42	16	3.5	2.0
5	5.3	601	*238	223	1,080	242	266	137	45	15	3.4	1.9
6	9.2	1,830	229	225	964	231	246	115	49	15	*3.2	2.2
7	13	802	205	423	837	223	229	104	50	14	3.1	2.5
8	14	2,830	226	300	737	211	214	93	50	14	3.1	2.6
9	19	3,180	610	294	663	200	198	87	47	13	2.9	*2.6
10	22	1,130	383	408	590	197	190	81	47	15	2.8	2.6
11	55	509	272	300	524	757	179	75	45	18	2.6	2.4
12	57	324	256	280	*467	2,200	166	72	42	14	2.5	2.4
13	40	254	213	*291	420	1,690	157	69	39	12	2.2	2.6
14	29	2,770	200	500	380	951	152	65	36	11	2.0	2.6
15	120	2,690	197	390	425	691	146	63	34	9.5	2.0	2.6
16	319	1,290	189	561	413	541	140	62	32	8.6	1.9	2.6
17	126	747	174	1,970	356	470	139	68	31	8.0	1.9	2.4
18	70	500	162	4,010	309	*418	134	70	30	8.0	1.9	2.2
19	47	1,900	209	7,710	278	371	129	65	30	7.5	1.7	2.2
20	36	2,040	1,610	18,300	264	338	122	62	29	7.5	1.7	2.0
21	31	964	777	11,400	256	380	*117	59	28	7.3	1.7	2.0
22	32	1,020	497	7,290	266	503	115	56	26	7.0	1.6	2.0
23	106	9,160	400	4,740	240	721	113	55	25	6.3	1.6	1.9
24	117	4,770	344	4,070	225	729	114	53	23	6.0	1.5	1.8
25	77	2,240	344	4,960	214	572	109	*51	23	5.3	1.4	1.7
26	55	1,200	302	4,450	207	476	104	50	21	4.9	1.4	1.7
27	46	837	440	3,610	200	435	100	51	19	4.7	1.3	1.7
28	39	639	433	2,960	202	398	93	51	18	4.7	1.2	1.7
29	33	512	356	2,750	209	361	89	49	18	4.7	1.0	1.8
30	*29	423	307	2,520	-----	331	85	46	*17	4.3	1.0	1.8
31	27	-----	268	2,060	-----	316	-----	44	-----	3.9	.9	-----
Total	1,592.9	46,450	11,044	87,982	16,906	16,468	5,344	2,342	1,020	313.2	68.7	62.4
Mean	51.4	1,548	356	2,838	583	531	178	75.5	34.0	10.1	2.22	2.08
Max	319	9,160	1,610	18,300	1,830	2,200	458	181	50	18	4.1	2.6
Min	4.7	26	162	223	200	197	85	44	17	3.9	0.9	1.0
Ac-ft	3,160	92,130	21,910	174,500	33,530	32,660	10,600	4,650	2,020	621	136	124

Calendar year 1963: Max 39,700 Min 4.7 Mean 1,374 Ac-ft 996,600
Water year 1963-64: Max 18,300 Min 0.9 Mean 518 Ac-ft 376,000

Peak discharge (base, 14,000 cfs).--Jan. 20 (1700) 27,800 cfs (23.25 ft).

* Discharge measurement made on this day.

11-4725. Eel River above Dos Rios, Calif.--Continued.

Records available.--Water temperatures: November 1960 to September 1964.

Extremes.--Maximum temperature during year, 82°F July 13; minimum, 41°F Jan. 15, 16.

1960-64: Maximum temperature recorded, 83°F June 25, Aug. 8-10, 1961; minimum recorded, 40°F Jan. 23-27, 1962.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	71	66	55	54	48	47	48	46	47	45	46	46	52	52	57	57	69	69	73	72	77	74	70	64
2	71	66	56	55	47	47	46	45	47	46	46	45	52	50	57	57	69	69	73	72	77	73	72	65
3	70	66	56	56	47	46	45	44	46	45	45	44	-	-	57	56	69	69	73	72	77	72	72	66
4	67	64	56	56	46	45	44	43	45	44	47	45	-	-	56	56	69	69	73	72	77	73	74	67
5	64	63	56	56	45	45	43	42	45	45	47	46	-	-	56	56	69	69	74	72	78	72	71	67
6	64	63	56	55	46	45	42	42	46	45	46	46	-	-	56	53	70	69	74	72	78	73	72	67
7	64	62	55	55	45	45	43	42	45	44	46	44	-	-	57	55	70	70	77	74	78	73	72	68
8	64	63	56	55	45	45	43	42	45	44	46	44	-	-	59	57	70	69	76	74	78	73	71	68
9	63	63	56	56	45	45	42	42	45	45	46	45	-	-	62	59	69	67	75	72	78	73	70	67
10	63	63	56	56	45	44	42	42	46	45	46	45	-	-	63	62	68	67	75	72	78	74	69	65
11	63	62	56	56	45	44	-	-	46	45	46	44	-	-	64	63	69	68	77	73	77	72	68	64
12	62	62	56	56	44	43	-	-	46	45	44	43	-	-	64	64	70	68	80	76	76	71	68	64
13	63	62	56	55	43	43	42	42	45	44	45	44	-	-	65	64	71	70	82	78	77	70	68	65
14	63	62	55	55	43	43	42	42	44	44	47	45	-	-	65	65	72	70	80	78	78	70	66	65
15	63	62	55	54	43	43	42	41	44	43	49	46	-	-	66	65	73	72	79	77	77	70	68	63
16	62	62	54	52	43	43	42	41	44	43	50	48	-	-	66	65	73	73	79	76	78	70	67	65
17	63	62	52	52	43	43	43	42	44	43	51	49	-	-	65	65	73	73	79	76	78	73	66	65
18	63	63	52	52	43	43	43	43	45	44	53	51	-	-	66	65	73	72	79	76	75	71	66	62
19	64	63	52	52	45	43	46	44	46	45	53	51	-	-	67	66	72	72	78	74	75	69	67	62
20	64	63	52	51	46	45	46	46	46	44	53	52	-	-	68	67	72	72	78	74	76	69	67	64
21	63	63	52	50	46	46	46	45	46	45	52	51	-	-	68	68	72	72	78	75	78	70	67	63
22	63	63	50	48	46	45	45	45	47	46	51	49	61	59	68	68	73	72	77	75	78	71	68	64
23	63	62	50	48	45	44	45	44	47	46	49	47	59	56	69	68	74	73	78	74	78	72	69	65
24	62	60	50	50	44	44	44	43	47	46	49	47	56	55	69	69	74	74	80	74	78	72	70	65
25	60	60	50	50	44	43	44	43	47	46	49	47	55	55	71	69	74	74	81	76	78	72	70	66
26	60	57	50	50	45	43	44	44	46	45	50	47	56	55	71	69	74	74	80	76	76	70	69	65
27	57	55	50	50	46	45	45	44	46	45	52	50	57	55	69	68	75	74	80	76	76	69	67	65
28	56	55	50	50	48	46	45	45	46	46	53	51	58	57	68	67	75	74	79	77	74	69	67	63
29	56	56	50	49	48	48	45	45	46	45	54	52	58	58	68	67	74	74	80	77	74	67	66	62
30	56	55	49	48	49	48	45	45	-----	-----	54	53	58	57	69	68	74	73	78	75	72	67	65	62
31	56	54	-----	-----	49	48	45	45	-----	-----	54	52	-----	-----	69	68	-----	-----	76	73	71	65	-----	-----
Avg	63	61	53	53	45	45	-	-	46	45	49	47	-	-	64	63	72	71	77	74	77	71	69	65

11-4729. Black Butte River near Covelo, Calif.

Location.--Lat 39°49'10", long 123°04'40", in SE¼ sec.28, T.23 N., R.11 W., on right bank 600 ft upstream from highway bridge, 0.6 mile upstream from mouth, and 9.5 miles east of Covelo.

Drainage area.--162 sq mi.

Records available.--Occasional low-flow measurements, water years 1951-56 and annual maximum, water years 1954-57, October 1958 to September 1964.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 1,490 ft (from topographic map). Sept. 10, 1953 to Sept. 30, 1957, crest-stage gage only at site 0.1 mile downstream at different datum.

Average discharge.--6 years, 210 cfs (152,000 acre-ft per year).

Extremes.--Maximum discharge during year, 6,820 cfs Jan. 20 (gage height, 12.93 ft); minimum, 1.4 cfs Sept. 30.

1953-57, 1958-64: Maximum discharge, 25,000 cfs Dec. 21, 1955 (gage height, 35.8 ft, from floodmarks, site and datum then in use), on basis of slope-area measurement of maximum flow.

1958-64: Minimum discharge, 1.2 cfs Sept. 11, 1959.

Flood of Dec. 11, 1937, reached a stage of 36.2 ft, from floodmarks at crest-stage gage site (discharge, 26,000 cfs).

Remarks.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3.5	10	106	68	612	141	286	121	54	*17	4.5	1.9
2	3.3	11	93	93	532	132	240	119	53	16	4.5	2.2
3	3.0	13	80	71	452	116	211	134	51	16	4.5	2.4
4	3.0	101	*73	65	428	124	202	122	51	16	4.3	2.6
5	3.3	68	65	57	425	124	209	129	53	16	*3.8	2.7
6	4.0	249	63	66	383	116	190	110	51	15	3.5	2.6
7	4.0	103	57	130	342	106	183	115	55	14	3.3	2.4
8	5.0	274	59	*98	318	103	190	130	51	13	3.0	2.3
9	5.5	327	106	89	300	108	202	129	53	13	2.9	*2.3
10	8.0	137	74	93	288	99	197	127	52	12	2.6	2.2
11	24	81	61	75	269	118	199	122	49	11	2.4	2.0
12	24	58	57	75	243	141	199	118	44	10	2.3	2.0
13	15	49	59	83	221	141	204	113	41	9.9	2.3	1.9
14	11	391	56	86	*204	150	216	105	39	9.0	2.3	1.9
15	17	402	54	75	206	170	223	98	37	8.7	2.3	1.9
16	80	194	51	121	185	177	218	99	36	8.7	2.2	1.6
17	29	126	47	325	174	*194	199	105	35	8.3	2.2	1.6
18	19	97	45	462	166	211	179	96	35	8.0	2.0	1.6
19	15	289	48	668	160	181	166	90	33	7.6	2.0	1.6
20	13	324	242	2,970	154	177	154	85	32	7.3	2.0	1.6
21	12	166	145	1,340	148	183	150	79	30	6.9	1.9	1.5
22	13	150	109	660	148	179	*154	76	29	6.6	1.7	1.5
23	25	1,970	93	466	143	172	143	72	26	6.2	1.7	1.5
24	23	845	81	489	143	172	132	68	24	5.5	1.7	1.5
25	18	399	74	668	132	152	122	66	22	5.3	1.7	1.5
26	16	283	69	620	126	168	118	75	21	5.0	1.6	1.5
27	14	223	80	536	121	190	119	*81	20	4.8	1.7	1.5
28	13	172	94	479	121	209	126	75	20	4.5	1.7	1.5
29	*12	145	99	479	113	226	134	72	19	4.8	1.7	1.5
30	12	121	81	483	-----	228	121	62	18	5.0	1.7	1.4
31	11	-----	71	432	-----	238	-----	58	-----	5.0	1.7	-----
TOTAL	458.6	7,778	2,492	12,422	7,257	4,946	5,386	3,051	1,134	296.1	77.7	56.2
MEAN	14.8	259	80.4	401	250	160	180	98.4	37.8	9.55	2.51	1.87
MAX	80	1,970	242	2,970	612	238	286	134	55	17	4.5	2.7
MIN	3.0	10	45	57	113	99	118	58	18	4.5	1.6	1.4
AC-FT	910	15,430	4,940	24,640	14,390	9,810	10,680	6,050	2,250	587	154	111

CALENDAR YEAR 1963 MAX 7,580 MIN 3.0 MEAN 312 AC-FT 225,800
 WATER YEAR 1963-64 MAX 2,970 MIN 1.4 MEAN 124 AC-FT 89,950

Peak discharge (base, 5,500 cfs).--Jan. 20 (1400) 6,820 cfs (12.93 ft).

* Discharge measurement made on this day.

EEL RIVER BASIN

11-4729. Black Butte River near Coveio, Calif.--Continued.

Records available.--Water temperatures: May to September 1964.Extremes.--Maximum temperature during period, 89°F Aug. 23; minimum, 54°F June 9, 10.

Temperature (°F) of water, May to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1															-	-	66	60	78	65	83	70	70	59
2															-	-	69	59	78	65	83	67	75	57
3															-	-	67	59	78	65	83	66	77	59
4															-	-	64	61	78	66	85	68	78	61
5															-	-	66	60	79	65	86	68	77	61
6															-	-								
7															-	-	65	61	81	66	86	70	77	61
8															-	-	66	57	82	69	86	70	77	61
9															-	-	60	56	80	68	87	70	76	60
10															-	-	57	54	80	66	88	70	74	60
11															-	-	66	54	82	67	87	70	74	56
12															-	-	70	58	85	69	86	70	74	56
13															-	-	72	60	86	71	86	70	74	58
14															-	-	74	61	88	73	86	70	74	58
15															-	-	76	64	85	72	87	70	74	58
16															-	-	75	66	86	73	86	70	74	58
17															-	-	71	62	86	70	86	69	73	57
18															-	-	71	60	86	72	85	69	72	58
19															-	-	73	62	85	71	85	69	73	57
20															-	-	73	61	85	69	84	68	74	58
21															-	-	74	62	85	70	87	69	73	59
22															-	-	77	63	84	69	88	69	72	57
23															-	-	79	64	85	70	88	70	76	59
24															-	-	81	66	86	69	89	70	78	62
25															-	-	82	68	87	70	88	69	78	62
26															-	-	80	66	88	71	86	67	75	61
27															-	-	78	66	87	71	82	65	72	59
28															-	-	76	62	87	71	82	65	70	57
29															67	55	77	62	80	74	81	65	69	56
30															68	56	78	65	82	70	81	62	70	56
31															70	58	78	66	84	70	78	64	70	56
															71	60			82	67	76	61		
Avg															-	-	72	62	83	69	85	68	74	59

EEL RIVER BASIN

405

11-4730. Middle Fork Eel River below Black Butte River, near Covelo, Calif.

Location.--Lat 39°49'35", long 123°05'30", in NW¼ sec.28, T.23 N., R.11 W., on right bank 0.2 mile downstream from Black Butte River and 8.6 miles east of Covelo.

Drainage area.--367 sq mi.

Records available.--August 1951 to September 1964.

Gage.--Water-stage recorder (digital). Datum of gage is 1,434.33 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--13 years, 1,001 cfs (724,700 acre-ft per year); median of yearly mean discharges, 890 cfs (644,000 acre-ft per year).

Extremes.--Maximum discharge during year, 20,500 cfs Jan. 20 (gage height, 13.53 ft); minimum daily, 5.9 cfs Sept. 30.

1951-64: Maximum discharge, 89,100 cfs Dec. 21, 1955 (gage height, 25.0 ft, from floodmarks), from rating curve extended above 19,000 cfs on basis of slope-area measurement of maximum flow; minimum, 4.4 cfs Sept. 22-26, 1951.

Remarks.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	11	42	529	392	1,960	507	1,020	464	187	*52	16	8.1
2	11	43	460	432	1,820	465	866	432	177	50	15	9.0
3	11	47	408	364	1,560	408	764	440	165	49	15	9.3
4	11	595	*368	332	1,500	465	725	412	160	50	14	9.8
5	11	374	332	292	1,520	480	769	412	183	54	*14	9.8
6	16	931	320	313	1,400	445	703	358	174	49	13	9.5
7	17	388	292	*496	1,250	392	676	358	207	45	13	9.2
8	16	2,170	296	404	1,180	380	714	390	177	42	12	9.0
9	17	2,440	372	372	1,130	392	764	400	169	41	12	*8.9
10	23	918	299	388	1,110	360	736	428	163	39	11	8.6
11	83	465	264	332	1,040	404	736	436	149	36	11	8.5
12	78	320	255	328	931	424	736	448	136	34	11	8.2
13	45	267	252	324	853	428	742	432	126	32	11	7.7
14	34	3,410	240	310	*786	445	793	393	117	31	11	7.7
15	54	2,070	231	289	768	523	866	365	111	30	10	a 7.4
16	181	1,070	218	408	696	578	823	368	106	29	10	a 7.1
17	86	720	208	849	648	*648	758	390	103	28	9.8	a 6.8
18	58	529	198	1,110	618	738	686	348	101	27	9.7	a 6.6
19	47	1,130	208	1,580	624	660	620	334	96	25	9.6	a 6.5
20	42	1,170	684	9,900	612	654	580	330	92	24	9.2	a 6.3
21	39	726	475	4,180	595	648	570	303	87	23	8.9	a 6.2
22	40	616	376	2,110	612	624	*590	282	81	22	8.4	a 6.2
23	113	6,450	332	1,520	595	589	538	270	76	21	8.4	a 6.1
24	89	3,340	299	1,510	595	573	484	256	71	20	8.2	a 6.1
25	76	1,770	285	1,940	562	518	436	248	66	19	8.0	a 6.1
26	85	1,390	267	1,840	523	567	428	267	63	18	7.8	a 6.0
27	66	1,140	396	1,610	496	636	444	*276	60	17	7.9	a 6.0
28	56	905	496	1,440	485	702	489	237	57	17	8.0	a 6.0
29	*51	738	624	1,450	450	780	552	236	55	17	8.0	a 6.0
30	48	618	507	1,560	-----	828	489	210	54	17	7.9	a 5.9
31	44	-----	249	1,400	-----	886	-----	195	-----	17	7.9	-----
TOTAL	1,559	36,792	10,740	39,775	26,919	17,147	20,107	10,718	3,569	975	326.7	224.6
MEAN	50.3	1,226	346	1,283	928	553	670	346	119	31.5	10.5	7.49
AC-FT	3,090	72,980	21,300	78,890	53,390	34,010	39,880	21,260	7,080	1,930	648	445
MAX	181	6,450	684	9,900	1,960	886	1,020	464	207	54	16	9.8
MIN	11	42	198	289	450	360	428	195	54	17	7.8	5.9

CALENDAR YEAR 1963 MAX 30,000 MIN 11 MEAN 982 AC-FT 710,900

WATER YEAR 1963-64 MAX 9,900 MIN 5.9 MEAN 461 AC-FT 334,900

Peak discharge (base, 10,000 cfs).--Jan. 20 (1300) 20,500 cfs (13.53 ft).

* Discharge measurement made on this day.

a No gage-height record.

EEL RIVER BASIN

11-4731. Williams Creek near Covelo, Calif.

Location.--Lat 39°49'30", long 123°08'25", in SW¼NE¼ sec.25, T.23 N., R.12 W., on right bank 1.0 mile upstream from mouth and 6.1 miles northeast of Covelo.

Drainage area.--30.4 sq mi.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,480 ft (from topographic map).

Extremes.--Maximum discharge during year, 4,440 cfs Jan. 20 (gage height, 7.50 ft), from rating curve extended above 1,900 cfs as explained below; minimum daily, 0.1 cfs Aug. 17 to Sept. 30, 1964.

1961-64: Maximum discharge, 5,900 cfs Jan. 31, 1963 (gage height, 8.87 ft), from rating curve extended above 1,900 cfs on basis of slope-area measurement of maximum flow; minimum, 0.1 cfs Sept. 20-29, 1962, Aug. 17 to Sept. 30, 1964.

Remarks.--No regulation or diversion above station.

Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Revisions (water years).--1963 Report: 1962(N).

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	2.8	36	25	202	37	68	18	8.9	3.6	0.6	0.1
2	.9	2.8	31	29	166	32	53	18	8.8	3.3	.5	.1
3	.9	3.0	28	24	142	29	47	24	8.2	3.3	.5	.1
4	.9	94	26	22	128	30	44	23	8.4	3.0	.4	.1
5	.9	38	23	21	119	29	42	21	11	3.0	.4	.1
6	.9	122	22	36	106	28	39	18	11	2.7	.4	.1
7	.9	47	20	48	93	26	36	*17	13	2.7	.4	.1
8	.9	158	25	*34	85	24	35	18	*12	2.4	.3	.1
9	*.9	255	31	32	78	24	*34	17	12	2.4	.3	.1
10	*1.4	84	24	31	73	23	32	16	11	2.4	.3	.1
11	4.6	49	21	27	67	53	30	16	10	2.2	.3	.1
12	3.3	34	19	26	61	59	29	16	9.4	2.2	.3	.1
13	3.3	*35	18	33	55	54	28	15	8.6	1.9	.2	.1
14	3.2	51.1	17	32	50	53	28	14	7.8	1.9	.2	.1
15	13	178	16	28	51	56	28	14	7.3	1.7	.2	.1
16	8.0	94	15	46	46	55	28	14	6.8	1.7	.2	.1
17	3.4	67	*15	163	42	54	26	16	6.8	1.5	.1	.1
18	3.1	51	15	177	40	50	26	14	6.6	1.5	.1	.1
19	3.1	130	21	726	38	44	24	13	6.4	1.4	.1	.1
20	3.1	104	69	2,440	37	42	22	13	6.0	1.4	.1	.1
21	3.1	68	35	728	35	45	21	12	5.5	*1.2	.1	.1
22	4.2	123	28	328	34	51	21	12	5.2	1.2	.1	.1
23	1.1	1,320	25	*202	33	49	22	12	5.2	1.1	.1	.1
24	3.5	323	24	265	32	49	20	11	4.7	1.1	.1	.1
25	3.0	156	23	426	30	47	19	10	4.7	.9	.1	.1
26	2.8	103	21	311	*28	49	18	11	4.3	.9	*.1	.1
27	2.8	77	33	256	27	52	17	12	4.3	.8	.1	.1
28	2.8	61	34	217	27	50	17	11	4.0	.8	.1	.1
29	2.8	50	33	212	26	47	17	10	4.0	.7	.1	.1
30	2.8	43	28	186	-----	46	17	9.5	3.6	.7	.1	.1
31	2.8	-----	26	168	-----	48	-----	9.3	-----	.6	.1	-----
Total	99.2	4,383.6	802	7,299	1,951	1,335	888	454.8	225.5	56.2	7.0	3.0
Mean	3.20	146	25.9	236	67.3	43.1	29.6	14.7	7.52	1.81	0.23	0.10
Max	13	1,320	69	2,440	202	59	68	24	13	3.6	0.6	0.1
Min	0.9	2.8	15	21	26	23	17	9.3	3.6	0.6	0.1	0.1
Ac-ft	197	3,690	1,590	14,480	3,870	2,650	1,760	902	447	111	14	6.0

Calendar year 1963: Max 3,520 Min 0.4 Mean 100 Ac-ft 72,370
 Water year 1963-64: Max 2,440 Min 0.1 Mean 47.8 Ac-ft 34,720

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1-10, Oct. 26 to Nov. 2, June 20 to Sept. 30.

11-4735.3, Mill Creek below Alder Creek, near Covelo, Calif.

Location.--Lat 39°50'30", long 123°16'35", in SE¼SW¼ sec.23, T.23 N., R.8 E., on left bank 0.8 mile downstream from Alder Creek and 3.6 miles north of Covelo.

Drainage area.--17.1 sq mi.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,450 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,130 cfs Jan. 20 (gage height, 17.50 ft), from rating curve extended above 370 cfs as explained below; no flow Sept. 24, 25.

1961-64: Maximum discharge, 2,200 cfs Jan. 31, 1963 (gage height 17.73 ft), from rating curve extended above 370 cfs on basis of slope-area measurement of maximum flow; no flow Sept. 24, 25, 1964.

Remarks.--No regulation or diversion above station.

Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	1.8	14	11	86	28	27	12	2.6	1.5	0.7	0.5
2	.7	2.8	13	15	64	21	22	11	2.5	1.4	.7	.6
3	.7	7.5	11	11	48	17	20	11	2.4	1.4	.7	.5
4	.8	53	11	10	40	14	19	8.5	3.0	1.4	.6	.4
5	.9	21	10	10	36	14	18	7.0	4.6	1.4	.6	.3
6	1.5	182	9.7	28	32	15	17	6.4	3.8	1.3	.5	.3
7	1.3	21	9.3	32	29	13	16	*5.9	4.3	1.2	.4	.3
8	1.1	66	14	19	27	12	14	5.3	3.7	1.2	.4	.3
9	*2.0	89	26	19	24	12	*13	5.0	4.5	1.2	.3	.3
10	2.0	23	14	17	22	11	13	4.5	4.0	1.1	.4	.3
11	4.5	15	12	15	22	32	12	4.5	3.5	.9	.3	.2
12	2.0	12	11	16	21	38	11	4.3	3.0	.9	.4	.1
13	1.4	*24	10	22	21	46	11	4.3	2.7	.8	.4	.1
14	1.2	291	9.7	21	*21	42	11	4.1	2.6	.8	.4	.1
15	5.8	113	9.3	17	22	39	11	4.0	2.4	.9	.4	.2
16	3.8	41	8.9	27	21	30	11	4.8	2.4	.9	.4	.1
17	2.0	25	*8.6	158	21	25	11	6.1	2.4	.8	.3	.1
18	1.7	18	8.5	133	20	21	11	4.6	2.4	.8	.3	.2
19	1.6	122	15	362	20	18	10	4.2	2.3	.9	.3	.2
20	1.5	53	39	962	19	17	10	4.0	2.2	.8	.3	.1
21	1.7	28	16	307	19	20	10	3.8	2.1	.7	.3	.1
22	2.4	77	14	162	19	25	10	3.6	1.8	*.7	.2	.1
23	5.1	431	12	*101	19	39	12	3.3	1.6	.7	.2	.1
24	2.6	112	12	129	18	45	12	3.1	1.5	.7	.2	0
25	2.6	46	12	*243	*14	37	11	2.9	1.4	.6	.2	0
26	2.1	32	11	165	13	34	10	3.7	1.4	.5	*.2	.1
27	1.9	25	13	132	13	30	9.9	4.0	1.5	.5	.2	.1
28	1.7	20	13	108	13	27	9.5	3.5	1.5	.7	.3	.1
29	1.7	17	13	144	13	23	9.1	3.1	1.4	1.0	.3	.2
30	1.7	15	12	101	-----	21	8.4	2.9	1.4	.8	.3	.2
31	1.7	-----	11	87	-----	21	-----	2.7	-----	.7	.4	-----
Total	62.5	1,984.1	403.0	3,584	757	787	389.9	158.1	76.9	29.2	11.6	6.3
Mean	2.02	66.1	13.0	116	26.1	25.4	13.0	5.10	2.56	0.94	0.38	0.21
Max	5.8	431	39	962	86	46	27	12	4.6	1.5	0.7	0.6
Min	0.7	1.8	8.5	1.0	13	11	8.4	2.7	1.4	0.5	0.2	0
Ac-ft	124	3,940	799	7,110	1,500	1,560	773	314	153	58	23	12

Calendar year 1963: Max 1,120 Min 0.6 Mean 41.8 Ac-ft 30,250
 Water year 1963-64: Max 962 Min 0 Mean 22.5 Ac-ft 16,360

* Discharge measurement made on this day.

EEL RIVER BASIN

11-4736. Short Creek near Covelo, Calif.

Location.--Lat 39°49'50", long 123°10'50", in NE¼ sec.27, T.23 N., R.12 W., on left bank 0.4 mile downstream from unnamed tributary, 0.7 mile upstream from wooden bridge, and 4.5 miles northeast of Covelo.

Drainage area.--15.2 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,480 ft (from topographic map).

Average discharge.--6 years, 18.2 cfs (13,180 acre-ft per year).

Extremes.--Maximum discharge during year, 952 cfs Jan. 20 (gage height, 5.88 ft); no flow Oct. 1 to Nov. 3, July 26 to Sept. 30.

1958-64: Maximum discharge, 1,630 cfs Feb. 8, 1960 (gage height, 7.55 ft); no flow for several months in each year.

Flood of Dec. 21, 1955, reached a stage of 10.56 ft, from floodmarks (discharge, 3,780 cfs on basis of slope-area measurement of maximum flow).

Remarks.--No regulation or diversion above station.

Cooperations.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	8.3	6.3	4.9	9.7	1.1	2.8	1.0	0.3		
2		0	6.8	8.9	3.8	9.1	8.9	3.2	1.0	.3		
3		0	5.9	7.1	3.1	6.7	8.1	4.7	1.0	.2		
4		8.6	5.1	6.5	2.6	5.7	7.4	4.7	1.0	.2		
5		6.2	4.4	5.7	2.3	5.4	6.9	3.7	.9	.2		
6		7.5	4.0	1.5	2.0	5.8	6.4	3.3	.9	.2		
7		1.8	3.4	*2.4	1.8	5.6	5.9	*3.1	1.0	.2		
8		3.1	5.7	1.6	1.7	4.8	5.4	2.7	.9	.2		
9	(*)	5.2	1.4	1.4	1.5	4.6	*5.1	2.5	.9	.2		
10		2.1	8.6	1.4	1.4	4.5	4.7	2.4	.9	.2		
11		1.2	6.0	1.3	1.3	3.3	4.5	2.3	.8	.2		
12		8.0	5.0	1.2	1.2	3.4	4.1	2.1	.7	.2		
13		8.7	4.4	1.5	1.1	2.8	4.2	2.0	.7	.2		
14		*10.5	3.8	1.7	1.1	2.3	4.1	1.7	.7	.1		
15		5.1	3.5	1.4	1.2	1.9	3.9	1.6	.6	.1		
16		2.6	3.2	1.6	1.1	1.5	3.9	1.6	.6	.1		
17		1.6	*3.0	8.6	9.3	1.2	3.9	1.7	.6	.1		
18		1.2	3.0	9.1	8.7	1.1	3.7	1.7	.6	.1		
19		5.2	5.7	2.19	8.1	9.6	3.6	1.6	.6	.1		
20		3.9	2.6	5.17	7.4	8.7	3.7	1.5	.6	.1		
21		2.0	1.5	2.04	6.9	1.0	3.6	1.4	.5	*.1		
22		4.7	1.2	1.16	6.7	1.6	3.6	1.3	.5	.1		
23		3.44	9.9	*7.9	6.4	1.8	3.7	1.3	.4	.1		
24		7.0	9.0	1.04	5.9	1.9	3.7	1.2	.4	.1		
25		3.5	8.9	1.90	5.6	1.5	3.4	1.1	.3	.1		
26		2.5	8.1	1.56	*5.0	1.4	3.2	1.0	.3	0	(*)	
27		1.9	1.0	1.14	4.9	1.2	3.2	1.1	.3	0		
28		1.5	9.1	8.7	5.1	1.1	2.9	1.1	.3	0		
29		1.3	8.3	8.3	5.0	1.0	2.7	1.0	.3	0		
30		1.0	7.1	6.6	-----	9.3	2.6	1.0	.3	0		
31		-----	6.2	5.1	-----	9.2	-----	1.1	-----	0		
Total	0	1,139.5	233.4	2,367.5	406.0	398.7	142.0	63.5	19.6	4.0	0	0
Mean	0	38.0	7.53	76.4	14.0	12.9	4.73	2.05	0.65	0.13	0	0
Max	0	34.4	2.6	5.17	4.9	3.4	1.1	4.7	1.0	0.3	0	0
Min	0	0	3.0	5.7	4.9	4.5	2.6	1.0	0.3	0	0	0
Ac-ft	0	2,260	463	4,700	805	791	282	126	39	7.9	0	0

Calendar year 1963: Max 754 Min 0 Mean 26.2 Ac-ft 13,990
 Water year 1963-64: Max 517 Min 0 Mean 13.0 Ac-ft 9,470

* Discharge measurement or observation of no flow made on this day.

11-4737. Mill Creek near Covelo, Calif.

Location.--Lat 39°44'45", long 123°10'15", in SW¼ sec.23, T.22 N., R.12 W., on right bank 50 ft upstream from unnamed tributary, 0.65 mile downstream from county road bridge, and 5.2 miles southeast of Covelo.

Drainage area.--96.9 sq mi.

Records available.--September 1956 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,280 ft (from topographic map).

Average discharge.--8 years, 137 cfs (99,180 acre-ft per year).

Extremes.--Maximum discharge during year, 7,630 cfs Jan. 20 (gage height, 13.60 ft), from rating curve extended above 1,900 cfs as explained below; no flow for many days.

1956-64: Maximum discharge, 10,000 cfs Feb. 8, 1960 (gage height, 15.15 ft), from rating curve extended above 1,900 cfs on basis of slope-area measurement at gage height 14.50 ft; no flow for several months in each year.

Remarks.--No regulation or diversion above station.

Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Revisions (water years).--1963 Report: 1960-62.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	31	20	273	71	63	13	3.5	0.2		
2	0	0	25	24	203	56	59	16	3.6	.1		
3	0	0	19	19	165	55	51	21	3.1	.1		
4	0	27	18	15	137	44	46	20	3.0	.1		
5	0	13	15	12	121	39	42	15	3.5	.1		
6	0	281	12	36	105	38	38	13	3.3	.1		
7	0	63	10	95	90	38	34	*13	3.8	.1		
8	0	114	16	*62	82	37	31	12	3.9	.1		
9	0	270	100	52	77	36	*30	11	4.3	.1		
10	0	80	48	56	74	35	28	9.8	3.4	0		
11	0	25	29	40	70	203	27	9.3	3.8	0		
12	0	10	22	35	65	250	23	9.1	3.4	0		
13	0	5.3	20	66	60	171	22	8.3	3.0	0		
14	0	*639	17	90	57	113	20	7.8	2.6	0		
15	.7	319	16	64	59	98	20	7.4	1.6	0		
16	.4	123	15	86	60	81	19	7.4	2.1	0		
17	.1	61	*14	494	56	73	18	7.4	1.9	0		
18	0	31	14	619	52	65	17	7.2	1.3	0		
19	0	258	18	1,410	49	58	16	7.1	1.5	0		
20	0	211	213	4,010	46	53	16	6.2	1.5	0		
21	0	88	86	1,480	44	54	15	6.0	1.3	*0		
22	.1	109	63	839	41	97	15	5.8	1.0	0		
23	.4	1,890	49	*556	40	115	16	5.7	.9	0		
24	.1	440	42	685	38	112	16	4.9	.5	0		
25	.1	193	38	1,050	37	86	15	4.6	.4	0		
26	0	126	32	694	*34	77	14	4.9	.3	0	(*)	
27	0	90	34	513	33	72	13	5.2	.3	0		
28	0	71	34	416	33	66	13	4.8	.3	0		
29	0	56	32	462	33	60	12	4.5	.2	0		
30	0	41	27	365	-----	56	12	3.9	.2	0		
31	0	-----	21	279	-----	53	-----	3.7	-----	0		
Total	1.9	5,634.3	1,130	14,644	2,234	2,462	761	275.0	63.5	1.0	0	0
Mean	0.06	188	36.5	472	77.0	79.4	25.4	8.87	2.12	0.03	0	0
Max	0.7	1,890	213	4,010	273	250	63	21	4.3	0.2	0	0
Min	0	0	10	12	33	35	12	3.7	0.2	0	0	0
Ac-ft	4.0	11,180	2,240	29,050	4,430	4,880	1,510	545	126	2.0	0	0

Calendar year 1963: Max 5,200 Min 0 Mean 159 Ac-ft 115,200
 Water year 1963-64: Max 4,010 Min 0 Mean 74.3 Ac-ft 53,970

* Discharge measurement or observation of no flow made on this day.

EEL RIVER BASIN

11-4740. Eel River below Dos Rios, Calif.

Location.--Lat 39°44'15", long 123°22'15", in NE¼ sec.25, T.22 N., R.14 W., on left bank 1.1 miles downstream from Burger Creek, 1.7 miles northwest of Dos Rios, and 2.2 miles downstream from Middle Fork.

Drainage area.--1,484 sq mi.

Records available.--October 1911 to December 1913, October 1951 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B. Published as "near Laytonville" 1911 and as "at Two Rivers" 1912-13.

Gage.--Water-stage recorder. Altitude of gage is 800 ft (from topographic map). Prior to Dec. 30, 1913, staff gage at bridge 500 ft downstream from Middle Fork at different datum.

Average discharge.--15 years, 3,054 cfs (2,211,000 acre-ft per year); median of yearly mean discharges, 2,570 cfs (1,860,000 acre-ft per year).

Extremes.--Maximum discharge during year, 76,900 cfs Jan. 20 (gage height, 26.13 ft); minimum, 5.6 cfs Sept. 27.

1911-13, 1951-64; Maximum discharge, 283,000 cfs Dec. 22, 1955 (gage height, 49.86 ft), from rating curve extended above 120,000 cfs on basis of a slope-conveyance study; minimum, 5.2 cfs Sept. 13, 1955.

Remarks.--Records good. Flow partly regulated by Lake Pillsbury (see p. 393) and by diversion through Potter Valley powerhouse (see p. 396).

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	26	97	1,280	832	5,360	1,100	1,970	*711	308	90	25	6.8
2	25	99	1,130	880	5,060	*1,440	1,760	697	297	85	24	7.3
3	24	157	1,020	816	*4,320	1,060	*1,520	768	284	83	23	7.3
4	24	2,830	936	732	3,900	960	1,410	872	274	83	*23	8.4
5	24	1,980	*856	677	3,670	944	1,380	760	294	83	22	9.5
6	27	5,100	800	670	3,330	904	1,310	664	314	85	21	10
7	34	1,980	760	1,210	2,900	864	1,230	632	329	79	20	10
8	38	5,160	760	1,000	2,620	800	1,210	638	345	70	18	11
9	43	8,130	1,390	888	2,410	776	1,270	638	314	65	18	*11
10	49	3,120	1,060	1,060	2,280	746	1,250	664	308	65	16	11
11	102	1,570	856	888	2,130	1,650	1,210	664	294	72	16	10
12	176	1,060	776	816	1,930	4,080	1,190	670	271	61	15	10
13	137	832	718	*840	1,740	3,020	1,140	651	246	52	14	10
14	92	6,790	677	1,190	1,600	2,060	1,200	607	228	48	13	10
15	184	8,100	638	984	1,660	1,780	1,270	560	213	46	13	9.5
16	560	3,890	619	1,100	1,550	1,650	1,270	538	195	44	12	9.0
17	287	2,240	583	3,750	1,390	1,560	1,180	601	190	43	12	9.0
18	178	1,610	560	7,860	1,290	1,590	1,060	560	187	42	12	9.0
19	132	3,850	601	14,000	1,230	1,450	976	521	178	38	11	8.4
20	109	5,410	2,790	44,100	1,180	1,360	912	516	176	38	10	8.4
21	92	2,580	1,720	26,500	1,140	1,420	880	490	164	35	9.5	7.8
22	92	2,040	1,200	15,100	1,100	1,620	872	455	156	34	9.0	7.8
23	190	21,100	1,020	9,220	1,100	1,880	856	430	145	33	9.0	7.8
24	261	12,800	920	7,790	1,070	1,910	800	410	132	30	8.4	7.8
25	198	6,000	880	10,400	1,030	1,630	725	392	121	29	8.4	6.8
26	173	3,720	808	9,190	952	1,500	684	*383	114	27	7.8	6.2
27	162	2,680	984	7,530	920	1,490	677	440	106	25	7.8	5.6
28	137	2,080	1,110	6,490	904	1,490	704	406	99	25	6.8	6.2
29	124	1,720	1,140	6,120	904	1,510	784	378	99	25	6.2	6.8
30	*106	1,470	1,040	6,020	-----	1,520	746	353	*94	26	6.2	6.8
31	102	-----	920	5,040	-----	1,560	-----	322	-----	26	6.2	-----
Total	3,908	120,195	30,552	193,693	60,670	47,324	33,446	17,391	6,475	1,587	423.3	255.2
Mean	126	4,006	986	6,248	2,092	1,527	1,115	561	216	51.2	13.7	8.51
Max	560	21,100	2,790	44,100	5,360	4,080	1,970	872	345	90	25	11
Min	24	97	560	670	904	746	677	322	94	25	6.2	5.6
Ac-ft	7,750	238,400	60,600	384,200	120,300	93,900	66,340	34,490	12,840	3,150	840	506

Calendar year 1963: Max 95,400 Min 24 Mean 3,361 Ac-ft 2,433,000

Water year 1963-64: Max 44,100 Min 5.6 Mean 1,410 Ac-ft 1,023,000

Peak discharge (base, 22,000 cfs).--Nov. 23 (1600) 31,300 cfs (18.51 ft); Jan. 20 (1800) 76,900 cfs (26.13 ft).

* Discharge measurement made on this day.

11-4744. Halls Creek near Covelo, Calif.

Location.--Lat 39°54'50", long 123°14'55", in sec.25, T.24 N., R.13 W., on right bank at downstream side of highway bridge, 6.8 miles southeast of Mina and 8.3 miles north of Covelo.

Drainage area.--25.9 sq mi.

Records available.--October 1961 to September 1964 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 2,570 ft (from topographic map).

Extremes.--Maximum discharge during year, 4,000 cfs Jan. 20 (gage height, 9.32 ft), from rating curve extended above 1,200 cfs as explained below; no flow Oct. 1-9, Aug. 5 to Sept. 30.

1961-64: Maximum discharge, 5,300 cfs Jan. 31, 1963 (gage height, 10.50 ft), from rating curve extended above 1,200 cfs on basis of slope-area measurement of maximum flow; no flow for many days in each year.

Remarks.--No known regulation or diversion above station.

Cooperation.--Records furnished by Bureau of Reclamation and reviewed by Geological Survey.

Revisions (water years).--1963 Report: 1962(M).

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	2.8	27	20	232	26	81	12	4.8	1.3	0.1	
2	0	3.3	23	31	172	25	57	13	4.6	1.3	.1	
3	0	8.6	20	22	130	22	48	18	4.4	1.3	.1	
4	0	208	18	20	111	23	44	19	4.5	1.3	.1	
5	0	125	17	18	97	25	41	16	5.7	1.2	0	
6	0	393	15	45	82	23	37	12	6.1	1.1	0	
7	0	97	14	76	70	21	35	*12	8.6	1.0	0	
8	0	185	17	46	63	20	33	11	6.8	1.0	0	
9	*0	210	28	41	59	20	32	11	6.8	1.0	0	
10	.1	78	20	37	55	19	*30	10	6.3	.9	0	
11	9.6	44	17	31	50	35	30	9.6	5.6	.8	0	
12	7.8	29	15	28	45	42	27	8.8	4.9	.7	0	
13	5.0	*43	15	31	*42	54	26	8.3	4.3	.7	0	
14	2.1	653	14	31	40	70	25	7.8	4.1	.7	0	
15	57	263	13	31	41	75	25	7.2	3.8	.7	0	
16	28	122	13	46	36	68	23	8.3	3.6	.6	0	
17	8.2	72	*12	138	32	65	21	12	3.4	.5	0	
18	4.9	52	12	151	29	57	20	8.7	3.3	.5	0	
19	3.7	370	15	444	27	45	18	8.1	3.3	.5	0	
20	2.9	196	60	1,810	26	42	17	7.2	3.2	.4	0	
21	2.6	94	32	507	24	43	16	7.0	2.9	*.4	0	
22	8.4	124	25	257	23	46	16	6.7	2.6	.4	0	
23	35	904	21	163	21	50	16	6.1	2.3	.3	0	
24	11	324	19	184	21	60	15	5.9	2.0	.2	0	
25	11	155	19	387	*20	59	14	5.8	1.8	.2	*0	
26	8.9	94	17	292	19	59	13	6.3	1.6	.2	0	
27	6.3	68	25	239	18	59	12	7.4	1.6	.1	0	
28	5.0	52	28	202	18	56	12	6.5	1.8	.2	0	
29	4.1	40	29	217	17	52	12	5.9	1.5	.3	0	
30	3.6	33	24	192	-----	49	11	5.3	1.4	.2	0	
31	3.1	-----	20	171	-----	51	-----	5.0	-----	.1	0	-----
Total	228.3	5,042.7	644	5,908	1,620	1,361	807	287.9	117.6	20.1	0.4	0
Mean	7.36	168	20.8	191	55.9	43.9	26.9	9.29	3.92	0.67	0.01	0
Max	57	904	60	1,810	232	75	81	19	8.6	1.3	0.1	0
Min	0	2.8	12	18	17	19	11	5.0	1.4	0.1	0	0
Ac-ft	453	10,000	1,280	11,720	3,210	2,700	1,600	571	233	40	1.0	0

Calendar year 1963: Max 2,450 Min 0 Mean 82.8 Ac-ft 59,980

Water year 1963-64: Max 1,810 Min 0 Mean 43.8 Ac-ft 31,810

* Discharge measurement or observation of no flow made on this day.

11-4745, North Fork Eel River near Mina, Calif.

Location.--Lat 39°56'15", long 123°20'45", in SW¼ sec.8, T.24 N., R.13 W., on right bank 1.2 miles upstream from Asbill Creek, 2 miles south of Mina, and 8.8 miles northeast of Nashmead.

Drainage area.--250 sq mi.

Records available.--August 1953 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,030 ft (from topographic map). Aug. 27, 1953, to Jan. 15, 1954, water-stage recorder and Jan. 16 to June 22, 1954, wire-weight gage, at bridge 0.2 mile downstream at different datum.

Average discharge.--11 years, 574 cfs (415,600 acre-ft per year); median of yearly mean discharges, 460 cfs (333,000 acre-ft per year).

Extremes.--Maximum discharge during year, 27,800 cfs Jan. 20 (gage height, 19.50 ft), from rating curve extended above 8,000 cfs as explained below; minimum daily, 0.5 cfs Sept. 13-15, 22.

1953-64: Maximum discharge, 58,400 cfs Dec. 22, 1955 (gage height, 24.00 ft), from rating curve extended above 8,000 cfs on basis of slope-area measurement of maximum flow; minimum, 0.1 cfs Aug. 30, 31, 1959.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.9	19	250	230	1,690	196	451	82	35	*12	2.7	0.8
2	2.9	20	218	295	1,330	263	353	91	34	12	2.6	.8
3	2.7	29	192	238	1,060	196	300	117	34	11	2.5	.8
4	2.7	300	*170	208	900	179	268	128	33	11	2.3	.8
5	2.9	170	155	186	804	181	245	96	35	11	*2.3	.8
6	3.3	430	144	351	684	177	224	85	39	11	2.5	.8
7	4.6	195	128	*985	588	174	208	80	42	9.7	2.3	.8
8	4.4	1,070	125	564	512	157	194	77	39	8.9	1.9	.7
9	4.4	1,220	317	497	462	155	185	73	37	8.5	1.9	.7
10	5.1	490	224	548	416	152	176	69	36	8.2	1.9	*.7
11	17	250	176	427	380	291	167	65	34	7.9	1.8	.7
12	47	195	152	368	338	512	158	63	31	7.3	1.7	.6
13	29	170	139	365	*305	552	150	60	29	7.0	1.5	.5
14	19	1,500	129	430	285	552	142	59	27	6.4	1.4	.5
15	57	1,000	120	365	295	528	137	57	25	6.1	1.3	.5
16	173	540	111	515	280	500	133	55	25	6.1	1.3	.6
17	53	380	103	1,510	245	*455	128	64	24	6.1	1.3	.6
18	32	280	96	2,320	226	409	122	59	23	6.1	1.1	.6
19	23	520	98	3,900	214	335	116	55	22	5.5	1.1	.6
20	18	500	446	15,800	202	295	107	52	22	5.3	1.1	.6
21	16	350	305	5,310	188	317	103	50	20	5.1	1.0	.6
22	18	320	228	2,500	179	356	*100	47	19	4.8	.9	.5
23	103	2,600	194	1,600	172	392	100	46	18	4.6	.9	.6
24	65	1,500	172	1,610	165	483	103	43	17	4.2	.8	.6
25	49	900	177	2,850	160	458	94	42	16	4.0	.8	.6
26	67	680	162	2,350	149	409	89	*43	15	3.5	.8	.6
27	43	550	253	1,870	144	392	84	50	14	3.2	.7	.6
28	33	420	332	1,580	141	368	81	46	14	3.2	.7	.6
29	*27	340	427	1,680	145	341	79	41	13	3.3	.7	.6
30	24	290	323	1,680	-----	308	76	39	13	3.2	.7	.7
31	21	-----	263	1,370	-----	290	-----	36	-----	3.0	.7	-----
Total	969.9	17,228	6,329	54,502	12,659	10,373	4,873	1,970	785	209.2	45.2	19.5
Mean	31.3	574	204	1,758	437	335	162	63.5	26.2	6.75	1.46	0.65
Max	173	2,600	446	15,800	1,690	552	451	128	42	12	2.7	0.8
Min	2.7	19	96	186	141	152	76	36	13	3.0	0.7	0.5
Ac-ft	1,920	34,170	12,550	108,100	25,110	20,570	9,670	3,910	1,560	415	90	39

Calendar year 1963: Max 12,500 Min 2.6 Mean 538 Ac-ft 389,400

Water year 1963-64: Max 15,800 Min 0.5 Mean 300 Ac-ft 218,100

Peak discharge (base, 8,000 cfs).--Jan. 20 (1200) 27,800 cfs (19.50 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 4-11, Nov. 14 to Dec. 1.

11-4750. Eel River at Alderpoint, Calif.

Location.--Lat 40°10'35", long 123°36'20", in NW¼ sec.27, T.3 S., R.5 E., on left bank at Alderpoint, 600 ft downstream from Carter Creek and 11.4 miles northeast of Garberville.

Drainage area.--2,079 sq mi.

Records available.--September 1955 to September 1964.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 270 ft (from topographic map).

Average discharge.--9 years, 4,429 cfs (3,206,000 acre-ft per year).

Extremes.--Maximum discharge during year, 100,000 cfs Jan. 20 (gage height, 36.59 ft); minimum, 10 cfs Aug. 30 to Sept. 5. 1955-64: Maximum discharge, 376,000 cfs Dec. 22, 1955 (gage height, 72.5 ft, from floodmarks), from rating curve extended above 110,000 cfs on basis of slope-area measurement of maximum flow; minimum, that of Aug. 30 to Sept. 5, 1964.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow slightly regulated by Lake Pillsbury (see p. 393) and by diversion through Potter Valley powerhouse (see p. 396).

Discharge, in cubic feet per second, water year October 1963 to September 1964												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	152	1,890	1,330	8,020	1,380	2,520	914	398	119	32	10
2	*30	158	1,710	1,470	7,740	2,140	2,730	922	375	112	31	*10
3	30	175	1,510	*1,460	6,600	*1,700	2,220	978	*367	112	31	10
4	30	1,850	*1,360	1,300	*5,780	1,420	2,020	1,170	355	110	31	10
5	a45	2,630	1,250	1,170	5,280	1,410	1,910	1,040	355	106	30	10
6	a80	6,230	1,170	1,440	4,840	1,410	1,850	930	380	106	29	11
7	a70	4,060	1,050	2,740	4,280	1,350	1,710	815	411	102	27	11
8	a55	4,580	1,050	2,300	3,810	1,240	1,640	787	420	102	26	11
9	a45	13,400	1,690	1,910	3,490	1,170	1,620	787	420	96	24	11
10	a55	5,600	1,710	2,020	3,230	1,170	1,650	759	388	88	23	11
11	108	2,760	1,350	1,850	3,020	1,940	1,580	773	375	85	22	12
12	148	1,850	1,170	1,650	2,780	5,860	1,540	766	355	81	21	12
13	253	1,500	1,060	1,710	2,520	4,800	1,470	759	323	88	20	13
14	a180	9,410	980	2,050	2,340	3,720	1,440	752	299	78	20	13
15	a168	16,200	917	1,900	2,330	3,050	1,490	689	275	71	19	13
16	a520	7,100	863	2,040	2,300	2,790	1,560	654	255	64	17	13
17	a500	3,750	800	4,200	2,050	2,550	1,520	675	244	58	16	13
18	420	2,690	760	13,200	1,890	2,410	1,400	738	230	57	15	13
19	289	4,490	776	21,200	1,780	2,260	1,280	654	224	55	14	12
20	a217	9,360	2,620	67,600	1,720	2,050	1,190	616	220	52	14	13
21	a180	4,380	2,800	47,300	1,660	2,070	1,110	592	214	51	14	13
22	a160	3,070	1,910	24,100	1,590	2,390	1,090	568	196	50	14	12
23	a175	24,800	1,600	16,000	1,560	2,790	1,090	526	190	47	13	12
24	386	24,600	1,430	12,900	1,500	2,980	1,060	510	172	44	13	12
25	420	9,820	1,380	17,000	1,470	2,740	986	485	160	44	13	12
26	334	5,790	1,360	16,100	1,370	2,410	914	475	140	42	13	12
27	295	4,040	1,350	12,900	1,280	2,310	858	490	135	38	12	12
28	a247	3,130	1,740	10,700	1,260	2,250	850	520	130	36	11	12
29	a214	2,530	1,870	9,740	1,260	2,200	890	470	*124	33	11	12
30	*185	2,170	1,790	10,000	-----	2,160	*930	460	124	32	10	*12
31	162	-----	1,580	8,060	-----	*2,170	-----	425	-----	32	10	-----
Total	6,035	182,275	44,496	319,340	88,750	72,290	44,118	21,699	8,254	2,191	596	353
Mean	195	6,076	1,435	10,300	3,060	2,332	1,471	700	275	70.7	19.2	11.8
Max	520	24,800	2,800	67,600	8,020	5,860	2,730	1,170	420	119	32	13
Min	30	152	760	1,170	1,260	1,170	850	425	124	32	10	10
Ac-ft	11,970	361,500	89,260	633,400	176,000	143,400	87,510	43,040	16,370	4,350	1,180	702

Calendar year 1963: Max 121,000 Min 30 Mean 4,550 Ac-ft 3,294,000

Water year 1963-64: Max 67,600 Min 10 Mean 2,160 Ac-ft 1,568,000

Peak discharge (base, 41,000 cfs).--Nov. 23 (2100) 43,700 cfs (20.89 ft); Jan. 20 (2100) 100,000 (36.59 ft).

* Discharge measurement made on this day.

a No gage-height record.

11-4750. Eel River at Alderpoint, Calif.--Continued.

Records available.--Water temperatures: November 1960 to September 1964.

Extremes.--Maximum temperature during year, 85°F July 14; minimum, 44°F Dec. 13-17, Jan. 12-19, 22-26, Feb. 6-9, 14-17.
 1960-64; Maximum temperature, that of July 14, 1964; minimum, 37°F Jan. 5-8, 1961, Jan. 14, 15, 1963.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	73	66	56	54	46	46	49	48	46	45	46	46	52	52	58	58	70	67	72	69	77	70	70	62
2	70	65	56	54	46	45	48	48	46	46	46	46	52	51	58	57	70	67	74	68	78	69	72	61
3	70	66	56	55	45	45	48	47	46	46	46	45	51	50	57	56	69	66	74	68	78	68	75	64
4	68	65	55	54	46	45	47	47	46	45	46	45	52	51	56	56	67	67	72	68	78	70	73	65
5	66	64	54	54	45	45	47	46	46	45	47	46	53	52	56	55	68	67	74	67	78	70	73	66
6	69	64	54	52	46	45	46	46	45	44	47	47	53	52	56	54	68	67	76	68	76	69	73	64
7	69	64	52	52	46	46	46	46	44	44	47	47	54	53	58	55	68	66	77	70	76	69	72	65
8	68	64	52	52	46	46	46	46	44	44	47	46	55	53	60	58	66	65	73	70	77	69	71	64
9	67	66	52	52	47	46	46	46	45	44	48	47	55	55	62	60	65	64	75	68	77	69	73	64
10	66	63	52	52	47	46	46	46	45	45	48	47	55	54	64	62	65	64	76	67	79	68	74	64
11	64	63	52	52	46	46	46	45	45	45	48	47	56	55	66	64	68	64	79	69	74	68	74	64
12	67	64	52	52	46	45	45	44	45	45	47	46	56	55	66	64	69	66	81	71	76	68	73	64
13	65	64	52	52	45	44	44	44	45	45	46	46	57	55	66	64	70	66	80	72	75	68	72	65
14	65	64	52	52	44	44	44	44	45	44	46	46	58	56	65	63	72	68	85	71	76	67	72	64
15	64	64	52	51	44	44	44	44	44	44	48	46	59	58	66	63	70	68	79	72	74	66	73	63
16	65	64	51	50	44	44	44	44	45	44	49	48	59	58	65	63	71	67	78	69	74	66	73	64
17	64	64	50	49	45	44	44	44	45	44	50	49	58	56	65	63	70	68	77	70	75	66	70	66
18	64	64	49	48	45	45	44	44	46	45	51	50	57	56	65	64	70	67	75	69	74	66	70	62
19	66	64	48	48	45	45	45	44	46	46	51	50	57	56	66	64	70	67	76	67	73	64	70	62
20	65	64	48	48	46	45	46	45	46	46	51	50	58	57	66	65	71	67	77	69	76	64	70	65
21	64	64	48	46	46	46	46	45	46	45	50	50	58	57	66	64	72	68	76	70	79	68	68	61
22	64	63	46	45	46	46	45	44	46	46	50	49	58	58	66	64	74	68	77	69	79	69	73	62
23	63	62	47	45	46	46	44	44	46	46	49	48	58	56	67	65	74	70	79	69	79	69	76	65
24	63	62	47	47	46	45	44	44	46	46	48	48	56	54	68	66	76	71	81	71	80	72	77	66
25	62	62	47	47	45	45	44	44	46	46	48	48	56	54	68	66	76	73	83	73	78	69	73	66
26	62	60	47	47	46	45	45	44	46	46	49	48	58	56	68	67	73	70	83	73	74	67	72	63
27	60	58	48	47	47	46	45	45	46	46	51	49	60	58	67	66	73	68	83	71	73	64	70	63
28	60	58	48	48	48	47	45	45	46	46	51	50	62	60	67	66	74	68	78	74	71	65	69	63
29	59	58	48	47	49	48	45	45	46	46	52	51	62	60	68	66	76	68	83	73	72	62	68	63
30	58	56	47	46	49	49	45	45	-----	-----	52	52	60	59	68	66	75	69	76	71	69	63	68	60
31	56	54	-----	-----	49	49	45	45	-----	-----	52	52	-----	-----	70	67	-----	-----	78	69	69	61	-----	-----
Avg	65	63	51	50	46	46	45	45	46	45	46	46	56	55	64	62	71	67	78	68	75	67	72	64

11-4755. South Fork Eel River near Branscomb, Calif.

Location.--Lat 39°43'09", long 123°39'06", in NW¼ sec.32, T.22 N., R.16 W., on right bank 0.4 mile upstream from Jack of Hearts Creek and 4.7 miles north of Branscomb.

Drainage area.--43.9 sq mi.

Records available.--October 1946 to September 1964.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 1,380 ft (from topographic map).

Average discharge.--18 years, 168 cfs (121,600 acre-ft per year); median of yearly mean discharges, 150 cfs (109,000 acre-ft per year).

Extremes.--Maximum discharge during year, 6,860 cfs Jan. 20 (gage height, 10.00 ft); minimum, 1.3 cfs Sept. 22-26.
1946-64: Maximum discharge, 20,100 cfs Dec. 22, 1955 (gage height, 16.20 ft), from rating curve extended above 4,600 cfs on basis of slope-area measurement of maximum flow; minimum, 1.3 cfs Sept. 10, 1959, Oct. 24, 1961, Sept. 22-26, 1964.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.8	1.3	1.4	42	5.0	1,430
.9	3.2	1.7	94	6.0	2,170
1.0	6.4	2.0	164	7.0	3,000
1.1	12	3.0	470	9.0	5,340
1.2	19	4.0	880		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.0	9.4	138	104	313	136	119	32	16	7.8	4.6	2.5
2	3.0	16	121	104	268	116	98	29	16	*8.3	4.6	2.5
3	3.0	15	108	92	223	85	90	56	16	8.3	*4.6	2.5
4	3.0	183	98	87	192	78	83	48	16	8.3	4.3	2.5
5	3.7	89	*89	81	170	71	80	38	20	7.8	4.0	2.5
6	5.7	323	83	*100	151	67	76	36	21	7.3	3.5	2.5
7	5.0	154	76	156	133	62	71	32	21	6.8	3.2	2.7
8	4.6	944	102	131	124	56	67	29	19	6.4	3.2	2.7
9	6.0	1,040	151	138	112	55	63	28	17	6.4	3.5	2.7
10	1.1	428	108	138	106	52	58	26	17	6.0	3.5	2.7
11	32	250	96	124	98	145	56	25	16	5.7	3.5	*2.5
12	1.7	170	87	114	*90	262	53	24	15	5.3	3.5	2.5
13	1.1	141	81	128	85	283	50	23	14	5.0	3.7	2.5
14	7.8	840	78	131	85	229	47	22	13	5.3	3.5	2.5
15	34	722	72	116	89	184	44	22	12	5.7	3.5	2.3
16	34	460	67	190	78	*159	42	23	12	6.0	3.5	2.1
17	17	332	63	628	74	138	41	25	12	5.7	3.5	2.1
18	13	244	60	1,010	69	119	41	23	12	5.3	3.5	1.7
19	12	350	72	2,250	63	108	39	22	12	5.0	3.2	1.7
20	9.9	332	344	4,210	60	98	38	21	12	5.0	3.2	1.6
21	11	259	186	2,030	56	112	*37	20	11	4.6	3.0	1.6
22	15	285	154	1,100	53	131	34	20	9.9	4.6	2.7	1.4
23	36	1,470	133	715	52	143	34	19	8.8	4.6	2.7	1.3
24	23	1,050	126	726	50	133	33	18	8.8	4.3	2.5	1.3
25	19	607	116	790	47	119	33	18	8.3	4.0	2.5	1.3
26	16	428	106	682	45	110	32	18	8.3	3.7	2.5	1.4
27	14	320	131	554	44	102	29	18	8.3	3.7	2.3	1.7
28	12	247	133	448	45	96	29	*18	8.3	3.7	2.5	2.1
29	11	198	124	464	47	89	28	17	8.3	4.0	2.5	2.3
30	*11	161	116	409	-----	83	28	17	8.3	4.0	2.5	2.1
31	9.4	-----	108	358	-----	90	-----	16	-----	3.7	2.5	-----
Total	413.1	12,067.4	3,527	18,308	3,022	3,711	1,573	783	397.3	172.3	101.8	63.8
Mean	13.3	402	114	591	104	120	524	25.3	13.2	5.56	3.28	2.13
Max	36	1,470	344	4,210	313	283	119	56	21	8.3	4.6	2.7
Min	3.0	9.4	60	81	44	52	28	16	8.3	3.7	2.3	1.3
Ac-ft	819	23,940	7,000	36,310	5,990	7,360	3,120	1,550	788	342	202	127

Calendar year 1963: Max 2,330 Min 3.0 Mean 159 Ac-ft 115,400
Water year 1963-64: Max 4,210 Min 1.3 Mean 121 Ac-ft 87,550

Peak discharge (base, 2,000 cfs).--Nov. 23 (1300) 2,190 cfs (6.02 ft); Jan. 20 (1300) 6,860 cfs (10.00 ft).

* Discharge measurement made on this day.

11-4755. South Fork Eel River near Branscomb, Calif.--Continued.

Records available--Water temperatures: October 1960 to September 1964.Extremes--Maximum temperature during year, 79°F July 13, 24, 25; minimum, 41°F Jan. 10-17.

1960-64: Maximum temperature recorded, 82°F Aug. 7, 1961; minimum recorded, 37°F Nov. 17, 18, 1961.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	62	55	46	45	49	49	44	44	43	43	45	44	49	48	51	50	62	59	67	61	73	70	60	57
2	62	56	47	46	49	49	44	44	43	43	45	45	48	45	50	48	60	57	68	61	72	66	61	56
3	61	55	46	46	49	48	44	43	43	43	45	44	49	46	48	46	58	57	67	60	70	65	62	56
4	60	57	47	46	48	48	43	43	43	43	48	45	50	47	49	47	58	58	68	62	71	64	63	57
5	58	58	47	47	48	48	43	42	43	43	49	48	50	47	49	48	58	58	71	63	72	64	62	57
6	60	58	47	47	48	47	42	42	43	43	48	46	50	46	50	46	58	58	72	63	71	65	62	57
7	61	58	47	47	47	46	44	42	43	43	47	45	50	47	52	49	58	57	72	64	72	65	61	57
8	60	57	-	-	46	45	44	42	43	43	47	45	51	47	55	51	58	55	70	64	73	65	60	57
9	58	58	-	-	45	44	43	42	43	43	47	47	51	48	58	53	55	54	70	61	73	65	61	56
10	59	57	-	-	44	43	42	41	43	43	48	47	51	47	58	55	54	54	72	63	73	66	61	55
11	57	56	-	-	44	43	41	41	43	42	47	46	51	49	60	55	59	54	74	64	70	66	56	55
12	56	56	-	-	43	43	41	41	42	42	46	46	51	48	59	56	63	58	77	68	70	63	60	54
13	57	56	-	-	43	43	41	41	42	42	47	46	53	49	58	56	65	60	79	70	71	64	59	55
14	57	57	-	-	43	43	41	41	43	42	48	47	55	50	58	55	67	62	74	69	72	65	61	55
15	57	57	-	-	43	43	41	41	43	43	51	48	56	52	58	54	66	63	72	67	71	65	62	56
16	57	56	-	-	43	43	41	41	43	43	52	48	55	51	57	54	63	60	73	65	71	63	61	55
17	58	56	-	-	43	43	42	41	43	43	50	48	53	49	54	53	62	59	75	66	70	63	61	57
18	58	58	-	-	43	43	42	42	43	43	50	48	51	48	56	54	63	58	73	68	70	64	61	55
19	59	58	-	-	44	43	44	42	44	43	49	47	52	48	59	55	63	58	73	65	70	63	62	57
20	59	58	-	-	44	44	44	44	44	44	49	46	52	51	59	57	65	58	73	65	73	66	62	58
21	58	58	-	-	44	44	44	44	44	44	46	46	54	50	60	56	67	59	73	66	72	66	62	58
22	58	58	-	-	44	44	44	44	44	44	47	45	54	51	61	56	71	62	74	68	71	66	64	57
23	58	55	-	-	44	44	44	43	44	44	46	45	51	47	61	57	73	62	77	66	73	66	66	59
24	55	54	-	-	44	43	43	43	45	44	45	45	49	47	62	58	74	63	79	69	72	65	66	59
25	54	54	50	50	43	43	43	43	45	44	47	45	51	48	61	58	73	62	79	69	69	64	64	59
26	54	53	50	50	44	43	43	43	44	44	47	45	54	50	60	56	70	63	78	69	67	62	62	58
27	54	51	50	50	45	44	43	43	44	44	49	46	56	52	57	55	67	59	77	69	67	61	59	58
28	52	50	50	50	46	45	43	43	44	44	49	46	58	54	59	56	68	59	75	72	66	61	59	56
29	53	50	50	49	46	45	43	43	44	44	49	47	58	54	61	57	70	62	77	70	66	61	59	56
30	53	48	49	49	45	45	43	43	-----	-----	49	48	54	51	63	58	68	61	74	69	65	61	58	55
31	48	46	-----	-----	45	44	43	43	-----	-----	49	49	-----	-----	63	59	-----	-----	72	66	62	58	-----	-----
Avg	57	55	-	-	45	45	43	42	43	43	48	46	52	49	57	54	64	59	73	66	70	64	61	57

EEL RIVER BASIN

417

11-4757. Tenmile Creek near Laytonville, Calif.

Location.--Lat 39°45'45", long 123°32'30", in NW¼ sec.16, T.22 N., R.15 W., on right bank 0.1 mile downstream from Step Gulch Creek and 6.0 miles northwest of Laytonville.

Drainage area.--50.3 sq mi.

Records available.--October 1957 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,450 ft (from topographic map).

Average discharge.--7 years, 144 cfs (104,300 acre-ft per year).

Extremes.--Maximum discharge during year, 6,760 cfs Jan. 20 (gage height, 13.86 ft); minimum, 0.1 cfs Sept. 25-28.

1957-64: Maximum discharge, 12,200 cfs Feb. 8, 1960 (gage height, 19.14 ft, from floodmarks), from rating curve extended above 4,300 cfs on basis of slope-area measurement at gage height 22.9 ft; no flow at times in each year except 1960, 1963-64.

Flood of Dec. 22, 1955, reached a stage of 22.9 ft, from floodmarks (discharge, 16,300 cfs by slope-area measurement of maximum flow).

Remarks.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.7	4.8	87	66	272	154	78	20	9.5	3.1	1.0	0.3
2	.7	6.1	76	69	214	118	61	19	9.2	*3.5	1.0	.4
3	.7	51	70	61	180	64	53	43	8.8	3.3	1.2	.4
4	1.6	243	63	57	159	54	49	35	9.9	3.3	*1.3	.5
5	1.4	86	58	54	141	48	46	25	15	3.3	1.2	.5
6	2.4	498	*53	*98	127	49	42	25	14	2.9	.9	.4
7	2.6	.91	47	119	114	45	38	22	13	2.6	.9	.4
8	2.2	765	113	78	104	41	38	19	12	2.4	.8	.3
9	2.6	582	157	91	94	41	36	17	11	2.4	.8	.4
10	4.8	156	79	89	87	38	35	17	11	2.4	.7	.4
11	16	80	64	73	79	380	33	16	9.9	2.2	.7	*.4
12	8.5	53	57	69	*73	363	32	15	8.8	1.9	.7	.5
13	5.3	90	53	109	67	272	30	15	7.9	1.9	.8	.4
14	4.1	1,060	50	108	64	150	29	15	7.0	1.6	.8	.3
15	20	522	47	82	88	118	29	14	7.0	1.7	.7	.3
16	18	235	46	180	71	*99	27	15	7.0	1.9	.6	.3
17	9.5	136	44	683	62	88	27	17	7.0	1.9	.6	.3
18	7.0	97	43	805	58	77	26	15	7.0	1.7	.6	.3
19	5.6	446	114	1,340	54	69	25	14	6.7	1.6	.5	.3
20	4.6	260	405	3,520	52	65	*23	13	6.1	1.6	.5	.2
21	4.8	132	131	1,150	48	93	22	12	5.8	1.5	.5	.2
22	7.3	412	99	727	45	157	22	12	5.3	1.5	.4	.2
23	18	2,130	83	532	45	147	23	12	4.6	1.4	.3	.2
24	11	678	77	726	42	114	22	11	4.1	1.3	.3	.2
25	9.9	374	82	824	39	89	21	11	3.7	1.0	.2	.1
26	7.9	250	73	571	38	78	19	11	3.5	.9	.3	.1
27	6.7	177	113	449	33	73	19	12	3.7	.9	.4	.1
28	5.8	139	99	363	33	67	17	*12	3.7	.9	.4	.1
29	5.3	116	88	464	38	62	17	11	3.3	1.2	.3	.2
30	5.3	99	76	368	-----	57	16	11	3.1	1.2	.3	.2
31	*4.6	-----	68	301	-----	60	-----	9.9	-----	1.0	.3	-----
TOTAL	205.1	9,968.9	2,715	14,231	2,531	3,329	955	515.9	228.6	60.0	20.0	8.9
MEAN	6.62	332	87.6	459	87.3	107	31.8	16.6	7.62	1.94	0.65	0.30
MAX	20	2,130	405	3,520	272	380	78	43	15	3.5	1.3	0.5
MIN	0.7	4.8	43	54	39	38	16	9.9	3.1	0.9	0.2	0.1
AC-FT	407	19,770	5,390	28,230	5,020	6,600	1,890	1,020	453	119	40	18

CALENDAR YEAR 1963 MAX 5,290 MIN 0.6 MEAN 157 AC-FT 113,900
 WATER YEAR 1963-64 MAX 3,520 MIN 0.1 MEAN 95.0 AC-FT 68,960

Peak discharge (base, 5,000 cfs).--Jan. 20 (1100) 6,760 cfs (13.86 ft).

* Discharge measurement made on this day.

EEL RIVER BASIN

11-4765. South Fork Eel River near Miranda, Calif.

Location.--Lat 40°10'55", long 123°46'30", in NW¼ sec.30, T.3 S., R.4 E., on right bank at Sylvandale Campgrounds on U. S. Highway 101, 0.5 mile upstream from Rocky Glen Creek, 4.3 miles southeast of Miranda, and 20 miles upstream from mouth.

Drainage area.--537 sq mi.

Records available.--October 1939 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder with thermograph attachment. Datum of gage is 217.29 ft above mean sea level (levels by California Division of Highways). Prior to Nov. 2, 1940, staff gage at site 200 ft upstream at datum 0.8 ft higher. Nov. 2, 1940, to Oct. 31, 1944, staff gage at present site and datum.

Average discharge.--25 years, 1,816 cfs (1,315,000 acre-ft per year).

Extremes.--Maximum discharge during year, 59,000 cfs Jan. 20 (gage height, 24.00 ft); minimum daily, 10 cfs Aug. 30.

1940-64: Maximum discharge, 173,000 cfs Dec. 22, 1955 (gage height, 42.7 ft, from floodmarks), from rating curve extended above 52,000 cfs on basis of slope-area measurement of maximum flow; minimum observed, 9 cfs Oct. 17, 1944.

Remarks.--Records good. Occasional storage and release for recreation use during summer months at Benbow Dam. No diversion above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 24 to Nov. 3, Nov. 9-14,
16-23, Nov. 25 to Jan. 18)

Oct. 1 to Jan. 20				Jan. 21 to Sept. 30			
0.9	46	4.0	1,420	2.0	5	4.5	1,200
1.3	69	6.0	3,700	2.2	26	7.0	4,900
1.6	107	10.0	10,600	2.4	54	11.0	12,800
2.0	196	15.0	23,600	2.8	130	16.0	26,800
2.5	380	22.0	50,000	3.3	270		
3.0	660			3.8	530		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*49	112	1,460	1,000	3,250	680	1,060	360	172	108	56	*36
2	50	140	1,310	*1,040	2,790	*1,250	980	365	*170	106	57	35
3	49	290	*1,200	940	*2,440	880	850	410	170	106	56	36
4	48	3,540	1,070	856	2,130	710	790	500	172	104	56	36
5	57	2,910	980	793	1,910	656	730	428	185	104	54	42
6	96	5,680	891	1,020	1,710	648	672	375	198	102	54	36
7	87	3,590	821	1,700	1,520	632	640	330	203	100	52	36
8	69	7,380	891	1,450	1,390	572	600	310	200	98	51	36
9	69	10,900	1,390	1,350	1,300	551	572	290	185	94	50	36
10	117	4,690	1,180	1,390	1,200	524	558	278	180	92	50	35
11	747	2,660	964	1,220	1,100	1,600	530	266	175	90	48	27
12	570	1,880	863	1,140	1,020	3,190	506	254	165	88	48	31
13	268	1,540	786	1,200	950	2,870	488	250	162	86	46	32
14	140	8,640	730	1,400	900	2,290	464	242	155	84	46	32
15	528	8,700	674	1,230	980	1,840	452	238	148	82	44	32
16	1,030	5,140	630	1,300	950	1,510	428	246	144	80	45	34
17	618	3,480	588	2,920	830	1,310	416	278	142	80	45	34
18	300	2,570	558	8,650	760	1,150	410	266	138	79	44	34
19	182	4,670	710	16,000	720	1,030	395	246	138	77	44	34
20	134	2,300	2,350	46,800	664	930	380	230	136	75	73	34
21	116	3,350	1,880	25,000	632	980	404	218	134	75	100	35
22	185	2,790	1,480	13,100	600	1,380	422	212	130	73	102	34
23	1,090	11,900	1,300	8,820	572	1,640	410	209	126	69	86	32
24	765	10,400	1,180	*7,400	551	1,500	400	206	122	64	77	31
25	588	6,110	1,200	9,300	530	1,320	390	195	*118	61	39	36
26	425	4,320	1,080	7,170	506	1,180	375	190	114	57	39	32
27	308	3,160	1,130	5,690	494	1,080	360	113	112	61	38	31
28	220	2,440	1,260	4,600	488	1,000	340	180	110	61	39	30
29	*176	2,010	1,240	4,470	500	930	*335	79	110	59	27	*30
30	149	1,740	1,160	4,400	-----	*850	330	152	108	57	10	31
31	126	-----	1,070	3,600	-----	800	-----	178	-----	54	27	-----
Total	9,356	129,032	34,026	185,949	33,387	37,483	15,687	8,094	4,522	2,526	1,603	1,010
Mean	302	4,301	1,098	5,998	1,151	1,209	523	261	151	81.5	51.7	33.7
Max	1,090	11,900	2,350	46,800	3,250	3,190	1,060	500	203	108	102	42
Min	48	112	558	793	488	524	350	79	108	54	10	27
Ac-ft	18,560	255,900	67,490	368,800	66,220	74,350	31,110	16,050	8,970	5,010	3,180	2,000

Calendar year 1963: Max 37,000 Min 48 Mean 1,910 Ac-ft 1,383,000
Water year 1963-64: Max 46,800 Min 10 Mean 1,264 Ac-ft 917,600

Peak discharge (base, 28,000 cfs).--Jan. 20 (1700) 59,000 cfs (24.00 ft).

* Discharge measurement made on this day.

11-4765. South Fork Eel River near Miranda, Calif.--Continued.

Records available,--Water temperatures: November 1960 to September 1964.Extremes,--Maximum temperature during year, 93°F July 25; minimum, 38°F Jan. 11.

1960-64: Maximum temperature recorded, that of July 25, 1964; minimum recorded, 34°F Jan. 20, 21, 1963.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	-	-	57	49	48	45	48	46	50	47	54	48	49	46	50	49	73	62	72	64	82	72	72	61
2	-	-	56	54	48	44	49	45	52	45	54	48	48	43	50	48	74	60	76	62	82	69	74	58
3	-	-	54	52	48	46	47	43	50	42	48	41	51	41	52	46	71	61	76	62	85	67	77	60
4	-	-	58	54	49	45	47	41	54	45	51	46	52	44	52	48	67	63	72	63	84	70	74	60
5	-	-	54	53	48	45	45	39	53	48	48	46	50	45	50	46	66	64	76	63	85	68	72	62
6	-	-	53	51	53	47	42	40	54	44	46	42	52	43	54	44	66	63	80	64	83	67	73	61
7	-	-	51	49	49	45	46	42	54	44	47	39	57	47	58	50	64	60	82	64	80	66	73	59
8	-	-	55	51	47	45	46	40	54	45	49	40	58	50	62	52	60	58	76	66	81	68	70	58
9	-	-	60	55	48	44	44	42	55	48	49	45	55	51	66	54	62	57	76	61	81	66	74	59
10	-	-	57	54	48	42	44	41	52	49	50	41	55	46	66	56	66	57	80	61	85	67	76	58
11	-	-	57	53	42	41	42	38	52	49	47	42	53	48	66	56	72	59	89	65	77	70	77	59
12	-	-	55	54	44	40	46	40	51	44	43	41	54	46	66	54	72	62	88	68	79	65	77	58
13	-	-	56	54	43	40	42	42	50	44	46	41	60	47	64	56	76	62	85	68	78	66	71	61
14	-	-	56	53	42	40	46	40	51	44	48	41	63	50	66	54	74	64	77	67	79	64	71	58
15	-	-	53	50	44	41	43	39	48	46	52	45	59	50	68	53	72	64	78	71	78	64	74	58
16	62	57	52	49	44	42	44	40	50	44	55	46	54	50	58	54	76	62	82	68	80	63	75	58
17	60	58	50	48	44	42	44	42	52	43	53	47	54	48	64	56	72	66	79	66	78	66	70	62
18	59	58	53	50	43	42	44	43	54	46	53	47	57	47	65	57	72	62	78	68	76	66	69	56
19	65	58	52	50	46	43	48	43	47	47	55	45	61	48	66	54	71	63	80	66	76	62	70	55
20	59	58	50	46	48	46	48	46	58	46	49	46	59	51	67	58	74	62	81	66	83	63	67	62
21	63	59	48	43	46	45	46	43	56	45	48	45	59	52	66	58	76	63	79	70	86	67	70	54
22	62	58	48	44	47	44	43	43	57	45	45	42	53	51	67	55	83	61	80	66	88	69	76	56
23	62	60	50	48	47	42	43	43	57	45	47	42	51	46	71	56	82	66	86	66	89	70	82	61
24	57	55	53	49	44	41	44	43	53	46	47	41	53	45	72	59	82	65	92	70	90	70	84	63
25	59	56	54	48	46	44	48	44	55	45	48	40	57	47	74	59	82	64	93	73	86	70	77	62
26	59	53	51	50	46	46	49	44	54	43	50	43	60	50	65	60	72	63	90	73	78	68	73	60
27	60	52	54	50	49	46	48	45	54	45	53	43	64	54	70	58	73	62	91	74	77	63	68	58
28	59	51	50	47	51	49	49	46	48	47	55	43	66	53	70	59	78	58	82	76	74	66	70	58
29	59	55	50	46	52	51	47	45	52	44	56	45	60	51	74	59	78	62	90	74	75	61	64	57
30	59	51	49	46	54	50	48	46	-----	-----	54	47	54	47	74	60	78	63	80	72	68	64	67	54
31	60	52	-----	-----	52	48	48	46	-----	-----	49	46	-----	-----	77	61	-----	-----	80	68	70	61	-----	-----
Avg	-	-	53	50	47	44	46	43	53	45	50	44	56	48	64	54	73	62	82	67	80	66	73	59

EEL RIVER BASIN

11-4766. Bull Creek near Weott, Calif.

Location.--Lat 40°21'05", long 124°00'10", in NW¼ sec.30, T.1 S., R.2 E. (revised), on right bank 0.2 mile downstream from Albee Creek, 4.5 miles northwest of Weott, and 4.6 miles upstream from mouth.

Drainage area.--28.1 sq mi.

Records available.--October 1960 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 262.23 ft above mean sea level (levels by California Division of Beaches and Parks).

Extremes.--Maximum discharge during year, 1,930 cfs Jan. 20 (gage height, 14.33 ft); minimum daily, 1.4 cfs Sept. 25, 26.
1960-64: Maximum discharge, 4,120 cfs Jan. 31, 1963 (gage height, 16.12 ft); maximum gage height, 16.88 ft Feb. 10, 1961; minimum daily discharge, that of Sept. 25, 26, 1964.

Remarks.--Records fair except those for periods of no gage-height record and those below 10 cfs, which are poor. Some regulation at low flow by log pond above station. Minor diversions above station for domestic use.

Cooperation.--Eighteen discharge measurements furnished by California Division of Beaches and Parks.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.0	27	130	76	239	83	60	25	11	8.0	7.0	*2.0
2	3.0	31	116	76	215	72	54	25	12	8.4	7.0	2.4
3	*3.4	60	*103	73	188	61	*50	30	11	8.4	6.4	2.0
4	4.0	145	95	*70	170	57	47	25	11	8.0	6.4	2.2
5	20	200	*88	67	156	58	44	24	12	8.0	6.4	2.4
6	16	*294	79	125	145	61	42	23	12	8.0	6.1	2.4
7	13	210	76	135	132	57	41	22	12	8.0	5.8	2.4
8	10	579	84	118	122	54	40	21	12	8.0	5.8	2.2
9	12	518	82	123	110	53	39	20	12	7.7	5.8	2.0
10	110	288	74	118	102	50	38	20	*11	7.7	5.8	2.0
11	80	240	68	111	98	184	37	19	11	7.4	5.5	1.8
12	50	192	67	105	89	191	36	18	10	7.0	5.2	2.2
13	27	178	64	121	82	194	35	18	8.4	7.0	5.2	2.2
14	20	356	60	111	78	168	34	18	9.4	7.0	5.2	1.8
15	95	346	60	105	84	149	33	17	9.4	7.7	5.2	1.8
16	72	*288	57	105	75	134	32	19	9.4	7.4	5.2	1.6
17	50	246	56	206	69	122	32	18	9.8	7.4	4.9	1.6
18	34	213	54	297	66	108	*31	16	9.4	7.0	4.6	1.6
19	*23	394	75	658	63	98	30	16	9.1	7.4	4.6	2.0
20	21	314	91	1,520	60	91	29	16	8.8	7.0	4.6	2.0
21	50	264	*76	1,020	56	93	28	15	8.8	7.0	4.3	1.8
22	150	270	73	775	*54	100	28	14	8.0	7.0	4.3	1.6
23	*51	585	70	595	50	91	28	14	7.7	7.4	4.3	1.6
24	45	478	68	*520	48	87	26	13	*7.7	7.4	4.3	1.6
25	37	382	67	585	46	*80	*26	13	7.0	7.4	*4.0	1.4
26	33	300	68	498	46	75	25	13	7.4	7.0	3.4	1.4
27	31	246	74	422	*42	*70	*25	12	7.7	6.7	3.4	1.8
28	*29	205	81	354	46	64	24	*12	8.0	6.7	3.2	1.8
29	28	178	79	342	41	61	24	12	8.0	*6.7	3.2	*1.9
30	27	155	*77	*289	-----	58	24	12	7.7	6.7	3.0	1.8
31	26	-----	74	263	-----	61	-----	12	-----	6.7	2.4	-----
Total	1,173.4	8,182	2,386	9,983	2,772	2,885	1,042	552	288.7	229.2	152.5	57.3
Mean	37.9	273	77.0	322	95.6	93.1	34.7	17.8	9.62	7.39	4.92	1.91
Max	150	585	130	1,520	239	194	60	30	12	8.4	7.0	2.4
Min	3.0	27	54	67	41	50	24	12	7.0	6.7	2.4	1.4
Ac-ft	2,330	16,230	4,730	19,800	5,500	5,720	2,070	1,090	573	455	302	114

Calendar year 1963: Max 1,970 Min - Mean 160 Ac-ft 116,200
Water year 1963-64: Max 1,520 Min 1.4 Mean 81.2 Ac-ft 58,910

Peak discharge (base, 1,000 cfs).--Jan. 20 (0300) 1,930 cfs (14.33 ft).

* Discharge measurement made on this day.

Note.--No gage height record Oct. 1 to Nov. 5, Apr. 8-21.

11-4767. Larabee Creek near Holmes, Calif.

Location.--Lat 40°24'30", long 123°54'00", in SW¼ sec.1, T.1 S., R.2 E., on left bank 50 ft downstream from Balcom Creek, 2.8 miles upstream from mouth and 2.8 miles east of Holmes.

Drainage area.--84.1 sq mi.

Records available.--July 1959 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 160 ft (from topographic map).

Average discharge.--5 years, 253 cfs (183,200 acre-ft per year).

Extremes.--Maximum discharge during year, 7,890 cfs Jan. 20 (gage height, 11.33 ft); minimum, 5.4 cfs Sept. 30. 1959-64: Maximum discharge, 10,000 cfs Feb. 8, 1960 (gage height, 12.40 ft), from rating curve extended above 5,000 cfs; minimum, 5.4 cfs Sept. 30, 1964.

Remarks.--Records good. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	9.5	41	218	196	564	196	205	61	29	18	14	8.6
2	9.5	69	*193	*293	444	*245	165	58	*29	21	13	8.6
3	9.0	69	165	215	*372	200	145	77	28	19	12	8.6
4	9.0	670	151	188	328	168	135	73	30	19	12	8.6
5	31	381	139	165	290	183	125	62	44	20	12	8.6
6	68	1,060	129	606	260	225	115	58	52	19	12	8.2
7	24	528	115	840	228	225	110	54	56	19	11	6.2
8	17	1,100	145	548	210	190	101	49	47	18	12	7.8
9	22	1,670	336	472	193	198	97	49	42	18	12	7.8
10	63	675	203	420	178	175	94	47	40	18	11	7.8
11	261	452	160	332	168	644	90	45	37	17	12	7.4
12	88	317	139	278	151	700	85	44	35	16	12	7.4
13	47	275	129	311	141	592	81	43	33	16	12	7.4
14	34	1,810	117	340	139	476	78	42	31	16	12	7.4
15	246	1,270	110	272	158	440	74	41	31	18	12	7.0
16	178	805	101	299	149	352	74	45	31	18	11	7.0
17	85	568	96	724	135	293	72	56	30	16	11	7.0
18	61	444	90	1,060	127	257	70	45	29	16	10	7.0
19	49	1,010	128	1,980	119	220	68	41	28	16	9.5	7.0
20	42	760	345	5,510	111	200	64	40	26	16	9.5	7.0
21	40	544	203	2,490	102	228	62	38	26	15	9.5	6.6
22	286	492	168	1,600	99	314	63	37	25	16	9.5	6.6
23	330	2,170	145	1,030	94	311	64	36	23	15	9.0	6.6
24	151	1,190	133	1,130	93	287	61	35	22	15	9.0	6.2
25	149	755	139	1,410	90	260	58	33	*21	14	9.0	5.8
26	113	584	131	984	84	242	56	36	20	14	8.6	5.8
27	84	468	203	760	82	225	55	37	19	13	8.6	5.8
28	68	372	366	605	93	203	54	33	19	13	9.0	5.8
29	*57	302	314	665	93	180	*49	32	19	13	8.6	*6.2
30	49	257	239	564	-----	*163	48	32	18	13	8.6	5.4
31	44	-----	203	512	-----	153	-----	31	-----	13	*8.6	-----
TOTAL	2,724.0	21,108	5,453	26,799	5,295	8,745	2,618	1,410	920	508	330.0	215.2
MEAN	87.9	704	176	864	183	282	87.3	45.5	30.7	16.4	10.6	7.17
MAX	330	2,170	366	5,510	564	700	205	77	56	21	14	8.6
MIN	9.0	41	90	165	82	153	48	31	18	13	8.6	5.4
AC-FT	5,400	41,870	10,820	53,160	10,500	17,350	5,190	2,800	1,820	1,010	655	427

CALENDAR YEAR 1963 MAX 3,490 MIN 9.0 MEAN 318 AC-FT 230,600
 WATER YEAR 1963-64 MAX 5,510 MIN 5.4 MEAN 208 AC-FT 151,000

Peak discharge (base, 3,000 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-14	1200	8.84	4,010	1-20	0600	11.33	7,890
11-23	1200	8.73	3,880				

EEL RIVER BASIN

11-4770. Eel River at Scotia, Calif.

Location.--Lat 40°29'30", long 124°05'55", in SW¼ sec.5, T.1 N., R.1 E., near center of span in left pier of bridge on U. S. Highway 101, 0.5 mile north of Scotia and 6 miles upstream from Van Duzen River.

Drainage area.--3,113 sq mi.

Records available.--October 1910 to September 1964. Monthly discharge only for some periods and yearly estimates for 1915-16, published in WSP 1315-B.

Gage.--Water-stage recorder with thermograph attachment. Datum of gage is 36.15 ft above mean sea level, datum of 1929. Prior to September 1934, staff gage at same site and datum. September 1934 to Dec. 12, 1940, wire-weight gage at same site and datum.

Average discharge.--54 years, 6,965 cfs (5,042,000 acre-ft per year).

Extremes.--Maximum discharge during year, 178,000 cfs Jan. 21 (gage height, 39.40 ft); minimum, 64 cfs Sept. 4. 1910-64: Maximum discharge, 541,000 cfs Dec. 22, 1955 (gage height, 61.90 ft), from rating curve extended above 200,000 cfs; minimum observed, 10 cfs Aug. 12-14, 1924.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow slightly regulated by Lake Pillsbury (see p. 393) and by diversion through Potter Valley powerhouse (see p. 396).

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 21 to Dec. 2, Jan. 31, to Feb. 17,
Feb. 24 to Mar. 12, Apr. 7 to June 10)

7.7	55	8.7	460	15.0	16,300
7.8	70	9.0	760	22.0	49,700
8.0	110	10.0	2,150	31.0	108,000
8.2	160	12.0	6,300	40.0	183,000
8.4	250				

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*128	*541	5,030	3,510	14,100	2,580	4,590	1,630	*771	317	154	84
2	126	541	*4,630	3,650	13,500	3,830	4,970	1,670	716	317	145	76
3	122	570	a 4,330	3,550	11,600	3,970	4,530	1,730	694	317	142	78
4	124	3,130	a 3,950	3,250	9,780	3,150	4,150	1,910	672	310	139	78
5	189	6,380	a 3,310	2,940	8,660	2,890	3,890	2,070	705	298	133	82
6	373	12,000	a 3,210	3,660	7,910	2,980	3,670	1,830	760	304	140	80
7	317	13,400	a 3,090	7,490	7,100	3,030	3,470	1,610	826	298	122	82
8	256	11,000	a 2,620	6,480	6,220	2,800	3,330	1,490	859	286	126	82
9	225	32,000	a 2,780	5,100	5,680	2,640	3,170	1,450	848	280	124	80
10	256	19,300	a 4,470	4,950	5,220	2,460	3,110	1,400	837	268	122	82
11	972	9,470	a 3,530	4,750	4,930	3,780	3,010	1,380	771	262	122	82
12	1,120	5,950	3,130	4,390	4,570	12,100	2,910	1,350	738	245	122	86
13	760	4,410	2,830	4,190	4,290	12,000	2,780	1,350	694	240	116	84
14	630	15,800	2,650	4,830	3,970	9,440	2,740	1,350	630	240	116	78
15	895	35,600	2,490	4,690	4,030	7,580	2,620	1,290	590	235	114	76
16	1,570	20,900	2,350	4,430	4,010	6,620	2,600	1,240	570	225	112	78
17	1,560	12,600	2,200	6,800	3,710	5,920	2,560	1,250	532	215	112	80
18	1,430	8,750	2,070	24,100	a 3,450	5,450	2,490	1,260	514	205	106	76
19	970	10,700	2,040	39,800	a 3,250	5,030	2,330	1,280	496	196	102	76
20	727	21,500	3,890	109,000	a 3,100	4,670	2,190	1,220	452	192	113	72
21	570	13,800	6,950	122,000	a 3,000	*4,610	2,050	1,110	452	188	104	74
22	640	9,380	4,790	55,200	a 2,800	5,150	1,960	1,050	452	188	118	74
23	1,880	29,800	3,970	35,800	a 2,700	6,100	1,930	1,010	444	188	139	74
24	1,470	54,100	3,550	27,400	2,650	6,300	1,890	978	412	184	139	74
25	1,400	25,700	3,430	31,300	2,600	5,920	1,780	906	388	176	128	68
26	1,390	16,600	3,270	31,300	2,510	*5,320	1,690	906	*388	172	114	68
27	1,090	11,900	3,250	24,700	2,330	4,930	1,590	882	366	160	100	68
28	918	8,930	3,890	20,300	*2,290	4,770	*1,500	804	359	160	92	*68
29	793	7,100	4,430	17,900	2,310	4,590	1,470	906	331	157	92	67
30	672	5,920	4,290	18,600	-----	4,430	1,530	771	324	157	84	67
31	580	-----	*3,870	*15,400	-----	4,370	-----	760	-----	*154	*86	-----
Total	24,153	427,772	110,290	651,460	152,270	159,410	82,500	39,843	17,591	7,134	3,678	2,294
Mean	779	14,260	3,558	21,010	5,251	5,142	2,750	1,290	586	230	119	76.5
Max	1,880	54,100	6,950	122,000	14,100	12,100	4,970	2,070	859	317	154	86
Min	122	541	2,040	2,940	2,290	2,460	1,470	760	324	154	84	67
Ac-ft	47,910	848,500	218,800	*1,292	302,000	316,200	163,600	79,030	34,890	14,150	7,300	4,550

Calendar year 1963: Max 212,000 Min 122 Mean 8,439 Ac-ft 6,110,000
Water year 1963-64: Max 122,000 Min 67 Mean 4,586 Ac-ft 3,329,000

Peak discharge (base, 72,000 cfs).--Jan. 21 (0200) 178,000 cfs (39.40 ft).

* Discharge measurement made on this day.

† Expressed in thousands.

a No gage-height record.

11-4770. Eel River at Scotia, Calif.--Continued.

Records available.--Water temperatures: November 1960 to September 1964.Extremes.--Maximum temperature during year, 72°F July 11, 24, Sept. 24; minimum, 43°F Dec. 13-15, Jan. 11-19, 23-25.
1960-64: Maximum temperature, 76°F Aug. 16, 1962; minimum, 38°F Jan. 13, 14, 1963.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	68	62	56	54	48	47	46	46	46	46	46	46	52	52	59	58	-	-	67	64	67	63	64	61
2	66	64	56	56	48	45	46	46	46	46	46	45	52	51	58	57	67	64	64	63	71	63	64	59
3	67	63	56	54	45	45	46	45	46	46	46	45	52	50	57	56	67	66	66	64	68	64	65	62
4	65	64	54	54	45	45	45	45	46	45	46	46	51	50	56	56	66	66	66	64	68	66	63	61
5	64	62	54	54	45	45	45	44	45	45	47	46	51	50	56	55	66	65	64	62	68	64	62	61
6	63	62	54	54	46	45	44	44	45	45	47	47	52	51	55	54	65	64	67	63	68	64	63	61
7	64	63	54	52	46	46	44	44	45	44	47	46	53	52	56	54	64	63	70	66	67	64	62	61
8	64	63	52	52	46	46	44	44	44	44	48	47	54	53	-	-	63	61	70	68	64	63	63	57
9	64	64	53	52	46	46	44	44	45	44	48	48	54	54	-	-	61	60	68	66	66	64	64	60
10	64	62	53	53	46	45	44	44	45	45	48	47	54	53	-	-	60	60	69	65	67	64	65	60
11	62	61	53	53	45	44	44	43	45	45	48	47	54	54	61	60	61	60	72	68	66	64	64	60
12	61	61	53	53	44	44	43	43	45	44	47	46	54	53	61	60	61	61	71	68	66	62	64	60
13	61	61	53	53	44	43	43	43	44	44	46	45	55	54	-	-	66	61	70	68	66	64	64	62
14	61	60	53	53	43	43	43	43	44	44	46	45	56	55	-	-	66	64	70	68	65	65	65	60
15	60	60	53	52	44	43	43	43	44	44	48	46	56	56	-	-	64	62	68	68	65	63	67	62
16	60	60	52	51	44	44	43	43	44	44	50	48	56	55	-	-	63	61	69	66	65	63	68	62
17	60	60	51	50	44	44	43	43	44	44	50	50	55	54	-	-	63	63	68	67	65	64	64	63
18	60	60	50	50	44	44	43	43	45	44	50	50	55	54	-	-	65	62	68	66	66	64	63	60
19	60	60	50	50	44	44	44	43	46	45	51	50	56	55	-	-	65	62	68	66	64	63	65	58
20	60	60	50	50	45	44	45	44	46	45	51	50	56	56	-	-	65	62	70	67	66	64	64	62
21	60	60	50	48	45	45	45	44	46	45	50	50	56	56	-	-	65	63	70	68	68	63	64	60
22	60	60	48	48	45	45	44	44	46	45	50	49	56	55	63	62	67	64	68	65	67	64	67	59
23	60	59	48	48	45	44	44	43	46	46	49	48	55	54	-	-	66	64	70	65	67	64	71	62
24	59	59	48	48	44	44	43	43	46	46	48	48	54	53	-	-	66	65	72	67	66	64	72	63
25	59	59	48	48	44	44	44	43	46	46	48	47	55	54	-	-	66	65	70	67	66	63	63	62
26	59	58	48	48	44	44	44	44	46	45	49	47	56	54	-	-	66	65	70	67	66	64	64	62
27	58	58	48	48	46	44	44	44	46	46	50	49	56	56	67	66	65	62	69	67	64	62	64	62
28	58	57	48	48	47	46	44	44	46	46	-	-	60	56	-	-	67	63	68	66	64	62	62	61
29	57	57	48	48	48	47	44	44	46	45	-	-	60	60	67	66	67	65	69	66	64	62	62	61
30	57	56	48	48	48	48	44	44	-----	-----	-	-	60	59	-	-	67	66	68	64	63	62	65	59
31	56	55	-----	-----	48	46	46	44	-----	-----	-	-	-----	-----	-	-	-----	-----	64	63	62	60	-----	-----
Avg	61	60	51	51	45	45	44	44	45	45	-	-	54	54	-	-	-	-	68	66	66	64	64	61

EEL RIVER BASIN

11-4775. Van Duzen River near Dinsmores, Calif.

Location.--Lat 40°29'05", long 123°39'25", in NW¼ sec.7, T.1 N., R.5 E., on left bank 20 ft downstream from private road bridge, 0.3 mile upstream from South Fork, and 2.8 miles west of Dinsmores.

Drainage area.--85.1 sq mi. At site August 1953 to September 1958, 87.1 sq mi (revised).

Records available.--August 1953 to September 1958, October 1963 to September 1964.

Gage.--Water stage recorder. Altitude of gage 1,980 ft (from topographic map). Aug. 19, 1953 to Sept. 30, 1958, at site 1.7 miles upstream at different datum.

Average discharge.--6 years, 369 cfs (267,100 acre-ft per year).

Extremes.--Maximum discharge during year, 15,500 cfs Jan. 20 (gage-height, 15.0, from floodmarks); minimum, 2.5 cfs Sept. 24, 25. 1953-58, 1963-64: Maximum discharge, 21,400 cfs Dec. 22, 1955 (gage height, 19.25 ft, site and datum then in use), from rating curve extended above 13,000 cfs; minimum, 1.8 cfs Aug. 29, 1958.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Rating table (gage-height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 7-17)

3.3	2.5	5.0	220
3.4	5.5	6.0	570
3.6	15	7.0	1,150
3.8	28	8.0	2,050
4.1	55	10.0	4,500
4.5	115	13.0	10,000

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.6	24	208	241	1,180	146	*307	*82	43	21	9.4	4.3
2	4.3	25	173	328	a 708	178	238	79	42	21	9.8	4.3
3	* 4.3	28	150	235	a 660	146	205	88	41	21	9.4	*4.3
4	4.6	443	132	195	a 600	*160	183	91	* 40	22	8.5	4.0
5	5.5	352	*120	168	*a 506	200	170	83	48	23	8.5	4.0
6	6.8	1,160	112	493	474	178	156	76	53	20	7.2	4.0
7	5.2	470	98	*746	404	160	145	71	53	17	7.2	4.0
8	8.9	1,630	121	436	362	145	141	71	51	19	7.7	4.0
9	10	1,950	220	401	334	150	139	70	50	19	7.2	4.0
10	13	710	160	384	314	141	136	70	47	19	6.8	4.0
11	50	398	129	298	289	180	130	68	44	19	6.8	3.7
12	36	265	113	259	256	232	124	65	41	17	6.4	3.7
13	26	205	108	241	229	220	120	64	40	17	5.9	3.7
14	22	2,380	101	229	210	256	122	62	38	16	5.5	3.4
15	38	1,600	94	205	210	304	127	59	36	16	5.5	3.4
16	79	866	86	323	193	320	125	60	35	16	5.5	3.4
17	38	570	79	865	a 178	328	115	76	34	15	5.5	3.4
18	30	432	74	1,060	a 164	324	107	65	34	14	5.5	3.4
19	26	1,330	92	1,760	a 154	274	101	60	33	13	5.2	3.4
20	23	1,050	316	*a 8190	a 146	256	94	58	32	13	5.2	3.4
21	22	630	210	a 2,430	143	268	91	56	30	14	4.9	3.1
22	60	530	160	a 1,340	137	265	91	53	30	14	4.6	3.1
23	158	2,830	137	a 1,000	132	247	89	52	28	14	4.6	3.1
24	59	1,780	124	a 900	130	244	83	50	27	13	4.6	2.8
25	55	986	132	a 1,400	122	226	79	48	25	12	4.6	2.5
26	49	685	132	a 1,150	113	218	76	52	25	12	4.6	2.8
27	38	506	289	a 900	110	215	74	64	24	11	4.6	2.8
28	32	390	477	a 680	107	215	74	53	24	9.8	4.6	2.8
29	30	310	443	a 800	103	226	79	49	22	9.8	4.6	3.1
30	27	250	328	a 520	-----	226	76	47	*21	9.4	4.3	3.1
31	*25	-----	262	a 800	-----	232	-----	44	-----	9.4	4.3	-----
Total	990.2	24,785	5,380	28,977	8,668	6,880	3,797	1,986	1,091	486.4	189.0	105.0
Mean	31.9	826	174	935	299	222	127	64.1	36.4	15.7	6.10	3.50
Max	158	2,830	477	8,190	1,180	328	307	91	53	23	9.8	4.3
Min	4.3	24	74	168	103	141	74	44	21	9.4	4.3	2.5
Ac-ft	1,960	49,160	10,670	57,480	17,190	13,650	7,530	3,940	2,160	965	375	208

Calendar year 1963: Max - Min - Mean - Ac-ft -
Water year 1963-64: Max 8,190 Min 2.5 Mean 228 Ac-ft 165,500

Peak discharge (base, 3,400 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-14	1200	9.85	4,290	1-20	0700	†15.0	15,500
11-23	1300	9.56	3,910				

* Discharge measurement made on this day.
a No gage-height record.

† From floodmarks.

11-4777. South Fork Van Duzen River near Bridgeville, Calif.

Location.--Lat 40°26'40", long 123°39'15", in SE¼ sec.19, T.1 N., R.5 E., on right bank 0.2 mile upstream from Butte Creek, 3 miles upstream from mouth, and 7.8 miles east of Bridgeville.

Drainage area.--36.2 sq mi.

Records available.--Occasional low-flow measurements, water years 1951-58 and annual maximum, water years 1954-57. September 1958 to September 1964.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 2,350 ft (from topographic map). Sept. 25, 1953, to Aug. 31, 1957, crest-stage gage only, at site 0.1 mile upstream at different datum.

Average discharge.--6 years, 143 cfs (103,500 acre-ft per year).

Extremes.--Maximum discharge during year, 6,760 cfs Jan. 20 (gage height, 13.63 ft); minimum, 2.7 cfs Oct. 3, 1953-57, 1958-64: Maximum discharge, 8,990 cfs Dec. 22, 1955 (gage height, 11.91 ft, from floodmarks, site and datum then in use), on basis of slope-area measurement of maximum flow.
1958-64: Minimum discharge, 2.0 cfs Sept. 24, 25, 1962.

Remarks.--Records good. No regulation or large diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	3.0	18	119	116	509	123	168	46	23	13	8.3	5.4
2	3.0	34	104	154	380	97	128	42	23	13	7.8	5.2
3	*3.0	40	93	115	310	89	110	54	22	14	7.5	5.2
4	3.0	252	85	98	275	106	101	52	22	15	7.3	5.0
5	10	265	*77	89	251	122	94	49	26	13	7.0	5.2
6	16	621	73	328	*215	109	86	44	30	*13	7.0	5.4
7	14	251	66	*360	190	*96	80	45	36	12	6.4	5.2
8	12	1,070	85	197	174	90	*78	*46	32	12	6.4	*5.2
9	13	964	119	195	162	99	76	44	31	13	6.2	5.6
10	21	365	93	174	153	87	74	44	*29	12	6.2	5.6
11	71	223	80	143	141	146	71	42	27	11	6.0	5.4
12	26	159	72	123	129	141	67	39	25	10	6.0	5.2
13	19	152	72	121	119	133	65	38	23	10	6.2	5.0
14	17	1,230	68	111	115	139	66	35	22	10	6.2	4.8
15	86	728	63	107	116	160	66	32	21	12	6.2	4.8
16	54	425	59	185	106	160	63	39	21	11	6.0	4.6
17	29	290	56	563	100	166	58	39	20	9.0	5.6	4.6
18	22	227	58	440	97	159	55	37	20	9.8	5.4	4.4
19	19	652	70	1,360	94	136	52	35	19	9.8	5.6	4.4
20	17	413	135	4,160	87	133	50	33	18	9.5	5.4	4.4
21	17	271	93	*1,220	84	134	48	31	17	9.3	5.2	4.6
22	154	272	78	644	82	131	49	30	16	9.0	4.8	4.2
23	113	1,260	71	431	78	124	47	28	16	8.3	5.0	4.0
24	51	700	67	512	77	122	44	27	15	8.3	4.8	3.8
25	55	437	70	696	74	117	41	26	15	7.8	4.6	3.6
26	40	313	72	518	71	119	39	39	14	7.5	4.6	3.8
27	30	241	128	434	69	119	38	36	14	7.5	4.8	3.8
28	25	193	241	359	70	122	39	30	14	7.5	4.8	4.0
29	22	162	185	476	69	124	35	28	14	7.5	4.8	4.0
30	19	138	136	416	-----	118	39	26	14	7.5	5.0	4.0
31	*17	-----	115	446	-----	118	-----	25	-----	7.3	5.4	-----
TOTAL	1,001	12,366	2,903	15,291	4,397	3,839	2,027	1,161	639	319.6	182.5	140.4
MEAN	32.3	412	93.6	493	152	124	67.6	37.5	21.3	10.3	5.89	4.68
MAX	154	1,260	241	4,160	509	166	168	54	36	15	8.3	5.6
MIN	3.0	18	56	89	69	87	35	25	14	7.3	4.6	3.6
AC-FT	1,990	24,530	5,760	30,330	8,720	7,610	4,020	2,300	1,270	634	362	278

CALENDAR YEAR 1963 MAX 2,760 MIN 2.9 MEAN 182 AC-FT 131,700
WATER YEAR 1963-64 MAX 4,160 MIN 3.0 MEAN 121 AC-FT 87,800

Peak discharge (base, 2,800 cfs).--Jan. 20 (0600) 6,760 cfs (13.63 ft).

* Discharge measurement made on this day.

11-4777. South Fork Van Duzen River near Bridgeville, Calif.--Continued.

Records available.--Water temperatures: November 1960 to September 1964.Extremes.--Maximum temperature during year, 76°F July 24-27; minimum, 38°F Jan. 18-20, Mar. 7.
1960-64: Maximum temperature, 81°F July 13, 1961; minimum, 32°F Feb. 27 to Mar. 1, 1962.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	64	60	49	46	47	46	46	46	45	45	43	42	46	45	49	46	64	58	65	61	68	63	61	57
2	64	61	50	49	46	45	46	46	45	44	42	41	45	44	47	44	64	58	68	60	69	60	60	55
3	63	60	50	48	46	45	46	43	45	44	43	41	46	42	48	44	62	58	67	60	70	60	62	56
4	61	60	49	49	46	45	44	42	45	44	44	43	48	44	48	45	60	58	66	60	71	62	62	56
5	60	58	49	48	46	46	43	41	45	44	44	42	48	44	48	46	58	58	68	61	71	62	62	57
6	60	58	48	48	47	46	44	42	44	42	42	41	47	44	54	44	58	56	70	59	70	62	62	58
7	60	57	48	47	46	44	44	42	45	43	42	38	49	44	55	46	58	54	70	62	70	62	61	57
8	60	57	50	48	45	44	44	43	45	44	43	41	51	45	58	50	56	53	67	60	70	62	62	57
9	60	60	51	50	44	44	43	43	45	44	44	43	51	47	60	50	54	52	66	65	70	62	62	57
10	60	57	51	49	44	42	43	41	45	44	44	42	50	46	60	52	57	52	68	58	72	63	63	58
11	57	56	51	49	42	41	42	41	44	44	44	42	49	47	60	52	63	54	72	62	70	64	64	58
12	56	56	50	49	42	41	43	42	44	42	42	42	50	46	60	52	64	56	74	64	70	63	64	59
13	57	56	50	50	44	42	42	40	43	42	43	41	52	46	58	54	64	56	74	66	70	63	63	59
14	58	57	51	50	44	42	40	40	43	41	44	42	53	48	58	50	66	58	71	65	70	62	62	58
15	58	56	50	48	44	43	40	39	42	41	46	44	53	48	60	51	63	58	69	64	68	62	62	58
16	57	56	48	47	44	42	41	41	42	40	46	43	52	48	59	52	62	56	71	62	68	60	63	58
17	57	56	48	47	44	43	41	39	42	40	46	44	51	46	56	50	60	58	72	62	68	61	62	61
18	56	56	48	48	44	42	39	38	43	40	46	44	51	45	57	52	60	56	70	64	67	61	61	56
19	56	56	48	48	45	44	39	38	44	41	46	43	52	46	60	54	62	56	70	62	66	59	60	56
20	56	56	48	46	45	44	42	38	44	41	46	44	52	47	60	54	64	56	71	62	70	60	62	59
21	56	56	46	45	44	44	42	42	45	43	44	43	53	48	60	53	66	58	70	62	70	64	60	56
22	56	54	47	46	44	44	42	42	45	43	44	42	52	48	61	53	69	58	72	62	71	64	64	58
23	54	52	48	47	44	43	42	42	46	43	43	42	48	45	62	52	70	61	74	62	71	64	66	61
24	52	52	48	48	44	42	42	42	46	43	44	42	48	44	62	56	70	61	76	65	70	63	66	62
25	54	52	48	48	44	44	44	42	44	41	45	42	52	45	62	56	70	60	76	66	70	63	66	62
26	53	52	49	48	45	44	44	43	44	41	46	43	55	44	60	56	66	61	76	66	68	62	63	58
27	52	48	49	48	48	45	44	44	44	41	46	43	56	44	56	54	65	57	76	65	66	65	60	57
28	51	48	48	47	48	48	44	43	44	42	47	43	58	50	60	54	67	57	72	68	65	60	59	58
29	52	51	48	47	48	48	44	44	43	41	48	45	57	51	63	54	68	60	75	66	64	58	58	56
30	51	48	47	46	48	47	44	43	44	43	48	46	51	46	64	56	67	60	72	66	64	59	58	56
31	50	48	-----	-----	47	46	45	44	-----	-----	48	46	-----	-----	66	58	-----	-----	68	62	62	57	-----	-----
Avg	57	55	49	48	45	44	43	42	44	42	45	43	51	46	58	51	63	57	71	63	69	62	62	58

11-4785. Van Duzen River near Bridgeville, Calif.

Location.--Lat 40°27'50", long 123°51'25", in E½ sec.17, T.1 N., R.3 E., on downstream side of right pier of bridge on State Highway 36, 0.3 mile downstream from Pip Creek, 0.5 mile upstream from Rogers Creek, and 4 miles west of Bridgeville.

Drainage area.--216 sq mi.

Records available.--October 1950 to September 1964.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 400 ft (from Topographic map).

Average discharge.--14 years, 884 cfs (640,000 acre-ft per year).

Extremes.--Maximum discharge during year, 32,000 cfs Jan. 20 (gage height, 18.10 ft); minimum, 8.0 cfs Sept. 26, 27.
1950-64: Maximum discharge, 43,500 cfs Dec. 22, 1955 (gage height, 21.3 ft, from floodmarks), from rating curve extended above 20,000 cfs on basis of slope-area measurement of maximum flow; minimum, 5.0 cfs Sept. 13, 1959.

Remarks.--Records good. No storage or large diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 17 to Sept. 30)

2.1	8.0	3.0	120	6.0	2,300
2.2	11	3.5	280	9.0	7,000
2.3	16	4.0	500	12.0	13,300
2.5	33	5.0	1,260	16.0	24,300
2.7	60				

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	*82	548	614	2,920	482	*739	*196	96	44	20	11
2	11	116	475	936	2,000	614	614	199	90	44	20	*11
3	11	122	420	662	1,590	490	518	240	88	43	20	11
4	*11	1,100	380	566	1,380	*490	470	252	*88	43	20	11
5	20	886	348	490	1,240	627	440	222	98	46	19	11
6	54	3,310	*332	*1,850	*1,080	676	410	205	130	43	18	10
7	43	1,400	300	2,590	928	596	384	187	151	37	17	10
8	28	4,930	356	1,400	816	518	364	181	135	37	16	10
9	28	5,620	792	1,260	739	578	352	175	125	38	16	10
10	52	1,970	530	1,180	690	512	344	172	116	37	16	10
11	295	1,150	420	928	641	1,080	324	166	107	35	15	10
12	181	776	368	776	572	1,220	312	157	98	34	15	10
13	102	608	344	784	536	1,060	300	151	92	33	15	10
14	73	5,880	328	768	490	992	292	148	88	32	14	10
15	246	4,470	304	669	518	1,020	292	138	84	32	14	10
16	372	2,320	284	884	490	1,000	288	138	80	32	14	10
17	187	1,510	264	2,410	445	928	268	178	76	30	14	10
18	120	1,120	252	3,290	425	880	252	157	74	28	14	10
19	94	3,200	334	6,090	410	725	236	140	71	28	14	10
20	76	2,530	1,060	21,700	384	662	219	135	69	28	13	10
21	71	1,490	669	7,070	364	732	212	128	67	28	13	10
22	410	1,200	500	3,800	352	832	208	122	64	26	13	10
23	823	6,410	425	2,360	336	760	212	118	60	25	12	9.2
24	340	4,180	384	2,600	328	776	196	113	57	23	12	9.2
25	376	2,290	388	4,050	316	690	190	109	54	23	12	8.6
26	284	1,560	384	3,100	296	655	178	113	50	22	11	8.3
27	202	1,170	739	2,300	288	627	172	142	48	22	11	8.3
28	154	912	1,470	1,880	292	614	169	122	48	20	11	8.3
29	128	732	1,220	2,360	292	596	169	111	*48	20	11	8.3
30	107	608	848	1,290	-----	578	166	105	48	20	11	*8.6
31	92	-----	669	2,270	-----	554	-----	100	-----	20	11	-----
Total	5,002	63,652	16,135	82,927	21,158	22,564	9,290	4,820	2,500	973	452	293.8
Mean	161	2,122	520	2,675	730	728	310	155	83.3	31.4	14.6	9.79
Max	823	6,410	1,470	21,700	2,920	1,220	739	252	151	46	20	11
Min	11	82	252	490	288	482	166	100	48	20	11	8.3
Ac-ft	9,920	126,300	32,000	164,500	41,970	44,760	18,430	9,560	4,960	1,930	897	58.3

Calendar year 1963: Max 12,400 Min 11 Mean 945 Ac-ft 684,500
Water year 1963-64: Max 21,700 Min 8.3 Mean 628 Ac-ft 455,800

Peak discharge (base, 9,100 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-14	1400	10.97	10,900	1-20	0800	18.10	32,000
11-23	1400	10.27	9,440				

EEL RIVER BASIN

11-4785. Van Duzen River near Bridgeville, Calif.--Continued

Records available.--Water temperatures: November 1960 to September 1964.

Extremes.--Maximum temperature during year, 78°F July 26; minimum, 41°F Dec. 12-14, Jan. 6, Feb. 17, March 7, 8, 11-13.
1960-64: Maximum temperature, 80°F July 11, 12, 1961; minimum, 38°F Jan. 12-16, 1963.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.		
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	
1	72	62	49	46	46	46	46	44	44	44	44	43	49	46	53	49	62	60	62	60	74	62	65	58	
2	65	63	50	48	46	45	46	46	44	44	44	43	42	46	45	50	48	66	59	70	58	74	62	64	56
3	66	62	50	48	45	45	46	44	44	44	44	42	42	46	44	48	48	63	60	67	60	76	59	66	57
4	64	62	49	48	45	44	44	43	44	44	45	42	49	46	49	48	62	60	61	58	76	63	64	58	
5	62	62	49	49	45	44	43	42	44	44	45	43	48	47	49	48	62	60	68	58	76	62	64	58	
6	64	62	49	48	46	44	42	41	44	42	43	42	48	46	52	46	61	60	70	62	74	62	63	57	
7	65	61	48	48	46	45	43	42	42	42	42	41	50	47	55	50	60	58	74	62	69	62	63	57	
8	64	61	51	48	45	45	43	43	42	42	43	41	52	48	54	52	58	57	66	62	72	62	62	56	
9	63	62	51	51	45	44	44	43	43	42	44	42	51	50	58	53	57	56	70	58	74	62	63	56	
10	63	60	51	50	44	44	44	43	43	43	43	42	50	47	58	55	59	56	72	59	74	62	62	54	
11	61	59	50	50	44	42	43	42	44	43	43	41	51	48	57	55	64	57	75	62	64	62	62	54	
12	59	57	50	50	42	41	42	42	44	43	42	41	51	48	60	55	61	59	74	64	72	60	61	55	
13	59	58	50	50	41	41	42	42	43	42	42	41	53	49	58	54	66	58	73	62	66	62	60	56	
14	61	58	51	50	42	41	42	42	42	42	44	42	56	51	58	52	64	61	66	62	70	59	62	56	
15	61	60	50	49	42	42	42	42	42	42	45	44	55	52	60	53	66	60	70	63	70	59	62	55	
16	60	58	49	47	42	42	43	42	42	42	45	44	53	50	58	54	65	59	73	62	71	57	62	54	
17	59	59	48	48	43	42	43	43	42	41	45	45	52	49	58	54	62	60	68	62	70	60	63	58	
18	59	58	48	48	43	42	43	42	43	42	45	45	53	48	57	56	66	57	74	61	70	60	60	57	
19	58	57	48	48	44	43	43	42	44	42	45	45	53	48	61	55	64	59	74	61	66	59	60	53	
20	58	58	48	47	45	44	43	43	44	42	46	45	55	51	61	56	67	59	74	61	71	58	62	58	
21	58	58	47	45	45	44	43	42	46	43	45	44	54	51	60	56	68	60	66	63	72	60	60	54	
22	58	56	45	45	44	44	42	42	46	44	44	43	53	51	61	56	70	60	73	60	71	62	61	53	
23	56	54	47	45	44	44	42	42	46	44	44	42	51	48	63	56	71	62	75	62	71	62	63	56	
24	54	54	47	47	44	43	42	42	46	44	44	42	49	47	63	58	71	62	76	62	70	60	63	57	
25	54	54	47	46	44	43	42	42	46	43	44	43	53	48	64	57	71	62	77	62	70	60	60	57	
26	54	54	48	47	44	44	42	42	44	42	46	44	55	50	65	62	69	61	78	61	68	60	58	54	
27	54	51	48	48	46	44	43	42	44	42	46	45	56	52	62	57	69	58	75	62	66	58	57	52	
28	52	50	48	47	48	46	43	43	44	43	48	46	58	53	60	57	70	58	66	62	67	59	57	54	
29	51	49	47	46	48	48	43	43	43	42	49	48	56	53	62	56	70	60	74	62	67	59	56	54	
30	51	49	46	46	48	47	43	43	-----	-----	49	48	53	50	62	58	68	60	65	61	62	58	55	51	
31	49	48	-----	-----	47	46	44	43	-----	-----	49	49	-----	-----	66	58	-----	-----	67	58	64	55	-----	-----	
Avg	59	57	49	48	45	44	43	43	44	43	44	43	52	49	58	54	65	59	71	61	70	60	61	56	

11-4797. Elk River near Falk, Calif.

Location.--Lat 40°42'10", long 124°09'20", in NW¼ sec.26, T.4 N., R.1 W., on left bank 500 ft downstream from Clapp Gulch, 1,300 ft downstream from confluence of North and South Forks, 2 miles northwest of Falk, and 5 miles south of Eureka.

Drainage area.--44.2 sq mi.

Records available.--October 1957 to September 1964.

Gage.--Water-stage recorder (digital). Altitude of gage is 50 ft (from topographic map).

Average discharge.--7 years, 80.8 cfs (58,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,950 cfs Jan. 20 (gage height, 27.13 ft); minimum, 0.8 cfs Sept. 25-30.

1957-64: Maximum discharge, 3,220 cfs Feb. 14, 1959 (gage height, 27.62 ft); minimum, 0.4 cfs Oct. 6-10, 1961, Sept. 14-23, 26-28, 1962.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. No storage or large diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	1.3	13	56	65	700	70	194	18	*8.5	6.1	3.5	1.4
2	1.3	17	50	116	210	226	180	20	7.7	6.1	3.0	1.2
3	1.3	15	46	102	150	142	119	44	7.1	5.9	2.4	1.3
4	*1.3	33	41	78	110	84	91	36	7.2	5.8	2.2	1.4
5	12	42	38	65	90	*128	76	33	7.1	5.8	2.1	1.5
6	17	217	41	708	72	305	63	68	9.9	5.7	2.0	1.5
7	9.2	114	37	1,110	*61	270	54	49	7.9	5.5	1.8	1.5
8	5.5	*540	73	382	53	162	47	36	6.3	5.4	1.9	1.4
9	4.7	1,400	150	224	47	131	41	30	3.8	5.0	1.8	1.4
10	8.8	300	*112	181	43	111	38	26	2.7	4.5	1.9	1.4
11	29	145	75	141	43	573	35	24	2.2	4.3	1.9	1.4
12	19	108	56	110	38	667	32	22	1.9	4.1	1.9	1.3
13	11	85	47	152	36	509	29	21	1.7	4.5	2.0	1.4
14	7.7	200	41	205	35	279	26	19	1.5	4.9	1.9	1.3
15	67	390	36	138	107	185	25	17	1.4	6.2	1.8	1.4
16	44	260	32	122	123	134	24	16	1.4	5.8	1.8	1.4
17	22	180	30	425	84	101	24	15	1.4	5.0	1.7	1.3
18	15	132	28	1,010	64	84	22	13	2.1	4.4	1.7	1.3
19	12	225	30	1,280	55	70	20	13	1.9	4.1	1.7	1.2
20	9.6	178	52	2,130	49	61	19	12	1.7	3.6	1.7	1.1
21	8.2	142	47	875	43	79	16	11	1.5	3.7	1.7	1.0
22	47	112	42	669	38	220	15	11	1.3	3.6	1.7	1.0
23	112	162	37	525	35	291	15	10	1.2	3.4	1.7	1.0
24	41	235	35	379	32	303	14	10	1.1	3.1	1.5	.9
25	43	150	35	286	30	277	13	10	1.0	2.9	1.3	.8
26	39	122	34	201	28	*174	13	10	*9.2	2.7	1.4	.9
27	28	100	38	144	26	128	12	11	8.0	2.6	1.4	.8
28	22	86	215	111	26	101	*12	10	7.5	2.4	*1.5	*.8
29	18	74	216	164	30	82	12	9.3	7.0	2.5	1.4	.8
30	15	64	116	192	-----	70	12	9.0	6.4	2.5	1.4	.8
31	14	-----	*78	272	-----	60	-----	8.9	-----	2.5	1.4	-----
TOTAL	685.9	5,841	1,964	12,562	2,458	6,077	1,293	642.2	525.6	134.6	57.1	35.9
MEAN	22.1	195	63.4	405	84.8	196	43.1	20.7	17.5	4.34	1.84	1.20
AC-FT	1,360	11,590	3,900	24,920	4,880	12,050	2,560	1,270	1,040	267	113	71
MAX	112	1,400	216	2,130	700	667	194	68	79	6.2	3.5	1.5
MIN	1.3	13	28	65	26	60	12	8.9	6.4	2.4	1.3	0.8

CALENDAR YEAR 1963: MAX 1,480 MIN 1.2 MEAN 86.2 AC-FT 62,400
 WATER YEAR 1963-64: MAX 2,130 MIN 0.8 MEAN 88.2 AC-FT 64,020

Peak discharge (base, 1100 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-9	0130	21.19	1950	1-20	0715	27.13	2950
1-6	2215	22.50	2140	2-1	0100	15.23	1100
1-17	2130	16.12	1220	3-11	1900	18.52	1550

* Discharge measurement made on this day.

Note.---No gage-height record Nov. 9 to Dec. 10, Feb. 1-6.

11-4800. Jacoby Creek near Freshwater, Calif.

Location.--Lat 40°47'30", long 124°00'10", in NW¼ sec.30, T.5 N., R.2 E., on left bank 300 ft downstream from unnamed tributary, 3.7 miles northeast of Freshwater, and 6.5 miles southeast of Arcata.

Drainage area.--6.07 sq mi.

Records available.--December 1954 to September 1964, discontinued as a continuous-record station; converted to a crest-stage partial-record station.

Gage.--Water-stage recorder (digital) and concrete control. Altitude of gage is 800 ft (from topographic map).

Average discharge.--9 years (1955-64), 15.1 cfs (10,930 acre-ft per year).

Extremes.--Maximum discharge during year, 900 cfs Jan. 20 (gage height, 5.03 ft); minimum, 0.8 cfs Oct. 1-4.

1954-64: Maximum discharge, 1,670 cfs Dec. 30, 1954 (gage height, 7.20 ft), from rating curve extended above 670 cfs on basis of critical-depth measurement at gage height 6.75 ft; minimum, 0.6 cfs Sept. 24, 1957.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-30, Jan. 27, 28, Feb. 4-17)
Mar. 2 to Apr. 4, Sept. 23-28)

0.6	0.8	1.1	5.8	2.0	92
.7	1.0	1.3	18	2.5	180
.8	1.3	1.5	30	3.0	280
.9	1.9	1.8	63	4.0	560
1.0	2.9				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	0.8	1.9	7.1	22	117	11	32	5.4	2.8	2.0	1.7	1.1
2	.8	3.0	*6.1	38	56	*26	22	4.0	2.8	2.0	1.2	1.1
3	.8	2.7	5.5	26	36	20	18	9.5	2.8	1.9	1.1	1.1
4	.8	*10	5.1	21	25	18	16	3.4	2.8	2.0	1.0	1.1
5	3.6	11	4.9	18	22	32	15	4.4	2.9	2.0	1.1	1.1
6	2.1	25	8.6	238	19	42	13	5.3	8.1	1.9	1.2	1.1
7	1.2	15	6.2	232	16	36	11	3.6	18	1.7	1.2	1.1
8	1.1	192	21	63	14	26	11	3.2	10	1.8	1.2	1.1
9	1.0	133	49	35	13	27	10	3.3	8.2	1.6	1.4	1.1
10	2.4	34	24	28	12	22	9.0	3.3	6.1	1.5	1.5	1.1
11	3.4	20	18	22	12	97	8.6	3.3	4.8	1.5	1.4	1.1
12	2.1	14	14	19	10	104	8.0	3.0	4.3	1.4	1.3	1.1
13	1.4	10	12	26	9.6	78	7.6	2.8	3.9	1.3	1.4	1.1
14	1.2	32	9.7	27	11	41	7.2	2.8	3.5	1.4	1.4	1.1
15	10	70	8.4	21	20	28	6.8	2.5	3.4	2.0	1.3	1.1
16	3.4	42	7.3	21	18	21	6.5	2.5	3.3	1.6	1.2	1.0
17	2.3	26	6.5	69	15	17	6.2	2.5	4.1	1.5	1.3	1.0
18	1.8	21	6.1	192	13	15	6.0	2.5	4.2	1.4	1.3	1.0
19	1.4	41	6.8	254	12	13	5.7	2.5	3.5	1.3	1.2	1.0
20	1.3	36	9.2	*546	10	14	5.5	2.5	3.2	1.2	1.3	1.0
21	1.3	23	7.8	151	9.4	28	5.3	2.5	3.2	1.3	1.2	1.0
22	19	17	6.6	86	8.6	31	5.1	3.1	2.9	1.3	1.2	1.0
23	13	27	5.8	66	8.0	28	4.9	3.2	2.7	1.2	1.2	1.0
24	5.1	28	5.0	78	7.5	29	4.8	3.2	2.5	1.2	1.2	1.0
25	15	22	5.5	62	7.0	26	4.6	3.2	2.4	1.2	1.2	1.0
26	6.4	18	5.6	43	6.4	*20	4.5	3.5	*2.5	1.2	1.2	1.0
27	3.4	15	11	29	6.0	18	4.4	*3.5	2.3	1.3	1.2	1.0
28	2.8	13	51	24	6.1	15	*4.0	3.4	2.1	1.4	1.2	*1.0
29	2.5	10	33	43	6.8	14	3.8	3.2	2.1	1.4	1.1	1.0
30	2.1	8.6	*19	38	-----	12	4.5	3.0	2.0	1.4	1.1	1.0
31	2.0	-----	13	*78	-----	12	-----	2.8	-----	1.4	*1.1	-----
TOTAL	115.5	921.2	398.8	2,616	526.4	921	271.0	106.9	127.4	47.3	38.6	31.5
MEAN	3.73	30.7	12.9	84.4	18.2	29.7	9.03	3.45	4.25	1.53	1.25	1.05
AC-FT	229	1,830	791	5,190	1,040	1,830	538	212	253	94	77	62
MAX	19	192	51	546	117	104	32	9.5	18	2.0	1.7	1.1
MIN	0.8	1.9	4.9	18	6.0	11	3.8	2.5	2.0	1.2	1.0	1.0
CALENDAR YEAR 1963: MAX 202 MIN 0.8 MEAN 15.2 AC-FT 11,010												
WATER YEAR 1963-64: MAX 546 MIN 0.8 MEAN 16.7 AC-FT 12,150												
Peak discharge (base, 300 cfs)												
Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge					
11-8	2100	3.76	488	1-20	0245	5.03	900					
1-6	1900	4.01	563									

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 31 to Nov. 2, Feb. 18 to Mar. 1, Apr. 5-27, May 28 to June 3, Sept. 1-22, 29-30.

11-4805. Mad River near Forest Glen, Calif.

Location.--Lat 40°27'30", long 123°30'35", in SW¼ sec.16, T.1 N., R.6 E., on right bank 0.7 mile downstream from Lamb Creek and 7.0 miles northwest of Forest Glen.

Drainage area.--143 sq mi.

Records available.--June 1953 to September 1964.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 2,410 ft (from topographic map). Prior to Dec. 22, 1955, water-stage recorder at site 0.7 mile upstream at different datum. Jan. 13 to June 18, 1956, wire-weight gage at former site at datum 4.17 ft lower than former datum.

Average discharge.--11 years, 349 cfs (252,700 acre-ft per year).

Extremes.--Maximum discharge during year, 7,300 cfs Jan. 20 (gage height, 9.93 ft); minimum daily, 9.0 cfs Oct. 10.

1953-64: Maximum discharge, 39,200 cfs Dec. 22, 1955 (gage height, 24.5 ft, from floodmarks, present datum), from rating curve extended above 8,100 cfs on basis of slope-area measurement of maximum flow; minimum daily, 0.6 cfs Sept. 15, 1961.

Remarks.--Records good. Flow regulated by Ruth Reservoir beginning in July 1961 (capacity, 42,000 acre-ft). No diversion above station.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1963, superseding those published in 1963 Report, are given herewith:

Dec. 15, 1962..... 926
Mar. 28, 1963..... 2,540

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
December 1962.....	18,033	1,100	400	582	35,770
Calendar year 1962.	-	3,840	4.8	264	191,200
March 1963.....	21,120	4,230	98	681	41,890
Water year 1962-63.	-	4,410	16	508	367,800

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	166	29	387	160	1,280	259	271	77	74	23	94	98
2	195	30	382	166	1,240	195	243	77	72	21	96	98
3	*213	33	378	160	1,080	*155	217	79	*70	23	96	*96
4	158	72	373	157	940	86	199	77	70	36	96	96
5	90	101	*369	143	*828	48	185	77	72	35	96	96
6	88	199	369	199	730	48	157	77	74	45	96	96
7	79	123	364	247	646	46	138	77	74	76	94	96
8	49	279	378	*163	574	45	135	76	72	94	94	98
9	10	360	382	103	512	46	133	72	74	94	94	96
10	9.0	307	382	67	460	45	133	67	72	94	94	96
11	25	320	378	49	436	61	130	58	70	92	94	96
12	59	333	373	45	423	72	116	43	70	92	94	96
13	59	369	373	45	418	77	98	43	70	92	94	96
14	48	760	360	43	414	83	96	43	67	92	94	96
15	38	517	329	42	414	92	96	43	67	94	96	94
16	35	432	275	52	409	88	96	45	67	92	96	94
17	31	396	243	142	409	86	96	43	67	92	96	96
18	30	378	206	149	405	77	94	43	67	92	96	92
19	30	617	163	331	400	74	94	43	67	92	96	92
20	30	475	160	4,470	396	96	92	43	64	94	96	92
21	30	418	146	5,010	391	130	83	43	64	94	96	92
22	37	418	143	2,600	391	169	83	43	59	92	96	92
23	43	807	141	1,620	387	220	81	42	62	92	96	92
24	61	574	141	1,180	387	220	79	42	52	92	96	92
25	74	470	141	1,340	382	231	79	42	32	92	96	92
26	72	432	146	1,470	382	227	79	50	22	92	96	92
27	70	423	160	1,350	382	209	79	69	27	92	96	92
28	62	409	202	1,190	360	217	77	76	30	92	98	92
29	48	400	189	1,150	311	227	77	74	25	94	98	92
30	*42	391	169	1,240	-----	224	*77	74	*21	94	98	92
31	29	-----	163	1,190	-----	*251	-----	74	-----	94	98	-----
TOTAL	2,010.0	10,872	8,365	26,273	15,787	4,104	3,613	1,832	1,794	2,485	2,966	2,830
MEAN	64.8	362	270	848	544	132	120	59.1	59.8	80.2	95.7	94.3
MAX	213	807	387	5,010	1,280	259	271	79	74	94	98	98
MIN	9.0	29	141	42	311	45	77	42	21	21	94	92
AC-FT	3,990	21,560	16,590	52,110	31,310	8,140	7,170	3,630	3,560	4,930	5,880	5,610

CALENDAR YEAR 1963: MAX 4,410 MIN 9.0 MEAN 433 AC-FT 313,400
WATER YEAR 1963-64: MAX 5,010 MIN 9.0 MEAN 227 AC-FT 163,500

* Discharge measurement made on this day.

MAD RIVER BASIN

11-4805. Mad River near Forest Glen, Calif.--Continued.

Records available.--Water temperatures: November 1960 to September 1964.

Extremes.--Maximum temperature during year, 71°F July 6; minimum, 38°F Feb. 6.

1960-64: Maximum temperature recorded, 79°F June 25, 1961; minimum, 35°F Jan. 24, 1962.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	64	61	51	49	47	47	44	44	40	40	42	42	45	43	47	45	59	54	70	64	62	58	59	56
2	64	61	52	50	47	47	45	44	40	40	43	41	44	42	46	44	59	54	68	62	62	58	61	56
3	62	60	52	52	47	47	44	43	40	40	43	41	46	42	48	45	58	54	70	62	62	56	61	55
4	62	61	52	52	47	47	44	43	40	40	43	42	47	42	48	46	57	56	70	64	63	58	61	56
5	62	60	52	51	47	46	44	43	40	40	43	42	47	42	48	47	57	56	70	63	63	58	61	56
6	61	60	51	49	46	46	43	43	40	38	44	41	47	42	51	44	57	56	71	64	63	56	61	58
7	61	60	51	50	46	46	43	43	40	39	44	41	48	43	52	47	57	55	67	61	63	57	61	57
8	62	61	52	51	46	46	43	42	40	40	44	40	49	44	54	48	56	54	64	56	63	58	61	58
9	61	61	52	52	46	46	43	42	40	40	44	42	48	44	56	50	54	54	62	54	63	58	61	56
10	61	59	52	52	46	46	43	42	41	40	44	41	49	44	56	52	60	54	64	54	63	58	61	56
11	59	58	52	51	46	46	42	41	41	40	43	40	49	45	57	52	62	56	64	56	63	58	61	56
12	59	58	51	51	46	46	41	41	41	40	40	40	49	44	60	54	63	58	65	57	63	58	61	57
13	60	59	51	51	46	46	41	41	41	40	43	40	50	44	60	55	63	58	66	58	63	58	61	57
14	60	60	51	51	46	46	41	41	41	40	44	42	51	45	58	54	64	58	64	58	63	58	61	58
15	60	59	51	50	46	46	41	40	41	40	45	43	51	45	58	52	63	60	64	58	63	58	62	58
16	59	58	50	50	46	46	41	40	41	40	45	41	50	45	56	52	62	56	64	56	63	57	62	58
17	59	58	50	50	46	45	41	41	41	40	46	42	50	44	57	51	61	58	64	56	63	58	62	60
18	60	59	50	50	45	45	41	40	41	40	46	44	50	44	58	54	62	56	63	58	63	58	60	57
19	60	59	50	49	45	45	40	40	42	40	47	43	50	44	61	55	60	56	65	56	62	56	60	57
20	59	59	50	49	46	45	43	40	42	40	46	44	51	44	60	56	62	57	63	56	63	58	62	58
21	59	59	49	49	46	45	42	42	42	40	44	42	52	47	61	54	64	57	63	57	64	58	60	56
22	59	58	49	49	45	44	42	42	42	40	44	42	51	47	61	54	64	58	63	55	64	58	63	58
23	58	56	49	49	45	44	42	42	42	40	44	42	47	44	62	54	66	59	63	56	64	58	64	60
24	56	56	49	48	44	43	42	41	43	41	44	42	48	45	63	56	65	58	64	58	64	58	64	60
25	58	56	48	48	44	43	41	41	42	40	44	42	51	46	61	55	67	60	64	58	64	58	64	60
26	58	56	48	48	44	44	41	40	42	40	46	42	53	48	58	56	67	62	64	58	63	57	63	59
27	56	54	48	48	45	44	40	40	43	41	46	42	54	48	56	54	66	59	64	58	62	58	62	59
28	55	52	48	47	46	45	40	40	42	41	46	42	55	49	57	52	67	59	64	59	62	58	62	59
29	54	54	47	47	46	46	40	40	43	42	46	42	54	50	59	54	69	62	64	59	62	56	62	59
30	55	52	47	47	46	45	40	40	-----	-----	46	43	50	46	60	54	68	62	64	59	62	58	62	59
31	52	51	-----	-----	45	44	40	40	-----	-----	45	43	-----	-----	60	54	-----	-----	63	56	60	56	-----	-----
Avg	59	58	50	50	46	45	42	41	41	40	44	42	50	45	56	52	62	57	65	58	63	57	62	58

11-4808. North Fork Mad River near Korbel, Calif.

Location.--Lat 40°53'10", long 123°56'30", in SW¼ sec.22, T.6 N., R.2 E., on left bank 0.5 mile downstream from Bald Mountain Creek, 1.2 miles northeast of Korbel, and 2.5 miles east of town of Blue Lake.

Drainage area.--40.5 sq mi.

Records available.--October 1957 to September 1964 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 250 ft (from topographic map).

Average discharge.--7 years, 137 cfs (99,180 acre-ft per year).

Extremes.--Maximum discharge during year, 8,400 cfs Jan. 20 (gage height, 15.75 ft); minimum, 1.6 cfs Sept. 26, 27.
1957-64: Maximum discharge, that of Jan. 20, 1964; minimum, 1.0 cfs Sept. 12, 1959.

Remarks.--Records fair. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.9	42	90	160	724	136	96	39	22	13	7.4	3.2
2	1.8	98	*83	233	411	*188	96	27	22	13	6.5	3.0
3	1.7	66	78	165	290	139	81	71	23	12	5.7	3.0
4	1.7	*139	74	135	220	123	73	36	24	12	5.6	3.0
5	13	121	71	115	180	185	68	29	35	12	5.3	3.0
6	13	235	73	1,240	143	220	61	27	85	11	5.0	2.9
7	6.4	189	67	1,140	117	188	58	26	60	11	4.8	2.9
8	5.1	4,180	148	383	99	139	53	24	40	11	4.8	2.8
9	4.6	*1,670	285	317	86	150	53	23	25	11	4.7	2.7
10	6.5	421	153	272	78	123	51	22	20	9.3	4.8	2.6
11	21	245	111	205	73	407	47	21	21	8.0	4.8	2.6
12	11	173	100	160	63	610	42	20	21	7.4	5.1	2.6
13	7.4	139	90	203	58	548	40	19	20	6.9	4.8	2.4
14	6.0	368	83	213	59	317	37	19	20	7.6	4.7	2.5
15	38	393	78	160	137	233	36	18	20	20	4.4	2.5
16	20	263	73	198	115	183	34	18	22	14	4.2	2.4
17	11	198	69	702	84	153	32	17	21	11	4.2	2.5
18	8.0	183	65	1,150	69	127	31	17	19	8.7	4.1	2.4
19	6.7	343	71	2,340	63	109	30	17	18	7.3	4.1	2.4
20	6.1	317	109	*4,840	58	115	28	17	17	6.9	4.0	2.1
21	7.0	203	105	1,360	50	223	28	17	16	6.7	3.9	2.0
22	125	158	84	768	44	284	28	17	15	6.9	3.7	2.0
23	165	267	74	567	38	263	27	17	15	7.0	3.6	1.9
24	81	326	67	955	35	240	26	18	14	7.0	3.5	1.8
25	162	228	65	670	32	*203	25	19	14	6.7	3.5	1.7
26	92	180	73	456	30	170	25	27	*14	6.4	3.5	1.7
27	66	140	158	311	27	141	*24	26	15	6.0	3.5	1.7
28	54	116	464	240	40	121	22	*24	13	5.8	3.5	*1.7
29	47	104	284	445	45	105	21	23	13	5.6	3.2	1.8
30	40	97	*178	*335	-----	94	23	23	13	5.3	3.1	1.8
31	36	-----	137	602	-----	89	-----	23	-----	5.6	*3.2	-----
Total	1,065.9	11,602	3,660	21,040	3,468	6,326	1,296	741	697	282.1	137.2	71.6
Mean	34.4	387	118	679	120	204	43.2	23.9	23.2	9.10	4.43	2.39
Max	165	4,180	464	4,840	724	610	96	71	85	20	7.4	3.2
Min	1.7	42	65	115	27	89	21	17	13	5.3	3.1	1.7
Ac-ft	2,110	23,010	7,260	41,730	6,880	12,550	2,570	1,470	1,380	560	272	142

Calendar year 1963: Max 4,180 Min 1.7 Mean 153 Ac-ft 110,900

Water year 1963-64: Max 4,840 Min 1.7 Mean 138 Ac-ft 99,930

Peak discharge (base, 1,500 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-8	2000	15.55	8,080	1-17	1700	9.07	1,710
1-6	1800	10.70	2,770	1-20	0400	15.75	8,400

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 26 to Dec. 2, Dec. 12, 13, May 6 to June 25, July 23-28.

MAD RIVER BASIN

11-4810. Mad River near Arcata, Calif.

Location.--Lat 40°54'35", long 124°03'35", in NW¼ sec.15, T.6 N., R.1 E., on right bank 100 ft upstream from bridge on U. S. Highway 299, 1.0 mile downstream from Warren Creek, and 2.8 miles northeast of Arcata.

Drainage area.--484 sq mi.

Records available.--October 1910 to September 1913, August 1950 to September 1964. Monthly discharge only for some periods published in WSP 1315-B.

Gage.--Water-stage recorder with thermograph attachment. Datum of gage is 17.79 ft above mean sea level, datum of 1929, supplementary adjustment of 1956. December 1910 to September 1913 staff gage at site 0.1 mile upstream at different datum. Aug. 15, 1950, to July 23, 1956, water-stage recorder at site 0.6 mile upstream at datum 6.00 ft higher. Aug. 29 to Oct. 26, 1961, auxiliary water-stage recorder at site 0.5 mile downstream at different datum.

Average discharge.--17 years, 1,516 cfs (1,098,000 acre-ft per year).

Extremes.--Maximum discharge during year, 45,200 cfs Jan. 20 (gage height, 16.04 ft); minimum daily, 33 cfs Oct. 21. 1910-13, 1950-64: Maximum discharge, 77,800 cfs Dec. 22, 1955 (gage height, 27.30 ft, site and datum then in use), from rating curve extended above 34,000 cfs on basis of slope-area measurement of maximum flow; minimum, 16 cfs Sept. 8, 9, 1951, Sept. 11, 1959.

Remarks.--Records good except those for periods of no gage-height record and those below 200 cfs, which are fair. Flow regulated by Ruth Reservoir beginning in July 1961 (usable capacity, 42,000 acre-ft). Since 1938, approximately 5.4 cfs diverted daily above station for municipal supply of City of Eureka.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water year 1963, superseding figures published in 1963 Report, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1963		1963-Con.		1963-Con.		1963-Con.		1963-Con.	
Sept. 4	190	Sept. 10	300	Sept. 16	290	Sept. 21	280	Sept. 26	175
5	250	11	300	17	295	22	270	27	160
6	280	12	300	18	300	23	260	28	140
7	300	13	295	19	300	24	240	29	155
8	300	14	290	20	290	25	200	30	160
9	300	15	290						

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
September 1963.....	7,405	300	140	247	14,690
Water year 1962-63.....	-	15,700	60	1,761	1,275,000

11-4810. Mad River near Arcata, Calif.--Continued.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	159	127	1,120	1,420	8,520	1,100	1,680	470	232	a140	154	99
2	180	232	*1,010	2,250	4,960	*1,700	1,530	460	229	a135	146	99
3	205	202	935	1,700	3,960	1,310	1,290	782	223	a125	130	99
4	*211	*527	865	1,380	3,260	1,140	1,160	781	226	a120	123	101
5	280	879	809	1,170	2,880	1,690	1,080	652	253	a115	118	101
6	232	2,390	837	5,090	2,480	1,980	977	712	344	a115	116	101
7	139	1,680	774	9,470	2,110	1,800	872	640	1,000	a115	114	106
8	99	1,1200	961	3,870	1,870	1,430	816	595	748	a120	114	103
9	74	*12,200	2,370	2,730	1,720	1,520	795	620	555	a130	114	103
10	58	3,280	1,620	2,500	1,610	1,380	816	590	455	a140	110	101
11	246	1,800	1,290	1,880	1,540	2,280	748	540	404	a150	110	101
12	336	1,270	1,090	1,580	1,390	3,500	694	570	360	a165	110	101
13	135	1,000	991	1,580	1,300	3,050	646	470	328	a185	108	101
14	103	3,030	928	1,800	1,220	1,930	625	412	304	199	108	101
15	371	4,700	851	1,420	1,480	1,860	625	372	280	214	108	101
16	718	2,940	760	1,470	1,500	1,710	600	360	274	214	106	101
17	352	2,000	664	3,630	1,300	1,580	555	376	265	190	103	101
18	155	1,740	605	8,180	1,220	1,550	515	348	274	180	101	99
19	79	3,230	605	11,500	1,180	1,400	490	324	259	177	106	103
20	46	4,180	1,350	32,600	1,140	1,300	465	304	241	167	114	101
21	33	2,460	1,320	16,600	1,090	1,630	455	288	232	167	123	101
22	324	1,840	998	*9,690	1,060	*1,920	440	265	a225	164	134	101
23	1,180	4,270	809	6,660	1,020	1,890	436	256	a220	162	134	101
24	580	5,000	706	6,490	991	1,860	420	247	a210	144	130	99
25	823	3,240	694	6,220	963	1,620	400	235	a200	139	116	97
26	742	2,400	652	5,320	907	*1,480	380	241	*a185	146	110	97
27	445	1,960	1,440	4,450	872	1,380	*364	*288	a175	144	101	101
28	324	1,650	3,500	3,780	879	1,320	368	268	a160	142	101	*a94
29	253	1,400	3,360	4,430	893	1,330	384	265	a155	144	101	a94
30	190	1,230	*2,070	*4,740	-----	1,340	372	253	a150	*137	103	a92
31	145	-----	1,550	5,110	-----	1,300	-----	238	-----	134	*108	-----
Total	9,217	84,057	37,534	170,710	55,315	52,280	20,998	13,222	9,166	4,719	3,574	3,000
Mean	297	2,802	1,211	5,507	1,907	1,686	700	427	306	152	115	100
Max	1,180	12,200	3,500	32,600	8,520	3,500	1,680	782	1,000	214	154	106
Min	33	127	605	1,170	872	1,100	364	235	150	115	101	92
Ac-ft	18,280	166,700	74,450	338,600	109,700	103,700	41,650	26,230	18,180	9,360	7,090	5,950

Calendar year 1963: Max 14,300 Min 33 Mean 1,554 Ac-ft 1,125,000

Water year 1963-64: Max 32,600 Min 33 Mean 1,267 Ac-ft 919,900

Peak discharge (base, 14,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-8	2200	11.84	23,400	1-20	1000	16.04	45,200
1-6	2400	9.35	14,200				

* Discharge measurement made on this day.
a No gage-height record.

11-4810. Mad River near Arcata, Calif.--Continued.

Records available.--Water temperatures: November 1960 to September 1964.

Extremes.--Maximum temperature during year, 68°F July 20, 21, 23-26, Aug. 3; minimum, 42°F Jan. 5, 6, Jan. 22 to Feb. 3, Feb. 5 to Mar. 4.

1960-64: Maximum temperature recorded, 73°F Sept. 3, 1963; minimum, 37°F Jan. 13, 1963.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	65	64	55	55	46	46	46	45	43	42	42	42	49	48	54	53	64	62	63	62	67	63	63	61
2	64	62	55	54	46	46	45	45	43	42	42	42	49	48	54	53	64	60	62	60	67	64	62	60
3	63	62	54	54	46	46	45	44	43	42	42	42	49	49	53	52	64	61	62	58	68	64	62	60
4	62	61	54	54	46	46	44	43	43	43	44	42	51	49	52	52	62	61	60	59	67	66	62	61
5	61	61	54	53	46	46	43	42	43	42	44	44	52	51	52	52	62	61	62	59	67	65	62	61
6	61	61	53	51	47	46	44	42	43	42	44	43	54	52	54	52	61	61	62	60	67	65	63	61
7	61	61	51	50	46	46	44	44	43	42	43	43	54	54	56	54	61	59	66	62	66	64	63	60
8	61	61	51	50	46	46	44	43	43	42	43	43	54	54	56	56	59	58	65	63	66	64	62	59
9	61	61	52	51	46	46	44	43	43	42	43	43	54	54	58	56	58	57	64	62	67	64	62	60
10	61	61	51	50	46	45	43	43	43	42	43	43	54	54	61	58	58	57	65	62	67	65	62	60
11	61	61	51	50	45	44	43	43	43	42	44	43	54	54	60	59	60	58	66	64	66	64	61	60
12	61	59	51	51	44	44	43	43	43	42	44	44	55	54	62	58	60	59	66	65	66	64	61	60
13	59	58	51	51	44	44	43	43	43	42	44	44	56	54	61	58	64	59	66	64	66	64	60	60
14	59	59	52	51	44	44	43	43	43	42	44	44	56	55	58	56	64	62	64	64	65	64	62	58
15	59	58	51	49	44	44	43	43	43	42	46	44	56	55	60	56	63	61	64	64	65	63	61	59
16	58	58	49	48	44	44	43	43	43	42	46	46	55	54	60	58	61	59	67	63	66	63	61	59
17	58	58	48	47	44	44	43	43	43	42	46	46	55	54	59	57	61	60	66	64	65	64	62	60
18	58	58	48	48	44	44	43	43	43	42	47	46	56	54	60	58	62	60	66	63	64	63	61	58
19	58	58	48	48	45	44	44	43	43	42	47	47	57	54	60	57	63	60	67	64	65	61	60	58
20	58	57	48	48	45	45	44	44	43	42	47	47	56	55	60	58	64	60	68	64	65	62	61	59
21	57	57	48	46	45	45	44	44	43	42	47	47	58	55	61	58	66	62	68	65	65	64	60	57
22	57	56	46	46	45	45	44	42	43	42	47	45	57	54	62	58	66	63	67	63	65	64	60	57
23	56	56	47	46	45	44	42	42	43	42	45	45	55	54	62	59	66	64	68	64	64	64	61	58
24	56	56	47	47	44	44	42	42	43	42	45	45	54	53	62	60	66	64	68	65	64	64	62	60
25	56	55	47	46	45	44	43	42	43	42	46	45	56	54	61	59	67	63	68	65	64	64	62	60
26	56	55	47	46	45	45	43	42	43	42	46	46	58	54	61	60	63	62	68	65	64	63	61	58
27	56	56	47	47	45	45	42	42	43	42	46	46	58	56	61	59	63	60	67	65	64	61	58	57
28	56	56	47	46	46	45	42	42	42	42	47	46	58	55	60	60	64	60	65	64	64	62	59	57
29	56	55	46	46	46	46	42	42	42	42	48	47	58	56	61	59	64	62	66	64	63	60	60	58
30	56	56	46	46	46	46	43	42	42	42	48	48	56	53	61	60	63	62	66	64	63	61	61	60
31	56	55	-----	-----	46	45	43	42	-----	-----	49	48	-----	-----	64	61	-----	-----	64	62	-----	-----	-----	-----
Avg	59	58	50	49	45	45	43	43	43	42	45	45	55	53	59	57	63	61	65	63	65	63	61	59

11-4812. Little River at Crannell, Calif.

Location.--Lat 41°00'40", long 124°04'50", in NE¼ sec.8, T.7 N., R.1 E., on right bank at Crannell, 0.5 mile upstream from Coon Creek and 9.1 miles north of Arcata.

Drainage area.--44.3 sq mi.

Records available.--October 1955 to September 1964.

Gage.--Water-stage recorder (digital). Datum of gage is 17.62 ft above mean sea level, datum of 1929.

Average discharge.--9 years, 140 cfs (101,400 acre-ft per year).

Extremes.--Maximum discharge during year, 7,930 cfs Jan. 20 (gage height, 10.83 ft), from rating curve extended above 2,700 cfs on basis of slope-area measurement at gage height 11.06 ft; minimum, 3.4 cfs July 17.

1955-64: Maximum discharge, that of Jan. 20, 1964; minimum, 2.8 cfs Sept. 9, 1959.

Flood of Jan. 17, 18, 1953, reached a stage of 15.7 ft, observed by an employee of Hammond Lumber Co.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
1445, 1650	1956	Dec. 22, 1955	6,380	9.63
1515	1957	Mar. 11, 1957	6,800	9.96
1565	1958	Jan. 29, 1958	6,000	9.32
1635	1959	Feb. 14, 1959	3,810	7.32
1715	1960	Feb. 8, 1960	6,280	9.55
Basic Data Report	1961	Nov. 25, 1960	3,400	6.90
Basic Data Report	1962	Dec. 19, 1961	4,780	8.26
Basic Data Report	1963	Dec. 2, 1962	4,660	8.15

Remarks.--Records good. No storage or diversion above station.

Revisions.--Revised figures of discharge, in cubic feet per second, for high-water periods in the water years 1956-63, superseding figures published in WSP 1445, 1515, 1565, 1635, 1650, 1715, and Basic Data Reports, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1955		1959		1961	
Dec. 21	2,070	Jan. 12	1,650	Jan. 31	1,430
22	4,090	27	1,400	Feb. 11	1,610
		Feb. 14	1,410	Dec. 19	1,470
1956		15	1,520		
Jan. 15	3,870			1962	
		1960		Jan. 19	1,110
1957		Feb. 7	1,670	Oct. 9	1,300
Mar. 11	2,650	8	2,560	Nov. 12	1,240
Dec. 21	2,810	May 26	1,910	26	1,800
		Nov. 25	1,940	Dec. 2	2,310
1958					
Jan. 29	2,920				

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
December 1955.....	22,038	4,090	114	711	43,710
January 1956.....	24,051	3,870	228	776	47,700
Water year 1955-56.....	-	4,090	3.3	198	143,600
Calendar year 1956.....	-	3,870	3.3	157	114,200
March 1957.....	18,300	2,650	122	590	36,300
Water year 1956-57.....	-	2,650	3.3	139	100,700
December 1957.....	12,960	2,810	38	418	25,710
Calendar year 1957.....	-	2,810	4.8	164	118,600
January 1958.....	13,706	2,920	101	442	27,190
Water year 1957-58.....	-	3,560	3.5	186	134,600
Calendar year 1958.....	-	3,560	3.5	141	102,300
January 1959.....	9,845	1,650	44	328	19,530
February.....	11,503	1,520	99	411	22,820
Water year 1958-59.....	-	1,650	3.1	92.5	66,980
Calendar year 1959.....	-	1,650	3.1	85.0	61,530
February 1960.....	11,555	2,560	66	398	22,920
May.....	8,402	1,910	60	271	16,670
Water year 1959-60.....	-	2,560	4.0	111	80,240
November 1960.....	5,320.6	1,940	5.4	177	10,550
Calendar year 1960.....	-	2,560	3.9	139	100,900
January 1961.....	2,982	1,430	31	96.2	5,910
February.....	12,332	1,610	119	440	24,460
Water year 1960-61.....	-	1,940	3.9	141	102,300
December 1961.....	6,910	1,470	36	223	13,710
Calendar year 1961.....	-	1,610	5.6	141	101,700
January 1962.....	3,966	1,110	36	128	7,870
Water year 1961-62.....	-	1,470	6.1	90.3	65,360
October 1962.....	6,254.2	1,300	8.7	202	12,410
November.....	7,198	1,800	24	240	14,280
December.....	8,222	2,310	52	265	16,310
Calendar year 1962.....	-	2,310	6.1	119	86,150
Water year 1962-63.....	-	2,310	5.2	160	115,500

LITTLE RIVER BASIN

11-4812, Little River at Crannell, Calif.--Continued.

Revised peak discharge.--1955-56: Dec. 22 (2 a.m.) 6,380 cfs (9.63 ft); Jan. 15 (12 m.) 5,430 cfs (8.84 ft).

1956-57: Dec. 11 (3 p.m.) 5,500 cfs (8.90 ft); Mar. 11 (10 p.m.) 6,800 cfs (9.96 ft).

1957-58: Nov. 13 (7 p.m.) 4,800 cfs (8.28 ft); Dec. 21 (7 a.m.) 5,640 cfs (9.02 ft); Jan. 29 (10 a.m.) 6,000 cfs (9.32 ft); Feb. 12 (5 a.m.) 4,420 cfs (7.93 ft).

1958-59: Jan. 12 (4 a.m.) 3,190 cfs (6.67 ft); Jan. 27 (1 p.m.) 3,400 cfs (6.90 ft); Feb. 14 (12 p.m.) 3,810 cfs (7.32 ft); Feb. 18 (12 p.m.) 1,380 cfs (4.41 ft).

1959-60: Feb. 8 (4 a.m.) 6,280 cfs (9.55 ft); Mar. 7 (7 a.m.) 1,360 cfs (4.38 ft); Mar. 30 (6 a.m.) 2,340 cfs (5.69 ft); May 26 (2 p.m.) 3,060 cfs (6.52 ft).

1960-61: Nov. 25 (4 a.m.) 3,400 cfs (6.90 ft); Dec. 17 (8 p.m.) 1,790 cfs (5.00 ft); Jan. 31 (6 a.m.) 3,350 cfs (6.84 ft); Feb. 10 (10 p.m.) 2,830 cfs (6.27 ft); Feb. 13 (4 p.m.) 1,540 cfs (4.65 ft); Mar. 25 (6 a.m.) 1,360 cfs (4.39 ft).

1961-62: Dec. 19 (2000) 4,780 cfs (8.26 ft); Jan. 19 (1900) 2,570 cfs (5.98 ft).

1962-63: Oct. 9 (0800) 3,180 cfs (6.66 ft); Nov. 12 (1000) 2,670 cfs (6.09 ft); Nov. 26 (0700) 4,190 cfs (7.70 ft); Dec. 2 (1500) 4,660 cfs (8.15 ft); Apr. 6 (0400) 2,730 cfs (6.16 ft); Apr. 12 (1300) 1,890 cfs (5.12 ft).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	5.0	18	96	184	758	94	106	49	19	14	14	*4.2
2	*5.2	58	85	394	425	134	93	43	19	15	12	4.1
3	5.6	36	*79	222	311	*100	84	97	18	14	9.4	4.1
4	5.6	154	73	159	247	86	78	61	19	14	8.4	4.2
5	27	*108	68	126	205	134	73	49	28	14	8.1	4.2
6	27	416	72	1,140	176	211	68	51	48	*14	7.9	4.1
7	12	171	63	980	153	186	64	43	87	13	7.6	4.0
8	9.2	4,000	116	429	134	132	61	38	54	14	7.5	3.9
9	8.7	1,000	263	322	122	123	61	35	39	14	7.6	4.3
10	15	460	145	289	115	107	62	33	32	12	7.0	4.4
11	42	242	109	228	111	313	56	31	28	12	7.3	4.2
12	20	168	90	186	98	477	52	30	25	11	7.4	4.2
13	13	134	79	194	92	506	50	28	24	11	7.2	4.2
14	11	639	72	203	91	277	48	27	22	12	6.9	4.1
15	91	635	66	165	171	198	46	26	21	23	6.6	4.1
16	42	371	61	243	174	156	44	26	22	16	6.2	4.0
17	20	262	57	688	128	132	42	25	21	13	5.5	4.4
18	15	227	54	894	109	116	41	24	22	12	5.5	4.4
19	13	395	59	2,330	97	104	39	23	20	11	5.1	4.2
20	12	364	89	4,630	88	97	37	23	18	12	5.0	3.9
21	15	231	89	1,270	78	208	36	22	18	12	4.9	3.8
22	220	178	73	*885	73	296	37	21	17	12	4.9	3.8
23	148	322	64	693	68	259	37	21	16	12	4.7	4.0
24	53	418	59	827	62	227	35	20	15	11	4.6	3.8
25	104	287	62	612	59	183	33	20	15	9.5	4.7	3.7
26	64	214	65	417	55	*152	32	21	15	9.3	4.5	3.8
27	37	178	111	322	53	132	31	*22	14	9.2	4.5	3.9
28	26	146	324	264	54	116	*31	21	14	9.2	4.2	4.2
29	21	122	263	373	55	105	29	20	14	9.2	3.8	*4.5
30	17	108	160	328	-----	96	32	19	14	8.9	3.8	4.5
31	15	-----	*119	*571	-----	90	-----	19	-----	9.0	3.9	-----
TOTAL	1,119.3	12,062	3,185	20,568	4,362	5,547	1,538	988	738	382.3	200.7	123.2
MEAN	36.1	402	103	663	150	179	51.3	31.9	24.6	12.3	6.47	4.11
AC-FT	2,220	23,920	6,320	40,800	8,650	11,000	3,050	1,960	1,460	758	398	244
MAX	220	4,000	324	4,630	758	506	106	97	87	23	14	4.5
MIN	5.0	18	54	126	53	86	29	19	14	8.9	3.8	3.7

CALENDAR YEAR 1963: MAX 4,000 MIN 5.0 MEAN 145
 WATER YEAR 1963-64: MAX 4,630 MIN 3.7 MEAN 139

AC-FT 105,000
 AC-FT 100,800

Peak discharge (base, 1,500 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-9	unknown	10.34	7,290	1-20	0415	10.83	7,930
1-6	1800	6.04	2,630				

11-4825. Redwood Creek at Orick, Calif.

Location.--Lat 41°17'20", long 124°03'30", in NE¼ sec.4, T.10 N., R.1 E., on downstream side of left pier of bridge on U. S. Highway 101 at Orick, 0.9 mile downstream from Prairie Creek.

Drainage area.--278 sq mi.

Records available.--September 1911 to September 1913, October 1953 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Altitude of gage is 10 ft (from topographic map). Sept. 10, 1911, to Aug. 28, 1912, chain gage and Aug. 29, 1912, to Aug. 9, 1913, staff gage, at same site at different datum.

Average discharge.--13 years, 1,058 cfs (766,000 acre-ft per year).

Extremes.--Maximum discharge during year, 37,700 cfs Jan. 20 (gage height, 21.97 ft); minimum, 20 cfs Sept. 30.

1911-13, 1953-64: Maximum discharge, 50,000 cfs Dec. 22, 1955 (gage height, 23.95); minimum, 10 cfs Sept. 22-24, 1911. Flood of Jan. 18, 1953, reached a stage of 23.95 ft, from floodmarks (discharge, 50,000 cfs).

Remarks.--Records good. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	169	1,030	1,110	5,140	724	1,160	455	202	128	93	* 34
2	*23	342	918	2,010	3,720	1,060	1,040	432	*196	*128	91	34
3	23	264	*834	1,520	*2,970	*862	883	667	190	130	84	34
4	23	724	766	1,270	2,390	802	796	550	193	118	75	34
5	45	*879	706	1,100	2,030	1,120	742	486	216	120	71	34
6	138	1,810	712	3,130	1,760	1,300	684	491	276	118	69	33
7	91	1,320	645	6,340	1,470	1,230	635	446	522	116	68	32
8	64	12,500	744	3,700	1,260	1,090	600	424	401	122	64	30
9	52	*12,000	1,320	3,120	1,120	1,110	590	410	320	118	64	30
10	48	4,000	967	2,900	1,010	1,050	605	401	284	114	64	28
11	190	2,320	814	2,340	967	1,690	560	388	260	108	64	28
12	169	1,650	718	1,970	848	2,520	532	374	240	100	66	27
13	104	1,300	661	1,910	778	2,530	504	356	230	98	61	26
14	82	3,130	625	1,900	742	2,050	491	342	212	98	58	26
15	290	4,180	590	1,580	1,080	1,830	491	324	205	114	55	26
16	288	3,150	560	1,870	1,030	1,640	478	320	202	114	54	26
17	166	2,450	536	3,770	841	1,480	460	329	202	106	50	28
18	114	2,150	514	6,190	778	1,380	442	304	205	102	49	27
19	93	3,000	514	12,800	736	1,240	419	296	196	96	47	26
20	82	3,280	678	28,900	684	2,020	396	288	184	95	45	25
21	96	2,370	694	11,800	640	1,610	383	276	178	93	43	25
22	424	2,070	595	7,540	610	1,720	388	264	169	93	41	24
23	867	4,170	550	5,530	590	1,590	396	256	160	91	41	24
24	450	4,440	527	5,980	570	1,540	370	248	151	86	39	23
25	536	3,260	550	5,660	550	1,390	356	240	145	86	37	22
26	486	2,550	560	4,470	527	1,280	338	240	142	80	36	21
27	334	2,080	1,000	3,570	514	*1,210	324	252	135	78	35	21
28	260	1,670	1,960	2,940	522	1,120	324	233	135	75	35	21
29	219	1,380	2,160	3,500	540	1,050	*320	222	132	75	34	*21
30	190	1,170	1,530	3,240	-----	1,000	342	212	130	75	36	20
31	169	-----	*1,180	3,540	-----	967	-----	208	-----	77	34	-----
Total	6,140	85,778	26,158	147,200	36,417	43,205	16,049	10,734	6,413	3,152	1,703	810
Mean	198	2,859	844	4,748	1,256	1,394	535	346	214	102	54.9	27.0
Max	867	12,500	2,160	28,900	5,140	2,530	1,160	667	522	130	93	34
Min	23	169	514	1,100	514	724	320	208	130	75	34	20
Ac-ft	12,180	170,100	51,880	292,000	72,230	85,700	31,830	21,290	12,720	6,250	3,380	1,610

Calendar year 1963: Max 12,500 Min 23 Mean 1,130 Ac-ft 818,300
 Water year 1963-64: Max 28,900 Min 20 Mean 1,049 Ac-ft 761,200

Peak discharge (base, 7,000 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-8	2400	19.18	26,600	1-20	0800	21.97	37,700
1-7	0200	12.75	8,040				

KLAMATH RIVER BASIN

11-4887. Dry Lake tributary at Perez, Calif.

Location.--Lat 41°40'20", long 121°15'25", in NE $\frac{1}{4}$ sec.10, T.44 N., R.6 E., on State Highway 139, 0.35 mile southwest of town of Perez.Drainage area.--1.74 sq mi.Records available.--October 1962 to September 1964.Gage.--Water-stage recorder, crest-stage gage, and float-operated recording rain gage. Altitude of gage is 4,150 ft (from topographic map). Prior to Oct. 31, 1962, crest-stage gage only, at same datum.Extremes.--Maximum discharge during year, 17 cfs Mar. 18 (gage height, 2.81 ft); no flow for several months.

1962-64: Maximum discharge, 128 cfs Oct. 12, 1962 (gage height, 6.44 ft), by computation of maximum flow through culvert; no flow for several months each year.

Remarks.--Records good except those for period of no gage-height record, which are poor.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.5	0	2.0	2.6
1.6	.1	2.3	6.8
1.7	.3	2.6	12
1.8	.8	3.0	22

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				0	0.3	0			0	(*)		
2				0	.3	0			0			
3	(*)			0	.1	0	(*)		0			
4			(*)	0	0	* .1			* 0			
5		(*)		0	* 0	.1			0			
6				* 0	0	0		(*)	0			
7				0	0	0			0			
8				0	0	0			0			
9				0	0	0			0			
10				0	.1	.1			* 0		(*)	(*)
11				0	.1	.1			0			
12				0	0	.1			0			
13				0	0	.1		(*)	0			
14				0	0	0			0			
15				0	0	0			0			
16				0	0	3.6			0			
17				0	0	7.3			0			
18				0	0	13			0			
19				0	0	9.6			.1			
20				.1	0	6.2			0			
21				0	0	4.2			0			
22				0	0	3.7			0			
23				.3	0	3.1			0			
24				1.1	0	1.4			0			
25				1.4	0	1.7			0			
26				1.3	0	1.1			0			
27				1.2	0	3.5			0			
28				1.0	0	3.6			0			
29				.9	0	1.5			0			
30				.7	-----	.2			0			
31				.6	-----	0			0			
Total	0	0	0	8.6	0.9	64.3	0	0	0.1	0	0	0
Mean	0	0	0	0.28	0.03	2.07	0	0	0.003	0	0	0
Max	0	0	0	1.4	0.3	13	0	0	0.1	0	0	0
Min	0	0	0	0	0	0	0	0	0	0	0	0
Ac-ft	0	0	0	17	1.8	128	0	0	0.2	0	0	0
(†)	1.66	1.73	0.30	3.15	0.17	1.07	0.12	0.78	3.34	0.72	0.13	0.08
Calendar year 1963:	Max	8.9	Min	0	Mean	0.15	Ac-ft	105				
Water year 1963-64:	Max	13	Min	0	Mean	0.20	Ac-ft	147				

* Discharge measurement or observation of no flow made on this day.

† Precipitation, in inches (some precipitation falling as snow may not be included). Records for October, November, February, Mar. 1-12 obtained by U. S. Weather Bureau at Tule Lake Inspection Station.

Note.--No gage-height record Feb. 3 to Mar. 12.

LOWER KLAMATH LAKE BASIN

441

11-4895. Antelope Creek near Tennant, Calif.

Location.--Lat 41°32'45", long 121°55'05", in NW¼ sec.25, T.43 N., R.1 W., on right bank 2.5 miles south of Tennant, 4 miles downstream from Frog Lake, and 17 miles southeast of town of Mount Hebron.

Drainage area.--18.6 sq mi (revised).

Records available.--May 1952 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 5,080 ft (from topographic map).

Average discharge.--12 years, 36.6 cfs (26,500 acre-ft per year).

Extremes.--Maximum discharge during year, 215 cfs Nov. 14 (gage height, 2.76 ft); minimum daily, 9.9 cfs Sept. 10-20, 23-30. 1952-64: Maximum discharge, 538 cfs Oct. 12, 1962 (gage height, 4.31 ft), from rating curve extended above 200 cfs; minimum daily, 3.6 cfs Jan. 5, 1960.

Remarks.--Records good except those for periods of ice effect, which are poor. No storage or diversion above station.

Rating tables, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1-9		Oct. 10 to Sept. 30	
0.8	16	0.6	7
.9	19	.7	11
1.0	24	.8	15
1.2	36	1.1	24
		1.4	42
		1.8	78
		2.3	141

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	21	26	22	19	18	22	38	51	22	14	14
2	17	21	25	21	19	17	20	36	* 45	* 22	13	13
3	16	21	25	20	19	18	20	36	45	21	13	12
4	* 16	* 23	25	20	19	19	21	34	44	21	13	11
5	23	31	* 25	20	19	18	22	34	46	21	* 13	11
6	34	31	25	20	22	18	21	33	67	20	12	11
7	20	25	24	20	20	17	22	* 33	65	20	12	10
8	19	28	25	19	19	18	24	33	57	19	11	10
9	24	33	24	* 20	19	18	26	35	56	19	11	10
10	20	26	24	20	19	17	26	36	50	18	11	9.9
11	* 46	25	b 24	b 20	18	15	27	38	46	18	11	9.9
12	25	25	b 23	b 20	20	b 18	27	38	44	17	11	9.9
13	23	32	b 22	19	18	b 19	28	41	42	18	11	9.9
14	22	131	b 21	19	19	19	30	41	41	17	11	9.9
15	21	56	21	23	19	18	* 32	42	44	17	10	* 9.9
16	21	43	21	19	18	18	31	45	42	16	11	9.9
17	20	39	21	16	18	18	29	50	40	16	11	9.9
18	20	37	21	21	18	18	29	46	38	16	10	9.9
19	20	34	21	19	18	18	29	46	35	15	11	9.9
20	20	33	21	13	18	18	30	48	33	15	11	9.9
21	20	32	21	b 17	18	18	31	48	32	15	11	10
22	26	31	21	b 19	18	18	31	48	30	15	11	10
23	28	31	20	b 20	18	18	28	47	28	15	11	9.9
24	23	29	20	b 20	* 17	18	28	47	28	14	11	9.9
25	22	29	20	b 20	18	17	28	47	27	14	11	9.9
26	22	29	20	b 20	19	18	31	48	26	14	11	9.9
27	21	28	21	b 20	18	18	32	51	25	13	11	9.9
28	21	27	23	b 20	18	19	36	49	24	14	11	9.9
29	23	27	22	b 20	17	21	43	46	23	14	11	9.9
30	21	26	22	20	-----	22	40	44	23	14	11	* 9.9
31	21	-----	22	20	-----	23	-----	45	-----	14	12	-----
Total	692	1,004	696	607	539	567	844	1,303	1,197	524	353	310.1
Mean	22.3	33.5	22.5	19.6	18.6	18.3	28.1	42.0	39.9	16.9	11.4	10.3
Max	46	131	26	23	22	23	43	51	67	22	14	14
Min	16	21	20	13	17	15	20	33	23	13	10	9.9
Ac-ft	1,370	1,990	1,380	1,200	1,070	1,120	1,670	2,580	2,370	1,040	700	615

Calendar year 1963: Max 248 Min 16 Mean 45.9 Ac-ft 33,240

Water year 1963-64: Max 131 Min 9.9 Mean 23.6 Ac-ft 17,100

Peak discharge (base, 100 cfs).--Nov. 14 (1130) 215 cfs (2.76 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

KLAMATH RIVER BASIN

11-5107. Klamath River below John C. Boyle powerplant, near Keno, Oreg.

Location.--Lat 42°05'05", long 122°04'20", in SE¼SE¼ sec.14, T.40 S., R.6 E., on right bank 0.7 mile downstream from John C. Boyle powerplant, 8 miles downstream from Spencer Creek, and 8.5 miles southwest of Keno.

Drainage area.--4,080 sq mi, approximately (not including Lost River or Lower Klamath Lake basins).

Records available.--January 1959 to September 1964. Prior to Oct. 1, 1961, published as "below Big Bend powerplant."

Gage.--Water-stage recorder (digital). Datum of gage is 3,274.82 ft above mean sea level, datum of 1929, supplementary adjustment of 1956 (levels by Pacific Power & Light Co.).

Average discharge.--5 years, 1,560 cfs (1,129,000 acre-ft per year).

Extremes.--Maximum discharge during year, 2,960 cfs Jan. 20 (gage height, 5.84 ft); minimum, 311 cfs Sept. 7; minimum daily, 326 cfs Aug. 15, 30.
1959-64: Maximum discharge, 5,420 cfs Apr. 24, 1963 (gage height, 7.16 ft); minimum, that of Sept. 7, 1964; minimum daily, that of Aug. 15, 30, 1964.

Remarks.--Records excellent. Flow regulated by Upper Klamath Lake (capacity, 584,000 acre-ft). Large diurnal fluctuation caused by John C. Boyle powerplant and 2 powerplants below Upper Klamath Lake. Large diversions for irrigation above station (see Remarks for station at Keno).

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.8	325
3.2	490
3.5	649
4.0	985
5.0	1,930
6.0	3,180

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,760	1,650	2,720	2,720	2,720	724	2,720	1,030	664	670	810	1,180
2	1,400	1,590	2,700	2,720	2,720	1,230	2,680	451	665	660	329	1,310
3	*1,510	1,300	2,720	2,730	2,720	1,190	*2,700	446	670	660	608	1,350
4	1,420	1,860	2,720	2,730	2,670	1,220	1,660	742	664	669	607	1,340
5	1,430	2,020	2,720	2,720	2,360	1,230	1,250	780	668	663	604	1,340
6	926	1,940	2,720	2,730	2,330	1,180	2,280	786	665	660	604	945
7	1,560	1,940	2,720	2,720	2,310	1,050	2,730	775	666	641	603	906
8	1,510	1,260	2,720	*2,730	2,330	964	2,730	670	662	652	458	1,270
9	1,490	793	2,720	2,730	2,050	1,230	2,730	650	1,030	658	328	1,350
10	1,440	786	2,720	2,580	1,930	1,170	2,730	630	*1,200	660	607	1,340
11	1,490	1,600	2,720	2,270	1,600	1,230	2,730	623	1,280	649	603	1,340
12	1,490	2,730	2,720	2,000	1,600	1,240	2,730	766	1,350	653	601	1,090
13	1,150	2,740	2,690	2,540	1,440	1,230	2,730	786	1,160	636	600	996
14	1,600	2,730	2,690	2,380	1,430	1,090	2,730	792	717	618	599	1,250
15	1,740	2,730	2,720	2,190	1,340	850	2,740	779	660	617	326	1,350
16	1,790	2,730	2,720	1,800	778	1,380	2,740	642	921	615	338	1,520
17	1,800	2,730	2,720	1,820	1,390	1,610	2,740	638	844	612	602	1,510
18	1,850	2,730	2,720	1,800	1,330	1,610	2,740	740	844	339	670	*1,510
19	1,340	2,730	2,730	1,440	1,250	1,530	2,730	751	655	340	990	1,370
20	1,350	*2,730	2,730	2,010	1,210	1,580	2,740	658	756	*618	1,030	1,140
21	1,800	2,720	2,730	2,450	1,210	1,450	2,740	660	654	616	1,040	1,280
22	1,940	2,720	2,730	2,720	1,100	1,300	2,290	660	731	612	1,170	1,340
23	1,690	2,730	2,730	2,720	735	1,550	2,160	650	697	612	377	1,320
24	1,560	2,720	2,730	2,730	1,200	1,590	2,100	646	658	616	1,040	1,320
25	1,640	2,720	2,720	2,690	1,200	1,690	1,580	736	661	337	1,040	1,600
26	1,540	2,720	2,730	2,650	*1,270	1,590	884	757	659	353	1,040	1,540
27	1,300	2,720	2,730	2,700	1,200	1,610	1,720	808	659	613	1,040	1,320
28	1,710	2,720	2,730	2,720	1,180	1,530	1,460	754	660	610	994	1,700
29	1,630	2,730	2,730	2,720	1,050	1,200	1,390	762	662	613	1,090	1,700
30	1,700	2,730	2,730	2,670	-----	1,940	1,260	648	661	608	326	1,700
31	1,650	-----	2,730	2,690	-----	2,380	-----	654	-----	607	1,190	-----
Total	48,206	68,549	84,360	76,820	47,653	42,368	69,144	21,870	23,443	18,487	22,264	40,227
Mean	1,555	2,285	2,721	2,478	1,643	1,367	2,305	705	781	596	718	1,341
Max	1,940	2,740	2,730	2,730	2,720	2,380	2,740	1,030	1,350	670	1,190	1,700
Min	926	786	2,690	2,000	778	724	884	446	654	337	326	906
Ac-ft	95,620	136,000	167,300	152,400	94,520	84,040	137,100	43,380	46,500	36,670	44,160	79,790
Calendar year 1963:	Max 5,310	Min 618	Mean 1,844	Ac-ft 1,334,000								
Water year 1963-64:	Max 2,740	Min 326	Mean 1,539	Ac-ft 1,117,000								

* Discharge measurement made on this day.

11-5165.3. Klamath River below Iron Gate Dam, Calif.

Location.--Lat 41°55'40", long 122°26'35", in E 1/4 sec. 17, T. 47 N., R. 5 W., 0.1 mile downstream from Bogus Creek, 0.6 mile downstream from Iron Gate Dam, and 5.9 miles northeast of Hornbrook.

Records available.--October 1960 to September 1964.

Gage.--Water-stage recorder with thermograph attachment. Datum of gage is 2,162.44 ft above mean sea level (levels by Pacific Power & Light Co.).

Extremes.--Maximum discharge during year, 4,580 cfs Jan. 20 (gage height, 5.55 ft); minimum daily, 745 cfs June 3.
1960-64: Maximum discharge, 10,600 cfs Dec. 2, 1962 (gage height, 7.72 ft); minimum daily, 647 cfs Nov. 6, 1960, Sept. 24, Oct. 1, 1961.

Remarks.--Records good. Complete regulation by Upper Klamath Lake (capacity, 584,000 acre-ft) and other smaller reservoirs; diversions above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 1)

Oct. 1 to Jan. 31		Feb. 1 to Apr. 30		May 1 to Sept. 30	
3.5	1,210	3.5	1,210	2.5	480
4.0	1,770	4.0	1,770	3.0	820
4.5	2,510	4.5	2,510	3.5	1,270
5.0	3,410	5.0	3,390	4.0	1,860
5.5	4,470	5.5	4,410	4.5	2,570

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*1.780	1.760	2.570	2.960	2.710	1.380	*3.690	*1.150	760	775	1.120	*1.360
2	1.780	1.770	2.800	2.960	2.720	1.360	3.610	1.040	*790	*782	1.110	1.360
3	1.780	1.770	3.140	3.030	2.850	1.390	3.530	1.040	745	782	1.110	1.360
4	1.800	*1.760	3.100	2.900	2.990	1.390	2.530	1.030	812	790	1.100	1.360
5	1.800	1.770	*3.100	2.890	2.650	1.400	1.880	1.040	798	798	*1.080	1.370
6	1.730	1.770	3.100	2.920	2.540	1.400	2.410	1.030	900	798	1.070	1.370
7	1.690	1.760	2.610	3.100	1.990	1.390	3.100	1.040	908	828	1.070	1.370
8	1.750	1.830	2.380	*3.080	2.460	1.390	3.170	1.040	876	908	1.080	1.370
9	1.760	1.830	2.850	3.070	2.190	1.390	3.210	1.040	805	942	1.060	1.370
10	1.760	1.780	3.210	3.080	1.950	1.390	3.190	1.040	1.360	942	1.060	1.370
11	1.770	1.770	3.310	2.870	2.050	1.490	2.940	1.030	2.260	942	1.060	1.370
12	1.770	1.780	3.330	2.220	2.110	1.550	2.870	1.040	1.870	942	1.060	1.370
13	1.760	1.810	3.350	2.620	2.080	1.550	3.070	1.050	1.770	884	1.060	1.370
14	1.750	1.940	3.140	3.050	1.840	1.570	3.370	1.050	1.450	868	1.070	1.370
15	1.750	2.900	2.740	2.490	1.810	1.550	3.430	1.060	1.280	860	1.060	1.370
16	1.750	2.980	3.070	2.250	1.600	1.670	3.430	1.070	1.180	860	1.060	1.370
17	1.760	2.610	3.210	2.110	1.480	1.760	3.430	1.070	1.120	860	1.060	1.370
18	1.760	2.800	3.100	2.010	1.450	1.760	3.140	1.070	1.030	860	1.060	1.370
19	1.770	3.030	2.540	1.990	1.410	1.770	2.780	1.070	828	860	1.070	1.370
20	1.780	3.120	2.510	4.250	1.400	1.780	3.010	1.070	790	860	1.070	1.370
21	1.770	2.980	2.870	3.750	1.400	1.780	3.190	1.080	782	844	1.070	1.370
22	1.770	3.250	2.920	3.530	1.400	1.780	2.670	1.080	775	844	1.070	1.370
23	1.770	2.870	2.320	3.390	1.390	1.770	2.570	1.080	775	844	1.060	1.370
24	1.770	2.460	2.900	3.390	1.380	1.800	2.540	1.070	775	852	1.060	1.370
25	1.730	2.850	2.530	3.310	1.360	1.800	1.940	1.070	775	852	1.050	1.370
26	1.760	3.230	2.650	3.050	1.360	1.800	1.770	1.070	782	844	1.060	1.370
27	1.760	3.210	3.030	3.230	1.360	1.990	1.760	1.080	782	844	1.060	1.370
28	1.760	3.030	2.990	2.990	*1.360	1.830	1.760	1.080	798	844	1.070	1.370
29	1.750	3.050	2.810	2.920	1.380	1.800	1.770	1.080	798	852	1.070	1.370
30	1.750	3.270	2.940	*2.800	-----	1.780	1.630	1.070	782	852	1.070	1.370
31	1.760	-----	3.030	2.800	-----	2.100	-----	1.070	-----	942	1.140	-----
Total	54,600	72,740	90,150	91,010	54,670	50,560	83,390	32,900	30,156	26,555	33,270	41,060
Mean	1,761	2,425	2,908	2,936	1,885	1,631	2,780	1,061	1,005	857	1,073	1,369
Max	1,800	3,270	3,350	4,250	2,990	2,100	3,690	1,150	2,260	942	1,140	1,370
Min	1,690	1,760	2,320	1,990	1,360	1,360	1,630	1,030	745	775	1,050	1,360
Ac-ft	108,300	144,300	178,800	180,500	108,400	100,300	165,400	65,260	59,810	52,670	65,990	81,440
Calendar year 1963: Max	5,910	Min	714	Mean	2,077	Ac-ft	1,504,000					
Water year 1963-64: Max	4,250	Min	745	Mean	1,806	Ac-ft	1,311,000					

* Discharge measurement made on this day.

11-5165.3. Klamath River below Iron Gate Dam, Calif.--Continued

Records available.--Water temperatures: August 1962 to September 1964.

Extremes: Maximum temperature during year, 72°F July 30; minimum, 36°F Jan. 20, 31, Feb. 2-6.

1962-64: Maximum temperature, 72°F July 11, Aug. 6-8, 13-20, 1963, July 30, 1964; minimum, 36°F Jan. 12-27, 31, 1963, Jan. 20, 31, Feb. 2-6, 1964.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	67	66	53	52	43	42	40	40	37	37	39	39	45	45	50	49	61	57	64	62	68	68	65	64
2	67	66	53	52	42	41	40	40	37	36	39	39	45	45	50	49	63	61	65	62	68	68	64	64
3	67	66	52	51	42	41	40	40	37	36	39	39	45	45	50	49	63	61	66	63	68	68	64	64
4	67	66	52	51	42	40	41	40	37	36	39	39	46	45	50	49	62	58	65	63	69	68	64	63
5	66	65	52	51	41	40	40	40	37	36	39	39	46	45	50	50	59	58	65	64	69	68	64	63
6	65	64	52	50	41	40	40	40	37	36	39	39	47	45	51	48	59	58	66	64	70	68	64	63
7	65	64	50	49	41	40	41	40	37	37	40	39	47	46	51	50	59	56	66	64	70	69	63	63
8	65	63	49	48	41	40	41	40	37	37	40	39	48	47	53	49	58	57	68	64	70	68	64	63
9	63	62	50	49	41	40	40	40	37	37	41	40	47	47	53	50	57	55	66	64	70	69	63	62
10	62	61	50	50	41	40	40	40	37	37	41	41	47	46	54	52	57	55	66	64	70	68	62	62
11	61	60	50	50	41	40	40	39	37	37	41	39	49	47	54	52	59	57	67	65	69	68	62	62
12	61	61	50	50	40	40	40	39	37	37	39	39	49	47	57	52	60	58	68	66	70	68	62	62
13	61	61	50	49	40	39	40	39	37	37	40	39	49	47	56	54	60	58	68	66	70	68	63	62
14	61	59	49	48	40	39	41	39	37	37	41	40	49	46	56	54	61	59	66	66	70	69	63	62
15	60	59	48	48	40	39	39	38	37	37	42	41	49	47	55	54	61	59	69	66	70	69	62	61
16	59	58	48	48	40	39	39	38	38	37	42	41	48	47	54	50	61	59	68	66	70	69	61	60
17	59	58	48	47	39	39	39	38	38	38	44	42	48	47	54	51	62	59	69	67	70	69	61	60
18	59	58	48	47	39	39	39	38	38	38	43	42	48	47	56	53	61	60	70	67	71	69	61	60
19	59	58	47	46	39	39	39	38	38	38	43	42	48	47	55	53	60	58	68	68	70	68	61	60
20	59	58	46	46	39	39	39	36	38	38	43	43	49	48	56	53	62	58	70	68	68	67	61	61
21	59	58	46	46	40	39	38	37	38	38	43	42	49	48	59	54	61	58	70	68	69	67	61	60
22	59	57	46	46	40	38	38	38	39	38	43	43	49	48	58	55	63	60	70	68	69	67	60	59
23	58	57	46	44	39	38	38	37	39	39	43	43	48	48	59	55	62	61	70	68	69	67	60	60
24	57	57	46	44	39	38	38	37	39	38	44	43	48	48	59	55	64	61	70	68	68	67	60	60
25	57	56	46	45	39	38	38	37	39	38	45	44	50	48	59	57	63	62	71	69	68	67	61	60
26	56	55	46	44	39	39	38	37	39	39	45	44	51	49	59	57	66	62	71	69	69	67	60	60
27	55	54	45	44	39	39	38	37	39	39	45	44	51	50	57	55	64	61	70	69	68	66	60	59
28	54	53	44	43	41	39	38	37	39	38	45	44	52	50	56	55	64	61	70	69	67	67	59	59
29	54	53	44	43	41	40	38	37	39	39	46	45	53	51	57	55	64	62	71	69	67	65	59	59
30	54	53	43	42	40	40	37	37	-----	-----	46	45	52	50	57	56	64	62	72	68	66	65	59	59
31	54	53	-----	40	39	37	36	-----	-----	-----	46	45	-----	-----	58	57	-----	70	68	65	65	-----	-----	-----
Avg	60	59	48	47	40	39	39	38	38	37	42	41	48	47	55	53	61	59	68	66	69	68	62	61

11-5169. Little Shasta River near Montague, Calif.

Location.--Lat 41°45'11", long 122°17'58", in NW 1/4 sec. 15, T. 45 N., R. 4 W., on right bank three-quarters of a mile downstream from Dry Creek and 12 miles east of Montague.

Drainage area.--48.2 sq mi.

Records available.--October 1957 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 3,280 ft (from topographic map).

Average discharge.--7 years, 15.3 cfs (11,080 acre-ft per year).

Extremes.--Maximum discharge during year, 147 cfs June 7 (gage height, 3.17 ft); minimum daily, 1.2 cfs Dec. 11.
1957-64: Maximum discharge, 741 cfs Nov. 13, 1957 (gage height, 4.76 ft), from rating curve extended above 200 cfs; minimum, 0.6 cfs Nov. 16, 1961.

Remarks.--No known diversion or regulation above station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a 3.2	3.1	4.0	7.2	27	13	* 70	40	38	17	8.0	5.0
2	a 3.1	3.0	b 3.8	* 8.0	22	12	42	36	38	16	7.2	4.7
3	a 3.3	3.0	b 3.4	5.4	17	12	33	34	37	15	6.7	* 4.4
4	a 3.3	3.6	b 3.8	4.4	19	36	36	31	40	16	6.5	4.0
5	a 3.3	4.5	3.6	b 4.4	20	32	38	30	37	16	6.2	3.8
6	a 3.4	4.0	4.1	4.9	16	20	32	29	69	15	6.2	4.2
7	a 3.4	3.5	b 3.8	5.5	15	17	37	29	106	14	6.1	3.9
8	a 3.4	9.8	4.1	4.3	14	16	50	29	83	13	5.3	4.1
9	a 3.6	17	3.6	5.3	15	17	52	35	* 89	13	5.4	4.2
10	a 3.3	6.2	* b 1.9	4.8	17	* 15	47	40	64	13	5.6	3.8
11	a 3.3	4.3	b 1.2	b 5.0	16	14	54	42	52	13	5.4	3.7
12	a 3.4	4.2		b 5.0	14	12	51	* 46	46	12	5.6	3.6
13	a 3.4	4.6		b 5.0	12	12	51	46	42	12	5.4	3.3
14	a 3.3	1.6		5.1	12	12	57	44	38	12	5.0	3.2
15	* a 3.3	1.1	b 2.0	b 5.0	11	17	65	44	39	12	5.0	3.5
16	3.3	6.3		5.4	10	22	62	42	37	11	4.9	3.5
17	3.1	5.5		4.5	9.8	32	48	43	39	9.7	5.0	3.6
18	3.1	5.2		3.9	12	34	42	43	35	9.7	4.6	3.7
19	3.3	4.8	3.9	7.1	15	30	40	44	32	9.5	4.5	3.6
20	3.3	4.2	4.5	4.9	16	27	40	44	30	9.3	4.4	3.8
21	3.1	3.7	3.9	17	17	22	43	43	28	9.0	4.3	3.6
22	4.5	3.8	3.8	12	19	19	41	42	26	8.1	4.5	3.3
23	5.8	4.8	3.8	9.4	19	17	34	40	* 25	8.3	4.4	3.3
24	3.7	5.5	3.7	8.6	20	16	30	40	24	7.9	4.5	3.6
25	3.7	5.5	3.6	9.2	17	15	26	40	22	7.8	4.5	3.4
26	3.7	5.6	3.4	11	15	16	29	39	20	7.8	4.5	3.0
27	3.3	6.3	5.9	11	15	20	35	46	20	7.0	4.5	3.2
28	3.1	5.0	20	10	* 15	33	46	51	19	7.3	4.5	3.1
29	3.3	4.6	15	11	13	41	52	43	17	9.4	4.5	3.0
30	3.4	4.4	10	12	-----	44	43	41	17	9.5	4.5	3.0
31	3.4	-----	8.6	14	-----	44	-----	39	-----	7.4	4.5	-----
Total	1 071	1 730	1 414	2 744	4 598	6 89	13 26	12 35	12 09	3 477	1 622	11 01
Mean	3.45	5.77	4.56	8.85	15.9	22.2	44.2	39.8	40.3	11.2	5.23	3.67
Max	5.8	17	20	49	27	44	70	51	106	17	8.0	5.0
Min	3.1	3.0	1.2	3.9	9.8	12	26	29	17	7.0	4.3	3.0
Ac-ft	212	343	280	544	912	1,370	2,630	2,450	2,400	690	322	218

Calendar year 1963: Max 206 Min 1.2 Mean 17.4 Ac-ft 12,560
Water year 1963-64: Max 106 Min 1.2 Mean 17.0 Ac-ft 12,370

* Discharge measurement made on this day.
a No gage-height record.
b Stage-discharge relation affected by ice.

KLAMATH RIVER BASIN

11-5175. Shasta River near Yreka, Calif.

Location.--Lat 41°49'30", long 122°35'40", in E½ sec.24, T.46 N., R.7 W., on right bank 0.5 mile upstream from mouth and 7 miles north of Yreka.

Drainage area.--793 sq mi (revised).

Records available.--October 1933 to December 1941, December 1944 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 2,000 ft (from topographic map). Prior to Nov. 2, 1933, staff gage at same site and datum.

Average discharge.--27 years (1933-41, 1945-64), 176 cfs (127,400 acre-ft per year); median of yearly mean discharges, 150 cfs (109,000 acre-ft per year).

Extremes.--Maximum discharge during year, 3,720 cfs Jan. 20 (gage height, 7.83 ft); minimum daily, 7.5 cfs Aug. 24. 1933-41, 1944-64: Maximum discharge, 6,090 cfs Dec. 22, 1955 (gage height, 9.43 ft); minimum, 3.4 cfs Aug. 13, 1939, when about 2 cfs was being diverted around gage.

Remarks.--Records good. Flow partly regulated by Lake Dwinell beginning in 1928. Storage limited to 50,000 acre-ft. Many diversions above station for irrigation.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 20			Jan. 20 to June 25		
June 25 to Sept. 30					
2.4	7.0	4.0	395	2.8	38
2.5	12	4.5	600	3.0	78
2.7	28	5.0	840	3.4	196
2.9	55	6.0	1,540	4.0	435
3.1	95	7.0	2,590	5.0	970
3.5	220	8.0	3,960	6.0	1,720

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	* 11 2	22 0	21 3	24 4	36 2	23 6	19 6	9 1	7 4	2 6	3 4	* 20
2	11 8	21 3	21 0	24 1	33 9	24 7	20 0	10 7	7 1	2 6	2 5	3 5
3	13 2	21 0	21 0	22 7	30 6	23 6	20 3	12 9	* 5 6	3 0	1 8	2 4
4	11 5	21 0	* 21 0	22 4	29 0	23 6	18 6	14 1	6 9	3 0	1 7	2 9
5	12 6	* 21 3	21 6	21 6	28 6	24 7	18 3	13 8	6 3	3 3	1 2	2 9
6	13 5	22 0	22 0	22 4	27 4	24 3	18 6	* 14 4	11 2	3 3	* 1 7	3 4
7	14 4	22 0	21 3	* 23 0	26 6	24 0	13 8	15 1	24 3	3 0	4 2	3 3
8	15 7	23 4	21 3	22 0	26 6	22 5	13 8	14 1	25 1	3 3	4 4	3 0
9	15 4	26 2	22 7	22 0	26 2	22 1	13 8	12 9	36 2	3 3	4 9	2 3
10	16 0	25 5	22 4	21 6	26 2	22 1	12 1	12 1	36 2	2 6	4 3	2 5
11	21 0	24 4	21 3	20 6	25 9	22 9	11 2	12 4	30 6	2 1	2 9	1 9
12	22 7	23 0	20 6	20 2	25 5	24 3	12 4	12 6	24 7	4 0	1 6	2 0
13	21 3	22 4	21 0	20 6	25 5	23 6	11 8	8 6	19 3	6 8	1 2	3 6
14	20 6	23 0	21 0	21 3	25 5	22 5	11 0	8 1	16 3	6 0	1 1	4 9
15	21 3	24 9	21 3	21 0	25 5	22 1	10 1	10 4	16 0	8 6	1 6	7 5
16	21 6	24 1	21 3	21 3	25 1	22 1	10 4	9 6	13 5	8 4	1 6	8 4
17	21 0	22 7	21 0	25 5	24 3	22 5	11 8	11 0	12 1	4 2	1 6	6 2
18	21 0	22 0	21 3	30 0	23 6	22 1	10 7	11 0	11 5	2 6	1 2	4 8
19	20 2	21 6	21 3	3 4 8	23 2	21 4	9 4	11 5	11 5	2 4	1 2	6 2
20	20 2	22 0	21 3	2 6 20	23 2	21 0	8 8	10 4	11 0	2 7	1 4	6 8
21	20 2	21 6	21 3	* 1 3 70	23 2	21 8	7 8	8 6	9 4	2 4	1 6	8 2
22	20 6	21 3	21 0	7 6 0	23 2	23 2	7 1	4 9	5 4	1 5	1 3	8 6
23	22 7	26 2	21 3	5 1 6	22 9	22 9	8 1	4 3	6 0	1 0	1 6	7 1
24	24 1	25 5	21 0	4 1 7	22 8	22 5	9 9	5 1	5 8	1 6	7 5	6 9
25	24 1	24 1	20 6	4 4 4	22 1	22 1	8 3	5 8	4 4	1 7	8 0	8 8
26	23 4	23 0	21 0	4 1 7	* 21 8	20 7	7 1	5 8	3 9	1 2	1 5	8 2
27	23 0	22 7	21 6	3 6 2	21 8	20 3	7 6	5 4	4 0	1 3	1 5	7 1
28	22 7	22 0	25 5	3 4 2	22 1	20 0	7 9	9 1	3 4	1 4	1 3	8 8
29	22 7	21 6	31 8	3 3 0	22 1	21 8	7 6	12 6	2 6	1 0	1 3	9 3
30	23 0	21 3	27 6	3 2 6	-----	* 19 6	7 4	12 1	* 2 7	2 9	2 1	9 8
31	23 0	-----	25 5	* 31 8	-----	18 3	-----	7 4	-----	3 4	1 8	-----
Total	5,957	6,850	6,852	12,637	7,404	6,927	3,552	3,159	3,804	972	610.5	1,633
Mean	192	228	221	408	255	223	118	102	127	31.4	19.7	54.4
Max	241	262	318	2,620	362	247	203	151	362	86	49	98
Min	112	210	206	202	218	183	71	43	26	10	7.5	19
Ac-ft	11,820	13,590	13,590	25,070	14,690	13,740	7,050	6,270	7,550	1,930	1,210	3,240

Calendar year 1963: Max 1,440 Min 32 Mean 211 Ac-ft 153,000
 Water year 1963-64: Max 2,620 Min 7.5 Mean 165 Ac-ft 119,800

Peak discharge (base, 400 cfs).--Jan. 20 (1000) 3,720 cfs (7.83 ft).

* Discharge measurement made on this day.

11-5178, Beaver Creek near Klamath River, Calif.

Location (revised).--Lat 41°53'40", long 122°49'20", in NE¼SW¼ sec.30, T.47 N., R.8 W., on left bank 0.1 mile downstream from Buckhorn Gulch, 1.9 miles upstream from mouth, and 2.1 miles north of Klamath River.

Drainage area.--106 sq mi (revised).

Records available.--Occasional low-flow measurements, water years 1953-58, and annual maximum, water year 1956. March 1959 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,920 ft (from topographic map). Prior to Mar. 17, 1959, crest-stage gage only and Mar. 17 to June 12, 1959, at site 0.6 mile downstream at different datum.

Average discharge.--5 years, 110 cfs (79,640 acre-ft per year).

Extremes.--Maximum discharge during year, 550 cfs Nov. 8 (gage height, 4.12 ft); minimum daily, 14 cfs Sept. 17, 20, 23, 24.

1955-56, 1959-64: Maximum discharge, 8,000 cfs Aug. 20, 1956 (gage height, 10.6 ft, present datum, from floodmarks), from rating curve extended above 600 cfs.

1959-64: Minimum discharge, 10 cfs Jan. 1, 1960.

Remarks.--Records good. Some small diversions above station for irrigation.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 8		Nov. 8 to Sept. 30	
2.2	21	2.1	8.0
2.5	48	2.4	35
2.8	91	2.8	85
3.3	216	3.2	161
4.0	490	3.8	335

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	35	63	75	96	90	216	188	228	95	52	29
2	* 27	36	61	75	90	85	190	175	216	93	48	* 29
3	26	36	* 61	68	88	81	171	173	* 215	90	46	27
4	27	49	59	64	90	96	168	159	231	90	44	26
5	37	* 46	62	63	91	101	168	154	249	84	43	25
6	47	60	79	66	88	95	157	* 151	249	79	* 42	25
7	37	49	66	* 68	87	88	159	150	252	75	41	24
8	34	288	68	63	87	88	178	154	228	74	38	23
9	34	135	64	63	88	90	195	180	213	72	38	24
10	33	82	59	61	91	87	185	202	210	68	36	23
11	46	71	53	58	90	96	195	216	195	66	36	23
12	36	62	58	59	87	93	192	234	185	64	35	23
13	34	59	57	58	84	90	195	234	180	62	35	22
14	32	183	56	57	82	88	216	228	173	63	35	22
15	33	106	54	56	82	93	* 237	234	168	62	34	18
16	34	81	53	63	79	99	* 231	237	163	59	32	15
17	31	77	52	62	78	110	210	237	161	57	31	14
18	30	70	52	64	79	125	200	246	161	54	30	16
19	29	74	53	92	81	121	195	264	152	53	30	15
20	31	67	56	135	82	125	195	267	143	53	30	14
21	34	62	53	* 101	84	123	198	249	137	52	29	16
22	43	64	51	85	88	119	195	240	129	51	27	15
23	50	82	51	78	91	115	180	246	123	51	25	14
24	41	79	50	77	93	110	166	246	115	50	24	14
25	44	75	50	81	90	105	161	249	110	48	23	16
26	39	77	54	82	* 87	106	166	231	106	47	23	17
27	37	78	63	81	87	110	178	219	105	45	24	17
28	37	72	100	79	87	123	210	222	103	46	24	19
29	37	68	95	81	84	143	222	219	99	58	26	20
30	36	66	81	79	-----	171	202	216	* 96	51	25	20
31	36	-----	77	87	-----	195	-----	228	-----	52	26	-----
Total	1,102	2,389	1,911	2,281	2,511	3,361	5,731	6,648	5,095	1,964	1,032	6,05
Mean	35.5	79.6	61.6	73.6	86.6	108	191	214	170	63.4	33.3	20.2
Max	50	288	100	135	96	195	237	267	252	95	52	29
Min	26	35	50	56	78	81	157	150	96	45	23	14
Ac-ft	2,190	4,740	3,790	4,520	4,980	6,670	11,370	13,190	10,110	3,900	2,050	1,200

Calendar year 1963: Max 897 Min 26 Mean 137 Ac-ft 99,150
 Water year 1963-64: Max 288 Min 14 Mean 94.6 Ac-ft 68,710

Peak discharge (base, 400 cfs).--Nov. 8 (1800) 550 cfs (4.12 ft).

* Discharge measurement made on this day.

11-5180.5. East Fork Scott River at Callahan, Calif.

Location.--Lat 41°18'15", long 122°46'35", in SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.22, T.40 N., R.8 W., on right bank 1.0 mile downstream from Big Mill Creek and 1.4 miles east of town of Callahan.

Drainage area.--110 sq mi.

Records available.--October 1959 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 3,200 ft (from topographic map). Prior to July 26, 1961, at site 1.6 miles downstream at different datum.

Extremes.--Maximum discharge during year, 984 cfs Nov. 14 (gage height, 7.68 ft); minimum daily, 0.9 cfs Sept. 10-17.

1959-64: Maximum discharge, 4,530 cfs Oct. 12, 1962 (gage height, 9.05 ft), from rating curve extended above 1,200 cfs on basis of slope-area measurement of maximum flow; 0.8 cfs Sept. 20, 1962.

Remarks.--Records good except those for period of no gage-height record, which are poor. Small diversions above station for irrigation.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 14				Nov. 14 to Sept. 30			
5.3	1.3	6.2	58	5.2	0.2	5.9	26
5.4	2.6	6.4	92	5.3	1.0	6.1	45
5.5	4.6	6.6	155	5.4	2.2	6.3	80
5.6	7.8	7.0	370	5.5	5.0	6.6	170
5.7	12	7.5	770	5.7	14	7.0	370
5.9	25						

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	1.6	.65	8.0	88	42	102	72	66	18	3.0	1.5
2	2.0	1.6	*.62	7.0	78	40	*88	66	64	18	2.8	1.5
3	*2.2	1.6	.60	6.5	74	38	76	66	58	18	2.8	1.4
4	2.1	2.6	.55	6.0	70	42	72	58	*56	18	*3.0	1.2
5	2.3	7.0	.55	5.5	68	43	74	*51	58	17	2.8	1.2
6	3.6	106	.55	*52	64	42	68	48	98	15	2.2	1.2
7	3.6	*66	.60	51	60	41	64	45	111	13	2.1	1.1
8	3.4	79	.65	48	58	38	74	44	120	11	2.0	1.0
9	4.2	116	.60	46	57	40	90	50	117	9.9	1.8	1.0
10	7.5	106	.55	46	57	38	85	60	102	8.6	1.8	.9
11	98	86	50	41	56	42	88	78	80	8.6	1.8	.9
12	37	73	50	44	52	42	88	90	66	7.8	1.7	.9
13	27	81	45	43	51	40	88	100	57	7.4	1.8	.9
14	22	549	45	43	48	40	90	90	56	7.8	2.0	.9
15	24	184	40	41	50	41	98	90	51	7.4	1.8	.9
16	29	130	40	43	46	41	111	95	48	7.0	1.8	.9
17	24	110	40	42	45	45	100	90	44	7.0	1.8	.9
18	20	95	40	43	43	50	92	82	42	*5.8	1.8	1.0
19	18	95	40	56	43	48	85	88	38	4.7	1.6	1.0
20	17	100	35	285	41	50	78	92	34	5.4	1.2	1.0
21	18	75	35	129	40	50	80	82	31	4.7	1.1	1.1
22	19	65	35	114	41	50	82	76	29	4.4	1.1	1.2
23	34	105	35	*90	41	48	74	72	27	3.6	1.1	1.2
24	26	100	35	85	41	46	64	74	24	3.0	1.1	1.2
25	24	95	35	80	*40	43	51	72	23	3.0	1.1	1.1
26	20	90	35	76	38	43	50	68	22	2.8	1.1	1.0
27	18	85	33	72	38	45	56	74	20	2.5	1.0	1.0
28	18	80	50	68	40	48	74	85	20	2.5	1.1	1.0
29	18	75	105	68	38	58	98	72	*19	2.8	1.2	1.0
30	18	70	100	66	-----	80	85	66	19	3.0	1.2	1.0
31	17	-----	90	72	-----	102	-----	64	-----	3.0	*1.4	-----
Total	578.9	2,960	1,605	2,174	1,506	1,456	2,425	2,260	1,600	250.7	54.1	32.1
Mean	18.7	98.7	51.8	70.1	51.9	47.0	80.8	72.9	53.3	8.09	1.75	1.07
Max	98	549	105	285	88	102	111	100	120	18	3.0	1.5
Min	2.0	16	33	41	38	38	50	44	19	2.5	1.0	0.9
Ac-ft	1,150	5,870	3,180	4,310	2,990	2,890	4,810	4,480	3,170	497	107	64

Calendar year 1963: Max 2,030 Min 2.0 Mean 125 Ac-ft 90,360

Water year 1963-64: Max 549 Min 0.9 Mean 46.2 Ac-ft 33,520

Peak discharge (base, 550 cfs).--Nov. 14 (1200) 984 cfs (7.68 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 16 to Jan. 5.

KLAMATH RIVER BASIN

449

11-5186. Moffett Creek near Fort Jones, Calif.

Location (revised).--Lat 41°38'02", long 122°44'50", in SE 1/4 sec. 27, T.44 N., R.8 W., on right bank 180 ft upstream from bridge, 590 ft upstream from Soap Creek, and 5.1 miles east of Fort Jones.

Drainage area.--69.8 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 2,940 ft (from topographic map). Prior to May 30, 1963, 90 ft downstream at datum 1.15 ft lower.

Average discharge.--6 years, 10.8 cfs (7,820 acre-ft per year).

Extremes.--Maximum discharge during year, 480 cfs Jan. 20 (gage height, 4.54 ft); no flow for several days.
1958-64: Maximum discharge, 486 cfs (revised) Dec. 2, 1962 (gage height, 4.57 ft, present datum); no flow for several days in 1964.

Flood of Jan. 29, 1958, reached a stage of 5.54 ft present datum (discharge not determined).

Remarks.--Minor diversions upstream for irrigation.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7	2.9	8.1	8.9	3.8	2.0	* 3.5	1.5	3.2	2.7	0	0.2
2	.7	2.9	6.5	* 7.8	3.9	2.0	3.4	1.5	2.7	3.4	0	.1
3	.9	2.9	6.0	7.6	3.9	1.9	3.3	1.6	2.2	3.9	0	.2
4	1.1	2.9	5.8	8.1	3.7	1.9	3.1	1.6	2.5	4.8	0	.1
5	1.1	2.9	6.0	8.1	3.7	2.0	3.1	1.6	2.9	4.2	0	.1
6	1.1	2.9	5.2	7.8	3.5	2.0	3.0	1.5	3.2	3.1	0	.1
7	1.1	2.9	5.2	7.9	3.3	2.0	2.8	1.6	3.2	2.5	0.1	.3
8	1.0	2.7	5.4	7.9	3.2	1.9	2.7	1.6	4.0	2.6	.2	.3
9	.8	2.7	5.8	7.9	3.0	1.9	2.8	1.4	* 4.2	2.5	.1	.3
10	.8	2.7	5.5	8.1	* 3.0	1.9	2.8	1.3	4.8	2.4	.1	.3
11	1.4	2.7	5.4	7.9	2.9	2.0	2.7	1.2	4.6	2.4	0	.6
12	1.2	* 2.8	4.7	7.8	2.8	2.0	2.7	1.1	4.6	2.7	0	.3
13	1.1	2.9	4.7	8.1	2.7	2.0	2.6	1.0	4.7	2.3	0	.1
14	1.2	4.5	4.5	8.1	2.5	2.0	2.5	9.6	4.6	2.1	0	.1
15	* 1.7	4.8	4.6	8.1	2.5	2.1	2.4	9.4	4.9	2.3	0	.1
16	1.7	4.8	4.5	9.3	2.4	2.1	2.3	9.3	4.6	2.2	0	.2
17	1.3	5.3	4.8	1.2	2.3	2.2	1.9	9.1	4.8	1.8	.1	.6
18	1.8	5.3	5.0	1.5	2.2	2.3	1.7	8.4	5.0	1.9	.1	.8
19	1.8	5.2	4.8	3.2	2.2	2.4	1.8	7.7	5.0	2.0	.1	.4
20	1.7	5.0	5.0	2.29	2.2	2.5	2.0	7.4	4.6	2.4	.2	.3
21	1.9	5.0	5.0	11.0	2.1	2.6	2.0	7.3	4.4	2.3	.1	.3
22	2.3	5.3	4.8	6.8	2.1	2.7	2.0	6.3	4.1	1.6	.1	.3
23	2.5	8.6	4.8	4.5	2.0	2.6	1.9	5.0	3.9	1.3	.1	.2
24	2.4	8.7	4.9	3.5	2.0	2.5	1.8	5.0	4.1	1.0	.2	0
25	3.4	8.1	4.8	3.2	* 1.9	2.5	1.6	4.9	3.8	.6	.1	0
26	3.4	7.8	4.7	3.2	1.9	2.4	1.5	4.7	3.3	.5	.1	0
27	3.4	7.4	5.0	3.3	1.9	2.4	1.5	5.5	3.1	.3	.1	.1
28	3.4	7.3	6.2	* 3.3	1.9	2.4	1.3	6.1	3.3	.1	.1	.2
29	3.4	7.1	6.9	3.3	1.9	2.6	1.3	5.3	3.3	.1	.1	.2
30	2.9	6.8	7.1	3.3	-----	2.8	1.4	2.3	3.1	0	.1	.2
31	2.9	-----	7.8	3.6	-----	3.1	-----	2.5	-----	0	.1	-----
Total	56.1	143.8	169.5	907.4	77.4	69.7	69.4	300.8	116.7	62.0	2.2	7.0
Mean	1.81	4.79	5.47	29.3	26.7	22.5	23.1	9.70	3.89	2.00	0.07	0.23
Max	3.4	8.7	8.1	229	39	31	35	16	5.0	4.8	0.2	0.8
Min	0.7	2.7	4.5	7.6	19	19	13	2.3	2.2	0	0	0
Ac-ft	111	285	336	1,800	1,540	1,380	1,380	597	231	123	4.4	14

Calendar year 1963: Max 29.4 Min 0.5 Mean 19.7 Ac-ft 14,240
Water year 1963-64: Max 229 Min 0 Mean 10.7 Ac-ft 7,800

* Discharge measurement made on this day.

Note.--No gage-height record Oct. 25 to Nov. 12.

KLAMATH RIVER BASIN

11-5195. Scott River near Fort Jones, Calif.

Location.--Lat 41°38'28", long 123°00'54", in NE 1/4 sec. 29, T.44 N., R.10 W., on right bank 1.7 miles upstream from Snow Creek and 10.8 miles downstream from Fort Jones.

Drainage area.--653 sq mi (revised).

Records available.--December 1941 to September 1964. Monthly discharge only October to December 1941, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 2,625.80 ft above mean sea level (levels by Corps of Engineers).

Average discharge.--23 years, 634 cfs (459,000 acre-ft per year); median of yearly mean discharges, 540 cfs (390,900 acre-ft per year).

Extremes.--Maximum discharge during year, 5,860 cfs Jan. 20 (gage height, 9.96 ft); minimum daily, 36 cfs Sept. 8.

1941-64: Maximum discharge, 38,500 cfs Dec. 22, 1955 (gage height, 21.40 ft), from rating curve extended above 15,000 cfs on basis of slope-area measurement of maximum flow; minimum, 20 cfs Sept. 14, 15, 1955.

Remarks.--Records good. Diversions for irrigation of about 30,000 acres above station.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 9		Nov. 9 to Sept. 30	
2.1	51	1.6	35
2.5	109	2.0	62
3.0	194	2.5	125
3.5	310	3.0	220
4.0	460	4.0	460
5.0	845	5.0	845
6.0	1,420	6.0	1,420
8.0	3,330	7.0	2,290
		9.0	4,550

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	114	518	599	995	504	* 671	581	778	212	79	45
2	65	112	* 484	578	975	528	671	560	735	196	73	45
3	* 62	114	460	528	900	487	627	542	691	178	73	45
4	64	117	442	494	854	481	588	511	* 695	190	* 72	44
5	65	128	427	463	827	500	574	475	786	182	73	44
6	85	178	463	* 454	791	494	556	445	850	182	73	43
7	82	* 253	469	472	760	478	536	* 412	1,000	164	72	42
8	78	1,140	451	445	735	457	553	395	925	158	72	36
9	76	2,880	448	427	719	451	592	400	905	149	66	38
10	75	1,170	424	418	711	442	615	442	827	137	65	40
11	79	764	390	390	699	472	595	514	751	127	61	44
12	123	595	372	382	675	525	603	607	699	119	60	45
13	119	500	368	375	651	500	599	703	655	120	58	44
14	109	1,360	360	370	631	475	607	719	651	118	56	72
15	103	1,990	352	355	627	469	651	711	619	116	57	52
16	104	1,090	345	375	603	466	691	743	584	116	60	49
17	112	836	338	436	578	481	655	731	542	116	58	48
18	104	703	330	550	556	508	611	731	484	* 109	56	48
19	106	655	322	635	546	518	570	804	442	105	53	50
20	104	627	340	4,310	532	525	528	868	430	98	51	57
21	102	546	335	2,830	525	536	508	809	400	92	a 51	55
22	103	518	315	1,490	522	532	508	755	380	90	a 50	58
23	108	814	310	* 1,090	518	514	490	747	365	86	a 50	56
24	127	920	308	930	514	500	451	778	340	85	a 49	53
25	122	735	300	881	* 504	475	430	809	325	86	a 49	52
26	127	691	300	872	494	454	390	791	322	80	a 48	51
27	123	695	390	818	487	451	409	723	294	77	a 48	50
28	120	651	613	778	484	454	469	715	264	77	a 47	51
29	117	592	863	773	478	475	635	703	* 252	80	a 47	50
30	117	553	719	809	-----	522	639	703	232	81	a 46	52
31	115	-----	655	796	-----	603	-----	735	-----	79	* a 46	-----
Total	3,061	2,204	13,211	25,123	18,891	15,277	17,022	20,162	17,223	3,805	1,819	1,459
Mean	98.7	735	426	810	651	493	567	650	574	123	58.7	48.6
Max	127	2,880	863	4,310	995	603	691	868	1,000	212	79	72
Min	62	112	300	355	478	442	390	395	232	77	46	36
Ac-ft	6,070	43,720	26,200	49,830	37,470	30,300	33,760	39,990	34,160	7,550	3,610	2,890

Calendar year 1963: Max 8,350 Min 55 Mean 725 Ac-ft 524,500
 Water year 1963-64: Max 4,310 Min 36 Mean 435 Ac-ft 315,600

Peak discharge (base, 2,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-9	0530	8.46	3,870	1-20	1600	9.96	5,860
11-14	2300	7.68	2,980				

* Discharge measurement made on this day.
 a No gage-height record.

11-5205. Klamath River near Seiad Valley, Calif.

Location.--Lat 41°51'20", long 123°13'50", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.3, T.46 N., R.12 W., on right bank 0.4 mile upstream from Bittenbender Creek, 1.4 miles downstream from Grider Creek, and 2.2 miles west of Seiad Valley.

Drainage area.--6,980 sq mi, approximately (not including Lost River or Lower Klamath Lake basins).

Records available.--October 1912 to September 1925, July 1951 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 1,320 ft (from river-profile map). November 1912 to June 1925, staff gage at site $3\frac{1}{2}$ miles upstream at different datum.

Average discharge.--26 years, 4,023 cfs (2,913,000 acre-ft per year).

Extremes.--Maximum discharge during year, 20,100 cfs Jan. 20 (gage height, 12.05 ft); minimum daily, 1,020 cfs July 27, 28. 1912-25, 1951-64: Maximum discharge, 122,000 cfs Dec. 22, 1955 (gage height, 29.2 ft, from floodmarks), from rating curve extended above 25,000 cfs on basis of slope-area measurements at gage heights 20.1 and 29.2 ft; minimum daily, 320 cfs Nov. 25, 1917.

Remarks.--Records good. Flow considerably regulated by reservoirs and powerplants above station. Large diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.7	975	6.0	5,050
3.0	1,220	7.0	6,800
4.0	2,190	9.0	11,200
5.0	3,500	11.0	16,900

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,000	2,230	4,280	4,490	5,750	2,910	5,380	* 3,160	2,890	*1,400	1,220	1,360
2	* 2,000	2,230	3,680	4,490	5,730	2,940	5,870	2,670	2,620	1,360	1,310	*1,510
3	2,000	2,230	* 4,220	4,440	5,510	2,840	5,590	2,650	2,500	1,340	1,280	1,510
4	2,010	2,330	4,240	4,250	5,530	2,890	5,070	2,580	* 2,550	1,340	1,270	1,500
5	2,060	* 2,330	4,190	4,160	5,390	3,010	4,000	2,510	2,800	1,340	1,240	1,500
6	2,120	2,450	4,270	4,240	5,000	2,970	3,650	2,440	2,910	1,320	* 1,210	1,480
7	2,020	2,500	4,140	* 4,440	4,520	2,910	4,780	2,370	3,370	1,280	1,210	1,470
8	2,080	4,430	3,600	4,430	4,350	2,840	4,940	2,360	3,230	1,290	1,230	1,450
9	2,080	6,780	3,660	4,310	4,600	2,800	5,150	2,410	3,140	1,370	1,220	1,440
10	2,090	4,220	4,240	4,280	4,010	2,770	5,150	2,530	3,010	1,350	1,200	1,440
11	2,190	3,390	4,270	4,120	4,020	2,910	5,030	2,640	3,890	1,320	1,190	1,440
12	2,230	3,080	4,250	3,830	4,010	3,230	4,810	2,810	4,010	1,300	1,160	1,440
13	2,240	2,910	4,300	3,280	3,960	3,160	4,840	2,950	3,590	1,310	1,150	1,460
14	2,190	4,250	4,240	4,010	3,800	3,110	5,200	2,940	3,360	1,250	1,150	1,460
15	2,190	5,980	3,830	3,940	3,620	3,120	5,480	2,930	2,860	1,250	1,150	1,520
16	2,200	5,230	3,720	3,330	3,490	3,180	5,580	3,010	2,730	1,240	1,150	1,530
17	2,190	4,620	4,080	3,530	3,120	3,460	5,510	2,980	2,500	1,200	1,140	1,530
18	2,190	4,080	4,060	4,120	3,050	3,580	5,300	3,000	2,390	1,160	1,140	1,530
19	2,180	4,460	3,960	4,360	3,000	3,580	4,680	3,160	2,150	1,130	1,130	1,530
20	2,190	4,520	3,500	1,600	2,970	3,560	4,590	3,320	1,950	1,120	1,140	1,540
21	2,190	4,380	4,180	12,300	2,940	3,590	4,870	3,190	1,880	1,100	1,140	1,550
22	2,250	4,220	3,830	8,050	2,970	3,580	4,680	3,020	1,800	1,080	1,120	1,560
23	2,330	5,250	3,700	6,620	2,950	3,500	4,220	2,980	1,750	1,060	1,100	1,570
24	2,310	5,170	3,280	6,060	2,970	3,440	4,080	3,020	1,700	1,060	1,090	1,540
25	2,330	4,470	3,700	5,820	2,900	3,370	3,840	3,090	1,640	1,050	1,080	1,540
26	2,290	4,920	3,370	5,820	2,850	3,320	3,180	3,080	1,600	1,040	1,090	1,550
27	2,290	4,970	4,020	5,370	* 2,820	3,320	3,160	2,890	1,580	1,020	1,100	1,540
28	2,260	4,650	4,460	5,250	2,820	3,600	3,330	2,860	1,530	1,020	1,100	1,540
29	2,250	4,510	5,080	5,220	2,810	3,470	3,650	2,860	1,480	1,060	1,110	1,550
30	2,240	4,570	4,600	5,200	-----	3,660	3,650	2,890	1,450	1,060	1,120	1,550
31	2,230	-----	4,670	* 5,190	-----	* 3,890	-----	2,930	-----	1,060	1,130	-----
Total	67,420	121,360	125,620	164,950	111,460	100,510	139,260	88,230	74,860	37,280	36,070	45,130
Mean	2,175	4,045	4,052	5,321	3,843	3,242	4,642	2,846	2,495	1,203	1,164	1,504
Max	2,330	6,780	5,080	16,000	5,750	3,890	5,870	3,320	4,010	1,400	1,310	1,570
Min	2,000	2,230	3,280	3,280	2,760	2,770	3,160	2,360	1,450	1,020	1,080	1,360
Ac-ft	113,700	240,700	249,200	327,200	221,100	199,400	276,200	175,000	148,500	73,940	71,540	89,510

Calendar year 1963: Max 20,200 Min 989 Mean 3,790 Ac-ft 2,744,000
 Water year 1963-64: Max 16,000 Min 1,020 Mean 3,039 Ac-ft 2,206,000

* Discharge measurement made on this day.

KLAMATH RIVER BASIN

11-5205. Klamath River near Seiad Valley, Calif.--Continued.

Records available.--Water temperatures: October 1963 to September 1964.

Extremes.--Maximum temperature during year, 78°F July 26; minimum, 37°F Feb. 7.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	67	65	52	51	44	43	42	42	40	39	42	41	49	47	51	49	63	60	70	65	69	66	64	62
2	67	65	52	51	43	42	42	41	40	40	42	41	48	47	49	47	62	59	68	64	70	66	65	61
3	65	63	52	51	43	42	41	40	40	39	42	41	48	46	49	47	61	60	69	65	71	67	65	62
4	63	61	52	51	43	43	40	40	39	39	44	42	49	47	50	48	60	59	68	67	72	68	66	63
5	61	60	51	51	43	42	40	40	39	39	44	43	49	48	49	49	60	59	70	66	72	68	66	63
6	61	60	51	50	43	43	40	40	39	38	43	42	49	47	51	47	59	58	71	67	73	69	66	63
7	61	60	50	49	43	42	41	40	38	37	42	41	50	49	52	49	58	57	72	69	73	69	66	64
8	62	60	50	49	42	42	40	40	39	38	42	40	51	50	54	50	57	55	72	69	74	70	65	61
9	62	61	49	49	42	42	40	40	39	38	44	42	51	50	56	52	56	54	69	65	74	70	64	61
10	62	60	50	49	42	40	40	40	39	38	44	42	50	49	58	55	59	56	71	66	75	71	64	62
11	61	60	50	50	40	39	40	39	40	39	44	42	51	49	57	54	62	58	73	69	75	72	64	61
12	60	59	50	50	39	39	39	39	39	38	42	41	51	50	57	55	63	61	73	72	72	69	64	61
13	60	59	50	50	39	39	39	39	39	38	43	41	51	50	57	55	63	62	74	73	73	69	65	62
14	60	60	50	49	39	39	39	39	39	38	44	42	52	51	56	53	64	62	74	70	73	69	65	62
15	60	59	49	47	39	39	39	39	40	38	46	44	52	51	57	53	63	61	71	69	73	69	65	62
16	59	58	48	47	39	39	39	39	40	39	46	45	51	50	56	54	61	58	71	67	73	69	64	61
17	60	58	47	47	39	39	39	39	41	39	46	45	50	49	56	52	61	59	72	69	73	70	65	62
18	60	58	48	47	39	39	39	39	41	40	46	45	50	49	57	54	61	59	72	68	72	68	64	60
19	58	57	48	47	40	39	40	38	41	40	46	45	51	50	59	55	62	58	73	68	71	67	63	60
20	57	56	47	47	40	39	40	39	42	40	46	45	52	51	59	56	63	59	73	69	72	68	63	61
21	58	57	47	46	40	40	39	38	41	40	45	44	52	51	58	55	64	60	72	69	75	70	63	60
22	57	56	46	45	40	39	38	38	42	41	45	45	52	51	58	55	66	61	72	68	75	71	63	60
23	56	55	45	45	40	40	39	38	42	40	46	45	51	50	60	56	68	63	74	69	75	72	64	61
24	55	54	46	45	40	40	39	39	42	41	46	45	50	49	61	57	69	65	76	71	74	71	65	62
25	55	54	46	45	41	40	40	39	41	40	45	44	51	50	61	58	69	65	77	72	73	69	65	62
26	55	53	46	45	41	40	40	39	41	39	47	45	54	51	61	57	69	65	78	73	72	69	64	61
27	53	52	46	45	41	41	40	39	42	40	48	46	55	52	57	54	66	62	77	74	70	66	63	60
28	52	52	46	44	41	41	40	39	41	40	48	47	57	54	57	55	66	61	76	72	69	67	62	60
29	53	52	44	44	41	41	40	39	41	40	49	48	56	54	60	56	66	64	73	71	68	65	62	59
30	53	52	44	44	42	41	40	39	-----	-----	49	48	54	51	63	59	67	63	73	71	67	65	61	59
31	52	51	-----	-----	42	42	39	39	-----	-----	50	48	-----	-----	64	62	-----	-----	70	67	65	63	-----	-----
Avg	59	58	48	48	41	41	40	39	40	39	45	44	51	50	56	53	63	60	72	69	72	68	64	61

11-5215. Indian Creek near Happy Camp, Calif.

Location.--Lat 41°50'50", long 123°23'10", in SE $\frac{1}{4}$ sec.22, T.17 N., R.7 E., on left bank 1.5 miles upstream from Slater Creek, 3.8 miles north of Happy Camp, and 4.5 miles upstream from mouth.

Drainage area.--118 sq mi.

Records available.--September 1911 to September 1921 (fragmentary), December 1956 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Altitude of gage is 1,300 ft (from topographic map). Prior to December 1956, staff gages at sites 0.25 mile upstream at different datums.

Average discharge.--10 years (1911-14, 1957-64), 411 cfs (297,600 acre-ft per year).

Extremes.--Maximum discharge during year, 2,810 cfs Jan. 20 (gage height, 10.32 ft); minimum daily, 42 cfs Sept. 25-30.

1911-21, 1956-64: Maximum discharge, 14,400 cfs Jan. 12, 1959 (gage height, 23.54 ft), from rating curve extended above 4,800 cfs on basis of slope-area measurement at gage height 29.0 ft; minimum observed, 20 cfs Aug. 19 to Sept. 6, 1914.

Flood of Dec. 21, 1955, reached a stage of 29.0 ft, from floodmarks (discharge, 23,000 cfs on basis of slope-area measurement of maximum flow).

Remarks.--Records good except those for periods of no gage-height record, which are fair. Small diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 28 to Dec. 28, Jan. 20-23, 25, 26, 29)

0.5	36	3.0	374
0.8	58	4.0	622
1.2	98	5.0	910
1.7	156	7.0	1,540
2.5	278	9.0	2,260

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	73	364	455	1,050	392	710	460	415	* 139	83	52
2	* 48	85	336	515	826	368	617	411	362	134	80	53
3	47	85	316	432	707	350	542	388	342	130	76	* 52
4	48	215	* 300	381	644	372	530	364	* 386	128	73	49
5	a 90	238	298	344	611	440	545	358	445	126	71	49
6	81	* 434	376	406	575	411	495	* 338	402	124	69	49
7	62	308	328	611	532	381	492	330	390	120	* 67	49
8	58	a1,940	336	* 468	510	358	549	340	336	118	66	48
9	62	a1,120	324	440	490	354	614	390	292	114	64	48
10	60	548	298	402	490	338	588	500	280	111	64	47
11	91	362	280	364	480	408	598	522	273	109	62	46
12	71	278	267	342	458	408	590	542	274	107	62	46
13	62	247	264	334	435	383	570	558	271	110	62	45
14	57	998	258	309	425	366	606	518	264	108	61	44
15	a 86	855	252	291	415	381	665	485	252	108	61	45
16	88	585	242	354	392	408	* 649	495	236	102	59	44
17	70	445	236	470	366	458	575	492	223	97	58	45
18	62	379	230	510	364	502	525	512	215	94	57	46
19	58	777	252	778	374	482	502	565	205	92	56	45
20	58	633	352	2,030	390	482	502	550	198	91	55	45
21	75	458	322	1,120	397	480	512	488	194	90	55	45
22	159	415	292	* 817	425	458	502	460	187	88	53	44
23	193	1,470	276	636	438	422	460	460	187	85	52	44
24	132	1,140	265	560	440	392	422	488	180	83	51	43
25	180	755	280	657	420	364	397	485	169	79	50	42
26	126	652	326	665	* 402	356	406	462	162	74	49	42
27	102	627	508	590	388	362	425	399	151	73	50	42
28	94	538	808	540	379	406	515	381	145	75	51	42
29	86	460	770	608	358	508	588	374	143	87	51	42
30	80	402	570	627	-----	* 603	515	406	139	83	51	42
31	76	-----	470	767	-----	701	-----	455	-----	79	52	-----
Total	2,610	17,522	1,0796	17,823	14,181	13,094	16,205	13,976	7,718	3,158	1,871	1,375
Mean	84.2	584	348	575	489	422	540	451	257	102	60.4	45.8
Max	193	1,940	808	2,030	1,050	701	710	565	445	139	83	53
Min	47	73	230	291	358	338	397	330	139	73	49	42
Ac-ft	5,180	34,750	21,410	35,350	28,130	25,970	32,140	27,720	15,310	6,260	3,710	2,730

Calendar year 1963: Max 3,820 Min 47 Mean 427 Ac-ft 308,800

Water year 1963-64: Max 2,030 Min 42 Mean 329 Ac-ft 238,700

Peak discharge (base, 2,000 cfs).--Nov. 8 (time unknown) about 2,500 cfs; Jan. 20 (0400) 2,810 cfs (10.32 ft).

* Discharge measurement made on this day.

a No gage-height record.

KLAMATH RIVER BASIN

11-5222. Elk Creek near Happy Camp, Calif.

Location.--Lat 41°44'40", long 123°20'50", in NE¼ sec.36, T.16 N., R.7 E., on left bank 0.15 mile downstream from East Fork, 4 miles upstream from mouth, and 4 miles south of Happy Camp.

Drainage area.--90.4 sq mi (revised).

Records available.--October 1956 to September 1964 (discontinued). Monthly discharge only for October 1956, published in WSP 1735.

Gage.--Water-stage recorder. Altitude of gage is 1,300 ft (from topographic map).

Average discharge.--8 years, 219 cfs (158,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,740 cfs Jan. 20 (gage height, 6.54 ft); minimum daily, 30 cfs Aug. 26, Sept. 8, 11-20, 23-30.

1956-64: Maximum discharge, 4,370 cfs Dec. 2, 1962 (gage height, 7.90 ft); minimum, 25 cfs Sept. 18, 1962.

Flood of Dec. 21, 1955, reached a stage of 15.3 ft, from floodmarks (discharge, 14,400 cfs on basis of slope-area measurement of maximum flow).

Remarks.--Records good. Small diversions above station for irrigation.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 8		Nov. 8 to Jan. 31		Feb. 1 to Sept. 30	
2.5	32	3.0	110	2.8	20
2.8	70	3.5	239	3.0	51
3.2	146	4.0	450	3.4	146
3.6	254	4.5	740	3.8	295
4.3	575	5.0	1,130	4.5	730
5.0	1,080	6.0	2,100		
6.0	2,100				

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	50	213	226	620	200	254	242	305	99	53	34
2	35	55	196	229	541	183	234	222	277	94	48	34
3	*34	54	*185	207	478	173	222	214	264	92	46	*34
4	34	115	174	196	430	183	218	203	*315	99	44	33
5	66	101	169	185	394	186	222	196	367	89	42	31
6	73	*144	179	213	367	176	210	*190	356	87	42	31
7	50	109	166	220	335	170	214	186	335	82	*41	31
8	46	1230	174	*201	310	164	230	190	286	80	41	30
9	48	719	164	201	290	164	250	214	242	78	41	31
10	47	303	149	190	282	161	238	259	222	76	41	31
11	77	213	142	179	268	186	242	282	226	73	39	30
12	52	172	138	172	254	186	250	310	242	69	39	30
13	48	159	136	172	242	176	250	330	226	67	39	30
14	46	888	131	159	238	176	277	305	218	67	39	30
15	52	550	127	152	230	183	300	305	203	73	37	30
16	52	374	127	185	218	186	*310	320	186	67	37	30
17	47	291	123	268	207	196	282	305	173	65	37	30
18	46	243	120	342	200	203	264	320	164	63	37	30
19	45	299	125	782	196	203	254	372	152	63	36	30
20	45	279	145	1940	193	207	254	378	146	61	34	30
21	48	226	133	866	190	207	264	330	141	59	33	31
22	91	246	129	*592	193	203	259	315	135	59	33	31
23	109	797	125	480	193	196	238	320	132	57	33	30
24	73	568	123	432	190	190	214	330	130	55	31	30
25	75	418	125	436	186	176	210	335	124	53	31	30
26	67	387	133	418	183	173	218	315	122	51	30	30
27	60	360	179	400	*179	173	238	277	114	49	31	30
28	55	303	320	387	179	176	295	254	112	49	31	30
29	54	264	320	428	173	193	320	250	104	57	31	30
30	52	236	264	436	-----	210	272	277	*104	51	33	30
31	50	-----	236	498	-----	*238	-----	310	-----	48	33	-----
Total	1,712	10,153	5,170	11,792	7,959	5,797	7,503	8,656	6,123	21,32	1,163	922
Mean	55.2	338	167	380	274	187	250	279	204	68.8	37.5	30.7
Max	109	1,230	320	1,940	620	238	320	378	367	99	53	34
Min	34	50	120	152	173	161	210	186	104	48	30	30
Ac-ft	3,400	20,140	10,250	23,390	15,790	11,500	14,880	17,170	12,140	4,230	2,310	1,830

Calendar year 1963: Max 2,290 Min 34 Mean 252 Ac-ft 182,500
 Water year 1963-64: Max 1,940 Min 30 Mean 189 Ac-ft 137,000

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-8	1900	6.32	2,470	11-23	1400	4.79	962
11-14	1100	5.52	1,600	1-20	0400	6.54	2,740

* Discharge measurement made on this day.

11-5222.6. Ti Creek near Somesbar, Calif.

Location.--Lat 41°31'30", long 123°31'35", (unsurveyed), on left bank at Ti Bar School, 0.1 mile upstream from mouth, and 10.5 miles north of Somesbar, Siskiyou County.

Drainage area.--9.46 sq mi.

Records available.--September 1960 to September 1964, discontinued as a continuous-record station; converted to a crest-stage partial-record station.

Gage.--Water-stage recorder, crest-stage gage, and float-operated rain gage. Altitude of gage is 700 ft (from topographic map).

Extremes.--Maximum discharge during year, 550 cfs Jan. 20 (gage height 3.80 ft); minimum 6.0 cfs Sept. 10-15, 16, 26-30.
1960-64: Maximum discharge, that of Jan. 20, 1964; minimum daily, 3 cfs Oct. 30 to Nov. 10, 1962.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.2	11	24	26	92	28	28	23	16	12	8.5	*8.2
2	8.2	12	*22	*25	85	25	*28	22	*16	12	8.5	7.6
3	8.2	14	21	24	74	23	28	22	16	12	8.5	7.6
4	9.4	27	20	23	66	25	28	22	16	12	8.5	7.0
5	21	22	20	22	61	25	28	22	16	12	8.5	7.0
6	17	29	20	34	55	25	28	22	16	11	8.0	6.5
7	14	25	20	37	51	24	28	22	16	11	8.0	7.0
8	13	149	23	32	48	23	28	22	16	11	8.0	7.0
9	14	55	24	31	44	23	28	21	16	11	8.0	7.0
10	15	28	23	29	42	22	28	20	16	11	8.0	6.5
11	20	20	22	28	40	27	28	20	15	10	8.2	6.5
12	15	18	21	27	37	24	28	21	15	10	8.2	6.5
13	14	17	20	27	37	26	28	21	15	10	8.2	6.5
14	14	53	20	26	35	26	28	20	15	10	7.6	6.5
15	20	49	19	25	36	27	28	20	15	10	7.6	6.5
16	15	35	19	26	33	28	28	22	14	10	7.6	6.0
17	14	29	18	32	32	29	28	20	14	10	7.6	7.0
18	14	26	18	43	31	29	29	21	14	10	8.0	7.0
19	14	40	19	66	30	29	28	20	14	10	8.0	6.5
20	15	32	21	295	29	31	27	21	14	10	8.0	6.5
21	15	27	20	150	28	32	27	20	13	10	8.0	7.0
22	26	32	20	96	28	30	26	20	13	9.5	8.0	7.6
23	17	125	20	81	27	28	25	20	13	9.5	8.0	7.0
24	12	75	19	67	26	28	25	20	13	9.5	8.0	7.0
25	15	50	19	74	25	27	25	19	13	9.5	8.0	6.5
26	14	38	21	68	25	27	24	19	12	9.5	8.0	6.0
27	13	34	27	61	25	26	24	18	12	9.0	8.0	6.0
28	12	31	34	67	25	28	23	18	12	9.0	8.0	6.0
29	11	28	33	*74	*23	28	23	17	12	9.0	8.0	6.5
30	11	26	31	66	-----	28	*23	17	*12	9.0	8.0	6.0
31	*11	-----	28	75	-----	28	-----	17	-----	9.0	8.0	-----
Total	440.0	1,157	686	1,757	1,190	829	805	629	430	317.5	249.5	202.5
Mean	14.2	38.6	22.1	56.7	41.0	26.7	26.8	20.3	14.3	10.2	8.05	6.75
Max	26	149	34	295	92	32	29	23	16	12	8.5	8.2
Min	8.2	11	18	22	23	22	23	17	12	9.0	7.6	6.0
Ac-ft	873	2,290	1,360	3,480	2,360	1,640	1,600	1,250	853	630	495	402
(+)	5.7	15.4	4.9	16.3	0.7	5.5	0.7	0.5	0.8	0.2	-	-

Calendar year 1963: Max 164 Min 8 Mean 29.1 Ac-ft 21,020
Water year 1963-64: Max 295 Min 6.0 Mean 23.8 Ac-ft 17,230

Peak discharge (base, 120 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11- 8	1900	2.99	248	1-20	1800	3.80	550
11-23	1200	2.78	183				

* Discharge measurement made on this day.

+ Precipitation, in inches.

Note.--No gage-height record Oct. 24-30, Nov. 28 to Dec. 1, Dec. 9 to Jan. 1, Jan. 28, Feb. 19-29, Apr. 2-17, May 21 to Aug. 10, Aug. 18-31.

KLAMATH RIVER BASIN

11-5223. South Fork Salmon River near Forks of Salmon, Calif.

Location--Lat 41°13'20", long 123°15'00", in SE¼ sec.30, T.39 N., R.12 W., on left bank 100 ft downstream from Methodist Creek and 4.5 miles southeast of town of Forks of Salmon.

Drainage area--252 sq mi.

Records available--Occasional low-flow measurements, water years 1953-57 and annual maximum, water years 1954-57. August 1957 to September 1964.

Gage--Water-stage recorder (digital). Altitude of gage is 1,450 ft (from topographic map). Sept. 13, 1953, to Aug. 23, 1957, crest-stage gage only, at datum 6.66 ft higher.

Average discharge--7 years, 482 cfs (349,000 acre-ft per year).

Extremes--Maximum discharge during year, 8,110 cfs Jan. 20 (gage height, 11.10 ft); minimum recorded, 27 cfs Sept. 25-26.

1953-64: Maximum discharge, 24,200 cfs Dec. 22, 1955 (gage height, 18.86 ft, from floodmarks, present datum), on basis of slope-area measurement of maximum flow.

1957-64: Minimum discharge recorded, that of Sept. 25-26, 1964.

Remarks--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 21 to Feb. 5, Apr. 10
to June 15, Aug. 2 to Sept. 26)

3.1	26	5.0	720
3.2	38	6.0	1,570
3.6	98	8.0	3,850
4.0	205	10.0	6,500
4.5	420		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*38	83	*353	447	1,330	362	* 597	522	673	*216	75	43
2	38	84	318	439	1,140	338	525	460	*587	211	71	*43
3	38	84	296	380	940	317	460	434	546	197	68	40
4	37	169	276	343	832	337	436	396	635	193	66	38
5	36	169	263	312	825	392	449	377	825	184	64	36
6	102	441	288	349	769	380	428	349	849	172	62	36
7	102	277	277	433	678	357	420	335	926	175	59	35
8	78	2,640	273	406	620	335	457	338	642	175	58	34
9	87	2,670	270	389	584	337	521	398	550	159	57	34
10	118	980	243	360	578	321	494	517	513	150	55	34
11	405	608	224	326	560	356	502	596	488	145	54	33
12	159	450	217	308	518	372	513	664	524	144	52	32
13	105	400	212	299	482	362	526	696	524	150	52	31
14	96	2,530	201	279	450	356	579	639	519	139	51	31
15	158	1,560	196	261	445	365	674	640	479	142	49	31
16	244	899	188	320	410	377	704	674	427	130	48	31
17	138	661	182	536	380	405	598	596	380	122	46	30
18	104	532	176	741	360	446	542	616	363	114	45	31
19	91	547	175	1,040	360	435	507	714	334	106	45	31
20	80	530	210	5,190	360	437	492	788	317	101	45	31
21	84	448	198	1,920	360	432	502	687	316	97	42	31
22	104	402	189	1,100	375	411	513	645	302	93	41	30
23	320	1,070	186	755	380	387	462	667	326	89	39	30
24	*176	968	177	602	390	362	413	699	331	86	38	29
25	214	670	176	664	375	330	384	690	313	84	38	28
26	160	619	179	727	355	316	395	671	293	81	36	a 28
27	123	595	307	678	343	317	433	595	260	79	37	a 28
28	103	510	825	*610	*338	342	568	537	233	77	37	a 28
29	106	443	900	699	322	403	*719	539	224	82	37	a 28
30	98	394	644	832	-----	469	603	590	218	79	36	a 28
31	88	-----	*508	884	-----	565	-----	669	-----	75	35	-----
TOTAL	3,830	22,433	9,127	22,629	15,859	11,721	15,416	17,738	13,917	4,047	1,538	973
MEAN	124	748	294	730	547	378	514	572	464	131	49.6	32.4
AC-FT	7,600	44,500	18,100	44,880	31,460	23,250	30,580	35,180	27,600	8,030	3,050	1,930
MAX	405	2,670	900	5,190	1,330	565	719	788	926	216	75	43
MIN	36	83	175	261	322	316	384	335	218	75	35	28

CALENDAR YEAR 1963 MAX 5,320 MIN 36 MEAN 557 AC-FT 403,400
WATER YEAR 1963-64 MAX 5,190 MIN 28 MEAN 380 AC-FT 276,200

Peak discharge (base, 3,000 cfs.)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11- 8	2130	9.11	5,290	1-20	0530	11.10	8,110
11-14	1345	8.45	4,440				

* Discharge measurement made on this day.
a No gage-height record.

11-5224. North Fork Salmon River near Forks of Salmon, Calif.

Location.--Lat 41°16'02", long 123°18'12", in NE¼ sec.18, T.10 N., R.8 E., on right bank 0.4 mile downstream from Pollocks Gulch, 1.2 miles upstream from Forks of Salmon, and 1.3 miles upstream from mouth.

Drainage area.--203 sq mi (revised).

Records available.--August 1958 to September 1964, discontinued as a continuous-record station; converted to a crest-stage partial-record station.

Gage.--Water-stage recorder (digital). Altitude of gage is 1,240 ft (from topographic map).

Average discharge.--6 years, 448 cfs (324,300 acre-ft per year).

Extremes.--Maximum discharge during year, 6,010 cfs Nov. 8 (gage height, 11.61 ft), from rating curve extended above 2,300 cfs as explained below; minimum, 32 cfs Sept. 25.

1958-64: Maximum discharge, 10,500 cfs Dec. 2, 1962 (gage height, 14.27 ft), from rating curve extended above 2,300 cfs on basis of slope-area measurement at gage height 12.80 ft; minimum, 28 cfs Oct. 5, 1960.

Remarks.--Records good. No regulation; small diversion above station for domestic use.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.4	26	4.6	230
3.5	36	5.0	360
3.7	58	6.0	820
4.0	99	7.0	1,400
4.3	150	10.0	3,960

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	*36	78	*440	541	1,570	468	*816	725	806	*204	81	49
2	36	86	399	520	1,320	436	736	638	*726	194	81	*49
3	35	85	369	453	1,080	406	648	597	676	184	75	47
4	34	154	346	414	993	415	607	544	719	204	72	44
5	40	162	329	383	1,010	455	623	518	840	186	70	42
6	92	284	404	417	945	440	582	480	891	171	66	40
7	74	212	356	487	848	415	575	462	927	162	64	41
8	54	3,050	342	460	790	395	633	468	716	156	63	41
9	54	2,510	336	455	757	398	717	548	606	147	61	40
10	54	936	299	429	764	380	685	711	587	138	60	40
11	90	601	278	399	739	415	702	824	556	132	57	39
12	84	438	267	379	691	423	720	908	563	127	56	38
13	66	361	261	368	637	402	730	940	578	127	56	37
14	58	1,600	250	343	595	391	796	858	572	123	55	37
15	67	1,310	241	321	572	400	910	851	516	133	53	36
16	83	816	230	372	525	424	945	889	458	123	52	35
17	68	635	220	490	490	468	822	814	415	114	50	36
18	61	524	213	636	470	535	749	852	389	109	50	37
19	57	513	214	709	474	526	706	983	356	105	49	37
20	56	478	261	2,720	482	531	687	1,020	340	102	48	36
21	84	421	241	1,440	489	533	714	897	334	98	46	35
22	84	395	226	939	516	501	722	842	314	95	45	35
23	180	1,150	224	719	527	472	649	850	330	92	44	34
24	*123	1,140	215	629	536	445	586	901	323	89	42	34
25	213	834	216	667	514	412	549	899	299	83	41	33
26	158	804	227	751	485	400	575	840	278	80	41	33
27	114	770	455	731	469	405	640	715	253	77	41	34
28	98	649	893	*686	*465	438	833	653	233	78	41	34
29	95	557	943	727	442	515	*1,000	667	221	84	41	33
30	88	493	737	828	-----	598	830	717	210	81	41	34
31	82	-----	*614	918	-----	717	-----	807	-----	78	43	-----
TOTAL	2,518	22,046	11,046	20,331	20,195	14,159	21,487	23,418	15,032	3,876	1,685	1,140
MEAN	81.2	735	356	656	696	457	716	755	501	125	54.4	38.0
AC-FT	4,990	43,730	21,910	40,330	40,060	28,080	42,620	46,450	29,820	7,690	3,340	2,260
MAX	213	3,050	943	2,720	1,570	717	1,000	1,020	927	204	81	49
MIN	34	78	213	321	442	380	549	462	210	77	41	33

CALENDAR YEAR 1963 MAX 5,690 MIN 34 MEAN 568 AC-FT 411,000
 WATER YEAR 1963-64 MAX 3,050 MIN 33 MEAN 429 AC-FT 311,300

Peak discharge (base, 2,500 cfs)

* Discharge measurement made on this day.

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11- 8	1930	11.61	6,010	1-20	0615	9.69	3,650
11-14	1400	8.94	2,950				

KLAMATH RIVER BASIN

11-5225. Salmon River at Somesbar, Calif.

Location--41°22'50", long 123°28'10", in NW¼ sec.2, T.11 N., R.6 E., on right bank 0.5 mile east of Somesbar Post Office and 1.5 miles upstream from mouth.

Drainage area--746 sq mi.

Records available--September 1911 to September 1915, October 1927 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage--Water-stage recorder. Altitude of gage is 500 ft (from topographic map). Prior to October 1927, staff gage at different datum.

Average discharge--41 years, 1,728 cfs (1,251,000 acre-ft per year).

Extremes--Maximum discharge during year, 19,300 cfs Jan. 20 (gage height, 11.23); minimum, 136 cfs Sept. 24-30. 1911-15, 1927-64: Maximum discharge, 84,000 cfs Dec. 22, 1955 (gage height, 28.80 ft), from rating curve extended above 33,000 cfs; minimum, 70 cfs Aug. 25, Sept. 4, 5, 1931.

Remarks--Records good. No storage or large diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 28 to Sept. 30)

3.0	130	6.0	4,440
3.5	440	8.0	9,500
4.0	940	10.0	15,300
5.0	2,440		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	185	377	1,610	*2,010	5,780	1,670	2,570	2,200	*2,620	765	363	*212
2	185	a400	1,480	2,010	5,100	1,600	2,330	1,980	2,330	754	335	224
3	180	a480	1,370	1,750	4,270	1,480	2,100	1,880	2,200	710	314	218
4	180	a560	1,280	1,610	3,820	1,540	2,010	1,750	2,330	743	300	212
5	229	a740	1,210	1,500	3,720	1,700	2,020	1,690	2,820	700	300	202
6	384	a1,640	1,400	1,830	3,520	1,640	1,910	1,560	2,930	660	288	196
7	342	a1,050	1,280	2,310	3,200	1,550	1,880	1,540	3,200	640	282	196
8	282	a2,300	1,280	2,170	2,980	1,480	1,990	1,540	2,410	630	276	190
9	276	a3,500	1,280	2,090	2,820	1,480	2,170	1,740	2,070	601	258	185
10	314	a4,900	1,140	1,960	2,760	1,420	2,120	2,170	1,960	565	246	180
11	632	2,280	1,070	1,820	2,660	1,560	2,140	2,390	1,880	529	246	180
12	480	*1,640	1,020	1,700	2,490	a1,800	2,170	2,670	1,940	512	240	174
13	356	1,430	1,000	1,660	2,330	a1,750	2,180	2,800	1,940	520	240	174
14	307	5,350	966	1,550	2,200	a1,630	2,340	2,600	1,910	512	240	163
15	349	4,780	928	1,430	2,170	a1,560	2,670	2,570	1,770	574	234	163
16	565	3,070	880	1,640	2,020	1,640	2,730	2,690	1,580	512	224	158
17	405	2,390	856	2,310	1,860	1,750	2,440	2,490	1,430	472	224	152
18	342	2,020	820	3,380	1,780	1,910	2,260	2,580	1,360	448	224	152
19	307	2,120	832	3,950	1,770	1,880	2,170	2,910	1,270	433	218	152
20	294	2,090	1,030	13,600	1,770	1,900	2,090	3,050	1,200	419	212	152
21	370	1,820	953	7,210	1,770	1,940	2,170	2,710	1,170	405	207	146
22	493	1,700	892	4,690	1,800	1,850	2,180	2,570	1,120	391	202	146
23	940	3,840	868	3,500	1,820	1,770	2,010	2,620	1,160	384	190	146
24	630	4,220	844	3,140	1,800	1,690	1,850	2,780	1,160	370	190	141
25	904	3,120	868	3,220	1,740	1,560	1,720	2,750	1,070	356	190	136
26	721	2,870	892	3,320	1,660	1,520	1,780	2,660	992	342	185	136
27	520	2,670	1,550	3,200	*1,600	1,520	1,910	2,330	928	321	190	136
28	448	2,300	2,750	2,980	1,600	1,600	*2,360	2,140	880	328	190	136
29	426	2,020	3,260	3,280	1,540	1,800	2,890	2,180	*820	363	185	136
30	*405	*1,800	2,570	*3,660	-----	2,020	2,440	2,330	776	*342	190	136
31	391	-----	2,200	3,900	-----	*2,330	-----	2,580	-----	328	196	-----
Total	12,842	74,477	40,379	94,380	74,350	52,540	65,600	72,450	51,226	15,629	7,379	5,030
Mean	414	2,483	1,303	3,045	2,564	1,695	2,187	2,337	1,708	504	238	168
Max	940	8,500	3,260	13,600	5,780	2,330	2,890	3,050	3,200	765	363	224
Min	180	377	820	1,430	1,540	1,420	1,720	1,540	776	321	185	136
Ac-ft	25,470	147,700	80,090	187,200	147,500	104,200	130,100	143,700	101,600	31,000	14,640	9,980

Calendar year 1963: Max 15,700 Min 180 Mean 2,016 Ac-ft 1,460,000
Water year 1963-64: Max 13,600 Min 136 Mean 1,547 Ac-ft 1,123,000

Peak discharge (base, 7,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-9	2100	10.90	18,200	1-20	0700	11.23	19,300
11-14	1600	7.87	9,160				

* Discharge measurement made on this day.
a No gage-height record.

11-5230. Klamath River at Somesbar, Calif.

Location.--Lat 41°22'40", long 123°29'30", in NE¼ sec.4, T.11 N., R.6 E., on left bank 300 ft downstream from Salmon River and 1 mile west of Somesbar Post Office.

Drainage area.--8,480 sq mi, approximately (not including Lost River or Lower Klamath Lake basins).

Records available.--October 1927 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Altitude of gage is 450 ft (from topographic map).

Average discharge.--37 years, 7,638 cfs (5,530,000 acre-ft per year).

Extremes.--Maximum discharge during year, 59,900 cfs Jan. 20 (gage height, 26.30 ft); minimum daily, 1,600 cfs Aug. 26, 27.

1927-64: Maximum discharge, 202,000 cfs Dec. 22, 1955 (gage height, 59.4 ft, from floodmarks), from rating curve extended above 80,000 cfs by slope-conveyance study; minimum daily, 320 cfs Aug. 25, Sept. 1, 1951.

Remarks.--Records good. Flow considerably regulated by reservoirs and powerplants above station. Large diversions above station for irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 25 to Jan. 19, July 10 to Sept. 30)

4.8	1,560	9.0	8,550
5.2	1,940	24.0	53,000
7.0	4,280		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,500	3,160	9,280	*10,300	21,000	7,350	11,000	8,400	*7,950	3,140	1,860	1,700
2	2,490	3,250	7,920	10,600	18,700	7,320	12,100	7,150	7,050	3,020	2,020	1,940
3	2,490	3,270	7,950	9,900	16,400	6,900	11,100	6,780	6,650	2,960	2,010	2,000
4	2,500	4,420	7,850	9,380	15,200	6,850	10,700	6,420	6,780	2,950	1,990	2,000
5	2,880	4,460	7,580	8,820	14,700	7,720	9,700	6,220	8,080	2,890	1,960	1,990
6	3,130	6,380	8,200	9,500	13,600	7,550	8,800	5,940	8,180	2,780	1,900	1,980
7	2,850	5,270	7,980	12,000	12,700	7,180	9,220	5,800	8,750	2,730	1,880	1,960
8	2,670	26,700	7,280	11,000	11,500	6,820	9,920	5,780	7,880	2,650	1,880	1,930
9	2,790	29,200	7,180	10,600	11,500	6,800	10,700	6,160	6,900	2,650	1,870	1,920
10	2,820	13,400	7,150	10,200	11,000	6,520	10,700	7,080	6,520	2,640	1,860	1,910
11	3,420	9,550	7,280	9,680	10,400	7,200	10,600	7,780	6,720	2,560	1,810	1,910
12	3,220	7,920	7,080	9,100	10,200	8,000	10,400	8,200	7,680	2,490	1,780	1,910
13	3,020	7,000	7,050	8,250	9,880	7,880	10,200	8,650	7,020	2,460	1,780	1,910
14	2,920	14,600	6,920	8,350	9,520	7,550	10,700	8,380	6,720	2,430	1,780	1,910
15	3,140	17,300	6,550	8,320	9,180	7,550	11,700	8,000	6,180	2,420	1,770	1,940
16	3,440	13,400	6,120	8,500	8,800	7,780	11,800	8,420	5,640	2,400	1,770	1,970
17	3,090	11,100	6,300	10,300	8,150	8,380	11,200	8,100	5,320	2,320	1,750	1,970
18	2,990	9,800	6,350	13,000	7,750	8,920	10,700	8,280	5,010	2,210	1,730	1,960
19	2,920	11,000	6,280	15,700	7,580	8,850	9,950	8,900	4,730	2,150	1,720	1,940
20	2,910	11,400	6,650	52,100	7,580	8,800	9,520	9,320	4,390	2,090	1,720	1,960
21	3,160	10,000	6,500	38,800	7,550	8,950	9,780	8,650	4,220	2,040	1,710	1,970
22	3,580	9,550	6,420	23,800	7,750	8,680	9,950	8,250	4,090	2,020	1,700	1,980
23	4,800	19,900	6,320	17,600	7,800	8,400	9,150	8,080	4,020	1,970	1,690	1,990
24	3,850	19,900	5,780	15,400	7,800	8,050	8,520	8,420	3,960	1,930	1,680	1,980
25	4,410	14,100	6,350	15,600	7,600	7,680	8,220	8,480	3,820	1,910	1,620	1,950
26	3,930	12,700	6,240	15,500	7,300	7,480	7,500	8,380	3,660	1,860	*1,600	1,960
27	3,530	12,400	8,680	14,400	*7,080	7,380	7,380	7,520	3,530	1,810	1,600	1,970
28	3,390	11,300	12,100	13,700	7,000	7,800	*8,180	7,050	3,440	1,790	1,650	1,960
29	3,310	10,300	14,000	14,200	6,820	8,420	9,620	7,000	3,310	1,850	1,650	1,970
30	*3,270	*9,620	11,900	*15,000	-----	9,180	9,100	7,300	*3,210	1,860	1,660	1,980
31	3,170	-----	10,800	15,600	-----	*10,000	-----	7,780	-----	*1,820	1,700	-----
Total	98,590	342,350	240,040	445,200	302,040	243,940	298,110	236,670	171,410	72,800	55,100	58,420
Mean	3,180	11,410	7,743	14,360	10,420	7,869	9,937	7,635	5,714	2,348	1,777	1,947
Max	4,800	29,200	14,000	52,100	21,000	10,000	12,100	9,320	8,750	3,140	2,020	2,000
Min	2,490	3,160	5,780	8,250	6,820	6,520	7,380	5,780	3,210	1,790	1,600	1,700
Ac-ft	195,600	679,000	476,100	883,000	599,100	483,800	591,300	469,400	340,000	144,400	109,300	115,900

Calendar year 1963: Max 51,600 Min 1,950 Mean 8,911 Ac-ft 6,450,000
Water year 1963-64: Max 52,100 Min 1,600 Mean 7,007 Ac-ft 5,087,000

Peak discharge (base, 25,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-8	2200	23.70	52,100	1-20	0900	26.30	59,900
11-23	1900	14.90	25,700				

* Discharge measurement made on this day.

KIAMATH RIVER BASIN

11-5230.3. Red Cap Creek near Orleans, Calif.

Location.--Lat 41°14'25", long 123°32'35", in SW¼ sec.19, T.10 N., R.6 E., on left bank 0.5 mile downstream from Leary Creek, 4.4 miles south of Orleans, and 4.9 miles upstream from mouth.

Drainage area.--56.1 sq mi.

Records available.--August 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 630 ft (from topographic map).

Average discharge.--6 years, 157 cfs (113,700 acre-ft per year).

Extremes.--Maximum discharge during year, 3,700 cfs Jan. 20 (gage height, 9.50 ft, from rating curve extended above 760 cfs as explained below; minimum, 16 cfs Oct. 3, 4, Sept. 21-30.

1958-64: Maximum discharge, 5,340 cfs Dec. 2, 1962 (gage height, 10.69 ft), from rating curve extended above 760 cfs on basis of slope-area measurement at gage height 9.12 ft; minimum, 12 cfs Sept. 25, 1963.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.5	16	6.0	615
3.7	29	7.0	1,190
4.0	58	8.0	2,030
4.5	128	9.0	3,100
5.0	246		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	18	31	141	185	740	150	264	146	*128	49	29	23
2	17	39	130	*200	647	155	*240	137	117	48	29	*23
3	16	35	120	182	550	148	221	133	112	47	28	22
4	16	88	111	166	494	155	205	125	123	46	27	21
5	29	94	106	153	458	185	197	122	135	45	26	20
6	38	157	109	279	418	178	185	117	166	43	26	20
7	26	123	100	454	375	170	178	112	185	41	25	20
8	23	1,170	111	372	340	164	178	112	133	41	24	19
9	24	849	118	330	314	161	182	125	117	41	25	20
10	28	361	105	292	298	155	180	141	112	40	24	19
11	47	229	99	258	282	197	178	150	106	38	23	18
12	30	166	94	226	261	232	175	155	102	36	23	18
13	26	*137	93	215	240	224	173	157	100	35	23	17
14	23	441	93	192	235	215	180	150	96	35	24	17
15	35	498	90	178	226	213	197	146	89	41	24	17
16	39	354	86	226	210	213	187	155	84	38	23	17
17	30	264	83	396	200	218	185	146	82	35	23	17
18	26	210	80	554	192	229	173	153	77	34	22	17
19	26	252	84	875	185	218	164	164	73	34	21	17
20	25	276	105	2,680	180	215	159	159	70	32	21	17
21	34	229	97	1,230	175	224	157	146	66	32	21	17
22	62	208	94	755	173	210	157	139	64	32	20	16
23	82	510	93	558	170	200	150	142	60	31	20	16
24	55	554	90	514	168	192	141	148	58	31	19	16
25	78	407	90	518	161	180	133	146	57	31	20	16
26	57	344	96	518	157	173	132	144	55	29	19	16
27	45	282	135	486	153	173	135	135	53	28	20	16
28	39	226	252	446	150	175	159	120	51	28	20	16
29	*35	*185	276	*498	*142	190	175	125	*50	29	20	16
30	32	161	229	554	-----	205	*155	128	50	29	20	16
31	31	-----	190	593	-----	229	-----	137	-----	28	21	-----
TOTAL	1,092	8,880	3,700	15,083	8,294	5,946	5,295	4,315	2,771	1,127	710	540
MEAN	35.2	296	119	487	286	192	177	139	92.4	36.4	22.9	18.0
MAX	82	1,170	276	2,680	740	232	264	164	185	49	29	23
MIN	16	31	80	153	142	148	132	112	50	28	19	16
AC-FT	2,170	17,610	7,340	29,920	16,450	11,790	10,500	8,560	5,500	2,240	1,410	1,070
CALENDAR YEAR	1963	MAX 1,360	MIN 16	MEAN 204	AC-FT 147,700							
WATER YEAR 1963-64		MAX 2,680	MIN 16	MEAN 158	AC-FT 114,600							

Peak discharge (base, 1,000 cfs).--Nov. 8 (2000) 2,140 cfs (8.11 ft); Jan. 20 (0500) 3,700 cfs (9.50 ft).

* Discharge measurement made on this day.

11-5230.5. Bluff Creek near Weitchpec, Calif.

Location.--Lat 41°14'25", long 123°39'25", in SW¼ sec.19, T.10 N., R.5 E., on left bank 0.8 mile upstream from Aikens Creek, 1.2 miles upstream from mouth, and 4.4 miles northeast of Weitchpec.

Drainage area.--74.6 sq mi.

Records available.--Occasional low-flow measurements, water years 1951-57 and annual maximum, water years 1955-56. August 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 400 ft (from topographic map). Sept. 21, 1953, to Sept. 30, 1956, crest-stage gage only, at site 0.2 mile downstream at different datum.

Average discharge.--6 years, 389 cfs (281,600 acre-ft per year).

Extremes.--Maximum discharge during year, 7,500 cfs Jan. 20 (gage height, 10.16 ft); minimum, 46 cfs Oct. 3-5.

1954-56, 1958-64: Maximum discharge, 20,200 cfs Dec. 22, 1955 (gage height, 13.7 ft, from floodmarks, present datum), on basis of slope-area measurement of maximum flow.

1958-64: Minimum discharge, 34 cfs Oct. 15, 1958.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

4.0	44	6.0	770
4.3	92	7.0	1,700
4.6	140	9.0	4,900
5.0	255	10.0	7,100
5.5	475		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	49	75	536	515	1,950	495	592	A275	150	104	82	58
2	48	100	495	598	1,590	475	547	A259	145	*104	81	58
3	47	37	*445	*520	1,360	430	510	A275	*140	104	76	*58
4	46	312	403	475	1,220	450	485	A255	148	102	76	58
5	99	252	380	435	1,140	553	475	A245	165	100	75	57
6	98	579	353	850	1,030	515	450	A234	168	100	74	57
7	61	529	315	1,280	920	475	425	A231	185	98	74	57
8	55	4,290	376	928	864	450	425	A234	165	98	72	55
9	55	2,450	412	896	805	440	445	A248	155	98	72	55
10	60	1,120	349	819	770	416	455	A248	150	96	71	55
11	106	728	315	721	721	500	435	A248	145	96	69	55
12	75	553	299	652	670	531	421	A238	138	93	69	54
13	62	*465	283	628	622	505	407	231	135	92	68	53
14	58	978	271	564	598	475	416	220	131	93	68	53
15	95	1,230	255	531	592	465	425	214	129	102	67	54
16	98	944	245	728	542	465	416	214	131	95	67	54
17	72	805	238	1,140	515	500	398	208	131	92	67	54
18	64	735	231	1,320	490	525	A371	205	126	90	65	53
19	60	960	234	2,640	485	500	A315	199	122	88	64	53
20	61	928	283	5,240	480	510	A295	199	122	85	62	53
21	115	756	275	2,920	465	553	A295	190	119	85	61	51
22	182	749	255	2,070	470	531	A295	185	113	84	60	51
23	234	2,060	241	1,570	465	505	A283	183	111	82	60	51
24	143	1,930	234	1,550	455	480	A267	178	111	81	58	50
25	238	1,450	241	1,660	435	450	A259	175	111	81	57	50
26	160	1,160	331	1,440	*412	435	A255	173	109	79	57	50
27	113	968	542	*1,250	403	435	*A255	170	108	76	57	50
28	96	812	825	1,120	394	450	A263	165	106	76	57	50
29	*84	688	756	1,360	376	485	A271	160	104	78	57	50
30	78	604	586	1,320	-----	*520	A267	155	104	75	57	*49
31	74	-----	505	1,560	-----	553	-----	153	-----	78	57	-----
TOTAL	2,886	29,297	11,509	39,300	21,239	15,072	11,418	6,567	3,977	2,805	2,057	1,606
MEAN	93.1	977	371	1,268	732	486	381	212	133	90.5	66.4	53.5
MAX	238	4,290	825	5,240	1,950	553	592	275	185	104	82	58
MIN	46	75	231	435	376	416	255	153	104	75	57	49
AC-FT	5,720	56,110	22,830	77,950	42,130	29,890	22,650	13,030	7,890	5,560	4,080	3,190

CALENDAR YEAR 1963 MAX 4,290 MIN 46 MEAN 440 AC-FT 318,300
WATER YEAR 1963-64 MAX 5,240 MIN 46 MEAN 404 AC-FT 293,000

Peak discharge (base, 2,700 cfs).--Nov. 8 (1800) 6,530 cfs (9.77 ft); Jan. 20 (0300) 7,500 cfs (10.16 ft).

* Discharge measurement made on this day.

A No gage-height record.

KLAMATH RIVER BASIN

11-5232. Trinity River above Coffee Creek, near Trinity Center, Calif.

Location.--Lat 41°06'26", long 122°42'23", on line between secs.31 and 32, T.38 N., R.7 W., on right bank 250 ft downstream from Chinquapin Gulch, 1.8 miles upstream from Coffee Creek, and 8.5 miles north of new location of Trinity Center.

Drainage area.--149 sq mi.

Records available.--September 1957 to September 1964.

Gage.--Water-stage recorder. Datum of gage is 2,533.36 ft above mean sea level, datum of 1929, supplementary adjustment of 1956.

Average discharge.--7 years, 396 cfs (286,700 acre-ft per year).

Extremes.--Maximum discharge during year, 4,520 cfs Nov. 14 (gage height, 7.31 ft); minimum daily, 28 cfs Sept. 27.

1957-64: Maximum discharge, 12,800 cfs Feb. 24, 1958 (gage height, 10.50 ft), from rating curve extended above 5,000 cfs on basis of slope-area measurement at gage height 9.91 ft; minimum daily, that of Sept. 27, 1964.

Flood of Dec. 22, 1955, reached a stage of 10.5 ft, from floodmarks.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

1.4	26	3.0	440
1.5	37	4.0	980
1.8	85	5.0	1,700
2.1	151	6.0	2,680
2.5	260		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3 7	7 2	3 1 6	2 6 6	2 3 9	2 3 9	4 8 0	a 4 4 4	2 6 0	9 1	4 7	4 3
2	* 3 5	7 2	3 0 2	2 5 1	2 3 9	2 2 4	4 1 2	a 4 0 0	2 4 5	9 1	4 7	4 5
3	3 5	8 1	2 9 2	2 3 3	2 4 5	* 2 1 6	* 3 7 0	a 3 8 0	2 2 7	8 7	4 5	4 0
4	3 6	1 3 2	2 8 2	2 1 9	2 7 3	2 4 2	3 6 7	a 3 4 0	2 3 3	8 9	4 4	3 7
5	7 2	3 6 6	2 8 2	2 0 8	3 1 2	2 6 0	3 8 5	* a 3 0 2	2 7 6	9 1	4 1	3 5
6	1 3 2	4 1 7	3 0 9	2 0 8	3 0 6	2 4 5	3 5 9	2 8 6	4 1 4	8 3	4 1	3 5
7	7 4	2 4 8	2 8 9	1 9 9	2 9 2	2 3 3	3 7 0	2 7 6	4 2 4	7 8	4 1	3 4
8	5 7	4 3 5	2 7 9	1 8 6	2 8 9	2 2 2	4 2 8	2 8 2	3 3 3	7 4	4 1	3 4
9	7 4	8 4 2	2 6 6	1 8 4	2 9 9	2 2 4	4 8 0	3 1 6	3 1 6	7 2	4 0	3 4
10	9 6	4 8 5	2 3 9	* 1 7 6	3 0 9	2 1 6	4 4 4	3 7 8	2 9 5	6 9	3 8	3 4
11	5 2 3	3 5 9	2 2 4	1 6 6	3 0 6	2 2 4	4 6 2	4 1 6	2 6 6	6 5	3 8	3 3
12	1 5 6	2 9 9	2 1 6	1 6 8	2 8 9	2 2 2	4 7 2	4 6 7	2 4 5	6 2	3 7	3 2
13	1 0 5	3 5 2	* 2 1 0	1 6 4	2 7 3	2 1 3	4 8 5	4 7 2	2 2 4	8 0	3 8	3 2
14	8 9	2 5 8 0	2 0 5	1 6 1	2 5 7	2 0 8	5 4 5	4 4 4	2 1 3	6 9	3 7	3 2
15	1 1 2	1 2 0 0	1 9 7	1 5 6	2 5 1	2 1 9	6 0 5	4 3 6	1 9 9	6 7	3 7	3 2
16	1 3 7	6 6 5	1 8 9	1 5 6	2 3 6	2 3 3	5 9 0	4 3 2	1 9 4	6 4	3 6	3 2
17	9 7	4 8 5	1 8 4	1 6 1	2 2 7	2 6 3	4 9 4	4 0 0	1 9 2	6 1	3 6	3 0
18	8 3	3 9 3	1 7 9	1 6 4	2 2 4	3 0 6	4 4 9	3 8 2	1 7 1	5 9	3 6	3 0
19	7 8	3 9 3	1 7 9	1 9 8	2 3 3	2 9 9	4 2 4	4 0 0	1 6 4	5 7	3 4	3 0
20	7 4	3 5 2	1 8 1	7 8 0	2 3 9	3 0 6	4 1 6	4 0 8	1 5 6	5 6	3 4	2 9
21	8 7	3 0 2	1 7 4	4 2 8	2 4 2	2 9 5	4 3 2	3 7 4	1 4 6	5 6	3 4	3 0
22	1 1 0	2 7 9	1 6 8	* 3 2 6	* 2 5 7	2 8 2	4 2 4	3 4 8	* 1 3 7	* 5 4	3 4	3 0
23	1 8 1	2 8 2	1 6 6	2 7 0	2 6 6	2 6 6	3 7 8	3 4 4	1 2 9	5 4	3 3	3 0
24	1 2 0	2 6 6	1 6 4	2 4 2	2 7 0	2 5 1	3 4 1	3 3 7	1 2 3	5 3	3 3	2 9
25	1 1 2	2 6 3	1 6 1	2 3 0	2 5 7	2 3 6	3 2 3	3 2 3	1 1 4	5 1	3 2	2 9
26	9 9	3 0 9	1 6 1	2 2 2	2 4 8	2 3 3	3 4 8	3 0 6	1 0 7	5 0	* 3 2	2 9
27	8 9	3 6 7	1 8 1	2 2 4	2 3 9	2 4 5	3 8 9	3 0 9	1 0 3	4 8	3 2	2 8
28	8 3	3 5 9	2 9 2	2 2 2	2 3 9	2 8 2	4 9 0	2 9 9	1 0 1	4 8	3 3	2 9
29	8 7	3 4 1	3 4 8	2 2 2	2 3 0	3 3 7	5 6 0	2 7 6	9 9	5 1	3 3	2 9
30	8 1	3 3 7	3 0 6	2 1 6	-----	4 1 6	4 9 4	2 6 3	9 5	5 0	3 3	2 9
31	* 7 6	-----	2 8 6	2 1 9	-----	4 9 0	-----	2 6 3	-----	4 8	3 6	-----
Total	3,227	13,333	7,227	7,225	7,586	8,147	13,216	11,103	6,201	2,028	1,153	975
Mean	104	444	233	233	262	263	441	358	207	65.4	37.2	32.5
Max	523	2,580	348	780	312	490	605	472	424	91	47	45
Min	35	72	161	156	224	208	323	263	95	48	32	28
Ac-ft	6,400	26,440	14,330	14,330	15,050	16,160	26,210	22,020	12,300	4,020	2,290	1,930

Calendar year 1963: Max 4,640 Min 35 Mean 436 Ac-ft 315,800

Water year 1963-64: Max 2,580 Min 28 Mean 222 Ac-ft 161,500

Peak discharge (base, 1,900 cfs).--Nov. 14 (1200) 4,520 cfs (7.31 ft).

* Discharge measurement made on this day.

a No gage-height record.

11-5237. Coffee Creek near Trinity Center, Calif.

Location.--Lat 41°05'35", long 122°45'10", in NW 1/4 sec. 2, T.37 N., R.8 W., on left bank 0.75 mile upstream from Little Boulder Creek, 3.2 miles upstream from mouth, and 8 miles northwest of new location of Trinity Center.

Drainage area.--107 sq mi.

Records available.--September 1957 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 2,750 ft (from topographic map).

Average discharge.--7 years, 280 cfs (202,700 acre-ft per year).

Extremes.--Maximum discharge during year, 1,620 cfs Nov. 14 (gage height, 4.63 ft); minimum daily, 32 cfs Aug. 26, Sept. 25.
1957-64: Maximum discharge, 3,360 cfs Oct. 12, 1962 (gage height, 5.72 ft); minimum, 23 cfs Jan. 13, Oct. 2, 1960.

Remarks.--Records good. Slight regulation at low flow.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.9	30	2.2	245
1.0	37	2.8	450
1.4	76	3.5	800
1.8	145	4.0	1,110

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	* 59	182	218	185	150	238	314	346	117	54	47
2	* 39	61	178	212	172	141	222	290	320	115	52	44
3	39	65	172	195	172	* 137	* 212	278	302	110	50	40
4	39	82	172	182	180	148	218	263	311	111	50	39
5	52	156	175	175	192	152	228	* 251	338	108	49	37
6	66	188	215	180	188	143	220	235	402	100	46	37
7	50	128	195	182	182	139	232	232	422	96	44	37
8	48	434	190	172	180	137	269	240	338	93	44	37
9	59	530	180	170	180	139	278	281	311	90	43	37
10	101	281	170	* 160	185	134	266	329	296	87	43	36
11	338	230	160	150	180	141	284	363	281	82	41	35
12	93	205	159	148	172	137	290	402	284	82	40	35
13	71	240	* 152	145	165	132	305	398	275	83	41	36
14	62	1,000	148	143	162	130	329	386	263	82	41	35
15	178	496	143	139	158	134	366	394	248	83	39	34
16	155	320	137	141	152	139	363	390	232	77	39	34
17	90	266	134	139	145	155	326	352	222	75	39	34
18	74	232	132	143	145	172	308	366	210	72	38	34
19	66	240	132	155	145	170	299	426	200	69	38	34
20	65	220	134	266	145	175	308	438	192	66	36	34
21	72	195	128	220	150	172	311	390	185	64	36	35
22	77	185	126	* 188	158	168	308	378	* 175	* 65	35	34
23	115	188	124	170	160	162	281	390	170	62	34	34
24	90	175	122	162	160	152	260	386	165	60	34	33
25	93	178	120	155	155	148	257	386	155	58	34	32
26	77	200	122	152	152	150	275	363	145	56	* 32	34
27	70	215	170	152	150	160	311	338	137	54	33	34
28	66	202	309	148	150	178	378	323	128	56	33	34
29	70	192	293	148	145	200	406	326	122	58	35	34
30	64	188	245	143	-----	220	352	329	119	56	35	34
31	61	-----	228	158	-----	241	-----	352	-----	53	39	-----
Total	2,580	7,351	5,246	5,211	4,765	4,856	8,700	10,589	7,294	2,440	1,247	1,074
Mean	83.2	245	169	168	164	157	290	342	243	78.7	40.2	35.8
Max	338	1,000	309	266	192	241	406	438	422	117	54	47
Min	39	59	120	139	145	130	212	232	119	53	32	32
Ac-ft	5,120	14,580	10,410	10,340	9,450	9,630	17,260	21,000	14,470	4,840	2,470	2,130
Calendar year 1963: Max 1,820 Min 39 Mean 304 Ac-ft 219,900												
Water year 1963-64: Max 1,000 Min 32 Mean 168 Ac-ft 121,700												

Peak discharge (base, 800 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
10-11	0200	3.59	854	11-14	1200	4.63	1,620
11-8	2200	3.85	1,010				

* Discharge measurement made on this day.

KLAMATH RIVER BASIN

11-5254. Clair Engle Lake near Lewiston, Calif.
(Formerly published as Trinity Lake near Lewiston)

Location.--Lat 40°48'05", long 122°45'44", sec.15, T.34 N., R.8 W., on side of intake structure of Trinity Dam on Trinity River, 9 miles north of Lewiston.

Drainage area.--692 sq mi.

Records available.--November 1960 to September 1964. Prior to October 1963 published as Trinity Lake near Lewiston.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Prior to Jan. 4, 1962, staff gage at same site and datum.

Extremes.--Maximum contents during year, 2,249,400 acre-ft Feb. 9, 1964 (elevation, 2,357.57 ft); minimum, 1,558,900 acre-ft Sept. 30 (elevation, 2,308.01).

1961-64: Maximum contents, 2,548,600 acre-ft Apr. 15, 1963 (elevation, 2,376.02 ft); minimum, 971,900 acre-ft Nov. 21, 22, 1961 (elevation, 2,251.93 ft).

Remarks.--The lake is formed by an earthfill dam completed in November 1960. Storage began Nov. 23, 1960. Usable capacity, 2,437,700 acre-ft between elevations 1,995.5 ft (elevation of invert of river outlets) and 2,370.0 ft (gross pool elevation) above mean sea level. Dead storage, 10,000 acre-ft. Records represent total contents at 2400 hrs.

Cooperation.--Records furnished by Bureau of Reclamation.

Capacity table (elevation, in feet, and contents, in acre-ft)

2,300	1,462,200	2,340	1,986,400
2,310	1,583,600	2,350	2,133,900
2,320	1,711,400	2,360	2,287,100
2,330	1,845,600		

Contents, in thousands of acre-feet, at 2400 hours, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.193.6	2.152.0	2.239.0	2.216.6	2.239.8	2.229.0	2.228.8	2.167.9	2.145.7	2.045.7	1.880.1	1.700.2
2	2.190.9	2.150.8	2.239.8	2.216.9	2.240.6	2.229.3	2.226.2	2.167.1	2.142.2	2.040.3	1.874.3	1.695.2
3	2.187.6	2.151.5	2.240.7	2.216.3	2.241.3	2.229.6	2.222.9	2.167.0	2.138.4	2.034.9	1.868.7	1.690.1
4	2.187.4	2.151.5	2.241.6	2.215.9	2.242.9	2.230.1	2.219.6	2.166.2	2.135.4	2.029.4	1.864.6	1.684.0
5	2.186.1	2.153.4	2.242.6	2.215.0	2.245.8	2.230.2	2.216.3	2.165.5	2.133.3	2.024.2	1.860.0	1.678.1
6	2.185.1	2.155.8	2.243.3	2.216.3	2.246.0	2.230.9	2.214.1	2.164.6	2.131.2	2.019.1	1.854.1	1.671.9
7	2.182.9	2.156.5	2.244.3	2.215.5	2.247.8	2.230.9	2.213.2	2.163.6	2.128.8	2.013.8	1.848.2	1.665.7
8	2.180.8	2.165.2	2.245.5	2.214.4	2.248.6	2.230.7	2.211.3	2.163.2	2.126.2	2.007.7	1.842.1	1.659.2
9	2.179.3	2.173.4	2.246.3	2.213.5	2.249.4	2.230.9	2.208.6	2.162.6	2.122.8	2.002.2	1.836.3	1.653.3
10	2.178.7	2.176.6	2.247.0	2.211.7	2.248.9	2.230.7	2.206.1	2.159.7	2.121.6	1.997.1	1.830.9	1.648.7
11	2.182.3	2.178.1	2.247.2	2.210.4	2.246.3	2.231.6	2.203.7	2.159.4	2.121.1	1.991.9	1.825.1	1.644.2
12	2.181.3	2.178.8	2.247.4	2.209.4	2.243.3	2.231.8	2.201.2	2.159.6	2.120.4	1.986.8	1.818.7	1.639.9
13	2.179.9	2.181.7	2.247.4	2.208.7	2.240.1	2.231.8	2.198.8	2.160.0	2.119.6	1.981.2	1.813.5	1.635.8
14	2.177.9	2.198.8	2.246.1	2.207.4	2.235.9	2.231.6	2.197.1	2.160.9	2.118.9	1.974.9	1.808.2	1.631.5
15	2.178.2	2.208.4	2.245.7	2.206.0	2.232.2	2.231.8	2.195.4	2.161.4	2.116.5	1.969.5	1.802.0	1.626.9
16	2.177.3	2.212.4	2.243.2	2.205.1	2.228.7	2.231.8	2.194.5	2.161.8	2.112.1	1.963.9	1.795.8	1.622.5
17	2.176.2	2.215.2	2.242.1	2.204.9	2.224.8	2.232.4	2.191.8	2.162.4	2.107.4	1.958.2	1.789.4	1.617.8
18	2.174.4	2.217.3	2.240.4	2.204.8	2.225.2	2.232.9	2.189.3	2.162.6	2.102.9	1.952.4	1.783.0	1.613.3
19	2.172.9	2.220.4	2.238.7	2.206.4	2.225.5	2.233.3	2.186.4	2.162.7	2.098.6	1.946.7	1.776.8	1.609.0
20	2.170.9	2.222.4	2.235.9	2.221.6	2.225.5	2.233.2	2.183.7	2.163.2	2.093.8	1.940.5	1.771.7	1.604.5
21	2.167.9	2.223.4	2.233.2	2.226.4	2.225.5	2.233.5	2.181.1	2.163.5	2.089.8	1.937.7	1.766.2	1.599.8
22	2.168.2	2.225.9	2.230.4	2.228.7	2.225.6	2.233.9	2.179.3	2.163.6	2.085.2	1.932.0	1.760.4	1.595.7
23	2.167.1	2.228.2	2.229.0	2.231.8	2.225.8	2.234.1	2.176.7	2.163.8	2.080.6	1.926.4	1.754.4	1.591.6
24	2.165.8	2.229.5	2.225.6	2.233.2	2.226.4	2.234.1	2.174.6	2.163.6	2.076.0	1.920.7	1.748.0	1.587.2
25	2.164.0	2.231.0	2.222.4	2.233.9	2.226.4	2.234.2	2.171.1	2.163.8	2.070.9	1.915.6	1.741.6	1.582.5
26	2.161.8	2.232.2	2.219.9	2.234.2	2.227.0	2.232.9	2.167.7	2.163.5	2.065.3	1.909.7	1.735.5	1.577.7
27	2.159.7	2.233.9	2.218.2	2.234.9	2.227.2	2.232.2	2.166.5	2.162.0	2.060.0	1.904.8	1.729.4	1.573.0
28	2.158.2	2.235.5	2.218.1	2.236.4	2.227.5	2.231.5	2.165.9	2.158.8	2.055.0	1.902.3	1.723.1	1.568.3
29	2.156.5	2.236.7	2.217.8	2.238.9	2.227.8	2.230.9	2.166.7	2.155.6	2.051.9	1.896.7	1.716.9	1.563.7
30	2.154.9	2.237.9	2.216.9	2.238.9	-----	2.231.3	2.167.7	2.152.5	2.049.0	1.891.2	1.711.4	1.558.9
31	2.152.6	-----	2.215.6	2.239.0	-----	2.230.7	-----	2.149.3	-----	1.885.8	1.706.2	-----
(†)	2,351.24	2,356.83	2,355.38	2,356.90	2,356.17	2,356.36	2,352.24	2,351.02	2,344.29	2,322.94	2,319.60	2,308.01
(‡)	-43.8	+85.3	-22.3	+23.4	-11.2	+2.9	-63.0	-18.4	-100.3	-163.2	-179.6	-147.3
(††)	1,910	380	160	-	-	-	3,290	5,420	6,180	8,420	7,790	4,690

Calendar year 1963..... ‡ +89.5

Water year 1963-64..... ‡ -637.5

† Elevation, in feet, at end of month.

‡ Change in contents, in thousands of acre-feet.

†† Evaporation, in acre-feet, furnished by Bureau of Reclamation. No record January, February and March; April record incomplete.

11-5254.3. Judge Francis Carr powerplant near French Gulch, Calif.

Location.--Lat 40°38'49", long 122°37'34", at powerplant 1.6 miles downstream from Mill Creek and 3.8 miles south of French Gulch.Records available.--April 1963 to September 1964.Gage.--Recorded powerplant output.Extremes.--1963-64: Maximum daily discharge, 3,280 cfs for several days in May, August, September 1964,; no flow May 6-9, 1963.Remarks.--Water is diverted from Trinity River at NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.8, T.33 N., R.8 W., through a tunnel to powerplant and then into Whiskeytown Reservoir.Cooperation.--Records furnished by Bureau of Reclamation.

Discharge, in cubic feet per second, period April to September 1963												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	168	313	1,376	1,595	1,370
2							-	15	323	1,369	1,575	1,370
3							-	543	315	1,371	1,566	1,447
4							-	612	314	1,376	1,558	1,306
5							-	192	315	1,392	1,561	1,364
6							-	0	314	1,383	1,616	1,372
7							-	0	314	1,372	1,616	1,373
8							-	0	324	1,357	1,616	1,361
9							-	0	324	1,363	1,615	1,389
10							-	6	316	1,363	1,503	1,427
11							-	176	314	1,369	1,566	1,362
12							-	12	314	1,388	1,565	1,384
13							-	12	319	1,395	1,570	1,379
14							-	29	369	1,394	1,568	1,374
15							-	37	403	1,397	1,631	1,373
16							140	44	470	1,396	1,589	1,374
17							140	19	476	1,396	1,591	1,373
18							15	12	373	1,394	1,592	1,383
19							15	12	323	1,394	1,591	1,373
20							15	12	362	1,396	1,577	1,377
21							15	43	363	1,394	1,568	1,374
22							15	11	330	1,378	1,580	1,378
23							19	4	345	1,394	1,585	1,373
24							38	12	334	1,380	1,599	1,376
25							27	312	333	1,352	1,593	1,386
26							60	314	335	1,380	1,593	1,386
27							12	311	349	1,384	1,582	1,387
28							12	158	490	1,391	1,581	1,382
29							63	159	1,038	1,370	1,582	1,379
30							196	156	720	1,369	1,581	1,381
31								180		1,368	1,570	
Total							-	3,561	11,532	42,801	49,075	41,333
Mean							-	115	384	1,381	1,583	1,378
Max							-	612	1,038	1,397	1,631	1,447
Min							-	0	313	1,352	1,503	1,306
Ac-ft							-	7,063	22,870	84,890	97,340	81,980
Calendar year 1962: Max	-		Min	-	Mean	-	Ac-ft	-				
Water year 1962-63: Max	-		Min	-	Mean	-	Ac-ft	-				

KIAMATH RIVER BASIN

11-5254.3. Judge Francis Carr powerplant near French Gulch, Calif.--Continued.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	920	506	459	613	551	661	2,220	1,321	3,095	2,301	3,103	3,189
2	918	532	459	586	545	645	2,361	1,321	3,142	2,891	3,094	2,934
3	935	527	461	615	560	647	2,202	1,321	3,117	3,226	2,592	2,846
4	918	538	479	873	538	640	2,642	1,321	3,149	3,223	2,056	2,966
5	921	530	473	861	543	653	2,642	1,321	3,151	3,227	3,154	3,280
6	928	525	474	870	541	653	1,771	1,321	3,104	3,228	3,198	3,280
7	937	529	473	927	610	654	1,925	1,321	3,151	3,198	3,280	3,280
8	927	540	471	930	628	646	2,225	1,321	3,141	3,185	3,280	3,280
9	931	529	475	931	628	653	2,515	1,321	3,147	3,114	3,280	3,266
10	928	533	476	930	1,301	650	2,642	2,449	1,727	3,102	3,077	2,246
11	918	529	476	932	2,642	654	2,642	1,725	1,420	3,190	3,154	2,299
12	928	546	475	930	2,531	646	2,642	1,326	1,420	3,183	3,280	2,282
13	931	779	466	919	2,035	667	2,228	1,321	1,420	3,175	2,365	2,213
14	926	2,274	1,057	927	2,527	664	2,093	1,320	1,424	3,163	2,424	2,292
15	920	800	1,056	935	2,642	664	2,437	1,321	2,510	3,141	3,280	2,331
16	930	496	1,055	899	2,642	670	2,519	1,420	2,998	3,185	3,280	2,270
17	899	505	1,058	898	2,633	669	2,447	1,420	3,001	3,149	3,280	2,508
18	959	508	1,144	930	569	624	2,558	1,423	3,062	3,182	3,280	2,259
19	964	535	1,624	927	655	697	2,544	1,420	3,061	3,183	3,280	2,281
20	936	529	1,696	900	665	763	2,550	1,420	3,164	3,183	2,553	2,304
21	943	531	1,679	925	673	764	2,560	1,422	3,173	1,592	3,280	2,279
22	918	527	1,669	650	660	764	1,928	1,420	3,108	3,219	3,280	2,282
23	914	541	1,669	557	654	766	2,380	1,420	3,176	3,176	3,280	2,295
24	918	535	1,675	546	656	765	2,120	1,420	3,063	3,179	3,280	2,299
25	922	545	1,678	546	647	772	2,525	1,420	3,005	3,011	3,280	2,296
26	939	552	1,685	547	662	1,049	2,519	1,421	3,012	3,016	3,280	2,352
27	863	549	1,674	551	656	1,013	1,742	2,064	3,148	2,467	2,367	2,344
28	925	556	1,460	552	661	1,046	1,321	3,280	3,145	1,368	3,280	2,355
29	933	549	1,463	546	655	1,003	1,321	3,091	2,232	2,243	3,280	2,357
30	953	586	1,458	547	-----	849	1,321	3,086	1,434	2,982	2,355	2,375
31	933	-----	1,462	1,154	-----	1,704	-----	3,087	-----	2,508	2,291	-----
Total	28,735	18,261	32,379	24,454	31,910	23,715	67,542	51,585	81,900	91,190	94,243	76,640
Mean	927	609	1,044	789	1,100	765	2,251	1,664	2,730	2,942	3,040	2,555
Max	964	2,274	1,696	1,154	2,642	1,704	2,642	3,280	3,176	3,228	3,280	3,280
Min	863	496	459	546	538	640	1,321	1,320	1,420	1,368	2,056	2,213
Ac-ft	57,070	36,220	64,220	48,500	63,290	47,040	132,500	102,300	162,400	180,900	186,900	152,000
Calendar year 1963:	Max	-	Min	-	Mean	-	Ac-ft	-				
Water year 1963-64:	Max	3,280	Min	459	Mean	1,701	Ac-ft	1,233,000				

11-5255. Trinity River at Lewiston, Calif.

Location.--Lat 40°43'10", long 122°48'09", in SW 1/4 sec. 17, T. 33 N., R. 8 W., on right bank 400 ft upstream from Deadwood Creek and 0.8 mile northeast of Lewiston. Prior to July 7, 1964, at site 0.8 mile downstream.

Drainage area.--728 (revised).

Records available.--August 1911 to September 1964.

Gage.--Altitude of gage is 1,810 ft (from topographic map). Prior to Oct. 16, 1930, staff gage and Oct. 16, 1930 to Sept. 30, 1958, water-stage recorder, at site 1.1 miles downstream at different datum. Oct. 1, 1958 to July 6, 1964, water-stage recorder at site 0.8 mile downstream at different datum.

Average discharge.--53 years, 1,638 cfs (1,186,000 acre-ft per year) adjusted for storage, evaporation and diversion.

Extremes.--Maximum discharge during year, 570 cfs Jan. 20 (gage height, 4.99 ft); minimum daily, 146 cfs Aug. 12.

1911-60 (prior to regulation by Trinity Lake): Maximum discharge, 71,600 cfs Dec. 22, 1955 (gage height, 27.3 ft, from flood-marks, site and datum then in use); minimum, 23 cfs July 30, 1924.

1961-64: Maximum discharge, 12,700 cfs Apr. 20, 1963 (gage height, 12.38 ft; minimum daily, 131 cfs May 4, 1963.

Remarks.--Records good. Flow regulated by Clair Engle Lake (see p. 464), beginning in November 1960. Diversion to Judge Francis Carr Powerplant (see preceding page), began in April 1963. Small diversions above head of Trinity Lake for irrigation, power and placer mining.

Discharge, in cubic feet per second, water year 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	247	*288	288	276	298	279	*282	*166	154	152	157	157
2	249	292	288	*273	295	279	282	169	*154	152	157	157
3	247	295	288	273	298	276	285	172	154	154	157	*155
4	a 238	295	288	273	288	276	282	172	156	154	155	155
5	a 233	292	288	273	282	273	279	166	156	154	153	157
6	a 230	298	288	273	279	273	270	164	159	*152	*150	157
7	a 230	295	288	270	276	273	247	162	156	g153	150	159
8	227	298	288	267	276	270	233	159	156	g155	150	159
9	222	285	*288	270	276	270	230	159	156	g155	153	159
10	219	273	285	270	276	267	227	162	156	g155	150	159
11	*227	264	285	270	279	267	224	159	156	a155	148	164
12	233	276	282	270	276	267	219	159	152	a155	146	161
13	233	292	279	270	276	270	208	159	152	g155	148	159
14	235	305	279	267	279	270	190	159	149	g155	153	161
15	238	343	276	270	a 276	267	164	159	147	g155	155	159
16	235	292	279	273	a 276	267	152	159	*147	*g150	157	159
17	235	288	282	273	g 276	267	159	159	149	153	159	159
18	241	*285	276	276	g 273	267	159	159	152	153	159	159
19	238	292	279	282	279	267	159	154	154	155	159	159
20	241	292	276	381	279	267	159	154	154	157	157	161
21	241	292	279	211	279	270	156	154	152	159	153	161
22	241	292	279	219	279	270	156	154	152	153	153	161
23	244	298	276	295	279	270	162	152	152	153	153	159
24	244	302	270	292	279	270	159	152	149	153	155	155
25	247	298	273	288	279	267	156	154	149	155	155	157
26	264	292	273	288	279	270	156	154	152	157	153	157
27	264	292	279	292	279	282	152	154	154	159	153	157
28	267	288	282	292	*279	282	166	154	152	157	157	157
29	270	288	285	285	276	285	166	154	149	166	155	157
30	276	288	282	288	-----	285	166	154	152	159	155	177
31	285	-----	279	*292	-----	292	-----	154	-----	159	155	-----
Total	7,541	8,770	8,727	8,592	8,121	8,455	6,005	4,921	4,582	4,809	4,770	4,773
Mean	243	292	282	277	280	273	200	159	153	155	154	159
Max	285	343	288	381	298	292	285	172	159	166	159	177
Min	219	264	270	211	273	267	152	152	147	150	146	155
Ac-ft	14,960	17,400	17,310	17,040	16,110	16,770	11,910	9,760	9,090	9,540	9,460	9,470
Mean†	490	2,005	966	1,446	1,186	1,085	1,423	1,612	1,301	579	449	317
Ac-ft‡	30,140	119,300	59,390	88,940	68,200	66,710	84,690	99,100	77,420	35,630	27,580	18,870
Calendar year 1963:	Max	11,600	Min	131	Mean	1,202	Mean†	1,972	Ac-ft	870,500	Ac-ft‡	1,428,000
Water year 1963-64:	Max	381	Min	146	Mean	219	Mean†	1,069	Ac-ft	158,800	Ac-ft‡	776,000

* Discharge measurement made on this day.

a No gage-height record.

g Computed from twice-daily staff gage readings.

‡ Adjusted for change in storage diversion, and evaporation from Clair Engle Lake (furnished by Bureau of Reclamation).

KLAMATH RIVER BASIN

11-5255. Trinity River at Lewiston, Calif.--Continued

Records available.--Water temperatures: October 1960 to September 1964.

Extremes.--Maximum temperature during year, 57°F May 22-25, 27-31, July 2; minimum, 41°F Jan. 27, 28.
 1960-64: Maximum temperature, 70°F June 18, 19, 21, 1963; minimum, 37°F Jan. 22, 23, 1962.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	52	50	49	48	44	43	44	44	43	42	47	47	50	48	52	48	55	51	56	50	53	50	50	49
2	52	50	48	48	44	44	44	44	43	42	48	47	49	48	50	48	55	51	57	50	52	49	51	49
3	51	49	48	48	44	44	44	44	44	43	49	48	50	48	51	48	53	50	56	50	52	49	50	49
4	-	-	48	48	44	44	44	43	44	43	49	48	50	48	50	48	51	50	56	50	52	49	51	49
5	-	-	48	48	44	44	43	43	44	44	49	48	50	48	51	47	51	50	56	50	53	49	51	49
6	-	-	48	47	44	44	43	43	45	44	49	48	50	48	52	47	52	49	56	50	52	49	51	49
7	-	-	47	47	44	44	43	43	45	44	49	48	50	48	52	47	53	48	56	50	53	49	51	49
8	49	48	47	47	44	44	43	43	46	45	49	48	51	48	53	48	49	49	55	50	53	49	51	49
9	48	48	47	46	44	44	43	43	46	45	49	48	50	49	54	49	49	49	-	-	53	49	51	49
10	50	48	46	45	44	44	43	43	46	45	49	48	51	49	55	51	51	48	-	-	53	49	51	49
11	49	48	45	45	44	44	43	43	46	45	48	48	50	49	55	51	53	48	-	-	53	49	51	49
12	49	48	45	45	44	44	43	43	46	45	48	48	51	49	55	51	55	48	-	-	53	49	51	49
13	49	48	45	45	44	44	43	43	47	46	49	48	51	48	55	51	55	49	-	-	53	50	51	49
14	49	48	45	45	44	44	43	43	47	46	49	48	52	49	56	51	55	50	-	-	53	50	51	49
15	49	49	45	45	44	44	43	43	-	-	49	48	51	48	56	50	54	50	-	-	53	50	51	49
16	50	49	45	45	44	44	43	43	-	-	49	48	51	48	53	51	54	50	-	-	53	50	51	49
17	50	49	45	45	44	44	43	43	-	-	50	48	52	48	56	51	54	49	54	50	53	50	51	49
18	50	49	45	45	44	44	43	43	47	46	50	48	51	48	54	51	54	49	54	50	52	50	51	49
19	50	49	45	45	44	44	43	42	47	45	50	48	51	48	55	51	54	48	54	50	53	50	51	49
20	49	49	45	45	44	44	42	42	47	45	49	49	51	48	56	51	54	48	54	50	53	50	51	49
21	49	49	45	45	44	44	42	42	47	45	50	49	51	47	56	51	55	49	54	50	53	50	51	49
22	49	49	45	45	44	44	42	42	47	46	49	49	51	48	57	51	56	49	53	50	52	50	51	49
23	49	48	45	44	44	44	42	42	47	46	50	49	50	47	57	52	56	50	53	50	52	49	51	49
24	48	48	44	44	44	44	42	42	46	45	50	49	50	47	57	52	56	49	54	50	52	49	52	50
25	48	48	44	44	44	44	42	42	46	45	50	48	51	47	57	51	56	49	53	50	52	49	52	50
26	48	48	44	44	44	44	42	42	46	45	50	48	51	47	54	52	55	49	54	50	52	49	52	50
27	49	48	44	43	44	44	42	41	46	45	50	49	52	47	54	52	55	49	53	50	51	49	52	50
28	49	48	43	43	44	44	42	41	45	45	51	49	52	48	57	52	55	49	51	50	52	49	52	50
29	49	48	43	43	44	44	42	42	47	45	51	49	52	48	57	52	55	49	53	50	52	49	51	50
30	49	48	44	43	44	44	42	42	-----	-----	51	49	50	48	57	51	56	50	53	50	51	49	51	50
31	49	48	-----	-----	44	44	42	42	-----	-----	50	49	-----	-----	57	51	-----	-----	53	51	51	49	-----	-----
Avg	-	-	46	45	44	44	43	43	-	-	49	48	51	48	55	50	54	49	-	-	52	49	51	49

11-5258. Weaver Creek near Douglas City, Calif.

Location.--Lat 40°40'15", long 122°56'30", in NE 1/4 sec. 36, T.33 N., R.10 W., on left bank 0.2 mile downstream from highway bridge and 1.3 miles north of Douglas City.

Drainage area.--48.4 sq mi.

Records available.--October 1958 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,680 ft (from topographic map).

Average discharge.--6 years, 50.9 cfs (36,850 acre-ft per year).

Extremes.--Maximum discharge during year, 10,700 cfs Jan. 20 (gage height, 11.32 ft), from rating curve extended above 600 cfs; no flow Aug. 26.

1958-64: Maximum discharge, that of Jan. 20, 1964; maximum gage height, 11.40 ft Jan. 31, 1963; minimum daily, that of Aug. 26, 1964.

Remarks.--No diversion or regulation above station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5	7.0	4.0	28	224	44	44	35	20	6.4	1.0	1.5
2	1.5	7.2	3.6	26	172	41	41	33	18	5.5	1.0	* 1.3
3	1.4	10	33	21	140	38	39	35	18	5.0	1.0	1.4
4	1.3	30	30	18	124	37	39	31	19	5.3	.9	1.0
5	3.1	18	28	15	120	36	40	29	27	5.4	.7	.9
6	5.3	45	29	41	105	35	39	30	26	4.5	.7	.7
7	4.6	26	27	40	94	34	39	28	25	4.1	.7	.7
8	4.0	88	28	25	86	34	39	27	23	3.7	.7	.6
9	3.7	93	28	21	78	35	38	26	25	4.4	.8	.7
10	4.9	41	25	19	80	33	37	27	23	4.1	.7	.8
11	1.5	29	24	15	75	41	39	29	20	3.7	.5	.8
12	7.6	23	* 21	13	71	49	39	30	17	3.1	.5	.7
13	6.4	29	20	13	* 66	46	39	31	15	3.0	.5	.6
14	5.8	* 196	19	11	61	41	* 37	30	14	2.7	.5	.6
15	1.1	78	18	9.6	60	41	39	30	12	3.3	.4	.7
16	1.1	49	17	11	55	40	38	30	12	3.7	.3	.6
17	* 7.7	37	16	27	50	40	38	30	12	3.0	.4	.6
18	7.2	30	14	41	47	42	35	29	12	2.4	* .4	.8
19	6.3	90	15	52	45	41	34	28	12	2.3	.4	.8
20	6.3	68	21	3,190	43	41	35	29	11	2.0	.4	.7
21	7.3	46	17	354	46	41	36	26	9.9	1.8	.3	.7
22	8.2	41	15	231	44	43	36	25	8.9	1.7	.3	.6
23	1.3	161	14	166	44	41	37	24	8.4	2.1	.2	.7
24	1.1	110	13	137	44	39	34	24	7.5	1.9	.1	.7
25	1.1	73	12	122	42	37	34	23	6.7	1.5	.1	.7
26	9.3	65	12	127	39	36	31	* 23	5.8	1.3	0	.6
27	8.4	60	34	124	* 38	36	31	23	6.1	1.0	.1	.6
28	7.2	55	80	118	37	36	31	23	6.5	1.1	.2	.6
29	7.7	50	64	137	36	37	36	24	6.4	1.8	.2	.6
30	7.4	45	40	* 139	-----	38	35	21	6.5	1.4	.3	.6
31	6.7	-----	32	169	-----	41	-----	20	-----	1.3	.6	-----
Total	212.8	1,700.2	822	5,460.6	2,166	1,214	1,109	853	433.7	94.5	14.9	22.9
Mean	6.86	56.7	26.5	176	74.7	39.2	37.0	27.5	14.5	3.05	0.48	0.76
Max	15	196	80	3,190	224	49	44	35	27	6.4	1.0	1.5
Min	1.3	7.0	12	9.6	36	33	31	20	5.8	1.0	0	0.6
Ac-ft	422	3,370	1,630	10,830	4,300	2,410	2,200	1,690	860	187	30	45

Calendar year 1963: Max 2,280 Min 1.3 Mean 74.1 Ac-ft 53,630

Water year 1963-64: Max 3,190 Min 0 Mean 38.5 Ac-ft 27,970

* Discharge measurement made on this day.

KLAMATH RIVER BASIN

11-5259. Browns Creek near Douglas City, Calif.

Location.--Lat 40°38'35", long 122°58'45", in NE 1/4 sec. 10, T.32 N., R.10 W., on right bank 2 miles upstream from mouth and 2.1 miles west of Douglas City.

Drainage area.--71.6 sq mi.

Records available.--January 1957 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,640 ft (from topographic map).

Average discharge.--7 years, 80.1 cfs (57,990 acre-ft per year).

Extremes.--Maximum discharge during year, 1,660 cfs Jan. 20 (gage height, 13.37 ft); minimum daily, 0.7 cfs Aug. 31.
1957-64: Maximum discharge, 3,950 cfs Feb. 18, 1958 (gage height, 16.60 ft), from rating curve extended above 1,400 cfs; minimum, 0.3 cfs July 31, Aug. 1, 1962.

Remarks.--Small diversion for irrigation above station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.8	13	81	49	229	50	53	26	15	7.3	2.2	2.1
2	4.5	13	72	48	230	46	51	27	14	6.6	2.3	* 3.7
3	* 4.1	14	65	44	205	43	48	29	14	6.1	2.2	4.0
4	4.5	66	60	42	182	43	44	28	16	6.0	2.4	3.6
5	5.7	47	55	40	175	44	41	26	18	4.9	2.2	1.9
6	11	93	53	46	157	44	40	24	18	6.0	2.3	2.2
7	9.7	77	50	57	142	42	36	21	17	6.0	2.1	1.6
8	8.7	76	49	52	129	39	36	20	16	5.4	2.3	1.5
9	9.0	86	50	51	121	39	37	19	17	4.8	2.6	1.9
10	13	68	45	50	115	39	36	19	17	4.9	1.9	2.2
11	29	52	42	47	111	44	35	19	16	4.7	1.9	2.6
12	16	40	* 40	46	108	46	36	18	14	4.1	2.0	2.9
13	13	39	38	47	* 102	43	34	18	14	4.0	2.2	2.7
14	12	295	37	46	96	42	* 34	18	13	4.0	1.9	2.8
15	26	214	35	43	92	45	33	17	12	4.1	2.0	2.6
16	48	111	34	45	86	45	35	18	12	4.5	1.7	2.8
17	20	84	33	54	80	45	34	21	12	4.2	1.5	2.7
18	16	69	32	75	74	47	33	18	12	3.4	* 1.7	2.9
19	14	95	33	85	71	46	30	18	11	4.2	1.7	2.6
20	13	102	45	937	68	45	29	18	10	3.8	1.4	2.3
21	13	87	39	586	64	46	29	18	9.9	3.8	1.4	2.8
22	13	80	36	346	60	48	27	16	8.6	2.6	1.3	2.6
23	14	105	35	236	57	47	27	16	8.0	2.5	1.1	2.3
24	14	116	34	190	56	46	28	16	7.5	2.8	1.1	2.3
25	15	107	33	160	53	43	27	16	7.1	2.2	1.0	2.1
26	14	112	34	146	50	43	27	* 16	7.0	1.9	1.1	2.2
27	14	128	41	140	* 47	43	26	18	6.8	1.8	2.0	2.8
28	13	116	48	139	46	43	26	17	7.0	1.5	2.3	3.2
29	13	99	53	142	44	44	25	17	7.6	2.6	1.8	3.5
30	13	89	51	146	-----	46	25	16	* 7.8	3.2	.8	3.4
31	13	-----	50	159	-----	47	-----	15	-----	2.2	.7	-----
Total	431.0	2,693	1,403	4,294	3,050	1,373	1,022	603	3,653	1,261	55.1	78.8
Mean	13.9	89.8	45.3	139	105	44.3	34.1	19.5	12.2	4.07	1.78	2.63
Max	48	295	81	937	230	50	53	29	18	7.3	2.6	4.0
Min	4.1	13	32	40	44	39	25	15	6.8	1.5	0.7	1.5
Ac-ft	855	5,340	2,780	8,520	6,050	2,720	2,030	1,200	725	250	109	156

Calendar year 1963: Max 1,120 Min 4.1 Mean 92.9 Ac-ft 67,280
Water year 1963-64: Max 937 Min 0.7 Mean 42.3 Ac-ft 30,740

* Discharge measurement made on this day.

11-5265. North Fork Trinity River at Helena, Calif.

Location.--Lat 40°46'55", long 123°07'40", in SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec.21, T.34 N., R.11 W., on right bank 500 ft downstream from East Fork of North Fork, 0.6 mile north of Helena, 1.0 mile upstream from mouth, and 6 miles northwest of Junction City.

Drainage area.--151 sq mi.

Records available.--August 1911 to September 1913, January 1957 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,380 ft (from topographic map). August 1911 to September 1913 at site three-quarters of a mile downstream at different datum.

Average discharge.--9 years, 423 cfs (306,200 acre-ft per year).

Extremes.--Maximum discharge during year, 4,820 cfs Jan. 20 (gage height, 13.49 ft); minimum daily, 7.5 cfs Sept. 26.
1911-13, 1957-64: Maximum discharge, 13,500 cfs Jan. 12, 1959 (gage height, 19.66 ft); minimum daily, that of Sept. 26, 1964.

Remarks.--No known regulation or diversion above station.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	69	419	494	1,340	353	513	331	345	134	56	35
2	24	69	380	465	1,140	333	454	291	309	127	54	* 33
3	* 24	72	349	409	941	313	398	280	289	124	50	29
4	23	207	325	373	868	349	375	258	353	122	45	24
5	32	216	309	340	906	418	385	249	495	116	43	20
6	72	411	341	390	835	396	364	233	475	114	44	17
7	52	306	313	515	734	360	351	228	467	114	40	16
8	38	2,660	305	474	671	332	380	231	316	117	39	17
9	43	2,310	300	439	647	* 325	414	271	269	112	39	17
10	62	822	272	403	649	303	399	334	257	107	37	15
11	229	510	253	369	619	322	403	368	* 247	102	* 35	13
12	115	384	* 238	347	571	323	406	407	256	100	34	13
13	81	352	231	329	528	311	410	404	269	104	34	12
14	67	* 2,420	220	303	489	311	* 460	* 367	278	103	33	13
15	205	1,530	213	283	471	342	523	356	266	105	32	12
16	223	856	203	294	434	375	521	379	237	99	30	13
17	116	615	191	358	407	424	450	334	206	92	29	11
18	85	492	183	483	400	488	404	335	190	87	* 27	12
19	71	579	190	548	e 390	466	376	372	181	83	27	12
20	64	602	238	3,400	e 385	463	361	406	182	79	27	12
21	98	491	229	1,830	e 379	451	369	365	182	75	26	10
22	127	425	220	1,030	e 375	423	374	355	177	73	25	9.4
23	261	476	213	721	e 371	* 388	333	364	192	66	23	7.9
24	152	498	205	607	e 365	351	296	373	201	64	22	8.4
25	248	547	205	546	e 361	315	276	371	189	61	21	8.5
26	171	652	211	519	e 361	299	278	370	181	61	21	7.5
27	122	720	447	518	* 365	301	302	327	160	61	22	7.7
28	97	634	908	539	350	320	396	283	141	61	22	9.5
29	93	543	972	606	328	369	469	284	137	69	23	10
30	84	471	694	* 716	-----	434	377	309	* 134	65	23	10
31	77	-----	562	796	-----	501	-----	350	-----	59	49	-----
Total	3,180	20,939	10,339	19,444	16,680	11,459	11,817	10,185	7,581	2,856	1,032	434.9
Mean	103	698	334	627	575	370	394	329	253	92.1	33.3	14.5
Max	261	2,660	972	3,400	1,340	501	523	407	495	134	56	35
Min	23	69	183	283	328	299	276	228	134	59	21	7.5
Ac-ft	6,310	41,530	20,510	38,570	33,080	22,730	23,440	20,200	15,040	5,660	2,050	863
Calendar year 1963:	Max	3,950	Min	23	Mean	460	Ac-ft	333,300				
Water year 1963-64:	Max	3,400	Min	7.5	Mean	317	Ac-ft	230,000				

* Discharge measurement made on this day.

e Stage-discharge relation indefinite.

KLAMATH RIVER BASIN

11-5270. Trinity River near Burnt Ranch, Calif.

Location.--Lat 40°47'20", long 123°26'20", in S½ sec.19, T.5 N., R.7 E., on left bank 500 ft upstream from Cedar Flat Creek, 700 ft upstream from highway bridge at Cedar Flat, and 2.3 miles southeast of town of Burnt Ranch.

Drainage area.--1,439 sq mi (revised).

Records available.--October 1931 to September 1940, October 1956 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 950 ft (from topographic map). Oct. 1, 1931, to Jan. 19, 1940, water-stage recorder (destroyed by flood of Feb. 28, 1940) at site 2 miles upstream at different datum.

Average discharge.--17 years, 2,491 cfs (1,803,000 acre-ft per year) unadjusted.

Extremes.--Maximum discharge during year, 15,800 cfs Jan. 20 (gage height, 13.46 ft); minimum daily, 213 cfs Sept. 25-28. 1931-40, 1956-64: Maximum discharge, 81,500 cfs Feb. 25, 1958 (gage height, 30.50 ft), from rating curve extended above 40,000 cfs on basis of slope-area measurement at gage height 43.2 ft; minimum, 82 cfs Aug. 31, 1939. Flood of Dec. 22, 1955, reached a stage of 43.2 ft, from floodmarks (discharge, 172,000 cfs, on basis of slope-area measurement of maximum flow).

Remarks.--Records good. Flow regulated by Clair Engle Lake (formerly Trinity Lake) beginning in November 1960 (see p. 464). Small diversions above station for mining and irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 3-11)

2.1	200	6.0	2,580
2.5	315	8.0	5,100
3.5	730	10.0	8,500
4.5	1,320	12.0	12,500

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	234	532	1,500	1,520	3,990	1,370	1,540	1,050	964	512	291	249
2	285	536	1,400	1,580	3,920	1,380	1,450	946	880	512	288	261
3	291	540	1,310	1,510	3,450	1,290	1,370	952	825	496	282	267
4	*291	815	*1,250	1,410	*3,220	1,290	1,320	904	850	488	276	255
5	309	*916	1,200	1,320	3,060	*1,370	1,330	*860	1,310	480	273	240
6	385	1,420	1,150	*1,250	2,920	1,350	*1,290	815	1,280	460	267	240
7	375	1,310	1,130	1,720	2,650	1,290	1,260	780	1,340	456	261	240
8	357	3,380	1,120	1,600	2,450	1,240	1,240	775	*1,000	472	255	237
9	350	6,200	1,270	1,540	2,320	1,240	1,270	820	875	444	249	240
10	382	2,450	1,150	1,460	2,260	1,190	1,280	928	825	428	249	*237
11	711	1,680	1,100	1,370	2,180	1,230	1,260	1,010	760	417	246	234
12	770	1,330	1,060	1,310	2,050	1,330	1,260	1,060	790	413	240	234
13	552	1,180	1,020	1,270	1,950	1,280	1,260	1,100	835	413	240	231
14	484	4,240	1,000	1,240	1,850	1,240	1,290	1,040	855	420	234	228
15	548	4,200	970	1,160	1,800	1,260	1,370	994	830	413	234	225
16	1,090	2,510	950	1,170	1,700	1,290	1,400	1,030	775	410	234	225
17	715	1,920	930	1,300	1,610	1,360	1,300	1,020	685	389	231	220
18	560	1,620	920	1,800	1,550	1,450	1,200	946	645	371	234	218
19	504	1,780	950	2,020	1,530	1,440	1,140	976	640	364	237	223
20	476	2,090	1,080	10,300	1,530	1,430	1,100	1,080	640	350	237	223
21	500	1,750	1,200	8,110	1,510	1,420	1,080	1,020	640	340	234	223
22	536	1,540	1,100	4,710	1,530	1,390	1,100	964	635	336	228	223
23	862	1,820	1,020	3,420	1,530	1,350	1,070	952	*650	319	223	223
24	730	2,140	1,000	2,840	1,530	1,290	1,000	970	710	306	223	218
25	795	1,980	1,020	2,540	1,480	1,220	940	964	695	291	218	213
26	790	2,020	1,040	2,400	1,430	1,180	910	1,010	650	291	220	213
27	655	2,150	1,200	2,340	1,400	1,180	922	940	600	291	220	213
28	580	2,020	1,600	2,300	1,380	1,210	1,040	850	548	291	220	213
29	560	1,810	2,500	2,390	1,340	1,280	1,260	805	532	312	225	215
30	544	1,640	2,000	2,700	-----	1,360	1,140	850	516	312	225	215
31	528	-----	1,720	2,760	-----	1,470	-----	916	-----	303	223	-----
Total	16,749	59,519	37,860	74,360	61,120	40,670	36,392	29,327	23,780	12,100	7,517	6,896
Mean	540	1,984	1,221	2,399	2,108	1,312	1,213	946	793	390	242	230
Max	1,090	6,200	2,500	10,300	3,990	1,470	1,540	1,100	1,340	512	291	267
Min	234	532	920	1,160	1,340	1,180	910	775	516	291	218	213
Ac-ft	33,220	118,100	75,090	147,500	121,200	80,670	72,180	58,170	47,170	24,000	14,910	13,680
Calendar year 1963: Max 16,200 Min 231 Mean 2,578 Ac-ft 1,867,000												
Water year 1963-64: Max 10,300 Min 213 Mean 1,110 Ac-ft 805,900												

* Discharge measurement made on this day.

Note.--No gage-height record Dec. 4 to Jan. 5.

11-5270. Trinity River near Burnt Ranch, Calif.--Continued.

Records available.--Water temperatures: October 1961 to September 1964.

Extremes.--Maximum temperature during year, 69°F Aug. 24-26; minimum, 43°F Feb. 4.

1961-64: Maximum temperature recorded, 77°F July 24, 1962; minimum recorded, 36°F Jan. 22-31, 1963.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	64	64	56	54	51	51	-	-	44	44	44	44	48	48	51	51	57	56	61	61	68	67	66	65
2	64	63	54	54	51	51	-	-	44	44	44	44	48	48	51	51	57	57	61	61	67	67	65	65
3	64	63	54	54	51	51	-	-	44	44	44	44	48	48	51	51	57	57	61	61	67	67	65	64
4	63	63	54	54	-	-	-	-	44	43	44	44	48	48	51	51	57	56	61	61	67	66	64	64
5	63	62	54	53	-	-	-	-	44	44	45	44	48	48	51	51	56	56	61	61	67	66	64	64
6	63	62	53	53	-	-	46	46	44	44	46	45	48	48	51	51	56	56	61	61	67	66	64	64
7	62	62	53	53	-	-	46	46	44	44	46	46	48	48	51	51	56	56	61	61	67	67	64	64
8	62	62	53	52	-	-	46	46	44	44	46	46	48	48	51	51	56	56	62	61	67	66	64	64
9	62	62	52	52	-	-	46	46	44	44	46	46	48	48	52	51	56	56	62	62	67	66	64	64
10	62	59	52	52	-	-	46	46	44	44	46	46	48	48	52	52	56	56	62	61	67	66	64	62
11	59	59	52	52	-	-	46	46	45	44	46	46	48	48	52	52	56	56	62	62	67	67	63	62
12	59	59	52	52	-	-	46	46	45	45	46	46	49	48	53	52	56	56	63	62	67	66	63	62
13	59	59	52	52	-	-	46	46	45	45	46	46	49	48	53	52	56	56	64	63	67	67	63	62
14	59	59	52	52	-	-	46	46	45	44	46	46	49	48	53	53	56	56	65	65	67	67	62	62
15	59	59	52	52	-	-	46	46	44	44	46	46	49	48	53	53	57	56	65	65	67	67	62	62
16	59	58	52	52	-	-	46	46	44	44	46	46	49	49	53	53	57	57	65	65	67	67	62	62
17	59	58	52	52	-	-	46	46	44	44	47	46	49	49	53	53	58	57	65	65	67	67	62	62
18	58	58	52	52	-	-	46	46	44	44	47	46	49	49	53	53	58	58	65	65	67	67	62	62
19	58	58	52	52	-	-	46	46	44	44	47	47	49	49	53	53	58	58	66	65	67	67	62	62
20	58	58	52	52	-	-	46	44	44	44	47	47	49	49	53	53	58	58	65	65	67	67	62	62
21	58	58	52	52	-	-	44	44	44	44	47	47	49	49	54	53	58	58	65	65	67	67	62	62
22	58	58	52	52	-	-	44	44	44	44	47	47	50	49	54	53	58	58	65	65	68	67	62	61
23	58	58	52	51	-	-	44	44	44	44	47	47	50	50	54	54	59	58	66	65	68	67	62	61
24	58	58	51	51	-	-	44	44	44	44	47	47	50	50	54	54	61	59	66	65	69	68	62	61
25	58	58	51	51	-	-	44	44	44	44	47	47	50	50	56	54	61	61	67	66	69	68	62	61
26	58	58	51	51	-	-	44	44	44	44	47	47	50	50	56	56	61	61	67	66	69	68	62	62
27	58	57	51	51	-	-	44	44	44	44	48	47	50	50	56	56	61	61	68	67	68	67	62	62
28	57	56	51	51	-	-	44	44	44	44	48	47	51	50	56	56	61	61	68	68	68	67	62	62
29	56	56	51	51	-	-	44	44	44	44	48	48	51	51	56	56	61	61	68	67	67	67	62	62
30	56	56	51	51	-	-	44	44	-----	-----	48	48	51	51	56	56	61	61	68	68	67	67	62	62
31	56	56	-----	-----	-	-	44	44	-----	-----	48	48	-----	-----	57	56	-----	-----	68	68	67	66	-----	-----
Avg	60	59	52	52	-	-			44	44	46	46	49	49	53	53	58	58	64	64	67	67	63	62

KLAMATH RIVER BASIN

11-5274. New River at Denny, Calif.

Location.--Lat 40°56'45", long 123°22'55", in NE¼ sec.33, T.7 N., R.7 E., on left bank at downstream side of private road bridge, 0.3 mile northeast of Denny, and 0.5 mile downstream from Quinby Creek.

Drainage area.--173 sq mi.

Records available.--October 1927 to December 1928 (published as "near Denny"), June 1959 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 1,350 ft (from topographic map). Oct. 1, 1927, to Dec. 23, 1928, at site 2.6 miles downstream at different datum.

Average discharge.--6 years, 392 cfs (283,800 acre-ft per year).

Extremes.--Maximum discharge during year, 6,980 cfs Jan. 20 (gage height, 10.17 ft); minimum 23 cfs Sept. 26-30. 1927-28, 1959-64; Maximum discharge, 9,580 cfs Dec. 2, 1962 (gage height, 11.71 ft), from rating curve extended above 3,600 cfs on basis of slope-area measurement at gage height 11.65 ft; minimum daily, 18 cfs Oct. 5-7, 1961.

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	32	73	428	611	2,360	498	680	378	274	100	55	37
2	31	79	379	611	1,980	467	610	342	248	98	55	39
3	*29	79	347	558	*1,630	439	555	334	227	96	50	37
4	29	172	323	523	1,510	*456	*525	309	245	96	50	33
5	42	*187	*305	502	1,520	512	515	299	292	94	48	30
6	93	369	305	547	1,380	498	485	*271	330	90	46	29
7	59	300	288	*749	1,210	474	465	264	394	90	45	29
8	48	3,010	295	704	1,110	453	490	264	*281	88	43	29
9	53	*2,570	298	683	1,040	453	525	299	248	88	42	29
10	53	905	278	675	1,020	432	505	342	239	82	42	29
11	113	579	260	647	965	467	500	374	221	78	40	27
12	73	435	250	587	890	484	495	390	206	74	39	27
13	59	362	245	551	817	470	495	394	203	86	39	27
14	53	950	241	505	767	474	540	374	194	74	40	27
15	134	1,150	233	474	727	495	605	358	185	76	38	*27
16	136	835	226	554	667	523	610	382	168	74	37	27
17	85	663	219	763	631	568	545	350	163	70	39	27
18	69	554	212	986	587	627	490	350	153	66	38	27
19	63	623	224	1,060	575	607	446	378	148	64	39	27
20	63	675	278	4,940	579	599	430	390	140	64	38	27
21	87	568	270	2,530	587	587	422	354	138	64	37	27
22	118	509	260	1,610	599	561	426	330	130	62	34	27
23	203	1,130	253	1,190	611	530	394	323	125	60	33	27
24	134	1,360	246	1,020	595	495	366	327	*123	50	31	27
25	192	997	250	1,010	558	463	334	320	110	53	31	26
26	a 150	621	255	1,040	526	442	330	323	114	53	30	23
27	a 110	722	421	1,010	502	439	338	306	114	53	31	23
28	95	611	883	970	488	460	393	264	110	52	30	23
29	89	537	1,020	1,120	463	496	465	254	104	60	30	23
30	81	474	808	1,340	-----	354	410	260	102	57	30	23
31	77	-----	667	1,430	-----	639	-----	281	-----	53	30	-----
TOTAL	2,653	22,299	10,769	31,500	26,894	15,664	14,394	10,184	5,737	2,275	1,210	840
MEAN	85.6	743	354	1,016	927	505	480	329	191	73.4	39.0	26.0
MAX	203	3,010	1,020	4,940	2,360	630	660	394	394	100	55	39
MIN	29	73	212	474	463	432	330	254	102	52	30	23
AC-FT	5,260	44,230	21,760	62,480	53,340	31,070	28,550	20,200	11,380	4,510	2,400	1,670

CALENDAR YEAR 1963 MAX 3,740 MIN 25 MEAN 485 AC-FT 351,200
 WATER YEAR 1963-64 MAX 4,340 MIN 23 MEAN 395 AC-FT 286,800

Peak discharge (base, 2,500 cfs).--Nov. 8 (2200) 5,430 cfs (9.29 ft); Jan. 20 (0700) 6,980 cfs (10.17 ft).

* Discharge measurement made on this day.

a No gage-height record.

11-5281. South Fork Trinity River at Forest Glen, Calif.

Location.--Lat 40°22'30", long 123°19'35", in SE¼ sec.13, T.1 S., R.7 E., on right bank 15 ft downstream from bridge on State Highway 36, at Forest Glen, and 100 ft downstream from Glen Creek.

Drainage area.--208 sq mi.

Records available.--Occasional low-flow measurements, water years 1953-57 and annual maximum, water years 1955-57. October 1959 to September 1964.

Gage.--Water-stage recorder (digital). Altitude of gage is 2,170 ft (from topographic map). Prior to Oct. 1, 1959, crest-stage gage only, at datum 1.26 ft lower.

Average discharge.--5 years, 332 cfs (240,400 acre-ft per year).

Extremes.--Maximum discharge during year, 10,500 cfs Jan. 20 (gage height, 15.68 ft); minimum, 15 cfs Sept. 25-27.

1954-57, 1959-64: Maximum discharge, 33,800 cfs (revised) Dec. 22, 1955 (gage height, 25.26 ft, from floodmarks, present datum), from rating curve extended above 5,000 cfs on basis of slope-area measurement at gage height 27.7 ft.

1959-64: Minimum discharge, 15 cfs Sept. 24-27, 1962, Sept. 25-27, 1964.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

WSP	Water year	Date	Discharge (cfs)	Gage-height (feet)
1445, 1565	1956	Dec. 22, 1955	33,800	25.26
1715	1960	Feb. 8, 1960	16,800	18.92
Basic Data Report	1963	Jan. 31, 1963	16,300	18.63

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.5	14	6.5	600
3.9	32	8.0	1,350
4.3	62	10.0	2,900
4.9	144	12.0	5,040
5.5	270	14.0	8,200

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	21	34	273	208	1,260	280	380	169	104	49	29	18
2	20	39	245	218	1,160	268	331	164	102	48	28	18
3	20	45	223	196	992	244	297	171	99	50	27	18
4	20	185	207	185	891	248	279	164	100	65	26	18
5	26	143	195	174	857	257	270	156	110	52	25	18
6	*32	385	185	227	*779	248	256	149	105	*48	25	18
7	30	*199	*173	309	697	*237	243	145	105	45	24	18
8	27	391	181	260	641	225	*238	*144	98	44	24	*18
9	28	645	196	*252	605	223	239	144	98	43	23	18
10	33	286	174	257	585	214	235	144	*96	42	23	18
11	59	177	161	233	555	270	228	143	90	40	23	18
12	39	133	154	220	517	301	220	142	84	38	22	18
13	33	139	149	219	480	272	216	141	80	39	22	17
14	30	1,680	144	211	451	275	218	136	77	38	22	17
15	64	984	140	197	438	292	223	133	74	38	21	17
16	72	540	135	232	402	305	221	142	72	37	21	17
17	47	359	131	428	373	324	212	146	72	36	21	16
18	37	273	127	689	352	343	204	135	70	34	21	16
19	34	641	142	914	339	322	196	133	69	33	21	17
20	33	632	224	6,710	326	310	188	131	67	32	20	17
21	33	425	194	2,750	312	315	184	126	65	32	20	17
22	43	388	174	1,540	305	306	183	122	63	31	20	16
23	63	2,690	162	1,080	296	288	181	119	61	30	20	16
24	51	1,750	155	915	290	276	177	116	59	30	20	16
25	49	947	156	1,080	278	259	171	114	56	29	20	15
26	45	677	151	1,080	266	253	166	132	55	28	19	15
27	40	531	185	977	257	255	164	145	54	28	19	16
28	37	430	239	902	251	265	167	127	54	28	19	16
29	36	359	265	941	243	286	168	122	52	29	19	16
30	35	309	241	1,010	-----	303	164	112	51	32	19	16
31	34	-----	217	980	-----	325	-----	107	-----	30	19	-----
TOTAL	1,171	16,416	5,698	25,594	15,198	8,589	6,619	4,274	2,342	1,178	682	509
MEAN	37.8	547	184	826	524	277	221	138	78.1	38.0	22.0	17.0
AC-FT	2,320	32,560	11,300	50,760	30,140	17,040	13,130	8,480	4,650	2,340	1,350	1,010
MAX	72	2,690	273	6,710	1,260	343	380	171	110	65	29	18
MIN	20	34	127	174	243	214	164	107	51	28	19	15

CALENDAR YEAR 1963 MAX 8,750 MIN 20 MEAN 482 AC-FT 348,600
 WATER YEAR 1963-64 MAX 6,710 MIN 15 MEAN 241 AC-FT 175,100

Peak discharge (base, 3,000 cfs).--Nov. 23 (1415) 3,800 cfs (10.94 ft); Jan. 20 (1130) 10,500 cfs (15.68 ft).

* Discharge measurement made on this day.

Note.--No gage-height record July 24 to Sept. 7.

KLAMATH RIVER BASIN

11-5282. South Fork Trinity River near Hyampom, Calif.

Location--Lat 40°36'30", long 123°27'00", in SW¼ sec.25, T.3 N., R.6 E., on left bank just above private road bridge, 0.3 mile downstream from Deep Gulch, 0.5 mile upstream from Hayfork Creek, and 0.7 mile south of Hyampom.

Drainage area--342 sq mi.

Records available--September 1956 to September 1964.

Gage--Water-stage recorder with thermograph attachment. Altitude of gage is 1,280 ft (from topographic map). Prior to Aug. 15, 1962, water-stage recorder at site 0.7 mile upstream at different datum.

Average discharge--8 years, 667 cfs (482,900 acre-ft per year).

Extremes--Maximum discharge during year, 13,300 cfs Jan. 20 (gage height, 14.50 ft), from rating curve extended above 2,600 cfs; minimum, daily, 24 cfs Sept. 26, 27.

1956-64: Maximum discharge, 26,600 cfs Feb. 8, 1960 (gage height, 16.92 ft, site and datum then in use), from rating curve extended above 7,200 cfs; minimum daily, that of Sept. 26, 27, 1964.

Flood of Dec. 22, 1955, reached a stage of 22.2 ft, former site and datum, from floodmarks (discharge, 39,400 cfs, on basis of slope-area measurement of maximum flow).

Remarks--Records fair. No regulation or diversion above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	36	56	566	442	2,330	553	746	319	205	92	47	26
2	36	61	506	466	2,180	553	670	312	199	92	46	32
3	35	62	462	426	1,890	494	580	330	192	92	45	34
4	34	106	430	396	1,660	486	530	326	194	107	44	35
5	39	218	400	375	*1,620	514	510	302	212	110	43	32
6	*56	*535	*382	452	1,520	*490	474	286	218	95	42	30
7	61	426	358	668	1,390	466	*458	*279	223	*89	41	29
8	51	556	356	*602	1,300	442	430	276	205	83	40	28
9	49	1,190	410	533	1,230	423	430	273	*199	82	39	*28
10	57	611	365	589	1,190	302	430	270	197	81	38	28
11	114	365	340	539	1,140	446	418	267	187	79	37	28
12	92	261	319	514	1,070	602	407	267	175	75	36	26
13	67	215	309	506	1,010	530	393	261	165	75	36	28
14	58	2,000	299	502	955	522	396	255	154	74	35	27
15	77	1,730	289	466	925	530	403	255	152	71	34	27
16	147	1,010	279	494	865	575	403	267	141	70	33	28
17	100	728	270	697	815	620	336	299	141	68	32	27
18	73	562	261	1,200	769	719	372	270	139	64	31	27
19	62	966	270	1,490	746	652	361	258	137	64	31	27
20	59	1,220	442	9,270	715	620	347	252	131	61	32	28
21	56	870	434	5,100	688	629	337	249	129	59	31	28
22	62	724	382	3,030	670	607	337	237	123	59	29	27
23	114	3,530	354	2,230	625	566	333	226	118	57	28	26
24	100	3,210	333	1,610	629	535	326	223	112	55	27	26
25	92	1,630	333	1,920	602	490	312	221	107	53	26	25
26	83	1,210	323	1,960	571	470	302	246	102	51	26	24
27	74	990	365	1,790	553	470	299	302	100	50	26	24
28	65	835	458	1,680	522	490	302	261	100	48	26	25
29	62	724	553	1,660	506	535	309	240	99	48	26	25
30	60	629	514	1,800	-----	593	302	226	95	52	26	26
31	56	-----	470	1,810	-----	629	-----	212	-----	49	27	-----
TOTAL	2,127	27,310	11,834	45,484	30,706	16,633	12,283	8,267	4,651	2,210	1,060	835
MEAN	68.6	910	382	1,467	1,059	537	409	267	155	71.3	34.2	27.8
MAX	147	3,530	566	9,270	2,330	719	746	330	223	110	47	35
MIN	34	56	261	375	506	382	299	212	95	48	26	24
AC-FT	4,220	54,170	23,470	90,220	60,900	32,990	24,360	16,400	7,230	4,380	2,100	1,660

Calendar year 1963: Max 10,300 Min 34 Mean 800 Ac-ft 579,400

Water year 1963-64: Max 9,270 Min 24 Mean 446 Ac-ft 324,100

Peak discharge (base, 4,900 cfs)--Nov. 23 (1800) 5,900 cfs (9.92 ft); Jan. 20 (1200) 13,300 cfs (14.50 ft).

* Discharge measurement made on this day.

Note--No gage-height record July 23 to Aug. 17.

11-5282. South Fork Trinity River near Hyampom, Calif.--Continued.

Records available.--Water temperatures: November 1960 to September 1962, October 1963 to September 1964.

Extremes.--Maximum temperature during year, 68°F July 21-25; minimum, 38°F Feb. 20, 21, Feb. 24 to Mar. 4.
 1960-62, 1963-64: Maximum temperature recorded, 77°F July 27, 29, 30, 1962; minimum, 32° (revised) Jan. 19, 1962.

Temperature (°F) of water, water year October 1963 to September 1964																								
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	62	62	50	49	44	43	46	46	42	42	38	38	44	44	50	49	59	58	60	60	64	63	63	61
2	62	62	49	48	43	42	46	45	43	42	38	38	44	43	49	48	58	58	60	60	64	63	62	61
3	62	62	49	49	42	42	45	45	43	42	38	38	43	42	48	48	58	58	60	59	63	63	62	61
4	62	60	49	49	42	42	45	44	42	42	39	38	44	43	48	48	58	58	59	59	63	63	64	62
5	60	60	49	49	42	42	44	43	42	42	39	39	44	44	48	48	58	58	60	59	64	63	63	61
6	62	60	49	48	44	42	43	43	42	41	40	39	44	43	48	47	58	58	60	60	64	63	63	61
7	61	61	48	48	44	44	43	42	41	41	40	39	46	44	49	48	58	58	61	60	65	64	62	61
8	61	61	48	48	44	44	42	42	41	41	39	39	47	46	50	49	58	57	61	61	65	64	62	61
9	61	61	48	48	44	44	42	42	42	41	40	39	47	46	52	50	57	56	61	60	64	63	64	60
10	61	59	48	48	44	44	42	42	42	42	40	40	47	46	53	52	56	56	60	60	64	63	65	63
11	59	59	48	48	44	43	42	42	42	41	40	40	48	47	54	53	58	56	61	60	65	64	65	63
12	59	59	48	48	43	42	42	41	41	40	40	40	48	48	54	54	58	58	62	60	64	63	66	64
13	59	59	48	48	42	42	41	41	40	40	40	39	49	48	54	54	58	57	63	62	64	63	66	64
14	59	59	48	48	42	42	41	41	40	39	40	40	50	49	54	54	59	58	63	62	64	63	65	64
15	59	59	48	47	42	42	41	41	39	39	42	40	50	50	54	54	59	59	63	62	64	63	65	63
16	59	59	47	46	42	42	41	41	39	39	42	41	50	49	54	54	59	59	62	62	64	62	65	63
17	59	59	46	46	42	42	41	41	39	39	42	42	50	49	54	53	59	59	62	62	64	62	66	65
18	59	59	46	46	42	42	41	41	39	39	42	42	49	48	54	53	59	59	63	62	65	62	65	64
19	59	59	46	45	43	42	41	41	39	39	42	42	49	48	55	54	60	59	63	63	65	64	65	63
20	59	58	45	44	44	43	41	41	39	38	42	42	49	48	56	55	59	59	63	63	67	65	65	64
21	58	57	44	44	44	44	41	41	39	38	42	42	49	49	56	56	59	59	63	62	68	66	64	63
22	57	57	44	44	44	44	41	41	39	39	42	42	50	49	56	56	60	59	63	62	68	66	65	63
23	57	56	44	44	44	44	41	41	40	39	42	41	49	48	56	56	60	59	63	62	68	66	67	64
24	56	56	44	44	44	42	41	41	39	38	41	41	48	47	57	56	60	60	64	63	68	66	67	64
25	56	55	44	44	43	42	41	41	39	38	41	41	48	47	58	57	60	60	65	64	68	66	66	64
26	55	54	44	44	43	42	41	41	39	38	42	41	50	48	57	57	60	60	66	65	67	65	65	62
27	54	53	44	44	44	43	42	41	38	38	43	42	50	50	57	56	61	60	66	65	66	64	64	62
28	53	52	44	44	45	44	42	42	38	38	43	42	52	50	56	56	60	59	66	66	66	64	64	62
29	52	52	44	44	46	45	42	42	38	38	44	43	52	52	57	56	60	59	66	65	64	63	64	62
30	52	51	44	44	46	46	42	42	-----	-----	44	44	52	50	58	57	60	60	66	65	65	63	64	62
31	51	50	-----	-----	46	46	42	42	-----	-----	44	44	-----	-----	58	58	-----	-----	66	64	65	62	-----	-----
Avg	58	58	47	46	43	43	42	42	40	40	41	41	48	47	54	53	59	58	63	62	65	64	64	63

KLAMATH RIVER BASIN

11-5284, Hayfork Creek near Hayfork, Calif.

Location.--Lat 40°31'10", long 123°05'05", in SW¼ sec.23, T.31 N., R.11 W., on left bank 1,300 ft downstream from Carrier Gulch and 5.8 miles southeast of town of Hayfork.

Drainage area.--86.7 sq mi (revised).

Records available.--October 1956 to September 1964.

Gage.--Water-stage recorder (digital). Datum of gage is 2,555.27 ft above mean sea level, datum of 1929.

Average discharge.--8 years, 108 cfs (78,190 acre-ft per year).

Extremes.--Maximum discharge during year, 3,190 cfs Jan. 20 (gage height, 10.21 ft); minimum 2.0 cfs Aug. 21-23.

1956-64: Maximum discharge, 4,210 cfs Feb. 8, 1960 (gage height, 11.67 ft); minimum, 1.2 cfs Sept. 1, 1957.

Flood of Dec. 22, 1955, reached a stage of 11.0 ft, from floodmarks (discharge, 3,880 cfs, on basis of slope-area measurement of maximum flow).

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation or diversion above station.

Rating table, (gage height, in feet, and discharge, in cubic feet per second)

(Shifting-control method used Oct. 1 to Nov. 5, Dec. 7-28,
Dec. 31 to Feb. 28)

2.2	1.2	2.7	23	5.0	480
2.3	3.2	3.0	52	6.0	805
2.4	6.0	3.5	124	7.0	1,220
2.5	10	4.0	220	8.0	1,760

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	5.2	19	126	63	348	79	125	37	19	6.4	3.4	2.8
2	5.2	19	107	65	328	77	110	36	17	6.0	3.1	2.8
3	5.2	19	95	62	290	70	96	35	17	6.2	3.0	3.0
4	5.2	93	83	59	*264	69	87	33	17	6.4	3.1	3.1
5	*5.7	64	*76	53	251	*74	86	32	18	6.9	3.1	3.1
6	9.2	182	73	56	230	73	*82	*31	18	6.5	3.3	3.0
7	9.2	*119	66	*67	210	70	79	31	18	6.0	3.4	2.9
8	8.4	158	65	62	192	68	78	30	16	6.2	3.3	*2.9
9	8.0	214	68	62	182	67	81	29	*17	5.9	3.1	2.9
10	10	133	62	62	174	65	82	26	17	5.7	2.7	2.8
11	22	86	60	61	166	70	81	25	16	5.8	2.8	2.8
12	15	64	55	58	155	74	77	24	15	5.6	2.7	2.7
13	13	63	52	56	143	70	73	23	15	4.9	2.7	2.7
14	12	624	49	54	134	70	72	22	14	4.8	3.0	2.6
15	27	385	46	50	129	75	72	22	13	4.9	3.0	2.6
16	41	216	43	52	119	81	70	24	13	5.2	3.0	2.8
17	22	153	41	71	109	86	65	30	13	5.5	3.0	3.0
18	17	120	40	104	103	97	60	25	13	5.3	2.9	2.9
19	15	172	42	132	100	93	55	24	12	5.3	2.5	2.8
20	14	172	61	1,620	96	91	52	23	12	5.4	2.4	2.8
21	14	131	61	588	94	92	48	22	12	5.1	2.2	2.6
22	15	114	57	358	92	88	47	21	11	5.0	2.1	2.6
23	22	540	54	280	92	85	46	20	9.8	4.6	2.3	2.6
24	20	607	50	238	89	83	45	19	9.0	3.8	2.6	2.6
25	20	328	49	236	87	81	41	18	8.4	3.9	2.8	2.6
26	19	282	47	224	81	75	40	23	8.3	3.3	3.0	2.6
27	19	270	52	218	79	74	38	29	7.9	2.6	3.1	2.8
28	19	220	65	218	77	76	36	25	7.4	2.7	3.0	3.2
29	19	180	78	226	73	87	35	22	7.3	3.0	2.9	3.0
30	19	149	74	245	-----	100	36	20	6.5	3.5	2.8	3.0
31	18	-----	67	258	-----	111	-----	20	-----	3.6	2.8	-----
TOTAL	473.3	5,896	1,964	5,958	4,487	2,471	1,995	801	397.6	156.0	89.1	84.6
MEAN	15.3	197	63.4	192	155	79.7	66.5	25.8	13.3	5.03	2.87	2.82
AC-FT	939	11,690	3,900	11,820	8,900	4,900	3,960	1,590	789	309	177	168
MAX	41	624	126	1,620	348	111	125	37	19	6.9	3.4	3.2
MIN	5.2	19	40	50	73	65	35	18	6.5	2.6	2.1	2.6

CALENDAR YEAR 1963 MAX 1,910 MIN 4.3 MEAN 136 AC-FT 98,530
WATER YEAR 1963-64 MAX 1,620 MIN 2.1 MEAN 67.7 AC-FT 49,140

Peak discharge (base, 1,100 cfs).--Jan. 20 (0915) 3,190 cfs (10.21 ft).

* Discharge measurement made on this day.

Note.--No gage-height record Apr. 21 to May 6, Aug. 23 to Sept. 24.

11-5284.4 Big Creek near Hayfork, Calif.

Location.--Lat 40°33'11", long 123°08'33", in NE¼SE¼ sec.7, T.31 N., R.11 W., on right bank 30 ft upstream from bridge on Hayfork-Douglas City road and 2 miles east of Hayfork.

Drainage area.--27.1 sq mi.

Records available.--October 1960 to September 1961, October 1962 to September 1964.

Gage.--Water-stage recorder. Altitude of gage is 2,385 ft (from topographic map).

Extremes.--Maximum discharge during year, 773 cfs Jan. 20 (gage height, 9.64 ft); no flow for many days.
1960-61, 1962-64: Maximum discharge, that of Jan. 20, 1964; no flow at times in each year.

Remarks.--City of Hayfork and large irrigators can divert up to 15 cfs daily above station for municipal supply, domestic use, and irrigation.

Cooperation.--Records furnished by California Department of Water Resources and reviewed by Geological Survey.

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.3	7.4	36	25	163	36	41	23	11	2.1	0	1.1
2	1.1	7.8	32	26	149	34	38	21	8.5	3.2	0	.2
3	*9	8.5	29	22	122	32	36	19	7.4	5.4	0	0
4	.9	22	27	22	112	33	35	16	9.5	6.8	.6	0
5	3.0	20	25	21	111	34	36	19	11	5.9	.5	0
6	2.6	40	23	30	105	33	34	8.0	13	5.6	0	0
7	2.9	26	21	37	96	31	*34	4.4	13	5.0	0	.4
8	2.0	62	21	33	88	30	33	5.5	12	2.1	0	.1
9	0	79	22	*32	84	*31	33	6.1	12	2.0	0	.5
10	.2	41	20	30	81	30	33	4.8	12	1.9	.7	.8
11	8.5	28	19	28	74	33	34	4.3	*9.3	2.8	*1	.6
12	8.1	24	20	28	68	34	32	4.8	7.1	3.1	0	.7
13	6.6	24	17	29	63	32	31	7.0	3.7	3.4	0	0
14	7.0	*100	18	28	59	31	32	*6.2	3.5	2.3	.2	.5
15	18	87	17	26	58	32	32	6.6	2.8	0	0	.9
16	17	55	17	29	54	33	31	5.7	2.5	0	0	.9
17	*9.3	43	17	38	51	35	32	5.1	3.5	0	0	.6
18	7.8	35	17	46	49	38	31	5.0	1.4	0	0	.7
19	6.3	71	18	61	45	37	31	5.7	.8	0	.4	.5
20	6.8	56	24	411	44	36	29	4.7	.7	0	0	.3
21	8.1	43	21	219	42	36	27	3.6	1.3	0	0	.7
22	8.5	38	20	134	42	36	25	4.4	.3	0	0	.8
23	12	78	17	98	41	34	28	4.1	.6	0	0	.4
24	10	66	16	83	40	36	27	3.7	.3	0	0	.8
25	10	61	16	79	39	33	26	4.0	.6	0	0	0
26	8.5	62	15	79	38	33	26	10	.3	0	0	.5
27	7.9	65	21	76	35	33	26	17	2.1	0	0	1.4
28	7.6	56	28	75	35	34	22	16	6.3	.2	0	1.2
29	8.0	47	33	83	34	35	22	15	5.4	.1	0	1.1
30	7.5	41	29	*91	-----	37	22	16	*5.5	0	0	1.2
31	7.8	-----	27	112	-----	38	-----	16	-----	.1	.7	-----
Total	206.2	1393.7	683	2131	2022	1050	919	291.7	167.4	52.0	3.2	16.9
Mean	6.65	46.5	22.0	68.7	69.7	33.9	30.6	9.41	5.58	1.68	0.10	0.56
Max.	18	100	36	411	163	38	41	23	13	6.8	0.7	1.4
Min	0	7.4	15	21	34	30	22	3.6	0.3	0	0	0
Ac-ft	409	2760	1350	4230	4010	2080	1820	579	332	103	6.3	34

Calendar year 1963: Max 403 Min 0 Mean 40.6 Ac-ft 29,360
Water year 1963-64: Max 411 Min 0 Mean 24.4 Ac-ft 17,710

* Discharge measurement made on this day.

KLAMATH RIVER BASIN

11-5285. Hayfork Creek near Hyampom, Calif.

Location.--Lat 40°37'35", long 123°26'00", in NW¼ sec.19, T.3 N., R.7 E., on right bank 1.2 miles upstream from mouth and 1.3 miles northeast of Hyampom.

Drainage area.--378 sq mi (revised).

Records available.--August 1953 to September 1964.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 1,280 ft (from topographic map).

Average discharge.--11 years, 485 cfs (351,100 acre-ft per year).

Extremes.--Maximum discharge during year, 14,200 cfs Jan. 20 (gage height, 13.98 ft), from rating curve extended above 6,700 cfs as explained below; minimum daily, 16 cfs Aug. 26, 27, Sept. 27, 28.
1953-64: Maximum discharge, 25,300 cfs Dec. 22, 1955 (gage height, 18.00 ft), from rating curve extended above 6,700 cfs on basis of slope-area measurement of maximum flow; minimum, 16 cfs Sept. 28, 1960, Aug. 26, 27, Sept. 27, 28, 1964.

Remarks.--Records good. No regulation; diversions for irrigation of about 700 acres above station.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	28	81	412	310	1,860	345	370	169	99	53	27	20
2	26	84	366	317	1,690	366	356	169	91	50	26	22
3	26	88	328	295	1,440	345	328	172	90	49	26	21
4	26	169	304	295	1,260	317	307	166	91	50	25	20
5	*30	223	289	268	*1,170	331	292	160	95	50	25	20
6	39	*459	*268	292	1,100	*328	286	155	99	47	24	18
7	40	416	256	428	994	317	*274	*143	103	*47	24	19
8	42	380	250	*373	886	304	268	138	97	46	23	19
9	44	730	277	359	825	304	265	131	*99	43	22	*18
10	55	468	253	356	785	292	268	123	101	42	22	18
11	77	349	238	331	740	310	262	119	97	40	22	17
12	84	250	223	321	685	380	256	117	91	39	21	17
13	70	217	217	314	640	352	244	115	84	39	21	17
14	63	1,320	214	321	599	342	241	113	79	39	20	17
15	86	1,370	205	295	581	342	238	111	75	38	20	17
16	150	785	199	295	536	345	235	115	73	36	20	17
17	115	523	196	359	500	356	232	125	73	33	20	17
18	91	400	190	649	472	373	226	121	73	33	20	17
19	79	839	196	825	452	373	214	115	70	32	19	18
20	77	904	277	7,560	428	359	208	113	68	33	18	20
21	77	599	274	3,440	412	359	199	109	66	31	18	19
22	81	476	253	1,880	404	352	196	105	66	31	18	18
23	97	1,670	241	1,370	392	342	196	105	59	31	18	18
24	101	1,870	232	1,100	384	335	196	99	56	30	18	17
25	103	1,190	235	1,000	373	314	190	97	56	29	17	17
26	97	898	226	1,020	359	301	184	101	52	27	16	17
27	90	830	244	976	342	295	175	121	52	27	17	16
28	86	700	301	958	342	292	169	121	55	28	18	17
29	84	568	384	994	335	301	163	113	55	29	18	17
30	86	476	359	1,090	-----	317	163	105	53	28	18	17
31	82	-----	331	1,160	-----	335	-----	101	-----	27	18	-----
TOTAL	2,232	19,332	8,238	29,551	20,986	10,324	7,201	3,867	2,318	1,157	639	542
MEAN	72.0	644	266	953	724	333	240	125	77.3	37.3	20.6	18.1
MAX	150	1,870	412	7,560	1,860	380	370	172	103	53	27	22
MIN	26	81	190	268	335	292	163	97	52	27	16	16
AC-FT	4,430	38,340	16,340	58,610	41,630	20,480	14,280	7,670	4,600	2,290	1,270	1,080

CALENDAR YEAR 1963 MAX 5,790 MIN 26 MEAN 514 AC-FT 371,800
WATER YEAR 1963-64 MAX 7,560 MIN 16 MEAN 291 AC-FT 211,000

Peak discharge (base, 4,000 cfs).--Jan. 20 (1200) 14,200 cfs (13.98 ft).

* Discharge measurement made on this day.

11-5285. Hayfork Creek near Hyampom, Calif.--Continued.

Records available.--Water temperatures: November 1960 to September 1964.Extremes.--Maximum temperature during year, 77°F July 26, 27; minimum, 40°F Dec. 13, 14, Jan. 12-14.

1960-64: Maximum temperature recorded, 83°F July 13, 1961; minimum, 32°F Jan. 22-26, 1962.

Temperature (°F) of water, water year October 1963 to September 1964																								
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	64	61	48	46	44	43	46	45	45	44	45	44	52	50	52	51	64	62	69	64	72	68	64	62
2	64	60	49	47	43	42	45	45	45	44	45	44	50	48	51	49	64	60	68	63	71	67	64	61
3	63	60	49	49	42	42	45	44	44	42	44	44	49	48	49	48	63	60	67	63	72	67	65	61
4	61	59	49	49	42	42	44	44	44	43	47	44	52	49	50	49	61	61	68	64	72	68	66	62
5	59	59	50	49	43	42	44	42	44	42	44	45	50	50	49	48	61	60	68	63	73	68	65	62
6	59	57	49	47	45	44	42	42	43	41	45	44	52	49	53	47	62	60	69	63	72	68	66	62
7	59	57	47	47	45	44	42	42	43	41	44	43	51	48	54	50	62	60	71	65	73	68	66	62
8	59	57	48	47	44	43	42	42	43	42	44	43	53	49	58	53	60	57	70	66	73	68	65	62
9	59	58	50	48	44	43	42	42	44	42	45	44	52	50	59	55	57	56	69	64	73	68	63	59
10	58	58	50	50	44	44	42	42	44	43	45	44	51	48	60	56	59	55	70	64	74	69	63	60
11	58	57	50	50	44	42	42	41	44	43	44	44	53	50	61	56	64	58	72	66	74	70	64	60
12	58	57	50	50	42	41	41	40	44	42	44	43	53	49	60	56	66	60	74	69	72	69	64	60
13	57	56	50	50	41	40	40	40	43	42	44	43	54	50	60	58	66	61	76	71	73	68	64	61
14	58	57	50	50	41	40	41	40	43	42	45	44	55	50	59	56	68	62	74	70	73	68	64	60
15	58	58	50	48	41	41	41	41	43	42	48	45	55	52	60	56	66	63	72	68	72	68	65	60
16	58	58	48	47	42	41	42	41	43	43	48	47	54	51	59	56	64	61	73	68	72	67	64	61
17	58	58	47	47	42	42	42	42	43	43	48	48	53	49	58	55	64	60	74	68	72	68	64	62
18	58	58	47	47	42	42	42	41	43	43	48	48	53	49	60	57	64	60	72	69	70	64	64	60
19	59	58	48	45	44	42	42	41	43	43	48	48	55	50	62	58	64	60	72	68	68	64	64	60
20	59	58	45	45	44	43	43	42	44	43	48	48	56	51	62	59	65	60	72	68	72	66	64	61
21	58	58	45	44	44	44	42	42	44	44	48	47	57	52	62	58	66	60	73	68	72	67	63	59
22	58	58	44	44	44	44	43	42	44	44	47	46	56	50	62	58	68	62	72	68	73	68	64	59
23	58	55	44	44	44	42	43	42	44	44	46	45	50	49	63	58	70	64	74	68	74	68	66	61
24	55	54	46	44	42	41	42	42	44	44	46	45	49	47	64	60	70	64	76	70	72	68	66	62
25	54	54	46	45	43	42	43	42	44	44	48	46	54	46	64	60	70	64	76	71	72	67	66	62
26	54	54	45	45	44	43	43	43	44	43	49	47	57	51	63	60	68	64	77	72	70	67	63	60
27	54	52	46	45	45	44	43	43	44	43	50	48	59	54	60	59	66	62	77	72	70	65	63	60
28	52	49	46	44	47	45	43	43	44	43	51	49	61	56	62	58	67	61	76	70	69	66	62	59
29	51	49	44	44	47	47	43	43	44	43	52	50	60	56	63	59	68	63	75	70	68	64	62	59
30	51	50	44	44	47	46	44	43	-----	-----	52	51	56	52	65	60	68	63	74	72	67	64	62	58
31	50	48	-----	-----	46	46	44	43	-----	-----	52	52	-----	-----	66	62	-----	-----	72	68	66	62	-----	-----
Avg	57	56	47	47	44	43	43	42	44	43	47	46	54	50	59	56	65	61	72	68	71	67	64	61

KIAMATH RIVER BASIN

11-5290. South Fork Trinity River near Salyer, Calif.

Location.--Lat 40°50'30", long 123°34'00", in SE¼ sec.1, T.5 N., R.5 E., on right bank 4 miles south of Salyer and 8 miles upstream from mouth.

Drainage area.--898 sq mi (revised).

Records available.--October 1911 to September 1913, October 1950 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B. Published as "near China Flat" 1911-13.

Gage.--Water-stage recorder with thermograph attachment. Datum of gage is 541.1 ft above mean sea level (river-profile survey). Oct. 12, 1911, to Aug. 10, 1913, staff gage at site 7.7 miles downstream at different datum.

Average discharge.--16 years, 1,719 cfs (1,245,000 acre-ft per year).

Extremes.--Maximum discharge during year, 27,800 cfs Jan. 20 (gage height, 26.00 ft); minimum, 61 cfs Sept. 28, 29.

1911-13, 1950-64: Maximum discharge, 65,100 cfs Dec. 22, 1955 (gage height, 39.4 ft, from floodmarks), from rating curve extended above 21,000 cfs by slope-conveyance study; minimum, 54 cfs Sept. 10, 1955.

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 15 to Apr. 22)

2.9	56	8.0	1,680
3.3	96	10.0	3,270
4.0	190	16.0	11,000
5.0	400	19.0	15,500
6.0	710	22.0	20,300

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	103	207	1,670	1,410	6,810	1,340	1,750	826	524	239	131	78
2	102	212	1,500	1,470	6,000	1,460	1,660	818	506	231	129	82
3	100	218	1,350	1,330	*5,130	1,320	*1,480	838	491	229	126	86
4	100	*375	*1,230	1,210	4,550	*1,280	1,380	834	*488	231	123	89
5	111	693	1,140	1,120	4,300	1,410	1,340	*806	521	243	119	86
6	155	1,440	1,070	*1,450	4,010	1,380	1,280	778	542	227	115	82
7	165	1,530	996	2,360	3,610	1,320	1,220	750	599	218	112	80
8	152	2,760	987	1,990	3,300	1,250	1,190	734	542	214	111	78
9	145	3,960	1,180	1,890	3,080	1,240	1,170	726	518	209	106	*78
10	156	2,250	1,040	1,860	2,950	1,200	1,190	722	500	202	105	79
11	261	1,440	947	1,680	2,850	1,290	1,160	700	479	197	104	78
12	281	1,050	879	1,580	2,610	1,660	1,120	686	449	190	102	78
13	231	854	846	1,520	2,450	1,570	1,080	668	420	193	100	75
14	193	3,360	814	1,520	2,300	1,480	1,080	654	400	187	98	73
15	205	4,900	790	1,380	2,240	1,480	1,110	640	380	184	95	73
16	358	2,990	762	1,480	2,110	1,540	1,100	651	368	180	93	72
17	370	2,200	730	2,030	1,970	1,610	1,060	710	363	174	91	71
18	271	1,770	703	3,330	1,860	1,700	1,020	679	355	167	91	70
19	221	a3,800	718	4,170	1,780	1,670	978	658	345	164	90	71
20	204	a3,300	1,190	20,000	1,720	1,610	942	637	333	159	86	71
21	200	a2,700	1,210	14,000	1,660	1,630	915	619	321	155	86	72
22	209	a2,400	1,060	7,780	1,610	1,590	911	599	313	152	85	70
23	333	a6,900	969	5,610	1,570	1,510	897	590	301	151	82	69
24	323	a5,800	897	4,710	1,530	1,440	879	581	*285	146	81	68
25	340	a4,800	893	4,650	1,460	1,350	850	572	275	142	79	66
26	321	a3,800	884	4,710	1,400	1,300	822	587	265	139	77	63
27	275	a2,900	1,220	4,390	1,340	1,280	810	665	255	132	75	62
28	249	2,490	1,660	4,120	1,300	1,300	814	633	255	129	75	62
29	233	2,150	1,950	4,280	1,260	1,370	822	593	253	136	76	63
30	223	1,880	1,740	4,610	-----	1,480	802	566	247	137	76	64
31	214	-----	1,540	4,710	-----	1,550	-----	536	-----	132	78	-----
TOTAL	6,804	75,129	34,565	118,350	78,760	44,610	32,832	21,056	11,893	5,589	2,997	2,209
MEAN	219	2,504	1,115	3,818	2,716	1,439	1,094	679	396	180	96.7	73.6
MAX	370	4,900	1,950	20,000	6,810	1,700	1,750	838	599	243	131	89
MIN	100	207	703	1,120	1,260	1,200	802	536	247	129	75	62
AC-FT	13,500	149,000	68,560	234,700	156,200	88,480	65,120	41,760	23,590	11,090	5,940	4,380

CALENDAR YEAR 1963: MAX 21,500 MIN 100 MEAN 1,916 AC-FT 1,387,000
WATER YEAR 1963-64: MAX 20,000 MIN 62 MEAN 1,188 AC-FT 862,300

Peak discharge (base, 8,000 cfs).--Jan. 20 (1500) 27,800 cfs (26.00 ft).

* Discharge measurement made on this day.
a No gage-height record.

11-5290. South Fork Trinity River near Salyer, Calif.--Continued.

Records available--Water temperatures: August 1962 to September 1964.Extremes--Maximum temperature during year, 78°F July 26, 27; minimum, 41°F Jan. 20-23, Jan. 30 to Feb. 1. 1962-64; Maximum temperature, 78°F July 26, 27, 1964; minimum recorded, 36°F Jan. 25-30, 1963.

Temperature (°F) of water, water year October 1963 to September 1964																									
Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.		
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	
1	65	63	52	51	48	47	45	44	42	41	47	46	50	50	53	51	62	61	70	67	72	69	66	64	
2	65	63	52	51	47	46	44	44	42	42	48	47	50	49	52	51	62	60	68	67	72	68	67	64	
3	65	64	52	52	46	46	44	43	42	42	48	48	49	47	51	51	61	60	68	65	72	68	67	64	
4	64	61	52	52	46	45	43	42	43	42	48	48	50	49	51	51	61	60	70	67	73	70	68	64	
5	62	61	52	52	45	45	43	42	43	43	48	48	50	50	52	51	61	61	69	67	74	70	68	64	
6	62	60	52	51	45	45	42	42	44	43	48	47	50	50	53	52	62	61	70	67	74	70	68	64	
7	62	61	51	51	46	45	42	42	44	44	47	47	50	50	54	52	62	62	71	68	72	69	68	64	
8	62	62	51	51	45	45	43	42	44	44	47	47	51	50	57	53	62	60	71	68	72	70	68	66	
9	62	62	51	51	45	45	43	43	44	44	48	47	51	51	58	56	60	60	69	66	72	69	67	65	
10	62	62	52	51	45	45	43	43	44	44	48	48	52	51	59	57	60	59	70	66	74	70	67	62	
11	62	60	52	52	45	44	43	42	44	44	48	48	52	52	59	59	64	60	72	68	73	72	67	63	
12	60	60	52	52	45	43	43	43	44	44	48	48	52	52	59	59	66	64	75	71	74	71	68	63	
13	60	60	52	52	43	43	43	43	44	44	48	48	53	52	59	59	67	65	77	73	73	70	67	63	
14	60	60	52	52	43	43	43	42	46	44	48	48	54	53	59	59	68	66	76	73	73	70	68	63	
15	60	60	52	52	43	43	42	42	45	45	48	48	55	53	59	58	68	67	73	72	72	70	68	63	
16	60	60	52	51	43	42	42	42	45	45	49	48	55	54	59	58	67	64	73	70	72	68	70	63	
17	60	60	51	51	42	42	42	42	45	45	49	49	55	53	58	56	65	64	73	70	72	69	70	64	
18	60	60	51	51	42	42	42	42	45	45	49	49	53	52	57	56	66	64	72	70	72	69	68	63	
19	60	60	-	-	42	42	42	42	45	45	49	48	52	52	59	57	66	64	72	68	71	68	67	62	
20	60	60	-	-	43	42	42	41	45	45	49	49	53	52	57	57	66	64	72	68	73	70	67	63	
21	60	60	-	-	43	43	41	41	45	45	49	49	53	53	60	59	67	64	72	70	75	72	66	60	
22	60	60	-	-	43	43	41	41	46	45	49	49	53	53	60	60	69	66	73	70	75	72	68	61	
23	60	58	-	-	43	43	42	41	46	46	49	47	53	51	60	60	72	68	73	69	76	73	70	63	
24	58	57	-	-	43	42	42	42	46	46	47	47	52	51	61	60	70	68	76	71	75	72	71	63	
25	57	57	-	-	42	42	42	42	46	45	47	47	52	51	61	60	70	67	77	72	75	72	72	63	
26	57	56	-	-	42	42	42	42	46	46	48	47	53	51	61	60	69	67	78	74	74	72	70	61	
27	56	55	-	-	43	42	42	42	46	46	48	48	54	52	60	59	68	64	78	74	74	69	68	61	
28	55	54	49	49	45	43	42	42	46	46	49	48	56	54	60	59	67	64	77	75	72	69	68	60	
29	54	54	49	48	45	45	42	42	46	46	50	49	56	54	60	59	68	66	75	74	71	67	67	60	
30	54	53	48	48	45	45	42	41	-----	-----	50	50	54	53	61	60	70	66	75	72	70	67	66	59	
31	53	52	-----	-----	45	45	41	41	-----	-----	50	50	-----	-----	63	61	-----	-----	74	71	68	64	-----	-----	
Avg	60	59	-	-	44	44	42	42	45	44	48	48	52	52	58	57	66	64	73	70	73	70	68	63	

KLAMATH RIVER BASIN

11-5298, Willow Creek at Willow Creek, Calif.

Location.--Lat 40°55'39", long 123°38'11", in SE¼ sec.29, T.7 N., R.5 E., on left bank 0.4 mile upstream from mouth and 0.5 mile northwest of Willow Creek.

Drainage area.--43.3 sq mi.

Records available.--August 1959 to September 1964.

Average discharge.--5 years, 149 cfs (107,900 acre-ft per year).

Gage.--Water-stage recorder. Altitude of gage 480 ft (from topographic map).

Extremes.--Maximum discharge during year, 5,260 cfs Jan. 20 (gage height, 9.86 ft), from rating curve extended above 1,300 cfs on basis of slope-area measurement of peak flow at gage height 9.68 ft; minimum 9.8 cfs Sept. 25, 26.
1959-64: Maximum discharge, that of Jan. 20, 1964; minimum, 7.2 cfs Sept. 10, 1962.

Remarks.--Records good. No regulation; small diversion for irrigation of about 40 acres above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 27-30)

3.4	10	5.5	460
3.6	22	6.0	700
3.9	48	7.0	1,370
4.2	84	8.0	2,380
4.5	143	9.0	3,750
5.0	278		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	11	22	148	251	968	*152	260	*95	47	30	20	12
2	10	30	130	304	675	145	214	89	45	29	19	12
3	*10	28	118	260	541	133	184	110	44	29	18	12
4	11	73	112	231	469	145	*171	108	46	29	17	12
5	19	74	106	206	412	223	164	106	50	29	16	11
6	20	186	104	473	359	198	150	100	67	27	16	11
7	15	154	93	712	321	179	143	108	100	25	16	11
8	14	*1,480	135	465	288	164	141	120	73	25	15	11
9	14	927	184	412	269	182	150	128	63	26	15	11
10	19	338	150	359	257	164	150	126	58	26	15	11
11	39	220	133	304	242	209	141	114	53	25	15	11
12	25	152	120	275	223	231	133	104	51	24	15	11
13	27	126	114	266	203	228	128	97	49	23	15	11
14	17	292	110	237	195	214	139	88	47	23	15	11
15	37	428	102	217	195	223	141	83	46	25	14	11
16	34	331	88	269	179	237	137	81	45	24	14	11
17	24	266	91	531	166	245	120	78	44	23	13	11
18	20	242	86	680	159	248	112	74	43	23	12	11
19	18	373	102	1,120	155	228	108	70	42	22	12	12
20	18	388	150	3,510	152	231	104	70	41	22	12	12
21	23	284	137	1,440	145	234	104	65	39	22	12	11
22	39	248	124	822	143	228	106	62	38	21	12	11
23	62	514	114	605	141	212	95	60	36	20	11	11
24	40	537	110	575	137	206	88	58	*33	20	11	11
25	89	404	108	600	128	182	83	57	33	19	11	10
26	50	314	150	546	120	182	81	58	32	18	11	10
27	37	260	288	474	114	184	83	57	32	17	11	11
28	*31	*220	460	420	114	198	91	53	32	17	11	11
29	27	189	428	605	108	212	95	51	31	19	11	12
30	24	166	*314	610	-----	226	91	50	30	18	11	11
31	21	-----	257	*752	-----	223	-----	*48	-----	18	*11	-----
TOTAL	845	9,266	4,866	18,531	7,578	6,266	3,907	2,568	1,390	718	427	335
MEAN	27.3	309	157	598	261	202	130	82.8	46.3	23.2	13.8	11.2
MAX	89	1,480	460	3,510	968	248	260	128	100	30	20	12
MIN	10	22	86	206	108	133	81	48	30	17	11	10
AC-FT	1,680	18,380	9,650	36,760	15,030	12,430	7,750	5,090	2,760	1,420	847	664

CALENDAR YEAR 1963 MAX 1,480 MIN 10 MEAN 166 AC-FT 120,100
WATER YEAR 1963-64 MAX 3,510 MIN 10 MEAN 155 AC-FT 112,500

Peak discharge (base, 1,200 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-8	2000	8.40	2,880	1-31	2200	6.85	1,250
1-20	0600	9.86	5,260				

* Discharge measurement made on this day.

11-5300. Trinity River near Hoopa, Calif.

Location.--Lat 41°01'50", long 123°39'05", in SE¼ sec.31, T.8 N., R.5 E., in Hoopa Indian Reservation, on left bank 0.7 mile downstream from Campbell Creek and 1-3/4 miles southeast of Hoopa.

Drainage area.--2,847 sq mi (revised).

Records available.--October 1911 to January 1914, October 1916 to September 1918, October 1931 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B. Published as "at Hoopa" 1911-14, 1916-18.

Gage.--Water-stage recorder with thermograph attachment. Altitude of gage is 315 ft (from river-profile map). Prior to October 1931, staff gage at site 2.1 miles downstream at different datum.

Average discharge.--37 years (1911-13, 1916-18, 1931-64), 5,454 cfs (3,949,000 acre-ft per year) unadjusted.

Extremes.--Maximum discharge during year, 62,300 cfs Jan. 20 (gage height, 21.68 ft); minimum, 373 cfs Sept. 26, 27. 1911-14, 1916-18, 1931-64: Maximum discharge, 190,000 cfs Dec. 22, 1955 (gage height, 36.90 ft), from rating curve extended above 56,000 cfs; minimum, 162 cfs Oct. 4, 1931.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow regulated by Clair Engle Lake (formerly Trinity Lake) beginning in November 1960 (see p. 464). Small diversions above station for mining and irrigation.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

3.2	370	7.0	3,180
3.5	460	9.0	7,000
4.0	680	14.0	22,200
5.0	1,220	19.0	45,500
6.0	2,030		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	470	965	4,090	4,500	16,400	3,840	5,040	2,820	2,070	1,020	580	424
2	*481	1,010	3,700	4,610	15,400	4,120	4,760	2,620	1,980	1,000	571	454
3	523	1,000	*3,580	4,210	13,200	3,740	4,340	2,610	*1,880	980	558	457
4	523	1,410	3,320	3,870	11,800	3,670	4,070	2,580	1,870	970	535	454
5	595	2,130	3,110	3,610	11,200	4,120	3,940	2,420	2,260	970	527	439
6	775	3,520	3,010	4,270	10,500	4,090	3,800	2,360	2,550	955	511	430
7	815	3,820	2,940	6,950	9,460	3,910	3,670	2,280	2,800	920	499	424
8	730	10,200	2,880	6,100	8,560	3,700	3,610	2,270	2,300	910	488	421
9	710	16,200	3,260	5,620	8,000	3,720	3,670	2,310	2,020	915	478	418
10	745	7,800	3,010	5,440	7,680	3,590	3,670	2,450	1,900	875	478	418
11	1,080	4,880	2,730	5,000	7,350	3,770	3,560	2,580	1,800	855	474	415
12	1,420	3,590	2,580	4,610	6,880	4,630	3,510	2,600	1,720	825	464	409
13	1,070	2,860	2,480	4,430	6,440	4,500	3,480	2,620	1,730	825	460	409
14	900	6,760	2,430	4,300	6,080	4,300	3,540	2,550	1,710	830	457	406
15	992	13,300	2,360	3,940	5,920	4,290	3,690	2,420	1,660	835	448	403
16	1,610	8,250	2,280	4,110	5,600	4,430	3,740	2,470	1,590	820	442	403
17	1,480	6,040	2,210	5,400	5,260	4,570	3,560	2,520	1,480	790	436	400
18	1,130	4,900	2,160	8,620	5,000	4,880	3,320	2,400	1,400	745	433	397
19	965	5,600	2,170	10,800	4,840	4,860	3,180	2,400	1,360	720	436	397
20	910	8,200	2,720	42,700	4,740	4,700	a3,050	2,460	1,330	710	439	397
21	930	6,240	2,970	33,600	4,660	4,700	a3,000	2,410	1,310	680	433	397
22	1,060	5,340	2,710	20,400	4,610	4,570	a2,950	2,300	1,290	670	427	397
23	1,530	8,950	2,580	14,400	4,590	4,410	a2,880	2,260	1,270	645	418	397
24	1,500	14,400	2,470	12,000	4,540	4,180	a2,710	2,260	1,270	625	412	394
25	1,510	9,670	2,440	10,800	4,430	3,890	a2,520	2,240	*1,260	605	406	385
26	1,620	7,700	2,470	10,800	*4,210	3,720	a2,480	2,240	1,200	580	406	379
27	1,310	6,950	3,210	*10,100	3,940	3,700	*2,520	2,280	1,160	562	403	376
28	*1,150	6,260	5,130	9,520	3,800	3,720	2,670	2,140	1,120	558	406	379
29	1,080	5,520	7,080	9,970	3,720	3,930	2,980	1,990	1,080	585	409	385
30	1,040	4,590	*5,860	11,100	-----	*4,200	2,900	1,990	1,050	600	415	*385
31	980	-----	5,020	11,300	-----	4,500	-----	2,030	-----	585	*415	-----
Total	31,634	188,055	98,960	297,080	208,810	128,950	102,810	73,880	49,420	24,165	14,264	12,249
Mean	1,020	6,268	3,192	9,583	7,200	4,160	3,427	2,383	1,647	780	460	408
Max	1,620	16,200	7,080	42,700	16,400	4,880	5,040	2,820	2,800	1,020	580	457
Min	470	965	2,160	3,610	3,720	3,590	2,480	1,990	1,050	558	403	376
Ac-ft	62,700	373,000	196,300	589,200	414,200	255,800	203,900	146,500	98,020	47,930	28,290	24,300

Calendar year 1963: Max 44,500 Min 470 Mean 5,816 Ac-ft 4,211,000

Water year 1963-64: Max 42,700 Min 376 Mean 3,361 Ac-ft 2,440,000

Peak discharge (base, 22,000 cfs).--Jan. 20 (1800) 62,300 cfs (21.68 ft).

* Discharge measurement made on this day.

a No gage-height record.

KIAMATH RIVER BASIN

11-5300. Trinity River near Hoopa, Calif.--Continued.

Records available.--Water temperatures: February to September 1964.

Extremes.--Maximum temperature for period, 78°F July 27, 28; minimum, 40°F Feb. 28 to Mar. 4.

Temperature (°F) of water, water year October 1963 to September 1964

Day	Oct.		Nov.		Dec.		Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1									-	-	40	40	46	46	53	53	63	63	69	68	76	75	67	67
2									-	-	40	40	46	46	53	53	64	63	68	68	75	74	67	66
3									-	-	40	40	46	46	53	53	63	63	68	68	74	74	66	66
4									-	-	41	40	47	46	54	53	63	62	68	68	74	74	66	66
5									-	-	41	41	47	47	55	54	62	62	68	68	74	74	66	65
6									-	-	41	41	48	47	55	55	62	62	70	68	74	74	65	65
7									-	-	41	41	48	48	55	55	62	62	70	69	74	74	65	65
8									-	-	41	41	48	48	55	55	62	62	70	70	74	74	65	65
9									-	-	41	41	48	48	55	54	62	62	70	70	74	74	65	64
10									-	-	41	41	48	48	55	55	62	62	70	70	74	72	64	64
11									-	-	41	41	48	47	56	55	62	62	72	70	74	74	64	64
12									-	-	41	41	48	48	56	56	65	62	74	71	74	74	64	64
13									-	-	41	41	49	48	56	56	66	64	75	73	74	73	64	64
14									-	-	42	41	49	48	56	56	66	64	74	74	73	73	64	64
15									-	-	42	42	52	49	57	56	65	65	74	74	73	73	64	63
16									-	-	43	42	52	52	57	57	65	65	74	74	73	73	63	63
17									-	-	43	42	52	52	57	57	65	65	74	74	73	73	63	63
18									-	-	43	43	54	52	57	57	65	65	74	74	73	73	63	63
19									-	-	43	43	54	52	57	57	65	65	74	73	73	72	63	63
20									-	-	43	43	-	-	58	57	65	65	74	73	72	72	63	63
21									-	-	44	43	-	-	58	58	65	65	73	73	72	72	63	62
22									-	-	44	44	-	-	58	58	66	65	74	73	72	71	63	62
23									-	-	44	44	-	-	58	58	68	66	74	73	72	71	63	62
24									-	-	44	44	-	-	60	58	69	68	75	74	72	71	63	62
25									-	-	44	44	-	-	60	60	70	68	76	75	72	71	63	62
26									-	-	44	44	-	-	60	60	70	70	77	75	72	71	62	62
27									-	-	44	44	53	53	61	60	70	69	78	77	71	71	62	62
28									40	40	45	44	53	53	61	61	69	69	78	76	71	71	62	61
29									40	40	45	45	53	53	61	61	69	69	76	76	71	69	61	61
30									45	45	45	45	53	53	63	61	69	69	76	76	69	67	61	61
31									46	46	45	45	53	53	63	63	63	63	76	76	67	67	61	61
Avg									-	-	42	42	-	-	57	57	65	65	73	72	73	72	64	63

11-5305. Klamath River near Klamath, Calif.

Location.--Lat 41°30'45", long 123°58'30", in SW $\frac{1}{4}$ sec.17, T.13 N., R.2 E., on right bank 2.8 miles upstream from Turwar Creek and 3.3 miles east of Klamath.

Drainage area.--12,100 sq mi, approximately (not including Lost River or Lower Klamath Lake basins).

Records available.--October 1910 to December 1926 (published as "near Requa"), October 1950 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Datum of gage is 5.60 ft above mean sea level (levels by Corps of Engineers). Prior to June 1926 staff gage at same site at different datum.

Average discharge.--30 years, 17,000 cfs (12,310,000 acre-ft per year).

Extremes.--Maximum discharge during year, 162,000 cfs Jan. 20 (gage height, 27.10 ft); minimum daily, 2,200 cfs Aug. 27. 1910-26, 1950-64: Maximum discharge, 425,000 cfs Dec. 22, 1955 (gage height, 49.7 ft, from floodmarks), from rating curve extended above 140,000 cfs on basis of flood-routing study; minimum observed, 1,340 cfs July 31, Aug. 1, 1924.

Remarks.--Records good. Flow considerably regulated by reservoirs and powerplants above station. Large diversions for irrigation above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 30 to Sept. 30)

3.8	2,100	11.0	26,000
4.2	2,700	15.0	50,000
5.0	4,100	18.0	74,000
6.0	6,400	24.0	131,000

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,060	4,280	16,800	17,800	51,500	14,500	19,800	14,200	11,200	4,440	2,820	2,310
2	3,040	4,600	15,400	19,100	48,600	15,900	21,000	12,600	10,700	4,320	2,820	2,400
3	3,040	4,560	13,900	17,800	41,600	14,800	19,900	12,200	9,810	4,240	2,920	2,670
4	3,080	6,120	13,600	16,500	36,900	14,300	18,700	11,500	9,530	4,140	2,860	2,670
5	3,280	8,620	13,000	15,300	34,000	16,000	17,800	10,800	11,000	4,120	2,820	2,640
6	4,260	12,300	12,900	18,200	31,700	16,700	16,500	10,400	12,300	4,040	2,760	2,610
7	3,960	14,000	12,900	29,400	29,100	16,100	15,800	9,950	13,500	3,920	2,670	2,600
8	3,580	50,600	12,500	25,100	26,500	15,200	16,800	9,810	12,600	3,840	2,640	2,600
9	3,440	84,100	13,900	22,400	25,100	14,800	17,400	10,100	10,800	3,800	2,640	2,540
10	3,580	35,500	12,700	21,700	24,200	14,400	18,000	11,000	9,950	3,760	2,610	*2,540
11	4,320	21,400	12,400	19,900	23,200	15,400	17,600	12,100	9,390	3,680	2,600	2,520
12	4,880	16,300	11,900	18,400	22,000	18,700	17,300	12,700	10,200	3,520	2,500	2,520
13	4,400	13,300	11,500	17,500	21,000	18,900	16,900	13,200	10,200	3,440	2,500	2,520
14	4,000	18,400	11,200	16,800	20,100	17,700	17,100	13,100	9,670	3,440	2,500	2,520
15	4,260	41,700	10,800	16,200	20,000	17,100	18,200	12,500	9,250	3,540	2,480	2,540
16	4,980	30,400	10,200	20,700	19,100	17,100	18,900	12,600	8,380	3,520	2,480	2,560
17	5,120	23,700	9,780	21,300	18,100	*17,300	18,300	12,700	7,900	3,360	2,460	2,610
18	4,380	20,400	9,950	32,500	17,000	18,200	17,300	12,500	7,360	3,260	2,430	2,610
19	4,020	20,200	9,880	46,600	16,400	18,300	16,600	12,700	7,030	3,180	2,430	2,560
20	3,880	25,900	11,000	130,000	16,200	18,000	15,500	13,500	6,640	3,150	2,400	2,560
21	4,260	22,300	11,700	123,000	15,900	18,700	15,500	13,200	6,250	3,060	2,380	2,560
22	4,760	19,400	10,700	*70,900	15,900	18,600	15,800	12,400	6,050	3,020	2,360	2,560
23	7,870	31,600	*10,700	50,100	15,900	18,000	15,300	11,900	5,850	2,980	2,360	2,560
24	6,700	50,900	10,200	42,500	15,900	17,200	14,100	12,100	5,720	2,920	2,320	2,560
25	6,790	36,000	9,950	41,800	15,500	16,300	13,400	12,300	5,600	2,850	2,280	2,540
26	6,910	28,100	10,500	39,500	15,000	15,600	12,800	12,200	5,350	2,820	2,240	2,500
27	5,680	25,400	13,700	36,100	14,500	15,300	12,200	11,700	5,150	2,780	2,200	2,500
28	5,000	22,800	19,100	32,900	14,100	15,500	12,800	10,700	4,950	2,680	2,240	2,490
29	4,700	20,200	26,400	34,000	13,900	16,200	14,700	10,300	4,700	2,680	2,240	2,480
30	4,520	18,200	22,600	37,100	-----	16,900	14,900	10,300	4,500	2,790	2,240	2,480
31	4,380	-----	19,400	37,200	-----	18,200	-----	10,800	-----	2,790	2,280	-----
Total	140,130	731,280	411,160	*1,088,3	678,900	515,900	496,900	368,060	251,530	106,080	77,480	76,330
Mean	4,520	24,380	13,260	35,110	23,410	16,640	16,560	11,870	8,384	3,422	2,499	2,544
Max	7,870	84,100	26,400	130,000	51,500	18,900	21,000	14,200	13,500	4,440	2,920	2,670
Min	3,040	4,280	9,780	15,300	13,900	14,300	12,200	9,810	4,500	2,680	2,200	2,310
Ac-ft	277,900	*1,450	815,500	*2,159	*1,347	*1,023	985,600	730,000	498,900	210,400	153,700	151,400

Calendar year 1963: Max 113,000 Min 2,720 Mean 18,440 Ac-ft 13,350,000
Water year 1963-64: Max 130,000 Min 2,200 Mean 13,500 Ac-ft 9,802,000

Peak discharge (base, 50,000 cfs)

Date	Time	Gage height	Discharge	Date	Time	Gage height	Discharge
11-9	0300	22.01	111,000	1-20	2300	27.10	162,000
11-24	0700	15.71	55,000	2-1	1600	15.60	54,200

* Discharge measurement made on this day.

† Expressed in thousands.

SMITH RIVER BASIN

11-5310. Middle Fork Smith River at Gasquet, Calif.

Location.--Lat 41°50'40", long 123°57'35", in NW¼ sec.28, T.16 N., R.2 E., on left bank 0.4 mile east of Gasquet and 0.6 mile upstream from confluence with North Fork Smith River.

Drainage area.--130 sq mi.

Records available.--October 1911 to February 1918 (published as "near Crescent City"). Occasional low-flow measurements, water years 1952-57 and annual maximum, water years 1954-56. October 1958 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Altitude of gage is 350 ft (from topographic map). October 1911 to February 1918, staff or chain gages at various sites within 0.4 mile downstream at different datums. Sept. 23, 1953, to Sept. 30, 1956, crest-stage gage only, at site 0.2 mile upstream at different datum.

Average discharge.--12 years (1911-17, 1958-64), 645 cfs (467,000 acre-ft per year).

Extremes.--Maximum discharge during year, 14,200 cfs Jan. 20 (gage height, 10.52 ft); minimum, 48 cfs Sept. 25, 26.

1911-18, 1953-56, 1958-64: Maximum discharge, 18,100 cfs (revised) Dec. 2, 1962 (gage height, 12.28 ft).

1911-18, 1958-64: Minimum discharge observed, 38 cfs Oct. 21, 1915.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
1635	1959	Jan. 12, 1959	15,700	11.16
1715	1960	Feb. 8, 1960	12,500	9.72
Basic Data Report	1961	Nov. 24, 1960	11,000	9.05
Basic Data Report	1962	Nov. 23, 1961	10,400	8.76
Basic Data Report	1963	Dec. 2, 1962	18,100	12.28

Remarks.--Records good. No regulation or diversion above station.

Revisions.--Revised figures of discharge, in cubic feet per second, for high-water periods in the water years 1959-60, 1963, superseding figures published in WSP 1635, 1715, and Basic Data Report, are given herewith:

Jan. 12, 1959..... 9,930
 Feb. 8, 1960..... 9,940
 Feb. 9, 1960..... 9,730
 Dec. 2, 1962..... 12,000

Month	Cfs-days	Maximum	Minimum	Mean	Acre-feet
January 1959.....	66,367	9,930	416	2,141	131,600
Water year 1958-59.....	-	9,930	44	542	392,200
Calendar year 1959.....	-	9,930	48	490	355,000
February 1960.....	57,321	9,940	375	1,977	113,700
Water year 1959-60.....	-	9,940	52	548	397,900
Calendar year 1960.....	-	9,940	45	679	492,800
December 1962.....	38,582	12,000	312	1,245	76,530
Calendar year 1962.....	-	12,000	52	574	415,500
Water year 1962-63.....	-	12,000	65	761	550,700

Revised peak discharge.--1960-61: Nov. 24 (10 p.m.) 11,000 cfs (9.05 ft); Feb. 10 (12 p.m.) 10,900 cfs (9.02 ft).

1961-62: Nov. 23 (1000) 10,400 cfs (8.76 ft); Dec. 19 (2000) 9,840 cfs (8.52 ft).

11-5310. Middle Fork Smith River at Gasquet, Calif.--Continued

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1963 TO SEPTEMBER 1964

DAY	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
1	65	a88	510	644	3,230	523	674	340	*230	109	89	55
2	64	a160	460	*883	2,000	555	620	296	209	109	89	*56
3	*62	a150	415	750	*1,500	520	545	308	194	107	83	56
4	61	a470	*390	650	1,260	*550	510	296	203	105	82	56
5	76	a590	375	560	1,110	897	490	292	249	105	76	56
6	92	*a1,250	385	1,140	968	820	465	284	252	101	73	58
7	73	748	352	2,140	848	736	440	273	320	*97	73	58
8	68	7,730	430	1,320	778	650	435	273	263	97	73	58
9	67	3,280	656	1,140	708	620	455	292	227	99	71	58
10	70	1,260	545	1,090	668	578	475	332	206	99	71	55
11	111	785	475	946	638	941	455	336	194	95	70	52
12	88	572	425	834	584	1,240	430	328	183	92	70	52
13	74	a510	400	799	545	1,140	410	324	178	91	68	53
14	70	a1,900	375	799	535	960	400	316	175	89	68	53
15	113	a2,100	352	736	550	1,040	420	292	168	95	67	53
16	117	1,400	332	1,030	525	1,060	415	288	168	99	67	53
17	83	1,080	316	2,400	500	1,020	385	288	163	94	67	52
18	74	1,050	304	2,630	485	960	352	288	163	92	64	50
19	70	1,460	308	7,640	480	841	336	284	160	89	65	50
20	70	1,410	475	10,000	480	771	324	288	155	88	64	52
21	88	1,020	535	4,320	460	785	324	273	148	86	61	52
22	272	841	495	2,620	450	785	324	259	138	88	61	52
23	362	3,120	445	1,830	445	771	316	252	133	86	61	50
24	191	2,910	405	2,580	425	715	292	256	131	83	58	50
25	270	1,660	415	3,550	405	650	273	252	125	82	58	48
26	183	1,220	498	2,620	390	614	266	259	121	80	56	48
27	131	984	841	1,940	365	590	263	242	121	79	55	49
28	115	799	1,140	1,600	360	572	277	230	119	79	55	49
29	105	662	1,160	2,060	352	590	328	221	113	79	55	50
30	95	572	855	2,020	-----	*626	*320	218	111	79	55	50
31	88	-----	680	2,500	-----	644	-----	236	-----	79	55	-----
TOTAL	3,468	41,781	15,749	65,771	22,044	23,764	12,019	8,716	5,320	2,852	2,080	1,584
MEAN	112	1,393	508	2,122	760	767	401	281	177	92.0	67.1	52.8
MAX	362	7,730	1,160	10,000	3,230	1,240	674	340	320	109	89	58
MIN	61	88	304	560	352	520	263	218	111	79	55	48
AC-FT	6,880	82,870	31,240	130,500	43,720	47,140	23,840	17,290	10,550	5,660	4,130	3,140

CALENDAR YEAR 1963: MAX 7,730 MIN 61 MEAN 685 AC-FT 495,900
WATER YEAR 1963-64: MAX 10,000 MIN 48 MEAN 561 AC-FT 407,000

Peak discharge (base, 7,500 cfs).--Nov. 8 (1600) 12,500 cfs (9.72 ft); Jan. 20 (0200) 14,200 cfs (10.52 ft).

* Discharge measurement made on this day.
a No gage-height record.

SMITH RIVER BASIN

11-5325. Smith River near Crescent City, Calif.

Location.--Lat 41°47'20", long 124°03'20", in SW¼ sec.10, T.16 N., R.1 E., on left bank 0.5 mile downstream from South Fork and 8 miles east of Crescent City.

Drainage area.--609 sq mi (revised).

Records available.--October 1931 to September 1964. Monthly discharge only for some periods, published in WSP 1315-B.

Gage.--Water-stage recorder. Altitude of gage is 90 ft (from topographic map).

Average discharge.--33 years, 3,754 cfs (2,718,000 acre-ft per year).

Extremes.--Maximum discharge during year, 93,400 cfs Jan. 20 (gage height, 31.22 ft); minimum, 182 cfs Sept. 25-29. 1931-64: Maximum discharge, 165,000 cfs Dec. 22, 1955 (gage height, 41.20 ft), from rating curve extended above 69,000 cfs on basis of slope-area measurement at gage height 39.51 ft; minimum, 168 cfs Oct. 21, 1931.

Remarks.--Records good. No regulation or diversion above station.

Rating table (gage height in feet, discharge, in cubic feet per second)

3.9	180	13.0	10,300
4.8	440	18.0	24,500
6.0	990	22.0	40,200
8.0	2,510	26.0	61,500
10.0	4,780		

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	218	600	3,140	3,820	19,100	3,040	3,620	1,810	*1,130	556	456	229
2	214	1,220	2,820	*5,690	11,600	3,470	3,260	1,610	1,040	556	424	229
3	*212	1,090	2,560	4,640	9,460	3,100	2,900	1,870	972	544	367	*229
4	212	3,800	*2,260	3,890	*6,860	3,470	2,650	1,780	1,060	532	355	223
5	292	4,060	2,210	3,350	5,930	*5,920	2,580	1,750	1,470	520	343	220
6	420	*8,540	2,410	9,160	5,140	5,100	2,430	1,670	1,540	504	325	216
7	280	5,570	2,160	16,300	4,480	4,430	2,280	1,640	2,090	*488	316	214
8	244	57,300	2,660	8,520	4,040	3,850	2,260	1,670	1,750	488	313	212
9	235	30,600	4,670	7,060	3,700	3,660	2,450	1,790	1,450	500	310	210
10	271	10,000	3,540	6,710	3,500	3,360	2,560	1,890	1,280	472	307	210
11	508	6,040	2,950	5,600	3,300	5,830	2,390	1,880	1,160	460	295	208
12	408	4,340	2,530	4,780	3,040	7,400	2,280	1,830	1,090	440	301	206
13	304	3,520	2,380	4,610	2,840	6,350	2,160	1,780	1,030	420	301	204
14	280	14,000	2,200	4,640	2,730	5,240	2,190	1,700	972	432	295	204
15	797	15,600	2,070	4,200	3,150	6,000	2,280	1,560	936	540	286	204
16	715	9,990	1,950	6,550	3,080	5,770	2,210	1,580	905	532	280	202
17	420	7,940	1,840	16,500	2,840	5,340	2,020	1,580	885	460	274	200
18	340	8,320	1,770	16,600	2,780	5,020	1,890	1,520	880	432	271	202
19	301	9,900	1,850	49,100	2,800	4,330	1,780	1,540	840	420	262	202
20	295	9,490	3,040	61,500	2,750	4,060	1,730	1,560	795	400	250	200
21	576	6,520	3,540	25,200	2,610	4,380	1,620	1,430	755	397	244	194
22	2,600	7,380	3,100	15,200	2,480	4,500	1,730	1,370	715	400	241	190
23	3,160	21,100	2,670	10,900	2,340	4,320	1,650	1,330	690	388	241	190
24	1,640	19,200	2,420	17,200	2,260	3,970	1,530	1,370	664	379	235	186
25	2,770	11,300	2,560	23,400	2,130	3,580	1,450	1,340	644	364	232	184
26	1,760	7,840	2,970	15,100	2,010	3,350	1,400	1,330	628	355	229	182
27	1,130	6,140	5,770	11,100	1,920	3,200	1,390	1,230	620	346	229	182
28	905	4,950	8,370	8,760	1,870	3,180	1,480	1,150	596	346	226	182
29	785	4,120	7,840	12,500	1,790	3,300	1,720	1,090	580	361	223	184
30	690	3,540	5,170	11,700	-----	*3,410	*1,600	1,100	564	364	220	*186
31	600	-----	4,070	15,100	-----	3,480	-----	1,150	-----	361	223	-----
Total	23,582	304,010	99,490	409,380	122,530	135,410	63,490	47,900	29,731	13,757	8,874	6,084
Mean	761	10,130	3,209	13,210	4,225	4,368	2,116	1,550	991	444	286	203
Max	3,160	57,300	8,370	61,500	19,100	7,400	3,620	1,890	2,090	556	456	229
Min	212	600	1,770	3,350	1,790	3,040	1,390	1,090	564	346	220	182
Ac-ft	46,770	603,000	197,300	812,000	243,000	268,600	125,900	95,010	58,970	27,290	17,600	12,070

Calendar year 1963: Max 57,300 Min 212 Mean 4,056 Ac-ft 2,936,000
 Water year 1963-64: Max 61,500 Min 182 Mean 3,454 Ac-ft 2,508,000

Peak discharge (base, 36,000 cfs)--Nov. 8 (1700) 89,200 cfs (30.57 ft); Jan. 20 (0200) 93,400 cfs (31.22 ft).

* Discharge measurement made on this day.

LOPEZ CREEK BASIN

491

11-5330. Lopez Creek near Smith River, Calif.

Location.--Lat 41°57'36", long 124°12'08", in SE¼ sec.8, T.18 N., R.1 W., on right bank at culvert on U. S. Highway No. 101, 3.7 miles northwest of town of Smith River.

Drainage area.--0.93 sq mi.

Records available.--October 1961 to September 1964.

Gage.--Water-stage recorder, crest-stage gage and tipping-bucket rain gage. Altitude of gage is 35 ft (from topographic map).

Extremes.--Maximum discharge during year, 65 cfs Jan. 19 (gage height, 2.18 ft); no flow Sept. 20, 23-30.
1961-64: Maximum discharge, 147 cfs May 6, 1963 (gage height, 3.68 ft), by indirect measurement of maximum flow through culvert at gage height 3.58 ft; no flow at times in each year.

Remarks.--Records good above 5 cfs and fair below. No regulation or diversion above station.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

0.67	0	1.0	5.1
.7	.1	1.1	7.8
.8	.7	1.3	16
.9	2.6	2.1	59

Discharge, in cubic feet per second, water year October 1963 to September 1964

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	1.9	4.6	6.5	1.7	3.9	2.6	1.3	*0.4	0.4	0.5	0.1
2	.1	1.9	4.4	6.7	1.5	3.6	2.6	1.1	.4	.4	.4	.1
3	.1	2.0	3.9	*6.5	1.3	3.1	2.2	1.5	.5	.4	.4	*.1
4	*.1	7.0	*3.6	6.2	*8.6	*4.4	2.2	1.1	.7	.4	.4	.1
5	.4	8.0	3.6	5.6	7.3	5.1	2.0	1.1	1.7	.4	.4	.1
6	.2	*1.4	3.9	2.0	6.5	6.7	1.9	.9	1.5	*.4	.3	.1
7	.1	1.5	3.4	2.6	5.6	6.5	1.9	a.9	1.3	.3	.3	.1
8	.1	4.1	5.1	1.9	5.4	6.2	1.9	a.9	1.1	.5	.3	.1
9	.1	*3.2	5.9	1.5	5.1	5.9	1.9	a.9	.9	.4	.3	.1
10	.4	2.0	5.1	1.1	5.1	5.1	1.9	a.8	.7	.4	.3	.1
11	.9	1.3	4.9	9.0	4.4	9.8	1.7	a.8	.7	.4	.3	.1
12	.4	8.6	4.6	7.5	4.4	10	1.7	a.8	.7	.4	.4	.1
13	.4	7.0	4.4	7.8	4.1	9.4	1.7	a.7	.6	.3	.3	.1
14	.3	1.1	3.9	7.0	4.4	9.0	1.7	a.7	.6	.5	.3	.1
15	2.2	1.1	3.9	6.5	4.9	9.4	1.7	a.7	.6	2.0	.3	.1
16	.7	9.8	3.4	7.5	4.4	8.2	1.5	a.6	.6	.9	.3	.1
17	.5	1.2	3.1	1.9	4.1	7.3	1.3	a.6	.6	.7	.3	.1
18	.5	1.2	3.1	2.0	3.9	6.7	1.3	a.6	.5	.6	.3	.1
19	.4	1.8	3.6	4.3	3.6	5.9	1.1	a.5	.5	.5	.3	.1
20	.4	1.7	3.9	5.3	3.4	5.4	1.1	a.5	.5	.5	.2	0
21	.6	1.3	3.9	*3.7	3.1	5.6	a.1.0	a.5	.5	.5	.2	.1
22	6.7	1.1	3.6	3.2	3.1	6.5	a.1.0	a.4	.5	.5	.2	.1
23	6.1	2.2	3.4	2.8	2.9	5.4	a.9	a.4	.4	.4	.2	0
24	4.4	1.8	3.6	2.7	2.6	5.1	a.9	a.4	.4	.4	.2	0
25	4.4	1.4	3.6	2.5	2.6	4.6	a.8	.4	.4	.4	.2	0
26	3.1	1.1	3.9	2.1	2.4	4.4	a.8	.4	.4	.4	.2	0
27	2.4	8.6	4.1	1.6	2.2	4.1	a.7	.4	.4	.4	.2	0
28	2.4	7.0	7.0	1.3	2.4	3.9	a.7	.5	.4	.4	.2	0
29	1.9	6.2	7.5	1.5	2.0	3.9	*.7	.4	.4	.4	.1	*0
30	1.7	5.4	6.7	1.2	-----	3.6	.9	.4	.4	.4	.1	0
31	1.3	-----	6.2	1.6	-----	*3.4	-----	.4	-----	.5	.1	-----
Total	43.4	378.4	135.8	544.8	153.5	182.1	44.3	21.6	19.3	15.5	8.5	2.1
Mean	1.40	12.6	4.38	17.6	5.29	5.87	1.48	0.70	0.64	0.50	0.27	0.07
Max	6.7	4.1	7.5	5.3	1.7	1.0	2.6	1.5	1.7	2.0	0.5	0.1
Min	0.1	1.9	3.1	5.6	2.0	3.1	0.7	0.4	0.4	0.3	0.1	0
Ac-ft	86	751	269	1,080	304	361	88	43	38	31	17	4.2
(+)	9.0	16.9	6.5	21.4	2.5	8.8	1.7	1.2	2.5	3.1	0	0.4

Calendar year 1963: Max 111 Min 0 Mean 5.41 Ac-ft 3,910
Water year 1963-64: Max 53 Min 0 Mean 5.30 Ac-ft 3,070

Peak discharge (base, 55 cfs).--Jan. 19 (2100) 65 cfs (2.18 ft).

* Discharge measurement or observation of no flow made on this day.

† Precipitation in inches.

a No gage-height record.

DISCHARGE AT PARTIAL-RECORD STATIONS AND MISCELLANEOUS SITES

Crest-stage partial-record stations

As explained on page 9 the California District publishes annual maxima on small streams at about 290 sites in a separate publication Floods From Small Drainage Areas. In addition discharge measurements are generally made in times of drought or flood to give better coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

The following table contains annual maximum discharges for crest-stage stations not included in above-mentioned report. A crest-stage gage is a device which will register the peak stage occurring between inspection of the gage. A stage-discharge relation for each gage is developed from discharge measurements made by indirect measurements of peak flow or by current meter. The data of the maximum discharge is not always certain but is usually determined by comparison with nearby continuous-record stations, weather records, or local inquiry. Only the maximum discharge for each water year is given. Information on some lower floods may have been obtained but is not published herein. The years given in the period of record represent water years for which the annual maximum has been obtained.

Annual maximum discharge at crest-stage partial-record stations

Station No.	Station name	Location	Drainage area (sq mi)	Period of record	Annual maximum			
					Date	Gage height (feet)	Discharge (cfs)	
Smith River Basin								
5320.00	South Fork Smith River near Crescent City	Lat 41°47'30", long 124°01'30", in SE¼ sec.11, T.16 N., R.1 E., 9.5 miles east of Crescent City.	295	1911-13 1954-64	1-20-64	26.84	46,200	

Measurements at miscellaneous sites

Stream	Tributary to	Location	Drainage area (sq mi)	Measured previously (water years)	Measurements	
					Date	Discharge (cfs)
Santa Ana River Basin						
Santa Ana River	Pacific Ocean	Lat 33°56'43", long 117°33'30", in NE¼NE¼ sec.1, T.3 S., R.7 W., on left bank 300 ft downstream from Hamner Avenue Bridge, 4.8 miles north of Corona, and 5 miles upstream from Temescal Creek.	994 (revised)	1930-60	10-29-63	32.2
Klamath River Basin						
South Fork Scott River	Scott River	SW¼SE¼ sec.20, T.40 N., R.8 W., 1.5 miles upstream from East Fork Scott River and 1.1 miles southwest of Callahan.	41.5 (revised)	1958-60†	8-31-64	7.46
Fall Creek	Klamath River	NE¼ sec.36, T.48 N., R.5 W., 1,500 ft upstream from mouth and 0.8 mile south of Fall Creek powerplant and Copco Post Office.	20.0	1928-59†	9-1-64	35.6
Thompson Creek	Klamath River	SE¼SE¼ sec.17, T.17 N., R.8 E., 400 ft above mouth and 6 miles northeast of Happy Camp.	--	--	9-3-64	17.5

† Operated as a continuous record gaging station.

These measurements were made by the Orange County Flood Control District to determine the rate of absorption along the stream bed of the Santa Ana River, covering that portion of the river from Yorba Bridge to the Geological Survey gaging station, Santa Ana River at Santa Ana. The measurements are listed in downstream order. Flow includes release to river at Horseshoe Bend, 3 miles upstream from Yorba Bridge, by Metropolitan Water District of Southern California from Oct. 1 to Nov. 20, Nov. 23 to Jan. 21, Feb. 5 to Aug. 8, Sept. 3-30.

Santa Ana River, lat 33°51'30", long 117°47'12", in Canon de Santa Ana Grant, about 1,000 ft above Yorba Bridge and 2.7 miles southeast of Atwood, water year 1964

(Measured previously 1938-63)

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
Oct. 1	127	Dec. 13	125	Feb. 25	95.4	May 8	210	July 17	239
4	180	20	156	28	90.5	12	197	21	238
8	216	24	138	Mar. 3	110	15	189	24	240
11	207	27	168	6	105	19	241	28	232
15	203	31	162	10	103	22	259	31	216
18	93.2	Jan. 3	150	13	121	26	233	Aug. 4	224
22	186	7	177	17	174	29	246	7	230
25	203	10	172	20	181	June 2	237	11	2.17
Nov. 1	216	14	143	24	207	5	229	14	.56
5	161	17	175	27	215	12	228	18	0
7	167	22	125	31	229	16	228	28	0
12	209	23	194	Apr. 3	209	19	253	Sept. 4	12.4
15	218	28	65.6	7	201	23	232	11	46.8
19	194	31	38.3	10	192	26	222	15	100
21	343	Feb. 7	141	14	201	30	220	18	143
22	123	7	135	17	204	July 3	251	22	189
29	228	11	143	21	201	7	260	22	203
Dec. 3	210	14	114	24	224	10	232	25	282
6	218	18	105	May 1	177	14	243	29	284
10	166	21	93.4	5	206				

Santa Ana River, lat 33°50'55", long 117°50'05", in SW 1/4 sec. 4, T.4 S., R.9 W., at Jefferson Street Bridge, 1 mile north of Olive, water year 1964

(Measured previously 1938-63)

Oct. 1	72.6	Dec. 10	125	Feb. 25	69.5	Apr. 24	173	June 26	163
4	53.9	13	110	28	47.1	May 1	129	30	169
8	123	20	96.5	Mar. 3	70.5	5	151	July 3	179
11	144	27	86.2	6	57.4	8	151	7	190
15	136	31	109	10	69.8	12	142	10	163
18	131	Jan. 3	100	13	52.3	15	131	14	181
22	113	7	129	17	107	19	148	17	165
25	126	10	123	20	112	22	181	21	187
29	141	14	145	24	191	26	178	24	174
Nov. 1	141	17	120	27	153	29	148	28	162
5	82.6	23	180	31	181	June 2	148	31	155
7	105	28	10.4	Apr. 3	165	5	156	Aug. 4	145
12	141	Feb. 7	44.3	7	145	9	152	7	151
19	151	7	47.3	10	134	12	159	11	0
21	237	11	87.6	14	143	16	172	Sept. 18	0
29	178	14	67.0	17	149	19	176	25	188
Dec. 3	149	18	68.6	21	145	23	167	29	167
6	154	21	61.3						

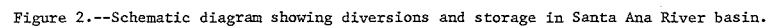
Santa Ana River, lat 33°50'08", long 117°51'49", in San Juan Cajon de Santa Ana Grant, at Anaheim-Olive Bridge, 1.1 miles west of Olive, water year 1964

(Measured previously 1938-63)

Oct. 1	103	Dec. 6	50.0	Feb. 25	10.8	May 5	48.6	July 3	48.5
4	117	10	55.4	28	0	8	48.5	7	60.3
8	41.6	13	28.5	Mar. 13	0	12	36.3	10	59.9
15	79.5	20	22.6	17	43.4	15	33.6	14	38.3
18	110	24	23.9	20	29.7	19	32.6	17	50.4
22	66.6	27	21.2	24	32.3	22	36.3	21	52.6
25	80.4	31	20.9	27	43.2	26	57.6	24	53.6
29	102	Jan. 3	41.8	31	31.6	29	41.3	28	33.6
Nov. 1	74.2	7	36.0	Apr. 3	68.6	June 2	33.4	31	6.06
5	24.2	10	14.6	7	42.4	5	35.6	Aug. 4	19.4
7	42.2	14	96.5	10	35.3	9	35.8	7	26.1
12	65.2	17	26.0	14	36.0	12	34.9	11	5.86
19	67.9	23	18.0	17	38.0	16	54.2	14	0
21	81.6	Feb. 11	7.03	21	38.2	19	51.8	25	0
29	63.5	18	12.0	24	42.6	23	54.2	Sept. 29	67.4
Dec. 3	52.7	21	7.16	May 1	29.3	30	36.0		

Santa Ana River, lat 33°47'17", long 117°52'54", in Santiago de Santa Ana Grant, at Chapman Ave. Bridge, 1.7 miles west of Orange, Orange County, water year 1964
(Measured previously 1938-47, 50, 52, 54, 56, 58, 62, 63)

Note.--During the year for each date listed above a no flow observation was made at this site.



	Page		Page
Agua Caliente Creek near Warner Springs.....	104	Colorado River, at Yuma, Ariz.....	23
Alameda Creek, at Union City.....	347	below Davis Dam, Ariz.-Nev.....	11
near Niles.....	344	below Imperial Dam, schematic diagram.....	34
Alamitos Creek near New Almaden.....	326	below Palo Verde Dam, Ariz.-Nev.....	21
Alamo Creek near Nipomo.....	250	below Parker Dam, Ariz.-Calif.....	18
Alamo River near Niland.....	44	near Topock, Ariz.....	13
Albion River near Comptche.....	387	Convict Creek near Mammoth Lakes.....	73
Alisal Creek near Solvang.....	241	Cooperation, record of.....	2
Aliso Canyon Creek near New Cuyama.....	250	Corn Springs Wash near Desert Center.....	41
Aliso Creek at El Toro.....	121	Corralitos Creek, at Freedom.....	302
All-American Canal, above Pilot Knob wasteway.....	27	near Corralitos.....	301
below Pilot Knob wasteway.....	29	Corte Madera Creek at Ross.....	361
near Imperial Dam, Ariz.-Calif.....	26	Cottonwood Creek (Owens Lake basin) near Olancha.....	83
Almaden Reservoir, contents of.....	331	Cottonwood Creek (Tia Juana River basin), above Tecate	
Amargosa River at Tecopa.....	38	Creek, near Dulzura.....	88
Anderson Lake, contents of.....	335	at Barrett Dam, near Dulzura.....	88
Andreas Creek near Palm Springs.....	56	Cottonwood Creek at Morena Dam.....	87
Antelope Creek (Lower Klamath Lake basin) near Tennant.....	441	Cottonwood Wash near Cottonwood Spring.....	59
Aptos Creek at Aptos.....	305	Cow Creek near San Ardo.....	281
Arch Creek near Earp.....	19	Coyote Creek basin, reservoirs in.....	335
Arroyo de la Cruz near San Simeon.....	260	Coyote Creek (tributary to Salton Sea) near Borrego Springs	47
Arroyo Grande, at Arroyo Grande.....	258	Coyote Creek (tributary to San Francisco Bay), near Gilroy.	332
near Arroyo Grande.....	257	near Madrone.....	333
Arroyo Mocho, near Livermore.....	337	Coyote Creek (tributary to San Gabriel River) at Los	
near Pleasanton.....	338	Alamitos.....	191
Arroyo Seco (Los Angeles River basin) near Pasadena.....	198	Coyote Creek (tributary to Ventura River) near Oak View....	226
Arroyo Seco (Salinas River basin), near Greenfield.....	283	Coyote Lake, contents of.....	335
near Soledad.....	284	Cristianitos Creek near San Clemente.....	117
Arroyo Trabuco near San Juan Capistrano.....	120	Cubic foot per second, definition of.....	3
Arroyo Valle, above Lang Canyon, near Livermore.....	340	Cucamonga Creek near Upland.....	165
at Pleasanton.....	343	Cushenbury Creek near Lucerne Valley.....	59
near Livermore.....	341	Cuyama River, below Buckhorn Canyon, near Santa Maria.....	250
Atascadero Creek near Goleta.....	231	below Twitchell Dam.....	252
Austin Creek near Cazadero.....	381	Cuyamaca Reservoir, contents of.....	95
Ballona Creek near Culver City.....	207	Darwin Creek near Darwin.....	36
Barrett Reservoir, contents of.....	88	Data, accuracy of.....	8
Bautista Creek near Hemet.....	160	explanation of.....	5
Beacon Creek at Helendale.....	64	supplemental.....	9
Beaver Creek near Klamath River.....	447	Day Creek near Etiwanda.....	153
Big Bear Lake near Big Bear Lake.....	123	De Luz Creek near Fallbrook.....	113
Big Creek near Hayfork.....	479	Deep Creek (Mojave River basin) near Hesperia.....	60
Big Dip Creek near Stovepipe Wells.....	37	Deep Creek (Salton Sea basin) near Palm Desert.....	57
Big Pine Creek near Big Pine.....	77	Definition of terms and abbreviations.....	3
Big River, South Fork, near Comptche.....	388	Devil Canyon Creek near San Bernardino.....	148
Big Rock Creek near Valyermo.....	66	Dry Creek (tributary to Alameda Creek) at Union City.....	345
Big Sulphur Creek near Cloverdale.....	372	Dry Creek (tributary to Napa River) near Napa.....	356
Big Sur River near Big Sur.....	261	Dry Creek (tributary to Russian River), near Cloverdale.....	376
Black Butte River near Covelo.....	403	near Geyserville.....	377
Bluff Creek near Weitchpec.....	461	Dry Lake tributary at Perez.....	440
Bodfish Creek near Gilroy.....	294	Dunn Creek near Rockport.....	391
Borrego Palm Creek near Borrego Springs.....	48	Eagle Creek at Eagle Mountain.....	41
Boulder Creek at Cuyamaca Reservoir, near Julian.....	95	East Twin Creek near Arrowhead Springs.....	137
Branciforte Creek at Santa Cruz.....	310	Eaton Creek near Pasadena.....	201
Brea Creek, at Fullerton.....	183	Eel River, above Dos Rios.....	401
below Brea Dam, near Fullerton.....	182	at Alderpoint.....	413
Browns Creek near Douglas City.....	470	at Scotia.....	422
Buckhorn Creek near Valyermo.....	68	at Van Arsdale Dam, near Potter Valley.....	397
Bull Creek near Weott.....	420	below Dos Rios.....	410
Butano Creek near Pescadero.....	313	below Scott Dam, near Potter Valley.....	394
Cajon Creek near Keenbrook.....	146	Middle Fork, below Black Butte River, near Covelo.....	405
Calero Reservoir, contents of.....	331	North Fork, near Mina.....	412
Campo Creek near Campo.....	89	South Fork, near Branscomb.....	415
Carbon Creek below Carbon Canyon Dam.....	167	near Miranda.....	418
Carmel River at Robles del Rio.....	262	El Capitan Reservoir, contents of.....	96
Carmel River near Carmel.....	263	El Toro Creek near Spreckels.....	286
Carpinteria Creek near Carpinteria.....	230	Elk Creek (Klamath River basin) near Happy Camp.....	454
Caruthers Creek near Ivanpah.....	40	Elk River near Falk.....	429
Cedar Creek near Bell Station.....	289	Elsinore Lake at Elsinore.....	162
Chemehuevi Wash tributary near Needles.....	14	Estrella River near Estrella.....	274
Chesbro Reservoir, contents of.....	304	Feliz Creek near Hopland.....	370
China Spring Creek near Mountain Pass.....	39	Fish Creek near Duarte.....	175
Cholame Creek, near Shandon.....	273	Fortynine Palms Creek near Twentynine Palms.....	41
tributary near Cholame.....	272	Franz Creek near Kellogg.....	374
City Creek near Highland.....	131	Fullerton Creek, at Fullerton.....	185
Clair Engle Lake near Lewiston.....	464	at Richman Avenue, near Fullerton.....	186
Coffee Creek near Trinity Center.....	463	below Fullerton Dam, near Brea.....	184
Colma Creek at South San Francisco.....	317	Garcia River near Point Arena.....	383
Colorado River aqueduct near Parker Dam, Ariz.-Calif.....	15	Gibraltar Reservoir, contents of.....	234
Colorado River, at Imperial Dam, Ariz.-Calif.....	22	Gila Gravity Main Canal at Imperial Dam, Ariz.-Calif.....	25
at Needles.....	12	Green Valley Creek near Corralitos.....	303
at northerly international boundary above Morelos Dam,		Guadalupe Reservoir, contents of.....	331
near Andrade.....	24	Guadalupe River at San Jose.....	329

	Page		Page
Guadalupe River basin, reservoirs in.....	331	Mad River, near Arcata.....	434
Gualala River, South Fork, near Annapolis.....	382	near Forest Glen.....	431
Guejito Creek near San Pasqual.....	101	North Fork, near Korbel.....	433
Havasu Lake near Parker Dam, Ariz.-Calif.....	16	Malibu Creek at Crater Camp, near Calabasas.....	209
Hayfork Creek, near Hayfork.....	478	Matadero Creek at Palo Alto.....	324
near Hyampom.....	480	Matilija Creek, above reservoir, near Matilija Hot Springs.	220
Hopper Creek near Piru.....	214	at Matilija Hot Springs.....	222
Horse Thief Creek near Tecopa.....	39	North Fork, at Matilija Hot Springs.....	223
Huasna River near Arroyo Grande.....	251	Matilija Reservoir at Matilija Hot Springs.....	221
Huerhuero Creek near Creston.....	271	Mattole River near Petrolia.....	392
Hulls Creek near Covelo.....	411	Mazourka Creek near Independence.....	81
Hydrologic conditions.....	10	Meeks and Daley Canal near Colton.....	143
Independence Creek below Pinyon Creek, near Independence..	80	Mill Creek (El River basin), below Alder Creek, near	
Indian Creek near Happy Camp.....	453	Covelo.....	407
Jack Creek near Templeton.....	268	near Covelo.....	409
Jacoby Creek near Freshwater.....	430	Mill Creek (Santa Ana River basin), near Mentone.....	128
Jameson Lake, contents of.....	233	near Yucaipa.....	126
Jamul Creek near Jamul.....	90	Miller Creek near Live Oak Springs.....	89
Judge Francis Carr powerplant near French Gulch.....	465	Mission Creek, below Whittier Narrows Dam.....	204
Klamath River, at Somesbar.....	459	near Montebello.....	204
below John C. Boyle powerplant, near Keno, Oreg.....	442	Moffet Creek near Fort Jones.....	449
below Iron Gate Dam.....	443	Mojave River, at Afton.....	65
near Klamath.....	487	at Barstow.....	64
near Seiad Valley.....	451	at lower narrows, near Victorville.....	62
La Brea Creek near Siskiyou.....	254	West Fork, near Hesperia.....	61
Lakes and reservoirs:		Mono Lake near Mono Lake.....	84
Almaden Reservoir.....	331	Morena Reservoir, contents of.....	87
Anderson Lake.....	335	Murrieta Creek at Temecula.....	110
Barrett Reservoir.....	88	Nacimiento River, below Nacimiento Dam, near Bradley.....	276
Big Bear Lake near Big Bear Lake.....	123	near Bryson.....	275
Cachuma, Lake, near Santa Ynez.....	238	Napa River, near Napa.....	357
Calero Reservoir.....	331	near St. Helena.....	354
Chesbro Reservoir.....	304	Navarro River near Navarro.....	386
Clair Engle Lake near Lewiston.....	464	New River (Klamath River basin) at Denny.....	474
Coyote Lake.....	335	New River (Salton Sea basin) near Westmoreland.....	45
Cuyamaca Reservoir.....	95	Ninemile Creek near Brown.....	72
El Capitan Reservoir.....	96	Novato Creek near Novato.....	360
Elsinore Lake.....	162	Noyo River near Fort Bragg.....	389
Elsmann, Lake.....	331	Oak Creek near Mojave.....	70
Gibraltar Reservoir.....	234	Outlet Creek near Longvale.....	400
Guadalupe Reservoir.....	331	Owens River, at Keeler Bridge, near Lone Pine.....	82
Havasu Lake near Parker Dam, Ariz.-Calif.....	16	near Big Pine.....	79
Hemet, Lake, near Idyllwild.....	156	Pacheco Creek near Dunneville.....	290
Henshaw, Lake.....	106	Pacoima Creek near San Fernando.....	193
Hodges, Lake.....	103	Pajaro River, at Chittenden.....	300
Jameson Lake.....	233	near Gilroy.....	292
Lexington Reservoir.....	331	Pajaro River basin, reservoirs in.....	304
Loveland, Lake.....	93	Palm Canyon Creek near Palm Springs.....	55
Matilija Reservoir at Matilija Hot Springs.....	221	Palo Verde Canal near Blythe.....	20
Mono Lake near Mono Lake.....	84	Partial-record stations, discharge at.....	492
Morena Reservoir.....	87	Patterson Creek at Union City.....	346
Pillsbury, Lake, near Potter Valley.....	393	Pescadero Creek, near Paicines.....	297
Piru, Lake, near Piru.....	212	near Pescadero.....	312
Rodriguez Reservoir at Rodriguez Dam, Baja California,		Pilot Knob powerplant and wasteway near Pilot Knob.....	28
Mex.....	90	Pine Creek at division box, near Bishop.....	75
Salinas Reservoir near Pozo.....	266	Pine Tree Creek near Mojave.....	71
Stevens Creek Reservoir near Monte Vista.....	325	Pinole Creek at Pinola.....	350
Sutherland Reservoir.....	98	Pipes Creek near Yucca Valley.....	59
Sweetwater Reservoir.....	94	Piru Creek, above Lake Piru.....	211
Uvas Reservoir.....	304	below Santa Felicia Dam.....	213
Vail Lake.....	109	Plunge Creek near East Highlands.....	129
Larabee Creek near Holmes.....	421	Potter Valley powerhouse tailrace near Potter Valley.....	396
Las Flores Creek near Oceanside.....	114	Precipitation:	
Lee Vining Creek near Lee Vining.....	86	Amargosa River at Tecopa.....	38
Lexington Reservoir, contents of.....	331	Aliso Canyon Creek near New Cuyama.....	250
Little Dalton Creek near Glendora.....	177	Arch Creek near Earp.....	19
Little Lake Creek near Little Lake.....	71	Beacon Creek at Helendale.....	64
Little River at Crannell.....	437	Buckhorn Creek near Valyermo.....	68
Little Rock Creek near Little Rock.....	69	China Spring Creek near Mountain Pass.....	39
Little San Geronio Creek near Beaumont.....	134	Cholame Creek tributary near Cholame.....	272
Little Shasta River near Montague.....	445	Colma Creek at South San Francisco.....	317
Little Tujunga Creek near San Fernando.....	196	Corn Springs Wash near Desert Center.....	41
Llagas Creek near Morgan Hill.....	291	Cottonwood Wash near Cottonwood Spring.....	59
Lone Pine Creek near Keanbrook.....	147	Cow Creek near San Ardo.....	281
Long Creek near Desert Hot Springs.....	53	Darwin Creek near Darwin.....	36
Lopez Creek near Smith River.....	491	Dry Lake tributary at Perez.....	440
Los Angeles River, at Long Beach.....	206	Dunn Creek near Rockport.....	391
at Los Angeles.....	197	Eagle Creek at Eagle Mountain.....	41
at Sepulveda Dam.....	192	Fortynine Palms Creek near Twentynine Palms.....	41
near Downey.....	199	Green Valley Creek near Corralitos.....	303
Los Gatos Creek (Guadalupe River basin) at Los Gatos.....	328	Horse Thief Creek near Tecopa.....	39
Los Trancos Creek tributary near Stanford University.....	322	Little Lake Creek near Little Lake.....	71
Lytile Creek near Fontana.....	144	Lopez Creek near Smith River.....	491
Maacama Creek near Kellogg.....	373	Miller Creek near Live Oak Springs.....	89

	Page		Page
Precipitation--Continued		San Juan Creek near San Juan Capistrano.....	118
Pine Tree Creek near Mojave.....	71	San Lorenzo Creek, at Hayward.....	348
San Jacinto, South Fork tributary, near Valle Vista.....	157	below Bitterwater Creek, near King City.....	282
San Mateo Creek near San Clemente.....	116	San Lorenzo River at Big Trees.....	309
San Ramon Creek at San Ramon.....	351	San Luis Rey River, at Lake Henshaw, near Mesa Grande.....	106
Santa Rita Creek near Templeton.....	269	at Monserate Narrows, near Pala.....	106
Sunflower Wash near Essex.....	40	at Oceanside.....	107
Temecula Creek at Vail Dam.....	109	near Bonsall.....	107
Ti Creek near Somesbar.....	455	West Fork, near Warner Springs.....	105
Uvas Creek above Uvas Reservoir, near Morgan Hill.....	293	San Mateo Creek, at San Onofre.....	117
Vallecito Creek near Julian.....	49	near San Clemente.....	116
Wildrose Creek near Wildrose station.....	35	San Onofre Creek, at San Onofre.....	115
Pudding Creek near Fort Bragg.....	390	near San Onofre.....	115
Purissima Creek near Half Moon Bay.....	316	San Ramon Creek, at San Ramon.....	351
Quail Wash near Joshua Tree.....	40	at Walnut Creek.....	352
Rancheria Creek near Boonville.....	385	San Timoteo Creek, near Loma Linda.....	136
Red Cap Creek near Orleans.....	460	near Redlands.....	135
Redwood Creek (tributary to Napa Creek) near Napa.....	358	Santa Agueda Creek near Santa Ynez.....	240
Redwood Creek (tributary to Pacific Ocean) at Orick.....	439	Santa Ana Creek near Oak View.....	227
Redwood Creek (tributary to San Francisco Bay) at		Santa Ana River, absorption studies.....	493
Redwood City.....	318	at Auburndale Bridge, near Corona.....	155
Return surface flows from Yuma project, Ariz.-Calif.....	30	at Colton.....	149
Rheem Creek at San Pablo.....	349	at Riverside Narrows, near Arlington.....	150
Rio Hondo, above Whittier Narrows Dam.....	202	at Santa Ana.....	171
near Downey.....	205	at Waterman Avenue, at San Bernardino.....	133
near Montebello.....	203	below Prado Dam.....	166
Rock Creek at Little Round Valley, near Bishop.....	74	near Mentone.....	124
Rodriguez Reservoir at Rodriguez Dam, Baja California, Mex.	90	schematic diagram of.....	494
Ross Creek at San Jose.....	327	Santa Anita Creek near Sierra Madre.....	200
Rush Creek above Grant Lake, near June Lake.....	85	Santa Clara River at Los Angeles-Ventura County line.....	210
Russian River, East Fork, near Calpella.....	367	Santa Cruz Creek near Santa Ynez.....	237
East Fork, near Ukiah.....	368	Santa Margarita River, at Ysidora.....	114
near Cloverdale.....	371	near Fallbrook.....	112
near Guerneville.....	379	near Temecula.....	111
near Healdsburg.....	375	tributary near Fallbrook.....	113
near Hopland.....	369	Santa Maria Creek near Ramona.....	102
near Redwood Valley.....	365	Santa Maria River at Guadalupe.....	257
near Ukiah.....	366	Santa Paula Creek near Santa Paula.....	219
Salinas Reservoir near Pozo.....	266	Santa Rita Creek near Templeton.....	269
Salinas River, above Pilitas Creek, near Santa Margarita...	267	Santa Rosa Creek (Russian River basin) near Santa Rosa....	378
at Paso Robles.....	270	Santa Rosa Creek (Santa Rosa Creek basin) near Cambria....	259
near Bradley.....	280	Santa Ynez River, above Gibraltar Dam, near Santa	
near Pozo.....	264	Barbara.....	234
near Spreckels.....	285	at barrier, near Surf.....	248
Salmon Creek at Bodega.....	363	at Cooper's Reef, near Lompoc.....	245
Salmon River, at Somesbar.....	458	at Grand Avenue, near Santa Ynez.....	240
North Fork, near Forks of Salmon.....	457	at Jameson Lake, near Montecito.....	233
South Fork, near Forks of Salmon.....	456	at Santa Rosa damsite, near Buellton.....	244
Salsipuedes Creek near Lompoc.....	246	at Solvang.....	242
Salt Creek near Mecca.....	43	at 13th Street, near Lompoc.....	247
Salton Sea, near Westmoreland.....	42	below Gibraltar Dam, near Santa Barbara.....	235
inflow to.....	42	below Los Laureles Canyon, near Santa Ynez.....	236
San Antonio Creek (Alameda Creek basin) near Sunol.....	336	near Buellton.....	243
San Antonio Creek (Santa Ana River basin) near Claremont...	163	near Santa Ynez.....	239
San Antonio Creek (tributary to Pacific Ocean) near		Santa Ysabel Creek, at Sutherland Dam.....	98
Casmalia.....	249	near Ramona.....	99
San Antonio Creek (Ventura River basin) at Casitas Springs.	225	near San Pasqual.....	100
San Antonio River, at Pleyto.....	279	Santiago Creek, at Modjeska.....	168
at Sam Jones Bridge, near Lockwood.....	277	at Santa Ana.....	170
San Benito River, near Hollister.....	299	at Santiago Dam, near Villa Park.....	169
near Willow Creek School.....	296	Saratoga Creek at Saratoga.....	330
San Diego Creek near Irvine.....	122	Scott Creek above Little Creek, near Davenport.....	311
San Diego River, at El Capitan Dam.....	96	Scott River, near Fort Jones.....	450
near Santee.....	97	East Fork, at Callahan.....	448
San Dieguito River, at Lake Hodges.....	103	Sespe Creek, near Fillmore.....	217
near San Pasqual.....	102	near Wheeler Springs.....	215
San Dimas Creek below San Dimas Dam.....	176	Sharon Creek near Menlo Park.....	319
San Felipe Creek, near Julian.....	46	Shasta River near Yreka.....	446
near Westmoreland.....	50	Sheehan ditch at Riverside Narrows, near Arlington.....	151
San Francisquito Creek, at Stanford University.....	323	Short Creek near Covelo.....	408
below Ladera damsite, near Stanford University.....	320	Silver Canyon Creek near Laws.....	76
tributary near Stanford University.....	321	Sisquoc River, near Garey.....	256
San Gabriel River, above Whittier Narrows Dam.....	178	near Sisquoc.....	253
at Pico.....	180	Smith River, Middle Fork, at Gasquet.....	488
at Spring Street, near Los Alamitos.....	181	near Crescent City.....	490
below Santa Fe Dam, near Baldwin Park.....	176	Snow Creek near White Water.....	52
East Fork, near Camp Bonita.....	172	Sonoma Creek at Boyes Hot Springs.....	359
near Azusa.....	174	Soquel Creek, at Soquel.....	307
West Fork, at Camp Rincon.....	173	West Branch, near Soquel.....	306
San Jacinto River, near Elsinore.....	161	Stevens Creek Reservoir near Monte Vista.....	325
near San Jacinto.....	158	Sunflower Wash near Essex.....	40
South Fork tributary, near Valle Vista.....	157	Sutherland Reservoir, contents of.....	98
San Jose Creek (tributary to Pacific Ocean) near Goleta....	232	Sweetwater Reservoir, contents of.....	94
San Jose Creek (tributary to San Gabriel River) near		Sweetwater River, at Loveland Dam, near Alpine.....	93
Whittier.....	179	at Sweetwater Dam.....	94

	Page		Page
Sweetwater River, near Descanso.....	91	Warm Creek, near San Bernardino.....	142
Tahquitz Creek near Palm Springs.....	54	Floodway at San Bernardino.....	139
Temescal Creek near Corona.....	162	Water temperature:	
Temecula Creek, at Vail Dam.....	109	Arroyo Valle near Livermore.....	342
near Aguanga.....	108	Big Rock Creek near Valyermo.....	67
Tenmile Creek near Laytonville.....	417	Black Butte River near Covelo.....	404
Tepusquet Creek near Sisquoc.....	255	Eel River, above Dos Rios.....	402
Terms and abbreviations, definition of.....	3	at Alderpoint.....	414
Ti Creek near Somesbar.....	455	at Scotia.....	423
Tia Juana River, near Dulzura.....	89	below Scott Dam, near Potter Valley.....	395
near Nestor.....	90	South Fork, near Branscomb.....	416
Tomki Creek near Willits.....	398	near Miranda.....	419
Topanga Creek near Topanga Beach.....	208	Garcia River near Point Arena.....	384
Toro Creek near Pozo.....	265	Hayfork Creek near Hyampom.....	481
Tres Pinos Creek near Tres Pinos.....	298	Klamath River, below Iron Gate Dam.....	444
Trinity River, above Coffee Creek, near Trinity Center....	462	near Seiad Valley.....	452
at Lewiston.....	467	Mad River, near Arcata.....	436
near Burnt Ranch.....	472	near Forest Glen.....	432
near Hoopa.....	485	Mojave River at lower narrows, near Victorville.....	63
North Fork, at Helena.....	471	Napa River near St. Helena.....	355
South Fork, at Forest Glen.....	475	Russian River near Guerneville.....	380
near Hyampom.....	476	Salmon Creek at Bodega.....	364
near Salyer.....	482	Sespe Creek near Wheeler Springs.....	216
Tujunga Creek, below Hansen Dam.....	196	Trinity River, at Lewiston.....	468
below Mill Creek, near Colby Ranch.....	194	near Burnt Ranch.....	473
near Sunland.....	195	near Hoopa.....	486
Upper Penitencia Creek at San Jose.....	334	South Fork, near Hyampom.....	477
Uvas Creek, above Uvas Reservoir, near Morgan Hill.....	293	near Salyer.....	483
near Gilroy.....	295	Van Duzen River, near Bridgeville.....	428
Uvas Reservoir, contents of.....	304	South Fork, near Bridgeville.....	426
Vail Lake, contents of.....	109	Waterman Canyon Creek near Arrowhead Springs.....	138
Vallecito Creek near Julian.....	49	Weaver Creek near Douglas City.....	469
Van Duzen River, near Bridgeville.....	427	Whitewater River, at White Water.....	51
near Dinsmores.....	424	near Macca.....	58
South Fork, near Bridgeville.....	425	Wildrose Creek near Wildrose Station.....	35
Ventura River, near Meiners Oaks.....	224	Williams Creek near Covelo.....	406
near Ventura.....	228	Willow Creek (tributary to Trinity River) at Willow Creek..	484
Walker Creek near Tomales.....	362	Yuma project, Ariz.-Calif., return surface flows from.....	30
Walnut Creek (Pacheco Creek basin) at Walnut Creek.....	353	Zayante Creek at Zayante.....	308

