

# Surface Water Supply of the United States 1960

## Part 10. The Great Basin

*Prepared under the direction of E. L. HENDRICKS, Chief, Surface Water Branch*

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GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1714

*Prepared in cooperation with the States  
of California, Idaho, Nevada, Oregon,  
Utah, and Wyoming, and with other  
agencies*



**UNITED STATES DEPARTMENT OF THE INTERIOR**

**STEWART L. UDALL, *Secretary***

**GEOLOGICAL SURVEY**

**Thomas B. Nolan, *Director***

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## PREFACE

This report was prepared by the Geological Survey in cooperation with the States of California, Idaho, Nevada, Oregon, Utah, and Wyoming, and with other agencies, by personnel of the Water Resources Division, L. B. Leopold, chief, under the general direction of E. L. Hendricks, chief, Surface Water Branch, and F. J. Flynn, chief, Basic Records Section.

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# CALENDAR FOR WATER YEAR 1960

## OCTOBER 1959

| 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 1959

| 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 1959

| 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 1960

| S  | M  | T  | W  | T  | F  | S  |
|----|----|----|----|----|----|----|
|    |    |    |    | 1  | 2  |    |
| 3  | 4  | 5  | 6  | 7  | 8  | 9  |
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| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 |    |    |    |    |    |    |

## FEBRUARY 1960

| 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 1960

| 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 1960

| 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 1960

| 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 1960

| 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 1960

| 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 1960

| 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 1960

| 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 |

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## SURFACE WATER SUPPLY OF THE GREAT BASIN, 1960

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### SCOPE OF WORK

This volume is one of a series of 20 reports presenting records of stage, discharge, and content of streams, lakes, and reservoirs in the United States during the 1960 water year. Since 1888, when the United States Geological Survey first studied streamflow in relation to problems of irrigation, similar records have been obtained at more than 15,500 gaging stations in the 50 States. On September 30, 1960, the Geological Survey and cooperating organizations were maintaining 7,300 gaging stations. Partial-record stations for low flow or for flood flow have been operated at many other points. In addition, discharge measurements are made at miscellaneous sites. The records for the 1960 water year at gaging stations, partial-record stations, and miscellaneous sites in The Great Basin are given in this report.

### COOPERATION

Many State, municipal, and private organizations have cooperated with the Geological Survey in this work by either furnishing or helping to collect data. Organizations that supplied data are acknowledged in station descriptions, and organizations that assisted in the collection of data through cooperative agreements with the Survey are:

California: State Department of Water Resources, H. O. Banks, director.

Idaho: State Department of Reclamation, G. N. Carter, State reclamation engineer.

Nevada: Department of Conservation and Natural Resources, H. A. Sharberger, director; Office of State Engineer, Edmund Muth.

Oregon: Office of State Engineer, L. A. Stanley.

Utah: Office of State Engineer, W. D. Criddle; and Utah Water & Power Board, Charles Redd, chairman, succeeded by P. T. Jones, J. R. Bingham, director.

Wyoming: Office of State Engineer, Earl Lloyd.

Work in the Bear River basin (exclusive of Malad Valley) was done under cooperative agreement with the Bear River Commission, E. O. Larson, chairman.

Assistance in the form of funds or services was given by the Corps of Engineers, Department of the Army, in collecting records published herein for 2 gaging stations in Utah and 5 in Nevada.

Assistance was also furnished by the Forest Service and the Soil Conservation Service of the Department of Agriculture; the Fish and Wildlife Service and the Bureau of Reclamation of the United States Department of the Interior.

The following organizations aided in collecting records:

California: Truckee-Carson Irrigation District and Walker River Irrigation District.

Idaho: Utah Power & Light Co.

Oregon: Harney and Lake Counties.

Nevada: Truckee-Carson Irrigation District and Walker River Irrigation District.

Utah: Utah Power & Light Co.

## DIVISION OF WORK

The stream-gaging work was done by the Water Resources Division of the Geological Survey under the direction of personnel shown in the preface. The data for stations in the several States were collected and prepared for publication in the district offices listed below.

| <u>State or river basin</u>      | <u>District office</u>          | <u>Address</u>              |
|----------------------------------|---------------------------------|-----------------------------|
| California <u>a/</u> .....       | Menlo Park.....                 | 345 Middlefield Road.       |
| Nevada.....                      | Salt Lake City, Utah.....       | 463 Federal Building.       |
| Oregon <u>b/</u> .....           | Portland.....                   | 1002 N. E. Holladay Street. |
| Utah <u>c/</u> .....             | Salt Lake City.....             | 463 Federal Building.       |
| Bear River basin <u>d/</u> ..... | Logan, Utah (project office)... | 170 N. Main Street.         |
| Malad River basin, Idaho...      | Boise.....                      | 914 Jefferson Street.       |

a/ Except for stations in Walker Lake, Carson River, and Truckee River basins.

b/ The work in Oregon was done in collaboration with L. A. Stanley, State engineer.

c/ Including stations in Walker Lake, Carson River, and Truckee River basins and stations in the Bear River basin in Idaho operated in connection with Federal Power Commission projects.

d/ Except stations in Malad River basins and stations operated in connection with Federal Power Commission projects.

Information of a more detailed nature than that published for most of the gaging stations given in this report is on file in the district offices listed above. Some gaging-station records for California have been analyzed by 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 number of consecutive days in each year; and (3) the highest mean discharge for selected number of consecutive days in each year. Provisional records of discharge, information on the availability of electronic computer results, and other unpublished data concerning the gaging-station records may generally be obtained from the district offices.

## 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 herein only to those gaging stations where a continuous record of discharge is obtained.

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 (cfs/m) 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 for 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. 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

Beginning with the series of reports for the water year ending September 30, 1951, the order of listing gaging-station records was changed. In this report, in a downstream direction along the main stem, all stations on a tributary entering above a main-stem station are listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed in listing stations of 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 show 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.

The order of listing used before the publication of the 1951 report listed first all stations on the main stem from headwaters toward mouth, then all stations on the uppermost tributary to the main stem from the tributary's source to mouth, and then all stations from source to mouth of the uppermost tributary to the tributary.

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 this report. In assigning station numbers, no distinction is made between partial-record stations and regular 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 includes the part number, but the station number shown in this report, just to the left of the station name, consists of only the essential digits of the complete number. For example, for a station with the complete number 10-0115.00, the station number shown in this report is 115. The notation to the left of the hyphen is the part number; it is 10 for all stations in this report, with one exception, and is therefore omitted. The exception is the transmountain diversions from Colorado River basin which were numbered as part 9 stations. For those stations the "9-" is shown in the station number.

## 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. The records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous record of fluctuations. 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 determinations of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs, and by other methods), 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 the 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 essentially 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 requisite 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. If so, the rate of change in stage is used as a factor in the determination of discharge.

At most gaging stations in the northern part of the United States and at some in the mountainous regions of other parts 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. If the stage-discharge relation is affected by ice, this information is given in a note to the table. No mention is made of occasional days of ice effect if the degree of accuracy of daily records is not changed.

The data herein presented 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 water year 1960 is shown on page IV for the purpose of 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, general remarks, and notations of revisions of the previously published record. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "Location" for some stations, is that determined and used by Corps of Engineers unless otherwise noted. Under "Records available" are given the periods for which there are published records generally equivalent to those at the present site. Under "Gage" are given the type of gage currently in use and the datum of the present 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 (unless it is of no importance). 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 gage, 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 conditions which affect the natural flow at gaging station is given under "Remarks."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual reports. In order to make it easier to find such revised records, a paragraph headed "Revisions (water years)" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge are concerned in the revision, that fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure

was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

Skeleton rating tables are generally published for all stations except those at 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 are generally not published for stations on canals.

For stations equipped with water-stage recorder, except those on streams subject to sudden or rapid fluctuation, the daily table gives the discharge corresponding to the daily mean gage height. For stations subject to such fluctuation the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day or by using the discharge integrator, an instrument for obtaining the daily mean discharge from a continuous gage-height graph and containing, as an essential element, a curve representing the stage-discharge relation at the station. For stations equipped with nonrecording gages, the table of daily discharge gives the discharge corresponding to once-daily readings of the gage, or to the mean of twice-daily readings, or to the mean gage height determined from gage-height graphs based on gage readings. For periods of rapidly changing stage, the daily mean discharge is determined from gage-height graphs based on gage readings, the frequency of which is stated in the station description.

In the table of daily discharge, the figures for the maximum day and the minimum day for each month are underlined. If the figure is repeated, it is underlined only on the first day of its occurrence.

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. Discharge for the month may be expressed in cubic feet per second per square mile (line headed "Cfsm"), or in inches (line headed "In."), or in acre-feet (line headed "Ac-ft"). Figures for cubic feet per second per square mile and runoff in inches are omitted if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches.

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 of 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 will be presented. Peak discharges are not published for canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man.

Footnotes to the table of daily discharge indicate periods when discharge was computed or estimated by unusual or special methods during periods of no gage-height record and ice effect, or by other effects that reduce the degree of accuracy of the records. Days on which discharge measurements were made are indicated by asterisk and footnote unless they were made at frequent regular intervals, in which instance the general frequency of discharge measurements is given under "Remarks" in the station description.

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.

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. For most of these samples the results are published in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States" which is issued in four volumes. In this report under "Remarks" a reference is made to quality-of-water records collected at gaging stations on a regular basis and published in the quality-of-water reports. At many other gaging stations quality-of-water data are obtained at irregular intervals and published as "miscellaneous analyses" in quality-of-water reports; such records are not referred to in "Remarks" paragraph in this report. At many gaging stations water temperature is obtained also at the time a discharge measurement is made; such temperature readings are not reported in the quality-of-water annual reports.

Data collected at partial-record stations and at miscellaneous sites are given at the end of each report. Partial-record stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage stations. Discharge measurements at miscellaneous sites are given in a third table. 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.

#### 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. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. 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.

Many gaging stations on streams in the irrigated areas of the United States are situated above most of the diversions from those streams, and therefore the discharge recorded does not actually show the water supply available at the stations for further development, because water must first be supplied to existing irrigation systems.

#### PUBLICATIONS

Basic data for gaging stations are published in an annual series of reports consisting of 20 volumes, including one each for the States of Alaska and Hawaii. The area of the other 48 States is divided into 14 parts whose boundaries coincide with certain natural drainage lines. Formerly, the annual series of reports on surface-water supply consisted of 14 volumes, one for each of the 14 parts. Beginning with the reports for 1951, the records for the 48 States were published in 18 volumes, there being 2 volumes each for Parts 1, 2, 3, and 6. The boundaries of the various parts are indicated by the following list and the map in figure 1.

- Part 1. North Atlantic slope basins, in two volumes:
  - A, North Atlantic slope basins, Maine to Connecticut.
  - B, North Atlantic slope basins, New York to York River.
2. South Atlantic slope and eastern Gulf of Mexico basins, in two volumes:
  - A, South Atlantic slope basins, James River to Savannah River.
  - B, South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River.
3. Ohio River basin, in two volumes:
  - A, Ohio River basin except Cumberland and Tennessee River basins.
  - B, Cumberland and Tennessee River basins.
4. St. Lawrence River basin.
5. Hudson Bay and upper Mississippi River basins.
6. Missouri River basin, in two volumes:
  - A, Missouri River basin above Sioux City, Iowa.
  - B, Missouri River basin below Sioux City, Iowa.
7. Lower Mississippi River basin.
8. Western Gulf of Mexico basins.
9. Colorado River basin.
10. The Great Basin.
11. Pacific slope basins in California.
12. Pacific slope basins in Washington and upper Columbia River basin.
13. Snake River basin.
14. Pacific slope basins in Oregon and lower Columbia River basin.

Water-supply papers and other publications of the Geological Survey containing data on the water resources of the United States may be purchased or consulted as follows:

1. Copies may be purchased from Superintendent of Documents, Government Printing Office, Washington 25, D. C., who will, on application, furnish lists giving prices. A list of Geological Survey publications may be obtained by applying to the Director, Geological Survey, Washington, D. C.
2. Sets of the reports may be consulted in the libraries of the principal cities in the United States.

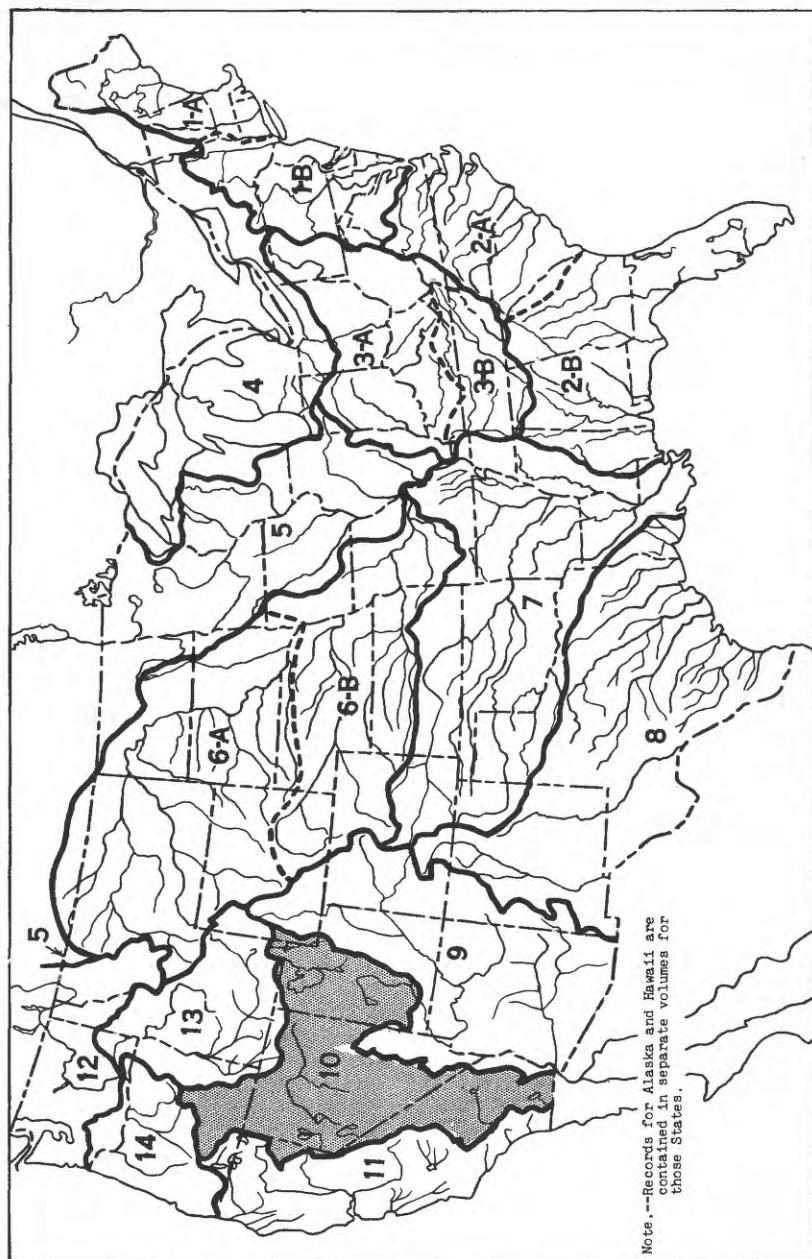


Figure 1.--Map of conterminous United States showing areas covered by 18 of the 20 volumes on surface water supply. The area covered by this report is shaded.

3. Sets are available for consultation in the offices of the Water Resources Division of the Geological Survey. Addresses of the offices in the area covered by this report are given on page 2.

Early records of the flow of streams in the United States are published in the reports listed below. In many of these reports records for years earlier than those indicated have been included for some streams.

Streamflow data for the years 1884-1901, in reports of the Geological Survey

(A = Annual Reports; B = Bulletin)

| Report        | Character of data                                                                                                                                | Year                    |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 10th A, pt. 2 | Descriptive information only.                                                                                                                    |                         |
| 11th A, pt. 2 | Monthly discharge and descriptive information.....                                                                                               | 1884 to September 1890. |
| 12th A, pt. 2 | .....do.....                                                                                                                                     | 1884 to June 30, 1891.  |
| 13th A, pt. 3 | Monthly discharge.....                                                                                                                           | 1884-92.                |
| 14th A, pt. 2 | Descriptions, measurements, gage heights, and ratings.....                                                                                       | 1888-93.                |
| B 131.....    | Descriptive information only.                                                                                                                    | 1893-94.                |
| 16th A, pt. 2 | Descriptions, measurements, gage heights, ratings, and monthly discharge.                                                                        | 1895.                   |
| B 140.....    | Gage heights.....                                                                                                                                | 1896.                   |
| WSP 11.....   | Descriptions, measurements, rating, and monthly discharge...                                                                                     | 1895-96.                |
| WSP 15.....   | Descriptions, measurements, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries above Kansas River.    | 1897.                   |
| WSP 16.....   | Descriptions, measurements, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries above Kansas River. | 1897.                   |
| 19th A, pt. 4 | Descriptions, measurements, ratings, and monthly discharge..                                                                                     | 1897.                   |
| WSP 27.....   | Measurements, ratings, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries.                            | 1898.                   |
| WSP 28.....   | Measurements, ratings, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries.                         | 1898.                   |
| 20th A, pt. 4 | Monthly discharge.....                                                                                                                           | 1898.                   |
| WSP 35 to 39. | Descriptions, measurements, gage heights, and ratings.....                                                                                       | 1899.                   |
| 21st A, pt. 4 | Monthly discharge.....                                                                                                                           | 1899.                   |
| WSP 47 to 52. | Descriptions, measurements, gage heights, and ratings.....                                                                                       | 1900.                   |
| 22d A, pt. 4. | Monthly discharge.....                                                                                                                           | 1900.                   |
| WSP 65, 66... | Descriptions, measurements, gage heights, and ratings.....                                                                                       | 1901.                   |
| WSP 75.....   | Monthly discharge.....                                                                                                                           | 1901.                   |

Note.--Records for all stations in Oregon from the beginning of record through September 1910 have been republished in WSP 370 with some revisions, superseding all earlier reports for these stations. Also, records for all stations in California from the beginning of record through September 1910 have been republished in WSP 300 with some revisions, superseding all earlier reports for those stations.

Reports on surface-water supply containing records from 1899 to date for drainage basins in this report are listed below. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained.

Numbers of water-supply papers containing results of stream measurements in The Great Basin, 1899-1960

| Year   | WSP    | Year    | WSP | Year | WSP | Year | WSP  | Year | WSP  |
|--------|--------|---------|-----|------|-----|------|------|------|------|
| 1899   | 38     | 1912    | 330 | 1925 | 610 | 1937 | 630  | 1949 | 1150 |
| 1900   | 51     | 1913    | 360 | 1926 | 630 | 1938 | 860  | 1950 | 1180 |
| 1901   | 66, 75 | 1914    | 390 | 1927 | 650 | 1939 | 880  | 1951 | 1214 |
| 1902   | 85     | 1915    | 410 | 1928 | 670 | 1940 | 900  | 1952 | 1244 |
| 1903   | 100    | 1916    | 440 | 1929 | 690 | 1941 | 930  | 1953 | 1284 |
| 1904   | 133    | 1917    | 460 | 1930 | 705 | 1942 | 960  | 1954 | 1344 |
| 1905   | 176    | 1918    | 480 | 1931 | 720 | 1943 | 980  | 1955 | 1394 |
| 1906   | 212    | 1919-20 | 510 | 1932 | 735 | 1944 | 1010 | 1956 | 1444 |
| 1907-8 | 250    | 1921    | 530 | 1933 | 750 | 1945 | 1040 | 1957 | 1514 |
| 1909   | 270    | 1922    | 550 | 1934 | 765 | 1946 | 1060 | 1958 | 1564 |
| 1910   | 290    | 1923    | 570 | 1935 | 790 | 1947 | 1090 | 1959 | 1634 |
| 1911   | 310    | 1924    | 590 | 1936 | 810 | 1948 | 1120 | 1960 | 1714 |

Note.--Records for all stations in Oregon from the beginning of record through September 1910 have been republished in WSP 370 with some revisions, superseding all earlier reports for these stations. Also, records for all stations in California from the beginning of record through September 1910 have been republished in WSP 300 with some revisions, superseding all earlier reports for those stations.

A compilation of records for the area covered by this report through September 1950 has been published in Water-Supply Paper 1314. That report contains a summary of monthly and annual discharges for all previously published records as well as some records not contained in the annual series of water-supply papers. All records were reexamined and revised where warranted. Estimates of discharge were made to fill short gaps whenever practical.

The reports listed in the foregoing tables contain the customary records of discharge collected during the systematic operation of gaging stations. Detailed information on the stage and discharge of many streams during major floods has been included in special reports on these floods published by the Geological Survey or other agencies. The more recent of these special reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier notable floods. The following is a list of numbers and titles of these reports:

### Report

WSP 771: Floods in the United States, magnitude and frequency.  
 WSP 843: Floods of December 1937 in northern California.  
 WSP 844: Floods of March 1938 in southern California.  
 WSP 847: Maximum discharges at stream-measurement stations through September 1938.  
 WSP 994: Cloudburst floods in Utah, 1850 to 1938.  
 WSP 1137-H: Floods of November-December 1950 in western Nevada.  
 WSP 1227-D: Summary of floods in the United States during 1951.  
 WSP 1260-E: Floods of 1952 in Nevada and Utah.  
 WSP 1260-F: Summary of floods in the United States during 1952.  
 WSP 1320-E: Summary of floods in the United States during 1953.

### RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The table below contains a list of gaging stations for the area covered by this report, at which records of discharge were collected during the water year October 1959 to September 1960 by agencies other than the Geological Survey. The records of these stations are not contained in publications of the Geological Survey. Records for many canals and ditches and occasional records for several natural streams, none of which are here listed, have also been collected, and some of them have been published in the reports of irrigation projects or of the water commissioner of the drainage basin in which the streams are situated.

| Records of discharge collected by agencies other than the Geological Survey |                                                                                    |             |                                                  |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------|--------------------------------------------------|
| Stream                                                                      | Location                                                                           | Period      | Collected by                                     |
| Blackwood Creek..                                                           | Near Tahoe, Calif.....                                                             | 1957-60     | California Department of Water Resources.        |
| Big Cottonwood Creek.                                                       | Near mouth of canyon, Salt Lake City, Utah.                                        | 1898-1960a/ | Salt Lake City.                                  |
| City Creek.....                                                             | .....do.....                                                                       | 1898-1960a/ | Do.                                              |
| Donner Creek.....                                                           | Above Gold Creek near Truckee, Calif.....                                          | 1923-60     | Sierra Pacific Power Co.                         |
| Emigration Creek.                                                           | Near mouth of canyon, Salt Lake City, Utah.                                        | 1898-1960a/ | Salt Lake City.                                  |
| Ephraim Creek....                                                           | Near Ephraim, Utah.....                                                            | 1914-60     | Intermountain Forest & Range Experiment Station. |
| Independence Creek.                                                         | Below Independence Lake, near Hobart Mills, Calif.                                 | 1955-60     | Sierra Pacific Power Co.                         |
| Lahontan Reservoir.                                                         | Near Fallon, Nev.....                                                              | 1936-60     | Truckee-Carson Irrigation District.              |
| Little Cottonwood Creek.                                                    | Near mouth of canyon, Salt Lake City, Utah.                                        | 1898-1960a/ | Salt Lake City.                                  |
| Mill Creek.....                                                             | .....do.....                                                                       | 1898-1960a/ | Do.                                              |
| Otter Creek outlet.                                                         | Near Antimony (Coyote), Utah, at former Geological Survey gaging station.          | 1913-19b/   | Sevier River water commissioner.                 |
| Parleys Creek....                                                           | Near mouth of canyon, Salt Lake City, Utah.                                        | 1920-60     | Salt Lake City.                                  |
| Santiago Creek...                                                           | Near Little Rock, Calif.....                                                       | 1898-1960a/ | Los Angeles County Flood Control District.       |
| Sevier River.....                                                           | Near Delta, Utah, at former Geological Survey gaging station.                      | 1912-19b/   | Sevier River water commissioner.                 |
| Sheep Creek.....                                                            | At mouth, near Salina, Utah, at former Geological Survey gaging station.           | 1920-60     | Forest Service Sheep Creek Evaluation project.   |
| Do.....                                                                     | Near Salina, Utah, at former Geological Survey gaging station.                     | 1957-58b/   | Do.                                              |
| Sheep Creek, West Fork.                                                     | .....do.....                                                                       | 1958-60     | Do.                                              |
| Trout Creek.....                                                            | Near Tahoe Valley, Calif.....                                                      | 1957-60     | California Department of Water Resources.        |
| Truckee Canal....                                                           | At Derby Dam, near Wadsworth, Nev.....                                             | 1916-60     | Truckee-Carson Irrigation District               |
| Truckee River....                                                           | Near Myers, Calif.....                                                             | 1957-60     | Do.                                              |
| Walker River.....                                                           | Near Wabuska, Nev.....                                                             | 1902-8b/    | Walker River Irrigation District.                |
| Weber River.....                                                            | Below Wanship Dam, near Wanship, Utah, at former Geological Survey gaging station. | 1920-34b/   | Do.                                              |
| Do.....                                                                     | Below Echo Dam, at Echo, Utah, at former Geological Survey gaging station.         | 1950-55b/   | Weber River water commissioner.                  |
|                                                                             |                                                                                    | 1957-58b/   |                                                  |
|                                                                             |                                                                                    | 1958-60     | Do.                                              |
|                                                                             |                                                                                    | 1958-60     |                                                  |

a/ Monthly discharge records 1898-1950 are contained in WSP 1314.

b/ Published in water-supply papers by the Geological Survey.

## HYDROLOGIC CONDITIONS

Streamflow was generally below median to deficient over most of the area during the water year. In most of Nevada and in southern California and southern Utah streamflow was seriously deficient most of the time. Only in Oregon was streamflow not considered deficient during the last six months of the water year. In September the elevation of Great Salt Lake reached a new all-time low for the period of record which began in 1851. Floods from cloudburst-type storms were limited to small areas. Flood from Peterson Creek near Sigurd, Utah, developed rates of streamflow exceeding 1,000 cubic feet per second per square mile from 2.2 square miles.

Figure 2 on page 13, for which records of three long-term gaging stations were used, shows a comparison of the monthly and yearly mean discharges for the 1960 water year with the median discharge for the period 1931-60.

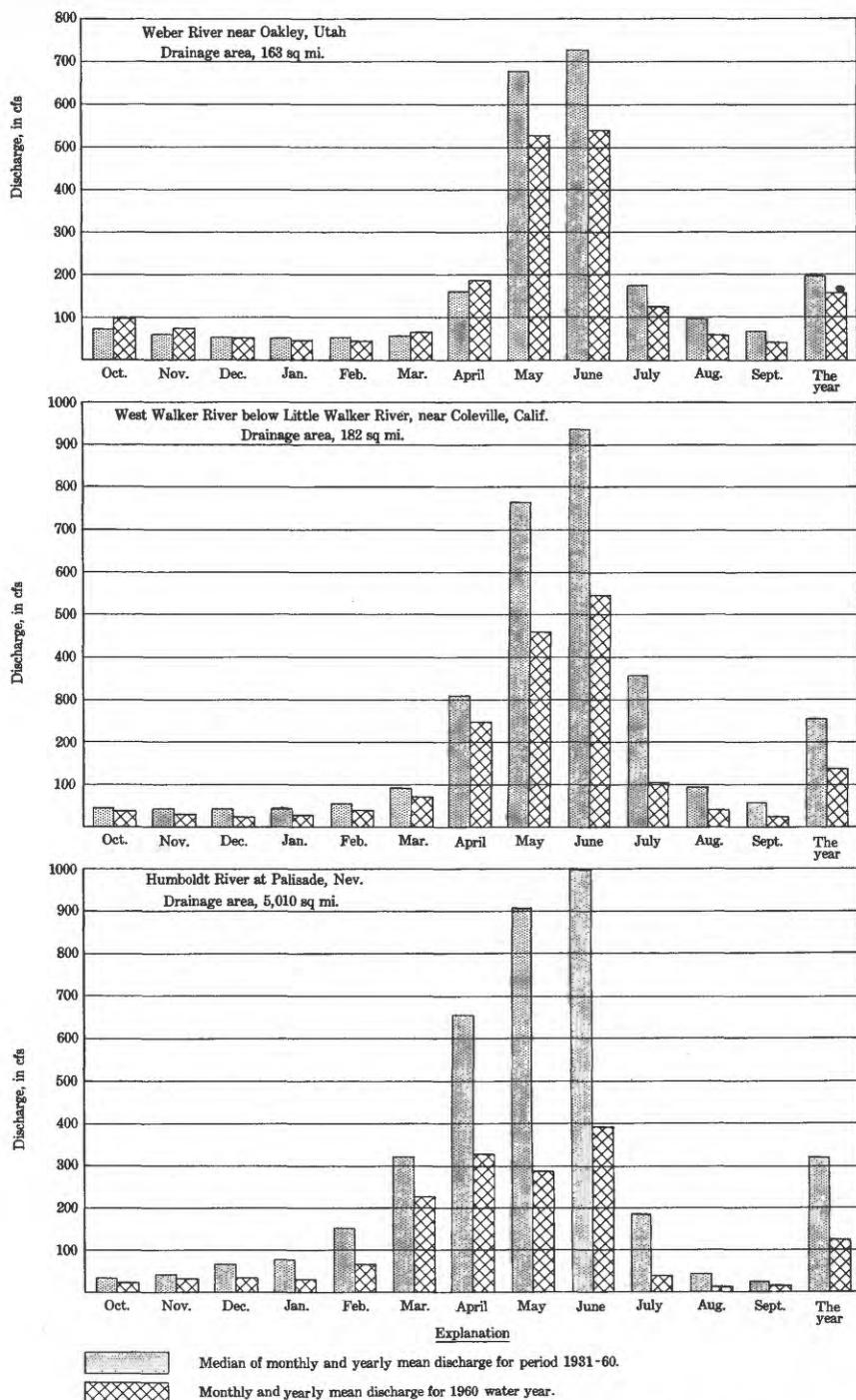


Figure 2. Comparison of discharge at three long-term representative gaging stations during 1960 water year with median discharge for period 1931-60.

## GAGING STATION RECORDS

## GREAT SALT LAKE BASIN

## 100. Great Salt Lake, Utah

Location.--Lat 40°44'05", long 112°12'45", in NW $\frac{1}{4}$  sec.17, T.1 S., R.3 W., at Salt Lake County Boat Harbor on southeast shore of lake, 17 miles west of Salt Lake City.

Records available.--September 1875 to December 1899, October 1902 to September 1960. Records for October 1902 to September 1912 and diagram showing fluctuations of lake from 1851-1950, published in WSP 1314.

Gage.--Water-stage recorder at Boat Harbor since October 1938 at datum 4,186.9 ft above mean sea level, datum of 1929. Prior to October 1938, staff gages at sites and datums as follows: September 1875 to October 1877 at Black Rock at datum 4,208.4 ft above mean sea level, November 1877 to November 1879 at Farmington Bay at datum 4,206.9 ft above mean sea level, November 1879 to April 1881 near Black Rock at datum 4,203.1 ft above mean sea level, April 1881 to December 1899 at Garfield Landing at datum 4,198.5 ft above mean sea level, and July 1903 to October 1938 at Saltair at datum 4,196.9 ft above mean sea level. Staff gage at Midlake October 1902 to September 1956 at datum 4,197.9 ft above mean sea level, datum of 1929.

Extremes.--Maximum elevation during year, 4,195.30 ft Apr. 1, 15, May 1, 15; minimum, 4,193.60 ft Sept. 15.

1875-99, 1902-60: Maximum elevation observed, 4,210.9 ft June 30, 1876; minimum, that of Sept. 15, 1960.

Maximum elevation since 1851, 4,211.6 ft in 1873, computed from traditional data of E. C. LaRue.

Remarks.--To compensate for wind effect and seiches, elevations given for the gage are taken from a mean slope line defined by several days' gage-height graph preceding and following 12:01 a.m. for the first and fifteenth of each month. Wind effects may cause substantial changes in elevations which are not shown in the published elevations.

Gage height and elevation, in feet, water year October 1899 to September 1960

| Day   |         | Gage height | Elevation |
|-------|---------|-------------|-----------|
| Oct.  | 1.....  | f7.60       | 4,194.50  |
|       | 15..... | 7.55        | 4,194.45  |
| Nov.  | 1.....  | 7.50        | 4,194.40  |
|       | 15..... | 7.40        | 4,194.30  |
| Dec.  | 1.....  | 7.40        | 4,194.30  |
|       | 15..... | 7.40        | 4,194.30  |
| Jan.  | 1.....  | f7.60       | 4,194.50  |
|       | 15..... | 7.65        | 4,194.55  |
| Feb.  | 1.....  | 7.75        | 4,194.65  |
|       | 15..... | 7.65        | 4,194.75  |
| Mar.  | 1.....  | 7.95        | 4,194.85  |
|       | 15..... | 8.25        | 4,195.15  |
| Apr.  | 1.....  | 8.40        | 4,195.30  |
|       | 15..... | 8.40        | 4,195.30  |
| May   | 1.....  | 8.40        | 4,195.30  |
|       | 15..... | 8.40        | 4,195.30  |
| June  | 1.....  | 8.25        | 4,195.15  |
|       | 15..... | 8.10        | 4,195.00  |
| July  | 1.....  | 7.65        | 4,194.75  |
|       | 15..... | 7.60        | 4,194.50  |
| Aug.  | 1.....  | 7.35        | 4,194.25  |
|       | 15..... | 7.10        | 4,194.00  |
| Sept. | 1.....  | 6.75        | 4,193.65  |
|       | 15..... | 6.70        | 4,193.60  |

f Fragmentary gage height.

## 105. Hilliard-East Fork Canal near State line, near Evanston, Wyo.

Location.--Lat 40°55', long 110°49', in NW $\frac{1}{4}$  sec.16, T.2 N., R.10 E., in Utah, on left bank 300 ft downstream from road bridge, three-quarters of a mile downstream from head, and 25 miles south (revised) of Evanston.

Records available.--November 1941 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 8,500 ft (from topographic map).

Average discharge.--18 years (1942-60), 5.15 cfs (3,730 acre-ft per year).

Extremes.--1941-60: Maximum daily discharge, 42 cfs June 15, 1956, June 16-19, 1960; no flow during winter and at other times each year except 1958.

Remarks.--Records good except those for periods of ice effect, which are fair. Canal diverts from East Fork Bear River for irrigation of about 2,600 acres in Filliard Flat area in Wyoming.

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                                                      | 6.8  | b0.5  | (*)  |      |      |      |      | 0    | *32   | 27    | 3.4  | 3.7   |
| 2                                                      | 5.4  |       |      |      |      |      |      | 0    | 33    | 27    | 3.2  | 3.6   |
| 3                                                      | .3   |       |      |      |      |      |      | *0   | 34    | 27    | 3.2  | 4.3   |
| 4                                                      | 4.4  |       |      |      |      |      |      | 0    | 31    | 27    | 3.2  | 6.6   |
| 5                                                      | 7.1  |       |      |      |      |      |      | 0    | 30    | 14    | 1.5  | 6.4   |
| 6                                                      | 2.8  |       |      |      |      |      |      | 0    | 30    | .6    | .8   | 6.4   |
| 7                                                      | .8   |       |      |      |      |      |      | 0    | 30    | 2.9   | 1.4  | 6.4   |
| 8                                                      | .8   |       |      |      |      |      |      | 0    | 29    | 7.5   | 4.3  | 4.3   |
| 9                                                      | .4   |       |      |      |      |      |      | 0    | 29    | 7.5   | 4.2  | 5.5   |
| 10                                                     | **4  |       |      |      |      |      |      | 0    | 28    | 7.5   | 1.2  | 6.4   |
| 11                                                     | .6   |       |      |      |      |      |      | 0    | 28    | 3.6   | .6   | 6.4   |
| 12                                                     | .8   |       |      |      |      |      | (*)  | 0    | 29    | .5    | 2.0  | 5.7   |
| 13                                                     | .8   |       |      |      |      |      |      | 0    | *30   | .4    | 4.2  | 5.7   |
| 14                                                     | .8   |       |      |      |      |      |      | 0    | 21    | 1.1   | 4.5  | 5.5   |
| 15                                                     | .8   |       |      |      |      |      |      | 0    | 34    | 3.9   | 1.9  | 5.4   |
| 16                                                     | .6   | 0     |      |      |      |      |      | 0    | 42    | 3.9   | 3.6  | 5.4   |
| 17                                                     | b.6  | 0     |      |      |      |      |      | *0   | 42    | 3.7   | 2.7  | 5.4   |
| 18                                                     | b.6  | 0     |      |      |      |      |      | 0    | 42    | 3.7   | 1.8  | 5.5   |
| 19                                                     | b.8  | 0     |      |      |      |      |      | 0    | 42    | 3.7   | 1.4  | 5.5   |
| 20                                                     | b.7  | 0     |      |      |      |      |      | 0    | *40   | 12    | 1.8  | 5.5   |
| 21                                                     | b.8  | 0     |      |      |      |      |      | *0   | 40    | *19   | 1.5  | 5.5   |
| 22                                                     | .8   | 0     |      |      |      |      |      | 10   | *35   | 19    | 1.4  | 5.9   |
| 23                                                     | .8   | 0     |      |      |      |      |      | 11   | 30    | 21    | 1.4  | 5.9   |
| 24                                                     | .8   | 0     |      |      |      |      |      | *18  | 29    | 21    | 1.4  | 5.9   |
| 25                                                     | .7   | 0     |      |      |      |      |      | 18   | 28    | 22    | *1.3 | 5.7   |
| 26                                                     | b.7  | 0     |      |      |      |      |      | 18   | 28    | 21    | 1.2  | 5.7   |
| 27                                                     | b.7  | 0     |      |      |      |      |      | 18   | 28    | 21    | 1.2  | 5.7   |
| 28                                                     | **7  | 0     |      |      |      |      | (*)  | 23   | 28    | 20    | 1.1  | 5.7   |
| 29                                                     | b.7  | 0     |      |      |      |      |      | 29   | 28    | 19    | 1.1  | 5.7   |
| 30                                                     | b.7  | 0     |      |      |      |      |      | 30   | 27    | 20    | 3.5  | 5.7   |
| 31                                                     | b.7  | ----- |      |      |      |      |      | *30  | ----- | 15    | 5.9  | ----- |
| Total                                                  | 42.4 | 7.5   | 0    | 0    | 0    | 0    | 0    | 205  | 957   | 402.5 | 71.9 | 167.0 |
| Mean                                                   | 1.37 | 0.25  | 0    | 0    | 0    | 0    | 0    | 6.81 | 31.9  | 15.0  | 2.32 | 5.57  |
| Ac-ft                                                  | 84   | 15    | 0    | 0    | 0    | 0    | 0    | 407  | 1,900 | 798   | 143  | 331   |
| Calendar year 1959: Max 33 Min 0 Mean 6.96 Ac-ft 5,040 |      |       |      |      |      |      |      |      |       |       |      |       |
| Water year 1959-60: Max 42 Min 0 Mean 5.06 Ac-ft 3,680 |      |       |      |      |      |      |      |      |       |       |      |       |

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

\*\* Field estimate made on this day.

b Stage-discharge relation affected by ice.

## 115. Bear River near Utah-Wyoming State line

Location.--Lat 40°58', long 110°51', in SE $\frac{1}{4}$  sec.30, T.3 N., R.10 E., on left bank just downstream from West Fork, 2.8 miles upstream from Utah-Wyoming State line.

Drainage area.--176 sq mi.

Records available.--July 1942 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 7,965 ft (from river-profile map).

Average discharge.--18 years, 185 cfs (133,900 acre-ft per year).

Extremes.--Maximum discharge during year, 1,490 cfs June 3 (gage height, 2.28 ft); minimum not determined, occurred during period when intake was frozen.

1942-60: Maximum discharge, 2,800 cfs June 6, 1957 (gage height, 4.27 ft); minimum determined, 16 cfs Apr. 11, 1951, Nov. 5, 1954, Nov. 1, 1955, Oct. 30, 1956.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Two diversions above station for irrigation of about 800 acres above and 2,600 acres below station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |       |
|-----|-----|-----|-------|
| 0.6 | 22  | 1.8 | 512   |
| .8  | 36  | 2.2 | 550   |
| 1.0 | 59  | 2.7 | 945   |
| 1.2 | 96  | 3.0 | 1,240 |
| 1.5 | 183 |     |       |

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     | 58    | 92    | *b38  | 21    | 36    | b30   | 44    | 123    | *919   | 210   | 74    | 32    |
| 2     | 56    | 90    | b38   | 19    | 36    | b31   | 44    | 134    | 1,110  | 137   | 61    | 42    |
| 3     | 56    | 88    | b38   | 18    | 38    | 32    | 44    | *134   | 1,180  | 199   | 54    | 38    |
| 4     | 61    | 82    | b30   | 21    | b31   | 32    | 52    | 137    | 1,140  | 195   | 50    | 38    |
| 5     | 64    | 68    | b28   | 25    | b32   | 32    | 69    | 129    | 1,010  | 187   | 47    | 34    |
| 6     | 73    | 71    | b31   | 29    | 33    | 32    | 94    | 134    | 1,000  | 199   | 46    | 33    |
| 7     | 86    | 86    | b32   | 32    | 33    | 32    | 106   | 180    | *928   | 195   | 46    | 35    |
| 8     | 71    | 76    | b34   | 36    | 33    | *33   | 118   | 239    | 919    | 166   | 42    | 31    |
| 9     | 84    | 74    | b33   | 39    | *34   | 34    | 149   | 322    | 858    | 152   | 40    | 29    |
| 10    | 113   | 73    | b31   | 40    | 34    | b34   | 176   | 433    | 704    | 149   | 42    | 27    |
| 11    | 96    | 69    | b30   | 39    | 34    | b34   | 191   | 607    | 688    | 149   | 42    | 27    |
| 12    | 98    | 68    | b30   | *38   | b34   | 35    | *187  | 850    | 688    | 137   | 40    | 29    |
| 13    | 88    | 54    | b30   | 38    | b32   | 32    | 156   | 983    | 728    | 132   | 38    | 27    |
| 14    | 84    | 42    | b27   | 36    | b35   | 33    | 163   | 884    | 720    | 123   | 36    | 28    |
| 15    | 84    | 59    | b24   | 34    | b34   | b34   | 152   | 767    | 681    | 117   | 36    | 27    |
| 16    | 86    | 58    | b23   | 31    |       | b35   | 143   | 728    | 628    | 103   | 36    | 27    |
| 17    | 80    | 54    | b25   | 27    |       | b35   | 118   | *696   | 644    | 96    | 38    | 30    |
| 18    | 80    | 56    |       | 25    |       | b36   | 132   | 593    | 621    | 92    | 38    | 30    |
| 19    | 84    | 55    |       | 25    |       | 36    | 140   | 464    | 593    | 92    | 36    | 27    |
| 20    | 80    | 51    |       | 31    |       | 36    | 134   | 392    | *543   | 84    | 35    | 26    |
| 21    | 78    | 50    |       | 34    | b34   | 38    | 218   | 392    | 446    | *74   | 32    | 25    |
| 22    | 78    | 52    | 26    | 35    | b34   | 40    | 288   | 483    | 375    | 71    | 35    | 29    |
| 23    | 90    | 58    |       | 36    | b33   | 42    | 256   | 543    | 354    | 63    | 47    | 33    |
| 24    | 115   | 58    |       | 37    | b31   | 44    | 199   | 421    | 312    | 62    | 40    | 30    |
| 25    | 115   | 54    |       | 38    | b30   | 46    | 169   | 458    | 298    | 59    | *38   | 27    |
| 26    | 115   | b36   | 21    | 39    | b30   | 54    | 152   | 471    | 270    | 52    | 36    | 26    |
| 27    | 115   | b43   | 20    | 39    | b30   | 62    | 140   | 543    | 261    | 51    | 35    | 25    |
| 28    | *146  | b41   | 21    | *37   | b30   | 59    | 134   | 477    | 248    | 50    | 33    | 24    |
| 29    | 108   | b40   | 22    | b33   | b30   | *48   | 129   | 614    | 235    | 47    | 33    | 24    |
| 30    | 103   | b39   | 23    | b31   | ----- | 48    | 118   | 751    | 222    | 52    | 30    | 26    |
| 31    | 88    | ----- | 22    | b31   | ----- | 46    | ----- | 775    | -----  | 63    | 27    | ----- |
| Total | 2,733 | 1,837 | 859   | 994   | 959   | 1,195 | 4,215 | 14,857 | 19,323 | 3,612 | 1,263 | 882   |
| Mean  | 88.2  | 61.2  | 27.7  | 32.1  | 35.1  | 38.5  | 140   | 479    | 644    | 117   | 40.7  | 29.4  |
| Ac-ft | 5,420 | 3,640 | 1,700 | 1,970 | 1,900 | 2,370 | 8,360 | 29,470 | 38,330 | 7,167 | 2,510 | 1,750 |

Calendar year 1959: Max 1,410 Min 20 Mean 163 Ac-ft 117,700  
 Water year 1959-60: Max 1,180 Min 18 Mean 144 Ac-ft 104,600

Peak discharge (base, 1,100 cfs).--June 3 (1:30 a.m.) 1,490 cfs (3.28 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Dec. 18 to Jan. 28 (stage-discharge relation affected by ice most of period); discharge estimated on basis of 2 discharge measurements, weather records, and records for other Bear River stations.

## 120. Mill Creek at Utah-Wyoming State line

Location.--Lat 40°59'30", long 110°50'30", in W½ sec.17, T.3 N., R.10 E., in Utah, on right bank 2,000 ft upstream from State line and 19½ miles south (revised) of Evanston, Wyo.

Drainage area.--59 sq mi, approximately.

Records available.--October 1949 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 7,860 ft (from river-profile map).

Average discharge.--11 years, 32.9 cfs (23,820 acre-ft per year).

Extremes.--Maximum discharge during year, 377 cfs May 12 (gage height, 3.22 ft); minimum, 2.0 cfs Aug. 22.  
1949-60; Maximum discharge, 690 cfs June 7, 1957 (gage height, 4.39 ft); minimum, 0.9 cfs Nov. 11, 1951, result of freezeup.

Remarks.--Records good except those for periods of ice effect, which are fair. Three small diversions for irrigation of hay meadows above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.3 | 1.4 | 1.3 | 50  |
| .5  | 4.1 | 1.6 | 86  |
| .6  | 6.2 | 2.0 | 143 |
| .8  | 13  | 2.4 | 213 |
| 1.0 | 24  | 2.7 | 270 |

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     | 12   | 12    | *7.6  | b6    | 8.2   | 7.3   | 12    | 36    | *156  | 15    | 8.7   | 4.5   |
| 2     | 11   | 12    | 7.3   |       | 8.2   | 7.3   | 12    | 43    | 183   | 15    | 6.0   | 5.4   |
| 3     | 11   | 12    | 7.3   |       | 7.9   | 7.3   | 12    | *42   | 198   | 15    | 4.9   | 5.2   |
| 4     | 10   | 12    | 5.6   |       | 7.6   | 7.6   | 18    | 40    | 189   | 17    | 5.6   | 5.8   |
| 5     | 14   | 12    | 5.4   | b8    | 7.3   | 7.3   | 30    | 37    | 159   | 16    | 5.6   | 5.2   |
| 6     | 15   | b11   | 5.8   |       | 7.3   | 8.7   | 48    | 44    | 146   | 13    | 5.4   | 7.3   |
| 7     | 18   | 13    | 6.5   |       | 7.3   | 8.2   | 54    | 59    | 149   | 13    | 4.5   | 6.2   |
| 8     | 14   | 13    | 6.5   |       | 7.3   | *8.7  | 59    | 82    | 149   | 15    | 4.9   | 5.4   |
| 9     | 17   | 14    | 6.5   | b6    | *8.4  | 8.2   | 77    | 116   | 125   | 11    | 4.5   | 4.7   |
| 10    | 22   | 13    | 7.0   |       | 9.0   | 7.6   | 87    | 157   | 109   | 11    | 4.7   | 4.7   |
| 11    | 18   | 13    | 7.0   | 7.9   | 8.4   | 8.2   | 90    | 204   | 100   | 11    | 4.3   | 4.5   |
| 12    | 19   | 11    | 6.5   | *7.3  | 7.6   | 8.2   | *67   | 259   | 92    | 10    | 4.1   | 4.5   |
| 13    | 16   | 8.2   | 6.0   | 7.0   | 7.9   | 7.6   | 47    | 251   | 82    | 9.4   | 4.0   | 4.5   |
| 14    | 15   | b7.5  | 6.2   | 7.3   | 7.9   | 8.2   | 48    | 192   | 73    | 9.0   | 4.0   | 4.5   |
| 15    | 14   | 8.2   | b6.5  | 7.6   | 7.9   | 8.7   | 44    | 162   | 65    | 8.7   | 3.8   | 3.0   |
| 16    | 15   | 7.9   | b6    | b6    | 7.9   | 8.4   | 38    | 159   | 57    | 8.2   | 3.8   | 3.2   |
| 17    | 14   | 6.8   |       |       | 7.9   | 8.2   | 34    | *154  | 53    | 7.6   | 4.5   | 4.3   |
| 18    | 13   | 7.9   |       |       |       | 7.6   | 33    | 137   | 52    | 7.3   | 4.3   | 4.7   |
| 19    | 13   | 7.3   |       |       |       | 8.2   | 36    | 105   | 45    | 7.3   | 4.3   | 4.7   |
| 20    | 13   | 6.5   | b6    | b7    | b8    | 12    | 38    | 91    | 38    | 6.5   | 4.1   | 4.5   |
| 21    | 12   | 7.6   |       |       |       | 16    | 82    | 112   | *34   | 6.8   | 2.8   | 4.5   |
| 22    | 12   | 7.6   |       |       |       | 23    | 112   | 143   | 51    | *7.3  | 2.4   | 5.4   |
| 23    | 13   | b7.5  |       |       |       | 23    | 92    | 137   | 30    | 6.8   | 5.2   | 6.0   |
| 24    | 18   | b7.5  | b6    | b7    | b8    | 24    | 61    | 105   | 30    | 6.2   | 5.2   | 6.0   |
| 25    | 17   | b7.5  |       |       |       | 22    | 47    | 113   | 26    | 5.8   | *5.2  | 5.8   |
| 26    | 16   | b7.5  | b6    | b8    | b8    | 7.9   | 24    | 38    | 109   | 24    | 5.6   | 4.7   |
| 27    | 15   | 6.8   |       |       |       | 7.6   | 28    | 33    | 119   | 20    | 5.6   | 3.6   |
| 28    | *20  | 7.6   |       |       |       | 7.3   | 26    | 33    | 109   | 15    | 5.6   | 3.8   |
| 29    | 15   | 7.0   |       |       |       | 8.7   | *19   | 33    | 124   | 14    | 5.4   | 4.0   |
| 30    | 12   | 7.0   | b6    | b7    | b8    | 9.0   | 15    | 30    | 118   | 15    | 5.8   | 4.0   |
| 31    | 12   | ----- |       |       |       | 8.7   | 14    | ----- | 126   | ----- | 4.3   | ----- |
| Total | 456  | 281.9 | 193.7 | 222.5 | 228.1 | 397.5 | 1,445 | 3,685 | 2,450 | 298.9 | 141.2 | 151.5 |
| Mean  | 14.7 | 9.40  | 6.25  | 7.18  | 7.87  | 12.8  | 48.2  | 119   | 81.7  | 9.64  | 4.55  | 5.05  |
| Ac-ft | 904  | 559   | 384   | 441   | 452   | 788   | 2,870 | 7,310 | 4,860 | 593   | 280   | 300   |

Calendar year 1959: Max 268 Min 4.0 Mean 29.0 Ac-ft 21,020

Water year 1959-60: Max 259 Min 2.4 Mean 27.2 Ac-ft 19,740

Peak discharge (base, 250 cfs).--May 12 (10 p.m.) 377 cfs (3.22 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## BEAR RIVER BASIN

157. Sulphur Creek above reservoir, near Evanston, Wyo.

Location.--Lat 41°09', long 110°48', in SW $\frac{1}{4}$  sec.35, T.14 N., R.119 W., on right bank  $\frac{1}{12}$  miles downstream from Willow Creek,  $\frac{2}{12}$  miles upstream from Sulphur Creek Dam, and  $\frac{1}{12}$  miles southeast of Evanston.

Drainage area.--64 sq mi, approximately.

Records available.--December 1957 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 7,170 ft (from river-profile map).

Extremes.--Maximum discharge during year, 499 cfs Mar. 26 (gage height, 4.83 ft); no flow Aug. 15 to Sept. 21.  
1957-60: Maximum discharge, 560 cfs Apr. 18, 1958 (gage height, 5.07 ft), from rating curve extended above 100 cfs by logarithmic plotting; no flow at times in each year.

Remarks.--Records good except those for period of ice effect, which are fair.

Rating table, water year 1959-60, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used July 19 to Aug. 24)

|     |    |     |     |     |     |
|-----|----|-----|-----|-----|-----|
| 1.3 | 0  | 1.7 | 2.0 | 2.6 | 42  |
| 1.4 | .1 | 1.8 | 4.1 | 3.0 | 83  |
| 1.5 | .3 | 2.0 | 9.9 | 3.4 | 142 |
| 1.6 | .6 | 2.3 | 22  | 3.8 | 219 |

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     | 0.4  | 0.5   | *0.5 |      |      | 2     | 18    | 9.3   | 14    | 2.2  | 0.4  | 0     |
| 2     | .4   | .6    | .5   |      |      | 2     | 17    | 8.0   | *16   | 2.0  | .3   | 0     |
| 3     | .4   | .6    | .5   |      |      | 2     | 27    | *10   | 15    | 2.0  | .3   | 0     |
| 4     | .4   | .6    | .4   |      |      | 2     | 35    | 16    | 15    | 1.7  | .3   | 0     |
| 5     | .4   | .5    | .3   |      |      | 5     | 37    | 24    | 15    | 1.0  | .3   | 0     |
| 6     | .4   | .5    | .4   |      |      | 8     | 39    | 21    | 16    | 1.0  | .2   | 0     |
| 7     | .5   | .5    | .5   |      |      | 8     | 28    | 12    | 24    | 1.2  | .2   | 0     |
| 8     | .4   | .5    | .4   |      |      | **8   | 24    | 11    | 42    | 1.4  | .2   | 0     |
| 9     | .5   | .5    | .4   |      | (*)  | 8     | 20    | 15    | 25    | 1.4  | .2   | 0     |
| 10    | .5   | .5    | .5   |      |      | 6     | 16    | 22    | 28    | 1.4  | .2   | 0     |
| 11    | .5   | .5    | .6   |      |      |       | 12    | 29    | 17    | 1.0  | .2   | 0     |
| 12    | .4   | .5    | .5   | (*)  |      |       | *12   | 37    | 13    | .6   | .2   | 0     |
| 13    | .4   | .5    | .6   |      |      |       | 9.9   | 42    | 11    | .6   | .1   | 0     |
| 14    | .4   | .4    |      |      |      |       | 9.3   | 30    | 9.9   | .6   | .1   | 0     |
| 15    | .4   | .4    |      |      |      | 4     | 7.7   | 21    | 9.6   | .5   | 0    | 0     |
| 16    | .4   | .4    |      | 1.5  |      |       | 6.8   | 14    | 12    | .4   | 0    | 0     |
| 17    | .4   | .4    |      |      |      |       | 6.8   | 15    | 9.6   | .4   | 0    | 0     |
| 18    | .5   | .5    |      |      |      |       | 6.3   | 20    | 15    | .4   | 0    | 0     |
| 19    | .5   | .5    |      |      |      | 16    | 7.4   | 26    | 11    | .4   | 0    | 0     |
| 20    | .5   | .4    |      |      |      | 25    | 8.4   | 19    | 12    | .4   | 0    | 0     |
| 21    | .5   | .4    |      |      |      | 50    | 6.5   | 13    | *9.0  | *.4  | 0    | 0     |
| 22    | .5   | .5    | .5   |      |      | 100   | 6.0   | 13    | 11    | .4   | 0    | .1    |
| 23    | .5   | .5    |      |      |      | 100   | 8.4   | 16    | 9.9   | .4   | 0    | .3    |
| 24    | .5   | .6    |      |      |      | *100  | 9.0   | 15    | 13    | .4   | 0    | .2    |
| 25    | .5   | .5    |      |      |      | 150   | 10    | 12    | 9.3   | .4   | *0   | .2    |
| 26    | *.5  | .5    |      |      |      | 208   | 12    | 13    | 7.7   | .4   | 0    | .2    |
| 27    | .6   | .4    |      |      |      | 208   | 19    | 17    | 5.2   | .4   | 0    | .2    |
| 28    | .7   | .5    |      |      |      | *31   | 21    | 21    | 3.5   | .4   | 0    | .2    |
| 29    | .7   | .4    |      |      |      | *39   | 17    | 18    | 2.6   | .4   | 0    | .2    |
| 30    | .6   | .5    |      |      |      | 35    | 15    | 18    | 2.2   | .4   | 0    | .2    |
| 31    | .5   | ----- |      |      |      | 24    | ----- | 17    | ----- | .4   | 0    | ----- |
| Total | 14.8 | 14.6  | 15.1 | 46.5 | 58   | 1,219 | 469.5 | 574.3 | 403.5 | 25.0 | 3.2  | 1.8   |
| Mean  | 0.48 | 0.49  | 0.49 | 1.5  | 2    | 39.3  | 15.8  | 18.5  | 13.4  | 0.81 | 0.10 | 0.06  |
| Ac-ft | 29   | 29    | 30   | 92   | 115  | 2,420 | 931   | 1,140 | 800   | 50   | 6.3  | 5.6   |

Calendar year 1959: Max 235 Min 0 Mean 7.02 Ac-ft 5,080  
Water year 1959-60: Max 208 Min 0 Mean 7.77 Ac-ft 5,650

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

\*\* Field estimate made on this day.

Note.--Stage-discharge relation affected by ice Dec. 14 to Mar. 25.

## 159. Sulphur Creek below reservoir, near Evanston, Wyo.

Location.--Lat 41°09', long 110°49', in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.28, T.14 N., R.119 W., on left bank 6.3 miles upstream from mouth and 10 $\frac{1}{2}$  miles southeast of Evanston.

Drainage area.--68 sq mi, approximately.

Records available.--March 1958 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 7,110 ft (from river-profile map).

Extremes.--Maximum discharge during year, 79 cfs June 9 (gage height, 2.77 ft); maximum gage height, 2.82 ft July 31; no flow Jan. 31 to Mar. 7, Mar. 9-29.

1958-60: Maximum discharge, 164 cfs June 29, 1959 (gage height, 3.67 ft); no flow at times in each year.

Remarks.--Records good. Flow regulated by Sulphur Creek reservoir (capacity, 4,600 acre-ft) completed December 1957.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used July 14 to Sept. 30)

|     |     |     |     |     |    |
|-----|-----|-----|-----|-----|----|
| 1.0 | 0   | 1.4 | 2.0 | 2.0 | 21 |
| 1.1 | .1  | 1.5 | 3.7 | 2.4 | 46 |
| 1.2 | .4  | 1.6 | 6.2 | 2.8 | 80 |
| 1.3 | 1.0 | 1.8 | 13  |     |    |

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                       | 0.2  | 3.4   | 3.0  | 2.2  |       | 0     | 24        | 4.2         | 24    | 12    | 29    | 22    |
| 2                       | .2   | 3.4   | *3.0 | 2.2  |       | 0     | 31        | 4.4         | *26   | 12    | 13    | 24    |
| 3                       | .2   | 3.4   | 3.0  | 2.2  |       | 0     | 31        | *4.4        | 27    | 12    | 14    | 26    |
| 4                       | .1   | 3.4   | 3.0  | 2.2  |       | 0     | 31        | 4.4         | 26    | 12    | 14    | 27    |
| 5                       | .1   | 3.4   | 3.0  | 2.2  |       | 0     | 31        | 4.4         | 27    | *13   | 15    | 27    |
| 6                       | .1   | 3.4   | 3.0  | 2.2  |       | 0     | 31        | 4.4         | 27    | 15    | 16    | 19    |
| 7                       | .1   | 3.4   | 3.2  | 2.3  |       | 0     | 31        | 4.4         | 27    | 24    | 16    | 7.8   |
| 8                       | .1   | 3.4   | 3.2  | 2.2  |       | ** .2 | 31        | 5.4         | 45    | 40    | 17    | 8.1   |
| 9                       | .1   | 3.4   | 3.2  | 2.2  | (*)   | 0     | 31        | 14          | 70    | 49    | 15    | 7.8   |
| 10                      | .1   | 3.4   | 3.2  | 2.2  |       | 0     | 31        | 14          | 77    | 48    | 13    | 7.8   |
| 11                      | .1   | 3.4   | 3.2  | 2.2  |       | 0     | 31        | 20          | 66    | 50    | 13    | 7.8   |
| 12                      | .5   | 3.4   | 3.2  | *2.2 |       | 0     | *31       | 35          | 57    | 52    | 12    | 7.8   |
| 13                      | 3.4  | 3.4   | 3.2  | 2.2  |       | 0     | 31        | 38          | 48    | 54    | 13    | 5.4   |
| 14                      | 3.4  | 3.2   | 3.2  | 2.2  |       | 0     | 31        | 51          | 20    | 60    | 13    | 3.7   |
| 15                      | 3.4  | 3.5   | 2.5  | 2.2  |       | 0     | 31        | 51          | 20    | 61    | 16    | 4.4   |
| 16                      | 3.2  | 3.4   | 2.0  | 2.2  |       | 0     | 19        | 50          | 17    | 58    | 19    | 5.7   |
| 17                      | 3.2  | 3.4   | 2.0  | 2.3  |       | 0     | 10        | 24          | 10    | 57    | 18    | 5.7   |
| 18                      | 3.2  | 3.4   | 2.0  | 2.3  |       | 0     | 7.2       | 8.1         | 10    | 56    | 16    | 6.0   |
| 19                      | 3.2  | 3.0   | 2.2  | 2.3  |       | 0     | 4.4       | 8.1         | 10    | 48    | 16    | 5.7   |
| 20                      | 3.2  | 3.0   | 2.2  | 2.3  |       | 0     | 4.7       | 8.1         | 10    | 40    | 15    | 5.7   |
| 21                      | 3.2  | 3.0   | 2.2  | 2.3  |       | 0     | 4.4       | 8.1         | *10   | *47   | 15    | 6.0   |
| 22                      | 3.2  | 3.0   | 2.2  | 2.2  |       | 0     | 4.4       | 5.7         | 12    | 60    | 11    | 6.0   |
| 23                      | 3.4  | 3.0   | 2.2  | 1.8  |       | 0     | 4.2       | 4.0         | 18    | 66    | 6.5   | 6.2   |
| 24                      | 3.4  | 3.0   | 2.2  | 1.2  |       | 0     | 4.4       | 4.0         | 18    | 66    | 6.2   | 6.2   |
| 25                      | 3.4  | 3.2   | 2.3  | .8   |       | 0     | 4.4       | 3.7         | 18    | 66    | *5.4  | 6.2   |
| 26                      | 3.2  | 3.0   | 2.3  | .5   |       | 0     | 4.4       | 4.0         | 18    | 64    | 12    | 6.5   |
| 27                      | 3.2  | 3.0   | 2.3  | .2   |       | 0     | 4.4       | 4.2         | 18    | 62    | 22    | 6.5   |
| 28                      | *3.4 | 3.0   | 2.2  | .1   |       | 0     | 4.4       | 4.2         | 18    | 64    | 26    | 6.5   |
| 29                      | 3.4  | 3.0   | 2.2  | .1   |       | *0    | 4.2       | 5.7         | 18    | 67    | 24    | 6.8   |
| 30                      | 3.4  | 3.0   | 2.0  | .1   | ----- | 10    | 4.2       | 16          | 16    | 66    | 24    | 6.8   |
| 31                      | 3.4  | ----- | 2.0  | 0    | ----- | 22    | -----     | 22          | ----- | 59    | 23    | ----- |
| Total                   | 64.7 | 97.3  | 80.6 | 53.8 | 0     | 32.2  | 546.7     | 438.9       | 808   | 1,460 | 488.1 | 300.1 |
| Mean                    | 2.09 | 3.24  | 2.60 | 1.74 | 0     | 1.04  | 18.2      | 14.2        | 26.9  | 47.1  | 15.7  | 10.0  |
| Ac-ft                   | 128  | 193   | 160  | 107  | 0     | 64    | 1,080     | 871         | 1,500 | 2,900 | 968   | 595   |
| Calendar year 1959: Max | 140  |       |      |      | Min 0 |       | Mean 8.50 | Ac-ft 6,150 |       |       |       |       |
| Water year 1959-60: Max | 77   |       |      |      | Min 0 |       | Mean 11.9 | Ac-ft 8,670 |       |       |       |       |

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

\*\* Field estimate made on this day.

## BEAR RIVER BASIN

## 170. Yellow Creek near Evanston, Wyo.

Location.--Lat 41°09', long 111°03', in SW $\frac{1}{4}$  sec. 21, T.5 N., R.8 E., in Utah, on left bank 600 ft downstream from Sage Creek,  $\frac{1}{2}$  miles upstream from Coyote Creek, and  $\frac{3}{4}$  miles southwest of Evanston.

Drainage area.--80 sq mi, approximately.

Records available.--October 1944 to September 1945, October 1949 to September 1960. Records for February 1943 to September 1944 at site  $\frac{1}{2}$  miles downstream not equivalent, but would be equivalent by adding flow of Wright No. 2 and Cook Canals, in reports on Bear River Hydrometric Data, 1944 (Geological Survey openfile report).

Gage.--Water-stage recorder. Altitude of gage is 6,920 ft (from river-profile map). Oct. 1, 1944, to Sept. 30, 1945, at site 500 ft upstream, at different datums.

Average discharge.--12 years (1944-45, 1949-60), 9.32 cfs (6,750 acre-ft per year).

Extremes.--Maximum discharge during year, 305 cfs Mar. 23 (gage height, 6.47 ft); no flow for most of year.  
1944-45, 1949-60: Maximum discharge, 477 cfs Apr. 28, 1952 (gage height, 7.04 ft); no flow at times.

Remarks.--Records good. One small diversion for irrigation of hay meadows above station. Flow regulated by Barker Reservoir (capacity, 162 acre-ft) completed in fall of 1959.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.2 | 0   | 1.1 | 22  |
| .3  | .1  | 1.5 | 32  |
| .4  | .3  | 2.0 | 42  |
| .5  | .8  | 3.0 | 65  |
| .6  | 2.1 | 4.0 | 88  |
| .8  | 7.2 | 5.0 | 130 |
| .9  | 11  | 6.0 | 216 |

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     | 21    | 8.3   | 9.5   | 0.4  |      |       |
| 2     |      |      |      |      |      | 0     | 16    | 8.0   | *8.3  | .2   |      |       |
| 3     |      |      |      |      |      | 0     | 7.2   | 8.3   | 5.7   | .8   |      |       |
| 4     |      |      |      |      |      | 0     | .8    | *9.9  | 4.0   | .4   |      |       |
| 5     |      |      |      |      |      | 0     | 6.0   | 14    | 5.2   | .4   |      |       |
| 6     |      |      |      |      |      | 0     | 22    | 14    | 2.5   | .4   |      |       |
| 7     |      |      |      |      |      | 0     | 22    | 12    | 2.0   | .3   |      |       |
| 8     |      |      |      |      |      | 1.0   | 18    | 15    | 1.8   | .8   |      |       |
| 9     |      |      |      |      |      | **7.0 | 12    | 23    | 1.6   | .4   |      |       |
| 10    |      |      |      |      |      | 10    | 10    | 29    | 1.4   | .2   |      |       |
| 11    |      |      |      |      |      | 15    | 8.0   | 34    | .9    | 0    |      |       |
| 12    |      |      |      |      |      | 4.0   | 6.6   | 40    | .8    | 0    |      |       |
| 13    |      |      |      |      |      | 2.0   | *5.4  | 46    | .7    | .3   |      |       |
| 14    |      |      |      |      |      | 1.6   | 5.7   | 42    | .6    | .4   |      |       |
| 15    |      |      |      |      |      | 1.1   | 5.7   | 34    | .8    | .5   |      |       |
| 16    |      |      |      |      |      | .9    | 4.5   | 28    | .6    | 2.0  |      |       |
| 17    |      |      |      |      |      | .9    | .5    | 27    | 1.2   | 2.0  |      |       |
| 18    |      |      |      |      |      | .9    | .2    | 28    | 1.1   | 2.3  |      |       |
| 19    |      |      |      |      |      | 1.7   | .1    | 28    | 1.4   | 2.5  |      |       |
| 20    |      |      |      |      |      | 17    | .1    | 24    | 1.4   | 2.5  |      |       |
| 21    |      |      |      |      |      | 28    | 0     | 22    | *2.3  | 2.0  |      |       |
| 22    |      |      |      |      |      | 52    | .1    | 23    | 2.9   | *1.1 |      |       |
| 23    |      |      |      |      |      | 179   | 0     | 23    | 2.7   | .9   |      |       |
| 24    |      |      |      |      |      | *130  | 9.9   | 20    | 2.5   | .8   |      |       |
| 25    |      |      |      |      |      | *99   | 9.1   | 16    | 2.3   | 0    | (*)  |       |
| 26    |      |      |      |      |      | 103   | 8.7   | 15    | 2.3   | 0    |      |       |
| 27    |      |      |      |      |      | 124   | 8.7   | 14    | 2.1   | 0    |      |       |
| 28    | (*)  |      |      |      |      | 91    | 8.7   | 14    | 2.1   | 0    |      |       |
| 29    |      |      |      |      |      | *60   | 9.1   | 15    | 2.0   | 0    |      |       |
| 30    |      |      |      |      |      | 33    | 8.7   | 12    | 1.6   | 0    |      |       |
| 31    |      |      |      |      |      | 24    | ----- | 11    | ----- | 0    |      |       |
| Total | 0    | 0    | 0    | 0    | 0    | 986.1 | 234.8 | 657.5 | 72.1  | 21.2 | 0    | 0     |
| Mean  | 0    | 0    | 0    | 0    | 0    | 31.8  | 7.63  | 21.2  | 2.40  | 0.68 | 0    | 0     |
| Ac-ft | 0    | 0    | 0    | 0    | 0    | 1,960 | 466   | 1,500 | 143   | 42   | 0    | 0     |

Calendar year 1959: Max 66 Min 0 Mean 3.25 Ac-ft 2,350  
Water year 1959-60: Max 179 Min 0 Mean 5.39 Ac-ft 3,910

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

\*\* Field estimate made on this day.

195. Chapman Canal at State line, near Evanston, Wyo.

Location.--Lat 41°24', long 111°02', in SE $\frac{1}{4}$  sec.36, T.17 N., R.121 W., on right bank at Highway bridge,  $6\frac{1}{2}$  miles downstream from headgates and 10 miles northwest of Evanston.

Records available.--April 1942 to September 1960 (prior to October 1944, irrigation seasons only). Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 6,570 ft (from river-profile map). Prior to Oct. 11, 1946, staff gage at same site and datum.

Average discharge.--16 years (1944-60), 17.7 cfs (12,810 acre-ft per year).

Extremes.--1942-60: Maximum daily discharge observed, 129 cfs Apr. 14, 1946; no flow at times in each year.

Remarks.--Records good except those for periods of ice effect, which are fair. Canal diverts water from Bear River in NW $\frac{1}{4}$  sec.36, T.16 N., R.121 W. Many diversions above station for irrigation in Wyoming. Flow at station is for storage in Neponset Reservoir, Utah, and irrigation in Salaratus basin, Utah.

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                       | 61      | 0.8   | 0.8  |      |      | 0     | 4.7     | 36    | 70     | 12    |      |       |
| 2                       | 60      | .7    | .8   |      |      | 0     | 3.2     | 36    | *78    | 6.0   |      |       |
| 3                       | 51      | .6    | .8   |      |      | 0     | 4.7     | 38    | 76     | 2.8   |      |       |
| 4                       | 58      | .6    | .6   |      |      | 0     | 31      | *40   | 76     | .4    |      |       |
| 5                       | 66      | .6    | .5   |      |      | 1     | 53      | 43    | 78     | .2    |      |       |
| 6                       | 65      | .5    | .5   |      |      | 2     | 57      | 40    | 83     | .5    |      |       |
| 7                       | 76      | .6    | .5   |      |      | **4   | 58      | 37    | 62     | .9    |      |       |
| 8                       | 95      | 1.1   | .5   |      | (*)  |       | 56      | 38    | 76     | 4.5   |      |       |
| 9                       | 90      | 1.5   | .5   |      |      |       | 56      | 45    | 87     | 5.5   |      |       |
| 10                      | 91      | .8    | .5   |      |      |       | 67      | 49    | 87     | 3.0   |      |       |
| 11                      | 100     | .6    | 0    |      |      |       | *68     | 82    | 75     | 1.6   |      |       |
| 12                      | 99      | .6    | 0    |      |      |       | 70      | 114   | 86     | 2.6   |      |       |
| 13                      | 98      | .4    | 0    |      |      | 5     | 63      | 114   | 90     | 3.0   |      |       |
| 14                      | 96      | .2    | 0    |      |      |       | 57      | 102   | 82     | 1.5   |      |       |
| 15                      | 95      | .6    | 0    |      |      |       | 57      | 95    | 80     | 5.6   |      |       |
| 16                      | 91      | .6    | 0    |      |      |       | 55      | 97    | 81     | 12    |      |       |
| 17                      | 66      | .6    | 0    |      |      |       | 49      | 85    | 71     | 8.5   |      |       |
| 18                      | 65      | .6    | 0    |      |      |       | 47      | 71    | 63     | 5.5   |      |       |
| 19                      | 65      | .8    | 0    |      |      | 10    | 47      | *61   | 51     | 1.5   |      |       |
| 20                      | 66      | .6    | 0    |      |      | 15    | 52      | 48    | 53     | 6.3   |      |       |
| 21                      | 48      | .8    | 1.1  |      |      | 20    | 51      | 40    | *58    | 2.6   |      |       |
| 22                      | 1.9     | .8    | 4.5  |      |      | 25    | 83      | 38    | 46     | **3.0 |      |       |
| 23                      | 1.6     | .8    | .2   |      |      | 30    | 81      | 57    | 38     | 14    |      |       |
| 24                      | 1.5     | .8    | 0    |      |      | 35    | 40      | 68    | 41     | 9.4   |      |       |
| 25                      | 2.2     | .8    | 0    |      |      | *35   | 39      | 49    | 30     | 9.4   |      |       |
| 26                      | 1.6     | .7    | 0    |      |      | 30    | 38      | 49    | 20     | 8.8   | (*)  |       |
| 27                      | *1.8    | .5    | 0    |      |      | 35    | 37      | 52    | 22     | 11    |      |       |
| 28                      | 1.6     | .7    | 0    |      |      | 20    | 39      | 68    | 22     | 14    |      |       |
| 29                      | 2.2     | .8    | 0    |      |      | *20   | 39      | 64    | 22     | 1.4   |      |       |
| 30                      | 1.5     | .9    | 0    |      |      | 8.5   | 37      | 63    | 19     | .4    |      |       |
| 31                      | .9      | ----- | 0    |      |      | 5.8   | -----   | 68    | -----  | 0     |      |       |
| Total                   | 1,618.8 | 21.0  | 11.8 | 0    | 0    | 351.3 | 1,438.6 | 1,897 | 1,823  | 158.7 | 0    | 0     |
| Mean                    | 52.2    | 0.70  | 0.38 | 0    | 0    | 11.3  | 48.0    | 60.9  | 60.8   | 5.12  | 0    | 0     |
| Ac-ft                   | 3,210   | 42    | 23   | 0    | 0    | 697   | 2,860   | 3,740 | 3,620  | 315   | 0    | 0     |
| Calendar year 1959: Max | 104     |       |      | Min  | 0    | Mean  | 27.8    | Ac-ft | 20,100 |       |      |       |
| Water year 1959-60: Max | 114     |       |      | Min  | 0    |       | 20.0    | Ac-ft | 14,510 |       |      |       |

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

\*\* Field estimate made on this day.

Note.--Stage-discharge relation affected by ice Nov. 16-17, 22-25, Dec. 5-12, Mar. 5-28.

## 205. Bear River near Woodruff, Utah

Location.--Lat 41°31'25", long 111°01'00", in SW $\frac{1}{4}$  sec.20, T.18 N., R.120 W., in Wyoming, on left bank 2.8 miles upstream from Wyoming-Utah State line and 7.6 miles east of Woodruff.

Drainage area.--870 sq mi, approximately.

Records available.--October 1941 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 6,360 ft (from river-profile map).

Average discharge.--19 years, 205 cfs (148,400 acre-ft per year).

Extremes.--Maximum discharge during year, 1,040 cfs May 14 (gage height, 3.45 ft); no flow Aug. 24 to Sept. 28.

1941-60: Maximum discharge, 3,010 cfs Apr. 28, 1952 (gage height, 5.32 ft); maximum gage height, 5.98 ft Mar. 21, 1951 (ice jam); no flow at times in each year 1942-49, 1954-60.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Diversions for irrigation of about 45,000 acres above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |       |
|-----|-----|-----|-------|
| 0.5 | 0   | 1.5 | 80    |
| .6  |     | 1.8 | 158   |
| .7  | 1.6 | 2.2 | 299   |
| .8  | 3.4 | 2.7 | 542   |
| 1.0 | 13  | 3.4 | 1,010 |
| 1.2 | 30  |     |       |

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     | 28    | 113   | 43    | 25    |       |        | 245    | 203          | 354    | 16    | 3.4  | 0     |
| 2     | 24    | 113   | *43   | 25    |       |        | 206    | 189          | 455    | 13    | 4.7  | 0     |
| 3     | 22    | 111   | 42    | 25    | 45    | 50     | 196    | 192          | 666    | 11    | 5.1  | 0     |
| 4     | 24    | 111   | 39    | 25    |       |        | 199    | *213         | 784    | 9.8   | 4.2  | 0     |
| 5     | 24    | 90    | 36    | 30    |       |        | 209    | 234          | 830    | 7.2   | 3.0  | 0     |
| 6     | 24    | 100   | 38    | 33    |       | 60     | 234    | 234          | 738    | 6.8   | 2.5  | 0     |
| 7     | 24    | 108   | 40    | 37    |       | 95     | 256    | 209          | 712    | 6.8   | 2.5  | 0     |
| 8     | 26    | 103   | 40    | 40    |       | 115    | 249    | 223          | 751    | 6.8   | 2.5  | 0     |
| 9     | 33    | 98    | 38    | 44    |       | *150   | 234    | 285          | 851    | 5.1   | 2.0  | 0     |
| 10    | 30    | 98    | 37    | 45    | (*)   | 185    | 242    | 391          | 817    | 5.8   | 2.0  | 0     |
| 11    | 37    | 96    | 35    | 45    |       | 185    | 253    | 497          | 596    | 3.4   | 2.0  | 0     |
| 12    | 51    | 89    | 35    | 45    |       | 220    | 245    | 666          | 497    | 4.2   | 1.5  | 0     |
| 13    | 41    | 89    | 33    | *45   |       | 200    | *238   | 878          | 434    | 3.2   | 1.5  | 0     |
| 14    | 39    | 74    | 33    | 45    |       | 160    | 183    | <u>1,010</u> | 424    | 3.0   | 1.5  | 0     |
| 15    | 35    | 64    | 31    | 45    |       | 160    | 177    | 900          | 391    | 2.5   | 1.0  | 0     |
| 16    | 30    | 64    | 28    |       |       | 190    | 161    | 757          | 359    | 2.5   | 1.0  | 0     |
| 17    | 33    | 65    |       |       |       | 220    | 149    | 653          | 316    | 2.0   | 1.0  | 0     |
| 18    | 36    | 68    |       | 35    | 50    | 250    | 121    | 590          | 299    | 2.0   | .5   | 0     |
| 19    | 36    | 70    |       |       |       | 290    | 132    | *514         | 276    | 1.5   | .5   | 0     |
| 20    | 35    | 70    |       |       |       | 340    | 144    | 420          | *253   | 1.5   | .5   | 0     |
| 21    | 36    | 71    | 30    |       |       | 380    | 132    | 337          | 213    | 1.0   | .2   | 0     |
| 22    | 60    | 72    |       |       |       | 450    | 196    | 299          | 161    | *1.0  | .2   | 0     |
| 23    | 92    | 72    |       | 40    |       | 510    | 299    | 341          | 128    | 1.0   | .1   | 0     |
| 24    | 98    | 72    |       |       |       | 590    | 350    | 350          | 106    | .5    | 0    | 0     |
| 25    | 116   | 62    |       |       |       | 705    | 272    | 249          | 82     | .5    | 0    | 0     |
| 26    | 116   | 50    | 28    |       |       | 692    | 245    | 213          | 61     | .5    | *0   | 0     |
| 27    | 121   | 54    |       |       |       | 810    | 234    | 196          | 52     | .5    | 0    | 0     |
| 28    | 124   | 50    |       | 45    |       | 790    | 238    | 223          | 43     | .2    | 0    | 0     |
| 29    | *146  | 47    | 25    |       |       | 465    | 245    | 213          | 28     | .2    | 0    | 3.4   |
| 30    | 141   | 44    |       |       |       | *333   | 230    | 245          | 18     | .2    | 0    | 5.4   |
| 31    | 124   | ----- | ----- | ----- | ----- | 283    | -----  | *320         | -----  | .2    | 0    | ----- |
| Total | 1,826 | 2,388 | 1,014 | 1,199 | 1,425 | 9,078  | 6,514  | 12,242       | 11,673 | 117.9 | 43.4 | 6.8   |
| Mean  | 58.9  | 79.6  | 32.7  | 38.7  | 49.1  | 293    | 217    | 395          | 369    | 3.80  | 1.40 | 0.23  |
| Ac-ft | 3,620 | 4,740 | 2,010 | 2,380 | 2,830 | 18,010 | 12,920 | 24,280       | 23,150 | 234   | 86   | 13    |

Calendar year 1959: Max 1,470 Min 0.5 Mean 135 Ac-ft 96,200

Water year 1959-60: Max 1,010 Min 0 Mean 130 Ac-ft 94,270

Peak discharge (base, 1,300 cfs).--No peak above base.

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

\*\* Field estimate made on this day.

Note.--No gage-height record July 15-31, Aug. 6 to Sept. 28; discharge estimated on basis of 1 field estimate, 1 observation of no flow, weather records, and natural flow recession. Stage-discharge relation affected by ice Nov. 5-9, Nov. 15 to Mar. 21 (no gage-height record Jan. 10-13, Jan. 24 to Mar. 9).

## 210. Woodruff Creek near Woodruff, Utah

Location.--Lat 41°29', long 111°16', in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.28, T.9 N., R.6 E., on left bank  $\frac{1}{4}$  miles upstream from Birch Creek and 6 miles southwest of Woodruff.

Drainage area.--65 sq mi, approximately.

Records available.--October 1937 to September 1943, October 1949 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 6,600 ft (from topographic map). Prior to June 21, 1939, staff gage half a mile downstream at different datum. June 21, 1939, to Sept. 30, 1943, water-stage recorder at site  $\frac{1}{2}$  miles upstream at different datum.

Average discharge.--17 years, 26.6 cfs (19,260 acre-ft per year).

Extremes.--Maximum discharge during year, 234 cfs May 13 (gage height, 3.89 ft); minimum daily, 5.3 cfs Aug. 14, 15.  
1937-43, 1949-60: Maximum discharge, 528 cfs May 25, 1950 (gage height, 5.72 ft); minimum observed, 1.3 cfs Aug. 1, 1940.

Remarks.--Records good except those for period of backwater from beaver dam, which are fair. No diversion above station.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Oct. 1 to Dec. 2, Mar. 21-28, May 13 to June 2, July 13-22)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.3 | 4.4 | 2.0 | 53  |
| 1.4 | 8.7 | 2.5 | 96  |
| 1.6 | 20  | 3.0 | 140 |
| 1.8 | 36  | 4.0 | 244 |

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                       | 8.3   | 10    | 8.7   | 8.3     | 7.8   | 7.4       | 20    | 27           | 34    | 13    | 6.6   | 6.1   |
| 2                       | 8.7   | 11    | 8.7   | b8.3    | 7.8   | 7.0       | 20    | *30          | 32    | 14    | 6.6   | 7.0   |
| 3                       | 8.7   | 11    | 8.7   | 8.0     | 7.8   | 7.0       | 19    | 37           | 30    | 14    | 6.6   | 6.6   |
| 4                       | 9.2   | 10    | b8.7  | 8.0     | b7.8  | 7.0       | 22    | 42           | 28    | 14    | 6.1   | 7.0   |
| 5                       | 9.2   | 9.2   | b8.7  | 8.0     | b7.8  | 7.4       | 27    | 43           | 26    | 14    | 6.1   | 7.0   |
| 6                       | 8.7   | 9.2   | 8.7   | 8.0     | 7.8   | 7.4       | 38    | 46           | 24    | 14    | 6.1   | 6.1   |
| 7                       | 9.8   | 10    | 8.7   | 8.0     | 7.8   | 8.7       | 42    | 24           | 16    | 5.7   | 6.1   | 6.1   |
| 8                       | 9.2   | 10    | 8.7   | 8.0     | 8.3   | 11        | 36    | 92           | 26    | 13    | 5.7   | 6.1   |
| 9                       | 9.2   | 10    | 8.7   | 8.0     | 9.2   | 10        | 42    | 115          | 23    | 11    | 5.7   | 6.1   |
| 10                      | 9.2   | 9.8   | 8.7   | 8.0     | *8.7  | *b8.3     | 48    | 139          | 24    | 11    | 5.7   | 5.7   |
| 11                      | 9.2   | 10    | 8.7   | *7.8    | 8.7   | 8.3       | *45   | 170          | 20    | 11    | 5.7   | 5.7   |
| 12                      | 9.2   | 11    | 8.7   | 7.8     | b8.5  | 8.7       | 41    | 195          | 19    | 11    | 5.7   | 5.7   |
| 13                      | 8.7   | 10    | 8.7   | 7.8     | 8.3   | 8.3       | 34    | 200          | 17    | 8.7   | 5.7   | 5.7   |
| 14                      | 9.2   | 8.7   | 8.7   | 7.8     | 8.3   | 7.8       | 32    | 151          | 17    | 9.2   | 5.3   | 5.7   |
| 15                      | 9.8   | 8.7   | 8.7   | 8.3     | 8.3   | 8.7       | 30    | 126          | 17    | 8.3   | 5.3   | 5.7   |
| 16                      | 9.2   | 9.2   | 8.7   | b7.5    | 8.3   | b8.7      | 27    | 115          | 16    | 7.8   | 5.7   | 6.1   |
| 17                      | 8.7   | 10    | 8.7   | b7.5    | 8.3   | 9.2       | 24    | 114          | 16    | 8.3   | 6.1   | 6.6   |
| 18                      | 8.7   | 10    | 8.3   | b7.5    | 8.3   | 9.2       | 24    | 100          | 16    | 8.3   | 6.1   | 6.6   |
| 19                      | 9.8   | 10    | 8.7   | b7.5    | 8.3   | 12        | 24    | 71           | 14    | 7.0   | 6.1   | 6.6   |
| 20                      | 9.2   | 11    | 8.7   | b7.5    | 7.8   | 16        | 22    | 56           | 14    | 7.0   | 5.7   | 6.6   |
| 21                      | 8.7   | 11    | 8.7   | b7.5    | 7.8   | 24        | 26    | 59           | 14    | 7.0   | 5.7   | 6.6   |
| 22                      | 8.3   | 11    | 8.7   | 7.8     | 7.8   | 27        | 42    | 63           | *14   | *7.4  | 5.7   | 7.0   |
| 23                      | 8.7   | 12    | 8.7   | 7.4     | b7.8  | 30        | 49    | 57           | 14    | 7.0   | 6.1   | 7.0   |
| 24                      | 8.7   | 12    | 8.7   | 7.4     | b7.4  | 32        | 39    | 52           | 14    | 7.0   | *6.1  | 7.0   |
| 25                      | 8.7   | 12    | 9.2   | 7.4     | 7.4   | *32       | 32    | 48           | 14    | 6.6   | 6.1   | 6.6   |
| 26                      | 9.2   | 7.8   | 9.2   | 7.4     | b7.4  | 36        | 29    | 43           | 13    | 6.6   | 6.1   | 6.6   |
| 27                      | *9.8  | 8.3   | b8.5  | 7.4     | b7.4  | 40        | 29    | 43           | 14    | 6.6   | 6.1   | 6.6   |
| 28                      | 10    | 8.7   | b8.5  | 7.4     | b7.4  | 39        | 28    | 40           | 14    | 6.6   | 6.1   | 6.6   |
| 29                      | 10    | 8.7   | b8.5  | 7.4     | b7.4  | 29        | 29    | 38           | 14    | 6.6   | 5.7   | 6.6   |
| 30                      | 9.8   | *8.7  | b8.5  | 7.4     | ----- | 25        | 26    | 36           | 14    | 6.6   | 5.7   | 6.6   |
| 31                      | 9.2   | ----- | 8.7   | 7.8     | ----- | 24        | ----- | *35          | ----- | 6.6   | 5.7   | ----- |
| Total                   | 283.0 | 299.0 | 269.5 | 259.9   | 231.7 | 516.1     | 946   | 2,446        | 576   | 295.2 | 183.4 | 192.0 |
| Mean                    | 9.13  | 9.97  | 8.69  | 7.74    | 7.99  | 16.6      | 31.5  | 78.9         | 19.2  | 9.52  | 5.92  | 6.40  |
| Ac-ft                   | 561   | 593   | 535   | 476     | 460   | 1,020     | 1,880 | 4,850        | 1,140 | 586   | 364   | 381   |
| Calendar year 1959: Max | 112   |       |       | Min 6.1 |       | Mean 17.0 |       | Ac-ft 12,270 |       |       |       |       |
| Water year 1959-60: Max | 200   |       |       | Min 5.3 |       | Mean 17.7 |       | Ac-ft 12,850 |       |       |       |       |

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Backwater from beaver dam Oct. 1 to Dec. 2. No gage-height record Nov. 27-30, Jan. 2-10; discharge estimated on basis of 1 discharge measurement and records for nearby stations.

## BEAR RIVER BASIN

## 230. Big Creek near Randolph, Utah

Location.--Lat 41°37', long 111°15', in SE $\frac{1}{4}$  sec.10, T.10 N., R.6 E., on left bank  $3\frac{1}{2}$  miles downstream from main forks and  $4\frac{1}{2}$  miles southwest of Randolph.

Drainage area.--52.2 sq mi.

Records available.--October 1949 to September 1960. March 1939 to September 1944 (fragmentary), at site a quarter of a mile downstream, records equivalent except for a few short periods each irrigation season.

Gage.--Water-stage recorder. Altitude of gage is 6,390 ft (from topographic map). Oct. 1, 1949, to Sept. 9, 1959, at site 100 ft downstream at different datum.

Average discharge.--11 years (1949-60), 19.0 cfs (13,760 acre-ft per year).

Extremes.--Maximum discharge during year, 135 cfs Mar. 18 (gage height, 3.48 ft); maximum gage height, 3.67 ft Jan. 16 (ice jam); minimum discharge, 3.6 cfs Nov. 5, but may have been less during periods of ice effect or no gage-height record.

1949-60: Maximum discharge, 337 cfs July 11, 1957 (gage height, 3.75 ft); minimum, 1.6 cfs Mar. 12, 1951 (ice jam upstream).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No diversion above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Mar. 1 to Apr. 3)

|     |     |
|-----|-----|
| 1.5 | 3.7 |
| 1.6 | 5.3 |
| 1.8 | 10  |
| 2.2 | 23  |

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     | 8.2   | 6.8   |      |       |       | 6.8   | 7.5   | 8.2   | 7.5   | 5.5   | 6.2   | 5.7   |
| 2     | 8.2   | 6.0   |      |       |       | 6.6   | 7.1   | *8.5  | 7.3   | 5.5   | 5.7   | 6.2   |
| 3     | 8.0   | 6.0   |      |       |       | 6.4   | 7.1   | 9.2   | 7.1   | 6.2   | 5.1   | 5.7   |
| 4     | 8.0   | 6.4   |      |       |       | 6.6   | 7.8   | 8.8   | 6.8   | 6.2   | 5.0   | 6.4   |
| 5     | 7.8   | 6.6   |      |       | a6.5  | 6.4   | 8.5   | 9.5   | 7.1   | 6.2   | 4.8   | 6.0   |
| 6     | 7.8   |       |      |       |       | b8.0  | 10    | 9.2   | 7.1   | 6.2   | 4.8   | 5.5   |
| 7     | 9.2   |       |      |       |       | *13   | 12    | 9.5   | 8.2   | 6.6   | 5.0   | 5.1   |
| 8     | 8.5   |       |      |       | (*)   | b15   | 11    | 9.8   | 8.2   | 6.4   | 5.0   | 5.1   |
| 9     | 9.0   |       |      |       |       | 9.0   | 12    | 9.8   | 8.5   | 6.0   | 5.0   | 5.3   |
| 10    | 9.5   |       |      |       |       | 9.0   | 12    | 9.8   | 8.8   | 5.7   | 5.1   | 5.3   |
| 11    | 8.2   |       |      |       |       | 7.5   | *14   | 9.5   | 7.8   | 5.7   | 5.0   | 5.1   |
| 12    | 8.0   |       |      |       | (*)   | 6.2   | 13    | 9.5   | 7.5   | 5.7   | 5.0   | 5.1   |
| 13    | 7.8   |       |      |       |       | 6.0   | 11    | 9.8   | 7.3   | 5.7   | 5.0   | 5.3   |
| 14    | 7.8   |       |      |       | b7    | 5.5   | 10    | 9.5   | 7.1   | 5.7   | 5.0   | 5.1   |
| 15    | 7.8   |       |      |       |       | 6.2   | 10    | 9.2   | 7.3   | 5.5   | 5.1   | 5.1   |
| 16    | 7.5   | b7.5  | b7   |       |       | 6.8   | 9.5   | 9.2   | 7.1   | 5.3   | 5.5   | 5.3   |
| 17    | 7.5   |       |      |       |       | 8.2   | 9.0   | 9.0   | 7.1   | 5.3   | 5.5   | 6.0   |
| 18    | 7.5   |       |      |       |       | 22    | 8.8   | 9.2   | 7.1   | 5.3   | 5.5   | 5.7   |
| 19    | 7.8   |       |      |       |       | 20    | 8.8   | 9.2   | 6.8   | 5.1   | 5.1   | 5.5   |
| 20    | 7.5   |       |      |       | b6.5  | 21    | 8.8   | 8.8   | 7.1   | *5.1  | 5.0   | 5.3   |
| 21    | 7.5   |       |      |       |       | 19    | 8.8   | 8.2   | 6.6   | 5.3   | 5.0   | 5.3   |
| 22    | 7.5   |       |      |       |       | 17    | 10    | 8.5   | *6.8  | 5.3   | 5.0   | 6.6   |
| 23    | 7.5   |       |      |       | b6.5  | 14    | 11    | 8.5   | 6.6   | 5.3   | 5.7   | 6.4   |
| 24    | 7.5   |       |      |       |       | 13    | 11    | 8.0   | 6.8   | 5.1   | *5.7  | 6.0   |
| 25    | 7.5   |       |      |       |       | *12   | 10    | 7.8   | 6.4   | 5.1   | 5.5   | 5.7   |
| 26    | 7.3   |       |      |       |       | 12    | 9.2   | 7.5   | 6.2   | 5.0   | 5.3   | 5.7   |
| 27    | *7.3  |       |      |       | a6.5  | 12    | 9.0   | 8.0   | 6.2   | 5.0   | 5.3   | 5.5   |
| 28    | 6.6   | b7    |      |       |       | 11    | 9.2   | 8.0   | 6.0   | 5.0   | 5.1   | 5.5   |
| 29    | 6.4   |       |      |       |       | 9.2   | 9.5   | 7.5   | 5.7   | 5.1   | 5.1   | 5.5   |
| 30    | 6.2   |       |      |       |       | 8.8   | 8.8   | 7.5   | 5.5   | 5.0   | 5.1   | 5.5   |
| 31    | 7.5   |       |      |       | a6.5  | 8.5   |       | *7.5  | 5.5   | 5.0   | 5.1   | 5.5   |
| Total | 240.4 | 216.8 | 217  | 201.5 | 195.0 | 332.7 | 294.4 | 273.2 | 211.6 | 171.5 | 161.3 | 167.5 |
| Mean  | 7.75  | 7.23  | 7    | 6.5   | 6.72  | 10.7  | 9.81  | 8.81  | 7.05  | 5.55  | 5.20  | 5.58  |
| Ac-ft | 477   | 430   | 430  | 400   | 587   | 660   | 584   | 542   | 420   | 341   | 320   | 332   |

Calendar year 1959: Max 30 Min - Mean 10.7 Ac-ft 7,730  
Water year 1959-60: Max 22 Min 4.8 Mean 7.33 Ac-ft 5,320

\* Discharge measurement made on this day.  
a No gage-height record (stage-discharge relation affected by ice); discharge estimated on basis of weather records and records for nearby stations.  
b Stage-discharge relation affected by ice.

## 265. Bear River near Randolph, Utah

Location.--Lat 41°48', long 111°06', in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 7, T.12 N., R.8 E., on left bank 3.5 miles upstream from Twin Creek, 4.8 miles upstream from Utah-Wyoming State line, and 11 miles northeast of Randolph.

Drainage area.--1,640 sq mi, approximately.

Records available.--October 1943 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 6,205 ft (from river-profile map).

Average discharge.--17 years, 188 cfs (136,100 acre-ft per year).

Extremes.--Maximum discharge during year, 753 cfs Mar. 27 (gage height, 5.47 ft); maximum gage height, 6.51 ft Mar. 22 (ice jam); minimum discharge, 4.5 cfs Sept. 30. 1943-60: Maximum discharge, 2,660 cfs May 8, 1952 (gage height, 8.80 ft); minimum, that of Sept. 30, 1960.

Remarks.--Records good except those for period of ice effect, which are fair. Diversions for irrigation of about 96,000 acres above station.

Rating table, water year 1959-60, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Mar. 23 to May 28)

|     |     |     |
|-----|-----|-----|
| 1.2 | 3.0 | 224 |
| 1.3 | 6.0 | 417 |
| 1.5 | 16  | 661 |
| 1.8 | 40  | 979 |
| 2.2 | 88  |     |

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                       | 31    | 123   |       |       |       |        | 391    | 53    | 42     | 52    | 24    | 6.0   |
| 2                       | 33    | 120   |       |       |       |        | 361    | *49   | 42     | 17    |       | 6.0   |
| 3                       | 39    | 120   | 60    | 40    | 65    | 70     | 324    | 50    | 36     | 36    | 12    | 6.0   |
| 4                       | 38    | 120   |       |       |       |        | 301    | 52    | 30     | 34    | 11    | 5.7   |
| 5                       | 37    | 110   |       |       |       |        | 284    | 46    | 25     | 32    | 11    | 5.4   |
| 6                       | 36    | 120   |       | 45    | 70    |        | 282    | 42    | 30     | 31    | 11    | 5.4   |
| 7                       | 37    | 125   |       | 50    | 70    | *85    | 282    | 36    | 57     | 30    | 11    | 5.1   |
| 8                       | 37    | 120   | 55    | 55    | *70   |        | 291    | 34    | 106    | 29    | 11    | 5.1   |
| 9                       | 36    | 118   |       | 60    |       |        | 130    | 293   | 31     | 138   | 25    | 14    |
| 10                      | 39    | 115   |       | 65    |       |        | 165    | 276   | 29     | 201   | 23    | 15    |
| 11                      | 40    | 113   |       |       |       |        | 190    | 248   | 25     | 257   | 24    | 15    |
| 12                      | 43    | 112   |       |       |       |        | 215    | 252   | 25     | 261   | 32    | 13    |
| 13                      | 46    | 108   | 50    | *65   |       |        | 250    | *224  | 22     | 233   | 25    | 11    |
| 14                      | 49    | 100   |       |       |       |        | 190    | 210   | 25     | 226   | 22    | 9.2   |
| 15                      | 51    | 90    |       |       |       |        | 175    | 188   | 48     | 208   | 22    | 8.8   |
| 16                      | 52    | 82    |       |       |       |        | 175    | 151   | 104    | 215   | 22    | 8.4   |
| 17                      | 51    |       |       |       |       |        | 200    | 107   | 138    | 188   | 46    | 8.4   |
| 18                      | 52    |       |       | 55    |       |        | 225    | 99    | 115    | 160   | 45    | 8.4   |
| 19                      | 51    |       |       |       | 70    |        | 260    | 94    | 102    | 131   | 37    | 8.0   |
| 20                      | 52    |       |       |       |       |        | 310    | 77    | 91     | 117   | *38   | 7.6   |
| 21                      | 54    | 90    | 45    |       |       |        | 350    | 68    | 82     | 110   | 40    | 7.2   |
| 22                      | 54    |       |       | 60    |       |        | 400    | 62    | 78     | *85   | 38    | 6.8   |
| 23                      | 53    |       |       |       |       |        | 456    | 59    | 69     | 73    | 36    | 7.2   |
| 24                      | 60    |       |       |       |       |        | 474    | 52    | 62     | 66    | 36    | *6.8  |
| 25                      | 69    |       |       |       |       |        | 534    | 70    | 70     | 60    | 35    | 6.4   |
| 26                      | 78    |       |       |       |       |        | 670    | 78    | 57     | 64    | 33    | 6.4   |
| 27                      | 87    |       |       |       |       |        | 661    | 68    | 51     | 56    | 32    | 6.0   |
| 28                      | 96    | 70    | 40    | 65    |       |        | 647    | 68    | 48     | 58    | 26    | 6.0   |
| 29                      | *107  |       |       |       |       |        | 673    | 71    | 47     | 57    | 12    | 5.7   |
| 30                      | 117   | (*)   |       |       |       |        | *590   | 65    | 48     | 82    | 11    | 5.7   |
| 31                      | 120   |       |       |       |       |        | 458    |       | 45     | 18    | 5.7   |       |
| Total                   | 1,752 | 2,956 | 1,515 | 1,765 | 2,005 | 9,003  | 5,406  | 1,772 | 3,390  | 962   | 304.7 | 160.5 |
| Mean                    | 56.5  | 98.5  | 48.9  | 56.9  | 69.1  | 290    | 180    | 57.2  | 113    | 31.0  | 9.83  | 5.35  |
| Ac-ft                   | 3,480 | 5,860 | 3,000 | 3,500 | 3,980 | 17,860 | 10,720 | 3,510 | 6,720  | 1,910 | 604   | 318   |
| Calendar year 1959: Max | 484   |       |       | Min   | -     | Mean   | 85.0   | Ac-ft | 60,080 |       |       |       |
| Water year 1959-60: Max | 673   |       |       | Min   | 4.8   | Mean   | 84.7   | Ac-ft | 61,460 |       |       |       |

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 5 to Mar. 22 (no gage-height record Jan. 16 to Feb. 8; discharge estimated on basis of 1 discharge measurement, weather records, and records for other Bear River stations).

## BEAR RIVER BASIN

270. Twin Creek at Sage, Wyo.

Location.--Lat 41°49', long 110°58', in SE $\frac{1}{4}$  sec. 7, T.21 N., R.119 W., on left bank half a mile southwest of Sage and 5 miles upstream from mouth.

Drainage area.--246 sq mi (corrected).

Records available.--April 1943 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,330 ft (from highway map). Prior to Oct. 1, 1945, staff gage at site 0.6 mile upstream at different datum.

Average discharge.--17 years, 18.7 cfs (13,540 acre-ft per year).

Extremes.--Maximum discharge during year, 422 cfs Mar. 26 (gage height, 4.89 ft); minimum, 1.4 cfs Oct. 31.  
1943-60: Maximum discharge, 649 cfs Mar. 18, 1947 (gage height, 6.08 ft); minimum, 0.6 cfs Mar. 18, 1953, result of freezeup.

Remarks.--Records good except those for periods of ice effect, which are fair. Diversions for irrigation of about 1,100 acres above station.

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                       | 8.5   | 8.1   | (*)   |      | 5.5     | 5.5       | 30          | 14    | 9.2   | 5.3   | 4.4   | 3.3   |
| 2                       | 8.5   | 8.5   |       |      |         |           | 21          | 14    | *9.8  | 5.3   | 4.4   | 3.0   |
| 3                       | 8.1   | 8.5   |       |      |         |           | 16          | 17    | 9.8   | 5.3   | 4.4   | 3.0   |
| 4                       | 7.7   | 8.1   |       |      |         |           | 35          | *18   | 9.8   | 5.3   | 4.2   | 3.0   |
| 5                       | 7.7   | 5.5   | 6.5   |      | 5.5     |           | 54          | 19    | 9.2   | 5.3   | 4.2   | 3.0   |
| 6                       | 7.4   | 7.4   |       |      |         |           | 10          | 61    | 18    | 9.2   | 5.3   | 4.0   |
| 7                       | 7.7   | 8.1   |       |      |         |           | 15          | 57    | 17    | 9.2   | 5.3   | 4.0   |
| 8                       | 8.1   | 9.2   |       |      |         |           | 13          | 43    | 16    | 9.2   | 5.3   | 4.0   |
| 9                       | 8.1   | 10    | 6.0   | 5    | 6.0     | 6.0       | 20          | 34    | 14    | 9.2   | 5.3   | 4.0   |
| 10                      | 7.7   | 10    |       |      |         |           | *14         | 28    | 8.5   | 9.2   | 5.3   | 4.0   |
| 11                      | 7.7   | 10    |       |      |         |           | 8.8         | 22    | 8.5   | 9.2   | 5.3   | 4.0   |
| 12                      | 7.0   | 9.2   |       |      |         |           | 11          | 18    | 6.2   | 9.2   | 5.3   | 4.0   |
| 13                      | 5.5   | 6.6   | 6.0   | 5    | 6.0     | 6.0       | 11          | *14   | 6.6   | 8.8   | 5.3   | 4.0   |
| 14                      | 5.5   | 5.0   |       |      |         |           | 6.6         | 12    | 6.6   | 8.5   | 5.3   | 4.0   |
| 15                      | 5.5   | 8.1   |       |      |         |           | 5.1         | 9.8   | 6.2   | 8.1   | 5.1   | 3.5   |
| 16                      | 5.5   | 8.1   |       |      |         |           | 5.3         | 9.2   | 6.2   | 8.1   | 5.1   | 3.5   |
| 17                      | 5.9   | 8.5   | 6.0   | 5    | 6.0     | 6.0       | 5.5         | 9.8   | 6.2   | 7.7   | 4.8   | 3.5   |
| 18                      | 6.2   | 9.2   |       |      |         |           | 37          | 9.8   | 7.0   | 7.0   | 4.8   | 3.5   |
| 19                      | 6.6   | 11    |       |      |         |           | 129         | 9.8   | 7.7   | 6.6   | 4.8   | 3.5   |
| 20                      | 7.0   | 12    |       |      |         |           | 110         | 10    | 6.6   | 6.2   | *4.8  | 3.3   |
| 21                      | 7.4   | 12    | 6.0   | 5    | 6.0     | 6.0       | 129         | 9.2   | 7.0   | 6.2   | 4.8   | 3.3   |
| 22                      | 7.0   | 12    |       |      |         |           | 168         | 9.8   | 6.2   | 5.9   | 4.8   | 3.3   |
| 23                      | 7.4   | 13    |       |      |         |           | 234         | 11    | 6.2   | 5.5   | 4.8   | 3.3   |
| 24                      | 6.6   | 12    |       |      |         |           | *269        | 15    | 6.2   | 5.5   | 4.8   | *3.3  |
| 25                      | 6.6   | 10    | 6.0   | 5    | 6.0     | 6.0       | *294        | 15    | 6.2   | 5.3   | 4.8   | 3.3   |
| 26                      | 6.6   | 6.0   |       |      |         |           | 301         | 15    | 6.2   | 5.3   | 4.8   | 3.3   |
| 27                      | 6.6   | 6.5   |       |      |         |           | 288         | 14    | 7.0   | 5.3   | 4.8   | 3.3   |
| 28                      | 7.4   | 6.5   |       |      |         |           | *153        | 16    | 8.1   | 5.3   | 4.6   | 3.3   |
| 29                      | *7.7  | 6.5   | 6.0   | 5    | 6.0     | 6.0       | 54          | 20    | 8.5   | 5.3   | 4.6   | 3.3   |
| 30                      | 7.7   | 6.5   |       |      |         |           | *44         | 17    | 8.8   | 5.3   | 4.4   | 3.3   |
| 31                      | 7.0   | ----- |       |      |         |           | 47          | ----- | 9.2   | ----- | 4.4   | 3.3   |
| Total                   | 219.9 | 262.1 | 190.5 | 155  | 166.5   | 2,409.8   | 644.4       | 302.9 | 228.1 | 155.2 | 114.7 | 72.9  |
| Mean                    | 7.09  | 8.74  | 6.15  | 5    | 5.74    | 77.7      | 21.5        | 9.77  | 7.60  | 5.01  | 3.70  | 2.43  |
| Ac-ft                   | 436   | 520   | 378   | 307  | 330     | 4,780     | 1,280       | 601   | 452   | 308   | 228   | 145   |
| Calendar year 1959: Max | 221   |       |       |      | Min 3.5 | Mean 12.5 | Ac-ft 9,060 |       |       |       |       |       |
| Water year 1959-60: Max | 301   |       |       |      | Min 1.6 | Mean 13.4 | Ac-ft 9,760 |       |       |       |       |       |

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 14, Nov. 26 to Mar. 10.



## BEAR RIVER BASIN

320. Smiths Fork near Border, Wyo.

Location.--Lat 42°17', long 110°52', in NW¼ sec.33, T.27 N., R.118 W., or left bank 4½ miles upstream from Howland Creek, 6 miles downstream from Hobbie Creek, and 12 miles northeast of Border.

Drainage area.--165 sq mi.

Records available.--May 1942 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,650 ft (from topographic map). Prior to Oct. 16, 1945, at site 0.8 mile downstream at different datum.

Average discharge.--18 years, 193 cfs (139,700 acre-ft per year).

Extremes.--Maximum discharge during year, 710 cfs May 13 (gage height, 3.50 ft); minimum, 49 cfs Mar. 11, but may have been less during periods of ice effect.  
1942-60: Maximum discharge, 1,500 cfs June 7, 1957 (gage height, 4.56 ft); minimum recorded, 35 cfs Mar. 21, 1955, result of freezeup.

Remarks.--Records good except those for periods of ice effect, which are fair. One diversion for irrigation of about 200 acres above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.5 | 49  | 2.7 | 345 |
| 1.8 | 83  | 3.0 | 471 |
| 2.2 | 169 | 3.4 | 679 |

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                       | 101   | 89    | 78    | 64    | 60    | 54    | 74     | 199    | 467     | 232    | 142   | 99    |
| 2                       | 101   | 89    | 78    | 60    | 64    | 56    | 71     | 209    | 485     | 225    | 133   | 99    |
| 3                       | 101   | 89    | *76   | 56    | 64    | 60    | 75     | 250    | *522    | 222    | 130   | 99    |
| 4                       | 101   | 91    | 72    | 54    | 58    | 64    | 83     | *254   | 542     | 219    | 124   | 99    |
| 5                       | 99    | 89    | 68    | 56    | 60    | 64    | 101    | 261    | 527     | 216    | 121   | 96    |
| 6                       | 99    | 90    | 72    | 58    | 64    | 64    | 133    | 298    | 508     | 209    | 119   | 94    |
| 7                       | 105   | 91    | 74    | 60    | 68    | 64    | 169    | 318    | 489     | 209    | 117   | 97    |
| 8                       | 101   | 88    | 74    | 62    | 72    | 64    | 181    | 353    | 471     | 209    | 115   | 96    |
| 9                       | 103   | 88    | 74    | 61    | 70    | 60    | 232    | 403    | 458     | 202    | 113   | 94    |
| 10                      | 103   | 88    | 74    | 60    | 66    | 62    | 276    | 458    | 476     | 196    | 115   | 94    |
| 11                      | 99    | 85    | 74    | 60    | *69   | 58    | 254    | 532    | 445     | 196    | 115   | 94    |
| 12                      | 103   | 88    | 76    | 60    | 64    | 62    | 250    | 599    | 437     | 193    | 113   | 93    |
| 13                      | 101   | 82    | 78    | 60    | 60    | 60    | 222    | 662    | 420     | 184    | 117   | 91    |
| 14                      | 97    | 78    | 74    | *60   | 58    | 60    | *229   | 559    | 415     | 181    | 113   | 91    |
| 15                      | 96    | 81    | 70    | 60    | 62    | 62    | 190    | 562    | 432     | 178    | 115   | 91    |
| 16                      | 94    | 82    | 68    | 60    | 64    | 68    | 172    | 517    | 407     | 169    | 121   | 89    |
| 17                      | 94    | 82    | 72    | 56    | 64    | 65    | 153    | 503    | 403     | 166    | 119   | 93    |
| 18                      | 93    | 82    | 74    | 54    | 60    | 59    | 156    | 485    | 386     | 166    | 113   | 91    |
| 19                      | 93    | 82    | 74    | 52    | 58    | 58    | 158    | *441   | 370     | 164    | 109   | 89    |
| 20                      | 91    | 86    | 74    | 56    | 58    | 59    | 150    | 420    | 357     | *158   | 101   | 88    |
| 21                      | 89    | 83    | 74    | 58    | 62    | 60    | 187    | 420    | 337     | 158    | 97    | 89    |
| 22                      | 91    | 82    | 76    | 60    | 62    | 62    | 250    | 432    | 318     | 156    | 99    | 94    |
| 23                      | 105   | 83    | 74    | 62    | 58    | 64    | 276    | 424    | *306    | 153    | 109   | 91    |
| 24                      | 103   | 83    | 76    | 64    | 55    | 66    | 219    | 420    | 295     | 150    | *103  | 88    |
| 25                      | 99    | 83    | 78    | 62    | 58    | 70    | 196    | 420    | 283     | 145    | 101   | 85    |
| 26                      | 97    | 80    | 70    | 60    | 56    | 73    | 184    | 403    | 272     | 142    | 99    | 83    |
| 27                      | 96    | 73    | 66    | 62    | 52    | 80    | 187    | 420    | 264     | 140    | 99    | 83    |
| 28                      | 94    | 76    | 84    | 60    | 53    | 85    | 199    | 407    | 254     | 137    | 99    | 85    |
| 29                      | *93   | 76    | 86    | 60    | 53    | 80    | 184    | 420    | 239     | 135    | 99    | 85    |
| 30                      | 91    | 76    | 66    | 60    | ----- | 79    | 184    | 432    | 236     | 133    | 97    | 83    |
| 31                      | 89    | ----- | 66    | 60    | ----- | *76   | -----  | 441    | -----   | 135    | 96    | ----- |
| Total                   | 3,022 | 2,515 | 2,250 | 1,837 | 1,773 | 2,018 | 5,395  | 12,962 | 11,821  | 5,478  | 3,463 | 2,743 |
| Mean                    | 97.5  | 83.8  | 72.6  | 59.3  | 61.1  | 65.1  | 180    | 418    | 394     | 177    | 112   | 91.4  |
| Ac-ft                   | 5,990 | 4,990 | 4,460 | 3,640 | 3,520 | 4,000 | 10,700 | 25,710 | 23,450  | 10,870 | 6,870 | 5,440 |
| Calendar year 1959: Max |       | 621   |       | Min   | 57    | Mean  | 147    | Ac-ft  | 106,700 |        |       |       |
| Water year 1959-60: Max |       | 662   |       | Min   | 52    | Mean  | 151    | Ac-ft  | 109,600 |        |       |       |

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 6, 14-18, Nov. 26 to Dec. 2, Dec. 4 to Feb. 8, Feb. 12 to Mar. 8.

## 380. Bear River below Smiths Fork, near Cokeville, Wyo.

Location.--Lat 42°07'30", long 110°58'20", in SE 1/4 sec. 28, T.25 N., R.119 W., 1.1 miles upstream from Wyman Dam, 2.8 miles northwest of Cokeville, and 3.8 miles downstream from Smiths Fork.

Drainage area.--2,460 sq mi, approximately.

Records available.--April 1954 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,140 ft (from river-profile map).

Average discharge.--6 years, 340 cfs (246,100 acre-ft per year).

Extremes.--Maximum discharge during year, 1,600 cfs Mar. 25 (gage height, 5.09 ft); minimum, 82 cfs Sept. 30.  
1954-60: Maximum discharge, 3,780 cfs Mar. 26, 1956 (gage height, 7.54 ft); minimum, 68 cfs Sept. 12, 1954.

Remarks.--Records excellent except those for periods of ice effect, which are good. Natural flow of stream affected by diversions for irrigation and return flow from irrigated areas.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |       |
|-----|-----|-----|-------|
| 2.2 | 72  | 3.0 | 265   |
| 2.4 | 106 | 4.0 | 780   |
| 2.6 | 157 | 5.0 | 1,500 |

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                       | 204    | 237    | 198    | b130  | 160   | b140   | 820    | 342    | 407     | 240    | 144   | 106   |
| 2                       | 201    | 243    | 204    | b130  | 165   | b140   | 715    | 346    | *440    | 227    | 138   | 104   |
| 3                       | 198    | 243    | *201   | b130  | b155  | 144    | 664    | 380    | 464     | 289    | 138   | 102   |
| 4                       | 201    | 250    | b175   | b120  | b150  | 149    | 641    | 407    | 484     | 257    | 138   | 102   |
| 5                       | 198    | 207    | b170   | b130  | b145  | 152    | 658    | *389   | 484     | 278    | 130   | 102   |
| 6                       | 188    | 169    | b175   | b130  | b140  | 157    | 715    | 425    | 469     | 278    | 125   | 98    |
| 7                       | 195    | 247    | b190   | b155  | b140  | 163    | 761    | 425    | 454     | 257    | 120   | 96    |
| 8                       | 195    | 240    | 198    | b140  | b140  | 177    | 721    | 454    | 445     | 257    | 118   | 98    |
| 9                       | 191    | 243    | 201    | b145  | b145  | 188    | 744    | 474    | 440     | 250    | 116   | 102   |
| 10                      | 195    | 243    | 174    | 149   | b150  | *230   | 784    | 495    | 449     | 237    | 116   | 100   |
| 11                      | 188    | 243    | 183    | 154   | *157  | 240    | 721    | 553    | 449     | 237    | 120   | 100   |
| 12                      | 188    | 254    | 180    | 154   | b160  | 237    | 675    | 619    | 435     | 237    | 116   | 100   |
| 13                      | 195    | 234    | 183    | 157   | b160  | 271    | 619    | 686    | 445     | 234    | 113   | 100   |
| 14                      | 191    | 180    | b170   | 154   | b160  | 289    | *484   | 675    | 449     | 243    | 113   | 100   |
| 15                      | 191    | 204    | b160   | *160  | 154   | 338    | 407    | 608    | 445     | 234    | 111   | 100   |
| 16                      | 191    | 224    | b155   | b160  | b158  | 321    | 376    | 548    | 416     | 211    | 116   | 98    |
| 17                      | 191    | 211    | b150   | b160  | b155  | 282    | 325    | 500    | 411     | 214    | 120   | 106   |
| 18                      | 191    | 224    | 160    | b150  | b155  | 264    | 297    | 474    | 435     | 188    | 118   | 111   |
| 19                      | 188    | 224    | 166    | b145  | b155  | 274    | 282    | 445    | 435     | 195    | 116   | 108   |
| 20                      | 237    | 211    | 160    | b140  | b155  | 321    | 274    | 411    | 425     | *191   | 111   | 104   |
| 21                      | 195    | 217    | 174    | b145  | b155  | 440    | 289    | 393    | 402     | 186    | 104   | 102   |
| 22                      | 188    | 224    | 160    | b145  | b155  | 564    | 333    | 393    | *380    | 188    | 102   | 108   |
| 23                      | 195    | 234    | 183    | b150  | b155  | 738    | 385    | 385    | 354     | 188    | *108  | 108   |
| 24                      | 211    | 250    | 174    | b155  | b155  | 910    | 380    | 354    | 338     | 186    | 111   | 102   |
| 25                      | 204    | 243    | 174    | b160  | b150  | 1,060  | 354    | 346    | 321     | 177    | 108   | 102   |
| 26                      | 207    | 224    | b170   | 160   | b145  | 1,360  | 317    | 333    | 297     | 166    | 104   | 102   |
| 27                      | 214    | 214    | b160   | 157   | b140  | 1,280  | 305    | 329    | 282     | 163    | 102   | 102   |
| 28                      | 220    | b205   | b145   | 157   | b140  | 1,250  | 329    | 350    | 271     | 160    | 102   | 100   |
| 29                      | 224    | b200   | b130   | b155  | b140  | 1,150  | 354    | 342    | 260     | 154    | 102   | 95    |
| 30                      | *230   | 198    | b130   | b150  | ----- | *1,090 | 333    | 350    | 250     | 144    | 102   | 84    |
| 31                      | 237    | -----  | b130   | b155  | ----- | 994    | -----  | 359    | -----   | 130    | 102   | ----- |
| Total                   | 6,242  | 6,740  | 5,283  | 4,562 | 4,392 | 15,313 | 15,062 | 13,590 | 12,036  | 6,596  | 3,584 | 3,040 |
| Mean                    | 201    | 225    | 170    | 147   | 151   | 494    | 502    | 438    | 401     | 213    | 118   | 101   |
| Ac-ft                   | 12,380 | 13,370 | 10,460 | 9,050 | 8,710 | 30,370 | 29,880 | 26,960 | 23,670  | 13,080 | 7,110 | 6,030 |
| Calendar year 1959: Max |        | 874    |        | Min   | 91    | Mean   | 250    | Ac-ft  | 180,700 |        |       |       |
| Water year 1959-60: Max |        | 1,360  |        | Min   | 84    | Mean   | 263    | Ac-ft  | 191,300 |        |       |       |

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## BEAR RIVER BASIN

## 395. Bear River at Border. Wyo.

Location.--Lat 42°11', long 111°03', in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.15, T.14 S., R.46 E., in Idaho, on left bank a quarter of a mile west of Wyoming-Idaho State line, half a mile west of Border, and 2.1 miles upstream from Thomas Fork.

Drainage area.--2,490 sq mi, approximately.

Records available.--October 1937 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 6,051.63 ft above mean sea level, unadjusted.

Average discharge.--23 years, 396 cfs (286,700 acre-ft per year).

Extremes.--Maximum discharge during year, 1,410 cfs Mar. 26 (gage height, 5.17 ft); minimum, 72 cfs Sept. 7.

1937-60: Maximum discharge, 3,680 cfs May 11, 1952 (gage height, 8.89 ft); minimum daily, 30 cfs Aug. 18-22, 1940.

Remarks.--Records good except those for periods of ice effect, which are fair. Diversions for irrigation of about 124,000 acres above station.

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     | 212    | 246    | 210    | 140   | 165   | 150    | 872    | 336    | 294    | 224    | 124   | 83    |
| 2     | 208    | 253    | 210    | 140   | 170   | 150    | 761    | 345    | 345    | 207    | 132   | 82    |
| 3     | 203    | 255    | *210   | 140   | 165   | 150    | 711    | 374    | *336   | 244    | 130   | 78    |
| 4     | 205    | 261    | 205    | 130   | 160   | 150    | 690    | 405    | 372    | 240    | 129   | 80    |
| 5     | 201    | 230    | 200    | 140   | 155   | 155    | 694    | *400   | 360    | 230    | 124   | 80    |
| 6     | 195    | 185    | 200    | 140   | 150   | 160    | 733    | 408    | 350    | 260    | 119   | 77    |
| 7     | 197    | 244    | 200    | 145   | 150   | 165    | 779    | 419    | 348    | 243    | 116   | 75    |
| 8     | 199    | 246    | 205    | 150   | 150   | 170    | 736    | 438    | 340    | 234    | 114   | 75    |
| 9     | 199    | 246    | 205    | 155   | 150   | 185    | 743    | 464    | 340    | 230    | 110   | 78    |
| 10    | 203    | 251    | 190    | 155   | 160   | 200    | 769    | 472    | 345    | 220    | 110   | 80    |
| 11    | 195    | 246    | 190    | 160   | 165   | *220   | 729    | 505    | 362    | 233    | 110   | 78    |
| 12    | 195    | 260    | 190    | 160   | *170  | 225    | 669    | 567    | 333    | 230    | 111   | 80    |
| 13    | 199    | 250    | 190    | 165   | 170   | 250    | 616    | 632    | 343    | 220    | 105   | 78    |
| 14    | 201    | 220    | 180    | *165  | 165   | 280    | *499   | 652    | 357    | 220    | 106   | 78    |
| 15    | 197    | 190    | 170    | 165   | 165   | 300    | 427    | 577    | 355    | 200    | 106   | 89    |
| 16    | 199    | 230    | 165    | 165   | 165   | 330    | 377    | 481    | 338    | 191    | 110   | 88    |
| 17    | 199    | 220    | 160    | 165   | 165   | 305    | 348    | 441    | 321    | 180    | 113   | 95    |
| 18    | 199    | 230    | 165    | 165   | 165   | 275    | 310    | 416    | 340    | 170    | 113   | 101   |
| 19    | 199    | 235    | 170    | 155   | 165   | 270    | 288    | 411    | 348    | *170   | 111   | 104   |
| 20    | 234    | 220    | 170    | 150   | 165   | 290    | 283    | 382    | 350    | 160    | 110   | 102   |
| 21    | 212    | 225    | 180    | 150   | 165   | 380    | 288    | 355    | 343    | 160    | 106   | 98    |
| 22    | 201    | 230    | 170    | 155   | 165   | 500    | 321    | 350    | 326    | 160    | 104   | 98    |
| 23    | 203    | 240    | 190    | 155   | 165   | 630    | 360    | 352    | *301   | 160    | *108  | 104   |
| 24    | 214    | 250    | 180    | 160   | 165   | 800    | 387    | 326    | 283    | 160    | 113   | 102   |
| 25    | 214    | 250    | 180    | 165   | 160   | 932    | 357    | 331    | 272    | 157    | 113   | 99    |
| 26    | 210    | 235    | 180    | 165   | 150   | 1,280  | 333    | 314    | 255    | 149    | 106   | 99    |
| 27    | 218    | 210    | 175    | 165   | 150   | 1,220  | 312    | 310    | 248    | 134    | 104   | 101   |
| 28    | 228    | 210    | 160    | 160   | 150   | 1,230  | 331    | 322    | 234    | 146    | 99    | 102   |
| 29    | 232    | 208    | 140    | 160   | 150   | 1,160  | 355    | 294    | 228    | 130    | 96    | 99    |
| 30    | *238   | 210    | 140    | 160   | ----- | 1,100  | 340    | 296    | 228    | 144    | 95    | 93    |
| 31    | 244    | -----  | 140    | 160   | ----- | *1,020 | -----  | 277    | -----  | 116    | 89    | ----- |
| Total | 6,453  | 6,986  | 5,620  | 4,805 | 4,655 | 14,632 | 15,418 | 12,652 | 9,595  | 5,997  | 3,436 | 2,676 |
| Mean  | 208    | 233    | 181    | 155   | 161   | 472    | 514    | 408    | 320    | 190    | 111   | 89.2  |
| Ac-Ft | 12,800 | 13,860 | 11,150 | 9,530 | 9,230 | 29,020 | 30,580 | 25,090 | 19,030 | 11,890 | 6,820 | 5,310 |

Calendar year 1959: Max 876 Min 93 Mean 244 Ac-ft 176,700  
 Water year 1959-60: Max 1,280 Min 75 Mean 254 Ac-ft 184,300

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 5-6, Nov. 12 to Mar. 24 (no gage-height record Feb. 20 to Mar. 10; discharge estimated on basis of weather records and records for stations below Smiths Fork near Cokeville and at Stewart Dam).

## 410. Thomas Fork near Wyoming-Idaho State line

Location.--Lat 42°24'10", long 111°01'30", in SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.19, T.28 N., R.119 W., in Wyoming, on right bank 1.3 miles upstream from State line, 1.5 miles downstream from Giraffe Creek, and 3 $\frac{1}{2}$  miles northeast of Geneva, Idaho.

Drainage area.--113 sq mi.

Records available.--October 1949 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,280 ft (from topographic map). Prior to Aug. 23, 1957, at site 0.2 mile upstream at different datum.

Average discharge.--11 years, 52.1 cfs (37,720 acre-ft per year).

Extremes.--Maximum discharge during year, 268 cfs Apr. 9 (gage height, 2.84 ft); minimum, 3.0 cfs Nov. 26.

1949-60: Maximum discharge, 869 cfs May 18, 1950 (gage height, 5.55 ft, site and datum then in use); minimum, 2.6 cfs Mar. 2, 1956, result of freezeup.

Remarks.--Records good except those for periods of ice effect, which are fair. No diversion above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.1 | 7.2 | 1.7 | 48  |
| 1.2 | 10  | 2.0 | 85  |
| 1.4 | 20  | 2.5 | 184 |

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     | 15   | 12    | b11   | b10   | b10   | b10   | 31    | 88    | 87    | 28    | 19   | 13    |
| 2     | 14   | 12    | b11   | b10   | b10   | b11   | 27    | 96    | 85    | 28    | 17   | 14    |
| 3     | 14   | 13    | b11   | b9.0  | b10   | b12   | 35    | 118   | *64   | 28    | 15   | 14    |
| 4     | 13   | 13    | *b9.0 | b8.0  | b9.0  | b12   | 61    | 124   | 60    | 27    | 14   | 13    |
| 5     | 13   | 11    | b8.0  | b9.0  | b9.0  | 12    | 98    | *126  | 58    | 27    | 14   | 13    |
| 6     | 13   | 13    | b9.0  | 11    | b9.0  | 12    | 153   | 144   | 57    | 26    | 13   | 12    |
| 7     | 15   | 13    | b9.5  | 10    | b10   | 12    | 163   | 148   | 56    | 30    | 13   | 12    |
| 8     | 15   | 13    | b9.5  | 10    | b10   | 13    | 150   | 161   | 54    | 29    | 13   | 12    |
| 9     | 17   | 13    | b9.5  | 11    | b11   | 12    | 184   | 170   | 56    | 25    | 13   | 11    |
| 10    | 18   | 12    | b9.5  | 10    | b11   | b12   | 168   | 172   | 66    | 24    | 13   | 11    |
| 11    | 18   | 11    | b10   | 10    | b11   | b12   | 134   | 177   | 59    | 24    | 14   | 11    |
| 12    | 15   | 12    | b10   | 11    | *b10  | 12    | 118   | 177   | 51    | 24    | 13   | 11    |
| 13    | 17   | 10    | b10   | b10   | b11   | 11    | 95    | 166   | 48    | 23    | 12   | 11    |
| 14    | 15   | b9.5  | b10   | b10   | b11   | 10    | *95   | 144   | 46    | 22    | 11   | 11    |
| 15    | 14   | b11   | b10   | *b10  | b11   | b10   | 77    | 132   | 52    | 21    | 12   | 11    |
| 16    | 14   | 12    | b10   | b10   | b11   | b11   | 67    | 122   | 46    | 19    | 15   | 11    |
| 17    | 13   | 13    | b10   | b10   | b11   | b12   | 61    | 116   | 44    | 19    | 15   | 12    |
| 18    | 13   | 13    | b10   | b10   | b11   | 12    | 64    | 110   | 43    | 19    | 14   | 13    |
| 19    | 13   | 13    | b10   | b10   | b11   | b12   | 66    | 103   | 42    | *19   | 13   | 11    |
| 20    | 13   | 12    | b9.0  | b11   | b11   | b12   | 65    | 98    | 40    | 18    | 12   | 11    |
| 21    | 13   | 12    | b9.0  | b11   | b11   | b14   | 82    | 93    | 38    | 18    | 11   | 11    |
| 22    | 14   | 12    | b10   | b11   | b10   | b15   | 105   | 90    | 37    | 18    | 12   | 13    |
| 23    | 14   | 13    | b10   | b11   | b9.5  | 18    | 107   | 88    | *37   | 18    | *14  | 13    |
| 24    | 14   | 13    | 10    | b11   | b9.0  | 19    | 85    | 85    | 36    | 18    | 13   | 12    |
| 25    | 14   | 13    | 10    | b11   | b10   | 20    | 77    | 82    | 34    | 17    | 13   | 11    |
| 26    | 13   | 9.8   | 9.4   | 11    | b10   | 22    | 74    | 79    | 32    | 17    | 12   | 11    |
| 27    | 13   | b9.0  | b8.0  | 11    | b9.0  | 26    | 75    | 82    | 32    | 17    | 12   | 11    |
| 28    | 13   | b10   | b9.0  | b10   | b9.0  | 32    | 84    | 78    | 32    | 16    | 11   | 11    |
| 29    | 13   | b11   | b9.0  | b10   | b9.0  | 45    | 81    | 74    | 30    | 16    | 11   | 11    |
| 30    | *13  | b11   | b10   | b10   | ----- | 41    | 81    | 71    | 29    | 16    | 11   | 11    |
| 31    | 12   | ----- | b10   | b10   | ----- | *37   | ----- | 70    | ----- | 16    | 11   | 11    |
| Total | 438  | 355.3 | 300.4 | 317.0 | 294.5 | 522   | 2,761 | 3,584 | 1,411 | 667   | 406  | 353   |
| Mean  | 14.1 | 11.8  | 9.69  | 10.2  | 10.2  | 16.8  | 92.0  | 116   | 47.0  | 21.5  | 13.1 | 11.8  |
| Ac-ft | 869  | 705   | 596   | 629   | 584   | 1,040 | 5,480 | 7,110 | 2,800 | 1,320 | 805  | 700   |

Calendar year 1959: Max 132 Min 8.0 Mean 25.9 Ac-ft 18,730  
 Water year 1959-60: Max 184 Min 8.0 Mean 31.2 Ac-ft 22,640

Peak discharge (base, 150 cfs).--Apr. 9 (11 p.m.) 268 cfs (2.84 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## 440. Bear River at Harer, Idaho

Location.--Lat 42°11'50", long 111°10'05", in NW¼ sec.23, T.14 S., R.45 E., on right bank 400 ft downstream from Sheep Creek, three-quarters of a mile north of Harer siding on Union Pacific (Oregon Short Line) Railroad, and 5 miles southeast of Dingle.

Drainage area.--2,780 sq mi, approximately.

Records available.--June 1913 to September 1960. Monthly discharge only October 1916 to September 1918, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 6,000 ft (from topographic map). Prior to Aug. 24, 1914, staff gage at site 1,500 ft downstream at different datum.

Average discharge.--47 years, 511 cfs (369,900 acre-ft per year).

Extremes.--Maximum daily discharge during year, 1,320 cfs Mar. 27; minimum, 89 cfs Sept. 15. 1913-60: Maximum discharge, 4,440 cfs May 7, 1952 (gage height, 11.04 ft); minimum daily, 26 cfs Aug. 21-27, 1934.

Remarks.--Records good except those for periods of ice effect, which are fair. Many diversions above station for irrigation.

Cooperation.--Records collected by Utah Power & Light Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project.

Rating table, water year 1959-60, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |       |
|-----|-----|-----|-------|
| 2.5 | 89  | 4.0 | 523   |
| 3.0 | 191 | 5.0 | 956   |
| 3.5 | 336 | 7.0 | 1,680 |

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                   | 249    | 269    | 225    | 150    | 175    | 165    | 1,020  | 443    | 326     | 235    | 141   | 99    |
| 2                   | 249    | 269    | 225    | 150    | 180    | 165    | 852    | 447    | 339     | 227    | 145   | 96    |
| 3                   | 246    | 278    | 225    | 150    | 185    | 165    | 824    | 478    | 343     | 216    | 125   | 91    |
| 4                   | 240    | 288    | 220    | 150    | 180    | 165    | 828    | 527    | 353     | 269    | 135   | 92    |
| 5                   | 240    | 278    | 210    | 150    | 180    | 165    | 832    | 549    | 367     | 243    | 133   | 92    |
| 6                   | 238    | 224    | *200   | 150    | 175    | 175    | *882   | 527    | 360     | 252    | 131   | 94    |
| 7                   | 240    | 258    | 190    | 160    | 175    | 180    | 936    | 562    | 356     | 278    | 127   | 98    |
| 8                   | 235    | 281    | 185    | 165    | 170    | 185    | 947    | 570    | 346     | 275    | *125  | 94    |
| 9                   | 235    | 272    | 180    | 165    | 170    | 190    | 906    | 601    | 346     | 266    | 119   | 92    |
| 10                  | 235    | 281    | 180    | 165    | 175    | 215    | 928    | 623    | 374     | 255    | 119   | 94    |
| 11                  | 232    | 281    | 180    | 170    | 185    | 220    | 947    | 654    | 421     | 246    | 117   | 94    |
| 12                  | 227    | 288    | 180    | 175    | 185    | 225    | 875    | 698    | 410     | 246    | 112   | 92    |
| 13                  | 224    | 281    | 185    | 180    | 180    | 245    | 820    | 760    | 388     | 240    | 112   | 94    |
| 14                  | 227    | 206    | 185    | *182   | 175    | 270    | 748    | 804    | 402     | 235    | 108   | 92    |
| 15                  | 224    | 205    | 180    | 185    | 170    | 325    | *628   | 784    | 413     | 235    | 110   | 91    |
| 16                  | 224    | 210    | 175    | 180    | 170    | 350    | 544    | 658    | 417     | 216    | 112   | 99    |
| 17                  | 224    | 230    | 170    | 180    | 175    | 335    | 498    | 553    | 399     | 201    | 117   | 104   |
| 18                  | 224    | 230    | 170    | 175    | 175    | 320    | 443    | *527   | 410     | 198    | 121   | 110   |
| 19                  | 221    | 235    | 170    | 165    | 175    | 325    | 406    | 515    | 421     | 184    | 119   | 117   |
| 20                  | 221    | 235    | 170    | 160    | 175    | 325    | 388    | 515    | 432     | 186    | 114   | 143   |
| 21                  | 255    | 235    | 170    | 180    | 175    | 350    | 374    | 470    | 424     | 184    | 114   | 137   |
| 22                  | 227    | 250    | 170    | 165    | 175    | 410    | 388    | 428    | 417     | 184    | 112   | 127   |
| 23                  | 227    | 270    | 170    | 165    | 175    | 540    | 447    | 406    | 392     | 181    | 110   | 127   |
| 24                  | 232    | 270    | 175    | 170    | 175    | 700    | 511    | *395   | 356     | 184    | 114   | 127   |
| 25                  | 240    | 265    | 175    | 170    | 170    | 880    | 486    | 374    | 326     | 189    | 117   | 125   |
| 26                  | 232    | 230    | 175    | 175    | 170    | 1,020  | 466    | 367    | *278    | 206    | 116   | *125  |
| 27                  | 235    | 225    | 170    | 175    | 170    | 1,320  | 424    | 350    | 255     | 191    | 114   | 125   |
| 28                  | 243    | 220    | 160    | 175    | *168   | 1,310  | 439    | 370    | 249     | 181    | 110   | 133   |
| 29                  | 246    | 220    | 145    | 175    | 170    | 1,260  | 462    | 350    | 240     | 181    | 108   | 131   |
| 30                  | *252   | 225    | 135    | 175    | -----  | 1,180  | 470    | 333    | 235     | 169    | 108   | 129   |
| 31                  | 260    | -----  | 135    | 175    | -----  | 1,130  | -----  | 333    | -----   | 163    | 105   | ----- |
| Total               | 7,304  | 7,509  | 5,585  | 5,187  | 5,078  | 14,810 | 19,749 | 15,971 | 10,795  | 6,716  | 3,688 | 3,264 |
| Mean                | 236    | 250    | 180    | 167    | 175    | 478    | 658    | 515    | 360     | 217    | 119   | 109   |
| Ac-ft               | 14,490 | 14,890 | 11,080 | 10,290 | 10,070 | 29,380 | 39,170 | 31,680 | 21,410  | 13,320 | 7,320 | 6,470 |
| Calendar year 1959: | Max    | 1,060  |        | Min    | 112    | Mean   | 278    | Ac-ft  | 201,500 |        |       |       |
| Water year 1959-60: | Max    | 1,320  |        | Min    | 91     | Mean   | 289    | Ac-ft  | 209,600 |        |       |       |

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 15 to Mar. 27; discharge estimated on basis of 3 discharge measurements, weather records, and records for other Bear River stations.

## 460. Rainbow inlet canal near Dingle, Idaho

Location.--Lat 42°13'00", long 111°17'30", in SE $\frac{1}{4}$  sec.3, T.14 S., R.44 E., on left bank  $\frac{1}{2}$  miles west of Dingle and  $\frac{1}{2}$  miles downstream from headworks at Stewart Dam.

Records available.--January 1922 to September 1960. Monthly discharge prior to October 1945, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,950 ft (from topographic map). Prior to Oct. 1, 1923, at site 300 ft downstream at different datum. Oct. 1, 1923, to Oct. 27, 1944, at site half a mile downstream at different datum.

Average discharge.--38 years, 299 cfs (216,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,770 cfs Mar. 27 (gage height, 5.46 ft); minimum daily, 11 cfs Sept. 5, 6, 19.

1922-60: Maximum discharge, 4,180 cfs May 7, 1952 (gage height, 8.62 ft); minimum daily, 1 cfs in 1931, 1934, 1940, 1948.

Remarks.--Records good except those for periods of ice effect or backwater from Mud Lake, which are fair. Discharge measurements generally made three times a week. Canal diverts from Bear River at Stewart Dam in NE $\frac{1}{4}$  sec.34, T.13 S., R.44 E., for storage in Bear Lake. At times flow in canal is augmented by surplus water from Black Otter Slough entering at the station and by seepage and wastage from irrigation lands or both sides of canal.

Cooperation.--Records collected by Utah Power & Light Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project.

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                                                           | 210    | 231    | 185   | b95   | 120   | 120    | 1,040  | 420    | 19    | 22    | 75    | 12    |
| 2                                                           | 208    | 231    | 188   | 95    | 124   | 124    | 882    | 420    | 19    | 22    | 64    | 12    |
| 3                                                           | 205    | 240    | 185   | b100  | 128   | 122    | 804    | 432    | 20    | 21    | 63    | 12    |
| 4                                                           | 201    | 243    | b180  | b103  | b125  | 118    | 784    | 469    | 20    | 20    | 60    | 12    |
| 5                                                           | 201    | 240    | b175  | b100  | b125  | 120    | 777    | 501    | 21    | 20    | 49    | 11    |
| 6                                                           | 201    | 188    | b165  | 99    | b123  | 128    | 815    | 472    | 22    | 19    | 44    | 11    |
| 7                                                           | 199    | 214    | b149  | 107   | b122  | 135    | 878    | 478    | 22    | 19    | 44    | 12    |
| 8                                                           | 196    | 219    | b145  | 116   | b120  | 139    | 910    | 491    | 22    | 19    | 41    | 13    |
| 9                                                           | 196    | 236    | 137   | 113   | 113   | 143    | 866    | 507    | 21    | 19    | 40    | 12    |
| 10                                                          | 192    | 228    | 137   | 113   | 128   | 168    | 866    | 468    | 21    | 30    | 40    | 12    |
| 11                                                          | 194    | 231    | 139   | 116   | 133   | 203    | 894    | 441    | 22    | 64    | 44    | 13    |
| 12                                                          | 188    | 231    | b140  | 118   | b132  | 177    | 839    | 447    | 23    | 80    | 40    | 13    |
| 13                                                          | 185    | 233    | b145  | b123  | 130   | 194    | 773    | 444    | 23    | 95    | 34    | 13    |
| 14                                                          | 185    | 221    | b144  | 128   | b127  | 219    | 716    | 429    | 24    | 95    | 27    | 12    |
| 15                                                          | 190    | 170    | b135  | b130  | 124   | 270    | 610    | 423    | 24    | 88    | 28    | 12    |
| 16                                                          | 183    | 159    | 131   | b125  | 122   | 298    | 530    | 365    | 24    | 82    | 33    | 12    |
| 17                                                          | 190    | 196    | 118   | b125  | b129  | 280    | 478    | 270    | 24    | 72    | 34    | 12    |
| 18                                                          | 194    | 185    | 128   | b120  | b132  | 268    | 435    | 236    | 24    | 68    | 34    | 12    |
| 19                                                          | 194    | 168    | 133   | b110  | 128   | 275    | 402    | 185    | 25    | 64    | 36    | 11    |
| 20                                                          | 192    | 196    | 133   | 100   | b128  | 270    | 371    | 157    | 25    | 57    | 34    | 13    |
| 21                                                          | 236    | 192    | 130   | 104   | b129  | 296    | 354    | 135    | 25    | 58    | 35    | 15    |
| 22                                                          | 214    | 212    | 126   | 111   | b128  | 360    | 379    | 120    | 23    | 56    | 46    | 15    |
| 23                                                          | 199    | 224    | 126   | 113   | b127  | 482    | 382    | 85     | 22    | 45    | 50    | 15    |
| 24                                                          | 210    | 226    | b130  | 122   | b126  | 646    | 453    | 24     | 21    | 42    | 49    | 21    |
| 25                                                          | 208    | 221    | b130  | 120   | b125  | 827    | 466    | 21     | 21    | 42    | 45    | 24    |
| 26                                                          | 210    | b185   | b134  | 118   | b124  | 955    | 444    | 19     | 22    | 46    | 42    | 24    |
| 27                                                          | 210    | b192   | b130  | 122   | b123  | 1,260  | 408    | 19     | 22    | 50    | 19    | 25    |
| 28                                                          | 221    | 179    | b108  | b122  | b122  | 1,340  | 402    | 19     | 23    | 51    | 17    | 26    |
| 29                                                          | 219    | 179    | b100  | 122   | b121  | 1,260  | 420    | 19     | 22    | 58    | 15    | 27    |
| 30                                                          | 221    | 181    | 90    | b122  | ----- | 1,180  | 438    | 19     | 22    | 72    | 14    | 27    |
| 31                                                          | 221    | -----  | b90   | b122  | ----- | 1,120  | -----  | 19     | ----- | 74    | 13    | ----- |
| Total                                                       | 6,273  | 6,271  | 4,286 | 3,534 | 3,638 | 13,497 | 18,816 | 8,574  | 668   | 1,570 | 1,209 | 461   |
| Mean                                                        | 202    | 209    | 138   | 114   | 125   | 435    | 627    | 277    | 22.3  | 50.6  | 39.0  | 15.4  |
| Ac-ft                                                       | 12,440 | 12,440 | 8,500 | 7,010 | 7,220 | 26,770 | 37,320 | 17,010 | 1,320 | 3,110 | 2,400 | 914   |
| Calendar year 1959: Max 975 Min 12 Mean 165 Ac-ft 119,700   |        |        |       |       |       |        |        |        |       |       |       |       |
| Water year 1959-60: Max 1,340 Min 11 Mean 188 Ac-ft 136,500 |        |        |       |       |       |        |        |        |       |       |       |       |

b Stage-discharge relation affected by ice.

Note.--Stage-discharge relation affected by backwater from Mud Lake May 23 to July 13, Aug. 28 to Sept. 30; discharge computed on basis of 33 discharge measurements, engineers' and observer's notes, and trend of flow.

## 465. Bear River below Stewart Dam, near Montpelier, Idaho

Location.--Lat 42°15'30", long 111°17'30", in NE¼ sec.34, T.13 S., R.44 E., on right bank 300 ft downstream from Stewart Dam and 4½ miles south of Montpelier.

Drainage area.--2,820 sq mi, approximately.

Records available.--January 1922 to September 1960. Monthly discharge only January 1922 to September 1945, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,950 ft (from topographic map).

Average discharge.--38 years, 63.9 cfs (46,260 acre-ft per year).

Extremes.--Maximum discharge during year, 50 cfs Mar. 28 (gage height, 1.76 ft); minimum, 0.1 cfs Nov. 26.  
1922-60: Maximum daily discharge, 3,050 cfs June 3, 1923; no flow July 15, 1956.

Remarks.--Records good. Discharge measurements generally made once a week. Water diverted at Stewart Dam through Rainbow inlet canal (see p. 33), for storage and regulation in Bear Lake. Many diversions above station for irrigation.

Cooperation.--Records collected by Utah Power & Light Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project.

Rating table, water year 1959-60 (gage height, in feet, and  
discharge, in cubic feet per second)  
(Shifting-control method used Oct. 1-28, Nov. 4  
to Dec. 19, Jan. 3-7, Sept. 3-30)

|     |     |     |    |
|-----|-----|-----|----|
| 0.7 | 0   | 1.1 | 12 |
| .8  | .9  | 1.3 | 22 |
| .9  | 4.3 |     |    |

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                       | 12    | 1.9   | 9.8   | 8.9   | 8.9     | 6.2   | 9.4       | 4.7   | 6.6          | 9.8   | 20    | 15    |
| 2                       | 12    | 2.3   | 9.8   | 8.5   | 8.9     | 5.8   | 8.1       | 4.7   | 6.6          | 9.4   | 20    | 14    |
| 3                       | 12    | 2.3   | 9.8   | 8.5   | 8.9     | 6.2   | 7.0       | 4.7   | 7.3          | 8.5   | 20    | 13    |
| 4                       | 12    | 4.0   | 7.7   | 8.5   | 7.3     | 6.6   | 7.0       | 4.7   | 7.3          | 8.1   | 20    | 11    |
| 5                       | 13    | 5.4   | 8.1   | 7.3   | 7.3     | 6.6   | 7.0       | 5.1   | 7.7          | 7.5   | 20    | 11    |
| 6                       | 13    | 2.9   | 8.1   | 7.3   | 7.7     | 7.7   | 7.0       | 4.7   | 8.5          | 8.1   | 21    | 9.8   |
| 7                       | 13    | 7.3   | 7.3   | 7.3   | 7.3     | 8.1   | 7.3       | 4.7   | 9.4          | 8.5   | 20    | 9.4   |
| 8                       | 13    | 11    | 6.6   | 7.7   | 7.7     | 8.5   | 7.7       | 5.1   | 8.9          | 8.5   | 20    | 8.9   |
| 9                       | 12    | 11    | 6.6   | 8.5   | 8.5     | 10    | 7.3       | 5.4   | 8.9          | 8.5   | 20    | 9.4   |
| 10                      | 12    | 11    | 7.0   | 8.9   | 8.9     | 11    | 7.7       | 8.5   | 8.9          | 16    | 21    | 9.4   |
| 11                      | 12    | 11    | 5.8   | 9.8   | 8.9     | 11    | 8.1       | 13    | 9.8          | 17    | 21    | 8.9   |
| 12                      | 11    | 11    | 6.2   | 9.8   | 8.5     | 11    | 8.1       | 13    | 10           | 17    | 21    | 8.9   |
| 13                      | 11    | 11    | 4.7   | 9.8   | 8.5     | 12    | 7.3       | 12    | 9.8          | 16    | 20    | 8.5   |
| 14                      | 11    | 7.3   | 4.7   | 9.4   | 8.5     | 13    | 7.3       | 13    | 9.8          | 17    | 20    | 8.5   |
| 15                      | 12    | 5.8   | 4.7   | 8.5   | 8.5     | 14    | 7.0       | 12    | 11           | 17    | 19    | 8.1   |
| 16                      | 12    | 6.6   | 4.7   | 8.5   | 8.5     | 13    | 6.6       | 12    | 11           | 17    | 20    | 8.1   |
| 17                      | 12    | 8.5   | 3.3   | 10    | 8.5     | 13    | 6.2       | 11    | 11           | 17    | 20    | 8.1   |
| 18                      | 13    | 8.9   | 4.0   | 11    | 8.1     | 13    | 5.8       | 11    | 10           | 17    | 21    | 8.5   |
| 19                      | 13    | 10    | 4.3   | 11    | 8.5     | 11    | 5.4       | 12    | 11           | 18    | 21    | 9.4   |
| 20                      | 13    | 9.8   | 4.3   | 11    | 8.9     | 11    | 5.1       | 16    | 11           | 17    | 21    | 9.4   |
| 21                      | 13    | 9.8   | 4.0   | 11    | 8.5     | 11    | 4.7       | 15    | 12           | 18    | 21    | 11    |
| 22                      | 13    | 11    | 4.0   | 10    | 8.9     | 9.8   | 4.3       | 14    | 12           | 20    | 21    | 14    |
| 23                      | 13    | 11    | 4.0   | 9.4   | 8.1     | 14    | 4.7       | 14    | 11           | 19    | 20    | 14    |
| 24                      | 13    | 11    | 4.3   | 8.5   | 10      | 11    | 4.7       | 15    | 10           | 18    | 21    | 12    |
| 25                      | 13    | 11    | 5.8   | 9.8   | 8.5     | 9.8   | 5.1       | 15    | 9.4          | 18    | 20    | 9.4   |
| 26                      | 13    | 6.6   | 5.4   | 9.4   | 8.1     | 15    | 5.1       | 8.5   | 8.5          | 19    | 21    | 8.1   |
| 27                      | 6.6   | 8.1   | 8.1   | 8.9   | 8.9     | 17    | 5.4       | 4.7   | 7.7          | 19    | 20    | 7.7   |
| 28                      | 7.7   | 7.3   | 9.8   | 8.9   | 7.0     | 19    | 5.1       | 4.7   | 7.7          | 20    | 19    | 7.7   |
| 29                      | 9.8   | 8.5   | 9.8   | 8.9   | 7.7     | 11    | 5.1       | 6.6   | 9.8          | 20    | 18    | 7.7   |
| 30                      | 9.8   | 10    | 9.8   | 9.4   | -----   | 11    | 5.1       | 6.2   | 11           | 20    | 17    | 7.7   |
| 31                      | 1.2   | ----- | 9.4   | 9.4   | -----   | 11    | -----     | 6.6   | -----        | 2     | 16    | ----- |
| Total                   | 332.3 | 243.3 | 201.9 | 283.8 | 242.5   | 338.3 | 191.7     | 288.6 | 283.6        | 475.9 | 620   | 295.  |
| Mean                    | 10.7  | 8.11  | 6.51  | 9.15  | 8.36    | 10.9  | 6.39      | 9.31  | 9.45         | 15.4  | 20.0  | 9.8   |
| Ac-ft                   | 659   | 483   | 400   | 563   | 481     | 671   | 380       | 572   | 563          | 944   | 1,230 | 58    |
| Calendar year 1959: Max | 33    |       |       |       | Min 0.7 |       | Mean 15.7 |       | Ac-ft 11,350 |       |       |       |
| Water year 1959-60: Max | 21    |       |       |       | Min 0.7 |       | Mean 10.4 |       | Ac-ft 7,530  |       |       |       |

## 475. Montpelier Creek at irrigators weir, near Montpelier, Idaho

Location--Lat 42°20', long 111°14', in SE $\frac{1}{4}$  sec.31, T.12 S., R.45 E., on right bank 3 miles east of Montpelier and  $3\frac{1}{2}$  miles downstream from South Fork.

Drainage area--50.9 sq mi.

Records available--October 1942 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage--Water-stage recorder and sharp-crested weir. Altitude of gage is 6,210 ft (from topographic map).

Average discharge--18 years, 21.4 cfs (15,490 acre-ft per year).

Extremes--Maximum discharge during year, 91 cfs Apr. 7 (gage height, 1.50 ft); minimum, 0.7 cfs Dec. 24, result of freezeup.  
1942-60: Maximum discharge, 224 cfs May 18, 1950 (gage height, 2.91 ft); minimum, that of Dec. 24, 1960.

Remarks--Records excellent. One small diversion above station for irrigation.

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     | 11    | 8.3   | 7.8   | 6.0   | 6.1   | 5.1   | *17   | 29    | 23    | 15    | 9.9   | 8.4   |
| 2     | 10    | 8.5   | 7.2   | 5.1   | 6.1   | 5.8   | 16    | 30    | 23    | 15    | 9.1   | 9.5   |
| 3     | 9.9   | 8.5   | 7.4   | 4.7   | 6.0   | 6.3   | 19    | 32    | *22   | 15    | 8.8   | 8.8   |
| 4     | 9.9   | 9.0   | 5.4   | 4.2   | 5.3   | 6.4   | 30    | 32    | 21    | 14    | 8.4   | 8.8   |
| 5     | 9.5   | 6.6   | 5.7   | 5.3   | 5.8   | 6.4   | 43    | *31   | 21    | 14    | 8.4   | 8.1   |
| 6     | 9.5   | 7.0   | 6.0   | 5.4   | 6.3   | 6.6   | 65    | 31    | 22    | 14    | 8.4   | 7.7   |
| 7     | 10    | 8.8   | 6.0   | 5.6   | 6.1   | 6.6   | 68    | 32    | 23    | 14    | 8.4   | 8.1   |
| 8     | 10    | 8.3   | 5.6   | 5.4   | 6.6   | 6.6   | 56    | 32    | 23    | 13    | 8.1   | 7.7   |
| 9     | 11    | 8.3   | 5.7   | 5.3   | 6.8   | 6.6   | 62    | 32    | 23    | 13    | 8.1   | 7.7   |
| 10    | 11    | 8.5   | 6.6   | 5.3   | 6.6   | 6.6   | 67    | 33    | 28    | 12    | 8.4   | 7.7   |
| 11    | 9.9   | 8.3   | 6.3   | 5.4   | 6.4   | *6.9  | 58    | 34    | 24    | 11    | 8.4   | 7.7   |
| 12    | 9.5   | 8.5   | 6.4   | 5.4   | 5.6   | 6.6   | 49    | 34    | 22    | 11    | 7.7   | 7.4   |
| 13    | 9.5   | 7.7   | 6.1   | 5.4   | 6.3   | 6.6   | 38    | 33    | 21    | 11    | 7.7   | 7.7   |
| 14    | 9.5   | 6.9   | 6.0   | 5.6   | 5.7   | 6.4   | *39   | 32    | 21    | 11    | 7.4   | 7.7   |
| 15    | 9.5   | 7.2   | 5.8   | *5.6  | 6.9   | 6.3   | 31    | 31    | 23    | 11    | 7.7   | 7.7   |
| 16    | 9.9   | 8.3   | 5.1   | 4.9   | 6.6   | 6.1   | 28    | 30    | 21    | 11    | 9.1   | 7.1   |
| 17    | 8.8   | 7.0   | 6.0   | 6.4   | 5.7   | 6.8   | 26    | 30    | 20    | 10    | 9.5   | 7.1   |
| 18    | 8.8   | 7.4   | 6.0   | 6.0   | 6.0   | 6.9   | 28    | 30    | 20    | 10    | 8.8   | 8.4   |
| 19    | 8.8   | 7.7   | 5.6   | 5.8   | 6.9   | 7.0   | 32    | 28    | 19    | 9.9   | 8.1   | 7.7   |
| 20    | 8.8   | 7.5   | 4.6   | 6.4   | 5.6   | 7.4   | 28    | 28    | 19    | 10    | 7.7   | 7.4   |
| 21    | 8.8   | 8.0   | 5.6   | 6.3   | 7.5   | 7.8   | 33    | 27    | 19    | 11    | 7.4   | 7.7   |
| 22    | 9.1   | 7.8   | 5.7   | 6.3   | 6.8   | 8.5   | 36    | 28    | 18    | 11    | *7.4  | 9.1   |
| 23    | 9.9   | 8.2   | 5.1   | 6.3   | 6.1   | 9.3   | 36    | 27    | *18   | 10    | 8.8   | 7.7   |
| 24    | 9.5   | 8.5   | 5.3   | 6.1   | 5.7   | 10    | 32    | 26    | 18    | 10    | 8.4   | 8.1   |
| 25    | 8.8   | 8.3   | 5.8   | 6.1   | 6.6   | 12    | 30    | 26    | 17    | 9.9   | 8.4   | 7.7   |
| 26    | 7.7   | 6.6   | 5.4   | 6.3   | 6.6   | 14    | 30    | 26    | 16    | 9.9   | 8.1   | 7.7   |
| 27    | 8.4   | 6.1   | 5.5   | 6.3   | 5.1   | 17    | 30    | 26    | 16    | 9.5   | 8.1   | 7.7   |
| 28    | 8.4   | 6.1   | 5.1   | 6.1   | 5.0   | 20    | 31    | 24    | 16    | 9.5   | 8.1   | 7.7   |
| 29    | 8.4   | 6.6   | 5.1   | 5.8   | 4.7   | 17    | 30    | 23    | 16    | 9.1   | 7.7   | 7.7   |
| 30    | *8.3  | 7.7   | 5.3   | 5.6   | ----- | 18    | 28    | 22    | 15    | 9.1   | 7.7   | 7.7   |
| 31    | 8.0   | ----- | 6.1   | 6.0   | ----- | 18    | ----- | 23    | ----- | 8.8   | 7.7   | ----- |
| Total | 290.1 | 232.2 | 179.3 | 176.4 | 177.5 | 281.6 | 1,115 | 902   | 608   | 352.7 | 255.9 | 237.2 |
| Mean  | 9.36  | 7.74  | 5.78  | 5.69  | 6.12  | 9.08  | 37.2  | 29.1  | 20.3  | 11.4  | 8.25  | 7.91  |
| Ac-ft | 575   | 461   | 356   | 350   | 352   | 559   | 2,210 | 1,790 | 1,210 | 700   | 508   | 470   |

Calendar year 1959: Max 39

Min 3.5

Mean 12.5

Ac-ft 9,020

Water year 1959-60: Max 68

Min 3.5

Mean 13.1

Ac-ft 9,540

\* Discharge measurement made on this day.

## BEAR RIVER BASIN

555. Bear Lake at Lifton, near St. Charles, Idaho

Location.--Lat 42°07'20", long 111°19'20", in NE $\frac{1}{4}$  sec.16, T.15 S., R.44 E., in Lifton pumping plant of Utah Power & Light Co.,  $3\frac{1}{2}$  miles east of St. Charles.

Drainage area.--435 sq mi, approximately (does not include Mud Lake drainage).

Records available.--October 1903 to June 1906 (gage heights only), January 1921 to September 1960. Monthly contents only January 1921 to September 1945, published in WSP 1314. Published as Bear Lake at Fish Haven 1903-6.

Gage.--Water-stage recorder. Datum of gage is 5,900 ft above mean sea level, unadjusted (levels by Utah Power & Light Co.). October 1903 to June 1906, staff gage at different site and datum.

Extremes.--Maximum contents during year, 1,061,000 acre-ft May 16-24 (gage height, 18.51 ft); minimum, 771,400 acre-ft Sept. 30 (gage height, 14.26 ft).  
1921-60: Maximum contents, 1,423,000 acre-ft June 10, 1923 (gage height, 23.68 ft); no usable contents Nov. 9-19, 1935 (gage height, 2.00 ft, lower limit of pumps).

Remarks.--Outflow regulated by gates and pumps at Bear Lake and by gates in dike at north end of Mud Lake. Inflow to lake augmented by water diverted from Bear River through Rainbow Inlet canal and Dingle Inlet canal, which empty into Mud Lake (see p. 33). Water from Mud Lake reaches Bear Lake by a sluice at pumping plant or by gates in causeway at south end of Mud Lake. Capacity, 1,421,000 acre-ft between gage heights 2.00 (lower limit of pumps) and 23.65 ft (present feasible upper limit of storage with existing facilities). Storage water used for irrigation and power development. Figures given herein represent usable contents.

Cooperation.--Gage heights furnished by Utah Power & Light Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project. Contents computed by Geological Survey from capacity table based on data furnished by Utah Power & Light Co.

Capacity table, water year 1959-60 (gage height, in feet, and contents, in thousands of acre-feet)

|      |       |      |       |
|------|-------|------|-------|
| 14.0 | 754   | 17.0 | 956.9 |
| 15.0 | 821   | 18.0 | 1,026 |
| 16.0 | 888.6 | 19.0 | 1,095 |

Contents, in thousands of acre-feet, at 7 a.m., water year October 1959 to September 1960

| Day | Oct.     | Nov.     | Dec.     | Jan.     | Feb.     | Mar.     | Apr.     | May      | June     | July     | Aug.     | Sept.    |
|-----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1   | 907.1    | 911.1    | 914.5    | 917.3    | 929.2    | 955.5    | 995.4    | 1,040    | 1,047    | 980.3    | 900.2    | 804.2    |
| 2   | 907.1    | 911.1    | 915.2    | 917.3    | 929.6    | 956.9    | 998.2    | 1,041    | 1,044    | 978.2    | 897.5    | 802.9    |
| 3   | 907.1    | 911.8    | 915.2    | 917.3    | 930.3    | 957.6    | 1,001    | 1,044    | 1,041    | 975.4    | 894.7    | 801.6    |
| 4   | 907.1    | 911.8    | 915.2    | 917.9    | 931.0    | 957.6    | 1,004    | 1,045    | 1,038    | 972.7    | 891.3    | 800.9    |
| 5   | 906.4    | 911.8    | 915.9    | 917.9    | 931.6    | 958.3    | 1,008    | 1,047    | 1,035    | 969.9    | 888.6    | 800.2    |
| 6   | 906.4    | 911.8    | 915.9    | 917.9    | 932.5    | 959.7    | 1,010    | 1,049    | 1,033    | 967.2    | 885.9    | 799.6    |
| 7   | 905.7    | 911.8    | 915.9    | 917.9    | 932.5    | 960.4    | 1,013    | 1,050    | 1,030    | 965.8    | 883.2    | 798.2    |
| 8   | 905.0    | 912.5    | 915.9    | 918.6    | 935.0    | 961.7    | 1,015    | 1,051    | 1,027    | 962.4    | 879.8    | 796.9    |
| 9   | 905.0    | 912.5    | 916.6    | 918.6    | 933.0    | 962.4    | 1,017    | 1,053    | 1,024    | 960.4    | 876.4    | 796.2    |
| 10  | 905.0    | 912.5    | 916.6    | 918.6    | 933.7    | 963.1    | 1,019    | 1,054    | 1,022    | 957.6    | 873.0    | 794.9    |
| 11  | 905.0    | 912.5    | 916.6    | 918.6    | 934.4    | 963.1    | 1,021    | 1,055    | 1,020    | 954.9    | 869.6    | 793.5    |
| 12  | 905.0    | 912.5    | 916.6    | 918.6    | 935.7    | 963.8    | 1,022    | 1,056    | 1,019    | 954.2    | 866.2    | 792.2    |
| 13  | 904.3    | 912.5    | 916.6    | 918.6    | 937.1    | 963.8    | 1,023    | 1,058    | 1,018    | 952.1    | 862.8    | 790.8    |
| 14  | 904.3    | 912.5    | 916.6    | 918.6    | 937.8    | 964.5    | 1,024    | 1,059    | 1,016    | 949.4    | 860.0    | 789.5    |
| 15  | 904.3    | 913.2    | 916.6    | 919.3    | 939.1    | 965.2    | 1,025    | 1,060    | 1,015    | 947.3    | 856.6    | 788.2    |
| 16  | 904.3    | 913.2    | 916.6    | 919.3    | 939.8    | 965.8    | 1,026    | 1,061    | 1,013    | 945.3    | 853.9    | 786.8    |
| 17  | 904.3    | 913.2    | 916.6    | 919.3    | 941.2    | 967.2    | 1,027    | 1,061    | 1,012    | 942.5    | 850.5    | 785.5    |
| 18  | 904.3    | 913.2    | 916.6    | 919.3    | 941.8    | 967.9    | 1,028    | 1,061    | 1,011    | 940.5    | 846.5    | 784.8    |
| 19  | 905.0    | 913.9    | 916.6    | 919.3    | 945.2    | 969.2    | 1,029    | 1,061    | 1,009    | 937.8    | 842.4    | 784.2    |
| 20  | 905.0    | 913.9    | 916.6    | 919.3    | 945.9    | 969.9    | 1,029    | 1,061    | 1,008    | 935.0    | 839.1    | 782.8    |
| 21  | 905.7    | 913.9    | 916.6    | 919.3    | 946.6    | 971.5    | 1,029    | 1,061    | 1,006    | 932.3    | 835.1    | 781.5    |
| 22  | 906.4    | 914.5    | 916.6    | 920.0    | 946.0    | 972.7    | 1,029    | 1,061    | 1,004    | 928.9    | 831.7    | 780.8    |
| 23  | 907.1    | 914.5    | 916.6    | 920.7    | 947.3    | 974.0    | 1,029    | 1,061    | 1,002    | 926.2    | 829.7    | 779.5    |
| 24  | 908.4    | 914.5    | 916.6    | 921.3    | 948.0    | 976.1    | 1,031    | 1,061    | 999.6    | 922.7    | 827.7    | 778.1    |
| 25  | 909.1    | 914.5    | 916.6    | 922.0    | 949.4    | 978.9    | 1,032    | 1,060    | 996.8    | 920.0    | 824.4    | 777.4    |
| 26  | 909.8    | 914.5    | 916.6    | 922.0    | 950.8    | 981.6    | 1,033    | 1,060    | 994.1    | 917.3    | 821.0    | 776.1    |
| 27  | 909.8    | 914.5    | 916.6    | 922.7    | 952.1    | 983.7    | 1,034    | 1,059    | 991.3    | 913.9    | 817.8    | 774.8    |
| 28  | 910.5    | 914.5    | 916.6    | 924.1    | 952.8    | 985.8    | 1,035    | 1,058    | 988.5    | 911.1    | 815.0    | 774.1    |
| 29  | 910.5    | 914.5    | 916.6    | 924.8    | 954.2    | 987.2    | 1,037    | 1,056    | 985.8    | 908.4    | 812.3    | 772.8    |
| 30  | 911.1    | 914.5    | 917.3    | 926.2    | 956.2    | 989.2    | 1,038    | 1,053    | 983.0    | 905.7    | 809.6    | 771.4    |
| 31  | 911.1    | 917.3    | 927.5    | 927.5    | 957.0    | 992.0    | 1,039    | 1,050    | 980.0    | 903.0    | 806.9    | 770.0    |
| (†) | 5,916.33 | 5,916.38 | 5,916.42 | 5,916.57 | 5,916.96 | 5,917.51 | 5,918.18 | 5,918.35 | 5,917.38 | 5,916.21 | 5,914.79 | 5,914.26 |
| (‡) | +4.0     | +3.4     | +2.8     | +10.2    | +6.7     | +37.8    | +46.0    | +12.0    | -67.0    | -80.0    | -96.1    | -35.5    |

Calendar year 1959..... -59.5  
Water year 1959-60..... -135.7

† Elevation, in feet, at end of month.

‡ Change in contents, in thousands of acre-feet.

## 595. Bear Lake outlet canal near Paris, Idaho

Location.--Lat 42°13'00", long 111°20'30", in SW<sup>1</sup> sec.8, T.14 S., R.44 E., on right bank 2,000 ft downstream from headgates (at dike) and 3 miles southeast of Paris.

Records available.--January 1922 to September 1960. Monthly discharge only January 1922 to September 1945, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,920 ft (from topographic map).

Average discharge.--38 years, 340 cfs (246,100 acre-ft per year).

Extremes.--Maximum daily discharge during year, 1,360 cfs July 21, 22; minimum daily, 4 cfs Apr. 16 to May 15.

1922-60: Maximum daily discharge, 1,870 cfs Aug. 8, 1924; minimum daily, 1 cfs for many days in 1937, 1954, 1959.

Remarks.--Records good except those for period of no gage-height record, which are fair. Discharge measurements generally made six times a week during period of release from Bear Lake.

Cooperation.--Records collected by Utah Power & Light Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project.

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     | 12   | 10    | 8    | 8    | 8     | 6    | 5     | 4      | 1,080  | 1,240  | 1,020  | 415    |
| 2     | 12   | 10    | 8    | 8    | 8     | 6    | 5     | 4      | 1,020  | 1,250  | 970    | 348    |
| 3     | 12   | 10    | 8    | 8    | 8     | 6    | 5     | 4      | 1,010  | 1,250  | 1,070  | 233    |
| 4     | 12   | 10    | 8    | 8    | 8     | 6    | 5     | 4      | 1,010  | 1,240  | 1,130  | 233    |
| 5     | 12   | 10    | 8    | 8    | 8     | 6    | 5     | 4      | 1,020  | 1,240  | 1,140  | 234    |
| 6     | 12   | 9     | 8    | 8    | 7     | 6    | 5     | 4      | 1,100  | 1,260  | 1,140  | 225    |
| 7     | 12   | 9     | 8    | 8    | 7     | 6    | 5     | 4      | 1,220  | 1,210  | 1,140  | 212    |
| 8     | 12   | 9     | 8    | 8    | 7     | 6    | 5     | 4      | 1,270  | 1,220  | 1,140  | 208    |
| 9     | 12   | 9     | 8    | 8    | 7     | 6    | 5     | 4      | 1,210  | 1,230  | 1,150  | 206    |
| 10    | 12   | 9     | 8    | 8    | 7     | 6    | 5     | 4      | 1,120  | 1,240  | 1,140  | 205    |
| 11    | 12   | 9     | 8    | 8    | 7     | 6    | 5     | 4      | 1,120  | 1,230  | 1,140  | 205    |
| 12    | 12   | 9     | 8    | 8    | 7     | 6    | 5     | 4      | 1,110  | 1,230  | 1,140  | 206    |
| 13    | 12   | 9     | 8    | 8    | 7     | 6    | 5     | 4      | 1,040  | 1,260  | 1,130  | 205    |
| 14    | 12   | 9     | 8    | 8    | 7     | 6    | 5     | 4      | 857    | 1,270  | 1,130  | 198    |
| 15    | 12   | 9     | 8    | 8    | 7     | 6    | 5     | 4      | 954    | 1,260  | 1,090  | 205    |
| 16    | 12   | 9     | 8    | 8    | 7     | 6    | 4     | 139    | 964    | 1,240  | 1,080  | 206    |
| 17    | 12   | 9     | 8    | 8    | 7     | 6    | 4     | 326    | 852    | 1,230  | 1,090  | 205    |
| 18    | 12   | 9     | 8    | 8    | 7     | 6    | 4     | 283    | 976    | 1,220  | 1,090  | 205    |
| 19    | 12   | 9     | 8    | 8    | 7     | 6    | 4     | 303    | 980    | 1,300  | 1,080  | 201    |
| 20    | 12   | 9     | 8    | 8    | 7     | 6    | 4     | 303    | 977    | 1,340  | 1,050  | 205    |
| 21    | 12   | 9     | 8    | 8    | 7     | 6    | 4     | 297    | 970    | 1,360  | 1,050  | 208    |
| 22    | 12   | 9     | 8    | 8    | 7     | 6    | 4     | 277    | 964    | 1,360  | 931    | 206    |
| 23    | 12   | 9     | 8    | 8    | 7     | 6    | 4     | 415    | 1,030  | 1,350  | 453    | 205    |
| 24    | 12   | 8     | 8    | 8    | 7     | 5    | 4     | 682    | 1,110  | 1,340  | 658    | 206    |
| 25    | 11   | 8     | 8    | 8    | 7     | 5    | 4     | 930    | 1,100  | 1,350  | 928    | 212    |
| 26    | 11   | 8     | 8    | 8    | 7     | 5    | 4     | 1,130  | 1,100  | 1,320  | 899    | 213    |
| 27    | 11   | 8     | 8    | 8    | 7     | 5    | 4     | 1,120  | 1,100  | 1,350  | 819    | 210    |
| 28    | 11   | 8     | 8    | 8    | 7     | 5    | 4     | 1,110  | 1,100  | 1,340  | 683    | 210    |
| 29    | 11   | 8     | 8    | 8    | 6     | 5    | 4     | 1,120  | 1,110  | 1,300  | 635    | 213    |
| 30    | 11   | 8     | 8    | 8    | ----- | 5    | 4     | 1,130  | 1,170  | 1,190  | 558    | 210    |
| 31    | 10   | ----- | 8    | 8    | ----- | 5    | ----- | 1,130  | -----  | 1,090  | 458    | -----  |
| Total | 364  | 268   | 248  | 248  | 207   | 178  | 135   | 10,755 | 31,738 | 39,290 | 30,132 | 6,653  |
| Mean  | 11.7 | 8.9   | 8.0  | 8.0  | 7.1   | 5.7  | 4.5   | 347    | 1,058  | 1,267  | 972    | 222    |
| Ac-ft | 722  | 532   | 492  | 492  | 411   | 353  | 268   | 21,330 | 62,950 | 77,930 | 59,770 | 13,200 |

Calendar year 1959: Max 1,340 Min 2 Mean 221 Ac-ft 160,300  
 Water year 1959-60: Max 1,360 Min 4 Mean 328 Ac-ft 238,400

Note.--No gage-height record Oct. 1 to May 15; discharge estimated on basis of 7 discharge measurements, weather records, and records for Bear River stations.

## BEAR RIVER BASIN

## 750. Bear River at Soda Springs, Idaho

Location.--Lat 42°36'50", long 111°35'00", in NW¼ sec.29, T.9 S., R.42 E., on left bank 800 ft upstream from Bailey Creek road bridge and 2 miles south of Soda Springs.

Drainage area.--3,970 sq mi, approximately.

Records available.--May to September 1896, May, June 1898, and October 1953 to September 1960 in reports of Geological Survey. Irrigation season only during 1944-49, 1950-53 in reports of Bear River Hydrometric Data (Geological Survey open-file report).

Gage.--Water-stage recorder. Altitude of gage is 5,760 ft (from topographic map). May 25 to Oct. 2, 1896, May 22 to July 1, 1898, staff gage at different datum. During irrigation season 1944-49, 1950-53, water-stage recorder at site 800 ft downstream at different datum.

Average discharge.--7 years (1953-60), 487 cfs (352,600 acre-ft per year).

Extremes.--Maximum discharge during year, 1,440 cfs July 12 (gage height, 4.77 ft); minimum daily, 87 cfs Nov. 14.

1896, 1898, 1944-49, 1950-60: Maximum discharge, 6,380 cfs June 9, 15, 1896 (gage height, 8.40 ft, datum then in use); minimum daily, 80 cfs Nov. 13, 14, 1955.

Remarks.--Records good except those for periods of ice effect, which are fair. Many diversions for irrigation above station. Flow regulated by storage in Bear Lake.

Cooperation.--Records collected by Utah Power & Light Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |       |
|-----|-----|-----|-------|
| 2.1 | 82  | 3.5 | 530   |
| 2.5 | 154 | 4.0 | 841   |
| 3.0 | 304 | 5.0 | 1,630 |

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                       | 184    | 147   | *135  | 105   | 115    | 95     | 733    | 316    | 1,240         | 1,280  | 1,160  | 547    |
| 2                       | 195    | 143   | 135   | 105   | 115    | 95     | 857    | 308    | 1,180         | 1,340  | 1,050  | 499    |
| 3                       | 184    | 143   | 130   | 105   | 115    | 100    | 633    | 312    | 1,120         | 1,360  | 1,030  | 440    |
| 4                       | 182    | 150   | 90    | 105   | 110    | 115    | 682    | 297    | 1,080         | 1,360  | 1,110  | 331    |
| 5                       | 172    | 110   | 100   | 105   | 110    | 130    | 733    | 294    | 1,080         | 1,360  | 1,160  | 308    |
| 6                       | 169    | 130   | 115   | 105   | 115    | 140    | 720    | 290    | *1,090        | 1,360  | *1,160 | 304    |
| 7                       | 172    | 143   | 120   | 110   | 125    | 160    | 651    | 294    | 1,190         | 1,360  | 1,160  | 297    |
| 8                       | 164    | 143   | 125   | 110   | 130    | 160    | 598    | 280    | 1,360         | 1,370  | 1,160  | 283    |
| 9                       | 169    | 136   | 125   | 110   | 130    | 160    | 558    | 283    | 1,390         | 1,370  | 1,160  | 272    |
| 10                      | 169    | 139   | 120   | 115   | 125    | 165    | 536    | 290    | 1,380         | 1,400  | 1,170  | 269    |
| 11                      | 166    | 141   | 120   | 120   | 120    | 170    | *499   | 297    | 1,360         | 1,400  | 1,180  | 266    |
| 12                      | 174    | 141   | 120   | 120   | 110    | 170    | 459    | 312    | 1,320         | 1,420  | 1,190  | 262    |
| 13                      | 174    | 130   | 115   | 115   | 110    | 170    | 430    | 308    | 1,300         | 1,420  | 1,190  | 256    |
| 14                      | 169    | 87    | 115   | 115   | 110    | 170    | 412    | 297    | 1,200         | 1,410  | 1,190  | 252    |
| 15                      | 164    | 125   | 115   | 115   | 110    | 165    | 394    | 269    | 1,120         | 1,390  | 1,200  | 252    |
| 16                      | 169    | 160   | 120   | 115   | 110    | 160    | 381    | 276    | 1,090         | 1,380  | 1,160  | 252    |
| 17                      | 169    | 115   | 120   | 110   | 115    | 160    | 339    | *327   | 1,080         | 1,350  | 1,150  | 262    |
| 18                      | 166    | 100   | 120   | *110  | 115    | 170    | 283    | 536    | 994           | 1,320  | 1,160  | 266    |
| 19                      | 164    | 130   | 120   | 110   | 115    | 185    | 283    | 520    | 1,100         | 1,320  | 1,160  | 259    |
| 20                      | 159    | 145   | 120   | 105   | 115    | 205    | 283    | 547    | 1,120         | 1,370  | 1,150  | 259    |
| 21                      | 156    | 150   | 115   | 105   | 120    | 225    | 286    | 547    | 1,120         | 1,410  | 1,100  | 259    |
| 22                      | 156    | 156   | 115   | 110   | 120    | 239    | 276    | 499    | *1,140        | 1,420  | 1,100  | 259    |
| 23                      | 162    | 164   | 120   | 115   | 115    | 249    | 269    | 504    | 1,140         | 1,400  | 965    | *269   |
| 24                      | 164    | 169   | 120   | 115   | 115    | 283    | 286    | 598    | 1,200         | 1,390  | 610    | 272    |
| 25                      | 162    | 164   | 115   | 120   | *115   | 308    | 297    | 855    | 1,270         | 1,380  | 707    | 272    |
| 26                      | *154   | 90    | 110   | 120   | 110    | 360    | 316    | 1,110  | 1,280         | 1,370  | 957    | 276    |
| 27                      | 159    | 100   | 105   | 115   | 105    | 478    | 339    | 1,250  | 1,280         | 1,380  | 957    | 280    |
| 28                      | 156    | 120   | 95    | 110   | 100    | 592    | 356    | 1,270  | 1,280         | 1,390  | 877    | 280    |
| 29                      | 150    | 135   | 95    | 110   | 95     | 564    | 364    | 1,280  | *1,250        | 1,390  | 759    | 280    |
| 30                      | 145    | 135   | 95    | 110   | -----  | 610    | 347    | 1,280  | 1,230         | 1,360  | 707    | 283    |
| 31                      | 147    | ----- | 95    | 115   | -----  | 682    | -----  | 1,270  | -----         | 1,240  | 627    | -----  |
| Total                   | 5,145  | 4,041 | 3,560 | 3,455 | 3,315  | 7,635  | 13,400 | 17,116 | 35,984        | 42,450 | 32,396 | 8,866  |
| Mean                    | 166    | 135   | 115   | 111   | 114    | 246    | 447    | 552    | 1,199         | 1,369  | 1,045  | 296    |
| Ac-ft                   | 10,200 | 8,020 | 7,060 | 6,850 | 6,580  | 15,140 | 26,580 | 33,950 | 71,370        | 84,200 | 64,260 | 17,590 |
| Calendar year 1959: Max |        |       | 1,400 |       | Min 87 | Mean   | 391    |        | 283,500       |        |        |        |
| Water year 1959-60: Max |        |       | 1,420 |       | Min 87 | Mean   | 485    |        | Ac-ft 351,800 |        |        |        |

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 15-21, Nov. 26 to Mar. 21.

## 795. Bear River at Alexander, Idaho

Location.--Lat 42°38'45", long 111°41'55", in NW $\frac{1}{4}$  sec.17, T.9 S., R.41 E., on right bank 600 ft downstream from Soda hydroelectric plant of Utah Power & Light Co., half a mile southeast of Alexander, and 5 miles downstream from Soda Creek.

Drainage area.--4,050 sq mi (revised), approximately.

Records available.--March 1911 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,650 ft (from topographic map).

Average discharge.--49 years, 768 cfs (556,000 acre-ft per year).

Extremes.--Maximum daily discharge during year, 1,380 cfs July 14; minimum daily, 138 cfs Dec. 20.

1911-60: Maximum discharge observed, 4,740 cfs Mar. 31, 1911; maximum gage height, 15.95 ft Dec. 11, 1919 (backwater from ice); minimum discharge, 28 cfs at times when reservoir gates were closed.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by Bear Lake Reservoir and Soda hydroelectric plant.

Cooperation.--Records collected by Utah Power & Light Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project.

Revisions (water years).--WSP 1314(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used June 27 to Sept. 30)

|     |     |     |       |
|-----|-----|-----|-------|
| 0.5 | 124 | 2.0 | 945   |
| 1.0 | 310 | 3.0 | 1,900 |
| 1.5 | 579 |     |       |

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                       | 226    | 242    | *219   | 178    | 202    | 474    | 883    | 329    | 1,230   | 1,340  | 1,100  | 526    |
| 2                       | 246    | 230    | 209    | 206    | 192    | 441    | 969    | 358    | 1,190   | 1,330  | 1,200  | 419    |
| 3                       | 246    | 226    | 229    | 172    | 211    | 429    | a720   | 400    | 1,210   | 1,340  | 1,190  | 472    |
| 4                       | 246    | 196    | 187    | 187    | 184    | 448    | a795   | 424    | 1,220   | 1,340  | 1,200  | 252    |
| 5                       | 246    | 215    | 184    | 187    | 195    | 450    | a725   | 448    | 1,250   | 1,340  | 1,130  | 285    |
| 6                       | 246    | 210    | 178    | 144    | 167    | 169    | a795   | 426    | 1,280   | 1,350  | 1,100  | a335   |
| 7                       | 336    | 205    | 153    | 198    | 211    | 477    | a725   | 419    | 1,300   | 1,350  | *1,010 | a300   |
| 8                       | 363    | 219    | 176    | 231    | 252    | 437    | a720   | 360    | 1,320   | 1,340  | 1,080  | a330   |
| 9                       | 285    | 196    | 159    | 188    | 255    | 428    | a320   | 389    | 1,320   | 1,340  | 1,100  | a305   |
| 10                      | 226    | 179    | 181    | 146    | 280    | 385    | a150   | 392    | 1,330   | 1,350  | 1,110  | a340   |
| 11                      | 222    | 207    | a180   | 212    | 226    | 312    | a500   | 377    | 1,310   | 1,330  | 1,090  | a270   |
| 12                      | 226    | 187    | a140   | 192    | 256    | 229    | *a485  | 381    | 1,270   | 1,340  | 1,140  | a395   |
| 13                      | 230    | 229    | 272    | *218   | 213    | 158    | 376    | 356    | 1,260   | 1,350  | 1,140  | a285   |
| 14                      | 222    | 195    | 208    | 204    | 182    | 468    | 431    | 394    | 1,250   | 1,380  | 1,130  | a255   |
| 15                      | 230    | 228    | 182    | 209    | 151    | 267    | 406    | 436    | 1,190   | 1,240  | 1,140  | a245   |
| 16                      | 230    | 203    | 153    | 191    | 144    | 236    | 351    | 529    | 1,220   | 1,330  | 1,210  | a210   |
| 17                      | 234    | 207    | 176    | 177    | 192    | 199    | 145    | *548   | 1,100   | 1,340  | 1,180  | a245   |
| 18                      | 219    | 194    | 178    | 208    | 280    | 251    | 190    | 592    | 1,020   | 1,350  | 1,100  | a210   |
| 19                      | 226    | 197    | 181    | 187    | 197    | 272    | 262    | 520    | 919     | 1,330  | 1,080  | a280   |
| 20                      | 251    | 207    | 158    | 147    | 162    | 267    | 261    | 450    | 1,050   | 1,260  | 1,050  | a315   |
| 21                      | 246    | 212    | 165    | 173    | 182    | 424    | 343    | 624    | *1,120  | 1,290  | 1,060  | a340   |
| 22                      | 230    | 224    | 176    | 182    | 181    | 524    | 347    | 703    | 1,150   | 1,310  | 1,070  | *a355  |
| 23                      | 238    | 194    | 185    | 253    | 184    | 500    | 393    | 786    | 1,150   | 1,300  | 1,070  | 357    |
| 24                      | 230    | 211    | 206    | 158    | 148    | 525    | 322    | 1,050  | 1,120   | 1,290  | 804    | 361    |
| 25                      | *222   | 218    | 223    | 187    | *172   | 507    | 411    | 1,170  | 1,130   | 1,300  | 853    | 356    |
| 26                      | 222    | 219    | 185    | 221    | 171    | 477    | 396    | 1,200  | 1,150   | 1,300  | 798    | 349    |
| 27                      | 222    | 191    | 140    | 181    | 193    | 558    | 407    | 1,060  | 1,210   | 1,140  | 617    | 380    |
| 28                      | 226    | 224    | 175    | 205    | 149    | 747    | 590    | 1,080  | 1,210   | 1,210  | 850    | 337    |
| 29                      | 245    | 188    | 162    | 195    | 433    | 954    | 560    | 1,090  | 1,280   | 1,200  | 661    | 402    |
| 30                      | 222    | 186    | 185    | 192    | -----  | 904    | 469    | 1,060  | 1,350   | 1,210  | 719    | 435    |
| 31                      | 219    | -----  | 187    | 167    | -----  | 841    | -----  | 1,130  | -----   | 1,180  | 611    | -----  |
| Total                   | 7,458  | 6,239  | 5,672  | 5,896  | 5,945  | 13,738 | 14,447 | 19,489 | 36,109  | 40,400 | 31,393 | 9,956  |
| Mean                    | 241    | 208    | 183    | 190    | 205    | 443    | 482    | 629    | 1,204   | 1,303  | 1,013  | 332    |
| Ac-ft                   | 14,790 | 12,370 | 11,250 | 11,690 | 11,790 | 27,250 | 28,660 | 38,660 | 71,620  | 80,130 | 62,270 | 19,750 |
| Calendar year 1959: Max |        | 1,330  |        | Min    | 138    | Mean   | 458    | Ac-ft  | 331,600 |        |        |        |
| Water year 1959-60: Max |        | 1,380  |        | Min    | 138    | Mean   | 538    | Ac-ft  | 390,200 |        |        |        |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records of powerplant.

## 845. Cottonwood Creek near Cleveland, Idaho

Location.--Lat 42°20', long 111°46', in SW $\frac{1}{4}$  sec.34, T.12 S., R.40 E., on right bank 500 ft upstream from Cleveland irrigation canal, 2 $\frac{1}{2}$  miles west of Cleveland, and 4 miles downstream from proposed Cottonwood Dam.

Drainage area.--61.7 sq mi.

Records available.--November 1938 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,150 ft (from topographic map). Prior to Dec. 29, 1944, staff gage at same site and datum.

Average discharge.--21 years (1939-60), 29.4 cfs (21,280 acre-ft per year).

Extremes.--Maximum discharge during year, 489 cfs Apr. 6 (gage height, 3.08 ft); minimum, 1.2 cfs Aug. 8-10, 14.

1938-60: Maximum discharge, 773 cfs Apr. 27, 1952 (gage height, 3.83 ft); minimum observed, 0.5 cfs Aug. 17, 1940.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. A few small diversions for irrigation of meadowland in Cottonwood Valley above station. Treasureton Canal diverts from Cottonwood Creek above station in SE $\frac{1}{4}$  sec.8, T.12 S., R.39 E., for irrigation in Battle Creek basin in vicinity of Treasureton.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.4 | 1.2 | 1.3 | 30  |
| .6  | 2.7 | 1.8 | 77  |
| .8  | 6.2 | 2.3 | 185 |
| 1.0 | 13  | 2.7 | 327 |

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                       | 9.5   | 7.8   | 5.8   | 8.0   | *7.5  | 10    | 50    | 46      | 7.2   | 4.2  | 1.6  | 1.7   |
| 2                       | 8.8   | 7.8   | 5.8   |       | 7.2   | 10    | 46    | 51      | 6.9   | 4.0  | 1.5  | 2.0   |
| 3                       | 8.5   | *7.5  | 6.0   |       | 6.9   | 9.9   | 59    | *63     | 8.5   | 3.8  | 1.5  | 1.8   |
| 4                       | 8.2   | 8.5   | 6.0   |       | 7.0   | 9.5   | 105   | 69      | 8.2   | 3.9  | 1.4  | 1.8   |
| 5                       | 7.8   | 6.0   | 5.0   |       | 7.0   | 9.5   | *179  | 66      | 7.8   | 3.2  | 1.3  | 1.8   |
| 6                       | 7.2   | 6.0   | 5.5   | 9.0   | 7.0   | 9.9   | 308   | 65      | 7.5   | 3.3  | 1.4  | 1.7   |
| 7                       | 9.2   | 8.5   | 5.6   |       | 7.0   | 9.9   | 245   | 64      | 7.5   | 3.4  | 1.3  | *1.7  |
| 8                       | 9.5   | 6.9   | 5.6   |       | 11    | 195   | 62    | 9.5     | 3.4   | 1.6  | 1.7  |       |
| 9                       | 10    | 7.2   | 5.8   |       | 11    | 228   | 59    | 9.9     | 3.2   | 1.2  | 1.8  |       |
| 10                      | 11    | 7.5   | 6.2   |       | 13    | 245   | 57    | 11      | 3.3   | 1.2  | 2.2  |       |
| 11                      | 9.2   | 7.2   | *6.2  | 10    |       | 15    | 188   | 57      | 11    | 3.8  | 1.3  | 2.2   |
| 12                      | 8.8   | 7.2   | 6.5   |       | 11    | 145   | 57    | 9.2     | 3.3   | 1.3  | 2.2  |       |
| 13                      | 9.2   | 6.9   | 6.5   |       | 10    | 116   | 47    | 8.8     | 2.8   | 1.3  | 2.3  |       |
| 14                      | 8.8   | 6.9   | 6.5   |       | 10    | 105   | 42    | 8.2     | 2.6   | 1.2  | 2.3  |       |
| 15                      | 8.2   | 8.5   | 6.2   |       | 11    | 86    | 35    | 9.5     | 2.6   | 1.4  | 2.3  |       |
| 16                      | 7.5   | 7.5   | 6.0   | 10    |       | 12    | 75    | 30      | 9.5   | 2.5  | 1.7  | 2.3   |
| 17                      | 7.5   | 5.6   | 5.8   |       | 11    | 64    | 26    | 7.8     | 2.4   | 1.7  | 2.6  |       |
| 18                      | 7.5   | 6.2   | 5.8   |       | 11    | 63    | 23    | 7.8     | 2.3   | 1.5  | 2.3  |       |
| 19                      | 7.5   | 7.2   | 6.2   |       | 12    | 72    | 21    | 7.5     | 2.2   | 1.4  | 1.9  |       |
| 20                      | 7.5   | 6.5   | 6.5   |       | 14    | 69    | 18    | 7.8     | 2.2   | 1.3  | 1.7  |       |
| 21                      | 7.5   | 7.5   | 6.5   | 8.0   | (*)   | *16   | 76    | 16      | 6.9   | 1.9  | 1.3  | 1.7   |
| 22                      | 8.2   | 6.2   | 6.9   |       | 20    | 88    | 14    | 6.9     | 1.8   | 1.3  | 2.3  |       |
| 23                      | 10    | 8.8   | 6.9   |       | 27    | 90    | *13   | 6.2     | 1.7   | 1.5  | 2.5  |       |
| 24                      | 8.8   | 8.8   | 6.9   |       | 38    | 73    | 11    | 6.0     | 2.0   | 1.6  | 2.5  |       |
| 25                      | 8.2   | 8.8   | 7.5   |       | 51    | 65    | 10    | 5.2     | 1.8   | 1.6  | 2.6  |       |
| 26                      | 8.2   | 6.2   | 7.8   | 10    |       | 67    | 60    | 9.9     | 4.2   | *1.7 | 1.6  | 2.6   |
| 27                      | 7.8   | 7.2   | 8.0   |       | 89    | 57    | 10    | 4.0     | 1.7   | 1.6  | 2.3  |       |
| 28                      | 7.8   | 7.8   | 8.0   |       | 97    | 57    | 9.5   | 4.0     | 1.6   | 1.5  | 1.9  |       |
| 29                      | 7.8   | 5.2   | 8.0   |       | 71    | 50    | 8.5   | 4.2     | 1.6   | 1.5  | 1.7  |       |
| 30                      | 7.8   | 5.4   | 8.0   |       | ----- | *63   | 45    | 8.2     | *4.2  | 1.6  | 1.5  | 1.7   |
| 31                      | 7.8   | ----- | 8.0   | ----- | ----- | 57    | ----- | 7.8     | ----- | 1.5  | 1.3  | ----- |
| Total                   | 261.3 | 215.3 | 202.0 | 255.0 | 269.6 | 816.7 | 3,304 | 1,075.9 | 222.9 | 81.3 | 44.0 | 62.1  |
| Mean                    | 8.43  | 7.18  | 6.52  | 8.23  | 9.30  | 26.3  | 110   | 34.7    | 7.43  | 2.62 | 1.42 | 2.07  |
| Ac-ft                   | 518   | 427   | 401   | 506   | 535   | 1,620 | 6,550 | 2,130   | 442   | 161  | 87   | 123   |
| Calendar year 1959: Max | 224   |       |       |       |       |       |       |         |       |      |      |       |
| Water year 1959-60: Max | 308   |       |       |       |       |       |       |         |       |      |      |       |
| Min                     | 1.6   |       |       |       |       |       |       |         |       |      |      |       |
| Mean                    | 18.6  |       |       |       |       |       |       |         |       |      |      |       |

Peak discharge (base, 150 cfs).--Apr. 6 (9:30 a.m.) 489 cfs (3.08 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Dec. 31 to Jan. 31 and Feb. 5-23 (stage-discharge relation affected by ice most of time), May 13-22; discharge estimated on basis of 2 discharge measurements, weather records, and records for nearby stations. Stage-discharge relation affected by ice Dec. 5-7, 27-30, Feb. 4, Feb. 24 to Mar. 1.

865. Bear River below Utah Power & Light Co.'s tailrace, at Oneida, Idaho

Location.--Lat 42°16', long 111°45', in sec.26, T.13 S., R.40 E., on right bank 200 ft below tailrace of Oneida plant and 6 miles south of Cleveland.

Drainage area.--4,400 sq mi (revised), approximately.

Records available.--October 1921 to September 1960. Monthly discharge only October 1921 to September 1945, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,800 ft (from topographic map).

Average discharge.--39 years, 792 cfs (573,400 acre-ft per year).

Extremes.--Maximum daily discharge during year, 1,430 cfs July 11; minimum daily, 200 cfs Sept. 25.

1921-60: Maximum daily discharge, 5,480 cfs May 8, 1922; minimum daily, 15 cfs May 3, 4, 1925.

Remarks.--Records good. Many diversions above station. Flow regulated by Bear Lake and Soda, Grace, and Oneida hydroelectric plants.

Cooperation.--Records collected by Utah Power & Light Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used July 10 to Sept. 26)

|     |     |     |       |
|-----|-----|-----|-------|
| 1.7 | 185 | 3.0 | 647   |
| 2.0 | 263 | 4.0 | 1,170 |
| 2.5 | 432 | 5.0 | 1,660 |

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                  | 345    | 432    | 273    | 313    | 356    | 538    | 1,200  | 453     | 936    | 1,160  | 1,010  | 618    |
| 2                  | 540    | 393    | 543    | 350    | 410    | 773    | 1,090  | 531     | 655    | 1,170  | 1,040  | 529    |
| 3                  | 353    | 378    | 420    | 303    | 425    | 737    | 961    | 672     | 883    | *1,300 | 1,150  | 450    |
| 4                  | 480    | 447    | 438    | 413    | 401    | 752    | 1,200  | 659     | 975    | 1,190  | 1,120  | 531    |
| 5                  | 434    | 370    | 371    | 291    | 383    | 737    | 1,150  | 688     | 865    | 1,200  | 1,010  | 397    |
| 6                  | 414    | 447    | 261    | *375   | 395    | 391    | 1,240  | 652     | 950    | 1,060  | 1,110  | 328    |
| 7                  | 457    | 365    | 372    | 382    | 307    | 609    | 1,260  | 633     | 924    | 1,160  | 962    | 412    |
| 8                  | 534    | 475    | 415    | 464    | 255    | *687   | 1,120  | 549     | 962    | 1,120  | 915    | 390    |
| 9                  | 620    | 349    | 407    | 413    | 752    | 724    | 1,050  | 580     | 941    | 1,160  | 953    | 338    |
| 10                 | 430    | 364    | 457    | 332    | 672    | 723    | 605    | 656     | 955    | 1,200  | 997    | 474    |
| 11                 | 421    | 372    | 333    | 336    | 493    | 623    | 619    | 544     | 926    | 1,430  | 960    | 521    |
| 12                 | 412    | 408    | 424    | 434    | 446    | 624    | 863    | 446     | 739    | 1,210  | 1,160  | 539    |
| 13                 | 433    | 385    | 322    | 369    | 379    | 293    | *794   | 386     | 1,190  | 1,190  | 1,050  | 307    |
| 14                 | 449    | 452    | 448    | 362    | 300    | 719    | 730    | 408     | 1,130  | 986    | *1,080 | 307    |
| 15                 | 432    | 297    | *375   | 446    | 367    | 305    | 675    | 312     | 1,000  | 1,140  | 1,250  | 279    |
| 16                 | 379    | 450    | 379    | 354    | 313    | 388    | 708    | *314    | 808    | 1,260  | 975    | 235    |
| 17                 | 388    | 378    | 402    | 247    | 252    | 424    | 531    | 359     | 855    | 962    | 1,140  | 251    |
| 18                 | 407    | 410    | 375    | 217    | 358    | 320    | 438    | 354     | 817    | 995    | 1,120  | 243    |
| 19                 | 435    | 388    | 364    | 374    | 499    | 545    | 401    | 362     | 655    | 1,060  | 1,140  | 565    |
| 20                 | 418    | 381    | 375    | 352    | 391    | 390    | 534    | 320     | 684    | 1,220  | 1,130  | 809    |
| 21                 | 411    | 415    | 365    | 394    | 226    | 734    | 524    | 316     | 770    | 1,000  | 1,150  | 836    |
| 22                 | *418   | 449    | 342    | 451    | 333    | 727    | 606    | 458     | 795    | 1,100  | 987    | 770    |
| 23                 | 428    | 319    | 368    | 506    | 350    | 790    | 631    | 568     | 810    | 1,020  | 1,120  | 217    |
| 24                 | 386    | 360    | 369    | 209    | 302    | 818    | 752    | 922     | 901    | 995    | 1,010  | 203    |
| 25                 | 441    | 486    | 484    | 378    | 291    | 807    | 598    | 812     | 993    | 1,040  | 836    | 200    |
| 26                 | 396    | 279    | 406    | 386    | 433    | 822    | 719    | 888     | 751    | 942    | 831    | 696    |
| 27                 | 276    | 418    | 330    | *479   | 373    | 947    | 717    | 796     | 1,140  | 1,080  | 773    | 636    |
| 28                 | 456    | 400    | 431    | 419    | 208    | 1,100  | 884    | 896     | 1,060  | 1,070  | 630    | 666    |
| 29                 | 510    | 351    | 310    | 393    | 654    | 1,230  | 712    | 856     | 1,030  | 1,040  | 729    | 652    |
| 30                 | 350    | 514    | 356    | 385    | -----  | 1,220  | 757    | 975     | 1,160  | 996    | 715    | 612    |
| 31                 | 398    | -----  | 440    | 379    | -----  | 1,290  | -----  | 859     | -----  | 1,040  | 776    | -----  |
| Total              | 13,251 | 11,930 | 11,755 | 11,586 | 11,304 | 21,767 | 24,069 | 18,224  | 27,260 | 34,496 | 30,829 | 14,011 |
| Mean               | 427    | 398    | 379    | 374    | 390    | 702    | 802    | 568     | 909    | 1,113  | 924    | 467    |
| Ac-ft              | 26,280 | 23,660 | 23,320 | 22,980 | 22,420 | 43,170 | 47,740 | 36,150  | 54,070 | 68,420 | 61,150 | 27,790 |
| Calendar year 1959 | Max    | 1,350  | Min    | 185    | Mean   | 544    | Ac-ft  | 393,700 |        |        |        |        |
| Water year 1959-60 | Max    | 1,430  | Min    | 200    | Mean   | 630    | Ac-ft  | 457,200 |        |        |        |        |

\* Discharge measurement made on this day.

## BEAR RIVER BASIN

875. Mink Creek below Dry Fork, near Mink Creek, Idaho

Location--Lat 42°15'30", long 111°40'30", in NE¼NW¼ sec.33, T.13 S., R.41 E., on right bank 500 ft downstream from Dry Fork and 3 miles northeast of town of Mink Creek.

Drainage area--19.3 sq mi.

Records available--April 1947 to September 1952, October 1955 to September 1960.

Gage--Water-stage recorder. Altitude of gage is 5,300 ft (from topographic map).

Average discharge--10 years, 76.0 cfs (55,020 acre-ft per year).

Extremes--Maximum discharge during year, 298 cfs May 13 (gage height, 3.22 ft); minimum, 5.3 cfs Sept. 28.

1947-52, 1955-60: Maximum discharge, 600 cfs May 29, 1948; maximum gage height, 3.97 ft June 7, 1957; minimum discharge, that of Sept. 28, 1960.

Remarks--Records excellent. Mink Creek Canal began diverting above station in June 1950. Diversion is routed through Glendale Reservoir in Worm Creek basin for irrigation near Preston. Two other diversions above station for irrigation of about 1,000 acres above and below station.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.1 | 5.0 | 1.7 | 27  |
| 1.2 | 6.5 | 2.0 | 52  |
| 1.3 | 9.0 | 2.5 | 117 |
| 1.4 | 12  | 3.0 | 227 |
| 1.5 | 16  | 3.5 | 400 |

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                       | 15    | 35    | 33    | 28      | 26    | 26        | 48           | 76     | 167   | 32    | 16   | 18    |
| 2                       | 16    | 35    | 33    | 28      | 27    | 25        | 46           | 78     | 167   | 30    | 16   | 20    |
| 3                       | 20    | 35    | 33    | 28      | 27    | 25        | 48           | *85    | 169   | 28    | 15   | 20    |
| 4                       | 23    | 35    | 33    | 28      | 27    | 25        | 52           | 92     | 164   | 27    | 15   | 19    |
| 5                       | 23    | *34   | 32    | 28      | 27    | 25        | 61           | 94     | 158   | 27    | 16   | 18    |
| 6                       | 23    | 33    | 32    | 28      | 26    | 26        | 72           | 100    | 150   | 26    | 15   | 18    |
| 7                       | 23    | 33    | 33    | 28      | 27    | 26        | 82           | 117    | 143   | 24    | 14   | *17   |
| 8                       | 23    | 33    | 31    | 29      | 28    | 26        | 83           | 137    | 135   | 25    | 15   | 16    |
| 9                       | 23    | 33    | 31    | 28      | 27    | 26        | 89           | 167    | 122   | 23    | 14   | 14    |
| 10                      | 30    | 34    | 31    | 28      | 27    | 26        | 94           | 190    | 121   | 23    | 13   | 15    |
| 11                      | 36    | 34    | *30   | 28      | 27    | 26        | 83           | 216    | 111   | 22    | 13   | 16    |
| 12                      | 36    | 34    | 30    | 28      | 27    | 26        | 83           | *254   | 103   | 20    | 15   | 16    |
| 13                      | 36    | 33    | 30    | 28      | 27    | 26        | 83           | 292    | 98    | 21    | 16   | 16    |
| 14                      | 36    | 33    | 30    | 28      | 27    | 26        | 82           | 276    | 94    | 19    | 16   | 15    |
| 15                      | 36    | 33    | 30    | *28     | 26    | 27        | 78           | 251    | 85    | 19    | 18   | 15    |
| 16                      | 36    | 33    | 30    | 28      | 26    | 26        | 76           | 230    | 77    | 18    | 18   | 14    |
| 17                      | 36    | 33    | 30    | 28      | 26    | 26        | 70           | 230    | 76    | 20    | 17   | 14    |
| 18                      | 36    | 33    | 30    | 28      | 26    | 26        | 65           | 224    | 70    | 23    | 16   | 14    |
| 19                      | 36    | 33    | 30    | 28      | 26    | 27        | 65           | 203    | 76    | 20    | 16   | 14    |
| 20                      | 36    | 33    | 30    | 28      | 26    | 30        | 63           | 175    | 66    | 19    | 16   | 14    |
| 21                      | 36    | 33    | 30    | *28     | 26    | *35       | 65           | 167    | 61    | 18    | 18   | 14    |
| 22                      | 36    | 33    | 30    | 27      | 26    | 40        | 73           | 173    | 57    | 17    | 18   | 14    |
| 23                      | 36    | 33    | 30    | 27      | *26   | 46        | 86           | *173   | 53    | 17    | 19   | 14    |
| 24                      | 36    | 33    | 30    | 27      | 26    | 49        | 94           | 164    | 47    | 17    | 18   | 14    |
| 25                      | 36    | 33    | 30    | 27      | 26    | 53        | 88           | 156    | 45    | 17    | 18   | 9.9   |
| 26                      | 36    | 33    | 30    | 27      | 26    | 58        | 81           | 154    | 42    | *20   | 18   | 7.5   |
| 27                      | 36    | 33    | 30    | 27      | 26    | 60        | 78           | 162    | 40    | 19    | 17   | 6.5   |
| 28                      | 36    | 33    | 30    | 27      | 26    | 66        | 78           | 167    | 36    | 18    | 16   | 6.5   |
| 29                      | 36    | 33    | 29    | 27      | 26    | 60        | 77           | 158    | 36    | 18    | 17   | 6.5   |
| 30                      | 36    | 33    | 29    | 26      | ----- | *56       | 76           | 162    | *55   | 18    | 16   | 6.2   |
| 31                      | 35    | ----- | 29    | 26      | ----- | 51        | -----        | 167    | ----- | 18    | 16   | ----- |
| Total                   | 974   | 1,002 | 949   | 857     | 767   | 1,098     | 2,217        | 5,292  | 2,804 | 663   | 499  | 422.1 |
| Mean                    | 31.4  | 33.4  | 30.6  | 27.6    | 26.4  | 35.4      | 73.9         | 171    | 93.5  | 21.4  | 16.1 | 14.1  |
| Ac-ft                   | 1,930 | 1,990 | 1,880 | 1,700   | 1,520 | 2,180     | 4,400        | 10,500 | 5,560 | 1,320 | 990  | 837   |
| Calendar year 1959: Max | 242   |       |       | Min 13  |       | Mean 48.7 | Ac-ft 35,280 |        |       |       |      |       |
| Water year 1959-60: Max | 292   |       |       | Min 6.2 |       | Mean 47.9 | Ac-ft 34,810 |        |       |       |      |       |

\* Discharge measurement made on this day.

## 905. Bear River near Preston, Idaho

Location.--Lat 42°10', long 111°51', in NW $\frac{1}{4}$  sec.36, T.14 S., R.39 E., on left bank 600 ft downstream from headgates of West Cache Canal, 5 miles downstream from Pink Creek, 5 miles north of Preston, and 5 $\frac{1}{2}$  miles upstream from Battle Creek.

Drainage area.--4,500 sq mi, approximately.

Records available.--October 1889 to December 1916, January to September 1917 (gage heights only), January 1944 to September 1960. Prior to 1903, published as "at Battlecreek." Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,540 ft (from topographic map). October 1889 to September 1917 staff or wire-weight gages at several sites within 5 miles downstream at different datums.

Average discharge.--17 years (1943-60), 823 cfs (595,800 acre-ft per year).

Extremes.--Maximum recorded discharge during year, 2,960 cfs Aug. 10 (gage height, 4.60 ft); minimum, 2.5 cfs May 7 (gage height, 0.27 ft); minimum daily, 93 cfs Sept. 16, 1889-1917: Maximum discharge, about 8,500 cfs June 9, 10, 1907, estimated on basis of records for station near Collinston, Utah; maximum gage height observed, 9.04 ft Jan. 17, 18, 1917 (backwater from ice), site and datum then in use; minimum not determined.

1943-60: Maximum discharge, 4,420 cfs Apr. 17, 1950 (gage height, 5.61 ft); minimum, 0.6 cfs June 14, 1949; minimum daily, 9.5 cfs July 6, 1957.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Station is below all irrigation diversions from Bear River in Idaho except Cub River pumps in SE $\frac{1}{4}$  sec.20, T.16 S., R.39 E. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas.

Revisions (water years).--WSP 250: 1905-7.

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                       | 440    | 450    | 232    | 395    | 362    | 543    | 1,260   | 423    | 802    | 1,00C  | 854    | 550    |
| 2                       | 580    | 420    | 365    | 389    | 406    | *623   | 1,110   | 355    | 562    | 94C    | 837    | 337    |
| 3                       | 450    | 430    | 477    | 458    | 442    | 755    | 1,170   | 501    | 713    | 1,22C  | 930    | 381    |
| 4                       | 520    | 478    | 358    | 441    | 394    | 752    | 1,090   | 736    | 889    | 95C    | 909    | 383    |
| 5                       | 480    | *429   | 432    | 376    | 406    | 752    | 1,220   | 693    | 723    | 997    | 895    | 256    |
| 6                       | 460    | 470    | 292    | 379    | 381    | 542    | 1,240   | 638    | 794    | *78C   | 927    | 235    |
| 7                       | 520    | 421    | 403    | 420    | 408    | 616    | 1,340   | 589    | 771    | *1,08C | 841    | *228   |
| 8                       | 580    | 462    | 414    | 487    | 237    | 636    | 1,200   | 507    | 821    | 894    | 677    | 269    |
| 9                       | 680    | 312    | 457    | 507    | 758    | 756    | 1,050   | 576    | 807    | 97C    | 878    | 178    |
| 10                      | 480    | 325    | 436    | 435    | 663    | 750    | 732     | 606    | 802    | 99C    | 954    | 197    |
| 11                      | 430    | 384    | *410   | 325    | 540    | 683    | 615     | 520    | 796    | 1,24C  | 776    | 441    |
| 12                      | 440    | 360    | 438    | 532    | 476    | 556    | 747     | *503   | 560    | 1,10C  | 953    | 501    |
| 13                      | 450    | 335    | 327    | 424    | 435    | 383    | 782     | 450    | 1,060  | 93C    | 976    | 168    |
| 14                      | 460    | 425    | 459    | 379    | 338    | 676    | 733     | 517    | 879    | 787    | 898    | 178    |
| 15                      | 440    | 301    | *399   | 448    | 365    | 409    | 744     | 327    | 846    | 93C    | 1,090  | 157    |
| 16                      | 420    | 394    | 332    | 395    | 273    | 403    | 695     | 250    | 687    | 1,08C  | 861    | 93     |
| 17                      | 420    | 347    | 428    | 300    | 280    | 412    | 594     | 310    | 692    | 82C    | 983    | 128    |
| 18                      | 440    | 346    | 386    | 320    | 336    | 380    | 407     | 299    | 714    | 775    | 1,040  | 124    |
| 19                      | 460    | 424    | 393    | 428    | 485    | 451    | 485     | 307    | 578    | 887    | 954    | 343    |
| 20                      | 430    | 358    | 406    | 381    | 419    | 513    | 500     | 229    | 465    | 95C    | 930    | 578    |
| 21                      | 430    | 409    | 371    | *430   | 209    | *796   | 489     | 224    | 566    | 86C    | 1,060  | 779    |
| 22                      | 430    | 467    | 340    | 445    | 365    | 679    | 609     | 292    | 661    | 854    | 864    | 692    |
| 23                      | 440    | 318    | 400    | 450    | 316    | 720    | 649     | *480   | 631    | 797    | 978    | 281    |
| 24                      | 420    | 321    | 426    | 343    | 358    | 871    | 700     | 674    | 739    | 90C    | 934    | 130    |
| 25                      | 450    | 444    | 482    | 413    | 280    | 857    | 540     | 711    | 836    | 91C    | 809    | 130    |
| 26                      | 420    | 261    | 401    | 456    | 421    | 892    | 700     | 1,020  | 538    | 725    | 627    | 454    |
| 27                      | 390    | 359    | 367    | 427    | 418    | 967    | 807     | 786    | 961    | 97C    | 688    | 604    |
| 28                      | 470    | 404    | 445    | 441    | 256    | 1,170  | 829     | 821    | 928    | 950    | 533    | 556    |
| 29                      | 540    | 324    | 360    | 375    | 616    | 1,190  | 613     | 776    | 842    | 853    | 536    | 594    |
| 30                      | 400    | 442    | 402    | 422    | -----  | *1,290 | 753     | 866    | 992    | 792    | 627    | 517    |
| 31                      | 420    | -----  | 443    | 400    | -----  | 1,380  | -----   | 790    | -----  | 926    | 468    | -----  |
| Total                   | 14,390 | 11,620 | 12,281 | 12,801 | 11,623 | 22,403 | 24,383  | 16,776 | 22,655 | 28,893 | 26,287 | 10,462 |
| Mean                    | 464    | 387    | 396    | 413    | 401    | 723    | 541     | 755    | 932    | 932    | 848    | 349    |
| Ac-ft                   | 28,540 | 23,050 | 24,360 | 25,390 | 23,050 | 44,440 | 48,360  | 33,270 | 44,940 | 57,310 | 52,140 | 20,750 |
| Calendar year 1959: Max | 1,410  | Min    | 105    | Mean   | 491    | Ac-ft  | 355,200 |        |        |        |        |        |
| Water year 1959-60: Max | 1,380  | Min    | 93     | Mean   | 586    | Ac-ft  | 425,600 |        |        |        |        |        |

\* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1 to Nov. 3, Apr. 24-27; discharge estimated on basis of power-plant output at Oneida.

## BEAR RIVER BASIN

930. Cub River near Preston, Idaho

Location--Lat 42°08', long 111°41', in SW $\frac{1}{4}$  sec. 5, T.15 S., R.41 E., on right bank  
0.2 mile upstream from headgates of Cub River-Worm Creek Canal, 0.7 mile upstream from  
forest boundary, and 10 miles east of Preston.

Drainage area--19.4 sq mi.

Records available--March 1940 to September 1952, October 1955 to September 1960.

Gage--Water-stage recorder. Altitude of gage is 5,320 ft (from topographic map).

Average discharge--17 years, 84.8 cfs (61,390 acre-ft per year).

Extremes--Maximum discharge during year, 505 cfs May 13 (gage height, 2.74 ft); minimum,  
17 cfs Feb. 8.

1940-52, 1955-60: Maximum discharge, 715 cfs June 7, 1957 (gage height, 3.39 ft);  
maximum gage height, 3.83 ft June 2, 1943; minimum discharge, 11 cfs Jan. 22, 1951.

Remarks--Records excellent. No diversion above station.

Rating table, water year 1959-60 (gage height, in feet, and discharge,  
in cubic feet per second)  
(Stage-discharge relation affected by ice Jan. 17-20,  
Feb. 24, 27, 29, Mar. 1)

|     |    |     |     |
|-----|----|-----|-----|
| 0.5 | 16 | 2.0 | 202 |
| .8  | 28 | 2.5 | 368 |
| 1.0 | 41 | 3.0 | 593 |
| 1.4 | 85 |     |     |

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                       | 29    | 30    | 25    | 20    | 18    | 18    | 37    | 82     | 284   | 74     | 39    | 30    |
| 2                       | 29    | 30    | 25    | 19    | 18    | 18    | 35    | 87     | 284   | 71     | 38    | 30    |
| 3                       | 28    | 29    | 25    | 19    | 18    | 18    | 37    | 99     | 284   | 70     | 38    | 29    |
| 4                       | 28    | 29    | 24    | 19    | 18    | 18    | 43    | 106    | 274   | 67     | 37    | 29    |
| 5                       | 28    | *28   | 24    | 19    | 18    | 18    | *56   | *106   | 258   | 65     | 36    | 29    |
| 6                       | 28    | 28    | 24    | 19    | 18    | 18    | 74    | 112    | 241   | 63     | 36    | 29    |
| 7                       | 30    | 28    | 24    | 19    | 18    | 19    | 82    | 138    | 224   | 61     | 35    | *29   |
| 8                       | 29    | 28    | 23    | 19    | 18    | 19    | 84    | 170    | 216   | 60     | 35    | 29    |
| 9                       | 30    | 28    | 23    | 19    | 18    | 19    | 91    | 241    | 205   | 58     | 35    | 29    |
| 10                      | 31    | 28    | 23    | 19    | 18    | 19    | 98    | 305    | 195   | 57     | 35    | 28    |
| 11                      | 31    | 28    | *22   | 19    | 18    | 19    | 99    | 390    | 185   | 56     | 34    | 28    |
| 12                      | 33    | 28    | 22    | 19    | 18    | 18    | 98    | *446   | 172   | 55     | 33    | 28    |
| 13                      | 34    | 28    | 22    | 18    | 18    | 19    | 93    | 496    | 165   | 53     | 33    | 28    |
| 14                      | 34    | 28    | 22    | 18    | 17    | 19    | 90    | 468    | 159   | 52     | 33    | 28    |
| 15                      | 34    | 28    | 22    | 18    | 17    | 19    | 84    | *411   | 153   | 51     | 33    | 28    |
| 16                      | 34    | 28    | 22    | 18    | 17    | 18    | 77    | 377    | 148   | 50     | 34    | 27    |
| 17                      | 33    | 27    | 21    | 18    | 17    | 18    | 71    | 377    | 138   | 49     | 33    | 28    |
| 18                      | 33    | 26    | 21    | 18    | 17    | 18    | 69    | 348    | 130   | 48     | 32    | 27    |
| 19                      | 32    | 26    | 21    | 18    | 17    | 19    | 69    | 277    | 123   | 47     | 32    | 26    |
| 20                      | 32    | 26    | 21    | 18    | 17    | 22    | 65    | 241    | 115   | 47     | 32    | 26    |
| 21                      | 31    | 26    | 20    | *18   | 18    | *25   | 71    | 246    | 110   | 46     | 31    | 26    |
| 22                      | 31    | 26    | 20    | 18    | 18    | 32    | 91    | 252    | 103   | 46     | 32    | 26    |
| 23                      | 31    | 26    | 20    | 18    | *18   | 39    | 130   | *244   | 98    | 45     | 32    | 26    |
| 24                      | 32    | 26    | 20    | 18    | 18    | 46    | 121   | 241    | 95    | 44     | 31    | 26    |
| 25                      | 32    | 26    | 20    | 18    | 18    | 50    | 103   | 241    | 91    | 43     | 31    | 26    |
| 26                      | 32    | 26    | 20    | 18    | 18    | 59    | 96    | 241    | 87    | *42    | 31    | 26    |
| 27                      | 32    | 26    | 20    | 18    | 18    | 64    | 93    | 261    | 84    | 41     | 30    | 26    |
| 28                      | 32    | 25    | 20    | 18    | 18    | 69    | 90    | 246    | 81    | 41     | 30    | 26    |
| 29                      | 31    | 25    | 20    | 18    | 18    | 54    | 85    | 252    | 78    | 40     | 30    | 26    |
| 30                      | 31    | 25    | 20    | 18    | ---   | 46    | 82    | 261    | *75   | 40     | 30    | 25    |
| 31                      | 30    | ---   | 20    | 18    | ---   | 40    | ---   | 277    | 40    | 40     | 29    | ---   |
| Total                   | 965   | 816   | 676   | 571   | 515   | 897   | 2,414 | 8,039  | 4,853 | 1,622  | 1,030 | 824   |
| Mean                    | 31.1  | 27.2  | 21.8  | 18.4  | 17.8  | 28.9  | 80.5  | 259    | 162   | 52.3   | 33.2  | 27.5  |
| Ac-ft                   | 1,910 | 1,620 | 1,340 | 1,130 | 1,020 | 1,780 | 4,790 | 15,950 | 9,630 | 3,220  | 2,040 | 1,630 |
| Calendar year 1959: Max | 411   |       |       | Min   | 18    |       | Mean  | 65.3   | Ac-ft | 47,960 |       |       |
| Water year 1959-60: Max | 496   |       |       | Min   | 17    |       | Mean  | 63.4   | Ac-ft | 46,060 |       |       |

\* Discharge measurement made on this day.

1060. Little Bear River near Paradise, Utah

Location.--Lat 41°35'25", long 111°51'10", in SE $\frac{1}{4}$  sec.20, T.10 N., R.1 E., on right bank 1 mile upstream from backwater of Hyrum Reservoir, 2 miles northwest of Paradise, and 5 miles downstream from East Fork.

Drainage area.--203 sq mi.

Records available.--January 1937 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,680 ft (from topographic map). Prior to Nov. 28, 1945, at site 150 ft upstream at different datum. Nov. 28, 1945, to May 19, 1952, at present site at datum 1.50 ft higher.

Average discharge.--23 years, 85.3 cfs (61,750 acre-ft per year).

Extremes.--Maximum discharge during year, 504 cfs Apr. 9 (gage height, 4.59 ft); minimum, 10 cfs July 27, Aug. 3, 5.  
1937-60: Maximum discharge, 1,830 cfs Dec. 23, 1955 (gage height, 6.03 ft); minimum, 4 cfs Aug. 14, 1940.

Remarks.--Records good except those for period of no gage-height record, which are fair. Diversions above station for irrigation of about 400 acres above and 2,400 acres below station. No diversion between station and Hyrum Reservoir.

Cooperation.--Five discharge measurements furnished by Little Bear River water commissioner.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used May 30 to June 20, Aug. 24 to Sept. 9)

|     |    |     |     |
|-----|----|-----|-----|
| 3.0 | 10 | 3.8 | 140 |
| 3.1 | 15 | 4.2 | 290 |
| 3.3 | 29 | 4.4 | 390 |
| 3.5 | 60 |     |     |

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                       | 36    | 37    | 37    | 41    | 39    | 44    | 126    | 140   | *47    | *18  | *13  | *16   |
| 2                       | 37    | *38   | 38    | 41    | 41    | 42    | 111    | 128   | 44     | 1    | 12   | 17    |
| 3                       | 36    | 34    | 38    | 40    | 39    | 38    | 126    | 149   | 39     | 18   | 12   | 15    |
| 4                       | 36    | 36    | 37    | 40    | 36    | 41    | 174    | 162   | 34     | 18   | 12   | 14    |
| 5                       | 36    | 33    | 33    | 40    | 41    | 46    | 240    | 156   | 30     | 18   | 12   | 14    |
| 6                       | 36    | 32    | 37    | 41    | 41    | 58    | 315    | 149   | 27     | 17   | 12   | 14    |
| 7                       | 39    | 34    | 37    | 39    | 39    | 74    | 340    | 146   | 27     | 17   | 12   | 14    |
| 8                       | 38    | 34    | 37    | 39    | 55    | *126  | *320   | 152   | 27     | 17   | 12   | 14    |
| 9                       | 39    | 34    | 37    | 38    | 70    | 98    | 335    | 171   | 27     | 17   | 12   | 14    |
| 10                      | 39    | 34    | 38    | 39    | 55    | 70    | 370    | 192   | 27     | 17   | 12   | 15    |
| 11                      | 37    | 33    | 37    | 42    | 49    | 56    | 315    | 202   | 28     | 17   | 12   | 14    |
| 12                      | 38    | 34    | 37    | 42    | 46    | 53    | 272    | *221  | 27     | 17   | 12   | 14    |
| 13                      | 37    | 36    | 37    | 39    | 47    | 53    | 225    | 214   | 27     | 17   | 12   | 15    |
| 14                      | 37    | 39    | 37    | 39    | 44    | 53    | 210    | 178   | 27     | 17   | 12   | 15    |
| 15                      | 36    | 42    | 37    | 39    | 46    | 47    | 188    | 143   | 27     | *16  | *14  | *17   |
| 16                      | 34    | 41    | 37    | 37    | 44    | 46    | 178    | 128   | 26     | 14   | 14   | 14    |
| 17                      | 34    | 38    | 37    |       | 44    | 44    | 149    | 111   | *25    | 14   | 14   | 14    |
| 18                      | 34    | 39    | 36    |       | 41    | 44    | 143    | 108   | 24     | 14   | 14   | 14    |
| 19                      | 36    | 39    | 36    |       | 46    | 55    | 159    | 89    | 24     | 14   | 14   | 14    |
| 20                      | 36    | 38    | 34    |       | 42    | 77    | 146    | 70    | 23     | 14   | 14   | 14    |
| 21                      | 36    | 38    | 36    |       | 44    | 117   | 146    | 58    | 22     | 14   | 14   | 13    |
| 22                      | 36    | 39    | 36    |       | 44    | 156   | 152    | 60    | 22     | 14   | 14   | 14    |
| 23                      | 37    | 39    | 37    | 40    | 42    | 182   | 185    | 56    | 20     | 14   | 14   | 12    |
| 24                      | 36    | 39    | 37    |       | 49    | 188   | 171    | 53    | 18     | 14   | 14   | 12    |
| 25                      | 36    | 38    | 51    |       | 47    | 192   | 156    | 53    | 17     | 12   | 14   | 12    |
| 26                      | 36    | 38    | 42    |       | *44   | 233   | 162    | 56    | 19     | 13   | 14   | 12    |
| 27                      | 37    | *36   | 38    |       | 42    | 253   | 174    | 56    | 20     | 12   | 14   | 12    |
| 28                      | 37    | 37    | 37    |       | 44    | 285   | 182    | 55    | 19     | 12   | 14   | 12    |
| 29                      | 37    | 37    | 38    | *41   | 44    | 185   | *178   | 46    | 18     | 12   | 15   | 13    |
| 30                      | 37    | 37    | 39    | 39    | ---   | 146   | 149    | 46    | 19     | 12   | 14   | 13    |
| 31                      | 37    | ---   | *42   | 39    | ---   | *134  | ---    | 47    | ---    | 12   | 14   | ---   |
| Total                   | 1,133 | 1,101 | 1,167 | 1,235 | 1,305 | 3,236 | 6,097  | 3,595 | 780    | 463  | 408  | 417   |
| Mean                    | 36.5  | 36.7  | 37.6  | 39.8  | 45.0  | 104   | 203    | 116   | 26.0   | 15.1 | 13.2 | 13.9  |
| Ac-ft                   | 2,250 | 2,180 | 2,310 | 2,450 | 2,590 | 6,420 | 12,090 | 7,130 | 1,550  | 937  | 809  | 827   |
| Calendar year 1959: Max | 320   |       |       | Min   | 12    | Mean  | 50.8   | Ac-ft | 36,790 |      |      |       |
| Water year 1959-60: Max | 370   |       |       | Min   | 12    | Mean  | 57.2   | Ac-ft | 41,540 |      |      |       |

Peak discharge (base, 400 cfs).--Apr. 9 (11 p.m.) 504 cfs (4.59 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Jan. 17-28; discharge estimated on basis of weather records and records for nearby stations.

## BEAR RIVER BASIN

## 1070. Hyrum Reservoir near Hyrum, Utah

Location.--Lat 41°37'30", long 111°52'30", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 7, T.10 N., R.1 E., at Hyrum Dam on Little Bear River, 1 mile southwest of Hyrum.

Drainage area.--220 sq mi.

Records available.--October 1938 to September 1960.

Gage.--Mercury indicating gage. Datum of gage is at mean sea level.

Extremes.--Maximum contents observed during year, 15,760 acre-ft May 13 (elevation, 4,673.0 ft); minimum observed, 810 acre-ft Sept. 25-30 (elevation, 4,633.4 ft).  
1938-60: Maximum contents observed, 16,100 acre-ft June 12, 13, 1953 (elevation, 4,673.7 ft); no contents Oct. 16 to about Dec. 12, 1957.

Remarks.--Reservoir is formed by earth-fill dam; storage began in 1935. Usable capacity, 15,280 acre-ft between elevations 4,629.6 (sill of outlet canal) and 4,672 ft (top of spillway gates). Dead storage, 3,405 acre-ft (below elevation 4,629.6 ft, sill of outlet canal). Elevation of spillway crest, 4,660 ft. Water used for irrigation on Hyrum project. Figures given herein represent usable contents; those published in annual reports prior to 1946 represent total contents.

Cooperation.--Capacity table furnished by Bureau of Reclamation. Elevation<sup>s</sup> furnished by superintendent of Hyrum Dam.

Revisions (water years).--WSP 1060: 1946(m).

Capacity table, water year 1959-60 (elevation, in feet,  
and contents, in acre-feet)

|       |       |       |        |
|-------|-------|-------|--------|
| 4,630 | 80    | 4,655 | 7,780  |
| 4,635 | 1,200 | 4,660 | 9,840  |
| 4,640 | 2,570 | 4,665 | 12,030 |
| 4,645 | 4,130 | 4,670 | 14,340 |
| 4,650 | 5,860 | 4,674 | 16,240 |

Contents, in acre-feet, water year October 1959 to September 1960

| Day | Oct.    | Nov.    | Dec.    | Jan.    | Feb.    | Mar.    | Apr.    | May     | June    | July    | Aug.    | Sept.   |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1   | -       | -       | -       | -       | -       |         |         | 15,280  | 14,010  | 9,000   | 4,600   | 1,620   |
| 2   | -       | -       | -       | -       | -       |         |         | 15,280  | 13,870  | 8,870   | 4,490   | 1,580   |
| 3   | -       | -       | -       | -       | -       |         |         | 15,280  | 13,640  | 8,670   | 4,330   | 1,510   |
| 4   | -       | -       | -       | -       | -       |         |         | 15,280  | 13,400  | 8,500   | 4,190   | 1,510   |
| 5   | -       | -       | -       | -       | -       |         |         | 15,280  | 13,220  | 8,300   | 4,100   | 1,510   |
| 6   | -       | -       | -       | -       | -       |         |         | 15,280  | 13,030  | 8,100   | 3,960   | 1,490   |
| 7   | -       | -       | -       | -       | -       |         |         | 15,280  | 12,850  | 7,940   | 3,830   | 1,490   |
| 8   | -       | -       | -       | -       | -       |         |         | 15,420  | 12,670  | 7,820   | 3,670   | 1,490   |
| 9   | -       | -       | -       | -       | -       |         |         | 15,570  | 12,440  | 7,700   | 3,480   | 1,460   |
| 10  | 3,870   | 5,010   | 7,180   | 9,840   | 10,440  |         |         | 15,520  | 12,260  | 7,540   | 3,360   | 1,460   |
| 11  | -       | -       | -       | -       | -       |         |         | 15,660  | 12,080  | 7,340   | 3,200   | 1,460   |
| 12  | -       | -       | -       | -       | -       |         |         | 15,710  | 11,900  | 7,150   | 3,080   | 1,430   |
| 13  | -       | -       | -       | -       | -       |         |         | 15,760  | 11,760  | 6,950   | 2,990   | 1,380   |
| 14  | -       | -       | -       | -       | -       |         |         | 15,860  | 11,630  | 6,800   | 2,830   | 1,300   |
| 15  | -       | -       | -       | -       | -       |         |         | 15,570  | 11,490  | 6,760   | 2,870   | 1,230   |
| 16  | -       | -       | -       | -       | -       |         |         | 15,470  | 11,360  | 6,720   | 2,750   | 1,150   |
| 17  | -       | -       | -       | -       | -       |         |         | 15,420  | 11,220  | 6,570   | 2,630   | 1,080   |
| 18  | -       | -       | -       | -       | -       |         |         | 15,420  | 11,050  | 6,420   | 2,570   | 1,000   |
| 19  | -       | -       | -       | -       | -       |         |         | 15,580  | 10,920  | 6,270   | 2,450   | 1,000   |
| 20  | 4,060   | 5,680   | 7,780   | 10,350  | 10,440  |         |         | 15,330  | 10,740  | 6,190   | 2,360   | 980     |
| 21  | -       | -       | -       | -       | -       |         |         | 15,280  | 10,610  | 6,160   | 2,280   | 950     |
| 22  | -       | -       | -       | -       | -       |         |         | 15,190  | 10,440  | 6,160   | 2,190   | 910     |
| 23  | -       | -       | -       | -       | -       |         |         | 15,090  | 10,260  | 6,080   | 2,050   | 880     |
| 24  | -       | -       | -       | -       | -       |         |         | 15,000  | 9,670   | 5,970   | 2,000   | 840     |
| 25  | -       | -       | -       | -       | -       |         |         | 14,900  | 9,460   | 5,830   | 1,940   | 810     |
| 26  | -       | -       | -       | -       | -       |         |         | 14,720  | 9,410   | 5,650   | 1,890   | 810     |
| 27  | -       | -       | -       | -       | -       |         |         | 14,620  | 9,350   | 5,540   | 1,860   | 810     |
| 28  | -       | -       | -       | -       | -       |         |         | 14,480  | 9,250   | 5,400   | 1,830   | 810     |
| 29  | -       | -       | -       | -       | 10,480  |         |         | 14,390  | 9,180   | 5,180   | 1,780   | 810     |
| 30  | -       | 6,310   | -       | -       | -       |         | 15,570  | 14,250  | 9,080   | 5,010   | 1,720   | 810     |
| 31  | 4,560   | -----   | 8,630   | 10,350  | -----   | 12,940  | -----   | 14,150  | -----   | 4,800   | 1,670   | -----   |
| (†) | 4,646.3 | 4,651.2 | 4,657.1 | 4,661.2 | 4,661.5 | 4,667.0 | 4,672.6 | 4,669.6 | 4,658.2 | 4,647.0 | 4,636.6 | 4,633.4 |
| (‡) | +1,140  | +1,750  | +2,320  | +1,720  | +130    | +2,460  | +2,630  | -1,420  | -5,070  | -4,280  | -3,130  | -860    |

Calendar year 1959..... † -1,210

Water year 1959-60..... ‡ -2,610

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

a No gage-height record; contents interpolated.

## 1075. Little Bear River near Hyrum, Utah

Location--Lat 41°38'00", long 111°53'00", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.6, T.10 N., R.1 E., on left bank 2,000 ft upstream from road bridge, 1 mile downstream from Hyrum Dam, and 1 $\frac{1}{2}$  miles west of Hyrum.

Drainage area--222 sq mi.

Records available--October 1938 to September 1960.

Gage--Water-stage recorder. Altitude of gage is 4,520 ft (from topographic map). Prior to Nov. 9, 1949, at site 1,200 ft downstream at different datum.

Average discharge--22 years, 60.7 cfs (43,940 acre-ft per year).

Extremes--Maximum discharge during year, 335 cfs Apr. 11 (gage height, 2.45 ft); minimum daily, 0.2 cfs Nov. 27-30.

1938-60: Maximum discharge, 986 cfs Apr. 30, 1952 (gage height, 4.54 ft); minimum daily, 0.2 cfs Oct. 9-11, 26-30, 1955, Nov. 27-30, 1959.

Remarks--Records good. Diversions above station for irrigation of about 2,800 acres above and about 7,600 acres below station. Flow regulated by Hyrum Reservoir (see preceding page).

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                                                          | 0.5   | 2.5   | 0.6  | 2.0   | 46    | 42      | 77      | 151     | *3.0  | 0.7  | *0.8 | *1.9  |
| 2                                                          | .5    | *2.5  | 2.2  | 2.2   | 47    | 43      | 21      | 142     | 2.3   | .7   | .8   | 1.7   |
| 3                                                          | .5    | 2.5   | 2.2  | 2.2   | 46    | 44      | 8.5     | 142     | 2.5   | .7   | .8   | 1.7   |
| 4                                                          | .5    | 2.5   | 2.2  | 2.3   | 46    | 46      | 6.7     | 159     | 2.5   | .7   | .8   | 1.2   |
| 5                                                          | .5    | 2.5   | 2.2  | 2.3   | 45    | 50      | 70      | 144     | 3.0   | .7   | .8   | .8    |
| 6                                                          | 1.9   | 2.5   | 2.2  | 2.3   | 46    | 53      | 201     | 110     | 2.3   | .7   | .8   | .8    |
| 7                                                          | 5.7   | 2.5   | 2.2  | 2.5   | 47    | 60      | 207     | 131     | 2.3   | .7   | .8   | .8    |
| 8                                                          | 7.1   | 2.5   | 2.2  | 2.5   | 52    | 74      | 216     | 144     | 1.9   | .7   | .8   | .8    |
| 9                                                          | 8.1   | 2.5   | 2.2  | 2.5   | 57    | 37      | 253     | 159     | 1.9   | .7   | .8   | .8    |
| 10                                                         | 9.4   | 2.3   | 2.2  | 2.5   | 61    | 5.7     | 301     | 177     | 2.2   | .7   | .8   | .8    |
| 11                                                         | 9.4   | 2.3   | 2.2  | 2.5   | 59    | 5.0     | *328    | 187     | 1.9   | .7   | .8   | .8    |
| 12                                                         | 9.4   | 2.3   | 2.2  | 3.7   | 56    | 5.0     | 324     | *193    | 1.7   | .7   | .8   | .8    |
| 13                                                         | 9.4   | 2.3   | 2.2  | 6.7   | 54    | 4.7     | 287     | 195     | 1.3   | .7   | .8   | .8    |
| 14                                                         | 9.0   | 2.5   | 2.2  | 12    | 54    | 4.7     | 257     | 167     | 1.2   | .7   | .8   | .8    |
| 15                                                         | 9.0   | 2.5   | 2.2  | 21    | 52    | 4.7     | 231     | 115     | 1.0   | .7   | .9   | .8    |
| 16                                                         | 9.0   | 2.3   | 2.2  | 25    | 52    | 4.7     | 210     | 68      | .8    | .7   | 1.2  | .8    |
| 17                                                         | 9.4   | 2.3   | 2.2  | 28    | 51    | 4.7     | 185     | 41      | .7    | .7   | 1.7  | .7    |
| 18                                                         | 9.4   | 2.3   | 2.2  | 28    | 50    | 4.7     | 169     | 23      | .6    | .7   | 1.7  | .7    |
| 19                                                         | 4.2   | 2.3   | 2.2  | 28    | 49    | 5.0     | 167     | 17      | .6    | .7   | 1.2  | .7    |
| 20                                                         | 1.5   | 2.3   | 2.2  | 31    | 48    | 5.0     | 151     | 12      | .6    | .8   | 1.0  | .6    |
| 21                                                         | 1.6   | 2.3   | 2.2  | 34    | 49    | 5.0     | 142     | 8.5     | .6    | .8   | 1.0  | .6    |
| 22                                                         | 1.7   | 2.3   | 2.2  | 36    | 50    | 6.1     | 150     | 8.1     | .6    | .8   | 1.2  | .7    |
| 23                                                         | 1.9   | 2.3   | 2.2  | 37    | 48    | 70      | 167     | 8.1     | .6    | .8   | 1.6  | .7    |
| 24                                                         | 1.9   | 2.3   | 2.2  | 39    | 47    | 287     | 185     | 8.5     | .6    | .8   | 1.3  | .7    |
| 25                                                         | 1.9   | 1.5   | 2.5  | 40    | 48    | 289     | 177     | 9.0     | .6    | .9   | 1.2  | .7    |
| 26                                                         | 1.9   | .3    | 2.2  | 41    | *44   | 130     | 169     | 7.8     | .6    | 1.3  | 1.2  | .7    |
| 27                                                         | 1.9   | *.2   | 2.0  | 45    | 44    | 150     | 171     | 4.2     | .6    | .8   | 1.0  | .7    |
| 28                                                         | 2.0   | .2    | 2.0  | 46    | 43    | 189     | 175     | 4.2     | .7    | .8   | 1.5  | .7    |
| 29                                                         | 2.2   | .2    | 2.2  | *45   | 41    | 181     | *179    | 4.5     | .6    | .8   | 1.7  | .8    |
| 30                                                         | 2.3   | .2    | 2.2  | 45    | ----- | 134     | 165     | 3.7     | .6    | .8   | 1.7  | 1.2   |
| 31                                                         | 2.3   | ----- | *2.2 | 45    | ----- | *105    | -----   | 3.7     | ----- | .8   | 1.7  | ----- |
| Total                                                      | 136.0 | 60.0  | 66.5 | 662.2 | 1,432 | 2,029.0 | 5,350.2 | 2,547.3 | 40.4  | 23.5 | 34.0 | 26.3  |
| Mean                                                       | 4.39  | 2.00  | 2.14 | 21.4  | 49.4  | 65.5    | 178     | 82.2    | 1.35  | 0.76 | 1.10 | 0.88  |
| Ac-ft                                                      | 270   | 119   | 132  | 1,310 | 2,840 | 4,020   | 10,610  | 5,050   | 80    | 47   | 67   | 52    |
| Calendar year 1959: Max 264 Min 0.2 Mean 24.3 Ac-ft 17,610 |       |       |      |       |       |         |         |         |       |      |      |       |
| Water year 1959-60: Max 328 Min 0.2 Mean 33.9 Ac-ft 24,600 |       |       |      |       |       |         |         |         |       |      |      |       |

\* Discharge measurement made on this day.

\*\* Field estimate made on this day.

## 1080. Utah Power &amp; Light Co.'s tailrace near Logan, Utah

Location--Lat 41°44'40", long 111°47'00", in NE $\frac{1}{4}$  sec.36, T.12 N., R.1 E., on right bank 100 ft downstream from powerhouse of Utah Power & Light Co. and  $2\frac{1}{2}$  miles east of Logan.

Records available--May 1913 to September 1960.

Gage--Water-stage recorder and timber control. Altitude of gage is 4,680 ft (from topographic map). Prior to Oct. 1, 1938, at datum 0.61 ft higher.

Average discharge--47 years, 112 cfs (81,080 acre-ft per year).

Extremes--1913-60: Maximum daily discharge, 206 cfs Apr. 24, 1956; no flow for periods in several years.

Remarks--Records excellent. Flow regulated by powerplant above station. Power canal diverts water from right bank of Logan River in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.29, T.12 N., P.2 E. Water returned to river 125 ft below gaging station on Logan River above State dam.

Cooperation--Records collected in collaboration with Utah Power & Light Co. in connection with a Federal Power Commission project.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|      |     |     |     |
|------|-----|-----|-----|
| 0.75 | 0   | 1.5 | 50  |
| .9   | 7.0 | 2.0 | 107 |
| 1.0  | 12  | 2.7 | 207 |
| 1.2  | 26  |     |     |

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                       | 116   | 106   | 94    | 83    | 75    | 73    | 137    | 193    | 175    | 184    | 100   | 95    |
| 2                       | 116   | 104   | 94    | 75    | 78    | 68    | 130    | 194    | *173   | 179    | 99    | 97    |
| 3                       | 116   | 104   | 94    | 72    | 76    | 67    | 131    | 194    | 175    | 179    | 99    | 93    |
| 4                       | 116   | 104   | 87    | 71    | 69    | 70    | 158    | 188    | 175    | *179   | 99    | 94    |
| 5                       | *115  | 98    | 83    | 75    | 75    | 71    | 45     | 185    | 175    | 176    | 99    | 94    |
| 6                       | 115   | 98    | 84    | 80    | 76    | 74    | 71     | 193    | 175    | 175    | 99    | 93    |
| 7                       | 112   | 103   | 86    | 80    | 76    | 80    | 165    | 193    | 175    | 169    | 99    | 94    |
| 8                       | 112   | 102   | 87    | 76    | 80    | *93   | 169    | 193    | 178    | 166    | *99   | 94    |
| 9                       | 112   | 102   | 88    | 78    | 83    | 88    | 170    | 193    | 176    | 163    | 99    | 92    |
| 10                      | 112   | 103   | 89    | 79    | 80    | 82    | 176    | 194    | 175    | 161    | 99    | 90    |
| 11                      | 110   | 103   | 89    | 81    | 76    | 80    | 180    | 190    | 176    | 158    | 99    | 90    |
| 12                      | 111   | 103   | 88    | 82    | 69    | 83    | 175    | 190    | 176    | 154    | 98    | 88    |
| 13                      | 111   | 102   | 87    | 80    | 79    | 79    | 193    | 186    | 178    | 154    | *99   | 86    |
| 14                      | 111   | 95    | 84    | 79    | 72    | 80    | 194    | 188    | 179    | 152    | 97    | 89    |
| 15                      | 111   | 98    | *84   | 83    | 74    | 78    | *193   | 185    | 180    | 149    | 95    | 89    |
| 16                      | 110   | 100   | 86    | 73    | 78    | 75    | 193    | 184    | 180    | 144    | 98    | 75    |
| 17                      | 110   | 92    | 84    | 60    | 73    | 75    | 191    | 184    | 180    | 142    | 99    | 82    |
| 18                      | 110   | 98    | 88    | 67    | 72    | 74    | 191    | 180    | 180    | 141    | 97    | 82    |
| 19                      | 110   | 98    | 89    | 67    | 79    | 79    | 196    | 179    | 180    | 138    | 95    | 81    |
| 20                      | 110   | 98    | 86    | 82    | 72    | 83    | 194    | 178    | 182    | 135    | 95    | 83    |
| 21                      | 110   | 98    | 86    | 78    | 73    | 93    | 196    | 179    | 182    | 135    | 93    | 83    |
| 22                      | *110  | 99    | 88    | 75    | 74    | *97   | 196    | 176    | 168    | 133    | 95    | 86    |
| 23                      | 110   | 97    | 88    | 71    | 71    | 98    | 199    | 175    | 184    | 130    | 95    | 88    |
| 24                      | 110   | 98    | 86    | 71    | 64    | 98    | 197    | 175    | 185    | 127    | 94    | 88    |
| 25                      | 110   | 98    | 93    | *72   | 71    | 97    | *194   | 173    | 185    | 117    | 95    | 87    |
| 26                      | 110   | 95    | 88    | 75    | 71    | 97    | 196    | 175    | 185    | 108    | 93    | 83    |
| 27                      | 110   | 90    | 79    | *78   | 66    | 97    | 194    | 173    | 184    | 111    | 94    | 84    |
| 28                      | 110   | 90    | 73    | 76    | 69    | 32    | 194    | 173    | 184    | 111    | 94    | 84    |
| 29                      | 110   | 94    | 76    | 75    | 62    | 0     | 194    | 175    | 184    | 111    | 93    | 83    |
| 30                      | 104   | 93    | 76    | 78    | ----- | 47    | 193    | 175    | 184    | 104    | 90    | 86    |
| 31                      | 108   | ----- | 83    | 75    | ----- | 147   | -----  | 175    | -----  | 100    | 89    | ----- |
| Total                   | 3,446 | 2,963 | 2,667 | 2,347 | 2,133 | 2,455 | 5,205  | 5,688  | 5,368  | 4,485  | 2,988 | 2,633 |
| Mean                    | 111   | 98.8  | 86.0  | 75.7  | 73.6  | 79.2  | 174    | 183    | 179    | 145    | 96.4  | 87.8  |
| Ac-ft                   | 6,840 | 5,880 | 5,290 | 4,660 | 4,230 | 4,870 | 10,320 | 11,280 | 10,650 | 8,900  | 5,930 | 5,220 |
| Calendar year 1959: Max | 199   |       |       | Min   | 0     |       | Mean   | 120    | Ac-ft  | 87,030 |       |       |
| Water year 1959-60: Max | 199   |       |       | Min   | 0     |       | Mean   | 116    | Ac-ft  | 84,070 |       |       |

\* Discharge measurement made on this day.

1085. Logan, Hyde Park &amp; Smithfield Canal near Logan, Utah

Location.--Lat 41°44'45", long 111°47'05", in SE $\frac{1}{4}$  sec.25, T.12 N., R.1 E., on right bank  $1\frac{1}{4}$  miles downstream from head of canal and  $2\frac{1}{2}$  miles east of Logan.

Records available.--June 1904 to September 1923 (fragmentary), October 1923 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder in flume. Prior to May 29, 1924, water-stage recorder or staff gages at several sites within 1 mile of present site at different datums.

Average discharge.--37 years (1923-60), 28.5 cfs (20,630 acre-ft per year).

Extremes.--1923-60: Maximum daily discharge, 136 cfs May 30, 31, 1930; no flow at times in most years.

Remarks.--Records good except those below 10 cfs and those for periods of no gage-height record, which are fair. No diversion above station. Canal diverts from Logan River in NE $\frac{1}{4}$  sec.31, T.12 N., R.2 E., for irrigation and domestic supply north of Logan.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used May 16 to June 18)

|       |     |     |     |
|-------|-----|-----|-----|
| -0.04 | 0   | 0.5 | 20  |
| 0.0   | .2  | .8  | 36  |
| .1    | 1.5 | 1.2 | 58  |
| .2    | 4.7 | 1.8 | 95  |
| .3    | 8.9 | 2.3 | 125 |

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     | 0.2   | 6.8   | 4.1   | 8.5   | 6.0   | 7.6   | 0.5   | 0.5     | 118   | 45    | 35    | 29    |
| 2     | **2   | 6.8   | 3.7   | 8.9   | 6.8   | 7.2   | .5    | .5      | 110   | 44    | 35    | 29    |
| 3     | .8    | 8.1   | 3.7   | 8.1   | 6.8   | 7.6   | .5    | 28      | 110   | 44    | 35    | 28    |
| 4     | 4.7   | 8.5   | 5.4   | 7.6   | 6.0   | 7.6   | .6    | 28      | 112   | 45    | 34    | 27    |
| 5     | 5.1   | 7.6   | 4.1   | 7.6   | 6.8   | 7.2   | .2    | *29     | 111   | 42    | 34    | 25    |
| 6     | 4.7   | *8.1  | 5.1   | 7.6   | 6.8   | 7.6   | .8    | 29      | 107   | 40    | 34    | 24    |
| 7     | 8.1   | 9.4   | 3.7   | 8.1   | 6.8   | 8.1   | 3.1   | 35      | 106   | 42    | 34    | 24    |
| 8     | 8.5   | 7.6   | 5.5   | 8.5   | 8.1   | 7.2   | 2.8   | 40      | 105   | 40    | 33    | 23    |
| 9     | 8.9   | 8.1   | 5.1   | 9.9   | 7.6   | 2.8   | 2.5   | *43     | 104   | 39    | 33    | 24    |
| 10    | 6.3   | 7.2   | 5.5   | 8.9   | 6.8   | 1.8   | 1.8   | 47      | 103   | 39    | 33    | 24    |
| 11    | .2    | 6.4   | *5.1  | 8.5   | 6.0   | 2.8   | .6    | 69      | 95    | 37    | 33    | 24    |
| 12    | .2    | 6.0   | 4.7   | 8.1   | 5.5   | 5.1   | .6    | 92      | 94    | 37    | 33    | 24    |
| 13    | .2    | 6.0   | 4.7   | 7.2   | 6.0   | 5.1   | .5    | 92      | 92    | 39    | 33    | 24    |
| 14    | .2    | 6.0   | 4.7   | 6.4   | 5.1   | 5.1   | .5    | 75      | 92    | 35    | 33    | 24    |
| 15    | .2    | 6.4   | 4.7   | 5.5   | 5.1   | 5.1   | .3    | 79      | 100   | 37    | 34    | 25    |
| 16    | .2    | 6.0   | 4.7   | 5.5   | 5.1   | 5.1   | .3    | 86      | 101   | 37    | 35    | 32    |
| 17    | .2    | 5.5   | 4.7   | 4.7   | 5.1   | 5.1   | .3    | 103     | *100  | 37    | 36    | 30    |
| 18    | .3    | 6.0   | 4.7   | 4.4   | 5.1   | 5.1   | .2    | 109     | 98    | 37    | 35    | 29    |
| 19    | .3    | 5.5   | 5.1   | 5.0   | 5.5   | 5.1   | .3    | 102     | 96    | 37    | 32    | 30    |
| 20    | .3    | 5.1   | 5.1   | 5.6   | 5.1   | 5.5   | .3    | 98      | 94    | 37    | 32    | 26    |
| 21    | .2    | 5.5   | 5.1   | 6.2   | 5.1   | 5.5   | .3    | 97      | 92    | 37    | 32    | 24    |
| 22    | .2    | 4.7   | 5.1   | 6.8   | 4.7   | **2.1 | .5    | 98      | 80    | 37    | 34    | 23    |
| 23    | 1.2   | 4.4   | 5.5   | 7.4   | 4.4   | .7    | .6    | 96      | 77    | 37    | 32    | 23    |
| 24    | 4.1   | 4.4   | 5.5   | 8.0   | *4.4  | .8    | .5    | 95      | 75    | 37    | 29    | 22    |
| 25    | 4.1   | 4.4   | 5.5   | *8.1  | 5.5   | .8    | .5    | 95      | 70    | 37    | 19    | 21    |
| 26    | 5.5   | 4.1   | 6.4   | 8.5   | 6.4   | .8    | .3    | 95      | 67    | 35    | 30    | 20    |
| 27    | 8.9   | 4.4   | 5.5   | 7.2   | 6.0   | .7    | .5    | 95      | 62    | 35    | 30    | 20    |
| 28    | 9.4   | 4.7   | 5.1   | 6.4   | 6.8   | .2    | .5    | 94      | 58    | 34    | 30    | 19    |
| 29    | 8.9   | 4.7   | 5.1   | 6.0   | 6.8   | 0     | .3    | 98      | *54   | 35    | 29    | 19    |
| 30    | 9.4   | 4.4   | 6.4   | 6.0   | ----- | .2    | .5    | 102     | 51    | 35    | 29    | 17    |
| 31    | 7.2   | ----- | 6.8   | 6.0   | ----- | .7    | ----- | 108     | ----- | 35    | 29    | ----- |
| Total | 108.9 | 182.8 | 154.1 | 221.2 | 172.2 | 126.3 | 21.7  | 2,258.0 | 2,734 | 1,182 | 999   | 733   |
| Mean  | 3.51  | 6.09  | 4.97  | 7.14  | 5.94  | 4.07  | 0.72  | 72.8    | 91.1  | 38.1  | 32.2  | 24.4  |
| Ac-ft | 216   | 363   | 306   | 439   | 342   | 251   | 43    | 4,480   | 5,420 | 2,340 | 1,980 | 1,450 |

Calendar year 1959: Max - Min 0 Mean 26.2 Ac-ft 18,960  
Water year 1959-60: Max 118 Min 0 Mean 24.3 Ac-ft 17,630

\* Discharge measurement made on this day.

\*\* Field estimate made on this day.

Note.--No gage-height record Jan. 19-24, June 19-27; discharge estimated on basis of recorded range in stage and information from watermaster.

## BEAR RIVER BASIN

## 1090. Logan River above State dam, near Logan, Utah

Location.--Lat 41°44'40", long 111°47'00", in NE $\frac{1}{4}$  sec.36, T.12 N., R.1 E., on right bank at Logan plant of Utah Power & Light Co., 125 ft upstream from tailrace, half a mile upstream from State dam, and 2 $\frac{1}{2}$  miles east of Logan.

Drainage area.--218 sq mi.

Records available.--June 1896 to September 1960. Published as Logan River near Logan prior to 1913. Records since May 1913 equivalent to earlier records if records for Utah Power & Light Co.'s tailrace near Logan are added. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,680 ft (from topographic map). Prior to May 7, 1913, staff gage at various sites within half a mile downstream, below confluence of tailrace, at different datums, May 7 to Sept. 30, 1913, water-stage recorder at present site at different datums and Oct. 1, 1913, to Sept. 3, 1938, at datum about 2.3 ft lower than present datum.

Average discharge.--47 years (1913-60), 105 cfs (76,020 acre-ft per year). Average combined discharge of Logan River above State dam, Utah Power & Light Co.'s tailrace, and Logan, Hyde Park & Smithfield Canal, 64 years (1896-1960), 278 cfs (201,370 acre-ft per year).

Extremes.--Maximum discharge during year, 541 cfs May 13 (gage height, 2.69 ft); minimum daily, 12 cfs for many days.

Maximum combined discharge during year (Logan River above State dam, Utah Power & Light Co.'s tailrace, and Logan, Hyde Park & Smithfield Canal), 819 cfs May 13; minimum daily, 77 cfs Jan. 17.

1913-60: Maximum discharge, 2,000 cfs Mar. 21, 1916 (gage height, 5.6 ft, datum then in use), from rating curve extended above 1,000 cfs; minimum daily, 6 cfs Nov. 7, 1940.

1896-1960: Maximum combined discharge observed (Logan River above State dam, Utah Power & Light Co.'s tailrace, and Logan, Hyde Park & Smithfield Canal), 2,480 cfs May 24, 1907; minimum daily, 50 cfs Jan. 21, 1935.

Remarks.--Records excellent above 20 cfs and good below. Water diverted from river and springs above station for power, irrigation, and municipal supply. Flow regulated by powerplants above station. For records of combined flow of Logan River, Utah Power & Light Co.'s tailrace, and Logan, Hyde Park & Smithfield Canal, see following page. Combined flow record excludes that in Logan City culinary pipe lines and one small irrigation diversion from power flume that siphons canyon 400 ft upstream from station.

Cooperation.--Records collected in collaboration with Utah Power & Light Co. in connection with a Federal Power Commission project.

Revisions (water years).--WSP 1314: 1900.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Sept. 9-11)

|     |    |     |     |
|-----|----|-----|-----|
| 0.9 | 12 | 1.7 | 158 |
| 1.0 | 22 | 2.2 | 315 |
| 1.3 | 67 | 2.7 | 541 |

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                       | 26    | 16    | 12   | 13   | 12    | 14    | 19    | 55     | 217    | 20    | 36    | 19    |
| 2                       | 23    | 17    | 12   | 13   | 12    | 14    | 18    | 58     | *233   | 19    | 36    | *19   |
| 3                       | 21    | 17    | 12   | 14   | 12    | 14    | 18    | 52     | 242    | 19    | 32    | 19    |
| 4                       | 15    | 19    | 12   | 13   | 12    | 15    | 36    | 85     | 236    | *20   | 31    | 19    |
| 5                       | *14   | 16    | 12   | 13   | 12    | 15    | 158   | 71     | 223    | 18    | 28    | 19    |
| 6                       | 13    | 14    | 13   | 12   | 13    | 15    | 203   | 83     | 208    | 18    | 27    | 18    |
| 7                       | 19    | 14    | 13   | 13   | 13    | 16    | 133   | 128    | 188    | 18    | 26    | 18    |
| 8                       | 18    | 13    | 13   | 14   | 13    | *19   | 128   | 182    | 182    | 19    | *25   | 17    |
| 9                       | 19    | 13    | 12   | 14   | 14    | 21    | 169   | 265    | 169    | 19    | 23    | 18    |
| 10                      | 35    | 13    | 13   | 14   | 13    | 17    | 188   | 323    | 163    | 20    | 23    | 18    |
| 11                      | 32    | 12    | 13   | 14   | 13    | 14    | *174  | 374    | 143    | 19    | 21    | 17    |
| 12                      | 34    | 12    | 13   | 13   | 12    | 12    | 169   | 428    | 131    | 19    | 21    | 17    |
| 13                      | 32    | 13    | 12   | 13   | 12    | 12    | 121   | 503    | 119    | 19    | *21   | 19    |
| 14                      | 31    | 14    | 13   | 13   | 12    | 12    | 109   | 470    | 111    | 19    | 20    | 20    |
| 15                      | 30    | 13    | *13  | 12   | 12    | 12    | *87   | 418    | 96     | 19    | 22    | 20    |
| 16                      | 28    | 12    | 12   | 12   | 12    | 12    | 75    | 382    | 83     | 19    | 22    | 22    |
| 17                      | 27    | 14    | 12   | 12   | 12    | 12    | 53    | 356    | 73     | 19    | 20    | 19    |
| 18                      | 27    | 12    | 12   | 12   | 12    | 12    | 50    | 327    | 62     | 19    | 20    | 18    |
| 19                      | 26    | 12    | 12   | 14   | 12    | 12    | 47    | 258    | 55     | 19    | 20    | 18    |
| 20                      | 27    | 12    | 12   | 14   | 12    | 12    | 35    | 205    | 48     | 19    | 20    | 18    |
| 21                      | 26    | 12    | 12   | 14   | 12    | 15    | 53    | 205    | 50     | 19    | 20    | 17    |
| 22                      | *25   | 12    | 12   | 14   | 12    | *30   | 89    | 220    | 57     | 20    | 20    | 18    |
| 23                      | 19    | 12    | 12   | 14   | 12    | 41    | 166   | 211    | 35     | 20    | 21    | 18    |
| 24                      | 19    | 12    | 13   | 14   | 12    | 52    | 138   | 197    | 31     | 21    | 22    | 18    |
| 25                      | 20    | 12    | 14   | *15  | 14    | 64    | 102   | 200    | 25     | 26    | 22    | 18    |
| 26                      | 19    | 12    | 12   | 15   | 13    | 81    | 85    | 197    | 22     | 35    | 20    | 18    |
| 27                      | 15    | 13    | 12   | 14   | 13    | 119   | 81    | 214    | 21     | 34    | 18    | 18    |
| 28                      | 15    | 13    | 12   | 13   | 14    | 186   | 75    | 200    | 20     | 31    | 18    | 18    |
| 29                      | 15    | 13    | 12   | 13   | 14    | 188   | 73    | 185    | 20     | 30    | 18    | 18    |
| 30                      | 19    | 12    | 12   | 13   | 14    | 124   | 65    | 197    | 20     | 32    | 18    | 16    |
| 31                      | 18    | ----- | 12   | 12   | ----- | 22    | ----- | 211    | -----  | 36    | 18    | ----- |
| Total                   | 710   | 400   | 383  | 413  | 363   | 1,204 | 2,917 | 7,240  | 3,283  | 684   | 715   | 549   |
| Mean                    | 22.9  | 13.3  | 12.4 | 13.3 | 12.5  | 38.8  | 97.2  | 234    | 109    | 22.1  | 23.1  | 18.3  |
| Ac-ft                   | 1,410 | 793   | 760  | 819  | 720   | 2,390 | 5,790 | 14,360 | 6,510  | 1,360 | 1,420 | 1,090 |
| Calendar year 1959: Max |       |       | 352  | Min  | 12    | Mean  | 50.0  | Ac-ft  | 36,220 |       |       |       |
| Water year 1959-60: Max |       |       | 503  | Min  | 12    | Mean  | 51.5  | Ac-ft  | 37,420 |       |       |       |

\* Discharge measurement made on this day.

## 1090. Logan River above State dam, near Logan, Utah--Continued

Combined discharge, in cubic feet per second, of Logan River above State dam, Utah Power & Light Co.'s tailrace, and Logan, Hyde Park & Smithfield Canal near Logan, Utah, water year October 1959 to September 1960

| Day                     | Oct.  | Nov.  | Dec.  | Jan.  | Feb.  | Mar.  | Apr.   | May    | June    | July   | Aug.  | Sept. |
|-------------------------|-------|-------|-------|-------|-------|-------|--------|--------|---------|--------|-------|-------|
| 1                       | 142   | 129   | 110   | 104   | 93    | 95    | 156    | 248    | 510     | 249    | 171   | 143   |
| 2                       | 139   | 128   | 110   | 97    | 97    | 89    | 148    | 252    | 516     | 242    | 170   | 145   |
| 3                       | 138   | 129   | 110   | 94    | 95    | 89    | 150    | 274    | 527     | 242    | 166   | 140   |
| 4                       | 136   | 132   | 102   | 92    | 87    | 93    | 195    | 281    | 523     | 242    | 164   | 140   |
| 5                       | 134   | 122   | 99    | 96    | 94    | 93    | 203    | 285    | 509     | 236    | 161   | 138   |
| 6                       | 133   | 120   | 102   | 100   | 96    | 97    | 275    | 305    | 490     | 233    | 160   | 135   |
| 7                       | 139   | 126   | 103   | 101   | 96    | 104   | 301    | 356    | 469     | 229    | 159   | 136   |
| 8                       | 138   | 122   | 106   | 98    | 101   | 119   | 300    | 415    | 465     | 225    | 157   | 134   |
| 9                       | 140   | 123   | 105   | 102   | 105   | 112   | 342    | 501    | 449     | 221    | 155   | 134   |
| 10                      | 153   | 123   | 108   | 102   | 100   | 101   | 366    | 564    | 441     | 220    | 155   | 132   |
| 11                      | 142   | 121   | 107   | 104   | 95    | 97    | 355    | 633    | 414     | 214    | 153   | 131   |
| 12                      | 145   | 121   | 106   | 103   | 86    | 100   | 345    | 710    | 401     | 210    | 152   | 129   |
| 13                      | 143   | 121   | 104   | 100   | 97    | 96    | 314    | 781    | 389     | 211    | 153   | 129   |
| 14                      | 142   | 115   | 102   | 98    | 89    | 97    | 304    | 733    | 382     | 207    | 150   | 133   |
| 15                      | 141   | 117   | 102   | 100   | 91    | 95    | 280    | 682    | 376     | 205    | 151   | 134   |
| 16                      | 138   | 118   | 103   | 90    | 95    | 92    | 268    | 652    | 364     | 200    | 155   | 129   |
| 17                      | 137   | 112   | 101   | 77    | 90    | 92    | 244    | 643    | 353     | 198    | 155   | 131   |
| 18                      | 137   | 116   | 105   | 83    | 89    | 91    | 241    | 616    | 340     | 197    | 152   | 129   |
| 19                      | 136   | 116   | 106   | 86    | 96    | 96    | 243    | 539    | 331     | 194    | 147   | 129   |
| 20                      | 137   | 115   | 103   | 102   | 89    | 100   | 229    | 481    | 324     | 191    | 147   | 127   |
| 21                      | 136   | 116   | 103   | 98    | 90    | 114   | 249    | 481    | 324     | 191    | 145   | 124   |
| 22                      | 135   | 116   | 105   | 96    | 91    | 129   | 286    | 494    | 305     | 190    | 149   | 127   |
| 23                      | 133   | 113   | 106   | 92    | 87    | 140   | 366    | 482    | 296     | 187    | 148   | 129   |
| 24                      | 133   | 114   | 104   | 93    | 80    | 151   | 336    | 467    | 291     | 185    | 145   | 128   |
| 25                      | 134   | 114   | 112   | 95    | 90    | 162   | 296    | 468    | 280     | 180    | 142   | 126   |
| 26                      | 134   | 111   | 106   | 98    | 90    | 179   | 281    | 467    | 274     | 178    | 143   | 121   |
| 27                      | 134   | 107   | 96    | 99    | 85    | 217   | 276    | 482    | 267     | 180    | 142   | 122   |
| 28                      | 134   | 108   | 90    | 95    | 90    | 218   | 270    | 467    | 262     | 176    | 142   | 121   |
| 29                      | 134   | 112   | 93    | 94    | 83    | 188   | 267    | 458    | 258     | 176    | 140   | 120   |
| 30                      | 132   | 109   | 94    | 97    | ----- | 171   | 258    | 474    | 255     | 171    | 137   | 119   |
| 31                      | 131   | ----- | 102   | 93    | ----- | 170   | -----  | 494    | -----   | 171    | 136   | ----- |
| Total                   | 4,260 | 3,546 | 3,205 | 2,979 | 2,667 | 3,787 | 8,144  | 15,185 | 11,385  | 6,351  | 4,702 | 3,915 |
| Mean                    | 137   | 118   | 103   | 96.1  | 92.0  | 122   | 271    | 490    | 380     | 205    | 152   | 130   |
| Ac-ft                   | 8,450 | 7,030 | 6,360 | 5,910 | 5,290 | 7,510 | 16,150 | 30,120 | 22,580  | 12,600 | 9,330 | 7,770 |
| Calendar year 1959: Max |       |       | 644   | Min   | 72    | Mean  | 195    | Ac-ft  | 142,200 |        |       |       |
| Water year 1959-60: Max |       |       | 781   | Min   | 77    | Mean  | 192    | Ac-ft  | 139,100 |        |       |       |

1135. Blacksmith Fork above Utah Power & Light Co.'s dam, near Hyrum, Utah

Location.--Lat 41°37'20", long 111°44'25", in NE¼ sec.8, T.10 N., R.2 E., on right bank three-quarters of a mile upstream from diversion dam, 3¼ miles upstream from powerplant of Utah Power & Light Co., and 6 miles east of Hyrum.

Drainage area.--260 sq mi.

Records available.--October 1913 to September 1960. Monthly discharge only for October 1913, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,000 ft (from topographic map). Prior to Oct. 2, 1934, at site 1,000 ft upstream at different datum.

Average discharge.--47 years, 125 cfs (90,500 acre-ft per year).

Extremes.--Maximum discharge during year, 318 cfs Apr. 10 (gage height, 3.22 ft); minimum daily, 62 cfs Dec. 16, Feb. 8, Sept. 20, 25, 27.

1913-60: Maximum discharge, 1,620 cfs May 15, 1917 (gage height, 6.5 ft, from floodmarks, site and datum then in use), from rating curve extended above 800 cfs; minimum daily, 29 cfs Jan. 3, 1935.

Remarks.--Records good. A few small diversions for irrigation of about 200 acres above station. Low flow may be slightly regulated by powerplant above station.

Revisions (water years).--WSP 1514: 1925.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |
|-----|-----|
| 2.1 | 58  |
| 2.3 | 100 |
| 2.5 | 145 |
| 3.0 | 271 |

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     | 79    | 75    | 68    | 68    | 66    | 73    | 120    | 140   | *118  | *90   | *79   | 68    |
| 2     | 79    | *75   | 68    | 68    | 68    | 66    | 113    | 143   | 118   | 94    | 79    | 68    |
| 3     | 77    | 75    | 68    | 70    | 66    | 66    | 120    | 159   | 113   | 90    | 73    | 66    |
| 4     | 77    | 77    | 66    | 70    | 68    | 66    | 145    | 167   | 120   | 87    | 75    | 68    |
| 5     | 75    | 77    | 66    | 70    | 64    | 66    | 176    | 167   | 118   | 90    | 73    | 68    |
| 6     | 75    | 68    | 64    | 70    | 64    | 68    | 208    | 164   | 118   | 90    | 73    | 68    |
| 7     | 79    | 77    | 66    | 70    | 64    | 73    | 223    | 171   | 118   | 85    | 73    | 68    |
| 8     | 79    | 75    | 66    | 73    | 62    | 85    | 216    | 176   | 118   | 85    | 73    | 68    |
| 9     | 83    | 75    | 66    | 73    | 73    | 92    | 252    | 191   | 113   | 87    | 75    | 66    |
| 10    | 81    | 75    | 66    | 73    | 68    | 81    | 271    | 191   | 115   | 85    | 73    | 66    |
| 11    | 79    | 73    | 66    | 75    | 73    | 79    | *255   | 191   | 111   | 85    | 71    | 66    |
| 12    | 79    | 73    | 66    | 75    | 68    | 79    | 231    | *200  | 111   | 85    | 73    | 66    |
| 13    | 79    | 73    | 66    | 75    | 68    | 79    | 193    | 208   | 107   | 81    | 73    | 66    |
| 14    | 79    | 73    | 66    | 75    | 66    | 73    | 186    | 191   | 100   | 87    | 73    | 66    |
| 15    | 79    | 71    | 66    | 75    | 68    | 68    | 164    | 179   | 104   | 83    | 73    | 66    |
| 16    | 79    | 71    | 62    | 73    | 68    | 68    | 155    | 171   | 96    | 83    | 75    | 66    |
| 17    | 77    | 73    | 66    | 73    | 64    | 68    | 138    | 167   | 104   | 83    | 73    | 64    |
| 18    | 73    | 73    | 66    | 73    | 64    | 68    | 134    | 164   | 104   | 81    | 75    | 64    |
| 19    | 77    | 73    | 66    | 73    | 66    | 75    | 140    | 155   | 104   | 79    | 73    | 64    |
| 20    | 77    | 71    | 66    | 73    | 64    | 81    | 136    | 145   | 102   | 81    | 71    | 62    |
| 21    | 77    | 71    | 66    | 73    | 64    | 98    | 143    | 143   | 100   | 81    | 68    | 64    |
| 22    | 75    | 71    | 66    | 73    | 64    | 115   | 157    | 140   | 100   | 81    | 73    | 64    |
| 23    | 75    | 71    | 66    | 73    | 64    | 131   | 181    | 140   | 98    | 81    | 73    | 64    |
| 24    | 75    | 71    | 66    | 71    | 64    | 140   | 169    | 136   | 98    | 81    | 71    | 64    |
| 25    | 75    | 68    | 66    | 68    | 64    | 152   | 155    | 131   | 94    | 79    | 71    | 62    |
| 26    | 75    | 68    | 66    | 68    | *64   | 176   | 147    | 129   | 96    | 77    | 71    | 64    |
| 27    | 75    | *68   | 64    | 68    | 64    | 186   | 152    | 129   | 96    | 79    | 71    | 62    |
| 28    | 75    | 68    | 65    | 71    | 66    | 210   | 145    | 127   | 92    | 77    | 68    | 64    |
| 29    | 75    | 66    | 66    | *68   | 68    | 158   | 152    | 124   | 90    | 77    | 68    | 64    |
| 30    | 77    | 68    | 67    | 68    | ----- | 140   | 143    | 122   | 79    | 75    | 68    | 64    |
| 31    | 75    | ----- | 68    | 66    | ----- | *136  | -----  | 120   | ----- | 79    | 66    | ----- |
| Total | 2,391 | 2,163 | 2,046 | 2,212 | 1,914 | 3,117 | 5,120  | 4,881 | 3,155 | 2,578 | 2,244 | 1,960 |
| Mean  | 77.1  | 72.1  | 66.0  | 71.4  | 66.0  | 101   | 171    | 157   | 105   | 83.2  | 72.4  | 65.3  |
| Ac-ft | 4,740 | 4,290 | 4,060 | 4,390 | 3,800 | 6,180 | 10,160 | 9,680 | 6,260 | 5,110 | 4,450 | 3,890 |

Calendar year 1959: Max 239 Min 62 Mean 89.9 Ac-ft 65,080

Water year 1959-60: Max 271 Min 62 Mean 92.3 Ac-ft 67,010

Peak discharge (base, 140 cfs).--Mar. 26 (10 p.m.) 260 cfs (2.99 ft); Apr. 10 (1 a.m.) 318 cfs (3.22 ft); May 13 (9 a.m.) 216 cfs (2.83 ft).

\* Discharge measurement made on this day.

1170. Hammond (East Side) Canal near Collinston, Utah

Location.--Lat 41°50', long 112°03', in SE $\frac{1}{4}$  sec.27, T.13 N., R.2 W., on right bank 3,600 ft downstream from Cutler Dam and 4 miles north of Collinston.

Records available.--June 1912 to September 1960. Prior to 1915, published as Hammond ditch near Collinston. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Prior to May 22, 1914, staff gage at same site and datum.

Average discharge.--48 years, 50.3 cfs (36,420 acre-ft per year).

Extremes.--1912-60: Maximum daily discharge, 182 cfs June 28, July 1, 1932, June 27, 28, 1933, May 17, 1960; no flow at times in each year.

Remarks.--Records good. Canal diverts from east side of Bear River in NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 26, T.13 N., R.2 W., at dam at which West Side Canal and intake of Cutler powerplant also divert. Water from this canal and West Side Canal used for irrigation of about 58,000 acres below station in eastern Box Elder County.

Cooperation.--Gage-height record and six discharge measurements furnished by Utah Power & Light Co.

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     | 20    | 24    |      |      |      |      |      | 0     | 165   | 174    | 163   | 131   |
| 2     | 19    | *21   |      |      |      |      |      | 0     | 166   | *175   | 162   | *124  |
| 3     | 19    | 24    |      |      |      |      |      | 0     | 144   | 175    | 162   | 122   |
| 4     | 18    | 23    |      |      |      |      |      | 70    | 165   | 170    | 162   | 122   |
| 5     | 16    | 23    |      |      |      |      |      | 79    | 165   | 177    | 160   | 122   |
| 6     | 16    | *23   |      |      |      |      |      | 71    | 165   | 175    | 161   | 122   |
| 7     | 14    | 23    |      |      |      |      |      | 68    | 164   | 171    | 161   | 122   |
| 8     | 13    | 22    |      | (*)  |      |      |      | 68    | *163  | 170    | 160   | 116   |
| 9     | 13    | 22    |      |      |      |      |      | *68   | 163   | 170    | 160   | 113   |
| 10    | 12    | 22    |      |      |      |      |      | 73    | 160   | 170    | 161   | 110   |
| 11    | 12    | 22    |      |      |      |      |      | 93    | 156   | 165    | 160   | 112   |
| 12    | 12    | 22    |      |      |      |      |      | *118  | 156   | 165    | 161   | 118   |
| 13    | 12    | 22    |      |      |      |      |      | 121   | 152   | 165    | 160   | 121   |
| 14    | *16   | 22    |      |      |      |      |      | 124   | 150   | 166    | 161   | 120   |
| 15    | 27    | 22    |      |      |      |      |      | 134   | 151   | 165    | *161  | 120   |
| 16    | 33    | 13    |      |      |      |      |      | 160   | 152   | 165    | 161   | 120   |
| 17    | 33    | 0     |      |      |      |      |      | 162   | 156   | 161    | 162   | 120   |
| 18    | 33    | 0     |      |      |      |      |      | 174   | 155   | 155    | 159   | 120   |
| 19    | 33    | 0     |      |      |      |      |      | 171   | 160   | 156    | 155   | 119   |
| 20    | 33    | 0     |      |      |      |      |      | 173   | 174   | 156    | 152   | 113   |
| 21    | 32    | 0     |      |      |      |      |      | 175   | 170   | 156    | 151   | 111   |
| 22    | 32    | 0     |      |      |      |      |      | 173   | 175   | 156    | 149   | 105   |
| 23    | 32    | 0     |      |      |      |      |      | 168   | 175   | 156    | 145   | 104   |
| 24    | *32   | 0     |      |      |      |      |      | 169   | 176   | 156    | 144   | 104   |
| 25    | 32    | 0     |      |      |      |      |      | 169   | 174   | *156   | 142   | 104   |
| 26    | 32    | 0     |      |      |      |      |      | 168   | 174   | 155    | 142   | 100   |
| 27    | 32    | 0     |      |      |      |      |      | 167   | 174   | 150    | 142   | 100   |
| 28    | 32    | 0     |      |      |      |      |      | 167   | 173   | 156    | 138   | 103   |
| 29    | 32    | 0     |      |      |      |      |      | 167   | 174   | 155    | 138   | 101   |
| 30    | 29    | 0     |      |      |      |      |      | 166   | 174   | 156    | 138   | 100   |
| 31    | 24    | ----- |      |      |      |      |      | *164  | ----- | 162    | 138   | ----- |
| Total | 745   | 353   | 0    | 0    | 0    | 0    | 0    | 3,800 | 4,921 | 5,082  | 4,771 | 3,419 |
| Mean  | 24.0  | 11.8  | 0    | 0    | 0    | 0    | 0    | 123   | 164   | 164    | 154   | 114   |
| Ac-ft | 1,480 | 700   | 0    | 0    | 0    | 0    | 0    | 7,540 | 9,760 | 10,080 | 9,460 | 6,780 |

Calendar year 1959: Max 174

Min 0

Mean 58.3

Ac-ft 42,210

Water year 1959-60: Max 182

Min 0

Mean 63.1

Ac-ft 45,800

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

## BEAR RIVER BASIN

## 1175. West Side Canal near Collinston, Utah

Location.--Lat 41°50', long 112°04', in SW $\frac{1}{4}$  sec.27, T.13 N., R.2 W., on left bank 4,200 ft downstream from Cutler Dam and 4 miles north of Collinston.

Records available.--June 1912 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Prior to May 22, 1914, staff gage at same site and datum.

Average discharge.--48 years, 234 cfs (169,400 acre-ft per year).

Extremes.--1912-60: Maximum daily discharge, 751 cfs June 24, 25, 1959; no flow for periods in every year except 1914.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Canal diverts from west side of Bear River in NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.26, T.13 N., R.2 W., at dam at which Hammond (East Side) Canal and intake of Cutler powerplant also divert. Water from this canal and Hammond (East Side) Canal used for irrigation of about 58,000 acres below stations in eastern Box Elder County.

Cooperation.--Gage-height record and 10 discharge measurements furnished by Utah Power & Light Co.

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                       | 86     | 125   | 68    | a 40  | a 35  | a 17     |       | 0             | 730    | 732    | 698    | 634    |
| 2                       | 134    | *124  | 68    |       |       |          |       | 0             | 732    | *732   | 694    | *626   |
| 3                       | 162    | 124   | 59    |       |       |          |       | 0             | 728    | 732    | 692    | 618    |
| 4                       | 157    | 124   | 52    |       |       |          |       | 285           | 726    | 724    | 694    | 610    |
| 5                       | 174    | 119   | 52    |       |       |          |       | 285           | 726    | 721    | 694    | 602    |
| 6                       | 219    | *119  | 52    | (*)   |       | (*)      |       | 254           | 726    | 713    | 696    | 600    |
| 7                       | 216    | 119   | 52    |       |       |          |       | 254           | 724    | 711    | 702    | 592    |
| 8                       | 215    | 120   | 49    |       |       |          |       | *255          | *717   | 713    | 707    | 584    |
| 9                       | 202    | 120   | 46    |       |       |          |       | *255          | 692    | 702    | 715    | 586    |
| 10                      | 178    | 120   | 46    |       |       |          |       | 306           | 675    | 686    | 715    | 588    |
| 11                      | 178    | a120  | *47   |       |       | a 13     |       | 407           | 665    | 692    | 726    | 590    |
| 12                      | 180    | a120  | 47    |       |       |          |       | *456          | 667    | 705    | 721    | 594    |
| 13                      | 177    | 90    | 47    |       |       |          |       | 458           | 658    | 700    | 721    | 596    |
| 14                      | *171   | a80   | *47   |       |       |          | (*)   | 483           | 660    | 702    | 724    | 576    |
| 15                      | 160    | a80   | 47    |       |       |          |       | 555           | 650    | 696    | *724   | 568    |
| 16                      | 160    | a80   | 47    |       |       | a 20     |       | 646           | 640    | 688    | 717    | 570    |
| 17                      | 159    | 79    | a47   |       |       |          |       | 675           | 646    | 688    | 715    | 560    |
| 18                      | 159    | 80    | a47   |       |       |          |       | 675           | 667    | 692    | 707    | 551    |
| 19                      | 160    | 80    | a47   |       |       |          |       | 679           | 688    | 705    | 696    | 552    |
| 20                      | 160    | a80   | a47   |       |       |          |       | 692           | 719    | 702    | 694    | 551    |
| 21                      | 159    | a70   | a47   | a 35  |       | (*)      | 0     | 702           | 726    | 696    | 696    | 546    |
| 22                      | 159    | a70   | 42    |       |       |          |       | 702           | 732    | 667    | 665    | 537    |
| 23                      | 160    | 69    | a42   |       |       |          |       | 700           | 740    | 656    | 646    | 533    |
| 24                      | *159   | 69    | a42   |       |       |          |       | 702           | 736    | 656    | 671    | 531    |
| 25                      | 155    | 68    | a42   |       |       |          |       | 711           | 742    | *663   | 658    | 529    |
| 26                      | 155    | a68   | a42   | (*)   |       | 0        | 0     | 730           | 742    | 686    | 642    | 524    |
| 27                      | 153    | 67    | a42   |       |       |          |       | 728           | 740    | 688    | 632    | 508    |
| 28                      | 148    | a68   | a42   |       |       |          |       | 726           | 738    | 679    | 632    | 508    |
| 29                      | 141    | a69   | a42   |       |       |          |       | 726           | 736    | 675    | 628    | 510    |
| 30                      | 135    | 70    | a42   |       |       |          |       | 728           | 736    | 686    | 624    | 508    |
| 31                      | 125    | ----- | a42   | ----- | ----- | 0        | ----- | *724          | -----  | 700    | 624    | -----  |
| Total                   | 5,056  | 2,791 | 1,481 | 1,135 | 685   | 326      | 0     | 15,495        | 21,204 | 21,588 | 21,270 | 16,982 |
| Mean                    | 165    | 93.0  | 47.8  | 36.6  | 23.6  | 10.5     | 0     | 500           | 707    | 696    | 686    | 566    |
| Ac-ft                   | 10,030 | 5,540 | 2,940 | 2,250 | 1,360 | 647      | 0     | 30,730        | 42,060 | 42,820 | 42,190 | 33,680 |
| Calendar year 1959: Max | 751    |       |       | Min 0 |       | Mean 269 |       | Ac-ft 194,500 |        |        |        |        |
| Water year 1959-60: Max | 742    |       |       | Min 0 |       | Mean 295 |       | Ac-ft 214,200 |        |        |        |        |

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

a No gage-height record; discharge estimated on basis of 5 discharge measurements and record of gate changes by employees of Utah Power & Light Co.

## 1180. Bear River near Collinston, Utah

Location.--Lat 41°50', long 112°03', in NW¼SE¼ sec.27, T.13 N., R.2 W., on right bank 800 ft downstream from Cutler plant of Utah Power & Light Co., 2,000 ft downstream from Cutler Dam, and 5½ miles north of Collinston.

Drainage area.--6,000 sq mi, approximately.

Records available.--June 1889 to September 1960. Published as "at Collinston" prior to 1900. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Datum of gage is 4,276.13 ft above mean sea level (levels by Bureau of Reclamation). Prior to Nov. 8, 1913, staff gage and Nov. 8, 1913, to Sept. 10, 1938, water-stage recorder, at site three-quarters of a mile downstream at different datums.

Extremes.--Maximum discharge during year, 3,780 cfs Jan. 22 or 23 (gage height, 4.75 ft); minimum daily, 16 cfs July 14-18, 20-25.

1889-1960: Maximum discharge observed, 11,600 cfs June 7-10, 1909 (gage height, 7.70 ft, site and datum then in use); practically no flow at 12 p.m. Aug. 5, 1920; minimum daily, 10 cfs Aug. 4-12, 18-23, 1905.

Remarks.--Records excellent. Natural flow of stream affected by storage reservoirs, power developments, diversions for irrigation, and return flow from irrigated areas.

Cooperation.--Nine discharge measurements furnished by Utah Power & Light Co.

Revisions (water years).--WSP 1564: 1902.

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                       | 764    | 715    | 735    | 598    | 892    | 1,290   | 2,320   | 2,020  | 21      | 22    | 20    | 23    |
| 2                       | 1,150  | 741    | 757    | 824    | 871    | 1,390   | 2,260   | 1,850  | 21      | *20   | 19    | *23   |
| 3                       | 568    | 737    | 800    | 749    | 852    | 1,420   | 2,240   | 1,580  | 21      | 20    | 19    | 23    |
| 4                       | 1,010  | 782    | 819    | 1,000  | 881    | 1,620   | 2,110   | 1,110  | 21      | 20    | 18    | 23    |
| 5                       | 396    | 708    | 604    | 514    | 851    | 1,780   | 1,970   | 1,210  | 22      | 21    | 20    | 24    |
| 6                       | 506    | 712    | 616    | 570    | 884    | 2,290   | 1,960   | 1,640  | 22      | 21    | 21    | 23    |
| 7                       | 1,150  | 747    | 702    | 848    | 876    | *2,100  | 2,280   | 1,340  | 23      | 21    | 24    | 24    |
| 8                       | 880    | 935    | 711    | 760    | 992    | 2,090   | 2,400   | 1,450  | 23      | 21    | 23    | 24    |
| 9                       | 846    | 803    | 734    | 745    | 1,330  | 2,660   | 2,510   | 1,400  | 23      | 22    | 22    | 24    |
| 10                      | 605    | 528    | 859    | 932    | 1,210  | 2,570   | 2,450   | 1,600  | 23      | 24    | 22    | 25    |
| 11                      | 748    | 858    | 954    | 959    | 1,450  | 2,330   | 2,660   | 1,620  | 24      | 21    | 22    | 25    |
| 12                      | 954    | 684    | 799    | 1,190  | 1,500  | 1,690   | 1,960   | *1,340 | 24      | 21    | 22    | 24    |
| 13                      | 889    | 814    | 1,020  | 1,040  | 1,420  | 1,570   | 2,250   | 1,290  | 24      | 17    | 23    | 24    |
| 14                      | *793   | 586    | *823   | 952    | 1,040  | 1,950   | *2,030  | 1,380  | 24      | 16    | 23    | 25    |
| 15                      | 675    | 704    | 600    | 793    | 937    | 1,220   | 2,110   | 1,180  | 24      | 16    | *23   | 25    |
| 16                      | 936    | 935    | 741    | 886    | 778    | 1,330   | 1,930   | 583    | *23     | 16    | 25    | 24    |
| 17                      | 743    | 789    | 774    | 778    | 837    | 1,250   | 1,910   | 682    | 22      | 16    | 30    | 23    |
| 18                      | 715    | 749    | 728    | 727    | 1,030  | 1,070   | 1,650   | 481    | 22      | 16    | 25    | 23    |
| 19                      | 656    | 850    | 686    | 656    | 817    | 1,290   | 1,650   | 344    | 22      | 17    | 25    | 23    |
| 20                      | 780    | 629    | 842    | 690    | 813    | 1,300   | 1,480   | 101    | 22      | 16    | 25    | 767   |
| 21                      | 612    | 709    | 884    | 655    | 704    | 1,740   | 1,300   | 20     | 22      | 16    | 24    | 21    |
| 22                      | 798    | 1,070  | 681    | 1,000  | 825    | *877    | 1,410   | 20     | 23      | 16    | 25    | 22    |
| 23                      | 691    | 812    | 865    | 974    | 874    | 1,760   | 1,430   | 20     | 23      | 16    | 25    | 24    |
| 24                      | *677   | 581    | 814    | 407    | 838    | 2,000   | 1,530   | 20     | 23      | 16    | 26    | 23    |
| 25                      | 697    | 745    | 915    | 1,030  | 687    | 2,070   | 1,700   | 20     | 22      | 16    | 25    | 23    |
| 26                      | 1,000  | 769    | 942    | *956   | 810    | 2,110   | 1,860   | 20     | 22      | 17    | 26    | 23    |
| 27                      | 537    | 828    | 833    | 949    | 884    | 2,220   | 1,960   | 43     | 23      | 17    | 26    | 760   |
| 28                      | 734    | 946    | 956    | 922    | 279    | 2,020   | 1,720   | 20     | 22      | 17    | 25    | 20    |
| 29                      | 791    | 743    | 609    | 976    | 1,100  | 2,450   | 1,720   | 20     | 22      | 19    | 26    | 22    |
| 30                      | 695    | 713    | 573    | ---    | ---    | 2,430   | 2,010   | 20     | 22      | 18    | 24    | 23    |
| 31                      | 835    | -----  | 528    | 918    | -----  | 2,330   | -----   | *20    | -----   | 18    | 23    | ----- |
| Total                   | 23,829 | 22,720 | 23,904 | 25,974 | 27,262 | 56,217  | 58,770  | 24,444 | 675     | 570   | 726   | 2,180 |
| Mean                    | 769    | 757    | 771    | 838    | 940    | 1,813   | 1,959   | 789    | 22.5    | 18.4  | 23.4  | 72.7  |
| Ac-ft                   | 47,260 | 45,060 | 47,410 | 51,520 | 54,070 | 111,500 | 116,600 | 48,480 | 1,340   | 1,130 | 1,440 | 4,320 |
| Calendar year 1959: Max | 2,140  |        |        |        |        | Mean    | 692     | Ac-ft  | 500,900 |       |       |       |
| Water year 1959-60: Max | 2,660  |        |        |        |        | Mean    | 730     | Ac-ft  | 530,100 |       |       |       |

\* Discharge measurement made on this day.

1190. Little Malad River above Elkhorn Reservoir, near Malad City, Idaho

Location.--Lat 42°20', long 112°26', on line between secs.35 and 36, T.12 S., R.34 E., on left bank three-quarters of a mile upstream from highway bridge, 2 miles downstream from Wright Creek, 2½ miles downstream from springs, 2½ miles upstream from Elkhorn Dam, and 14 miles northwest of Malad City.

Drainage area.--120 sq mi, approximately.

Records available.--August 1911 to August 1913 (published as "near Malad"), October 1931 to September 1932, October 1940 to September 1960. Monthly figures only for some periods, published in WSP 1314.

Gage.--Water-stage recorder and Cippoletti weir. Altitude of gage is 5,050 ft (by barometer). Prior to Dec. 5, 1940, staff gages at different datums.

Average discharge.--22 years (1911-12, 1931-32, 1940-60), 17.2 cfs (12,450 acre-ft per year).

Extremes.--Maximum discharge during year, 255 cfs July 31 (gage height, 3.19 ft); minimum, 9.1 cfs Nov. 14 (gage height, 0.34 ft).

1911-13, 1931-32, 1940-60: Maximum discharge, 351 cfs July 24, 1955 (gage height, 3.63 ft), from rating curve extended above 70 cfs on basis of computation of peak flow by weir formula; minimum, 6.8 cfs Aug. 19, 1948, Jan. 3, 1951; minimum gage height, 0.31 ft Aug. 19, 1948.

Remarks.--Records good except those computed on basis of fragmentary or no gage-height record, which are fair. Diversions for irrigation of about 400 acres above station.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |
|-----|-----|
| 0.4 | 9.8 |
| .6  | 18  |
| .8  | 28  |
| 1.0 | 38  |
| 1.2 | 50  |

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     | 15   | 14    | 14   | 14   | 13    | 13    | 18    | 14   | 13    | 14   | 19   | 13    |
| 2     | 14   | 14    | 14   | 14   | 14    | 13    | 18    | 14   | 14    | 15   | 14   | 13    |
| 3     | 14   | 14    | 14   | 13   | 13    | 13    | 21    | 14   | 13    | 15   | 13   | 13    |
| 4     | 15   | 14    | 13   | 12   | 13    | f14   | 31    | 14   | 14    | 15   | 13   | 12    |
| 5     | 15   | 13    | 13   | 13   | 14    | f13   | 38    | 14   | 14    | 15   | 13   | 12    |
| 6     | 15   | 14    | 14   | 13   | 14    | f14   | 35    | 14   | 14    | 15   | 13   | 12    |
| 7     | 15   | *14   | 14   | 13   | 14    | 15    | 27    | *14  | 14    | 15   | 12   | 12    |
| 8     | 15   | 14    | 14   | 13   | 14    | 16    | 21    | 14   | 14    | 15   | 12   | 12    |
| 9     | 15   | 14    | 14   | 13   | 14    | 15    | 19    | 14   | 14    | 15   | 12   | 12    |
| 10    | 15   | 14    | 14   | 13   | 14    | 14    | 18    | 14   | *14   | 15   | 12   | 12    |
| 11    | 15   | 14    | 14   | 13   | 13    | 13    | 17    | 13   | 13    | 15   | 13   | 12    |
| 12    | 15   | 14    | 14   | 13   | 13    | 14    | 17    | 13   | 13    | 15   | 13   | 12    |
| 13    | *15  | 14    | 14   | 12   | 14    | 14    | 16    | 13   | 13    | 14   | 12   | 12    |
| 14    | 15   | 13    | 14   | 12   | 13    | 14    | 15    | 14   | 13    | 14   | 14   | 12    |
| 15    | 15   | 14    | *14  | 12   | 13    | 14    | 14    | 14   | 13    | *14  | 13   | 12    |
| 16    | 14   | 14    | 14   | *12  | 13    | 13    | 14    | 14   | 13    | 14   | 12   | 12    |
| 17    | 14   | 14    | 14   | 12   | 13    | 14    | 14    | 14   | 12    | 14   | *12  | 12    |
| 18    | 14   | 14    | 14   | 12   | 13    | 15    | 14    | 14   | 12    | 14   | 12   | 12    |
| 19    | 14   | 14    | 14   | 12   | 14    | 15    | 14    | 14   | 13    | 14   | 12   | 12    |
| 20    | 14   | 14    | 14   | 12   | 13    | 16    | 14    | 14   | 13    | 14   | 12   | 12    |
| 21    | 14   | 14    | 14   | 13   | 14    | 17    | 14    | 14   | 13    | 14   | 12   | 12    |
| 22    | 14   | 14    | 14   | 13   | 13    | f18   | 14    | 14   | 13    | 15   | 16   | 12    |
| 23    | 14   | 14    | 14   | 13   | 12    | f25   | 15    | 14   | 13    | 15   | 14   | 12    |
| 24    | 14   | 14    | 14   | 13   | 13    | *f28  | 14    | 14   | 13    | 15   | 13   | 12    |
| 25    | 14   | 14    | 14   | 13   | 13    | f37   | 14    | 14   | 13    | 14   | 13   | 12    |
| 26    | 14   | 13    | 14   | 13   | 14    | 46    | 14    | 14   | 13    | 14   | 13   | 12    |
| 27    | 14   | 14    | 13   | 13   | 14    | 33    | 14    | 13   | 13    | 14   | 12   | 12    |
| 28    | 14   | 14    | 13   | 13   | 14    | 29    | 14    | 14   | 13    | 14   | 12   | 12    |
| 29    | 14   | 14    | 13   | 13   | 13    | 20    | 14    | 14   | 13    | 14   | 12   | 12    |
| 30    | 14   | 14    | 13   | 13   | ----- | 19    | 13    | 14   | 12    | 14   | 12   | 12    |
| 31    | 14   | ----- | 13   | 13   | ----- | 18    | ----- | 13   | ----- | 50   | 12   | ----- |
| Total | 447  | 417   | 427  | 396  | 389   | 572   | 535   | 429  | 395   | 484  | 399  | 363   |
| Mean  | 14.4 | 13.9  | 13.8 | 12.8 | 13.4  | 18.5  | 17.8  | 13.8 | 13.2  | 15.6 | 12.9 | 12.1  |
| Ac-ft | 887  | 827   | 847  | 785  | 772   | 1,130 | 1,060 | 851  | 783   | 960  | 791  | 720   |

Calendar year 1959: Max 42 Min 11 Mean 15.8 Ac-ft 11,420  
 Water year 1959-60: Max 50 Min 12 Mean 14.4 Ac-ft 10,410

\* Discharge measurement made on this day.  
 f Fragmentary gage-height record; discharge computed from partly estimated gage heights.  
 Note.--No gage-height record Mar. 14-21, Sept. 29, 30; discharge estimated on basis of weather records and records for nearby stations.

1225. Devil Creek above Campbell Creek, near Malad City, Idaho

Location.--Lat 42°18', long 112°12', in sec.12, T.13 S., R.36 E., on right bank 0.6 mile upstream from proposed dam, 1.3 miles upstream from highway crossing of Campbell Creek, 4.5 miles upstream from Evans dividers, and 7½ miles northeast of Malad City.

Drainage area.--13 sq mi, approximately.

Records available.--October 1938 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,150 ft (by barometer). Prior to Dec. 16, 1943, staff gage and Dec. 16, 1943, to Aug. 22, 1954, water-stage recorder, at site 50 ft upstream at datum 1.84 ft higher.

Average discharge.--22 years, 9.48 cfs (6,860 acre-ft per year).

Extremes.--Maximum discharge during year, 31 cfs Apr. 3 (gage height, 2.27 ft); minimum, 2.4 cfs Aug. 22 (gage height, 1.61 ft); minimum daily, 3.6 cfs Feb. 26.  
1938-60: Maximum discharge observed, 160 cfs Apr. 2, 1943, from rating curve extended above 130 cfs on basis of logarithmic plotting; maximum gage height, 2.38 ft Apr. 19, 1952, site and datum then in use; minimum discharge recorded, 1.6 cfs Jan. 13, 1950 (gage height, 0.43 ft, site and datum then in use); minimum daily, 1.6 cfs Nov. 3-5, 1949.

Remarks.--Records good. Diversions above station for irrigation of 20 to 30 acres. Stream receives part of flow of Birch Creek above station. Malad powerplant and its small reservoir on Birch Creek cause slight diurnal fluctuations.

Revisions (water years).--WSP 1344: 1943(M). WSP 1514: 1942.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Oct. 1 to Nov. 17, Jan. 10 to Mar. 8, Mar. 27, 28)

Oct. 1 to Mar. 28

Mar. 29 to Sept. 30

|     |     |     |    |     |     |     |    |
|-----|-----|-----|----|-----|-----|-----|----|
| 1.4 | 3.5 | 1.8 | 14 | 1.6 | 3.0 | 1.9 | 12 |
| 1.5 | 5.2 | 1.9 | 18 | 1.7 | 5.0 | 2.0 | 16 |
| 1.6 | 7.4 | 2.0 | 23 | 1.8 | 7.9 |     |    |
| 1.7 | 10  |     |    |     |     |     |    |

Discharge, in cubic feet per second, water year October 1958 to September 1960

| Day   | Oct.  | Nov.  | Dec.  | Jan.  | Feb.  | Mar.  | Apr.  | May   | June  | July  | Aug.  | Sept. |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1     | 5.0   | 5.0   | 5.2   | 5.4   | 5.9   | b4.3  | 9.0   | 7.2   | 6.9   | 5.5   | 4.8   | 4.8   |
| 2     | 5.0   | 5.0   | 5.4   | 5.4   | 6.3   | 4.5   | 8.6   | 7.9   | 6.9   | 5.2   | 4.8   | 4.8   |
| 3     | 5.0   | 5.0   | 5.2   | 5.4   | 5.9   | 4.5   | 13    | 8.6   | 6.9   | 5.2   | 4.3   | 4.8   |
| 4     | 4.9   | 5.2   | 4.9   | b5.0  | 5.9   | 4.7   | 13    | 8.3   | 6.9   | 5.2   | 4.3   | 4.3   |
| 5     | 5.0   | 4.9   | 4.5   | b5.2  | 5.9   | 4.9   | 14    | 8.3   | 6.9   | 5.0   | 4.3   | 4.5   |
| 6     | 5.0   | 4.9   | 5.0   | 5.4   | 5.9   | 5.4   | 12    | 8.6   | 7.2   | 5.2   | 4.3   | 4.5   |
| 7     | 4.9   | 4.9   | 5.0   | 6.1   | 6.3   | 5.6   | 9.3   | 9.0   | 7.2   | 5.2   | 4.3   | 4.8   |
| 8     | 4.9   | *4.9  | 5.0   | 5.9   | 6.3   | 5.6   | 9.0   | *8.6  | 7.2   | 5.2   | 4.1   | 5.0   |
| 9     | 5.0   | 4.9   | 5.0   | 6.1   | 6.3   | 5.2   | 9.0   | 8.3   | 7.6   | 5.2   | 4.3   | 4.8   |
| 10    | 5.0   | 4.9   | 5.0   | 5.9   | 6.3   | 5.2   | 8.6   | 7.9   | 7.6   | 5.2   | 4.3   | 4.8   |
| 11    | 5.0   | 4.9   | 5.0   | 6.1   | 6.1   | 4.9   | 7.9   | 8.3   | *7.2  | 5.0   | 4.5   | 4.8   |
| 12    | 5.0   | 5.0   | 5.0   | 6.3   | 5.9   | 5.0   | 7.2   | 8.3   | 6.6   | 5.0   | 4.3   | 4.5   |
| 13    | *5.1  | 5.0   | 5.0   | 6.3   | 6.3   | 5.0   | 6.9   | 8.3   | 6.6   | 5.0   | 4.1   | 4.8   |
| 14    | 5.2   | 4.7   | 4.7   | 6.1   | 6.1   | 5.0   | 7.2   | 8.3   | 6.3   | 5.0   | 3.9   | 4.5   |
| 15    | 5.2   | 5.0   | *5.0  | b5.4  | 5.0   | 5.0   | 6.9   | 7.6   | 6.3   | *5.0  | 4.3   | 4.5   |
| 16    | 5.2   | 5.0   | 5.0   | *b4.8 | 5.9   | 5.0   | 6.3   | 7.2   | 6.0   | 5.0   | 4.3   | 4.3   |
| 17    | 5.2   | 4.9   | 5.0   | b5.0  | 6.1   | 5.0   | 6.3   | 7.2   | 5.8   | 5.0   | *4.3  | 4.3   |
| 18    | 5.2   | 5.0   | 5.2   | b5.2  | 5.9   | 5.0   | 6.3   | 6.9   | 5.8   | 5.0   | 4.3   | 4.5   |
| 19    | 5.2   | 5.0   | 5.2   | b5.4  | 5.9   | 5.2   | 6.6   | 6.9   | 5.8   | 5.0   | 4.3   | 4.3   |
| 20    | 5.2   | 5.0   | 5.4   | b5.6  | 5.9   | 5.2   | 6.6   | 6.9   | 5.8   | 4.5   | 4.3   | 4.3   |
| 21    | 5.2   | 5.0   | 5.6   | b5.9  | 5.0   | 5.6   | 6.9   | 6.9   | 5.8   | 4.5   | 4.1   | 4.3   |
| 22    | 5.4   | 5.0   | 5.6   | 5.9   | 5.6   | 6.3   | 7.2   | 7.2   | 5.8   | 4.3   | 4.5   | 4.3   |
| 23    | 5.2   | 5.0   | 5.6   | 5.6   | 5.4   | 7.0   | 7.2   | 7.2   | 5.8   | 4.8   | 4.5   | 4.3   |
| 24    | 5.2   | 5.0   | 5.6   | 5.6   | b4.5  | *7.7  | 6.9   | 7.2   | 5.5   | 4.8   | 5.0   | 4.3   |
| 25    | 5.2   | 5.0   | 5.9   | 5.6   | b5.9  | 7.7   | 7.2   | 6.9   | 5.8   | 4.5   | 4.8   | 4.1   |
| 26    | 5.2   | 5.0   | 5.6   | 5.6   | b5.6  | 9.9   | 7.2   | 6.6   | 5.8   | 4.5   | 4.5   | 4.1   |
| 27    | 5.0   | 5.0   | 5.0   | 5.6   | *b5.8 | 13    | 7.2   | 6.9   | 5.8   | 4.5   | 4.5   | 4.1   |
| 28    | 4.9   | 5.0   | 5.4   | 5.6   | b5.9  | 20    | 7.2   | 6.6   | 5.5   | 4.5   | 4.5   | 4.1   |
| 29    | 5.0   | 5.2   | 5.4   | 5.6   | b4.0  | 12    | 6.9   | 6.6   | 5.2   | 4.5   | 4.5   | 4.1   |
| 30    | 5.0   | 5.0   | 5.6   | 5.9   | 5.9   | 12    | 6.9   | 6.6   | 5.5   | 4.5   | 4.5   | 3.7   |
| 31    | 5.0   | ----- | 5.9   | 5.9   | ----- | 11    | ----- | 6.6   | ----- | 4.5   | 4.5   | ----- |
| Total | 157.5 | 149.3 | 161.9 | 174.8 | 160.0 | 212.4 | 244.5 | 233.9 | 190.0 | 151.5 | 136.3 | 133.3 |
| Mean  | 5.08  | 4.98  | 5.22  | 5.63  | 5.52  | 6.85  | 8.15  | 7.55  | 6.33  | 4.89  | 4.40  | 4.44  |
| Ac-ft | 312   | 296   | 321   | 347   | 317   | 421   | 485   | 464   | 377   | 300   | 270   | 264   |

Calendar year 1959: Max 17 Min 3.1 Mean 6.39 Ac-ft 4,620  
Water year 1959-60: Max 20 Min 3.6 Mean 5.75 Ac-ft 4,170

\* Discharge measurement made on this day.  
b Stage-discharge relation affected by ice.

## 1255. Malad River at Woodruff, Idaho

Location.--Lat 42°02', long 112°14', in sec.15, T.16 S., R.36 E., on downstream left abutment of highway bridge at Woodruff, 2½ miles north of Idaho-Utah State line.

Drainage area.--485 sq mi, approximately.

Records available.--November 1938 to September 1960.

Gage.--Staff gage read once daily. Altitude of gage is 4,355 ft (by barometer). Prior to Mar. 6, 1951, staff gage at site 300 ft downstream at datum 0.27 ft lower.

Average discharge.--21 years (1939-60), 61.7 cfs (44,670 acre-ft per year).

Extremes.--Maximum daily discharge during year, 230 cfs Mar. 10; maximum gage height observed, 4.84 ft Mar. 9; minimum observed, 3.0 cfs July 16 (gage height, 1.38 ft). 1938-60: Maximum discharge, 650 cfs Jan. 22 or 23, 1943 (gage height, 8 ft, from information by observer), from rating curve extended above 370 cfs by logarithmic plotting; minimum observed, that of July 16, 1960.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by several small reservoirs above station. Diversions above station for irrigation of 25,000 to 30,000 acres.

Revisions (water years).--WSP 1060: 1943(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.3 | 2.2 | 2.5 | 54  |
| 1.5 | 5.5 | 3.0 | 86  |
| 1.7 | 11  | 4.0 | 150 |
| 2.0 | 22  | 5.2 | 240 |

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                       | 20    | 26    | a36   | 36      | a46   | 46        | a70          | 56    | 16    | 17    | 18    | 15    |
| 2                       | 26    | a26   | 37    | a36     | 47    | a47       | 68           | 48    | 16    | 17    | 18    | 16    |
| 3                       | 24    | a25   | a36   | 36      | a46   | 48        | 59           | 48    | 17    | 16    | 18    | 16    |
| 4                       | 24    | 25    | 36    | a36     | 46    | a50       | a58          | a46   | 17    | 15    | 18    | 16    |
| 5                       | 25    | a25   | a36   | 36      | a46   | 52        | 57           | 45    | 17    | 15    | 18    | 16    |
| 6                       | 25    | 24    | 36    | a38     | 46    | a65       | 58           | a42   | 17    | 14    | 18    | 16    |
| 7                       | 25    | *26   | a36   | 39      | 51    | 108       | 63           | *39   | 16    | 14    | 18    | 16    |
| 8                       | 25    | 26    | 36    | a40     | a53   | a160      | 58           | 29    | 16    | 14    | 18    | 16    |
| 9                       | 26    | a27   | a35   | 40      | a56   | 209       | 44           | 28    | 17    | 14    | 17    | 16    |
| 10                      | 26    | 28    | 34    | a40     | 59    | a230      | 52           | 24    | 17    | 14    | 18    | 16    |
| 11                      | 29    | a28   | a36   | 39      | a60   | 206       | 49           | 19    | *17   | 14    | 18    | 16    |
| 12                      | 30    | 29    | 37    | a40     | 61    | a165      | 48           | 19    | 17    | 9.1   | 17    | 16    |
| 13                      | *29   | a28   | a34   | 40      | a54   | 142       | 51           | 19    | a17   | 3.5   | 16    | 16    |
| 14                      | 31    | 27    | *32   | a42     | 48    | a120      | 49           | 18    | a17   | 3.2   | 16    | 16    |
| 15                      | 31    | a26   | a34   | 44      | a50   | 108       | 47           | 15    | a17   | *3.2  | 17    | 16    |
| 16                      | 31    | 26    | 37    | *41     | 51    | a100      | 44           | 15    | a17   | 3.0   | 16    | 16    |
| 17                      | a32   | a26   | a37   | 41      | a52   | 109       | 43           | 15    | 17    | 17    | *16   | 16    |
| 18                      | 32    | 27    | 37    | a40     | 52    | a112      | 43           | 15    | 17    | 18    | 16    | 16    |
| 19                      | a30   | a28   | a37   | 40      | a49   | 116       | 48           | 16    | 17    | 18    | 16    | 16    |
| 20                      | 28    | 29    | 37    | a40     | 46    | a140      | 50           | 15    | 17    | 13    | 16    | 17    |
| 21                      | a28   | a28   | a40   | 40      | 42    | 175       | 50           | 15    | 17    | 12    | 16    | 16    |
| 22                      | a28   | 26    | 44    | a40     | a42   | a170      | 52           | 16    | 17    | 9.1   | 16    | 16    |
| 23                      | 28    | a28   | a40   | 41      | a43   | 161       | 53           | 15    | 17    | 8.5   | 16    | 16    |
| 24                      | a28   | 29    | 37    | a42     | 44    | *140      | a50          | 16    | 17    | a8.5  | 16    | 16    |
| 25                      | 28    | a27   | a37   | 43      | a45   | 121       | 48           | 16    | 17    | a6.5  | 16    | 16    |
| 26                      | a27   | 26    | 36    | a42     | 46    | a110      | a47          | 17    | 17    | a4.4  | 16    | 13    |
| 27                      | 26    | a28   | a38   | 41      | *44   | 97        | 46           | 16    | 17    | a3.9  | 15    | 17    |
| 28                      | a26   | 30    | 41    | a44     | 46    | a93       | a46          | 16    | 17    | 3.5   | 15    | 14    |
| 29                      | 26    | a32   | a40   | 46      | a46   | 91        | 45           | 16    | 17    | 18    | 16    | 17    |
| 30                      | a26   | 35    | 38    | a45     | ----- | a82       | a50          | 15    | 17    | 18    | 15    | 17    |
| 31                      | 27    | ----- | a37   | 44      | ----- | 72        | -----        | 17    | ----- | 18    | 16    | ----- |
| Total                   | 849   | 821   | 1,144 | 1,252   | 1,417 | 3,645     | 1,546        | 746   | 506   | 362.4 | 516   | 485   |
| Mean                    | 27.4  | 27.4  | 36.9  | 40.4    | 48.9  | 118       | 51.5         | 24.1  | 16.9  | 11.7  | 16.6  | 16.2  |
| Ac-ft                   | 1,680 | 1,630 | 2,270 | 2,480   | 2,810 | 7,230     | 3,070        | 1,480 | 1,000 | 719   | 1,020 | 962   |
| Calendar year 1959: Max | 172   |       |       | Min 17  |       | Mean 36.2 | Ac-ft 26,200 |       |       |       |       |       |
| Water year 1959-60: Max | 230   |       |       | Min 3.0 |       | Mean 36.3 | Ac-ft 26,350 |       |       |       |       |       |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for adjacent periods, weather records, records for nearby streams, or interpolated.

## 1264. Box Elder Creek at Mantua, Utah

Location.--Lat 41°28'58", long 111°56'49", in SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec.27, T.9 N., R.1 W., on left bank 0.2 mile downstream from Flume Hollow, 0.3 mile upstream from Dunns Hollow, 1 mile south of Mantua, and 1.3 miles upstream from Big Creek.

Drainage area.--14.0 sq mi.

Records available.--April 1959 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,230 ft (from topographic map).

Extremes.--1959: Maximum discharge during period April to September, 25 cfs Apr. 26

(gage height, 1.37 ft); no flow for many days June to September.

1959-60: Maximum discharge during water year, 34 cfs Apr. 9 (gage height, 1.53 ft); no flow for many days October to March.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

## Discharge, in cubic feet per second, 1959

| Day                      | Apr. | May  | June | July | Aug. | Sept. | Day | Apr.  | May  | June | July | Aug. | Sept. |
|--------------------------|------|------|------|------|------|-------|-----|-------|------|------|------|------|-------|
| 1                        | *0   | 4.6  | 0.1  | -    | 0    | 0     | 16  | 1.4   | 0.9  | 0.1  | -    | 0    | 0     |
| 2                        | 1.4  | 4.4  | .1   | -    | 0    | 0     | 17  | 1.2   | .8   | .1   | -    | 0    | *0    |
| 3                        | 1.7  | 4.0  | .1   | -    | 0    | 0     | 18  | 1.5   | .8   | .1   | -    | 0    | 0     |
| 4                        | 5.0  | *3.4 | 0    | -    | 0    | 0     | 19  | 1.2   | .6   | .1   | -    | *.2  | .6    |
| 5                        | 7.0  | 3.1  | 0    | -    | 0    | 0     | 20  | 1.3   | .5   | .1   | -    | .1   | .3    |
| 6                        | 8.8  | 2.6  | 0    | -    | 0    | 0     | 21  | 1.5   | .5   | .1   | -    | 0    | .2    |
| 7                        | 6.5  | 2.2  | 0    | -    | 0    | 0     | 22  | *1.9  | .5   | 0    | -    | 0    | 0     |
| 8                        | *4.3 | 2.0  | 0    | -    | 0    | 0     | 23  | 2.1   | .5   | 0    | (*)  | 0    | 0     |
| 9                        | 2.7  | 1.8  | 0    | -    | 0    | 0     | 24  | 2.1   | .4   | *0   | -    | 0    | 0     |
| 10                       | 1.7  | 1.7  | 0    | -    | 0    | 0     | 25  | 2.6   | .3   | 0    | -    | 0    | .4    |
| 11                       | 1.8  | 1.4  | 0    | -    | 0    | 0     | 26  | .1    | .6   | 0    | -    | 0    | 1.2   |
| 12                       | 2.1  | 1.2  | 0    | -    | 0    | 0     | 27  | *9.4  | *1.0 | 0    | -    | 0    | .4    |
| 13                       | 2.2  | *1.0 | 0    | -    | 0    | 0     | 28  | *5.9  | .5   | .1   | -    | 0    | .4    |
| 14                       | 1.8  | .9   | 0    | -    | 0    | 0     | 29  | 5.2   | .3   | .1   | -    | 0    | a.3   |
| 15                       | 1.5  | .9   | 0    | -    | 0    | 0     | 30  | *4.8  | .2   | .1   | -    | 0    | a.2   |
|                          |      |      |      |      |      |       | 31  |       | .2   |      | -    | 0    |       |
| Total.....               |      |      |      |      |      |       |     | 100.5 | 43.8 | 1.2  | 0    | 0.3  | 4.1   |
| Mean.....                |      |      |      |      |      |       |     | 3.35  | 1.41 | 0.04 | 0    | 0.01 | 0.14  |
| Runoff in acre-feet..... |      |      |      |      |      |       |     | 199   | 87   | 2.4  | 0    | 0.6  | 8.1   |

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

a No gage-height record; discharge estimated on basis of weather records, trend of flow, and recorded range in stage.

## 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    | 0.1  | 0    |      |      | 0    | 1.8   | 9.7   | 2.1  | 0.3  | 0.1  | 0.1   |
| 2     | 0    | .1   | 0    |      |      | 0    | 1.5   | 13    | 1.8  | .3   | .2   | .1    |
| 3     | 0    | .1   | 0    |      |      | 0    | 2.2   | 21    | 1.5  | .3   | *.2  | .1    |
| 4     | 0    | .1   | 0    |      |      | 0    | 5.2   | 19    | *1.3 | .3   | .2   | .1    |
| 5     | 0    | 0    | 0    |      |      | 0    | 11    | 18    | 1.2  | *.3  | .2   | .1    |
| 6     | 0    | 0    | 0    |      |      | 0    | *15   | 17    | .9   | .3   | .2   | .1    |
| 7     | .2   | 0    | 0    |      |      | 0    | 11    | 17    | .8   | .3   | .2   | *.1   |
| 8     | .1   | 0    | 0    |      |      | 0    | 14    | 17    | .8   | .3   | .2   | .1    |
| 9     | .2   | 0    | *0   |      |      | 0    | 18    | 17    | 1.2  | .3   | .1   | .1    |
| 10    | .1   | 0    | 0    |      |      | 0    | 22    | *17   | 1.2  | .2   | .1   | .1    |
| 11    | 0    | 0    | 0    |      |      | 0    | *20   | 15    | .9   | .2   | .1   | .1    |
| 12    | 0    | 0    | 0    |      |      | 0    | *18   | 14    | .7   | .2   | .1   | .1    |
| 13    | 0    | 0    | 0    |      |      | 0    | 17    | *12   | .8   | .2   | .1   | .1    |
| 14    | *0   | 0    | 0    |      |      | 0    | 16    | 10    | .8   | .2   | .1   | .1    |
| 15    | 0    | 0    | 0    |      |      | 0    | 13    | 9.0   | .9   | .2   | .2   | .1    |
| 16    | 0    | 0    | 0    |      |      | 0    | 11    | 8.1   | .8   | .2   | .1   | .1    |
| 17    | .1   | *0   | 0    |      |      | *0   | 9.7   | 7.3   | *.8  | .2   | .1   | .1    |
| 18    | .1   | 0    | 0    | (*)  |      | 0    | 9.7   | 7.0   | .7   | .2   | .1   | .1    |
| 19    | .1   | 0    | 0    |      | (*)  | 0    | 10    | 6.5   | .6   | .2   | .1   | .1    |
| 20    | .1   | 0    | 0    |      |      | .1   | 12    | *5.7  | .5   | .2   | .1   | .1    |
| 21    | .1   | 0    | 0    |      |      | .1   | 14    | 4.8   | .5   | .2   | .1   | .1    |
| 22    | .1   | 0    | 0    |      |      | *.1  | 18    | 4.8   | .5   | .2   | .1   | .1    |
| 23    | .1   | 0    | 0    |      |      | .2   | 18    | 4.6   | .5   | .2   | .1   | .1    |
| 24    | .1   | 0    | 0    |      |      | 1.2  | 12    | 4.6   | .5   | .2   | .1   | .1    |
| 25    | .1   | .1   | 0    |      |      | 1.2  | 11    | 3.8   | .4   | .2   | .1   | .1    |
| 26    | .1   | .1   | 0    |      |      | *4.7 | 10    | 3.6   | .4   | .2   | .1   | .1    |
| 27    | .1   | .1   | 0    |      |      | 6.4  | 9.4   | 3.8   | .3   | .2   | .1   | .1    |
| 28    | .1   | 0    | .1   |      |      | 7.3  | *10   | 3.2   | .3   | .2   | .1   | .1    |
| 29    | .1   | 0    | .1   |      |      | 3.4  | 9.7   | 2.7   | .3   | .2   | .1   | .1    |
| 30    | .1   | 0    | .1   |      |      | 2.7  | 9.0   | 2.4   | .3   | .2   | .1   | .1    |
| 31    | .1   | 0    | 0    |      |      | 2.9  |       | 2.4   | .3   | .1   | .1   | .1    |
| Total | 2.1  | 0.7  | 0.3  | 0    | 0    | 29.3 | 357.2 | 301.0 | 24.3 | 7.0  | 3.9  | 3.0   |
| Mean  | 0.07 | 0.02 | 0.01 | 0    | 0    | 0.95 | 11.9  | 9.71  | 0.81 | 0.23 | 0.13 | 0.10  |
| Ac-ft | 4.2  | 1.4  | 0.6  | 0    | 0    | 58   | 708   | 597   | 48   | 14   | 7.7  | 6.0   |

Calendar year 1959: Max - Min - Mean - Ac-ft -  
 Water year 1959-60: Max 22 Min 0 Mean 1.99 Ac-ft 1,440

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

Note.--No gage-height record Oct. 1-13, Aug. 25 to Sept. 6; discharge estimated on basis of weather records, trend of flow, and recorded range in stage.

## 1285. Weber River near Oakley, Utah

Location.--Lat 40°44'10", long 111°14'45", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.15, T.1 S., R.6 E., on right bank 1.4 miles downstream from South Fork, 2.6 miles upstream from Water-Provo diversion canal, and 3 $\frac{1}{4}$  miles northeast of Oakley.

Drainage area.--163 sq mi.

Records available.--October 1904 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 6,600 ft (from topographic map). Prior to Oct. 25, 1933, staff gage at site a quarter of a mile downstream at different datum. Oct. 25, 1933, to Aug. 29, 1955, water-stage recorder at present site at datum 0.5 ft higher.

Average discharge.--56 years, 222 cfs (160,700 acre-ft per year).

Extremes.--Maximum discharge during year, 1,350 cfs June 3 (gage height, 3.14 ft); minimum not determined, occurred during period of ice effect.

1904-60: Maximum discharge observed, 4,170 cfs June 13, 1921 (gage height, 9.0 ft, site and datum then in use), from rating curve extended above 2,000 cfs by logarithmic plotting; minimum recorded, 16 cfs Mar. 12, 1941.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Several small diversions for irrigation above station. Flow slightly regulated by several small lakes on headwaters and a small reservoir on Smith and Morehouse Creek. Total capacity of all reservoirs, about 3,200 acre-ft.

Revisions (water years).--WSP 790: 1934. WSP 1394: 1907-9, 1911-12, 1921-22.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used May 19)

|     |     |     |       |
|-----|-----|-----|-------|
| 0.2 | 32  | 1.6 | 390   |
| .5  | 69  | 2.0 | 575   |
| .8  | 125 | 2.5 | 890   |
| 1.2 | 235 | 2.9 | 1,190 |

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     | *74   | 108   | b54   | b46   | 47    | b40   | 93     | 208    | 946    | *157  | *108  | *48   |
| 2     | 72    | 104   | b54   |       | *46   | b40   | 87     | 205    | 1,100  | 147   | 98    | 51    |
| 3     | 69    | 106   | b54   |       | 46    | b40   | 93     | 202    | 1,170  | 144   | 89    | 47    |
| 4     | 69    | 108   | b50   |       | b45   | b40   | 104    | 211    | 1,120  | 144   | 82    | 50    |
| 5     | 69    | 104   | b48   |       | a45   | b42   | 125    | 202    | 988    | 137   | 75    | 48    |
| 6     | 74    | 96    | b48   | a48   | a48   | b45   | 154    | *196   | *939   | 132   | 70    | 47    |
| 7     | 89    | 96    | b48   |       |       | 51    | 168    | 199    | 883    | 132   | 67    | 47    |
| 8     | 85    | 91    | b48   |       |       | 74    | 171    | 217    | 897    | 125   | 66    | 46    |
| 9     | 91    | 89    | b51   |       |       | 59    | 199    | 255    | 820    | 125   | 63    | 42    |
| 10    | 114   | 85    | b54   |       |       | 52    | 223    | 329    | 666    | 130   | 60    | 42    |
| 11    | 102   | 82    | b52   | b48   | a41   | 53    | 229    | 471    | 602    | 130   | 57    | 43    |
| 12    | 104   | 79    | b52   | b48   | *a41  | 51    | 223    | 785    | 570    | 135   | 55    | 43    |
| 13    | 102   | 74    | b52   | b48   | 48    | *202  | *939   | 555    | 123    | 52    | 40    | 40    |
| 14    | 98    | 62    | b55   | 48    | 47    | 205   | 918    | 512    | 123    | 50    | 42    | 42    |
| 15    | 98    | b64   | b55   | 48    | 48    | 202   | 799    | 480    | 117    | 48    | 43    | 43    |
| 16    | 96    | b63   | b54   | b43   | b41   | 50    | 199    | 771    | *440   | 112   | 51    | 42    |
| 17    | 94    | b63   | b52   | b43   |       | 53    | 182    | 778    | 394    | 112   | 51    | 46    |
| 18    | 94    | b64   | b54   | b43   |       | 52    | 185    | 738    | 361    | 110   | 48    | 46    |
| 19    | 93    | b63   | b55   | a43   |       | 53    | 190    | *614   | 350    | 112   | 47    | 45    |
| 20    | 91    | 63    | b50   | a43   | 57    | 185   | 507    | 309    | 110    | 46    | 45    | 45    |
| 21    | 94    | 63    | b56   | a45   | b40   | 66    | 208    | 476    | 272    | 121   | 46    | 43    |
| 22    | 112   | 63    | b53   |       | b40   | 70    | 248    | 540    | 245    | 125   | 50    | 45    |
| 23    | 110   | 63    | b53   |       | b40   | 79    | 258    | 642    | 229    | 121   | 60    | 48    |
| 24    | 123   | 65    | b50   |       | a40   | 83    | 235    | 570    | 217    | 114   | 55    | 47    |
| 25    | 125   | 63    | b51   |       | a40   | 91    | 226    | *586   | 208    | 110   | 53    | 46    |
| 26    | 127   | b59   | b46   | a45   | a40   | 104   | 223    | 555    | 193    | 106   | 51    | 45    |
| 27    | 125   | b54   | b40   |       | b40   | 117   | 217    | 608    | 185    | 100   | 50    | 43    |
| 28    | 135   | b55   | b35   |       | b40   | 119   | 220    | 560    | 171    | 106   | 48    | 42    |
| 29    | 123   | b54   | b39   |       | *b40  | 102   | 214    | 666    | 173    | 108   | 47    | 42    |
| 30    | *119  | *b56  | b45   |       | ----- | 100   | *208   | 785    | 165    | 121   | *42   | 5     |
| 31    | 112   | ----- | *b50  | ----- | ----- | *98   | -----  | *820   | -----  | 121   | 48    | ----- |
| Total | 3,083 | 2,259 | 1,560 | 1,420 | 1,239 | 2,024 | 5,676  | 16,352 | 16,180 | 3,810 | 1,834 | 1,346 |
| Mean  | 99.5  | 75.3  | 50.3  | 45.8  | 42.7  | 65.3  | 189    | 527    | 539    | 123   | 59.2  | 44.9  |
| Ac-ft | 6,120 | 4,480 | 3,030 | 2,820 | 2,460 | 4,010 | 11,260 | 32,430 | 32,090 | 7,560 | 3,640 | 2,670 |

Calendar year 1959: Max 1,090 Min 35 Mean 157 Ac-ft 113,400  
Water year 1959-60: Max 1,170 Min 35 Mean 155 Ac-ft 112,600

Peak discharge (base, 1,200 cfs).--June 3 (1 a.m.) 1,350 cfs (3.14 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, and records for station near Peoa.

b Stage-discharge relation affected by ice.

## 1290. Weber-Provo diversion canal at Oakley, Utah

Location.--Lat 40°42'30", long 111°16'30", in NW $\frac{1}{4}$  sec.28, T.1 S., R.6 E., on right bank 1,400 ft downstream from head and three-quarters of a mile east of Oakley.

Records available.--October 1945 to September 1960 in reports of Geological Survey. October 1938 to September 1945, collected by Bureau of Reclamation, available in files of Salt Lake City district office, Geological Survey. October 1932 to September 1939 in reports of Weber River water commissioner.

Gage.--Water-stage recorder with Parshall flume or Cippoletti weir. Altitude of gage is 6,500 ft (from topographic map).

Extremes.--1945-60: Maximum daily discharge, 913 cfs May 21, 1956; no water diverted from Weber River for several months in each year.

Remarks.--Records good except those for periods of fragmentary or no gage-height record and those computed from once-daily gage readings, which are fair. Canal diverts water from Weber River in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.21, T.1 S., R.6 E., for irrigation and water supply in Jordan River basin. Figures given herein represent water diverted from main stem of Weber River, some of which may return to Weber River through seepage. For records at outlet of canal see page 99.

Revisions (water years).--WSP 1284: 1949.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 19 to Mar. 28

Mar. 28 to June 11

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| 1.9 | 6.6 | 0.0 | 0   | 1.0 | 80  |
| 2.0 | 9.2 | .1  | 2.8 | 1.5 | 149 |
| 2.3 | 19  | .2  | 7.0 | 2.0 | 235 |
| 2.7 | 35  | .4  | 20  | 3.0 | 459 |
| 3.0 | 49  | .7  | 46  | 4.0 | 723 |
| 4.0 | 106 |     |     |     |     |

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     | 61    | 29    | 20    | g23   | g24   | 55    | 120    | 186   |      |      | (*)   |
| 2     | 0     | 60    | 30    | 19    | g24   | g20   | 49    | 117    | 239   |      |      |       |
| 3     | 0     | 59    | 29    | 16    | g23   | g24   | 50    | 120    | 528   |      |      |       |
| 4     | 0     | 61    | 21    | 15    | g23.7 | g24   | 60    | 127    | 567   |      |      |       |
| 5     | 0     | 57    | 13    | 22    | g18   | g23   | 65    | 122    | 463   |      |      |       |
| 6     | 0     | 52    | 21    | g28   | g24   | g24   | 67    | 121    | 221   |      |      |       |
| 7     | 0     | 54    | 22    | g28   | g25   | f27   | 67    | 124    | 152   |      |      |       |
| 8     | 0     | 48    | 20    | g28   | g25   | 43    | 67    | 138    | 188   |      |      |       |
| 9     | 0     | 45    | 23    | g28   | g25   | 34    | 68    | 179    | 291   |      |      |       |
| 10    | 0     | 42    | 33    | g28   | g26   | 28    | 68    | 233    | 308   |      |      | (*)   |
| 11    | 0     | 39    | 23    | g28   | g24   | 26    | 135   | 345    | 173   |      |      |       |
| 12    | 0     | 37    | 23    | g27   | g10   | 27    | 181   | 581    | 5     |      |      |       |
| 13    | 0     | 34    | 22    | g27   | g17   | 25    | 149   | 716    | 0     |      |      |       |
| 14    | 0     | 31    | 19    | g25   | g19   | 25    | 140   | 589    | 0     |      |      |       |
| 15    | a20   | 37    | 25    | g26   | g23   | 23    | 134   | 553    | 0     |      |      |       |
| 16    | a38   | 35    | 22    | g20   | g25   | 25    | 136   | 517    | 0     |      |      |       |
| 17    | a38   | 32    | 21    | g14   | g23   | 24    | 121   | 449    | 0     |      |      |       |
| 18    | a38   | 32    | 27    | g20   | g24   | 25    | 125   | 303    | 0     |      |      |       |
| 19    | 32    | 30    | 26    | g18   | g25   | 26    | 133   | 301    | 0     |      |      |       |
| 20    | 31    | 29    | 17    | g20   | g17   | 29    | 125   | 274    | 0     |      |      |       |
| 21    | 30    | 30    | 27    | g25   | g20   | 34    | 140   | 246    | 0     |      |      |       |
| 22    | 44    | 29    | 25    | g25   | g21   | 38    | 167   | 280    | 0     |      |      |       |
| 23    | 44    | 29    | 22    | g26   | g17   | 41    | 183   | 291    | 0     |      |      |       |
| 24    | 51    | 29    | 22    | g25   | g17   | 46    | 165   | f264   | 0     |      |      |       |
| 25    | 54    | 28    | 25    | g26   | g23   | 52    | 163   | f107   | 0     |      |      |       |
| 26    | 59    | 28    | 23    | g26   | g24   | 57    | 159   | f106   | 0     |      |      |       |
| 27    | 58    | 23    | 23    | g26   | g20   | 58    | 157   | 45     | 0     |      |      |       |
| 28    | 62    | 25    | 12    | g26   | g19   | 64    | 154   | 0      | 0     |      |      |       |
| 29    | *62   | 25    | 15    | g16   | g26   | 67    | 149   | 0      | 0     |      |      |       |
| 30    | *62   | 26    | 18    | g20   | ----- | 63    | 136   | 0      | 0     |      |      |       |
| 31    | 61    | ----- | 22    | g24   | ----- | 61    | ----- | 0      | ----- |      |      | ----- |
| Total | 784   | 1,147 | 689   | 722   | 615.7 | 1,107 | 3,568 | 7,368  | 3,321 | 0    | 0    | 0     |
| Mean  | 25.3  | 38.2  | 22.2  | 23.3  | 21.2  | 35.7  | 119   | 238    | 111   | 0    | 0    | 0     |
| Ac-ft | 1,560 | 2,280 | 1,370 | 1,430 | 1,220 | 2,200 | 7,080 | 14,610 | 6,590 | 0    | 0    | 0     |

Calendar year 1959: Max 556 Min 0 Mean 49.0 Ac-ft 35,490

Water year 1959-60: Max 716 Min 0 Mean 52.8 Ac-ft 38,340

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

a No gage-height record; discharge estimated on basis of water commissioner's notes and records for station near Woodland.

f Fragmentary gage-height record; discharge computed from partly estimated gage heights.

g Computed from once-daily staff-gage readings.

## WEBER RIVER BASIN

1293. Weber River near Peoa, Utah

Location.--Lat 40°45'10", long 111°22'20", in SE¼NW¼ sec.10, T.1 S., R.5 E., on left bank 60 ft downstream from bridge on U. S. Highway 189, 2.4 miles north of Peoa, and 3.2 miles upstream from Wanship Dam.

Drainage area.--285 sq mi, approximately.

Records available.--May 1957 to September 1960.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 6,050 ft (from Bureau of Reclamation Rockport Reservoir map).

Extremes.--Maximum discharge during year, 932 cfs June 2 (gage height, 2.87 ft); minimum recorded, 28 cfs Dec. 29.

1957-60: Maximum discharge, 2,110 cfs June 7, 1957 (gage height, 3.37 ft); minimum recorded, that of Dec. 29, 1959.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Many diversions for irrigation above station. No diversion between station and Rockport Reservoir. Records do not include water diverted from Weber River basin through Weber-Provo diversion canal (see preceding page). Flow slightly regulated by several small reservoirs above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |       |
|-----|-----|-----|-------|
| 1.5 | 28  | 2.2 | 233   |
| 1.6 | 38  | 2.4 | 386   |
| 1.8 | 68  | 2.6 | 579   |
| 2.0 | 128 | 3.0 | 1,040 |

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     | 107   | 107   | 63    |       |       | 45    | 104   | 114    | *733   | 90    | *70   | *49   |
| 2     | 96    | 107   | 63    |       | (*)   | 45    | 90    | 110    | 790    | 90    | 58    | 49    |
| 3     | 96    | 107   | 63    | b52   | 48    | 45    | 85    | 114    | 801    | 88    | 68    | 49    |
| 4     | 96    | 110   | b56   |       |       | 46    | 85    | 124    | 528    | 85    | 63    | 51    |
| 5     | 93    | 104   | b54   |       |       | 49    | 83    | 118    | 450    | 83    | 56    | 50    |
| 6     | 96    | 96    | b54   | b54   |       | 54    | 100   | *114   | 590    | *75   | 56    | 49    |
| 7     | 107   | 93    | b54   | b54   |       | 65    | 128   | 107    | 633    | 73    | 56    | 47    |
| 8     | 107   | 90    | b54   |       | 50    | 90    | 124   | 110    | *644   | 63    | 56    | 49    |
| 9     | 110   | 90    | b58   |       |       | 80    | 146   | 118    | 460    | 63    | 56    | 52    |
| 10    | 151   | 90    | 61    |       |       | 70    | 165   | 124    | 312    | 59    | 56    | 52    |
| 11    | 133   | 88    | b58   | 54    | 48    | 64    | 137   | 124    | 329    | 54    | 56    | 52    |
| 12    | 121   | 88    | b58   |       |       | 61    | 90    | 204    | 460    | 58    | 54    | 52    |
| 13    | 124   | 85    | 59    |       |       | 60    | *80   | 247    | 488    | 61    | 51    | 52    |
| 14    | 121   | 78    | b63   |       |       | 61    | 80    | 290    | 450    | 63    | 49    | 52    |
| 15    | 110   | 80    | b63   |       |       | 63    | 83    | 215    | 414    | 61    | 46    | 51    |
| 16    | 104   | 78    | b61   |       | b46   | 65    | 85    | 192    | *386   | 59    | 47    | 52    |
| 17    | 96    | 78    | b59   |       |       | 72    | 80    | 186    | 353    | 58    | 49    | 54    |
| 18    | 93    | 80    | 61    | b48   |       | 72    | 80    | 304    | 337    | 58    | 49    | 53    |
| 19    | 96    | 78    | 63    |       |       | 75    | 80    | 268    | 320    | 61    | 49    | 52    |
| 20    | 96    | 73    | b56   |       |       | 80    | 83    | *204   | 276    | 59    | 47    | 51    |
| 21    | 93    | 73    | 63    |       | b46   | 90    | 80    | 160    | 247    | 59    | 44    | 50    |
| 22    | 96    | 75    | 65    |       |       | 100   | 80    | 174    | 221    | 61    | 46    | 52    |
| 23    | 100   | 80    | 61    |       |       | 120   | 100   | 227    | 198    | 61    | 56    | 53    |
| 24    | 104   | 78    | 59    |       |       | 156   | 110   | 198    | 180    | 58    | 56    | 52    |
| 25    | 104   | 78    | 63    |       |       | 165   | 118   | *345   | 156    | 54    | 54    | 49    |
| 26    | 100   | 68    | 58    | 50    | 45    | 160   | 128   | 361    | 128    | 56    | 51    | 46    |
| 27    | 110   | b61   | b52   |       |       | 156   | 128   | 432    | 114    | 54    | 50    | 46    |
| 28    | 124   | b63   | b37   |       |       | 160   | 142   | 478    | 107    | 54    | 50    | 47    |
| 29    | *124  | b63   | b42   |       | (*)   | 128   | 137   | 539    | 96     | 56    | 47    | 49    |
| 30    | 118   | *66   | b50   |       |       | 110   | *121  | 676    | 98     | 61    | 46    | *47   |
| 31    | 114   | ----- | *b56  |       |       | *110  | ----- | 710    | -----  | 70    | 46    | ----- |
| Total | 3,340 | 2,505 | 1,788 | 1,590 | 1,358 | 2,717 | 3,132 | 7,687  | 11,089 | 2,075 | 1,646 | 1,509 |
| Mean  | 108   | 83.5  | 57.7  | 51.3  | 46.8  | 87.6  | 104   | 248    | 370    | 64.7  | 53.1  | 50.3  |
| Ac-ft | 6,620 | 4,970 | 3,550 | 3,150 | 2,690 | 5,390 | 6,210 | 15,250 | 21,990 | 3,970 | 3,260 | 2,990 |

Calendar year 1959: Max 1,020 Min 37 Mean 129 Ac-ft 93,080  
 Water year 1959-60: Max 790 Min 37 Mean 110 Ac-ft 80,050

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Jan. 8-15, Jan. 21 to Feb. 11, Feb. 22 to Mar. 23; discharge estimated on basis of 2 discharge measurements, weather records, and records for station near Oakley.

## 1305. Weber River near Coalville, Utah

Location.--Lat 40°53'40", long 111°24'00", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.20, T.2 N., R.5 E., on left bank  $1\frac{1}{2}$  miles upstream from high-water line of Echo Reservoir,  $1\frac{1}{2}$  miles south of Coalville, and 6 miles downstream from Silver Creek.

Drainage area.--438 sq mi.

Records available.--April 1927 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,600 ft (from topographic map). Prior to Mar. 22, 1931, staff gage and Mar. 22, 1931, to Sept. 30, 1952, water-stage recorder, at same site at datum 1 ft higher.

Average discharge.--29 years (1931-60), 196 cfs (141,900 acre-ft per year), since completion of Weber-Provo diversion canal.

Extremes.--Maximum discharge during year, 458 cfs June 7 (gage height, 2.34 ft); minimum, 13 cfs May 21.

1927-60: Maximum discharge, 2,190 cfs May 6, 1952; maximum gage height, 5.08 ft (present datum) May 29, 1951; minimum discharge, 6 cfs Sept. 20, 1934.

Remarks.--Records good except those for periods of ice effect or doubtful or no gage-height record, which are fair. Many diversions for irrigation above station. No diversion between station and Echo Reservoir. Records do not include water diverted from Weber River basin through Weber-Provo diversion canal (see p. 99). Flow slightly regulated by several small reservoirs above station, and since Apr. 1, 1957, by Rockport Reservoir (usable capacity, 60,000 acre-ft).

Revisions (water years).--WSP 1314: 1943(M).

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Nov. 14-26, Dec. 10, Feb. 15-17, 19-22, Mar. 23 to Apr. 30, May 26-28, Sept. 11-30)

|     |    |     |     |
|-----|----|-----|-----|
| 0.3 | 12 | 1.0 | 89  |
| .4  | 17 | 1.5 | 204 |
| .5  | 24 | 2.0 | 362 |
| .7  | 44 | 2.5 | 552 |

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                       | 86    | 33    | b52   | a28    | a70   |       | 91        | 91    | *66          | 177   | 147    | 91    |
| 2                       | 70    | 32    | b53   | a28    | a70   |       | 89        | 87    | 66           | 172   | 145    | 77    |
| 3                       | 49    | 32    | b53   | a28    | a70   |       | 95        | *80   | 58           | 170   | 145    | 77    |
| 4                       | 48    | 34    | b54   | a28    | a70   |       | 106       | 82    | 54           | 172   | 150    | 79    |
| 5                       | 45    | 34    | b53   | a28    | a70   |       | 108       | 75    | 52           | 160   | 150    | 74    |
| 6                       | 44    | 32    | b56   | a28    | a70   |       | 112       | 66    | 193          | 152   | 152    | d72   |
| 7                       | 47    | 32    | b56   | a28    | a52   | b45   | 104       | 57    | 394          | 152   | 150    | d58   |
| 8                       | 45    | 32    | b54   | a28    | a40   |       | 102       | 53    | 416          | 150   | 154    | d54   |
| 9                       | 43    | 32    | b54   | a30    | a40   |       | 106       | *53   | 416          | 154   | 154    | 38    |
| 10                      | 48    | a32   | *43   | a32    | a40   |       | 104       | 59    | 413          | 150   | 154    | 36    |
| 11                      | 45    | a31   | b32   | *33    | a40   |       | *100      | 54    | 416          | 143   | 157    | 36    |
| 12                      | 42    | a31   | b29   | b33    | a40   |       | 93        | 50    | 420          | 147   | 185    | 35    |
| 13                      | 33    | a31   | b29   | 32     | a40   |       | 87        | 49    | 416          | 145   | 207    | 35    |
| 14                      | 30    | 31    | b27   | 32     | a40   | *69   | 84        | d31   | 420          | 145   | 207    | 36    |
| 15                      | 33    | 32    | b29   | 32     | *d42  | 106   | 80        | d26   | 424          | 143   | 221    | 34    |
| 16                      | 32    | *32   | b30   | b31    | d40   | 87    | 86        | d25   | 435          | 145   | *227   | 34    |
| 17                      | 32    | 32    | b29   | b29    | d40   | 80    | 77        | d27   | 435          | 143   | 236    | 37    |
| 18                      | 31    | 33    | b51   | b29    | d40   | 86    | 77        | d22   | 431          | 147   | 233    | 38    |
| 19                      | *33   | 34    | b28   | b50    | d41   | 89    | 75        | *d21  | 424          | 150   | 233    | 36    |
| 20                      | 34    | 40    | b29   | b51    | d41   | 98    | 77        | 19    | 352          | 145   | 233    | 33    |
| 21                      | 33    | 60    | b29   | b31    | d42   | 135   | 79        | 16    | 276          | 147   | 236    | 29    |
| 22                      | 35    | 60    | 28    | b31    | d42   | 201   | 84        | 16    | *282         | *145  | 233    | 32    |
| 23                      | 34    | 62    | 28    | b32    | b41   | 221   | 89        | 20    | 282          | 150   | 216    | 29    |
| 24                      | 35    | 63    | b29   | a35    | b40   | 230   | 82        | 20    | 292          | 147   | 182    | 28    |
| 25                      | 36    | 62    | 29    | a50    | b39   | 242   | 86        | 23    | 260          | 147   | 162    | 28    |
| 26                      | 36    | 58    | 28    | a70    | b39   | 257   | 91        | *96   | 210          | 147   | 125    | 29    |
| 27                      | a35   | b57   | b28   | a70    | b39   | 253   | 91        | 210   | 204          | 147   | 97     | 28    |
| 28                      | a35   | b57   | b28   | a70    | b40   | 233   | 93        | 287   | 204          | 145   | 95     | *30   |
| 29                      | a34   | b57   | b28   | a70    | b40   | 160   | 91        | 416   | 190          | 145   | 93     | 31    |
| 30                      | a34   | b54   | a28   | a70    | ----- | 106   | 89        | 413   | 180          | 147   | 93     | 33    |
| 31                      | a33   | ----- | a28   | a70    | ----- | 98    | -----     | 258   | -----        | 147   | 93     | ----- |
| Total                   | 1,250 | 1,242 | 1,132 | 1,197  | 1,358 | 3,346 | 2,728     | 2,802 | 8,681        | 4,676 | 5,265  | 1,308 |
| Mean                    | 40.3  | 41.4  | 36.5  | 38.6   | 46.8  | 108   | 90.9      | 90.4  | 289          | 151   | 170    | 43.6  |
| Ac-ft                   | 2,480 | 2,460 | 2,250 | 2,370  | 2,690 | 6,640 | 5,410     | 5,560 | 17,220       | 9,270 | 10,440 | 2,590 |
| Calendar year 1959: Max | 641   |       |       | Min 13 |       |       | Mean 133  |       | Ac-ft 96,070 |       |        |       |
| Water year 1959-60: Max | 435   |       |       | Min 16 |       |       | Mean 95.6 |       | Ac-ft 69,380 |       |        |       |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for station near Wanship.

b Stage-discharge relation affected by ice.

d Doubtful gage-height record; discharge computed on basis of recorder graph, weather records, and records for station near Wanship.

## WEBER RIVER BASIN

## 1310. Chalk Creek at Coalville, Utah

Location.--Lat 40°55'10", long 111°24'00", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.8, T.2 N., R.5 E., on left bank 100 ft downstream from bridge on U. S. Highway 189 in Coalville and a third of a mile upstream from mouth.

Drainage area.--253 sq mi.

Records available.--November 1904, March to November 1905, April 1927 to September 1960.

Gage.--Water-stage recorder and concrete control. Datum of gage is 5,560.6 ft above mean sea level, datum of 1929. Prior to Feb. 13, 1931, staff gage at site 100 ft upstream at different datum. Feb. 13, 1931, to Oct. 15, 1941, water-stage recorder at site 300 ft upstream at different datum.

Average discharge.--33 years (1927-60), 58.2 cfs (42,140 acre-ft per year).

Extremes.--Maximum discharge during year, 386 cfs Mar. 27 (gage height, 1.96 ft); minimum, 3.9 cfs Nov. 27, Aug. 18 (gage height, 0.18 ft).  
1927-60: Maximum discharge, 1,540 cfs Apr. 28, 1952 (gage height, 4.67 ft); minimum, less than 1 cfs for several days in 1934.

Remarks.--Records good except those for periods of ice effect, which are fair. Several diversions for irrigation above station, none below. Flow slightly affected by Chalk Creek Reservoir (capacity, 1,200 acre-ft).

Revisions (water years).--WSP 1564: 1929.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.1 | 1.5 | 0.6 | 41  |
| .2  | 4.5 | .9  | 95  |
| .3  | 9.0 | 1.3 | 190 |
| .4  | 17  | 1.6 | 274 |

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     | 22    | 15    | 14.0  | 11   | 16    | 17    | 41    | 79    | *75   | 16    | 8.1   | 7.6   |
| 2     | 20    | 15    | 14    | b11  | 16    | 18    | 33    | 79    | 66    | 15    | 7.6   | 9.0   |
| 3     | 19    | 15    | 13    | b11  | 15    | 18    | 36    | *85   | 66    | 13    | 6.3   | 9.0   |
| 4     | 20    | 19    | 9.8   | b11  | 14    | 20    | 51    | 93    | 70    | 11    | 6.8   | 9.8   |
| 5     | 19    | 15    | 7.6   | b11  | 15    | 33    | 64    | 93    | 62    | 8.6   | 7.2   | 7.6   |
| 6     | 18    | 11    | 9.0   | b11  | 17    | 54    | 79    | 93    | 52    | 7.6   | 5.8   | 8.1   |
| 7     | 21    | 15    | 9.0   | b11  | 17    | 66    | 81    | 93    | 52    | 6.8   | 7.6   | 8.6   |
| 8     | 20    | 14    | 11    | 12   | 26    | 214   | 59    | 102   | 64    | 7.6   | 5.8   | 8.6   |
| 9     | 20    | 14    | 11    | 12   | 27    | 108   | 66    | *128  | 62    | 6.6   | 6.3   | 9.6   |
| 10    | 21    | 15    | *14   | 14   | 24    | 61    | 71    | 152   | 59    | 13    | 6.3   | 8.1   |
| 11    | 28    | 15    | 13    | *15  | 18    | 47    | *77   | 169   | 52    | 14    | 5.8   | 7.2   |
| 12    | 22    | 15    | 13    | 15   | 15    | 54    | 71    | 217   | 47    | 11    | 5.8   | 7.2   |
| 13    | 21    | 13    | 13    | 15   | 18    | 40    | 61    | *251  | 44    | 5.8   | 5.4   | 8.1   |
| 14    | 20    | 8.8   | 14    | 15   | 18    | *29   | 57    | 225   | 40    | 6.6   | 5.0   | 8.1   |
| 15    | 19    | 12    | 11    | 14   | *17   | 18    | 54    | 195   | 40    | 8.6   | 4.5   | 7.6   |
| 16    | 18    | *15   | 11    | b13  | 18    | 21    | 54    | 192   | 37    | 7.2   | *4.5  | 7.2   |
| 17    | 18    | 11    | 11    | 12   | 15    | 18    | 46    | 174   | 33    | 6.8   | 4.5   | 7.6   |
| 18    | 17    | 12    | 11    | 13   | 16    | 28    | 51    | 182   | 32    | 5.8   | 4.2   | 8.1   |
| 19    | *19   | 15    | 12    | 15   | 18    | 50    | 49    | *162  | 36    | *5.8  | 4.5   | 7.6   |
| 20    | 19    | 11    | 12    | 15   | 17    | 68    | 49    | 133   | 36    | 5.8   | 5.0   | 7.2   |
| 21    | 19    | 14    | 11    | 15   | 17    | 121   | 54    | 115   | 33    | 6.8   | 6.8   | 7.2   |
| 22    | 17    | 15    | 14    | 15   | 18    | 147   | 75    | 115   | *27   | 6.8   | 6.8   | 7.2   |
| 23    | 16    | 17    | 13    | 15   | 16    | 187   | 95    | 128   | 26    | 5.0   | 7.2   | 7.6   |
| 24    | 16    | 15    | 14    | 15   | 16    | *182  | 89    | 115   | 32    | 5.0   | 7.6   | 7.6   |
| 25    | 15    | 15    | 15    | 15   | b16   | 174   | 77    | 104   | 28    | 5.8   | 9.6   | 7.6   |
| 26    | 15    | 9.0   | 14    | 15   | b16   | 198   | 79    | *99   | 27    | 6.1   | 7.6   | 6.8   |
| 27    | 15    | 6.3   | 11    | 15   | b16   | 216   | 79    | 95    | 26    | 5.0   | 7.6   | 6.3   |
| 28    | 17    | 9.8   | 9.8   | 15   | b16   | 145   | 79    | 93    | 25    | 5.8   | 6.8   | *6.3  |
| 29    | 17    | 12    | 11    | 16   | b16   | 62    | 83    | 83    | 25    | 5.8   | 6.3   | 6.3   |
| 30    | 16    | 15    | 11    | 16   | ----- | 51    | 81    | 77    | 20    | 6.6   | 6.8   | 6.3   |
| 31    | 15    | ----- | 11    | 16   | ----- | 52    | ----- | 73    | ----- | 8.1   | 6.8   | ----- |
| Total | 579   | 403.9 | 368.2 | 425  | 504   | 2,517 | 1,941 | 3,984 | 1,294 | 285.4 | 195.9 | 230.1 |
| Mean  | 18.7  | 13.5  | 11.9  | 13.7 | 17.4  | 81.2  | 64.7  | 129   | 43.1  | 9.21  | 6.32  | 7.67  |
| Ac-ft | 1,150 | 801   | 730   | 843  | 1,000 | 4,990 | 3,850 | 7,900 | 2,570 | 566   | 389   | 456   |

Calendar year 1959: Max 172 Min 5.0 Mean 30.7 Ac-ft 22,200  
Water year 1959-60: Max 251 Min 4.2 Mean 34.8 Ac-ft 25,240

Peak discharge (base, 400 cfs).--No peak above base.

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## 1315. Echo Reservoir at Echo, Utah

Location.--Lat 40°57'50", long 111°26'00", in NW 1/4 sec. 30, T.3 N., R.5 E., near outlet works at left end of Echo Dam, 1 mile southeast of Echo.

Drainage area.--732 sq mi.

Records available.--October 1930 to September 1960.

Gage.--Staff gage read once daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Prior to 1932, elevations obtained from mercury gage in valve house and staff gage.

Extremes.--Maximum contents during year, 57,490 acre-ft May 15 (elevation, 5,548.2 ft); minimum, 5,760 acre-ft Sept. 30 (elevation, 5,487.7 ft).  
1930-60: Maximum contents, 74,540 acre-ft June 16-20, 1956 (elevation, 5,560.4 ft); no storage Sept. 12 to Dec. 3, 1931, Sept. 24 to Nov. 2, 1934, Oct. 12 to Nov. 21, 1944, Oct. 1 to Nov. 15, 1954.

Remarks.--Reservoir is formed by earth-fill, rock-faced dam; storage began in October 1930; dam completed in 1931. Capacity, 73,940 acre-ft between elevations 5,450 (bottom of outlet tunnel) and 5,560 ft (top of radial gates in spillway) above mean sea level. Dead storage negligible. Figures given herein represent total contents. Water is used for irrigation on the Echo project.

Cooperation.--Capacity table furnished by Bureau of Reclamation.

Capacity table, water year 1959-60 (elevation, in feet, and contents, in acre-feet)

|       |        |       |        |       |        |
|-------|--------|-------|--------|-------|--------|
| 5,485 | 4,720  | 5,510 | 18,480 | 5,535 | 41,440 |
| 5,490 | 6,730  | 5,515 | 22,390 | 5,540 | 47,200 |
| 5,495 | 9,110  | 5,520 | 26,620 | 5,545 | 53,560 |
| 5,500 | 11,830 | 5,525 | 31,180 | 5,550 | 59,880 |
| 5,505 | 14,920 | 5,530 | 36,100 |       |        |

Contents, in acre-feet, water year October 1959 to September 1960

| Day | Oct.    | Nov.    | Dec.    | Jan.    | Feb.    | Mar.    | Apr.    | May     | June    | July    | Aug.    | Sept.   |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1   | 7,130   | 11,660  | 15,460  | 19,320  | 23,130  | 27,060  | 41,110  | 52,220  | 48,040  | 44,840  | 24,890  | 12,350  |
| 2   | 7,130   | 11,660  | 15,600  | 19,470  | 23,290  | 27,240  | 41,440  | 52,600  | 47,560  | 44,040  | 24,210  | 12,000  |
| 3   | 7,340   | 11,660  | 15,810  | 19,550  | 23,460  | 27,330  | 41,660  | 52,980  | 47,080  | 43,690  | 23,630  | 11,540  |
| 4   | 7,350   | 11,660  | 15,950  | 19,620  | 23,630  | 27,410  | 42,000  | 53,360  | 46,490  | 43,240  | 22,880  | 11,030  |
| 5   | 7,690   | 11,890  | 16,090  | 19,700  | 23,790  | 27,770  | 42,550  | 53,740  | 46,010  | 42,550  | 22,250  | 10,480  |
| 6   | 8,020   | 12,000  | 16,230  | 19,860  | 23,960  | 27,860  | 42,900  | 54,120  | 45,450  | 41,880  | 21,510  | 10,050  |
| 7   | 8,210   | 12,120  | 16,440  | 19,930  | 24,150  | 28,310  | 43,350  | 54,510  | 44,840  | 41,330  | 20,790  | 9,680   |
| 8   | 8,310   | 12,240  | 16,580  | 20,010  | 24,380  | 29,040  | 43,690  | 54,760  | 45,080  | 40,660  | 21,350  | 9,420   |
| 9   | 8,510   | 12,350  | 16,720  | 20,170  | 24,720  | 29,680  | 44,150  | 55,150  | 45,310  | 40,010  | 20,870  | 9,010   |
| 10  | 8,650   | 12,470  | 16,940  | 20,240  | 24,890  | 29,960  | 44,610  | 55,540  | 45,540  | 39,250  | 20,320  | 8,760   |
| 11  | 8,860   | 12,590  | 17,080  | 20,400  | 24,970  | 30,240  | 44,960  | 55,920  | 45,780  | 38,720  | 19,860  | 8,410   |
| 12  | 9,010   | 12,710  | 17,160  | 20,480  | 25,150  | 30,610  | 45,310  | 56,320  | 46,010  | 38,180  | 19,090  | 8,120   |
| 13  | 9,160   | 12,830  | 17,300  | 20,640  | 25,320  | 30,710  | 45,660  | 56,840  | 46,370  | 37,660  | 18,560  | 7,740   |
| 14  | 9,310   | 12,950  | 17,380  | 20,710  | 25,400  | 30,900  | 46,250  | 57,360  | 46,610  | 36,930  | 18,190  | 7,360   |
| 15  | 9,470   | 13,080  | 17,450  | 20,790  | 25,490  | 31,180  | 46,720  | 57,490  | 46,840  | 36,310  | 17,590  | 6,910   |
| 16  | 9,570   | 13,200  | 17,590  | 20,870  | 25,580  | 31,460  | 47,320  | 57,230  | 47,080  | 35,700  | 17,230  | 6,730   |
| 17  | 9,730   | 13,260  | 17,740  | 21,030  | 25,750  | 31,750  | 47,560  | 56,840  | 47,320  | 35,080  | 16,870  | 6,600   |
| 18  | 9,840   | 13,380  | 17,810  | 21,110  | 25,920  | 31,940  | 47,920  | 56,820  | 47,560  | 34,280  | 16,440  | 6,520   |
| 19  | 9,940   | 13,510  | 17,960  | 21,190  | 26,010  | 32,130  | 48,160  | 55,920  | 47,800  | 33,490  | 16,160  | 6,470   |
| 20  | 10,100  | 13,650  | 18,040  | 21,270  | 26,100  | 32,520  | 48,400  | 55,410  | 48,040  | 32,810  | 15,880  | 6,430   |
| 21  | 10,210  | 13,760  | 18,110  | 21,430  | 26,180  | 32,810  | 48,890  | 54,890  | 48,040  | 32,130  | 15,670  | 6,390   |
| 22  | 10,370  | 13,890  | 18,260  | 21,510  | 26,270  | 33,690  | 49,250  | 54,000  | 47,920  | 31,560  | 15,330  | 6,260   |
| 23  | 10,540  | 14,140  | 18,340  | 21,580  | 26,360  | 34,480  | 49,500  | 52,980  | 47,800  | 30,900  | 14,990  | 6,220   |
| 24  | 10,590  | 14,330  | 18,480  | 21,670  | 26,440  | 34,980  | 49,870  | 52,100  | 47,680  | 30,240  | 14,660  | 6,130   |
| 25  | 10,750  | 14,470  | 18,640  | 21,830  | 26,530  | 36,200  | 50,240  | 51,230  | 47,560  | 29,680  | 14,400  | 6,090   |
| 26  | 10,870  | 14,600  | 18,710  | 21,910  | 26,710  | 37,240  | 50,730  | 50,240  | 47,200  | 29,040  | 14,140  | 6,090   |
| 27  | 10,980  | 14,730  | 18,860  | 22,150  | 26,800  | 38,290  | 50,980  | 49,620  | 46,610  | 28,400  | 13,890  | 6,010   |
| 28  | 11,140  | 14,990  | 19,010  | 22,310  | 26,880  | 39,250  | 51,350  | 49,130  | 46,250  | 27,680  | 13,630  | 5,970   |
| 29  | 11,310  | 15,150  | 19,090  | 22,560  | 26,970  | 39,900  | 51,720  | 48,890  | 45,840  | 26,970  | 13,380  | 5,840   |
| 30  | 11,430  | 15,330  | 19,160  | 22,720  | -----   | 40,330  | 51,970  | 48,770  | 45,430  | 26,270  | 13,010  | 5,760   |
| 31  | 11,540  | -----   | 19,240  | 22,960  | -----   | 40,780  | -----   | 48,650  | -----   | 25,490  | 12,710  | -----   |
| (+) | 5,499.5 | 5,505.6 | 5,511.0 | 5,515.7 | 5,520.4 | 5,534.4 | 5,543.9 | 5,541.2 | 5,538.5 | 5,518.7 | 5,501.5 | 5,487.7 |
| (*) | +4,130  | +3,790  | +3,910  | +3,720  | +4,010  | +13,810 | +11,190 | -3,320  | -3,320  | -19,940 | -12,780 | -6,950  |

Calendar year 1959..... \* +3,220

Water year 1959-60..... \* -1,650

+ Elevation, in feet, at end of month.

\* Change in contents, in acre-feet.

Note.--Gage read at about 6 a.m. during summer and about 9 a.m. during winter.

## 1325. Lost Creek near Croydon, Utah

Location.--Lat 41°10'35", long 111°24'20", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.8, T.5 N., R.5 E., on right bank 0.8 mile downstream from Francis Fork, 1.6 miles upstream from Hell Canyon, and  $\frac{9}{16}$  miles northeast of Croydon.

Drainage area.--133 sq mi.

Records available.--February 1921 to December 1923, April 1941 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,820 ft (by barometer). Prior to Aug. 26, 1954, at several sites within 40 ft of present site at various datums.

Average discharge.--21 years, 34.2 cfs (24,760 acre-ft per year).

Extremes.--Maximum discharge during year, 112 cfs May 16 (gage height, 4.12 ft); minimum, 3.8 cfs Aug 14.

1921-23, 1941-60: Maximum discharge, 770 cfs May 10, 11, 18, 1923 (gage height, 4.20 ft, site and datum then in use), from rating curve extended above 200 cfs; minimum, 3 cfs for several days in 1941-42.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Mar. 22, Mar. 26 to May 15)

| Oct. 1 to Mar. 22,<br>May 29 to Sept. 30 |     |     |    | Mar. 23 to May 28 |    |  |  |
|------------------------------------------|-----|-----|----|-------------------|----|--|--|
| 2.5                                      | 1.7 | 2.8 | 13 | 2.9               | 13 |  |  |
| 2.6                                      | 4.4 | 3.2 | 29 | 3.2               | 32 |  |  |
| 2.7                                      | 8.0 | 3.6 | 72 | 3.4               | 48 |  |  |
|                                          |     |     |    | 3.9               | 97 |  |  |

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     | 9.6   | 8.4   |          | b6.8  |       | a7.6  | 18    | 37    | *20   | 7.6   | 5.0   | 5.0   |
| 2     | 8.8   | 8.4   |          |       |       | a7.6  | 14    | 41    | 18    | 5.7   | 5.7   | 5.7   |
| 3     | 8.4   | 8.4   |          | a6.8  |       | a8.2  | 15    | 56    | 17    | 6.5   | 5.4   | 6.5   |
| 4     | 8.0   | 9.6   |          |       |       | a9.0  | 25    | 64    | 17    | 6.5   | 5.0   | 6.5   |
| 5     | 7.6   | b9.0  | b7.5     |       |       | a11   | 40    | 58    | 16    | 6.5   | 5.0   | 5.7   |
| 6     | 7.2   | b8.5  |          |       |       | a13   | *59   | 59    | 16    | 6.8   | 4.7   | 5.4   |
| 7     | 9.2   | 8.4   |          |       |       | a25   | 66    | 68    | 16    | 6.8   | 4.7   | 5.4   |
| 8     | 10    | 8.8   |          | a7.6  | a7.6  | a40   | 59    | 83    | 22    | 6.8   | 4.7   | 5.4   |
| 9     | 9.6   | 8.4   | a7.5 (*) |       |       | a25   | 73    | *90   | 16    | 6.8   | 4.7   | 5.4   |
| 10    | 13    | 8.0   |          |       |       | a16   | 87    | 89    | 22    | 6.5   | 4.4   | 5.0   |
| 11    | 12    | 8.4   |          |       |       | a14   | 91    | 92    | 17    | 6.1   | 4.4   | 5.0   |
| 12    | 11    | 8.4   |          | *7.6  |       | a13   | 83    | 90    | 16    | 6.5   | 4.1   | 5.0   |
| 13    | 9.6   | 8.0   |          | 7.6   |       | a12   | *56   | 85    | 14    | 6.1   | 4.1   | 5.7   |
| 14    | 9.2   | b7.6  |          | 7.6   |       | a11   | 59    | 71    | 13    | 5.7   | 4.1   | 5.4   |
| 15    | 8.8   | b7.6  | b7.5     | 7.6   |       | *11   | 56    | 62    | 13    | 5.4   | 4.1   | 5.0   |
| 16    | 8.4   | 7.6   |          | b7.6  | *b7.6 | b11   | 47    | 65    | 13    | 5.4   | *4.7  | 5.4   |
| 17    | 8.0   | *b7.6 |          | b7.6  | b7.6  | 12    | 39    | 52    | 12    | 5.4   | 5.0   | 5.4   |
| 18    | 8.0   | b7.6  |          |       | b7.6  | 12    | 36    | 50    | 12    | *5.0  | 5.0   | 5.0   |
| 19    | a8.0  | 8.0   |          |       |       | 16    | 36    | *46   | 11    | 4.7   | 4.7   | 5.0   |
| 20    | *8.0  | b7.6  |          |       |       | 21    | 32    | 39    | 11    | 4.7   | 4.4   | 5.0   |
| 21    | 8.0   | 7.6   |          |       |       | 28    | 41    | 35    | 9.6   | 4.7   | 4.4   | 5.0   |
| 22    | 8.0   | 7.6   | 7.2      |       |       | 37    | 68    | 32    | *9.6  | 5.0   | 4.1   | 5.7   |
| 23    | 8.0   | 7.6   | b7.2     |       |       | b41   | 82    | a51   | 10    | 5.0   | 5.0   | 6.5   |
| 24    | 8.0   | 7.6   | b7.2     | a7.6  | a7.6  | *44   | 67    | a29   | 10    | 4.7   | 5.4   | 6.1   |
| 25    | 8.0   | 8.0   | 7.2      |       |       | 45    | 54    | a26   | 9.2   | 4.7   | 5.4   | 5.7   |
| 26    | 8.0   | b7.6  | 6.8      |       |       | 57    | 47    | *25   | 8.4   | 4.7   | 5.0   | 5.4   |
| 27    | 8.0   | b7.5  | b6.8     |       |       | 56    | 46    | 25    | 8.0   | 4.4   | 4.7   | 5.4   |
| 28    | 8.0   | b7.5  | b6.8     |       |       | 59    | *47   | 24    | 7.6   | 4.4   | 4.4   | *5.4  |
| 29    | 8.0   | b7.5  | b6.8     |       |       | 36    | 46    | 23    | 7.6   | 4.4   | 4.4   | 5.4   |
| 30    | 8.0   | b7.5  | b6.8     |       |       | 27    | 40    | 22    | 7.6   | 4.7   | 4.4   | 5.4   |
| 31    | 8.0   |       | b6.8     |       |       | 24    |       | 20    |       | 4.7   | 4.4   |       |
| Total | 270.4 | 240.3 | 227.1    | 231.6 | 220.4 | 749.4 | 1,529 | 1,589 | 401.6 | 174.0 | 145.5 | 163.6 |
| Mean  | 8.72  | 8.01  | 7.32     | 7.47  | 7.60  | 24.2  | 51.0  | 51.3  | 13.4  | 5.61  | 4.69  | 5.45  |
| Ac-ft | 536   | 477   | 450      | 459   | 437   | 1,490 | 3,030 | 3,150 | 797   | 345   | 289   | 324   |

Calendar year 1959: Max 70 Min 3.2 Mean 13.6 Ac-ft 9,840  
Water year 1959-60: Max 92 Min 4.1 Mean 16.2 Ac-ft 11,780

Peak discharge (base, 130 cfs).--No peak above base.

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, trend of flow, and records for nearby streams.

b Stage-discharge relation affected by ice.

## 1340. East Canyon Reservoir near Morgan, Utah

Location.--Lat 40°55'20", long 111°35'50", in NE $\frac{1}{4}$  sec.10, T.2 N., R.3 E., or upstream face of concrete dam, 9 miles southeast of Morgan.

Drainage area.--155 sq mi, approximately.

Records available.--October 1931 to September 1960. October 1931 to September 1937 month-end contents only, published in WSP 1314.

Gage.--Tape gage generally read once a week. Altitude of gage is 5,550 ft (from river-profile map). Prior to Oct. 1, 1953, staff gage at site 500 ft east of dam.

Extremes.--Maximum contents observed during year, 26,010 acre-ft May 29, June 5 (gage height, 135.6 ft); minimum, 2,430 acre-ft (interpolated) Sept. 30.  
1931-60: Maximum contents, 29,170 acre-ft June 2, 1943 (gage height, 141.67 ft); no contents at times in 1931, 1934, 1937, 1946, 1954.

Remarks.--Reservoir was formed in 1896 by a 58-foot rock-fill dam (capacity, 3,850 acre-ft), which was raised 25 ft in 1900 (capacity, 9,000 acre-ft), raised 12 ft more in 1902 (capacity, 14,000 acre-ft), and later replaced by present concrete dam, which formed a reservoir having a capacity of 28,730 acre-ft between gage heights 0.0 (bottom of outlet tunnel) and 140.8 ft (top of flashboards in spillway). Gage height of spillway crest is 135 ft. No dead storage. Figures given herein represent total contents. Water is used for irrigation in Davis and Weber counties.

Cooperation.--Capacity table furnished by Utah State Engineer.

Revisions.--WSP 1634: Drainage area.

Capacity table, water year 1959-60 (gage height, in feet, and contents, in acre-feet)

|    |       |     |        |     |        |
|----|-------|-----|--------|-----|--------|
| 40 | 2,000 | 80  | 7,900  | 115 | 17,500 |
| 50 | 3,000 | 85  | 9,020  | 120 | 19,120 |
| 55 | 3,650 | 90  | 10,250 | 125 | 21,000 |
| 60 | 4,400 | 95  | 11,620 | 130 | 23,300 |
| 65 | 5,150 | 100 | 13,000 | 136 | 26,220 |
| 70 | 5,900 | 105 | 14,380 |     |        |
| 75 | 6,900 | 110 | 15,880 |     |        |

Contents, in acre-feet, water year October 1959 to September 1960

| Day | Oct.   | Nov.    | Dec.    | Jan.   | Feb.    | Mar.    | Apr.    | May     | June    | July   | Aug.   | Sept.  |
|-----|--------|---------|---------|--------|---------|---------|---------|---------|---------|--------|--------|--------|
| 1   | -      | 9,000   | -       | -      | -       | -       | -       | 23,540  | -       | -      | -      | -      |
| 2   | -      | -       | -       | -      | -       | -       | -       | -       | -       | -      | -      | -      |
| 3   | -      | -       | -       | 11,050 | -       | -       | 18,050  | -       | -       | 21,740 | -      | -      |
| 4   | 8,010  | -       | -       | -      | -       | -       | -       | -       | -       | -      | -      | 7,800  |
| 5   | -      | -       | -       | -      | -       | -       | -       | -       | 26,010  | -      | -      | -      |
| 6   | -      | -       | 10,180  | -      | -       | 13,330  | -       | -       | -       | -      | -      | -      |
| 7   | -      | -       | -       | -      | 12,200  | -       | -       | -       | -       | -      | 14,980 | -      |
| 8   | -      | 9,250   | -       | -      | -       | -       | -       | 24,550  | -       | -      | -      | -      |
| 9   | -      | -       | -       | -      | -       | -       | -       | -       | -       | -      | -      | -      |
| 10  | -      | -       | -       | 11,270 | -       | -       | 20,140  | -       | -       | 20,360 | -      | -      |
| 11  | 8,330  | -       | -       | -      | -       | -       | -       | -       | -       | -      | -      | 7,160  |
| 12  | -      | -       | -       | -      | -       | -       | -       | -       | 25,910  | -      | -      | -      |
| 13  | -      | -       | 10,420  | -      | -       | 14,440  | -       | -       | -       | -      | -      | -      |
| 14  | -      | -       | -       | -      | 12,640  | -       | -       | -       | -       | -      | 13,080 | -      |
| 15  | -      | 9,500   | -       | -      | -       | -       | -       | 25,410  | -       | -      | -      | -      |
| 16  | -      | -       | -       | -      | -       | -       | -       | -       | -       | -      | -      | -      |
| 17  | -      | -       | -       | 11,520 | -       | -       | 21,550  | -       | -       | 19,090 | -      | -      |
| 18  | 8,580  | -       | -       | -      | -       | -       | -       | -       | -       | -      | -      | 5,220  |
| 19  | -      | -       | -       | -      | -       | -       | -       | -       | 24,600  | -      | -      | -      |
| 20  | -      | -       | 10,610  | -      | -       | 14,920  | -       | -       | -       | -      | -      | -      |
| 21  | -      | -       | -       | -      | 12,810  | -       | -       | -       | -       | -      | 11,210 | -      |
| 22  | -      | 9,720   | -       | -      | -       | -       | -       | 25,910  | -       | -      | -      | -      |
| 23  | -      | -       | -       | -      | -       | -       | -       | -       | -       | -      | -      | -      |
| 24  | -      | -       | -       | 11,710 | -       | -       | 22,660  | -       | -       | 17,920 | -      | -      |
| 25  | 8,800  | -       | -       | -      | -       | -       | -       | -       | -       | -      | -      | 3,780  |
| 26  | -      | -       | -       | -      | -       | -       | -       | -       | 23,250  | -      | -      | -      |
| 27  | -      | -       | 10,860  | -      | -       | 16,490  | -       | -       | -       | -      | -      | -      |
| 28  | -      | -       | -       | -      | 13,060  | -       | -       | -       | -       | -      | 10,120 | -      |
| 29  | -      | 9,980   | -       | -      | a13,100 | -       | -       | 26,010  | -       | -      | -      | -      |
| 30  | -      | a10,010 | -       | -      | -       | -       | a23,410 | -       | a22,390 | -      | -      | a2,430 |
| 31  | a8,970 | -       | a10,970 | 11,980 | -       | a17,380 | -       | a26,010 | -       | 16,690 | a9,130 | -      |
| (†) | -      | -       | -       | 96.3   | -       | -       | -       | -       | -       | 112.5  | -      | -      |
| (*) | +1,130 | +1,040  | +960    | +1,010 | +1,120  | +4,280  | +6,030  | +2,600  | -3,620  | -5,700 | -7,560 | -6,700 |

Calendar year 1959..... \$ +880

Water year 1959-60..... \$ -5,410

† Gage height, in feet, at end of month.

\* Change in contents, in acre-feet.

a No gage-height record; contents interpolated.

## 1345. East Canyon Creek near Morgan, Utah

Location.--Lat 40°55'20", long 111°36'20", in NW¼ sec.10, T.2 N., R.3 E., on right bank 2,500 ft downstream from East Canyon Dam, 2½ miles upstream from Sheep Canyon, and 9 miles southeast of Morgan.

Drainage area.--155 sq mi, approximately.

Records available.--October 1931 to September 1960. Monthly discharge only October 1931 to September 1937, published in WSP 1314.

Gage.--Water-stage recorder and Lyman rectangular weir. Altitude of gage is 5,460 ft (from river-profile map).

Average discharge.--29 years (1931-60), 51.0 cfs (36,920 acre-ft per year).

Extremes.--Maximum discharge during year, 177 cfs Sept. 15 (gage height, 1.28 ft); minimum daily, 2.2 cfs Dec. 19-29, Jan. 5 to Feb. 7.  
1931-60: Maximum discharge, 872 cfs May 4, 1952 (gage height, 3.49 ft); minimum daily, 1.4 cfs Dec. 18-20, 1954, Dec. 28, 1954, to Jan. 30, 1955.

Remarks.--Records good. No diversions between station and East Canyon Reservoir (see preceding page) which completely regulates flow.

Revisions.--WSP 1634: Drainage area.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|    |     |     |     |
|----|-----|-----|-----|
| 0  | 0   | 0.6 | 53  |
| .1 | 3.6 | 1.0 | 117 |
| .2 | 9.7 | 1.3 | 177 |
| .3 | 18  |     |     |

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                       | 4.2   | 3.6   | 2.7  | 2.7  | 2.2     | 3.2   | 4.7       | 6.5   | 27           | 103   | 138   | 115   |
| 2                       | 4.2   | 3.2   | 2.7  | 2.7  | 2.2     | 3.2   | 4.7       | 6.5   | *27          | 99    | 134   | 113   |
| 3                       | 4.2   | 3.6   | 2.7  | 2.7  | 2.2     | 3.2   | 4.7       | 7.1   | 27           | 99    | 130   | 113   |
| 4                       | 3.6   | 4.2   | 2.7  | 2.7  | 2.2     | 3.2   | 4.7       | 7.1   | 27           | 97    | 128   | 84    |
| 5                       | 3.6   | 4.2   | 2.7  | 2.7  | 2.2     | 3.2   | 4.7       | 7.1   | 27           | 97    | 128   | 64    |
| 6                       | 3.6   | 3.6   | 2.7  | 2.2  | 2.2     | 3.2   | 4.7       | 7.1   | 27           | 97    | 126   | 52    |
| 7                       | 3.6   | 3.6   | 2.7  | 2.2  | 2.2     | 3.6   | 5.3       | 7.1   | 27           | 96    | 138   | 50    |
| 8                       | 3.6   | 3.6   | 2.7  | 2.2  | 2.7     | 3.6   | 5.3       | 7.8   | 27           | 96    | 148   | 50    |
| 9                       | 3.6   | 4.2   | 2.7  | 2.2  | 2.7     | 3.6   | 5.3       | 7.8   | 27           | 94    | 146   | 50    |
| 10                      | 3.6   | 4.2   | 2.7  | 2.2  | 2.7     | 3.6   | 5.9       | *7.8  | 27           | 94    | 146   | 50    |
| 11                      | 3.6   | 4.2   | *2.7 | 2.2  | 2.7     | 3.6   | 5.9       | 7.8   | 27           | 96    | 146   | 50    |
| 12                      | 3.6   | 4.2   | 2.7  | *2.2 | 2.7     | 3.6   | 5.9       | 7.8   | 67           | 96    | 146   | 49    |
| 13                      | 4.2   | 4.7   | 2.7  | 2.2  | 2.7     | 3.6   | 6.5       | 7.8   | 96           | 94    | 144   | 49    |
| 14                      | 4.2   | 4.7   | 2.7  | 2.2  | 2.7     | 3.6   | *6.5      | 7.8   | 94           | 92    | 148   | 49    |
| 15                      | 4.2   | 4.2   | 2.7  | 2.2  | 2.7     | *3.6  | 6.5       | 9.0   | 94           | 90    | 150   | 123   |
| 16                      | 4.2   | 4.2   | 2.7  | 2.2  | *2.7    | 3.6   | 6.5       | 9.0   | 92           | 99    | *140  | 169   |
| 17                      | 3.6   | *4.2  | 2.7  | 2.2  | 2.7     | 3.6   | 6.5       | 9.0   | 92           | 94    | 136   | 162   |
| 18                      | 3.6   | 4.2   | 2.7  | 2.2  | 2.7     | 3.6   | 6.5       | 9.0   | 92           | 96    | 132   | 162   |
| 19                      | 3.6   | 4.2   | 2.2  | 2.2  | 2.7     | 3.6   | 6.5       | 9.0   | 90           | 94    | 132   | 180   |
| 20                      | *3.2  | 4.2   | 2.2  | 2.2  | 2.7     | 3.6   | 6.5       | *8.6  | 92           | 92    | 130   | 156   |
| 21                      | 3.2   | 4.2   | 2.2  | 2.2  | 2.7     | 3.6   | 6.5       | 8.4   | 94           | 92    | 126   | 152   |
| 22                      | 3.2   | 4.2   | 2.2  | 2.2  | 2.7     | 3.6   | 6.5       | 8.4   | 92           | *92   | 125   | 150   |
| 23                      | 3.2   | 3.6   | 2.2  | 2.2  | 2.7     | 3.6   | 6.5       | 8.4   | *91          | 92    | 128   | 148   |
| 24                      | 3.2   | 3.6   | 2.2  | 2.2  | 2.7     | 3.6   | 6.5       | 23    | 92           | 96    | 126   | 146   |
| 25                      | 3.6   | 3.6   | 2.2  | 2.2  | 2.7     | 3.6   | 6.5       | 29    | 89           | 96    | 125   | 140   |
| 26                      | 3.6   | 3.6   | 2.2  | 2.2  | 2.7     | 4.2   | 6.5       | *28   | 97           | 94    | 123   | 128   |
| 27                      | 3.6   | 3.2   | 2.2  | 2.2  | 2.7     | 4.2   | 6.5       | 28    | 104          | 94    | 121   | 126   |
| 28                      | 3.6   | 3.2   | 2.2  | 2.2  | 2.7     | 4.2   | 6.5       | 29    | 103          | 94    | 121   | *125  |
| 29                      | 3.6   | 3.2   | 2.2  | 2.2  | 2.7     | 4.2   | 6.5       | 29    | 103          | 94    | 119   | 125   |
| 30                      | 3.6   | 2.7   | 2.7  | 2.2  | -----   | 4.7   | 6.5       | 27    | 101          | 92    | 115   | 121   |
| 31                      | 3.6   | ----- | 2.7  | 2.2  | -----   | 4.7   | -----     | 27    | -----        | 120   | 113   | ----- |
| Total                   | 113.4 | 116.1 | 78.2 | 70.2 | 74.8    | 113.8 | 178.8     | 401.9 | 2,072        | 2,961 | 4,108 | 3,231 |
| Mean                    | 3.66  | 3.87  | 2.52 | 2.26 | 2.58    | 3.67  | 5.86      | 13.0  | 69.1         | 95.1  | 133   | 108   |
| Ac-ft                   | 225   | 230   | 155  | 139  | 148     | 226   | 355       | 797   | 4,110        | 5,870 | 8,150 | 6,410 |
| Calendar year 1959: Max |       |       | 123  |      | Min 1.8 |       | Mean 25.6 |       | Ac-ft 18,560 |       |       |       |
| Water year 1959-60: Max |       |       | 169  |      | Min 2.2 |       | Mean 36.9 |       | Ac-ft 26,820 |       |       |       |

\* Discharge measurement made on this day.

## 1350. Hardscrabble Creek near Porterville, Utah

Location.--40°57'10", long 111°43'00", in SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec.34, T.3 N., R.2 E., on right bank two-thirds of a mile upstream from Tucker Hollow and 2 $\frac{1}{2}$  miles southwest of Porterville.

Drainage area.--28.1 sq mi.

Records available.--October 1941 to September 1960 in reports of Geological Survey. December 1937 to August 1940 (fragmentary) in files of State engineer's office.

Gage.--Water-stage recorder. Altitude of gage is 5,500 ft (from topographic map).

Average discharge.--19 years (1941-60), 31.0 cfs (22,440 acre-ft per year).

Extremes.--Maximum discharge during year, 177 cfs May 12 (gage height, 2.67 ft); minimum, 4.0 cfs Aug. 21.

1941-60: Maximum discharge, 464 cfs Aug. 20, 1945 (gage height, 3.60 ft); minimum recorded, 3.0 cfs Feb. 11, 1944.

Remarks.--Records good except those for periods of ice effect or fragmentary or no gage-height record, which are fair. A small transbasin canal diverts water from Arthurs Fork, a tributary of Hardscrabble Creek, to Farmington Creek for irrigation in vicinity of Farmington.

Revisions (water years).--WSP 1314: 1942(M), 1944-45(M). WSP 1634: Drainage area.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 6

Apr. 7 to Sept. 30

|     |     |     |    |     |     |     |     |
|-----|-----|-----|----|-----|-----|-----|-----|
| 1.2 | 3.3 | 1.8 | 21 | 1.0 | 4.4 | 1.8 | 34  |
| 1.4 | 6.4 | 2.0 | 39 | 1.3 | 10  | 2.1 | 69  |
| 1.6 | 12  | 2.3 | 84 | 1.6 | 21  | 2.6 | 161 |

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     | 8.4   | 7.7   | b7.0  | a5.6  | b5.6  | b6.0  | 27    | 46    | 56    | 14    | f6.9  | 5.8   |
| 2     | 7.9   | 7.5   | b6.5  | a5.6  |       | b6.4  | 25    | 54    | *55   | 14    | f6.9  | 5.6   |
| 3     | 7.9   | 7.9   | b6.5  | a5.6  |       | 7.9   | 27    | *69   | 50    | 13    | f6.7  | 5.8   |
| 4     | 7.5   | 8.9   | b6.2  | a5.6  |       | 8.4   | 37    | 82    | 46    | 13    | f6.5  | 6.3   |
| 5     | 7.3   | 8.4   | b6.2  | a5.6  |       | 9.5   | 54    | 80    | 41    | 13    | a6.2  | 6.5   |
| 6     | 7.5   | b8.2  | a6.2  | a5.4  | a5.6  | 12    | *76   | 82    | 40    | 13    | a6.1  | 8.8   |
| 7     | 10    | b8.0  | a6.2  | a5.2  |       | 15    | 74    | 92    | 40    | 12    | a6.0  | 8.3   |
| 8     | 8.6   | b8.0  | a6.2  | b5.2  |       | 35    | 69    | 104   | 39    | 12    | a5.9  | 8.1   |
| 9     | 12    | 8.0   | a6.2  | b5.2  |       | 17    | 87    | *115  | 36    | 12    | a5.8  | 8.1   |
| 10    | 13    | 7.9   | *b6.2 | b5.2  |       | b14   | 102   | 126   | 34    | 11    | a5.7  | 7.9   |
| 11    | 10    | 7.9   | b6.2  | b5.2  | b5.6  | b13   | 97    | 140   | 31    | 11    | a5.6  | 7.9   |
| 12    | 9.5   | 7.9   | b6.2  | *b5.0 |       | 13    | 87    | *157  | 29    | 11    | a5.6  | 7.9   |
| 13    | 9.2   | 7.7   | b6.2  | b5.0  |       | 12    | 74    | 148   | 27    | 10    | a5.6  | 7.9   |
| 14    | 8.9   | b7.5  | b6.2  | b4.9  |       | 12    | 69    | 126   | 26    | 10    | a5.6  | 7.9   |
| 15    | 8.4   | a7.5  | b6.2  | b4.9  |       | a5.6  | *b11  | 65    | 113   | 25    | 9.3   | a5.6  |
| 16    | 8.2   | a7.5  | b6.2  | b4.7  | (*)   | b11   | 59    | 111   | 24    | 9.1   | *5.6  | 8.1   |
| 17    | 8.2   | *b7.5 | b6.2  | b4.5  |       | b11   | 52    | 109   | 23    | 8.8   | 5.6   | 9.1   |
| 18    | 8.2   | b7.5  | b6.2  | b4.7  |       | 11    | 48    | 100   | 22    | *8.3  | 5.6   | 8.3   |
| 19    | 7.9   | b7.5  | b6.2  | b5.0  |       | 13    | 48    | 83    | 22    | 7.9   | 5.2   | 8.3   |
| 20    | *7.7  | b7.5  | b6.0  | b5.0  |       | 16    | 50    | *71   | 20    | 7.9   | 5.1   | 8.3   |
| 21    | 7.7   | b7.7  | b6.0  | b5.2  | b5.6  | 21    | 66    | 66    | 20    | 7.7   | 4.6   | 8.3   |
| 22    | 7.5   | b7.7  | b6.0  | b5.4  |       | 27    | 88    | 65    | *19   | f7.7  | 5.6   | 8.8   |
| 23    | 7.5   | 7.7   | b6.0  | b5.6  |       | 31    | 90    | 84    | *19   | 7.7   | 6.3   | 8.6   |
| 24    | 7.7   | 7.7   | b6.0  | b5.6  |       | *36   | 72    | 62    | 17    | f7.5  | 5.9   | 8.3   |
| 25    | 7.7   | 7.5   | b6.0  | b5.6  |       | 41    | 59    | 61    | 17    | f7.3  | 5.8   | 8.3   |
| 26    | 7.5   | b7.3  | b5.8  | b5.6  |       | 49    | 52    | *61   | 16    | f7.1  | 5.4   | 8.3   |
| 27    | 7.7   | b7.3  | a5.8  | b5.6  |       | 56    | 46    | 62    | 16    | f7.1  | 5.1   | 8.3   |
| 28    | 7.9   | b7.1  | a5.8  | b5.6  |       | 56    | *42   | 58    | 16    | f6.9  | 5.2   | *8.3  |
| 29    | 7.7   | b7.1  | a5.8  | b5.6  |       | 36    | 41    | 56    | 15    | f6.9  | 5.1   | 8.3   |
| 30    | 7.7   | b7.1  | a5.8  | b5.6  |       | 31    | 40    | 56    | 14    | f6.9  | 4.9   | 8.6   |
| 31    | 7.7   | ----- | a5.8  | b5.6  | ----- | 29    | ----- | 58    | ----- | f6.9  | 4.9   | ----- |
| Total | 260.6 | 230.7 | 190.0 | 164.3 | 162.4 | 667.2 | 1,823 | 2,677 | 855   | 500.0 | 176.6 | 236.9 |
| Mean  | 8.41  | 7.69  | 6.13  | 5.30  | 5.6   | 21.5  | 60.8  | 86.4  | 28.5  | 9.68  | 5.70  | 7.90  |
| Ac-ft | 517   | 458   | 377   | 326   | 322   | 1,320 | 3,620 | 5,310 | 1,700 | 595   | 350   | 470   |

Calendar year 1959: Max 68 Min 3.5 Mean 13.9 Ac-ft 10,060

Water year 1959-60: Max 157 Min 4.5 Mean 21.2 Ac-ft 15,360

Peak discharge (base, 220 cfs).--No peak above base.

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of trend of flow, weather records, and records for nearby streams.

b Stage-discharge relation affected by ice.

f Fragmentary gage-height record; discharge computed from partly estimated gage heights and records for nearby streams.

## WEBER RIVER BASIN

1365. Weber River at Gateway, Utah

Location.--Lat 41°08'20", long 111°50'00", in NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 27, T.5 N., R.1 E., on right bank 800 ft downstream from Union Pacific Railroad bridge, 2,500 ft downstream from Strawberry Creek, and 2,500 ft east of section house at Gateway.

Drainage area.--1,610 sq mi, approximately.

Records available.--November 1889 to June 1893, August 1894 to September 1899, August to November 1900, January to October 1901, July to August 1919, August 1930 to September 1960. Monthly discharge only for some periods, published in WSP 1314. Published as "near Uinta" 1889-1903.

Gage.--Water-stage recorder. Altitude of gage is 4,790 ft (by barometer). Oct. 13, 1889, to July 11, 1903, staff gage at site 1 mile downstream at different datum. June 22, 1919, to Oct. 22, 1929, water-stage recorder at site 2,200 ft upstream at different datum. Oct. 22, 1929, to Oct. 30, 1947, water-stage recorder at site 50 ft downstream at datum 0.80 ft higher. Oct. 31, 1947, to Dec. 9, 1959, at present site at datum 0.80 ft higher.

Extremes.--Maximum discharge during year, 1,530 cfs Mar. 8 (gage height, 4.02 ft); minimum not determined, occurred during period of ice effect or no gage-height record. 1889-1901, 1919-60: Maximum discharge observed, 7,980 cfs May 31, 1896; minimum, 45 cfs Sept. 24, 1934.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Many diversions for irrigation above and below station. Flow regulated by Rockport, Echo, and East Canyon Reservoirs (see p. 65, 67). Records of chemical analyses for the water year 1960 are given in WSP 1744.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 9

Dec. 10 to Sept. 30

|      |     |     |     |     |     |     |       |
|------|-----|-----|-----|-----|-----|-----|-------|
| -0.2 | 48  | 0.6 | 185 | 0.6 | 46  | 2.5 | 600   |
| 0.0  | 71  | 1.0 | 304 | .9  | 84  | 3.0 | 850   |
| .2   | 100 | 1.5 | 505 | 1.3 | 160 | 3.5 | 1,140 |
|      |     |     |     | 1.9 | 340 |     |       |

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                       | 336   |       | 58    | 53    | 56    | b56    | 340    | 291    | 560    | 420     | 424    | *318   |
| 2                       | 202   |       | 60    | 52    | 60    | 56     | 311    | 301    | *496   | 444     | 408    | 294    |
| 3                       | 95    | (*)   | 62    | *b51  | 56    | 56     | 331    | 372    | *482   | 460     | 410    | 301    |
| 4                       | 92    |       | 60    | b50   | 56    | 61     | 396    | 440    | 500    | 460     | 412    | 344    |
| 5                       | 86    |       | 58    | b50   | 53    | *94    | 478    | 424    | 500    | *450    | 412    | 329    |
| 6                       | 84    |       | 54    | b52   | 53    | 252    | *595   | 436    | 514    | 450     | 388    | 315    |
| 7                       | 81    |       | 53    | *53   | 54    | 474    | 645    | 523    | 528    | 444     | 400    | 297    |
| 8                       | 84    |       | *52   | 53    | 98    | 1,130  | 620    | 615    | 590    | 430     | 424    | 268    |
| 9                       | 107   |       | 52    | 53    | 234   | 715    | 690    | 640    | 523    | 430     | 408    | 262    |
| 10                      | 126   |       | 57    | 55    | 145   | 356    | 770    | *625   | 518    | 424     | 392    | 265    |
| 11                      | 100   |       | 57    | 61    | 116   | 252    | 795    | 585    | 482    | 440     | 376    | 237    |
| 12                      | 95    |       | 57    | 61    | 92    | 223    | 730    | 560    | 478    | 444     | *380   | 147    |
| 13                      | 89    |       | 57    | 57    | 86    | 229    | 635    | *532   | 487    | 430     | 404    | 262    |
| 14                      | 89    |       | 57    | 57    | 80    | 204    | 560    | 444    | 474    | 430     | 420    | 259    |
| 15                      | 87    |       | 57    | *56   | 76    | 158    | 518    | 500    | 460    | 430     | 428    | 246    |
| 16                      | 81    |       | *56   | 55    | 74    | 145    | 469    | 550    | 456    | 420     | 416    | 240    |
| 17                      | 81    |       | 56    | b54   | *67   | 156    | 412    | 575    | 456    | 430     | 400    | 246    |
| 18                      | 80    | (*)   | 56    | b50   | 66    | *149   | 380    | 640    | 452    | 430     | *378   | 234    |
| 19                      | 80    |       | 57    | b48   | 66    | 229    | 368    | 625    | 452    | *440    | 368    | 243    |
| 20                      | *78   |       | 57    | b47   | 66    | 376    | 329    | *605   | 444    | 430     | 356    | 243    |
| 21                      | 74    |       | 57    | b48   | 66    | 518    | 372    | 590    | 448    | 430     | 360    | 226    |
| 22                      | 74    |       | 60    | b49   | 66    | 560    | 536    | 655    | *452   | 400     | 364    | 223    |
| 23                      | 72    |       | 60    | 49    | 62    | 590    | 645    | 640    | 440    | 390     | 388    | 229    |
| 24                      | 70    |       | 60    | 50    | 61    | 575    | 532    | 645    | 424    | 390     | 364    | 212    |
| 25                      | 69    |       | 70    | 52    | 62    | 580    | 456    | *645   | 428    | 400     | 356    | 201    |
| 26                      | 67    |       | 64    | 54    | 62    | 620    | 396    | 675    | 444    | 410     | 340    | 185    |
| 27                      | 70    |       | 60    | 56    | 58    | 680    | 356    | 685    | 444    | 400     | 318    | *178   |
| 28                      | 70    |       | b54   | *56   | b56   | 760    | *352   | 690    | 432    | 400     | 318    | 180    |
| 29                      | 69    |       | b52   | 55    | b54   | 532    | 352    | 670    | 420    | 400     | 333    | 175    |
| 30                      | 67    |       | b52   | 55    | ----- | 428    | 318    | 665    | 412    | 400     | 322    | 180    |
| 31                      | 65    | ----- | 52    | 55    | ----- | 408    | -----  | 670    | -----  | 400     | 315    | -----  |
| Total                   | 2,920 | 1,800 | 1,774 | 1,647 | 2,201 | 11,602 | 14,689 | 17,513 | 14,196 | 13,260  | 11,800 | 7,339  |
| Mean                    | 94.2  | 60    | 57.2  | 53.1  | 75.9  | 374    | 490    | 565    | 475    | 420     | 381    | 245    |
| Ac-ft                   | 5,790 | 3,570 | 3,520 | 3,270 | 4,370 | 23,010 | 29,140 | 34,740 | 28,160 | 26,320  | 23,400 | 14,560 |
| Calendar year 1959: Max |       | 650   |       |       | Min   | 52     | Mean   | 248    | Ac-ft  | 179,300 |        |        |
| Water year 1959-60: Max |       | 1,130 |       |       | Min   | 47     | Mean   | 275    | Ac-ft  | 199,800 |        |        |

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Nov. 1 to Dec. 9, Aug. 3; discharge estimated on basis of 3 discharge measurements and records for station near Plain City.

## 1375. South Fork Ogden River near Huntsville, Utah

Location.--Lat 41°16', long 111°40', in SE $\frac{1}{4}$  sec.12, T.6 N., R.2 E., on right bank half a mile downstream from Maggie Creek, 1 mile upstream from Huntsville Mountain Canal, and  $5\frac{1}{2}$  miles east of Huntsville.

Drainage area.--148 sq mi.

Records available.--March 1921 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,190 ft (by barometer). Prior to Aug. 14, 1934, at site 300 ft upstream at different datum.

Average discharge.--39 years, 108 cfs (78,190 acre-ft per year).

Extremes.--Maximum discharge during year, 458 cfs May 11 (gage height, 3.08 ft); maximum gage height, 3.28 ft Jan. 19 (ice jam); minimum discharge, 26 cfs Feb. 21.

1921-60: Maximum discharge, 1,890 cfs May 3, 1952 (gage height, 5.98 ft); minimum observed, 20 cfs Nov. 25, 1931, July 28, 1934.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.8 | 26  | 2.0 | 190 |
| 1.0 | 40  | 2.5 | 307 |
| 1.2 | 61  | 3.0 | 455 |
| 1.5 | 100 |     |     |

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     | 39    | 39    | 36    | 34    | 32    | b32   | 170    | 180    | 99    | 41    | 36    | 35    |
| 2     | 39    | 39    | 36    | 33    | 33    | b32   | 118    | 200    | 95    | 40    | 34    | 35    |
| 3     | 38    | 40    | 36    | b33   | 32    | 32    | 121    | 251    | 89    | 41    | 32    | 35    |
| 4     | 36    | 40    | 37    | b32   | b32   | 34    | 149    | *284   | 85    | 41    | 32    | 36    |
| 5     | 35    | 39    | b35   | b33   | b32   | 35    | 192    | 281    | 82    | 40    | 32    | 34    |
| 6     | 34    | 38    | b36   | a35   | 33    | 40    | 242    | 289    | 79    | 40    | 32    | 33    |
| 7     | 39    | 39    | *b35  | a35   | 32    | 45    | *261   | 331    | 78    | 39    | 32    | 33    |
| 8     | 38    | 38    | b36   | 34    | 39    | 61    | 254    | 385    | 85    | 40    | 32    | 32    |
| 9     | 45    | 39    | b35   | 34    | 45    | 63    | 304    | 417    | 75    | 39    | 32    | 32    |
| 10    | 45    | 39    | 36    | 34    | 39    | 51    | 348    | 433    | 72    | 38    | 32    | 32    |
| 11    | 41    | 39    | 35    | 35    | 36    | 53    | 342    | *439   | 68    | 37    | 32    | 32    |
| 12    | 39    | 39    | 35    | 34    | b35   | 52    | 312    | 439    | 64    | 37    | 32    | 32    |
| 13    | 39    | 38    | 35    | *33   | 35    | 49    | 266    | 414    | 61    | 36    | 32    | 32    |
| 14    | 39    | 36    | 34    | 33    | b35   | 49    | 251    | 354    | 58    | 36    | 32    | 32    |
| 15    | 38    | 37    | 34    | 33    | 34    | 57    | 229    | 312    | 58    | 34    | 32    | 32    |
| 16    | 38    | 39    | b34   | b31   | 33    | *44   | 205    | 274    | 57    | 34    | 33    | 32    |
| 17    | 37    | 38    | b34   | b30   | 33    | 44    | 180    | 249    | 55    | 35    | *33   | 32    |
| 18    | 37    | 39    | 34    | b29   | *b33  | 45    | 170    | 233    | 54    | 34    | 32    | 32    |
| 19    | 37    | *39   | 34    | b30   | 33    | 52    | 172    | 205    | 52    | 32    | 32    | 32    |
| 20    | 37    | 39    | b34   | b31   | b33   | 68    | 164    | 178    | 51    | *34   | 31    | 33    |
| 21    | *38   | 39    | 34    | a32   | 33    | 89    | 188    | 164    | *50   | 34    | 31    | 33    |
| 22    | 37    | 39    | 34    | a32   | 32    | 111   | 264    | 157    | 49    | 34    | 32    | 35    |
| 23    | 38    | 39    | 34    | a32   | b32   | 135   | 307    | 149    | 47    | 33    | 34    | 34    |
| 24    | 37    | 39    | 34    | 32    | b32   | 159   | 249    | *142   | 46    | 34    | 34    | 34    |
| 25    | 39    | 40    | 37    | 32    | b32   | 178   | 211    | 131    | 44    | 33    | 34    | 34    |
| 26    | 38    | 36    | 35    | 33    | b32   | 207   | 190    | 123    | 45    | 33    | 33    | *34   |
| 27    | 38    | b35   | b34   | 34    | b32   | 233   | 182    | 119    | 43    | 32    | 32    | 33    |
| 28    | 38    | b36   | b34   | 32    | b32   | 251   | 186    | 114    | 42    | 33    | 32    | 33    |
| 29    | 38    | 36    | b34   | 32    | b32   | 186   | 176    | 111    | 41    | 33    | 32    | 32    |
| 30    | 38    | 37    | b34   | 32    | ----- | 159   | 174    | 108    | 42    | 33    | 32    | 32    |
| 31    | 37    | ----- | b34   | 32    | ----- | 146   | -----  | 105    | ----- | 34    | 32    | ----- |
| Total | 1,184 | 1,149 | 1,079 | 1,007 | 976   | 2,792 | 6,537  | 7,569  | 1,864 | 1,114 | 1,005 | 992   |
| Mean  | 38.2  | 36.2  | 34.8  | 32.5  | 33.7  | 90.1  | 218    | 244    | 62.1  | 35.9  | 32.4  | 33.1  |
| Ac-ft | 2,350 | 2,280 | 2,140 | 2,000 | 1,940 | 5,540 | 12,970 | 15,010 | 3,700 | 2,210 | 1,990 | 1,970 |

Calendar year 1959: Max 302 Min 30 Mean 60.6 Ac-ft 43,880  
 Water year 1959-60: Max 439 Min 29 Mean 74.0 Ac-ft 54,100

Peak discharge (base, 400 cfs).--May 11 (1 a.m.) 458 cfs (3.08 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby streams.

b Stage-discharge relation affected by ice.

## 1376. South Fork Ogden River at Huntsville, Utah

Location.--Lat 41°14'50", long 111°45'45", in NE $\frac{1}{4}$  sec.19, T.6 N., R.2 E., on right banks of North and South Branches, both about 75 ft downstream from highway bridges, 1 mile southeast of Huntsville Post Office, and  $\frac{1}{4}$  miles upstream from Pine View Dam.

Drainage area.--170 sq mi, approximately.

Records available.--October 1959 to September 1960 in reports of Geological Survey. 1937-57 (seasonal records only for some years) in reports of Ogden River water commissioner.

Gage.--Water-stage recorder and concrete controls. Altitude of gages is 4,910 ft (from topographic map).

Extremes.--Maximum discharge during year, 462 cfs May 11; minimum daily, 4.2 cfs Sept. 28-30.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Diversions for irrigation above station. Records represent combined flow at gaging stations on North and South Branches.

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     |      |       | 10   | 18    | 21    | 25    | 162    | 182    | 40    | 15    | 7.1   | 5.4   |
| 2     |      |       | 11   | 17    | 21    | 24    | 145    | 194    | 35    | 14    | 7.2   | 5.6   |
| 3     |      |       | 11   | 17    | 22    | 24    | 147    | 242    | 33    | 14    | 6.8   | 5.6   |
| 4     |      |       | 12   | 17    | 21    | 24    | 167    | 260    | *30   | 14    | 6.8   | 5.8   |
| 5     |      |       | 12   | 17    | 21    | 29    | 203    | 306    | 29    | 14    | 6.6   | 5.6   |
| 6     |      |       | 13   | 17    | 27    | 31    | 254    | 330    | 29    | 14    | 6.4   | 5.5   |
| 7     |      |       | 13   | 18    | 27    | 34    | *286   | 370    | 29    | 14    | 7.0   | 5.2   |
| 8     |      |       | 13   | 16    | 26    | 45    | 286    | 411    | 32    | 14    | 7.0   | 5.3   |
| 9     |      |       | 13   | 16    | 25    | 52    | 339    | 439    | 32    | 13    | 7.0   | 5.6   |
| 10    |      |       | 13   | 16    | 24    | 51    | 387    | 445    | 32    | 13    | 6.6   | 5.8   |
| 11    |      |       | 13   | 17    | 24    | 50    | 396    | 417    | 30    | 12    | 6.8   | 5.3   |
| 12    |      |       | 13   | 18    | 24    | 48    | *363   | *394   | 29    | 10    | 6.5   | 5.3   |
| 13    |      |       | 13   | *18   | 24    | 48    | 313    | 373    | 28    | 11    | 6.7   | 5.3   |
| 14    |      |       | 13   | 18    | 24    | 46    | 289    | 319    | *29   | 12    | 6.7   | 5.3   |
| 15    |      |       | 13   | 18    | 24    | 45    | 269    | 277    | 27    | 12    | 6.3   | 4.9   |
| 16    |      |       | 13   | 18    | 24    | *43   | 245    | 240    | 25    | 10    | 6.6   | 5.3   |
| 17    |      |       | 14   | 19    | 24    | 41    | 216    | 206    | 25    | 9.4   | *6.6  | 5.6   |
| 18    |      | *10   | 14   | 19    | 24    | 40    | 201    | 178    | 24    | 9.4   | 5.9   | 5.2   |
| 19    |      | 10    | 14   | 19    | 24    | 44    | 198    | 152    | 22    | 8.7   | 5.8   | 4.8   |
| 20    |      | 9.6   | 14   | 19    | 24    | 55    | 182    | 128    | 21    | *8.1  | 5.5   | 5.2   |
| 21    |      | 10    | 14   | 18    | 25    | 76    | 201    | 106    | *21   | 8.1   | 5.8   | 5.3   |
| 22    |      | 9.8   | 15   | 18    | 25    | 115   | 280    | 92     | 21    | 8.1   | 5.6   | 5.3   |
| 23    |      | 9.4   | 15   | 18    | 25    | 168   | 321    | 83     | 19    | 7.5   | 5.8   | 4.9   |
| 24    |      | 9.6   | 16   | 18    | 25    | 200   | 269    | *69    | 19    | 7.0   | 6.6   | 4.6   |
| 25    |      | 9.3   | 17   | 18    | 25    | *234  | 226    | 61     | 18    | 7.0   | 6.5   | 4.6   |
| 26    |      | 9.3   | 17   | 18    | 25    | 260   | 203    | 54     | 18    | 6.6   | 5.9   | *4.5  |
| 27    |      | 9.3   | 17   | 20    | 24    | 290   | 194    | 53     | 17    | 6.6   | 5.8   | 4.5   |
| 28    |      | 9.3   | 17   | 20    | 24    | 340   | 192    | 52     | *16   | 7.0   | 5.5   | 4.2   |
| 29    |      | 9.3   | 17   | 20    | 24    | 280   | *190   | 49     | 16    | 7.2   | 5.3   | 4.2   |
| 30    |      | 9.8   | 17   | 21    | ----- | 230   | 185    | 48     | 15    | 7.2   | 4.8   | 4.2   |
| 31    |      | ----- | 17   | 21    | ----- | 186   | -----  | 45     | ----- | 7.3   | 4.9   | ----- |
| Total | 310  | 294.7 | 434  | 562   | 697   | 3,178 | 7,309  | 6,595  | 761   | 321.4 | 194.4 | 154.1 |
| Mean  | 10   | 9.82  | 14.0 | 18.1  | 24.0  | 103   | 244    | 213    | 25.4  | 10.4  | 6.27  | 5.14  |
| Ac-ft | 615  | 585   | 861  | 1,110 | 1,380 | 6,300 | 14,500 | 13,080 | 1,510 | 637   | 386   | 306   |

Calendar year 1959: Max - Min - Mean - Ac-ft -  
 Water year 1959-60: Max 445 Min 4.2 Mean 56.9 Ac-ft 41,270

\* Discharge measurement made on this day.

Note.--No gage-height record Oct. 1 to Nov. 17, Feb. 21 to Mar. 4, Mar. 26-30; discharge estimated on basis of weather records, recorded range in stage, and records for station near Huntsville.

1377. North Fork Ogden River near Huntsville, Utah

Location--Lat 41°17'40", long 111°49'40", in SW $\frac{1}{4}$  sec.4, T.7 N., R.1 E., on left bank 75 ft downstream from bridge on State Highway 162, half a mile downstream from Grover Hollow, 3 $\frac{1}{2}$  miles northwest of Huntsville, and 4 miles upstream from Pine View Dam.

Drainage area--61 sq mi, approximately.

Records available--October 1959 to September 1960.

Gage--Water-stage recorder and concrete control. Datum of gage is 4,902.78 ft above mean sea level, datum of 1929.

Extremes--Maximum discharge during year, 312 cfs Apr. 10; maximum gage height, 3.47 ft May 13; no flow for many days.

Remarks--Records good except those for period Mar. 22 to June 1, which are fair. Many diversions for irrigation above station.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Mar. 23-31, Apr. 10-16, Apr. 19 to June 1)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.7 | 0   | 1.2 | 13  |
| .8  | .3  | 1.5 | 33  |
| .9  | 1.9 | 2.0 | 87  |
| 1.0 | 4.5 | 3.0 | 243 |
| 1.1 | 8.0 | 3.4 | 312 |

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     | 121    | 134     | *8.0  | 4.2  | 1.3  | 0     |
| 2     |      |      |      |      |      | 0     | 115    | 145     | *9.7  | 3.9  | 1.2  | 0     |
| 3     |      |      |      |      |      | 0     | 132    | 180     | 10    | 3.9  | 1.2  | 0     |
| 4     |      |      |      |      |      | 0     | 149    | *194    | 10    | 3.6  | 1.2  | 0     |
| 5     |      |      |      |      |      | 0     | 175    | 192     | 9.3   | 3.3  | 1.0  | 0     |
| 6     |      |      |      |      |      | 0     | *226   | 192     | 9.7   | 3.3  | 1.0  | 0     |
| 7     |      |      | (*)  |      |      | 0     | *246   | 209     | 17    | 3.1  | 1.3  | 0     |
| 8     |      |      |      |      |      | 0     | 253    | 226     | 15    | 2.8  | 1.2  | 0     |
| 9     |      |      |      |      |      | 0     | 248    | 243     | 9.7   | 2.8  | 1.0  | 0     |
| 10    |      | (*)  |      |      |      | 0     | 296    | 248     | 8.4   | 2.6  | .7   | 0     |
| 11    |      |      |      |      |      | 0     | 268    | *260    | 7.6   | 2.3  | .7   | 0     |
| 12    | (*)  |      |      |      |      | 0     | 243    | *279    | 7.2   | 2.1  | .5   | 0     |
| 13    |      |      |      |      |      | 0     | *210   | 275     | 6.8   | 2.1  | .4   | 0     |
| 14    |      |      |      | (*)  |      | 0     | 187    | 248     | *6.5  | 1.9  | .5   | 0     |
| 15    |      |      |      |      |      | 0     | 170    | 206     | 6.5   | 1.9  | .5   | 0     |
| 16    |      |      |      |      |      | 0     | 162    | 172     | 6.1   | 1.9  | .4   | 0     |
| 17    |      |      |      |      |      | *0    | 153    | *136    | 6.1   | 1.9  | *.4  | 0     |
| 18    |      |      |      |      |      | 0     | 148    | 114     | 5.4   | 1.7  | .3   | 0     |
| 19    |      | (*)  |      |      |      | 0     | *140   | 97      | 5.4   | 1.7  | .3   | 0     |
| 20    |      |      |      |      |      | 0     | 136    | 81      | 5.8   | 1.7  | .2   | 0     |
| 21    |      |      |      |      |      | 0     | 143    | 69      | *5.4  | *1.5 | .2   | 0     |
| 22    |      |      |      |      |      | 64    | 159    | 61      | 4.8   | 1.5  | .2   | 0     |
| 23    |      |      |      |      |      | 94    | 161    | 49      | 4.5   | 1.3  | .1   | 0     |
| 24    |      |      |      |      |      | 117   | 149    | *41     | 4.5   | 1.2  | .1   | 0     |
| 25    |      |      |      |      |      | *131  | 142    | 40      | 4.5   | 1.3  | .1   | 0     |
| 26    |      |      |      |      |      | 136   | 134    | 38      | 4.2   | 1.3  | .1   | 0     |
| 27    |      |      |      |      |      | 153   | *131   | 35      | 4.5   | 1.2  | 0    | *0    |
| 28    |      |      |      |      |      | 199   | 134    | 27      | *4.2  | 1.2  | 0    | 0     |
| 29    |      |      |      |      |      | 190   | *128   | 18      | 4.2   | 1.2  | 0    | 0     |
| 30    |      |      |      |      |      | 175   | 128    | 13      | 4.5   | 1.2  | 0    | 0     |
| 31    |      |      |      |      |      | *161  | -----  | 8.8     | ----- | 1.2  | 0    | ----- |
| Total | 0    | 0    | 0    | 0    | 0    | 1,420 | 5,187  | 4,230.8 | 215.5 | 66.8 | 16.1 | 0.1   |
| Mean  | 0    | 0    | 0    | 0    | 0    | 45.8  | 173    | 136     | 7.18  | 2.15 | 0.52 | 0.005 |
| Ac-ft | 0    | 0    | 0    | 0    | 0    | 2,820 | 10,290 | 8,390   | 427   | 132  | 3.2  | 0.2   |

Calendar year 1959: Max - Min - Mean - Ac-ft -  
Water year 1959-60: Max 296 Min 0 Mean 30.4 Ac-ft 22,090

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

## WEBER RIVER BASIN

1378. Middle Fork Ogden River at Huntsville, Utah

Location.--Lat 41°17'15", long 111°46'35", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.1, T.6 N., R.1 E., on left bank 20 ft downstream from highway bridge and 1 $\frac{1}{2}$  miles north of Huntsville.

Drainage area.--32 sq mi, approximately.

Records available.--April 1958 to September 1960.

Gage.--Water-stage recorder and concrete control. Datum of gage is 4,915.41 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation).

Extremes.--Maximum discharge during year, 273 cfs May 10 (gage height, 2.18 ft); no flow for many days.

1958-60: Maximum discharge, 450 cfs May 5, 1958 (gage height, 2.72 ft); no flow at times in each year.

Remarks.--Records good except those for periods of doubtful or no gage-height record, which are fair.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used May 10, 11)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.6 | 0   | 1.2 | 19  |
| .7  | .2  | 1.3 | 30  |
| .8  | 1.1 | 1.6 | 82  |
| .9  | 2.6 | 1.9 | 155 |
| 1.0 | 5.4 | 2.2 | 246 |
| 1.1 | 10  |     |     |

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                                                        | 1.2  | 0.5   | 0.2  |      |      | 0     | *61   | 89      | 4.3   | 0.4  |      |       |
| 2                                                        | 1.2  | .5    | .2   |      |      | 0     | 52    | 102     | 4.0   | .4   |      |       |
| 3                                                        | 1.2  | .5    | .2   |      |      | 0     | 56    | 131     | 3.3   | .3   |      |       |
| 4                                                        | .8   | .4    | .2   |      |      | 0     | 74    | 139     | *2.4  | .3   |      |       |
| 5                                                        | .8   | .5    | .2   |      |      | 0     | 105   | 142     | 2.2   | .3   |      |       |
| 6                                                        | 1.1  | .4    | 0    |      |      | 0     | *135  | 161     | 2.2   | .3   |      |       |
| 7                                                        | 1.2  | .4    | *0   |      |      | 0     | *161  | 181     | 2.0   | .3   |      |       |
| 8                                                        | 1.5  | .4    | 0    |      |      | d1.4  | 155   | 199     | 2.0   | .3   |      |       |
| 9                                                        | 1.9  | .4    | 0    |      |      | d13   | 184   | 217     | 1.9   | .3   |      |       |
| 10                                                       | 2.4  | .4    | 0    |      |      | 2.6   | 193   | 224     | 1.9   | .2   |      |       |
| 11                                                       | 1.5  | .4    | 0    |      |      | 1.0   | 187   | *227    | 1.7   | .2   |      |       |
| 12                                                       | 1.5  | .4    | 0    |      |      | 1.0   | 158   | *193    | 1.7   | .2   |      |       |
| 13                                                       | 1.2  | .3    | 0    |      |      | 1.0   | 131   | 158     | 1.7   | .2   |      |       |
| 14                                                       | 1.2  | .4    | 0    | (*)  |      | 1.0   | 131   | 123     | 1.7   | .2   |      |       |
| 15                                                       | 1.2  | .3    | 0    |      |      | 1.0   | 121   | 106     | 1.5   | .2   |      |       |
| 16                                                       | 1.0  | .3    | 0    |      |      | 1.0   | 104   | 97      | 1.5   | .2   |      |       |
| 17                                                       | 1.1  | .3    | 0    |      | (*)  | *1.1  | 93    | 90      | 1.4   | .2   | (*)  |       |
| 18                                                       | 1.2  | .3    | 0    |      |      | 1.2   | 84    | 80      | 1.2   | .2   |      |       |
| 19                                                       | 1.4  | *.3   | 0    |      |      | 2.0   | 82    | 59      | 1.1   | .2   |      |       |
| 20                                                       | 1.4  | .3    | 0    |      |      | 2.8   | 74    | 45      | 1.1   | .1   |      |       |
| 21                                                       | *1.2 | .3    | 0    |      |      | 14    | 102   | 39      | *1.1  | *.1  |      |       |
| 22                                                       | 1.2  | .3    | 0    |      |      | 29    | 150   | 38      | .9    | .1   |      |       |
| 23                                                       | 1.2  | .3    | 0    |      |      | 47    | 164   | 32      | .8    | .1   |      |       |
| 24                                                       | 1.2  | .3    | 0    |      |      | 64    | 116   | *27     | .7    | .1   |      |       |
| 25                                                       | .7   | .3    | 0    |      |      | 89    | 93    | 24      | .6    | .1   |      |       |
| 26                                                       | .6   | .2    | 0    |      |      | 104   | 80    | 27      | .5    | .1   |      |       |
| 27                                                       | .6   | .2    | 0    |      |      | 118   | *78   | 19      | .5    | 0    |      | (*)   |
| 28                                                       | .6   | .2    | 0    |      |      | 121   | 76    | 13      | .4    | 0    |      |       |
| 29                                                       | .6   | .3    | 0    |      |      | 93    | 78    | 8.9     | .4    | 0    |      |       |
| 30                                                       | .6   | .3    | 0    |      |      | 80    | 78    | 6.8     | .4    | 0    |      |       |
| 31                                                       | .5   | ----- | 0    |      |      | 68    | ----- | 5.1     | ----- | 0    |      | ----- |
| Total                                                    | 35.0 | 10.4  | 1.0  | 0    | 0    | 857.1 | 3,354 | 5,002.8 | 47.1  | 5.6  | 0    | 0     |
| Mean                                                     | 1.13 | 0.35  | 0.03 | 0    | 0    | 27.6  | 112   | 96.9    | 1.57  | 0.18 | 0    | 0     |
| Ac-ft                                                    | 69   | 21    | 2.0  | 0    | 0    | 1,700 | 6,650 | 5,960   | 93    | 11   | 0    | 0     |
| Calendar year 1959: Max 147 Min 0 Mean 8.97 Ac-ft 6,500  |      |       |      |      |      |       |       |         |       |      |      |       |
| Water year 1959-60: Max 227 Min 0 Mean 20.0 Ac-ft 14,510 |      |       |      |      |      |       |       |         |       |      |      |       |

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

d Doubtful gage-height record; discharge computed from reconstructed gage-height record.

Note.--No gage-height record Mar. 11-19, June 22 to July 20; discharge estimated on basis of 1 discharge measurement, weather records, and records for nearby streams.

## 1379. Spring Creek at Huntsville, Utah

Location.--Lat 41°15'55", long 111°45'55", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.7, T.6 N., R.2 E., on left bank at north edge of Huntsville.

Drainage area.--7.2 sq mi, approximately.

Records available.--April 1958 to September 1960.

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 4,902.99 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation).

Extremes.--Maximum discharge during year, 101 cfs Mar. 28 (gage height, 2.13 ft); minimum, 3.2 cfs Aug. 20 (gage height, 0.28 ft).  
1958-60: Maximum discharge, that of Mar. 28, 1960; minimum, 3.0 cfs Sept. 8, 11, 12, 1959.

Remarks.--Records good except those for period of no gage-height record, which are fair.

Rating table, water year 1959-60 (gage height, in feet,  
and discharge, in cubic feet per second)

|     |     |     |    |
|-----|-----|-----|----|
| 0.2 | 1.9 | 1.0 | 29 |
| .3  | 3.7 | 1.8 | 79 |
| .5  | 9.2 |     |    |

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     | 6.5   | 6.0   | 6.2   | 6.2   | a6.5  | 7.7   | 25    | 12   | 18    | 6.5   | 5.7   | 5.2   |
| 2     | 6.2   | 6.0   | 6.2   | 6.2   |       | 7.7   | 20    | 12   | 17    | 5.7   | 5.0   | 5.0   |
| 3     | 6.2   | 6.0   | 6.2   | 6.2   |       | 7.7   | 18    | 14   | 17    | 6.2   | 4.7   | 5.2   |
| 4     | 6.2   | 6.0   | 6.0   | 6.2   |       | 8.0   | 16    | *16  | *16   | 6.5   | 4.4   | 5.2   |
| 5     | 6.2   | 6.5   | 6.0   | 6.2   |       | 8.9   | 16    | 13   | 15    | 7.1   | 4.2   | 5.0   |
| 6     | 6.0   | 6.2   | 6.0   | 6.0   | a6.8  | 10    | 15    | 12   | 13    | 6.8   | 4.7   | 5.2   |
| 7     | 6.5   | 6.2   | 6.0   | 6.2   | a7.0  | 11    | 16    | 12   | 12    | 6.5   | 5.0   | 5.0   |
| 8     | 6.5   | 6.0   | 6.0   | 6.2   | a8.0  | 13    | 15    | 11   | 14    | 6.8   | 5.2   | 4.7   |
| 9     | 11    | 6.0   | 6.0   | 6.2   | a9.0  | 12    | 15    | 11   | 14    | 6.8   | 5.2   | 4.7   |
| 10    | 9.9   | 6.0   | 6.2   | 6.5   | a8.2  | 12    | 14    | 10   | 15    | 6.5   | 5.0   | 4.4   |
| 11    | 7.4   | 6.0   | *6.0  | 6.8   | a7.8  | 11    | 14    | 11   | 16    | 6.0   | 4.7   | 4.4   |
| 12    | 7.4   | 6.2   | 6.0   | 6.5   |       | 12    | 13    | 12   | 18    | 5.7   | 4.2   | 4.4   |
| 13    | 6.5   | 6.0   | 6.0   | 6.5   |       | 13    | *13   | 12   | 16    | 5.4   | 4.2   | 4.4   |
| 14    | 6.2   | 5.7   | 6.0   | *6.5  |       | 12    | 12    | 14   | 14    | 5.4   | 4.4   | 4.4   |
| 15    | 6.0   | 6.0   | 6.0   | 6.8   |       | 11    | 12    | 11   | 15    | 5.7   | 4.4   | 4.4   |
| 16    | 6.2   | 6.2   | 6.0   | 6.8   | *a7.8 | 11    | 11    | 10   | 14    | 5.7   | 4.4   | 4.4   |
| 17    | 6.2   | 6.2   | 6.0   | 6.8   |       | *11   | 12    | 11   | 12    | 5.7   | *4.4  | 5.0   |
| 18    | 6.2   | 6.2   | 6.0   | 6.5   |       | 11    | 11    | 12   | 12    | 5.2   | 4.4   | 4.4   |
| 19    | 6.2   | *6.2  | 6.0   | 6.5   |       | 12    | 12    | 13   | 11    | 5.0   | 4.2   | 4.4   |
| 20    | 6.2   | 6.0   | 6.0   | 6.5   |       | 12    | 12    | 13   | 10    | *4.4  | 4.0   | 4.4   |
| 21    | 6.2   | 6.2   | 6.0   | 6.5   | a6.5  | 14    | 11    | 15   | *10   | 5.0   | 4.0   | 4.4   |
| 22    | *6.2  | 6.5   | 6.0   | 6.5   |       | 18    | 11    | 17   | 11    | 5.0   | 4.2   | 4.2   |
| 23    | 6.5   | 6.5   | 6.2   | 7.7   | 8.0   | 24    | 12    | 15   | 11    | 5.0   | 4.2   | 4.0   |
| 24    | 6.2   | 6.5   | 6.2   |       | 7.7   | 29    | 14    | *14  | 11    | 5.2   | 4.2   | 4.0   |
| 25    | 6.5   | 6.5   | 7.1   |       | 8.0   | 48    | 15    | 14   | 11    | 5.2   | 4.2   | 4.0   |
| 26    | 6.2   | 6.2   | 6.5   |       | 8.0   | *56   | 13    | 13   | 9.2   | 5.2   | 4.2   | *4.0  |
| 27    | 6.0   | 6.0   | 6.2   |       | 7.7   | 57    | 13    | 15   | 8.9   | 4.7   | 4.2   | 3.7   |
| 28    | 6.2   | 6.0   | 6.2   | 7.4   | 8.0   | 75    | 15    | 15   | 7.7   | 4.7   | 4.2   | 3.7   |
| 29    | 6.2   | 6.0   | 6.2   |       | 7.4   | 54    | 14    | 16   | 7.4   | 5.0   | 4.4   | 3.7   |
| 30    | 6.0   | 6.2   | 6.2   |       | ----- | 36    | 13    | 17   | 6.5   | 5.7   | 4.7   | 3.7   |
| 31    | 6.0   | ----- | 6.2   |       | ----- | *32   | ----- | 16   | ----- | 6.0   | 4.7   | ----- |
| Total | 203.9 | 184.2 | 189.8 | 199.8 | 219.9 | 657.0 | 423   | 409  | 382.7 | 176.3 | 139.6 | 133.6 |
| Mean  | 6.58  | 6.14  | 6.12  | 6.45  | 7.58  | 21.2  | 14.1  | 13.2 | 12.8  | 5.89  | 4.50  | 4.45  |
| Ac-ft | 404   | 365   | 376   | 396   | 436   | 1,300 | 839   | 811  | 759   | 350   | 277   | 265   |

Calendar year 1959: Max 25 Min 3.2 Mean 8.51 Ac-ft 6,160  
Water year 1959-60: Max 75 Min 3.7 Mean 9.07 Ac-ft 6,580

\* Discharge measurement made on this day.  
a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, trend of flow, and records for nearby streams.

## WEBER RIVER BASIN

## 1390. Pine View Reservoir near Ogden, Utah

Location.--Lat 41°15'20", long 111°50'25", in NW¼SE¼ sec.16, T.6 N., R.1 E., at trashrack at Pine View Dam on Ogden River, 7 miles northeast of Ogden.

Drainage area.--310 sq mi, approximately.

Records available.--November 1936 to September 1960.

Gage.--Staff gage read once daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Extremes.--Maximum contents during year, 85,380 acre-ft May 21, 22 (elevation, 4,891.0 ft); minimum, 4,780 acre-ft Oct. 6, 7 (elevation, 4,837.7 ft).  
1936-60: Maximum contents, that of May 21, 22, 1960; minimum, 4 acre-ft Jan. 10, 1957 (elevation, 4,819.1 ft).

Remarks.--Reservoir is formed by earth-fill, rock-faced dam; storage began Nov. 16, 1936; capacity, 110,100 acre-ft at elevation 4,900 ft (maximum super storage) above mean sea level. During September 1939 sills of radial spillway gates were raised 1 ft, thus changing the top of spillway gates from elevation 4,871 to 4,872 ft. During 1957 the storage capacity was increased by raising the crest of the spillway to 4,878 ft and elevation of maximum super storage to 4,900 ft (additional capacity, 65,920 acre-ft). Dead storage negligible. Figures given herein represent total contents. Water is used for irrigation in Weber River basin and Ogden River projects.

Cooperation.--Capacity table furnished by Bureau of Reclamation.

Capacity table, water year 1959-60 (elevation, in feet, and contents, in acre-feet)

|         |        |         |        |
|---------|--------|---------|--------|
| 4,837.0 | 4,400  | 4,870.0 | 40,680 |
| 4,840.0 | 6,150  | 4,875.0 | 49,700 |
| 4,845.0 | 9,680  | 4,880.0 | 59,670 |
| 4,850.0 | 14,060 | 4,885.0 | 70,690 |
| 4,855.0 | 19,330 | 4,890.0 | 82,820 |
| 4,860.0 | 25,480 | 4,895.0 | 96,060 |
| 4,865.0 | 32,610 |         |        |

Contents, in acre-feet, water year October 1959 to September 1960

| Day | Oct.    | Nov.    | Dec.    | Jan.    | Feb.    | Mar.    | Apr.    | May     | June    | July    | Aug.    | Sept.   |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1   | 5,010   | 4,950   | 6,020   | 7,820   | 9,760   | 12,370  | 30,370  | 64,390  | 84,360  | 64,390  | 39,500  | 19,560  |
| 2   | 5,010   | 4,950   | 6,020   | 7,900   | 9,840   | 12,470  | 31,410  | 65,050  | 83,840  | 63,510  | 38,820  | 19,330  |
| 3   | 4,950   | 4,950   | 6,080   | 7,900   | 9,920   | 12,560  | 32,310  | 66,150  | 83,080  | 62,650  | 38,000  | 18,880  |
| 4   | 4,900   | 4,950   | 6,150   | 7,970   | 10,000  | 12,650  | 33,250  | 67,050  | 82,570  | 61,790  | 37,340  | 18,540  |
| 5   | 4,840   | 4,950   | 6,210   | 8,040   | 10,080  | 12,830  | 34,310  | 68,170  | 81,810  | 61,150  | 36,690  | 18,320  |
| 6   | 4,780   | 4,950   | 6,280   | 8,110   | 10,160  | 13,010  | 35,730  | 69,310  | 81,310  | 60,310  | 35,890  | 17,990  |
| 7   | 4,780   | 4,950   | 6,340   | 8,180   | 10,240  | 13,100  | 37,340  | 70,920  | 80,580  | 59,470  | 35,100  | 17,660  |
| 8   | 4,840   | 4,950   | 6,400   | 8,250   | 10,320  | 13,290  | 38,820  | 72,320  | 80,060  | 58,640  | 34,460  | 17,340  |
| 9   | 4,900   | 4,950   | 6,400   | 8,330   | 10,480  | 13,480  | 40,340  | 73,740  | 79,320  | 57,810  | 33,690  | 16,910  |
| 10  | 5,010   | 4,950   | 6,470   | 8,400   | 10,730  | 13,680  | 42,410  | 75,410  | 78,820  | 56,990  | 33,070  | 16,490  |
| 11  | 5,120   | 4,950   | 6,530   | 8,470   | 10,820  | 13,860  | 44,000  | 77,100  | 78,080  | 56,180  | 32,310  | 15,960  |
| 12  | 5,180   | 4,950   | 6,530   | 8,620   | 10,900  | 14,060  | 45,980  | 78,820  | 77,350  | 55,370  | 31,710  | 15,550  |
| 13  | 5,180   | 5,010   | 6,600   | 8,700   | 10,980  | 14,250  | 47,450  | 80,300  | 76,860  | 54,570  | 30,960  | 15,140  |
| 14  | 5,120   | 5,070   | 6,660   | 8,770   | 11,070  | 14,450  | 48,570  | 81,560  | 76,380  | 53,770  | 30,230  | 14,650  |
| 15  | 5,120   | 5,120   | 6,730   | 8,770   | 11,150  | 14,550  | 49,890  | 82,570  | 75,650  | 52,990  | 29,640  | 14,250  |
| 16  | 5,120   | 5,180   | 6,790   | 8,840   | 11,150  | 14,650  | 51,040  | 83,330  | 74,930  | 52,200  | 28,790  | 13,860  |
| 17  | 5,120   | 5,180   | 6,790   | 8,840   | 11,150  | 14,750  | 52,010  | 83,840  | 74,450  | 51,420  | 28,220  | 13,580  |
| 18  | 5,120   | 5,240   | 6,860   | 8,920   | 11,230  | 14,840  | 52,790  | 84,360  | 73,500  | 50,470  | 27,660  | 13,290  |
| 19  | 5,120   | 5,300   | 6,930   | 8,920   | 11,320  | 15,040  | 53,770  | 84,870  | 72,790  | 49,700  | 26,970  | 13,010  |
| 20  | 5,120   | 5,300   | 7,000   | 8,980   | 11,320  | 15,250  | 54,570  | 85,120  | 72,090  | 48,950  | 26,290  | 12,740  |
| 21  | 5,120   | 5,420   | 7,060   | 9,070   | 11,400  | 15,660  | 55,570  | 85,380  | 71,390  | 48,010  | 25,620  | 12,470  |
| 22  | 5,120   | 5,420   | 7,130   | 9,070   | 11,490  | 15,960  | 56,180  | 85,380  | 70,690  | 47,080  | 24,960  | 12,020  |
| 23  | 5,120   | 5,530   | 7,200   | 9,150   | 11,580  | 16,490  | 57,600  | 85,120  | 70,000  | 46,350  | 24,430  | 11,580  |
| 24  | 5,070   | 5,590   | 7,270   | 9,220   | 11,670  | 17,770  | 58,900  | 85,120  | 69,310  | 45,440  | 23,920  | 11,150  |
| 25  | 5,070   | 5,660   | 7,400   | 9,220   | 11,760  | 18,990  | 59,880  | 85,120  | 68,630  | 44,540  | 23,410  | 10,820  |
| 26  | 5,070   | 5,720   | 7,470   | 9,300   | 11,930  | 20,720  | 60,730  | 85,120  | 67,950  | 43,640  | 22,900  | 10,480  |
| 27  | 5,070   | 5,780   | 7,470   | 9,380   | 12,100  | 22,410  | 61,580  | 84,870  | 67,270  | 42,760  | 22,410  | 10,160  |
| 28  | 5,070   | 5,840   | 7,540   | 9,450   | 12,190  | 24,430  | 62,220  | 84,870  | 66,600  | 42,060  | 21,920  | 9,760   |
| 29  | 5,070   | 5,900   | 7,610   | 9,530   | 12,280  | 26,560  | 63,080  | 84,870  | 65,930  | 41,370  | 21,190  | 9,380   |
| 30  | 5,010   | 5,960   | 7,610   | 9,610   | -----   | 28,080  | 63,950  | 84,870  | 65,050  | 40,680  | 20,720  | 8,980   |
| 31  | 4,950   | -----   | 7,680   | 9,680   | -----   | 29,360  | -----   | 84,610  | -----   | 40,000  | 20,020  | -----   |
| (†) | 4,838.0 | 4,839.7 | 4,842.3 | 4,845.0 | 4,848.1 | 4,862.8 | 4,882.0 | 4,890.7 | 4,882.5 | 4,869.6 | 4,855.6 | 4,844.1 |
| (‡) | -60     | +1,010  | +1,720  | +2,000  | +2,600  | +17,080 | +34,590 | +20,660 | -19,560 | -25,050 | -19,980 | -11,040 |

Calendar year 1959..... † -4,160

Water year 1959-60..... ‡ +3,970

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

1393. Wheeler Creek near Huntsville, Utah

Location.--Lat 41°15'15", long 111°50'35", in NW¼SE¼ sec.16, T.6 N., R.1 E., on right bank 150 ft upstream from mouth, 150 ft downstream from culvert under State Highway 39, 250 ft downstream from Pine View Dam on Ogden River, 3¼ miles west of Huntsville, and 6 miles northeast of Ogden.

Drainage area.--11.1 sq mi.

Records available.--October 1958 to September 1960.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,800 ft (from topographic map).

Extremes.--1958-59: Maximum discharge during water year, 45 cfs Apr. 27 (gage height, 2.04 ft); minimum daily, 0.4 cfs Dec. 5-8.  
1959-60: Maximum discharge during water year, 51 cfs Apr. 6 (gage height, 2.10 ft, from graph based on partial gage-height record); minimum daily, 0.2 cfs for several days.

Remarks.--Records good except those for periods of doubtful, fragmentary, or no gage-height record or when water was bypassing gage in pipeline, which are fair. Records include flow diverted around station by city of Ogden pipeline.

Rating table, Oct. 1, 1958, to Sept. 30, 1960 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.0 | 0.2 | 1.4 | 5.7 |
| 1.1 | .7  | 1.5 | 9.5 |
| 1.2 | 1.6 | 1.7 | 20  |
| 1.3 | 3.1 | 1.9 | 34  |

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                                                        |      | 0.7   | 0.8  | 0.9  | 0.6   | 0.8  | f6.0  | 6.7   | 12    | 1.5  |      |       |
| 2                                                        |      | .6    | .7   | .9   | .6    | .9   | f12   | 5.7   | 12    | 1.0  |      |       |
| 3                                                        | (*)  | .6    | .5   | .9   | .8    | .9   | f15   | 5.7   | 13    | 1.3  |      |       |
| 4                                                        |      | .6    | .5   | .8   | .6    | .9   | 16    | 6.0   | 13    | 1.2  |      |       |
| 5                                                        |      | .7    | .4   | .9   | .6    | .9   | 16    | 5.7   | 14    | 1.2  |      |       |
| 6                                                        |      | .7    | .4   | .9   | .6    | .9   | 16    | 5.1   | 14    | 1.1  |      |       |
| 7                                                        |      | .7    | .4   | .9   | .6    | .9   | 12    | 5.1   | 14    | *1.0 |      |       |
| 8                                                        |      | .7    | .4   | .9   | .6    | .8   | 7.1   | 4.8   | 14    | 1.0  |      |       |
| 9                                                        |      | .7    | .5   | .9   | .5    | 1.0  | 4.8   | 5.7   | 14    | .9   |      |       |
| 10                                                       |      | .7    | .5   | .9   | .5    | 1.0  | 4.0   | 6.7   | 12    | .9   | (*)  |       |
| 11                                                       |      | .7    | .9   | .9   | .5    | *.9  | 3.8   | 7.1   | *7.8  | .8   |      |       |
| 12                                                       | 0.7  | .7    | 1.2  | *.8  | *.6   | .9   | 3.8   | *7.8  | 7.1   | .8   |      |       |
| 13                                                       |      | .7    | .9   | .8   | .5    | f1.0 | 4.0   | 9.5   | 6.7   | .8   |      |       |
| 14                                                       |      | 1.3   | .8   | .8   | .5    | f1.0 | *4.3  | 12    | 6.7   | .8   |      |       |
| 15                                                       |      | 1.0   | .8   | .8   | .6    | .9   | 4.0   | 12    | 7.1   | .8   |      |       |
| 16                                                       |      | .8    | .8   | .8   | .7    | .9   | 3.3   | 13    | 6.7   | .7   |      |       |
| 17                                                       |      | .7    | *.8  | .8   | .6    | 1.0  | 2.9   | 13    | 5.7   | .7   |      |       |
| 18                                                       |      | .7    | .8   | .8   | .8    | 1.0  | 3.6   | 12    | 5.4   | .7   |      |       |
| 19                                                       |      | *.8   | .8   | .8   | .8    | f1.2 | 3.3   | 10    | 5.1   |      |      |       |
| 20                                                       |      | .8    | .8   | .8   | .8    | 1.0  | 3.3   | 9.1   | 4.5   |      |      |       |
| 21                                                       |      | .8    | .8   | .7   | .8    | 1.0  | 3.6   | 8.6   | 4.0   |      |      |       |
| 22                                                       | (*)  | .8    | .8   | .8   | .8    | 1.6  | 3.8   | 8.6   | 3.6   |      |      |       |
| 23                                                       | .6   | .8    | .8   | .8   | .8    | 3.1  | 3.8   | 8.2   | 3.1   |      |      |       |
| 24                                                       | .6   | .8    | .8   | .7   | .7    | f3.1 | 4.0   | 8.6   | 2.8   |      |      |       |
| 25                                                       | .6   | .8    | .8   | .8   | .7    | f2.6 | 4.0   | 9.5   | 2.8   | .7   |      |       |
| 26                                                       | .7   | .7    | .7   | .8   | .8    | 3.6  | 26    | 10    | 2.9   |      |      |       |
| 27                                                       | .7   | .8    | .8   | .7   | .8    | 3.8  | *30   | 12    | 3.8   |      |      |       |
| 28                                                       | .7   | .6    | .8   | .7   | .8    | 2.4  | *16   | 11    | 2.8   |      |      |       |
| 29                                                       | .8   | .6    | .7   | .7   | -     | 2.6  | 11    | 11    | 2.4   |      |      |       |
| 30                                                       | .8   | .6    | .7   | .7   | ----- | 2.4  | 7.8   | 12    | 1.8   |      |      |       |
| 31                                                       | .7   | ----- | .9   | .6   | ----- | 3.8  | ----- | 11    | ----- |      |      |       |
| Total                                                    | 21.6 | 22.2  | 22.3 | 25.0 | 18.6  | 49.0 | 255.2 | 273.2 | 224.8 | 26.3 | 21.7 | 21.0  |
| Mean                                                     | 0.70 | 0.74  | 0.72 | 0.81 | 0.66  | 1.58 | 8.51  | 8.81  | 7.49  | 0.85 | 0.70 | 0.70  |
| Ac-ft                                                    | 43   | 44    | 44   | 50   | 37    | 97   | 506   | 542   | 446   | 52   | 43   | 42    |
| Calendar year 1959: Max - Min - Mean - Ac-ft -           |      |       |      |      |       |      |       |       |       |      |      |       |
| Water year 1959-60: Max 30 Min 0.4 Mean 2.69 Ac-ft 1,950 |      |       |      |      |       |      |       |       |       |      |      |       |

\* Discharge measurement made on this day.

f Fragmentary gage-height record; discharge computed from partly estimated gage heights.

Note.--Water bypassed gage in pipeline Oct. 1-22, July 19 to Sept. 30; discharge estimated on basis of 4 discharge measurements, trend of flow, and records for nearby streams.

## WEBER RIVER BASIN

1393. Wheeler Creek near Huntsville, Utah--Continued

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                       | e0.8 | 0.8   |      | 0.5  | 0.2   | 0.2   | 7.8   | 10    | 18    | 4.5  | 2.1  | 1.6   |
| 2                       | e.8  | .8    |      | .5   | .2    | .2    | 7.4   | 10    | 17    | 4.3  | 2.0  | 1.3   |
| 3                       | .8   | .8    |      | .5   | .2    | .2    | d14   | 14    | 17    | 4.3  | 1.8  | 1.3   |
| 4                       | .8   | .8    |      | .5   | .2    | .3    | d26   | *16   | *17   | 4.0  | 1.8  | 1.5   |
| 5                       | .8   | .8    | a0.5 | .5   | .2    | .3    | d29   | 16    | 16    | 3.8  | 2.0  | 1.4   |
| 6                       | .8   | .6    |      | .5   | .2    | .8    | d31   | 14    | 15    | 3.6  | 1.8  | 1.3   |
| 7                       | .8   | .6    | (*)  | .5   | .2    | 1.6   | *d31  | 16    | 15    | 3.8  | 1.7  | 1.3   |
| 8                       | .8   | .6    |      | .4   | .3    | 4.8   | 32    | 17    | 15    | 3.6  | 1.7  | 1.2   |
| 9                       | 1.5  | .6    | *.5  | .4   | 1.1   | 5.1   | d30   | 16    | 15    | 3.6  | 1.7  | 1.2   |
| 10                      | 1.4  | .6    | .5   | .4   | .9    | 3.1   | d29   | 21    | 13    | 3.8  | 1.6  | 1.2   |
| 11                      | .9   | .6    | .4   | .4   | .8    | a2.0  | d26   | 24    | 12    | 3.3  | 1.6  | 1.2   |
| 12                      | .9   | .6    | .5   | .4   | 1.0   | a1.0  | d22   | *27   | 12    | 2.9  | 1.5  | 1.1   |
| 13                      | .8   | .6    | .5   | .4   | .7    | a.8   | d20   | 28    | 12    | 2.8  | 1.5  | 1.1   |
| 14                      | .8   | .6    | .4   | *.4  | .3    | a.7   | 18    | 28    | 11    | 2.8  | 1.5  | 1.1   |
| 15                      | .8   | .5    | .4   | .4   | .3    | a.7   | 16    | 26    | 10    | 2.6  | 1.5  | 1.1   |
| 16                      | .8   | .6    | .4   | .4   | .2    | a.7   | 14    | 26    | 10    | 2.6  | 1.5  | 1.1   |
| 17                      | .8   | .5    | .5   | .3   | .2    | *.7   | 12    | 26    | 10    | 2.6  | *1.5 | 1.2   |
| 18                      | .8   | .5    | .5   | .3   | .2    | .7    | 12    | 26    | 8.6   | 2.6  | 1.5  | 1.2   |
| 19                      | .8   | *.5   | .5   | .2   | .2    | 1.3   | 14    | 23    | 8.6   | 2.6  | 1.5  | 1.1   |
| 20                      | .8   |       | .5   | .2   | .2    | 2.8   | 12    | 20    | 8.2   | 2.4  | 1.4  | 1.0   |
| 21                      | .8   |       | .5   | .2   | .2    | 5.7   | 12    | 18    | *7.4  | *2.4 | 1.4  | 1.0   |
| 22                      | *.8  |       | .5   | .2   | .2    | 10    | 14    | 18    | 7.1   | 2.4  | 1.5  | 1.0   |
| 23                      | .8   |       | .5   | .2   | *.2   | 15    | 17    | 18    | 6.7   | 2.3  | 1.5  | 1.0   |
| 24                      | .8   |       | .5   | .2   | .2    | 19    | 16    | 16    | 6.4   | 2.3  | 1.5  | 1.0   |
| 25                      | .8   | a.5   | .7   | .2   | .2    | *22   | 14    | *16   | 5.7   | 2.3  | 1.4  | 1.0   |
| 26                      | .8   |       | .8   | .2   | .2    | 24    | 14    | 17    | 5.7   | 2.1  | 1.4  | 1.0   |
| 27                      | .8   |       | .6   | .2   | .2    | 28    | *13   | 18    | 5.7   | 2.1  | 1.4  | *.9   |
| 28                      | .8   |       | .5   | .2   | .3    | 28    | 14    | 17    | 5.4   | 2.1  | 1.4  | .8    |
| 29                      | .8   |       | .5   | .2   | .3    | 18    | 12    | 16    | 5.1   | 2.1  | 1.3  | .9    |
| 30                      | .8   |       | .6   | .2   | ----- | 14    | 11    | 16    | 4.8   | 2.1  | 1.3  | .8    |
| 31                      | .8   | ----- | .5   | .2   | ----- | 12    | ----- | 17    | ----- | 2.1  | 1.3  | ----- |
| Total                   | 26.3 | 17.5  | 15.8 | 10.3 | 9.8   | 223.7 | 540.2 | 591   | 320.4 | 90.8 | 48.6 | 33.8  |
| Mean                    | 0.85 | 0.58  | 0.51 | 0.33 | 0.34  | 7.22  | 18.0  | 19.1  | 10.7  | 2.93 | 1.57 | 1.13  |
| Ac-ft                   | 52   | 35    | 31   | 20   | 19    | 444   | 1,070 | 1,170 | 636   | 180  | 96   | 67    |
| Calendar year 1959: Max | 30   |       |      |      |       |       |       |       |       |      |      |       |
| Water year 1959-60: Max | 32   |       |      |      |       |       |       |       |       |      |      |       |
|                         |      |       |      | Min  | -     | Mean  | 2.67  | Ac-ft | 1,930 |      |      |       |
|                         |      |       |      | Min  | 0.2   | Mean  | 5.27  | Ac-ft | 3,820 |      |      |       |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, and records for nearby streams.

d Doubtful gage-height record; discharge computed from reconstructed gage-height graph based on recorder graph.

e Water bypassed gage in pipeline; discharge estimated on basis of records for nearby streams.

## 1410. Weber River near Plain City, Utah

Location.--Lat 41°16'42", long 112°05'30", in NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.8, T.6 N., R.2 W., or right bank at highway bridge, 1 mile downstream from Fourmile Creek, 1½ miles south of Plain City, and 6 miles upstream from mouth.

Drainage area.--2,060 sq mi, approximately.

Records available.--January 1904 to September 1960. January 1904 to May 1905 in reports of State engineer; monthly discharge only, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,210 ft (from topographic map). Prior to Nov. 12, 1914, staff gage and Nov. 12, 1914, to Aug. 29, 1949, chain gage, at same site and datum.

Extremes.--Maximum discharge during year, 1,680 cfs Mar. 9 (gage height, 8.37 ft); minimum recorded, 13 cfs July 18.

1904-60: Maximum discharge, 10,100 cfs May 6, 1952 (gage height, 19.01 ft); practically no flow during latter part of several summers since 1915.

Remarks.--Records good except those for periods of no gage-height record, which are fair. During summer months practically entire flow is diverted for irrigation above station. Flow regulated by Rockport, Echo, East Canyon, and Pine View Reservoirs (see p. 65, 67, 76). Records of chemical analyses for the water year 1960 are given in WSP 1744.

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     | 463   | 135   | 115   | 106   | a120  | 134    | 463    | 250   | 52         | a21   | 43    | 40    |
| 2     | 423   | 136   | 120   | 103   | a120  | 128    | 406    | 218   | 56         | a21   | 41    | 35    |
| 3     | 228   | 151   | 122   | 94    | a120  | 124    | 392    | 279   | 62         | 21    | 39    | 58    |
| 4     | 153   | 151   | 119   | 93    | a120  | 188    | 454    | 354   | 58         | a20   | 30    | 56    |
| 5     | 155   | 156   | 103   | 90    | a120  | 233    | 535    | 389   | 46         | a19   | 29    | 65    |
| 6     | 139   | 153   | 95    | 97    | a120  | 303    | 671    | 360   | 52         | 20    | 35    | 74    |
| 7     | 120   | 159   | 95    | 103   | a120  | 650    | 789    | 385   | 41         | a19   | 33    | 63    |
| 8     | 122   | 153   | 94    | 107   | a230  | 1,135  | 757    | 485   | 77         | a17   | 41    | 51    |
| 9     | 129   | 150   | *88   | 108   | a500  | 1,230  | 778    | 496   | 90         | a17   | 51    | 40    |
| 10    | 196   | 139   | 106   | 119   | a320  | 662    | 818    | *410  | 72         | 18    | 39    | 48    |
| 11    | 176   | 135   | 114   | 152   | a250  | 420    | 871    | 258   | 62         | 20    | 33    | 56    |
| 12    | 152   | 131   | 111   | 163   | a200  | 352    | 868    | a180  | 51         | 18    | 32    | 67    |
| 13    | 157   | 118   | 104   | 144   | a180  | 352    | 752    | a130  | 48         | 23    | 30    | 58    |
| 14    | 147   | 117   | 109   | 133   | a170  | 361    | *680   | a90   | 30         | 25    | 34    | 53    |
| 15    | 138   | 112   | 105   | *143  | a160  | 318    | 630    | a66   | 26         | 28    | 35    | 55    |
| 16    | 128   | 118   | 106   | 128   | a158  | 281    | 563    | a50   | (*)<br>a23 | 23    | 42    | 55    |
| 17    | 135   | 119   | 96    | 109   | a160  | 277    | 480    | a32   |            | 16    | 58    | 50    |
| 18    | 131   | 120   | 91    | 101   | a160  | *265   | 412    | *a32  |            | 13    | *46   | 48    |
| 19    | 134   | 118   | 93    | 103   | 163   | 308    | 361    | 61    |            | 14    | 42    | 48    |
| 20    | 138   | *119  | 94    | 114   | 166   | 398    | 332    | 59    |            | 14    | 41    | 48    |
| 21    | *138  | 120   | 108   | 112   | 156   | 604    | 284    | a30   |            | *15   | 41    | 55    |
| 22    | 119   | 119   | 106   | 110   | 155   | 683    | 345    | a30   |            | 15    | 42    | 53    |
| 23    | 116   | 123   | 107   | 115   | *146  | 712    | 595    | a30   |            | 21    | 71    | 58    |
| 24    | 110   | 120   | 107   | 117   | 124   | 730    | 590    | a30   |            | 18    | 65    | 61    |
| 25    | 107   | 120   | 169   | 128   | 133   | 722    | 469    | *a30  |            | 16    | 59    | 50    |
| 26    | 105   | 117   | 144   | 146   | 143   | 742    | 389    | 33    | 25         | 16    | 55    | *47   |
| 27    | 100   | 114   | 116   | 159   | 128   | 826    | 298    | a30   |            | 16    | 55    | 48    |
| 28    | 109   | 114   | 105   | 150   | 120   | 982    | 279    | 53    |            | 19    | 59    | 49    |
| 29    | 109   | 112   | 107   | a140  | 116   | 796    | *365   | 61    |            | 18    | 27    | 52    |
| 30    | 126   | 115   | 99    | a130  | ----- | 593    | 299    | 53    |            | 25    | 31    | 51    |
| 31    | 140   | ----- | 108   | a120  | ----- | 535    | -----  | *50   |            | 25    | 39    | ----- |
| Total | 4,843 | 3,864 | 3,358 | 3,737 | 4,878 | 16,044 | 15,925 | 5,014 | 1,170      | 591   | 1,318 | 1,612 |
| Mean  | 156   | 129   | 108   | 121   | 168   | 518    | 531    | 162   | 39.0       | 19.1  | 42.5  | 53.7  |
| Ac-ft | 9,610 | 7,660 | 6,660 | 7,410 | 9,680 | 31,820 | 31,590 | 9,950 | 2,320      | 1,170 | 2,610 | 3,200 |

Calendar year 1959: Max 627 Min 13 Mean 130  
 Water year 1959-60: Max 1,230 Min 13 Mean 170  
 Ac-ft 93,990  
 Ac-ft 123,700

\* Discharge measurement made on this day.  
 a No gage-height record; discharge estimated on basis of 4 discharge measurements, recorded range in stage, and records for Weber River at Gateway.

## 1415. Holmes Creek near Kaysville, Utah

Location.--Lat 41°03'18", long 111°53'40", in NE $\frac{1}{4}$  sec.25, T.4 N., R.1 W., on left bank 2 miles northeast of Kaysville.

Drainage area.--2.49 sq mi.

Records available.--May 1950 to September 1960.

Gage.--Water-stage recorder and concrete control. Datum of gage is 5,095.1 ft above mean sea level, unadjusted.

Average discharge.--10 years, 3.69 cfs (2,670 acre-ft per year).

Extremes.--Maximum discharge during year, 15 cfs May 13; maximum gage height, 1.71 ft Jan. 17 (backwater from ice); minimum discharge, 0.7 cfs Feb. 13.  
1950-60: Maximum discharge, 36 cfs May 3, 1952 (gage height, 1.13 ft); no flow for part of several days in 1951, 1955.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Discharge measurements generally made twice a month. No diversion above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.4 | 0.8 | 0.7 | 6.6 |
| .5  | 1.8 | .8  | 12  |
| .6  | 3.4 | .9  | 19  |

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     | a1.7 | 1.6   | 1.3  | 1.4  | 1.5   | 1.4   | 4.8   | 5.8   | 6.2   | 2.8  | 2.3  | 2.1   |
| 2     | a1.8 | 1.5   | 1.3  | 1.4  | 1.5   | 1.4   | 4.5   | 6.2   | 5.8   | 2.8  | 2.1  | 1.9   |
| 3     | a1.8 | 1.5   | 1.3  | 1.4  | 1.5   | 1.4   | 4.5   | 7.5   | 5.8   | 3.0  | 2.0  | 1.9   |
| 4     | a1.8 | 1.5   | b1.3 | 1.4  | b1.5  | 1.5   | 5.1   | 8.5   | 5.5   | 3.0  | 2.0  | 1.9   |
| 5     | a1.8 | 1.5   | b1.3 | 1.4  | 1.5   | 1.6   | 7.1   | 8.5   | 5.1   | 2.8  | 2.0  | 1.8   |
| 6     | 1.8  | 1.6   | b1.3 | 1.5  | 1.5   | 1.9   | 9.5   | 8.0   | 5.1   | 2.6  | 2.0  | 1.6   |
| 7     | 1.9  | 1.6   | b1.3 | 1.5  | 1.5   | 2.1   | 10    | 8.0   | 5.1   | 2.6  | 2.0  | 1.6   |
| 8     | 1.9  | 1.6   | b1.3 | 1.5  | 2.0   | 2.6   | 11    | 8.5   | 4.8   | 2.6  | 1.9  | 1.6   |
| 9     | 1.9  | 1.6   | b1.3 | 1.6  | 1.9   | 2.4   | 12    | 9.0   | 4.8   | 2.6  | 1.9  | 1.6   |
| 10    | 1.8  | 1.5   | 1.4  | 1.6  | 1.8   | 2.3   | 13    | 9.5   | 4.2   | 2.6  | 1.8  | 1.6   |
| 11    | 1.8  | 1.5   | 1.4  | 1.6  | 1.6   | 2.3   | 13    | 12    | 3.9   | 2.6  | 1.8  | 1.5   |
| 12    | 1.8  | 1.6   | 1.4  | 1.8  | 1.6   | 2.1   | 11    | 13    | 3.9   | 2.6  | 1.8  | 1.4   |
| 13    | 1.8  | 1.5   | 1.5  | 1.6  | 1.5   | 2.0   | 11    | 15    | 3.4   | 2.8  | 1.8  | 1.4   |
| 14    | 1.6  | 1.6   | 1.5  | 1.5  | 1.8   | 2.0   | 10    | 15    | 3.2   | 2.8  | 1.8  | 1.4   |
| 15    | 1.6  | 1.5   | 1.5  | 1.5  | 1.6   | 2.0   | 9.5   | 13    | 3.2   | 2.8  | 1.9  | 1.4   |
| 16    | 1.6  | 1.4   | 1.5  | b1.5 | 1.5   | 1.9   | 8.5   | 13    | 3.2   | 2.6  | 2.0  | 1.4   |
| 17    | 1.6  | 1.4   | 1.5  | b1.4 | 1.5   | 1.9   | 7.5   | 13    | 3.2   | 2.6  | 2.0  | 1.4   |
| 18    | 1.6  | 1.5   | 1.4  | b1.4 | 1.4   | 2.0   | 7.1   | 12    | 3.2   | 2.6  | 2.0  | 1.4   |
| 19    | 1.6  | 1.5   | 1.5  | a1.4 | 1.4   | 2.4   | 7.1   | 11    | 3.0   | 2.3  | 2.0  | 1.4   |
| 20    | 1.6  | 1.4   | 1.5  | 1.4  | 1.5   | 3.0   | 7.1   | 9.5   | 3.0   | 2.3  | 2.0  | 1.4   |
| 21    | 1.6  | 1.4   | 1.6  | 1.4  | 1.5   | 4.2   | 8.0   | 8.0   | 3.2   | 2.4  | 2.0  | 1.4   |
| 22    | 1.5  | 1.4   | 1.6  | 1.5  | 1.5   | 4.8   | 8.5   | 8.0   | 3.2   | 2.3  | 2.3  | 1.4   |
| 23    | 1.5  | 1.5   | 1.6  | 1.5  | b1.5  | 5.5   | 9.0   | 8.0   | 3.2   | 2.4  | 2.1  | 1.4   |
| 24    | 1.5  | 1.5   | 1.6  | 1.5  | b1.5  | 5.8   | 7.5   | 8.0   | 3.2   | 2.4  | 2.0  | 1.4   |
| 25    | 1.4  | 1.5   | 1.9  | 1.5  | 1.5   | 6.2   | 6.6   | 8.0   | 3.0   | 2.4  | 2.0  | 1.4   |
| 26    | 1.4  | 1.4   | 1.9  | 1.6  | 1.5   | 6.6   | 6.2   | 7.5   | 3.0   | 2.4  | 1.9  | 1.4   |
| 27    | 1.5  | b1.3  | b1.5 | 1.8  | 1.5   | 9.0   | 5.8   | 7.5   | 2.8   | 2.1  | 1.8  | 1.4   |
| 28    | 1.5  | b1.3  | b1.5 | 1.8  | 1.5   | 8.5   | 5.8   | 7.1   | 2.8   | 2.1  | 1.9  | 1.4   |
| 29    | 1.5  | b1.3  | 1.5  | 1.6  | b1.4  | 6.6   | 5.8   | 6.6   | 2.6   | 2.1  | 1.8  | 1.4   |
| 30    | 1.4  | b1.3  | 1.6  | 1.5  | ----- | 5.8   | 5.8   | 6.6   | 2.6   | 2.1  | 1.8  | 1.4   |
| 31    | 1.5  | ----- | 1.5  | 1.5  | ----- | 5.1   | ----- | 6.2   | ----- | 2.1  | 1.8  | ----- |
| Total | 51.1 | 44.3  | 45.6 | 47.0 | 45.0  | 108.3 | 242.3 | 287.5 | 115.2 | 78.2 | 60.6 | 45.7  |
| Mean  | 1.65 | 1.48  | 1.47 | 1.52 | 1.55  | 3.49  | 8.08  | 9.27  | 3.84  | 2.52 | 1.95 | 1.52  |
| Ac-ft | 101  | 88    | 90   | 93   | 69    | 215   | 481   | 570   | 228   | 155  | 120  | 91    |

Calendar year 1959: Max 7.5 Min 1.3 Mean 2.18 Ac-ft 1,580

Water year 1959-60: Max 15 Min 1.3 Mean 3.20 Ac-ft 2,320

Peak discharge (base, 10 cfs).--Apr. 11 (6 a.m.) 14 cfs (0.80 ft); May 13 (1 p.m.) 15 cfs (0.83 ft).

a No gage-height record; discharge estimated on basis of weather records and records for nearby streams.

b Stage-discharge relation affected by ice.

1420. Farmington Creek above diversions, near Farmington, Utah

Location.--Lat 41°00'05", long 111°52'25", in NE $\frac{1}{4}$  sec.18, T.3 N., R.1 E., or right bank 1.0 mile northeast of Farmington.

Drainage area.--10.0 sq mi.

Records available.--October 1949 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,100 ft (from Forest Service topographic map). Prior to Oct. 1, 1951, at site 600 ft downstream at different datum.

Average discharge.--11 years, 12.6 cfs (9,120 acre-ft per year).

Extremes.--Maximum discharge during year, 99 cfs May 8 (gage height, 1.54 ft); minimum, 1.2 cfs Dec. 5, Aug. 21, Sept. 13.  
1949-60: Maximum discharge, 282 cfs May 20, 1958 (gage height, 1.86 ft); minimum, 0.9 cfs Aug. 25, 30, 31, 1954.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Discharge measurements generally made twice a month. Records include a small transmountain diversion from Hardscrabble Creek.

Revisions.--WSP 1564: Drainage area.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |    |
|-----|-----|-----|----|
| 0.6 | 1.3 | 1.1 | 21 |
| .7  | 2.6 | 1.2 | 32 |
| .8  | 4.8 | 1.3 | 47 |
| .9  | 8.4 | 1.4 | 73 |
| 1.0 | 14  |     |    |

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     | 2.9  | 2.4   | 2.0  | 2.3  | 2.1   | 2.0   | 8.9   | 16    | 21    | 5.7   | a2.1 | 2.3   |
| 2     | 2.8  | 2.4   | 2.0  | 2.3  | 2.1   | 1.9   | 8.0   | 20    | 21    | 5.7   | a1.9 | 2.1   |
| 3     | 2.6  | 2.4   | 2.0  | 2.3  | 2.3   | 1.9   | 8.4   | 33    | 21    | 5.4   | 1.7  | 2.1   |
| 4     | 2.6  | 2.6   | 1.9  | 2.1  | 2.1   | 2.0   | 13    | 36    | 21    | 5.4   | 1.7  | 2.4   |
| 5     | 2.6  | 2.1   | 1.4  | 2.1  | 2.1   | 2.3   | 18    | 35    | 20    | 5.1   | 1.6  | 1.9   |
| 6     | 2.4  | 2.1   | 1.6  | 2.1  | 2.1   | 2.8   | 24    | 39    | 19    | 4.8   | 1.6  | 1.9   |
| 7     | 2.8  | 2.4   | 1.6  | 2.3  | 2.1   | 3.6   | 24    | 47    | 19    | 4.8   | 1.6  | 1.7   |
| 8     | 2.6  | 2.4   | 1.7  | 2.3  | 2.9   | 5.4   | 24    | 52    | 18    | 4.5   | 1.6  | 1.6   |
| 9     | 3.6  | 2.6   | 1.7  | 2.3  | 2.9   | 4.3   | 30    | 55    | 17    | 4.0   | 1.6  | 1.6   |
| 10    | 6.0  | 2.6   | 2.1  | 2.3  | 2.6   | 4.3   | 36    | 57    | 16    | 4.0   | 1.6  | 1.5   |
| 11    | 4.0  | 2.6   | 2.1  | 2.3  | 2.3   | 4.0   | 36    | 63    | 15    | 4.0   | 1.6  | 1.5   |
| 12    | 3.4  | 2.6   | 2.1  | 2.3  | 2.3   | 3.8   | 32    | 65    | 14    | a3.7  | 1.6  | 1.5   |
| 13    | 3.1  | 2.1   | 2.1  | 2.1  | 2.3   | 3.4   | 26    | 63    | 13    | a3.5  | 1.6  | 1.5   |
| 14    | 3.4  | 2.1   | 2.1  | 2.1  | 2.6   | 3.1   | 25    | 47    | 12    | a3.3  | 1.6  | 1.5   |
| 15    | 3.1  | 2.6   | 2.1  | 2.1  | 2.3   | 3.1   | 22    | 43    | 12    | a3.1  | 1.6  | 1.5   |
| 16    | 2.9  | 2.3   | 2.0  | 2.1  | 2.3   | 3.1   | 20    | 41    | 10    | a2.9  | 1.9  | 1.5   |
| 17    | 2.9  | 2.3   | 2.0  | 1.9  | 2.3   | 2.9   | 19    | 45    | 10    | a2.7  | 1.9  | 1.7   |
| 18    | 2.9  | 2.3   | 2.0  | 2.1  | 2.3   | 3.4   | 18    | 47    | 9.8   | a2.5  | 1.7  | 1.7   |
| 19    | 2.8  | 2.4   | 2.0  | 2.1  | 2.3   | 4.8   | 19    | 41    | 8.9   | 2.4   | 1.6  | 1.7   |
| 20    | 2.8  | 2.3   | 2.0  | 2.1  | 2.3   | 6.8   | 19    | 35    | 8.4   | 2.4   | 1.5  | 1.5   |
| 21    | 2.8  | 2.3   | 2.0  | 2.1  | 2.3   | 9.3   | 28    | 33    | 8.9   | 2.4   | 1.5  | 1.5   |
| 22    | 2.8  | 2.4   | 2.1  | 2.1  | 2.3   | 12    | 43    | 30    | 8.4   | 2.4   | 2.1  | 1.5   |
| 23    | 2.8  | 2.4   | 2.1  | 2.1  | 2.1   | 13    | 39    | 28    | 8.0   | 2.4   | a2.0 | a1.5  |
| 24    | 2.6  | 2.4   | 2.1  | 2.1  | 2.1   | 15    | 26    | 26    | 7.5   | 2.4   | a1.8 | a1.5  |
| 25    | 2.6  | 2.1   | 2.4  | 2.1  | 2.1   | 17    | 20    | 24    | 7.1   | 2.3   | a1.8 | a1.5  |
| 26    | 2.6  | 1.7   | 2.3  | 2.3  | 2.1   | 19    | 17    | 24    | 6.8   | 2.1   | a1.8 | a1.5  |
| 27    | 2.8  | 1.6   | 2.0  | 2.3  | 2.0   | 20    | 15    | 24    | 6.4   | 2.0   | a1.7 | a1.5  |
| 28    | 2.8  | 1.7   | 2.4  | 2.3  | 2.0   | 18    | 14    | 23    | 6.4   | 2.0   | 1.7  | a1.5  |
| 29    | 2.6  | 1.9   | 2.3  | 2.3  | 2.0   | 14    | 13    | 23    | 6.0   | 2.0   | 1.6  | a1.5  |
| 30    | 2.6  | 2.0   | 2.3  | 2.1  | ----- | 12    | 13    | 22    | 5.7   | 2.0   | 1.6  | a1.5  |
| 31    | 2.4  | ----- | 2.3  | 2.1  | ----- | 10    | ----- | 22    | ----- | a2.0  | 1.5  | ----- |
| Total | 91.6 | 68.1  | 62.8 | 67.5 | 65.6  | 229.2 | 658.3 | 1,159 | 377.3 | 103.9 | 52.7 | 49.7  |
| Mean  | 2.95 | 2.27  | 2.03 | 2.18 | 2.26  | 7.39  | 21.9  | 37.4  | 12.6  | 3.35  | 1.70 | 1.66  |
| Ac-ft | 182  | 135   | 125  | 134  | 130   | 455   | 1,310 | 2,300 | 748   | 206   | 105  | 99    |

Calendar year 1959: Max 52 Min 1.4 Mean 7.04 Ac-ft 5,090

Water year 1959-60: Max 65 Min 1.4 Mean 8.16 Ac-ft 5,930

Peak discharge (base, 80 cfs).--May 8 (9 p.m.) 99 cfs (1.54 ft).

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for nearby streams.

## TRIBUTARIES BETWEEN WEBER AND JORDAN RIVERS

1425. Ricks Creek above diversions, near Centerville, Utah

Location.--Lat 40°56'25", long 111°52'00", in NW $\frac{1}{4}$  sec.5, T.2 N., R.1 E., on left bank half a mile east of alternate U. S. Highway 91 and 1.2 miles north of Centerville.

Drainage area.--2.35 sq mi.

Records available.--April 1950 to September 1960.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,840 ft (from topographic map).

Average discharge.--10 years, 2.25 cfs (1,630 acre-ft per year).

Extremes.--Maximum discharge during year, 17 cfs May 10 (gage height, 1.02 ft); minimum, 0.2 cfs Feb. 13.

1950-60: Maximum discharge, 34 cfs May 22, 1958 (gage height, 1.32 ft); minimum, 0.1 cfs Apr. 9, 1953, Feb. 3, 1955, Jan. 19, 1958, January or February 1959.

Remarks.--Records good. Discharge measurements generally made twice a month.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.5 | 0.4 | 0.9 | 8.2 |
| .6  | 1.1 | 1.0 | 13  |
| .7  | 2.5 | 1.1 | 18  |
| .8  | 4.8 |     |     |

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     | 0.8  | 0.6   | 0.5  | 0.6  | 0.6   | 0.6  | 2.1   | 4.5   | 3.0   | 1.4  | 1.0  | 0.7   |
| 2     | .9   | .7    | .5   | .5   | .6    | .6   | 2.1   | 5.4   | 3.0   | 1.4  | .9   | .7    |
| 3     | .9   | .7    | .5   | .5   | .6    | .6   | 2.3   | 5.7   | 2.6   | 1.3  | .7   | .8    |
| 4     | .9   | .7    | .5   | .5   | .6    | .6   | 2.8   | 7.1   | 2.6   | 1.3  | .7   | .7    |
| 5     | .9   | .6    | .5   | .5   | .6    | .6   | 4.0   | 7.1   | 2.6   | 1.3  | .7   | .7    |
| 6     | .8   | .6    | .6   | .5   | .6    | .8   | 5.4   | 7.1   | 2.6   | 1.3  | .6   | .7    |
| 7     | 1.0  | .6    | .6   | .6   | .6    | .9   | 5.1   | 7.8   | 2.8   | 1.3  | .6   | .7    |
| 8     | .8   | .6    | .6   | .7   | .9    | 1.3  | 5.4   | 9.1   | 2.6   | 1.2  | .6   | .7    |
| 9     | 1.0  | .6    | .6   | .7   | .9    | 1.1  | 6.0   | 11    | 2.6   | 1.2  | .6   | .7    |
| 10    | 1.0  | .6    | .7   | .7   | .6    | 1.0  | 6.4   | 15    | 2.6   | 1.2  | .6   | .7    |
| 11    | .9   | .6    | .6   | .7   | .5    | 1.0  | 5.7   | 15    | 2.6   | 1.2  | .6   | .6    |
| 12    | .8   | .5    | .6   | .7   | .5    | .9   | 5.1   | 14    | 2.5   | 1.2  | .6   | .7    |
| 13    | .8   | .5    | .6   | .7   | .4    | .8   | 4.8   | 16    | 2.5   | 1.1  | .5   | .7    |
| 14    | .8   | .4    | .6   | .7   | .6    | .8   | 4.8   | 15    | 2.4   | 1.1  | .5   | .7    |
| 15    | .8   | .5    | .7   | .7   | .5    | .7   | 4.5   | 12    | 2.3   | 1.0  | .6   | .7    |
| 16    | .7   | .5    | .7   | .6   | .5    | .8   | 4.5   | 11    | 2.1   | 1.0  | .6   | .8    |
| 17    | .7   | .4    | .6   | .6   | .5    | .8   | 4.5   | 9.5   | 2.1   | 1.0  | .6   | .7    |
| 18    | .7   | .4    | .6   | .7   | .5    | .9   | 4.5   | 8.6   | 2.0   | 1.0  | .6   | .7    |
| 19    | .6   | .4    | .7   | .7   | .5    | 1.3  | 4.5   | 7.8   | 2.0   | 1.0  | .6   | .6    |
| 20    | .6   | .4    | .6   | .7   | .5    | 1.7  | 4.5   | 6.4   | 1.8   | .9   | .5   | .6    |
| 21    | .6   | .4    | .6   | .7   | .5    | 1.8  | 4.8   | 6.0   | 1.8   | .9   | .5   | .7    |
| 22    | .6   | .4    | .6   | .7   | .5    | 2.0  | 5.1   | 5.7   | 1.8   | .9   | .7   | .7    |
| 23    | .6   | .4    | .6   | .7   | .4    | 2.0  | 5.1   | 5.7   | 1.7   | .8   | .6   | .7    |
| 24    | .6   | .4    | .6   | .6   | .4    | 2.3  | 4.8   | 5.1   | 1.7   | .8   | .6   | .7    |
| 25    | .6   | .4    | .7   | .7   | .5    | 2.6  | 4.5   | 4.8   | 1.5   | .8   | .6   | .6    |
| 26    | .6   | .4    | .7   | .6   | .5    | 3.2  | 4.5   | 4.8   | 1.5   | .7   | .6   | .6    |
| 27    | .6   | .4    | .6   | .6   | .5    | 3.7  | 4.5   | 4.5   | 1.5   | .8   | .6   | .6    |
| 28    | .6   | .5    | .6   | .6   | .5    | 3.2  | 4.5   | 4.2   | 1.5   | .8   | .6   | .6    |
| 29    | .6   | .5    | .6   | .6   | .5    | 2.5  | 4.5   | 4.0   | 1.4   | .8   | .5   | .6    |
| 30    | .6   | .5    | .6   | .6   | .6    | 2.3  | 4.5   | 3.7   | 1.4   | .8   | .5   | .6    |
| 31    | .6   | ----- | .6   | .6   | ----- | 2.1  | ----- | 3.5   | ----- | .9   | .6   | ----- |
| Total | 23.1 | 15.2  | 18.7 | 19.6 | 15.9  | 45.5 | 135.8 | 247.1 | 65.1  | 32.4 | 19.1 | 20.3  |
| Mean  | 0.75 | 0.51  | 0.60 | 0.63 | 0.55  | 1.47 | 4.53  | 7.97  | 2.17  | 1.05 | 0.62 | 0.68  |
| Ac-ft | 46   | 30    | 37   | 39   | 32    | 90   | 269   | 490   | 129   | 64   | 38   | 40    |

Calendar year 1959: Max 7.4 Min 0.4 Mean 1.28 Ac-ft 924

Water year 1959-60: Max 16 Min 0.4 Mean 1.80 Ac-ft 1,300

Peak discharge (base, 10 cfs).--May 10 (6 p.m.) 17 cfs (1.02 ft).

1430. Parrish Creek above diversions, near Centerville, Utah

Location.--Lat 40°55'25", long 111°51'50", in NW<sup>1</sup> sec.8, T.2 N., R.1 E., on right bank 1 mile northeast of Centerville.

Drainage area.--2.08 sq mi.

Records available.--October 1949 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. V-notch sharp-crested weir since October 1957. Altitude of gage is 4,600 ft (from topographic map). Prior to Oct. 1, 1957, water-stage recorder at site 500 ft downstream at different datum.

Average discharge.--11 years, 1.60 cfs (1,160 acre-ft per year).

Extremes.--Maximum discharge during year, 9.92 cfs May 11 (gage height, 1.39 ft); minimum, 0.10 cfs Aug. 20.  
1949-60: Maximum discharge, 30 cfs May 5, 1952; minimum, that of Aug. 20, 1960.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Revisions.--WSP 1394: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |      |     |      |
|-----|------|-----|------|
| 0.2 | 0.09 | 0.9 | 3.42 |
| .3  | .23  | 1.1 | 5.60 |
| .4  | .47  | 1.2 | 6.92 |
| .5  | .81  | 1.3 | 8.42 |
| .7  | 1.85 | 1.4 | 10.1 |

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     | 0.39  | a0.36 | 0.32  | 0.34  | 0.34  | 0.36  | 1.32  | 2.64   | 1.98  | 0.56  | 0.27  | 0.25  |
| 2     | .36   | .36   | .32   | .34   | .34   | .39   | 1.22  | 2.98   | 1.92  | .56   | .23   | .23   |
| 3     | .36   | a.36  | .32   | .34   | .34   | .39   | 1.27  | 3.42   | 1.78  | .53   | .21   | .29   |
| 4     | .36   | a.36  | .29   | .34   | .32   | .44   | 1.66  | 3.91   | 1.72  | .53   | .20   | .32   |
| 5     | .36   | a.36  | .29   | .34   | .32   | .53   | 2.41  | 3.81   | 1.54  | .50   | .20   | .27   |
| 6     | .34   | a.35  | .29   | .34   | .34   | .59   | 3.24  | 4.11   | 1.54  | .47   | .20   | .25   |
| 7     | .36   | a.35  | .29   | .34   | .34   | .77   | 3.33  | 4.88   | 1.60  | .44   | .18   | .25   |
| 8     | .34   | a.35  | .29   | .34   | .50   | 1.32  | 3.42  | 5.85   | 1.66  | .41   | .18   | .25   |
| 9     | .41   | a.35  | .29   | .34   | .50   | .81   | 4.22  | 6.92   | 1.54  | .41   | .18   | .23   |
| 10    | .50   | a.35  | .32   | .34   | .39   | .66   | 4.76  | 7.80   | 1.43  | .39   | .18   | .23   |
| 11    | .41   | a.34  | .32   | .34   | .36   | .56   | 4.54  | 8.74   | 1.32  | .41   | .18   | .23   |
| 12    | .39   | a.34  | .32   | .34   | .34   | .53   | 4.11  | 8.91   | 1.22  | .39   | .16   | .21   |
| 13    | .39   | a.34  | .32   | .34   | .32   | .53   | 3.71  | 8.58   | 1.17  | .36   | .16   | .20   |
| 14    | .39   | a.34  | .32   | .32   | .34   | .50   | 3.52  | 7.65   | 1.07  | .34   | .16   | .21   |
| 15    | .39   | a.34  | .32   | .32   | .36   | .47   | 3.24  | 6.92   | 1.07  | .32   | .18   | .21   |
| 16    | .36   | .34   | .32   | .32   | .36   | .47   | 2.98  | 6.37   | 1.02  | .32   | .21   | .21   |
| 17    | .36   | .34   | .32   | b.32  | .36   | .50   | 2.72  | 5.98   | .98   | .29   | .21   | .21   |
| 18    | .36   | .34   | .32   | b.32  | .36   | .56   | 2.72  | 5.60   | .94   | .27   | .20   | .20   |
| 19    | .36   | .34   | .32   | a.32  | .36   | .73   | 2.64  | 4.99   | .89   | .29   | .18   | .23   |
| 20    | .36   | .34   | .29   | a.32  | .34   | .94   | 2.64  | 4.43   | .89   | .27   | .16   | .23   |
| 21    | .36   | .34   | .32   | a.32  | .34   | 1.12  | 3.24  | 4.01   | .85   | .27   | .15   | .20   |
| 22    | a.36  | .34   | .32   | a.32  | .36   | 1.32  | 3.81  | 3.71   | .85   | .25   | .25   | .21   |
| 23    | a.36  | .34   | .32   | a.32  | .36   | 1.48  | 3.91  | 3.33   | .81   | .27   | .32   | .21   |
| 24    | a.36  | .34   | .32   | b.32  | b.36  | 1.66  | 3.42  | 3.15   | .77   | .27   | .25   | .21   |
| 25    | a.36  | .34   | .36   | b.32  | .39   | 1.85  | 3.24  | 2.98   | .70   | .25   | .25   | .20   |
| 26    | a.36  | .32   | .32   | b.33  | .39   | 2.19  | 2.98  | 2.81   | .70   | .23   | .21   | .21   |
| 27    | a.36  | .29   | .29   | b.33  | .39   | 2.49  | 2.81  | 2.81   | .66   | .23   | .21   | .21   |
| 28    | a.36  | .32   | .36   | .34   | .36   | 2.49  | 2.56  | 2.56   | .63   | .23   | .21   | .20   |
| 29    | a.36  | .32   | .34   | .34   | .36   | 1.92  | 2.49  | 2.41   | .59   | .21   | .20   | .21   |
| 30    | a.36  | .32   | .34   | .34   | ----- | 1.60  | 2.49  | 2.26   | .56   | .21   | .18   | .21   |
| 31    | a.36  | ----- | .34   | .34   | ----- | 1.37  | ----- | 2.12   | ----- | .27   | .21   | ----- |
| Total | 11.51 | 10.22 | 9.82  | 10.28 | 10.54 | 31.54 | 90.62 | 146.64 | 34.40 | 10.73 | 6.27  | 6.78  |
| Mean  | 0.371 | 0.341 | 0.317 | 0.332 | 0.363 | 1.02  | 3.02  | 4.73   | 1.15  | 0.346 | 0.202 | 0.226 |
| Ac-ft | 23    | 20    | 19    | 20    | 21    | 63    | 180   | 291    | 68    | 21    | 12    | 13    |

Calendar year 1959: Max 4.65

Min 0.18

Mean 0.780

Ac-ft 566

Water year 1959-60: Max 8.91

Min 0.16

Mean 1.04

Ac-ft 751

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

a No gage-height record; discharge estimated on basis of recorded range in stage, engineers' notes, weather records, and records for nearby streams.

b Stage-discharge relation affected by ice.

1435. Centerville Creek above diversions, near Centerville, Utah

Location.--Lat 40°55'00", long 111°51'45", in SE $\frac{1}{4}$  sec.8, T.2 N., R.1 E., or right bank 1.2 miles east of Centerville.

Drainage area.--3.15 sq mi.

Records available.--October 1949 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder and concrete rating flume. Altitude of gage is 4,650 ft (from topographic map).

Average discharge.--11 years, 2.66 cfs (1,930 acre-ft per year).

Extremes.--Maximum daily discharge during year, 7.9 cfs Apr. 10; minimum daily, 0.7 cfs for several days.

1949-60: Maximum daily discharge, 30 cfs May 6, 7, 1952; minimum daily, 0.5 cfs Mar. 16, 1955.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Discharge measurements generally made twice a month. Record includes flow of one ditch which diverts water about a quarter of a mile above station.

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                                                         |      | 1.0   | 1.0  | 1.1  | 0.9   | 1.0  | a2.1  | 2.8   | 3.5   | 1.3  | a0.8 | 0.9   |
| 2                                                         |      | 1.0   | 1.0  | 1.1  | 1.9   | 1.0  | a2.0  | 2.8   | 3.8   | 1.2  | .8   | .9    |
| 3                                                         | al.0 | 1.0   | 1.0  | 1.1  | 1.0   | 1.0  | a2.4  | 3.4   | 3.4   | 1.3  | .8   | 1.0   |
| 4                                                         |      | 1.0   | .9   | 1.1  | 1.0   | 1.1  | a2.8  | a3.7  | 3.2   | a1.3 | .8   | 1.0   |
| 5                                                         |      | .9    | .9   | 1.1  | 1.0   | 1.1  | a4.0  | a3.8  | 3.2   | 1.3  | .7   | .9    |
| 6                                                         | 1.0  | 1.0   | .9   | 1.1  | 1.0   | 1.3  | a5.0  | a3.8  | 3.2   | 1.3  | .8   | .9    |
| 7                                                         | 1.0  | 1.1   | 1.0  | 1.1  | 1.0   | 1.4  | 6.1   | a3.9  | 3.3   | 1.2  | a.8  | .9    |
| 8                                                         | 1.0  | 1.1   | 1.0  | 1.2  | 2.5   | 6.4  | a4.2  | 3.2   | 1.2   | a.8  | .8   |       |
| 9                                                         | 1.1  | 1.1   | 1.0  | 1.2  | 1.5   | 7.1  | a4.6  | 3.1   | 1.2   | a.8  | .8   |       |
| 10                                                        | 1.1  | 1.1   | 1.1  | 1.1  | 1.3   | 7.9  | a5.0  | 2.8   | 1.2   | a.8  | .8   |       |
| 11                                                        | .9   | 1.0   | 1.0  | 1.1  | 1.2   | 7.7  | 5.3   | 2.6   | 1.1   | a.8  | .9   |       |
| 12                                                        | .8   | 1.0   | 1.0  | 1.0  | 1.3   | 6.7  | 5.8   | 2.5   | 1.1   | a.8  | .9   |       |
| 13                                                        | .8   | .9    | 1.0  | al.0 | 1.0   | 1.2  | 5.8   | 6.2   | 2.3   | 1.1  | a.7  | a.8   |
| 14                                                        | .8   | 1.0   | 1.1  | 1.1  | 1.2   | 5.1  | 6.2   | 2.2   | 1.0   | a.7  | .8   |       |
| 15                                                        | .9   | 1.1   | 1.1  | 1.1  | 1.1   | 1.1  | 4.7   | 6.2   | 2.1   | 1.0  | a.7  | .9    |
| 16                                                        | .9   | 1.1   | 1.1  | 1.1  | 1.1   | 1.1  | 4.3   | 5.9   | 2.1   | 1.0  | a.7  | .9    |
| 17                                                        | .9   | 1.1   | 1.1  | 1.1  | 1.1   | 1.2  | 3.7   | 5.6   | 2.0   | 1.1  | a.7  | .9    |
| 18                                                        | .9   | 1.1   | 1.1  | 1.1  | 1.1   | 1.3  | 3.2   | 5.7   | 2.0   | .9   | a.7  | .9    |
| 19                                                        | .9   | 1.1   | 1.1  | 1.1  | 1.1   | 1.4  | 3.1   | 4.7   | 1.9   | .9   | .7   | a.9   |
| 20                                                        | .9   | 1.0   | 1.1  | .9   | 1.1   | 1.6  | 3.0   | 4.5   | 1.8   | .9   | .7   | a.9   |
| 21                                                        | .9   | 1.0   | 1.1  | .9   | 1.1   | 1.8  | 3.2   | 4.1   | 1.8   | .9   | a.7  | a.9   |
| 22                                                        | 1.0  | 1.0   | 1.1  | .9   | 1.1   | 1.9  | 3.6   | 4.0   | 1.6   | .9   | a.7  | a.9   |
| 23                                                        | 1.0  | 1.1   | 1.1  | .9   | 1.1   | 2.1  | 3.8   | 3.9   | 1.7   | .9   | a.7  | a.9   |
| 24                                                        | 1.0  | 1.1   | 1.1  | .9   | 1.1   | 2.1  | 3.5   | 3.8   | 1.7   | .9   | a.7  | a.9   |
| 25                                                        | 1.0  | 1.1   | 1.2  | 1.0  | 1.0   | 2.4  | 3.3   | 3.8   | 1.6   | .9   | a.7  | a.9   |
| 26                                                        | 1.0  | .9    | 1.1  | 1.0  | 1.0   | 2.9  | 3.2   | 3.7   | 1.5   | .8   | a.7  | .9    |
| 27                                                        | 1.0  | .9    | 1.0  | 1.0  | 1.0   | 3.3  | 3.0   | 3.7   | 1.5   | .7   | a.7  | .8    |
| 28                                                        | 1.1  | 1.1   | 1.1  | .9   | 1.0   | a3.3 | 2.9   | 3.6   | 1.4   | .8   | a.7  | .9    |
| 29                                                        | 1.1  | 1.0   | 1.1  | .9   | 1.0   | a3.0 | 2.8   | 3.7   | 1.3   | .8   | a.7  | .9    |
| 30                                                        | .9   | 1.0   | 1.2  | .9   | ----- | a2.5 | 2.8   | 3.9   | 1.3   | a.8  | a.7  | .9    |
| 31                                                        | 1.0  | ----- | 1.1  | .9   | ----- | a2.3 | ----- | 3.6   | ----- | a.8  | .7   | ----- |
| Total                                                     | 29.9 | 30.9  | 32.7 | 30.7 | 53.4  | 53.4 | 125.2 | 135.9 | 69.6  | 32.0 | 22.8 | 26.6  |
| Mean                                                      | 0.96 | 1.03  | 1.05 | 0.99 | 1.05  | 1.72 | 4.17  | 4.38  | 2.32  | 1.03 | 0.74 | 0.89  |
| Ac-ft                                                     | 59   | 61    | 65   | 61   | 60    | 106  | 248   | 270   | 138   | 63   | 45   | 53    |
| Calendar year 1959: Max. 3.7 Min - Mean 1.40 Ac-ft 1,020  |      |       |      |      |       |      |       |       |       |      |      |       |
| Water year 1959-60: Max 7.9 Min 0.7 Mean 1.69 Ac-ft 1,230 |      |       |      |      |       |      |       |       |       |      |      |       |

a No gage-height record; discharge estimated on basis of 2 discharge measurements, recorded range in stage, weather records, and records for nearby streams.

1440. Stone Creek above diversions, near Bountiful, Utah

Location.--Lat 40°53'40", long 111°50'40", in NW $\frac{1}{4}$  sec.21, T.2 N., R.1 E., on right bank 2.2 miles east of Bountiful.

Drainage area.--4.48 sq mi.

Records available.--April 1950 to September 1960.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,080 ft (from topographic map).

Average discharge.--10 years, 3.22 cfs (2,330 acre-ft per year).

Extremes.--Maximum discharge during year, 14 cfs May 13 (gage height, 1.16 ft); minimum not determined, probably occurred during period when flow was through pipeline.

1950-60: Maximum discharge, 82 cfs May 5, 1952 (gage height, 2.79 ft); no flow Oct. 5, 1951.

Remarks.--Records good except those for periods of ice effect, no gage-height record, or when flow was diverted around station by a pipeline, which are fair. Records include flow in pipeline.

Rating table, water year 1959-60, except periods of ice effect or when flow was diverted around station by pipeline (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.7 | 0.1 | 1.0 | 4.9 |
| .8  | .8  | 1.1 | 9.3 |
| .9  | 2.2 | 1.2 | 16  |

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     | 0.6  | 1.0   | 0.7  | 0.8  | 0.8   | 0.6  | 3.6   | 4.5   | *3.9  | 0.9  |      | (*)   |
| 2     | .6   | .9    | .7   |      | *.9   | *.7  | 3.3   | 4.5   | 3.6   | .9   | (**) |       |
| 3     | .6   | *1.0  | .7   |      | .9    | a.8  | 3.8   | 5.2   | 3.6   | .9   |      |       |
| 4     | .6   | 1.0   | *.7  | (*)  | .9    | a.9  | 4.5   | 6.8   | 3.1   | .9   |      |       |
| 5     | .6   | 1.0   | .7   |      | .8    | a.9  | 6.4   | 6.8   | 3.1   | *.9  |      |       |
| 6     | .6   | 1.0   | .8   |      | .7    | a.9  | 8.2   | 6.8   | 3.1   |      |      |       |
| 7     | *.7  | .9    | .8   |      | 1.7   | 2.0  | *7.8  | 7.3   | 3.3   |      |      |       |
| 8     | .6   | .9    | .7   |      | 1.3   | 3.6  | 7.3   | 8.2   | 3.1   | .7   |      | 0.3   |
| 9     | .8   | .9    | .7   |      | 1.2   | 1.9  | 7.8   | 8.8   | 2.8   |      |      |       |
| 10    | 1.0  | .9    | .7   |      | .9    | 1.7  | 8.2   | 9.3   | 3.1   |      |      |       |
| 11    | .8   | .9    | .8   |      | .8    | 1.4  | 7.3   | *10   | 2.6   |      |      |       |
| 12    | .8   | .9    | .8   |      | .7    | 1.4  | 6.8   | 10    | 2.4   |      |      |       |
| 13    | .8   | .8    | .8   |      | .7    | 1.3  | 6.8   | 13    | 2.6   | .5   |      | (*)   |
| 14    | .9   | .6    | .7   | a.8  | .7    | 1.3  | 6.4   | 12    | *2.6  |      | 0.3  |       |
| 15    | .9   | .7    | .7   |      | .7    | *1.0 | 6.0   | 12    | 2.6   |      |      |       |
| 16    | .8   | .7    | .7   |      | .6    | .9   | 5.6   | 11    | 2.4   |      |      |       |
| 17    | .9   | *.7   | *.7  |      | .6    | .8   | 5.2   | 10    | 2.2   |      |      | (*)   |
| 18    | .9   | .8    | .7   |      | .6    | .8   | 4.9   | 9.8   | 2.0   | (**) |      |       |
| 19    | *.9  | .8    | .7   | (*)  | *.6   | 1.2  | 4.9   | *9.3  | 2.0   |      |      |       |
| 20    | 1.0  | .8    | .7   |      | .7    | 1.4  | 4.9   | 7.3   | 1.9   | .4   |      |       |
| 21    | 1.0  | .8    | .7   |      | .7    | 2.0  | 5.6   | 6.8   | 1.9   |      |      |       |
| 22    | 1.0  | .8    | .7   |      | .7    | 2.4  | 6.4   | 6.0   | 1.9   |      |      |       |
| 23    | 1.0  | .8    | .7   |      | .6    | 3.3  | 6.8   | 4.9   | 1.7   |      |      |       |
| 24    | 1.2  | .8    | .7   |      |       | 3.6  | 6.0   | 4.9   | 1.6   |      |      | .2    |
| 25    | 1.2  | .8    | .9   |      |       | 4.5  | 5.2   | 4.5   | 1.4   |      |      |       |
| 26    | 1.2  | .7    | .8   | b.8  | a.6   | 5.6  | 4.9   | 4.9   | 1.3   |      |      |       |
| 27    | 1.2  | .6    | .6   | b.8  |       | 6.4  | 4.5   | 4.9   | 1.3   |      |      |       |
| 28    | 1.2  | .7    | .7   | b.8  |       | 6.0  | 4.2   | 4.9   | 1.2   |      |      |       |
| 29    | 1.2  | .7    | .7   | .9   |       | 4.9  | 4.2   | 4.2   | 1.0   | .3   |      |       |
| 30    | 1.0  | .6    | .8   | .9   |       | 4.5  | 4.2   | 4.2   | 1.0   |      |      |       |
| 31    | 1.0  | ----- | .8   | .8   | ----- | 4.2  | ----- | 3.9   | ----- |      |      |       |
| Total | 27.6 | 24.5  | 22.6 | 25.0 | 21.4  | 72.9 | 171.5 | 226.7 | 70.3  | 16.3 | 9.3  | 7.8   |
| Mean  | 0.89 | 0.82  | 0.73 | 0.81 | 0.74  | 2.35 | 5.72  | 7.31  | 2.34  | 0.53 | 0.3  | 0.26  |
| Ac-ft | 55   | 49    | 45   | 50   | 42    | 145  | 340   | 450   | 139   | 32   | 18   | 15    |

Calendar year 1959: Max 7.3 Min - Mean 1.69 Ac-ft 1,230  
 Water year 1959-60: Max 13 Min - Mean 1.90 Ac-ft 1,580

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

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

\*\* Field estimate made on this day.

a No gage-height record; discharge estimated on basis of 3 discharge measurements, weather records, and records for nearby streams.

b Stage-discharge relation affected by ice.

Note.--Water bypassed gage in pipeline July 6 to Sept. 30; discharge estimated on basis of 6 discharge measurements, records at station, computation of flow in pipe, and records for nearby streams.

## TRIBUTARIES BETWEEN WEBER AND JORDAN RIVERS

1450. Mill Creek at Mueller Park, near Bountiful, Utah

Location--Lat 40°51'50", long 111°50'10", in SE $\frac{1}{4}$  sec.33, T.2 N., R.1 E., on right bank 2 miles southeast of Bountiful.

Drainage area--8.79 sq mi.

Records available--April 1950 to September 1960.

Gage--Water-stage recorder and concrete control. Altitude of gage is 5,240 ft (from topographic map).

Average discharge--10 years, 6.37 cfs (4,610 acre-ft per year).

Extremes--Maximum daily discharge during year, 26 cfs May 12; minimum daily, 0.7 cfs Sept. 20.

1950-60: Maximum daily discharge, 140 cfs Apr. 28, 1952; minimum daily, 0.5 cfs for several days in August and September 1954.

Remarks--Records good. Discharge measurements generally made twice a month. Records include flow of pipeline which diverts about a quarter of a mile above station and is measured at diversion box by Cipolletti weirs, and an additional flow of 0.3 cfs which is diverted around this structure.

Revisions--WSP 1394: Drainage area.

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     | 1.2  | 1.2   | 1.0  | 1.1  | 1.0   | 1.1   | 7.7   | 9.9   | 14    | 3.0  | 1.5  | 1.3   |
| 2     | 1.1  | 1.2   | 1.0  | 1.0  | 1.0   | 1.1   | 7.1   | 11    | 14    | 3.0  | 1.4  | 1.1   |
| 3     | 1.1  | 1.2   | 1.0  | 1.0  | 1.2   | 1.1   | 6.5   | 12    | 13    | 3.2  | 1.4  | 1.3   |
| 4     | 1.1  | 1.2   | 1.0  | .9   | 1.0   | 1.3   | 6.2   | 16    | 12    | 3.1  | 1.3  | 1.3   |
| 5     | 1.1  | 1.2   | 1.0  | .9   | 1.0   | 1.4   | 11    | 16    | 11    | 3.0  | 1.3  | 1.0   |
| 6     | 1.0  | 1.2   | 1.0  | 1.0  | 1.0   | 1.6   | 18    | 16    | 10    | 2.8  | 1.3  | 1.0   |
| 7     | 1.1  | 1.2   | 1.2  | 1.0  | 1.0   | 2.2   | 20    | 18    | 10    | 2.8  | 1.3  | .9    |
| 8     | 1.1  | 1.2   | 1.2  | 1.0  | 1.4   | 3.5   | 19    | 20    | 10    | 2.7  | 1.1  | .9    |
| 9     | 1.1  | 1.2   | 1.2  | 1.0  | 1.5   | 2.2   | 21    | 22    | 9.6   | 2.5  | 1.1  | .9    |
| 10    | 1.2  | 1.1   | 1.2  | 1.0  | 1.3   | 1.9   | 20    | 22    | 8.6   | 2.4  | 1.1  | .9    |
| 11    | 1.1  | 1.2   | 1.2  | 1.0  | 1.3   | 1.8   | 23    | 25    | 8.0   | 2.3  | 1.1  | .9    |
| 12    | 1.1  | 1.2   | 1.2  | 1.0  | 1.3   | 1.8   | 21    | 26    | 7.4   | 2.4  | 1.0  | .9    |
| 13    | 1.1  | 1.0   | 1.2  | 1.0  | 1.3   | 1.7   | 19    | 23    | 6.7   | 2.3  | 1.0  | .8    |
| 14    | 1.0  | 1.2   | 1.2  | 1.0  | 1.3   | 1.7   | 19    | 25    | 5.5   | 2.3  | 1.0  | .8    |
| 15    | 1.1  | 1.2   | 1.0  | 1.0  | 1.3   | 1.7   | 17    | 23    | 5.5   | 2.1  | 1.0  | .8    |
| 16    | 1.1  | 1.2   | 1.0  | 1.0  | 1.3   | 1.5   | 15    | 21    | 5.5   | 2.1  | 1.3  | .8    |
| 17    | 1.1  | 1.2   | 1.0  | 1.1  | 1.1   | 1.5   | 14    | 20    | 5.3   | 1.9  | 1.1  | 1.0   |
| 18    | 1.1  | 1.2   | 1.0  | 1.0  | 1.1   | 1.6   | 12    | 18    | 5.3   | 1.7  | 1.0  | 1.0   |
| 19    | 1.3  | 1.2   | 1.0  | 1.0  | 1.1   | 2.2   | 14    | 16    | 5.1   | 2.0  | 1.0  | .8    |
| 20    | 1.3  | 1.2   | 1.2  | 1.0  | 1.1   | 2.9   | 12    | 14    | 4.9   | 1.8  | .9   | .7    |
| 21    | 1.3  | 1.2   | 1.0  | 1.0  | 1.1   | 3.7   | 13    | 13    | 4.7   | 1.8  | .9   | .8    |
| 22    | 1.3  | 1.2   | 1.2  | 1.0  | 1.1   | 5.2   | 15    | 12    | 4.5   | 1.7  | 1.1  | 1.0   |
| 23    | 1.3  | 1.2   | 1.2  | 1.0  | 1.1   | 6.2   | 17    | 12    | 4.3   | 1.7  | 1.4  | 1.0   |
| 24    | 1.3  | 1.3   | 1.2  | 1.0  | 1.1   | 7.4   | 15    | 12    | 4.3   | 1.7  | 1.3  | 1.0   |
| 25    | 1.2  | 1.3   | 1.4  | 1.2  | 1.1   | 8.8   | 13    | 12    | 4.0   | 1.4  | 1.1  | .9    |
| 26    | 1.2  | 1.1   | 1.3  | 1.2  | 1.1   | 13    | 11    | 13    | 3.9   | 1.5  | 1.1  | .8    |
| 27    | 1.3  | 1.0   | 1.1  | 1.0  | 1.1   | 15    | 11    | 12    | 3.7   | 1.5  | 1.0  | .8    |
| 28    | 1.2  | 1.0   | 1.1  | 1.0  | 1.1   | 16    | 11    | 12    | 3.7   | 1.5  | 1.0  | .8    |
| 29    | 1.2  | 1.0   | 1.1  | 1.0  | 1.1   | 13    | 10    | 12    | 3.4   | 1.5  | 1.0  | .8    |
| 30    | 1.1  | 1.0   | 1.1  | 1.0  | ----- | 11    | 9.7   | 13    | 3.2   | 1.4  | .9   | .8    |
| 31    | 1.2  | ----- | 1.1  | 1.0  | ----- | 9.0   | ----- | 14    | ----- | 1.6  | .9   | ----- |
| Total | 36.0 | 35.0  | 34.6 | 31.4 | 33.5  | 144.1 | 428.2 | 510.9 | 211.1 | 66.7 | 34.9 | 27.8  |
| Mean  | 1.16 | 1.17  | 1.12 | 1.01 | 1.16  | 4.65  | 14.3  | 16.5  | 7.04  | 2.15 | 1.13 | 0.93  |
| Ac-ft | 71   | 69    | 69   | 62   | 66    | 286   | 849   | 1,010 | 419   | 132  | 69   | 55    |

Calendar year 1959: Max 14 Min 0.6 Mean 2.95 Ac-ft 2,140  
 Water year 1959-60: Max 26 Min 0.7 Mean 4.36 Ac-ft 3,160

## 1460. Salt Creek at Nephi, Utah

Location--Lat 39°42'45", long 111°48'25", in NE¼ sec.3, T.13 S., R.1 E., on right bank 1 mile east of Nephi.

Drainage area--95.6 sq mi.

Records available--December 1950 to September 1960.

Gage--Water-stage recorder. Altitude of gage is 5,240 ft (by barometer). Prior to Nov. 6, 1952, at site 75 ft upstream at datum 1.43 ft higher.

Average discharge--9 years (1951-60), 27.6 cfs (19,980 acre-ft per year).

Extremes--Maximum discharge during year, 97 cfs May 12; minimum, 2.6 cfs Feb. 24. 1950-60: Maximum discharge, 724 cfs May 2, 1952; minimum, 1.1 cfs Dec. 13, 1951.

Remarks--Records good. No flow in Salt Creek diversion canal near Nephi during year.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |    |
|-----|-----|-----|----|
| 1.4 | 3.4 | 1.8 | 21 |
| 1.5 | 6.1 | 2.0 | 38 |
| 1.6 | 9.9 | 2.5 | 97 |

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     | 7.1   | 7.8   | 7.8   | 8.2   | 7.1   | 6.4   | 17    | 26    | 63    | 19   | 12    | 9.0   |
| 2     | 6.8   | 7.4   | 7.8   | 7.8   | 7.1   | 6.1   | 16    | 26    | 66    | 19   | 11    | 8.6   |
| 3     | 6.8   | 7.8   | 7.8   | 7.4   | 7.1   | 5.8   | 16    | 27    | *71   | 19   | 9.0   | 9.0   |
| 4     | 6.8   | 7.4   | 7.4   | 4.9   | 6.4   | 6.1   | 16    | 39    | 69    | 19   | 8.2   | 9.4   |
| 5     | 6.8   | 7.4   | 7.4   | 3.9   | 6.1   | 6.4   | 18    | 35    | 66    | 17   | 8.2   | 9.0   |
| 6     | 6.4   | 7.4   | 7.8   | 5.5   | 6.8   | 7.4   | 27    | 36    | 64    | 17   | 9.0   | 8.2   |
| 7     | 6.8   | 7.4   | 7.8   | 7.1   | 6.4   | 8.6   | 37    | 39    | 58    | 17   | 9.4   | 7.8   |
| 8     | 6.8   | 7.4   | 7.4   | 8.2   | 7.8   | 10    | *38   | 44    | 55    | 16   | 8.6   | 7.4   |
| 9     | 6.4   | 7.1   | 7.4   | 8.2   | 8.6   | 9.0   | 44    | 49    | 51    | 14   | 7.1   | 7.4   |
| 10    | 6.8   | 7.1   | 7.4   | 8.6   | 7.8   | 8.6   | 49    | *60   | 45    | 16   | 7.4   | 7.4   |
| 11    | 6.4   | 7.1   | 7.4   | 8.2   | 7.1   | 8.6   | 55    | 79    | 42    | 14   | *7.4  | 7.4   |
| 12    | 6.1   | 7.1   | 7.8   | 7.8   | 6.8   | 8.6   | 45    | 85    | *42   | 14   | 8.6   | 7.8   |
| 13    | 6.4   | 6.8   | 7.8   | 7.8   | 7.1   | 9.9   | 37    | 78    | *42   | *14  | 8.2   | 8.2   |
| 14    | 6.4   | 6.8   | 7.4   | 7.4   | 7.1   | 9.0   | 34    | 70    | 42    | 14   | 9.0   | 8.6   |
| 15    | 6.4   | 6.8   | 7.4   | 8.2   | 6.4   | 8.2   | 32    | 63    | 41    | 14   | 8.2   | 8.2   |
| 16    | 6.8   | 6.4   | *7.8  | 7.8   | 6.4   | 8.6   | 31    | 63    | 39    | 14   | 8.2   | 7.8   |
| 17    | 7.1   | 6.8   | 7.8   | 7.1   | 5.8   | 8.2   | 30    | 63    | 40    | 14   | 8.6   | 8.2   |
| 18    | 6.8   | 6.8   | 7.8   | 5.5   | 5.8   | 7.8   | 29    | 66    | 39    | 13   | 8.6   | 6.8   |
| 19    | 6.8   | *7.8  | 8.2   | 6.8   | 6.1   | 8.6   | 31    | *58   | 37    | 13   | 7.8   | 6.1   |
| 20    | 6.8   | 8.6   | 8.2   | *8.2  | 6.4   | 8.2   | 30    | 47    | 33    | 12   | 8.2   | 5.5   |
| 21    | *7.1  | 8.6   | 8.2   | 8.2   | 6.1   | 9.9   | 32    | 41    | 32    | 12   | 9.0   | 5.5   |
| 22    | 7.4   | 8.6   | 7.8   | 7.8   | 6.1   | 12    | 39    | 43    | 29    | 12   | 9.0   | 6.4   |
| 23    | 7.4   | 8.6   | 7.8   | 7.1   | 5.8   | 13    | 39    | 45    | 27    | 13   | 9.4   | 6.8   |
| 24    | 7.4   | 8.6   | 7.8   | 7.4   | 5.9   | *15   | 36    | 42    | 27    | 13   | 9.0   | 6.4   |
| 25    | 7.4   | 8.2   | 9.0   | 7.8   | *7.1  | 15    | *33   | 39    | 26    | 13   | 8.6   | 6.4   |
| 26    | 7.1   | 8.2   | 8.2   | 7.8   | 7.8   | 16    | 32    | 43    | 25    | 12   | 7.4   | 6.1   |
| 27    | 9.0   | 7.8   | 8.2   | 7.4   | 7.4   | 21    | 32    | *53   | 24    | 12   | 6.8   | 5.5   |
| 28    | 8.6   | 7.4   | 6.4   | 7.4   | 6.4   | 24    | 32    | 53    | 23    | 12   | 6.2   | 5.2   |
| 29    | 7.4   | 7.8   | 6.1   | 7.1   | 6.1   | 20    | 29    | 55    | 21    | 12   | 7.8   | 5.5   |
| 30    | 7.4   | 7.8   | 6.8   | 6.8   | ----- | 19    | 28    | 59    | 20    | 12   | 7.1   | 5.5   |
| 31    | 7.4   | ----- | 7.8   | 7.1   | ----- | 19    | ----- | 58    | ----- | 13   | 7.1   | ----- |
| Total | 217.1 | 226.8 | 237.7 | 226.5 | 194.9 | 344.0 | 964   | 1,584 | 1,259 | 445  | 262.1 | 217.1 |
| Mean  | 7.00  | 7.56  | 7.67  | 7.31  | 6.72  | 11.1  | 32.1  | 51.1  | 42.0  | 14.4 | 8.45  | 7.24  |
| Ac-ft | 431   | 450   | 471   | 449   | 387   | 682   | 1,910 | 3,140 | 2,500 | 883  | 520   | 431   |

Calendar year 1959: Max 38 Min 5.5 Mean 12.6 Ac-ft 9,140  
 Water year 1959-60: Max 85 Min 3.9 Mean 16.9 Ac-ft 12,250

\* Discharge measurement made on this day.

## 1465. Currant Creek near Goshen, Utah

Location.--Lat 39°53'05", long 111°53'05", in NW 1/4 sec. 1, T.11 S., R.1 W., on right bank 0.9 mile upstream from canal diversions and 5.4 miles south of Goshen.

Drainage area.--303 sq mi.

Records available.--August 1953 to September 1960 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 4,850 ft (from topographic map).

Average discharge.--7 years, 21.8 cfs (15,780 acre-ft per year).

Extremes.--Maximum discharge during year, 69 cfs May 9, 10 (gage height, 1.58 ft); no flow Oct. 1-11, 20, 22-28.

1953-60: Maximum discharge, 78 cfs May 13, 14, 1959 (gage height, 1.65 ft); no flow Sept. 27-30, Oct. 1-11, 20, 22-28, 1959.

Remarks.--Records good except those for period of no gage-height record, which are fair. Diversions for irrigation above station. Flow regulated by Mona (Mount Nebo) Reservoir about 1 mile above station. Spring area about half a mile below station contributes water to Currant Creek at head of canyon; a discharge of 1.5 cfs was measured Aug. 12, 1955, at point where spring flow enters creek.

Rating table, water year 1959-60 (gage height, in feet,  
and discharge, in cubic feet per second)  
(Shifting-control method used Sept. 7-19)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.1 | 0   | 0.6 | 6.8 |
| .2  | .7  | .8  | 13  |
| .3  | 1.6 | 1.0 | 22  |
| .4  | 2.8 | 1.3 | 42  |
| .5  | 4.6 | 1.7 | 81  |

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    | 21    | 1.2  |       | 5.4   | 4.6   | 6.1   | 40    | 41    | 5C    | 19    | 29    |
| 2     | 0    | 20    | 1.2  |       | 5.2   | 4.4   | 6.1   | 43    | 37    | 51    | 18    | 27    |
| 3     | 0    | 20    | 1.3  |       | 4.6   | 4.2   | 6.1   | 43    | *46   | 5F    | 18    | 23    |
| 4     | 0    | 19    | 1.2  |       | 5.0   | 4.2   | 6.1   | 48    | 46    | 51    | 18    | 21    |
| 5     | 0    | 19    | 1.1  |       | 4.6   | 4.6   | 6.1   | 50    | 43    | 5F    | 22    | 19    |
| 6     | 0    | 18    | 1.2  |       | 4.6   | 4.4   | 6.1   | 58    | 42    | 5F    | 22    | 18    |
| 7     | 0    | 18    | 1.2  |       | 4.6   | 4.4   | 6.1   | 63    | 46    | 5F    | 22    | 17    |
| 8     | 0    | 20    | a1.2 |       | 4.8   | 4.4   | 6.3   | 63    | 40    | 54    | 19    | 17    |
| 9     | 0    | 25    | a2.0 |       | 4.8   | 4.4   | 6.6   | 64    | 36    | 5F    | 17    | 15    |
| 10    | 0    | 24    | a2.0 |       | 4.6   | 4.4   | 6.6   | 68    | 36    | 4R    | 16    | 14    |
| 11    | 0    | 24    | a2.0 | a4.5  | 4.6   | 4.4   | 15    | 61    | 40    | 4F    | 13    | 13    |
| 12    | 3.0  | 24    | a2.0 |       | 4.6   | 4.4   | 20    | 64    | 41    | 34    | 23    | *13   |
| 13    | 8.8  | 24    | a3.0 |       | 4.6   | 4.4   | 20    | 65    | *41   | *31   | *27   | 22    |
| 14    | 9.0  | 22    | a3.0 |       | 4.8   | 4.4   | 20    | 65    | 41    | 31    | 28    | 23    |
| 15    | 9.0  | 22    |      |       | 4.6   | 4.4   | 20    | 65    | 41    | 28    | 29    | 16    |
| 16    | 9.3  | 19    | (*)  |       | 4.6   | 4.6   | 24    | 64    | 40    | 32    | 29    | 15    |
| 17    | 9.3  | 15    |      |       | 4.6   | 4.6   | 27    | 64    | 41    | 30    | 27    | 14    |
| 18    | 9.3  | 15    |      |       | 4.6   | 4.6   | 26    | 62    | 42    | 28    | 27    | 14    |
| 19    | 5.1  | 13    |      |       | 4.6   | 4.2   | 26    | 61    | 42    | 27    | 29    | 16    |
| 20    | 0    | *14   |      | *5.2  | 4.6   | 3.4   | 26    | 56    | 29    | 25    | 29    | 17    |
| 21    | *.5  | 15    |      |       | 5.2   | 4.6   | 3.4   | 26    | 52    | 21    | 24    | 29    |
| 22    | 0    | 15    |      |       | 5.2   | 4.6   | 3.4   | 26    | 41    | 21    | 28    | 15    |
| 23    | 0    | 15    | a4.0 |       | 5.2   | 4.8   | *3.4  | 27    | 37    | 22    | 28    | 15    |
| 24    | 0    | 15    |      |       | 5.2   | 4.6   | 3.4   | 27    | 40    | 23    | 23    | 14    |
| 25    | 0    | 15    |      |       | 5.2   | *4.6  | 3.3   | *27   | 40    | 29    | 26    | 19    |
| 26    | 0    | 16    |      |       | 5.2   | 4.6   | 3.1   | 28    | 40    | 34    | 25    | 18    |
| 27    | 0    | 15    |      |       | 5.0   | 4.6   | 3.1   | 34    | *40   | 47    | 25    | 18    |
| 28    | 0    | 15    |      |       | 5.4   | 4.8   | 3.3   | 34    | 40    | 47    | 25    | 18    |
| 29    | 2.2  | 15    |      |       | 5.6   | 5.0   | 3.1   | 34    | 41    | 50    | 24    | 20    |
| 30    | 7.1  | 10    |      |       | 5.4   |       | 3.1   | 37    | 44    | 52    | 2F    | 18    |
| 31    | 13   |       |      |       | 5.4   |       | 4.0   | 44    | 44    | 2Q    | 28    | 15    |
| Total | 85.6 | 542   | 91.6 | 148.7 | 136.2 | 124.0 | 586.2 | 1,624 | 1,157 | 1,105 | 709   | 500   |
| Mean  | 2.76 | 18.1  | 2.95 | 4.80  | 4.70  | 4.00  | 19.5  | 52.4  | 38.6  | 35.6  | 22.9  | 16.7  |
| Ac-ft | 170  | 1,080 | 182  | 295   | 270   | 246   | 1,160 | 3,220 | 2,290 | 2,190 | 1,410 | 992   |

Calendar year 1959: Max 76 Min 0 Mean 20.2 Ac-ft 14,630  
Water year 1959-60: Max 66 Min 0 Mean 18.6 Ac-ft 13,500

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of observer's notes, 2 discharge measurements, weather records, and records for nearby streams.

## 1470. Summit Creek near Santaquin, Utah

Location.--Lat 39°55'20", long 111°45'10", in NW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.30, T.10 S., R.2 E., on right bank  $3\frac{1}{2}$  miles southeast of Santaquin.

Drainage area.--14.6 sq mi.

Records available.--March 1910 to September 1916, October 1954 to September 1960.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,900 ft (from topographic map). March 1910 to September 1916 hook gage and sharp-crested weir in powerplant tailrace and staff gages and weir in main river channel at site  $2\frac{1}{2}$  miles downstream at different datums.

Average discharge.--12 years (1911-16, 1954-60), 13.4 cfs (9,700 acre-ft per year).

Extremes.--Maximum discharge during year, 65 cfs May 13 (gage height, 0.95 ft); minimum, 2.4 cfs Dec. 28.  
1910-16, 1954-60: Maximum discharge observed, 215 cfs June 3, 1957 (discharge measurement); minimum, 1.3 cfs Jan. 21, 1955.

Remarks.--Records good except those for periods of no gage-height record, which are fair.

Revisions.--WSP 1314: Drainage area at former site.

Rating table, water year 1959-60 (gage height, in feet,  
and discharge, in cubic feet per second)

|     |     |     |    |
|-----|-----|-----|----|
| 0.3 | 1.7 | 0.7 | 13 |
| .4  | 2.9 | .8  | 23 |
| .5  | 4.7 | .9  | 47 |
| .6  | 7.6 | 1.0 | 68 |

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     | 5.2   | 4.5   | 3.3  | 3.2  | 3.3   | 3.9   | 5.4   | 11    | 38    | 8.0   | 8.2   | 5.4   |
| 2     | 4.9   | 4.5   |      | 3.2  | 3.0   | 3.9   | 5.2   | 12    | 35    | 8.0   | 8.2   | 5.4   |
| 3     | 4.9   | 4.7   |      | 2.9  | 3.0   | 3.9   | 5.2   | 13    | *33   | 8.0   | 8.0   | 5.6   |
| 4     | 4.9   | 4.7   |      | 2.8  | 3.0   | 3.7   | 5.2   | 16    | 28    | 8.0   | 6.0   | 5.6   |
| 5     | 4.7   | 4.5   |      | 3.2  | 3.3   | 3.3   | 6.0   | 16    | 27    | 8.0   | 6.0   | 5.6   |
| 6     | 4.7   | 4.3   | 3.1  | 3.2  | 3.5   | 3.3   | 8.4   | 17    | 23    | 7.2   | 6.0   | 5.6   |
| 7     | 4.9   | 4.3   |      | 3.0  | 3.9   | 3.3   | 10    | 20    | 25    | 7.2   | 6.0   | 5.4   |
| 8     | 4.9   | 4.3   |      | 3.0  | 4.1   | 3.3   | 10    | 25    | 22    | 6.9   | 6.0   | 5.4   |
| 9     | 4.9   | 4.3   |      | 3.0  | 3.7   | 3.5   | 12    | 28    | 20    | 6.9   | 5.6   | 5.4   |
| 10    | 4.9   | 4.3   |      | 3.0  | 3.7   | 3.7   | 14    | *41   | 18    | 6.9   | 5.6   | 5.4   |
| 11    | 4.7   | 4.3   | 3.0  | 3.0  | 3.7   | 3.7   | 14    | 50    | 15    | 6.9   | 5.6   | 5.2   |
| 12    | 4.9   | 4.3   |      | 3.2  | 3.5   | 3.7   | 14    | 50    | 15    | 6.9   | 5.6   | 5.2   |
| 13    | 5.2   | 4.3   |      | 3.2  | 3.9   | 3.7   | 12    | 56    | *14   | *6.9  | *5.6  | 5.2   |
| 14    | 4.9   | 3.9   |      | 3.2  | 3.7   | 3.0   | 12    | 60    | 13    | 6.9   | 5.6   | 5.2   |
| 15    | 4.9   | 4.1   |      | 3.2  | 3.7   | 3.0   | 13    | 53    | 13    | 6.9   | 5.6   | 5.2   |
| 16    | 4.9   | 3.9   | *2.9 | 3.0  | 3.9   | 3.7   | 13    | 53    | 13    | 6.9   | 5.4   | 5.2   |
| 17    | 5.2   | 3.9   | 2.9  | 2.8  | 3.7   | 3.7   | 12    | 56    | 13    | 6.9   | 5.6   | 5.2   |
| 18    | 5.2   | 4.1   | 2.9  | a3.0 | 3.5   | 3.7   | 13    | 53    | 12    | 6.6   | 5.4   | 5.2   |
| 19    | 5.2   | 3.9   | 2.9  | a3.1 | 3.7   | 3.7   | 14    | *30   | 12    | 6.6   | 5.4   | 4.9   |
| 20    | 5.2   | *4.1  | 2.9  | *3.3 | 3.7   | 3.9   | 13    | 25    | 12    | 6.6   | 5.4   | 4.9   |
| 21    | *5.2  | 4.1   | 2.9  | 3.3  | 3.5   | 4.1   | 17    | 23    | 11    | 6.6   | 5.2   | 4.9   |
| 22    | 4.9   | 4.1   | 2.9  | 3.3  | 3.5   | 4.3   | 21    | 27    | 10    | 6.6   | 5.4   | 4.9   |
| 23    | 4.9   | 3.9   | 2.9  | 3.3  | 3.5   | *4.5  | 18    | 31    | 9.8   | 6.6   | 6.0   | 5.2   |
| 24    | 4.9   | 3.9   | 3.0  | 3.3  | *3.5  | 4.5   | 16    | 28    | 9.8   | 6.6   | 5.6   | 4.9   |
| 25    | 4.9   | 3.9   | 3.3  | 3.3  | 3.7   | 4.9   | *14   | 28    | 9.4   | 6.6   | 5.2   | 4.9   |
| 26    | 4.7   | 3.5   | 3.2  | 3.3  | 3.7   | 4.9   | 13    | 31    | 9.4   | 6.6   | 5.2   | 4.9   |
| 27    | 4.9   | 3.2   | 3.0  | 3.5  | 3.7   | 5.4   | 12    | 35    | 8.9   | 6.6   | 5.2   | 4.9   |
| 28    | 5.4   | 3.5   | 2.6  | 3.3  | 3.7   | 5.6   | 12    | 33    | 8.9   | 6.6   | 5.2   | 4.9   |
| 29    | 5.2   | 3.7   | 3.5  | 3.3  | 3.9   | 5.4   | 11    | 35    | 8.4   | 6.2   | 5.2   | 4.9   |
| 30    | 4.9   | 3.3   | 3.7  | 3.3  | ----- | 5.4   | 10    | 35    | 8.0   | 6.6   | 5.2   | *4.8  |
| 31    | 4.7   | ----- | 3.3  | 3.3  | ----- | 5.4   | ----- | 35    | ----- | 6.2   | 5.2   | ----- |
| Total | 153.8 | 122.3 | 95.4 | 98.0 | 104.2 | 126.0 | 355.4 | 1,026 | 494.6 | 215.0 | 173.4 | 155.4 |
| Mean  | 4.96  | 4.08  | 3.08 | 3.16 | 3.59  | 4.06  | 11.8  | 33.1  | 16.5  | 6.94  | 5.59  | 5.18  |
| Ac-ft | 305   | 243   | 189  | 194  | 207   | 250   | 705   | 2,040 | 981   | 426   | 344   | 308   |

Calendar year 1959: Max 21

Min 2.6

Mean 6.37

Ac-ft 4,610

Water year 1959-60: Max 60

Min 2.6

Mean 8.52

Ac-ft 6,190

Peak discharge (base, 30 cfs).--May 13 (2 p.m.) 65 cfs (0.95 ft); June 1 (8 p.m.) 47 cfs (0.90 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for nearby streams.

## 1475. Payson Creek above diversions, near Payson, Utah

Location.--Lat 39°58'10", long 111°41'35", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.3, T.10 S., R.2 E., on left bank a quarter of a mile above diversion dam for Strawberry Water Users Association powerplant, 5 miles southeast of Payson, and 12 miles upstream from Utah Lake.

Drainage area.--18.8 sq mi.

Records available.--July 1947 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,670 ft (by barometer).

Average discharge.--13 years, 13.1 cfs (9,480 acre-ft per year).

Extremes.--Maximum discharge during year, 109 cfs May 11 (gage height, 2.36 ft); minimum, 3.4 cfs Mar. 14.

1947-60: Maximum discharge, 465 cfs May 4, 1952 (gage height, 2.93 ft), from rating curve extended above 150 cfs on basis of logarithmic plotting; minimum recorded, 1.5 cfs Jan. 8, 1957.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow affected by several small reservoirs.

Revisions.--WSP 1634: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Jan. 21 to Feb. 2, May 1-13)

|     |     |     |    |
|-----|-----|-----|----|
| 0.8 | 3.7 | 1.4 | 25 |
| 1.0 | 7.8 | 1.6 | 39 |
| 1.2 | 15  | 2.0 | 77 |

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     | 4.8   | 4.2   | 4.2   |       | 3.7   | 4.4   | 6.4   | 16    | 18    | 9.9   | 8.7   | 4.4   |
| 2     | 4.8   | 4.1   | 4.2   |       | 3.9   | 4.4   | 6.4   | 18    | 18    | 9.9   | 8.4   | 4.4   |
| 3     | 4.6   | 4.2   | 4.2   |       | 4.1   | 4.2   | 6.4   | 24    | 17    | 9.9   | 9.0   | 4.6   |
| 4     | 4.6   | 4.4   | 4.2   |       | b4.1  | 4.4   | 7.1   | 35    | *16   | 9.6   | 11    | 4.4   |
| 5     | 4.6   | 4.2   | b4.0  |       | b4.1  | 4.4   | 9.0   | 30    | 16    | 9.6   | 11    | 4.2   |
| 6     | 4.6   | 4.4   | b3.9  |       | 4.1   | 4.8   | 12    | 32    | 16    | 9.3   | 11    | *4.2  |
| 7     | 5.0   | 4.6   | 3.9   |       | 4.1   | 5.1   | 13    | 41    | 19    | 9.3   | 11    | 4.1   |
| 8     | 4.8   | 4.6   | 3.9   |       | 4.8   | 5.1   | *15   | 54    | 18    | 9.6   | 11    | 3.9   |
| 9     | 4.8   | 4.4   | 3.9   |       | 4.4   | 4.8   | 19    | 60    | 15    | 10    | 10    | 3.9   |
| 10    | 4.8   | 4.4   | 4.1   |       | 4.4   | 4.6   | 23    | *68   | 14    | 9.9   | *10   | 3.9   |
| 11    | 4.6   | 4.4   | 4.1   | a3.9  | 4.4   | 4.6   | 23    | 72    | 13    | 9.9   | 10    | 3.9   |
| 12    | 4.4   | 4.4   | 4.1   |       | 4.4   | 4.8   | 18    | 77    | 13    | 9.6   | 9.6   | 3.7   |
| 13    | 4.4   | 4.4   | 4.2   |       | 4.2   | 4.8   | 16    | 57    | *12   | *9.0  | 9.6   | 3.7   |
| 14    | 4.4   | b4.4  | 4.2   |       | 4.2   | 4.2   | 17    | 44    | 11    | 8.1   | 9.3   | 3.7   |
| 15    | 4.4   | 4.4   | 4.2   |       | b4.3  | 4.6   | 18    | 38    | 12    | 7.3   | 9.3   | 3.7   |
| 16    | 4.4   | 4.4   | *4.1  |       | b4.4  | 4.6   | 18    | 35    | 11    | 7.1   | 9.0   | 3.9   |
| 17    | 4.4   | 4.4   |       |       | b4.4  | 4.4   | 15    | 32    | 11    | 6.9   | 9.0   | 4.1   |
| 18    | 4.4   | 4.4   |       |       | b4.4  | 4.4   | 17    | 32    | 10    | 7.1   | 8.4   | 3.9   |
| 19    | 4.4   | 4.4   |       |       | b4.4  | 4.6   | 19    | *28   | 9.9   | 8.1   | 7.8   | 4.8   |
| 20    | 4.4   | *4.4  |       |       | a4.4  | 5.0   | 19    | 26    | 9.3   | 8.1   | 7.6   | 5.3   |
| 21    | *4.6  | 4.2   |       | *3.7  | a4.4  | 5.1   | 36    | 24    | 9.3   | 8.1   | 7.6   | 5.3   |
| 22    | 4.6   | 4.2   |       | 3.6   | a4.4  | 5.3   | 40    | 24    | 9.3   | 8.1   | 8.1   | 5.5   |
| 23    | 4.6   | 4.2   |       | 3.6   | a4.4  | *6.0  | 30    | 22    | 9.3   | 7.8   | 8.1   | 5.5   |
| 24    | 4.6   | 4.2   | a3.9  | 3.6   | *4.4  | 6.2   | 21    | 24    | 9.3   | 7.6   | 7.6   | 5.3   |
| 25    | 4.6   | 4.2   |       | 3.9   | 4.4   | 6.6   | 17    | 25    | 8.7   | 7.1   | 7.3   | 5.1   |
| 26    | 4.8   | 4.2   |       | 3.9   | 4.4   | 7.3   | 15    | 23    | 9.6   | 6.6   | 6.0   | 5.0   |
| 27    | 5.1   | b4.1  |       | 3.9   | 4.4   | 7.8   | 15    | 23    | 11    | 6.4   | 4.4   | 5.0   |
| 28    | 5.5   | 4.1   |       | 3.9   | b4.4  | 7.8   | *15   | 21    | 10    | 6.4   | 4.4   | 4.6   |
| 29    | 4.8   | 4.2   |       | 3.9   | b4.4  | 6.6   | 14    | 21    | 9.9   | 6.4   | 4.4   | 4.1   |
| 30    | 4.4   | 4.2   |       | 3.7   | ----- | 6.4   | 14    | 20    | 9.9   | 7.8   | 4.2   | 3.7   |
| 31    | 4.2   | ----- |       | 3.7   | ----- | 6.4   | ----- | 19    | ----- | 9.0   | 4.2   | ----- |
| Total | 143.4 | 129.3 | 123.9 | 119.4 | 124.8 | 163.7 | 514.3 | 1,058 | 375.5 | 239.5 | 257.0 | 131.8 |
| Mean  | 4.63  | 4.31  | 4.00  | 3.85  | 4.30  | 5.28  | 17.1  | 34.1  | 12.5  | 8.37  | 8.29  | 4.39  |
| Ac-ft | 284   | 256   | 246   | 237   | 248   | 325   | 1,020 | 2,100 | 745   | 515   | 510   | 261   |

Calendar year 1959: Max 26

Min -

Mean 6.75

Ac-ft 4,880

Water year 1959-60: Max 72

Min 3.7

Mean 9.29

Ac-ft 6,750

Peak discharge (base, 80 cfs).--May 11 (6 p.m.) 109 cfs (2.36 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, trend of flow, and records for nearby streams.

b Stage-discharge relation affected by ice.

## 1485. Spanish Fork at Thistle, Utah

Location.--Lat 40°00', long 111°30', in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 29, T.9 S., R.4 E., on right bank at Thistle, 0.3 mile downstream from confluence of Soldier Fork and Thistle Creek and 2 miles upstream from Diamond Fork. Prior to June 28, 1960, at site 800 ft upstream.

Drainage area.--490 sq mi, approximately.

Records available.--January 1908 to September 1925, October 1932 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Datum of gage is 5,027.28 ft above mean sea level, datum of 1929. Prior to Nov. 21, 1912, staff gage 0.9 mile downstream at different datum. Nov. 21, 1912, to Dec. 31, 1925, staff gage at site 600 ft upstream at different datum. Jan. 1, 1933, to May 10, 1937, staff gage 800 ft upstream at different datum. May 12, 1937, to Oct. 7, 1938, staff gage and Oct. 8, 1939, to June 27, 1960, water-stage recorder at site 800 ft upstream at datum 2.42 ft higher.

Average discharge.--45 years, 90.4 cfs (65,450 acre-ft per year).

Extremes.--Maximum discharge during year, 1,240 cfs Sept. 5 (gage height, 7.31 ft), from rating curve extended above 40 cfs on basis of slope-area measurement of peak flow; minimum, 12 cfs Aug. 17.

1908-25, 1932-60: Maximum discharge, 1,800 cfs May 4, 1952 (gage height, 7.96 ft, datum then in use); minimum observed, 10 cfs Sept. 17, 22, 25, Oct. 25, 1954, Dec. 9, 10, 1951.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Small diversions for irrigation above station.

Revisions (water years).--WSP 1564: 1909-11, 1915, 1917, 1923-24, 1933, 1935.

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

(Shifting-control method used May 11-20, June 28 to July 4)

| Oct. 1 to June 27 |     |  |  | June 28 to Sept. 30 |    |  |  |
|-------------------|-----|--|--|---------------------|----|--|--|
| 2.7               | 18  |  |  | 2.1                 | 10 |  |  |
| 3.0               | 44  |  |  | 2.3                 | 21 |  |  |
| 3.4               | 98  |  |  | 2.6                 | 41 |  |  |
| 4.1               | 236 |  |  |                     |    |  |  |

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     | 29    | 29    | 29    | 32    | 36    | 37    | 67    | 72    | *98   | 34    | 22    | 27    |
| 2     | 27    | 30    | 31    | b32   | 38    | 37    | 62    | 71    | 93    | 34    | 18    | 26    |
| 3     | 26    | 31    | 31    | b29   | 35    | 33    | 62    | 82    | 90    | 34    | 20    | 27    |
| 4     | 28    | 32    | 31    | b25   | b31   | 39    | 68    | 108   | 87    | 34    | 19    | 26    |
| 5     | 26    | 32    | b28   | b28   | b33   | 39    | 81    | 118   | 81    | 32    | 18    | *58   |
| 6     |       |       |       |       |       |       |       |       |       |       |       |       |
| 7     | 28    | 31    | b26   | b30   | 37    | 42    | *90   | 116   | 77    | 29    | 20    | 21    |
| 8     | 30    | 33    | b26   | b32   | 35    | 45    | 98    | 120   | 81    | 29    | 20    | 21    |
| 9     | 29    | 31    | b26   | 33    | 42    | 61    | 98    | 130   | 79    | 29    | 18    | 22    |
| 10    | 28    | 31    | b27   | 33    | 47    | 52    | 108   | 143   | 72    | 27    | *17   | 21    |
| 11    | 28    | 31    | 31    | 34    | 41    | 50    | 118   | 159   | 68    | 25    | 17    | 21    |
| 12    | 29    | 31    | 31    | 35    | 37    | 47    | 116   | 173   | 66    | *26   | 16    | 21    |
| 13    | 30    | 31    | 30    | 35    | 32    | 53    | 95    | *196  | 62    | 26    | 16    | 20    |
| 14    | 30    | 26    | *30   | 35    | 31    | 55    | 88    | 219   | 57    | 25    | 15    | *19   |
| 15    | 29    | 31    | b28   | 34    | 35    | 52    | 88    | 214   | 51    | 25    | 15    | 21    |
| 16    | 28    | 34    | b29   | 30    | 39    | 45    | 84    | 207   | 49    | 25    | 16    | 21    |
| 17    | 28    | 30    | b30   | 27    | 35    | 45    | 64    | *207  | 43    | 24    | 12    | 22    |
| 18    | 28    | 32    | 31    | *b25  | 36    | 47    | 70    | 210   | 45    | 24    | 13    | 22    |
| 19    | 28    | 33    | 32    | b28   | 39    | 49    | 75    | 190   | 50    | 22    | 14    | 21    |
| 20    | 29    | *31   | 32    | b31   | 38    | 53    | 72    | 175   | 51    | 21    | 16    | 21    |
| 21    | 27    | 34    | 32    | b32   | 34    | 58    | 87    | 185   | *52   | 21    | 19    | 20    |
| 22    | *27   | 36    | 35    | b33   | 37    | *64   | 108   | 161   | 52    | 21    | 20    | 21    |
| 23    | 27    | 38    | 32    | 33    | 36    | 70    | 116   | 163   | 50    | 20    | 20    | 21    |
| 24    | 26    | 35    | 33    | 33    | b34   | 81    | 95    | 157   | 47    | 20    | 24    | 22    |
| 25    | 25    | 34    | 36    | 34    | 33    | 98    | 79    | 151   | 45    | 21    | 26    | 22    |
| 26    | 27    | 30    | 34    | 35    | *39   | 114   | *79   | 140   | 45    | 20    | 27    | 21    |
| 27    | 27    | 26    | 29    | 35    | 37    | 127   | 78    | 134   | 40    | 17    | 26    | 20    |
| 28    | 26    | 25    | b28   | 34    | b35   | 120   | 81    | *127  | *40   | 17    | 25    | 20    |
| 29    | 30    | 28    | b27   | 32    | b35   | 85    | 78    | 123   | 38    | 18    | 25    | 20    |
| 30    | 31    | 28    | b30   | 35    | ----- | 75    | 74    | 118   | 36    | 20    | 24    | 20    |
| 31    | 30    | ----- | b32   | 36    | ----- | 77    | ----- | 108   | ----- | 25    | 26    | ----- |
| Total | 878   | 933   | 936   | 995   | 1,056 | 1,896 | 2,561 | 4,667 | 1,791 | 770   | 599   | 686   |
| Mean  | 28.3  | 31.1  | 30.2  | 32.1  | 36.4  | 61.1  | 85.4  | 151   | 59.7  | 24.8  | 19.3  | 22.9  |
| Ac-ft | 1,740 | 1,850 | 1,860 | 1,970 | 2,090 | 3,760 | 5,080 | 9,260 | 3,550 | 1,530 | 1,190 | 1,360 |

Calendar year 1959: Max 98 Min 17 Mean 40.7 Ac-ft 29,450

Water year 1959-60: Max 219 Min 12 Mean 48.5 Ac-ft 35,240

Peak discharge (base, 330 cfs).--Sept. 5 (5 p.m.) 1,240 cfs (7.31 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Oct. 2-21, Aug. 1, 2; discharge estimated on basis of weather records, trend of flow, recorded range in stage, and records for nearby stations.

## 9-2820. Strawberry tunnel at West Portal, near Thistle, Utah

Location.--Lat 40°09'40", long 111°14'40", in SW $\frac{1}{4}$  sec.34, T.7 S., R.6 E., on left bank 40 ft downstream from west portal of tunnel and 18 miles northeast of Thistle.

Records available.--June 1915 to September 1960. Monthly discharge only June 1915 to October 1945, published in WSP 1314.

Gage.--Water-stage recorder and rectangular weir. Altitude of gage is 7,470 ft (by barometer).

Extremes.--1922-25, 1932-60: Maximum daily discharge, 595 cfs July 9, 1923; minimum daily observed, 4 cfs many times when no water was being diverted from Strawberry Reservoir.

Remarks.--Records good. Records show water diverted from Strawberry Reservoir (in Colorado River basin, capacity, 270,000 acre-ft) plus tunnel seepage, for use on lands of Strawberry project.

Cooperation.--Records furnished by Strawberry Water Users Association.

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     | 40    |      |      |      |      |      |       | 42     | 297    | 441    | 257    | 134   |
| 2     | 41    |      |      |      |      |      |       | 43     | 333    | 444    | 250    | 115   |
| 3     | 48    |      |      |      |      |      |       | 62     | 361    | 335    | 270    | 116   |
| 4     | 46    |      |      |      |      |      |       | 59     | 369    | 334    | 296    | 77    |
| 5     | 46    |      |      |      |      |      |       | 46     | 370    | 316    | 282    | 76    |
| 6     | 90    |      |      |      |      |      |       | 45     | 378    | 370    | 315    | 59    |
| 7     | 41    |      |      |      |      |      |       | 22     | 384    | 336    | 315    | 44    |
| 8     | 119   |      |      |      |      |      |       | 6      | 357    | 337    | 346    | 22    |
| 9     | 93    |      |      |      |      |      |       | 12     | 318    | 377    | 357    | 41    |
| 10    |       |      |      |      |      |      |       | 48     | 298    | 341    | 369    | 40    |
| 11    |       |      |      |      |      |      |       | 70     | 311    | 342    | 376    | 35    |
| 12    |       |      |      |      |      |      |       | 93     | 282    | 358    | 380    | 42    |
| 13    |       |      |      |      |      |      |       | 169    | 298    | 372    | 334    | 64    |
| 14    |       |      |      |      |      |      |       | 237    | 358    | 358    | 283    | 66    |
| 15    |       |      |      |      |      |      |       | 239    | 415    | 318    | 306    | 72    |
| 16    |       | 5    | 5    | 5    | 5    |      |       | 285    | 426    | 375    | 356    | 82    |
| 17    |       |      |      |      |      |      |       | 284    | 467    | 278    | 335    | 82    |
| 18    |       |      |      |      |      |      |       | 267    | 462    | 255    | 326    | 72    |
| 19    |       |      |      |      |      |      |       | 206    | 449    | 276    | 300    | 75    |
| 20    |       | 5    |      |      |      |      |       | 246    | 408    | 278    | 280    | 89    |
| 21    |       |      |      |      |      |      |       | 22     | 257    | 470    | 271    | 105   |
| 22    |       |      |      |      |      |      |       | 62     | 224    | 477    | 274    | 104   |
| 23    |       |      |      |      |      |      |       | 50     | 225    | 477    | 271    | 168   |
| 24    |       |      |      |      |      |      |       | 50     | 256    | 481    | 210    | 139   |
| 25    |       |      |      |      |      |      |       | 50     | 256    | 486    | 198    | 98    |
| 26    |       |      |      |      |      |      |       | 50     | 266    | 468    | 225    | 135   |
| 27    |       |      |      |      |      |      |       | 42     | 280    | 461    | 238    | 122   |
| 28    |       |      |      |      |      |      |       | 42     | 257    | 472    | 335    | 111   |
| 29    |       |      |      |      |      |      |       | 42     | 238    | 465    | 354    | 121   |
| 30    |       |      |      |      |      |      |       | 42     | 240    | 465    | 313    | 132   |
| 31    |       |      |      |      |      |      |       | 266    | -----  | 370    | 138    | ----- |
| Total | 752   | 150  | 155  | 155  | 145  | 171  | 572   | 5,246  | 12,043 | 9,832  | 8,010  | 2,222 |
| Mean  | 24.3  | 5    | 5    | 5    | 5    | 5.52 | 19.1  | 169    | 401    | 317    | 258    | 74.1  |
| Ac-ft | 1,490 | 298  | 307  | 307  | 288  | 339  | 1,130 | 10,410 | 23,890 | 19,530 | 15,890 | 4,410 |

Calendar year 1959: Max 482 Min - Mean 94.0 Ac-ft 68,050  
 Water year 1959-60: Max 481 Min - Mean 108 Ac-ft 78,260

Note.--Discharge for period of seepage flow only Oct. 10 to Apr. 20, May 8; estimated on basis of observer's notes.

## 1495. Diamond Fork below Red Hollow, near Thistle, Utah

Location.--Lat 40°04'40", long 111°24'00", in NW $\frac{1}{4}$  sec.32, T.8 S., R.5 E., on right bank 0.5 mile downstream from Red Hollow, 7.2 miles upstream from mouth, and 8 miles north-east of Thistle.

Drainage area.--110 sq mi, approximately.

Records available.--October 1953 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,300 ft (from river-profile map).

Average discharge.--7 years, 113 cfs (81,810 acre-ft per year).

Extremes.--Maximum discharge during year, 479 cfs June 24 (gage height, 3.21 ft); minimum, 1.5 cfs Dec. 5.  
1953-60; Maximum discharge, 1,020 cfs July 13, 1954 (gage height, 4.71 ft); minimum, that of Dec. 5, 1959.

Remarks.--Records good except those for period of no gage-height record, which are fair. Flow includes water diverted from Strawberry Reservoir (capacity, 270,000 acre-ft) in Colorado River basin via Strawberry tunnel (see preceding page) for irrigation in vicinity of Spanish Fork.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used May 24-28, Aug. 11 to Sept. 30)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.8 | 4.0 | 2.0 | 123 |
| .9  | 7.4 | 2.5 | 238 |
| 1.1 | 17  | 3.0 | 403 |
| 1.4 | 39  | 3.2 | 483 |
| 1.7 | 74  |     |     |

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     | 42    | 12    | 12    | 11    | 18    | 16    | 20    | 61     | *282   | 422    | 250    | 130   |
| 2     | 48    | 12    | 12    | 9.9   | 20    | 16    | 19    | 62     | 318    | 415    | 244    | 116   |
| 3     | 54    | 12    | 12    | 7.8   | 16    | 14    | 20    | 86     | 324    | 377    | 252    | 117   |
| 4     | 53    | 13    | 9.5   | 6.7   | 10    | 16    | 23    | 100    | 331    | 324    | 273    | 80    |
| 5     | 52    | 11    | 5.0   | 8.7   | 12    | 18    | 27    | 87     | 328    | 289    | 264    | 74    |
| 6     | 84    | 12    | 7.8   | 11    | 18    | 21    | *30   | 89     | 334    | 331    | 282    | 58    |
| 7     | 119   | 12    | 10    | 13    | 14    | 22    | 30    | 70     | 338    | 334    | 286    | 52    |
| 8     | 123   | 12    | 9.9   | 13    | 18    | 24    | 29    | 58     | 321    | 331    | 311    | 35    |
| 9     | 102   | 12    | 11    | 14    | 24    | *14   | 30    | 52     | 282    | 345    | *324   | 40    |
| 10    | 25    | 12    | 9.9   | 14    | 20    | 14    | 30    | 87     | 258    | 324    | 331    | 43    |
| 11    | 14    | 12    | 13    | 14    | 16    | 13    | 31    | 112    | 267    | *318   | 328    | 38    |
| 12    | 14    | 12    | 11    | 14    | 12    | 14    | 29    | *127   | 247    | 328    | 331    | 39    |
| 13    | 14    | 12    | 11    | 14    | 15    | 15    | 27    | 194    | 252    | 342    | 305    | *60   |
| 14    | 14    | 8.8   | *11   | 14    | 18    | 15    | 27    | 252    | 289    | 314    | 264    | 65    |
| 15    | 13    | 12    | 9.9   | 14    | 14    | 14    | 27    | 252    | 338    | 295    | 273    | 69    |
| 16    | 13    | 12    | 9.9   | 12    | 20    | 13    | 27    | 282    | 345    | 279    | 305    | 77    |
| 17    | 13    | 11    | 10    | 8.8   | 16    | 12    | 25    | 289    | 430    | 261    | 298    | 81    |
| 18    | 13    | 11    | 12    | *7.4  | 14    | 14    | 26    | 282    | 454    | 247    | 292    | 71    |
| 19    | 13    | 11    | 12    | 11    | 18    | 15    | 27    | 233    | 438    | 252    | 267    | 69    |
| 20    | 13    | *10   | 10    | 14    | 16    | 16    | 26    | 252    | 381    | 252    | 252    | 83    |
| 21    | 13    | 11    | 11    | 14    | 18    | 17    | 28    | 267    | *442   | 255    | 233    | 98    |
| 22    | *13   | 12    | 11    | 14    | 20    | *18   | 77    | 250    | 467    | 252    | 211    | 98    |
| 23    | 13    | 11    | 12    | 14    | 17    | 19    | 77    | 247    | 454    | 227    | 168    | 114   |
| 24    | 13    | 11    | 11    | 16    | 12    | 19    | 71    | 270    | 471    | 206    | 138    | 112   |
| 25    | 12    | 11    | 13    | 17    | 16    | 20    | 70    | 276    | 462    | 194    | 138    | 98    |
| 26    | 12    | 8.2   | 12    | 17    | 20    | 23    | *70   | 279    | 450    | 216    | 132    | 81    |
| 27    | 13    | 6.3   | 9.5   | 17    | 13    | 25    | 65    | 301    | 438    | 247    | 117    | 55    |
| 28    | 16    | 9.8   | 5.8   | 16    | 10    | 25    | 68    | *286   | 462    | 301    | 108    | 56    |
| 29    | 13    | 11    | 7.8   | 14    | 14    | 21    | 65    | 250    | 458    | 308    | 116    | 56    |
| 30    | 12    | 12    | 9.1   | 16    | ----- | 20    | 62    | 241    | 467    | 295    | 129    | 56    |
| 31    | 12    | ----- | 11    | 17    | ----- | 21    | ----- | *244   | -----  | 289    | 132    | ----- |
| Total | 978   | 334.9 | 322.1 | 404.3 | 466   | 544   | 1,183 | 5,958  | 11,128 | 9,170  | 7,356  | 2,221 |
| Mean  | 31.5  | 11.2  | 10.4  | 13.0  | 16.1  | 17.5  | 39.4  | 192    | 371    | 296    | 237    | 74.0  |
| Ac-ft | 1,940 | 664   | 639   | 802   | 924   | 1,080 | 2,350 | 11,780 | 22,070 | 18,190 | 14,590 | 4,410 |

Calendar year 1959: Max 517 Min 5.0 Mean 103 Ac-ft 74,240  
Water year 1959-60: Max 471 Min 5.0 Mean 109 Ac-ft 79,440

\* Discharge measurement made on this day.

Note.--No gage-height record Jan. 22 to Mar. 8; discharge estimated on basis of weather records, trend of flow, and records for stations on Spanish Fork.

## 1505. Spanish Fork at Castilla, Utah

Location.--Lat 40°03'00", long 111°32'50", in SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec.12, T.9 S., R.3 E., on left bank 600 ft upstream from outlet of Cold Springs, 1 mile upstream from diversion dam of Bureau of Reclamation,  $\frac{1}{4}$  miles northwest of Castilla, and 3 miles downstream from Diamond Fork.

Drainage area.--670 sq mi, approximately.

Records available.--September 1889 to December 1890, April 1903 to November 1917, May 1919 to September 1925, January 1933 to September 1960. Monthly discharge only for some periods, published in WSP 1314. Published as "near Spanish Fork" 1889-90, 1903-8.

Gage.--Water-stage recorder. Altitude of gage is 4,870 ft (from topographic map). Prior to May 3, 1919, staff gages at various sites  $\frac{1}{2}$  to  $2\frac{1}{2}$  miles downstream from present site at different datums below power canal, which began diverting late in 1908. May 3, 1919, to Apr. 14, 1920, staff gage and Apr. 15, 1920, to Apr. 16, 1940, water-stage recorder, at present site upstream from power canal at datum 2.00 ft lower.

Average discharge.--12 years (1890, 1903-14), 172 cfs; 36 years (1914-17, 1919-25, 1933-60), 218 cfs (157,800 acre-ft per year; includes transmountain diversion).

Extremes.--Maximum discharge during year, 656 cfs Sept. 5 (gage height, 7.04 ft); minimum, 29 cfs Dec. 28, computed from partly estimated gage-height record.  
1889-90, 1903-17, 1919-25, 1933-60: Maximum discharge, 3,610 cfs May 3, 1952 (gage height, 9.83 ft); minimum, 14 cfs Dec. 9, 1951.

Remarks.--Records good except those for periods of fragmentary or no gage-height record, which are fair. Several small diversions for irrigation above station. Flow since June 1915 includes water diverted from Strawberry Reservoir (capacity, 270,000 acre-ft) in Colorado River basin via Strawberry tunnel (see p. 92) for irrigation in vicinity of Spanish Fork.

Rating tables, water year 1959-60 (gage height, in feet, and discharge,  
in cubic feet per second)  
(Shifting-control method used May 3-13)

Oct. 1 to May 9

May 10 to Sept. 30

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| 4.5 | 34  | 5.0 | 68  | 6.5 | 427 |
| 4.7 | 54  | 5.5 | 145 | 7.0 | 656 |
| 5.0 | 101 | 6.0 | 260 |     |     |
| 5.5 | 215 |     |     |     |     |

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                       | 72    | 46    | 44    | 42    | 57     | 60    | 117      | 144    | 389           | 452    | 277    | 153   |
| 2                       | 78    | 46    | 44    | 44    | 59     | 60    | 115      | 144    | 419           | 456    | 269    | 138   |
| 3                       | 87    | 46    | 45    | 39    | 57     | 57    | 113      | 172    | 448           | 412    | 277    | 136   |
| 4                       | 87    | 48    | 44    | 39    | 45     | 82    | 113      | 207    | 460           | 364    | 298    | 112   |
| 5                       | 87    | 46    | 39    | 40    | 47     | 64    | 119      | 207    | 460           | 340    | 289    | 161   |
| 6                       | 121   | 47    | 39    | 43    | 58     | 66    | *136     | 205    | 464           | 385    | 314    | 99    |
| 7                       | 177   | 46    | 40    | 50    | 54     | 72    | 147      | 197    | 477           | 385    | 320    | 89    |
| 8                       | 182   | 46    | 40    | 50    | 66     | 96    | 136      | 194    | 448           | 393    | *343   | 82    |
| 9                       | 180   | 45    | 41    | 51    | 73     | 85    | 151      | 199    | 400           | 400    | 360    | 77    |
| 10                      | 80    | 45    | 45    | 53    | 66     | 77    | 160      | 236    | 371           | 567    | 371    | 79    |
| 11                      | 50    | 45    | 45    | 54    | 59     | 70    | 160      | 283    | 371           | *364   | a375   | 76    |
| 12                      | 47    | 44    | 43    | 54    | 52     | 77    | 140      | *317   | 340           | 364    | 389    | 78    |
| 13                      | 47    | f41   | 42    | 53    | 54     | 85    | 134      | 408    | 336           | 375    | 353    | *86   |
| 14                      | 47    | f38   | *44   | 53    | 60     | 81    | 134      | 502    | 378           | 346    | 295    | 95    |
| 15                      | 47    | 45    | 44    | 53    | 54     | 70    | 123      | 511    | 431           | 330    | 295    | 101   |
| 16                      | 47    | 44    | 43    | 48    | 63     | 70    | 115      | 543    | 443           | 314    | 333    | 110   |
| 17                      | 47    | 44    | 43    | 42    | 55     | 70    | 99       | *534   | 502           | 292    | 330    | 119   |
| 18                      | 47    | 46    | 46    | *a37  | 52     | 72    | 103      | 529    | 511           | 280    | 317    | 109   |
| 19                      | 47    | 45    | 48    | a45   | 60     | 75    | 111      | 468    | 498           | 286    | 304    | 107   |
| 20                      | 48    | 44    | 46    | a50   | 57     | 81    | 105      | 452    | 448           | 283    | 283    | 119   |
| 21                      | 47    | *47   | 48    | 52    | 58     | 90    | 115      | 472    | *502          | 286    | 260    | 132   |
| 22                      | 47    | 50    | 50    | 52    | 60     | *99   | 172      | 431    | 529           | 283    | 241    | 145   |
| 23                      | *48   | 50    | 47    | 52    | 55     | 109   | 199      | 412    | 518           | 257    | 194    | 154   |
| 24                      | 48    | 50    | 47    | 53    | 50     | 121   | 187      | *439   | 525           | 228    | 162    | 158   |
| 25                      | 48    | 48    | 52    | 57    | 55     | 144   | 163      | 431    | 507           | 213    | 154    | 145   |
| 26                      | 47    | 44    | 50    | 57    | 63     | 160   | *165     | 427    | 516           | 233    | 151    | 129   |
| 27                      | 47    | 38    | 44    | 57    | *60    | 177   | 156      | 435    | 498           | 263    | 140    | 102   |
| 28                      | 57    | 39    | f36   | 57    | 47     | 170   | 160      | 404    | 516           | 323    | 127    | 96    |
| 29                      | 48    | 43    | f37   | 52    | 58     | 121   | 154      | 371    | 507           | 340    | 129    | 96    |
| 30                      | 47    | 43    | f39   | 54    | -----  | 115   | 147      | 360    | 502           | 330    | 158    | 95    |
| 31                      | 47    | ----- | 41    | 57    | -----  | 119   | -----    | *364   | -----         | 336    | 147    | ----- |
| Total                   | 2,136 | 1,349 | 1,356 | 1,540 | 1,654  | 2,875 | 4,144    | 10,998 | 13,712        | 10,280 | 8,235  | 3,376 |
| Mean                    | 68.9  | 45.0  | 43.7  | 49.7  | 57.0   | 92.7  | 138      | 355    | 457           | 332    | 266    | 113   |
| Ac-ft                   | 4,240 | 2,680 | 2,690 | 3,050 | 3,280  | 5,700 | 8,220    | 21,810 | 27,200        | 20,390 | 16,330 | 6,700 |
| Calendar year 1959: Max | 558   |       |       |       | Min 36 |       | Mean 154 |        | Ac-ft 111,300 |        |        |       |
| Water year 1959-60: Max | 543   |       |       |       | Min 36 |       | Mean 168 |        | Ac-ft 122,300 |        |        |       |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, trend of flow, and records for nearby stations.

f Fragmentary gage-height record; discharge computed from partly estimated gage heights.

## 1520. Spanish Fork near Lake Shore, Utah

Location.--Lat 40°09'30", long 111°43'50", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.32, T.7 S., R.2 E., on left bank 1 mile upstream from mouth and 2 $\frac{1}{2}$  miles north of Lake Shore.

Drainage area.--700 sq mi, approximately.

Records available.--December 1903 to September 1907, March 1909 to December 1919, May 1920 to September 1925, January 1938 to September 1960. Published as "at Lake Shore" 1909, 1913-25.

Gage.--Water-stage recorder. Altitude of gage is 4,500 ft (from topographic map). Prior to Jan. 23, 1938, staff gages at several sites about 3 miles upstream at various datums. Jan. 23, 1938, to Mar. 23, 1953, water-stage recorder at present site at different datums. Mar. 24, 1953, to Sept. 15, 1957, water-stage recorder at present site at datum 4.0 ft higher.

Average discharge.--40 years (1904-7, 1909-19, 1920-25, 1938-60), 88.1 cfs (63,780 acre-ft per year).

Extremes.--Maximum discharge during year, 357 cfs Sept. 6 (gage height, 7.47 ft); no flow May 15-20, 25-30, June 16, 17.  
1903-7, 1909-25, 1938-60: Maximum discharge observed, 3,020 cfs Apr. 23, 1952; no flow at times.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by many diversions for irrigation and hydroelectric powerplant. During latter part of irrigation season, only wasted and return waters pass gage. Station is below all diversions. Discharge includes that of overflow canal constructed in winter of 1947-48, which diverts part of high flow from river about 1 mile above gage.

Revisions (water years).--WSP 1314: 1904.

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                       | 35    | 0.8   | 32    | b82   | 73    | 73    | 117     | 0.4   | 1.2    | 0.5  | 0.5  | 1.9   |
| 2                       | 34    | .2    | 34    | b80   | 73    | 76    | 111     | .3    | .1     | .4   | .4   | 2.0   |
| 3                       | 34    | .1    | 36    | b75   | 75    | 71    | 107     | .2    | .4     | .3   | .4   | .8    |
| 4                       | 37    | 1.7   | 40    | b70   | 61    | 76    | 118     | .1    | *.4    | .3   | .4   | 1.6   |
| 5                       | 36    | 28    | 35    | b60   | b55   | 84    | 138     | .2    | .7     | .5   | .5   | 16    |
| 6                       | 37    | 30    | 36    | b67   | 66    | 84    | 151     | .1    | .2     | .9   | .5   | *65   |
| 7                       | 25    | 25    | b56   | b73   | 71    | 86    | *168    | .1    | .4     | .8   | .9   | 10    |
| 8                       | 10    | 23    | b58   | b75   | 75    | 107   | 154     | .9    | .9     | .8   | .6   | 3.7   |
| 9                       | .2    | 16    | b40   | b75   | 95    | 105   | 160     | 2.3   | 1.2    | .7   | 1.0  | 7.1   |
| 10                      | .1    | 13    | 43    | 76    | 89    | 98    | 168     | 4.0   | 2.1    | .4   | 1.7  | 8.8   |
| 11                      | 15.   | 2.3   | 48    | 75    | 79    | 93    | 171     | 5.4   | 2.8    | .2   | 1.4  | 9.1   |
| 12                      | 7.2   | .5    | 48    | 76    | 70    | 94    | 156     | 3.1   | 4.4    | .2   | 1.0  | 17    |
| 13                      | .4    | 2.8   | 50    | 74    | 68    | 99    | 150     | .5    | 2.8    | .5   | *1.2 | 17    |
| 14                      | 2.4   | 14    | 54    | 73    | 68    | 99    | 140     | .1    | 1.8    | *.7  | 3.1  | 18    |
| 15                      | 6.0   | 15    | b53   | 73    | 69    | 89    | 100     | 0     | .1     | 1.6  | 1.5  | 20    |
| 16                      | 14    | 21    | *b54  | 70    | 73    | 88    | 60      | 0     | 0      | 1.7  | 2.1  | 19    |
| 17                      | 34    | *25   | b54   | 66    | 71    | 85    | 45      | 0     | 0      | 1.2  | 1.9  | 21    |
| 18                      | 36    | 20    | 57    | b62   | 64    | 86    | 20      | 0     | .2     | 1.2  | 6.6  | 13    |
| 19                      | 29    | 17    | 59    | b60   | 71    | 91    | 10      | 0     | .2     | 1    | 6.2  | 12    |
| 20                      | 13    | 16    | 58    | b60   | 73    | 95    | 4.0     | 0     | .2     | .6   | .8   | 14    |
| 21                      | 6.1   | 13    | 66    | *b63  | 70    | *101  | 2.0     | .2    | *.5    | .6   | .6   | 18    |
| 22                      | .9    | 22    | 63    | b66   | 71    | 115   | 2.0     | .1    | .7     | .7   | .6   | 19    |
| 23                      | *.9   | 26    | 63    | 71    | 68    | 120   | 2.0     | .6    | .2     | .9   | 13   | 17    |
| 24                      | 1.2   | 19    | 63    | 70    | 56    | 130   | 2.0     | 2.3   | .2     | .9   | .6   | 19    |
| 25                      | 1.2   | 20    | 70    | 73    | 62    | 146   | 2.0     | 0     | 10     | .6   | .6   | 21    |
| 26                      | 1.0   | 27    | 70    | 76    | 74    | 164   | 1.5     | 0     | .6     | 2.0  | .7   | 20    |
| 27                      | .5    | 18    | 65    | 74    | *75   | 173   | 1.5     | 0     | 1.4    | 4.8  | .5   | 21    |
| 28                      | 17    | 22    | 60    | 71    | 63    | 163   | *1.4    | 0     | 1.8    | 1.2  | .5   | 22    |
| 29                      | 11    | 24    | 60    | 68    | 63    | 149   | 1.1     | 0     | 1.4    | .6   | .7   | 24    |
| 30                      | 1.4   | 30    | 75    | 68    | ---   | 127   | .5      | 0     | .6     | .6   | .8   | 27    |
| 31                      | 1.2   | ---   | b60   | 66    | ---   | 130   | ---     | .2    | ---    | .7   | 1.0  | ---   |
| Total                   | 447.7 | 492.4 | 1,640 | 2,190 | 2,041 | 3,517 | 2,264.0 | 21.1  | 37.7   | 27.1 | 52.3 | 465.0 |
| Mean                    | 14.4  | 16.4  | 52.9  | 70.6  | 70.4  | 107   | 75.5    | 0.68  | 1.26   | 0.87 | 1.69 | 16.2  |
| Ac-ft                   | 888   | 977   | 3,250 | 4,340 | 4,050 | 6,580 | 4,490   | 42    | 75     | 54   | 104  | 962   |
| Calendar year 1959: Max | 142   |       |       | Min   | 0     | Mean  | 34.6    | Ac-ft | 25,050 |      |      |       |
| Water year 1959-60: Max | 183   |       |       | Min   | 0     | Mean  | 35.6    | Ac-ft | 25,810 |      |      |       |

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Apr. 13-28; discharge estimated on basis of 1 discharge measurement, observer's notes, and records for nearby stations.

## 1525. Hobbie Creek near Springville, Utah

Location.--Lat 40°09'30", long 111°31'30", in NE¼ sec.6, T.8 S., R.4 E., on right bank 1,000 ft downstream from Springville hydroelectric plant, 1¼ miles downstream from Right Fork, and 4 miles southeast of Springville.

Drainage area.--105 sq mi.

Records available.--March 1904 to December 1916, April 1945 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,920 ft (from topographic map). Prior to June 1, 1909, staff gage at site 200 ft downstream at different datum (destroyed by flood). June 1, 1909, to Dec. 31, 1916, staff gage at site 800 ft upstream at different datum. Apr. 17, 1945, to July 23, 1952, water-stage recorder at same site at datum 1.70 ft higher.

Average discharge.--27 years, 52.2 cfs (37,790 acre-ft per year).

Extremes.--Maximum discharge during year, 73 cfs Apr. 11 (gage height, 2.70 ft); minimum, 1.6 cfs Sept. 17, 1904-16, 1945-60: Maximum discharge, 1,250 cfs May 4, 1952 (gage height, 7.83 ft, present datum); minimum, 1.4 cfs Feb. 12, 1946.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Several diversions for irrigation above station. Flow regulated by hydroelectric plants at times during low stages. Springville city pipeline (capacity, approximately 5 cfs) diverts water from tributary spring above station (diversion began August 1951).

Rating table, water year (1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |    |
|-----|-----|-----|----|
| 1.7 | 3.8 | 2.2 | 22 |
| 1.8 | 6.0 | 2.4 | 38 |
| 2.0 | 12  | 2.7 | 70 |

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     |      | 14    | 11    | 13   | 11    | 11    | 28    | 25    | 23    | 11    | 9.5   | 9.2   |
| 2     |      | 14    | 11    | 12   | 11    | 11    | 25    | 28    | a21   | 11    | 9.2   | 9.5   |
| 3     |      | 14    | 11    | 12   | 11    | 11    | 25    | 32    | a20   | 9.8   | 10    | 10    |
| 4     |      | 14    | 11    | 12   | 11    | 11    | 31    | 38    | a19   | 9.2   | 9.2   | 10    |
| 5     |      | 14    | 8.8   | 12   | 11    | 12    | 40    | 42    | a18   | 9.2   | 8.0   | 9.8   |
| 6     |      | 14    | 8.8   | 12   | 11    | 12    | 50    | 45    | a18   | 9.2   | 8.2   | 10    |
| 7     |      | 14    | 11    | 12   | 11    | 12    | *57   | 45    | a17   | 8.5   | 8.5   | *9.8  |
| 8     |      | 14    | 11    | 12   | 12    | 15    | 50    | 49    | a17   | 8.8   | *8.2  | 9.8   |
| 9     |      | 14    | 11    | 11   | 13    | 16    | 58    | *52   | a16   | 8.8   | 8.2   | 9.8   |
| 10    |      | 13    | 11    | 11   | 14    | 15    | 64    | 54    | a15   | 7.1   | 8.2   | 10    |
| 11    |      | 12    | 11    | 12   | 13    | 14    | 64    | 52    | a15   | 7.1   | 8.5   | 9.8   |
| 12    |      | 12    | 12    | 13   | 12    | 14    | 54    | 54    | a15   | 6.8   | 8.5   | 9.5   |
| 13    |      | 12    | 12    | 13   | 13    | 14    | 43    | 53    | a15   | 6.6   | 9.2   | 9.2   |
| 14    |      | 13    | *12   | 13   | 13    | 15    | 39    | 58    | a14   | *7.1  | 8.8   | 9.2   |
| 15    |      | 12    | 11    | 14   | 12    | 14    | 36    | 52    | a13   | 8.5   | 8.8   | 9.5   |
| 16    |      | 12    | *11   | 13   | 12    | 14    | 35    | 48    | a13   | 8.5   | 8.8   | 9.5   |
| 17    |      | *12   | 11    | 13   | 12    | 14    | 32    | 44    | a13   | 8.0   | 9.2   | 8.5   |
| 18    |      | a12   | 11    | 13   | 12    | 14    | 30    | 45    | a13   | 7.4   | 6.6   | 7.7   |
| 19    |      | a12   | 11    | a12  | 12    | 14    | 32    | 44    | a13   | 7.4   | 6.0   | 8.8   |
| 20    |      | a12   | 11    | a12  | 12    | 14    | 33    | 39    | a13   | 7.7   | 6.0   | 9.5   |
| 21    |      | 13    | 12    | *13  | 12    | *14   | 30    | 34    | *13   | 8.0   | 5.8   | 8.8   |
| 22    |      | 12    | 12    | 12   | 12    | 15    | 34    | 32    | 13    | 8.5   | 5.8   | 9.2   |
| 23    | *12  | 11    | 12    | 12   | 12    | 18    | 36    | 30    | 13    | 8.5   | 6.6   | 9.2   |
| 24    | 12   | 11    | 12    | 11   | 11    | 22    | 38    | 28    | 13    | 8.8   | 7.7   | 9.2   |
| 25    | 12   | 10    | 12    | 11   | *11   | 25    | 36    | 25    | 13    | 8.8   | 10    | 9.5   |
| 26    | 12   | 11    | 13    | 11   | 11    | 28    | 36    | 25    | 12    | 8.5   | 9.2   | 9.5   |
| 27    | 13   | 11    | 12    | 11   | 11    | 35    | 36    | 28    | 13    | 8.2   | 9.2   | 9.5   |
| 28    | 13   | 11    | 9.8   | 11   | 9.5   | 41    | 34    | 28    | 11    | 9.2   | 9.5   | 8.8   |
| 29    | 14   | 10    | 12    | 11   | 9.5   | 32    | *31   | 28    | 11    | 9.2   | 9.2   | 8.8   |
| 30    | 14   | 11    | 12    | 11   | ----- | 31    | 28    | 26    | 11    | 9.2   | 8.8   | 8.5   |
| 31    | 14   | ----- | 13    | 11   | ----- | 30    | ----- | *24   | ----- | 9.5   | 8.8   | ----- |
| Total | 365  | 371   | 350.4 | 372  | 338.0 | 558   | 1,165 | 1,207 | 444   | 264.1 | 258.2 | 280.1 |
| Mean  | 11.8 | 12.4  | 11.3  | 12.0 | 11.7  | 18.0  | 38.8  | 38.9  | 14.8  | 8.52  | 8.33  | 9.34  |
| Ac-ft | 724  | 736   | 695   | 738  | 670   | 1,110 | 2,310 | 2,390 | 881   | 524   | 512   | 556   |

Calendar year 1959: Max 36

Min 7.7

Mean 15.7

Ac-ft 11,360

Water year 1959-60: Max 64

Min 5.8

Mean 16.3

Ac-ft 11,850

Peak discharge (base, 120 cfs).--No peak above base.

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for nearby streams.

## 1535. Provo River near Kamas, Utah

Location.--Lat 40°35'00", long 111°00'30", in NE $\frac{1}{4}$  sec.2, T.3 S., R.8 E., on right bank 3 miles upstream from Soapstone Creek and 14 miles east of Kamas.

Drainage area.--29.6 sq mi.

Records available.--August 1949 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 8,110 ft (by barometer).

Average discharge.--11 years, 50.0 cfs (36,200 acre-ft per year).

Extremes.--Maximum discharge during year, 456 cfs May 12 (gage height, 3.08 ft); minimum, 3.2 cfs Sept. 29, 30.

1949-60: Maximum discharge, 825 cfs June 6, 1957 (gage height, 3.66 ft); minimum, 1.7 cfs Oct. 30, 1956.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No diversion above station. Flow regulated by several small lakes at headwaters which have dams and outlet works. Combined regulated capacity, 10,841 acre-ft. Station is immediately above outlet of Duchesne tunnel.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used June 14-22)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.8 | 2.4 | 1.6 | 43  |
| 1.9 | 4.0 | 2.0 | 99  |
| 1.0 | 6.4 | 2.4 | 192 |
| 1.1 | 9.6 | 2.8 | 330 |
| 1.3 | 19  | 3.0 | 412 |

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     | 12    | 18    | 8.3   | 4.0   |      |      | 15    | 38    | *205  | 92    | 42    | 8.6   |
| 2     | 10    | 17    | *8.0  | 4.0   |      |      | 15    | 39    | 211   | 92    | *38   | 8.6   |
| 3     | 10    | 17    | 8.0   | 4.0   |      |      | 15    | 39    | 218   | 94    | 37    | 7.7   |
| 4     | 11    | 16    | b8.0  | 4.0   |      |      | 15    | 40    | 208   | 94    | 35    | 8.3   |
| 5     | 13    | b14   | b8.0  | 4.0   |      |      | 20    | 39    | 183   | 94    | 31    | 7.4   |
| 6     | 14    | b14   | b8.0  | 3.8   |      |      | 26    | 47    | 180   | *96   | 31    | 7.7   |
| 7     | 16    | b14   | 8.0   | 3.8   |      |      | 35    | 65    | *160  | 94    | 32    | 9.3   |
| 8     | 12    | b14   | b7.6  | 4.0   |      |      | 32    | 86    | 178   | 94    | 35    | 7.0   |
| 9     | 15    | 14    | b7.3  | 4.0   |      |      | 40    | 121   | 148   | 94    | 33    | *5.8  |
| 10    | 23    | 14    | 7.0   | 4.0   |      |      | 51    | 169   | 113   | 94    | 33    | 5.5   |
| 11    | 23    | 13    | 6.4   | 4.0   |      | 4    | 55    | 255   | 94    | 92    | 34    | 5.0   |
| 12    | 24    | 12    | 5.8   | 4.0   |      |      | *51   | 334   | 92    | 89    | 36    | 4.4   |
| 13    | 22    | b12   | 4.8   | 4.0   |      |      | 45    | *370  | 78    | 89    | 34    | 4.6   |
| 14    | 21    | b12   | 4.6   | b4.0  |      |      | 45    | 297   | 71    | 89    | 34    | 5.2   |
| 15    | 22    | b12   | 4.8   | b4.0  |      | 4    | 43    | 251   | *67   | 89    | 34    | 4.4   |
| 16    | 22    | 12    | 4.8   | b4.0  |      |      | 41    | 227   | 69    | 89    | 37    | 4.4   |
| 17    | 20    | 12    | 4.8   | b4.0  |      |      | 37    | 224   | 89    | 78    | 36    | 4.8   |
| 18    | 19    | 9.6   | 4.4   | b4.0  |      |      | 37    | 160   | 89    | 55    | 36    |       |
| 19    | 18    | 9.6   | 4.6   | b4.0  |      |      | 38    | 119   | 91    | 58    | 36    | 4.0   |
| 20    | 17    | b9.6  | 4.2   | b4.0  |      |      | 38    | *106  | 103   | 56    | 37    | 3.8   |
| 21    | 16    | 9.6   | 3.8   |       |      |      | 59    | 134   | 101   | 56    | 38    | 4.0   |
| 22    | 15    | 9.6   | 4.0   |       |      |      | 81    | 183   | 94    | 59    | 24    | 5.2   |
| 23    | 22    | 9.6   | 4.2   |       |      | 6    | 85    | 166   | 71    | 64    | 24    | 5.5   |
| 24    | 25    | 9.6   | 4.2   |       |      |      | 68    | 140   | 71    | 68    | 20    | 4.6   |
| 25    | 26    | 9.6   | 4.2   |       |      |      | 56    | 156   | 68    | 72    | 11    | 4.2   |
| 26    | 24    | b8.3  | 4.2   |       | 4    |      | 51    | 158   | 67    | 72    | 8.6   | 3.8   |
| 27    | 24    | b8.3  | 4.4   |       |      |      | 47    | 158   | 65    | 53    | 12    | 3.5   |
| 28    | 29    | b8.3  | 4.2   |       |      | 10   | 42    | 158   | 65    | 50    | 12    | 3.3   |
| 29    | *22   | b8.3  | 4.2   |       |      |      | 39    | 189   | 74    | 48    | 9.3   | 3.3   |
| 30    | 20    | b8.3  | 4.2   |       |      |      | *37   | 186   | 92    | 39    | 7.7   | 3.2   |
| 31    | 19    | ----- | 4.0   |       |      |      | 186   | ----- | ----- | 41    | 7.4   | ----- |
| Total | 586   | 355.3 | 173.0 | 123.6 | 116  | 170  | 1,257 | 4,840 | 3,415 | 2,344 | 875.0 | 161.7 |
| Mean  | 18.9  | 11.8  | 5.58  | 3.99  | 4    | 5.5  | 41.9  | 156   | 114   | 75.6  | 28.2  | 5.39  |
| Ac-ft | 1,160 | 705   | 343   | 245   | 230  | 337  | 2,490 | 9,600 | 6,770 | 4,650 | 1,740 | 321   |

Calendar year 1959: Max 249 Min 3.5 Mean 40.4 Ac-ft 29,240

Water year 1959-60: Max 370 Min 3.2 Mean 39.4 Ac-ft 28,590

Peak discharge (base, 400 cfs).--May 12 (7:30 p.m.) 456 cfs (3.08 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Jan. 1-5, Jan. 21 to Apr. 5; discharge estimated on basis of weather records and records for nearby streams.

9-2725. Duchesne tunnel near Kamas, Utah

Location.--Lat 40°36', long 111°00', in NE $\frac{1}{4}$  sec.2, T.3 S., R.8 E., on left bank 600 ft downstream from tunnel outlet, 3 miles upstream from Soapstone Creek, and 14 miles east of Kamas.

Drainage area.--40 sq mi, approximately.

Records available.--October 1953 to September 1960.

Gage.--Water-stage recorder with Parshall flume, and Sparling water meter for low flow. Datum of gage is 8,098.5 ft (Bureau of Reclamation design plan).

Extremes.--Maximum discharge during year, 697 cfs June 2 (gage height, 4.74 ft); minimum daily, 0.6 cfs July 20 to Aug. 14, when flow was cut off at head of tunnel.  
1953-60: Maximum discharge, that of June 2, 1960; minimum daily, that of July 20 to Aug. 14, 1960.

Remarks.--Records good Oct. 16 to Nov. 13, Apr. 6 to Sept. 30, when most of flow was through Parshall flume, and fair for remainder of year. Flow is diversion from Duchesne River in Colorado River basin to Jordan River basin, and includes normally about 1.5 cfs tunnel seepage.

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                       | 16    | 29    | 14    |       |         |      | 22    | 37     | 429    | 44    | 0.6  | 0.8   |
| 2                       | 17    | 28    | 13    |       |         |      | 23    | 37     | 533    | 42    | .6   | .8    |
| 3                       | 17    | 28    | 13    |       | 9.0     |      | 24    | 36     | 553    | 41    | .6   | .8    |
| 4                       | 18    | 27    | 12    |       |         |      | 25    | 37     | 500    | 40    | .6   | .8    |
| 5                       | 18    | 22    | 12    |       |         |      | 26    | 36     | 441    | 39    | .6   | .8    |
| 6                       | 18    | 22    | 11    |       |         |      | 34    | 38     | 399    | 49    | .6   | .8    |
| 7                       | 19    | 22    | 11    |       |         |      | 40    | 47     | 364    | 41    | .6   | .9    |
| 8                       | 19    | 21    | 11    |       |         |      | 37    | 66     | 380    | 40    | .6   | .9    |
| 9                       | 19    | 22    | 11    |       |         |      | 51    | 101    | 314    | 34    | .6   | 1.1   |
| 10                      | 19    | 22    | 10    |       |         |      | 62    | 150    | 256    | 33    | .6   | 1.1   |
| 11                      | 19    | 21    | 10    |       | 9.3     | 10   | 63    | 213    | 240    | 31    | .6   | 1.1   |
| 12                      | 19    | 21    | 10    |       |         |      | 61    | 294    | 232    | 29    | .6   | 1.1   |
| 13                      | 18    | 18    | 9.5   |       |         |      | 54    | 373    | 224    | 28    | .6   | 1.1   |
| 14                      | 18    | 18    | 9.5   |       |         |      | 54    | 362    | 212    | 26    | .6   | 1.1   |
| 15                      | 18    | 18    | 9.0   |       |         |      | 53    | 330    | 194    | 24    | .8   | 1.1   |
| 16                      | 28    | 17    | 9.0   |       | 8.6     |      | 49    | 302    | 179    | 23    | .9   | 1.1   |
| 17                      | 26    | 17    | 8.8   |       |         |      | 38    | 286    | 165    | 22    | .9   | 1.1   |
| 18                      | 26    | 17    | 8.8   |       |         |      | 38    | 258    | 153    | 22    | .9   | 1.1   |
| 19                      | 26    | 17    | 8.7   |       |         |      | 38    | 185    | 142    | 11    | .9   | 1.1   |
| 20                      | 25    | 17    | 8.7   |       |         |      | 38    | 158    | 125    | .6    | .9   | 1.1   |
| 21                      | 23    | 17    | 8.7   |       | 9.7     |      | 54    | 178    | 106    | .6    | .9   | 1.1   |
| 22                      | 23    | 16    | 8.7   |       |         |      | 79    | 241    | 92     | .6    | .9   | 1.1   |
| 23                      | 31    | 16    |       |       |         | 11   | 84    | 261    | 84     | .6    | .9   | 1.1   |
| 24                      | 36    | 16    |       |       |         |      | 68    | 213    | 76     | .6    | .9   | 1.1   |
| 25                      | 39    | 16    |       |       |         |      | 54    | 222    | 70     | .6    | .9   | 1.1   |
| 26                      | 37    | 16    |       |       |         | 17   | 48    | 227    | 64     | .6    | .9   | 1.1   |
| 27                      | 37    | 15    | 8.6   |       |         | 17   | 43    | 240    | 57     | .6    | .9   | 1.1   |
| 28                      | 42    | 15    |       |       | 10      | 17   | 41    | 245    | 53     | .6    | .9   | 1.1   |
| 29                      | 35    | 15    |       |       |         | 17   | 41    | 297    | 50     | .6    | .9   | 1.1   |
| 30                      | 31    | 14    |       |       |         | 18   | 38    | 305    | 46     | .6    | .9   | 1.1   |
| 31                      | 29    | ----- |       |       |         | 18   | ----- | 335    | -----  | .6    | .9   | ----- |
| Total                   | 766   | 580   | 304.8 | 266.6 | 275.0   | 359  | 1,380 | 6,080  | 6,733  | 635.2 | 23.6 | 30.8  |
| Mean                    | 24.7  | 19.3  | 9.83  | 8.60  | 9.48    | 11.6 | 46.0  | 196    | 224    | 20.4  | 0.76 | 1.03  |
| Ac-ft                   | 1,520 | 1,150 | 605   | 529   | 545     | 712  | 2,740 | 12,080 | 13,350 | 1,260 | 47   | 61    |
| Calendar year 1959: Max | 589   |       |       |       | Min -   | Mean | 50.8  | Ac-ft  | 36,800 |       |      |       |
| Water year 1959-60: Max | 553   |       |       |       | Min 0.6 | Mean | 47.7  | Ac-ft  | 34,600 |       |      |       |

## 1545. Weber-Provo diversion canal near Woodland, Utah

Location.--Lat 40°36'40", long 111°18'15", in SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.30, T.2 S., R.6 E., on right bank 100 ft upstream from outlet to Provo River and  $\frac{1}{2}$  miles northwest of Woodland.

Records available.--October 1931 to September 1960 (periods of diversion only).

Gage.--Water-stage recorder with Parshall flume or Cippoletti weir. Datum of gage is 6,318 ft above mean sea level (levels by Bureau of Reclamation).

Extremes.--1931-60: Maximum daily discharge, 870 cfs June 4, 1957; no water diverted from Weber River or Beaver Creek for several months in each year.

Remarks.--Records good except those for periods of ice effect or doubtful gage-height record, which are fair. Canal diverts water from Weber River in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.21, T.1 S., R.6 E., and from Beaver Creek in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.17, T.2 S., R.6 E., to Provo River for irrigation along Provo and Jordan Rivers. Figures given herein represent quantity of water reaching Provo River during periods when water was diverted from Weber River and Beaver Creek. Not all of flow diverted reaches Provo River due to evaporation, transpiration, and seepage losses. For records at head of canal see page 61.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Oct. 16-19)

Oct. 12 to Mar. 28

Mar. 28 to June 22

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| 1.8 | 3.6 | 0.1 | 2.5 | 1.5 | 146 |
| 2.2 | 14  | .3  | 11  | 2.0 | 231 |
| 2.6 | 29  | .5  | 25  | 2.6 | 352 |
| 3.0 | 48  | .8  | 54  | 3.8 | 646 |
| 3.6 | 80  | 1.0 | 76  |     |     |

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     | -     | 48    | 29    | 21    | 21    | b25   | 56    | 131     | 80      |      |      |       |
| 2     | -     | 48    | 30    | 17    | 22    | b24   | 51    | 122     | 197     |      |      |       |
| 3     | -     | 46    | 31    | 16    | 21    | 21    | 49    | 122     | 459     |      |      |       |
| 4     | -     | 46    | 24    | 13    | 15    | 19    | 57    | 128     | 495     |      |      |       |
| 5     | -     | 45    | 17    | 19    | 14    | 20    | 65    | 124     | 435     |      |      |       |
| 6     | -     | 46    | 16    | 23    | 23    | 22    | 64    | 119     | 237     |      |      |       |
| 7     | -     | 52    | 21    | 26    | 23    | 21    | 62    | 119     | 162     |      |      |       |
| 8     | -     | 45    | 22    | 24    | 25    | 35    | 61    | 128     | 181     |      |      |       |
| 9     | -     | 44    | 16    | 23    | 23    | 34    | 62    | 159     | 275     |      |      |       |
| 10    | -     | 41    | 26    | 23    | 22    | 26    | 64    | 209     | 303     |      |      |       |
| 11    | -     | 39    | 23    | 23    | 22    | 22    | 95    | 285     | 207     |      |      |       |
| 12    | 8.7   | 35    | 21    | 22    | 17    | 26    | 181   | 473     | 10      |      |      |       |
| 13    | 8.2   | 32    | 20    | 21    | 18    | 23    | 151   | 630     | 11      |      |      |       |
| 14    | -     | 26    | 19    | 20    | 20    | 22    | 138   | 535     | 10      |      |      |       |
| 15    | 7.7   | 34    | 20    | 20    | 17    | 18    | 131   | 515     | 10      |      |      |       |
| 16    | 37    | 34    | 22    | 16    | 23    | 21    | 130   | 488     | 10      |      |      |       |
| 17    | 40    | 31    | 19    | d14   | 19    | 20    | 110   | 442     | 9.5     |      |      |       |
| 18    | 39    | 31    | 22    | b16   | 15    | 22    | 116   | 301     | 9.5     |      |      |       |
| 19    | 34    | 30    | 25    | d16   | 22    | 23    | 124   | 291     | 9.5     |      |      |       |
| 20    | 32    | 27    | 19    | d18   | 18    | 26    | 120   | 277     | 9.0     |      |      |       |
| 21    | 31    | 29    | 19    | d24   | 16    | 26    | 126   | 244     | 8.0     |      |      |       |
| 22    | 37    | 29    | 25    | d22   | 18    | 29    | 148   | 265     | 5.3     |      |      |       |
| 23    | 42    | 29    | 21    | 22    | 15    | 31    | 173   | 283     | -       |      |      |       |
| 24    | 45    | 28    | 21    | 22    | 14    | 37    | 165   | 279     | -       |      |      |       |
| 25    | 46    | 27    | 23    | 20    | 23    | 40    | 164   | 115     | -       |      |      |       |
| 26    | 51    | 25    | 21    | 21    | 23    | 45    | 160   | 101     | -       |      |      |       |
| 27    | 52    | 21    | 19    | 21    | 18    | 46    | 157   | 79      | -       |      |      |       |
| 28    | 52    | 22    | 11    | 20    | 15    | 62    | 157   | 13      | -       |      |      |       |
| 29    | 52    | 24    | 15    | 16    | 17    | 67    | 152   | 13      | -       |      |      |       |
| 30    | 50    | 23    | 18    | 16    | ----- | 62    | 143   | 7.5     | -       |      |      |       |
| 31    | 48    | 20    | 22    | 22    | ----- | 62    | ----- | 5.3     | -----   |      |      |       |
| Total | 712.6 | 1,040 | 655   | 617   | 559   | 975   | 3,432 | 7,002.8 | 3,132.8 | -    | -    | -     |
| Mean  | -     | 34.7  | 21.1  | 19.9  | 19.3  | 31.5  | 114   | 226     | -       | -    | -    | -     |
| Ac-ft | 1,410 | 2,060 | 1,500 | 1,220 | 1,110 | 1,930 | 6,810 | 13,890  | 6,210   | -    | -    | -     |

Calendar year 1959: Max 528 Min - Mean - Ac-ft 34,900  
Water year 1959-60: Max 630 Min - Mean - Ac-ft 35,940

b Stage-discharge relation affected by ice.

d Doubtful gage-height record; discharge computed from reconstructed gage-height graph based on recorder graph and observer's notes.

Note.--No water was diverted from Weber River or Beaver Creek on days for which no figures are given.

## JORDAN RIVER BASIN

1550. Provo River near Hailstone, Utah

Location.--Lat 40°36', long 111°22', in SE $\frac{1}{4}$  sec.34, T.2 S., R.5 E., on right bank 3 miles upstream from Ross Creek and Hailstone.

Drainage area.--233 sq mi.

Records available.--October 1949 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,100 ft (from river-profile map).

Extremes.--Maximum discharge during year, 2,220 cfs May 13 (gage height, 6.08 ft); minimum, 11 cfs Aug. 20.

1949-60: Maximum discharge, 3,880 cfs June 4, 1957 (gage height, 7.28 ft); minimum, that of Aug. 20, 1960.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Records include flow of Weber-Provo diversion canal and Duchesne tunnel. Flow affected by irrigation diversions above station and by storage in several small reservoirs at headwaters.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Apr. 11-16, May 31 to June 2, July 8 to Sept. 30)

|     |     |     |       |
|-----|-----|-----|-------|
| 1.1 | 11  | 2.5 | 234   |
| 1.2 | 17  | 3.0 | 399   |
| 1.3 | 25  | 4.0 | 850   |
| 1.6 | 58  | 5.0 | 1,400 |
| 2.0 | 119 | 6.0 | 2,100 |

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                                                           | 84    | 161   | b100  |       |       | *b65  | 180    | 369    | *1,050 | 164   | a53   | 31    |
| 2                                                           | 85    | 159   | *b112 |       |       | b66   | 164    | 358    | 1,300  | 159   | *51   | 35    |
| 3                                                           | 82    | 155   | 103   |       | (*)   | b68   | 164    | 362    | 1,620  | 161   | 48    | 37    |
| 4                                                           | 84    | 159   | 98    |       |       | b76   | 192    | 384    | 1,600  | 159   | 38    | 45    |
| 5                                                           | 85    | 140   |       |       |       | b90   | *231   | 366    | 1,410  | 153   | 34    | 56    |
| 6                                                           | 88    | 142   |       | (*)   |       | 93    | 294    | 366    | 1,170  | *155  | 32    | 32    |
| 7                                                           | 103   | 161   |       |       |       | 99    | 334    | 411    | *1,010 | 177   | 27    | 32    |
| 8                                                           | 99    | 148   |       |       |       | b110  | 320    | 474    | 1,050  | 159   | 23    | *29   |
| 9                                                           | 105   | 146   |       |       |       | b110  | 380    | 637    | 1,030  | 153   | 23    | 28    |
| 10                                                          | 132   | 142   |       |       |       | 101   | 450    | 895    | 920    | 153   | 22    | 27    |
| 11                                                          | 130   | 134   | b80   |       |       | 90    | 515    | 1,180  | 740    | 149   | 21    | 26    |
| 12                                                          | 128   | 132   |       |       |       | 101   | *583   | 1,650  | 503    | 142   | 19    | 25    |
| 13                                                          | 125   | 119   |       |       |       | 96    | 498    | 2,010  | 466    | 144   | 15    | 27    |
| 14                                                          | 121   | 106   |       |       |       | 93    | 478    | 1,840  | 418    | 140   | 17    | 28    |
| 15                                                          | 123   | 123   |       |       |       | 87    | 458    | 1,650  | *388   | 139   | 16    | 24    |
| 16                                                          | 151   | 121   |       | b65   | b65   | 90    | 450    | 1,490  | 352    | 134   | 15    | 23    |
| 17                                                          | 155   | 110   |       |       |       | 88    | 384    | 1,420  | 352    | 130   | 19    | 26    |
| 18                                                          | 146   | 117   | a80   |       |       | 95    | 384    | 1,170  | 344    | a100  | 19    | 26    |
| 19                                                          | 142   | 117   |       |       |       | 106   | 399    | *985   | 304    | a90   | 17    | 24    |
| 20                                                          | 140   | 103   |       |       |       | 123   | 369    | 855    | 301    | a73   | 15    | 23    |
| 21                                                          | 136   | 105   | b80   |       |       | 140   | 430    | 825    | 269    | a71   | 12    | 21    |
| 22                                                          | 142   | 108   |       |       |       | 155   | 574    | 1,040  | 269    | a74   | 17    | 25    |
| 23                                                          | 153   | 114   | 82    |       |       | 170   | 651    | 1,120  | 226    | a80   | 28    | 27    |
| 24                                                          | 175   | 117   | 79    |       |       | 177   | 553    | 985    | 207    | a85   | 35    | 25    |
| 25                                                          | 177   | 112   | 82    |       |       | 184   | 511    | 855    | 182    | a83   | 39    | 25    |
| 26                                                          | 180   | 96    | 85    |       |       | 204   | 478    | 835    | 168    | a83   | 36    | 24    |
| 27                                                          | 175   | b90   |       |       |       | 218   | 438    | 815    | 159    | a70   | 30    | 23    |
| 28                                                          | *197  | b90   |       |       |       | 234   | *430   | 700    | 146    | a65   | 29    | 21    |
| 29                                                          | 177   | b90   | b85   |       |       | 218   | 418    | 850    | 138    | a60   | 27    | 21    |
| 30                                                          | 168   | b90   |       |       |       | 202   | 392    | 890    | 159    | a52   | 24    | 23    |
| 31                                                          | 161   | ----- |       |       |       | 197   | -----  | 865    | -----  | a52   | 26    | ----- |
| Total                                                       | 4,149 | 3,707 | 2,506 | 2,015 | 1,885 | 3,946 | 12,102 | 28,652 | 18,251 | 3,607 | 827   | 817   |
| Mean                                                        | 134   | 124   | 80.8  | 65    | 65    | 127   | 403    | 924    | 608    | 116   | 26.7  | 27.2  |
| Ac-ft                                                       | 8,230 | 7,350 | 4,970 | 4,000 | 3,740 | 7,830 | 24,000 | 56,850 | 36,200 | 7,160 | 1,640 | 1,620 |
| Calendar year 1959: Max 1,510 Min 32 Mean 230 Ac-ft 166,200 |       |       |       |       |       |       |        |        |        |       |       |       |
| Water year 1959-60: Max 2,010 Min 12 Mean 225 Ac-ft 163,600 |       |       |       |       |       |       |        |        |        |       |       |       |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for station near Kamas, Duchesne tunnel, and Weber-Provo diversion canal.

b Stage-discharge relation affected by ice.

1590. Deer Creek Reservoir near Charleston, Utah

Location.--Lat 40°24'20", long 111°31'40", in SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec.5, T.5 S., R.4 E., et dam on Provo River, 800 ft upstream from Deer Creek and 4½ miles southwest of Charleston.

Drainage area.--560 sq mi.

Records available.--December 1940 to September 1960.

Gage.--Mercury indicating gage read once daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Extremes.--Maximum contents during year, 125,700 acre-ft June 11, 12 (elevation, 5,406.20 ft); minimum, 55,750 acre-ft Oct. 16 (elevation, 5,367.78 ft).  
1940-60: Maximum contents, 155,900 acre-ft June 24, 25, 1957, June 8, 1958; maximum elevation, 5,418.25 ft June 8, 1958; minimum since reservoir first filled in June 1946, 55,750 acre-ft Oct. 16, 1959 (elevation, 5,367.78 ft).

Remarks.--Reservoir is formed by earth-fill dam with concrete cutoff wall. Storage began in October 1940. Capacity, 152,560 acre-ft between elevations 5,280 (bottom of outlet tunnel) and 5,417 ft (top of 20-foot radial gates). Dead storage, 2,870 acre-ft below elevation 5,305 ft (sill of trashrack structure). Water used for irrigation, domestic, and industrial purposes. Contents given herein include dead storage and are computed from 12 p.m. elevations which are based on trend indicated by 8 a.m. readings.

Cooperation.--Records of daily elevations and contents furnished by Provo River water commissioner.

Capacity table, water year 1959-60 (elevation, in feet, and contents, in acre-feet)

|       |        |       |         |
|-------|--------|-------|---------|
| 5,365 | 51,820 | 5,390 | 92,140  |
| 5,370 | 58,970 | 5,395 | 101,800 |
| 5,375 | 66,530 | 5,400 | 112,000 |
| 5,380 | 74,520 | 5,405 | 123,000 |
| 5,385 | 83,040 | 5,410 | 134,600 |

Contents, in acre-feet, at 12 p.m., water year October 1959 to September 1960

| Day | Oct.     | Nov.     | Dec.     | Jan.     | Feb.     | Mar.     | Apr.     | May      | June     | July     | Aug.     | Sept.    |
|-----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1   | 55,960   | 57,080   | 61,060   | 63,180   | 65,540   | 67,940   | 79,390   | 92,520   | 114,700  | 115,200  | 90,840   | 69,280   |
| 2   | 55,890   | 57,280   | 61,230   | 63,210   | 65,660   | 68,030   | 79,730   | 92,290   | 116,400  | 114,600  | 90,090   | 68,800   |
| 3   | 55,850   | 57,510   | 61,580   | 63,230   | 65,700   | 68,190   | 80,080   | 92,230   | 117,600  | 113,800  | 89,170   | 68,330   |
| 4   | 55,820   | 57,650   | 61,460   | 63,240   | 65,650   | 68,440   | 80,510   | 91,950   | 119,500  | 113,100  | 88,350   | 67,860   |
| 5   | 55,800   | 57,760   | 61,550   | 63,240   | 65,660   | 68,660   | 80,930   | 91,880   | 121,100  | 112,300  | 87,350   | 67,390   |
| 6   | 55,890   | 57,870   | 61,550   | 63,270   | 65,800   | 68,930   | 81,480   | 91,650   | 122,100  | 111,600  | 86,690   | 66,770   |
| 7   | 56,060   | 58,050   | 61,510   | 63,460   | 65,970   | 69,360   | 82,130   | 91,700   | 122,900  | 110,700  | 85,990   | 66,040   |
| 8   | 56,350   | 58,240   | 61,550   | 63,640   | 66,190   | 69,960   | 82,730   | 91,650   | 123,900  | 109,700  | 85,180   | 65,680   |
| 9   | 56,530   | 58,460   | 61,660   | 63,760   | 66,380   | 70,470   | 83,450   | 91,860   | 124,700  | 109,200  | 84,390   | 65,220   |
| 10  | 56,410   | 58,650   | 61,780   | 63,880   | 66,520   | 70,790   | 84,150   | 92,400   | 125,400  | 108,700  | 83,760   | 64,710   |
| 11  | 56,180   | 58,840   | 61,880   | 64,040   | 66,590   | 71,110   | 84,950   | 93,420   | 125,700  | 108,000  | 83,040   | 64,220   |
| 12  | 56,030   | 59,120   | 61,990   | 64,160   | 66,640   | 71,480   | 85,770   | 95,410   | 125,700  | 107,000  | 82,270   | 63,530   |
| 13  | 55,990   | 59,240   | 62,090   | 64,250   | 66,690   | 71,870   | 86,440   | 97,950   | 125,400  | 105,900  | 81,470   | 63,300   |
| 14  | 55,890   | 59,280   | 62,170   | 64,310   | 66,810   | 72,110   | 87,240   | 100,500  | 125,200  | 104,600  | 80,940   | 62,880   |
| 15  | 55,760   | 59,410   | 62,220   | 64,340   | 66,900   | 72,240   | 87,960   | 102,600  | 124,600  | 103,300  | 80,600   | 62,430   |
| 16  | 55,750   | 59,460   | 62,260   | 64,370   | 66,980   | 72,530   | 88,440   | 104,400  | 124,400  | 102,000  | 79,560   | 62,030   |
| 17  | 55,760   | 59,530   | 62,300   | 64,370   | 67,060   | 72,760   | 88,910   | 105,900  | 124,100  | 100,800  | 78,710   | 61,640   |
| 18  | 55,780   | 59,860   | 62,400   | 64,370   | 67,140   | 73,050   | 89,380   | 106,800  | 123,900  | 102,600  | 77,860   | 61,260   |
| 19  | 55,780   | 59,940   | 62,460   | 64,370   | 67,170   | 73,380   | 89,580   | 107,800  | 123,200  | 101,800  | 77,350   | 60,750   |
| 20  | 55,780   | 60,040   | 62,530   | 64,370   | 67,200   | 73,850   | 89,750   | 108,200  | 122,500  | 101,000  | 76,510   | 60,210   |
| 21  | 55,780   | 60,150   | 62,640   | 64,400   | 67,280   | 74,330   | 89,870   | 108,500  | 121,900  | 100,000  | 75,850   | 59,710   |
| 22  | 55,780   | 60,280   | 62,730   | 64,510   | 67,310   | 74,770   | 90,040   | 109,000  | 121,300  | 99,290   | 75,180   | 59,270   |
| 23  | 55,780   | 60,450   | 62,790   | 64,660   | 67,310   | 75,280   | 90,370   | 110,000  | 120,700  | 98,440   | 74,600   | 58,970   |
| 24  | 55,780   | 60,600   | 62,850   | 64,800   | 67,310   | 75,740   | 90,760   | 111,000  | 120,100  | 97,560   | 74,110   | 58,530   |
| 25  | 55,780   | 60,660   | 62,970   | 64,950   | 67,470   | 76,210   | 91,210   | 111,400  | 119,500  | 96,890   | 73,540   | 58,240   |
| 26  | 55,820   | 60,690   | 63,060   | 65,140   | 67,620   | 76,760   | 91,640   | 111,900  | 118,900  | 96,020   | 73,050   | 57,800   |
| 27  | 56,000   | 60,730   | 63,090   | 65,250   | 67,740   | 77,320   | 91,880   | 112,200  | 118,300  | 94,970   | 72,340   | 57,220   |
| 28  | 56,270   | 60,780   | 63,110   | 65,280   | 67,800   | 77,750   | 92,090   | 112,600  | 117,700  | 93,830   | 71,660   | 56,930   |
| 29  | 56,540   | 60,840   | 63,110   | 65,310   | 67,840   | 78,230   | 92,270   | 113,000  | 117,000  | 93,080   | 71,110   | 56,500   |
| 30  | 56,730   | 60,940   | 63,110   | 65,350   | 67,840   | 78,710   | 92,550   | 113,600  | 116,100  | 92,330   | 70,540   | 55,920   |
| 31  | 56,900   | 61,140   | 63,140   | 65,420   | 67,840   | 79,080   | 92,840   | 114,200  | 115,200  | 91,680   | 69,750   | 55,420   |
| (†) | 5,368.58 | 5,371.35 | 5,372.79 | 5,374.28 | 5,375.84 | 5,382.72 | 5,390.22 | 5,401.00 | 5,401.92 | 5,389.75 | 5,377.05 | 5,367.90 |
| (‡) | +860     | +4,040   | +2,200   | +2,280   | +2,420   | +11,240  | +13,470  | +21,650  | +1,900   | -24,420  | -21,930  | -13,830  |

Calendar year 1959..... ‡ -25,890

Water year 1959-60..... ‡ -120

† Elevation, in feet, at end of month.

‡ Change in contents, in acre-feet.

## JORDAN RIVER BASIN

1595. Provo River below Deer Creek Dam, Utah

Location--Lat 40°24'10", long 111°31'45", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 7, T.5 S., R.4 E., on right bank 200 ft upstream from Deer Creek, 1,000 ft downstream from Deer Creek Dam, and 4 miles northeast of Vivian Park.

Drainage area--560 sq mi.

Records available--May 1953 to September 1960.

Gage--Water-stage recorder. Altitude of gage is 5,270 ft (from topographic map).

Average discharge--7 years, 333 cfs (241,100 acre-ft per year).

Extremes--Maximum discharge during year, 690 cfs June 7 (gage height, 4.18 ft); minimum daily, 85 cfs Oct. 8.

1953-60: Maximum discharge, 2,190 cfs June 26, 1957 (gage height, 6.74 ft); no flow Feb. 2, 3, 1957, when reservoir gates were closed.

Remarks--Records good except those for period of no gage-height record, which are fair. Flow regulated by Deer Creek Reservoir (see preceding page) and by small lakes at headwaters that serve as reservoirs. Small transmountain diversions from Strawberry River drainage into Daniels Creek (see p. 107). Flow also affected by irrigation diversions above station and water diverted to Provo River by Weber-Provo diversion canal (see p. 99) and Duchesne tunnel (see p. 98).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used May 17, July 5-8)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.9 | 79  | 3.5 | 475 |
| 2.2 | 130 | 4.0 | 645 |
| 2.8 | 275 |     |     |

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     | *228   | 174    | 162    | 165    | 165   | *120  | 120   | 329    | 402    | 463    | 417    | 313    |
| 2     | 239    | 176    | 160    | 165    | 165   | 119   | 119   | 402    | 504    | 472    | 420    | 307    |
| 3     | 244    | 176    | *162   | 165    | *165  | 119   | 119   | 391    | 501    | 463    | *411   | 302    |
| 4     | 241    | 176    | 162    | 167    | 167   | 119   | 119   | 385    | 504    | 459    | 414    | 310    |
| 5     | 112    | 179    | 162    | *169   | 167   | 119   | *119  | 340    | 501    | 456    | 414    | 310    |
| 6     | 86     | *181   | 165    | 165    | 167   | 119   | 119   | 340    | 501    | 456    | 351    | 302    |
| 7     | 86     | 184    | 165    | 162    | 167   | 120   | 117   | 307    | 491    | *480   | 351    | 297    |
| 8     | 85     | 181    | 165    | 162    | 167   | 119   | 117   | 335    | 491    | 460    | 357    | *288   |
| 9     | 208    | 181    | 165    | 162    | 167   | 119   | 119   | 337    | 488    | 463    | 360    | 275    |
| 10    | 346    | 181    | 165    | 165    | 169   | 119   | 119   | 363    | 491    | 373    | 340    | 275    |
| 11    | 360    | 184    | 165    | 162    | 169   | 119   | 120   | 420    | 491    | 308    | 360    | 241    |
| 12    | 293    | 96     | 165    | 162    | 169   | 119   | 120   | 450    | 494    | 439    | 354    | 241    |
| 13    | 233    | 176    | 165    | 160    | a166  | 119   | 120   | 450    | 475    | 441    | 354    | 241    |
| 14    | 257    | 176    | 165    | 160    | a166  | 120   | 120   | 463    | *453   | 447    | 349    | 241    |
| 15    | 257    | 162    | 165    | 160    | a168  | 120   | 120   | 469    | 456    | 453    | 343    | 252    |
| 16    | 257    | 149    | 165    | 160    | a167  | 120   | 120   | 469    | 432    | 444    | 349    | 249    |
| 17    | 257    | 151    | 165    | 162    | a166  | 120   | 119   | *466   | 420    | 441    | 363    | 244    |
| 18    | 254    | 162    | 165    | 165    | a165  | 119   | 138   | 469    | 423    | 438    | 363    | 257    |
| 19    | 254    | 172    | 165    | 167    | a165  | 117   | 172   | 469    | 426    | 438    | 363    | 257    |
| 20    | 257    | 169    | 167    | 167    | a165  | 117   | 218   | 469    | 438    | 438    | 357    | 249    |
| 21    | 244    | 169    | 167    | 162    | a165  | 117   | 213   | 475    | 453    | 435    | 365    | 244    |
| 22    | 231    | 169    | 167    | 162    | a165  | 119   | 220   | 475    | 444    | 429    | 357    | 241    |
| 23    | 231    | 169    | 167    | 162    | a165  | 119   | 252   | 371    | 444    | 438    | 335    | 236    |
| 24    | 220    | 167    | 165    | 162    | a165  | 119   | 244   | 385    | 444    | 438    | 340    | 233    |
| 25    | 213    | 167    | 167    | 162    | 120   | 119   | 244   | 391    | 441    | 441    | 346    | 233    |
| 26    | 213    | 165    | 167    | 162    | 120   | 119   | 210   | 400    | 447    | 441    | 346    | 231    |
| 27    | 213    | 165    | 167    | 162    | 120   | 119   | 249   | *402   | 450    | 438    | 343    | 226    |
| 28    | *191   | 162    | 167    | 162    | 120   | 120   | *286  | 400    | 453    | 423    | 352    | 216    |
| 29    | 169    | 162    | 167    | 165    | 120   | 120   | 283   | 402    | 453    | 414    | 329    | 223    |
| 30    | 172    | 162    | 167    | 165    | ----- | 120   | 283   | 405    | 456    | 414    | 335    | 228    |
| 31    | 172    | -----  | 165    | 165    | ----- | 120   | ----- | 400    | -----  | 414    | 335    | -----  |
| Total | 6,821  | 5,043  | 5,118  | 5,063  | 4,592 | 3,693 | 5,038 | 12,529 | 13,667 | 13,536 | 11,153 | 7,764  |
| Mean  | 220    | 168    | 165    | 163    | 158   | 119   | 168   | 407    | 462    | 437    | 360    | 259    |
| Ac-ft | 13,530 | 10,000 | 10,150 | 10,040 | 9,110 | 7,320 | 9,990 | 25,050 | 27,500 | 26,850 | 22,120 | 15,400 |

Calendar year 1959: Max 581 Min 85 Mean 298 Ac-ft 216,100  
Water year 1959-60: Max 504 Min 85 Mean 258 Ac-ft 187,100

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for station at Vivian Park.

## 1610. Provo River at Vivian Park, Utah

Location.--Lat 40°21'40", long 111°33'45", in NW¼NW¼ sec.25, T.5 S., R.3 E., on right bank half a mile downstream from North Fork, 3,500 ft northwest of Vivian Park, and three-quarters of a mile upstream from South Fork.

Drainage area.--600 sq mi, approximately.

Records available.--October 1911 to September 1960. Monthly discharge only for some periods, published in WSP 1314. Prior to 1938, published as "at Forks."

Gage.--Water-stage recorder. Altitude of gage is 5,200 ft (from topographic map). Prior to Nov. 13, 1933, staff gage at site three-quarters of a mile downstream at different datum.

Extremes.--Maximum discharge during year, 593 cfs June 7 (gage height, 3.53 ft); minimum daily, 123 cfs Nov. 12.

1911-60: Maximum discharge observed, 3,180 cfs June 11, 1921; minimum daily, 29 cfs Mar. 11, 13, 15-17, 20-22, 1948.

Remarks.--Records good. Flow regulated by Deer Creek Reservoir (see p. 101) and by small lakes at headwaters that serve as reservoirs. Small transmountain diversions from Strawberry River drainage into Daniels Creek (see p. 107). Flow also affected by irrigation diversions above station and water diverted to Provo River by Weber-Provo diversion canal (see p. 99), and Duchesne tunnel (see p. 98).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Feb. 29 to Mar. 18,  
July 27 to Aug. 16)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.7 | 108 | 5.0 | 430 |
| 2.0 | 165 | 5.4 | 568 |
| 2.5 | 283 |     |     |

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                       | 250    | 197    | 178    | 195    | 180   | 134   | 147    | 332    | 446    | 470     | 450    | 318    |
| 2                       | 265    | 197    | 178    | 195    | 180   | *136  | 145    | 424    | 539    | 480     | 450    | 316    |
| 3                       | 270    | 195    | *180   | 195    | *184  | 136   | 145    | 417    | 543    | 470     | *437   | 313    |
| 4                       | 270    | 193    | 180    | 195    | 184   | 136   | *145   | 414    | 539    | 466     | 437    | 321    |
| 5                       | 169    | 190    | 182    | *197   | 184   | 136   | 147    | 373    | 536    | 466     | 433    | 318    |
| 6                       |        | *193   | 182    | 199    | 182   | 139   | 151    | *367   | 532    | 466     | 373    | 310    |
| 7                       | 143    | 193    | 182    | 195    | 182   | 141   | 153    | 350    | 525    | *473    | 364    | *305   |
| 8                       | 143    | 193    | 182    | 193    | 186   | 147   | 153    | 367    | 525    | 470     | 373    | 299    |
| 9                       | 234    | 190    | 184    | 193    | 186   | 141   | 159    | 379    | 522    | 470     | 370    | 288    |
| 10                      | 361    | 190    | 184    | 193    | 184   | 137   | 161    | 401    | 514    | 413     | 352    | 280    |
| 11                      | 373    | 190    | 184    | 195    | 182   | 136   | 163    | 470    | 514    | 326     | 370    | 254    |
| 12                      | 321    | 123    | 186    | 190    | 180   | 139   | 163    | 514    | 518    | 480     | 367    | 250    |
| 13                      | 260    | 186    | 186    | 188    | 180   | 137   | 163    | 543    | 504    | 463     | 358    | 247    |
| 14                      | 280    | 186    | 186    | 188    | 180   | 137   | 163    | 561    | *473   | 466     | 355    | 244    |
| 15                      | 280    | 178    | 186    | 188    | 180   | 137   | 163    | 554    | 470    | 470     | 352    | 254    |
| 16                      | 280    | 167    | 188    | 188    | 180   | 137   | 163    | 557    | 446    | 460     | 358    | 252    |
| 17                      | 278    | 169    | 188    | 186    | 178   | 137   | 163    | *564   | 433    | 460     | 370    | 252    |
| 18                      | 278    | 176    | 188    | 186    | 178   | 139   | 178    | 581    | 437    | 458     | 376    | 262    |
| 19                      | 278    | 184    | 188    | 188    | 178   | 141   | 210    | 550    | 433    | 456     | 373    | 267    |
| 20                      | 278    | 182    | 190    | 190    | 178   | 141   | 250    | 546    | 446    | 456     | 367    | 260    |
| 21                      | 267    | 182    | 188    | 188    | 178   | 145   | 244    | 539    | 456    | 456     | 373    | 254    |
| 22                      | 260    | 182    | 188    | 186    | 178   | 145   | 252    | 536    | 446    | 453     | 364    | 252    |
| 23                      | 260    | 180    | 188    | 186    | 178   | 145   | 280    | 430    | 450    | 456     | 341    | 250    |
| 24                      | 252    | 180    | 190    | 186    | 178   | 145   | 278    | 437    | 446    | 460     | 347    | 244    |
| 25                      | 247    | 180    | 197    | 186    | 155   | 145   | 254    | 433    | 446    | 466     | 350    | 244    |
| 26                      | 247    | 180    | 195    | 186    | 134   | 145   | 247    | 440    | 453    | 466     | 350    | 240    |
| 27                      | *247   | 180    | 186    | 184    | 134   | 147   | *270   | *437   | 460    | 463     | 350    | 237    |
| 28                      | 227    | 180    | 195    | 182    | 134   | 149   | 307    | 437    | 463    | 450     | 338    | 227    |
| 29                      | 204    | 180    | 195    | 182    | 132   | 149   | 305    | 440    | 463    | 440     | 332    | 230    |
| 30                      | 201    | 180    | 195    | 182    | ----- | 147   | 305    | 446    | 463    | 437     | 338    | 232    |
| 31                      | 199    | -----  | 195    | 182    | ----- | 149   | -----  | 443    | -----  | 446     | 335    | -----  |
| Total                   | 7,763  | 5,476  | 5,801  | 5,867  | 5,027 | 4,375 | 6,027  | 14,262 | 14,441 | 14,110  | 11,503 | 8,020  |
| Mean                    | 250    | 183    | 187    | 189    | 173   | 141   | 201    | 460    | 481    | 455     | 371    | 267    |
| Ac-ft                   | 15,400 | 10,860 | 11,510 | 11,640 | 9,970 | 8,680 | 11,950 | 28,290 | 28,640 | 27,990  | 22,820 | 15,910 |
| Calendar year 1959: Max | 608    |        |        | Min    | 123   |       | Mean   | 327    | Ac-ft  | 237,000 |        |        |
| Water year 1959-60: Max | 564    |        |        | Min    | 123   |       | Mean   | 281    | Ac-ft  | 203,700 |        |        |

\* Discharge measurement made on this day.

## JORDAN RIVER BASIN

1615. South Fork Provo River at Vivian Park, Utah

Location.--Lat 40°21'10", long 111°34'10". in NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.26, T.5 S., R.3 E., on right bank a quarter of a mile southeast of Vivian Park and half a mile upstream from mouth.

Drainage area.--30 sq mi, approximately.

Records available.--October 1911 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder and Parshall flume. Altitude of gage is 5,240 ft (from topographic map). Prior to June 15, 1913, staff gage at site half a mile downstream at different datum. June 15, 1913, to Nov. 21, 1933, staff gage at site a quarter of a mile downstream at different datum.

Extremes.--Maximum discharge during year, 20 cfs Feb. 8 (gage height, 0.72 ft); minimum, 3.6 cfs Aug. 15. 1911-60: Maximum discharge observed, 123 cfs May 27, 1922; minimum, that of Aug. 15, 1960.

Remarks.--Records good. Flow affected by irrigation diversions upstream and by diversion for city of Provo municipal supply which bypasses gaging station.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |
|-----|-----|
| 0.3 | 4.5 |
| .5  | 11  |
| .7  | 19  |

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     | 13    | 13    | 12   | 13   | 11    | 12    | 12    | 10    | 7.7   | 6.2   | 6.0   | 12    |
| 2     | 13    | 13    | 12   | 13   | 12    | *12   | 12    | 9.7   | *7.7  | 6.8   | 7.1   | 12    |
| 3     | 13    | 13    | *12  | 13   | 11    | 12    | 12    | 9.7   | 8.7   | 6.5   | *8.1  | 11    |
| 4     | 13    | 13    | 12   | *13  | *11   | 12    | *12   | 10    | 7.7   | 6.0   | 8.1   | 8.7   |
| 5     | 13    | 13    | 12   | 13   | 11    | 12    | 12    | 10    | 7.4   | 6.2   | 8.1   | 9.8   |
| 6     | 13    | 13    | 12   | 13   | 11    | 13    | 12    | 10    | 8.1   | 6.2   | 7.1   | 10    |
| 7     | 13    | 13    | 12   | 13   | 11    | 13    | 12    | 10    | 8.1   | *6.2  | 7.7   | *10   |
| 8     | 13    | 13    | 12   | 13   | 13    | 15    | 12    | 11    | 7.1   | 6.5   | 7.4   | 10    |
| 9     | 13    | 13    | 12   | 13   | 13    | 13    | 12    | 10    | 6.8   | 6.8   | 8.4   | 10    |
| 10    | 13    | 13    | 12   | 13   | 12    | 13    | 12    | 9.7   | 7.1   | 6.5   | 8.1   | 8.7   |
| 11    | 13    | 13    | 13   | 13   | 12    | 13    | 12    | 9.7   | 7.4   | 6.5   | 9.0   | 4.8   |
| 12    | 13    | 13    | 13   | 13   | 12    | 13    | 12    | 11    | 7.1   | 7.4   | 9.4   | 7.7   |
| 13    | 12    | 13    | 13   | 13   | 12    | 13    | 12    | 11    | *7.7  | 7.4   | 9.4   | 9.4   |
| 14    | 12    | 13    | 13   | 12   | 12    | 13    | 12    | *9.7  | 7.7   | 7.1   | 7.1   | 8.7   |
| 15    | 12    | 13    | 13   | 12   | 12    | 13    | 12    | 7.4   | 8.1   | 6.8   | 6.8   | 8.7   |
| 16    | 11    | 13    | 13   | 12   | 12    | 13    | 13    | 7.4   | 7.7   | 7.4   | 7.4   | 11    |
| 17    | 11    | 13    | 13   | 12   | 12    | 12    | 13    | 7.4   | 7.1   | 8.4   | 9.0   | 10    |
| 18    | 11    | 13    | 13   | 12   | 12    | 12    | 13    | *7.1  | 7.1   | 9.4   | 9.7   | 6.2   |
| 19    | 11    | 12    | 13   | 12   | 12    | 13    | 13    | 8.1   | 7.7   | 7.4   | 9.4   | 6.5   |
| 20    | 11    | 13    | 13   | 12   | 11    | 13    | 13    | 8.7   | 7.4   | 8.1   | 9.4   | 10    |
| 21    | 11    | 13    | 13   | 12   | 12    | 13    | 12    | 8.4   | 7.7   | 8.1   | 6.2   | 11    |
| 22    | 9.7   | 13    | 13   | 12   | 12    | 13    | 12    | 7.4   | 8.4   | 8.1   | 8.4   | 11    |
| 23    | 6.0   | 13    | 13   | 12   | 12    | 14    | 12    | 8.1   | 9.0   | 7.1   | 9.4   | 11    |
| 24    | 7.1   | 13    | 13   | 12   | 12    | 13    | 12    | 8.7   | 8.7   | 6.8   | 9.4   | 9.7   |
| 25    | 8.4   | 12    | 13   | 12   | 13    | 13    | 12    | 8.7   | 8.1   | 6.8   | 9.7   | 5.1   |
| 26    | 9.7   | 12    | 13   | 12   | 13    | 13    | 12    | 9.4   | 7.7   | 6.8   | 9.4   | 7.7   |
| 27    | *13   | 12    | 13   | 12   | 13    | 13    | *13   | 10    | 7.4   | 7.4   | 9.0   | 9.7   |
| 28    | 14    | 12    | 13   | 11   | 13    | 13    | 12    | 7.7   | 6.8   | 8.4   | 6.8   | 11    |
| 29    | 14    | 12    | 13   | 11   | 12    | 13    | 11    | 8.4   | 6.0   | 8.1   | 8.1   | 9.7   |
| 30    | 14    | 12    | 13   | 11   | ----- | ----- | 10    | 8.7   | 5.7   | 8.7   | 10    | 8.7   |
| 31    | 14    | ----- | 13   | 11   | ----- | 13    | ----- | 7.4   | ----- | 6.0   | 11    | ----- |
| Total | 367.9 | 383   | 393  | 381  | 347   | 399   | 363   | 280.5 | 226.9 | 222.1 | 260.1 | 279.7 |
| Mean  | 11.9  | 12.8  | 12.7 | 12.3 | 12.0  | 12.9  | 12.1  | 9.05  | 7.56  | 7.16  | 8.39  | 9.32  |
| Ac-ft | 730   | 760   | 780  | 758  | 688   | 791   | 720   | 556   | 450   | 441   | 516   | 555   |

Calendar year 1959: Max 20 Min 5.7 Mean 13.1 Ac-ft 9,480  
 Water year 1959-60: Max 15 Min 4.8 Mean 10.7 Ac-ft 7,740

\* Discharge measurement made on this day.

## 1630. Provo River at Provo, Utah

Location.--Lat 40°14'15", long 111°41'55", in NW 1/4 sec. 3, T. 7 S., R. 2 E., on left bank 1,300 ft downstream from bridge on State Highway 114, 2 miles west of Provo, and 2 miles upstream from mouth.

Drainage area.--680 sq mi, approximately.

Records available.--May 1903 to June 1905, May 1933 to September 1934, January 1937 to September 1960. Monthly discharge only for some periods, published in WSP 1314. Published as "at San Pedro, Los Angeles, and Salt Lake Railroad bridge, near Provo" 1903-4 and as "at Rio Grande Western Railroad bridge, near Provo" 1905.

Gage.--Water-stage recorder. Altitude of gage is 4,510 ft (from topographic map). May 1903 to June 1905, staff gages at site three-quarters of a mile upstream at different datums. May 1933 to September 1934, staff gage at present site at different datum. January 1937 to November 1938, water-stage recorder at site 1,000 ft upstream at different datum. November 1938 to Aug. 23, 1957, water-stage recorder at present site at datum 2.00 ft higher.

Extremes.--Maximum discharge during year, 309 cfs Oct. 12 (gage height, 3.15 ft); minimum, 0.3 cfs Aug. 25 (gage height, 1.05 ft).  
1903-5, 1933-34, 1937-60: Maximum discharge, 2,520 cfs May 6, 1952 (gage height, 6.37 ft); practically no flow for several periods.

Remarks.--Records good. Station is below all diversions. At times entire flow is diverted above station for irrigation. Flow regulated by Deer Creek Reservoir (see p. 101) and small lakes at headwaters that serve as reservoirs. Small transmountain diversions from Strawberry River drainage into Daniels Creek (see p. 107). Flow affected by Weber-Provo diversion canal (see p. 99) and Duchesne tunnel (see p. 98). Certain diversions for industrial use which reach Provo Bay, an arm of Utah Lake, are made above station; however, part of this flow is used for irrigation.

Revisions (water years).--WSP 1564: 1904, 1934.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Mar. 24 to Aug. 20)

|     |     |     |    |     |     |
|-----|-----|-----|----|-----|-----|
| 1.0 | 0.4 | 1.5 | 14 | 2.6 | 175 |
| 1.1 | 1.7 | 1.7 | 27 | 3.0 | 279 |
| 1.2 | 3.5 | 1.9 | 47 | 3.5 | 439 |
| 1.3 | 5.9 | 2.2 | 92 |     |     |

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     | 170    | 129   | 164    | 170    | 168   | 107   | 123     | 6.2   | 3.3   | 2.2  | 2.2  | 0.5   |
| 2     | 206    | 150   | 161    | 170    | 168   | 104   | 117     | 8.2   | 2.5   | 1.7  | 1.4  | .4    |
| 3     | 229    | 157   | 164    | 170    | 164   | 102   | 115     | 6.8   | 3.5   | 2.5  | 1.3  | .6    |
| 4     | 229    | 157   | 159    | 175    | 161   | 104   | 109     | 4.6   | 4.6   | 1.6  | *1.1 | 1.6   |
| 5     | 116    | 161   | 154    | 182    | 164   | 105   | 96      | 4.6   | 4.2   | 1.4  | 1.0  | 1.9   |
| 6     | 32     | 164   | 157    | 185    | 164   | 109   | 94      | 4.2   | 4.6   | 2.2  | 1.4  | 1.7   |
| 7     | 32     | 166   | 159    | 185    | 164   | 113   | 94      | 4.2   | 4.9   | *4.6 | 1.4  | *2.0  |
| 8     | 38     | 168   | 170    | 177    | 170   | 131   | 92      | 3.7   | 4.2   | 2.7  | 1.4  | 2.4   |
| 9     | 86     | 168   | 170    | 168    | 177   | 117   | 91      | 3.5   | 3.7   | 2.4  | 1.3  | 1.9   |
| 10    | 268    | 168   | 175    | 168    | 170   | 109   | 89      | 3.5   | 4.4   | 2.4  | 1.0  | 1.1   |
| 11    | 294    | 168   | 177    | 170    | 170   | 121   | 79      | 3.5   | 5.1   | 2.2  | .9   | 1.6   |
| 12    | 279    | 107   | 177    | 173    | 168   | 121   | 77      | 4.9   | 3.9   | 2.2  | .9   | 1.6   |
| 13    | 209    | 168   | 180    | 185    | 168   | 127   | 68      | 4.6   | *4.2  | 2.4  | 1.0  | 1.6   |
| 14    | 224    | 173   | 177    | 182    | 170   | 127   | 53      | 2.9   | 4.6   | 2.0  | 1.6  | 1.4   |
| 15    | 219    | 173   | 170    | 182    | 164   | 109   | 43      | 3.5   | 4.6   | 1.7  | 1.3  | 1.0   |
| 16    | 197    | 159   | 164    | 180    | 173   | 109   | 35      | 5.9   | 3.3   | 1.7  | 1.0  | 1.1   |
| 17    | 187    | *161  | *164   | 177    | 173   | 105   | 26      | 3.9   | 2.4   | 1.7  | .7   | 1.1   |
| 18    | 192    | 166   | 159    | 180    | 170   | 102   | 13      | *3.1  | 2.0   | 1.7  | .9   | 1.4   |
| 19    | 214    | 175   | 157    | 180    | 159   | 102   | 3.9     | 3.5   | 1.4   | 1.7  | .9   | 1.4   |
| 20    | 206    | 170   | 173    | 182    | 166   | 107   | 4.9     | 2.9   | 1.4   | 1.7  | 1.0  | 1.3   |
| 21    | 194    | 173   | 177    | 182    | 159   | 117   | 2.4     | 2.7   | 1.4   | 1.4  | .9   | 1.6   |
| 22    | 177    | 173   | 177    | *180   | 161   | 117   | 2.9     | 2.5   | 1.6   | 1.4  | .5   | 1.6   |
| 23    | *170   | 173   | 175    | 170    | 159   | 119   | 4.2     | 2.2   | 1.7   | 1.6  | .5   | 1.7   |
| 24    | 161    | 173   | 175    | 168    | 157   | 115   | 2.9     | 1.9   | 1.6   | 1.7  | .4   | 1.7   |
| 25    | 133    | 173   | 185    | 170    | 144   | *113  | 3.5     | 1.6   | 1.9   | 1.6  | .4   | 2.4   |
| 26    | 142    | 168   | 182    | 175    | 115   | 115   | 4.6     | 1.6   | 2.5   | 1.4  | 2.5  | 2.7   |
| 27    | 146    | 166   | 180    | 173    | *115  | 109   | *6.2    | 1.7   | 1.7   | 1.4  | 2.4  | 2.4   |
| 28    | 135    | 166   | 180    | 170    | 115   | 113   | 5.4     | 2.7   | 2.0   | 1.4  | 1.1  | 1.9   |
| 29    | 117    | 166   | 182    | 170    | 111   | 115   | 5.4     | 2.9   | 1.6   | 1.3  | 1.0  | 1.7   |
| 30    | 121    | 166   | 182    | 168    | 111   | 125   | 6.2     | 2.4   | *4.2  | 1.4  | .7   | 1.6   |
| 31    | 119    | ----- | 180    | 168    | ----- | 123   | -----   | 2.4   | ----- | 1.7  | .4   | ----- |
| Total | 5,242  | 4,905 | 5,306  | 5,433  | 4,587 | 3,512 | 1,466.5 | 112.8 | 107.4 | 59.0 | 34.6 | 46.9  |
| Mean  | 169    | 164   | 171    | 175    | 158   | 113   | 48.9    | 3.64  | 3.58  | 1.90 | 1.12 | 1.56  |
| Ac-ft | 10,400 | 9,730 | 10,520 | 10,780 | 9,100 | 6,970 | 2,910   | 224   | 213   | 117  | 69   | 93    |

Calendar year 1959: Max 312

Water year 1959-60: Max 294

Min -

Min 0.4

Mean 123

Mean 84.2

Ac-ft 88,910

Ac-ft 61,130

\* Discharge measurement made on this day.

1645. American Fork above upper powerplant, near American Fork, Utah

Location.--Lat 40°26'50", long 111°40'55", in NW1/4 sec.26, T.4 S., R.2 E., on right bank 600 ft downstream from Rock Creek, 1,000 ft upstream from intake for upper powerplant of Utah Power & Light Co., 4 miles upstream from mouth of canyon, and 8 miles northeast of American Fork.

Drainage area.--51.1 sq mi.

Records available.--January 1927 to September 1960. Monthly discharge only January 1927 to September 1945, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,950 ft (from topographic map).

Average discharge.--33 years, 52.5 cfs (38,010 acre-ft per year).

Extremes.--Maximum discharge during year, 293 cfs May 13 (gage height, 6.4 ft); minimum daily, 10 cfs Dec. 5.

1927-60: Maximum discharge not determined, occurred July 30, 1953 (gage height, 9.2 ft, from floodmark); minimum, 4 cfs Jan. 25, 1952.

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

Cooperation.--Records collected by Utah Power & Light Co., under general supervision of Geological Survey, in connection with a Federal Power Commission project.

Revisions.--WSP 1634: Drainage area.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Oct. 1 to Nov. 25, Aug. 15 to Sept. 30)

Oct. 1 to Dec. 31

Jan. 1 to Sept. 30

|     |    |     |    |     |     |
|-----|----|-----|----|-----|-----|
| 4.6 | 9  | 4.6 | 9  | 5.5 | 72  |
| 4.7 | 14 | 4.9 | 20 | 5.9 | 145 |
| 4.8 | 21 | 5.2 | 39 | 6.4 | 281 |
| 4.9 | 30 |     |    |     |     |

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                       | 16    | 18    | 14   | 15   | 13     | 12    | 24        | 44    | 193          | 50    | 24    | 18    |
| 2                       | 17    | 18    | 15   | 14   | 14     | 11    | 22        | 48    | *212         | 49    | 24    | *18   |
| 3                       | 16    | 18    | *15  | 14   | 13     | *11   | 22        | 51    | 215          | 47    | 24    | 18    |
| 4                       | 15    | *18   | 13   | *13  | *14    | 12    | *25       | 59    | 199          | 45    | *23   | 19    |
| 5                       | 15    | 15    | 10   | 14   | 13     | 12    | 31        | 55    | 183          | 43    | 23    | 18    |
| 6                       | 15    | 14    | 13   | 16   | 14     | *13   | 48        | *60   | 173          | 42    | 22    | *18   |
| 7                       | 17    | 18    | 14   | 16   | 14     | 14    | 56        | 72    | *180         | *46   | 22    | 18    |
| 8                       | 16    | 18    | 14   | 16   | 14     | 16    | 57        | 96    | 180          | 45    | 22    | 18    |
| 9                       | 18    | 18    | 14   | 16   | 14     | 14    | 71        | 125   | 162          | 44    | 22    | 18    |
| 10                      | 25    | 17    | 14   | 16   | 14     | 14    | 90        | 162   | 150          | 44    | 21    | 18    |
| 11                      | 24    | 17    | 14   | 16   | 13     | 13    | 96        | 196   | 136          | 41    | 22    | 17    |
| 12                      | 25    | 18    | 14   | 16   | 13     | 14    | 81        | 223   | 127          | 40    | 22    | 17    |
| 13                      | 22    | 17    | 14   | 15   | 13     | 14    | 76        | 257   | *121         | 38    | 22    | 17    |
| 14                      | 20    | 13    | 14   | 15   | 12     | 14    | 74        | *229  | 117          | 37    | 21    | 17    |
| 15                      | 20    | 16    | 14   | 15   | 12     | 13    | 68        | 226   | 114          | 36    | 20    | 17    |
| 16                      | 20    | 16    | 14   | 14   | 13     | 13    | 66        | 212   | 108          | 34    | 20    | 17    |
| 17                      | 20    | 15    | *15  | 14   | 12     | 13    | *58       | 201   | 102          | 34    | 21    | 18    |
| 18                      | 20    | 16    | 14   | 14   | 12     | 14    | 57        | 173   | 97           | 33    | *20   | 17    |
| 19                      | 20    | 15    | 13   | 14   | 12     | 14    | 59        | 138   | 92           | 33    | 20    | 17    |
| 20                      | 19    | 15    | 13   | 14   | 12     | 16    | 59        | 121   | 86           | 32    | 19    | 17    |
| 21                      | 18    | 15    | 14   | 14   | 12     | 18    | 71        | 117   | 78           | 31    | 18    | 16    |
| 22                      | 17    | 15    | 14   | 13   | 12     | 20    | 86        | 136   | 72           | 30    | 20    | 18    |
| 23                      | 18    | 16    | 14   | 13   | 12     | 22    | 81        | 152   | 68           | 29    | 20    | 17    |
| 24                      | 19    | 16    | 14   | 13   | 12     | 26    | 71        | 132   | 64           | 28    | 19    | 16    |
| 25                      | 19    | 15    | 15   | *13  | 12     | 28    | 63        | 136   | 63           | 27    | 18    | 16    |
| 26                      | 19    | 13    | 15   | 13   | 12     | 31    | *58       | 150   | 60           | 26    | 18    | 16    |
| 27                      | *20   | 12    | 13   | 13   | 12     | 34    | 52        | 158   | 58           | 26    | 18    | 16    |
| 28                      | 20    | 12    | 14   | 13   | 12     | 34    | 49        | 145   | 56           | 24    | 18    | 16    |
| 29                      | 19    | 13    | 14   | 13   | 12     | 30    | 45        | 168   | 55           | 24    | 18    | 16    |
| 30                      | 18    | 14    | 15   | 13   | -----  | 27    | 44        | 175   | 52           | 24    | 18    | 16    |
| 31                      | 18    | ----- | 15   | 13   | -----  | 26    | -----     | 180   | -----        | 24    | 17    | ----- |
| Total                   | 585   | 471   | 432  | 441  | 369    | 563   | 1,760     | 4,397 | 3,573        | 1,106 | 636   | 515   |
| Mean                    | 18.9  | 15.7  | 13.9 | 14.2 | 12.7   | 18.2  | 58.7      | 142   | 119          | 35.7  | 20.5  | 17.2  |
| Ac-ft                   | 1,160 | 934   | 857  | 875  | 732    | 1,120 | 3,490     | 8,720 | 7,090        | 2,190 | 1,260 | 1,020 |
| Calendar year 1959: Max |       |       | 171  |      | Min 10 |       | Mean 34.0 |       | Ac-ft 24,600 |       |       |       |
| Water year 1959-60: Max |       |       | 257  |      | Min 10 |       | Mean 40.6 |       | Ac-ft 29,450 |       |       |       |

\* Discharge measurement made on this day.

## Transmountain diversions from Colorado River basin to Jordan River basin

The following ditches and tunnels in Utah, each equipped with a water-stage recorder, divert water from the Colorado River basin to the Jordan River basin.

9-2725. Duchesne tunnel diverts water from the Duchesne River to the Provo River. Gage is located in NE $\frac{1}{4}$  sec.2, T.3 S., R.8 E. (see p. 98 ) for complete record of daily discharge).

9-2800. Strawberry River and Willow Creek ditches divert water from the Strawberry River drainage to Daniels Creek (tributary of Provo River). The combined flow is gaged in sec.4, T.2 S., R.12 W., Uinta special meridian. Records of daily flow are available in Salt Lake City district office.

9-2815. Hobble Creek ditch diverts water from tributary of Strawberry River to Daniels Creek (tributary to Provo River). Gage is located in NW $\frac{1}{4}$  sec.15, T.6 S., R.6 E. Records of daily flow are available in Salt Lake City district office.

9-2820. Strawberry tunnel whose west portal is in SW $\frac{1}{4}$  sec.34, T.7 S., R.6 E., diverts water from Strawberry Reservoir on Strawberry River to Diamond Fork in the Jordan River basin. Records furnished by Spanish Fork Water Users Association and include tunnel seepage (see p. 92 for complete record of daily discharge).

Transmountain diversions, in acre-feet, water year October 1959 to September 1960

| Name                                             | Oct.  | Nov.  | Dec. | Jan. | Feb. | Mar.  | Apr.  | May    | June   | July   | Aug.   | Sept. | Water<br>year |
|--------------------------------------------------|-------|-------|------|------|------|-------|-------|--------|--------|--------|--------|-------|---------------|
| Duchesne tunnel...                               | 1,520 | 1,150 | 605  | 529  | 545  | 712   | 2,740 | 12,080 | 13,350 | 1,260  | 47     | 61    | 34,600        |
| Strawberry River<br>and Willow Creek<br>ditches. | 31    | 0     | 0    | 0    | 0    | 0     | 14    | 1,560  | 815    | 253    | 107    | 77    | 2,840         |
| Hobble Creek ditch                               | 7     | 3     | 0    | 0    | 0    | 0     | 12    | 587    | 87     | 0      | 0      | 0     | 696           |
| Strawberry tunnel.                               | 1,490 | 298   | 307  | 307  | 288  | 339   | 1,130 | 10,410 | 23,890 | 19,500 | 15,890 | 4,410 | 78,260        |
| Total in Utah...                                 | 3,050 | 1,450 | 912  | 836  | 833  | 1,050 | 3,900 | 24,640 | 38,140 | 20,990 | 16,040 | 4,550 | 116,400       |

## JORDAN RIVER BASIN

1670. Jordan River at narrows, near Lehi, Utah

Location.--Lat 40°26'40", long 111°55'15", in SE¼NW¼ sec.26, T.4 S., R.1 W., at narrows 5½ miles northwest of Lehi and 7½ miles downstream from Utah Lake.

Drainage area (revised).--3,000 sq mi, approximately, including 255 sq mi in closed basin in Cedar Valley.

Records available.--May to December 1904, July 1913 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 4,470 ft (by barometer). Prior to May 16, 1920, staff gage and May 16, 1920, to Sept. 30, 1934, water-stage recorder, at outlet of Utah Lake 7½ miles upstream at different datum.

Average discharge.--47 years (1913-60), 365 cfs (264,200 acre-ft per year).

Extremes.--1904, 1913-60: Maximum daily discharge, 1,410 cfs June 10, 1952; no flow at times when gates were closed.

Remarks.--Records good. Figures given herein represent combined flow of Jordan River, Utah and Salt Lake Canal, and East Jordan Canal. Flow may be regulated by gates and pumps at outlet of Utah Lake, pumps at Pelican Point, and diversion dam at narrows.

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                       | 187    | 83    | 86    | 21    | 1.2   | 2.2   | 27      | 398    | 628     | 797    | 891    | 525    |
| 2                       | 189    | 84    | 52    | 21    | 1.2   | 2.2   | 25      | 457    | 629     | 795    | 638    | 523    |
| 3                       | 184    | 84    | 18    | 21    | 1.4   | 2.5   | 25      | 530    | 637     | 781    | 844    | 516    |
| 4                       | 189    | 85    | 18    | 21    | 1.4   | 2.5   | 25      | 560    | 631     | 778    | 670    | 520    |
| 5                       | 203    | 86    | 18    | 21    | 1.7   | 2.5   | 29      | 479    | 635     | 792    | 667    | 521    |
| 6                       | 210    | 85    | 19    | 21    | 1.7   | 2.5   | 28      | 447    | 629     | 790    | 639    | 521    |
| 7                       | 210    | 85    | 20    | 21    | 1.7   | 2.5   | 15      | 491    | 627     | 794    | 661    | 517    |
| 8                       | 226    | 85    | 20    | 21    | 1.7   | 2.5   | 3.9     | 551    | 616     | 790    | 648    | 432    |
| 9                       | 239    | 85    | 20    | 18    | 2.0   | 2.5   | 3.9     | 580    | 613     | 790    | 669    | 385    |
| 10                      | 252    | 85    | 21    | 13    | 2.0   | 2.2   | 3.6     | 605    | 589     | 787    | 676    | 453    |
| 11                      | 254    | 85    | 21    | 13    | 2.0   | 2.2   | 3.6     | 606    | 567     | 781    | 667    | 439    |
| 12                      | 253    | 85    | 20    | 13    | 2.0   | 2.2   | 10      | 613    | 524     | 771    | 667    | 449    |
| 13                      | 253    | 84    | 19    | 13    | 2.0   | 2.2   | 3.1     | 602    | 598     | 774    | 662    | 460    |
| 14                      | 253    | 84    | 20    | 5.2   | 2.0   | 2.2   | 2.8     | 610    | 608     | 775    | 650    | 439    |
| 15                      | 127    | 84    | 22    | 2.0   | 2.0   | 2.2   | 2.8     | 622    | 605     | 771    | 549    | 385    |
| 16                      | 92     | 84    | 22    | 1.7   | 2.0   | 2.2   | 2.5     | 643    | 621     | 766    | 417    | 393    |
| 17                      | 93     | 84    | 22    | 1.7   | 2.0   | 2.2   | 2.8     | 648    | 643     | 769    | 531    | 409    |
| 18                      | 93     | 84    | 22    | 1.4   | 2.0   | 2.2   | 2.8     | 613    | 682     | 771    | 532    | 416    |
| 19                      | 92     | 84    | 21    | 1.4   | 2.2   | 2.2   | 2.5     | 524    | 691     | 766    | 531    | 394    |
| 20                      | 95     | 84    | 21    | 1.4   | 2.2   | 2.2   | 2.5     | 534    | 691     | 762    | 524    | 407    |
| 21                      | 106    | 83    | 21    | 1.4   | 2.2   | 2.2   | 16      | 581    | 719     | 764    | 517    | 354    |
| 22                      | 118    | 84    | 21    | 1.4   | 2.2   | 2.2   | 141     | 625    | 730     | 764    | 505    | 217    |
| 23                      | 134    | 84    | 21    | 1.2   | 2.2   | 34    | 160     | 620    | 747     | 761    | 477    | 352    |
| 24                      | 134    | 85    | 21    | 1.2   | 2.2   | 45    | 169     | 602    | 743     | 757    | 510    | 341    |
| 25                      | 133    | 85    | 21    | 1.2   | 2.2   | 37    | 248     | 616    | 766     | 754    | 488    | 315    |
| 26                      | 142    | 84    | 20    | 1.2   | 2.2   | 36    | 261     | 626    | 773     | 753    | 525    | 321    |
| 27                      | 141    | 84    | 21    | 1.2   | 2.2   | 40    | 322     | 604    | 794     | 751    | 456    | 312    |
| 28                      | 138    | 84    | 21    | 1.2   | 2.2   | 36    | 352     | 632    | 804     | 751    | 396    | 294    |
| 29                      | 137    | 85    | 21    | 1.2   | 2.2   | 36    | 337     | 634    | 799     | 748    | 487    | 264    |
| 30                      | 118    | 85    | 21    | 1.2   | ----- | 27    | 358     | 628    | 798     | 736    | 517    | 296    |
| 31                      | 102    | ----- | 21    | 1.2   | ----- | 24    | -----   | 625    | -----   | 740    | 526    | -----  |
| Total                   | 5,097  | 2,532 | 732   | 266.4 | 56.2  | 365.5 | 2,582.8 | 17,906 | 20,137  | 23,880 | 17,737 | 12,170 |
| Mean                    | 164    | 84.4  | 23.6  | 8.59  | 1.94  | 11.8  | 86.1    | 578    | 671     | 770    | 572    | 406    |
| Ac-ft                   | 10,110 | 5,020 | 1,450 | 528   | 111   | 725   | 5,120   | 35,520 | 39,940  | 47,370 | 35,180 | 24,140 |
| Calendar year 1959: Max | 855    |       |       | Min   | 0.9   | Mean  | 314     | Ac-ft  | 227,600 |        |        |        |
| Water year 1959-60: Max | 804    |       |       | Min   | 1.2   | Mean  | 283     | Ac-ft  | 205,200 |        |        |        |

## 1705. Surplus Canal at Salt Lake City, Utah

Location.--Lat 40°43'40", long 111°55'35", in SW 1/4 sec. 14, T.1 S., R.1 W., on right bank 350 ft downstream from diversion dam which is an eighth of a mile downstream from highway bridge over Jordan River on Twenty-first South Street, Salt Lake City.

Records available.--December 1942 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 4,219.02 ft above mean sea level, datum of 1929. Prior to Oct. 22, 1952, at site 50 ft upstream at present datum.

Average discharge.--17 years (1943-60), 188 cfs (136,100 acre-ft per year).

Extremes.--Maximum discharge during year, 310 cfs May 13 (gage height, 5.28 ft); minimum daily, 45 cfs Feb. 8.

1942-60: Maximum discharge, 1,700 cfs June 7, 1952; maximum gage height, 8.84 ft May 7, 1952; minimum daily discharge, 9.6 cfs Jan. 13, Feb. 20, June 26, 1956.

Remarks.--Records fair. Flow regulated by headgates at diversion dam 350 ft above station. Canal was built to bypass floodwater of Jordan River around Salt Lake City; residential and industrial area (see p. 111 for records of combined flow of Jordan River and Canal). Several diversions for irrigation below station.

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                       | 189   | 122   | 70    | 70    | 60     | 59       | 53    | 118          | 181   | *80   | *128  | 115   |
| 2                       | 165   | 99    | 77    | *66   | 84     | *58      | *87   | 104          | 182   | 85    | 110   | *115  |
| 3                       | *163  | *82   | 80    | 60    | 90     | 54       | 99    | 112          | 180   | 106   | 94    | 109   |
| 4                       | 154   | 71    | 80    | 66    | 68     | 54       | 90    | 123          | 200   | 130   | 90    | 134   |
| 5                       | 130   | 74    | 78    | 63    | 61     | 64       | 91    | 130          | 197   | 134   | 114   | 123   |
| 6                       | 125   | 73    | 75    | 64    | *61    | 63       | 118   | 134          | 192   | 123   | 107   | 123   |
| 7                       | 139   | *75   | 77    | 66    | 52     | 57       | 166   | 128          | 181   | 123   | 112   | 117   |
| 8                       | 147   | 74    | 77    | 66    | 45     | 87       | 160   | 128          | 224   | 112   | 155   | 112   |
| 9                       | 144   | 74    | 77    | *67   | 63     | 73       | 144   | 146          | 242   | 118   | 96    | 101   |
| 10                      | 144   | 78    | 82    | 67    | 61     | 61       | 171   | 187          | 237   | 134   | 84    | 91    |
| 11                      | 144   | 78    | 82    | 84    | 61     | 56       | 174   | 224          | 213   | 125   | 94    | 101   |
| 12                      | 139   | 85    | 78    | 91    | 60     | 59       | 136   | 240          | 186   | 109   | 102   | 120   |
| 13                      | 139   | 84    | 67    | 88    | 60     | 63       | 128   | 270          | 178   | 109   | 91    | 122   |
| 14                      | 136   | *80   | 67    | 77    | 60     | 81       | 106   | *235         | 176   | 106   | 85    | 126   |
| 15                      | 136   | 88    | 66    | 71    | 61     | 70       | 101   | 214          | 198   | *115  | *78   | *130  |
| 16                      | 128   | 102   | *64   | *67   | *63    | 78       | *94   | 216          | *184  | 96    | 90    | 122   |
| 17                      | *117  | 85    | 66    | 66    | 57     | *74      | 93    | 184          | 160   | 110   | 95    | 144   |
| 18                      | 107   | 75    | 71    | 64    | 50     | 73       | 91    | 190          | 149   | 120   | 100   | 152   |
| 19                      | 107   | 71    | 68    | 64    | 53     | 66       | 81    | 205          | 150   | 106   | 100   | 142   |
| 20                      | 110   | 64    | 70    | 64    | *52    | 60       | 80    | 189          | 146   | 98    | 100   | 125   |
| 21                      | 110   | 61    | 71    | 63    | 52     | 57       | 80    | 174          | 138   | 91    | 105   | 107   |
| 22                      | 110   | 63    | 71    | 61    | 56     | 50       | 78    | 183          | 154   | 98    | 170   | 104   |
| 23                      | 112   | 60    | 70    | *63   | 52     | 50       | 85    | 160          | 128   | 106   | 145   | 104   |
| 24                      | 142   | *63   | *70   | 66    | 50     | 70       | 130   | 163          | 125   | 122   | 120   | 107   |
| 25                      | 174   | 77    | 77    | 64    | 56     | 64       | 125   | 134          | 114   | 136   | 118   | 99    |
| 26                      | 152   | 77    | 80    | 60    | 56     | 60       | 125   | 131          | 106   | 130   | 116   | 94    |
| 27                      | 101   | 63    | 70    | 61    | 56     | 61       | 154   | 157          | 109   | 117   | 116   | 85    |
| 28                      | 102   | *64   | 70    | 60    | 59     | 66       | 158   | *150         | 90    | 115   | 116   | 82    |
| 29                      | *107  | 64    | 71    | 61    | 60     | 66       | *149  | 133          | 73    | 110   | 115   | 75    |
| 30                      | 101   | 70    | 71    | *61   | ---    | 61       | 134   | 137          | 77    | 104   | 115   | 71    |
| 31                      | 133   | ---   | 73    | 63    | ---    | 67       | ---   | 136          | ---   | 123   | 115   | ---   |
| Total                   | 4,107 | 2,296 | 2,266 | 2,074 | 1,719  | 1,982    | 3,481 | 5,115        | 4,850 | 3,489 | 3,376 | 3,352 |
| Mean                    | 132   | 76.5  | 73.1  | 66.9  | 59.3   | 63.9     | 116   | 165          | 162   | 113   | 109   | 112   |
| Ac-ft                   | 8,150 | 4,550 | 4,490 | 4,110 | 3,410  | 3,930    | 6,900 | 10,150       | 9,620 | 6,920 | 6,700 | 6,650 |
| Calendar year 1959: Max | 346   |       |       |       | Min 52 | Mean 136 |       | Ac-ft 98,790 |       |       |       |       |
| Water year 1959-60: Max | 270   |       |       |       | Min 45 | Mean 104 |       | Ac-ft 75,580 |       |       |       |       |

\* Discharge measurement made on this day.

Note.--No gage-height record Mar. 1, 2, Aug. 16 to Sept. 1; discharge estimated on basis of 1 discharge measurement, weather records, trend of flow, and records for Jordan River at Salt Lake City.

## 1710. Jordan River at Salt Lake City, Utah

Location.--Lat 40°43'40", long 111°55'25", in SW 1/4 sec. 14, T.1 S., R.1 W., on left bank a quarter of a mile downstream from highway bridge on Twenty-first South Street, Salt Lake City, and 2 miles downstream from Mill Creek.

Records available.--December 1942 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 4,220.73 ft above mean sea level, datum of 1929.

Average discharge.--17 years (1943-60), 150 cfs (108,600 acre-ft per year).

Extremes.--Maximum discharge during year, 228 cfs Mar. 31 (gage height, 4.32 ft); minimum, 73 cfs Oct. 26. Maximum combined discharge during year (Jordan and Surplus Canal), 456 cfs May 13; minimum daily, 179 cfs Feb. 24.

1942-60: Maximum discharge, 384 cfs June 3, 1944; maximum gage height, 5.75 ft June 26, 1952; no flow May 10, 24, 1952 (entire flow diverted to Surplus Canal). Maximum combined discharge (Jordan River and Surplus Canal), 1,820 cfs June 7, 1952; minimum daily, 141 cfs July 13, 1955.

Remarks.--Records good. Flow completely regulated since reconstruction in May 1952 of Surplus Canal diversion dam 1,000 ft upstream. Flow affected by gates and pumps at outlet of Utah Lake. Many diversions above station for irrigation and industrial and municipal water supplies. For records of Surplus Canal see preceding page. For records of combined flow see following page. Records of chemical analyses for the water year 1960 are given in WSP 1744.

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     | 168   | 166   | 155   | 153   | 150   | 135    | 203   | 89    | 135   | *149  | *148  | 123   |
| 2     | 165   | 152   | 160   | *150  | 165   | 136    | *122  | 95    | 158   | 149   | 144   | *130  |
| 3     | *166  | *160  | 158   | 146   | 168   | 137    | 124   | 101   | 153   | 151   | 139   | 132   |
| 4     | 161   | 160   | 157   | 148   | 154   | 140    | 121   | 99    | 152   | 155   | 135   | 137   |
| 5     | 168   | 163   | 154   | 144   | 149   | 155    | 123   | 100   | 150   | 154   | 138   | 138   |
| 6     | 173   | 162   | 156   | 145   | *148  | 156    | 124   | 118   | 153   | 149   | 135   | 140   |
| 7     | 174   | *161  | 158   | 147   | 147   | 155    | 128   | 118   | 158   | 149   | 133   | 139   |
| 8     | 177   | 161   | 158   | 147   | 149   | 188    | 127   | 115   | 171   | 155   | 147   | 141   |
| 9     | 178   | 160   | 158   | *149  | 160   | 161    | 128   | 121   | 172   | 154   | 135   | 138   |
| 10    | 178   | 157   | 158   | 158   | 158   | 139    | 128   | 135   | 167   | 157   | 138   | 134   |
| 11    | 179   | 156   | 159   | 172   | 151   | 136    | 127   | 135   | 149   | 149   | 136   | 135   |
| 12    | 177   | 158   | 159   | 178   | 146   | 139    | 122   | 132   | 141   | 132   | 127   | 139   |
| 13    | 171   | 155   | 159   | 174   | 148   | 148    | 118   | 138   | 142   | 137   | 124   | 142   |
| 14    | 171   | *158  | 158   | 166   | 147   | 174    | 110   | *137  | 147   | 137   | 121   | 143   |
| 15    | 170   | 162   | 155   | 159   | 146   | 165    | 110   | 132   | 150   | *139  | *123  | *144  |
| 16    | 165   | 177   | *154  | *155  | 145   | 179    | *108  | 130   | 151   | 135   | 125   | 142   |
| 17    | *157  | 155   | 154   | 153   | 142   | *180   | 107   | 129   | 151   | 135   | 125   | 151   |
| 18    | 154   | 138   | 157   | 152   | 138   | 180    | 104   | 132   | 148   | 135   | 122   | 155   |
| 19    | 154   | 133   | 154   | 152   | 136   | 173    | 110   | 139   | 147   | 132   | 120   | 152   |
| 20    | 154   | 135   | 154   | 153   | *132  | 167    | 123   | 135   | 144   | 135   | 121   | 145   |
| 21    | 152   | 133   | 155   | 153   | 128   | 164    | 113   | 127   | 151   | 139   | 121   | 138   |
| 22    | 149   | 141   | 153   | 154   | 130   | 160    | 112   | 123   | 158   | 139   | 123   | 138   |
| 23    | 140   | 142   | 153   | *155  | 129   | 161    | 121   | 132   | 155   | 149   | 133   | 138   |
| 24    | 98    | *141  | *155  | 156   | 129   | 191    | 116   | 131   | 157   | 144   | 135   | 140   |
| 25    | 77    | 153   | 159   | 157   | 134   | 186    | 109   | 127   | 155   | 145   | 136   | 138   |
| 26    | *102  | 156   | 161   | 158   | 134   | 183    | 101   | 126   | 152   | 140   | 134   | 136   |
| 27    | 145   | 152   | 152   | 161   | 134   | 185    | 96    | 130   | 154   | 130   | 130   | 134   |
| 28    | 147   | *153  | 148   | 157   | 134   | 196    | 98    | *128  | 156   | 130   | 128   | 135   |
| 29    | *148  | 153   | 150   | 156   | 135   | 198    | 98    | 126   | 147   | 130   | 128   | 138   |
| 30    | 167   | 154   | 150   | *155  | ----- | 202    | *89   | 126   | 143   | 140   | 126   | 136   |
| 31    | 194   | ----- | 155   | 152   | ----- | 219    | ----- | 123   | ----- | 140   | 123   | ----- |
| Total | 4,879 | 4,607 | 4,826 | 4,815 | 4,165 | 5,188  | 3,560 | 3,829 | 4,565 | 4,422 | 4,053 | 4,171 |
| Mean  | 157   | 154   | 156   | 155   | 144   | 167    | 119   | 124   | 152   | 140   | 131   | 139   |
| Ac-ft | 9,680 | 9,140 | 9,570 | 9,550 | 8,260 | 10,290 | 7,060 | 7,590 | 9,050 | 8,770 | 8,040 | 8,270 |

Calendar year 1959: Max 237 Min 77 Mean 159 Ac-ft 114,900  
 Water year 1959-60: Max 219 Min 77 Mean 145 Ac-ft 105,500

\* Discharge measurement made on this day.

## 1710. Jordan River at Salt Lake City, Utah--Continued

Combined discharge, in cubic feet per second, of Jordan River and Surplus Canal  
at Salt Lake City, Utah, water year October 1959 to September 1960

| Day                     | Oct.   | Nov.   | Dec.   | Jan.    | Feb.   | Mar.     | Apr.   | May           | June   | July   | Aug.   | Sept.  |
|-------------------------|--------|--------|--------|---------|--------|----------|--------|---------------|--------|--------|--------|--------|
| 1                       | 357    | 288    | 225    | 223     | 210    | 194      | 256    | 207           | 316    | 228    | 276    | 238    |
| 2                       | 330    | 251    | 237    | 216     | 250    | 194      | 249    | 199           | 338    | 233    | 254    | 245    |
| 3                       | 329    | 242    | 238    | 206     | 256    | 191      | 223    | 213           | 333    | 257    | 233    | 241    |
| 4                       | 315    | 231    | 237    | 214     | 222    | 194      | 211    | 222           | 352    | 285    | 225    | 271    |
| 5                       | 298    | 237    | 232    | 207     | 210    | 219      | 214    | 230           | 347    | 288    | 252    | 261    |
| 6                       | 298    | 235    | 231    | 209     | 209    | 219      | 242    | 252           | 345    | 271    | 242    | 263    |
| 7                       | 313    | 236    | 235    | 213     | 199    | 212      | 294    | 246           | 359    | 271    | 245    | 256    |
| 8                       | 324    | 235    | 235    | 213     | 194    | 275      | 287    | 243           | 395    | 265    | 302    | 253    |
| 9                       | 322    | 234    | 235    | 216     | 223    | 234      | 272    | 267           | 414    | 272    | 231    | 239    |
| 10                      | 322    | 235    | 240    | 225     | 219    | 200      | 299    | 322           | 404    | 291    | 222    | 225    |
| 11                      | 323    | 234    | 241    | 256     | 212    | 192      | 301    | 359           | 362    | 273    | 230    | 236    |
| 12                      | 316    | 243    | 237    | 269     | 206    | 198      | 258    | 372           | 327    | 241    | 229    | 259    |
| 13                      | 310    | 239    | 226    | 262     | 208    | 211      | 246    | 408           | 320    | 241    | 215    | 264    |
| 14                      | 307    | 238    | 225    | 243     | 207    | 255      | 216    | 372           | 323    | 243    | 206    | 269    |
| 15                      | 306    | 250    | 221    | 230     | 207    | 235      | 211    | 346           | 348    | 254    | 201    | 274    |
| 16                      | 293    | 279    | 218    | 222     | 208    | 257      | 202    | 346           | 335    | 229    | 215    | 264    |
| 17                      | 274    | 240    | 220    | 219     | 199    | 254      | 200    | 313           | 311    | 245    | 220    | 295    |
| 18                      | 261    | 213    | 228    | 216     | 188    | 253      | 195    | 322           | 297    | 256    | 222    | 307    |
| 19                      | 261    | 204    | 222    | 216     | 189    | 239      | 191    | 344           | 297    | 238    | 220    | 294    |
| 20                      | 264    | 199    | 224    | 217     | 184    | 227      | 203    | 324           | 290    | 231    | 221    | 270    |
| 21                      | 262    | 194    | 226    | 216     | 180    | 221      | 193    | 301           | 289    | 229    | 226    | 245    |
| 22                      | 259    | 204    | 224    | 215     | 186    | 210      | 190    | 286           | 292    | 236    | 293    | 242    |
| 23                      | 252    | 202    | 223    | 218     | 181    | 211      | 206    | 292           | 293    | 246    | 278    | 242    |
| 24                      | 240    | 204    | 225    | 222     | 179    | 261      | 246    | 294           | 282    | 266    | 255    | 247    |
| 25                      | 251    | 230    | 236    | 221     | 190    | 250      | 234    | 261           | 269    | 281    | 254    | 237    |
| 26                      | 254    | 233    | 241    | 218     | 190    | 243      | 226    | 257           | 258    | 272    | 250    | 230    |
| 27                      | 246    | 215    | 222    | 222     | 190    | 246      | 250    | 287           | 263    | 255    | 246    | 219    |
| 28                      | 249    | 217    | 218    | 217     | 193    | 262      | 256    | 278           | 246    | 251    | 244    | 217    |
| 29                      | 255    | 217    | 221    | 217     | 195    | 264      | 247    | 259           | 220    | 248    | 243    | 213    |
| 30                      | 268    | 224    | 221    | 216     | -----  | 263      | 223    | 263           | 220    | 246    | 241    | 207    |
| 31                      | 327    | -----  | 228    | 215     | -----  | 286      | -----  | 259           | -----  | 269    | 238    | -----  |
| Total                   | 8,936  | 6,903  | 7,092  | 6,869   | 5,884  | 7,170    | 7,041  | 8,944         | 9,415  | 7,911  | 7,429  | 7,523  |
| Mean                    | 290    | 230    | 229    | 222     | 203    | 231      | 235    | 289           | 314    | 255    | 240    | 251    |
| Ac-ft                   | 17,820 | 13,690 | 14,070 | 13,660  | 11,670 | 14,220   | 13,970 | 17,740        | 18,670 | 15,690 | 14,740 | 14,920 |
| Calendar year 1959: Max | 560    |        |        | Min 169 |        | Mean 295 |        | Ac-ft 213,700 |        |        |        |        |
| Water year 1959-60: Max | 414    |        |        | Min 179 |        | Mean 249 |        | Ac-ft 180,900 |        |        |        |        |

## TOOLE VALLEY

1727, Vernon Creek near Vernon, Utah

Location.--Lat 39°59', long 112°23', in W $\frac{1}{2}$  sec. 2, T. 10 S., R. 5 W., on right bank 7 miles upstream from confluence with Dutch Creek forming Faust Creek and 8 miles southeast of Vernon.

Drainage area.--25 sq mi, approximately.

Records available.--June 1958 to September 1960.

Gage.--Water-stage recorder.

Extremes.--Maximum daily discharge during year, 3.4 cfs May 15-18; maximum gage height, 1.49 ft Jan. 19 (backwater from ice); minimum daily discharge, 1.0 cfs Oct. 4-20, Jan. 4, Aug. 28, 29.

1958-60: Maximum daily discharge, that of May 15-18, 1960; minimum daily, 1.0 cfs Sept. 10, 11, Oct. 4-20, 1959, Jan. 4, Aug. 28, 29, 1960.

Remarks.--Records good except those for periods of ice effect, which are frir.

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                       | 1.1  | 1.2   | 1.3   | b1.2  | 1.5     | b1.5 | 2.1       | 1.8  | 2.1         | 1.7  | 1.4  | 1.1   |
| 2                       | 1.1  | 1.2   | 1.3   | b1.1  | b1.5    | b1.6 | 2.1       | *1.8 | 2.0         | 1.7  | 1.3  | 1.1   |
| 3                       | 1.1  | 1.2   | 1.3   | b1.1  | b1.5    | b1.6 | 2.1       | 2.0  | *2.0        | 1.6  | 1.3  | 1.1   |
| 4                       | 1.0  | 1.2   | b1.3  | b1.0  | b1.5    | 1.6  | 2.1       | 2.1  | 1.9         | 1.6  | 1.3  | 1.1   |
| 5                       | 1.0  | b1.2  | b1.3  | b1.2  | b1.5    | 1.6  | 2.1       | 2.2  | 1.9         | 1.6  | *1.3 | 1.2   |
| 6                       | 1.0  | b1.2  | b1.2  | b1.3  | 1.5     | 1.7  | 2.2       | 2.2  | 1.9         | 1.6  | 1.2  | 1.2   |
| 7                       | 1.0  | 1.2   | *b1.2 | 1.4   | 1.5     | 1.8  | 2.4       | 2.4  | 1.8         | 1.6  | 1.2  | 1.2   |
| 8                       | 1.0  | 1.2   | b1.2  | 1.4   | 1.6     | 1.8  | *2.5      | 2.4  | 1.8         | *1.6 | 1.2  | 1.2   |
| 9                       | 1.0  | *1.2  | 1.2   | 1.4   | 1.6     | 1.8  | 2.5       | 2.6  | 1.8         | 1.6  | 1.2  | 1.2   |
| 10                      | 1.0  | 1.2   | 1.2   | 1.4   | 1.6     | 1.7  | 3.0       | 2.8  | 1.8         | 1.6  | 1.2  | 1.2   |
| 11                      | 1.0  | 1.2   | b1.2  | b1.4  | 1.6     | 1.7  | 2.4       | 2.9  | 1.8         | 1.6  | 1.2  | 1.2   |
| 12                      | 1.0  | 1.2   | b1.2  | b1.4  | b1.6    | 1.8  | 2.4       | 3.0  | 1.7         | 1.6  | 1.2  | 1.2   |
| 13                      | 1.0  | b1.2  | 1.2   | *b1.4 | 1.6     | 1.8  | 2.2       | *3.2 | *1.7        | 1.5  | 1.2  | 1.2   |
| 14                      | 1.0  | b1.2  | b1.2  | b1.4  | b1.6    | *1.8 | 2.2       | 3.3  | 1.7         | 1.5  | 1.1  | 1.2   |
| 15                      | 1.0  | 1.2   | b1.2  | b1.4  | *b1.6   | b1.8 | 2.2       | 3.4  | 1.7         | 1.5  | 1.1  | 1.2   |
| 16                      | 1.0  | 1.2   | b1.2  | b1.4  | b1.6    | b1.8 | 2.2       | 3.4  | 1.7         | 1.5  | 1.1  | 1.2   |
| 17                      | 1.0  | b1.2  | b1.2  | b1.4  | b1.6    | b1.8 | 2.1       | *3.4 | 1.7         | 1.5  | 1.1  | 1.3   |
| 18                      | *1.0 | 1.2   | 1.2   | b1.3  | b1.6    | 1.8  | 2.1       | 3.4  | 1.8         | 1.5  | 1.1  | 1.3   |
| 19                      | 1.0  | 1.2   | 1.2   | b1.3  | 1.6     | 1.8  | 2.1       | 3.2  | 1.6         | 1.4  | 1.1  | 1.3   |
| 20                      | 1.0  | b1.2  | b1.2  | b1.2  | 1.6     | 1.8  | 2.1       | 3.1  | 1.6         | 1.4  | 1.1  | 1.2   |
| 21                      | 1.1  | 1.2   | 1.2   | 1.4   | b1.6    | 1.9  | 2.1       | 3.0  | 1.6         | 1.4  | 1.1  | 1.3   |
| 22                      | 1.1  | 1.2   | 1.2   | b1.4  | b1.6    | 2.0  | 2.1       | 2.9  | 1.6         | 1.4  | 1.1  | 1.3   |
| 23                      | 1.1  | 1.2   | 1.2   | b1.4  | b1.6    | 1.9  | 2.0       | 2.8  | 1.6         | 1.4  | 1.1  | 1.3   |
| 24                      | 1.1  | 1.2   | 1.2   | 1.4   | b1.5    | 2.0  | 2.0       | 2.7  | 1.6         | 1.4  | 1.1  | 1.3   |
| 25                      | 1.1  | 1.2   | b1.3  | 1.4   | b1.6    | 2.0  | 2.1       | 2.6  | 1.6         | 1.4  | 1.1  | 1.3   |
| 26                      | 1.1  | b1.2  | b1.2  | 1.4   | 1.6     | 2.0  | *2.0      | 2.5  | 1.6         | 1.4  | 1.1  | 1.3   |
| 27                      | 1.2  | b1.2  | b1.2  | 1.4   | b1.6    | 2.1  | 2.0       | 2.4  | 1.6         | 1.4  | 1.1  | *1.4  |
| 28                      | 1.2  | b1.2  | b1.2  | 1.4   | b1.5    | 2.2  | 2.0       | 2.4  | 1.6         | 1.4  | 1.0  | 1.4   |
| 29                      | 1.2  | b1.2  | b1.2  | 1.4   | b1.4    | 2.1  | 1.9       | 2.2  | 1.6         | 1.4  | *1.0 | 1.3   |
| 30                      | 1.2  | 1.2   | b1.3  | 1.5   | -----   | 2.1  | 1.9       | 2.2  | 1.7         | 1.4  | 1.1  | 1.4   |
| 31                      | 1.2  | ----- | b1.3  | 1.5   | -----   | *2.1 | -----     | 2.1  | -----       | 1.4  | 1.1  | ----- |
| Total                   | 32.9 | 36.0  | 38.0  | 41.7  | 45.3    | 57.0 | 65.2      | 82.4 | 51.9        | 46.6 | 35.8 | 37.2  |
| Mean                    | 1.06 | 1.20  | 1.23  | 1.35  | 1.56    | 1.84 | 2.17      | 2.66 | 1.73        | 1.55 | 1.15 | 1.24  |
| Ac-ft                   | 65   | 71    | 75    | 83    | 90      | 113  | 129       | 163  | 103         | 97   | 71   | 74    |
| Calendar year 1959: Max | 1.9  |       |       |       | Min 1.0 |      | Mean 1.41 |      | Ac-ft 1,020 |      |      |       |
| Water year 1959-60: Max | 3.4  |       |       |       | Min 1.0 |      | Mean 1.56 |      | Ac-ft 1,130 |      |      |       |

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## 1728.7. Trout Creek near Callao, Utah

Location.--Lat 39°44', long 113°53', in sec.33, T.12 S., R.18 W., on left bank 2½ miles upstream from Birch Creek and 14 miles southwest of Callao.

Drainage area.--8.8 sq mi, approximately.

Records available.--December 1958 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,200 ft (from topographic map).

Extremes.--Maximum daily discharge during year, 20 cfs May 12, 13 (gage height, 1.42 ft); minimum, 0.7 cfs Aug. 29.

1958-60: Maximum daily discharge, that of May 12, 13, 1960; minimum, that of Aug. 29, 1960.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.8 | 0.7 | 1.1 | 5.9 |
| .9  | 1.4 | 1.3 | 14  |
| 1.0 | 3.0 | 1.5 | 25  |

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     | 1.3  | 1.5   | 1.3  | 1.2  | 1.0   | 1.0   | 2.2   | 3.8   | 9.8   | 3.0  | 1.5  | 0.9   |
| 2     | 1.3  | 1.5   | 1.3  | 1.1  | 1.0   | 1.0   | 1.9   | 3.8   | *10   | 3.0  | 1.4  | .9    |
| 3     | 1.3  | 1.5   | 1.3  | 1.0  | 1.0   | 1.0   | 2.1   | 3.8   | 11    | 3.0  | 1.3  | 1.0   |
| 4     | 1.3  | 1.5   | b1.2 | 1.0  | 1.0   | 1.0   | 2.2   | 3.8   | 11    | 3.0  | *1.2 | .9    |
| 5     | 1.3  | 1.4   | b1.2 | 1.0  | 1.0   | 1.1   | 3.3   | 3.5   | 10    | 3.0  | 1.2  | .9    |
| 6     | 1.3  | 1.5   | b1.2 | 1.0  | 1.0   | 1.2   | 4.1   | 4.1   | 10    | *3.0 | 1.2  | 1.0   |
| 7     | 1.3  | 1.4   | b1.2 | 1.0  | 1.0   | 1.5   | 4.7   | 4.7   | 11    | 3.0  | 1.1  | .9    |
| 8     | 1.5  | 1.4   | *1.2 | 1.0  | 1.3   | 1.6   | *4.7  | 5.6   | 10    | 3.0  | 1.1  | .9    |
| 9     | 1.5  | 1.4   | 1.2  | 1.0  | 1.1   | 1.4   | 5.0   | 7.0   | 9.8   | 2.8  | 1.1  | .9    |
| 10    | 1.5  | *1.4  | 1.2  | 1.0  | 1.0   | 1.2   | 5.9   | 9.8   | 9.4   | 2.6  | 1.1  | .9    |
| 11    | 1.5  | 1.4   | 1.1  | 1.0  | 1.0   | 1.3   | 6.6   | 14    | 9.0   | 2.6  | 1.0  | .9    |
| 12    | *1.5 | 1.5   | b1.1 | 1.0  | b1.0  | 1.3   | 6.2   | *20   | 8.4   | 2.4  | 1.0  | .9    |
| 13    | 1.5  | 1.4   | 1.1  | .9   | b1.1  | 1.3   | 5.6   | 20    | 7.6   | 2.4  | 1.0  | .9    |
| 14    | 1.5  | 1.6   | 1.1  | *.9  | b1.0  | b1.6  | 5.0   | 19    | *7.3  | 2.1  | 1.0  | .9    |
| 15    | 1.5  | 1.5   | 1.2  | .9   | b1.0  | *b1.8 | 5.3   | 18    | 7.0   | 1.9  | 1.0  | .9    |
| 16    | 1.5  | 1.5   | 1.2  | .9   | b1.0  | b1.7  | 5.3   | 16    | 6.6   | 1.9  | 1.0  | 1.0   |
| 17    | 1.5  | 1.5   | 1.2  | .9   | *b1.0 | b1.7  | 5.0   | 15    | 7.0   | 1.9  | 1.0  | 1.0   |
| 18    | 1.5  | 1.5   | 1.1  | .9   | 1.0   | 1.5   | 4.7   | *14   | 6.6   | 1.8  | .9   | 1.0   |
| 19    | 1.6  | 1.5   | 1.1  | .9   | 1.0   | 1.6   | 4.7   | 12    | 6.2   | 1.8  | .9   | 1.0   |
| 20    | 1.5  | 1.5   | 1.1  | .9   | 1.0   | 1.9   | 5.0   | 11    | 5.6   | 1.5  | .9   | 1.0   |
| 21    | 1.6  | 1.5   | 1.1  | .9   | 1.0   | 2.2   | 5.0   | 11    | 5.6   | 1.5  | .9   | 1.0   |
| 22    | 1.6  | 1.5   | 1.1  | .9   | 1.0   | 2.4   | 6.2   | 10    | 5.3   | 1.5  | .9   | 1.0   |
| 23    | 1.6  | 1.5   | 1.1  | .9   | 1.1   | 2.6   | 6.6   | 9.8   | 5.0   | 2.2  | .9   | 1.0   |
| 24    | 1.6  | 1.5   | 1.1  | 1.0  | b1.1  | 2.6   | 6.6   | 9.8   | 4.4   | 1.9  | .9   | 1.0   |
| 25    | 1.6  | 1.2   | 1.2  | 1.0  | b1.0  | 2.8   | 5.9   | 9.4   | 3.8   | 1.8  | .9   | 1.1   |
| 26    | 1.6  | 1.2   | b1.1 | 1.0  | 1.0   | 3.0   | *5.3  | 9.0   | 4.1   | 1.6  | .8   | 1.0   |
| 27    | 1.5  | b1.2  | b1.1 | 1.0  | 1.0   | 3.3   | 4.7   | 9.0   | 3.8   | 1.6  | .8   | 1.0   |
| 28    | 1.5  | b1.2  | b1.1 | 1.0  | 1.0   | 2.8   | 4.7   | 9.0   | 3.5   | 1.5  | .9   | *1.0  |
| 29    | 1.5  | 1.3   | b1.0 | .9   | 1.0   | 2.4   | 4.4   | 9.4   | 3.3   | 1.4  | .8   | 1.0   |
| 30    | 1.5  | 1.3   | b1.0 | .9   | ----- | 2.4   | 4.1   | 9.4   | 3.3   | 1.5  | *.8  | 1.0   |
| 31    | 1.5  | ----- | b1.1 | .9   | ----- | *2.4  | ----- | 9.8   | ----- | 1.5  | .8   | ----- |
| Total | 45.8 | 42.8  | 35.6 | 29.9 | 29.7  | 56.6  | 142.7 | 314.5 | 215.4 | 68.3 | 31.3 | 28.8  |
| Mean  | 1.48 | 1.43  | 1.15 | 0.96 | 1.02  | 1.82  | 4.76  | 10.1  | 7.18  | 2.20 | 1.01 | 0.96  |
| Ac-ft | 91   | 85    | 71   | 59   | 59    | 112   | 283   | 624   | 427   | 135  | 62   | 57    |

Calendar year 1959: Max 5.9 Min 0.9 Mean 1.76 Ac-ft 1,280  
 Water year 1959-60: Max 20 Min 0.8 Mean 2.85 Ac-ft 2,060

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## 1729.4. Dove Creek near Park Valley, Utah

Location.--Lat 41°47', long 113°34', in SE $\frac{1}{4}$  sec.4, T.12 N., R.15 W., on left bank 6 miles upstream from Black Hill Creek and 12 miles west of Park Valley.

Drainage area.--35 sq mi, approximately.

Records available.--December 1958 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,600 ft (from topographic map).

Extremes.--Maximum discharge during year, 11 cfs Sept. 1 (gage height, 1.49 ft); minimum daily, 0.1 cfs for many days.

1958-60: Maximum discharge, that of Sept. 1, 1960; minimum daily, 0.1 cfs for many days in 1959-60.

Remarks.--Records good.

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                       | 0.2  | 0.2   | 0.2  | 0.2     | 0.2   | 0.2       | 0.3   | 0.7       | *0.5  | 0.1  | 0.1  | 0.9   |
| 2                       | .2   | .2    | .2   | .2      | .2    | .2        | .2    | .7        | .4    | .1   | .1   | .4    |
| 3                       | .2   | .2    | .2   | .2      | .2    | .2        | .2    | .7        | .4    | .1   | *.1  | .2    |
| 4                       | .2   | .2    | .2   | .2      | .2    | .2        | .2    | .7        | .4    | .1   | .1   | .2    |
| 5                       | .2   | .2    | .2   | .2      | .2    | .2        | .2    | .7        | .4    | .1   | .1   | .2    |
| 6                       | .2   | .1    | .2   | .2      | .2    | .2        | .2    | .7        | .4    | *.2  | .1   | *.2   |
| 7                       | .2   | .1    | .2   | .2      | .2    | .2        | *.2   | .7        | .4    | .2   | .1   | .2    |
| 8                       | .3   | .1    | .2   | .2      | .2    | .3        | .2    | .7        | .5    | .2   | .1   | .2    |
| 9                       | .3   | .1    | *.2  | .2      | .2    | .3        | .2    | .7        | .5    | .2   | .1   | .2    |
| 10                      | .3   | .1    | .2   | .2      | .2    | .3        | .2    | .6        | .5    | .2   | .1   | .2    |
| 11                      | .3   | .1    | .2   | .2      | .2    | .3        | .2    | .6        | .4    | .2   | .1   | .2    |
| 12                      | .2   | .2    | .2   | .2      | .2    | .3        | .3    | *.6       | .4    | .2   | .1   | .2    |
| 13                      | .3   | .1    | .2   | .2      | .2    | .3        | .3    | .6        | .4    | .2   | .1   | .2    |
| 14                      | *.2  | .1    | .2   | .2      | .2    | .3        | .3    | .7        | .4    | .2   | .1   | .2    |
| 15                      | .2   | .1    | .2   | .2      | .2    | .3        | .3    | .7        | .4    | .1   | .1   | .2    |
| 16                      | .2   | *.1   | .2   | *.2     | .2    | *.3       | .3    | .7        | *.4   | .1   | .1   | .2    |
| 17                      | .2   | .1    | .2   | .2      | .2    | .3        | .3    | .7        | .4    | .1   | .1   | .2    |
| 18                      | .2   | .1    | .2   | .2      | *.2   | .3        | .4    | .7        | .4    | .1   | .1   | .2    |
| 19                      | .2   | .1    | .2   | .2      | .2    | .4        | .4    | *.7       | .3    | .1   | .1   | .2    |
| 20                      | .2   | .1    | .2   | .2      | .2    | .4        | .4    | .7        | .2    | .1   | .1   | .2    |
| 21                      | .2   | .1    | .2   | .2      | .2    | .4        | .4    | .8        | .2    | .1   | .1   | .2    |
| 22                      | .2   | .1    | .2   | .2      | .2    | .4        | .4    | .8        | .2    | .1   | .1   | .2    |
| 23                      | .2   | .2    | .2   | .2      | .2    | .3        | .4    | .8        | .2    | .1   | .1   | .2    |
| 24                      | .2   | .2    | .2   | .2      | .2    | .3        | .5    | .7        | .2    | .1   | .1   | .2    |
| 25                      | .2   | .2    | .2   | .2      | .2    | .3        | .4    | .7        | .2    | .1   | .1   | .2    |
| 26                      | .2   | .2    | .2   | .2      | .2    | .3        | .4    | .7        | .2    | .1   | .1   | .2    |
| 27                      | .2   | .2    | .2   | .2      | .2    | .3        | *.4   | .7        | .2    | .1   | .1   | .2    |
| 28                      | .2   | .2    | .2   | .2      | .2    | .3        | .6    | .7        | .2    | .1   | .2   | .2    |
| 29                      | .2   | .2    | .2   | .2      | .2    | *.3       | .7    | .7        | .2    | .1   | .2   | .2    |
| 30                      | .2   | .2    | .2   | .2      | ----- | .3        | .7    | .7        | .1    | .1   | .2   | .2    |
| 31                      | .2   | ----- | .2   | .2      | ----- | .2        | ----- | .6        | ----- | .1   | .2   | ----- |
| Total                   | 6.7  | 4.3   | 6.2  | 6.2     | 5.8   | 8.9       | 10.2  | 21.5      | 10.0  | 4.0  | 3.5  | 6.9   |
| Mean                    | 0.22 | 0.14  | 0.20 | 0.20    | 0.20  | 0.29      | 0.34  | 0.69      | 0.33  | 0.13 | 0.11 | 0.23  |
| Ac-ft                   | 13   | 8.5   | 12   | 12      | 12    | 18        | 20    | 43        | 20    | 7.8  | 6.9  | 14    |
| Calendar year 1959: Max | 1.6  |       |      | Min 0.1 |       | Mean 0.42 |       | Ac-ft 303 |       |      |      |       |
| water year 1959-60: Max | 0.9  |       |      | Min 0.1 |       | Mean 0.26 |       | Ac-ft 187 |       |      |      |       |

\* Discharge measurement made on this day.

## SEVIER LAKE BASIN

## 1736. Midway Creek near Hatch, Utah

Location.--Lat 37°31'10", long 112°43'35", in SE $\frac{1}{4}$  sec.10, T.38 S., R.8 W., on right bank 200 ft south of State Highway 14, 0.7 mile east of Navajo Lake Resort turnout, and 19 miles southwest of Hatch.

Records available.--August 1957 to September 1960.

Gage.--Water-stage recorder.

Extremes.--Maximum discharge during year, 78 cfs May 13 (gage height, 2.00 ft); no flow for most of year.

1957-60: Maximum discharge, 153 cfs June 6, 1958 (gage height, 2.64 ft); no flow for most of period.

Remarks.--Records good.

Discharge, in cubic feet per second, water year October 1959 to September 1960

| May 11.....             | 3.2      | May 14..... | 40      | May 17..... | 12                  |
|-------------------------|----------|-------------|---------|-------------|---------------------|
| 12.....                 | *26      | 15.....     | 24      | 18.....     | 5.0                 |
| 13.....                 | 41       | 16.....     | *18     | 19.....     | .1                  |
| Month                   | Cfs-days | Maximum     | Minimum | Mean        | Runoff in acre-feet |
| May 1960.....           | 169.3    | 41          | 0       | 5.46        | 336                 |
| Calendar year 1959..... | -        | 15          | 0       | .12         | 85                  |
| Water year 1959-60..... | -        | 41          | 0       | .46         | 336                 |

\* Discharge measurement made on this day.

Note.--Flow occurred only on days listed above. Observation of no flow generally made once a month.

## 1745. Sevier River at Hatch, Utah

Location.--Lat 37°39'00", long 112°25'30", in SW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> sec.28, T.36 S., R.5 W., on left bank 300 ft downstream from bridge, 0.2 mile east of Hatch, and 2.8 miles downstream from Mammoth Creek.

Drainage area.--340 sq mi, approximately.

Records available.--June 1911 to September 1928, June 1939 to September 1960. Monthly discharge only for some periods, published in WSP 1314. Published as "near Hatchtown" 1911 and as "near Hatch" 1912.

Gage.--Water-stage recorder. Altitude of gage is 6,870 ft (from river-profile map). Prior to May 7, 1914, and Aug. 22, 1914, to Mar. 15, 1915, staff gages and May 7-25, 1914, Mar. 16, 1915, to Sept. 30, 1928, and June 20, 1939, to Oct. 3, 1949, water-stage recorder, at several sites within 2 miles of present site at various datums.

Average discharge.--38 years, 133 cfs (96,300 acre-ft per year).

Extremes.--Maximum discharge during year, 259 cfs May 14 (gage height, 2.37 ft); minimum, 27 cfs Sept. 13.

1911-28, 1939-60: Maximum discharge not determined, occurred May 25, 1914, when Hatchtown Dam failed; maximum recorded, 1,490 cfs May 26, 1922 (gage height, 5.25 ft, datum then in use); minimum daily, 10 cfs for several days in 1912 when water was stored in Hatchtown Reservoir. Minimum natural flow, that of Sept. 13, 1960.

Remarks.--Records good except those for periods of ice effect, which are fair. Small diversions for irrigation above station. No regulation since Hatchtown Dam failed in 1914.

Revisions (water years).--WSP 960: 1939-40. WSP 1284: 1916. WSP 1564: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |    |     |     |
|-----|----|-----|-----|
| 1.3 | 25 | 1.8 | 101 |
| 1.4 | 35 | 2.0 | 147 |
| 1.6 | 64 | 2.3 | 225 |

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     | 42    | 47    | 46    | b40   | b44   | 47    | 51    | 57    | 74    | 46    | 39    | 41    |
| 2     | 42    | 50    | 44    | b36   | 44    | 47    | 51    | 56    | 72    | 46    | 38    | 39    |
| 3     | 41    | 48    | b42   | b35   | b44   | b47   | 51    | *54   | 74    | 47    | 38    | 35    |
| 4     | 38    | 46    |       | b35   | 44    | 48    | 54    | 57    | 74    | 46    | 38    | 34    |
| 5     | 38    | 43    |       | b35   | b44   | 48    | 57    | 60    | 72    | 46    | 38    | 35    |
| 6     | 38    | 44    |       | b35   | b44   | 50    | 62    | 57    | 78    | 47    | 38    | 38    |
| 7     | 38    | 44    | b42   | b35   | b44   | 53    | 67    | 59    | 72    | 46    | 39    | 35    |
| 8     | 38    | 44    |       | b33   | 43    | 59    | 72    | 62    | 76    | *27   | 38    | 35    |
| 9     | 38    | 44    |       | b33   | 44    | 59    | 72    | 76    | 72    | 46    | 38    | 37    |
| 10    | 38    | 44    |       | b33   | b43   | 59    | 76    | 91    | 69    | 44    | 37    | 35    |
| 11    | 38    | 46    | b45   | b32   | 42    | 57    | 79    | 105   | 69    | 44    | 38    | 33    |
| 12    | 37    | 46    | b43   | b31   | b42   | 62    | 87    | 152   | 67    | 44    | 38    | 34    |
| 13    | 37    | 46    | 42    | b31   | 43    | 67    | *83   | 206   | 64    | 43    | 37    | 33    |
| 14    | 37    | 46    | b42   | 32    | b43   | 62    | 78    | 220   | 62    | 44    | 37    | 33    |
| 15    | *37   | 47    |       | b34   | b44   | 56    | 76    | 220   | 60    | 44    | 37    | *34   |
| 16    | 37    | 46    |       | 37    | b44   | 54    | 70    | 198   | 59    | 44    | 35    | 34    |
| 17    | 37    | *44   |       | (*)   | b38   | b44   | 53    | 70    | 185   | *57   | 43    | 35    |
| 18    | 37    | 46    | 43    | b38   | b44   | 64    | 65    | *177  | 56    | 42    | *37   | 35    |
| 19    | 37    | 46    | 44    | b38   | 44    | 69    | 65    | 154   | 53    | 42    | 35    | 34    |
| 20    | 37    | 44    | b45   | b38   | b44   | 69    | 70    | 147   | 51    | 43    | 35    | 35    |
| 21    | 38    | 44    | 46    | b38   | b44   | 69    | 72    | 130   | 53    | 43    | 35    | 35    |
| 22    | 38    | 44    | 44    | b38   | b44   | 67    | 81    | 121   | 53    | 43    | 38    | 35    |
| 23    | 38    | 46    | 42    | b39   | b44   | 65    | 95    | 108   | 53    | 41    | 38    | 35    |
| 24    | 38    | 46    | 43    | b40   | b44   | *64   | 97    | 99    | 53    | 41    | 37    | 34    |
| 25    | 39    | 44    | 47    | b42   | *b44  | 60    | 91    | 97    | 51    | 41    | 35    | 35    |
| 26    | 39    | b43   | b42   | b43   | b44   | 57    | 83    | 91    | 50    | 41    | 35    | 35    |
| 27    | 39    |       |       | *44   | 44    | 57    | 67    | 89    | 50    | 41    | 35    | 34    |
| 28    | 39    |       |       | b44   | b45   | 56    | 72    | 81    | 47    | 41    | 34    | 34    |
| 29    | 39    |       |       | b44   | 47    | 54    | 64    | 79    | 46    | 41    | 34    | 35    |
| 30    | 42    | 44    | b42   | b44   | 53    | 60    | 76    | 47    | 42    | 34    | 35    | 35    |
| 31    | 43    | ----- |       | b44   | ----- | 53    | ----- | 76    | ----- | 42    | 35    | ----- |
| Total | 1,194 | 1,351 | 1,335 | 1,159 | 1,272 | 1,785 | 2,138 | 3,440 | 1,841 | 1,353 | 1,135 | 1,051 |
| Mean  | 38.5  | 45.0  | 43.1  | 37.4  | 43.9  | 57.6  | 71.3  | 111   | 61.4  | 43.6  | 36.6  | 35.0  |
| Ac-ft | 2,370 | 2,680 | 2,650 | 2,300 | 2,520 | 3,540 | 4,240 | 6,820 | 3,650 | 2,680 | 2,250 | 2,080 |

Calendar year 1959: Max 132 Min 37 Mean 53.4 Ac-ft 38,690  
 Water year 1959-60: Max 220 Min 31 Mean 52.1 Ac-ft 37,780

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

\* Discharge measurement made on this day.  
 b Stage-discharge relation affected by ice.

## SEVIER LAKE BASIN

1800. Sevier River near Circleville, Utah

Location.--Lat 38°06', long 112°19', in SW $\frac{1}{4}$  sec.20, T.31 S., R.4 W., Salt Lake meridian, on left bank 2 miles upstream from Pine Creek and 6 miles southwest of Circleville.

Drainage area.--950 sq mi, approximately.

Records available.--May to September 1912, April 1914 to September 1927 (fragmentary 1923, 1925-27), October 1949 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage-recorder. Altitude of gage is 6,240 ft (from river-profile map). May 10 to Sept. 19, 1912, staff gage at site 300 ft upstream at different datum. Apr. 23, 1914, to Sept. 30, 1927, and Nov. 21, 1949, to Aug. 6, 1954, water-stage recorder at site 300 ft upstream at datum 0.23 ft higher.

Average discharge.--20 years (1914-22, 1923-24, 1949-60), 159 cfs (115,100 acre-ft per year).

Extremes.--Maximum discharge during year, 223 cfs Mar. 8 (gage height, 2.23 ft); minimum daily, 18 cfs June 30, July 1, 5.

1912, 1914-27, 1949-60: Maximum discharge, 1,960 cfs about May 21, 1922 (gage height, 9.8 ft, from high-water mark, present datum), from rating curve extended above 1,000 cfs by logarithmic plotting; minimum daily, that of June 30, July 1, 5, 1960.

Remarks.--Records good except those for periods of ice effect, which are fair. Many diversions above and below station.

Revisions (water years).--WSP 1180: 1922(M). WSP 1314: 1916.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |    |     |     |
|-----|----|-----|-----|
| 0.8 | 14 | 1.6 | 89  |
| 9   | 19 | 2.0 | 159 |
| 1.2 | 42 | 2.5 | 274 |

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                       | 50    | 56    | 92    | b98    | 92    | 101       | 92           | 47    | 28    | 18    | 31    | 38    |
| 2                       | 49    | 53    | 94    | b76    | 95    | 101       | 92           | 46    | 27    | 19    | 26    | 46    |
| 3                       | 47    | 65    | 92    | b78    | 95    | 98        | 90           | *42   | 26    | 27    | 26    | 38    |
| 4                       | 46    | 60    | 90    | b72    | 90    | 98        | 89           | 51    | 26    | 19    | 25    | 43    |
| 5                       | 43    | 58    | 86    | b78    | 95    | 102       | 90           | 52    | 26    | 19    | 24    | 40    |
| 6                       | 44    | 61    | b90   | b90    | 92    | 111       | 90           | 51    | 31    | 22    | 22    | 38    |
| 7                       | 48    | 61    | b93   | b95    | 94    | 137       | 89           | 51    | 33    | 23    | 23    | 51    |
| 8                       | 47    | 63    | b91   | b100   | 98    | 193       | 88           | 48    | 31    | 23    | 22    | 44    |
| 9                       | 47    | 62    | 98    | b103   | 111   | 165       | 89           | 43    | 29    | 33    | *23   | 35    |
| 10                      | 48    | 63    | 104   | b102   | 104   | 135       | 79           | 42    | 29    | 33    | 27    | 36    |
| 11                      | 46    | 65    | 100   | b102   | 100   | 130       | 83           | 45    | 30    | 27    | 26    | 38    |
| 12                      | 47    | 68    | 96    | 101    | 96    | 119       | 92           | 49    | 30    | *22   | 25    | *32   |
| 13                      | 52    | 73    | 95    | 96     | 96    | 125       | *90          | 73    | *28   | 21    | 23    | 33    |
| 14                      | *52   | 68    | b94   | 94     | 95    | 119       | 89           | 116   | 26    | 21    | 22    | 35    |
| 15                      | 52    | 69    | b91   | 92     | 95    | 104       | 89           | 141   | 25    | 21    | 22    | 33    |
| 16                      | 53    | 71    | *b95  | 86     | 95    | 101       | 85           | 139   | 26    | 22    | 22    | 32    |
| 17                      | 55    | 75    | b91   | 81     | 92    | 95        | 68           | 118   | 25    | 21    | 23    | 30    |
| 18                      | 59    | 75    | b94   | 88     | 89    | 101       | 67           | 107   | 24    | 27    | 25    | 29    |
| 19                      | 52    | *75   | b98   | 86     | 98    | 109       | 63           | *102  | 22    | 21    | 24    | 30    |
| 20                      | 55    | 76    | 98    | 86     | 98    | 123       | 61           | 88    | 21    | 27    | 21    | 29    |
| 21                      | 58    | 79    | 102   | 92     | 90    | 132       | 58           | 88    | 22    | 17    | 23    | 30    |
| 22                      | 59    | 88    | 100   | 94     | b88   | 130       | 42           | 73    | 22    | 27    | 27    | 32    |
| 23                      | 58    | 92    | 98    | 86     | b85   | 126       | 39           | 67    | 22    | 27    | 31    | 37    |
| 24                      | 56    | 94    | 100   | 88     | b81   | 123       | 44           | 61    | 20    | 27    | 28    | 34    |
| 25                      | 48    | 92    | 107   | 89     | 86    | *118      | 47           | 54    | 20    | 27    | 27    | 38    |
| 26                      | 47    | 88    | 95    | 90     | *95   | 111       | 42           | 50    | 20    | 27    | 27    | 35    |
| 27                      | 54    | 85    | 74    | *94    | 100   | 104       | 47           | 41    | 19    | 23    | 26    | 32    |
| 28                      | 49    | b90   | b74   | 95     | 96    | 106       | 46           | 37    | 19    | 27    | 24    | 40    |
| 29                      | 49    | b90   | b93   | 92     | 101   | 102       | 52           | 35    | 20    | 37    | 25    | 49    |
| 30                      | 56    | b92   | b90   | 89     | ----- | 98        | 51           | 36    | 18    | 37    | 24    | 47    |
| 31                      | 58    | ----- | b93   | 94     | ----- | 95        | -----        | 32    | ----- | 31    | 26    | ----- |
| Total                   | 1,584 | 2,217 | 2,908 | 2,797  | 2,742 | 3,612     | 2,025        | 745   | 707   | 770   | 1,104 |       |
| Mean                    | 51.1  | 73.9  | 93.8  | 90.2   | 94.6  | 117       | 71.4         | 65.3  | 22.8  | 24.8  | 36.8  |       |
| Ac-ft                   | 3,140 | 4,400 | 5,770 | 5,550  | 5,440 | 7,160     | 4,250        | 4,020 | 1,480 | 1,410 | 2,190 |       |
| Calendar year 1959: Max | 170   |       |       | Min 24 |       | Mean 70.1 | Ac-ft 50,770 |       |       |       |       |       |
| Water year 1959-60: Max | 193   |       |       | Min 18 |       | Mean 63.8 | Ac-ft 46,340 |       |       |       |       |       |

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## 1835. Sevier River near Kingston, Utah

Location.--Lat 38°12', long 112°12', in NE¼NW¼ sec.16, T.30 S., R.3 W., on left bank 1,000 ft upstream from bridge on State Highway 22, 1 mile west of Kingston, and 2 miles upstream from East Fork.

Drainage area.--1,110 sq mi, approximately.

Records available.--June 1914 to September 1960.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,980 ft (from river-profile map). Prior to Sept. 20, 1918, at site 1 mile downstream at different datum.

Average discharge.--46 years, 133 cfs (96,290 acre-ft per year).

Extremes.--Maximum discharge during year, 239 cfs Mar. 8 (gage height, 1.68 ft); minimum daily, 4.6 cfs Aug. 16-19.

1914-60: Maximum discharge, about 3,000 cfs (including estimated flow of 360 cfs in overflow channel bypassing station) Mar. 4, 1938 (gage height, 5.20 ft), from rating curve extended above 600 cfs; minimum daily, 4.2 cfs June 29, 30, 1953.

Remarks.--Records good. Many diversions for irrigation above station.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |    |     |     |
|-----|----|-----|-----|
| 0.5 | 3  | 1.0 | 55  |
| .6  | 7  | 1.2 | 101 |
| .7  | 14 | 1.6 | 231 |
| .8  | 24 |     |     |

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                       | 15   | 19    | 109   | 107   | 121   | 123   | 68    | 7.0   | 11    | 8.4   | 6.6   | 6.2   |
| 2                       | 14   | 24    | 115   | 94    | 123   | 121   | 61    | 7.0   | 11    | 8.4   | *5.8  | 6.2   |
| 3                       | 14   | 22    | 115   | 96    | 123   | 115   | 46    | 7.7   | 11    | 9.1   | 5.8   | 6.6   |
| 4                       | 13   | 21    | 115   | 88    | 121   | 118   | 34    | 8.4   | 9.8   | 9.1   | 5.8   | 6.6   |
| 5                       | 11   | 19    | 104   | 95    | 121   | 123   | 30    | *8.4  | 8.4   | 9.1   | 5.4   | 6.6   |
| 6                       | 11   | 27    | 107   | 109   | 121   | 129   | 25    | 9.8   | 9.1   | 9.8   | 5.4   | 6.6   |
| 7                       | 11   | 34    | 115   | 115   | 121   | 148   | 27    | 11    | 9.8   | 9.1   | 5.4   | 6.6   |
| 8                       | 13   | 34    | 109   | 118   | 126   | 205   | 19    | 11    | 9.8   | 9.1   | 5.4   | 6.6   |
| 9                       | 12   | 35    | 121   | 129   | 144   | 191   | 20    | 11    | 9.8   | 9.1   | 5.8   | 6.6   |
| 10                      | 12   | 37    | 129   | 126   | 135   | 163   | 19    | 12    | 9.1   | 8.4   | 5.4   | 7.0   |
| 11                      | 12   | 34    | 121   | 129   | 129   | 154   | 15    | 11    | 8.4   | 7.7   | 5.4   | 7.0   |
| 12                      | 12   | 31    | 118   | 132   | 123   | 144   | 17    | 11    | 7.7   | *7.0  | 5.4   | *7.0  |
| 13                      | 11   | 27    | 118   | 121   | 123   | 148   | *22   | 11    | *8.4  | 7.0   | 5.4   | 7.0   |
| 14                      | *12  | 30    | 115   | 123   | 121   | 144   | 23    | 11    | 7.7   | 7.0   | 5.4   | 7.0   |
| 15                      | 12   | 45    | 107   | 121   | 115   | 129   | 20    | 28    | 8.4   | 7.0   | 5.0   | 7.0   |
| 16                      | 12   | 45    | *118  | 121   | 121   | 126   | 20    | 32    | 8.4   | 6.6   | 4.6   | 7.0   |
| 17                      | 13   | 45    | 109   | 112   | 115   | 118   | 21    | 20    | 8.4   | 7.0   | 4.6   | 7.7   |
| 18                      | 13   | 50    | 115   | 118   | 112   | 118   | 17    | 15    | 9.1   | 7.0   | 4.6   | 7.7   |
| 19                      | 12   | *53   | 121   | 115   | 121   | 126   | 10    | 18    | 9.1   | 7.0   | 4.6   | 7.0   |
| 20                      | 12   | 57    | 123   | 115   | 121   | 141   | 7.7   | 11    | 7.7   | 7.0   | 5.0   | 7.7   |
| 21                      | 12   | 68    | 126   | 118   | 115   | 151   | 7.7   | 9.1   | 7.7   | 7.0   | 5.0   | 7.0   |
| 22                      | 12   | 94    | 126   | 115   | 112   | 151   | 7.7   | 9.1   | 7.7   | 7.0   | 5.4   | 7.0   |
| 23                      | 12   | 96    | 126   | 118   | 107   | *135  | 8.4   | 9.1   | 7.7   | 7.0   | 5.4   | 7.0   |
| 24                      | 13   | 94    | 123   | 112   | 101   | 121   | 8.4   | 10    | 8.4   | 6.6   | 5.4   | 7.0   |
| 25                      | 13   | 91    | 129   | 118   | 107   | 112   | 7.7   | 9.8   | 8.4   | 6.6   | 5.4   | 7.0   |
| 26                      | 12   | 81    | 123   | *118  | *115  | 107   | 7.7   | *10   | 8.4   | 7.0   | 5.4   | 6.6   |
| 27                      | 13   | 84    | 101   | 123   | 123   | 98    | 7.7   | 9.1   | 9.1   | 6.2   | 5.4   | 7.0   |
| 28                      | 13   | 96    | 98    | 126   | 115   | 109   | 7.7   | 8.4   | 8.4   | 5.8   | 5.4   | 6.6   |
| 29                      | 13   | 91    | 115   | 123   | 115   | 121   | 7.7   | 8.4   | 8.4   | 6.2   | 5.4   | 9.1   |
| 30                      | 14   | 109   | 109   | 115   | ----- | 104   | 7.7   | 8.4   | 9.1   | 6.2   | 5.4   | 6.4   |
| 31                      | 17   | ----- | 115   | 118   | ----- | 91    | ----- | 9.1   | ----- | 6.2   | 5.8   | ----- |
| Total                   | 391  | 1,591 | 3,595 | 3,598 | 3,467 | 4,084 | 600.1 | 361.8 | 265.4 | 231.7 | 168.2 | 210.4 |
| Mean                    | 12.6 | 53.0  | 116   | 116   | 120   | 132   | 20.0  | 11.7  | 8.85  | 7.47  | 5.36  | 7.01  |
| Ac-ft                   | 776  | 3,160 | 7,130 | 7,120 | 6,880 | 8,100 | 1,190 | 718   | 526   | 460   | 330   | 417   |
| Calendar year 1959: Max | 177  |       |       |       |       |       |       |       |       |       |       |       |
| Water year 1959-60: Max | 205  |       |       |       |       |       |       |       |       |       |       |       |
| Min                     | 6.2  |       |       |       |       |       |       |       |       |       |       |       |
| Mean                    | 4.6  |       |       |       |       |       |       |       |       |       |       |       |

\* Discharge measurement made on this day.

## 1850. Antimony Creek near Antimony, Utah

Location.--Lat 38°06', long 111°53', in NW $\frac{1}{4}$  sec. 22, T. 31 S., R. 1 W., on right bank 5 miles upstream from mouth and 5 miles southeast of Antimony.

Drainage area.--26 sq mi, approximately.

Records available.--October 1946 to September 1948, August 1957 to September 1960.

Gage.--Water-stage recorder. October 1946 to September 1948 at datum 0.89 ft lower.

Average discharge.--5 years, 21.2 cfs (15,350 acre-ft per year).

Extremes.--Maximum discharge during year, 181 cfs July 31 (gage height, 2.43 ft); minimum daily, 14 cfs Oct. 2, 4-7, 9, 10, 26, 27.

1946-48, 1957-60: Maximum discharge, 669 cfs Aug. 3, 1959 (gage height, 4.52 ft), from rating curve extended above 250 cfs on basis of slope-area measurement of peak flow; minimum, 11 cfs Aug. 22, 1947.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion above station.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Oct. 1-27, Mar. 15-28, July 31 to Sept. 30)

|     |    |
|-----|----|
| 0.5 | 11 |
| 1.0 | 35 |
| 1.3 | 56 |

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     | 15   | 15   | 16    | 18    | 17   |      | 18    | 17    | 17    | 16   | 17   | a15   |
| 2     | 14   | 15   | 16    | 18    | 17   |      | 18    | 17    | 17    | 16   | 16   | a15   |
| 3     | 15   | 15   | 16    | 18    | 17   | a16  | 18    | 17    | 17    | 17   | 18   | a16   |
| 4     | 14   | 15   | 17    | 18    | 17   |      | 18    | 17    | 17    | 16   | 16   | a15   |
| 5     | 14   | 15   | 17    | 18    | 17   |      | 19    | *17   | 17    | 16   | 15   | a15   |
| 6     | 14   | 15   | 17    | 18    | 17   | a15  | 18    | 17    | 17    | 16   | 15   | a15   |
| 7     | 14   | 16   | 17    | 18    | 17   | a15  | 17    | 17    | 17    | 16   | 15   | a15   |
| 8     | 15   | 16   | 17    | 18    | 16   | 15   | 19    | 19    | 17    | 16   | 15   | a15   |
| 9     | 14   | 15   | 17    | 18    | 16   | 15   | 18    | 23    | 17    | 16   | *15  | a15   |
| 10    | 14   | 15   | 17    | 18    | 16   | 16   | 18    | 23    | 17    | 16   | 16   | a15   |
| 11    | 15   | 15   | 17    | 18    | 16   | 16   | 17    | 40    | 17    | 16   | 15   | a15   |
| 12    | 15   | 15   | 17    | 18    | 17   | 15   | 17    | 54    | 17    | *16  | 15   | *15   |
| 13    | 15   | 15   | 18    | 18    | 16   | 15   | *17   | 38    | *17   | 16   | 15   | 15    |
| 14    | *15  | 16   | 19    | 18    | 16   | 16   | 16    | 33    | 17    | 16   | 15   | 15    |
| 15    | 15   | 16   | 19    | 19    | 16   | 16   | 17    | 29    | 17    | 16   | 15   | 15    |
| 16    | 15   | 16   | 19    | 19    | 16   | 15   | 17    | 27    | 17    | 16   | 15   | 15    |
| 17    | 15   | 16   | 18    | 18    | 16   | 15   | 17    | *26   | 17    | 16   | 15   | 15    |
| 18    | 15   | 16   | *18   | 19    | 16   | 15   | 16    | 24    | 17    | 16   | 15   | 15    |
| 19    | 15   | *16  | 18    | 19    | 16   | 15   | 16    | 22    | 17    | 16   | 15   | 15    |
| 20    | 15   | 17   | 18    | 18    | 16   | 15   | 16    | 21    | 17    | 16   | 15   | 15    |
| 21    | 15   | 17   | 18    | 18    | 16   | 15   | 17    | 20    | 17    | 16   | 15   | 15    |
| 22    | 15   | 17   | 18    | 18    | 16   | 16   | 17    | 20    | 17    | 16   | 15   | 16    |
| 23    | 15   | 17   | 18    | 18    |      | 17   | 18    | 19    | 17    | 17   | 15   | 16    |
| 24    | 15   | 17   | 18    | 18    |      | 17   | 18    | 19    | 17    | 16   | 15   | 16    |
| 25    | 15   | 17   | 18    | 17    |      | *18  | 17    | 18    | 17    | 16   | 15   | 16    |
| 26    | 14   | 17   | 18    | *17   | *a16 | 18   | 17    | 18    | 17    | 16   | 15   | 15    |
| 27    | 14   | 17   | 18    | 17    |      | 18   | 17    | 18    | 17    | 16   | 15   | 15    |
| 28    | 15   | 17   | 18    | 17    |      | 17   | 16    | 18    | 16    | 16   | a15  | 16    |
| 29    | 15   | 16   | 18    | 17    |      | 17   | 17    | 18    | 17    | 16   | a15  | 16    |
| 30    | 15   | 16   | 17    | 17    |      | 17   | 17    | 18    | 16    | 16   | a15  | 15    |
| 31    | 15   | ---  | 17    | 17    | ---  | 17   | ---   | 18    | ---   | 21   | a15  | ---   |
| Total | 456  | 478  | 544   | 555   | 472  | 496  | 518   | 702   | 508   | 502  | 473  | 457   |
| Mean  | 14.7 | 15.9 | 17.5  | 17.9  | 16.3 | 16.0 | 17.3  | 22.6  | 16.9  | 16.2 | 15.3 | 15.2  |
| Ac-ft | 904  | 948  | 1,080 | 1,100 | 936  | 984  | 1,030 | 1,390 | 1,010 | 998  | 938  | 906   |

Calendar year 1959: Max 78 Min 13 Mean 17.0 Ac-ft 12,320  
Water year 1959-60: Max 54 Min 14 Mean 16.8 Ac-ft 12,220

\* Discharge measurement made on this day.  
a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, and records for nearby streams.

## 1880. Otter Creek Reservoir near Antimony, Utah

Location.--Lat 38°10'15", long 112°00'00", in NW $\frac{1}{4}$  sec.28, T.30 S., R.2 W., near spillway on right side of dam on Otter Creek,  $3\frac{1}{2}$  miles (revised) northwest of Antimony and  $9\frac{1}{2}$  miles (revised) east of Kingston.

Records available.--January 1914 to September 1915, January 1934 to September 1960. Published as "near Coyote" 1914.

Gage.--Staff gage. Altitude of gage is 6,350 ft (by barometer).

Extremes.--Maximum contents observed during year, 32,000 acre-ft Apr. 10, 20 (gage height, 27.0 ft); minimum observed, 280 acre-ft Sept. 20 (gage height, 1.2 ft).  
1914-15, 1934-60: Maximum contents observed, 55,000 acre-ft May 1, 1946, May 20, 1948, June 10, 20, 1949, June 10, 1952, May 20, 1958 (gage height, 37.0 ft); minimum observed, 200 acre-ft Sept. 10, 1956 (gage height, 1.0 ft).

Remarks.--Reservoir was formed in 1898 by a 15-foot earth-fill, rock-faced dam which was raised some each year to the ultimate height of 45 ft in 1915. The dam has a concrete core through the center. Capacity, 52,500 acre-ft between gage height zero (bottom of outlet gate) and 36.0 ft (top of flashboards on spillway). Spillway crest is at gage height 33.5 ft. Figures given herein represent total contents. Reservoir stores water from Otter Creek and also water diverted from East Fork Sevier River, for irrigation in Sevier River basin.

Cooperation.--Gage-height record furnished by Otter Creek Reservoir Co. Capacity table furnished by Sevier River water commissioner.

Capacity table, water year 1959-60 (gage height, in feet, and contents, in acre-feet)

|      |       |      |        |
|------|-------|------|--------|
| 1.0  | 200   | 14.0 | 10,700 |
| 2.0  | 600   | 16.0 | 13,500 |
| 4.0  | 1,600 | 18.0 | 16,000 |
| 6.0  | 2,900 | 20.0 | 19,200 |
| 8.0  | 4,500 | 22.0 | 22,800 |
| 10.0 | 6,500 | 24.0 | 26,400 |
| 12.0 | 8,500 | 27.0 | 32,000 |

Contents, in acre-feet, water year October 1959 to September 1960

| Day | Oct.    | Nov.    | Dec.    | Jan.    | Feb.    | Mar.    | Apr.    | May     | June    | July   | Aug.   | Sept. |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--------|-------|
| 1   | 9,740   | 11,480  | 13,820  | 16,900  | 20,460  | 24,960  | 30,200  | 31,600  | 27,480  | 13,690 | 5,500  | -     |
| 2   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | 400   |
| 3   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 4   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 5   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 6   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 7   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 8   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 9   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 10  | 10,100  | 12,260  | 14,740  | 18,180  | 22,440  | 28,400  | 32,000  | 31,000  | 23,160  | -      | 3,700  | 360   |
| 11  | -       | -       | -       | -       | -       | -       | -       | -       | -       | 10,460 | -      | -     |
| 12  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 13  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 14  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 15  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 16  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 17  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 18  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 19  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 20  | 10,700  | 13,040  | 15,860  | 19,200  | 23,700  | 28,200  | 32,000  | 30,400  | 18,350  | 8,000  | 2,080  | 280   |
| 21  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 22  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 23  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 24  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 25  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 26  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 27  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 28  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 29  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 30  | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| 31  | a11,420 | a13,750 | a16,900 | a20,360 | a24,830 | a30,030 | a31,640 | a27,720 | a14,110 | a5,710 | a660   | a280  |
| (†) | -       | -       | -       | -       | -       | -       | -       | -       | -       | -      | -      | -     |
| (*) | +1,690  | +2,330  | +3,150  | +3,460  | +4,470  | +5,200  | +1,610  | -3,920  | -13,610 | -8,400 | -5,050 | -380  |

Calendar year 1959..... \* -13,100

Water year 1959-60..... \* -9,450

† Gage height, in feet, at end of month.

\* Change in contents, in acre-feet.

a No gage-height record; contents interpolated.

## 1890. East Fork Sevier River near Kingston, Utah

Location.--Lat 38°12', long 112°09', in SW¼ sec.13, T.30 S., R.3 W., on right bank 1,000 ft downstream from bridge on State Highway 22, 1.7 miles east of Kingston, 4.1 miles upstream from mouth, and 10½ miles downstream from Otter Creek.

Drainage area.--1,260 sq mi, approximately.

Records available.--March 1913 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,110 ft (from river-profile map). Prior to Apr. 29, 1914, staff gage at site 1 mile upstream at different datum. Apr. 29, 1914, to June 2, 1939, water-stage recorder at site 1,500 ft downstream at different datum.

Average discharge.--47 years, 83.2 cfs (60,230 acre-ft per year).

Extremes.--Maximum discharge during year, 235 cfs May 30 (gage height, 2.18 ft); minimum discharge not determined, occurred during period of ice effect or no gage-height record. 1913-60: Maximum discharge, 2,030 cfs May 12, 1941 (gage height, 5.65 ft) minimum daily recorded, 7 cfs Oct. 29, 30, 1930.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Diversions for irrigation above and below station. Flow regulated by Otter Creek Reservoir (see preceding page).

Revisions (water years).--WSP 750: 1931-32.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.4 | 5.0 | 1.1 | 54  |
| .5  | 7.8 | 1.5 | 111 |
| .6  | 12  | 2.0 | 206 |
| .8  | 23  | 2.5 | 332 |

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                       | 23   | 13   |       |       |       | 13   | 29    | 39    | 230    | 187   | 137    | 37    |
| 2                       | 18   | 15   |       |       |       | 13   | 31    | 38    | 230    | 185   | *133   | 36    |
| 3                       | 18   | 17   |       |       |       | 13   | 31    | 39    | 230    | 183   | 130    | 37    |
| 4                       | 16   | 14   |       | b7.0  |       | 12   | 31    | 42    | 230    | 183   | 132    | 44    |
| 5                       | 16   | b13  |       |       |       | 13   | 31    | *46   | 230    | 185   | 130    | 41    |
| 6                       | 15   | b13  |       |       | a9.0  | 14   | 31    | 42    | 230    | 185   | 123    | 41    |
| 7                       | 13   | 13   |       |       |       | 16   | 31    | 37    | 230    | 183   | 121    | 48    |
| 8                       | 13   | 13   |       |       |       | 18   | 31    | 31    | 230    | 183   | 120    | 36    |
| 9                       | 13   | 12   |       |       |       | 16   | 31    | 33    | 230    | 181   | 116    | 31    |
| 10                      | 13   |      |       |       |       | 15   | 31    | 32    | 228    | 179   | 114    | 28    |
| 11                      | 12   |      | b10   |       | b9.7  | 14   | 31    | 28    | 226    | 177   | 109    | 26    |
| 12                      | 12   |      |       |       | b9.7  | 14   | 32    | 28    | 219    | *177  | 106    | *23   |
| 13                      | 12   |      |       |       | 9.7   | 15   | *32   | 29    | *219   | 175   | 103    | 22    |
| 14                      | *11  |      | a11   |       | 9.3   | 14   | 31    | 31    | 217    | 171   | 102    | 20    |
| 15                      | 11   |      |       |       | b9.7  | 14   | 32    | 34    | 217    | 171   | 97     | 22    |
| 16                      | 11   |      |       | (*)   | 9.7   | 14   | 32    | 33    | 215    | 169   | 92     | 21    |
| 17                      | 13   |      |       |       | b9.7  | 14   | 30    | 32    | 215    | 163   | 91     | 22    |
| 18                      | 11   |      |       |       | b9.7  | 14   | 26    | 31    | 210    | 156   | 86     | 19    |
| 19                      | 11   | *12  |       | a7.0  | 9.7   | 14   | 25    | 31    | 210    | 156   | 84     | 20    |
| 20                      | 11   | 11   |       |       | 9.7   | 14   | 25    | 30    | 210    | 150   | 84     | 20    |
| 21                      | 11   | b11  |       |       | 9.7   | 15   | 25    | 29    | 208    | 142   | 108    | 19    |
| 22                      | 11   | 11   | 10    |       | b9.3  | 15   | 26    | 31    | 206    | 142   | 111    | 20    |
| 23                      | 13   | 12   | 8.2   |       | b9.0  | 15   | 25    | 31    | 202    | 141   | 102    | 25    |
| 24                      | 12   | 11   | 8.2   |       | b9.0  | 15   | 28    | 30    | 202    | 141   | 91     | 26    |
| 25                      | 12   | 11   | 8.9   |       | b10   | *15  | 33    | 29    | 200    | 141   | 82     | 25    |
| 26                      | 12   |      | 7.5   | (*)   | *12   | 15   | 34    | *31   | 198    | 141   | 69     | 25    |
| 27                      | 12   |      |       |       | 13    | 15   | 31    | 105   | 193    | 142   | 58     | 26    |
| 28                      | 13   | b10  |       |       | 12    | 15   | 36    | 230   | 189    | 139   | 49     | 26    |
| 29                      | 13   |      | b7.5  |       | 13    | 16   | 36    | 230   | 189    | 139   | 42     | 26    |
| 30                      | 12   |      |       |       | ----- | 16   | 40    | 233   | 189    | 135   | 36     | 25    |
| 31                      | 12   |      |       |       | ----- | 15   | ----- | 233   | -----  | 133   | 37     | ----- |
| Total                   | 406  | 351  | 290.3 | 217.0 | 283.6 | 451  | 920   | 1,898 | 6,432  | 5,035 | 2,997  | 839   |
| Mean                    | 13.1 | 11.7 | 9.36  | 7.00  | 9.78  | 14.5 | 30.7  | 61.2  | 214    | 162   | 96.7   | 28.0  |
| Ac-ft                   | 805  | 696  | 576   | 430   | 563   | 895  | 1,820 | 3,760 | 12,760 | 9,990 | 5,940  | 1,660 |
| Calendar year 1959: Max | 210  |      |       |       |       | Min  | -     | Mean  | 58.1   | Ac-ft | 42,040 |       |
| Water year 1959-60: Max | 233  |      |       |       |       | Min  | -     | Mean  | 55.0   | Ac-ft | 39,900 |       |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, trend of flow, and records for nearby streams.

b Stage-discharge relation affected by ice.

## 1910. Piute Reservoir near Marysville, Utah

Location.--Lat 38°19'30", long 112°11'30", in NE¼NW¼ sec.3, T.29 S., R.3 W., at Piute Dam, 9 miles south of Marysville.

Drainage area.--2,400 sq mi, approximately.

Records available.--March 1914 to September 1960.

Gage.--Staff gage read once daily except Sunday. Datum of gage is 5,900.8 ft above mean sea level (levels by Office of State Engineer).

Extremes.--Maximum contents observed during year, 28,910 acre-ft Apr. 1, 2 (gage height, 52.8 ft); no contents for several days in August and September.  
1914-60: Maximum contents, 82,300 acre-ft May 28, 1922 (gage height, 76.4 ft, original capacity table); no contents at times in several years.

Remarks.--Reservoir is formed by earth-fill dam; storage began in summer of 1910. Capacity, 74,010 acre-ft between gage heights 16 (approximate bottom of reservoir) and 76 ft (top of flashboards on spillway since 1941). Spillway crest is at gage height 70.2 ft. No dead storage. Water is used for irrigation.

Capacity table, water year 1959-60 (gage height, in feet, and contents, in acre-feet)

|      |       |      |        |
|------|-------|------|--------|
| 23.0 | 880   | 40.0 | 12,510 |
| 26.0 | 1,970 | 45.0 | 18,160 |
| 29.0 | 3,480 | 50.0 | 24,850 |
| 32.0 | 5,480 | 55.0 | 32,250 |
| 35.0 | 7,790 |      |        |

Contents, in acre-feet, water year October 1959 to September 1960

| Day | Oct.  | Nov.   | Dec.   | Jan.   | Feb.   | Mar.   | Apr.   | May     | June   | July   | Aug.   | Sept. |
|-----|-------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|-------|
| 1   | 4,500 | -      | 7,230  | 15,570 | 24,000 | 27,730 | 28,910 | -       | 8,630  | 10,470 | 5,630  | 0     |
| 2   | 4,440 | 4,640  | 7,470  | 15,790 | 24,140 | 27,730 | 28,910 | 18,660  | 8,720  | 10,090 | 5,780  | 0     |
| 3   | 4,440 | 4,640  | 7,710  | -      | 24,430 | 27,730 | -      | 18,160  | 8,810  | -      | 5,700  | 0     |
| 4   | -     | 4,640  | 7,960  | 16,370 | 24,710 | 27,730 | 28,610 | 17,680  | 9,080  | 9,340  | 5,630  | 0     |
| 5   | 4,570 | 4,640  | 8,210  | 16,720 | 24,990 | 27,730 | 28,460 | 17,190  | -      | 8,990  | 5,550  | 0     |
| 6   | 4,640 | 4,570  | -      | 17,070 | 25,280 | -      | 28,320 | 16,950  | 9,340  | 8,550  | 5,480  | 0     |
| 7   | 4,700 | 4,570  | 8,630  | 17,430 | -      | 27,880 | 28,170 | 16,720  | 9,620  | 8,130  | -      | 0     |
| 8   | 4,770 | -      | 8,900  | 17,800 | 25,710 | 27,880 | 27,880 | -       | 9,800  | 7,070  | 5,200  | 0     |
| 9   | 4,910 | 4,500  | 9,160  | 18,160 | 25,850 | 27,880 | 27,440 | 16,490  | 10,090 | 7,150  | 5,050  | e431  |
| 10  | 4,980 | 4,500  | 9,430  | -      | 25,990 | 27,880 | -      | 16,140  | 10,470 | -      | 4,840  | e539  |
| 11  | -     | 4,440  | 9,710  | 18,780 | 26,140 | 27,880 | 26,860 | 15,790  | 10,970 | 6,150  | 4,570  | -     |
| 12  | 5,120 | 4,440  | 10,000 | 19,040 | 26,280 | 27,880 | 26,570 | 15,230  | -      | 5,700  | 4,301  | 880   |
| 13  | 5,120 | 4,440  | -      | 19,410 | 26,420 | -      | 26,280 | 14,670  | 11,780 | 5,410  | 3,980  | 880   |
| 14  | 5,120 | 4,370  | 10,380 | 19,670 | -      | 27,880 | 25,990 | 14,230  | 11,990 | 5,120  | -      | e404  |
| 15  | 5,120 | 4,370  | 10,670 | 19,930 | 26,720 | 27,880 | 25,710 | -       | 12,090 | 5,050  | 3,370  | e218  |
| 16  | 5,120 | 4,440  | 10,970 | 20,190 | 26,860 | 27,880 | 25,420 | 13,260  | 12,200 | 4,980  | 3,030  | e88   |
| 17  | 5,050 | 4,440  | 11,270 | -      | 27,000 | 27,880 | -      | 12,830  | 12,200 | -      | 2,720  | e53   |
| 18  | -     | 4,500  | 11,570 | 20,710 | 27,150 | 27,880 | 24,850 | 12,300  | 12,200 | 5,270  | 2,240  | -     |
| 19  | 4,910 | 4,500  | 11,890 | 20,980 | 27,300 | 27,880 | 24,570 | 11,780  | -      | 5,050  | 1,850  | -     |
| 20  | 4,910 | 4,500  | -      | 21,250 | 27,440 | -      | 24,290 | 11,270  | 12,410 | 4,840  | 1,560  | -     |
| 21  | 4,840 | 4,570  | 12,510 | 21,520 | -      | 28,020 | 23,720 | 10,770  | 12,510 | 4,640  | -      | -     |
| 22  | 4,840 | -      | 12,830 | 21,790 | 27,580 | 28,020 | 23,160 | -       | 12,620 | 4,370  | 912    | -     |
| 23  | 4,770 | 4,980  | 13,150 | 22,060 | 27,580 | 28,020 | 22,610 | 10,000  | 12,620 | 4,170  | e431   | -     |
| 24  | 4,770 | 5,270  | 13,470 | -      | 27,580 | 28,020 | -      | 9,520   | 12,620 | -      | e262   | e13   |
| 25  | -     | 5,550  | 13,800 | 22,610 | 27,580 | 28,170 | 22,060 | 8,990   | 12,510 | -      | e130   | -     |
| 26  | 4,770 | 5,850  | 14,120 | 22,890 | 27,580 | 28,320 | 21,520 | 8,460   | -      | 4,500  | e81    | e7    |
| 27  | 4,770 | 6,150  | -      | 23,160 | 27,580 | -      | 20,960 | 8,130   | 12,090 | 4,640  | -      | -     |
| 28  | 4,770 | 6,450  | 14,670 | 23,440 | -      | 28,610 | 20,450 | 7,870   | 11,780 | 4,770  | 0      | e0    |
| 29  | 4,770 | -      | 14,890 | 23,580 | 27,730 | 28,760 | 19,930 | -       | 11,470 | 4,980  | 0      | e13   |
| 30  | 4,700 | 6,990  | 15,120 | 23,720 | -      | 28,760 | 19,410 | 8,210   | 10,970 | 5,270  | 0      | e27   |
| 31  | 4,700 | -      | 15,340 | 23,860 | -      | 28,760 | -      | 8,460   | -      | 4,500  | 0      | -     |
| (†) | 30.9  | 34.0   | 42.6   | -      | 52.0   | 52.7   | 46.0   | 35.8    | 38.5   | -      | -      | 19.5  |
| (*) | +60   | +2,290 | +8,350 | +8,520 | +3,570 | +1,030 | -9,350 | -10,950 | +2,510 | -5,520 | -5,450 | +27   |

Calendar year 1959..... \$ -27,260

Water year 1959-60..... \$ -4,610

† Gage height, in feet, at end of month.

\* Change in contents, in acre-feet.

a No gage-height record; contents interpolated.

e Capacity table in error; contents estimated from inflow-outflow study.

1915. Sevier River below Piute Dam, near Marysville, Utah

Location.--Lat 38°19'55", long 112°11'15", in NW¼SE¼ sec.34, T.28 S., R.3 W., on left bank three-quarters of a mile downstream from Piute Dam and 8 miles south of Marysville.

Drainage area.--2,440 sq mi, approximately.

Records available.--May to August 1911, May 1912 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,870 ft (by barometer). Prior to May 4, 1912, staff gage at site half a mile upstream at different datum. May 4, 1912, to Mar. 31, 1935, water-stage recorder at site a quarter of a mile upstream at different datum. Apr. 1, 1935, to Apr. 7, 1936, at datum 0.2 ft higher.

Average discharge.--48 years (1912-60), 227 cfs (164,300 acre-ft per year).

Extremes.--Maximum discharge during year, 434 cfs July 8 (gage height, 1.95 ft); minimum daily, 0.3 cfs Dec. 12, 13.

1911-60: Maximum discharge, 2,600 cfs May 23, 24, 1922; practically no flow at times when reservoir gates were closed.

Remarks.--Records good. One small diversion between gage and Piute Reservoir. Flow regulated by Piute Reservoir (see preceding page). Records of chemical analyses for the water year 1960 are given in WSP 1744.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Nov. 28 to Dec. 3,  
Dec. 8 to Jan. 28, July 30 to Aug. 5)

|      |     |     |     |
|------|-----|-----|-----|
| -0.4 | 0.3 | 0.4 | 35  |
| -.3  | 1.7 | .6  | 60  |
| -.2  | 3.2 | .7  | 101 |
| -.1  | 4.8 | .8  | 132 |
| 0.0  | 7.5 | 1.0 | 178 |
| .1   | 12  | 1.5 | 295 |
| .2   | 18  | 2.0 | 478 |

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     | 121   | 73      | 0.7  | 0.7   | 40    | 139   | 112    | 245    | 201    | 374    | 46    | 56      |
| 2     | 66    | 75      | .6   | .7    | 40    | 141   | 144    | 242    | 219    | 363    | 32    | 53      |
| 3     | 48    | 75      | 5.8  | .6    | 40    | 141   | 150    | *263   | 173    | 363    | 144   | 47      |
| 4     | 40    | 79      | 11   | .6    | 40    | 139   | 150    | 275    | 171    | 362    | 153   | 49      |
| 5     | 27    | 79      | 12   | .4    | 40    | 141   | 150    | 190    | 134    | *362   | 139   | 49      |
| 6     | 23    | 79      | 13   | .4    | 40    | 141   | 148    | 144    | 134    | 398    | 139   | 31      |
| 7     | 21    | 79      | 14   | .4    | 40    | 141   | 160    | 141    | 109    | 407    | 155   | 8.7     |
| 8     | 22    | 79      | 7.0  | 1.0   | 40    | 141   | 183    | 141    | 105    | 430    | 178   | 8.5     |
| 9     | 30    | 79      | 1.1  | 1.0   | 40    | 141   | 180    | 163    | 79     | 427    | 192   | 7.9     |
| 10    | 31    | 86      | .9   | .9    | 40    | 141   | 180    | 270    | 35     | 407    | 203   | 14      |
| 11    | 31    | 86      | .7   | .9    | 40    | 144   | 180    | 288    | 32     | 390    | 210   | 31      |
| 12    | 42    | 86      | .3   | .9    | 40    | 144   | *180   | 334    | 45     | 327    | 210   | 45      |
| 13    | *54   | 86      | .3   | .9    | 42    | 146   | 178    | 338    | *118   | 266    | 212   | 64      |
| 14    | 54    | 86      | .6   | .9    | 42    | 148   | 178    | 272    | 150    | 237    | 224   | 97      |
| 15    | 60    | 86      | .6   | .9    | 42    | 148   | 178    | 315    | 157    | 157    | 233   | 97      |
| 16    | 66    | 86      | *.6  | 1.0   | 42    | 148   | 178    | 280    | 144    | 134    | 245   | 62      |
| 17    | 66    | 86      | .6   | 1.1   | 42    | 148   | 173    | 270    | 169    | 124    | 245   | 56      |
| 18    | 66    | 86      | .6   | 1.1   | 42    | 150   | 173    | 275    | 157    | 187    | 229   | 56      |
| 19    | 66    | *86     | .6   | 1.1   | 42    | 150   | 180    | 295    | 148    | 223    | 231   | *40     |
| 20    | 66    | 79      | .6   | 1.1   | 42    | 153   | 233    | 252    | 153    | 231    | 236   | 37      |
| 21    | 66    | 59      | .7   | 1.1   | 102   | 153   | 265    | 229    | 171    | 222    | 224   | 31      |
| 22    | 64    | 59      | .7   | 1.1   | 148   | 150   | 278    | 272    | 173    | 210    | 201   | 34      |
| 23    | 54    | 59      | .7   | 1.3   | 148   | *150  | 292    | 295    | 226    | 134    | 178   | 32      |
| 24    | 53    | 57      | .7   | 1.3   | 148   | 130   | 290    | 324    | 208    | 66     | 146   | 32      |
| 25    | 53    | 57      | .7   | 1.3   | 146   | 101   | 292    | 318    | 215    | 59     | 115   | 35      |
| 26    | 53    | 57      | .9   | 1.4   | 141   | 97    | 312    | 327    | 295    | 51     | 112   | 33      |
| 27    | 53    | 47      | .7   | *1.4  | *139  | 97    | 310    | 280    | 304    | 92     | 64    | 34      |
| 28    | 60    | 26      | .7   | 17    | 139   | 97    | 298    | 231    | 331    | 55     | 59    | 31      |
| 29    | 66    | 1.3     | .7   | 42    | 139   | 97    | 280    | 146    | 351    | 52     | 57    | 30      |
| 30    | 69    | 1.0     | .7   | 40    | ----- | 97    | 272    | 146    | 390    | 45     | 56    | 30      |
| 31    | 73    | -----   | .7   | 40    | ----- | 97    | -----  | 155    | -----  | 32     | 53    | -----   |
| Total | 1,662 | 2,055.3 | 79.5 | 184.5 | 2,066 | 4,151 | 6,277  | 7,716  | 5,297  | 7,192  | 4,981 | 1,231.1 |
| Mean  | 53.6  | 68.5    | 2.56 | 5.31  | 71.2  | 134   | 209    | 249    | 177    | 232    | 161   | 41.0    |
| Ac-ft | 3,300 | 4,080   | 158  | 326   | 4,100 | 8,230 | 12,450 | 15,300 | 10,510 | 14,270 | 9,880 | 2,440   |

Calendar year 1959: Max 554 Min 0.3 Mean 161  
Water year 1959-60: Max 430 Min 0.3 Mean 117

Ac-ft 116,800  
Ac-ft 85,040

\* Discharge measurement made on this day.

1942. Clear Creek above diversions, near Sevier, Utah

Location.--Lat 38°34'45", long 112°17'20", in NW¼SW¼ sec.31, T.25 S., R.4 W., on left bank at south side of State Highway 13, 1.8 miles west of Sevier, 2.3 miles upstream from mouth, and 17 miles southwest of Richfield.

Drainage area.--164 sq mi.

Records available.--August 1957 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,680 ft (from topographic map).

Extremes.--Maximum discharge during year, 136 cfs May 15 (gage height, 2.52 ft); minimum, 2.1 cfs Aug. 29.

1957-60: Maximum discharge, 301 cfs May 24, 1958 (gage height, 3.36 ft); minimum, 1.9 cfs Sept. 9, 1959.

Remarks.--Records good except those for periods of doubtful or no gage-height record, which are fair. Small diversions for irrigation above station.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.7 | 2.3 | 1.8 | 39  |
| .8  | 3.4 | 2.1 | 71  |
| 1.0 | 6.5 | 2.4 | 121 |
| 1.2 | 11  | 2.5 | 143 |
| 1.5 | 21  |     |     |

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     | 6.9   | 9.0   | 6.7   | 7.7   | 9.0   | 9.2   | 30    | 25    | 66    | a13   | 8.1   | 6.3   |
| 2     | 6.3   | 9.5   | 7.5   | 5.7   | 9.9   | 8.5   | 27    | 25    | 80    | a12   | 6.7   | 7.1   |
| 3     | 6.2   | 11    | 7.3   | 5.6   | 7.9   | 8.1   | 27    | *24   | 104   | a11   | 7.1   | 6.7   |
| 4     | 5.8   | 9.2   | 7.7   | 6.2   | 9.2   | 9.5   | 33    | 27    | 110   | a11   | 7.9   | 6.5   |
| 5     | 4.1   | 7.3   | 5.5   | 5.8   | 6.3   | 11    | 38    | 32    | 113   | *a11  | 7.5   | 14    |
| 6     | 4.4   | 6.7   | 5.5   | 6.7   | 9.7   | 16    | 43    | 33    | 108   | a10   | 7.1   | 9.7   |
| 7     | 4.5   | 8.5   | 6.3   | 8.1   | 8.1   | 22    | 46    | 33    | 115   | a10   | *6.7  | 9.5   |
| 8     | 4.8   | 8.3   | 6.7   | 9.0   | 11    | 21    | 43    | 35    | 108   | a10   | 6.5   | 8.3   |
| 9     | 5.3   | 8.5   | 7.1   | 10    | 14    | 16    | 43    | 39    | 82    | a10   | 6.5   | 7.7   |
| 10    | 4.4   | 8.5   |       | 10    | 10    | 13    | 45    | 49    | 67    | a10   | 6.3   | 5.6   |
| 11    | 5.1   | 8.5   | a8.0  | 10    | 9.5   | 12    | 46    | 73    | 54    | a9.8  | 6.3   | 6.3   |
| 12    | 7.1   | 8.5   |       | 9.9   | 6.5   | 14    | *40   | 108   | 49    | a9.4  | 6.2   | 7.9   |
| 13    | *6.4  | 8.1   |       | 9.7   | 8.7   | 15    | 34    | 125   | 55    | a9.2  | 6.2   | 7.5   |
| 14    | 6.3   | 6.2   |       | 9.0   | 9.5   | 13    | 33    | 125   | *47   | 9.0   | 6.8   | 7.3   |
| 15    | 6.7   | 8.5   |       | 9.9   | 6.7   | 10    | 33    | 121   | 42    | 7.7   | 5.6   | 7.7   |
| 16    | 6.7   | 8.1   | a10   | 9.0   | 9.5   | 12    | 33    | *93   | 39    | 7.5   | 6.0   | 7.5   |
| 17    | 6.9   | 7.1   |       | 6.9   | 6.3   | 11    | 32    | 82    | 36    | 7.5   | 6.5   | 6.7   |
| 18    | 7.1   | 7.3   | *10   | *7.7  | 7.7   | 13    | 30    | 90    | 32    | 7.1   | a6.0  | 6.7   |
| 19    | 7.1   | 8.5   | 10    | 8.7   | 10    | 14    | 30    | 73    | 30    | 7.1   | *5.3  | *6.2  |
| 20    | 6.5   | *6.9  | 7.5   | 5.8   | 9.0   | 17    | 31    | 58    | 30    | 6.0   | 5.1   | 5.6   |
| 21    | 5.6   | 7.1   | 11    | 7.7   | 7.1   | 24    | 35    | 46    | 28    | 7.3   | 4.8   | 7.1   |
| 22    | 6.5   | 7.9   | 9.9   | 10    | 8.7   | 31    | 39    | 49    | 26    | 8.7   | 5.0   | 7.9   |
| 23    | 6.9   | 8.1   | 9.2   | 8.5   | 7.1   | *36   | 36    | 58    | 25    | 9.2   | 4.5   | 7.1   |
| 24    | 6.7   | 8.3   | 9.2   | 8.5   | 6.7   | 38    | d31   | 56    | 22    | 8.1   | 4.8   | 7.9   |
| 25    | 6.7   | 7.5   | 9.7   | 10    | 9.0   | 39    | d27   | *53   | a20   | 7.7   | 4.1   | 7.3   |
| 26    | 7.1   | 6.3   | 7.9   | 9.9   | 9.7   | 43    | d23   | 51    | a18   | 7.5   | 4.4   | 7.1   |
| 27    | 7.5   | 4.8   | 6.7   | 9.7   | *9.0  | 44    | 20    | 54    | a17   | 6.7   | 3.4   | 6.7   |
| 28    | 10    | 5.1   | 4.7   | 9.2   | 8.5   | 42    | 20    | 56    | a16   | 7.7   | 2.8   | 6.5   |
| 29    | 10    | 5.8   | 5.3   | 8.5   | 9.0   | 32    | 24    | 61    | a15   | 9.2   | 3.7   | 6.3   |
| 30    | 9.9   | 6.3   | 6.3   | 8.5   | ----- | 31    | 24    | 62    | a14   | 8.1   | 5.0   | 5.5   |
| 31    | 8.7   | ----- | 7.3   | 9.5   | ----- | 31    | ----- | 66    | ----- | 9.7   | 5.1   | ----- |
| Total | 205.2 | 231.4 | 245.0 | 261.4 | 253.3 | 656.3 | 996   | 1,882 | 1,566 | 278.2 | 177.0 | 220.2 |
| Mean  | 6.62  | 7.71  | 7.90  | 8.43  | 8.73  | 21.2  | 33.2  | 60.7  | 52.2  | 8.97  | 5.71  | 7.34  |
| Ac-ft | 407   | 459   | 486   | 518   | 502   | 1,300 | 1,980 | 3,730 | 3,110 | 552   | 351   | 437   |

Calendar year 1959: Max 39 Min 2.3 Mean 11.0 Ac-ft 7,980  
 Water year 1959-60: Max 125 Min 2.8 Mean 19.0 Ac-ft 13,830

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, recorded range in stage, trend of flow, and records for Fillmore Canal near Fillmore.

d Doubtful gage-height record; discharge estimated on basis of recorder graph and records for Fillmore Canal near Fillmore.

## 2050. Sevier River near Sigurd, Utah

Location.--Lat 38°52', long 111°57', in SW $\frac{1}{4}$  sec.19, T.22 S., R.1 W., on left bank 200 ft downstream from bridge, half a mile downstream from Rockyford Dam, 2 miles northeast of Sigurd, and 5 miles upstream from Lost Creek.

Drainage area.--3,340 sq mi, approximately.

Records available.--July to September 1912, July 1914 to September 1960. Prior to October 1938, published as "near Vermilion."

Gage.--Water-stage recorder. Altitude of gage is 5,180 ft (by barometer). July to September 1912, staff gage a quarter of a mile downstream at different datum. July 31, 1914, to Apr. 19, 1917, staff gage and Apr. 20, 1917, to Oct. 16, 1935, water-stage recorder, at present site at datum 2.00 ft lower.

Average discharge.--46 years (1914-60), 99.8 cfs (72,250 acre-ft per year).

Extremes.--Maximum discharge during year, 334 cfs Mar. 11 (gage height, 2.92 ft); minimum recorded, 0.7 cfs Aug. 27.

1914-60: Maximum discharge, 2,400 cfs May 30, 1922 (gage height, 6.1 ft, present datum), from rating curve extended above 600 cfs on basis of maximum discharge for other Sevier River stations; practically no flow (seepage only) when Rockyford Reservoir gates are closed.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Flow regulated by reservoirs above station. During irrigation season practically entire flow through Rockyford Dam is diverted above station for irrigation below.

Revisions (water years).--WSP 1394: 1927-28, 1947.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Mar. 2-27)

|                                                                                |         |       |       |       |       |        |         |         |       |          |       |       |    |
|--------------------------------------------------------------------------------|---------|-------|-------|-------|-------|--------|---------|---------|-------|----------|-------|-------|----|
|                                                                                |         |       |       |       | 0.1   | 0.4    |         |         |       |          |       |       |    |
|                                                                                |         |       |       |       | .1    | 1.1    |         |         |       |          |       | 37    |    |
|                                                                                |         |       |       |       | .2    | 2.1    |         |         |       |          |       | 73    |    |
|                                                                                |         |       |       |       | .3    | 3.6    |         |         |       |          |       | 120   |    |
|                                                                                |         |       |       |       | .4    | 5.8    |         |         |       |          |       | 202   |    |
|                                                                                |         |       |       |       | .6    | 13     |         |         |       |          |       | 325   |    |
| 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                                                                              | a1.5    | 52    | 71    | 57    | 81    | 192    | 150     | a1.0    | 44    | a0.8     | a0.8  | 1.0   |    |
| 2                                                                              |         | 53    | 64    | 56    | 86    | 196    | 139     | a6.0    | 35    |          | a0.8  | .9    |    |
| 3                                                                              |         | 60    | 62    | 51    | 88    | 196    | 123     | *53     | 9.0   |          | 31    | .9    |    |
| 4                                                                              |         | 61    | 57    | 45    | 90    | 198    | 121     | 103     | 19    |          | 40    | .9    |    |
| 5                                                                              |         | 55    | 55    | 46    | 91    | 200    | 114     | 98      | 23    |          | *37   | .9    |    |
| 6                                                                              | a2.0    | 53    | 55    | 49    | 121   | 202    | 113     | 101     | 3.8   | a0.8     | 29    | .8    |    |
| 7                                                                              |         | 53    | 55    | 48    | 128   | 204    | 129     | 105     | }     |          | }     | 7.4   | .8 |
| 8                                                                              |         | 52    | 56    | 48    | 106   | 208    | 120     | 108     |       |          |       |       |    |
| 9                                                                              |         | 52    | 59    | 52    | 110   | 212    | 118     | 107     |       |          |       |       |    |
| 10                                                                             |         | 52    | 61    | 56    | 114   | 215    | 158     | *97     |       |          |       |       |    |
| 11                                                                             | *a3.0   | 52    | 63    | 61    | 112   | 277    | *177    | 87      | 38    | 8.5      | a.8   | .8    |    |
| 12                                                                             |         | 52    | 60    | 65    | 105   | 311    | 190     | 77      | 45    |          |       | .8    |    |
| 13                                                                             |         | 52    | 60    | 69    | 99    | 276    | 184     | 64      | *46   |          |       | .8    |    |
| 14                                                                             |         | 51    | 60    | 69    | 105   | 239    | 173     | 57      | *43   |          |       | .8    |    |
| 15                                                                             |         | 52    | *59   | 69    | 96    | 234    | 158     | 69      | 5.3   |          |       | .8    |    |
| 16                                                                             | a50     | 52    | 61    | 69    | 96    | 230    | 140     | 68      | a.9   | 40<br>20 | a.8   | .9    |    |
| 17                                                                             | a64     | 53    | 64    | 65    | 100   | 232    | 159     | 62      |       |          |       | .9    |    |
| 18                                                                             | a64     | 52    | 66    | 62    | 94    | 158    | 162     | 55      |       |          |       | .9    |    |
| 19                                                                             | 64      | 53    | 68    | 66    | 100   | 125    | 140     | 32      |       |          |       | *.9   |    |
| 20                                                                             | 81      | *53   | 69    | 65    | 104   | 132    | 132     | 24      |       |          |       | .9    |    |
| 21                                                                             | 96      | 55    | 68    | 62    | 102   | 136    | 100     | 23      | a.8   | a.8      | *.8   | .9    |    |
| 22                                                                             | 93      | 54    | 69    | 63    | 101   | *135   | 83      | 25      |       |          |       | 1.0   |    |
| 23                                                                             | 86      | 53    | 70    | 63    | 129   | 125    | 50      | 33      |       |          |       | .9    |    |
| 24                                                                             | 60      | 53    | 70    | 64    | 164   | 129    | 19      | 33      |       |          |       | .9    |    |
| 25                                                                             | 52      | 54    | 66    | 66    | 175   | 139    | 31      | 31      |       |          |       | .8    |    |
| 26                                                                             | 51      | 54    | 61    | 67    | 182   | 158    | 32      | 5.8     | a.8   |          |       | .8    |    |
| 27                                                                             | 49      | 52    | 57    | *69   | *186  | 177    | 51      |         |       |          |       | .7    |    |
| 28                                                                             | 57      | 55    | 53    | 70    | 190   | 169    | 69      |         |       |          |       | .8    |    |
| 29                                                                             | 60      | 72    | 56    | 71    | 192   | 166    | 78      |         |       |          |       | .9    |    |
| 30                                                                             | 57      | 78    | 57    | 71    | ----- | 164    | 76      |         |       |          |       | 1.1   |    |
| 31                                                                             | 55      | ----- | 59    | 73    | ----- | 159    | -----   | 74      | ----- |          |       | 1.2   |    |
| Total                                                                          | 1,071.5 | 1,645 | 1,911 | 1,907 | 3,447 | 5,894  | 3,158.0 | 1,899.0 | 419.4 | 90.9     | 166.0 | 26.2  |    |
| Mean                                                                           | 34.6    | 54.8  | 61.6  | 61.5  | 119   | 190    | 105     | 61.3    | 14.0  | 2.93     | 5.35  | 0.87  |    |
| Ac-ft                                                                          | 2,130   | 3,260 | 3,790 | 3,780 | 6,840 | 11,690 | 6,260   | 3,770   | 832   | 180      | 329   | 52    |    |
| Calendar year 1959: Max 386 Min - Mean 68.2 Ac-ft 49,370                       |         |       |       |       |       |        |         |         |       |          |       |       |    |
| Water year 1959-60: Max 311 Min - Mean 59.1 Ac-ft 42,910                       |         |       |       |       |       |        |         |         |       |          |       |       |    |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 2 discharge measurements, engineers' and water commissioner's notes, and records for other Sevier River stations.

## 2100. Pleasant Creek near Mount Pleasant, Utah

Location.--Lat 39°32'30", long 111°23'30", in W½ sec.5, T.15 S., R.5 E., on left bank a quarter of a mile downstream from South Fork and 3.9 miles east of Mount Pleasant.

Drainage area.--16 sq mi, approximately.

Records available.--October 1954 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 6,759.67 ft above mean sea level (levels by U. S. Soil Conservation Service).

Average discharge.--6 years, 16.7 cfs (12,090 acre-ft per year).

Extremes.--Maximum discharge during year, 88 cfs June 3 (gage height, 6.92 ft); minimum, 5.6 cfs Nov. 27.

1954-60: Maximum discharge not determined, occurred during mud-rock flow Aug. 16, 1955 (estimated flow, 750 cfs below debris basin located half a mile below gage); minimum, 0.8 cfs Sept. 28, 1959, caused by temporary obstruction upstream.

Maximum discharge known, 2,060 cfs July 24, 1946, from critical-depth measurement of peak flow over retention dam half a mile below gage.

Remarks.--Records good except those for period of no gage-height record, which are fair.

Records include flow of Candland ditch and Coal Fork ditch which are transmountain diversions from San Rafael River basin.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used May 17 to June 7, July 29 to Aug. 11, Aug. 25 to Sept. 30)

|     |     |     |    |
|-----|-----|-----|----|
| 5.6 | 5.2 | 6.5 | 44 |
| 5.9 | 9.0 | 7.0 | 80 |
| 6.1 | 19  |     |    |

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     | 9.0   | 8.6   | 7.1   | 7.9   | 7.9   | 9.5   | 9.9   | 14    | 61    | 19    | 9.0   | 8.2   |
| 2     | 8.6   | 8.2   | 7.5   | 7.5   | 7.9   | 9.5   | 9.9   | 14    | 72    | 19    | 9.5   | 7.9   |
| 3     | 8.6   | 8.6   | 7.5   | 7.5   | 8.2   | 9.9   | 10    | 14    | *74   | 19    | 9.5   | 7.9   |
| 4     | 9.0   | 8.2   | 7.1   | 7.5   | 7.9   | 9.9   | 12    | 17    | 69    | 19    | 9.5   | 7.9   |
| 5     | 8.6   | 7.9   | 6.7   | 7.5   | 8.2   | 9.9   | 13    | 14    | 65    | 17    | 9.0   | 7.5   |
| 6     | 8.6   | 7.5   | 7.1   | 7.5   | 8.2   | 10    | 15    | 15    | 64    | 16    | 9.0   | 7.5   |
| 7     | 8.6   | 7.5   | 7.5   | 7.9   | 8.6   | 12    | 15    | 17    | 60    | 15    | 9.0   | 7.1   |
| 8     | 8.6   | 7.5   | 7.5   | 7.9   | 8.6   | 12    | 15    | 20    | 59    | 15    | 9.0   | 6.7   |
| 9     | 8.6   | 7.5   | 7.9   | 7.9   | 8.6   | 11    | 16    | 23    | 52    | 13    | 10    | 6.7   |
| 10    | 8.6   | 7.5   | 8.2   | 7.9   | 8.6   | 11    | 17    | 28    | 49    | 13    | 9.0   | 6.7   |
| 11    | 8.6   | 7.5   | 8.2   | 7.5   | 8.6   | 10    | 16    | 35    | 46    | 12    | *9.0  | 6.7   |
| 12    | 8.2   | 7.5   | 7.9   | 7.5   | 8.2   | 11    | 15    | 41    | 44    | 11    | 9.0   | 6.3   |
| 13    | 8.3   | 7.1   | 7.9   | 7.5   | 8.6   |       | 14    | 53    | 42    | *11   | 8.6   | 6.7   |
| 14    | 8.6   | 6.7   | 7.9   | 7.5   | 8.2   |       | 14    | 54    | 40    | 11    | 8.6   | *6.7  |
| 15    | 8.6   | 7.5   | *7.5  | 7.5   | 8.6   |       | 14    | 51    | *38   | 11    | 8.6   | 6.7   |
| 16    | 8.2   | 7.5   | 7.1   | 7.9   | 8.6   |       | 14    | 42    | 37    | 11    | 8.2   | 7.1   |
| 17    | 8.2   | 7.1   | 7.1   | 7.9   | 8.2   |       | 13    | 43    | 36    | 11    | 8.2   | 7.5   |
| 18    | 8.2   | 7.5   | 7.1   | 7.9   | 8.2   | al2   | 14    | *42   | 34    | 11    | 8.2   | 7.1   |
| 19    | 8.2   | *8.2  | 7.1   | *7.9  | 8.6   |       | 14    | 37    | 32    | 11    | 7.5   | 7.1   |
| 20    | *8.2  | 7.9   | 7.5   | 7.9   | 8.2   |       | 14    | 34    | 30    | 10    | 7.5   | 6.7   |
| 21    | 8.6   | 7.5   | 7.5   | 7.9   | 8.2   |       | 17    | 35    | 28    | 9.9   | 7.1   | 6.7   |
| 22    | 8.2   | 7.9   | 7.5   | 7.9   | 8.6   |       | 19    | 37    | 27    | 9.9   | 7.9   | 6.7   |
| 23    | 8.2   | 7.5   | 7.5   | 7.9   | 8.2   |       | 19    | 41    | 26    | 9.9   | 8.2   | 6.7   |
| 24    | 7.9   | 8.2   | 7.1   | 7.9   | 8.2   | *13   | 17    | 42    | 25    | 9.5   | 7.9   | 6.7   |
| 25    | 7.9   | 8.2   | 7.5   | 7.9   | 8.6   | 13    | 18    | 44    | 24    | 9.5   | 7.5   | 6.7   |
| 26    | 7.9   | 7.5   | 7.5   | 7.9   | *9.0  | 13    | 15    | *50   | 23    | 9.0   | 7.5   | 6.7   |
| 27    | 8.2   | 6.3   | 7.5   | 7.9   | 9.0   | 13    | 15    | 49    | 22    | 9.0   | 7.9   | 6.7   |
| 28    | 10    | 7.1   | 7.5   | 7.9   | 8.2   | 11    | *13   | 52    | 21    | 9.5   | 7.5   | 6.7   |
| 29    | 8.6   | 7.1   | 7.9   | 7.9   | 9.0   | 10    | 13    | 54    | 21    | 10    | 7.5   | 6.7   |
| 30    | 8.6   | 7.1   | 7.9   | 7.9   | ----- | 10    | 13    | 55    | 20    | 9.5   | 7.5   | 6.7   |
| 31    | 8.6   | ----- | 7.9   | 7.9   | ----- | 9.9   | ----- | 60    | ----- | 9.9   | 7.9   | ----- |
| Total | 262.7 | 227.9 | 232.7 | 240.9 | 243.7 | 350.6 | 431.8 | 1,127 | 1,241 | 580.6 | 260.3 | 209.7 |
| Mean  | 8.47  | 7.60  | 7.51  | 7.77  | 8.40  | 11.3  | 14.4  | 36.4  | 41.4  | 12.3  | 8.40  | 6.99  |
| Ac-ft | 521   | 452   | 462   | 478   | 483   | 695   | 856   | 2,240 | 2,460 | 755   | 518   | 416   |

Calendar year 1959: Max 39 Min 6.3 Mean 11.7 Ac-ft 8,440

Water year 1959-60: Max 74 Min 6.3 Mean 14.2 Ac-ft 10,330

Peak discharge (base, 50 cfs).--May 13 (9 p.m.) 58 cfs (6.62 ft); June 3 (6 p.m.) 88 cfs (6.92 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, trend of flow, weather records, and records for nearby streams.

## SEVIER LAKE BASIN

## Transmountain diversions from Colorado River basin to Sevier Lake basin

The following ditch and 2 tunnels in Utah, each equipped with a water-stage recorder, divert water from the Colorado River basin to the Sevier Lake basin. Records of daily flow collected by Geological Survey available in Salt Lake City district office. There are 10 other transmountain diversions in this area; however, they represent only a small portion of the total flow diverted, and records are available for these diversions from October 1949 to September 1958.

9-3095. Fairview ditch diverts water from tributaries of San Rafael River and Price River to San Pitch River basin. Gage is located in SE $\frac{1}{4}$  sec.26, T.13 S., R.5 E.

9-3190. Ephraim tunnel diverts water from tributary of San Rafael River to San Pitch River basin. Gage is located in NW $\frac{1}{4}$  sec.24, T.17 S., R.4 E.

9-3230. Spring City tunnel diverts water from tributary of San Rafael River to San Pitch River basin. Gage is located in SE $\frac{1}{4}$  sec.16, T.16 S., R.5 E.

Diversions, in acre-feet, water year October 1959 to September 1960

| Name                | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May   | June  | July | Aug. | Sept. | Water year |
|---------------------|------|------|------|------|------|------|------|-------|-------|------|------|-------|------------|
| Fairview ditch..... | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 311   | 402  | 7    | 0     | 720        |
| Ephraim tunnel..... | 12   | 12   | 12   | 12   | 12   | 12   | 18   | 1,640 | 1,490 | 68   | 1    | 6     | 3,300      |
| Spring City tunnel. | 30   | 19   | 12   | 12   | 12   | 19   | 24   | 868   | 1,210 | 52   | 18   | 45    | 2,320      |
| Total in Utah....   | 42   | 31   | 24   | 24   | 24   | 31   | 42   | 2,510 | 3,010 | 522  | 26   | 51    | 6,340      |

## Transmountain diversion from Sevier Lake basin to Colorado River basin

1840. Tropic and East Canal diverts water from East Fork Sevier River to tributary of Paria River. Gage is located in SW $\frac{1}{4}$  sec.17, T.36 S., R.3 W.

Diversions, in acre-feet, water year October 1959 to September 1960

| Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Water year |
|------|------|------|------|------|------|------|-----|------|------|------|-------|------------|
| 155  | 0    | 0    | 0    | 0    | 0    | 0.6  | 336 | 452  | 177  | 0    | 0     | 1,060      |

## 2110. Twin Creek near Mount Pleasant, Utah

Location.--Lat 39°29'30", long 111°24'25", in NW $\frac{1}{4}$  sec.30, T.15 S., R.5 E., on right bank  $\frac{3}{4}$  miles southeast of Mount Pleasant.

Drainage area.--5.9 sq mi, approximately.

Records available.--October 1954 to September 1960.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 6,500 ft (from topographic map).

Average discharge.--6 years, 8.09 cfs (5,860 acre-ft per year).

Extremes.--Maximum discharge during year, 40 cfs June 8 (gage height, 1.70 ft); minimum, 3.2 cfs Apr. 25.

1954-60: Maximum discharge, 117 cfs June 26, 1957 (gage height, 1.81 ft); from rating curve extended above 70 cfs; minimum, 1.8 cfs Mar. 18, 1955.

Remarks.--Records good except those for periods of ice effect or doubtful or no gage-height record, which are fair. Records include flow of Twin Creek tunnel, a transmountain diversion from San Rafael River basin.

Revisions.--WSP 1634: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used June 10-20)

|     |     |     |    |
|-----|-----|-----|----|
| 1.2 | 3.2 | 1.5 | 26 |
| 1.3 | 7.8 | 1.6 | 38 |
| 1.4 | 15  |     |    |

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                       | 5.1   | 5.1   | 4.2   |       | 4.2   |       | 4.2   | 6.1   | 23    | 7.8   | 5.6   | 4.2   |
| 2                       | 5.1   | 5.1   | 4.2   |       | 4.2   |       | 4.2   | 6.1   | *28   | 8.4   | 5.1   | 4.2   |
| 3                       | 5.1   | 5.1   | 4.2   |       | 4.2   |       | 4.2   | 6.6   | 29    | 7.8   | 5.1   | 3.8   |
| 4                       | 5.1   | 5.1   | b4.0  | b3.8  | b4.2  | a4.2  | 4.2   | 6.6   | 26    | 7.8   | 5.6   | 4.2   |
| 5                       | 5.1   | b5.1  | b4.0  |       | b4.2  |       | 4.6   | 6.6   | 28    | 7.2   | 5.6   | 4.2   |
| 6                       | 5.1   | b5.6  | b3.8  |       | 4.2   |       | 5.1   | 6.6   | 29    | 7.8   | 5.6   | 4.2   |
| 7                       | 3.8   | 5.6   | b3.8  |       | 4.2   | *4.6  | 5.1   | 7.2   | 28    | 7.2   | 5.6   | 3.8   |
| 8                       | 3.8   | 5.6   | 3.5   | a3.8  | 4.2   | 4.6   | 5.1   | 7.8   | 30    | 7.2   | 5.1   | 3.8   |
| 9                       | 4.2   | 5.6   | 3.5   |       | 4.2   | 4.2   | 5.1   | 8.4   | 29    | 7.2   | 5.1   | 3.8   |
| 10                      | 4.6   | 5.6   | 3.8   |       | 3.8   | 4.2   | 5.6   | d10   | 26    | 7.2   | 5.1   | 3.5   |
| 11                      | 4.2   | 5.6   | 3.8   |       | 3.8   | b4.2  | 6.1   | d10   | 23    | 7.2   | *5.1  | 3.5   |
| 12                      | 4.2   | 5.6   | b3.8  |       | b3.8  | 4.2   | 6.1   | d14   | 23    | 7.2   | 5.1   | 3.5   |
| 13                      | 4.2   | 5.6   | 3.8   |       | 3.8   | 4.2   | 5.1   | d17   | 21    | *7.2  | 5.1   | 3.8   |
| 14                      | 4.6   | b5.1  | 3.8   |       | 3.8   | b4.2  | 5.1   | d17   | *22   | 6.6   | 5.1   | *3.8  |
| 15                      | 4.6   | 4.6   | *3.8  | a4.0  | b3.8  | b4.2  | 5.6   | d17   | 26    | 6.6   | 5.1   | 3.8   |
| 16                      | 4.6   | 4.6   | 3.8   |       | 3.8   | b4.2  | 5.6   | d15   | 22    | 6.6   | 5.1   | 4.2   |
| 17                      | 4.6   | 4.6   | 3.8   |       | b4.0  | b4.2  | b5.6  | d15   | 20    | 6.6   | 5.1   | 4.6   |
| 18                      | 4.6   | 4.6   | 3.8   |       | b4.0  | b4.2  | 5.6   | d15   | 17    | 6.6   | 4.6   | 4.2   |
| 19                      | 5.1   | *4.6  | 3.8   | *b4.2 | 4.2   | 4.2   | 5.1   | *d15  | 14    | 6.6   | 4.6   | 4.2   |
| 20                      | *5.1  | b4.6  | b5.8  | 4.2   | 4.2   | 4.2   | 5.1   | d13   | 14    | 6.6   | 4.6   | 4.2   |
| 21                      | 5.1   | 4.6   | 3.8   | 4.2   | 4.2   | 4.6   | 5.6   | d13   | 13    | 7.2   | 4.6   | 4.2   |
| 22                      | 5.1   | 4.6   | 3.8   | 4.2   | b4.2  | 4.6   | 6.6   | d14   | 11    | 6.6   | 5.1   | 4.2   |
| 23                      | 5.1   | 4.6   | 3.8   | 3.8   | b4.2  | 4.6   | 6.6   | d14   | 10    | 6.6   | 5.1   | 4.2   |
| 24                      | 5.1   | 4.6   | 3.8   | 3.8   | b4.2  | *4.6  | 5.6   | d14   | 9.7   | 6.6   | 4.6   | 4.2   |
| 25                      | 5.1   | 4.6   | b3.8  | 3.8   | a4.0  | 4.6   | 6.1   | *d17  | 9.0   | 6.6   | 4.6   | 3.8   |
| 26                      | 5.1   | b4.4  | b3.8  | 3.8   | a4.0  | 4.6   | 6.1   | 20    | 9.0   | 6.1   | 4.6   | 3.8   |
| 27                      | 5.1   | b4.4  | b3.6  | 3.8   | a4.0  | 4.6   | 6.1   | 20    | 9.0   | 5.6   | 4.6   | 3.8   |
| 28                      | 5.6   | b4.4  | b3.5  | 3.8   | a4.0  | 4.6   | *6.1  | 20    | 8.4   | 5.6   | 4.2   | 3.5   |
| 29                      | 5.1   | b4.4  | b3.6  | 3.8   | a4.0  | 4.2   | 6.1   | 20    | 8.4   | 5.6   | 3.8   | 3.8   |
| 30                      | 5.1   | b4.4  | b3.7  | 3.8   | ----- | 4.2   | 6.1   | 19    | 7.8   | 6.1   | 3.8   | 3.8   |
| 31                      | 5.1   | ----- | ----- | 3.8   | ----- | 4.2   | ----- | 21    | ----- | 5.6   | 3.8   | ----- |
| Total                   | 149.4 | 148.0 | 118.0 | 121.0 | 117.6 | 134.2 | 163.4 | 412.0 | 573.3 | 211.6 | 151.8 | 118.8 |
| Mean                    | 4.82  | 4.93  | 3.81  | 3.90  | 4.06  | 4.33  | 5.45  | 13.3  | 19.1  | 6.83  | 4.90  | 3.96  |
| Ac-ft                   | 296   | 294   | 234   | 240   | 233   | 266   | 324   | 817   | 1,140 | 420   | 301   | 236   |
| Calendar year 1959: Max | 16    |       |       | Min   | 3.5   | Mean  | 5.79  | Ac-ft | 4,190 |       |       |       |
| Water year 1959-60: Max | 30    |       |       | Min   | 3.5   | Mean  | 6.61  | Ac-ft | 4,800 |       |       |       |

Peak discharge (base, 30 cfs).--May 12 (7 p.m.) 32 cfs (1.55 ft); June 8 (7 p.m.) 40 cfs (1.70 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for nearby streams.

b Stage-discharge relation affected by ice.

d Doubtful gage-height record; discharge computed from reconstructed gage-height graph based on recorder graph and records for nearby streams.

## 2164. Twelvemile Creek near Mayfield, Utah

Location.--Lat 39°06'10", long 111°38'45", in NW¼ sec.1, T.20 S., R.2 E., on right bank 0.1 mile east of Manti-La Sal Forest boundary, half a mile downstream from Clear Creek, and 3.5 miles east of Mayfield.

Drainage area.--60 sq mi, approximately.

Records available.--October 1959 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,000 ft (from topographic map).

Extremes.--Maximum discharge during year, 274 cfs May 11 (gage height, 2.75 ft, from reconstructed gage-height graph); minimum not determined, probably occurred during period of ice effect or no gage-height record.

Remarks.--Records good except those for periods of ice effect or doubtful or no gage-height record, which are fair. No diversion above station. Flow regulated by several small reservoirs at headwaters; combined capacity, about 930 acre-ft.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.6 | 3.0 | 1.1 | 27  |
| .7  | 5.7 | 1.5 | 64  |
| .8  | 9.5 | 2.1 | 151 |

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     |      |       | a5.6  | 5.4   | 4.8   | 4.8   | 6.7   | 26    | 92    | d37   | 20   | 13    |
| 2     |      |       | a5.6  | 5.1   | 4.8   | 4.8   | d8.6  | *50   | 94    | d37   | 19   | 14    |
| 3     |      |       | (*)   | 5.1   |       | 4.8   | d11   | 30    | 94    | d37   | 19   | 15    |
| 4     |      |       |       | 5.1   |       | 5.4   | d14   | 44    | 94    | d37   | 19   | 13    |
| 5     |      |       |       | 5.4   | b4.8  | 5.4   | d22   | 38    | 94    | d37   | *19  | 14    |
| 6     |      |       |       | 6.0   |       | 6.0   | d27   | 40    | 93    | *d33  | 19   | 13    |
| 7     |      |       |       | 5.4   |       | 6.4   | *d27  | 53    | 93    | 34    | 18   | 13    |
| 8     |      |       | a6.5  | 5.1   | 5.4   | 7.8   | 26    | 66    | d82   | 33    | 17   | 12    |
| 9     |      |       |       | 5.1   | 5.7   | 6.4   | 33    | d85   | d77   | 32    | 18   | 12    |
| 10    |      |       |       | 5.1   | 5.4   | 5.7   | 37    | d96   | d72   | 32    | 18   | 12    |
| 11    |      |       | b5.6  | 5.4   | 5.4   | 5.4   | *33   | d118  | d71   | 30    | 17   | 12    |
| 12    |      |       |       | 5.4   | 5.4   | 6.4   | 24    | d139  | d72   | 23    | 16   | 12    |
| 13    |      |       |       | 5.4   | 5.4   | 6.7   | 21    | d136  | d68   | 26    | 17   | 12    |
| 14    |      |       |       | 5.4   | 5.4   | 5.7   | 25    | 129   | *d65  | 24    | 16   | 12    |
| 15    |      |       |       | 5.7   | b5.0  | 7.8   | 30    | 129   | 63    | 24    | 16   | 11    |
| 16    |      | a7    |       | 5.4   |       | 6.7   | 29    | *123  | 60    | 23    | 16   | 12    |
| 17    |      |       |       |       |       | 8.6   | 23    | 116   | 56    | 24    | 16   | 12    |
| 18    |      |       |       |       |       | 6.7   | 31    | 106   | 53    | 25    | 15   | 12    |
| 19    |      |       |       | 5.7   | b5.5  | 7.8   | 35    | 97    | 53    | 24    | 14   | 12    |
| 20    |      |       |       | 5.4   | (*)   | 4.8   | 9.0   | 26    | 92    | 49    | 23   | 14    |
| 21    |      |       |       | 5.7   | 5.7   |       | 10    | 58    | 96    | 46    | 22   | 13    |
| 22    |      |       |       | 5.7   | 5.4   |       | *12   | 59    | 103   | 43    | 22   | 14    |
| 23    |      |       |       | 5.4   | 4.8   |       | 13    | 43    | 102   | 43    | 21   | 13    |
| 24    |      |       | a6.0  | 5.7   | 4.8   | b4.8  | 13    | 32    | 96    | 44    | 20   | *13   |
| 25    |      |       |       | 5.7   | 4.8   |       | 14    | 24    | *92   | 42    | 19   | 12    |
| 26    |      |       |       | 4.8   | (*)   | 15    | 24    | 93    | 41    | 19    | 12   | 10    |
| 27    |      |       |       | 4.8   | 5.1   | 13    | 23    | 94    | 40    | 19    | 12   | 10    |
| 28    |      |       | b5.7  | 4.8   | b5.0  | 10    | 20    | 94    | 38    | 19    | 12   | 9.5   |
| 29    |      |       |       | b4.8  | 4.8   | 10    | 21    | 93    | d37   | 19    | 12   | 9.5   |
| 30    |      |       |       | b4.8  | ----- | 7.8   | 22    | 90    | d35   | 20    | 12   | 9.5   |
| 31    |      |       |       | 4.8   | ----- | 7.4   | ----- | 90    | ----- | 19    | 12   | ----- |
| Total | 217  | 187.5 | 174.3 | 161.8 | 144.1 | 253.5 | 815.3 | 2,736 | 1,907 | 827   | 480  | 353.5 |
| Mean  | 7    | 6.25  | 5.62  | 5.22  | 4.97  | 8.18  | 27.2  | 88.3  | 63.6  | 26.7  | 15.5 | 11.8  |
| Ac-ft | 430  | 372   | 346   | 321   | 286   | 503   | 1,620 | 5,430 | 3,780 | 1,640 | 952  | 701   |

Calendar year 1959: Max - Min - Mean - Ac-ft -  
 Water year 1959-60: Max 139 Min - Mean 22.6 Ac-ft 16,380

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for Muddy Creek near Emery.

b Stage-discharge relation affected by ice.

d Doubtful gage-height record; discharge computed from reconstructed graph based on recorder graph.

2170. Sevier River below San Pitch River, near Gunnison, Utah

Location.--Lat 39°09'00", long 111°52'30", in NE $\frac{1}{4}$  sec.14, T.19 S., R.1 W., on left bank 1,000 ft downstream from San Pitch River and 3 miles west of Gunnison.

Drainage area.--4,880 sq mi, approximately.

Records available.--March 1912 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,900 ft (from topographic map).

Average discharge.--48 years, 230 cfs (166,500 acre-ft per year).

Extremes.--Maximum discharge during year, 371 cfs Mar. 9 (gage height, 2.78 ft); minimum, 12 cfs July 16 (gage height, 0.83 ft).  
1917-60: Maximum discharge, 2,620 cfs June 1, 1922 (gage height, 5.68 ft); minimum daily, 8 cfs July 13-17, Sept. 6, 1934.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by reservoirs and many diversions for irrigation above station. Most of flow diverted above station during irrigation season.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used June 26 to July 4)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.7 | 9.5 | 1.5 | 90  |
| 0.8 | 15  | 2.0 | 185 |
| 1.1 | 39  | 3.0 | 419 |

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                           | 58    | 73    | 162   | b129   | 160    | 262      | 217   | 69           | 140   | 13    | 32    | 35    |
| 2                           | 55    | 94    | 156   | b150   | 179    | 265      | 194   | *72          | 135   | 14    | 24    | 36    |
| 3                           | 83    | 101   | 146   | b122   | 181    | 269      | 148   | 71           | 113   | 15    | 23    | 42    |
| 4                           | 69    | 106   | 142   | b118   | 183    | 274      | 148   | 112          | 98    | 14    | 31    | 52    |
| 5                           | 71    | 111   | 146   | b115   | 181    | 278      | 135   | 172          | 78    | 15    | 44    | 55    |
| 6                           | 69    | 104   | 140   | b118   | 185    | 280      | 140   | 177          | 85    | *14   | *46   | 71    |
| 7                           | 68    | 99    | 137   | b122   | 221    | 299      | 148   | 175          | 82    | 14    | 69    | 58    |
| 8                           | 64    | 99    | 137   | b128   | 227    | 331      | 164   | 179          | 72    | 14    | 67    | 54    |
| 9                           | 60    | 96    | 138   | 131    | 225    | 338      | 160   | 189          | a60   | 21    | 49    | 40    |
| 10                          | 65    | 85    | 144   | 133    | 225    | 304      | 162   | 187          | a56   | 17    | 44    | 34    |
| 11                          | 65    | 82    | 146   | 140    | 229    | 292      | 191   | 198          | a56   | 20    | 44    | 36    |
| 12                          | *65   | 84    | 144   | 142    | 217    | 334      | *196  | 200          | a72   | 20    | 41    | 23    |
| 13                          | 65    | 87    | 144   | 142    | 210    | 356      | 200   | 212          | 76    | 21    | 35    | 20    |
| 14                          | 65    | 88    | 142   | 144    | 204    | 328      | 191   | 206          | *72   | 20    | 34    | 25    |
| 15                          | 65    | 108   | *140  | 146    | 204    | 311      | 181   | 168          | 71    | 22    | 31    | 21    |
| 16                          | 58    | 135   | 138   | 146    | 198    | 302      | 184   | 183          | 49    | 26    | 31    | 16    |
| 17                          | 78    | 146   | 138   | 140    | 196    | 294      | 198   | 172          | 29    | 38    | 31    | 22    |
| 18                          | 98    | 148   | 142   | b136   | 196    | 292      | 196   | 150          | 32    | 38    | 34    | 25    |
| 19                          | 101   | 140   | 150   | 133    | 189    | 234      | 198   | 122          | 34    | 24    | 44    | 43    |
| 20                          | 99    | *140  | 150   | 138    | 198    | 191      | 166   | 94           | 34    | 23    | 42    | *54   |
| 21                          | 113   | 138   | 158   | 140    | 196    | *194     | 154   | 78           | 34    | 22    | 35    | 54    |
| 22                          | 123   | 138   | 154   | 137    | 189    | 202      | 131   | 88           | 34    | 22    | 35    | 55    |
| 23                          | 109   | 138   | 154   | 138    | 183    | 204      | 106   | 115          | 37    | 43    | 35    | 54    |
| 24                          | 106   | 138   | 154   | 142    | 206    | 196      | 94    | 118          | 51    | 56    | *35   | 45    |
| 25                          | 82    | 140   | 156   | *144   | 245    | 196      | 87    | 115          | 54    | 59    | 29    | 52    |
| 26                          | 71    | 137   | 154   | 152    | 260    | 204      | 52    | 108          | 52    | 39    | 24    | 53    |
| 27                          | 73    | 135   | 148   | 156    | 267    | 198      | 54    | 113          | 33    | 32    | 37    | 73    |
| 28                          | 81    | 133   | 138   | 158    | *262   | 225      | 54    | 137          | 38    | 31    | 42    | 59    |
| 29                          | 91    | 131   | b130  | 158    | 269    | 223      | 61    | 148          | 34    | 21    | 40    | 58    |
| 30                          | 84    | 148   | b124  | 156    | -----  | 212      | 69    | 156          | *17   | 31    | 34    | 56    |
| 31                          | 78    | ----- | b124  | 158    | -----  | 217      | ----- | 150          | ----- | 37    | 34    | ----- |
| Total                       | 2,415 | 3,504 | 4,476 | 4,292  | 6,085  | 8,103    | 4,389 | 4,434        | 1,818 | 796   | 1,176 | 1,321 |
| Mean                        | 77.8  | 117   | 144   | 138    | 210    | 261      | 146   | 60.6         | 25.7  | 37.9  | 44.0  | 44.0  |
| Ac-ft                       | 4,790 | 6,950 | 8,880 | 8,510  | 12,070 | 16,070   | 8,710 | 8,790        | 3,610 | 1,580 | 2,330 | 2,620 |
| Calendar year 1959: Max 484 |       |       |       | Min 15 |        | Mean 133 |       | Ac-ft 95,930 |       |       |       |       |
| Water year 1959-60: Max 356 |       |       |       | Min 13 |        | Mean 117 |       | Ac-ft 84,910 |       |       |       |       |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of trend of flow and records for other Sevier River stations.

b Stage-discharge relation affected by ice.

## 2185. Sevier Bridge Reservoir near Juab, Utah

Location.--Lat 39°22'20", long 112°01'55", in NW $\frac{1}{4}$  NW $\frac{1}{4}$  sec.1, T.17 S., R.2 W., at Sevier Bridge Dam 13 miles southwest of Juab.

Drainage area.--5,120 sq mi, approximately.

Records available.--January 1914 to September 1960.

Gage.--Staff gage below gage height 60 ft and wire-weight gage above, read once daily.

Extremes.--Maximum contents observed during year, 70,850 acre-ft Apr. 9 (gage height, 52.2 ft); no contents Aug. 1 to Sept. 22.  
1914-60: Maximum contents, 251,000 acre-ft Apr. 19, 20, 1922 (gage height, 80.0 ft), from former capacity table; no storage at times in 1927-28, 1930-36, 1951, 1960.

Remarks.--Reservoir was formed by a 30-foot earth-fill dam. Storage began about 1904. Dam ultimately raised to 90 ft by June 1916. Capacity, 236,000 acre-ft between gage heights 6 (approximate bottom of outlet tunnel) and 80.0 ft (top of flashboard on spillway). No dead storage. Figures given herein represent total contents. Water is used for irrigation.

Revisions (water years).--WSP 960: 1941.

Capacity table, water year 1959-60 (gage height, in feet, and contents, in acre-feet)

|    |        |    |        |
|----|--------|----|--------|
| 6  | 0      | 26 | 14,150 |
| 8  | 45     | 30 | 20,200 |
| 11 | 532    | 35 | 29,150 |
| 14 | 2,130  | 40 | 39,540 |
| 17 | 4,440  | 45 | 51,390 |
| 20 | 7,200  | 50 | 64,580 |
| 25 | 12,830 | 53 | 73,200 |

Contents, in acre-feet, at 8 a.m., water year October 1959 to September 1960

| Day | Oct.   | Nov.   | Dec.   | Jan.   | Feb.    | Mar.    | Apr.   | May     | June    | July    | Aug. | Sept.  |
|-----|--------|--------|--------|--------|---------|---------|--------|---------|---------|---------|------|--------|
| 1   | 7,300  | 13,230 | 21,050 | 30,320 | 40,220  | 52,910  | 68,830 | 83,210  | 30,130  | 13,230  | 0    | 0      |
| 2   | 7,400  | 13,490 | 21,220 | 30,710 | 40,670  | 53,410  | 69,120 | 82,110  | 30,320  | 11,960  | 0    | 0      |
| 3   | 7,610  | 13,620 | 21,560 | 30,910 | 40,890  | 53,670  | 69,400 | 80,760  | -       | 10,760  | 0    | 0      |
| 4   | 7,810  | -      | 21,890 | 31,100 | 41,350  | 54,180  | 69,690 | -       | 30,910  | 9,620   | 0    | 0      |
| 5   | 7,910  | 14,150 | 22,240 | 31,300 | 41,800  | 54,950  | 69,980 | 58,610  | 30,910  | 8,750   | 0    | 0      |
| 6   | 8,110  | 14,570 | 22,590 | 31,500 | 42,260  | 55,980  | 69,980 | 57,560  | 31,100  | 7,810   | 0    | 0      |
| 7   | 8,220  | 14,990 | 22,760 | 31,710 | 42,490  | 56,240  | 70,260 | 56,500  | 31,500  | -       | 0    | 0      |
| 8   | 8,430  | 15,130 | 22,940 | 32,110 | 42,960  | 56,760  | 70,560 | 55,470  | 31,500  | 6,450   | 0    | 0      |
| 9   | 8,640  | 15,270 | 23,290 | 32,510 | 43,650  | 57,560  | 70,850 | 53,920  | 31,500  | 5,770   | 0    | 0      |
| 10  | 8,750  | 15,410 | 23,640 | 32,920 | 44,120  | 58,350  | -      | 52,400  | 31,910  | 5,140   | 0    | 0      |
| 11  | 8,960  | 15,550 | 24,170 | 33,330 | 44,590  | 58,870  | 70,560 | 51,640  | 31,100  | 4,790   | 0    | 0      |
| 12  | 9,070  | 15,840 | 24,530 | 33,530 | 45,070  | 59,410  | -      | 49,680  | 30,320  | 4,530   | 0    | 0      |
| 13  | 9,170  | 16,140 | 24,890 | 33,950 | 45,300  | 59,950  | 70,560 | -       | 29,540  | 4,530   | 0    | 0      |
| 14  | 9,390  | 16,430 | 25,250 | 34,160 | 46,020  | 61,030  | -      | 47,220  | 28,960  | 4,700   | 0    | 0      |
| 15  | 9,620  | 16,580 | 25,420 | 34,570 | 46,250  | 61,840  | 70,260 | 45,540  | 28,020  | 4,790   | 0    | 0      |
| 16  | 9,730  | 16,730 | 25,790 | 34,990 | 46,730  | 62,380  | -      | -       | 27,260  | 4,880   | 0    | 0      |
| 17  | 9,950  | 17,020 | 25,980 | 35,200 | 47,220  | 62,930  | 69,690 | 42,960  | -       | 4,970   | 0    | 0      |
| 18  | 10,070 | 17,490 | 26,340 | 35,410 | 47,460  | 63,480  | -      | 41,590  | 25,420  | 5,050   | 0    | 0      |
| 19  | 10,290 | 17,800 | 26,710 | 35,630 | 47,940  | 64,030  | 69,120 | 40,670  | 24,350  | 5,140   | 0    | 0      |
| 20  | 10,520 | 17,960 | 27,080 | 35,840 | 48,130  | 64,310  | -      | 39,540  | -       | 5,230   | 0    | 0      |
| 21  | 10,640 | 18,270 | 27,260 | 36,270 | 48,430  | 64,580  | -      | -       | 22,420  | 5,310   | 0    | 0      |
| 22  | 11,000 | 18,420 | 27,640 | 36,700 | 48,910  | 64,860  | -      | 37,340  | 21,720  | 5,410   | 0    | 0      |
| 23  | 11,230 | 18,580 | 28,020 | 37,120 | 49,410  | 65,150  | 66,830 | -       | 20,880  | 5,500   | 0    | -      |
| 24  | 11,470 | 18,900 | 28,400 | 37,340 | 49,660  | 65,710  | 66,550 | 35,200  | 20,040  | 5,140   | 0    | -      |
| 25  | 11,720 | 19,230 | 28,770 | 37,780 | 50,150  | 65,990  | 66,270 | 34,160  | 19,230  | 4,530   | 0    | 686    |
| 26  | 11,960 | 19,550 | 29,150 | 38,220 | 50,650  | 66,270  | 65,710 | 33,530  | 18,420  | 4,030   | 0    | 917    |
| 27  | 12,210 | 19,880 | 29,350 | 38,440 | 51,140  | -       | -      | 32,710  | 17,490  | 3,380   | 0    | 1,200  |
| 28  | 12,340 | 20,040 | 29,540 | 38,880 | 51,890  | 67,110  | -      | 31,500  | 16,430  | 2,640   | 0    | 1,490  |
| 29  | 12,590 | 20,370 | 29,740 | 39,100 | 52,400  | 67,590  | 64,310 | 30,130  | 15,410  | 2,340   | 0    | 1,680  |
| 30  | 12,710 | 20,540 | 29,930 | 39,540 | -       | -       | 63,760 | 29,740  | 14,020  | 1,810   | 0    | 1,810  |
| 31  | 12,970 | -      | 30,130 | 39,760 | -       | 68,250  | -      | 29,930  | -       | 246     | 0    | -      |
| (†) | 25.1   | 30.2   | 35.5   | 40.1   | 45.4    | 51.3    | 49.7   | 35.4    | 25.9    | 10.0    | -    | 13.5   |
| (‡) | +5,870 | +7,570 | +9,590 | +9,630 | +12,640 | +15,850 | -4,490 | -33,850 | -15,910 | -13,770 | -246 | +1,810 |

Calendar year 1959..... \$ -32,800

Water year 1959-60..... \$ -5,290

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

## 2190. Sevier River near Juab, Utah

Location.--Lat 39°22'30", long 112°02'20", in SE $\frac{1}{4}$  sec.35, T.16 S., R.2 W., on left bank half a mile downstream from Sevier Bridge Dam and 12 miles southwest of Juab.

Drainage area.--5,120 sq mi, approximately.

Records available.--September 1911 to September 1960.

Gage.--Water-stage recorder and rubble masonry control since Apr. 16, 1914. Altitude of gage is 4,940 ft (by barometer). Prior to Apr. 16, 1914, staff gage 500 ft upstream at different datum. Apr. 16, 1914, to Apr. 7, 1938, water-stage recorder at present site and datum. Apr. 8, 1938, to Mar. 31, 1942, water-stage recorder at site 1,300 ft upstream at different datum.

Average discharge.--49 years, 237 cfs (171,600 acre-ft per year).

Extremes.--Maximum discharge during year, 907 cfs May 9 (gage height, 3.95 ft); minimum not determined, occurred during period of no gage-height record.  
1911-60: Maximum discharge, 2,140 cfs June 2, 1922 (gage height, 8.50 ft); practically no flow at times when reservoir gates were closed.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion between station near Gunnison and this station. Flow regulated by Sevier Bridge Reservoir (see preceding page).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.0 | 9.9 | 2.0 | 260 |
| 1.2 | 45  | 3.0 | 579 |
| 1.5 | 116 | 4.0 | 914 |

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     |      |      |      |      |      |       |         | 554    | 83     | 622    | 171   | 54      |
| 2     |      |      |      |      |      |       |         | *704   | 56     | 605    | 62    | 54      |
| 3     |      |      |      |      | a3.0 | a3.4  |         | 701    |        | 589    | 45    | 56      |
| 4     |      |      |      |      |      |       |         | 691    |        | 528    | 41    | 56      |
| 5     |      |      |      |      |      |       |         | 691    |        | 446    | 41    | 26      |
| 6     |      | a2.0 |      | a2.8 |      |       | a3.9    | 688    | a3     | *446   | *56   | 42      |
| 7     |      |      |      |      |      |       |         | 685    |        | 382    | 56    | 113     |
| 8     |      |      |      |      |      |       |         | 809    |        | 341    | 71    | 71      |
| 9     |      |      |      |      |      |       |         | 904    |        | 334    | 74    | 67      |
| 10    |      |      |      |      |      |       | 136     | 900    | 288    | 207    | 69    | 58      |
| 11    |      |      | a2.0 |      |      | a3.6  |         |        |        |        |       |         |
| 12    |      |      |      |      |      |       | *257    | 897    | 449    | 143    | 67    | 54      |
| 13    | a1.6 |      |      |      |      |       | *263    | 894    | 446    | 54     | 62    | 51      |
| 14    |      |      | (*)  |      |      |       | 263     | 890    | 443    |        | 56    | *49     |
| 15    |      |      |      |      |      |       | 263     | 887    | 475    |        | 51    | a41     |
| 16    |      |      |      |      |      |       | 266     | 880    | *491   |        | 45    | a36     |
| 17    |      | (*)  |      |      |      |       | 266     | 877    | 484    |        | 51    | a32     |
| 18    |      |      |      |      |      |       | 263     | 870    | 478    |        | 51    | a26     |
| 19    | (*)  | a2.2 |      | (*)  | a3.2 |       | 263     | 747    | 475    | a2     | 51    | a23     |
| 20    |      |      |      |      |      |       | 266     | 691    | 468    |        | 49    | a21     |
| 21    |      |      |      | a3.0 |      | (*)   | 390     | 685    | 468    |        | 49    | a23     |
| 22    |      |      |      |      |      |       | 471     | 681    | 462    |        | 49    | 51      |
| 23    |      |      |      |      |      |       | 420     | 678    | 459    |        | 47    | 39      |
| 24    |      |      |      |      |      |       | 427     | 671    | 455    | 117    | a35   |         |
| 25    |      |      |      |      |      |       | 519     | 668    | 452    | 295    | *a24  |         |
| 26    |      |      | a2.4 |      |      |       | 268     | 566    | 520    | 322    | 47    |         |
| 27    |      |      |      |      |      |       | 316     | 497    | 556    | 313    | a47   | a1.0    |
| 28    |      | a2.0 |      |      |      |       | 316     | 625    | 543    | 303    | a47   |         |
| 29    | a1.8 |      |      |      |      |       | 316     | 707    | 536    | 294    | 47    |         |
| 30    |      |      |      |      |      |       | 316     | 500    | 523    | 285    | 47    |         |
| 31    |      |      |      |      |      |       | 316     | 391    | 592    | 269    | 45    |         |
|       |      |      |      |      |      |       |         | 185    |        | 245    | a42   |         |
| Total | 50.8 | 63.0 | 66.4 | 91.0 | 91.8 | 115.4 | 6,436.1 | 21,794 | 10,203 | 7,160  | 1,695 | 1,051.0 |
| Mean  | 1.64 | 2.10 | 2.14 | 2.94 | 3.17 | 3.72  | 215     | 703    | 340    | 231    | 54.7  | 35.0    |
| Ac-ft | 101  | 125  | 132  | 180  | 182  | 229   | 12,770  | 43,230 | 20,240 | 14,200 | 3,360 | 2,180   |

Calendar year 1959: Max 921 Min - Mean 181 Ac-ft 130,800  
Water year 1959-60: Max 904 Min - Mean 133 Ac-ft 96,930

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 7 discharge measurements, weather records, trend of flow, and records for other Sevier River stations.

## 2240. Sevier River near Lynndyl, Utah

Location.--Lat 39°29', long 112°24', in SE $\frac{1}{4}$  sec.27, T.15 S., R.5 W., on right bank  $1\frac{1}{2}$  miles downstream from highway bridge and  $3\frac{1}{2}$  miles southwest of Lynndyl.

Drainage area.--6,270 sq mi, approximately.

Records available.--April 1914 to October 1919, October 1942 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,660 ft (by barometer).

Average discharge.--23 years, 202 cfs (146,200 acre-ft per year).

Extremes.--Maximum discharge during year, 725 cfs May 11 (gage height, 5.90 ft); minimum, 6.4 cfs Feb. 5 (gage height, 1.89 ft).  
1914-19, 1942-60: Maximum daily discharge, 1,820 cfs June 9, 1914, based on records at Leamington; minimum, 5.2 cfs Nov. 25, 1957 (gage height, 1.79 ft), result of freezeup.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by Sevier Bridge Reservoir (see p. 130). Several diversions for irrigation between reservoir and station. Records of chemical analyses and water temperatures for the water year 1960 are given in WSP 1744.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Apr. 17 to May 4)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.9 | 7.7 | 3.5 | 157 |
| 2.0 | 11  | 4.0 | 242 |
| 2.2 | 19  | 5.0 | 474 |
| 2.5 | 38  | 6.0 | 748 |
| 3.0 | 90  |     |     |

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     | 42    |       | 16    |       | 10    | 51    | 14     | 334    | 242    | 553    | 254   | 70    |
| 2     | 42    |       | 16    |       | 12    | 50    | 15     | *418   | 119    | 556    | 219   | 60    |
| 3     | 42    |       | 16    |       | 11    | 44    | 15     | 566    | *106   | 513    | 160   | 63    |
| 4     | 41    |       | 16    |       | 9.8   | 50    | 14     | 542    | 108    | 492    | 106   | 63    |
| 5     | 41    | a42   | 15    |       | 8.9   | 50    | 17     | 534    | 73     | 479    | *85   | 62    |
| 6     | 41    |       | 15    |       | 8.9   | 49    | 21     | 540    | 63     | 446    | *80   | 62    |
| 7     | 40    |       | *15   |       | 9.5   | 66    | 20     | 537    | 60     | *451   | 77    | 58    |
| 8     | 40    |       | 15    |       | *10   | 79    | *20    | 526    | 61     | 410    | 85    | 63    |
| 9     | 35    | *45   | 15    |       | 12    | 77    | 19     | 580    | 58     | 350    | 82    | 103   |
| 10    | 29    | 43    | 17    |       | 12    | 55    | 18     | 711    | 56     | 341    | 90    | 91    |
| 11    | 29    | 43    | 17    |       | 12    | *44   | 19     | 719    | 53     | 298    | 79    | 86    |
| 12    | 29    | 43    | 17    |       | 10    | 39    | 138    | 708    | 362    | 205    | 66    | 80    |
| 13    | 29    | 43    | 16    | b9.0  | 10    | 38    | 223    | 694    | 400    | 191    | 60    | 75    |
| 14    | 29    | b42   | 16    | (*)   | 10    | *41   | 244    | 674    | *408   | 114    | 57    | 69    |
| 15    | 29    | 41    | 15    |       | 10    | 41    | 250    | 671    | 423    | 80     | 53    | 72    |
| 16    | 30    | 41    | 14    |       | *10   | 41    | 252    | 669    | 453    | 69     | 46    | 60    |
| 17    | 39    | 35    | 14    |       | 10    | 40    | 262    | *846   | 456    | 60     | 41    | 56    |
| 18    | *41   | 23    | 16    |       | 14    | 39    | 275    | 635    | 448    | 56     | 42    | 54    |
| 19    | 41    | 22    | 16    |       | 39    | 36    | 279    | 575    | 448    | 53     | 49    | 52    |
| 20    | *41   | *20   | 14    |       | 41    | 36    | 285    | 479    | 436    | 50     | 53    | 49    |
| 21    | 40    | 18    | 14    |       | 41    | 35    | 325    | 479    | 433    | 46     | 53    | 51    |
| 22    | 41    | 17    | 12    |       | 41    | 33    | 497    | 471    | 436    | 42     | 52    | 60    |
| 23    | 41    | 17    | 11    |       | 47    | 28    | 440    | 495    | 430    | 32     | 61    | *76   |
| 24    | 41    | 19    | 11    |       | 39    | 25    | 443    | 500    | 428    | 30     | 59    | 77    |
| 25    | 41    | 23    | b10   | b10   | 62    | 21    | 413    | 471    | 426    | 126    | *69   | 47    |
| 26    |       | 18    | b9.5  | b11   | 57    | 19    | 303    | 423    | 456    | 258    | 63    | 39    |
| 27    |       | 16    | b9.0  | b11   | 50    | 14    | 314    | 345    | 542    | 270    | 65    | 32    |
| 28    |       | 16    | b9.0  | b11   | 45    | 14    | 327    | 364    | 548    | 266    | 61    | 28    |
| 29    |       | 16    | b9.0  | b11   | 53    | 13    | 338    | 553    | 540    | 262    | 52    | 29    |
| 30    |       | 16    | b9.0  | b11   | ----- | 13    | 341    | 325    | 523    | 256    | 63    | *26   |
| 31    |       | ----- | b9.0  | 10    | ----- | *13   | -----  | 257    | -----  | 248    | 66    | ----- |
| Total | 1,184 | 951   | 423.5 | 291.0 | 705.1 | 1,193 | 6,141  | 16,440 | 9,591  | 7,605  | 2,448 | 1,813 |
| Mean  | 38.2  | 31.7  | 13.7  | 9.39  | 24.3  | 38.5  | 205    | 530    | 320    | 245    | 79.0  | 60.4  |
| Ac-ft | 2,350 | 1,890 | 840   | 577   | 1,400 | 2,370 | 12,180 | 32,610 | 19,020 | 15,080 | 4,860 | 3,600 |

Calendar year 1959: Max 739 Min 9.0 Mean 170 Ac-ft 123,500  
water year 1959-60: Max 719 Min - Mean 133 Ac-ft 96,780

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, trend of flow, water commissioner's notes, and records for other Sevier River stations.

b Stage-discharge relation affected by ice.

## 2325. Chalk Creek near Fillmore, Utah

Location.--Lat 38°58', long 112°18', in NE $\frac{1}{4}$  sec.28, T.21 S., R.4 W., on left bank 1 mile east of Fillmore and 2 $\frac{1}{4}$  miles downstream from South Fork.

Drainage area.--60 sq mi, approximately.

Records available.--May to July 1914, March 1944 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,180 ft (by barometer). May to July 1914 staff gage at site 1 $\frac{1}{4}$  miles upstream at different datum.

Average discharge.--16 years (1944-60), 31.4 cfs (22,730 acre-ft per year).

Extremes.--Maximum discharge during year, 162 cfs May 12; minimum daily, 4.9 cfs Nov. 27. 1914, 1944-60: Maximum discharge, 509 cfs May 4, 1952; minimum daily, 4.4 cfs Nov. 21, 1956.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Records include flow of Fillmore Canal which diverts on left bank at flood-control dam 400 ft upstream. During low-water periods flow is diverted 2 miles upstream and carried in a lined ditch to head of Fillmore Canal. One small diversion for irrigation above station.

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     | 7.7   | 7.3   | 6.9   | *6.0  | 7.5   | 8.0   | 29    | 40    | 59    | 15    | 11    | 9.5   |
| 2     | 7.5   | 7.3   | 6.7   | 5.9   | 7.6   | 8.0   | 27    | 40    | 59    | 15    | 10    | 9.5   |
| 3     | 7.3   | 7.5   | 6.8   | 6.1   | 6.9   | 8.0   | 26    | 41    | 56    | 15    | 8.9   | 9.1   |
| 4     | 7.3   | 7.3   | 6.8   | 6.4   | 7.7   | 8.0   | 28    | 48    | 53    | 15    | 8.7   | 12    |
| 5     | 7.0   | 6.8   | 5.1   | 6.4   | 7.8   | 8.0   | 36    | 55    | 50    | 14    | 8.5   | 13    |
| 6     | 7.0   | 7.0   | 5.9   | 6.4   | 8.0   | 9.0   | 49    | *61   | 48    | 15    | *8.3  | 9.5   |
| 7     | 7.0   | 7.0   | 6.8   | 6.7   | 8.2   | 10    | 61    | 70    | 45    | *15   | 8.1   | 5.4   |
| 8     | 7.0   | 7.2   | 6.6   | 7.5   | 8.5   | 14    | 67    | 83    | 41    | 15    | 7.9   | 8.3   |
| 9     | 7.0   | 7.2   | 6.6   | 7.7   | 9.6   | 16    | 73    | 96    | 39    | 15    | 8.3   | 8.9   |
| 10    | 6.8   | 7.2   | 6.8   | 7.9   | 9.4   | 15    | 80    | 116   | 36    | 15    | 8.3   | 8.5   |
| 11    | 6.8   | 5.5   | 6.6   | 7.9   | 9.4   | 15    | 83    | 134   | 34    | 14    | 7.7   | 8.7   |
| 12    | 7.0   | 6.1   | 6.6   | 7.9   | 7.4   | 15    | 78    | 152   | 31    | 13    | 7.5   | 8.3   |
| 13    | 7.2   | 6.4   | 6.8   | 7.7   | 9.8   | 17    | 85    | 158   | 29    | 13    | 7.5   | *8.7  |
| 14    | 7.2   | 5.9   | 7.0   | 8.1   | 9.1   | 15    | 61    | 142   | 27    | 12    | 7.9   | 8.5   |
| 15    | 7.0   | 6.6   |       | 8.1   | 8.8   | 15    | 60    | 132   | *26   | 12    | 7.5   | 8.3   |
| 16    | 7.0   | 6.7   |       | 8.1   | 8.8   | 15    | 59    | 124   | 25    | 11    | 8.3   | 11    |
| 17    | 7.0   | 6.8   |       | 5.9   | 8.4   | 15    | 57    | 119   | 24    | 11    | 8.5   | 10    |
| 18    | 7.2   | 6.8   |       | 6.6   | 8.3   | 15    | 57    | 120   | 23    | 11    | 8.1   | 8.9   |
| 19    | 7.0   | 6.8   |       | 7.7   | 8.7   | 18    | 59    | *104  | 22    | 11    | 7.7   | 8.3   |
| 20    | 7.2   | 6.7   |       | 6.4   | 8.7   | 21    | 58    | 90    | 21    | 11    | 7.3   | 8.1   |
| 21    | *7.3  | 6.7   | 7.0   | 6.8   | 8.3   | 24    | 65    | 83    | 21    | 10    | 7.2   | 8.1   |
| 22    | 7.3   | 6.9   |       | 8.1   | 8.1   | 27    | 78    | 81    | 20    | 11    | 7.5   | 8.7   |
| 23    | 7.3   | 6.8   |       | 8.1   | *8.2  | 32    | 81    | 82    | 19    | 11    | 8.1   | 8.1   |
| 24    | 7.3   | *6.9  |       | 8.1   | 8.0   | 34    | 72    | 81    | 18    | 11    | 7.9   | 7.9   |
| 25    | 7.3   | 7.0   |       | 8.1   | 8.0   | 36    | 66    | 75    | 17    | 10    | *7.7  | 7.7   |
| 26    | 7.3   | 6.4   |       | *7.9  | 8.0   | 37    | 58    | 72    | 17    | 9.3   | 7.3   | 7.5   |
| 27    | 7.3   | 4.9   | 5.7   | 7.9   | 8.0   | 40    | *51   | 72    | 17    | 10    | 7.2   | 7.3   |
| 28    | 7.9   | 5.9   | 5.1   | 7.9   | 8.0   | 40    | 47    | 69    | 17    | 11    | 7.5   | 7.7   |
| 29    | 7.3   | 6.6   | 5.4   | 7.5   | 8.0   | *36   | 47    | 67    | 16    | 11    | 7.2   | 7.7   |
| 30    | 7.3   | 6.9   | 6.0   | 7.5   | ----- | 34    | 42    | 64    | 15    | 11    | 7.3   | 7.7   |
| 31    | 7.3   | ----- | 6.4   | 7.5   | ----- | 32    | ----- | 59    | ----- | 12    | 7.7   | ----- |
| Total | 223.1 | 201.1 | 204.6 | 226.8 | 241.2 | 637.0 | 1,719 | 2,728 | 925   | 385.3 | 248.6 | 260.9 |
| Mean  | 7.20  | 6.70  | 6.60  | 7.32  | 8.32  | 20.5  | 57.3  | 88.0  | 30.8  | 12.4  | 8.02  | 8.70  |
| Ac-ft | 443   | 399   | 406   | 450   | 478   | 1,260 | 3,410 | 5,410 | 1,830 | 764   | 493   | 517   |

Calendar year 1959: Max 45 Min 4.9 Mean 12.0 Ac-ft 8,680  
 Water year 1959-60: Max 156 Min 4.9 Mean 21.9 Ac-ft 15,860

\* Discharge measurement made on this day.  
 Note.--No gage-height record Dec. 15 to Jan. 1, Feb. 24 to Mar. 6, Apr. 25, 26; discharge estimated on basis of weather records, recorded range in stage, and records for nearby streams.

## BEAVER RIVER BASIN

## 2340. Three Creeks near Beaver, Utah

Location.--Lat 38°17'40", long 112°25'40", in NW¼ sec. 16, T.29 S., R.5 W., on right bank half a mile downstream from Three Creeks Dam, half a mile upstream from Merchant Creek, and 16 miles east of Beaver.

Drainage area.--19.5 sq mi.

Records available.--July 1947 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 8,550 ft (from topographic map). Prior to Aug. 24, 1947, at site 500 ft downstream at different datum. Aug. 24, 1947, to May 11, 1950, at site 700 ft upstream at different datum.

Average discharge.--13 years, 10.1 cfs (7,310 acre-ft per year).

Extremes.--Maximum discharge during year, 40 cfs May 19 (gage height, 2.25 ft); minimum recorded, 0.9 cfs Nov. 5, result of freezeup.

1947-60: Maximum discharge, 290 cfs Aug. 9, 1947 (gage height, 4.35 ft, site and datum then in use), from rating curve extended above 160 cfs on basis of slope-area measurement of peak flow; minimum daily, 0.1 cfs May 6, 9, 10, 1955, when gates of Three Creeks Dam were closed.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow affected by storage in Puffer Lake and in Three Creeks Reservoir (capacity, 2,020 acre-ft) completed in 1950.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.0 | 0.5 | 1.5 | 6.7 |
| 1.1 | 1.0 | 1.6 | 9.3 |
| 1.2 | 1.8 | 1.8 | 16  |
| 1.3 | 3.0 | 2.0 | 26  |
| 1.4 | 4.6 | 2.2 | 37  |

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     | 2.5  | 2.2   |      |      |      |      | 3.1   | 6.3   | 14    | 7.0   | 5.0   | 4.4   |
| 2     | 2.5  | 2.4   |      |      |      |      | 2.8   | 5.6   | 14    | 7.0   | 4.8   | 3.8   |
| 3     | 2.2  | 2.4   |      |      |      |      | 3.1   | 5.8   | 14    | 6.7   | 4.8   | 3.9   |
| 4     | 2.4  | 2.0   |      |      |      |      | 4.0   | 6.5   | 14    | 6.7   | 4.6   | 3.8   |
| 5     | 2.4  | b2.1  | 2.1  |      |      | 2.1  | 5.4   | 6.7   | 14    | 6.7   | 4.6   | 3.9   |
| 6     | 2.4  |       |      |      |      |      | 6.3   | 8.5   | 14    | 6.7   | 4.2   | 4.1   |
| 7     | 2.2  |       |      |      |      |      | 7.0   | 11    | 14    | 6.5   | *4.2  | 3.8   |
| 8     | 2.2  |       |      |      |      |      | 8.0   | 13    | 14    | *6.3  | 4.2   | 3.6   |
| 9     | 2.4  |       |      |      |      |      | 8.5   | 15    | 13    | 6.3   | 4.2   | 3.4   |
| 10    | 2.4  |       |      |      |      |      | 9.3   | 16    | 12    | 6.0   | 4.2   | 3.4   |
| 11    | 2.4  |       | b2.0 |      |      |      | 9.9   | *18   | 12    | 5.8   | 4.2   | 3.4   |
| 12    | 2.4  |       |      |      |      |      | 9.3   | 17    | 12    | 5.6   | 4.1   | 3.4   |
| 13    | 2.2  |       |      |      |      |      | 9.0   | 12    | 11    | 5.4   | 4.1   | 3.4   |
| 14    | 2.2  |       | 2.0  |      |      |      | 8.8   | 9.9   | *11   | 5.4   | 4.1   | 3.8   |
| 15    | 2.1  | b2.2  | 2.0  |      |      |      | 9.0   | 8.5   | 10    | 5.2   | 3.9   | 3.8   |
| 16    | 2.1  |       | 2.0  | 2.0  | 2.0  | 2.2  | 9.0   | 7.7   | 9.9   | 5.4   | 3.9   | 3.8   |
| 17    | 2.0  |       | 1.9  |      |      |      | 8.8   | 10    | 9.9   | 5.4   | 3.9   | 3.9   |
| 18    | 2.1  |       | 1.9  |      |      |      | 8.5   | 19    | 9.3   | 5.2   | 3.8   | 3.6   |
| 19    | 2.1  |       | 1.9  |      |      |      | 8.8   | 22    | 9.0   | 5.4   | 3.8   | 3.4   |
| 20    | 2.1  |       | 1.8  |      |      |      | 8.8   | 30    | 9.0   | 5.2   | 3.6   | 3.3   |
| 21    | 2.1  |       | 1.8  |      |      |      | 3.6   | 9.3   | 34    | 8.8   | 5.2   | 3.6   |
| 22    | *2.1 |       | 1.8  |      | (*)  |      | 3.8   | 7.0   | 34    | 8.5   | 5.4   | 3.9   |
| 23    | 2.2  | (*)   | 1.8  |      |      |      | 4.0   | 5.0   | 34    | 8.3   | 5.6   | 3.8   |
| 24    | 2.1  |       | 1.9  |      |      |      | 4.0   | 5.0   | 35    | 8.3   | 5.2   | 3.6   |
| 25    | 2.1  |       | 1.9  |      |      |      | 4.1   | 5.0   | 35    | 8.0   | 5.0   | 3.6   |
| 26    | 2.1  | b2.1  | 1.8  |      |      |      | 4.6   | 11    | 33    | 7.5   | 4.8   | 3.4   |
| 27    | 2.1  |       | 1.8  |      |      |      | 4.9   | 14    | 35    | 7.5   | 5.0   | 3.4   |
| 28    | 2.7  |       | 1.8  |      |      |      | 4.5   | 10    | 31    | 7.5   | 5.2   | *3.4  |
| 29    | 2.2  |       | 1.8  |      |      |      | 4.0   | 6.5   | 24    | 7.2   | 5.2   | 3.4   |
| 30    | 2.4  | 2.1   | 1.8  |      |      |      | 3.9   | 6.3   | 16    | 7.2   | 5.0   | 3.4   |
| 31    | 2.2  | ----- | 1.8  |      |      |      | 3.8   | ----- | 14    | ----- | 5.4   | 3.8   |
| Total | 69.6 | 65.4  | 60.3 | 62.0 | 58.0 | 89.2 | 226.5 | 571.5 | 318.9 | 176.9 | 123.5 | 107.6 |
| Mean  | 2.25 | 2.18  | 1.95 | 2.00 | 2.00 | 2.88 | 7.55  | 18.4  | 10.6  | 5.71  | 3.98  | 3.59  |
| Ac-ft | 138  | 130   | 120  | 123  | 115  | 177  | 449   | 1,130 | 633   | 351   | 245   | 213   |

Calendar year 1959: Max 13 Min 0.8 Mean 3.60 Ac-ft 2,610  
 Water year 1959-60: Max 35 Min - Mean 5.27 Ac-ft 3,820

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Nov. 30 to Dec. 8, Jan. 1 to Apr. 5; discharge estimated on basis of weather records, 2 discharge measurements, and records for stations on Beaver River.

## 2345. Beaver River near Beaver, Utah

Location.--Lat 38°16'40", long 112°33'30", in NW¼ sec. 20, T.29 S., R.6 W., on left bank a quarter of a mile downstream from Bakers Canyon and 4½ miles east of Beaver.

Drainage area.--82 sq mi, approximately.

Records available.--June to September 1906, March 1914 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,500 ft (from topographic map). Prior to Mar. 30, 1914, staff gage and Mar. 30, 1914, to Oct. 15, 1937, water-stage recorder, at site 3,000 ft downstream at different datum. Oct. 16, 1937, to Mar. 20, 1959, at site 0.4 mile downstream at different datum.

Average discharge.--46 years (1914-60), 53.5 cfs (38,730 acre-ft per year).

Extremes.--Maximum discharge during year, 188 cfs May 12 (gage height, 2.61 ft); minimum daily, 11 cfs Nov. 27-30.  
1914-60: Maximum discharge, 1,080 cfs July 22, 1936 (gage height, 7.27 ft, site and datum then in use), from rating curve extended above 500 cfs; minimum daily recorded, 10 cfs for several days in 1915, 1931, 1934.

Remarks.--Records good except those for periods of ice effect, which are fair. No diversion for irrigation above station. Water diverted for hydroelectric power, but returned to stream above station. Some regulation by powerplants and several small reservoirs.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 31

Apr. 1 to Sept. 30

|     |     |     |    |     |     |
|-----|-----|-----|----|-----|-----|
| 0.8 | 9.1 | 0.9 | 12 | 1.5 | 50  |
| 1.0 | 16  | 1.0 | 16 | 2.0 | 104 |
| 1.3 | 34  | 1.2 | 27 | 2.4 | 158 |

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     | 14   | 16    | 12   | b15  | 14    | 14    | 18    | 23    | 79    | 26    | 17   | 17    |
| 2     | 17   | 18    | 13   | b15  | 15    | 14    | 16    | 32    | 84    | 25    | 17   | 19    |
| 3     | 16   | 16    | 13   | b15  | 14    | 14    | 18    | 29    | 82    | 25    | 15   | 18    |
| 4     | 16   | 16    | 13   | b15  | 14    | 15    | 24    | 33    | 82    | 24    | 14   | 17    |
| 5     | 15   | 14    | b12  | b15  | b14   | 14    | 31    | 33    | 74    | 21    | 14   | 16    |
| 6     | 15   | 12    | b12  | b14  | 14    | 15    | 38    | 41    | 73    | 22    | 14   | 16    |
| 7     | 15   | 12    | 12   | b14  | 14    | 15    | 41    | 58    | 73    | 21    | *14  | 16    |
| 8     | 15   | 14    | 12   | b14  | 14    | 16    | 44    | 78    | 73    | *22   | 14   | 15    |
| 9     | 13   | 15    | 12   | 14   | 14    | 16    | 49    | 91    | 66    | 21    | 14   | 14    |
| 10    | 15   | 15    | 12   | 14   | 14    | 15    | 57    | 118   | 58    | 21    | 14   | 14    |
| 11    | 15   | 12    | b13  | 14   | 14    | 15    | 55    | *154  | 55    | 21    | 15   | 13    |
| 12    | 15   | 14    | b14  | 15   | b14   | 15    | 43    | 157   | 52    | 20    | 14   | 13    |
| 13    | 15   | 14    | 14   | 15   | 14    | 15    | 42    | 150   | 51    | 16    | 14   | 14    |
| 14    | 14   | 12    | 14   | 15   | 14    | 15    | 44    | 140   | *48   | 16    | 14   | 16    |
| 15    | 14   | 12    | b14  | 15   | b14   | b14   | 44    | 134   | 47    | 16    | 13   | 17    |
| 16    | 14   | 13    | b14  | b15  | 13    | 14    | 44    | 124   | 45    | 16    | 13   | 16    |
| 17    | 14   | 13    | 14   | b15  | b13   | b14   | 40    | 114   | 45    | 17    | 13   | 16    |
| 18    | 14   | 14    | 14   | 15   | 13    | 14    | 42    | 113   | 42    | 18    | 13   | 16    |
| 19    | 14   | 14    | 14   | 15   | 14    | 14    | 46    | 103   | 40    | 19    | 13   | 16    |
| 20    | 14   | 14    | 14   | 14   | 13    | 18    | 45    | 102   | 38    | 19    | 13   | 15    |
| 21    | 14   | 14    | 14   | 14   | b13   | 21    | 60    | 109   | 36    | 19    | 12   | 15    |
| 22    | *15  | 13    | 14   | 14   | *13   | 22    | 67    | 114   | 34    | 19    | 13   | 14    |
| 23    | 14   | *14   | 14   | 14   | b13   | 23    | 54    | 112   | 33    | 20    | 14   | 15    |
| 24    | 12   | 14    | 14   | 14   | b13   | 23    | 42    | 102   | 32    | 20    | 14   | 14    |
| 25    | 12   | 14    | 15   | 15   | 13    | 23    | 37    | 105   | 31    | 18    | 13   | 14    |
| 26    | 12   | 12    | 15   | *15  | 14    | 27    | *38   | 103   | 30    | 16    | 13   | 14    |
| 27    | 14   | b11   | b13  | 15   | 14    | 28    | 40    | 107   | 30    | 16    | 13   | 14    |
| 28    | 16   | b11   | b13  | 14   | 14    | 25    | 38    | 102   | 27    | 16    | *13  | *14   |
| 29    | 16   | 11    | b13  | 14   | 14    | *23   | 34    | 94    | 26    | 19    | 13   | 14    |
| 30    | 16   | 11    | b13  | 14   | ----- | 22    | 33    | 83    | 26    | 21    | 13   | 14    |
| 31    | 16   | ----- | *14  | 14   | ----- | 22    | ----- | 76    | ----- | 20    | 14   | ----- |
| Total | 451  | 403   | 414  | 450  | 398   | 555   | 1,224 | 2,932 | 1,512 | 610   | 427  | 454   |
| Mean  | 14.5 | 13.4  | 13.4 | 14.5 | 13.7  | 17.9  | 40.8  | 94.6  | 50.4  | 19.7  | 13.8 | 15.1  |
| Ac-ft | 895  | 799   | 821  | 893  | 789   | 1,100 | 2,430 | 5,820 | 3,000 | 1,210 | 847  | 900   |

Calendar year 1959: Max 70 Min 11 Mean 21.0 Ac-ft 15,220  
Water year 1959-60: Max 157 Min 11 Mean 26.9 Ac-ft 19,500

Peak discharge (base, 250 cfs).--No peak above base.

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## 2370. Beaver River at Adamsville, Utah

Location.--Lat 38°15'05", long 112°47'25", in SE $\frac{1}{4}$  sec.30, T.29 S., R.8 W., on left bank 800 ft downstream from bridge on State Highway 21, a quarter of a mile upstream from Indian Creek, and half a mile south of Adamsville.

Drainage area.--272 sq mi.

Records available.--December 1913 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,500 ft (from topographic map). Prior to Sept. 15, 1936, water-stage recorder and Sept. 15, 1936, to Oct. 15, 1937, staff gage, at site 225 ft upstream at different datum. Oct. 16, 1937, to May 28, 1946, water-stage recorder at site 75 ft downstream at datum 0.50 ft higher.

Average discharge.--46 years (1914-60), 37.3 cfs (27,000 acre-ft per year).

Extremes.--Maximum discharge during year, 233 cfs Sept. 6 (gage height, 2.55 ft); no flow for many days.

1913-60: Maximum discharge, 1,090 cfs July 23, 1941 (gage height, 4.68 ft, site and datum then in use), from rating curve extended above 500 cfs; no flow during summer months in many years.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No diversions between station and Rockyford Reservoir. Several ditches above station divert practically entire flow during irrigation season to supply Adamsville and Beaver districts.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|      |    |     |     |     |    |
|------|----|-----|-----|-----|----|
| 0.25 | 0  | 0.6 | 1.6 | 1.0 | 16 |
| .3   | .1 | .7  | 3.6 | 1.2 | 32 |
| .4   | .3 | .8  | 6.6 | 1.5 | 65 |
| .5   | .7 | .9  | 11  |     |    |

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    | 5.6   | 23    | *b21  | 32    | 35    | 18    | 1.4   | 0.4    |      |      | 0     |
| 2                       | 0    | 15    | 27    | b21   | 34    | 36    | 5.2   | 1.5   | .2     |      |      | 0     |
| 3                       | 0    | 23    | 28    | b22   | 32    | 35    | 4.9   | 1.0   | 0      |      |      | 13    |
| 4                       | 0    | 23    | 27    | a24   | 35    | 41    | 4.4   | .7    | 0      |      |      | 1.8   |
| 5                       | 0    | 22    | 26    | a29   | 31    | 44    | 3.4   | 2.0   | 0      |      |      | 9.6   |
| 6                       | 0    | 20    | b25   | a30   | 33    | 43    | 3.1   | .4    | 0      |      |      | 25    |
| 7                       | 0    | 20    | b24   | b30   | 34    | 46    | 2.9   | .3    | .2     | (*)  | (*)  | 3.4   |
| 8                       | 0    | 18    | b30   | 42    | 42    | 2.1   | .3    | 3.3   | 0      |      |      | 0     |
| 9                       | 0    | 19    | 23    | b30   | 50    | 38    | 2.0   | .2    | 3.1    |      |      | 0     |
| 10                      | 0    | 20    | 26    | b30   | 38    | 35    | 2.0   | .2    | 3.1    |      |      | 0     |
| 11                      | 0    | 24    | 24    | b30   | 36    | 34    | 1.5   | 1.8   | .2     |      |      | 0     |
| 12                      | 0    | 24    | 26    | a30   | 34    | 34    | 1.2   | .3    | 0      |      |      | 0     |
| 13                      | 0    | 24    | 28    | a30   | 35    | 37    | 1.1   | .3    | *0     |      |      | 0     |
| 14                      | 0    | 24    | 21    | a30   | 33    | 40    | .9    | .7    | .8     |      |      | 0     |
| 15                      | 0    | 24    | b23   | a29   | 35    | 36    | 1.0   | 3.8   | .8     |      |      | 0     |
| 16                      | 0    | 24    | b25   | a23   | 35    | 34    | .6    | .4    | .1     |      |      | 0     |
| 17                      | 0    | 24    | b28   | a23   | 33    | 33    | .5    | .2    | 0      |      |      | 0     |
| 18                      | 0    | 25    | 28    | a25   | 34    | 32    | .5    | .3    | 0      |      |      | 0     |
| 19                      | 0    | 25    | 30    | a29   | 35    | 32    | .5    | .4    | 0      |      |      | 0     |
| 20                      | 0    | 28    | 28    | a30   | 34    | 31    | .4    | 1.6   | 0      |      |      | 0     |
| 21                      | 0    | 26    | 30    | a30   | 35    | 33    | .4    | .6    | 0      |      |      | 0     |
| 22                      | *0   | 24    | 30    | a31   | 36    | 35    | .4    | .2    | 0      |      |      | 0     |
| 23                      | 0    | 23    | 30    | a32   | *31   | 35    | 0     | .1    | 0      |      |      | 0     |
| 24                      | 0    | 23    | 30    | a32   | 30    | 37    | 0     | .1    | 0      |      |      | 0     |
| 25                      | 0    | *23   | 32    | *33   | 38    | 39    | 0     | .6    | 0      |      |      | 0     |
| 26                      | 0    | 20    | 28    | 32    | 35    | 40    | 0     | 2.0   | 0      |      |      | 0     |
| 27                      | 0    | b20   | b26   | 33    | 34    | 41    | *1.0  | 1.5   | 0      |      |      | 0     |
| 28                      | 0    | b21   | b24   | 33    | 35    | 41    | 3.6   | .5    | 0      |      |      | 0     |
| 29                      | 0    | 24    | b25   | 33    | 35    | 39    | 6.2   | .1    | 0      |      |      | 0     |
| 30                      | .4   | 24    | b27   | 33    | ----- | *34   | 2.3   | .1    | 0      | (*)  |      | 0     |
| 31                      | .5   | ----- | b26   | 33    | ----- | 30    | ----- | 0     | -----  |      |      | ----- |
| Total                   | 0.9  | 657.6 | 821   | 901   | 1,012 | 1,142 | 70.1  | 23.6  | 12.2   | 0    | 0    | 52.8  |
| Mean                    | 0.03 | 21.9  | 26.5  | 29.1  | 34.9  | 36.8  | 2.34  | 0.76  | 0.41   | 0    | 0    | 1.76  |
| Ac-ft                   | 1.8  | 1,300 | 1,630 | 1,790 | 2,010 | 2,270 | 139   | 47    | 24     | 0    | 0    | 105   |
| Calendar year 1959: Max | 84   |       |       | Min   | 0     | Mean  | 15.5  | Ac-ft | 11,260 |      |      |       |
| Water year 1959-60: Max | 50   |       |       | Min   | 0     | Mean  | 12.8  | Ac-ft | 9,520  |      |      |       |

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

a No gage-height record; discharge estimated on basis of weather records and records for Beaver River near Beaver.

b Stage-discharge relation affected by ice.

## 2385. Rockyford Reservoir near Minersville, Utah

Location (revised).--Lat 38°13'05", long 112°50'05", in NW¼ sec.11, T.30 S., R.9 W., at Rockyford Dam on Beaver River, 5 miles east of Minersville.

Drainage area.--510 sq mi, approximately.

Records available.--April to August 1915, November 1915 to September 1917, December 1917 to March 1921, June to September 1922, October 1937 to September 1960. Month-end contents only for some periods, published in WSP 1314.

Gage.--Staff gage.

Extremes.--Maximum contents observed during year, 8,690 acre-ft Mar. 30, 31 (gage height, 33.6 ft); minimum observed, 868 acre-ft Oct. 1 (gage height, 11.5 ft).  
1915-22, 1937-60: Maximum contents observed, 23,810 acre ft Apr. 22, 25, 28, 30, May 1, 1945 (gage height, 51.5 ft); no contents at times in 1915, 1918-19, 1939, 1956.

Remarks.--Reservoir is formed by earth-fill dam completed in 1914. Capacity, 23,260 acre-ft between gage heights 0.0 (bottom of outlet tunnel) and 51.0 ft (spillway crest). Prior to fall of 1937 the spillway crest was at elevation 52.5 ft; capacity, 24,910 acre-ft. Dead storage negligible. Figures given herein represent total contents. Water is used for irrigation in vicinity of Minersville and Milford.

Capacity table, water year 1959-60 (gage height, in feet, and contents, in acre-feet)

|    |       |    |       |
|----|-------|----|-------|
| 10 | 622   | 25 | 4,500 |
| 15 | 1,520 | 30 | 6,720 |
| 20 | 2,810 | 35 | 9,590 |

Contents, in acre-feet, water year October 1959 to September 1960

| Day | Oct.   | Nov.   | Dec.   | Jan.   | Feb.   | Mar.   | Apr.   | May    | June   | July   | Aug.   | Sept.  |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1   | 868    | -      | -      | 4,330  | -      | -      | -      | -      | -      | -      | -      | -      |
| 2   | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 3   | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 4   | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 5   | -      | -      | -      | -      | -      | 7,430  | -      | -      | -      | -      | -      | -      |
| 6   | -      | -      | 3,130  | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 7   | -      | -      | -      | -      | 6,000  | -      | -      | -      | -      | 4,050  | -      | -      |
| 8   | -      | 1,590  | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 9   | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 10  | -      | -      | -      | 4,670  | -      | -      | -      | -      | -      | -      | -      | -      |
| 11  | -      | -      | -      | -      | -      | -      | -      | 7,490  | -      | -      | -      | -      |
| 12  | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 13  | -      | -      | -      | -      | 6,560  | -      | -      | -      | 5,380  | -      | -      | -      |
| 14  | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | 1,570  |
| 15  | -      | 2,010  | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 16  | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 17  | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 18  | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 19  | -      | -      | -      | 5,080  | -      | -      | -      | -      | -      | -      | -      | -      |
| 20  | -      | -      | 3,760  | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 21  | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 22  | 1,130  | 2,390  | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 23  | -      | -      | -      | -      | 6,990  | -      | -      | -      | -      | -      | -      | -      |
| 24  | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| 25  | -      | 2,520  | -      | 5,500  | -      | -      | -      | -      | -      | -      | -      | -      |
| 26  | -      | -      | -      | 5,420  | -      | -      | -      | -      | -      | -      | -      | -      |
| 27  | -      | -      | -      | -      | 7,160  | 8,530  | 8,200  | -      | -      | -      | -      | -      |
| 28  | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      | 1,620  |
| 29  | -      | 2,610  | -      | -      | a7,240 | -      | -      | -      | -      | -      | -      | -      |
| 30  | -      | a2,660 | -      | -      | -      | 8,690  | a8,050 | -      | a4,440 | -      | -      | a1,620 |
| 31  | a1,370 | -      | 4,290  | a5,660 | -      | 8,690  | -      | -      | -      | a3,110 | a1,590 | -      |
| (†) | -      | -      | -      | -      | -      | 33.6   | -      | -      | -      | -      | -      | -      |
| (‡) | +502   | +1,290 | +1,630 | +1,370 | +1,580 | +1,450 | -640   | -1,840 | -1,770 | -1,330 | -1,520 | +30    |

Calendar year 1959..... ‡ -6,070

Water year 1959-60..... ‡ +752

† Gage height, in feet, at end of month.

‡ Change in contents, in acre-feet.

a No gage-height record; contents interpolated except those for July 31, Aug. 31, when contents were computed from inflow-outflow study.

## 2390. Beaver River at Rockyford Dam, near Minersville, Utah

Location.--Lat 38°14', long 112°50', in NW $\frac{1}{4}$  sec.11, T.30 S., R.9 W., on right bank half a mile downstream from Rockyford Dam and  $4\frac{1}{2}$  miles east of Minersville.

Drainage area.--512 sq mi.

Records available.--December 1913 to September 1936, April 1937 to September 1960.

Gage.--Water-stage recorder. Concrete control since Nov. 12, 1916. Altitude of gage is 5,400 ft (by barometer). Prior to June 1, 1916, at site 1,500 ft upstream at different datum.

Average discharge.--45 years (1914-36, 1937-60), 38.5 cfs (27,870 acre-ft per year).

Extremes.--Maximum daily discharge during year, 33 cfs May 9-18; minimum daily, 2.5 cfs July 25, 28, 29.

1913-60: Maximum discharge, 727 cfs June 10, 1921 (gage height, 3.53 ft); minimum daily, 0.4 cfs Mar. 20, 1914.

Remarks.--Records good. One small diversion between dam and station. Flow regulated by Rockyford Reservoir (see preceding page). Numerous diversions for irrigation and municipal use above reservoir.

Revisions (water years).--WSP 1564: 1920, 1924.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used May 21 to Aug. 6, Aug. 10 to Sept. 21)

|     |     |     |    |
|-----|-----|-----|----|
| 0.7 | 2.5 | 1.0 | 21 |
| .8  | 6.3 | 1.1 | 31 |
| .9  | 12  | 1.2 | 43 |

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                       | 4.4   | 4.0   | 4.0   | *4.0  | 4.4   | 4.8   | 5.5    | 29    | 32    | 27    | 26    | 25    |
| 2                       | 4.4   | 4.0   | 4.0   | 4.0   | 4.4   | 4.8   | 5.5    | 30    | 32    | 27    | 26    | 20    |
| 3                       | 4.4   | 4.0   | 4.0   | 4.4   | 4.4   | 4.8   | 5.5    | 30    | 32    | 28    | 26    | 7.5   |
| 4                       | 4.0   | 3.6   | 4.0   | 4.4   | 4.4   | 4.8   | 5.5    | 31    | 32    | 29    | 26    | 4.0   |
| 5                       | 4.0   | 3.6   | 4.0   | 4.4   | 4.4   | 4.8   | 5.5    | 32    | 32    | 28    | 26    | 4.0   |
| 6                       | 4.0   | 3.6   | 4.4   | 4.4   | 4.8   | 4.8   | 5.5    | 32    | 31    | 29    | 26    | 4.0   |
| 7                       | 4.0   | 3.6   | 4.4   | 4.4   | 4.8   | 4.8   | 5.5    | 32    | 31    | 29    | *26   | 4.0   |
| 8                       | 3.6   | 4.0   | 4.4   | 4.4   | 4.4   | 5.2   | 5.9    | 33    | 31    | 27    | 26    | 4.0   |
| 9                       | 3.6   | 4.0   | 4.4   | 4.4   | 4.4   | 5.2   | 5.9    | 33    | 31    | 27    | 26    | 4.0   |
| 10                      | 3.6   | 4.0   | 4.4   | 4.4   | 4.4   | 5.2   | 5.9    | 33    | 31    | 27    | 26    | 4.0   |
| 11                      | 3.6   | 4.0   | 4.4   | 4.4   | 4.4   | 5.2   | 5.9    | *33   | 31    | 27    | 26    | 4.0   |
| 12                      | 3.6   | 4.0   | 4.4   | 4.4   | 4.4   | 4.8   | 5.9    | 33    | 31    | 27    | 26    | 4.0   |
| 13                      | 3.6   | 4.0   | 4.4   | 4.4   | 4.4   | 4.8   | 5.9    | 33    | *31   | 27    | 27    | 4.0   |
| 14                      | 3.6   | 4.0   | 4.4   | 4.4   | 4.4   | 4.8   | 5.9    | 33    | 31    | 27    | 27    | *4.0  |
| 15                      | 3.6   | 4.0   | 4.4   | 4.4   | 4.4   | 4.4   | 5.9    | 33    | 31    | 27    | 26    | 3.6   |
| 16                      | 3.6   | 4.0   | 4.4   | 4.4   | 4.4   | 4.4   | 5.9    | 33    | 31    | 27    | 21    | 3.6   |
| 17                      | 3.6   | 4.0   | 4.0   | 4.4   | 4.8   | 4.4   | 5.9    | 33    | 31    | 27    | 28    | 4.0   |
| 18                      | 3.6   | 4.0   | 4.0   | 4.4   | 4.8   | 4.4   | 5.9    | 33    | 31    | 27    | 28    | 3.6   |
| 19                      | 3.6   | 4.0   | 4.0   | 4.4   | 4.8   | 4.4   | 5.9    | 32    | 31    | 27    | 28    | 3.6   |
| 20                      | 3.6   | 4.4   | 4.0   | 4.4   | 4.8   | 4.4   | 5.9    | 32    | 31    | 27    | 26    | 3.6   |
| 21                      | 3.6   | 4.4   | 4.0   | 4.4   | 4.8   | 4.4   | 5.9    | 32    | 31    | 27    | 26    | 4.0   |
| 22                      | *3.6  | 4.4   | 4.0   | 4.4   | 4.8   | 4.8   | 5.9    | 32    | 30    | 27    | 26    | 4.4   |
| 23                      | 3.6   | 4.4   | 4.0   | 4.4   | *4.8  | 4.8   | 5.9    | 32    | 26    | 27    | 26    | 4.4   |
| 24                      | 3.6   | 4.4   | 4.0   | 4.4   | 4.8   | 4.8   | 5.9    | 32    | 26    | 17    | 26    | 4.0   |
| 25                      | 3.6   | *4.4  | 4.0   | *4.4  | 4.8   | 4.8   | 5.9    | 32    | 26    | 2.5   | 26    | 3.6   |
| 26                      | 3.6   | 4.0   | 4.0   | 4.4   | 4.8   | 5.2   | 5.9    | 32    | 26    | 17    | 26    | 4.0   |
| 27                      | 3.6   | 4.0   | 4.0   | 4.8   | 4.8   | 5.2   | *5.9   | 32    | 26    | 21    | 26    | 4.4   |
| 28                      | 4.0   | 4.0   | 4.0   | 4.8   | 4.8   | 5.5   | 21     | 32    | 26    | 2.5   | *28   | *4.4  |
| 29                      | 3.6   | 4.0   | 4.0   | 4.4   | 4.8   | 5.5   | 30     | 32    | 26    | 2.5   | 26    | 4.4   |
| 30                      | 3.6   | 4.0   | 4.0   | 4.4   | ----- | *5.5  | 30     | 32    | 26    | 16    | 26    | 4.4   |
| 31                      | 3.6   | ----- | 4.0   | 4.4   | ----- | 5.5   | -----  | 32    | ----- | 26    | 25    | ----- |
| Total                   | 116.0 | 120.8 | 128.4 | 136.4 | 134.0 | 151.2 | 237.5  | 994   | 894   | 734.5 | 804   | 160.5 |
| Mean                    | 3.74  | 4.03  | 4.14  | 4.40  | 4.62  | 4.88  | 7.92   | 32.1  | 29.8  | 23.7  | 25.9  | 5.35  |
| Ac-ft                   | 230   | 240   | 255   | 271   | 266   | 300   | 471    | 1,970 | 1,770 | 1,467 | 1,590 | 318   |
| Calendar year 1959: Max | 152   | Min   | 3.6   | Mean  | 29.5  | Ac-ft | 21,330 |       |       |       |       |       |
| Water year 1959-60: Max | 33    | Min   | 2.5   | Mean  | 12.6  | Ac-ft | 9,140  |       |       |       |       |       |

\* Discharge measurement made on this day.

## 2414. Little Creek near Paragonah, Utah

Location.--Lat 37°54'30", long 112°43'00", near center of sec.25, T.33 S., R.8 W., on right bank half a mile downstream from Dixie National Forest boundary, 2½ miles upstream from mouth of canyon, and 3½ miles northeast of Paragonah.

Drainage area.--17 sq mi, approximately.

Records available.--July 1959 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,650 ft (from topographic map).

Extremes.--1959: Maximum discharge during period July to September, 12 cfs Avg. 19 (gage height, 1.35 ft); minimum daily, 0.1 cfs July 29, Aug. 28 to Sept. 12.  
1959-60: Maximum discharge during water year not determined, occurred May 9 (gage height, 2.45 ft, from floodmarks); no flow Aug. 8, 11-21.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Station is above all diversions.

Rating table, July 29, 1959, to Sept. 30, 1960 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.6 | 0   | 1.0 | 2.1 |
| .7  | .1  | 1.1 | 3.8 |
| .8  | .4  | 1.2 | 6.3 |
| .9  | 1.0 |     |     |

Discharge, in cubic feet per second, 1959

| Day                      | July | Aug. | Sept. | Day | July | Aug. | Sept. | Day | July | Aug. | Sept. | Day | July | Aug. | Sept. |
|--------------------------|------|------|-------|-----|------|------|-------|-----|------|------|-------|-----|------|------|-------|
| 1                        | -    | 0.6  | 0.1   | 9   | -    | 0.4  | 0.1   | 17  | -    | 0.2  | 0.2   | 25  | -    | a0.2 | 0.3   |
| 2                        | -    | .6   | .1    | 10  | -    | .3   | .1    | 18  | -    | .4   | .2    | 26  | -    | a.2  | .2    |
| 3                        | -    | .4   | .1    | 11  | -    | .4   | .1    | 19  | -    | .8   | .2    | 27  | -    | *.2  | .2    |
| 4                        | -    | .4   | .1    | 12  | -    | .4   | .1    | 20  | -    | a.3  | .2    | 28  | -    | .1   | .2    |
| 5                        | -    | *.3  | .1    | 13  | -    | .3   | .2    | 21  | -    | a.3  | .2    | 29  | 0.1  | .1   | .3    |
| 6                        | -    | .2   | .1    | 14  | -    | .3   | .2    | 22  | -    | a.3  | .2    | 30  | .2   | .1   | .4    |
| 7                        | -    | .2   | .1    | 15  | -    | .3   | .2    | 23  | -    | a.2  | .2    | 31  | .4   | .1   | -     |
| 8                        | -    | .4   | .1    | 16  | -    | .2   | .2    | 24  | -    | a.2  | .2    |     |      |      |       |
| Total.....               |      |      |       |     |      |      |       |     |      |      |       |     | -    | 9.4  | 5.2   |
| Mean.....                |      |      |       |     |      |      |       |     |      |      |       |     | -    | 0.30 | 0.17  |
| Runoff in acre-feet..... |      |      |       |     |      |      |       |     |      |      |       |     | -    | 19   | 10    |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and trend of flow.

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     | 0.4  | 0.5  | 0.4  | 0.6  | 0.6  | 0.8  | 1.5  | 1.3  |      | 0.6  | 0.1  | 0.6   |
| 2     | .4   | .5   | .4   | .6   | .6   | .8   | 1.4  | 1.3  |      | .4   | .1   | *.4   |
| 3     | .4   | .5   | .4   | .6   | .6   | .8   | 1.4  | 1.2  |      | .4   | .1   | .3    |
| 4     | .4   | .4   | .2   | .6   | .7   | .8   | 1.3  | 1.3  |      | .4   | .1   | .3    |
| 5     | .4   | .2   | .2   | .6   | .6   | .8   | 1.3  | 1.3  | a0.9 | .4   | .1   | .4    |
| 6     | .4   | .3   | .3   | .6   | .6   | .8   | 1.2  | 1.4  |      | .6   | .1   | .6    |
| 7     | .4   | .4   | .4   | .6   | .6   | 1.1  | 1.3  | 1.5  |      | .5   | .1   | .4    |
| 8     | .4   | .4   | .4   | .6   | .7   | 1.5  | 2.4  | 1.6  |      | *.4  | 0    | .3    |
| 9     | .4   | .4   | .5   | .6   | .7   | 1.8  | 1.5  | 4.8  |      | .5   | .1   | .2    |
| 10    | 2.2  | .4   | .5   | .6   | .8   | *1.8 | 1.3  | a2.0 | 1.7  | .4   | .1   | .2    |
| 11    |      | .4   | .4   | .6   | .7   | 1.6  | 1.2  | a1.2 | a1.0 | .4   | 0    | .2    |
| 12    |      | .4   | .4   | .6   | .5   | .9   | 1.2  | *1.0 | a.9  | .4   | 0    | .2    |
| 13    |      | .4   | .4   | .6   | .6   | .8   | .9   | 1.2  | a.9  | .3   | 0    | .2    |
| 14    |      | .3   | .4   | .6   | .6   | .8   | .9   | 1.0  | *.9  | .2   | a0   | .2    |
| 15    |      | .5   | .4   | .6   | .6   | .8   | 1.0  | 1.0  | .9   | .2   | a0   | .2    |
| 16    |      | .5   | .4   | .6   | .6   | 1.2  | 1.0  | 1.2  | .9   | .2   | a0   | .2    |
| 17    |      | .5   | .4   | .6   | .6   | 1.9  | .8   |      | .9   | .2   | 0    | .2    |
| 18    |      | .6   | .4   | .6   | .8   | 1.6  | .9   |      | .9   | .2   | 0    | .2    |
| 19    |      | .5   | .4   | .6   | .8   | 1.3  | 1.0  |      | .8   | .2   | 0    | .2    |
| 20    |      | .4   | .4   | .6   | .8   | 1.3  | 1.0  |      |      | .2   | 0    | .2    |
| 21    |      | .5   | .4   | .6   | .7   | 1.3  | 1.0  |      | .8   | .2   | a0   | .2    |
| 22    |      | .4   | .4   | .6   | .7   | 1.4  | 1.0  |      | .8   | .2   | .1   | .2    |
| 23    |      | *.4  | .4   | .6   | .7   | *1.9 | 1.1  |      | .7   | .2   | .1   | .2    |
| 24    |      | .4   | .5   | .6   | *.8  | 2.0  | 1.0  | a1.0 | .7   | *.1  | *.4  | .2    |
| 25    |      | .4   | *.4  | .6   | .8   | 1.8  | .8   |      | .6   | *.1  | .6   | .2    |
| 26    | .4   | .1   | .5   | .7   | .8   | 1.8  | *1.1 | .6   | .1   | .1   | .1   | .1    |
| 27    | .4   | .1   | .6   | .7   | .8   | 1.5  | 1.3  | .6   | .1   | .1   | .1   | .1    |
| 28    | .4   | .2   | .4   | .6   | .8   | 1.5  | 1.5  | .6   | .2   | .1   | .1   | .1    |
| 29    | .3   | .2   | .6   | .6   | .8   | 1.4  | 1.6  | .6   | .2   | .1   | .1   | .1    |
| 30    | .4   | .4   | .6   | .6   |      | 1.4  | 1.4  | .6   | .2   | .1   | .1   | .2    |
| 31    | .5   |      | .6   | .6   |      | 1.5  |      |      | .4   | .1   |      |       |
| Total | 14.8 | 12.0 | 13.3 | 18.8 | 19.9 | 40.7 | 36.1 | 39.4 | 26.2 | 9.1  | 2.7  | 7.3   |
| Mean  | 0.48 | 0.40 | 0.43 | 0.61 | 0.69 | 1.31 | 1.20 | 1.27 | 0.87 | 0.29 | 0.09 | 0.24  |
| Ac-ft | 29   | 24   | 26   | 37   | 39   | 81   | 72   | 78   | 52   | 18   | 5.4  | 14    |

Calendar year 1959: Max - Min 0 Mean - Ac-ft 475  
Water year 1959-60: Max 4.8 Min 0 Mean 0.66 Ac-ft 475

\* Discharge measurement made on this day.

\*\* Field estimate made on this day.

a No gage-height record; discharge estimated on basis of weather records, trend of flow, and records for Coal Creek near Cedar City.

## 2418. Ashdown Creek near Cedar City, Utah

Location.--Lat 37°38'15", long 112°54'15", in SW<sup>1</sup> sec.29, T.36 S., R.9 W., on right bank 1 mile upstream from East Fork Coal Creek and 8 miles southeast of Cedar City.

Drainage area.--13.1 sq mi.

Records available.--January 1957 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 7,540 ft (from topographic map).

Extremes.--1958-59: Maximum discharge during water year, about 1,000 cfs Aug. 3 (gage height, 4.95 ft), based on slope-area measurement on Coal Creek near Cedar City; minimum, 1.7 cfs Nov. 23.

1959-60: Maximum discharge during water year, 116 cfs Sept. 5 (gage height, 2.61 ft), from rating curve extended above 42 cfs by logarithmic plotting; minimum not determined, probably occurred during period of ice effect or no gage-height record.

1957-60: Maximum discharge, that of Aug. 3, 1959; minimum recorded, that of Nov. 23, 1958.

Remarks.--Records good except those for periods of ice effect or fragmentary or no gage-height record, which are fair.

Rating tables, Oct. 1, 1958, to Sept. 30, 1960, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Oct. 22 to Nov. 15, 1958, Aug. 28 to Sept. 30, 1959, May 15-20, June 30 to Sept. 6, Sept. 16-30, 1960)

| Day | Oct. 1, 1958, to<br>Sept. 30, 1959 |     |     |    |  | Oct. 1, 1959, to<br>Sept. 30, 1960 |     |     |    |  |
|-----|------------------------------------|-----|-----|----|--|------------------------------------|-----|-----|----|--|
|     | 0.9                                | 1.4 | 1.5 | 13 |  | 0.4                                | 1.6 | 1.0 | 15 |  |
|     | 1.0                                | 2.8 | 1.8 | 26 |  | .5                                 | 2.9 | 1.3 | 27 |  |
|     | 1.2                                | 6.0 | 2.2 | 56 |  | .7                                 | 6.5 | 1.7 | 49 |  |

| Discharge, in cubic feet per second, water year October 1958 to September 1959 |       |       |       |       |       |       |       |       |       |        |       |
|--------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| Day                                                                            | Oct.  | Nov.  | Dec.  | Jan.  | Feb.  | Mar.  | Apr.  | May   | June  | July   | Aug.  |
| 1                                                                              |       | 2.8   | b2.6  | 4.6   | 3.4   | b4.7  | 14    | 13    | 7.6   | 4.3    | 4.2   |
| 2                                                                              |       | 3.1   | b2.8  | 4.8   | 3.7   | b5.0  | 17    | 12    | 7.4   | 4.3    | f24   |
| 3                                                                              |       | 3.0   | 3.2   | 4.6   | 3.4   | b5.0  | *16   | 11    | 7.4   | 4.3    | f52   |
| 4                                                                              |       | 3.0   | 3.4   | b2.6  | 3.2   | b4.5  | 21    | 8.5   | 7.4   | 4.0    | *15   |
| 5                                                                              |       | 2.8   | 3.8   | b5.2  | 3.4   | b4.3  | 18    | 8.2   | 7.4   | 4.0    | 6.4   |
| 6                                                                              |       | 2.7   | 3.8   | b3.4  | 3.7   | b4.5  | 12    | 8.5   | 7.4   | 4.0    | 5.3   |
| 7                                                                              |       | 2.7   | 3.7   | b3.6  | 3.4   | b4.7  | 9.4   | 9.4   | 7.4   | 3.8    | 5.2   |
| 8                                                                              |       | 2.7   | 3.7   | b3.7  | 3.4   | b4.8  | 9.0   | *9.9  | 7.4   | 3.8    | 5.0   |
| 9                                                                              |       | 2.7   | *3.8  | 3.8   | b3.3  | b4.9  | 7.6   | 12    | 7.0   | 3.8    | 5.2   |
| 10                                                                             |       | 2.7   | 3.6   | 3.4   | b3.4  | b4.5  | 7.6   | 12    | 6.8   | 3.7    | 5.0   |
| 11                                                                             |       | 4.2   | 3.7   | 4.3   | 3.6   | b4.1  | 7.8   | 15    | 6.6   | 3.7    | 4.8   |
| 12                                                                             | a3.7  | 8.5   | 3.4   | 4.5   | 3.4   | b4.3  | 8.0   | 17    | 6.4   | 3.7    | 4.6   |
| 13                                                                             |       | 7.0   | b3.0  | 4.6   | b3.3  | b4.6  | 8.2   | 19    | 6.4   | 3.7    | 4.6   |
| 14                                                                             |       | 5.0   | b2.4  | 4.6   | b3.1  | b4.8  | 8.0   | 20    | 6.4   | 3.7    | 4.6   |
| 15                                                                             |       | 3.7   | b2.4  | 4.6   | 4.2   | b4.6  | 7.6   | 14    | 6.4   | 3.7    | 4.6   |
| 16                                                                             |       | b3.0  | b2.4  | 4.6   | 4.0   | b4.7  | 7.0   | 12    | 5.8   | 3.6    | 4.5   |
| 17                                                                             |       | b2.4  | b2.5  | 4.6   | 3.8   | b5.1  | 5.8   | 13    | 5.5   | 3.6    | 4.5   |
| 18                                                                             |       | b2.4  | b2.6  | 4.6   | 3.8   | 5.5   | 5.7   | 12    | 5.5   | 3.4    | 6.4   |
| 19                                                                             |       | b2.4  | b2.7  | 4.6   | 3.8   | b5.8  | 5.7   | 10    | 5.5   | 3.4    | 4.0   |
| 20                                                                             |       | b3.0  | b2.8  | 4.6   | 4.0   | b5.2  | 6.0   | 10    | 5.5   | 3.8    | a4.5  |
| 21                                                                             |       | 3.4   | 2.8   | b3.2  | 4.0   | b4.9  | 6.4   | 9.7   | 5.5   | 3.7    | a3.5  |
| 22                                                                             |       | *3.7  | 2.5   | 4.8   | 3.4   | 4.0   | 5.2   | 7.6   | 10    | 5.3    | 3.7   |
| 23                                                                             |       | 3.7   | 3.2   | 5.2   | 3.2   | 3.8   | 6.4   | 9.0   | 10    | 5.3    | 3.6   |
| 24                                                                             |       | 3.7   | 5.2   | 4.5   | 3.2   | 3.8   | 5.3   | 9.2   | 10    | 5.2    | *3.8  |
| 25                                                                             |       | 4.2   | 5.3   | b4.0  | 3.1   | b3.9  | 4.2   | 9.9   | 10    | 4.8    | 3.7   |
| 26                                                                             |       | 3.6   | 4.8   | b3.8  | 3.2   | b4.0  | 5.3   | 9.2   | *9.7  | 4.8    | 3.6   |
| 27                                                                             |       | 3.4   | 3.7   | 4.3   | b3.0  | 4.2   | 5.5   | 8.0   | 9.2   | 4.6    | 3.6   |
| 28                                                                             |       | 3.1   | b3.0  | 4.5   | 3.2   | 4.3   | 5.2   | 11    | 8.7   | 4.6    | 3.4   |
| 29                                                                             |       | 3.1   | b2.6  | b4.2  | b3.0  | ---   | 5.2   | 14    | 8.5   | *4.5   | 3.6   |
| 30                                                                             |       | 3.0   | b2.5  | b3.3  | 3.1   | ----- | 4.8   | 13    | 8.0   | 4.3    | 3.7   |
| 31                                                                             |       | 2.8   | ----- | b4.1  | b3.2  | ----- | 5.8   | ----- | 7.8   | -----  | 4.5   |
| Total                                                                          | 112.0 | 105.8 | 107.8 | 118.3 | 103.3 | 153.4 | 298.7 | 348.1 | 182.1 | 117.2  | 247.8 |
| Mean                                                                           | 3.61  | 3.53  | 3.48  | 3.82  | 3.69  | 4.95  | 9.96  | 11.2  | 6.07  | 3.76   | 7.99  |
| Ac-ft                                                                          | 222   | 210   | 214   | 235   | 205   | 304   | 592   | 690   | 361   | 232    | 492   |
| Calendar year 1958: Max                                                        | 99    |       |       |       | Min   | 2.2   | Mean  | 16.1  | Ac-ft | 11,650 |       |
| Water year 1958-59: Max                                                        | 52    |       |       |       | Min   | 2.2   | Mean  | 5.48  | Ac-ft | 3,970  |       |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, trend of flow, and records for nearby streams.

b Stage-discharge relation affected by ice.

f Fragmentary gage-height record; discharge computed from partly estimated gage heights.

## 2418. Ashdown Creek near Cedar City, Utah--Continued

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                                                        | 3.9   | 4.0   | 4.2   | 4.5   |       | 4.7   | 19    | 20    | 14    | 5.1   | 4.5   | 9.8   |
| 2                                                        | 3.9   | 5.1   | 4.1   |       |       | 4.5   | 21    | 18    | 14    | 4.9   | 4.2   | 5.1   |
| 3                                                        | 3.9   | 4.9   | 4.0   |       |       | 4.5   | 37    | 18    | 14    | 4.7   | 4.2   | 4.5   |
| 4                                                        | 3.9   | 4.5   | 3.5   |       |       | 4.5   | 28    | 18    | 13    | 4.7   | 4.2   | 3.4   |
| 5                                                        | 3.9   | 4.0   | 2.8   |       |       | 5.0   | 28    | 18    | 13    | 4.5   | 4.2   | 9.4   |
| 6                                                        | 3.7   | 4.2   | 3.5   | 4.5   |       | 5.5   | 27    | *26   | 13    | 4.5   | 4.0   | 10    |
| 7                                                        | 3.7   | 4.2   | 3.8   |       |       | 6.0   | 30    | 29    | 13    | 4.5   | 3.9   | 4.0   |
| 8                                                        | 3.7   | 4.3   | 4.0   |       |       | 7.0   | 28    | 30    | 12    | 4.3   | 3.9   | 3.5   |
| 9                                                        | 3.7   | 4.3   | 4.4   |       |       | *8.0  | 29    | 28    | 11    | 4.3   | 4.0   | 3.4   |
| 10                                                       | 3.7   | 4.3   | 4.7   |       |       | 7.0   | 28    | 31    | 10    | 4.2   | 4.3   | 3.3   |
| 11                                                       | 3.5   | 4.3   | 4.0   | 4.5   |       | 8.0   | 33    | 36    | 9.9   | *4.0  | 4.0   | 3.3   |
| 12                                                       | 3.5   | 4.3   | 4.0   |       |       | 8.3   | 31    | 33    | 9.3   | 4.2   | 3.7   | 3.3   |
| 13                                                       | 3.5   | 4.1   | 4.1   |       |       | 7.6   | 29    | 33    | 8.8   | 4.2   | *3.6  | 3.2   |
| 14                                                       | 3.5   | 4.0   | 4.2   |       |       | 5.6   | 44    | 33    | 8.3   | 4.2   | 3.4   | 3.2   |
| 15                                                       | *3.2  | 4.8   | 4.2   |       |       | 6.0   | 43    | 31    | *7.9  | 4.2   | 3.4   | 3.2   |
| 16                                                       | 2.8   | 4.5   | 4.2   | 4.0   |       | 5.2   | 42    | *33   | 7.6   | 4.2   | 3.2   | *3.2  |
| 17                                                       | 2.8   | *4.2  | 3.4   |       |       | 5.5   | 30    | 29    | 7.4   | 4.2   | 3.2   | 3.4   |
| 18                                                       | 2.8   | 4.2   | 3.2   |       |       | 8.0   | 38    | 24    | 7.0   | 4.2   | 3.2   | 3.4   |
| 19                                                       | 2.9   | 4.5   | 3.2   |       |       | 14    | 39    | 20    | 6.7   | 4.2   | 3.2   | 3.4   |
| 20                                                       | 2.8   | 4.5   | 3.3   |       |       | 20    | 45    | 21    | 6.7   | 4.2   | 3.2   | 3.4   |
| 21                                                       | 2.8   | 4.5   | 3.4   | 4.0   |       | 26    | 39    | 20    | 6.3   | 4.2   | 3.2   | 3.4   |
| 22                                                       | 2.9   | 4.4   | 3.2   |       |       | 28    | 29    | 22    | 6.1   | 4.2   | 6.6   | 3.7   |
| 23                                                       | 3.1   | 4.3   | 3.2   |       |       | 24    | 22    | 19    | 6.1   | 4.0   | 4.2   | 3.5   |
| 24                                                       | 3.1   | 4.0   | 3.4   |       |       | 24    | 20    | 18    | 5.9   | 3.9   | 3.5   | 3.5   |
| 25                                                       | 3.1   | 3.8   | 3.5   |       |       | *27   | 20    | 17    | 5.7   | 3.9   | 3.2   | 3.7   |
| 26                                                       | 3.1   | 3.5   | 3.2   | 4.0   |       | 25    | 18    | 16    | 5.7   | 3.9   | 3.1   | 3.7   |
| 27                                                       | 3.2   | 3.0   | 2.7   |       |       | 23    | 18    | 16    | 5.3   | 3.9   | 3.1   | 3.7   |
| 28                                                       | 3.7   | 3.5   | 3.2   |       |       | 26    | 17    | 16    | 5.5   | 4.0   | 3.1   | 3.9   |
| 29                                                       | 3.2   | 4.0   | 4.0   |       |       | 25    | 18    | 15    | 5.3   | 8.1   | 3.1   | 3.9   |
| 30                                                       | 3.5   | 4.2   | 4.2   |       |       | 28    | 18    | 15    | 5.1   | 5.3   | 3.1   | 3.9   |
| 31                                                       | 3.9   |       | 4.4   |       |       | 26    |       | 14    |       | 4.9   | 3.4   |       |
| Total                                                    | 104.9 | 126.4 | 115.0 | 139.5 | 121.0 | 426.9 | 868   | 717   | 263.6 | 137.8 | 115.1 | 126.3 |
| Mean                                                     | 3.38  | 4.21  | 3.71  | 4.5   | 4.17  | 13.8  | 28.9  | 23.1  | 8.79  | 4.45  | 3.71  | 4.21  |
| Ac-ft                                                    | 208   | 251   | 228   | 277   | 240   | 847   | 1,720 | 1,420 | 523   | 273   | 228   | 251   |
| Calendar year 1959: Max 52 Min 2.7 Mean 5.54 Ac-ft 4,010 |       |       |       |       |       |       |       |       |       |       |       |       |
| Water year 1959-60: Max 45 Min 2.7 Mean 8.91 Ac-ft 6,470 |       |       |       |       |       |       |       |       |       |       |       |       |

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 5 to Dec. 14, Dec. 20, Dec. 26 to Mar. 11, Mar. 14-18 (no gage-height record Dec. 27 to Mar. 9; discharge estimated on basis of 1 discharge measurement, engineers' notes, weather records, trend of flow, and records for nearby streams).

## 2420. Coal Creek near Cedar City, Utah

Location.--Lat 37°40'20", long 113°02'05", in NE $\frac{1}{4}$  sec.13, T.36 S., R.11 W., on right bank 300 ft downstream from powerplant, 1.3 miles east of Cedar City, and 4 miles downstream from South Creek.

Drainage area.--80.3 sq mi (revised).

Records available.--May to September 1915 (gage heights and discharge measurements only), October 1915 to July 1916, September 1916 to July 1918, September 1918 to November 1919, June 1935 to September 1937, April 1938 to September 1960. Records prior to November 1919 exclude flow of power canal and records would be equivalent if added.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 6,000 ft (from topographic map). Prior to Mar. 30, 1939, staff gages and Mar. 30, 1939, to May 14, 1945, water-stage recorder, at several sites about 0.5 mile upstream at various datums. May 15, 1945, to Oct. 10, 1951, May 4 to July 2, 1952, water-stage recorder at site 2 miles upstream at different datum.

Average discharge.--24 years (1935-37, 1938-60), 30.7 cfs (22,230 acre-ft per year).

Extremes.--1958-59: Maximum discharge during water year, 1,210 cfs Aug. 3 (gage height, 5.45 ft, from floodmark), from slope-area measurement of peak flow; minimum, 0.4 cfs Dec. 15, result of powerplant regulation.

1959-60: Maximum discharge during water year, 477 cfs Sept. 6 (gage height, 2.20 ft, from floodmark), from rating curve extended above 330 cfs by logarithmic plotting; minimum, 0.3 cfs Nov. 5, 14, 17, 26, Feb. 17, result of powerplant regulation.

1915-19, 1935-60: Maximum discharge observed, 2,910 cfs July 9, 1936 (gage height, 6.4 ft, site and datum then in use), from rating curve extended by broad-crested weir formula; minimum, that of Nov. 5, 14, 17, 26, 1959, Feb. 17, 1960.

Remarks.--Records good except those for periods of no gage-height record during water year 1958-59, which are fair. No diversion above station for irrigation. Diversion above station for municipal supply of Cedar City. Slight regulation of low flow by steam powerplant above station.

Rating tables, Oct. 1, 1958, to Sept. 30, 1960 (gage height, in feet, and discharge, in cubic feet per second)

| Oct. 1, 1958, to<br>Sept. 30, 1959 |     |     |     | Oct. 1, 1959, to<br>Sept. 30, 1960 |     |     |     |
|------------------------------------|-----|-----|-----|------------------------------------|-----|-----|-----|
| 0.9                                | 2.1 | 1.5 | 60  | 0.8                                | 1.6 | 1.2 | 22  |
| 1.0                                | 4.1 | 1.6 | 88  | .9                                 | 3.3 | 1.3 | 35  |
| 1.1                                | 8.4 | 1.7 | 133 | 1.0                                | 6.8 | 1.5 | 78  |
| 1.2                                | 16  | 1.9 | 261 | 1.1                                | 13  | 1.7 | 150 |
| 1.4                                | 43  | 2.1 | 417 |                                    |     |     |     |

Discharge, in cubic feet per second, water year October 1958 to September 1959

| Day                     | Oct.  | Nov.  | Dec.  | Jan.  | Feb.    | Mar.      | Apr.  | May          | June  | July  | Aug.  | Sept. |
|-------------------------|-------|-------|-------|-------|---------|-----------|-------|--------------|-------|-------|-------|-------|
| 1                       | 10    | 10    | a8.6  | 8.4   | 7.8     | 12        | 22    | 55           | 16    | 9.0   | 9.0   | 5.8   |
| 2                       | 10    | 9.7   | a9.2  | 6.7   | 7.2     | 15        | 34    | 46           | 16    | 9.0   | 59    | 5.8   |
| 3                       | 10    | *10   | a10   | 5.0   | 6.7     | 16        | 34    | 31           | 16    | 9.0   | *a350 | 5.8   |
| 4                       | 9.7   | 10    | a11   | 4.1   | 8.4     | 13        | 36    | 27           | 16    | 8.4   | a25   | 5.8   |
| 5                       | 10    | 10    | a11   | 6.2   | 7.8     | 10        | 41    | 23           | 16    | 7.8   | *10   | 5.8   |
| 6                       | 9.7   | 10    | a10   | 8.4   | 7.2     | 10        | 44    | 23           | 16    | 7.8   | 9.0   | 5.8   |
| 7                       | 9.7   | 10    | a10   | 9.0   | 7.8     | 10        | 42    | 26           | 16    | 7.2   | 7.8   | 5.8   |
| 8                       | 9.7   | 9.7   | a10   | 9.0   | 8.4     | 12        | 30    | 27           | 16    | 7.2   | 36    | 5.8   |
| 9                       | 10    | 10    | a10   | 9.0   | 7.8     | 15        | 21    | 27           | 15    | 7.2   | 9.0   | 5.8   |
| 10                      | 10    | 9.7   | a10   | 8.4   | 7.2     | 16        | 21    | 27           | 15    | 7.2   | 8.4   | 5.8   |
| 11                      | 10    | 12    | *10   | 9.7   | 8.4     | 11        | 22    | 34           | 14    | 7.2   | 7.8   | 5.8   |
| 12                      | 10    | 16    | 9.0   | 8.4   | 7.8     | 13        | 24    | 40           | 14    | 7.2   | 7.2   | 6.2   |
| 13                      | 11    | 11    | 7.2   | 9.0   | 8.4     | 16        | 28    | 43           | 14    | 7.2   | 6.7   | 6.7   |
| 14                      | 10    | 11    | 5.4   | 8.4   | 6.7     | 15        | 30    | 41           | 14    | 7.2   | 6.7   | 7.8   |
| 15                      | 10    | 9.7   | 5.8   | 7.8   | 9.0     | 11        | 30    | 34           | 13    | 7.2   | 6.7   | 9.7   |
| 16                      | 10    | 6.7   | 7.8   | 7.8   | 9.7     | 10        | 27    | 27           | 13    | 7.2   | 6.2   | 7.2   |
| 17                      | 10    | 5.4   | 9.7   | 7.8   | 9.7     | 14        | 23    | 26           | 12    | 7.2   | 6.2   | 7.8   |
| 18                      | 10    | a5.0  | 9.0   | 8.4   | 9.0     | 16        | 20    | 22           | 12    | 7.2   | 8.4   | 7.2   |
| 19                      | 10    | a5.4  | 8.4   | 8.4   | 7.8     | 14        | 16    | 21           | 12    | 6.7   | 216   | 6.7   |
| 20                      | 9.7   | a7.2  | 8.4   | 6.2   | 7.8     | 10        | 16    | 19           | 12    | 7.8   | a30   | 6.7   |
| 21                      | 9.7   | a8.2  | 8.4   | 5.4   | 7.8     | 12        | 16    | 19           | 12    | *8.4  | a10   | *6.7  |
| 22                      | 10    | a8.2  | 9.0   | 7.8   | 8.4     | 13        | 21    | 20           | 12    | 7.8   | a7.2  | 6.7   |
| 23                      | 10    | a8.0  | 9.0   | 9.0   | 8.4     | 16        | 34    | 20           | 11    | 7.8   | a5.2  | 6.7   |
| 24                      | 11    | a8.8  | 7.8   | *9.0  | 7.8     | 16        | *40   | 19           | 11    | 7.8   | a14   | 7.2   |
| 25                      | 14    | a10   | 8.4   | 8.4   | 7.2     | *12       | 40    | 20           | 10    | 7.8   | 8.4   | 7.2   |
| 26                      | 13    | a9.6  | 8.4   | 8.4   | 7.8     | 11        | 39    | 20           | 10    | 7.2   | 6.7   | 7.2   |
| 27                      | 11    | a8.4  | 8.4   | 7.8   | *9.0    | 13        | 33    | 20           | 10    | 7.2   | 6.7   | 7.2   |
| 28                      | 11    | a7.4  | 9.0   | 7.8   | 9.7     | 13        | 39    | *18          | 9.7   | 7.2   | 6.7   | 7.2   |
| 29                      | 10    | a7.7  | 7.2   | 7.2   | -       | 12        | 53    | 16           | 9.7   | 7.2   | 6.7   | 7.2   |
| 30                      | 9.7   | a8.1  | 3.8   | 7.8   | -----   | 12        | 65    | 18           | 9.0   | 7.2   | 6.2   | 7.8   |
| 31                      | 10    | ----- | 8.4   | 8.4   | -----   | 13        | ----- | 16           | ----- | 8.4   | 5.8   | ----- |
| Total                   | 318.9 | 272.9 | 268.3 | 243.1 | 226.7   | 402       | 941   | 823          | 392.4 | 235.9 | 909.7 | 200.9 |
| Mean                    | 10.3  | 9.10  | 8.65  | 7.84  | 8.10    | 13.0      | 31.4  | 26.5         | 13.1  | 7.61  | 29.3  | 6.70  |
| Ac-ft                   | 633   | 541   | 532   | 482   | 450     | 797       | 1,870 | 1,650        | 778   | 488   | 1,800 | 398   |
| Calendar year 1958: Max |       |       | 676   |       | Min 3.8 | Mean 49.4 |       | Ac-ft 35,770 |       |       |       |       |
| Water year 1958-59: Max |       |       | 350   |       | Min 3.8 | Mean 14.3 |       | Ac-ft 10,380 |       |       |       |       |

Peak discharge (base, 350 cfs).--Aug. 3 (8 p.m.), 1,210 cfs (5.45 ft); Aug. 8 (1:30 p.m.) discharge unknown (2.97 ft); Aug. 19 (5:30 a.m.) discharge unknown (5.05 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, trend of flow, and records for nearby streams.

## 2420. Coal Creek near Cedar City, Utah--Continued

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     | 7.4   | 8.0   | 6.5   | 5.8   | 8.0   | 7.4   | 16    | 29    | 24    | 9.2   | 6.5   | 16    |
| 2     | 7.4   | 12    | 6.5   | *5.8  | 8.6   | 6.8   | 14    | 35    | 24    | 8.6   | 6.1   | 9.8   |
| 3     | 6.8   | 10    | 5.8   | 6.1   | 7.4   | 6.8   | 21    | 41    | 24    | 8.6   | 6.1   | 6.5   |
| 4     | 6.8   | 9.2   | 4.4   | 6.5   | 8.0   | *6.8  | 30    | 46    | 24    | 8.6   | 5.8   | 7.4   |
| 5     | 6.8   | 5.8   | *2.7  | 6.5   | 8.0   | 8.0   | 34    | 41    | 22    | 8.0   | 5.8   | 12    |
| 6     | 6.8   | 6.5   | 4.0   | 6.8   | 8.0   | 10    | 39    | 53    | 25    | 8.0   | 5.8   | 60    |
| 7     | 6.8   | 7.4   | 5.8   | 6.8   | 8.0   | 12    | *39   | *75   | 30    | 8.6   | 5.8   | 11    |
| 8     | 6.5   | 7.4   | 6.1   | 7.4   | 9.2   | 14    | 41    | 76    | 22    | 8.6   | 5.8   | 7.4   |
| 9     | 6.5   | 7.4   | 6.8   | 7.4   | 9.2   | 15    | 46    | 86    | 19    | 8.6   | 5.8   | 7.4   |
| 10    | 6.5   | 6.8   | 7.4   | 7.4   | 8.6   | 11    | 52    | 102   | 19    | 8.0   | 6.1   | 6.8   |
| 11    | 6.5   | 6.8   | 5.8   | 7.4   | 8.0   | 12    | 54    | 116   | 19    | *7.4  | 5.8   | 6.5   |
| 12    | 6.5   | 6.8   | 5.8   | 7.4   | 5.8   | 12    | 50    | 111   | 18    | 7.4   | 5.8   | 6.5   |
| 13    | 6.5   | 6.5   | 6.5   | 7.4   | 7.4   | 14    | 39    | *93   | 16    | 7.4   | *5.8  | 6.1   |
| 14    | 6.5   | 4.4   | 5.4   | 6.8   | 6.8   | 10    | 46    | 75    | *15   | 7.4   | 5.8   | 6.1   |
| 15    | *6.5  | 6.5   | 5.4   | 7.4   | 6.8   | 6.1   | 50    | 68    | 15    | 6.8   | 5.8   | *6.1  |
| 16    | 6.5   | 6.5   | 6.1   | 6.1   | 7.4   | 8.0   | 48    | 63    | 14    | 6.8   | 5.8   | 6.1   |
| 17    | 6.5   | 5.8   | 6.1   | 6.1   | 5.8   | 8.0   | 43    | 63    | 13    | 6.8   | 5.8   | 6.1   |
| 18    | 6.1   | 6.5   | 6.1   | 8.0   | 6.8   | 12    | 50    | 52    | 12    | 7.4   | 5.8   | 5.8   |
| 19    | 6.5   | 6.8   | 6.1   | 7.4   | 6.8   | 21    | 56    | 41    | 12    | 7.4   | 5.8   | 5.8   |
| 20    | 6.5   | 6.5   | 5.4   | 6.8   | 6.8   | 35    | 68    | *41   | 12    | 7.4   | 5.4   | 5.4   |
| 21    | 6.5   | 6.1   | 6.5   | 7.4   | 6.8   | *37   | 84    | 41    | 12    | 7.4   | 5.4   | 5.4   |
| 22    | 6.5   | 5.4   | 6.5   | 7.4   | 6.5   | 41    | 73    | 39    | 12    | 6.8   | 9.0   | 5.8   |
| 23    | 6.5   | 6.8   | 6.1   | 7.4   | 5.4   | 33    | 54    | 35    | 11    | 6.8   | 8.4   | 5.8   |
| 24    | 6.5   | 6.8   | 6.8   | 8.0   | 8.0   | 29    | 39    | 37    | 10    | 6.8   | 5.8   | 5.8   |
| 25    | 6.8   | 6.5   | 7.4   | 8.0   | 8.0   | 31    | 31    | 29    | 10    | 6.8   | 6.1   | 5.4   |
| 26    | 6.8   | 3.1   | 5.1   | 8.0   | 8.0   | 34    | 29    | 28    | 10    | 6.8   | 6.1   | 5.4   |
| 27    | 6.8   | 2.5   | 4.0   | *7.4  | 7.4   | 29    | 28    | 29    | 10    | 7.4   | 5.8   | 5.6   |
| 28    | 7.4   | 4.7   | 5.1   | 7.4   | 7.4   | 21    | *24   | 28    | 10    | 7.4   | 5.8   | 5.8   |
| 29    | 6.8   | 4.7   | 6.1   | 7.4   | 6.8   | 16    | 25    | 25    | 10    | 11    | 5.8   | 5.8   |
| 30    | 8.0   | 5.8   | 6.1   | 7.4   | ----- | 18    | 25    | 25    | 10    | 8.0   | 5.8   | 5.8   |
| 31    | 8.0   | ----- | 6.5   | 7.4   | ----- | 18    | ----- | 24    | ----- | 7.4   | 5.8   | ----- |
| Total | 209.3 | 196.0 | 180.9 | 220.5 | 214.5 | 542.9 | 1,253 | 1,648 | 484   | 239.6 | 184.1 | 261.4 |
| Mean  | 6.75  | 6.53  | 5.84  | 7.11  | 7.40  | 17.5  | 41.8  | 53.2  | 16.1  | 7.73  | 5.94  | 8.71  |
| Ac-ft | 415   | 389   | 359   | 437   | 425   | 1,080 | 2,490 | 3,270 | 960   | 475   | 365   | 518   |

Calendar year 1959: Max 350 Min 2.5 Mean 13.6 Ac-ft 9,840  
 Water year 1959-60: Max 116 Min 2.5 Mean 15.4 Ac-ft 11,180

Peak discharge (base, 350 cfs).--Sept. 6 (time unknown) 477 cfs (2.20 ft).

\* Discharge measurement made on this day.

## ESCALANTE VALLEY

## 9-4085. Santa Clara-Pinto diversion near Pinto, Utah

Location.--Lat 37°28'00", long 113°28'30", in SW $\frac{1}{4}$  sec.19, T.38 S., R.14 W., on left bank 400 ft downstream from diversion tunnel outlet and 6 miles southeast of Pinto.

Records available.--October 1953 to September 1960 (records of monthly diversion only).  
 Records of daily flow collected by Geological Survey available in Salt Lake City district office.

Gage.--Water-stage recorder and artificial rock-masonry control. Altitude of gage is 6,860 ft (by barometer).

Average discharge.--7 years, 1.77 cfs (1,280 acre-ft per year).

Extremes.--Maximum discharge during year, 22 cfs Apr. 11, May 12; maximum gage height, 1.44 ft Apr. 11; no flow for most of year.

1953-60: Maximum discharge, 72 cfs May 26, 1958 (gage height, 1.96 ft); no flow for most of each year.

Remarks.--Records good. This is a transmountain diversion from a tributary of Santa Clara River in Colorado River basin to Pinto Creek in Escalante Valley in The Great Basin.

Monthly diversion, in acre-feet, water year October 1959 to September 1960

| Month         | Diversion | Month           | Diversion |
|---------------|-----------|-----------------|-----------|
| October.....  | 0         | May.....        | 489       |
| November..... | 0         | June.....       | 46        |
| December..... | 0         | July.....       | 0         |
| January.....  | 0         | August.....     | 0         |
| February..... | 0         | September.....  | 0         |
| March.....    | 94        |                 |           |
| April.....    | 500       | Water year..... | 1,130     |

2437. Cleve Creek near Ely, Nev.  
(Formerly published as Cleveland Creek near Osceola)

Location.--Lat 39°12'50", long 114°32'20", in NW¼ sec.34, T.16 N., R.66 E., on right bank 2 miles downstream from North Fork, 4 miles southwest of Cleveland Ranch headquarters, and 18 miles east of Ely.

Drainage area.--31 sq mi, approximately.

Records available.--June 1914 to December 1916 (published as Cleveland Creek near Osceola), October 1959 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is about 6,200 ft (from topographic map). June 1914 to December 1916 staff gage at site about 3 miles downstream at different datum.

Extremes.--Maximum discharge during year, 13 cfs May 15 (gage height, 2.02 ft); minimum, 2.8 cfs Feb. 27 (gage height, 1.61 ft).  
1914-16, 1959-60: Maximum discharge observed, 44 cfs June 3, 1914; minimum, that of Feb. 27, 1960.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No diversion above station. Practically entire flow diverted for irrigation by Cleveland Ranch below station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.6 | 2.4 | 1.9 | 7.9 |
| 1.7 | 3.6 | 2.0 | 12  |
| 1.8 | 5.4 |     |     |

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     |       | 4.6   | 5.0   | b4.0  | 4.0   | 4.6   | 5.8   | 6.5   | 6.8   | 5.4   | *4.6  | 4.0   |
| 2     |       | 4.6   | 5.0   | b4.0  | b4.0  | b4.5  | 5.4   | 6.5   | *6.8  | 5.4   | 4.4   | 4.1   |
| 3     |       | 4.6   | 5.0   | b4.0  | b5.8  | 4.6   | 5.4   | 6.5   | 7.0   | 5.2   | 4.5   | 4.6   |
| 4     |       | 4.6   | 5.0   | b5.9  | 4.1   | 4.8   | 5.4   | 6.8   | 6.8   | 5.4   | 4.5   | 4.1   |
| 5     |       | 4.4   | b4.7  | a4.2  | 4.0   | 4.8   | 5.4   | 6.8   | 7.0   | 5.4   | 4.5   | 3.8   |
| 6     |       | 4.6   | b4.8  | a4.5  | 4.1   | 4.8   | 5.6   | 6.5   | 7.3   | 5.4   | 4.3   | 3.8   |
| 7     |       | 4.6   | 4.8   | 4.6   | 4.1   | 5.4   | *6.0  | 6.5   | 7.3   | *5.4  | 4.1   | 3.6   |
| 8     |       | 4.6   | *4.8  | 4.4   | 4.6   | 5.4   | 6.0   | 6.5   | 7.0   | 5.4   | 4.1   | 3.6   |
| 9     |       | 4.6   | 5.0   | 4.4   | 4.4   | 4.8   | 6.3   | 6.8   | 7.0   | 5.2   | 4.1   | 3.6   |
| 10    |       | *4.6  | 5.0   | 4.3   | 4.4   | 4.6   | 6.5   | 7.6   | 7.0   | 5.0   | 4.3   | 3.5   |
| 11    | a4.7  | 4.6   | 4.8   | 4.4   | b4.3  | 4.6   | 6.8   | 8.5   | 6.8   | 5.0   | 4.4   | 3.5   |
| 12    |       | 4.6   | b4.4  | 4.4   | b4.2  | 4.8   | 6.8   | *9.6  | 6.5   | 4.8   | 4.4   | 3.5   |
| 13    |       | 4.6   | b4.4  | b4.2  | 4.3   | 5.0   | 6.5   | 11    | 6.5   | 4.8   | 4.6   | 3.6   |
| 14    |       | 4.6   | b4.5  | b4.1  | b4.2  | 4.6   | 6.3   | 12    | 6.5   | 4.8   | 4.3   | 3.5   |
| 15    |       | 5.0   | b4.5  | *b4.0 | b4.2  | *5.0  | 6.3   | 12    | *6.5  | 4.6   | 4.1   | 3.5   |
| 16    |       | 5.0   | b4.6  | b3.9  | b4.3  | 5.0   | 6.5   | 12    | 6.3   | 4.6   | 4.1   | 3.8   |
| 17    |       | 5.0   | 4.8   | b3.8  | *b4.5 | 5.0   | 6.5   | 12    | 6.0   | 5.0   | 4.0   | 4.0   |
| 18    |       | 5.0   | 4.8   | b5.9  | b5.0  | 5.0   | 6.5   | 12    | 5.8   | 4.8   | 4.0   | 3.8   |
| 19    |       | 5.0   | 4.8   | b4.0  | 5.0   | 5.2   | 6.5   | *11   | 5.8   | 4.6   | 3.8   | 3.8   |
| 20    |       | 5.0   | b4.5  | b3.8  | b5.0  | 5.4   | 6.5   | 10    | 5.8   | 4.8   | 3.8   | 3.6   |
| 21    | 4.6   | 5.0   | 5.0   | 3.8   | b4.8  | 5.4   | 6.3   | 9.6   | 5.8   | 4.6   | 3.6   | 3.8   |
| 22    | 4.8   | 4.8   | 4.8   | 3.8   | b4.8  | 5.6   | 6.8   | 9.2   | 5.8   | 4.6   | 3.6   | 3.8   |
| 23    |       | 5.0   | 4.8   | 3.6   | b4.7  | 5.8   | 6.8   | 8.9   | 5.8   | 5.4   | a3.6  | 3.8   |
| 24    |       | 4.8   | 5.0   | 3.8   | b4.5  | 5.8   | 6.8   | 8.9   | 5.6   | 5.0   | a3.6  | 3.8   |
| 25    |       | 4.8   | 4.8   | 4.0   | 5.0   | 5.8   | 6.5   | 8.5   | 5.6   | 4.8   | a3.6  | 3.8   |
| 26    |       | 4.8   | b4.5  | 4.0   | 4.8   | 6.0   | *6.8  | 7.9   | 5.4   | 4.6   | a3.5  | 3.6   |
| 27    | a4.6  | b4.7  | b4.3  | 4.0   | 4.4   | 6.0   | 6.8   | 7.6   | 5.4   | 4.6   | a3.5  | 3.6   |
| 28    |       | 4.8   | b4.4  | 4.0   | b4.4  | 6.5   | 7.0   | 7.3   | 5.2   | 4.8   | a3.5  | 3.8   |
| 29    |       | 4.8   | b4.5  | 4.0   | b4.4  | 6.3   | 6.8   | 7.0   | 5.2   | 4.6   | *3.5  | *3.6  |
| 30    |       | 5.0   | b4.3  | 4.0   | ----- | *6.3  | 6.5   | 7.0   | 5.2   | 4.8   | 3.5   | 3.6   |
| 31    |       | ----- | 4.1   | 4.0   | ----- | 6.0   | ----- | 7.0   | ----- | 5.0   | 3.8   | ----- |
| Total | 144.8 | 142.7 | 145.7 | 125.6 | 128.3 | 163.2 | 190.1 | 266.0 | 187.5 | 153.8 | 123.6 | 112.5 |
| Mean  | 4.67  | 4.76  | 4.70  | 4.05  | 4.42  | 5.26  | 6.34  | 8.58  | 6.25  | 4.96  | 3.99  | 3.75  |
| Ac-ft | 287   | 283   | 289   | 249   | 254   | 324   | 377   | 528   | 372   | 305   | 245   | 223   |

Calendar year 1959: Max - Min - Mean - Ac-ft -  
Water year 1959-60: Max 12 Min 3.5 Mean 5.15 Ac-ft 3,740

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement, weather records, recorded range in stage, and records for Overland Creek near Ruby Valley.

b Stage-discharge relation affected by ice.

## 2447. Overland Creek near Ruby Valley, Nev.

Location.--Lat 40°27'30", long 115°23'30", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.23, T.30 N., R.58 E., on left bank at mouth of canyon, 0.1 mile upstream from Humboldt National Forest boundary, 2 $\frac{1}{2}$  miles north of Ruby Valley Post Office, and 32 miles southeast of Elko.

Drainage area.--9 sq mi, approximately.

Records available.--April to November 1917, March to June 1918, September 1918 (fragmentary), August 1959 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,450 ft (from topographic map). Prior to Aug. 23, 1959, at site about an eighth of a mile downstream at different datum.

Extremes.--1959: Maximum discharge during period August to September, 5.0 cfs Sept. 25 (gage height, 1.13 ft); minimum, 0.5 cfs Sept. 10.  
1959-60: Maximum discharge during water year, 104 cfs May 12 (gage height, 1.93 ft); minimum, 0.6 cfs Dec. 5, result of freezeup.  
1917, 1959-60: Maximum discharge, 143 cfs June 17, 1917 (gage height, 2.77 ft, site and datum then in use); minimum, that of Sept. 10, 1959.

Remarks.--Records good except those for periods of ice effect, which are fair. No diversion above station.

Rating table, Aug. 22, 1959, to Sept. 30, 1960, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| 0.8 | 0.4 | 1.1 | 4.2 | 1.6 | 34  |
| 9   | 1.0 | 1.2 | 7.5 | 1.8 | 64  |
| 1.0 | 2.1 | 1.4 | 18  | 2.0 | 112 |

Discharge, in cubic feet per second, 1959

| Day | Aug. | Sept. | Day | Aug. | Sept. | Day | Aug. | Sept. | Day | Aug. | Sept. | Day | Aug. | Sept. |
|-----|------|-------|-----|------|-------|-----|------|-------|-----|------|-------|-----|------|-------|
| 1   | -    | 0.8   | 7   | -    | 0.6   | 13  | -    | *1.0  | 19  | -    | 1.6   | 25  | 0.9  | 2.4   |
| 2   | -    | .8    | 8   | -    | .6    | 14  | -    | 1.3   | 20  | -    | 1.3   | 26  | .9   | 1.7   |
| 3   | -    | .7    | 9   | -    | .6    | 15  | -    | 1.2   | 21  | -    | 1.3   | 27  | .8   | 1.8   |
| 4   | -    | .6    | 10  | -    | .6    | 16  | -    | 1.2   | 22  | -    | 1.3   | 28  | .8   | 1.7   |
| 5   | -    | .6    | 11  | -    | .6    | 17  | -    | 1.3   | 23  | *0.9 | 1.4   | 29  | .8   | 1.7   |
| 6   | -    | .6    | 12  | -    | .8    | 18  | -    | 1.3   | 24  | .9   | 1.3   | 30  | .7   | 1.7   |

|                     |  |  |  |  |  |  |  |  |  |  |  |  |  |   |      |
|---------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|---|------|
| Total               |  |  |  |  |  |  |  |  |  |  |  |  |  | - | 34.4 |
| Mean                |  |  |  |  |  |  |  |  |  |  |  |  |  | - | 1.15 |
| Runoff in acre-feet |  |  |  |  |  |  |  |  |  |  |  |  |  | - | 68   |

\* Discharge measurement made on this day.

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     | 1.8  | 1.7   | 1.2   |      | 1.1   | 1.4   | 7.1   | 17    | 68    | 14    | 3.7  | 1.3   |
| 2     | 1.7  | 1.7   | b1.2  |      | 1.1   | 1.4   | 7.1   | 18    | 72    | 14    | 3.3  | 1.3   |
| 3     | 1.7  | 1.8   | 1.2   |      | 1.1   | 1.6   | 8.4   | 20    | 72    | 13    | 3.0  | 1.7   |
| 4     | 1.6  | 1.7   | b1.2  |      | 1.1   | 1.6   | 11    | 20    | 72    | 12    | 2.6  | 1.4   |
| 5     | 1.6  | 1.5   | b1.0  |      | 1.2   | 1.7   | 14    | 18    | *64   | 12    | 2.4  | 1.3   |
| 6     | 1.6  | *1.7  | *b1.0 |      | 1.2   | 1.9   | 17    | 20    | 62    | 11    | 2.4  | 1.2   |
| 7     | 1.7  | 1.6   | b1.2  |      | b2.0  | 2.8   | 18    | 22    | 57    | 10    | 2.3  | 1.2   |
| 8     | 1.8  | 1.4   | b1.4  | bl.0 | b5.0  | 3.5   | 19    | 25    | 46    | 9.8   | 2.1  | 1.2   |
| 9     | 2.8  | 1.4   | b1.4  |      | b2.5  | 2.8   | 20    | 29    | 43    | 9.8   | 1.9  | 1.2   |
| 10    | 2.4  | 1.4   | 1.2   |      | b1.6  | b2.5  | 20    | 58    | 41    | 9.3   | 1.9  | 1.2   |
| 11    | 2.3  | 1.4   | 1.0   |      | b1.4  | 2.4   | *20   | 56    | 41    | 8.4   | 1.8  | 1.1   |
| 12    | *2.3 | 1.4   | .9    |      | b2.0  | 2.4   | 19    | *70   | 43    | *8.4  | 1.7  | 1.1   |
| 13    | 2.3  | 1.3   | 1.0   |      | 1.8   | 2.4   | 18    | 68    | 45    | 7.5   | 1.9  | 1.0   |
| 14    | 2.3  | b1.3  | 1.1   |      | 1.8   | b2.4  | 17    | 55    | 41    | 7.1   | 2.3  | 1.0   |
| 15    | 2.3  | 1.6   | 1.2   |      | 1.7   | b2.3  | 17    | 48    | 41    | 6.3   | 1.9  | 1.0   |
| 16    | 2.3  | 1.3   | 1.2   | *1.0 | 1.6   | b2.4  | 17    | 50    | 43    | 6.0   | 1.9  | 1.0   |
| 17    | 2.3  | 1.3   | 1.1   | 1.0  | 1.6   | b2.4  | 16    | 48    | 44    | 5.8   | 1.9  | 1.1   |
| 18    | 2.1  | 1.3   | 1.0   | 1.0  | 1.6   | 2.6   | 16    | 45    | 39    | 5.3   | 1.8  | 1.0   |
| 19    | 2.1  | 1.2   | .9    | 1.0  | 1.6   | 3.5   | 17    | 40    | 34    | 4.7   | 1.7  | 1.0   |
| 20    | 2.1  | 1.2   | .8    | 1.0  | 1.6   | 4.7   | 18    | 35    | 29    | 4.4   | 1.4  | .9    |
| 21    | 2.1  | 1.2   | .9    | 1.0  | 1.6   | 5.6   | 20    | 31    | 24    | 4.2   | 1.3  | *1.1  |
| 22    | 2.1  | b1.2  | .8    | 1.0  | 1.6   | 6.7   | 20    | 28    | 23    | 4.2   | *1.7 | 1.1   |
| 23    | 2.1  | 1.3   | .8    | 1.0  | b1.6  | 7.5   | 20    | 26    | *22   | 4.2   | 1.7  | 1.1   |
| 24    | 2.1  | 1.2   | .8    | 1.0  | b1.5  | *8.2  | 19    | *23   | 21    | 4.0   | 1.7  | 1.0   |
| 25    | 1.9  | 1.2   | b.8   | 1.1  | b1.6  | 9.3   | 18    | 24    | 21    | 3.7   | 1.7  | 1.0   |
| 26    | 1.9  | b1.2  | b.8   | 1.1  | 1.6   | 10    | 17    | 25    | 20    | 3.3   | 1.4  | .9    |
| 27    | 1.8  | b1.2  | b.8   | 1.1  | *1.6  | 10    | 17    | 28    | 19    | 3.5   | 1.3  | .9    |
| 28    | 1.8  | b1.2  | b.8   | 1.1  | 1.4   | 10    | 17    | 32    | 18    | 3.5   | 1.3  | .9    |
| 29    | 1.8  | b1.2  | b1.0  | 1.1  | 1.4   | 8.4   | 16    | 38    | 17    | 3.5   | 1.3  | 1.1   |
| 30    | 1.8  | 1.3   | b1.0  | 1.1  | ----- | 8.0   | 16    | 45    | 15    | 3.5   | 1.3  | 1.0   |
| 31    | 1.8  | ----- | b1.0  | 1.1  | ----- | 7.1   | ----- | 53    | ----- | 4.2   | 1.3  | ----- |
| Total | 62.3 | 41.4  | 31.7  | 31.7 | 48.5  | 139.5 | 496.6 | 1,095 | 1,197 | 220.4 | 59.9 | 33.3  |
| Mean  | 2.01 | 1.38  | 1.02  | 1.02 | 1.67  | 4.50  | 16.6  | 35.3  | 39.9  | 7.11  | 1.93 | 1.11  |
| Ac-ft | 124  | 82    | 63    | 63   | 96    | 277   | 985   | 2,170 | 2,370 | 437   | 119  | 66    |

Calendar year 1959: Max - Min - Mean - Ac-ft -  
Water year 1959-60: Max 72 Min 0.8 Mean 9.45 Ac-ft 6,850

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## 2523. China Spring Creek near Mountain Pass, Calif.

Location.--Lat 35°28'05", long 115°30'30", in E½ sec.31, T.16 N., R.14 E., on upstream right bank of State highway culvert on U. S. Highways 466 and 91, 2.0 miles east of Mountain Pass.

Drainage area.--0.94 sq mi.

Records available.--January 1959 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 5.94 ft above mean sea level, datum of 1959.

Remarks.--No flow since station first established Jan. 14, 1959. No regulation or diversion.

## SALTON SEA BASIN

## 2540.05. Salton Sea near Westmoreland, Calif.

Location.--Lat 33°11'37", long 115°49'54", in NE¼SE¼SW¼ 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 1960. 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 reduced 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. January 1925 to Oct. 22, 1951, staff gages and reference marks at site on western shore 22 miles northwest at datum 0.91 ft lower.

Extremes.--Maximum elevation during year, 234.2 ft below mean sea level Apr. 17-22; minimum, 235.7 ft below mean sea level Oct. 1-7.

1904-60: Maximum elevation, 195.0 ft below mean sea level (former site and datum) in February and March 1907; minimum since 1906, 250.7 ft below mean sea level (former site and datum) during November 1924.

Remarks.--Records excellent. Bottom of sea is 273.5 ft below mean sea level (determined in 1904-5). See WSP 300, 735, and 918 for condensed history of Salton Sea. Area and capacity tables as computed from survey of 1956 above elevation 240 ft below mean sea level and tied in to former survey for portion below this elevation are given in WSP 1564.

Month-end elevations, in feet, below mean sea level, water year  
October 1959 to September 1960

| Date                | Elevation<br>(feet) |
|---------------------|---------------------|
| Sept. 30, 1959..... | 235.7               |
| Oct. 31.....        | 235.5               |
| Nov. 30.....        | 235.4               |
| Dec. 31.....        | 235.2               |
| Jan. 31, 1960.....  | 235.0               |
| Feb. 29.....        | 234.7               |
| Mar. 31.....        | 234.4               |
| Apr. 30.....        | 234.4               |
| May 31.....         | 234.3               |
| June 30.....        | 234.4               |
| July 31.....        | 234.6               |
| Aug. 31.....        | 234.8               |
| Sept. 30.....       | 234.9               |

2557, San Felipe Creek near Julian, Calif.

Location.--Lat 33°07'07", long 116°26'04", in NW 1/4 sec. 23, T. 12 S., R. 5 E., on left bank at bridge on State Highway 78, in Sentenac Canyon, 0.9 mile upstream from Grapevine Canyon and 10 miles northeast of Julian.

Records available.--August 1958 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 1,872.69 ft above mean sea level, datum of 1929).

Extremes.--Maximum discharge during year, 6.2 cfs Dec. 24 (gage height, 1.66 ft); no flow for many days.

1958-60: Maximum discharge, 7.1 cfs Feb. 16, 1959 (gage height, 1.68 ft), from rating curve extended above 2.0 cfs on basis of velocity-area study; no flow for many days each year.

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

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |
|-----|-----|
| 1.1 | 0   |
| 1.2 | .2  |
| 1.3 | .6  |
| 1.4 | 1.3 |
| 1.5 | 2.6 |

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    | 0.3   | 0.3  | 1.1  | 0.8   | 1.1   | 0.6   | 0.3  | 0.1   |      |      |       |
| 2     | 0    | .3    | .3   | .7   | *1.5  | .8    | .6    | .3   | *.1   |      |      |       |
| 3     | .1   | .3    | .3   | .6   | .7    | .8    | .6    | .4   | .1    |      |      |       |
| 4     | *.1  | .3    | .3   | .6   | .7    | .8    | *.6   | *.4  | .1    |      |      |       |
| 5     | .1   | .2    | .3   | .6   | .7    | .8    | .6    | .4   | .1    |      |      |       |
| 6     | .1   | .2    | .3   | .6   | .7    | .8    | .5    | .3   | .1    |      |      |       |
| 7     | .1   | .2    | .3   | .6   | .7    | .8    | .5    | .3   | .1    |      |      |       |
| 8     | .1   | .3    | .3   | .6   | .7    | *.8   | .5    | .2   | .1    |      |      | (*)   |
| 9     | .1   | *.3   | .4   | .6   | 1.0   | .7    | .4    | .2   | .1    |      |      |       |
| 10    | .1   | .3    | *.8  | 1.0  | 1.7   | .7    | .4    | .2   | 0     |      | (*)  |       |
| 11    | .1   | .3    | .4   | 2.0  | *1.1  | .7    | .4    | .1   | 0     |      |      |       |
| 12    | .1   | .3    | .4   | 1.1  | .9    | .7    | .4    | .1   | 0     |      |      |       |
| 13    | .1   | .3    | .4   | .9   | .8    | .7    | .4    | .1   | 0     |      |      |       |
| 14    | .1   | .3    | .4   | *.7  | .8    | .7    | .4    | .1   | 0     |      |      |       |
| 15    | .1   | .3    | .4   | 1.5  | .8    | .7    | .4    | .2   | 0     |      |      |       |
| 16    | .1   | .3    | .4   | .9   | *.8   | .8    | .4    | .2   | 0     |      |      |       |
| 17    | .1   | .3    | .4   | .7   | .8    | .8    | .3    | .2   | 0     |      |      |       |
| 18    | .1   | .3    | .4   | .7   | .8    | .8    | .3    | *.2  | 0     |      |      |       |
| 19    | .1   | .3    | .4   | .8   | 1.3   | .8    | .3    | .2   | 0     |      |      | (*)   |
| 20    | *.1  | .2    | .4   | .8   | .9    | .8    | *.3   | .1   | 0     |      |      |       |
| 21    | .1   | .2    | .5   | .8   | .8    | .8    | .3    | .1   | 0     |      |      |       |
| 22    | .1   | .2    | .4   | .8   | .8    | .8    | .3    | .1   | 0     |      |      |       |
| 23    | .1   | .2    | .4   | .8   | .8    | *.8   | .4    | .1   | 0     |      |      |       |
| 24    | .1   | *.2   | 2.2  | .8   | .8    | .8    | .5    | .1   | 0     |      |      | (*)   |
| 25    | .1   | .2    | 2.1  | .8   | .8    | .8    | .4    | .1   | 0     |      |      |       |
| 26    | .1   | .2    | .7   | .8   | *.8   | .8    | .4    | .1   | 0     |      |      |       |
| 27    | .1   | .2    | .6   | .8   | .8    | .7    | .5    | .1   | 0     |      |      |       |
| 28    | .1   | .3    | .6   | *.8  | .8    | .7    | .5    | .1   | 0     |      | (*)  |       |
| 29    | .1   | .3    | *.6  | .7   | 1.7   | .7    | .4    | .1   | *0    |      |      |       |
| 30    | .5   | .3    | .6   | .7   | ----- | .6    | .4    | .1   | ----- |      |      |       |
| 31    | .3   | ----- | .6   | .7   | ----- | ----- | ----- | .1   | ----- |      |      |       |
| Total | 3.7  | 7.9   | 16.9 | 25.6 | 26.3  | 23.9  | 13.0  | 5.6  | 0.9   | 0    | 0    | 0     |
| Mean  | 0.12 | 0.26  | 0.55 | 0.83 | 0.91  | 0.77  | 0.43  | 0.18 | 0.03  | 0    | 0    | 0     |
| Ac-ft | 7.3  | 16    | 34   | 51   | 52    | 47    | 26    | 11   | 1.8   | 0    | 0    | 0     |

Calendar year 1959: Max 3.4 Min 0 Mean 0.33 Ac-ft 241

Water year 1959-60: Max 2.2 Min 0 Mean 0.34 Ac-ft 246

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

2558. Coyote Creek near Borrego Springs, Calif.

Location.--Lat 33°22'30", long 116°25'25", in SE $\frac{1}{4}$  sec.23, T.9 S., R.5 E., on right bank 500 ft upstream from Box Canyon and 9 miles northwest of Borrego Springs.

Drainage area.--144 sq mi.

Records available.--October 1950 to September 1960.

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

Average discharge.--10 years (1950-60), 2.47 cfs (1,790 acre-ft per year).

Extremes.--Maximum discharge during year, 845 cfs Aug. 31 (gage height, 9.95 ft), from field estimate of peak flow and rating curve extended above 5 cfs on basis of slope-area measurement at gage height 8.90 ft; minimum daily, 1.2 cfs for several days.

1950-60: Maximum discharge, 3,800 cfs July 28, 1951 (gage height, 14.14 ft, from floodmark), from rating curve extended above 4 cfs on basis of slope-area measurement of peak flow; minimum daily, 1.1 cfs Aug. 19, 20, 1959.

Remarks.--Records good except those above 5 cfs and those for periods of no gage-height record, which are poor. No regulation or diversion.

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                                                        | 1.7  | 1.9   | a2.3 | 2.2  | 1.9   | 2.3  | 1.7   | 2.1  | 1.7   | 1.2  | 1.3  | a3.1  |
| 2                                                        | 1.7  | 1.9   | a2.3 | 2.2  | 2.1   | 2.3  | 1.7   | 2.1  | *1.7  | 1.2  | 1.3  | a2.5  |
| 3                                                        | 1.7  | 1.9   | a2.3 | 2.2  | 2.1   | 2.3  | 1.9   | 2.2  | 1.8   | 1.2  | 1.3  | a2.5  |
| 4                                                        | 1.7  | 1.9   | a2.3 | 2.2  | 2.2   | 2.3  | *2.1  | *2.1 | 1.7   | 1.2  | 1.2  | a2.1  |
| 5                                                        | 1.7  | 1.8   | a2.3 | 2.2  | 2.2   | 2.3  | 1.9   | 2.1  | 1.7   | 1.2  | 1.3  | a2.1  |
| 6                                                        | *1.7 | 1.8   | a2.3 | 2.2  | 2.2   | 2.3  | 1.9   | 1.9  | 1.7   | 1.2  | 1.2  | a2.1  |
| 7                                                        | 1.7  | 1.8   | a2.3 | 2.2  | 2.2   | *2.3 | 1.9   | 1.9  | 1.6   | 1.2  | 1.2  | *1.9  |
| 8                                                        | 1.7  | 1.9   | a2.3 | 2.2  | 2.2   | 2.3  | 1.9   | 1.9  | 1.6   | 1.2  | 1.2  | 1.8   |
| 9                                                        | 1.7  | 1.9   | a2.3 | 2.2  | 2.2   | 2.3  | 1.8   | 1.8  | 1.6   | 1.2  | 1.2  | 1.6   |
| 10                                                       | 1.7  | *1.9  | *2.5 | 2.3  | 2.3   | 2.3  | 1.7   | 1.8  | 1.6   | 1.3  | 1.3  | a2.1  |
| 11                                                       | 1.7  | 1.9   | 2.2  | 2.2  | *2.3  | 2.5  | 1.7   | 1.7  | 1.6   | 1.3  | *1.3 | a3.1  |
| 12                                                       | 1.7  | 1.9   | 2.1  | 2.2  | 2.3   | 2.5  | 1.7   | 1.6  | 1.6   | 1.3  | 1.3  | a3.1  |
| 13                                                       | 1.7  | 1.9   | a1.9 | *2.1 | 2.3   | 2.6  | 1.7   | 1.6  | 1.6   | 1.3  | 1.2  | a2.5  |
| 14                                                       | 1.7  | 2.1   | a1.9 | 2.2  | 2.3   | 2.6  | 1.7   | 1.6  | 1.6   | 1.3  | 1.2  | a2.5  |
| 15                                                       | 1.7  | 2.2   | a1.9 | 2.2  | 2.3   | 2.5  | 1.7   | 1.6  | 1.6   | 1.3  | 1.2  | a2.5  |
| 16                                                       | 1.7  | 2.2   | a1.9 | 2.1  | 2.2   | 2.6  | 1.7   | 1.6  | *1.6  | 1.3  | 1.2  | a2.5  |
| 17                                                       | 1.6  | 2.2   | a1.9 | 2.1  | 2.2   | 2.6  | 1.7   | 1.6  | 1.6   | 1.3  | 1.2  | a2.5  |
| 18                                                       | 1.6  | 2.2   | a1.9 | 2.1  | 2.2   | 2.5  | 1.7   | *1.6 | 1.6   | 1.3  | 1.2  | a2.5  |
| 19                                                       | 1.6  | 2.2   | a1.9 | 2.1  | 2.2   | 2.3  | 1.7   | 1.7  | 1.6   | 1.3  | 1.2  | *1.9  |
| 20                                                       | 1.6  | 2.2   | a1.9 | 2.1  | 2.2   | 2.3  | 1.7   | 1.7  | 1.6   | 1.3  | 1.4  | 1.9   |
| 21                                                       | 1.7  | 2.2   | a1.9 | 2.1  | 2.1   | 2.3  | *1.8  | 1.6  | 1.6   | 1.3  | 1.4  | 1.9   |
| 22                                                       | *1.7 | a2.2  | a1.9 | 2.1  | 2.1   | 2.3  | 1.9   | 1.6  | 1.6   | 1.4  | 1.4  | 1.9   |
| 23                                                       | 1.8  | a2.2  | a1.9 | 2.1  | 2.1   | *2.3 | 2.1   | 1.7  | 1.6   | 1.3  | 1.4  | 1.9   |
| 24                                                       | 1.8  | *2.2  | 1.9  | 2.1  | 2.2   | 2.3  | 2.1   | 1.7  | 1.5   | 1.3  | 1.4  | 1.9   |
| 25                                                       | 1.8  | 2.3   | 2.5  | 2.1  | 2.2   | 2.2  | 2.1   | 1.7  | 1.5   | 1.3  | *1.4 | 1.9   |
| 26                                                       | 1.8  | 2.3   | 2.5  | 2.1  | *2.2  | 2.1  | 2.1   | 1.7  | 1.5   | 1.3  | 1.4  | 1.9   |
| 27                                                       | 1.8  | 2.3   | 2.2  | 2.1  | 2.2   | 1.8  | 2.1   | 1.7  | 1.5   | 1.3  | 1.4  | 1.9   |
| 28                                                       | 1.9  | a2.3  | 2.1  | *1.9 | 2.2   | 1.8  | 2.1   | 1.7  | 1.4   | 1.3  | 1.4  | 1.9   |
| 29                                                       | 1.9  | a2.3  | *2.1 | 1.9  | 2.6   | 1.8  | 2.1   | 1.7  | 1.3   | *1.4 | 1.4  | 1.9   |
| 30                                                       | 1.9  | a2.3  | 2.1  | 1.9  | ----- | 1.7  | 2.1   | 1.7  | *1.3  | 1.4  | 1.4  | 1.9   |
| 31                                                       | 1.9  | ----- | 2.2  | 1.9  | ----- | 1.7  | ----- | 1.7  | ----- | 1.4  | *3.7 | ----- |
| Total                                                    | 55.6 | 62.3  | 66.0 | 65.8 | 64.0  | 70.3 | 56.0  | 54.7 | 47.5  | 39.8 | 75.9 | 84.7  |
| Mean                                                     | 1.73 | 2.08  | 2.13 | 2.12 | 2.21  | 2.27 | 1.87  | 1.76 | 1.58  | 1.28 | 2.45 | 2.82  |
| Ac-ft                                                    | 106  | 124   | 131  | 131  | 127   | 139  | 111   | 108  | 94    | 79   | 151  | 168   |
| Calendar year 1959: Max 24 Min 1.1 Mean 2.08 Ac-ft 1,500 |      |       |      |      |       |      |       |      |       |      |      |       |
| Water year 1959-60: Max 37 Min 1.2 Mean 2.04 Ac-ft 1,470 |      |       |      |      |       |      |       |      |       |      |      |       |

Peak discharge (base, 50 cfs).--Aug. 31 (5:30 p.m.) 845 cfs (9.95 ft); Sept. 7 (8 p.m.) 530 cfs (9.9 ft, from floodmark).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 3 discharge measurements, 2 field estimates of peak flow, recorded range in stage, or interpolated.

2558.1, Palm Canyon Creek near Borrego Springs, Calif.

Location.--Lat 33°16'40", long 116°25'50", in NW¼ sec.26, T.10 S., R.5 E., on left bank 3.5 miles northwest of Borrego Springs.

Drainage area.--21.7 sq mi.

Records available.--October 1950 to September 1960.

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

Average discharge.--10 years, 0.49 cfs (355 acre-ft per year); median of yearly mean discharges, 0.4 cfs (290 acre-ft per year).

Extremes.--Maximum discharge during year, 5.1 cfs Feb. 10 (gage height, 1.97 ft); no flow for several months.

1950-60: 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.

Note.--The maximum discharge for water year 1955, not previously published, has been determined as about 2,000 cfs Aug. 23, 1955 (gage height, 9.9 ft, from floodmarks).

Remarks.--Records fair. Discharge measurements or observations of no flow generally made twice a month. No regulation or diversion.

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    | 0.6  | 0.4   | 2.0  | 0.2   | 0    |      |      |      |       |
| 2     |      |      | 0    | .5   | 2.0   | 1.8  | .2    | 0    |      |      |      |       |
| 3     |      |      | 0    | .4   | 1.1   | 1.2  | .2    |      |      |      |      |       |
| 4     |      |      | 0    | .4   | .8    | .9   | .1    | .3   |      |      |      |       |
| 5     |      |      | 0    | .4   | .7    | .7   | .1    | .2   |      |      |      |       |
| 6     |      |      | .1   | .4   | .7    | .7   | .1    | .1   |      |      |      |       |
| 7     |      |      | .1   | .4   | .6    | .6   | .1    | 0    |      |      |      |       |
| 8     |      |      | .2   | .4   | .6    | .6   | .1    | 0    |      |      |      |       |
| 9     |      |      | .2   | .4   | 1.4   | .6   | .1    | 0    |      |      |      |       |
| 10    |      |      | .5   | .6   | 3.5   | .6   | 0     | 0    |      |      |      |       |
| 11    |      |      | .3   | .8   | 2.8   | .6   | 0     | 0    |      |      |      |       |
| 12    |      |      | .2   | 1.5  | 2.0   | .6   | 0     | 0    |      |      |      |       |
| 13    |      |      | .2   | 1.1  | 1.8   | .5   | 0     | 0    |      |      |      |       |
| 14    |      |      | .3   | 1.0  | 1.7   | .5   | 0     | 0    |      |      |      |       |
| 15    |      |      | .3   | 1.3  | 1.5   | .5   | 0     | 0    |      |      |      |       |
| 16    |      |      | .3   | 1.0  | 1.4   | .5   | 0     | 0    |      |      |      |       |
| 17    |      |      | .3   | .8   | 1.4   | .5   | 0     | 0    |      |      |      |       |
| 18    |      |      | .3   | .9   | 1.4   | .4   | 0     | 0    |      |      |      |       |
| 19    |      |      | .3   | .8   | 1.0   | .4   | 0     | 0    |      |      |      |       |
| 20    |      |      | .3   | .7   | .7    | .3   | 0     | 0    |      |      |      |       |
| 21    |      |      | .5   | .7   | .7    | .3   | 0     | 0    |      |      |      |       |
| 22    |      |      | .4   | .6   | .7    | .3   | 0     | 0    |      |      |      |       |
| 23    |      |      | .4   | .6   | .7    | .3   | 0     | 0    |      |      |      |       |
| 24    |      |      | 1.3  | .6   | .6    | .3   | 0     | 0    |      |      |      |       |
| 25    |      |      | 1.0  | .4   | .6    | .3   | 0     | 0    |      |      |      |       |
| 26    |      |      | .6   | .5   | .6    | .3   | 0     | 0    |      |      |      |       |
| 27    |      |      | .5   | .5   | .6    | .3   | .1    | 0    |      |      |      |       |
| 28    |      |      | .4   | .4   | .6    | .4   | .3    | 0    |      |      |      |       |
| 29    |      |      | .4   | .4   | 1.6   | .4   | .1    | 0    |      |      |      |       |
| 30    |      |      | .4   | .4   | ----- | .2   | .1    | 0    |      |      |      |       |
| 31    |      |      | .6   | .4   | ----- | .2   | ----- | 0    |      |      |      |       |
| Total | 0    | 0    | 10.4 | 19.9 | 34.2  | 17.8 | 1.8   | 0.7  | 0    | 0    | 0    | 0     |
| Mean  | 0    | 0    | 0.34 | 0.64 | 1.18  | 0.57 | 0.06  | 0.02 | 0    | 0    | 0    | 0     |
| Ac-ft | 0    | 0    | 21   | 39   | 68    | 35   | 3.6   | 1.4  | 0    | 0    | 0    | 0     |

Calendar year 1959: Max 3.9

Min 0

Mean 0.19

Ac-ft 139

Water year 1959-60: Max 3.5

Min 0

Mean 0.23

Ac-ft 168

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

## 2560. Whitewater River at White Water, Calif.

Location.--Lat 33°56'48", long 116°38'24", in NW¼NW¼NE¼ sec.2, T.3 S., R.3 E., on right bank 1.5 miles north of White Water and 3½ miles upstream from San Geronio River.

Drainage area.--57.4 sq mi.

Records available.--October 1948 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 1,610.98 ft above mean sea level, adjustment of 1934. Prior to Apr. 13, 1960, supplementary water-stage recorder and sharp-crested weir on diversion channel 400 ft west and 500 ft downstream from base gage. 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.--12 years, 11.0 cfs (7,960 acre-ft per year, unadjusted; average combined discharge of river and infiltration line, 11 years (1949-60), 12.7 cfs (9,190 acre-ft per year); median of combined yearly mean discharges, 10 cfs (7,200 acre-ft per year).

Extremes.--Maximum discharge during year, 140 cfs Feb. 2 (gage height, 6.79 ft); minimum daily, 2.8 cfs Oct. 25, 31.

1948-60: Maximum discharge, about 1,500 cfs Apr. 3, 1958 (gage height, 8.35 ft), from rating curve extended above 680 cfs by logarithmic plotting; no flow Jan. 9, 11, 1957.

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

Remarks.--Records poor. Discharge measurements generally made twice a month. Monthly runoff is adjusted for flow from infiltration line, rising water, open sump and well that bypasses 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.

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     | e5    | 4.8   | 6.1   | 7.5   | 9.0   | a15   | e8    | a8    | 7.0   | 5.7   | 7.0   | 5.3   |
| 2     | e5    | 7.5   | 6.1   | 11    | 25    | 8.0   | e8    | a7    | 7.0   | 8.8   | 7.0   | 5.3   |
| 3     | e4    | 5.6   | 6.1   | 8.5   | a7    | 8.0   | a7    | 7.5   | 9.3   | 7.0   | 5.7   |       |
| 4     | e3    | 5.2   | 6.1   | 9.0   | a7    | 7.5   | 8.5   | a6    | 7.0   | 9.3   | 6.5   | 9.3   |
| 5     | e8    | 4.8   | 6.1   | 6.6   | e6    | e7    | 7.5   | a6    | 7.0   | 8.3   | 6.5   | 12    |
| 6     | e7    | 7.5   | 6.6   | 6.6   | e6    | e6    | 7.5   | a5    | 6.1   | 8.8   | 6.5   | 11    |
| 7     | e7    | 5.6   | 7.5   | 6.6   | e5    | 6.1   | 8.5   | a5    | 6.5   | 8.8   | 6.5   |       |
| 8     | e8    | 7.5   | 8.0   | 5.6   | e20   | 7.0   | 8.0   | a5    | 9.3   | 8.3   | a6.5  | 9.3   |
| 9     | e7    | 6.6   | 8.5   | 7.5   | e40   | 7.0   | 7.0   | 5.3   | 7.0   | 7.8   | a6.5  | 8.8   |
| 10    | e6    | 7.5   | 10    | 10    | e20   | 7.5   | 7.0   | 4.4   | 6.5   | 8.3   | a6.5  | 8.3   |
| 11    | e6    | 7.5   | 9.5   | 8.0   | e9    | 8.0   | 8.1   | 3.8   | 6.5   | 8.3   | a6.5  | 8.3   |
| 12    | e7    | e6    | 9.5   | 16    | e8    | 8.5   | 7.5   | 4.4   | 6.5   | 8.3   | a6.5  | 7.0   |
| 13    | e6    | e6    | 10    | 11.0  | a7    | 9.0   | 7.8   | 7.4   | 6.5   | 7.8   | a6.5  | 5.3   |
| 14    | e6    | a6    | 9.5   | 9.0   | a6    | 9.0   | 7.8   | e6    | 6.5   | 6.7   | a6.5  | 6.1   |
| 15    | e6    | a6    | 8.5   | 8.5   | e5    | 9.5   | 7.8   | e6    | 6.5   | 6.7   | a6.5  | 6.1   |
| 16    | e6    | a6    | 7.5   | 8.5   | e5    | 9.5   | 7.8   | e6    | 6.5   | 7.8   | a6.5  | 6.1   |
| 17    | e6    | a6    | 8.0   | 8.0   | 5.2   | 6.6   | 7.4   | e8    | 7.6   | 7.8   | a6.5  | 6.5   |
| 18    | e5    | a6    | 8.5   | 8.0   | 5.6   | 4.8   | a7    | e8    | 7.0   | 7.4   | 6.5   | 6.5   |
| 19    | e6    | 6.6   | 8.5   | 7.5   | 5.6   | 5.6   | a7    | e7    | 7.4   | 6.1   | 6.5   | 6.5   |
| 20    | e6    | 9.0   | 8.5   | 7.5   | 5.2   | 4.8   | 7.0   | e8    | 7.0   | 7.4   | 6.5   | 6.5   |
| 21    | e6    | 7.0   | 15    | 7.5   | 5.6   | 4.4   | 7.0   | e8    | 5.7   | 7.4   | 6.5   | 6.5   |
| 22    | e6    | 7.5   | 8.0   | 7.5   | 5.6   | 4.0   | 8.8   | e8    | 4.7   | 7.7   | 6.1   | 6.5   |
| 23    | e6    | 8.5   | 7.5   | 6.6   | 5.2   | 5.2   | 10    | 7.8   | 5.3   | 5.0   | 7.4   | 5.7   |
| 24    | e4    | 7.5   | 24    | 7.5   | 5.0   | 7.5   | 9.3   | 7.0   | 5.2   | 4.1   | 7.4   | 6.1   |
| 25    | 2.8   | 8.0   | 56    | 7.5   | 5.2   | 7.5   | 7.8   | 7.0   | 3.6   | 5.4   | 6.5   | 7.0   |
| 26    | 4.4   | 8.0   | 40    | e10   | 5.6   | 8.0   | 7.0   | 6.5   | 3.6   | 7.0   | 6.5   | 6.5   |
| 27    | 6.6   | 8.5   | 15    | e8    | 5.6   | 8.0   | 26    | 6.7   | 4.2   | 7.0   | 6.5   | 6.1   |
| 28    | 7.0   | 8.5   | 7.0   | e7    | 6.1   | 9.0   | e18   | 7.0   | 4.9   | 7.0   | 5.5   | 6.1   |
| 29    | 6.6   | 8.0   | 5.2   | 7.0   | 32    | 8.5   | e10   | 7.0   | 4.8   | 7.0   | 6.1   | 6.5   |
| 30    | 4.4   | 6.1   | 6.1   | 10    | ----- | ----- | e8    | 7.0   | 4.9   | 7.0   | 5.7   | 6.5   |
| 31    | 2.8   | ----- | 8.0   | 7.0   | ----- | ----- | e8    | 7.0   | ----- | 7.0   | 5.3   | ----- |
| Total | 176.6 | 205.3 | 350.9 | 256.5 | 282.5 | 232.5 | 265.1 | 202.3 | 183.5 | 229.3 | 201.0 | 214.4 |
| Mean  | 5.70  | 6.84  | 11.3  | 8.27  | 9.74  | 7.50  | 8.84  | 6.53  | 6.12  | 7.40  | 6.48  | 7.15  |
| Ac-ft | 350   | 407   | 696   | 509   | 560   | 461   | 526   | 401   | 364   | 455   | 399   | 425   |
| (+)   | 22    | 30    | 39    | 49    | 57    | 48    | 38    | 15    | 15    | 14    | 13    | 13    |
| (*)   | 47    | 40    | 61    | 81    | 72    | 101   | 85    | 61    | 76    | 48    | 59    | 67    |
| (**)  | 114   | 40    | 30    | 0     | 15    | 11    | 21    | 111   | 99    | 121   | 134   | 90    |
| (**)  | 88    | 95    | 100   | 102   | 110   | 156   | 148   | 158   | 94    | 87    | 79    | 70    |

Adjusted for rising water, infiltration line, and pumped water

| Ac-ft | 533 | 517 | 826 | 639 | 704 | 621 | 670 | 588 | 554 | 638 | 605 | 595 |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

Observed

|                         |     |     |     |      |      |       |       |
|-------------------------|-----|-----|-----|------|------|-------|-------|
| Calendar year 1959: Max | 350 | Min | 2.8 | Mean | 10.7 | Ac-ft | 7,750 |
| Water year 1959-60: Max | 56  | Min | 2.8 | Mean | 7.65 | Ac-ft | 5,550 |

Adjusted

|                          |      |       |       |
|--------------------------|------|-------|-------|
| Calendar year 1959: Mean | 12.6 | Ac-ft | 9,130 |
| Water year 1959-60: Mean | 10.3 | Ac-ft | 7,490 |

Peak discharge (base, 100 cfs).--Dec. 25 (8 p.m.) 104 cfs (5.84 ft); Feb. 2 (3 a.m.) 140 cfs (6.79 ft).

† Runoff, in acre-feet, from rising water.

\*\* Runoff, in acre-feet, from infiltration line; furnished by Whitewater Mutual Water Co.

†† Runoff, in acre-feet, pumped from wells in vicinity of gage; furnished by Whitewater Mutual Water Co.

\*\*\* Runoff, in acre-feet, diverted from basin 15 miles upstream; furnished by California Electric Power Co.

a No gage-height record; discharge estimated on basis of 14 discharge measurements. weather records, unpublished records for Whitewater Mutual Water Co.'s diversion, or interpolated.

e Stage-discharge relation indefinite; discharge estimated same as footnote "a" above.

2565. Snow Creek near White Water, Calif.

Location.--Lat 33°52'10", long 116°40'50", in NW¼ 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 1960. Yearly discharge only for 1930, published in WSP 1314.

Gage.--Water-stage recorder and bubble gage. Altitude of gage is 2,100 ft (from topographic map). Prior to Dec. 16, 1927, water-stage recorders at sites 50 and 150 ft downstream at different datums. Dec. 16, 1927, to Sept. 30, 1931, water-stage recorder at site 500 ft upstream at different datum.

Average discharge.--8 years (1922-26, 1928-31, 1959-60), 7.19 cfs (5,210 acre-ft per year).

Extremes.--Maximum discharge during year, 85 cfs Feb. 2 (gage height, 2.12 ft); minimum daily, 2.2 cfs Aug. 1-8.

1921-31, 1959-60: Maximum discharge not determined; minimum daily, that of Aug. 1-8, 1960.

Remarks.--Records good except those above 10 cfs, which are poor. No regulation or diversion. Discharge measurements generally made twice a month.

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     | a3.0 | a3.1  | 3.6   | 4.0   | e5.6  | e8.6  | e5.1  | e6.3  | 4.7   | 2.7  | 2.2  | 2.9   |
| 2     | a3.0 | a3.6  | 3.6   | 3.9   | e29   | e7.2  | e5.0  | e6.1  | 4.7   | 2.7  | 2.2  | 2.9   |
| 3     | a2.9 | a3.3  | 3.6   | 3.8   | e29.2 | e6.4  | e5.0  | e6.1  | 4.8   | 2.7  | 2.2  | 2.7   |
| 4     | a2.9 | a3.3  | 3.6   | 3.7   | e7.4  | e6.0  | e5.0  | e5.9  | 4.7   | 2.7  | 2.2  | 2.5   |
| 5     | a2.9 | a3.2  | 3.6   | 3.7   | e6.3  | e5.6  | e5.0  | a5.9  | 4.8   | 2.8  | 2.2  | 2.4   |
| 6     | a2.9 | a3.2  | 3.6   | 3.7   | e6.1  | e5.6  | e5.5  | a5.9  | 4.6   | 2.8  | 2.2  | 2.4   |
| 7     | a2.9 | a3.2  | 3.6   | 3.7   | e5.9  | e6.1  | e5.6  | a5.9  | 4.5   | 2.8  | 2.2  | 2.4   |
| 8     | a2.9 | a3.2  | 3.9   | 3.7   | e5.9  | e6.4  | e5.5  | a6.1  | 4.2   | 2.8  | 2.2  | 2.4   |
| 9     | a2.9 | a3.2  | e4.1  | 3.7   | e11   | e6.4  | e5.3  | e6.3  | 4.1   | 2.8  | 2.3  | 2.5   |
| 10    | a2.9 | a3.2  | e4.7  | e4.3  | e8.6  | e6.2  | e5.2  | e6.5  | 3.8   | 2.8  | 2.9  | 2.6   |
| 11    | a2.9 | a3.2  | e4.6  | e5.1  | e7.6  | e5.8  | e5.2  | e6.7  | 3.8   | 2.7  | 2.6  | 2.9   |
| 12    | a2.9 | a3.2  | 4.2   | e7.4  | e6.7  | e5.6  | e5.0  | e6.7  | 3.8   | 2.7  | 2.5  | 3.2   |
| 13    | a2.9 | a3.2  | 4.0   | e4.7  | e6.3  | e5.8  | e4.8  | e6.1  | 3.8   | 2.7  | 2.4  | 2.5   |
| 14    | a2.9 | a3.2  | 3.6   | e4.9  | e5.8  | e6.2  | 4.8   | e5.9  | 3.7   | 2.7  | 2.4  | 2.4   |
| 15    | a2.8 | a3.2  | 3.4   | e5.3  | e5.5  | e5.9  | 4.8   | e5.8  | 3.7   | 2.6  | 2.4  | 2.4   |
| 16    | a2.8 | a3.2  | 3.3   | 4.3   | e5.1  | e5.6  | 4.7   | e5.6  | 3.7   | 2.5  | 2.4  | 2.4   |
| 17    | a2.8 | a3.2  | 3.3   | 4.2   | e5.0  | e5.1  | 4.7   | e5.4  | 3.3   | 2.5  | 2.3  | 2.4   |
| 18    | a2.8 | a3.2  | 3.3   | 4.1   | e5.0  | e5.0  | 4.7   | e5.4  | 3.2   | 2.5  | 2.3  | 2.3   |
| 19    | a2.8 | a3.2  | 3.4   | 4.0   | e5.0  | 4.8   | 4.6   | e5.1  | 3.2   | 2.5  | 2.3  | 2.4   |
| 20    | a2.8 | a3.2  | 3.5   | 3.9   | e4.9  | 4.7   | 4.7   | e5.0  | 3.1   | 2.5  | 2.5  | 2.3   |
| 21    | a2.8 | a3.1  | e5.1  | a3.9  | e4.7  | 4.6   | 4.8   | 4.8   | 2.9   | 2.6  | 2.5  | 2.3   |
| 22    | a2.8 | a3.1  | e4.9  | a4.4  | e4.5  | 4.7   | e5.0  | 4.8   | 2.8   | 4.9  | 2.4  | 2.4   |
| 23    | a2.8 | 3.1   | e4.5  | a4.4  | 4.6   | 4.7   | 4.8   | 4.8   | 2.7   | 3.3  | 2.4  | 2.4   |
| 24    | a2.8 | 3.1   | e7.1  | a4.3  | 4.7   | 4.8   | 4.7   | 4.7   | 2.7   | 2.4  | 2.4  | 2.3   |
| 25    | a2.8 | 3.3   | e8.4  | a4.3  | 4.5   | e5.0  | 4.6   | 4.6   | 2.7   | 2.3  | 2.4  | 2.3   |
| 26    | a2.8 | 3.3   | e6.6  | a5.0  | 4.5   | e5.0  | 4.5   | 4.6   | 2.7   | 2.3  | 2.4  | 2.3   |
| 27    | a2.8 | 3.3   | e5.5  | e4.7  | 4.5   | e5.0  | e8.6  | 4.6   | 2.7   | 2.4  | 2.3  | 2.3   |
| 28    | a2.8 | 3.6   | e4.8  | 4.2   | e4.6  | e6.0  | e9.9  | 4.6   | 2.7   | 2.4  | 2.3  | 2.4   |
| 29    | a2.9 | 3.6   | e4.6  | 4.1   | e8.8  | e6.3  | e9.1  | 4.8   | 2.7   | 2.4  | 2.3  | 2.5   |
| 30    | a3.0 | 3.6   | 4.3   | 4.0   | ----- | e5.8  | e6.7  | 4.8   | 2.7   | 2.3  | 2.3  | 2.6   |
| 31    | a3.1 | ----- | 4.3   | 4.0   | ----- | e5.4  | ----- | 4.8   | ----- | 2.3  | 2.4  | ----- |
| Total | 89.0 | 97.6  | 134.6 | 133.4 | 197.3 | 176.3 | 162.9 | 170.6 | 107.5 | 83.1 | 73.0 | 74.7  |
| Mean  | 2.87 | 3.25  | 4.34  | 4.30  | 6.80  | 5.69  | 5.43  | 5.50  | 3.58  | 2.68 | 2.35 | 2.49  |
| Ac-ft | 177  | 194   | 267   | 265   | 391   | 350   | 323   | 338   | 213   | 165  | 145  | 148   |

Calendar year 1959: Max - Min - Mean - Ac-ft -  
 Water year 1959-60: Max 29 Min 2.2 Mean 4.10 Ac-ft 2,980

Peak discharge (base, 50 cfs).--Feb. 2 (1:30 a.m.) 85 cfs (2.12 ft).

a No gage-height record; discharge estimated on basis of unpublished records for Palm Springs Water Co.'s. diversion and 5 discharge measurements.

e Stage-discharge relation indefinite; discharge estimated on basis of unpublished records for Palm Springs Water Co.'s. diversion, 10 discharge measurements, and weather records.

2580. Tahquitz Creek near Palm Springs, Calif.

Location.--Lat 33°48'18", long 116°33'30", in NE $\frac{1}{4}$ SW $\frac{1}{4}$  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 1960.

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.--13 years, 2.82 cfs (2,040 acre-ft per year); median of yearly mean discharges, 1.6 cfs (1,200 acre-ft per year).

Extremes.--Maximum discharge during year, 5.4 cfs Apr. 27 (gage height, 1.27 ft); no flow Oct. 1 to Dec. 21, June 24 to Sept. 30.

1947-60: 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 60 cfs on basis of slope-area measurement of peak flow; no flow for parts of each year.

Remarks.--Records good except those for period of no gage-height record, which are fair. No diversion or regulation above station.

Revisions (water years).--WSP 1244: 1948, 1951.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Mar. 11-13, Apr. 16-26, May 2-12)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.5 | 0   | 0.9 | 1.6 |
| .6  | .2  | 1.0 | 2.4 |
| .7  | .5  | 1.1 | 3.4 |
| .8  | 1.0 | 1.2 | 4.5 |

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    | 0.3  | 0.4   | 1.2  | 3.0   | 2.1  | 0.6   |      |      |       |
| 2     |      |      | 0    | .3   | 2.4   | 1.0  | 3.0   | 2.0  | .5    |      |      |       |
| 3     |      |      | 0    | .3   | 1.2   | .9   | 2.9   | 2.0  | .4    |      |      |       |
| 4     |      |      | 0    | .3   | .9    | .9   | 2.9   | 2.2  | .4    |      |      |       |
| 5     |      |      | 0    | .3   | .8    | .9   | 2.9   | 1.9  | .4    |      |      |       |
| 6     |      |      | 0    | .3   | .8    | .9   | 2.9   | 1.6  | .4    |      |      |       |
| 7     |      |      | 0    | .3   | .8    | 1.0  | 3.0   | 1.6  | .4    |      |      |       |
| 8     |      |      | 0    | .3   | .8    | 1.2  | 2.9   | 1.8  | .3    |      |      |       |
| 9     |      |      | 0    | .3   | .9    | 1.6  | 2.8   | 2.0  | .3    |      |      |       |
| 10    |      |      | 0    | .3   | 1.7   | 1.6  | 2.8   | 1.9  | .3    |      |      |       |
| 11    |      |      | 0    | .4   | 1.2   | 1.7  | 2.7   | 1.9  | .2    |      |      |       |
| 12    |      |      | 0    | .8   | 1.1   | 1.7  | 2.6   | 2.0  | .2    |      |      |       |
| 13    |      |      | 0    | .7   | 1.0   | 2.1  | 2.3   | 2.0  | .2    |      |      |       |
| 14    |      |      | 0    | .6   | .9    | 2.6  | 2.2   | 1.8  | .2    |      |      |       |
| 15    |      |      | 0    | .5   | .9    | 2.4  | 2.3   | 1.8  | .1    |      |      |       |
| 16    |      |      | 0    | .5   | .8    | 2.3  | 2.4   | 1.7  | .1    |      |      |       |
| 17    |      |      | 0    | .5   | .8    | 2.2  | 2.4   | 1.7  | .1    |      |      |       |
| 18    |      |      | 0    | .5   | .8    | 2.2  | 2.4   | 1.6  | .1    |      |      |       |
| 19    |      |      | 0    | .5   | .8    | 2.3  | 2.2   | 1.4  | .1    |      |      |       |
| 20    |      |      | 0    | .5   | .7    | 2.5  | 2.0   | 1.2  | .1    |      |      |       |
| 21    |      |      | 0    | .4   | .7    | 2.6  | 1.8   | 1.2  | .1    |      |      |       |
| 22    |      |      | .2   | .4   | .7    | 2.7  | 1.9   | 1.1  | .1    |      |      |       |
| 23    |      |      | .4   | .4   | .7    | 2.8  | 1.9   | 1.1  | .1    |      |      |       |
| 24    |      |      | .7   | .4   | .7    | 2.7  | 1.9   | 1.1  | 0     |      |      |       |
| 25    |      |      | 1.1  | .4   | .7    | 3.0  | 1.8   | 1.1  | 0     |      |      |       |
| 26    |      |      | .7   | .4   | .7    | 3.1  | 1.8   | 1.0  | 0     |      |      |       |
| 27    |      |      | .5   | .4   | .7    | 3.1  | 3.1   | .8   | 0     |      |      |       |
| 28    |      |      | .4   | .4   | .7    | 3.5  | 3.7   | .8   | 0     |      |      |       |
| 29    |      |      | .4   | .4   | 1.2   | 3.7  | 2.6   | .8   | 0     |      |      |       |
| 30    |      |      | .4   | .4   | ----- | 3.6  | 2.2   | .7   | 0     |      |      |       |
| 31    |      |      | .4   | .4   | ----- | 3.4  | ----- | .7   | ----- |      |      |       |
| Total | 0    | 0    | 5.2  | 12.9 | 26.5  | 67.4 | 75.3  | 46.6 | 5.7   | 0    | 0    | 0     |
| Mean  | 0    | 0    | 0.17 | 0.42 | 0.91  | 2.17 | 2.51  | 1.50 | 0.19  | 0    | 0    | 0     |
| Ac-ft | 0    | 0    | 10   | 26   | 53    | 134  | 149   | 92   | 11    | 0    | 0    | 0     |

Calendar year 1959: Max 36 Min 0 Mean 0.96 Ac-ft 697  
Water year 1959-60: Max 3.7 Min 0 Mean 0.65 Ac-ft 475

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

Note.--No gage-height record Jan. 2-26; discharge estimated on basis of recorded range in stage, weather records, and records for Andreas Creek near Palm Springs.

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.4 E., 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 1960.

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.--24 years (1930-41, 1947-60), 4.54 cfs (3,290 acre-ft per year); median of yearly mean discharges, 0.9 cfs (650 acre-ft per year).

Extremes.--Maximum discharge during year, 76 cfs Sept. 10 (gage height, 2.52 ft, from floodmarks); no flow for most of year.

1930-42, 1947-60: 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 good. No regulation or diversion above station. Discharge measurements or observations of no flow generally made twice a month.

Revisions (water years).--WSP 1314: 1936(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Sept. 10, 11)

|     |    |     |     |
|-----|----|-----|-----|
| 1.1 | 0  | 1.4 | 1.3 |
| 1.2 | .1 | 1.5 | 3.2 |
| 1.3 | .4 | 1.6 | 6.2 |

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    | 5.3  | 0     |     |      |      |      | 0     |
| 2     |      |      |      |      | 2.4  | 5.2  | 0     |     |      |      |      | 0     |
| 3     |      |      |      |      | .9   | 2.4  | 0     |     |      |      |      | 0     |
| 4     |      |      |      |      | .5   | 2.1  | 0     |     |      |      |      | 1.5   |
| 5     |      |      |      |      | .4   | 1.7  | 0     |     |      |      |      | .8    |
| 6     |      |      |      |      | .2   | 1.3  | 0     |     |      |      |      | 0     |
| 7     |      |      |      |      | .1   | 1.1  | 0     |     |      |      |      | 0     |
| 8     |      |      |      |      | 0    | 1.0  | 0     |     |      |      |      | 0     |
| 9     |      |      |      |      | 1.5  | .9   | 0     |     |      |      |      | 0     |
| 10    |      |      |      |      | 2.4  | .8   | 0     |     |      |      |      | 4.0   |
| 11    |      |      |      |      | 2.4  | .7   | 0     |     |      |      |      | 1.1   |
| 12    |      |      |      |      | 1.7  | .6   | 0     |     |      |      |      | 0     |
| 13    |      |      |      |      | 1.3  | .5   | 0     |     |      |      |      | 0     |
| 14    |      |      |      |      | 1.1  | .4   | 0     |     |      |      |      | 0     |
| 15    |      |      |      |      | .9   | .4   | 0     |     |      |      |      | 0     |
| 16    |      |      |      |      | .9   | .3   | 0     |     |      |      |      | 0     |
| 17    |      |      |      |      | .8   | .3   | 0     |     |      |      |      | 0     |
| 18    |      |      |      |      | .8   | .2   | 0     |     |      |      |      | 0     |
| 19    |      |      |      |      | 1.0  | .2   | 0     |     |      |      |      | 0     |
| 20    |      |      |      |      | .7   | .1   | 0     |     |      |      |      | 0     |
| 21    |      |      |      |      | .6   | .1   | 0     |     |      |      |      | 0     |
| 22    |      |      |      |      | .5   | .1   | 0     |     |      |      |      | 0     |
| 23    |      |      |      |      | .5   | .1   | 0     |     |      |      |      | 0     |
| 24    |      |      |      |      | .4   | 0    | 0     |     |      |      |      | 0     |
| 25    |      |      |      |      | .4   | 0    | 0     |     |      |      |      | 0     |
| 26    |      |      |      |      | .4   | 0    | 0     |     |      |      |      | 0     |
| 27    |      |      |      |      | .3   | 0    | 0     |     |      |      |      | 0     |
| 28    |      |      |      |      | .3   | 0    | 0     |     |      |      |      | 0     |
| 29    |      |      |      |      | 4.4  | .1   | 0     |     |      |      |      | 0     |
| 30    |      |      |      |      | 4.4  | .1   | 0     |     |      |      |      | 0     |
| 31    |      |      |      |      | 0    | 0    | 0     |     |      |      |      | 0     |
| Total | 0    | 0    | 0    | 0    | 27.8 | 23.9 | 0.2   | 0   | 0    | 0    | 0    | 7.4   |
| Mean  | 0    | 0    | 0    | 0    | 0.98 | 0.77 | 0.007 | 0   | 0    | 0    | 0    | 0.25  |
| Ac-ft | 0    | 0    | 0    | 0    | 55   | 47   | 0.4   | 0   | 0    | 0    | 0    | 15    |

Calendar year 1959: Max 23 Min 0 Mean 0.23 Ac-ft 164  
Water year 1959-60: Max 5.3 Min 0 Mean 0.16 Ac-ft 117

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

## 2590. Andreas Creek near Palm Springs, Calif.

Location.--Lat 33°45'36", long 116°32'57", in NW $\frac{1}{4}$ SE $\frac{1}{4}$  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 1960.

Gage.--Water-stage recorder 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.--12 years, 2.02 cfs (1,460 acre-ft per year); median of yearly mean discharges, 1.4 cfs (1,000 acre-ft per year).

Extremes.--Maximum discharge during year, 48 cfs July 22 (gage height, 2.40 ft); minimum daily, 0.3 cfs July 2-21, Aug. 13-19, 29, 30.

1948-60: 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 peak flow; minimum daily, 0.3 cfs for many days in 1950-51, 1960.

Remarks.--Records good. One small diversion for domestic use about 1 mile above station. Discharge measurements generally made twice a month.

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     | 0.9  | 1.2   | 1.1  | 2.0  | 2.4   | 3.5  | 1.8   | 1.8  | 1.0   | 0.4  | 0.5  | 0.9   |
| 2     | .8   | 1.4   | 1.1  | 1.8  | 10    | 2.9  | 1.8   | 1.8  | .9    | .3   | .4   | .7    |
| 3     | .7   | 1.2   | 1.1  | 1.8  | 3.5   | 2.9  | 1.7   | 1.8  | .9    | .3   | .4   | .9    |
| 4     | .7   | 1.2   | 1.1  | 1.8  | 3.1   | 2.7  | 1.8   | 1.8  | .8    | .3   | .4   | .9    |
| 5     | .7   | 1.2   | 1.1  | 1.8  | 2.4   | 2.6  | 1.7   | 1.8  | .9    | .3   | .4   | .6    |
| 6     | .7   | 1.2   | 1.1  | 1.8  | 2.0   | 2.6  | 1.7   | 1.5  | .9    | .3   | .4   | .5    |
| 7     | .8   | 1.2   | 1.1  | 1.8  | 1.7   | 2.6  | 2.0   | 1.4  | .8    | .3   | .4   | .5    |
| 8     | .8   | 1.2   | 1.1  | 1.8  | 1.7   | 2.6  | 2.0   | 1.4  | .8    | .3   | .4   | .5    |
| 9     | .8   | 1.2   | 1.1  | 1.8  | 4.4   | 2.6  | 1.8   | 1.4  | .7    | .3   | .4   | .5    |
| 10    | .9   | 1.2   | 2.0  | 2.1  | 4.4   | 2.4  | 2.0   | 1.4  | .7    | .3   | .7   | .6    |
| 11    | .9   | 1.2   | 1.3  | 2.3  | 3.5   | 2.4  | 1.8   | 1.3  | .6    | .3   | .4   | .5    |
| 12    | .9   | 1.2   | 1.3  | 2.9  | 3.1   | 2.4  | 1.8   | 1.3  | .6    | .3   | .4   | .4    |
| 13    | .9   | 1.2   | 1.3  | 2.1  | 2.6   | 2.4  | 1.5   | 1.3  | .6    | .3   | .3   | .4    |
| 14    | .9   | 1.2   | 1.3  | 2.1  | 2.3   | 2.4  | 1.6   | 1.3  | .5    | .3   | .3   | .4    |
| 15    | .9   | 1.2   | 1.3  | 2.3  | 2.3   | 2.3  | 1.5   | 1.3  | .5    | .3   | .3   | .4    |
| 16    | .9   | 1.2   | 1.3  | 2.0  | 2.4   | 2.1  | 1.4   | 1.4  | .5    | .3   | .3   | .4    |
| 17    | .9   | 1.2   | 1.3  | 1.8  | 2.4   | 2.1  | 1.4   | 1.4  | .5    | .3   | .3   | .4    |
| 18    | .9   | 1.1   | 1.3  | 1.7  | 2.4   | 2.1  | 1.3   | 1.4  | .4    | .3   | .3   | .4    |
| 19    | .9   | 1.1   | 1.3  | 1.7  | 2.6   | 2.1  | 1.3   | 1.3  | .4    | .3   | .3   | .4    |
| 20    | 1.0  | 1.1   | 1.3  | 1.7  | 2.4   | 2.1  | 1.3   | 1.3  | .5    | .3   | .4   | .4    |
| 21    | 1.0  | 1.1   | 2.7  | 1.7  | 2.3   | 2.0  | 1.4   | 1.3  | .4    | .3   | .4   | .4    |
| 22    | 1.0  | 1.2   | 1.7  | 1.7  | 2.1   | 2.0  | 1.5   | 1.2  | .4    | 3.8  | .4   | .4    |
| 23    | 1.0  | 1.2   | 1.7  | 1.7  | 2.0   | 2.0  | 1.8   | 1.3  | .4    | 1.1  | .4   | .4    |
| 24    | 1.0  | 1.1   | 2.7  | 1.7  | 2.0   | 2.0  | 1.7   | 1.4  | .4    | .8   | .4   | .4    |
| 25    | 1.0  | 1.1   | 3.5  | 1.7  | 2.0   | 2.1  | 1.5   | 1.4  | .4    | .6   | .4   | .4    |
| 26    | 1.0  | 1.1   | 2.7  | 1.7  | 2.0   | 2.0  | 1.5   | 1.3  | .4    | .5   | .4   | .4    |
| 27    | 1.0  | 1.1   | 2.3  | 1.5  | 2.0   | 2.0  | 4.4   | 1.3  | .4    | .5   | .4   | .4    |
| 28    | 1.0  | 1.1   | 2.0  | 1.5  | 2.3   | 2.4  | 2.9   | 1.2  | .4    | .5   | .4   | .4    |
| 29    | 1.0  | 1.1   | 1.7  | 1.5  | 4.4   | 2.1  | 2.3   | 1.2  | .4    | .6   | .3   | .4    |
| 30    | 1.1  | 1.1   | 1.5  | 1.5  | ----- | 1.8  | 2.0   | 1.2  | .4    | .6   | .3   | .4    |
| 31    | 1.2  | ----- | 2.1  | 1.5  | ----- | 1.8  | ----- | 1.2  | ----- | .5   | .6   | ----- |
| Total | 28.2 | 35.1  | 49.5 | 56.9 | 82.7  | 72.0 | 54.2  | 43.4 | 17.5  | 16.0 | 12.1 | 14.7  |
| Mean  | 0.91 | 1.17  | 1.60 | 1.83 | 2.85  | 2.32 | 1.81  | 1.40 | 0.58  | 0.52 | 0.39 | 0.49  |
| Ac-ft | 56   | 70    | 98   | 113  | 164   | 143  | 108   | 86   | 35    | 32   | 24   | 29    |

Calendar year 1959: Max 24 Min 0.4 Mean 1.33 Ac-ft 963  
 Water year 1959-60: Max 10 Min 0.3 Mean 1.32 Ac-ft 958

Peak discharge (base, 30 cfs).--July 22 (7 p.m.) 48 cfs (2.40 ft).

## 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 left bank on Cottonwood Spring road, 1 mile northwest of Cottonwood Spring.

Drainage area.--0.71 sq mi.

Records available.--October 1959 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 3,100 ft (from topographic map).

Extremes.--Maximum discharge during year, about 1 cfs Sept. 5 (gage height, 1.33 ft), estimated on basis of velocity-area study; no flow all year including maximum day, which was less than 0.05 cfs.

Remarks.--No flow during water year.

## 2602. Pipes Creek near Yucca Valley, Calif.

Location.--Lat 34°10'20", long 116°32'45", in NE<sup>1</sup>/<sub>4</sub> 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. Records available.--September 1958 to September 1960.

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

Remarks.--No flow since station first established Sept. 3, 1958. No regulation or diversion.

## MOJAVE RIVER BASIN

## 2605. Deep Creek near Hesperia, Calif.

Location.--Lat 34°20'30", long 117°13'40", in SE<sup>1</sup>/<sub>4</sub> 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 (revised) southeast of Hesperia.

Drainage area.--137 sq mi.

Records available.--October 1904 to September 1922, October 1929 to September 1960.

Monthly discharge only for some periods, published in WSP 1314. Combined creek and canal October 1950 to September 1960.

Gage.--Water-stage recorder and broad-crested weir. 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.--49 years (1904-22, 1929-60), 69.5 cfs (50,320 acre-ft per year); median of yearly mean discharges, 51 cfs (36,900 acre-ft per year). Average combined discharge of creek and canal, 10 years (1950-60), 41.7 cfs (30,190 acre-ft per year); median of yearly mean combined discharges, 23 cfs (16,700 acre-ft per year).

Extremes.--Maximum discharge during year, 112 cfs Apr. 28 (gage height, 2.24 ft); minimum daily, 0.2 cfs Aug. 4-8.

1904-22, 1929-60: Maximum discharge, 46,600 cfs Mar. 2, 1938, by slope-area measurement of peak flow; minimum, 0.1 cfs at times in 1932-34, 1936.

Remarks.--Records good. Discharge measurements generally made twice 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 1/2 miles above station for irrigation of about 1,500 acres and domestic use below station. No diversion during year.

Revisions (water years).--WSP 1314: 1931(M).

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     | 1.3  | 2.3   | 5.1   | 8.7   | 22    | 36    | 25    | 66    | 6.4   | 1.0  | 0.3  | 0.4   |
| 2     | 1.5  | 3.7   | 5.1   | 6.4   | 33    | 23    | 68    | 5.9   | 1.0   | 1.0  | 3.3  | 10    |
| 3     | 1.9  | 9.7   | 5.1   | 6.6   | 47    | 29    | 22    | 63    | 5.6   | .9   | .3   | 3.2   |
| 4     | 2.3  | 5.8   | 5.1   | 7.3   | 32    | 29    | 21    | 65    | 5.1   | .8   | .2   | .9    |
| 5     | 2.1  | 4.4   | 5.1   | 6.9   | 26    | 30    | 20    | 51    | 4.9   | .8   | .2   | .6    |
| 6     | 2.0  | 4.2   | 5.1   | 7.3   | 24    | 33    | 20    | 41    | 4.9   | .6   | .2   | .6    |
| 7     | 2.0  | 4.2   | 5.1   | 7.1   | 26    | 40    | 19    | 36    | 4.7   | .6   | .2   | .5    |
| 8     | 2.0  | 4.2   | 5.3   | 6.9   | 27    | 42    | 18    | 33    | 4.2   | .6   | .2   | .6    |
| 9     | 2.1  | 4.2   | 5.6   | 6.9   | 57    | 41    | 18    | 29    | 4.2   | .5   | .3   | .6    |
| 10    | 2.1  | 4.2   | 6.2   | 11    | 51    | 40    | 17    | 27    | 4.2   | .5   | .3   | .6    |
| 11    | 2.1  | 4.4   | 9.2   | 29    | 35    | 40    | 16    | 25    | 4.0   | .5   | .3   | .6    |
| 12    | 2.0  | 4.6   | 7.5   | 21    | 29    | 39    | 15    | 21    | 3.8   | .4   | .3   | .6    |
| 13    | 1.9  | 4.6   | 7.3   | 18    | 25    | 44    | 14    | 19    | 3.5   | .4   | .3   | .5    |
| 14    | 1.8  | 4.6   | 6.6   | 14    | 25    | 53    | 13    | 18    | 3.2   | .4   | .3   | .5    |
| 15    | 1.8  | 4.8   | 6.2   | 16    | 23    | 42    | 12    | 16    | 3.1   | .4   | .3   | .5    |
| 16    | 1.8  | 4.9   | 6.2   | 15    | 23    | 36    | 11    | 16    | 2.9   | .4   | .3   | .5    |
| 17    | 1.8  | 4.8   | 6.2   | 9.9   | 23    | 32    | 10    | 11    | 2.8   | .4   | .3   | .6    |
| 18    | 1.7  | 4.8   | 6.2   | 11    | 23    | 29    | 9.8   | 11    | 2.6   | .4   | .3   | .6    |
| 19    | 1.7  | 4.8   | 6.0   | 11    | 24    | 30    | 9.7   | 10    | 2.4   | .3   | .3   | .6    |
| 20    | 1.7  | 4.8   | 4.9   | 9.6   | 22    | 32    | 9.6   | 9.7   | 2.1   | .4   | .4   | .7    |
| 21    | 1.9  | 4.9   | 6.4   | 11    | 21    | 32    | 9.5   | 9.6   | 2.1   | .4   | .4   | .7    |
| 22    | 2.1  | 5.3   | 9.8   | 11    | 20    | 32    | 9.5   | 9.6   | 2.0   | .4   | .4   | .7    |
| 23    | 2.1  | 5.1   | 8.5   | 19    | 19    | 30    | 10    | 9.6   | 1.7   | .4   | .4   | 1.0   |
| 24    | 2.1  | 5.1   | 11    | 18    | 18    | 33    | 17    | 9.4   | 1.5   | .4   | .4   | 1.0   |
| 25    | 2.4  | 5.1   | 26    | 19    | 18    | 34    | 18    | 9.5   | 1.4   | .4   | .4   | 1.0   |
| 26    | 2.3  | 5.1   | 29    | 42    | 18    | 32    | 20    | 9.4   | 1.2   | .4   | .5   | .7    |
| 27    | 2.3  | 5.1   | 19    | 39    | 18    | 29    | 40    | 8.8   | 1.1   | .4   | .5   | .7    |
| 28    | 1.7  | 5.1   | 14    | 30    | 18    | 31    | 93    | 8.5   | 1.0   | .4   | .4   | .9    |
| 29    | 1.4  | 5.1   | 11    | 25    | 21    | 40    | 65    | 7.1   | 1.0   | .4   | .4   | .6    |
| 30    | 1.4  | 5.1   | 9.5   | 23    | ----- | 30    | 63    | 6.8   | 1.0   | .4   | .4   | .7    |
| 31    | 1.8  | ----- | 9.3   | 23    | ----- | 27    | ----- | 5.6   | ----- | .4   | .4   | ----- |
| Total | 59.1 | 145.0 | 272.6 | 489.6 | 796   | 1,080 | 668.1 | 721.6 | 94.3  | 15.7 | 10.2 | 31.7  |
| Mean  | 1.91 | 4.83  | 8.79  | 15.8  | 27.4  | 34.8  | 22.3  | 23.3  | 3.14  | 0.51 | 0.33 | 1.06  |
| Ac-ft | 117  | 288   | 541   | 971   | 1,580 | 2,140 | 1,330 | 1,430 | 187   | 31   | 20   | 63    |

Calendar year 1959: Max 1,540 Min 0.2 Mean 19.4 Ac-ft 14,040  
 Water year 1959-60: Max 93 Min 0.2 Mean 12.0 Ac-ft 8,700

Peak discharge (base, 400 cfs).--No peak above base.

Note.--No diversion by Hesperia Water Co.'s canal during water year; therefore, there is no need to publish a table of combined flows of creek and canal.

## MOJAVE RIVER BASIN

2610. West Fork Mojave River near Hesperia, Calif.

Location.--Lat 34°20'27", long 117°14'24", in SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec.18, T.3 N., R.4 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 1960.

Monthly discharge only for some periods, 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.--49 years (1904-22, 1929-60), 41.3 cfs (29,900 acre-ft per year); median of yearly mean discharges, 24 cfs (17,400 acre-ft per year).

Extremes.--Maximum discharge during year, 856 cfs Sept. 2 (gage height, 4.07 ft, from floodmark); no flow during year except Sept. 2, 3.

1904-22, 1929-60: Maximum discharge, 26,100 cfs Mar. 2, 1938, on basis of slope-area measurement of peak flow; no flow for several months in each year.

Remarks.--Records poor. Water diverted from Lake Gregory above station for domestic use and fire protection. One small diversion for irrigation above station.

Revisions (water years).--WSP 1564: 1930(M), 1932, 1933

Discharge, in cubic feet per second, water year October 1959 to September 1960

Sept. 2..... \*37

3. .3

| Month                                                                 | Cfs-days | Maximum | Minimum | Mean | Runoff in<br>acre-feet |
|-----------------------------------------------------------------------|----------|---------|---------|------|------------------------|
| September 1960.....                                                   | 37.3     | 37      | 0       | 1.24 | 74                     |
| Calendar year 1959.....                                               | -        | 688     | 0       | 6.49 | 4,700                  |
| Water year 1959-60.....                                               | -        | 37      | 0       | .10  | 74                     |
| Peak discharge (base, 500 cfs).--Sept. 2 (4 p.m.) 856 cfs (4.07 ft.). |          |         |         |      |                        |

\* Discharge measurement made on this day. Note.--Flow occurred only on days listed above.  
Observations of no flow generally made twice a month.

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

Location.--Lat 34°34'22", long 117°19'08", in SW¼SW¼SE¼ 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 The Atchison, Topeka and Santa Fe Railway Co. bridge, and 3 miles northwest of Victorville.

Drainage area.--530 sq mi.

Records available.--February 1899 to September 1906, October 1930 to September 1960.

Monthly discharge only for some periods, published in WSP 1314. Prior to October 1936, published as "at Victorville" and as "near Victorville" in 1937.

Gage.--Water-stage recorder. 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, --37 years, 76.9 cfs (55,670 acre-ft per year); median of yearly mean discharges, 43 cfs (31,100 acre-ft per year).

Extremes.--Maximum discharge during year, 94 cfs Dec. 24 (gage height, 1.25 ft); minimum daily, 8.8 cfs Aug. 15, 16.

1930-60: Maximum discharge, 70,600 cfs Mar. 2, 1938 (gage height, 18.7 ft, present datum), by slope-area measurement of peak flow; minimum daily, 6 cfs Aug. 19, 21, 26, 1951.

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

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                       | 19    | 32    | 31    | 39    | 45    | 50    | 39    | 27    | 18     | 10    | 9.9   | 12    |
| 2                       | 20    | 31    | 31    | 39    | 45    | 47    | 34    | 27    | 18     | 10    | 11    | 13    |
| 3                       | 26    | 30    | 31    | 39    | 44    | 42    | 32    | 27    | 18     | 10    | 11    | 14    |
| 4                       | 50    | 27    | 30    | 39    | 42    | 39    | 30    | 27    | 18     | 10    | 11    | 19    |
| 5                       | 32    | 26    | 30    | 39    | 42    | 44    | 29    | 29    | 18     | 10    | 11    | 14    |
| 6                       | 26    | 26    | 30    | 42    | 42    | 45    | 25    | 25    | 18     | 10    | 11    | 13    |
| 7                       | 26    | 27    | 30    | 45    | 42    | 44    | 25    | 25    | 17     | 10    | 10    | 10    |
| 8                       | 26    | 29    | 45    | 42    | 44    | 26    | 22    | 22    | 16     | 10    | 10    | 10    |
| 9                       | 25    | 30    | 31    | 47    | 44    | 38    | 29    | 21    | 16     | 10    | 10    | 10    |
| 10                      | 25    | 31    | 41    | 54    | 44    | 31    | 26    | 21    | 17     | 10    | 11    | 11    |
| 11                      | 25    | 35    | 35    | 54    | 42    | 31    | 25    | 19    | 18     | 10    | 11    | 13    |
| 12                      | 24    | 35    | 34    | 54    | 41    | 32    | 25    | 19    | 15     | 10    | 10    | 13    |
| 13                      | 23    | 35    | 32    | 50    | 42    | 32    | 26    | 20    | 14     | 10    | 10    | 10    |
| 14                      | 24    | 32    | 38    | 48    | 41    | 32    | 26    | 20    | 14     | 10    | 9.3   | 10    |
| 15                      | 25    | 32    | 38    | 50    | 38    | 31    | 24    | 20    | 13     | 9.9   | 8.8   | 10    |
| 16                      | 25    | 32    | 35    | 50    | 39    | 29    | 22    | 21    | 13     | 9.9   | 8.8   | 11    |
| 17                      | 26    | 31    | 35    | 45    | 41    | 28    | 22    | 21    | 13     | 9.9   | 9.9   | 12    |
| 18                      | 26    | 31    | 44    | 47    | 45    | 27    | 22    | 20    | 13     | 9.9   | 9.9   | 12    |
| 19                      | 26    | 31    | 45    | 48    | 44    | 27    | 22    | 20    | 13     | 10    | 9.9   | 13    |
| 20                      | 27    | 31    | 44    | 50    | 41    | 26    | 22    | 21    | 13     | 16    | 9.9   | 14    |
| 21                      | 29    | 31    | 48    | 51    | 56    | 29    | 22    | 21    | 13     | 15    | 9.3   | 13    |
| 22                      | 27    | 31    | 58    | 48    | 61    | 29    | 24    | 25    | 13     | 15    | 9.3   | 13    |
| 23                      | 27    | 31    | 59    | 45    | 53    | 31    | 25    | 24    | 13     | 15    | 9.9   | 13    |
| 24                      | 27    | 34    | 64    | 48    | 47    | 32    | 27    | 26    | 12     | 13    | 12    | 13    |
| 25                      | 29    | 34    | 53    | 48    | 50    | 26    | 25    | 25    | 12     | 12    | 12    | 12    |
| 26                      | 30    | 35    | 45    | 36    | 50    | 25    | 26    | 22    | 11     | 12    | 12    | 12    |
| 27                      | 31    | 34    | 44    | 34    | 48    | 26    | 29    | 20    | 11     | 12    | 12    | 12    |
| 28                      | 32    | 31    | 44    | 32    | 47    | 30    | 27    | 19    | 11     | 12    | 13    | 12    |
| 29                      | 31    | 31    | 39    | 32    | 54    | 35    | 36    | 19    | 10     | 11    | 13    | 12    |
| 30                      | 31    | 31    | 39    | 34    | ----- | 39    | 31    | 20    | 10     | 10    | 12    | 12    |
| 31                      | 32    | ----- | 39    | 35    | ----- | 38    | ----- | 20    | -----  | 9.9   | 12    | ----- |
| Total                   | 852   | 942   | 1,226 | 1,567 | 1,312 | 1,057 | 803   | 693   | 429    | 342.5 | 329.9 | 368   |
| Mean                    | 27.5  | 31.4  | 39.5  | 44.1  | 45.2  | 34.1  | 26.8  | 22.4  | 14.3   | 11.0  | 10.6  | 12.3  |
| Ac-ft                   | 1,690 | 1,870 | 2,430 | 2,710 | 2,600 | 2,100 | 1,590 | 1,370 | 851    | 679   | 654   | 730   |
| Calendar year 1959: Max |       | 522   |       | Min   | 9.7   | Mean  | 29.0  | Ac-ft | 21,000 |       |       |       |
| Water year 1959-60: Max |       | 64    |       | Min   | 8.8   | Mean  | 26.6  | Ac-ft | 19,270 |       |       |       |

Peak discharge (base, 200 cfs).--No peak above base.

## 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 1960.

Gage.--Water-stage recorder. Altitude of gage is 2,090 ft (from topographic map).

Average discharge.--30 years, 26.5 cfs (19,190 acre-ft per year); median of yearly mean discharges, zero cfs.

Extremes.--No flow during year.

1930-60: Maximum discharge, 64,300 cfs Mar. 3, 1938 (gage height, 8.60 ft), by slope-area measurement of peak flow; no flow for several months in each year.

Remarks.--No flow since Oct. 24, 1958. Observations of no flow generally made once a month. 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.

Revisions (water years).--WSP 1564: 1932.

## 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 1960.

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.--11 years, 2.34 cfs (1,690 acre-ft per year); median of yearly mean discharges, 1.3 cfs (940 acre-ft per year).

Extremes.--Maximum discharge during year, 107 cfs Sept. 1 (gage height, 4.72 ft); minimum daily, 0.1 cfs for many days.

1929-32, 1952-60: Maximum discharge, 3,550 cfs Feb. 10, 1932 (gage height, 4.70 ft, site and datum then in use); minimum daily, 0.1 cfs for some days in 1932, 1960.

Remarks.--Records good except those above 1.5 cfs, which are poor. Natural flow affected by ground-water withdrawals, diversions, municipal use, and storage in two small reservoirs.

Revisions (water years).--WSP 1564: 1931.

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                       | 0.6  | 0.9   | 1.2  | 1.3  | 1.4   | 1.7  | 1.2   | 1.0  | 0.5   | 0.1  | 0.1  | 11    |
| 2                       | .6   | .9    | 1.2  | 1.3  | 1.5   | 1.5  | 1.2   | 1.0  | *.4   | .1   | .1   | 26    |
| 3                       | .6   | .9    | 1.2  | 1.3  | 1.4   | 1.5  | 1.2   | 1.0  | .4    | .1   | .1   | 1.2   |
| 4                       | .6   | .9    | 1.2  | 1.3  | 1.4   | 1.5  | 1.2   | 1.0  | .4    | .2   | .1   | .7    |
| 5                       | .6   | *.9   | 1.2  | 1.3  | 1.4   | 1.5  | 1.2   | .9   | .4    | .2   | .2   | 3.2   |
| 6                       | .6   | .9    | 1.3  | 1.3  | 1.4   | 1.4  | 1.0   | .9   | .5    | .1   | .2   | .7    |
| 7                       | .6   | .9    | 1.3  | *1.4 | 1.4   | 1.4  | .9    | .9   | .5    | .1   | .2   | .5    |
| 8                       | .6   | .9    | 1.3  | 1.4  | 1.4   | 1.4  | .9    | .8   | .5    | .1   | .2   | .5    |
| 9                       | .6   | .9    | 1.3  | 1.4  | 1.4   | *1.4 | .9    | .8   | .5    | .1   | .2   | *.5   |
| 10                      | .6   | 1.1   | 1.3  | 1.4  | 1.4   | 1.4  | .8    | .7   | .5    | .1   | .2   | 1.7   |
| 11                      | .6   | 1.1   | 1.3  | 1.4  | 1.4   | 1.4  | .8    | .7   | .5    | .1   | .2   | .6    |
| 12                      | .6   | 1.1   | 1.3  | 1.4  | 1.4   | 1.4  | .8    | .5   | .5    | .1   | .2   | .5    |
| 13                      | .6   | 1.1   | 1.3  | 1.4  | 1.4   | 1.4  | .8    | *.5  | .4    | .1   | .1   | .4    |
| 14                      | .6   | 1.1   | 1.3  | 1.4  | 1.4   | 1.4  | .8    | .6   | .4    | .1   | .1   | .4    |
| 15                      | .6   | 1.1   | 1.3  | 1.4  | 1.4   | 1.4  | .8    | .7   | .3    | .1   | .1   | .4    |
| 16                      | .6   | 1.1   | *1.3 | 1.4  | 1.4   | 1.3  | .8    | .7   | .3    | .1   | .1   | .4    |
| 17                      | .6   | 1.1   | 1.3  | 1.4  | 1.4   | 1.3  | .8    | .8   | .3    | .1   | *.2  | .4    |
| 18                      | .7   | 1.1   | 1.3  | 1.4  | 1.4   | 1.3  | .8    | .7   | .3    | .1   | .2   | .4    |
| 19                      | .7   | 1.1   | 1.3  | 1.4  | 1.4   | 1.3  | .7    | .8   | .3    | .1   | .2   | .5    |
| 20                      | *.7  | 1.1   | 1.3  | 1.4  | 1.4   | 1.3  | .6    | .8   | .2    | .1   | .2   | .5    |
| 21                      | .7   | 1.2   | 1.4  | 1.4  | 1.4   | 1.3  | .6    | .8   | .3    | *.3  | .2   | .4    |
| 22                      | .7   | 1.2   | 1.4  | 1.4  | 1.4   | 1.3  | .7    | .8   | *.2   | .2   | .2   | .4    |
| 23                      | .7   | 1.2   | 1.4  | 1.4  | 1.4   | 1.4  | .8    | .8   | .2    | .2   | .2   | .5    |
| 24                      | .7   | 1.2   | 1.5  | 1.4  | 1.4   | 1.4  | .9    | .8   | .2    | .2   | .2   | .5    |
| 25                      | .7   | 1.2   | 1.4  | 1.4  | 1.4   | 1.3  | .9    | .8   | .2    | .2   | .2   | .5    |
| 26                      | .7   | 1.2   | 1.4  | 1.4  | 1.4   | 1.3  | *.9   | .8   | .2    | .1   | .2   | .5    |
| 27                      | .7   | 1.2   | 1.3  | 1.4  | 1.4   | 1.3  | 1.0   | .7   | .2    | .1   | .2   | .5    |
| 28                      | .7   | 1.2   | 1.3  | *1.4 | 1.5   | *1.3 | 1.0   | .7   | .2    | .1   | .2   | .4    |
| 29                      | .7   | 1.2   | 1.3  | 1.4  | 1.9   | 1.3  | 1.0   | .6   | .1    | .1   | .2   | .4    |
| 30                      | .6   | 1.2   | 1.3  | 1.4  | ----- | 1.2  | 1.0   | .5   | .1    | .1   | .2   | .5    |
| 31                      | .6   | ----- | 1.3  | 1.4  | ----- | 1.2  | ----- | .5   | ----- | .1   | .2   | ----- |
| Total                   | 20.2 | 32.2  | 40.5 | 42.8 | 41.3  | 42.5 | 27.0  | 23.6 | 10.0  | 3.9  | 5.4  | 55.1  |
| Mean                    | 0.65 | 1.07  | 1.31 | 1.38 | 1.42  | 1.37 | 0.90  | 0.76 | 0.33  | 0.13 | 0.17 | 1.84  |
| Ac-ft                   | 40   | 64    | 80   | 85   | 82    | 84   | 54    | 47   | 20    | 7.7  | 11   | 109   |
| Calendar year 1959: Max | 3.6  |       |      |      |       |      |       |      |       |      |      |       |
| Water year 1959-60: Max | 26   |       |      |      |       |      |       |      |       |      |      |       |
| Min                     | 0.2  |       |      |      |       |      |       |      |       |      |      |       |
| Mean                    | 0.83 |       |      |      |       |      |       |      |       |      |      |       |
| Ac-ft                   | 604  |       |      |      |       |      |       |      |       |      |      |       |

Peak discharge (base, 100 cfs).--Sept. 1 (10 p.m.) 107 cfs (4.72 ft).

\* Discharge measurement made on this day.

## 2635. Big Rock Creek near Valyermo, Calif.

Location.--Lat 34°25'17", long 117°50'19", in NE<sup>1</sup> sec.20, T.4 N., R.9 W., on left bank 0.1 mile upstream from Punchbowl Canyon and 0.9 mile south of Valyermo.

Drainage area.--23.0 sq mi.

Records available.--January 1923 to September 1960. Monthly discharge only for some periods, published in WSP 1314. Prior to October 1954, published as Rock Creek near Valyermo.

Gage.--Water-stage recorder. 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.--37 years, 15.6 cfs (11,290 acre-ft per year); median of yearly mean discharges, 8.8 cfs (6,400 acre-ft per year).

Extremes.--Maximum discharge during year, 6.5 cfs Feb. 1 (gage height, 1.85 ft); minimum daily, 1.3 cfs Sept. 16-18.

1923-60: Maximum discharge, 8,300 cfs Mar. 2, 1938, on basis of slope-area measurement of peak flow; minimum daily, 0.7 cfs Nov. 5, 1951.

Remarks.--Records good. Discharge measurements made four or more times a month. There is evidence of appreciable infiltration into the stream bed in the immediate vicinity of station.

Cooperation.--Twenty-four discharge measurements furnished by Los Angeles County Flood Control District.

Revisions (water years).--WSP 1314: 1938-39. WSP 1564: 1932, 1937, 1939(M).

Rating table, water year 1959-60 (gage height, in feet, and discharge,

in cubic feet per second)  
(Shifting-control method used Dec. 1-5, Apr. 10-26,  
May 5-22, Aug. 1-5)

|      |     |
|------|-----|
| 1.65 | 1.0 |
| 1.7  | 1.6 |
| 1.8  | 3.2 |
| 1.9  | 5.6 |

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                                                         | 2.6  | 2.8   | 2.6  | 2.6  | 4.1   | 4.8   | 4.6   | 4.1   | 3.2   | 2.0  | 1.8  | 1.6   |
| 2                                                         | 2.5  | 2.8   | 2.6  | 2.6  | 4.6   | 4.8   | 4.3   | 4.3   | 3.0   | 2.0  | 1.8  | 1.6   |
| 3                                                         | 2.3  | 2.6   | 2.6  | 2.6  | 4.6   | 4.8   | 4.3   | 4.6   | 2.8   | 2.0  | 1.8  | 1.6   |
| 4                                                         | 2.3  | 2.6   | 2.6  | 2.6  | 4.6   | 4.8   | 4.1   | 4.6   | 2.8   | 2.0  | 1.8  | 1.6   |
| 5                                                         | 2.3  | 2.6   | 2.6  | 2.6  | 4.6   | 4.8   | 4.1   | 4.6   | 2.8   | 2.0  | 1.8  | 1.6   |
| 6                                                         | 2.3  | 2.6   | 2.5  | 2.6  | 4.3   | 4.8   | 4.1   | 4.6   | 2.8   | 1.7  | 1.7  | 1.4   |
| 7                                                         | 2.3  | 2.6   | 2.5  | 2.6  | 4.3   | 4.8   | 4.1   | 4.3   | 2.6   | 1.7  | 1.7  | 1.4   |
| 8                                                         | 2.3  | 2.5   | 2.5  | 2.6  | 4.1   | 4.8   | 4.1   | 4.1   | 2.6   | 1.7  | 1.7  | 1.4   |
| 9                                                         | 2.3  | 2.5   | 2.5  | 2.6  | 4.3   | 4.8   | 4.1   | 3.8   | 2.6   | 1.7  | 1.7  | 1.4   |
| 10                                                        | 2.3  | 2.5   | 2.5  | 3.2  | 4.8   | 5.1   | 4.1   | 3.8   | 2.6   | 1.7  | 1.7  | 1.6   |
| 11                                                        | 2.3  | 2.5   | 2.5  | 3.2  | 4.8   | 5.1   | 4.1   | 3.8   | 2.6   | 1.7  | 1.7  | 1.7   |
| 12                                                        | 2.3  | 2.5   | 2.5  | 4.6  | 4.8   | 4.8   | 4.1   | 3.8   | 2.6   | 1.7  | 1.7  | 1.7   |
| 13                                                        | 2.2  | 2.3   | 2.5  | 3.4  | 4.8   | 4.8   | 4.1   | 3.8   | 2.6   | 1.7  | 1.7  | 1.6   |
| 14                                                        | 2.2  | 2.3   | 2.5  | 3.2  | 4.8   | 4.8   | 4.1   | 3.8   | 2.5   | 1.6  | 1.7  | 1.4   |
| 15                                                        | 2.2  | 2.3   | 2.5  | 3.2  | 4.8   | 4.8   | 4.1   | 3.8   | 2.5   | 1.6  | 1.7  | 1.4   |
| 16                                                        | 2.2  | 2.3   | 2.5  | 3.0  | 4.8   | 4.8   | 4.1   | 3.8   | 2.5   | 1.6  | 1.7  | 1.3   |
| 17                                                        | 2.3  | 2.2   | 2.5  | 3.0  | 4.8   | 4.8   | 4.1   | 3.8   | 2.5   | 1.6  | 1.7  | 1.3   |
| 18                                                        | 2.3  | 2.2   | 2.5  | 3.0  | 4.8   | 4.6   | 3.8   | 3.8   | 2.5   | 1.6  | 1.6  | 1.3   |
| 19                                                        | 2.5  | 2.2   | 2.5  | 3.0  | 4.8   | 4.6   | 3.8   | 3.8   | 2.5   | 1.6  | 1.6  | 1.4   |
| 20                                                        | 2.5  | 2.3   | 2.5  | 3.2  | 4.8   | 4.6   | 3.8   | 3.8   | 2.5   | 1.7  | 1.6  | 1.4   |
| 21                                                        | 2.5  | 2.3   | 2.5  | 3.2  | 4.8   | 4.6   | 3.8   | 3.8   | 2.2   | 1.7  | 1.6  | 1.6   |
| 22                                                        | 2.5  | 2.5   | 2.5  | 3.2  | 4.8   | 4.6   | 3.8   | 3.8   | 2.2   | 1.7  | 1.6  | 1.6   |
| 23                                                        | 2.5  | 2.5   | 2.5  | 3.2  | 4.8   | 4.6   | 3.8   | 3.8   | 2.0   | 1.7  | 1.6  | 1.6   |
| 24                                                        | 2.5  | 2.3   | 3.0  | 3.2  | 4.8   | 4.6   | 3.8   | 3.8   | 2.0   | 1.8  | 1.6  | 1.6   |
| 25                                                        | 2.5  | 2.3   | 2.6  | 3.4  | 4.8   | 4.6   | 3.8   | 3.6   | 1.8   | 1.8  | 1.7  | 1.6   |
| 26                                                        | 2.5  | 2.3   | 2.6  | 3.4  | 4.8   | 4.6   | 3.8   | 3.6   | 1.8   | 1.8  | 1.7  | 1.6   |
| 27                                                        | 2.5  | 2.5   | 2.6  | 3.8  | 4.8   | 4.6   | 4.6   | 3.4   | 2.0   | 1.8  | 1.7  | 1.6   |
| 28                                                        | 2.6  | 2.3   | 2.5  | 4.1  | 4.8   | 4.6   | 4.3   | 3.4   | 2.0   | 1.8  | 1.6  | 1.6   |
| 29                                                        | 2.6  | 2.5   | 2.5  | 4.1  | 5.1   | 4.6   | 4.1   | 3.2   | 2.0   | 1.8  | 1.6  | 1.6   |
| 30                                                        | 2.6  | 2.5   | 2.5  | 4.1  | ----- | 4.6   | 4.1   | 3.2   | 2.0   | 1.8  | 1.6  | 1.6   |
| 31                                                        | 2.6  | ----- | 2.6  | 4.1  | ----- | 4.6   | ----- | 3.2   | ----- | 1.8  | 1.6  | ----- |
| Total                                                     | 74.4 | 73.2  | 78.9 | 99.2 | 135.8 | 146.6 | 121.9 | 119.6 | 73.1  | 54.4 | 52.1 | 45.7  |
| Mean                                                      | 2.40 | 2.44  | 2.55 | 3.20 | 4.68  | 4.73  | 4.06  | 3.86  | 2.44  | 1.75 | 1.68 | 1.52  |
| Ac-ft                                                     | 148  | 145   | 156  | 197  | 269   | 291   | 242   | 237   | 145   | 108  | 103  | 91    |
| Calendar year 1959: Max 88 Min 2.2 Mean 5.99 Ac-ft 4,340  |      |       |      |      |       |       |       |       |       |      |      |       |
| Water year 1959-60: Max 5.1 Min 1.3 Mean 2.94 Ac-ft 2,130 |      |       |      |      |       |       |       |       |       |      |      |       |

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

## 2640. Little Rock Creek near Little Rock, Calif.

Location.--Lat 34°27'50", long 118°01'05", in SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> 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 Palm-dale Irrigation District's dam, and 5 miles south of Little Rock.

Drainage area.--49.0 sq mi.

Records available.--October 1930, February 1938, May to September 1938, April 1939 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 3,290 ft (from topographic map). Prior to May 1943, at site 500 ft downstream at different datums (datum changed in March 1939).

Average discharge.--28 years (1930-37, 1939-60), 16.7 cfs (12,090 acre-ft per year); median of yearly mean discharges, 8.4 cfs (6,100 acre-ft per year).

Extremes.--Maximum discharge during year, 17 cfs Jan. 26 (gage height, 4.28 ft); no flow Oct. 1 to Dec. 4, June 25 to Sept. 30.

1930-60: Maximum discharge, 17,000 cfs (estimated) Mar. 2, 1938; no flow for periods in most years.

Remarks.--No regulation or diversion.

Cooperation.--Records furnished by Los Angeles County Flood Control District; records reviewed by Geological Survey.

Revisions (water years).--WSP 1564: 1935, 1944.

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    | 2.5   | 10    | 8.6   | 4.7   | 6.3   | 0.6   |      |      |       |
| 2                       |      |      | 0    | 2.3   | 14    | 7.7   | 4.5   | 6.8   | .5    |      |      |       |
| 3                       |      |      | 0    | 2.3   | 13    | 7.0   | 4.1   | 8.5   | .5    |      |      |       |
| 4                       |      |      | 0    | 2.2   | 11    | 7.0   | 4.1   | 6.1   | .5    |      |      |       |
| 5                       |      | .4   |      | 2.0   | 10    | 7.0   | 3.9   | 5.2   | .5    |      |      |       |
| 6                       |      | .6   | 2.2  | 9.8   | 7.5   | 3.6   | 4.5   | .5    |       |      |      |       |
| 7                       |      | .8   | 2.3  | 10    | 7.9   | 3.4   | 3.9   | .5    |       |      |      |       |
| 8                       |      | .9   | 2.5  | 11    | 8.4   | 3.2   | 3.8   | .4    |       |      |      |       |
| 9                       |      | 1.0  | 2.5  | 14    | 8.4   | 3.2   | 3.4   | .4    |       |      |      |       |
| 10                      |      | 1.1  | 3.5  | 13    | 7.9   | 3.0   | 3.2   | .4    |       |      |      |       |
| 11                      |      | 1.2  | 9.3  | 11    | 7.5   | 3.0   | 2.6   | .4    |       |      |      |       |
| 12                      |      | 1.2  | 9.9  | 9.6   | 7.2   | 3.0   | 2.3   | .4    |       |      |      |       |
| 13                      |      | 1.2  | 6.1  | 8.6   | 7.2   | 3.0   | 2.2   | .4    |       |      |      |       |
| 14                      |      | 1.2  | 4.7  | 7.7   | 7.5   | 2.8   | 2.0   | .2    |       |      |      |       |
| 15                      |      | 1.1  | 4.3  | 7.0   | 7.5   | 2.8   | 2.0   | .2    |       |      |      |       |
| 16                      |      | 1.1  | 4.1  | 6.3   | 7.2   | 2.8   | 2.2   | .1    |       |      |      |       |
| 17                      |      | 1.1  | 3.9  | 6.1   | 6.8   | 2.6   | 2.2   | .1    |       |      |      |       |
| 18                      |      | 1.2  | 3.8  | 6.1   | 6.5   | 2.6   | 1.9   | .1    |       |      |      |       |
| 19                      |      | 1.2  | 3.8  | 5.8   | 6.3   | 2.6   | 1.7   | .1    |       |      |      |       |
| 20                      |      | 1.4  | 3.8  | 5.4   | 6.1   | 2.5   | 1.6   | .1    |       |      |      |       |
| 21                      |      | 2.3  | 3.9  | 5.4   | 5.8   | 2.2   | 1.6   | .1    |       |      |      |       |
| 22                      |      | 2.3  | 4.1  | 5.4   | 5.8   | 2.2   | 1.4   | .1    |       |      |      |       |
| 23                      |      | 2.2  | 6.1  | 5.2   | 5.8   | 2.6   | 1.7   | .1    |       |      |      |       |
| 24                      |      | 4.8  | 7.7  | 4.9   | 5.8   | 2.8   | 1.9   | .1    |       |      |      |       |
| 25                      |      | 10   | 9.6  | 4.9   | 5.8   | 2.8   | 1.9   | 0     |       |      |      |       |
| 26                      |      | 6.3  | 15   | 4.9   | 5.6   | 2.8   | 1.6   | 0     |       |      |      |       |
| 27                      |      | 4.5  | 13   | 4.9   | 5.6   | 4.3   | 1.2   | 0     |       |      |      |       |
| 28                      |      | 3.9  | 11   | 5.2   | 5.6   | 6.5   | 1.1   | 0     |       |      |      |       |
| 29                      |      | 3.2  | 11   | 6.8   | 5.6   | 6.3   | .9    | 0     |       |      |      |       |
| 30                      |      | 3.0  | 10   | ----- | 5.2   | 5.8   | .8    | 0     |       |      |      |       |
| 31                      |      | 2.6  | 10   | ----- | 4.9   | ----- | .6    | ----- |       |      |      |       |
| Total                   | 0    | 0    | 61.8 | 179.4 | 237.0 | 208.7 | 103.7 | 85.1  | 7.3   | 0    | 0    | 0     |
| Mean                    | 0    | 0    | 1.99 | 5.79  | 8.17  | 6.73  | 3.46  | 2.75  | 0.24  | 0    | 0    | 0     |
| Ac-ft                   | 0    | 0    | 123  | 356   | 470   | 414   | 206   | 169   | 14    | 0    | 0    | 0     |
| Calendar year 1959: Max |      |      | 163  | Min   | 0     | Mean  | 5.17  | Ac-ft | 3,740 |      |      |       |
| Water year 1959-60: Max |      |      | 15   | Min   | 0     | Mean  | 2.41  | Ac-ft | 1,750 |      |      |       |

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 wing wall 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 1960.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,100 ft (from topographic map).

Extremes.--Maximum discharge during year, 4.0 cfs Feb. 1 (gage height, 0.97 ft); no flow Oct. 1 to Jan. 17, June 23 to Sept. 30.  
1957-60: Maximum discharge, 22 cfs Apr. 18, 1958 (gage height, 1.51 ft); no flow for some months in each year.

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

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|      |     |
|------|-----|
| 0.53 | 0   |
| .6   | .1  |
| .7   | .3  |
| .8   | 1.0 |
| .9   | 2.1 |

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    | 0.7   | 0.6  | 0.3   | 0.4  | 0.2   |      |      |       |
| 2     |      | (*)  |      | 0    | 1.6   | .5   | .3    | .4   | .2    |      |      |       |
| 3     |      |      |      | 0    | 1.1   | .5   | .3    | .4   | .2    |      |      |       |
| 4     |      |      |      | 0    | .8    | .5   | .3    | .4   | .2    |      |      |       |
| 5     |      |      |      | 0    | .7    | .5   | .3    | .4   | .2    |      |      |       |
| 6     |      | (*)  |      | *0   | .4    | .4   | .3    | .4   | .2    |      |      |       |
| 7     |      |      |      | 0    | .4    | *.4  | .3    | .4   | .2    |      |      |       |
| 8     |      |      |      | 0    | .6    | .4   | .3    | .4   | .2    |      |      |       |
| 9     |      |      |      | 0    | 1.4   | .4   | .3    | .3   | .2    |      |      |       |
| 10    |      |      |      | 0    | 1.2   | .4   | .4    | .3   | .2    |      |      |       |
| 11    |      |      |      | 0    | 1.1   | .4   | .4    | .3   | .2    |      |      | (*)   |
| 12    |      |      |      | 0    | 1.0   | .4   | .4    | *.3  | .2    |      |      |       |
| 13    |      |      |      | 0    | 1.0   | .5   | .4    | .3   | .2    |      |      |       |
| 14    |      |      | (*)  | 0    | .8    | .4   | .4    | .3   | .1    |      |      |       |
| 15    |      |      |      | 0    | .5    | .4   | .4    | .3   | .1    |      |      |       |
| 16    |      |      |      | 0    | .4    | .5   | .4    | .3   | .1    |      |      |       |
| 17    |      |      |      | 0    | .4    | .5   | .4    | .3   | .1    |      | (*)  |       |
| 18    |      |      |      | .1   | .5    | .5   | *.4   | .4   | .1    |      |      |       |
| 19    |      | (*)  |      | .1   | .5    | .5   | .4    | .4   | .1    |      |      |       |
| 20    |      |      |      | .1   | .5    | .4   | .4    | .3   | .1    |      |      |       |
| 21    |      |      |      | .1   | .5    | *.3  | .4    | .4   | .1    |      |      |       |
| 22    |      |      |      | .1   | .5    | .3   | .4    | .4   | *.1   |      |      |       |
| 23    |      |      |      | .1   | .4    | .3   | .4    | .4   | 0     |      |      |       |
| 24    |      |      |      | .1   | .4    | .3   | .4    | .4   | 0     |      |      |       |
| 25    |      |      |      | *.1  | .4    | .3   | .4    | .4   | 0     | (*)  |      |       |
| 26    |      |      |      | .1   | .4    | .3   | .4    | .4   | 0     |      |      |       |
| 27    |      |      |      | .1   | .4    | .3   | .4    | .4   | 0     |      |      |       |
| 28    |      |      |      | .1   | .5    | .4   | .4    | .4   | 0     |      |      |       |
| 29    |      |      |      | .1   | .7    | .3   | .4    | .4   | 0     |      |      |       |
| 30    |      |      |      | .1   | ----- | .3   | .4    | .3   | 0     |      |      |       |
| 31    |      |      |      | .1   | ----- | .3   | ----- | .3   | ----- |      |      | ----- |
| Total | 0    | 0    | 0    | 1.4  | 19.8  | 12.5 | 11.1  | 11.2 | 3.5   | 0    | 0    | 0     |
| Mean  | 0    | 0    | 0    | 0.05 | 0.68  | 0.40 | 0.37  | 0.36 | 0.12  | 0    | 0    | 0     |
| Ac-ft | 0    | 0    | 0    | 2.8  | 39    | 25   | 22    | 22   | 6.9   | 0    | 0    | 0     |

Calendar year 1959: Max 3.9 Min 0 Mean 0.67 Ac-ft 484

Water year 1959-60: Max 1.6 Min 0 Mean 0.16 Ac-ft 118

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

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

2652. Convict Creek near Mammoth Lakes, Calif.

Location (revised).--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 1950 and October 1959 to September 1960 in reports of Geological Survey. October 1950 to September 1959 in files of city of Los Angeles, Department of Water and Power. Monthly discharge only prior to October 1950, published in WSP 1314.

Gage.--Water-stage recorder and wooden retaining walls and control. Altitude of gage is 7,450 ft, revised (from topographic map). Prior to Nov. 15, 1926, staff gage at same site and datum.

Average discharge.--35 years (1925-60), 23.6 cfs (17,090 acre-ft per year).

Extremes.--Maximum discharge during year, 42 cfs June 5, 6; minimum daily, 4.9 cfs Apr. 1. 1925-60: Maximum discharge, 290 cfs June 29, 1932 (gage height, 4.43 ft); minimum daily, 1.3 cfs Jan. 10, 1951.

Remarks.--No diversion; some regulation by Convict Lake 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 1959 to September 1960

| Day                     | Oct.  | Nov.  | Dec.  | Jan.  | Feb.    | Mar.  | Apr.      | May   | June         | July  | Aug.  | Sept. |
|-------------------------|-------|-------|-------|-------|---------|-------|-----------|-------|--------------|-------|-------|-------|
| 1                       | 9.8   | 7.1   | 7.1   | 6.2   | 8.0     | 8.0   | 4.9       | 12    | 26           | 21    | 15    | 6.3   |
| 2                       | 9.8   | 7.1   | 7.1   | 6.4   | 9.3     | 6.7   | 5.4       | 11    | 30           | 21    | 21    | 6.3   |
| 3                       | 9.6   | 7.1   | 7.1   | 6.7   | 8.9     | 5.8   | 5.4       | 9.4   | 36           | 20    | 19    | 6.3   |
| 4                       | 9.4   | 7.1   | 7.1   | 6.9   | 8.9     | 5.0   | 5.9       | 9.4   | 40           | 20    | 12    | 6.3   |
| 5                       | 9.4   | 7.1   | 6.7   | 7.1   | 9.0     | 6.7   | 5.9       | 9.2   | 42           | 19    | 12    | 6.8   |
| 6                       | 8.8   | 7.1   | 6.7   | 7.1   | 9.0     | 5.4   | 6.4       | 9.2   | 42           | 18    | 12    | 6.8   |
| 7                       | 8.8   | 7.1   | 6.2   | 7.6   | 9.1     | 6.7   | 7.4       | 9.2   | 41           | 18    | 12    | 6.8   |
| 8                       | 8.6   | 7.1   | 6.2   | 7.1   | 9.2     | 5.8   | 6.4       | 9.2   | 37           | 18    | 12    | 6.8   |
| 9                       | 8.6   | 7.1   | 6.2   | 6.7   | 9.2     | 6.7   | 7.4       | 9.4   | 39           | 18    | 13    | 6.8   |
| 10                      | 8.6   | 7.1   | 6.2   | 7.1   | 9.3     | 5.0   | 7.4       | 9.6   | 38           | 18    | 14    | 6.8   |
| 11                      | 8.6   | 7.1   | 6.2   | 8.0   | 9.3     | 5.4   | 8.0       | 9.9   | 38           | 18    | 14    | 6.8   |
| 12                      | 8.4   | 7.1   | 6.2   | 8.4   | 9.3     | 6.2   | 7.4       | 13    | 37           | 17    | 14    | 6.8   |
| 13                      | 8.2   | 7.1   | 6.2   | 8.9   | 9.3     | 5.8   | 7.8       | 14    | 37           | 17    | 16    | 6.8   |
| 14                      | 8.2   | 7.1   | 6.2   | 8.9   | 8.9     | 6.2   | 8.4       | 17    | 37           | 17    | 15    | 6.0   |
| 15                      | 8.2   | 7.1   | 6.2   | 8.9   | 8.9     | 5.8   | 7.8       | 21    | 37           | 17    | 14    | 5.6   |
| 16                      | 8.2   | 7.1   | 6.2   | 8.4   | 8.4     | 5.8   | 7.8       | 24    | 38           | 17    | 14    | 5.6   |
| 17                      | 8.2   | 7.1   | 6.1   | 8.0   | 9.3     | 5.8   | 7.8       | 27    | 38           | 17    | 14    | 5.6   |
| 18                      | 8.2   | 7.1   | 6.1   | 7.6   | 6.2     | 5.8   | 8.0       | 29    | 38           | 17    | 14    | 5.6   |
| 19                      | 8.2   | 7.1   | 6.1   | 7.6   | 8.9     | 5.8   | 8.6       | 29    | 37           | 17    | 14    | 5.6   |
| 20                      | 8.2   | 7.1   | 6.1   | 7.6   | 8.9     | 5.8   | 8.6       | 33    | 35           | 17    | 13    | 5.6   |
| 21                      | 8.2   | 6.4   | 6.1   | 7.6   | 7.6     | 5.8   | 9.8       | 36    | 34           | 17    | 13    | 5.6   |
| 22                      | 8.2   | 5.8   | 6.1   | 7.1   | 8.4     | 6.2   | 9.8       | 29    | 32           | 17    | 14    | 5.6   |
| 23                      | 8.2   | 5.8   | 6.0   | 8.0   | 7.6     | 6.7   | 9.8       | 27    | 32           | 17    | 13    | 5.6   |
| 24                      | 8.2   | 5.8   | 6.0   | 8.0   | 8.9     | 6.7   | 9.8       | 22    | 30           | 17    | 13    | 5.6   |
| 25                      | 8.2   | 5.8   | 6.0   | 8.4   | 7.6     | 6.7   | 10        | 22    | 28           | 17    | 12    | 6.0   |
| 26                      | 8.2   | 5.8   | 6.0   | 8.4   | 5.0     | 6.7   | 11        | 22    | 27           | 17    | 12    | 6.0   |
| 27                      | 8.4   | 5.8   | 6.0   | 8.4   | 6.7     | 7.1   | 13        | 21    | 25           | 17    | 10    | 6.0   |
| 28                      | 8.4   | 5.8   | 6.0   | 7.6   | 6.7     | 8.4   | 13        | 20    | 22           | 17    | 8.0   | 6.3   |
| 29                      | 8.2   | 5.8   | 6.0   | 7.6   | 6.2     | 7.6   | 12        | 22    | 22           | 17    | 8.0   | 6.3   |
| 30                      | 8.0   | 5.8   | 6.0   | 7.6   | -----   | 10    | 12        | 24    | 22           | 17    | 8.0   | 6.3   |
| 31                      | 8.0   | ----- | 6.0   | 7.6   | -----   | 6.7   | -----     | 25    | -----        | 17    | 8.0   | ----- |
| Total                   | 264.2 | 200.6 | 194.4 | 237.5 | 242.0   | 198.8 | 252.9     | 584.5 | 1,017        | 549   | 403.0 | 185.3 |
| Mean                    | 8.52  | 6.69  | 6.27  | 7.66  | 8.34    | 6.41  | 8.43      | 18.9  | 33.9         | 17.7  | 13.0  | 6.18  |
| Ac-ft                   | 524   | 398   | 386   | 471   | 480     | 394   | 502       | 1,160 | 2,020        | 1,090 | 799   | 368   |
| Calendar year 1959: Max | 58    |       |       |       | Min 5.8 |       | Mean 15.4 |       | Ac-ft 11,120 |       |       |       |
| Water year 1959-60: Max | 42    |       |       |       | Min 4.9 |       | Mean 11.8 |       | Ac-ft 8,590  |       |       |       |

2657. Rock Creek at Little Round Valley, near Bishop, Calif.

Location.--Lat 37°32'50", long 118°41'15", T.5 S., R.30 E., on right bank just upstream from diversion to Little Round Valley, 1.1 miles south of Toms Place and 20.5 miles northwest of Bishop, Mono County.

Drainage area.--35.8 sq mi.

Records available.--January to December 1918, January 1920 to September 1950, and October 1959 to September 1960 in reports of the Geological Survey. October 1950 to September 1959 in files of the city of Los Angeles, Department of Water and Power. Monthly discharge only prior to October 1950, published in WSP 1314.

Gage.--Water-stage recorder and 6-foot Parshall flume. Altitude of gage is 7,450 ft (from topographic map). Prior to May 24, 1926, staff gage at different datums. May 24 to Sept. 23, 1926, water-stage recorder at two different datums. Sept. 24, 1926, to Sept. 10, 1936, water-stage recorder at same site at datum 1.30 ft lower.

Average discharge.--40 years (1920-60), 30.5 cfs (22,080 acre-ft per year).

Extremes.--Maximum discharge during year, 55 cfs June 5; minimum daily, 8.5 cfs for many days.

1918-60: Maximum discharge, 270 cfs July 26, 1952 (gage height, 2.93 ft, site and 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 1959 to September 1960

| Day                     | Oct. | Nov.  | Dec.  | Jan.  | Feb.    | Mar. | Apr.      | May   | June         | July  | Aug. | Sept. |
|-------------------------|------|-------|-------|-------|---------|------|-----------|-------|--------------|-------|------|-------|
| 1                       | 13   | 11    | 9.0   | 12    | 9.0     | 10   | 13        | 16    | 30           | 24    | 29   | 9.8   |
| 2                       | 13   | 11    | 9.0   | 12    | 9.5     | 12   | 14        | 16    | 37           | 24    | 26   | 9.5   |
| 3                       | 13   | 11    | 9.0   | 11    | 9.5     | 11   | 15        | 15    | 44           | 24    | 23   | 10    |
| 4                       | 13   | 10    | 8.7   | 11    | 9.8     | 11   | 15        | 15    | 50           | 24    | 21   | 9.8   |
| 5                       | 12   | 10    | 8.7   | 11    | 9.8     | 11   | 16        | 14    | 55           | 25    | 19   | 9.2   |
| 6                       | 11   | 10    | 8.7   | 11    | 9.8     | 11   | 17        | 14    | 53           | 23    | 18   | 9.2   |
| 7                       | 11   | 10    | 8.7   | 9.0   | 9.8     | 11   | 17        | 14    | 49           | 23    | 17   | 9.2   |
| 8                       | 11   | 10    | 8.7   | 8.7   | 11      | 11   | 17        | 14    | 47           | 21    | 16   | 9.2   |
| 9                       | 11   | 10    | 9.5   | 8.5   | 8.7     | 11   | 17        | 15    | 45           | 21    | 16   | 9.2   |
| 10                      | 11   | 10    | 9.2   | 8.7   | 11      | 11   | 17        | 16    | 43           | 21    | 15   | 9.8   |
| 11                      | 11   | 10    | 8.7   | 9.0   | 11      | 11   | 17        | 20    | 42           | 21    | 15   | 11    |
| 12                      | 11   | 10    | 8.7   | 9.8   | 11      | 11   | 16        | 25    | 42           | 21    | 15   | 11    |
| 13                      | 11   | 10    | 8.7   | 11    | 10      | 11   | 16        | 27    | 44           | 20    | 15   | 11    |
| 14                      | 10   | 10    | 15    | 11    | 11      | 11   | 16        | 27    | 47           | 20    | 16   | 11    |
| 15                      | 10   | 10    | 11    | 11    | 11      | 11   | 16        | 27    | 51           | 19    | 16   | 11    |
| 16                      | 11   | 9.8   | 9.5   | 12    | 11      | 11   | 16        | 26    | 52           | 19    | 15   | 11    |
| 17                      | 11   | 9.8   | 8.7   | 11    | 11      | 11   | 16        | 26    | 48           | 19    | 15   | 11    |
| 18                      | 11   | 10    | 8.5   | 11    | 11      | 11   | 17        | 25    | 46           | 19    | 15   | 11    |
| 19                      | 11   | 10    | 8.5   | 10    | 12      | 12   | 17        | 25    | 45           | 19    | 15   | 11    |
| 20                      | 11   | 9.8   | 8.5   | 9.8   | 12      | 12   | 17        | 24    | 42           | 18    | 14   | 10    |
| 21                      | 11   | 9.8   | 8.7   | 9.8   | 11      | 13   | 19        | 24    | 40           | 18    | 13   | 10    |
| 22                      | 11   | 9.5   | 8.7   | 9.8   | 11      | 13   | 19        | 24    | 38           | 20    | 12   | 10    |
| 23                      | 11   | 10    | 8.7   | 10    | 11      | 12   | 19        | 23    | 36           | 22    | 11   | 9.8   |
| 24                      | 11   | 9.8   | 9.0   | 10    | 13      | 12   | 18        | 22    | 34           | 22    | 11   | 9.8   |
| 25                      | 11   | 9.5   | 8.7   | 10    | 11      | 13   | 17        | 21    | 32           | 23    | 11   | 9.5   |
| 26                      | 11   | 9.2   | 15    | 10    | 11      | 14   | 17        | 20    | 31           | 23    | 11   | 9.2   |
| 27                      | 11   | 9.2   | 15    | 9.8   | 11      | 14   | 16        | 20    | 30           | 23    | 11   | 9.2   |
| 28                      | 11   | 9.2   | 9.8   | 9.8   | 11      | 13   | 16        | 20    | 28           | 25    | 11   | 9.0   |
| 29                      | 11   | 9.0   | 11    | 9.8   | 11      | 12   | 16        | 22    | 26           | 27    | 10   | 8.7   |
| 30                      | 11   | 8.7   | 11    | 9.8   | -----   | 12   | 17        | 24    | 25           | 33    | 10   | 8.5   |
| 31                      | 11   | ----- | 12    | 9.8   | -----   | 12   | -----     | 25    | -----        | 33    | 10   | ----- |
| Total                   | 348  | 296.3 | 302.6 | 317.1 | 309.9   | 362  | 496       | 646   | 1,232        | 689   | 472  | 297.9 |
| Mean                    | 11.2 | 9.88  | 9.76  | 10.2  | 10.7    | 11.7 | 16.5      | 20.8  | 41.1         | 22.2  | 15.2 | 9.93  |
| Ac-ft                   | 690  | 588   | 600   | 629   | 615     | 718  | 984       | 1,280 | 2,440        | 1,360 | 956  | 591   |
| Calendar year 1959: Max | 53   |       |       |       | Min 8.5 |      | Mean 17.8 |       | Ac-ft 12,650 |       |      |       |
| Water year 1959-60: Max | 55   |       |       |       | Min 8.5 |      | Mean 15.8 |       | Ac-ft 11,430 |       |      |       |

2670. Pine Creek at division box, near Bishop, Calif.

Location (revised).--Lat 37°25'00", long 118°37'15", in NW $\frac{1}{4}$  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 1950 and October 1959 to September 1960 in reports of the Geological Survey. October 1950 to September 1959 in files of city of Los Angeles, Department of Water and Power. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder and Parshall flume, since November 1938. Altitude of gage is 5,280 ft (from topographic map).

Average discharge.--39 years (1921-60), 43.6 cfs (31,570 acre-ft per year).

Extremes.--Maximum discharge during year, 147 cfs June 4; minimum daily, 19 cfs for many days.

1921-60: Maximum discharge, 356 cfs June 4, 1957; minimum, 10 cfs Jan. 8, 1930, Jan. 21, 1935.

Remarks.--No regulation or diversion.

Cooperation.--Records furnished by city of Los Angeles, Department of Water and Power, and reviewed by Geological Survey; furnished figures rounded by Geological Survey.

Revisions (water years).--WSP 1314: 1923.

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                       | 31    | 24    | 21    | 19     | 20    | 19    | 21        | 24    | 100          | 38    | 40    | 20    |
| 2                       | 31    | 24    | 21    | 19     | 20    | 20    | 21        | 24    | 111          | 39    | 36    | 20    |
| 3                       | 31    | 23    | 21    | 20     | 20    | 20    | 22        | 24    | 125          | 40    | 33    | 20    |
| 4                       | 31    | 23    | 21    | 19     | 20    | 20    | 23        | 24    | 130          | 40    | 31    | 20    |
| 5                       | 31    | 23    | 22    | 20     | 20    | 20    | 23        | 24    | 110          | 40    | 30    | 20    |
| 6                       | 30    | 23    | 22    | 20     | 20    | 21    | 26        | 24    | 100          | 37    | 29    | 20    |
| 7                       | 28    | 24    | 22    | 20     | 21    | 20    | 28        | 26    | 106          | 36    | 28    | 20    |
| 8                       | 28    | 24    | 21    | 20     | 22    | 20    | 29        | 31    | 98           | 35    | 27    | 20    |
| 9                       | 27    | 23    | 21    | 20     | 21    | 20    | 31        | 37    | 83           | 35    | 27    | 20    |
| 10                      | 27    | 23    | 21    | 21     | 21    | 20    | 32        | 46    | 83           | 36    | 26    | 21    |
| 11                      | 26    | 23    | 21    | 20     | 20    | 20    | 31        | 59    | 84           | 34    | 26    | 20    |
| 12                      | 26    | 23    | 21    | 20     | 20    | 21    | 29        | 72    | 83           | 33    | 25    | 20    |
| 13                      | 26    | 22    | 22    | 20     | 20    | 22    | 28        | 64    | 89           | 33    | 25    | 20    |
| 14                      | 25    | 23    | 21    | 20     | 20    | 21    | 27        | 63    | 96           | 32    | 25    | 20    |
| 15                      | 25    | 23    | 21    | 20     | 20    | 20    | 27        | 56    | 91           | 31    | 25    | 20    |
| 16                      | 25    | 23    | 20    | 20     | 20    | 20    | 28        | 59    | 77           | 30    | 24    | 20    |
| 17                      | 24    | 22    | 20    | 21     | 20    | 20    | 29        | 58    | 80           | 29    | 24    | 20    |
| 18                      | 25    | 22    | 20    | 20     | 20    | 20    | 29        | 59    | 75           | 29    | 23    | 20    |
| 19                      | 25    | 22    | 21    | 20     | 19    | 21    | 30        | 56    | 70           | 29    | 23    | 19    |
| 20                      | 24    | 22    | 21    | 19     | 20    | 21    | 33        | 58    | 63           | 29    | 22    | 19    |
| 21                      | 24    | 22    | 21    | 19     | 20    | 21    | 39        | 62    | 58           | 29    | 22    | 20    |
| 22                      | 24    | 23    | 20    | 19     | 20    | 20    | 42        | 55    | 55           | 30    | 22    | 20    |
| 23                      | 24    | 22    | 20    | 20     | 19    | 21    | 38        | 47    | 52           | 33    | 22    | 20    |
| 24                      | 25    | 22    | 20    | 20     | 19    | 20    | 34        | 41    | 49           | 33    | 22    | 19    |
| 25                      | 25    | 22    | 21    | 20     | 19    | 20    | 30        | 38    | 49           | 32    | 22    | 20    |
| 26                      | 25    | 22    | 21    | 19     | 19    | 21    | 27        | 43    | 47           | 33    | 21    | 20    |
| 27                      | 24    | 22    | 21    | 19     | 20    | 22    | 25        | 56    | 44           | 37    | 21    | 19    |
| 28                      | 24    | 22    | 21    | 19     | 20    | 21    | 25        | 64    | 42           | 41    | 21    | 19    |
| 29                      | 24    | 22    | 20    | 19     | 20    | 21    | 24        | 68    | 40           | 45    | 20    | 19    |
| 30                      | 23    | 22    | 20    | 20     | 20    | 21    | 24        | 68    | 39           | 46    | 20    | 19    |
| 31                      | 24    | ----- | 20    | 19     | ----- | 21    | -----     | 80    | -----        | 42    | 20    | ----- |
| Total                   | 812   | 680   | 646   | 612    | 580   | 635   | 855       | 1,510 | 2,329        | 1,086 | 782   | 594   |
| Mean                    | 26.2  | 22.7  | 20.8  | 19.7   | 20.0  | 20.5  | 28.5      | 49.7  | 77.6         | 35.0  | 25.2  | 19.8  |
| Ac-ft                   | 1,610 | 1,350 | 1,280 | 1,210  | 1,150 | 1,260 | 1,700     | 3,000 | 4,620        | 2,150 | 1,550 | 1,180 |
| Calendar year 1959: Max | 128   |       |       | Min 20 |       |       | Mean 34.9 |       | Ac-ft 25,230 |       |       |       |
| Water year 1959-60: Max | 130   |       |       | Min 19 |       |       | Mean 30.4 |       | Ac-ft 22,060 |       |       |       |





## 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 1959 to September 1960

| Day                     | Oct.  | Nov.  | Dec. | Jan.   | Feb.  | Mar.      | Apr.         | May   | June  | July  | Aug.  | Sept. |
|-------------------------|-------|-------|------|--------|-------|-----------|--------------|-------|-------|-------|-------|-------|
| 1                       | 23    | 19    | 17   | 12     | 13    | 11        | 13           | 20    | 48    | 45    | 70    | 36    |
| 2                       | 23    | 20    | 17   | 12     | 14    | 11        | 14           | 19    | 54    | 49    | 63    | 33    |
| 3                       | 23    | 20    | 16   | 12     | 13    | 11        | 14           | 19    | 62    | 49    | 58    | 42    |
| 4                       | 22    | 20    | 16   | 12     | 13    | 11        | 15           | 19    | 65    | 51    | 60    | 40    |
| 5                       | 22    | 19    | 15   | 12     | 13    | 12        | 16           | 17    | 61    | 46    | 60    | 35    |
| 6                       | 21    | 19    | 15   | 12     | 13    | 12        | 16           | 16    | 62    | 43    | 58    | 34    |
| 7                       | 21    | 19    | 16   | 14     | 13    | 13        | 16           | 16    | 63    | 47    | 59    | 33    |
| 8                       | 21    | 19    | 16   | 14     | 16    | 12        | 16           | 16    | 58    | 46    | 64    | 31    |
| 9                       | 20    | 19    | 16   | 14     | 13    | 12        | 17           | 19    | 54    | 47    | 67    | 35    |
| 10                      | 20    | 19    | 16   | 14     | 13    | 12        | 17           | 24    | 52    | 49    | 69    | 40    |
| 11                      | 20    | 18    | 16   | 13     | 13    | 12        | 17           | 29    | 52    | 47    | 66    | 44    |
| 12                      | 20    | 18    | 15   | 12     | 13    | 12        | 16           | 32    | 56    | 46    | 69    | 48    |
| 13                      | 20    | 18    | 14   | 12     | 13    | 12        | 16           | 29    | 62    | 49    | 75    | 49    |
| 14                      | 20    | 19    | 15   | 14     | 13    | 12        | 16           | 28    | 67    | 52    | 70    | 41    |
| 15                      | 20    | 18    | 15   | 13     | 13    | 12        | 16           | 28    | 67    | 56    | 61    | 37    |
| 16                      | 20    | 18    | 14   | 13     | 13    | 12        | 16           | 30    | 61    | 53    | 55    | 34    |
| 17                      | 20    | 18    | 15   | 13     | 13    | 12        | 16           | 28    | 66    | 53    | 53    | 31    |
| 18                      | 19    | 17    | 15   | 13     | 13    | 12        | 16           | 29    | 62    | 60    | 55    | 29    |
| 19                      | 19    | 18    | 15   | 13     | 13    | 12        | 16           | 31    | 57    | 57    | 55    | 29    |
| 20                      | 19    | 17    | 15   | 13     | 13    | 12        | 18           | 31    | 53    | 53    | 61    | 28    |
| 21                      | 19    | 17    | 15   | 13     | 12    | 10        | 20           | 32    | 54    | 60    | 62    | 27    |
| 22                      | 20    | 17    | 15   | 13     | 12    | 12        | 21           | 28    | 55    | 60    | 53    | 26    |
| 23                      | 20    | 17    | 15   | 13     | 12    | 11        | 18           | 25    | 48    | 53    | 43    | 25    |
| 24                      | 20    | 17    | 15   | 13     | 12    | 13        | 17           | 24    | 49    | 54    | 39    | 26    |
| 25                      | 20    | 17    | 14   | 13     | 12    | 13        | 17           | 23    | 50    | 61    | 36    | 26    |
| 26                      | 20    | 17    | 14   | 13     | 12    | 13        | 16           | 25    | 47    | 73    | 39    | 25    |
| 27                      | 20    | 17    | 14   | 12     | 12    | 15        | 19           | 33    | 44    | 72    | 39    | 25    |
| 28                      | 20    | 17    | 14   | 13     | 12    | 14        | 21           | 36    | 42    | 65    | 38    | 24    |
| 29                      | 20    | 17    | 14   | 13     | 12    | 14        | 19           | 39    | 44    | 72    | 37    | 23    |
| 30                      | 20    | 17    | 13   | 12     | ----- | 13        | 19           | 38    | 42    | 73    | 39    | 23    |
| 31                      | 20    | ----- | 12   | 12     | ----- | 13        | -----        | 41    | ----- | 73    | 37    | ----- |
| Total                   | 632   | 542   | 464  | 397    | 372   | 378       | 504          | 824   | 1,657 | 1,733 | 1,710 | 979   |
| Mean                    | 20.4  | 18.1  | 15.0 | 12.8   | 12.8  | 12.2      | 16.8         | 26.6  | 55.2  | 56.0  | 55.2  | 32.6  |
| Ac-ft                   | 1,250 | 1,080 | 920  | 787    | 738   | 750       | 1,000        | 1,630 | 3,290 | 3,440 | 3,390 | 1,940 |
| Calendar year 1959: Max | 111   |       |      | Min 12 |       | Mean 35.5 | Ac-ft 25,680 |       |       |       |       |       |
| Water year 1959-60: Max | 76    |       |      | Min 10 |       | Mean 27.9 | Ac-ft 20,220 |       |       |       |       |       |

2775. Owens River near Big Pine, Calif.

Location (revised).--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 1950 and October 1959 to September 1960 in reports of the Geological Survey. October 1950 to September 1959 in files of city of Los Angeles, Department of Water and Power. Monthly discharge only for some periods, published in WSP 1314. Published as "near Tinemaha" prior to 1912.

Gage.--Water-stage recorder with artificial rock control. Altitude of gage is 3,800 ft (from topographic map). Prior to Oct. 8, 1922, staff gage at same site and datum.

Average discharge.--54 years (1906-60), 367 cfs (265,700 acre-ft per year).

Extremes.--Maximum discharge during year, 668 cfs Oct. 25; minimum daily, 7 cfs Oct. 4. 1906-60: 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.--Diversions above station from both main stream and tributaries. Flow regulated by Sabrina Reservoir and South Lake since 1911 (combined capacity, 20,900 acre-ft), Tinemaha Reservoir since 1929 (capacity, 16,600 acre-ft), Lake Crowley since 1941 (capacity, 183,500 acre-ft), and Pleasant Valley Reservoir since 1955 (capacity, 3,900 acre-ft). 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 1959 to September 1960

| Day                     | Oct.   | Nov.   | Dec.   | Jan.   | Feb.   | Mar.     | Apr.          | May    | June   | July   | Aug.   | Sept.  |
|-------------------------|--------|--------|--------|--------|--------|----------|---------------|--------|--------|--------|--------|--------|
| 1                       | 451    | 93     | 479    | 493    | 515    | 465      | 431           | 450    | 481    | 456    | 493    | 388    |
| 2                       | 25     | 291    | 485    | 479    | 535    | 479      | 429           | 449    | 481    | 458    | 476    | 384    |
| 3                       | 12     | 376    | 491    | 466    | 537    | 474      | 429           | 442    | 488    | 460    | 461    | 385    |
| 4                       | 7      | 420    | 493    | 475    | 515    | 467      | 429           | 446    | 494    | 462    | 449    | 402    |
| 5                       | 13     | 465    | 493    | 485    | 505    | 470      | 426           | 443    | 496    | 464    | 443    | 391    |
| 6                       | 20     | 453    | 498    | 508    | 501    | 474      | 433           | 443    | 496    | 466    | 432    | 388    |
| 7                       | 21     | 455    | 498    | 508    | 503    | 532      | 433           | 440    | 494    | 468    | 429    | 390    |
| 8                       | 21     | 461    | 500    | 508    | 507    | 253      | 432           | 440    | 494    | 442    | 451    | 390    |
| 9                       | 20     | 460    | 501    | 502    | 515    | 501      | 433           | 437    | 493    | 439    | 429    | 389    |
| 10                      | 20     | 463    | 503    | 502    | 512    | 503      | 434           | 423    | 489    | 443    | 430    | 390    |
| 11                      | 18     | 472    | 498    | 508    | 506    | 506      | 439           | 432    | 484    | 459    | 425    | 403    |
| 12                      | 17     | 476    | 500    | 508    | 494    | 503      | 442           | 438    | 485    | 455    | 424    | 404    |
| 13                      | 17     | 487    | 495    | 508    | 491    | 503      | 442           | 443    | 486    | 457    | 424    | 403    |
| 14                      | 62     | 505    | 495    | 500    | 489    | 510      | 442           | 439    | 486    | 457    | 424    | 407    |
| 15                      | 112    | 511    | 479    | 505    | 481    | 478      | 440           | 437    | 491    | 451    | 424    | 392    |
| 16                      | 163    | 498    | 486    | 508    | 486    | 465      | 440           | 429    | 492    | 454    | 403    | 386    |
| 17                      | 142    | 465    | 496    | 500    | 489    | 460      | 440           | 429    | 491    | 454    | 397    | 380    |
| 18                      | 303    | 471    | 499    | 492    | 490    | 467      | 440           | 437    | 494    | 455    | 399    | 378    |
| 19                      | 225    | 471    | 506    | 484    | 492    | 461      | 440           | 427    | 491    | 450    | 399    | 375    |
| 20                      | 605    | 468    | 512    | 502    | 489    | 457      | 440           | 435    | 486    | 447    | 398    | 371    |
| 21                      | 621    | 480    | 502    | 508    | 490    | 448      | 440           | 437    | 484    | 450    | 401    | 371    |
| 22                      | 664    | 477    | 504    | 502    | 477    | 447      | 441           | 450    | 480    | 461    | 395    | 357    |
| 23                      | 664    | 468    | 507    | 500    | 480    | 457      | 442           | 452    | 475    | 458    | 395    | 362    |
| 24                      | 666    | 477    | 511    | 502    | 479    | 468      | 445           | 445    | 461    | 461    | 396    | 380    |
| 25                      | 660    | 508    | 514    | 497    | 484    | 455      | 446           | 448    | 459    | 449    | 396    | 376    |
| 26                      | 343    | 510    | 509    | 502    | 484    | 452      | 446           | 458    | 452    | 454    | 396    | 369    |
| 27                      | 128    | 507    | 491    | 513    | 487    | 457      | 446           | 458    | 444    | 476    | 396    | 373    |
| 28                      | 108    | 480    | 489    | 515    | 487    | 457      | 445           | 460    | 447    | 472    | 393    | 376    |
| 29                      | 105    | 468    | 491    | 505    | 476    | 439      | 446           | 467    | 451    | 467    | 388    | 380    |
| 30                      | 101    | 474    | 489    | 495    | -----  | 442      | 446           | 475    | 454    | 475    | 388    | 371    |
| 31                      | 101    | -----  | 497    | 508    | -----  | 444      | -----         | 479    | -----  | 488    | 389    | -----  |
| Total                   | 6,435  | 13,608 | 15,411 | 15,484 | 14,396 | 14,194   | 13,157        | 13,791 | 14,399 | 14,203 | 12,923 | 11,531 |
| Mean                    | 208    | 454    | 497    | 499    | 496    | 458      | 439           | 445    | 480    | 458    | 417    | 384    |
| Ac-ft                   | 12,760 | 26,990 | 30,570 | 30,710 | 28,550 | 28,150   | 26,100        | 27,350 | 28,560 | 28,170 | 25,630 | 22,870 |
| Calendar year 1959: Max | 666    |        |        |        | Min 7  | Mean 426 | Ac-ft 308,600 |        |        |        |        |        |
| Water year 1959-60: Max | 666    |        |        |        | Min 7  | Mean 436 | Ac-ft 316,400 |        |        |        |        |        |

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.--October 1959 to September 1960. Records January 1923 to September 1959 available in files of city of Los Angeles, Department of Water and Power.

Gage.--Water-stage recorder and Parshall flume. 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 Cippoletti weir (removed during high water), at same site and datum.

Average discharge.--37 years (1923-60), 12.8 cfs (9,270 acre-ft per year).

Extremes.--Maximum discharge during year, 19 cfs June 18; minimum daily, 1.7 cfs Jan. 12, Sept. 28.

1923-60: Maximum daily discharge, 106 cfs June 16, 1941; 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 1959 to September 1960

| Day                     | Oct. | Nov.  | Dec. | Jan. | Feb.    | Mar.      | Apr.        | May   | June  | July  | Aug.  | Sept. |
|-------------------------|------|-------|------|------|---------|-----------|-------------|-------|-------|-------|-------|-------|
| 1                       | 3.6  | 2.9   | 2.3  | 2.3  | 2.3     | 1.9       | 2.6         | 5.4   | 12    | 9.7   | 5.0   | 2.3   |
| 2                       | 3.5  | 2.8   | 2.3  | 2.6  | 2.4     | 1.9       | 2.8         | 5.2   | 13    | 9.7   | 4.7   | 2.3   |
| 3                       | 3.5  | 2.8   | 2.3  | 2.8  | 2.4     | 2.0       | 2.8         | 5.0   | 13    | 9.7   | 4.4   | 2.9   |
| 4                       | 3.3  | 2.6   | 2.3  | 3.1  | 2.4     | 2.0       | 3.0         | 5.0   | 15    | 9.5   | 4.2   | 2.5   |
| 5                       | 3.2  | 2.6   | 2.0  | 3.4  | 2.3     | 2.3       | 3.2         | 4.9   | 17    | 9.1   | 4.1   | 2.3   |
| 6                       | 3.1  | 2.6   | 2.4  | 2.4  | 2.4     | 2.4       | 3.4         | 4.9   | 17    | 8.7   | 4.1   | 2.2   |
| 7                       | 2.9  | 2.6   | 2.4  | 2.3  | 2.5     | 2.4       | 3.6         | 4.9   | 18    | 8.3   | 3.8   | 2.2   |
| 8                       | 2.9  | 2.5   | 2.4  | 2.1  | 3.4     | 2.2       | 3.5         | 5.0   | 18    | 7.7   | 3.6   | 2.2   |
| 9                       | 2.8  | 2.5   | 2.4  | 1.9  | 2.8     | 2.0       | 3.8         | 5.9   | 18    | 7.7   | 3.5   | 2.2   |
| 10                      | 2.8  | 2.6   | 2.3  | 1.8  | 2.8     | 1.9       | 4.1         | 7.5   | 18    | 7.7   | 3.5   | 2.6   |
| 11                      | 2.8  | 2.5   | 2.3  | 1.8  | 2.6     | 1.9       | 4.2         | 9.5   | 18    | 7.5   | 3.5   | 2.6   |
| 12                      | 2.6  | 2.5   | 2.2  | 1.7  | 2.6     | 1.9       | 4.7         | 11    | 17    | 7.2   | 3.5   | 2.5   |
| 13                      | 2.5  | 2.5   | 2.2  | 1.9  | 2.4     | 2.0       | 4.9         | 12    | 17    | 6.8   | 3.3   | 2.5   |
| 14                      | 2.5  | 2.5   | 2.2  | 2.4  | 2.3     | 2.0       | 4.9         | 13    | 17    | 6.6   | 3.3   | 2.4   |
| 15                      | 2.5  | 2.5   | 2.6  | 2.1  | 2.3     | 1.9       | 5.0         | 13    | 18    | 6.2   | 3.1   | 2.4   |
| 16                      | 2.5  | 2.4   | 2.4  | 2.2  | 2.2     | 1.9       | 5.0         | 13    | 18    | 5.9   | 2.9   | 2.3   |
| 17                      | 2.5  | 2.3   | 2.3  | 2.2  | 2.2     | 1.9       | 5.2         | 13    | 18    | 5.7   | 2.9   | 2.3   |
| 18                      | 2.5  | 2.3   | 2.3  | 2.0  | 2.1     | 2.0       | 5.5         | 12    | 18    | 5.5   | 2.8   | 2.3   |
| 19                      | 2.6  | 2.3   | 2.3  | 2.0  | 2.3     | 2.0       | 5.9         | 12    | 18    | 5.4   | 2.6   | 2.0   |
| 20                      | 2.8  | 2.3   | 2.3  | 1.9  | 2.4     | 2.1       | 6.2         | 11    | 17    | 5.2   | 2.5   | 2.0   |
| 21                      | 2.8  | 2.4   | 2.2  | 1.9  | 2.1     | 2.1       | 6.8         | 12    | 16    | 5.2   | 2.4   | 2.0   |
| 22                      | 2.8  | 2.3   | 2.2  | 1.9  | 2.0     | 2.1       | 7.5         | 11    | 15    | 5.7   | 2.5   | 2.0   |
| 23                      | 2.6  | 2.4   | 2.2  | 1.9  | 1.9     | 2.1       | 7.3         | 11    | 14    | 5.7   | 3.1   | 2.0   |
| 24                      | 2.5  | 2.3   | 2.3  | 1.9  | 2.3     | 2.2       | 7.2         | 9.7   | 13    | 5.4   | 2.5   | 2.0   |
| 25                      | 2.5  | 2.3   | 2.3  | 2.0  | 2.6     | 2.3       | 6.8         | 9.1   | 13    | 5.2   | 2.6   | 1.9   |
| 26                      | 2.6  | 2.3   | 1.9  | 1.9  | 2.1     | 2.3       | 6.6         | 9.3   | 12    | 5.2   | 2.8   | 1.9   |
| 27                      | 2.8  | 2.1   | 2.4  | 1.9  | 2.1     | 2.5       | 6.6         | 9.7   | 12    | 5.2   | 2.8   | 1.8   |
| 28                      | 2.6  | 2.3   | 2.3  | 1.8  | 2.1     | 2.6       | 6.0         | 10    | 11    | 5.0   | 2.8   | 1.7   |
| 29                      | 2.6  | 2.3   | 2.4  | 1.8  | 2.0     | 2.6       | 5.7         | 11    | 11    | 5.2   | 2.6   | 1.8   |
| 30                      | 2.5  | 2.3   | 2.4  | 1.8  | -----   | 2.5       | 5.5         | 11    | 10    | 5.7   | 2.4   | 1.8   |
| 31                      | 2.8  | ----- | 2.1  | 1.8  | -----   | 2.6       | -----       | 11    | ----- | 5.5   | 2.3   | ----- |
| Total                   | 86.5 | 73.6  | 70.9 | 65.5 | 68.3    | 66.5      | 150.3       | 288.0 | 462   | 208.8 | 100.1 | 65.9  |
| Mean                    | 2.79 | 2.45  | 2.29 | 2.11 | 2.36    | 2.15      | 5.01        | 9.29  | 15.4  | 67.4  | 3.23  | 2.20  |
| Ac-ft                   | 172  | 146   | 141  | 130  | 135     | 132       | 298         | 571   | 916   | 414   | 199   | 131   |
| Calendar year 1959: Max | 20   |       |      |      | Min 1.9 | Mean 5.53 | Ac-ft 4,000 |       |       |       |       |       |
| Water year 1959-60: Max | 18   |       |      |      | Min 1.7 | Mean 4.66 | Ac-ft 3,580 |       |       |       |       |       |

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 1950 and October 1959 to September 1960 in reports of the Geological Survey. October 1950 to September 1959 in files of city of Los Angeles, Department of Water and Power. Monthly discharge only prior to October 1950, published in WSP 1314.

Gage.--Water-stage recorder and 10-foot Cippoletti 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 3-foot Cippoletti weir, all at present site at different datums.

Average discharge.--33 years (1927-60), 21.8 cfs (15,780 acre-ft per year); median of yearly mean discharges, 6.6 cfs (4,800 acre-ft per year).

Extremes.--Maximum discharge during year, 19 cfs Mar. 11; no flow Aug. 10 to Sept. 4. 1927-60: Maximum daily discharge, 1,200 cfs July 9, 1938 (gage height, 7.06 ft); no flow at times.

Remarks.--Natural flow affected by storage in several reservoirs, many natural lakes, diversions for irrigation, and return flow from irrigated areas. Major portion of runoff from drainage is diverted out of basin through Los Angeles aqueduct. Discharge at this point 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 1959 to September 1960

| Day                     | Oct. | Nov.  | Dec.  | Jan.  | Feb.  | Mar.  | Apr.      | May   | June        | July | Aug. | Sept. |
|-------------------------|------|-------|-------|-------|-------|-------|-----------|-------|-------------|------|------|-------|
| 1                       | 2.2  | 2.6   | 4.2   | 7.6   | 9.5   | 11    | 9.8       | 7.3   | 4.0         | 1.2  | 0.5  | 0     |
| 2                       | 2.2  | 2.8   | 4.2   | 7.6   | 10    | 11    | 9.8       | 7.3   | 3.7         | 1.2  | .5   | 0     |
| 3                       | 2.2  | 2.8   | 4.2   | 7.9   | 10    | 11    | 9.8       | 7.3   | 3.5         | 1.2  | .5   | 0     |
| 4                       | 2.2  | 3.0   | 4.7   | 8.2   | 10    | 11    | 9.5       | 7.0   | 3.5         | 1.2  | .5   | 0     |
| 5                       | 2.4  | 3.0   | 4.7   | 8.2   | 12    | 11    | 9.2       | 7.0   | 3.2         | 1.2  | .5   | .1    |
| 6                       | 2.8  | 3.2   | 4.7   | 8.2   | 12    | 11    | 8.8       | 7.0   | 3.2         | 1.2  | .4   | .2    |
| 7                       | 2.8  | 3.5   | 4.7   | 8.2   | 12    | 11    | 8.5       | 7.0   | 3.2         | 1.2  | .4   | .3    |
| 8                       | 2.8  | 3.5   | 5.0   | 8.2   | 12    | 11    | 8.5       | 7.0   | 3.0         | 1.2  | .3   | .5    |
| 9                       | 2.8  | 3.7   | 5.0   | 8.2   | 12    | 11    | 8.5       | 6.7   | 3.0         | 1.2  | .2   | .4    |
| 10                      | 2.8  | 3.7   | 5.0   | 8.5   | 12    | 11    | 8.5       | 6.4   | 3.0         | 1.2  | 0    | .4    |
| 11                      | 2.8  | 3.7   | 5.0   | 8.5   | 11    | 17    | 8.2       | 6.1   | 2.8         | 1.2  | 0    | .5    |
| 12                      | 3.0  | 3.7   | 5.0   | 8.8   | 11    | 16    | 7.9       | 5.8   | 2.6         | 1.2  | 0    | .5    |
| 13                      | 3.0  | 4.0   | 5.0   | 8.8   | 11    | 14    | 7.9       | 5.8   | 2.6         | 1.1  | 0    | .6    |
| 14                      | 3.0  | 4.2   | 5.3   | 8.8   | 11    | 13    | 7.9       | 5.8   | 2.6         | 1.1  | 0    | .6    |
| 15                      | 3.0  | 4.2   | 5.5   | 8.8   | 11    | 12    | 7.9       | 5.5   | 2.4         | 1.1  | 0    | .8    |
| 16                      | 3.2  | 4.2   | 5.5   | 8.8   | 11    | 12    | 7.9       | 5.5   | 2.4         | 1.1  | 0    | .8    |
| 17                      | 3.2  | 4.5   | 5.5   | 8.8   | 11    | 11    | 7.9       | 5.5   | 2.2         | 1.1  | 0    | .8    |
| 18                      | 3.2  | 4.5   | 5.5   | 8.8   | 10    | 11    | 7.6       | 5.3   | 2.2         | 1.1  | 0    | .9    |
| 19                      | 3.2  | 4.5   | 5.8   | 8.8   | 10    | 11    | 7.3       | 5.0   | 2.0         | 1.1  | 0    | .9    |
| 20                      | 3.2  | 4.5   | 6.1   | 9.2   | 10    | 11    | 7.5       | 4.7   | 2.0         | 1.1  | 0    | .9    |
| 21                      | 3.2  | 4.7   | 6.4   | 9.2   | 10    | 11    | 7.3       | 4.7   | 2.0         | 1.1  | 0    | 1.1   |
| 22                      | 3.5  | 4.7   | 6.7   | 9.2   | 10    | 10    | 6.7       | 4.7   | 2.0         | .8   | 0    | 1.1   |
| 23                      | 3.5  | 4.7   | 6.7   | 9.2   | 10    | 10    | 6.7       | 4.5   | 1.8         | .6   | 0    | 1.1   |
| 24                      | 3.2  | 4.7   | 6.7   | 9.2   | 10    | 10    | 6.7       | 4.5   | 1.8         | .6   | 0    | 1.1   |
| 25                      | 3.2  | 4.7   | 7.0   | 9.2   | 10    | 10    | 7.0       | 4.5   | 1.6         | .6   | 0    | 1.2   |
| 26                      | 3.2  | 4.5   | 7.0   | 9.2   | 10    | 10    | 7.0       | 4.5   | 1.6         | .5   | 0    | 1.2   |
| 27                      | 3.2  | 4.5   | 7.0   | 9.2   | 10    | 10    | 7.3       | 4.5   | 1.6         | .5   | 0    | 1.2   |
| 28                      | 3.2  | 4.5   | 7.0   | 9.2   | 10    | 10    | 7.3       | 4.5   | 1.4         | .5   | 0    | 1.2   |
| 29                      | 3.0  | 4.2   | 7.3   | 9.2   | 10    | 10    | 7.3       | 4.5   | 1.4         | .5   | 0    | 1.2   |
| 30                      | 2.8  | 4.2   | 7.6   | 9.2   | 10    | 10    | 7.3       | 4.2   | 1.2         | .5   | 0    | 1.2   |
| 31                      | 2.6  | ----- | 7.6   | 9.2   | 10    | 9.8   | -----     | 4.2   | -----       | .5   | 0    | ----- |
| Total                   | 90.6 | 119.2 | 177.6 | 270.1 | 308.5 | 348.8 | 239.3     | 174.3 | 73.5        | 29.9 | 3.8  | 20.8  |
| Mean                    | 2.92 | 3.97  | 5.73  | 8.71  | 10.6  | 11.3  | 7.98      | 5.62  | 2.45        | 0.96 | 0.12 | 0.69  |
| Ac-ft                   | 180  | 236   | 352   | 536   | 612   | 692   | 475       | 346   | 146         | 58   | 7.5  | 41    |
| Calendar year 1959: Max | 60   |       |       |       | Min 0 |       | Mean 6.50 |       | Ac-ft 4,710 |      |      |       |
| Water year 1959-60: Max | 17   |       |       |       | Min 0 |       | Mean 5.07 |       | Ac-ft 3,680 |      |      |       |

2860. Cottonwood Creek near Olancho, Calif.

Location.--Lat 36°26'20", long 118°04'40", T.17 S., R.36 E., just downstream from intake to Cottonwood powerhouse, 11.2 miles north of Olancho.

Drainage area.--39.9 sq mi.

Records available.--January 1906 to March 1911, January 1914 to September 1950, and October 1959 to September 1960 in reports of the Geological Survey. October 1950 to September 1959 in files of city of Los Angeles, Department of Water and Power. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder and Parshall flume on creek; water-stage recorder and Cippoletti weir for 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.--50 years (1906-10, 1914-60), 22.5 cfs (16,290 acre-ft per year).

Extremes.--Maximum discharge during year, 8.0 cfs Apr. 5; minimum daily, 0.1 cfs for many days. 1906-11, 1914-60: Maximum discharge observed, 434 cfs June 13, 1906 (discharge measurement); no flow Mar. 25-30, 1959.

Remarks.--No regulation above station. Cottonwood powerhouse (maximum capacity, 22 cfs) has diverted since Nov. 13, 1908. Records Oct. 31, 1938, to Sept. 30, 1950, computed as sum of powerhouse diversion and flow past station. 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.

Revisions (water years).--WSP 1564: 1909.

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                       | 0.2  | 0.2   | 0.2  | 0.2  | 0.1   | 0.1  | 0.1   | 0.2  | 0.2   | 0.2  | 0.1  | 0.1   |
| 2                       | .4   | .2    | .2   | .2   | .1    | .1   | 1.9   | .2   | .2    | .2   | .1   | .1    |
| 3                       | .4   | .2    | .2   | .2   | .1    | .1   | 1.5   | .2   | .2    | .2   | .1   | .1    |
| 4                       | .4   | .2    | .1   | .2   | .1    | .1   | 1.7   | .2   | .2    | .2   | .1   | .1    |
| 5                       | .4   | .2    | .1   | .2   | .1    | .1   | 2.8   | .2   | .2    | .2   | .1   | .1    |
| 6                       | .4   | .2    | .1   | .1   | .1    | .1   | 2.0   | .2   | .2    | .2   | .1   | .1    |
| 7                       | .3   | .3    | .1   | .1   | .1    | .1   | 1.8   | .2   | .1    | .2   | .1   | .1    |
| 8                       | .3   | .4    | .1   | .1   | .1    | .1   | .8    | .2   | .1    | .2   | .1   | .1    |
| 9                       | .3   | .4    | .1   | .1   | .1    | .1   | .6    | .2   | .1    | .2   | .1   | .1    |
| 10                      | .4   | .4    | .1   | .2   | .1    | .1   | .2    | .2   | .1    | .2   | .1   | .2    |
| 11                      | .5   | .2    | .1   | .2   | .1    | .1   | .1    | .2   | .1    | .2   | .1   | .3    |
| 12                      | .5   | .2    | .2   | .2   | .1    | .2   | .1    | .2   | .1    | .2   | .1   | .6    |
| 13                      | .5   | .2    | .2   | .2   | .1    | .2   | .1    | .2   | .1    | .2   | .1   | .1    |
| 14                      | .2   | .2    | .2   | .2   | .1    | .2   | .1    | .2   | .1    | .2   | .1   | .1    |
| 15                      | .2   | .2    | .2   | .2   | .1    | .2   | .1    | .2   | .1    | .2   | .1   | .1    |
| 16                      | .2   | .2    | .2   | .2   | .1    | .2   | .1    | .1   | .1    | .2   | .1   | .1    |
| 17                      | .3   | .2    | .2   | .2   | .1    | .2   | .1    | .1   | .1    | .2   | .1   | .1    |
| 18                      | .4   | .2    | .1   | .2   | .1    | .2   | .1    | .1   | .1    | .2   | .1   | .1    |
| 19                      | .4   | .2    | .2   | .2   | .1    | .2   | .1    | .1   | .1    | .2   | .1   | .1    |
| 20                      | .3   | .2    | .2   | .2   | .1    | .2   | .1    | .1   | .1    | .2   | .1   | .1    |
| 21                      | .5   | .2    | .2   | .2   | .1    | .2   | .1    | .1   | .1    | .2   | .1   | .1    |
| 22                      | .5   | .2    | .2   | .2   | .1    | .2   | .1    | .1   | .1    | .2   | .1   | .1    |
| 23                      | .5   | .2    | .2   | .2   | .1    | .2   | .1    | .1   | .1    | .2   | .1   | .1    |
| 24                      | .4   | .2    | .2   | .2   | .1    | .2   | .1    | .1   | .1    | .2   | .1   | .1    |
| 25                      | .4   | .3    | .2   | .2   | .1    | .1   | .1    | .1   | .1    | .2   | .1   | .1    |
| 26                      | .5   | .3    | .2   | .2   | .1    | .1   | .2    | .1   | .1    | .2   | .1   | .1    |
| 27                      | .5   | .3    | .2   | .2   | .1    | .1   | .2    | .1   | .1    | .2   | .1   | .1    |
| 28                      | .4   | .3    | .2   | .2   | .1    | .1   | .2    | .2   | .1    | .2   | .1   | .1    |
| 29                      | .5   | .3    | .2   | .2   | .1    | .1   | .2    | .2   | .1    | .2   | .1   | .1    |
| 30                      | .2   | .2    | .2   | .2   | .1    | .1   | .2    | .2   | .1    | .2   | .1   | .1    |
| 31                      | .2   | ----- | .2   | .2   | ----- | .1   | ----- | .2   | ----- | .2   | .1   | ----- |
| Total                   | 9.8  | 7.2   | 5.3  | 5.8  | 2.9   | 4.4  | 15.9  | 5.0  | 3.6   | 6.2  | 3.1  | 5.8   |
| Mean                    | 0.32 | 0.24  | 0.17 | 0.19 | 0.10  | 0.14 | 0.53  | 0.16 | 0.12  | 0.20 | 0.10 | 0.13  |
| Ac-ft                   | 19   | 14    | 11   | 12   | 5.8   | 8.7  | 32    | 9.9  | 7.1   | 12   | 6.1  | 7.5   |
| Calendar year 1959: Max |      |       | 6.2  |      | Min   | 0    | Mean  | 0.57 | Ac-ft | 412  |      |       |
| Water year 1959-60: Max |      |       | 2.8  |      | Min   | 0.1  | Mean  | 0.20 | Ac-ft | 145  |      |       |

## 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 1959 to September 1960

| Day                     | Oct.  | Nov.  | Dec.  | Jan.  | Feb.  | Mar.  | Apr.  | May   | June  | July  | Aug. | Sept. |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| 1                       | 4.7   | 4.7   | 2.5   | 2.3   | 4.6   | 4.6   | 11    | 12    | 7.6   | 3.3   | 3.2  | 1.2   |
| 2                       | 4.9   | 5.2   | 2.5   | 2.0   | 4.1   | 4.6   | 17    | 13    | 7.6   | 3.3   | 2.8  | 1.5   |
| 3                       | 4.9   | 5.2   | 2.5   | 2.0   | 4.4   | 4.6   | 18    | 11    | 7.6   | 3.3   | 2.4  | 2.0   |
| 4                       | 4.9   | 5.2   | 4.1   | 2.3   | 4.6   | 4.6   | 19    | 10    | 7.6   | 3.3   | 2.2  | 2.2   |
| 5                       | 4.4   | 4.7   | 3.4   | 4.0   | 4.8   | 4.6   | 20    | 9.6   | 7.9   | 3.3   | 2.2  | 1.7   |
| 6                       | 4.4   | 5.2   | 3.2   | 3.9   | 5.1   | 6.3   | 18    | 9.6   | 8.4   | 3.3   | 2.0  | 1.5   |
| 7                       | 4.3   | 5.3   | 3.4   | 3.9   | 5.1   | 5.6   | 17    | 9.6   | 8.4   | 3.1   | 2.0  | 1.5   |
| 8                       | 4.3   | 5.1   | 3.7   | 3.9   | 5.6   | 6.4   | 16    | 9.6   | 7.8   | 2.9   | 1.9  | 1.5   |
| 9                       | 4.6   | 5.4   | 3.7   | 3.9   | 5.3   | 6.4   | 15    | 9.6   | 7.5   | 2.9   | 1.9  | 1.5   |
| 10                      | 4.2   | 5.1   | 3.9   | 4.2   | 5.1   | 6.4   | 14    | 9.6   | 7.2   | 3.3   | 1.7  | 2.5   |
| 11                      | 4.1   | 5.2   | 3.7   | 4.2   | 5.1   | 6.4   | 12    | 9.6   | 7.5   | 3.8   | 1.7  | 3.9   |
| 12                      | 4.1   | 5.2   | 3.8   | 4.2   | 5.1   | 6.5   | 11    | 9.4   | 7.2   | 3.3   | 1.7  | 5.3   |
| 13                      | 4.1   | 5.2   | 2.7   | 4.2   | 5.1   | 6.5   | 12    | 9.4   | 6.9   | 3.1   | 1.5  | 3.4   |
| 14                      | 4.0   | 5.2   | 2.7   | 4.2   | 5.1   | 6.5   | 12    | 9.4   | 6.9   | 2.9   | 1.5  | 2.8   |
| 15                      | 4.0   | 5.2   | 3.3   | 4.2   | 5.1   | 6.2   | 11    | 9.0   | 6.4   | 2.7   | 1.5  | 2.6   |
| 16                      | 4.0   | 4.7   | 3.3   | 4.0   | 5.1   | 6.2   | 11    | 8.9   | 6.1   | 2.5   | 1.4  | 2.6   |
| 17                      | 3.9   | 4.7   | 3.3   | 4.0   | 4.8   | 6.5   | 11    | 8.9   | 6.1   | 2.3   | 1.4  | 2.6   |
| 18                      | 4.0   | 5.4   | 3.9   | 4.0   | 4.8   | 6.7   | 11    | 8.6   | 5.6   | 2.3   | 1.4  | 2.6   |
| 19                      | 5.7   | 5.2   | 4.0   | 4.0   | 4.8   | 7.3   | 11    | 8.6   | 5.3   | 2.1   | 1.4  | 2.6   |
| 20                      | 5.6   | 4.7   | 4.2   | 4.0   | 4.8   | 7.6   | 11    | 8.6   | 5.3   | 2.1   | 1.2  | 2.4   |
| 21                      | 3.9   | 4.7   | 4.2   | 4.0   | 4.8   | 8.4   | 11    | 8.6   | 5.3   | 2.1   | 1.2  | 2.4   |
| 22                      | 4.1   | 4.9   | 4.2   | 4.0   | 4.8   | 8.7   | 10    | 8.4   | 4.8   | 2.1   | 1.2  | 2.4   |
| 23                      | 4.3   | 5.7   | 4.2   | 4.0   | 4.8   | 8.7   | 9.2   | 7.8   | 4.6   | 2.5   | 1.2  | 2.4   |
| 24                      | 4.6   | 5.2   | 4.4   | 4.2   | 4.6   | 8.9   | 9.9   | 7.5   | 4.6   | 2.3   | 1.4  | 2.4   |
| 25                      | 4.6   | 5.3   | 4.2   | 4.2   | 4.6   | 10    | 11    | 7.5   | 4.4   | 2.3   | 1.4  | 2.4   |
| 26                      | 4.6   | 5.0   | 4.0   | 4.2   | 4.6   | 11    | 11    | 7.5   | 4.1   | 2.1   | 1.4  | 2.2   |
| 27                      | 4.6   | 4.3   | 4.4   | 4.2   | 4.6   | 11    | 11    | 7.5   | 3.9   | 2.3   | 1.2  | 2.2   |
| 28                      | 4.6   | 4.8   | 4.4   | 4.0   | 4.6   | 9.2   | 10    | 7.6   | 3.9   | 2.7   | 1.2  | 2.2   |
| 29                      | 4.1   | 4.6   | 4.4   | 4.0   | 4.6   | 9.2   | 12    | 7.6   | 3.7   | 2.5   | 1.2  | 2.2   |
| 30                      | 3.5   | 2.5   | 4.2   | 4.2   | ----- | 10    | 12    | 7.6   | 3.4   | 4.2   | 1.4  | 2.2   |
| 31                      | 4.2   | ----- | 3.3   | 4.2   | ----- | 10    | ----- | 7.6   | ----- | 4.4   | 1.4  | ----- |
| Total                   | 132.2 | 148.8 | 113.7 | 118.6 | 140.5 | 225.6 | 385.1 | 279.2 | 183.6 | 88.6  | 51.2 | 70.9  |
| Mean                    | 4.26  | 4.96  | 3.67  | 3.83  | 4.84  | 7.28  | 12.8  | 9.01  | 6.12  | 2.86  | 1.65 | 2.36  |
| Ac-ft                   | 262   | 295   | 226   | 235   | 279   | 447   | 764   | 554   | 364   | 176   | 102  | 141   |
| Calendar year 1959: Max | 25    |       |       |       | Min   | 2.5   | Mean  | 8.07  | Ac-ft | 5,840 |      |       |
| Water year 1959-60: Max | 20    |       |       |       | Min   | 1.2   | Mean  | 5.30  | Ac-ft | 3,840 |      |       |

## MONO LAKE BASIN

2870. Mono Lake near Mono Lake, Calif.

Location.--Lat 38°00', long 119°08', in NE $\frac{1}{4}$  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 1960. Records prior to September 1934 are published in WSP 765.

Gage.--Staff gage or reference point. Datum of gage is 6,410.73 ft above mean sea level, datum of 1929. Prior to Oct. 2, 1945, at datum 20.07 ft lower. Gage readings have been reduced to elevations above mean sea level.

Extremes.--1912-60: Maximum elevation observed, 6,428.1 ft July 18, 1919; minimum observed, 6,397.65 ft Sept. 26, 1960.

Cooperation.--Records furnished by city of Los Angeles, Department of Water and Power.

Revisions (water years).--WSP 765: 1912-33. WSP 1284: 1952.

| Elevation, in feet, water year October 1959 to September 1960 |           |        |           |         |           |
|---------------------------------------------------------------|-----------|--------|-----------|---------|-----------|
| Date                                                          | Elevation | Date   | Elevation | Date    | Elevation |
| Oct. 2                                                        | 6,399.79  | Feb. 8 | 6,399.22  | June 13 | 6,398.92  |
| 9                                                             | 6,399.73  | 15     | 6,399.22  | 20      | 6,398.82  |
| 16                                                            | 6,399.69  | 22     | 6,399.27  | 27      | 6,398.72  |
| 19                                                            | 6,399.67  | 29     | 6,399.31  | July 5  | 6,398.64  |
| 26                                                            | 6,399.65  | Mar. 7 | 6,399.23  | 11      | 6,398.57  |
| Nov. 2                                                        | 6,399.55  | 14     | 6,399.29  | 18      | 6,398.52  |
| 9                                                             | 6,399.49  | 21     | 6,399.34  | 25      | 6,398.43  |
| 16                                                            | 6,399.47  | 28     | 6,399.29  | Aug. 1  | 6,398.40  |
| 23                                                            | 6,399.44  | Apr. 4 | 6,399.38  | 8       | 6,398.32  |
| 30                                                            | 6,399.41  | 11     | 6,399.33  | 15      | 6,398.20  |
| Dec. 7                                                        | 6,399.28  | 18     | 6,399.27  | 17      | 6,398.21  |
| 14                                                            | 6,399.31  | 25     | 6,399.24  | 22      | 6,398.12  |
| 21                                                            | 6,399.33  | May 2  | 6,399.17  | 29      | 6,397.99  |
| 28                                                            | 6,399.31  | 9      | 6,399.16  | Sept. 8 | 6,397.77  |
| Jan. 5                                                        | 6,399.32  | 16     | 6,399.11  | 12      | 6,397.79  |
| 11                                                            | 6,399.24  | 23     | 6,399.00  | 19      | 6,397.79  |
| 18                                                            | 6,399.24  | 31     | 6,399.00  | 26      | 6,397.65  |
| 25                                                            | 6,399.22  | June 6 | 6,398.97  |         |           |

2874. Rush Creek above Grant Lake, near June Lake, Calif.

Location.--Lat 37°48'20", long 119°06'30", in NE¼ sec. 4, T.2 S., R.26 E., on left bank in narrows, 0.6 mile upstream from head of Grant Lake and 2.7 miles northwest of town of June Lake.

Drainage area.--51.2 sq mi.

Records available.--December 1936 to September 1950 and October 1959 to September 1960 in reports of the Geological Survey. October 1950 to September 1959 in files of city of Los Angeles, Department of Water and Power. Monthly discharge only prior to October 1950, published in WSP 1314.

Gage.--Water-stage recorder and 15-foot Parshall flume. Altitude of gage is 7,200 ft (from topographic map).

Average discharge.--23 years (1937-60), 81.0 cfs (58,640 acre-ft per year).

Extremes.--Maximum discharge during year, 148 cfs May 31; minimum daily, 8.4 cfs Nov. 30, Dec. 9, 10.  
1937-60: 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.

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 1959 to September 1960

| Day                     | Oct.  | Nov.  | Dec.  | Jan.  | Feb.  | Mar.  | Apr.  | May   | June  | July   | Aug.  | Sept. |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| 1                       | 89    | 61    | 8.9   | 44    | 17    | 13    | 21    | 20    | 133   | 30     | 45    | 58    |
| 2                       | 66    | 62    | 8.9   | 56    | 19    | 13    | 20    | 20    | 140   | 27     | 38    | 56    |
| 3                       | 66    | 67    | 8.3   | 33    | 15    | 15    | 19    | 21    | 144   | 25     | 32    | 64    |
| 4                       | 67    | 82    | 9.3   | 39    | 24    | 17    | 20    | 20    | 145   | 21     | 20    | 60    |
| 5                       | 63    | 57    | 8.9   | 36    | 27    | 17    | 21    | 20    | 146   | 20     | 20    | 57    |
| 6                       | 62    | 48    | 8.9   | 37    | 31    | 17    | 22    | 20    | 143   | 18     | 28    | 57    |
| 7                       | 63    | 24    | 8.9   | 42    | 31    | 17    | 24    | 22    | 139   | 17     | 21    | 55    |
| 8                       | 65    | 15    | 8.9   | 41    | 33    | 17    | 24    | 25    | 134   | 20     | 17    | 55    |
| 9                       | 65    | 12    | 8.4   | 37    | 32    | 16    | 25    | 25    | 130   | 49     | 18    | 59    |
| 10                      | 65    | 12    | 8.4   | 34    | 32    | 16    | 26    | 29    | 126   | 62     | 20    | 58    |
| 11                      | 65    | 11    | 8.9   | 33    | 26    | 15    | 26    | 36    | 123   | 65     | 30    | 57    |
| 12                      | 64    | 11    | 9.3   | 31    | 24    | 15    | 24    | 50    | 123   | 67     | 29    | 60    |
| 13                      | 52    | 11    | 9.8   | 32    | 23    | 18    | 22    | 57    | 123   | 66     | 18    | 60    |
| 14                      | 35    | 11    | 13    | 42    | 20    | 19    | 20    | 99    | 121   | 65     | 15    | 59    |
| 15                      | 51    | 11    | 12    | 44    | 19    | 18    | 21    | 106   | 119   | 64     | 13    | 60    |
| 16                      | 60    | 10    | 24    | 37    | 17    | 24    | 22    | 63    | 119   | 63     | 14    | 58    |
| 17                      | 52    | 10    | 33    | 32    | 17    | 24    | 22    | 95    | 118   | 64     | 36    | 56    |
| 18                      | 46    | 10    | 36    | 36    | 15    | 20    | 23    | 117   | 115   | 84     | 50    | 56    |
| 19                      | 51    | 10    | 36    | 33    | 17    | 18    | 24    | 119   | 113   | 89     | 40    | 60    |
| 20                      | 56    | 10    | 37    | 37    | 17    | 18    | 26    | 119   | 111   | 89     | 33    | 56    |
| 21                      | 58    | 10    | 36    | 36    | 18    | 17    | 28    | 118   | 109   | 64     | 21    | 45    |
| 22                      | 45    | 10    | 40    | 30    | 16    | 18    | 26    | 117   | 108   | 56     | 17    | 34    |
| 23                      | 39    | 10    | 41    | 23    | 14    | 18    | 25    | 113   | 106   | 39     | 14    | 43    |
| 24                      | 53    | 9.8   | 40    | 20    | 17    | 18    | 24    | 111   | 105   | 42     | 13    | 55    |
| 25                      | 61    | 9.8   | 38    | 19    | 15    | 19    | 24    | 109   | 104   | 72     | 12    | 56    |
| 26                      | 63    | 9.3   | 39    | 19    | 14    | 19    | 23    | 109   | 102   | 69     | 11    | 61    |
| 27                      | 53    | 9.3   | 44    | 20    | 14    | 20    | 22    | 112   | 101   | 38     | 14    | 58    |
| 28                      | 40    | 8.9   | 46    | 18    | 13    | 22    | 21    | 117   | 97    | 35     | 12    | 60    |
| 29                      | 47    | 8.9   | 50    | 16    | 13    | 20    | 21    | 120   | 77    | 34     | 26    | 58    |
| 30                      | 45    | 8.4   | 51    | 16    | ----- | 20    | 21    | 123   | 36    | 34     | 50    | 59    |
| 31                      | 58    | ----- | 56    | 16    | ----- | 21    | ----- | 126   | ----- | 42     | 55    | ----- |
| Total                   | 1,745 | 619.4 | 788.8 | 969   | 593   | 559   | 687   | 2,358 | 3,511 | 1,508  | 782   | 1,690 |
| Mean                    | 56.3  | 20.6  | 25.4  | 31.3  | 20.4  | 18.0  | 22.9  | 76.1  | 117   | 48.6   | 25.3  | 56.3  |
| Ac-ft                   | 3,460 | 1,230 | 1,560 | 1,920 | 1,180 | 1,110 | 1,360 | 4,680 | 6,960 | 2,890  | 1,550 | 3,350 |
| Calendar year 1959: Max | 140   |       |       | Min   | 8.4   |       | Mean  | 51.2  | Ac-ft | 37,040 |       |       |
| Water year 1959-60: Max | 146   |       |       | Min   | 8.4   |       | Mean  | 43.2  | Ac-ft | 31,350 |       |       |

## 2879. Lee Vining Creek near Lee Vining, Calif.

Location (revised).--Lat 37°55'45", long 119°10'10", in SW $\frac{1}{4}$  sec.24, T.1 N., R.25 E., on right bank 0.8 mile upstream from Gibbs Canyon and 3.3 miles southwest of Lee Vining.

Drainage area.--35.2 sq mi.

Records available.--April 1934 to September 1950 and October 1959 to September 1960 in reports of the Geological Survey. October 1950 to September 1959 in files of city of Los Angeles, Department of Water and Power. Monthly discharge only prior to October 1950, published in WSP 1314.

Gage.--Water-stage recorder on concrete revetment walls, rebuilt at different datum Oct. 17, 1955. Altitude of gage is 7,400 ft (from topographic map). Prior to Aug. 6, 1944, staff gage at same site at different datum.

Average discharge.--26 years (1934-60), 67.8 cfs (49,080 acre-ft per year).

Extremes.--Maximum discharge during year, 216 cfs June 2; minimum daily, 9.8 cfs

Jan. 13, 28.

1934-60: Maximum discharge observed, 503 cfs June 9, 1938 (gage height, 3.07 ft); no flow Nov. 29, 1935.

Remarks.--Flow regulated by Ellery, Saddlebag, and Tioga Lakes (combined capacity, 13,269 acre-ft), and several small 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 1959 to September 1960

| Day                     | Oct.  | Nov.  | Dec.  | Jan.  | Feb.    | Mar.  | Apr.      | May   | June         | July  | Aug.  | Sept. |
|-------------------------|-------|-------|-------|-------|---------|-------|-----------|-------|--------------|-------|-------|-------|
| 1                       | 22    | 12    | 18    | 16    | 16      | 14    | 30        | 23    | 118          | 69    | 51    | 18    |
| 2                       | 19    | 15    | 17    | 27    | 23      | 15    | 21        | 34    | 185          | 55    | 30    | 22    |
| 3                       | 20    | 17    | 16    | 20    | 33      | 15    | 33        | 40    | 195          | 50    | 24    | 19    |
| 4                       | 18    | 22    | 15    | 16    | 35      | 18    | 60        | 44    | 158          | 49    | 22    | 22    |
| 5                       | 22    | 15    | 21    | 16    | 27      | 17    | 30        | 42    | 156          | 65    | 20    | 15    |
| 6                       | 20    | 16    | 17    | 36    | 28      | 20    | 32        | 45    | 157          | 38    | 21    | 21    |
| 7                       | 17    | 18    | 23    | 28    | 20      | 21    | 68        | 42    | 148          | 57    | 19    | 19    |
| 8                       | 17    | 16    | 14    | 32    | 36      | 19    | 43        | 53    | 144          | 53    | 26    | 18    |
| 9                       | 17    | 16    | 29    | 28    | 35      | 15    | 45        | 51    | 141          | 49    | 29    | 21    |
| 10                      | 18    | 15    | 19    | 31    | 20      | 20    | 45        | 76    | 140          | 43    | 21    | 22    |
| 11                      | 21    | 16    | 26    | 66    | 23      | 18    | 46        | 88    | 138          | 82    | 28    | 16    |
| 12                      | 24    | 26    | 28    | 21    | 20      | 16    | 68        | 147   | 96           | 50    | 20    | 23    |
| 13                      | 29    | 27    | 24    | 9.8   | 29      | 15    | 48        | 147   | 138          | 42    | 30    | 17    |
| 14                      | 25    | 15    | 20    | 19    | 23      | 15    | 57        | 147   | 140          | 23    | 19    | 20    |
| 15                      | 21    | 18    | 27    | 16    | 28      | 14    | 75        | 147   | 141          | 27    | 23    | 18    |
| 16                      | 18    | 15    | 28    | 26    | 27      | 23    | 35        | 147   | 134          | 34    | 25    | 17    |
| 17                      | 18    | 15    | 24    | 16    | 20      | 19    | 46        | 146   | 120          | 50    | 24    | 18    |
| 18                      | 18    | 15    | 30    | 42    | 26      | 22    | 71        | 144   | 122          | 46    | 26    | 18    |
| 19                      | 20    | 15    | 17    | 52    | 16      | 26    | 64        | 129   | 97           | 24    | 32    | 18    |
| 20                      | 18    | 15    | 19    | 20    | 16      | 16    | 64        | 88    | 101          | 63    | 20    | 17    |
| 21                      | 15    | 15    | 32    | 20    | 22      | 27    | 65        | 91    | 88           | 26    | 16    | 19    |
| 22                      | 20    | 15    | 33    | 29    | 16      | 17    | 67        | 84    | 66           | 53    | 27    | 18    |
| 23                      | 18    | 15    | 17    | 32    | 23      | 20    | 69        | 60    | 103          | 16    | 27    | 21    |
| 24                      | 15    | 14    | 17    | 43    | 28      | 23    | 50        | 59    | 69           | 14    | 32    | 18    |
| 25                      | 15    | 14    | 20    | 25    | 21      | 27    | 49        | 41    | 62           | 23    | 20    | 20    |
| 26                      | 21    | 14    | 37    | 10    | 20      | 25    | 64        | 37    | 54           | 39    | 30    | 17    |
| 27                      | 15    | 14    | 32    | 11    | 16      | 24    | 35        | 88    | 82           | 42    | 15    | 18    |
| 28                      | 14    | 15    | 31    | 9.8   | 20      | 18    | 28        | 78    | 60           | 39    | 15    | 18    |
| 29                      | 13    | 15    | 30    | 16    | 28      | 34    | 36        | 82    | 36           | 52    | 23    | 17    |
| 30                      | 12    | 14    | 31    | 20    | -----   | 25    | 20        | 106   | 42           | 45    | 28    | 16    |
| 31                      | 12    | ----- | 36    | 13    | -----   | 22    | -----     | 111   | -----        | 63    | 16    | ----- |
| Total                   | 579   | 484   | 748   | 766.6 | 695     | 620   | 1,462     | 2,617 | 3,431        | 1,382 | 759   | 561   |
| Mean                    | 18.7  | 16.1  | 24.1  | 24.7  | 24.0    | 20.0  | 46.7      | 84.4  | 114          | 44.6  | 24.5  | 18.7  |
| Ac-ft                   | 1,150 | 960   | 1,480 | 1,520 | 1,380   | 1,230 | 2,900     | 5,190 | 6,810        | 2,747 | 1,510 | 1,110 |
| Calendar year 1959: Max | 137   |       |       |       | Min 12  |       | Mean 43.0 |       | Ac-ft 31,110 |       |       |       |
| Water year 1959-60: Max | 195   |       |       |       | Min 9.8 |       | Mean 38.5 |       | Ac-ft 27,980 |       |       |       |

2885. Walker Lake near Hawthorne, Nev.

Location.--Lat 38°35'05", long 118°42'15", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.2, T.8 N., R.29 E., 5 $\frac{1}{2}$  miles northwest of Hawthorne.

Records available.--August 1928 to September 1960. Occasional readings prior to August 1928.

Gage.--Bench mark, at U. S. Naval Depot, 4,053.41 ft above mean sea level, adjustment of 1912.

Extremes.--1928-60: Maximum elevation observed, 4,051.8 ft Mar. 13, 1928 (Indian Service); minimum observed, 3,983.43 ft Sept. 23, 1960.  
An elevation of 4,078.0 ft, adjustment of 1912, was observed Sept. 27, 1908, by Geological Survey.

Remarks.--Elevations determined by spirit leveling.

Cooperation.--Records partly furnished by U. S. Navy Department.

Elevation, in feet, water year October 1959 to September 1960

|             |          |              |          |
|-------------|----------|--------------|----------|
| Oct. 5..... | 3,987.07 | July 7.....  | 3,984.78 |
| Nov. 6..... | 3,986.66 | Sept. 6..... | 3,983.66 |
| Dec. 8..... | 3,986.40 | Sept.23..... | 3,983.43 |

## 2890. Virginia Creek near Bridgeport, Calif.

Location.--Lat 38°11'30", long 119°12'30", near center of W $\frac{1}{2}$  sec.22, T.4 N., R.25 E., on right bank  $1\frac{1}{2}$  miles downstream from Clearwater Creek, 3 miles upstream from mouth, and  $4\frac{1}{2}$  miles southeast of Bridgeport.

Drainage area.--64 sq mi, approximately.

Records available.--October 1953 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,700 ft (from topographic map).

Average discharge.--7 years, 15.0 cfs (10,860 acre-ft per year).

Extremes.--Maximum discharge during year, 39 cfs Mar. 25 (gage height, 3.90 ft); maximum gage height, 4.13 ft Jan. 17 (backwater from ice); minimum discharge, 1.0 cfs Aug. 18, 1953-60; Maximum discharge, 1,300 cfs Dec. 23, 1955 (gage height, 8.40 ft), from rating curve extended above 170 cfs on basis of slope-area measurement of peak flow; minimum, that of Aug. 18, 1960.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow partly regulated by Virginia Lakes and other lakes near headwaters. Diversions for irrigation of about 3,000 acres above station.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 31

Apr. 1 to Sept. 30

|     |     |     |    |      |     |     |     |
|-----|-----|-----|----|------|-----|-----|-----|
| 3.3 | 4.0 | 3.6 | 15 | 2.99 | 1.1 | 3.3 | 6.9 |
| 3.4 | 6.5 | 3.8 | 29 | 3.1  | 2.5 | 3.5 | 14  |
| 3.5 | 10  |     |    | 3.2  | 4.4 | 3.7 | 26  |

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     | 7.1   | 7.7   | 7.1   | b6.8  | 9.3   | 7.7   | 20    | 9.5   | 9.5   | 2.9  | 3.1  | 2.4   |
| 2     | 7.1   | 7.7   | 7.4   | b5.9  | b8.1  | b7.1  | 23    | 9.2   | 13    | 3.6  | 2.2  | 3.4   |
| 3     | 7.7   | 7.7   | 8.1   | b6.5  | b8.1  | 8.9   | 23    | 9.2   | 15    | 3.8  | 2.0  | 2.7   |
| 4     | 7.1   | 7.7   | 6.2   | b6.5  | b8.9  | 9.3   | 22    | 9.9   | 18    | 3.3  | *2.0 | 2.7   |
| 5     | 7.1   | 7.1   | b5.8  | b6.8  | 10    | 11    | 20    | 9.5   | 18    | *3.1 | 1.8  | 2.5   |
| 6     | 7.1   | 7.1   | b6.2  | b7.4  | 9.7   | 13    | 19    | 8.9   | 17    | 3.1  | 1.8  | 2.5   |
| 7     | 7.1   | 7.4   | b6.5  | b8.1  | 11    | 16    | 18    | 9.2   | 14    | 2.7  | 1.5  | 3.1   |
| 8     | 7.4   | 7.7   | 6.5   | 8.5   | 18    | 14    | 17    | 9.2   | *12   | 1.8  | 1.6  | 3.1   |
| 9     | 7.1   | 8.1   | 7.4   | 8.1   | 13    | 12    | 17    | 9.2   | 9.9   | 3.   | 2.1  | *3.1  |
| 10    | 7.1   | 7.7   | 7.4   | b7.7  | 13    | 11    | 16    | 9.5   | 9.5   | 3.8  | 2.2  | 4.4   |
| 11    | 7.1   | 8.1   | 6.8   | b7.4  | b11   | 12    | 15    | *10   | 9.2   | 3.4  | 2.2  | 4.9   |
| 12    | 7.4   | 8.1   | b6.5  | b7.4  | b12   | 13    | 13    | 10    | 8.9   | 2.9  | 2.4  | 4.2   |
| 13    | 7.4   | 7.7   | b7.1  | b7.7  | b10   | 13    | 13    | 11    | 8.6   | 2.7  | 2.2  | 4.0   |
| 14    | 7.7   | 8.1   | b6.2  | b7.4  | b9.3  | 12    | 13    | 11    | 9.2   | 2.5  | 2.2  | 3.8   |
| 15    | 7.7   | 7.7   | 7.1   | b7.4  | b8.9  | 11    | 13    | 11    | 9.2   | 2.5  | 2.0  | 3.8   |
| 16    | *7.7  | 7.4   | *8.5  | b7.4  | b8.5  | 11    | 12    | 11    | 8.9   | 2.4  | 1.2  | 4.0   |
| 17    | 7.7   | 7.7   | 9.3   | b7.4  | b8.5  | *10   | 12    | 11    | 7.6   | 2.2  | 1.3  | 4.0   |
| 18    | 8.5   | *8.1  | 9.3   | *b8.1 | *b8.1 | 11    | 13    | 11    | 7.9   | 2.1  | 1.1  | 3.8   |
| 19    | 8.5   | 8.1   | 8.1   | b7.4  | 9.3   | 13    | *13   | 9.9   | 6.9   | 2.1  | 1.2  | 3.8   |
| 20    | 8.5   | 7.7   | 8.1   | b7.4  | b9.3  | 16    | 13    | 8.6   | 6.2   | 2.1  | 1.5  | 3.8   |
| 21    | 7.7   | 8.1   | 8.9   | b7.7  | b8.9  | 19    | 13    | 9.2   | 5.6   | 2.1  | 1.6  | 4.0   |
| 22    | 7.4   | 7.4   | 8.1   | 8.5   | b8.5  | 21    | 13    | 8.6   | 4.9   | 2.1  | 1.7  | 4.2   |
| 23    | 7.7   | 8.5   | 8.1   | 8.5   | b8.1  | 21    | 13    | 8.2   | 4.0   | 2.1  | 2.1  | 4.0   |
| 24    | 7.7   | 7.4   | 8.5   | 8.9   | b8.9  | 23    | 12    | 8.2   | 4.0   | 2.1  | 2.2  | 4.0   |
| 25    | 7.7   | 7.4   | 8.1   | 9.3   | 8.9   | 23    | 12    | 6.9   | 3.3   | 2.4  | 2.4  | 3.8   |
| 26    | 7.7   | 6.8   | b7.1  | 9.3   | 8.9   | 21    | 12    | 6.6   | 3.1   | 2.7  | 2.2  | 3.8   |
| 27    | 7.7   | 6.5   | b8.1  | 9.3   | b8.1  | 21    | 11    | 6.2   | 3.1   | 3.1  | 2.2  | 4.0   |
| 28    | 7.7   | 7.1   | b7.7  | 9.3   | 8.5   | 15    | 11    | 5.9   | 2.7   | 3.1  | 2.4  | 3.8   |
| 29    | 7.4   | 6.8   | b7.7  | 8.9   | 8.1   | 21    | 10    | 6.3   | 3.1   | 3.3  | 2.4  | 4.0   |
| 30    | 7.7   | 6.8   | b7.4  | 9.3   | ----- | 21    | 9.5   | 7.9   | 3.1   | 3.8  | 2.4  | 4.4   |
| 31    | 7.7   | ----- | 7.7   | 8.9   | ----- | 18    | ----- | 7.9   | ----- | 3.8  | 2.4  | ----- |
| Total | 234.2 | 227.4 | 233.0 | 245.2 | 280.9 | 456.0 | 441.5 | 280.3 | 255.4 | 86.7 | 61.6 | 110.0 |
| Mean  | 7.55  | 7.58  | 7.52  | 7.91  | 9.69  | 14.7  | 14.7  | 9.04  | 8.51  | 2.87 | 1.99 | 3.67  |
| Ac-ft | 465   | 451   | 462   | 486   | 557   | 904   | 876   | 558   | 507   | 172  | 122  | 218   |

Calendar year 1959: Max 44 Min 1.9 Mean 9.63 Ac-ft 6,970  
 Water year 1959-60: Max 23 Min 1.1 Mean 7.96 Ac-ft 5,780

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

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

2895. Green Creek near Bridgeport, Calif.

Location.--Lat 38°10'25", long 119°14'00", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.29, T.4 N., R.25 E., on right bank 130 ft downstream from county road bridge and  $\frac{5}{2}$  miles south of Bridgeport.

Drainage area.--19.4 sq mi.

Records available.--October 1953 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,850 ft (from topographic map).

Average discharge.--7 years, 27.8 cfs (20,130 acre-ft per year).

Extremes.--Maximum discharge during year, 109 cfs June 5 (gage height, 2.64 ft); minimum, 2.5 cfs Sept. 27, but may have been less during periods of ice effect.  
1953-60: Maximum discharge, 307 cfs Dec. 23, 1955, from rating curve extended above 220 cfs on basis of slope-area measurement of peak flow and logarithmic plotting; maximum gage height, 3.46 ft Feb. 2, 1956 (backwater from ice); minimum discharge, that of Sept. 27, 1960.

Remarks.--Records good except those for periods of ice effect, which are fair. Flow regulated by West, Green, East, Summit, and other lakes.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|      |     |     |    |
|------|-----|-----|----|
| 1.45 | 2.6 | 1.8 | 12 |
| 1.5  | 3.5 | 2.0 | 23 |
| 1.6  | 5.0 | 2.3 | 52 |
| 1.7  | 8.0 | 2.6 | 97 |

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     | 13    | 7.1   | b4.4  | b4.2  | b5.9  | b5.3  | 14    | 19    | 78    | 35    | 46    | 5.3   |
| 2     | 12    | 7.1   | b4.6  | b3.9  | b5.3  | b4.8  | 16    | 19    | 92    | 36    | 42    | 4.4   |
| 3     | 12    | 7.1   | 4.8   | b4.2  | 5.6   | 5.6   | 18    | 20    | 95    | 35    | 38    | 4.4   |
| 4     | 12    | 6.2   | b4.2  | b3.9  | 6.5   | 5.6   | 21    | 21    | 93    | 33    | *35   | 4.2   |
| 5     | 11    | 5.0   | b5.9  | b5.9  | 7.1   | 5.9   | 22    | 20    | 97    | 33    | 33    | 4.0   |
| 6     | 10    | 4.6   | b3.9  | b4.2  | 7.1   | 6.5   | 25    | 19    | 93    | *29   | 30    | 4.0   |
| 7     | 10    | 4.6   | b4.0  | b4.4  | 7.4   | 8.0   | 25    | 25    | 79    | 28    | 28    | 3.9   |
| 8     | 10    | 4.6   | b4.0  | b4.6  | 8.8   | 8.0   | 25    | 30    | *73   | 27    | 26    | 3.8   |
| 9     | 9.6   | 4.6   | b4.0  | 4.6   | 10    | 7.1   | 26    | 35    | 70    | 26    | 25    | *3.7  |
| 10    | 8.8   | 4.6   | b4.4  | 4.8   | b6.5  | b7.1  | 27    | 44    | 67    | 25    | 23    | 4.2   |
| 11    | 8.8   | 4.6   | b3.9  | 4.8   | b5.9  | 7.4   | 27    | *53   | 66    | 25    | 21    | 5.9   |
| 12    | 9.2   | 4.6   | b3.9  | 5.0   | b6.2  | 7.4   | 22    | 64    | 76    | 23    | 22    | 5.6   |
| 13    | 9.2   | 4.6   | b3.8  | 5.0   | b7.1  | 7.7   | 22    | 66    | 79    | 22    | 22    | 5.0   |
| 14    | 8.8   | 4.6   | b3.8  | 5.3   | b6.5  | 8.0   | 24    | 63    | 74    | 22    | 21    | 4.2   |
| 15    | 8.4   | 4.6   | b3.9  | 5.6   | b6.5  | 8.4   | 24    | 60    | 70    | 22    | 19    | 4.0   |
| 16    | *8.4  | 4.6   | *b4.2 | b5.3  | b6.8  | b7.7  | 23    | 60    | 66    | 21    | 16    | 3.8   |
| 17    | 8.4   | 4.6   | 4.2   | b5.3  | b5.6  | *b8.0 | 23    | 57    | 72    | 19    | 16    | 3.7   |
| 18    | 8.0   | *4.6  | 4.4   | *b5.3 | *b5.6 | 8.4   | 25    | 53    | 70    | 18    | 15    | 3.7   |
| 19    | 7.7   | 4.8   | 4.2   | 5.0   | b5.6  | 8.4   | *25   | 50    | 63    | 18    | 14    | 3.5   |
| 20    | 7.4   | 4.6   | 4.2   | 5.0   | b5.9  | 10    | 26    | 48    | 60    | 17    | 12    | 3.4   |
| 21    | 7.4   | 4.6   | 4.4   | 4.8   | b5.6  | 12    | 31    | 46    | 58    | 17    | 12    | 3.4   |
| 22    | 7.7   | 4.6   | b4.2  | 4.8   | b5.3  | 14    | 33    | 41    | 56    | 16    | 10    | 3.2   |
| 23    | 7.7   | 4.8   | b4.4  | 5.0   | b5.3  | 13    | 29    | 38    | 53    | 16    | 9.2   | 3.2   |
| 24    | 7.4   | 4.6   | 4.4   | 5.3   | b5.0  | 12    | 25    | 34    | 52    | 15    | 8.0   | 3.2   |
| 25    | 7.4   | 4.6   | b4.4  | 5.3   | 5.6   | 15    | 24    | 32    | 51    | 16    | 12    | 3.2   |
| 26    | 7.4   | b4.0  | b4.0  | 5.3   | 5.6   | 16    | 22    | 31    | 50    | 14    | 12    | 2.7   |
| 27    | 7.4   | b4.0  | b4.0  | 5.6   | b5.3  | 16    | 21    | 36    | 46    | 22    | 11    | 2.6   |
| 28    | 7.1   | 4.2   | b4.0  | 5.3   | b5.0  | 14    | 21    | 42    | 43    | 16    | 9.2   | 3.4   |
| 29    | 7.1   | b4.4  | b4.4  | 5.9   | 5.3   | 15    | 19    | 48    | 40    | 16    | 6.5   | 5.7   |
| 30    | 6.5   | b4.0  | b4.2  | 5.9   | ----- | 14    | 19    | 52    | 57    | 49    | 6.5   | 5.9   |
| 31    | 6.8   | ----- | b4.4  | 5.6   | ----- | 13    | ----- | 63    | ----- | 51    | 5.3   | ----- |
| Total | 272.6 | 145.5 | 129.5 | 153.7 | 179.9 | 299.3 | 704   | 1,289 | 2,019 | 761   | 605.7 | 117.2 |
| Mean  | 8.79  | 4.85  | 4.18  | 4.96  | 6.20  | 9.65  | 23.5  | 41.6  | 67.3  | 24.5  | 19.5  | 3.91  |
| Ac-ft | 541   | 289   | 257   | 305   | 357   | 594   | 1,400 | 2,560 | 4,000 | 1,510 | 1,200 | 232   |

Calendar year 1959: Max 68 Min 3.8 Mean 17.6 Ac-ft 12,760  
Water year 1959-60: Max 97 Min 2.6 Mean 18.2 Ac-ft 13,240

\* Discharge measurement made on this day.  
b Stage-discharge relation affected by ice.

## WALKER LAKE BASIN

2905. Robinson Creek at Twin Lakes outlet, near Bridgeport, Calif.

Location.--Lat 38°10'20", long 119°19'25", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.28, T.4 N., R.24 E., on left bank a quarter of a mile downstream from Twin Lakes and 8 miles southwest of Bridgeport.

Drainage area.--34.7 sq mi.

Records available.--October 1953 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 7,050 ft (from topographic map).

Average discharge.--7 years, 55.2 cfs (39,960 acre-ft per year).

Extremes.--Maximum discharge during year, 141 cfs June 16 (gage height, 3.00 ft); minimum daily, 0.1 cfs Feb. 21 to Mar. 6, Mar. 8-11.

1953-60: Maximum discharge, 445 cfs June 29, 1956 (gage height, 4.35 ft); no flow for many days in 1954-55, 1958.

Maximum discharge known, 660 cfs June 21, 1911 (gage height, 5.2 ft), at site  $2\frac{1}{2}$  miles downstream.

Remarks.--Records excellent. Flow regulated by Twin Lakes.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|      |     |     |     |
|------|-----|-----|-----|
| 1.02 | 0.1 | 2.0 | 41  |
| 1.1  | 1.2 | 2.5 | 83  |
| 1.2  | 3.9 | 3.0 | 141 |
| 1.6  | 19  |     |     |

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     | 36    | 1.4   | 0.8  | b0.3 | b0.3  | b0.1 | 8.2     | 78    | 83    | 110   | 81      | 10    |
| 2     | 42    | 1.4   |      | b.3  | b.3   | b.1  | 11      | 76    | 89    | 112   | 80      | 9.4   |
| 3     | 45    | 1.0   | .8   | b.3  | b.3   | .1   | 14      | 73    | 93    | 116   | *78     | 9.8   |
| 4     | 47    | .6    | .8   | b.3  | b.3   | .1   | 17      | 71    | 96    | 112   | 78      | 9.8   |
| 5     | 47    | .6    | .8   | b.3  | .3    | .1   | 27      | 70    | 102   | 110   | 77      | 9.4   |
| 6     | 42    | .6    | 2.5  | b.3  | .3    | .1   | 31      | 66    | 106   | 108   | 75      | 9.4   |
| 7     | 38    | .6    | 3.3  | .3   | .3    | .2   | 30      | 64    | *109  | 104   | 72      | 9.4   |
| 8     | 34    | .6    | 3.3  | .3   | b.6   | .1   | 30      | 81    | 111   | 101   | 70      | *9.4  |
| 9     | 32    | .6    | 3.3  | .3   | b.3   | .1   | 28      | 80    | 118   | 97    | 68      | 9.8   |
| 10    | 30    | .6    | 3.3  | .3   | b.2   | .1   | 27      | 80    | 122   | 95    | 66      | 11    |
| 11    | 28    | .6    | 3.0  | b.3  | b.2   | .1   | 25      | *60   | 123   | 91    | 65      | 13    |
| 12    | 27    | .6    | 2.7  | b.3  | b.2   | .2   | 24      | 63    | 124   | 89    | 63      | 14    |
| 13    | 26    | .6    | 2.4  | b.3  | b.2   | .2   | 25      | 66    | 126   | 86    | 60      | 19    |
| 14    | 35    | .6    | 2.4  | b.3  | b.2   | .2   | 22      | 69    | 128   | 84    | 57      | 22    |
| 15    | *39   | .6    | *1.8 | b.3  | b.2   | .2   | 56      | 72    | 134   | 81    | 54      | 25    |
| 16    | 35    | .6    | 1.8  | b.3  | b.2   | *.2  | 121     | 79    | 140   | 79    | 50      | 26    |
| 17    | 32    | .6    | 1.6  | b.3  | b.2   | .2   | 115     | 82    | 140   | 76    | 47      | 26    |
| 18    | 29    | *.6   | 1.6  | b.3  | *b.2  | .2   | *106    | 83    | 140   | 77    | 44      | 26    |
| 19    | 14    | .6    | 1.8  | *b.4 | b.2   | .2   | 106     | 85    | 140   | 81    | 42      | 26    |
| 20    | 2.1   | .8    | 1.8  | b.4  | b.2   | .2   | 104     | 88    | 138   | 85    | 39      | 24    |
| 21    | 1.8   | .8    | 1.8  | b.4  | b.1   | .2   | 80      | 87    | 137   | 88    | 34      | 22    |
| 22    | 1.8   | .8    | 1.8  | b.3  | b.1   | .2   | 94      | 86    | 134   | 89    | 27      | 21    |
| 23    | 1.8   | 1.0   | 1.4  | .3   | b.1   | .2   | 92      | 85    | 120   | 89    | 22      | 20    |
| 24    | 1.8   | 1.0   | .8   | .3   | b.1   | .2   | 90      | 83    | 95    | 88    | 17      | 19    |
| 25    | 1.8   | 1.0   | .6   | b.3  | .1    | .2   | 88      | 80    | 100   | 87    | 14      | 18    |
| 26    | 1.8   | 1.0   | .6   | b.3  | b.1   | .2   | 85      | 78    | 120   | 87    | 12      | 17    |
| 27    | 1.6   | 1.0   | .6   | b.3  | b.1   | 4.0  | 84      | 78    | 120   | 86    | 11      | 17    |
| 28    | 1.4   | 1.0   | .6   | .3   | b.1   | 6.3  | 81      | 77    | 118   | 86    | 10      | 16    |
| 29    | 1.4   | 1.0   | .4   | .3   | b.1   | 5.4  | 83      | 77    | 116   | 85    | 9.8     | 15    |
| 30    | 1.4   | 1.0   | .4   | .3   | ----- | 4.5  | 80      | 78    | 114   | 84    | 16      | 15    |
| 31    | 1.4   | ----- | b.3  | b.3  | ----- | 5.4  | -----   | 79    | ----- | 83    | 10      | ----- |
| Total | 678.1 | 23.8  | 50.1 | 9.6  | 6.1   | 29.8 | 1,784.2 | 2,314 | 3,536 | 2,866 | 1,442.8 | 498.4 |
| Mean  | 21.9  | 0.79  | 1.62 | 0.31 | 0.21  | 0.96 | 59.5    | 74.6  | 118   | 91.8  | 46.5    | 16.6  |
| Ac-ft | 1,340 | 47    | 99   | 19   | 12    | 59   | 3,540   | 4,590 | 7,010 | 5,640 | 2,860   | 989   |

Calendar year 1959: Max 136

Water year 1959-60: Max 140

Min 0.3

Min 0.1

Mean 42.9

Mean 36.1

Ac-ft 31,010

Ac-ft 26,200

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## 2915. Buckeye Creek near Bridgeport, Calif.

Location.--Lat 38°14'20", long 119°19'30", in NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec.4, T.4 N., R.24 E., on right bank at Buckeye Hot Springs, 0.6 mile downstream from Eagle Creek and 5<sup>1</sup>/<sub>2</sub> miles southwest of Bridgeport.

Drainage area.--45 sq mi, approximately.

Records available.--November 1910 to September 1914 (fragmentary), October 1953 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,900 ft (from topographic map). November 1910 to September 1914 staff gage at site half a mile downstream at different datum.

Average discharge.--8 years (1911-12, 1953-60), 55.7 cfs (40,330 acre-ft per year).

Extremes.--Maximum discharge during year, 261 cfs June 2 (gage height, 3.05 ft); minimum, 3.3 cfs Dec. 12, result of freezeup.

1953-60: Maximum discharge, 700 cfs Dec. 23, 1955 (gage height, 4.00 ft), from rating curve extended above 360 cfs on basis of slope-area measurement of peak flow; minimum, that of Dec. 12, 1959.

Flood of June 21, 1911, reached an observed stage of 4.8 ft (discharge not determined), site and datum then in use.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.4 | 8.0 | 2.3 | 83  |
| 1.6 | 17  | 2.6 | 137 |
| 1.8 | 30  | 2.9 | 209 |
| 2.0 | 47  |     |     |

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     | 21    | 15    | b12  | b10  | 11    | 12    | 30    | 36    | 161   | 51    | 24   | 12    |
| 2     | 21    | 15    | b11  | b9   | 11    | b12   | 35    | 39    | 188   | 53    | 27   | 12    |
| 3     | 20    | 15    | b11  | b10  | b11   | 13    | 42    | 39    | 186   | 50    | *21  | 12    |
| 4     | 19    | 14    | b11  | b9   | b10   | 13    | 48    | 39    | 183   | 54    | 21   | 12    |
| 5     | 19    | 14    | b9   | b9   | 11    | 14    | 54    | 36    | 181   | *49   | 20   | 12    |
| 6     | 18    | 14    | b9   | b10  | 12    | 16    | 62    | 41    | 164   | 45    | 19   | 12    |
| 7     | 18    | 14    | b10  | b10  | 13    | 20    | 64    | 54    | *155  | 45    | 19   | 11    |
| 8     | 18    | 14    | b10  | 10   | 23    | 17    | 64    | 68    | 159   | 45    | 18   | *12   |
| 9     | 18    | 14    | b11  | 10   | 16    | 14    | 68    | 88    | 129   | 45    | 18   | 12    |
| 10    | 17    | 14    | 12   | 11   | 12    | b14   | 70    | *117  | 129   | 44    | 18   | 16    |
| 11    | 17    | 14    | 12   | 10   | b12   | 14    | 68    | 131   | 123   | 42    | 17   | 16    |
| 12    | 16    | 14    | b11  | 10   | b13   | 14    | 54    | 148   | 131   | 40    | 17   | 13    |
| 13    | 16    | 14    | b11  | 10   | 14    | 14    | 52    | 133   | 129   | 40    | 16   | 12    |
| 14    | 16    | 14    | b12  | 11   | b14   | 14    | 55    | 119   | 123   | 39    | 16   | 12    |
| 15    | *16   | 13    | *b13 | 10   | b14   | 14    | 53    | 115   | 112   | 37    | 16   | 11    |
| 16    | 16    | b12   | 16   | 10   | b12   | *15   | 52    | 110   | 115   | 35    | 16   | 11    |
| 17    | 16    | *b12  | 14   | 11   | *b14  | 16    | 54    | 101   | 121   | 34    | 16   | 11    |
| 18    | 16    | 13    | 11   | *10  | b14   | 18    | *57   | 99    | 108   | 33    | 15   | 11    |
| 19    | 16    | 13    | b10  | b10  | b14   | 20    | 57    | 91    | 96    | 32    | 14   | 11    |
| 20    | 16    | 12    | b10  | 10   | b14   | 23    | 65    | 94    | 89    | 30    | 14   | 10    |
| 21    | 16    | 13    | 11   | 10   | b14   | 27    | 79    | 97    | 82    | 29    | 14   | 11    |
| 22    | 16    | 12    | 10   | 10   | b14   | 30    | 72    | 76    | 77    | 26    | 14   | 11    |
| 23    | 16    | 13    | 10   | 10   | b13   | 30    | 56    | 67    | 75    | 26    | 14   | 11    |
| 24    | 16    | 12    | 11   | 11   | b15   | 33    | 44    | 59    | 72    | 25    | 14   | 11    |
| 25    | 16    | 12    | 10   | 11   | b13   | 37    | 42    | 57    | 69    | 24    | 14   | 10    |
| 26    | 16    | b11   | b10  | 10   | 12    | 41    | 40    | 67    | 64    | 24    | 13   | 10    |
| 27    | 15    | b11   | b11  | 11   | b12   | 40    | 38    | 85    | 59    | 25    | 13   | 10    |
| 28    | 15    | b12   | b10  | 11   | b12   | b26   | 36    | 94    | 56    | 26    | 12   | 10    |
| 29    | 15    | b12   | b10  | 11   | b12   | 32    | 34    | 103   | 54    | 29    | 12   | 10    |
| 30    | 14    | b11   | b11  | 11   | ----- | 32    | 33    | 115   | 52    | 34    | 12   | 10    |
| 31    | 15    | ----- | b10  | 11   | ----- | 29    | ----- | 139   | ----- | 29    | 12   | ----- |
| Total | 520   | 393   | 340  | 317  | 382   | 664   | 1,578 | 2,657 | 3,422 | 1,140 | 501  | 345   |
| Mean  | 16.8  | 13.1  | 11.0 | 10.2 | 13.2  | 21.4  | 52.6  | 85.7  | 114   | 36.8  | 16.2 | 11.5  |
| Ac-ft | 1,030 | 780   | 674  | 629  | 758   | 1,320 | 3,130 | 5,270 | 6,790 | 2,260 | 994  | 684   |

Calendar year 1959: Max 150 Min 9 Mean 36.3 Ac-ft 26,240  
 Water year 1959-60: Max 188 Min 9 Mean 33.5 Ac-ft 24,320

Peak discharge (base, 100 cfs).--May 12 (11 p.m.) 183 cfs (2.78 ft); June 2 (10:30 p.m.) 261 cfs (3.05 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

2920. Swager Creek near Bridgeport, Calif.

Location.--Lat 38°17'00", long 119°17'50", in SE¼NW¼ sec.23, T.5 N., R.24 E., on right bank three-quarters of a mile downstream from Yaney Canyon and 4 miles northwest of Bridgeport.

Drainage area.--53 sq mi, approximately.

Records available.--June 1911 to September 1915 (fragmentary), October 1953 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,620 ft (from topographic map). June 1911 to September 1915 staff gages at approximately same site at different datums.

Average discharge.--8 years (1911-12, 1953-60), 11.7 cfs (8,470 acre-ft per year).

Extremes.--Maximum discharge during year, 20 cfs Mar. 7 (gage height, 2.26 ft); maximum gage height, 3.00 ft Jan. 2 (backwater from ice); minimum discharge, 1.4 cfs July 18, Aug. 1, 3-21.  
1911-15, 1953-60: Maximum discharge, 585 cfs Dec. 23, 1955 (gage height, 6.24 ft), from rating curve extended above 175 cfs on basis of slope-area measurement of peak flow; minimum observed, 0.5 cfs Apr. 20, 1912.

Correction.--The minimum discharge for water year 1912 has been corrected to "minimum observed, 0.5 cfs Apr. 20, 1912," superseding that published in WSP 1444.

Remarks.--Records good except those for periods of ice effect, which are fair. Diversions for irrigation of about 1,000 acres above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.7 | 1.3 | 2.0 | 8.7 |
| 1.8 | 2.8 | 2.1 | 13  |
| 1.9 | 5.2 |     |     |

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     | 6.7   | 5.5   | 6.1   | b4.4  | 6.4   | 8.1   | 4.9   | 4.2   | 4.2   | 1.9  | 1.7  | 2.4   |
| 2     | 7.1   | 5.5   | 6.1   | b3.5  | b5.5  | 6.1   | 5.8   | 4.2   | 3.9   | 2.3  | 1.7  | 2.4   |
| 3     | 6.7   | 5.5   | 6.4   | b3.9  | b6.1  | 6.7   | 7.5   | 4.4   | 3.7   | 2.1  | *1.5 | 2.4   |
| 4     | 6.4   | 4.9   | 5.2   | b3.5  | b6.7  | 7.1   | 8.3   | 5.5   | 4.2   | 2.1  | 1.5  | 2.4   |
| 5     | 6.1   | 4.7   | b4.4  | b4.2  | b6.7  | 8.7   | 7.9   | 4.9   | 4.4   | *2.3 | 1.4  | 2.4   |
| 6     | 5.8   | 4.9   | b4.9  | 5.8   | 7.1   | 10    | 8.3   | 4.7   | 4.2   | 2.3  | 1.4  | 2.4   |
| 7     | 5.8   | 5.2   | b4.9  | 6.7   | 7.9   | 13    | 8.7   | 4.9   | *4.4  | 2.1  | 1.4  | 2.4   |
| 8     | 5.8   | 5.2   | b4.9  | 6.1   | 11    | 12    | 8.7   | 5.2   | 4.4   | 2.1  | 1.4  | *2.4  |
| 9     | 5.8   | 5.5   | 5.2   | 5.8   | b6.1  | 9.6   | 8.7   | 4.9   | 4.4   | 2.4  | 1.5  | 2.4   |
| 10    | 5.5   | 5.5   | 5.8   | 6.1   | 7.1   | 8.1   | 8.3   | *4.4  | 4.2   | 2.6  | 1.5  | 3.0   |
| 11    | 5.5   | 5.5   | 5.5   | b5.8  | b7.1  | 10    | 8.7   | 4.9   | 3.7   | 1.9  | 1.5  | 2.8   |
| 12    | 5.8   | 5.8   | b4.9  | b5.8  | b7.5  | 10    | 6.7   | 4.9   | 3.7   | 1.9  | 1.5  | 2.6   |
| 13    | 5.8   | 5.8   | b4.7  | b5.2  | 7.5   | 10    | 6.7   | 4.2   | 3.0   | 1.9  | 1.5  | 2.6   |
| 14    | 5.8   | 6.1   | b4.2  | 6.4   | b7.1  | 9.1   | 6.4   | 4.2   | 2.6   | 1.9  | 1.5  | 2.6   |
| 15    | *5.2  | 6.1   | *5.2  | 6.1   | b6.7  | 8.7   | 6.1   | 3.9   | 2.4   | 1.9  | 1.5  | 2.6   |
| 16    | 5.2   | 6.1   | 5.8   | b6.1  | b6.7  | *8.7  | 5.8   | 5.2   | 2.4   | 1.7  | 1.5  | 2.6   |
| 17    | 5.2   | *6.1  | 5.8   | b5.8  | b6.4  | 9.6   | 6.4   | 5.8   | 2.3   | 1.7  | 1.5  | 2.8   |
| 18    | 5.2   | 6.1   | 5.8   | b5.8  | *6.7  | 10    | *6.4  | 4.2   | 2.3   | 1.5  | 1.5  | 2.6   |
| 19    | 5.5   | 6.4   | 5.8   | *b5.2 | 7.1   | 7.4   | 6.4   | 4.2   | 2.3   | 1.7  | 1.5  | 2.6   |
| 20    | 5.5   | 6.1   | 5.8   | 5.8   | b6.7  | 5.2   | 6.4   | 3.9   | 2.6   | 1.7  | 1.5  | 2.6   |
| 21    | 5.5   | 6.1   | 6.1   | b5.5  | b6.4  | 4.7   | 7.1   | 3.2   | 2.3   | 1.7  | 1.5  | 2.8   |
| 22    | 5.5   | 5.8   | 5.8   | 6.1   | b6.4  | 4.4   | 7.5   | 3.2   | 2.3   | 1.7  | 1.7  | 3.0   |
| 23    | 5.5   | 6.4   | 5.5   | 6.1   | b6.1  | 4.7   | 7.5   | 3.5   | 2.3   | 1.7  | 1.9  | 3.0   |
| 24    | 5.5   | 6.1   | 6.4   | 6.4   | b6.4  | 4.9   | 6.4   | 3.7   | 2.1   | 1.7  | 1.8  | 3.0   |
| 25    | 5.5   | 6.1   | 5.5   | 6.4   | 6.4   | 5.8   | 6.1   | 5.5   | 2.1   | 1.7  | 1.9  | 2.8   |
| 26    | 5.5   | 5.5   | b3.9  | 6.4   | 6.4   | 6.4   | 5.8   | 3.9   | 2.4   | 1.7  | 1.9  | 2.8   |
| 27    | 5.5   | 5.5   | b4.7  | 6.1   | 6.1   | 8.3   | 6.4   | 4.4   | 2.4   | 1.8  | 1.9  | 2.8   |
| 28    | 5.5   | 6.1   | b5.8  | 6.4   | 6.4   | 7.9   | 5.2   | 5.8   | 2.1   | 2.1  | 2.1  | 2.4   |
| 29    | 5.5   | 5.8   | b4.9  | 6.1   | 6.7   | 5.8   | 4.9   | 5.8   | 1.9   | 2.4  | 2.3  | 2.4   |
| 30    | 4.9   | 6.1   | b5.2  | 6.4   | ----- | 5.8   | 3.9   | 5.8   | 1.9   | 1.8  | 2.4  | 3.2   |
| 31    | 5.2   | ----- | b4.9  | b6.1  | ----- | 4.7   | ----- | 4.9   | ----- | 1.7  | 2.3  | ----- |
| Total | 176.0 | 172.0 | 166.1 | 176.0 | 197.4 | 240.5 | 203.9 | 142.4 | 91.1  | 60.0 | 51.7 | 79.2  |
| Mean  | 5.68  | 5.73  | 5.36  | 5.68  | 6.81  | 7.76  | 6.80  | 4.59  | 3.04  | 1.94 | 1.67 | 2.64  |
| Ac-ft | 349   | 341   | 329   | 349   | 392   | 477   | 404   | 282   | 181   | 119  | 103  | 157   |

Calendar year 1959: Max 28

Min 1.5

Mean 7.66

Ac-ft 5,540

Water year 1959-60: Max 13

Min 1.4

Mean 4.80

Ac-ft 3,480

Peak discharge (base, 25 cfs).--No peak above base.

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## 2925. Bridgeport Reservoir near Bridgeport, Calif.

Location.--Lat 38°19'30", long 119°12'50", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.34, T.6 N., R.25 E., at Bridgeport Dam on East Walker River,  $4\frac{1}{2}$  miles north of Bridgeport.

Drainage area.--362 sq mi.

Records available.--March 1926 to September 1960. Monthly contents only for some periods, published in WSP 1314.

Gage.--Float gage read once daily. Datum of gage is at mean sea level.

Extremes.--Maximum contents during year, 22,680 acre-ft Mar. 29 to Apr. 10 (elevation, 6,452.05 ft); no contents Sept. 3-5, 8-10.  
1926-60: Maximum contents, 44,580 acre-ft June 12, 1938, June 25, 26, 1958 (elevation, 6,460.7 ft); no contents during fall of 1929, 1930, 1960.

Remarks.--Reservoir is formed by earth-fill, rock-faced dam. Storage began Dec. 8, 1923. Dam completed in November 1924. Capacity, 42,460 acre-ft between elevations 6,415 (approximate elevation of bottom of reservoir) and 6,460 ft (crest of spillway). Elevation of sill of outlet gate, 6,412 ft. No dead storage. Figures given herein represent total contents. Water is used for irrigation by Walker River Irrigation District.

Cooperation.--Elevations and capacity table furnished by Walker River Irrigation District.

Revisions (water years).--WSP 1180: 1949.

Capacity table, water year 1959-60 (elevation, in feet, and contents, in acre-feet)

|       |    |       |       |       |        |
|-------|----|-------|-------|-------|--------|
| 6,415 | 0  | 6,422 | 163   | 6,440 | 6,240  |
| 6,416 | 3  | 6,425 | 334   | 6,444 | 10,200 |
| 6,417 | 9  | 6,427 | 539   | 6,448 | 15,470 |
| 6,418 | 20 | 6,429 | 895   | 6,453 | 24,660 |
| 6,419 | 42 | 6,432 | 1,710 |       |        |
| 6,420 | 75 | 6,436 | 3,450 |       |        |

Contents, in acre-feet, at 8 a.m., water year October 1959 to September 1960

| Day | Oct.     | Nov.     | Dec.     | Jan.    | Feb.    | Mar.     | Apr.     | May      | June     | July     | Aug.     | Sept.    |
|-----|----------|----------|----------|---------|---------|----------|----------|----------|----------|----------|----------|----------|
| 1   | 3,840    | 5,400    | 8,030    | 10,910  | 13,920  | 18,870   | 22,680   | 21,010   | 16,580   | 14,140   | 7,410    | 115      |
| 2   | 3,930    | 5,440    | 8,080    | 10,970  | -       | -        | 22,680   | 21,010   | 16,580   | 14,140   | 7,310    | 14       |
| 3   | 4,020    | 5,520    | 8,230    | 11,030  | -       | 19,150   | 22,680   | a20,820  | 16,580   | 14,060   | 6,900    | 0        |
| 4   | 4,120    | 5,600    | 8,340    | 11,080  | -       | -        | 22,680   | 20,620   | 16,580   | 14,060   | 6,720    | 0        |
| 5   | 4,220    | 5,640    | 8,440    | 11,140  | -       | 19,610   | 22,680   | a20,460  | 16,580   | 14,060   | 6,550    | 0        |
| 6   | 4,280    | 5,680    | 8,540    | -       | -       | -        | 22,680   | 20,340   | 16,500   | 13,990   | 6,280    | 1        |
| 7   | 4,380    | 5,760    | 8,640    | 11,440  | -       | -        | 22,680   | 20,250   | 16,420   | 13,920   | 6,080    | 1        |
| 8   | 4,450    | 5,840    | 8,740    | -       | -       | -        | 22,680   | 20,070   | 16,190   | 13,790   | 5,880    | 0        |
| 9   | 4,480    | 5,920    | 8,790    | -       | -       | 20,820   | 22,680   | 19,880   | 15,950   | 13,720   | 5,640    | 0        |
| 10  | -        | 6,000    | 8,900    | -       | -       | -        | 22,680   | 19,800   | 15,870   | 13,580   | 5,370    | 0        |
| 11  | -        | 6,080    | 9,000    | -       | -       | -        | 22,580   | 19,700   | 15,710   | 13,450   | 5,080    | 6        |
| 12  | -        | 6,180    | 9,100    | -       | -       | 21,310   | 22,580   | 19,800   | 15,550   | 13,310   | 4,820    | 3        |
| 13  | -        | 6,280    | 9,160    | -       | -       | -        | 22,580   | 19,330   | 15,550   | 13,040   | 4,580    | 2        |
| 14  | -        | 6,370    | 9,270    | -       | -       | -        | 22,480   | 19,240   | 15,550   | 12,830   | 4,350    | 1        |
| 15  | -        | 6,460    | 9,380    | -       | -       | -        | 22,480   | 19,060   | 15,470   | 12,570   | 4,050    | 2        |
| 16  | -        | 6,550    | 9,430    | -       | -       | 21,700   | 22,380   | 18,870   | 15,470   | 12,260   | 3,840    | 2        |
| 17  | -        | 6,640    | 9,540    | -       | -       | -        | 22,380   | 18,690   | 15,470   | 12,000   | 3,630    | 2        |
| 18  | -        | 6,770    | 9,650    | -       | -       | -        | 22,380   | 18,260   | 15,320   | 11,650   | 3,420    | 3        |
| 19  | 5,000    | 6,860    | 9,760    | -       | -       | -        | 22,380   | 18,090   | 15,170   | 11,320   | 3,210    | 3        |
| 20  | 5,080    | 6,940    | 9,760    | -       | -       | -        | 22,190   | 18,010   | 15,100   | 11,030   | 2,940    | 3        |
| 21  | 5,110    | 7,080    | 9,870    | -       | -       | 22,290   | 22,290   | 17,830   | 14,880   | 10,730   | 2,700    | 2        |
| 22  | 5,150    | 7,170    | 9,980    | -       | -       | 22,290   | 21,990   | a17,700  | 14,730   | 10,440   | 2,500    | 3        |
| 23  | 5,150    | 7,260    | 10,090   | -       | -       | 22,380   | 21,800   | 17,580   | 14,580   | 10,090   | 2,190    | 2        |
| 24  | 5,180    | 7,360    | 10,140   | -       | 18,090  | 22,380   | a21,700  | a17,400  | 14,430   | 9,760    | 1,960    | 2        |
| 25  | 5,220    | 7,460    | 10,320   | -       | -       | 22,380   | 21,600   | 17,230   | 14,430   | 9,580    | 1,690    | 2        |
| 26  | 5,260    | 7,550    | 10,440   | 13,380  | -       | 22,580   | a21,550  | 17,060   | 14,430   | 9,000    | 1,430    | 1        |
| 27  | 5,290    | 7,650    | 10,440   | -       | -       | a22,580  | 21,500   | 16,900   | 14,430   | 8,540    | 1,160    | 1        |
| 28  | 5,330    | 7,700    | 10,500   | -       | -       | 22,580   | a21,400  | 16,820   | 14,360   | 8,230    | 885      | 1        |
| 29  | 5,330    | 7,840    | 10,610   | -       | a18,690 | 22,580   | 21,310   | a16,740  | 14,290   | 8,030    | 602      | 1        |
| 30  | 5,370    | 7,890    | 10,730   | -       | -       | 22,680   | 21,210   | 16,660   | 14,210   | 7,790    | 373      | 1        |
| 31  | 5,370    | -        | 10,850   | a13,850 | -       | 22,680   | -        | 16,580   | -        | 7,650    | 219      | -        |
| (†) | 6,438.92 | 6,441.81 | 6,444.53 | -       | -       | 6,452.04 | 6,451.28 | 6,448.72 | 6,447.17 | 6,441.54 | 6,423.10 | 6,415.45 |
| (*) | +1,590   | +2,520   | +2,960   | +3,000  | +4,840  | +3,990   | -1,470   | -4,630   | -2,370   | -6,560   | -7,431   | -218     |

Calendar year 1959..... \* -20,000

Water year 1959-60..... \* -3,779

† Elevation, in feet, at end of month.

\* Change in contents, in acre-feet.

a No elevation record; contents interpolated.

2930. East Walker River near Bridgeport, Calif.

Location.--Lat 38°19'40", long 119°12'50", in SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec.34, T.6 N., R.25 E., on right bank 1,500 ft downstream from Bridgeport Reservoir, 5 miles north of Bridgeport, and 10 miles upstream from Sweetwater Creek.

Drainage area.--362 sq mi.

Records available.--July 1911 to September 1914 (gage heights only), October 1921 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,400 ft (from topographic map). Prior to Oct. 1, 1921, staff gage at site half a mile upstream at different datum. Oct. 1, 1921, to Feb. 21, 1924, water-stage recorder at site 1 mile downstream at different datum. Feb. 22, 1924, to Sept. 30, 1931, water-stage recorder and Oct. 1, 1931, to May 25, 1939, staff gage, at present site at datum 2.34 ft lower.

Average discharge.--37 years (1922-24, 1925-60), 132 cfs (95,560 acre-ft per year).

Extremes.--Maximum daily discharge during year, 265 cfs June 6-8 (gage height, 1.69 ft); minimum, 1.7 cfs Nov. 16, 20, 21.  
1921-60: Maximum discharge, 1,240 cfs Jan. 22, 1943 (gage height, 4.5 ft); minimum daily, 0.2 cfs Nov. 2-29, Dec. 1-22, 25-28, 1955, Jan. 17-25, 1956.

Remarks.--Records good. Diversion for irrigation of meadow pasture lands near Bridgeport. Flow regulated by Bridgeport Reservoir (see preceding page). Records of chemical analyses and water temperatures for the water year 1960 are given in WSP 1744.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|      |     |     |     |
|------|-----|-----|-----|
| 0.09 | 2.4 | 0.6 | 33  |
| .1   | 2.5 | .8  | 61  |
| .2   | 5.0 | 1.0 | 96  |
| .3   | 9.0 | 1.3 | 161 |
| .4   | 15  | 1.7 | 268 |

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                   | 38    | 36    | 2.5  | 2.5  | 2.4   | 2.5   | 60    | 83    | 129    | 85    | 168   | 50    |
| 2                   | 38    | 23    | 2.5  | 2.5  | 2.5   | 2.5   | 60    | 96    | 152    | 85    | 145   | 29    |
| 3                   | 38    | 15    | 2.5  | 2.5  | 2.5   | 2.5   | 60    | 104   | 164    | 85    | 145   | 26    |
| 4                   | 38    | 15    | 2.5  | 2.5  | 2.5   | 2.5   | 60    | 104   | 199    | 104   | *145  | 28    |
| 5                   | 38    | 15    | 2.5  | 2.5  | 2.5   | 2.5   | 60    | 102   | 242    | 110   | 145   | 31    |
| 6                   | 38    | 15    | 2.5  | 2.5  | 2.5   | 2.5   | 60    | 91    | 265    | *110  | 147   | 32    |
| 7                   | 38    | 15    | 2.5  | 2.5  | 2.5   | 2.5   | 60    | 100   | 265    | 110   | 150   | 32    |
| 8                   | 38    | 15    | 2.5  | 2.5  | 2.5   | 2.5   | 60    | 112   | *265   | 110   | 147   | *32   |
| 9                   | 38    | 15    | 2.5  | 2.5  | 2.5   | 2.5   | 60    | 108   | 202    | 110   | 154   | 30    |
| 10                  | 38    | 15    | 2.5  | 2.5  | 2.5   | 2.5   | 60    | *110  | 174    | 120   | 154   | 38    |
| 11                  | 38    | 10    | 2.5  | 2.5  | 2.5   | 2.5   | 60    | 110   | 174    | 129   | 152   | 43    |
| 12                  | 38    | 7.0   | 2.5  | 2.5  | 2.5   | 12    | 60    | 153   | 152    | 143   | 152   | 38    |
| 13                  | 38    | 7.0   | 2.5  | 2.5  | 2.5   | 20    | 60    | 176   | 143    | 150   | 150   | 37    |
| 14                  | 38    | 7.0   | 2.5  | 2.5  | 2.5   | 20    | 60    | 207   | 143    | 154   | 147   | 36    |
| 15                  | 38    | 7.0   | 2.5  | 2.5  | 2.5   | 20    | 53    | 217   | 152    | 164   | 140   | 36    |
| 16                  | *36   | 4.0   | *2.5 | 2.5  | 2.5   | *20   | 41    | 220   | 174    | 164   | 127   | 37    |
| 17                  | 33    | *2.5  | 2.5  | 2.5  | *2.5  | 20    | 45    | 215   | 209    | 178   | 118   | 37    |
| 18                  | 33    | 2.5   | 2.5  | *2.5 | 2.5   | 20    | 48    | 207   | 245    | 186   | 136   | 37    |
| 19                  | 33    | 2.5   | 2.5  | 2.5  | 2.5   | 20    | *69   | 166   | 236    | 186   | 145   | 37    |
| 20                  | 33    | 2.4   | 2.5  | 2.5  | 2.5   | 20    | 104   | 143   | 220    | 184   | 143   | 36    |
| 21                  | 33    | 2.4   | 2.5  | 2.5  | 2.5   | 20    | 104   | 143   | 202    | 184   | 143   | 34    |
| 22                  | 34    | 2.5   | 2.5  | 2.5  | 2.5   | 36    | 104   | 143   | 161    | 184   | 140   | 36    |
| 23                  | 34    | 2.5   | 2.5  | 2.5  | 2.5   | 55    | 104   | 134   | 138    | 199   | 143   | 37    |
| 24                  | 34    | 2.5   | 2.5  | 2.5  | 2.5   | 60    | 104   | 129   | 100    | 223   | 138   | 36    |
| 25                  | 34    | 2.5   | 2.5  | 2.5  | 2.5   | 60    | 91    | 127   | 73     | 223   | 140   | 34    |
| 26                  | 36    | 2.5   | 2.5  | 2.5  | 2.5   | 60    | 83    | 114   | 78     | 220   | 143   | 33    |
| 27                  | 36    | 2.5   | 2.5  | 2.5  | 2.5   | 60    | 83    | 106   | 85     | 207   | 138   | 33    |
| 28                  | 36    | 2.5   | 2.5  | 2.5  | 2.5   | 60    | 83    | 98    | 85     | 169   | 125   | 33    |
| 29                  | 36    | 2.5   | 2.5  | 2.5  | 2.5   | 60    | 83    | 96    | 85     | 178   | 116   | 33    |
| 30                  | 36    | 2.5   | 2.5  | 2.4  | ----- | 60    | 83    | 102   | 83     | 178   | 102   | 34    |
| 31                  | 36    | ----- | 2.5  | 2.4  | ----- | 60    | ----- | 118   | -----  | 178   | 78    | ----- |
| Total               | 1,123 | 255.8 | 77.5 | 77.3 | 72.4  | 790.5 | 2,122 | 4,134 | 4,995  | 4,630 | 4,316 | 1,045 |
| Mean                | 36.2  | 8.53  | 2.50 | 2.49 | 2.50  | 25.5  | 70.7  | 133   | 166    | 156   | 139   | 34.8  |
| Ac-ft               | 2,230 | 507   | 154  | 153  | 144   | 1,570 | 4,210 | 8,200 | 9,910  | 9,580 | 8,560 | 2,070 |
| Calendar year 1959: | Max   | 248   |      | Min  | 2.4   | Mean  | 98.4  | Ac-ft | 71,230 |       |       |       |
| Water year 1959-60: | Max   | 265   |      | Min  | 2.4   | Mean  | 65.1  | Ac-ft | 47,290 |       |       |       |

\* Discharge measurement made on this day.

2935. East Walker River above Strosnider ditch, near Mason, Nev.

Location.--Lat 38°48'50", long 119°02'50", in NW<sup>1</sup>SW<sup>1</sup> sec.14, T.11 N., R.26 E., on right bank 0.8 mile upstream from head of Strosnider ditch, 12 miles southeast of Mason, and 13½ miles southeast of Yerington.

Drainage area.--1,100 sq mi, approximately.

Records available.--January 1947 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 4,574.10 ft above mean sea level, datum of 1929. Prior to Oct. 24, 1957, at site 400 ft upstream at datum 0.56 ft higher.

Average discharge.--13 years, 132 cfs (95,560 acre-ft per year).

Extremes.--Maximum discharge during year, 179 cfs June 9 (gage height, 2.38 ft); minimum, 10 cfs Mar. 15, 23.

1947-60: Maximum discharge, 1,640 cfs Dec. 24, 1955 (gage height, 6.87 ft, site and datum then in use), from rating curve extended above 1,100 cfs by logarithmic plotting; minimum, 3.1 cfs Mar. 21, 1948; minimum daily, 3.4 cfs Mar. 21-24, 1948.

Remarks.--Records good except those for periods of ice effect, no gage-height record, or shifting control, which are fair. Diversions for irrigation above station. Flow regulated by Bridgeport Reservoir (see p. 181).

Rating table, water year 1959-60, except periods of ice effect or shifting-control (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.6 | 8.4 | 1.0 | 40  |
| .7  | 14  | 1.5 | 115 |
| .8  | 21  | 2.0 | 202 |

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                       | 33    | 30    | b17   | b16   | 19     | 17    | 51        | 76           | 76    | 57    | 129   | 76    |
| 2                       | 38    | 32    | b18   | b11   | 21     | 17    | 53        | 77           | 77    | 55    | 123   | 57    |
| 3                       | 37    | 32    | 18    | b14   | 22     | 16    | 55        | *80          | 85    | 57    | 110   | 46    |
| 4                       | 35    | 28    | 19    | b15   | 21     | 17    | 57        | 83           | 99    | 54    | 105   | 37    |
| 5                       | a35   | 24    | b19   | b18   | 21     | 17    | 54        | 83           | *125  | 57    | *105  | 29    |
| 6                       | 37    | 22    | b18   | b23   | 22     | 17    | *51       | 82           | 156   | 68    | 102   | 24    |
| 7                       | *35   | 21    | b18   | *b25  | 22     | 17    | 51        | 82           | 169   | 72    | 105   | *22   |
| 8                       | a35   | 21    | b18   | b27   | 22     | *15   | 50        | 80           | 172   | 74    | 107   | 19    |
| 9                       | a35   | 21    | b21   | b28   | 25     | 14    | 47        | 83           | 174   | 72    | 102   | 17    |
| 10                      | a35   | 21    | b25   | b27   | 26     | 13    | 47        | 83           | 143   | 70    | 104   | 14    |
| 11                      | a35   | 22    | *b26  | b27   | 23     | 13    | 49        | 83           | 125   | 74    | 104   | 18    |
| 12                      | a34   | *25   | b26   | b26   | *22    | 12    | 47        | 82           | 123   | 76    | 101   | 20    |
| 13                      | a35   | 25    | b24   | b25   | 20     | 12    | 45        | *91          | 113   | *80   | 104   | 19    |
| 14                      | a35   | 24    | b22   | b23   | b20    | 11    | 45        | 118          | 99    | 86    | 104   | 22    |
| 15                      | a35   | 23    | b22   | b22   | 19     | 11    | 40        | 140          | 94    | 89    | 104   | 21    |
| 16                      | a35   | 23    | b22   | b21   | 19     | 12    | 36        | 165          | 99    | 94    | 97    | 26    |
| 17                      | a34   | 23    | b22   | b20   | b19    | 17    | 30        | 165          | 109   | 94    | 91    | 25    |
| 18                      | a34   | 22    | b23   | b21   | 19     | 18    | 26        | *155         | 125   | 102   | 88    | 25    |
| 19                      | 33    | 23    | b23   | b21   | 20     | 17    | 30        | 146          | 150   | 104   | 93    | 26    |
| 20                      | 32    | 23    | b23   | b20   | b19    | 14    | 32        | 126          | 150   | 109   | 91    | 26    |
| 21                      | 30    | 22    | 23    | b20   | 19     | 12    | 62        | 110          | 146   | 110   | 91    | 28    |
| 22                      | 31    | 21    | 24    | b21   | b19    | 11    | 67        | 102          | *140  | 117   | 89    | 27    |
| 23                      | 31    | 20    | 23    | b21   | 19     | 11    | 77        | 102          | 121   | 115   | 91    | 28    |
| 24                      | 31    | 20    | 22    | b22   | b19    | 13    | 83        | 99           | 112   | 118   | 96    | 29    |
| 25                      | 32    | 19    | 23    | b22   | 19     | 22    | 83        | *97          | 96    | 138   | 94    | 30    |
| 26                      | 32    | 20    | b20   | 22    | 19     | 27    | 76        | 94           | 76    | 145   | 104   | 28    |
| 27                      | 31    | 20    | b18   | 21    | 17     | 32    | 72        | 85           | 70    | 150   | 104   | 24    |
| 28                      | 29    | 19    | b18   | 20    | 17     | 35    | 77        | 76           | 68    | 146   | 102   | 23    |
| 29                      | 27    | 19    | b18   | 20    | 17     | 37    | 77        | 74           | 64    | 141   | 99    | 21    |
| 30                      | 28    | 18    | b18   | 19    | -----  | 43    | 77        | 76           | 60    | 138   | 91    | 26    |
| 31                      | 29    | ----- | b20   | 19    | -----  | 46    | -----     | 74           | ----- | 145   | 85    | ----- |
| Total                   | 1,028 | 683   | 651   | 657   | 586    | 586   | 1,647     | 3,069        | 3,416 | 3,007 | 3,115 | 833   |
| Mean                    | 33.2  | 22.8  | 21.0  | 21.2  | 20.2   | 18.9  | 54.9      | 99.0         | 114   | 97.0  | 100   | 27.8  |
| Ac-ft                   | 2,040 | 1,350 | 1,290 | 1,300 | 1,160  | 1,160 | 3,270     | 6,090        | 6,780 | 5,960 | 6,180 | 1,650 |
| Calendar year 1959: Max | 244   |       |       |       | Min 17 |       | Mean 88.3 | Ac-ft 63,890 |       |       |       |       |
| Water year 1959-60: Max | 174   |       |       |       | Min 11 |       | Mean 52.7 | Ac-ft 38,230 |       |       |       |       |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for nearby stations.

b Stage-discharge relation affected by ice.

Note.--Shifting-control method used Apr. 23 to June 30, July 6 to Sept. 3.

2952. West Walker River at Leavitt Meadows, near Coleville, Calif.

Location.--Lat 38°19'50", long 119°33'05", in NW¼NW¼ sec.34, T.6 N., R 22 E., on left bank at Leavitt Meadows Lodge, 500 ft upstream from Brownie Creek, 0.9 mile downstream from Leavitt Creek, and 16½ miles south of Coleville.

Drainage area.--73 sq mi, approximately.

Records available.--October 1957 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 7,111.32 ft above mean sea level (levels by Bureau of Reclamation).

Extremes.--Maximum discharge during year, 970 cfs June 2 (gage height, 4.78 ft); minimum, 3.8 cfs Jan. 11, but may have been less during periods of ice effect.  
1957-60: Maximum discharge, 1,440 cfs June 23, 1958 (gage height, 5.68 ft); minimum, that of Jan. 11, 1960.

Remarks.--Records good.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.0 | 5.0 | 2.7 | 134 |
| 1.1 | 7.0 | 3.1 | 222 |
| 1.5 | 20  | 4.0 | 600 |
| 1.9 | 42  | 4.6 | 890 |
| 2.3 | 78  |     |     |

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     | 34    | 15    | 7.9   | b6.8  | b12   | b14   | 70     | 110    | 717    | 114   | 41    | 9.1   |
| 2     | 33    | 15    | 8.5   | a5.8  | b11   | b14   | 85     | 128    | 840    | 120   | 34    | *9.1  |
| 3     | 32    | 15    | 8.8   | a6.0  | a10   | 14    | 109    | 129    | 795    | 106   | 30    | 9.1   |
| 4     | 28    | 14    | b7.6  | a5.6  | a11   | 14    | 139    | 121    | 753    | 114   | *28   | 9.1   |
| 5     | 27    | *13   | b6.2  | a7.0  | a13   | 15    | *174   | 114    | 717    | *103  | 27    | 11    |
| 6     | 26    | 13    | b6.6  | *7.0  | a14   | 18    | 222    | 141    | 658    | 90    | 26    | 10    |
| 7     | 24    | 13    | *b6.6 | 7.3   | a16   | 26    | 248    | 235    | 596    | 106   | 24    | 9.1   |
| 8     | *24   | 13    | 6.4   | 7.3   | 27    | b27   | 241    | 334    | *810   | 95    | 24    | 8.8   |
| 9     | 23    | 13    | 6.6   | 7.0   | a22   | b24   | 261    | *438   | 474    | 104   | 22    | 8.5   |
| 10    | 22    | 13    | 6.6   | 7.3   | a21   | *b24  | 286    | 580    | 465    | 114   | 20    | 19    |
| 11    | 22    | 12    | 6.4   | b6.8  | *b18  | 24    | 272    | 622    | 456    | 94    | 19    | 20    |
| 12    | 22    | 12    | b5.8  | b6.6  | b18   | 24    | 195    | 704    | 496    | 83    | 19    | 14    |
| 13    | 21    | 12    | b5.8  | b6.6  | b17   | 23    | 184    | 636    | 492    | 78    | 18    | 12    |
| 14    | 21    | 12    | b5.8  | b6.8  | b17   | 23    | 206    | 537    | 452    | 75    | 18    | 11    |
| 15    | 21    | 11    | 6.2   | b7.3  | b16   | 23    | 200    | 519    | 393    | 69    | 18    | 10    |
| 16    | 20    | 11    | 6.4   | b6.6  | b16   | 24    | 190    | 483    | 402    | 62    | 18    | 9.7   |
| 17    | 20    | 11    | 6.6   | b6.6  | b15   | 24    | 203    | 442    | 438    | 57    | 18    | 9.1   |
| 18    | 19    | 11    | 6.8   | b7.3  | b16   | 28    | 225    | 424    | 357    | 56    | 17    | 8.8   |
| 19    | 18    | 11    | 6.6   | b7.0  | b16   | 31    | 225    | 388    | 286    | 52    | 16    | 8.5   |
| 20    | 18    | 9.7   | 6.6   | b7.9  | b16   | 36    | 279    | 420    | 254    | 49    | 15    | 7.9   |
| 21    | 17    | 9.7   | 6.6   | b7.9  | b15   | 43    | 352    | 416    | 222    | 47    | 15    | 7.9   |
| 22    | 17    | 9.4   | 6.6   | 9.4   | b15   | 51    | 306    | 290    | 203    | 44    | 15    | 7.9   |
| 23    | 16    | 10    | 6.4   | 9.4   | b15   | 56    | 211    | 228    | 190    | 41    | 14    | 7.6   |
| 24    | 16    | 9.4   | 6.6   | 9.4   | b15   | 62    | 168    | 186    | 186    | 37    | 14    | 7.6   |
| 25    | 16    | 9.4   | 6.6   | 10    | 15    | 76    | 143    | 184    | 181    | 34    | 13    | 7.0   |
| 26    | 15    | 8.5   | b6.2  | 10    | b14   | 90    | 126    | 238    | 164    | 32    | 13    | 6.8   |
| 27    | 15    | 7.6   | b6.6  | b11   | b14   | 100   | 121    | 339    | 145    | 34    | 12    | 6.8   |
| 28    | 15    | 8.2   | 6.8   | 10    | b14   | 85    | 110    | 416    | 131    | 34    | 12    | 6.6   |
| 29    | 14    | 7.3   | b6.6  | 11    | 14    | 84    | 102    | 442    | 123    | 38    | 11    | 6.6   |
| 30    | 14    | 7.6   | 6.8   | 11    | ----- | 78    | 99     | 488    | 114    | 51    | 10    | 6.6   |
| 31    | 14    | ----- | b6.8  | b11   | ----- | 72    | -----  | 622    | -----  | 52    | 9.7   | ----- |
| Total | 644   | 336.8 | 207.4 | 246.7 | 453   | 1,248 | 5,752  | 11,322 | 12,210 | 2,185 | 590.7 | 285.2 |
| Mean  | 20.8  | 11.2  | 6.69  | 7.96  | 15.6  | 40.3  | 192    | 365    | 407    | 70.5  | 19.1  | 9.51  |
| Ac-ft | 1,280 | 668   | 411   | 489   | 899   | 2,480 | 11,410 | 22,460 | 24,220 | 4,330 | 1,170 | 566   |

Calendar year 1959: Max 622 Min 5.8 Mean 97.0 Ac-ft 70,260  
Water year 1959-60: Max 840 Min 5.6 Mean 96.9 Ac-ft 70,380

Peak discharge (base, 600 cfs).--May 12 (8:30 p.m.) 810 cfs (4.48 ft); June 2 (9 p.m.) 970 cfs (4.78 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.

b Stage-discharge relation affected by ice.

2955. Little Walker River near Bridgeport, Calif.

Location.--Lat 38°21'30", long 119°26'30", in NW¼ sec. 22, T.6 N., R.23 E., on right bank three-quarters of a mile north of Sonora Junction, 1½ miles upstream from mouth, and 14 miles northwest of Bridgeport.

Drainage area.--63 sq mi, approximately.

Records available.--April to August 1910, October 1944 to September 1960. Prior to October 1958, published as East Fork West Walker River near Bridgeport.

Gage.--Water-stage recorder. Altitude of gage is 6,790 ft (from topographic map). April to August 1910, staff gage at site 1 mile upstream at different datum.

Average discharge.--16 years (1944-60), 49.7 cfs (35,980 acre-ft per year).

Extremes.--Maximum discharge during year, 169 cfs June 3 (gage height, 1.58 ft); minimum, 5.1 cfs Aug. 21.

1910, 1944-60: Maximum discharge, 994 cfs Dec. 23, 1955 (gage height, 2.80 ft), from rating curve extended above 370 cfs on basis of slope-area measurements at gage heights 2.60 and 2.80 ft; maximum gage height recorded, 3.63 ft Jan. 3, 1945 (back-water from ice); minimum discharge recorded, 4.9 cfs Nov. 17, 1948, but may have been less during periods of ice effect.

Remarks.--Records good except those for periods of ice effect, which are fair. Small diversions above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Aug. 18-22, Sept. 1-9)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.3 | 5.5 | 1.1 | 58  |
| .5  | 11  | 1.3 | 95  |
| .7  | 19  | 1.5 | 145 |
| .9  | 33  |     |     |

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                       | 15   | b13   | b12  | b11  | b12     | b14       | 23    | 25           | 109   | 29    | 18    | 9.2   |
| 2                       | 14   | 13    | b11  | b10  | b12     | b14       | 26    | 27           | 123   | 33    | 17    | *9.2  |
| 3                       | 14   | 13    | b12  | b11  | b10     | 15        | 28    | 24           | 129   | 32    | 16    | 9.2   |
| 4                       | 13   | b12   | b10  | b10  | b11     | 15        | 31    | 24           | 132   | 32    | *16   | 8.9   |
| 5                       | 13   | *b12  | b10  | b10  | 13      | 17        | *32   | 23           | 123   | *33   | 16    | 8.9   |
| 6                       | 13   | b13   | b10  | *b12 | 14      | 23        | 34    | 24           | 116   | 31    | 15    | 8.6   |
| 7                       | 13   | b13   | *b10 | b14  | 16      | 27        | 34    | 31           | 104   | 30    | 15    | 8.6   |
| 8                       | *13  | b13   | b10  | b16  | 29      | b21       | 34    | 36           | *93   | 31    | 14    | 8.0   |
| 9                       | 13   | b13   | b11  | 12   | 17      | b19       | 36    | *45          | 87    | 32    | 13    | 8.6   |
| 10                      | 13   | b13   | b12  | 12   | b16     | *b19      | 38    | 55           | 83    | 30    | 13    | 14    |
| 11                      | 13   | b13   | b10  | b11  | *b16    | b19       | 35    | 61           | 81    | 27    | 13    | 11    |
| 12                      | 13   | b13   | b10  | b11  | b17     | 18        | 30    | 72           | 81    | 24    | 13    | 10    |
| 13                      | 13   | b12   | b11  | b11  | b17     | 19        | 28    | 72           | 81    | 19    | 13    | 9.8   |
| 14                      | 13   | b13   | b11  | b11  | b16     | b17       | 30    | 70           | 77    | 17    | 13    | 9.5   |
| 15                      | 13   | b12   | b11  | 12   | b15     | b17       | 29    | 70           | 72    | 16    | 9.5   | 9.5   |
| 16                      | 13   | b13   | b12  | b12  | b15     | 17        | 28    | 68           | 73    | 16    | 7.8   | 9.8   |
| 17                      | 13   | b13   | b11  | b10  | b15     | b18       | 29    | 65           | 73    | 17    | 7.8   | 10    |
| 18                      | 13   | b13   | 13   | b11  | b15     | 18        | 27    | 66           | 65    | 20    | 6.5   | 10    |
| 19                      | 13   | b11   | b11  | b10  | b15     | 19        | 26    | 65           | 58    | 20    | 6.0   | 10    |
| 20                      | 13   | b12   | b12  | b11  | b15     | 20        | 30    | 66           | 55    | 19    | 5.8   | 9.8   |
| 21                      | 13   | b11   | 12   | 11   | b15     | 21        | 34    | 65           | 52    | 18    | 5.5   | 10    |
| 22                      | 13   | b12   | b12  | 12   | b15     | 23        | 32    | 54           | 48    | 18    | 8.0   | 10    |
| 23                      | 13   | b12   | b15  | 12   | b15     | 23        | 28    | 46           | 44    | 18    | 10    | 10    |
| 24                      | 13   | b12   | 12   | 12   | b15     | 23        | 26    | 45           | 42    | 17    | 10    | 10    |
| 25                      | 13   | b12   | b12  | 12   | 14      | 25        | 24    | 47           | 38    | 17    | 10    | 10    |
| 26                      | 13   | b11   | b11  | 11   | 14      | 27        | 24    | 51           | 36    | 15    | 10    | 10    |
| 27                      | 13   | b11   | b11  | 12   | b14     | 27        | 25    | 54           | 34    | 14    | 10    | 10    |
| 28                      | 13   | b11   | b11  | 12   | b14     | b23       | 22    | 65           | 31    | 17    | 10    | 10    |
| 29                      | 13   | b11   | b11  | 12   | b14     | b24       | 22    | 72           | 30    | 21    | 10    | 10    |
| 30                      | 13   | b11   | b11  | 12   | -----   | 24        | 23    | 79           | 29    | 20    | 9.8   | 10    |
| 31                      | b13  | ----- | b11  | b11  | -----   | b23       | ----- | 95           | ----- | 18    | 9.8   | ----- |
| Total                   | 407  | 367   | 347  | 357  | 436     | 629       | 867   | 1,671        | 2,199 | 701   | 352.5 | 292.6 |
| Mean                    | 13.1 | 12.2  | 11.2 | 11.5 | 15.0    | 20.3      | 28.9  | 53.9         | 73.3  | 22.6  | 11.4  | 9.75  |
| Ac-ft                   | 807  | 728   | 688  | 708  | 865     | 1,250     | 1,720 | 3,310        | 4,360 | 1,390 | 699   | 580   |
| Calendar year 1959: Max |      |       | 106  |      | Min 8.9 | Mean 27.7 |       | Ac-ft 20,040 |       |       |       |       |
| Water year 1959-60: Max |      |       | 132  |      | Min 5.5 | Mean 23.6 |       | Ac-ft 17,100 |       |       |       |       |

Peak discharge (base, 200 cfs).--No peak above base.

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

2960. West Walker River below Little Walker River, near Coleville, Calif.

Location.--Lat 38°22'45", long 119°27'00", in NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 9, T. 6 N., R. 23 E., on left bank 50 ft downstream from Little Walker River, 200 ft upstream from bridge on U. S. Highway 395, and 13 miles southeast of Coleville.

Drainage area.--182 sq mi.

Records available.--April 1938 to September 1960. Prior to October 1958, published as "below East Fork."

Gage.--Water-stage recorder. Altitude of gage is 6,650 ft (from topographic map). Prior to Oct. 1, 1939, at site 125 ft downstream at datum 1.00 ft higher.

Average discharge.--22 years 254 cfs (183,900 acre-ft per year).

Extremes.--Maximum discharge during year, 1,270 cfs June 2 (gage height, 4.01 ft); minimum, 8.3 cfs Dec. 4, result of freezeup.

1938-60: Maximum discharge, 6,220 cfs Nov. 20, 1950 (gage height, 8.10 ft), from rating curve extended above 1,900 cfs on basis of slope-area measurement of peak flow; minimum, 4.0 cfs Nov. 18, 1946, result of freezeup.

Maximum discharge recorded prior to 1938, 5,800 cfs Dec. 11, 1937, iv slope-area measurement.

Remarks.--Records good except those for periods of ice effect, which are fair. Station is above diversions except for a few small ranch ditches. Flow very slightly regulated by Poor Lake Reservoir (capacity unknown) 7 miles upstream. Records of chemical analyses for the water year 1960 are given in WSP 1744.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |       |
|-----|-----|-----|-------|
| 0.6 | 14  | 2.0 | 257   |
| .8  | 28  | 2.5 | 430   |
| 1.1 | 64  | 3.0 | 648   |
| 1.5 | 136 | 4.0 | 1,260 |

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     | 58    | *37   | *29   | b24   | *34   | *31   | *118   | *155   | *877   | *151  | *72   | 27    |
| 2     | 57    | 38    | 27    | b22   | b29   | 34    | 134    | 175    | 1,050  | 170   | 60    | 23    |
| 3     | 56    | 37    | 29    | b24   | b31   | 35    | 159    | 184    | 1,030  | 157   | 50    | 22    |
| 4     | 51    | 34    | b22   | b24   | b34   | 36    | 196    | 172    | 998    | 155   | 45    | 22    |
| 5     | 49    | 31    | b22   | b29   | 35    | 43    | 237    | 157    | 952    | 151   | 45    | 22    |
| 6     | 46    | 32    | b23   | 36    | 36    | 60    | 284    | 191    | 866    | 134   | 42    | 23    |
| 7     | 45    | 33    | b23   | 38    | 43    | 78    | 320    | 287    | 801    | 144   | 38    | 23    |
| 8     | 44    | 33    | b23   | 34    | 98    | 66    | 310    | 388    | 683    | 134   | 39    | 21    |
| 9     | 43    | 33    | b24   | 32    | 36    | 54    | 327    | 504    | 634    | 144   | 42    | 19    |
| 10    | 42    | 33    | b24   | 31    | b46   | 51    | 355    | 619    | 629    | 161   | 48    | 40    |
| 11    | 40    | 32    | b23   | b28   | b51   | 53    | 352    | 708    | 596    | 136   | 48    | 35    |
| 12    | 39    | 31    | b21   | b25   | b53   | 53    | 269    | 823    | 643    | 122   | 44    | 26    |
| 13    | 37    | 30    | b24   | b25   | b46   | 54    | 245    | 785    | 643    | 110   | 42    | 23    |
| 14    | 37    | 30    | b22   | b27   | b43   | 51    | 269    | 658    | 596    | 101   | 40    | 23    |
| 15    | 36    | 29    | b24   | 28    | b38   | 49    | 263    | 634    | 538    | 95    | 43    | 23    |
| 16    | 36    | 29    | 26    | b26   | b34   | 48    | 249    | 600    | 516    | 86    | 44    | 22    |
| 17    | 35    | 29    | 26    | b24   | b37   | 49    | 260    | 546    | 564    | 81    | 44    | 23    |
| 18    | 34    | 29    | b24   | b26   | b37   | 56    | 281    | 542    | 504    | 78    | 42    | 22    |
| 19    | 33    | 30    | b22   | b27   | b44   | 61    | 281    | 504    | 419    | 68    | 39    | 22    |
| 20    | 33    | 28    | b20   | b29   | b38   | 70    | 320    | 525    | 388    | 66    | 37    | 20    |
| 21    | 32    | 29    | 25    | b28   | b36   | 81    | 396    | 542    | 341    | 64    | 35    | 20    |
| 22    | 33    | 28    | 24    | b28   | b38   | 93    | 381    | 419    | 313    | 64    | 35    | 20    |
| 23    | 33    | 31    | 23    | 28    | b36   | 99    | 281    | 334    | 294    | 58    | 34    | 21    |
| 24    | 32    | 28    | 25    | 28    | b36   | 106   | 224    | 287    | 281    | 56    | 34    | 21    |
| 25    | 33    | 26    | 25    | 30    | b34   | 126   | 193    | 275    | 260    | 58    | 34    | 21    |
| 26    | 33    | 25    | b22   | b26   | b32   | 149   | 175    | 338    | 240    | 57    | 35    | 21    |
| 27    | 35    | 28    | b24   | b28   | 32    | 166   | 168    | 450    | 219    | 66    | 35    | 21    |
| 28    | 34    | 27    | b25   | 30    | 31    | 144   | 155    | 521    | 191    | 72    | 34    | 22    |
| 29    | 33    | 26    | b22   | 31    | 32    | 140   | 142    | 564    | 172    | 81    | 31    | 22    |
| 30    | 32    | 26    | *b24  | b32   | ----- | 138   | 138    | 600    | 161    | 103   | 30    | 22    |
| 31    | 35    | ----- | b25   | b32   | ----- | 124   | -----  | 754    | -----  | 101   | *30   | ----- |
| Total | 1,214 | 910   | 742   | 878   | 1,150 | 2,398 | 7,478  | 14,241 | 16,399 | 3,222 | 1,271 | 692   |
| Mean  | 39.2  | 30.3  | 23.9  | 28.3  | 39.7  | 77.4  | 249    | 459    | 547    | 104   | 41.0  | 23.1  |
| Ac-ft | 2,410 | 1,800 | 1,470 | 1,740 | 2,280 | 4,760 | 14,830 | 28,250 | 32,530 | 6,390 | 2,520 | 1,370 |

Calendar year 1959: Max 770 Min 20 Mean 144 Ac-ft 104,400

Water year 1959-60: Max 1,050 Min 19 Mean 138 Ac-ft 100,400

Peak discharge (base, 1,120 cfs).--June 2 (10 p.m.) 1,270 cfs (4.01 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

2965. West Walker River near Coleville, Calif.

Location.--Lat 38°30'55", long 119°27'15", in NW 1/4 sec. 28, T.8 N., R.23 E., on left bank a quarter of a mile downstream from Rock Creek and 5 miles southeast of Coleville.

Drainage area.--245 sq mi.

Records available.--October 1902 to July 1908 (published as West Fork of Walker River near Coleville 1903, 1905-8 and as Walker River (West Fork) near Coleville 1904), March 1909 to September 1910, June 1915 to March 1938, May 1957 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,520 ft (from topographic map). Prior to July 31, 1908, staff gage at site half a mile upstream at different datum. Mar. 1, 1909, to Aug. 31, 1910, staff gage and June 18, 1915, to Aug. 15, 1919, water-stage recorder, near present site at different datums. Aug. 16, 1919, to Mar. 31, 1938, water-stage recorder at site 1,000 ft upstream at different datum.

Average discharge.--31 years (1902-7, 1909-10, 1915-37, 1957-60), 274 cfs (193,400 acre-ft per year).

Extremes.--Maximum discharge during year, 1,270 cfs June 2 (gage height, 3.15 ft); minimum daily, 24 cfs Dec. 12.  
1915-38, 1957-60: Maximum discharge, 6,500 cfs Dec. 11, 1937, from slope-area measurement of peak flow; minimum, 5 cfs Dec. 3, 1924, Aug. 27, 1931.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Station is above diversions except for a few small ranch ditches. Flow very slightly regulated by Poor Lake Reservoir (capacity unknown) 17 miles upstream.

Revisions (water years).--WSP 880: 1917 (runoff in acre-feet). WSP 1514: 1918, 1923.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |       |
|-----|-----|-----|-------|
| 0.6 | 16  | 2.0 | 370   |
| .8  | 39  | 2.5 | 690   |
| 1.1 | 87  | 3.0 | 1,130 |
| 1.5 | 185 |     |       |

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                       | 70    | *40   | *34   | a30   | *40    | *40      | *135   | *176   | *914          | *161  | *95   | 38    |
| 2                       | 68    | 42    | 30    | a27   | 36     | 40       | 145    | 192    | 1,070         | 179   | 75    | 35    |
| 3                       | 67    | 42    | 32    | a27   | b34    | 44       | 170    | 205    | 1,070         | 170   | 68    | 34    |
| 4                       | 60    | 39    | 26    | a26   | b38    | 44       | 205    | 198    | 1,010         | 161   | 62    | 32    |
| 5                       | 59    | 36    | b26   | a34   | 40     | 50       | 243    | 179    | *986          | 161   | 60    | 32    |
| 6                       | 56    | 36    | b25   | b42   | 42     | 64       | 296    | 195    | 887           | 145   | 56    | 34    |
| 7                       | 54    | 38    | b25   | a42   | 45     | 91       | 330    | 284    | 815           | 145   | 52    | 34    |
| 8                       | 51    | 38    | b25   | a40   | 104    | 87       | 322    | 366    | 682           | 140   | 51    | 32    |
| 9                       | 51    | 38    | b26   | a39   | 56     | 73       | 334    | 456    | 610           | 135   | 52    | 31    |
| 10                      | 50    | 38    | 30    | a39   | 56     | 65       | 354    | 589    | 603           | 185   | 59    | 42    |
| 11                      | 48    | 36    | 26    | a36   | 64     | 68       | 358    | 698    | 561           | 148   | 59    | 48    |
| 12                      | 46    | 36    | b24   | a35   | b54    | 70       | 296    | 851    | 810           | 123   | 57    | 35    |
| 13                      | 46    | 35    | 29    | a30   | 52     | 70       | 269    | 808    | 618           | 110   | 54    | 31    |
| 14                      | 46    | 36    | b29   | a32   | b45    | 65       | 292    | 658    | 561           | 100   | 51    | 30    |
| 15                      | 46    | 35    | b29   | a33   | b45    | 62       | 288    | 634    | 504           | 89    | 54    | 30    |
| 16                      | 46    | 35    | a31   | a30   | 51     | 62       | 277    | 603    | 474           | 82    | 56    | 29    |
| 17                      | 45    | 34    | a31   | a28   | b46    | 60       | 281    | 534    | 528           | 80    | 56    | 30    |
| 18                      | 45    | 35    | a30   | a29   | 39     | 67       | 296    | 522    | 468           | 82    | 54    | 30    |
| 19                      | 44    | 36    | a29   | b28   | b50    | 72       | 296    | 486    | 385           | 73    | 51    | 29    |
| 20                      | 42    | 32    | a28   | a35   | b45    | 80       | 322    | 498    | 354           | 64    | 50    | 29    |
| 21                      | 42    | 35    | a30   | a34   | b46    | 89       | 395    | 534    | 326           | 64    | 48    | 27    |
| 22                      | 42    | 31    | a29   | a34   | b44    | 102      | 390    | 405    | 307           | 65    | 48    | 29    |
| 23                      | 42    | 36    | a30   | a34   | b42    | 110      | 311    | 338    | 288           | 60    | 46    | 29    |
| 24                      | 40    | 34    | a31   | a34   | b39    | 117      | 262    | 300    | 273           | 56    | 45    | 27    |
| 25                      | 40    | 34    | b30   | a35   | 48     | 135      | 236    | 281    | 269           | a56   | 45    | 27    |
| 26                      | 40    | 32    | b29   | a32   | 42     | 155      | 208    | 319    | 250           | a60   | 46    | 27    |
| 27                      | 40    | 31    | a29   | a34   | 38     | 179      | 205    | 415    | 225           | a70   | 46    | 26    |
| 28                      | 39    | 31    | a28   | a35   | 40     | 161      | 185    | 480    | 205           | a75   | 45    | 26    |
| 29                      | 39    | 31    | a29   | a36   | 42     | 155      | 176    | 540    | 192           | a85   | 44    | 26    |
| 30                      | 38    | 31    | *b29  | a36   | -----  | 155      | 161    | 568    | 173           | a100  | 40    | 27    |
| 31                      | 39    | ----- | a30   | 35    | -----  | 138      | -----  | 770    | -----         | a110  | *39   | ----- |
| Total                   | 1,481 | 1,063 | 889   | 1,037 | 1,364  | 2,770    | 8,038  | 14,080 | 16,218        | 3,334 | 1,662 | 936   |
| Mean                    | 47.8  | 35.4  | 28.7  | 33.5  | 47.0   | 89.4     | 268    | 454    | 541           | 108   | 53.6  | 31.2  |
| Ac-ft                   | 2,940 | 2,110 | 1,760 | 2,060 | 2,710  | 5,490    | 15,940 | 27,930 | 32,170        | 6,610 | 3,300 | 1,860 |
| Calendar year 1959: Max | 797   |       |       |       |        | Mean 153 |        |        | Ac-ft 110,700 |       |       |       |
| Water year 1959-60: Max | 1,070 |       |       |       | Min 24 | Mean 144 |        |        | Ac-ft 104,900 |       |       |       |

Peak discharge (base, 1,120 cfs).--June 2 (11:50 p.m.) 1,270 cfs (3.15 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.

b Stage-discharge relation affected by ice.

## 2970. Topaz Reservoir near Topaz, Calif.

Location.--Lat 38°41'35", long 119°31'10", in NW¼NE¼ sec.33, T.10 N., R.22 E., at outlet works of Topaz Reservoir, 5½ miles north of Topaz.

Records available.--October 1931 to September 1960.

Gage.--Float and staff gages read once daily. Datum of gage is at mean sea level (levels by Walker River Irrigation District).

Extremes.--Maximum contents during year, 19,080 acre-ft June 13 (elevation, 4,984.22 ft); no contents Sept. 22, 24-30.

1931-60: Maximum contents observed, 60,240 acre-ft June 30, 1941 (elevation, 5,005.35 ft); minimum, that of Sept. 22, 24-30, 1960.

Remarks.--Topaz Reservoir, formerly known as Alkali Lake, was formed by the diversion of water from West Walker River through a feeder canal and the construction of an outlet tunnel through a low saddle in rim of lake. Storage began Jan. 30, 1922. Usable capacity, 59,440 acre-ft between elevations 4,972.3 ft (lowest practical elevation for diversion through tunnel, bottom of outlet tunnel at elevation 4,970 ft), and 5,005 ft (3 ft below top of levee). Capacity of reservoir increased from about 45,000 to 59,440 acre-ft in October 1937 by an earth-fill, rock-faced levee at south end. Figures given herein represent usable contents. Water is used for irrigation in Walker River Irrigation District.

Cooperation.--Elevations furnished by Walker River Irrigation District.

Capacity table, water year 1959-60 (elevation, in feet,  
and contents, in acre-feet)

|         |       |       |        |
|---------|-------|-------|--------|
| 4,972.3 | 0     | 4,980 | 12,130 |
| 4,974   | 2,620 | 4,985 | 20,390 |
| 4,977   | 7,320 |       |        |

Contents, in acre-feet, water year October 1959 to September 1960

| Day                               | Oct.     | Nov.     | Dec.     | Jan.     | Feb.     | Mar.     | Apr.     | May      | June     | July     | Aug.     | Sept.    |
|-----------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1                                 | 3,520    | 3,080    | 5,460    | 8,200    | 11,320   | 16,310   | 18,110   | 16,590   | 14,690   | 16,190   | 5,400    | 952      |
| 2                                 | 3,520    | 3,080    | 5,550    | 8,280    | 11,880   | 16,400   | 18,130   | 16,500   | 15,150   | 15,940   | 5,270    | 829      |
| 3                                 | 3,470    | 3,150    | 5,650    | 8,340    | 11,810   | 16,490   | 18,130   | 16,420   | 15,880   | 15,830   | 5,180    | 767      |
| 4                                 | 3,460    | 3,180    | 5,710    | 8,400    | 11,940   | 16,590   | 18,130   | 16,560   | 16,620   | 15,610   | 4,960    | 705      |
| 5                                 | 3,430    | 3,210    | 5,770    | 8,470    | 12,100   | 16,690   | 18,110   | 16,270   | 17,380   | 15,410   | 4,800    | 644      |
| 6                                 | 3,410    | 3,240    | 5,900    | 8,530    | 12,230   | 16,800   | 18,220   | 16,160   | 18,160   | 15,200   | 4,580    | 582      |
| 7                                 | 3,400    | 3,300    | 5,990    | 8,620    | 12,360   | 16,920   | 18,220   | 16,010   | 18,650   | 14,870   | 4,460    | 521      |
| 8                                 | 3,400    | 3,360    | 6,090    | 8,750    | 12,680   | 17,070   | 18,220   | 15,940   | 18,950   | 14,510   | 4,300    | 459      |
| 9                                 | 3,400    | 3,450    | 6,150    | 8,830    | 13,020   | 17,150   | 18,160   | 15,890   | 19,030   | 14,120   | 4,140    | 398      |
| 10                                | 3,400    | 3,490    | 6,250    | 8,940    | 13,330   | 17,230   | 18,110   | 15,860   | 19,030   | 13,730   | 3,990    | 398      |
| 11                                | 3,400    | 3,610    | 6,340    | 9,040    | 13,550   | 17,260   | 18,110   | 15,940   | 19,070   | 13,420   | 3,830    | 398      |
| 12                                | 3,400    | 3,680    | 6,440    | 9,150    | 13,730   | 17,370   | 18,100   | 16,040   | 19,050   | 13,020   | 3,650    | 398      |
| 13                                | 3,360    | 3,770    | 6,530    | 9,250    | 13,920   | 17,430   | 17,950   | 16,290   | 19,080   | 12,620   | 3,490    | 367      |
| 14                                | 3,360    | 3,900    | 6,610    | 9,340    | 14,100   | 17,520   | 17,830   | 16,420   | 19,050   | 12,150   | 3,400    | 337      |
| 15                                | 3,330    | 3,940    | 6,690    | 9,460    | 14,280   | 17,570   | 17,750   | 16,390   | 18,970   | 11,630   | 3,270    | 306      |
| 16                                | 3,330    | 4,050    | 6,780    | 9,550    | 14,450   | 17,620   | 17,720   | 16,360   | 18,770   | 11,140   | 3,050    | 245      |
| 17                                | 3,300    | 4,140    | 6,880    | 9,630    | 14,590   | 17,680   | 17,700   | 16,270   | 18,570   | 10,610   | 2,930    | 184      |
| 18                                | 3,290    | 4,270    | 6,970    | 9,710    | 14,720   | 17,750   | 17,700   | 16,020   | 18,520   | 10,130   | 2,650    | 138      |
| 19                                | 3,270    | 4,360    | 7,070    | 9,810    | 14,890   | 17,780   | 17,700   | 15,860   | 18,330   | 9,620    | 2,500    | 92       |
| 20                                | 3,240    | 4,460    | 7,160    | 9,900    | 15,050   | 17,830   | 17,600   | 15,710   | 18,050   | 9,070    | 2,370    | 61       |
| 21                                | 3,240    | 4,550    | 7,240    | 10,020   | 15,200   | 17,880   | 17,550   | 15,610   | 17,860   | 8,530    | 2,190    | 31       |
| 22                                | 3,210    | 4,610    | 7,340    | 10,110   | 15,330   | 17,930   | 17,550   | 15,450   | 17,750   | 8,050    | 2,030    | 0        |
| 23                                | 3,210    | 4,740    | 7,420    | 10,190   | 15,450   | 17,960   | 17,550   | 15,230   | 17,620   | 7,530    | 1,880    | 15       |
| 24                                | 3,210    | 4,830    | 7,500    | 10,290   | 15,600   | 17,980   | 17,400   | 14,990   | 17,450   | 7,160    | 1,690    | 0        |
| 25                                | 3,180    | 4,900    | 7,580    | 10,450   | 15,730   | 18,000   | 17,230   | 14,720   | 17,280   | 6,730    | 1,570    | 0        |
| 26                                | 3,180    | 5,020    | 7,670    | 10,560   | 15,860   | 18,000   | 17,050   | 14,540   | 17,150   | 6,420    | 1,480    | 0        |
| 27                                | 3,150    | 5,120    | 7,770    | 10,710   | 15,960   | 18,000   | 16,970   | 14,450   | 17,020   | 6,180    | 1,350    | 0        |
| 28                                | 3,120    | 5,240    | 7,850    | 10,840   | 16,060   | 18,080   | 16,850   | 14,410   | 16,850   | 5,900    | 1,260    | 0        |
| 29                                | 3,120    | 5,300    | 7,930    | 10,970   | 16,170   | 18,080   | 16,750   | 14,430   | 16,620   | 5,630    | 1,170    | 0        |
| 30                                | 3,080    | 5,370    | 8,020    | 11,080   | 16,270   | 18,080   | 16,670   | 14,400   | 16,390   | 5,550    | 1,110    | 0        |
| 31                                | 3,080    |          | 8,120    | 11,210   |          | 18,080   |          | 14,410   |          | 5,530    | 1,040    |          |
| (†)                               | 4,974.30 | 4,975.76 | 4,977.50 | 4,979.43 | 4,982.47 | 4,983.62 | 4,982.77 | 4,981.40 | 4,982.60 | 4,975.90 | 4,972.98 | 4,972.26 |
| (*)                               | -440     | +2,290   | +2,750   | +3,090   | +4,960   | +1,910   | -1,410   | -2,260   | +1,980   | -10,870  | -4,550   | -1,040   |
| Calendar year 1959..... * -29,940 |          |          |          |          |          |          |          |          |          |          |          |          |
| Water year 1959-60..... * -3,520  |          |          |          |          |          |          |          |          |          |          |          |          |

† Elevation, in feet, at end of month.

\* Change in contents, in acre-feet.

2975. West Walker River at Hoye Bridge, near Wellington, Nev.

Location.--Lat 38°43'40", long 119°25'40", in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.17, T.10 N., R.23 E., on left bank 20 ft upstream from Hoye Bridge, 2 miles upstream from head of Saroni Canal, and 4 miles southwest of Wellington.

Drainage area.--504 sq mi.

Records available.--April to August 1910 (published as West Walker River near Wellington), July 1920 to September 1923, March 1924 to September 1932, October 1937 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,980 ft (from topographic map). April to August 1910 staff gage at same site at different datum. July 1, 1927, to Sept. 30, 1923, water-stage recorder at site 3 miles downstream (1 mile downstream from Saroni Canal) at different datum and supplemental staff gage on Saroni Canal 1 mile downstream from head. Mar. 1, 1924, to Sept. 30, 1932, water-stage recorder at same site at different datum.

Average discharge.--13 years (1920-23, 1925-32, 1957-60), 207 cfs (149,900 acre-ft per year).

Extremes.--Maximum discharge during year, 564 cfs July 28 (gage height, 4.26 ft); maximum gage height, 4.72 ft July 29 (backwater from silt); minimum discharge, 6 cfs Dec. 29, but may have been less during periods of ice effect.  
1910, 1920-23, 1924-32, 1957-60: Maximum discharge, 2,180 cfs June 6, 1922; minimum, 6 cfs Dec. 19, 1925, Dec. 29, 1959, but may have been less during periods of ice effect.

Remarks.--Records good except those for periods of ice effect or backwater from cloudburst silt deposit, which are fair. Flow regulated by off-channel storage in Topaz Reservoir (see preceding page) since Jan. 30, 1922. Diversions for irrigation of about 10,500 acres above station. Records include releases from Topaz Reservoir and all return flow from Antelope Valley.

Rating table, water year 1959-60, except periods of ice effect or backwater from cloudburst silt deposit (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Feb. 8 to Mar. 23, May 8-10, June 1 to Aug. 13)

|     |    |     |     |
|-----|----|-----|-----|
| 0.9 | 11 | 2.0 | 125 |
| 1.1 | 24 | 3.0 | 308 |
| 1.4 | 50 | 4.0 | 527 |

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                                                         | 40    | 31    | b18   | b14   | 20    | 15    | 80     | 107    | 488    | 143    | c88   | 45    |
| 2                                                         | 42    | 30    | b17   | b12   | 21    | b15   | 85     | 120    | 481    | 133    | c79   | 46    |
| 3                                                         | 42    | 30    | 23    | b15   | 20    | 15    | 70     | 125    | 486    | 141    | c84   | 44    |
| 4                                                         | 42    | 30    | 20    | b13   | 18    | 15    | 72     | 136    | 441    | 130    | *c92  | 43    |
| 5                                                         | 42    | 29    | b19   | b13   | 18    | 15    | 102    | 139    | 459    | 141    | c90   | 41    |
| 6                                                         | 43    | 27    | b20   | *b15  | 19    | 15    | *131   | 154    | 466    | 160    | c93   | *40   |
| 7                                                         | 42    | 28    | b20   | b17   | 20    | 15    | 188    | 172    | 470    | *180   | 85    | 40    |
| 8                                                         | *45   | 26    | b20   | b18   | 24    | 14    | 209    | 258    | 474    | 200    | *84   | 39    |
| 9                                                         | 39    | *24   | b20   | 23    | 28    | 14    | 229    | *285   | 472    | 210    | 82    | 38    |
| 10                                                        | 39    | 20    | 18    | 19    | *24   | *14   | 225    | 389    | *466   | 210    | 79    | 40    |
| 11                                                        | 38    | 20    | *b18  | 18    | 24    | 14    | 229    | 444    | 457    | 213    | 79    | 40    |
| 12                                                        | 39    | 18    | b18   | b18   | 22    | 14    | 268    | 488    | 448    | 231    | 89    | 39    |
| 13                                                        | 39    | 18    | 16    | b18   | 19    | 14    | 246    | *511   | 459    | 250    | 71    | 38    |
| 14                                                        | 41    | 17    | b16   | b18   | 18    | 13    | 200    | 520    | 465    | 250    | 63    | 38    |
| 15                                                        | 45    | 16    | b16   | b18   | 18    | 13    | 186    | 518    | 461    | 250    | 64    | 37    |
| 16                                                        | 45    | 16    | b15   | b18   | 17    | 13    | 189    | 518    | 441    | 272    | 78    | 37    |
| 17                                                        | 45    | 16    | b15   | b18   | 17    | 13    | 172    | 511    | 411    | 260    | 76    | 36    |
| 18                                                        | 45    | 16    | 18    | b18   | 17    | 13    | 188    | 483    | 411    | 260    | 85    | 34    |
| 19                                                        | 45    | 16    | 16    | b17   | 16    | 13    | 220    | 457    | 402    | 272    | 79    | 33    |
| 20                                                        | 44    | 16    | 16    | b16   | 16    | 13    | 250    | 444    | 356    | 274    | 72    | 32    |
| 21                                                        | 44    | 15    | 16    | b16   | 16    | 13    | 260    | 455    | 293    | 250    | 64    | 31    |
| 22                                                        | 45    | 15    | 15    | b16   | 16    | 13    | 281    | 452    | 270    | 230    | 60    | 30    |
| 23                                                        | 45    | 15    | b15   | 18    | 16    | 32    | 279    | 388    | 266    | 222    | 60    | 23    |
| 24                                                        | 44    | 15    | 16    | 18    | b16   | 36    | 262    | 353    | 280    | 214    | 56    | 25    |
| 25                                                        | 44    | 15    | b15   | 18    | 16    | 43    | 218    | 302    | 229    | 150    | 53    | 25    |
| 26                                                        | 44    | 15    | b15   | 18    | 15    | 48    | 191    | 258    | 195    | 157    | 51    | 23    |
| 27                                                        | 44    | b15   | b15   | 18    | 15    | 54    | 149    | 268    | 189    | 106    | 47    | 20    |
| 28                                                        | 44    | b15   | b16   | 17    | 16    | 56    | 143    | 335    | 193    | c155   | 44    | 18    |
| 29                                                        | 44    | b15   | b15   | 17    | 16    | 59    | 122    | 393    | 200    | c197   | 42    | 17    |
| 30                                                        | 45    | 15    | b15   | 17    | ----- | 59    | 106    | 437    | 176    | c89    | 43    | 17    |
| 31                                                        | 43    | ----- | b16   | 17    | ----- | 57    | -----  | 450    | -----  | c80    | 44    | ----- |
| Total                                                     | 1,328 | 592   | 524   | 524   | 538   | 750   | 5,490  | 10,831 | 11,263 | 6,187  | 2,176 | 1,007 |
| Mean                                                      | 42.8  | 19.7  | 16.9  | 16.9  | 18.6  | 24.2  | 183    | 349    | 375    | 200    | 70.2  | 33.6  |
| Ac-ft                                                     | 2,630 | 1,170 | 1,040 | 1,040 | 1,070 | 1,490 | 10,890 | 21,480 | 22,540 | 12,270 | 4,320 | 2,000 |
| Calendar year 1959: Max 578 Min 15 Mean 166 Ac-ft 120,200 |       |       |       |       |       |       |        |        |        |        |       |       |
| Water year 1959-60: Max 520 Min 12 Mean 113 Ac-ft 81,740  |       |       |       |       |       |       |        |        |        |        |       |       |

Peak discharge (base, 700 cfs).--No peak above base.

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

c Backwater from cloudburst silt deposit.

3000. West Walker River near Hudson, Nev.

Location.--Lat 38°48'35", long 119°13'35", in SE $\frac{1}{4}$ SW $\frac{1}{4}$  sec.18, T.11 N., R.25 E., on left bank half a mile upstream from Wilson Canyon and 3 miles southeast of Hudson.

Drainage area.--964 sq mi.

Records available.--August 1914 to March 1925, January 1947 to September 1960. August 1914 to May 1921 published as "at Hudson."

Gage.--Water-stage recorder. Altitude of gage is 4,670 ft (from topographic map). Prior to May 1921, staff gage at site  $2\frac{1}{2}$  miles upstream at different datum. May 1921 to March 1925 water-stage recorder at approximately same site at different datum.

Average discharge.--23 years (1914-24, 1947-60), 195 cfs (141,200 acre-ft per year).

Extremes.--Maximum discharge during year, 346 cfs June 3 (gage height, 2.13 ft); minimum, 15 cfs Jan. 5, result of freezeup. 1914-25, 1947-60: Maximum discharge, 2,700 cfs Dec. 24, 1955 (gage height, 7.42 ft, from floodmarks), from rating curve extended above 1,700 cfs; minimum daily, 13 cfs Aug. 7 to Sept. 21, 1920.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Flow regulated by off-channel storage in Topaz Reservoir (see p.188) since Jan. 30, 1922. Many diversions above station for irrigation. Station is below return flow from irrigated areas in Smith Valley.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |    |     |     |
|-----|----|-----|-----|
| 0.8 | 10 | 1.4 | 105 |
| .9  | 20 | 1.8 | 223 |
| 1.1 | 45 | 2.2 | 373 |

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                   | 44    | 54    | 32    | b31   | 41    | 33    | 64    | 94     | 300    | 120    | 76    | 31    |
| 2                   | 45    | 47    | 32    | b20   | 48    | 35    | 66    | 108    | 319    | 98     | 66    | 36    |
| 3                   | 48    | 45    | 33    | b21   | 47    | 35    | 68    | 112    | 330    | 94     | 64    | 47    |
| 4                   | 48    | 42    | 33    | b18   | 45    | 33    | 68    | 120    | 296    | 84     | *54   | 45    |
| 5                   | 50    | 42    | b32   | b19   | 45    | 33    | 68    | 122    | 285    | 76     | 48    | 44    |
| 6                   | 48    | 42    | b32   | b23   | 45    | 33    | *87   | 122    | 296    | 78     | 48    | *42   |
| 7                   | 50    | 42    | b32   | *b42  | 47    | 33    | 128   | 125    | 307    | *100   | 45    | 37    |
| 8                   | *52   | 42    | b31   | 42    | 52    | 33    | 164   | 144    | 307    | 108    | 44    | 33    |
| 9                   | 47    | *44   | b31   | 41    | 62    | 33    | 180   | *186   | 300    | 118    | 44    | 36    |
| 10                  | 42    | 42    | b31   | 41    | *57   | *32   | 189   | 230    | *304   | 125    | 35    | 45    |
| 11                  | 38    | 41    | *b31  | 41    | 57    | 32    | 196   | 259    | 311    | 125    | 37    | 50    |
| 12                  | 38    | 40    | b31   | b37   | 57    | 32    | 223   | 285    | 307    | 133    | 35    | 50    |
| 13                  | 41    | 38    | 31    | b36   | 54    | 32    | 227   | 296    | 319    | 144    | 36    | 50    |
| 14                  | 40    | 38    | b28   | b36   | 48    | 31    | 203   | 315    | 326    | 155    | 36    | 52    |
| 15                  | 38    | 38    | b30   | b37   | 44    | 31    | 186   | 307    | 330    | 150    | 35    | 47    |
| 16                  | 45    | 37    | b31   | b36   | 44    | 31    | 167   | 311    | 323    | 161    | 35    | 41    |
| 17                  | 45    | 37    | 32    | b35   | 42    | 31    | 167   | 315    | 292    | 155    | 33    | 38    |
| 18                  | 52    | 37    | 36    | b35   | 41    | 32    | 174   | 304    | 285    | 152    | 38    | 41    |
| 19                  | 59    | 37    | b36   | b36   | 41    | 32    | 183   | 296    | 281    | 150    | 41    | 41    |
| 20                  | 50    | 36    | 35    | b36   | 41    | 40    | 199   | 281    | 266    | 152    | 35    | 37    |
| 21                  | 48    | 35    | 36    | b35   | 41    | 35    | 206   | 300    | 234    | 147    | 26    | 36    |
| 22                  | 47    | 33    | 36    | b36   | 41    | 32    | 209   | 307    | 208    | 136    | 25    | 37    |
| 23                  | 45    | 33    | b35   | b38   | 40    | 30    | 209   | 281    | 206    | 120    | 33    | 36    |
| 24                  | 45    | 33    | 35    | 38    | 38    | 32    | 206   | 248    | 203    | 118    | 33    | 37    |
| 25                  | 45    | 32    | 36    | 38    | 40    | 45    | 177   | 223    | 186    | 118    | 31    | 37    |
| 26                  | 47    | 32    | b35   | 38    | 38    | 59    | 174   | 203    | 161    | 105    | 27    | 36    |
| 27                  | 54    | 31    | b33   | 40    | 37    | 66    | 144   | 199    | 147    | 78     | 27    | 36    |
| 28                  | 50    | 32    | b33   | 40    | 37    | 72    | 130   | 230    | 144    | 66     | 25    | 35    |
| 29                  | 50    | b32   | b33   | 40    | 35    | 74    | 118   | 248    | 141    | 91     | 30    | 32    |
| 30                  | 54    | 32    | b35   | 40    | 35    | 74    | 105   | 278    | 136    | 91     | 32    | 31    |
| 31                  | 54    | ----- | b32   | 40    | ----- | 66    | ----- | 281    | -----  | 76     | 30    | ----- |
| Total               | 1,459 | 1,146 | 1,019 | 1,086 | 1,305 | 1,242 | 4,685 | 7,130  | 7,848  | 5,624  | 1,204 | 1,196 |
| Mean                | 47.1  | 38.2  | 32.9  | 35.0  | 45.0  | 40.1  | 156   | 230    | 262    | 117    | 38.8  | 39.9  |
| Ac-ft               | 2,890 | 2,270 | 2,020 | 2,150 | 2,590 | 2,460 | 9,290 | 14,140 | 15,570 | 7,190  | 2,390 | 2,370 |
| Calendar year 1959: | Max   | 354   |       | Min   | 28    |       | Mean  | 111    | Ac-ft  | 80,110 |       |       |
| Water year 1959-60: | Max   | 330   |       | Min   | 18    |       |       | 90.0   | Ac-ft  | 65,330 |       |       |

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

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## 3015. Walker River near Wabuska, Nev.

Location.--Lat 39°09'10", long 119°05'50", in SE¼NW¼ sec.20, T.15 N., R.26 E., on left bank 600 ft upstream from timber bridge at Julian Ranch, 1½ miles downstream from Southern Pacific Railroad bridge, 4.6 miles east of Wabuska, and 16 miles upstream from Weber Dam.

Drainage area.--2,600 sq mi, approximately.

Records available.--July 1902 to December 1904, January 1905 to July 1908 (fragmentary), January 1920 to September 1934, October 1958 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 4,280 ft (from topographic map). July 22, 1902, to July 31, 1908, staff gage at site 2½ miles upstream at different datum. Jan. 15 to July 27, 1920, staff gage; July 28, 1920, to Aug. 29, 1922, water-stage recorder; Aug. 30 to Oct. 13, 1922, staff gage; Oct. 14, 1922, to Sept. 30, 1924, water-stage recorder; Oct. 1, 1924, to Sept. 30, 1929, staff gage; all near present site at different datums; Oct. 1, 1929, to Sept. 30, 1934, water-stage recorder at site 1½ miles downstream at different datum.

Average discharge.--17 years (1902-4, 1920-24, 1925-34, 1958-60), 107 cfs (77,460 acre-ft per year).

Extremes.--Maximum discharge during year, 128 cfs Feb. 11 (gage height, 3.38 ft); minimum daily, 9.1 cfs July 16. 1902-8, 1920-34, 1958-60: Maximum discharge observed, 3,280 cfs July 10, 11, 1906 (gage height, 5.90 ft, site and datum then in use); no flow at times in 1924-25, 1931.

Remarks.--Records good except those for periods of ice effect, which are poor. Many diversions for irrigation above station. Flow regulated by Bridgeport Reservoir (see p. 181) and Topaz Reservoir (see p. 188).

Revisions (water years).--WSP 1314: 1923(M). WSP 1634: 1904.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Feb. 10-15)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.9 | 7.0 | 2.6 | 45  |
| 2.0 | 10  | 3.0 | 91  |
| 2.3 | 24  | 3.2 | 122 |

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     | 18    | 22    | b24   | b29   | 31    | 54    | 52    | 45    | 38    | 20    | 92    | 40    |
| 2     | 22    | 24    | b24   | b24   | 31    | 55    | 55    | 46    | 37    | 18    | 84    | 39    |
| 3     | 19    | 24    | b25   | b22   | 30    | 60    | 51    | *46   | 35    | 22    | 76    | 34    |
| 4     | 19    | 22    | b24   | b25   | 31    | 60    | 50    | 41    | 36    | 21    | 60    | 44    |
| 5     | 22    | 22    | b22   | b26   | 33    | 58    | 36    | 41    | 35    | 20    | *51   | 39    |
| 6     | 24    | 22    | b21   | b28   | 33    | 56    | *36   | 43    | 34    | 18    | 50    | 37    |
| 7     | *20   | 22    | b21   | *b50  | 34    | 55    | 36    | 40    | 36    | 15    | 48    | *31   |
| 8     | 22    | 22    | b21   | b34   | 40    | *53   | 36    | 39    | 39    | 16    | 43    | 27    |
| 9     | 19    | 22    | b30   | b43   | 67    | 51    | 37    | 39    | 36    | 16    | 39    | 52    |
| 10    | 18    | 22    | b40   | 41    | 106   | 40    | 39    | 39    | *39   | 14    | 41    | 35    |
| 11    | 18    | 22    | *b50  | b36   | 120   | 39    | 36    | *43   | 33    | 14    | 31    | 39    |
| 12    | 17    | *22   | b50   | b36   | *91   | 39    | 40    | 42    | 32    | 16    | 34    | 41    |
| 13    | 16    | 24    | b50   | b56   | 85    | 34    | 46    | 36    | 31    | *14   | 35    | 41    |
| 14    | 16    | 24    | b39   | b55   | 73    | 32    | 43    | 32    | 28    | 12    | 36    | 41    |
| 15    | 15    | 26    | b38   | b36   | 61    | 34    | 40    | 43    | 27    | 12    | 38    | 45    |
| 16    | 14    | 26    | b38   | b35   | 57    | 33    | 39    | 43    | 27    | 9.1   | 42    | 48    |
| 17    | 16    | 26    | b39   | b30   | 52    | 34    | 40    | 46    | 27    | 12    | 41    | 43    |
| 18    | 17    | 26    | b42   | 36    | 53    | 34    | 39    | 44    | 31    | 18    | 34    | 43    |
| 19    | 16    | 26    | b44   | 34    | 54    | 33    | 40    | 44    | 30    | 18    | 31    | 45    |
| 20    | 16    | 26    | b45   | b50   | 53    | 33    | 41    | 46    | 29    | 16    | 34    | 45    |
| 21    | 18    | 26    | b46   | b32   | 54    | 33    | 45    | 45    | 29    | 22    | 28    | 44    |
| 22    | 17    | 24    | b50   | b35   | 54    | 31    | 45    | 44    | 27    | 28    | 25    | 45    |
| 23    | 18    | 24    | b47   | b37   | 54    | 28    | 41    | 58    | 26    | 26    | 29    | 48    |
| 24    | 18    | 24    | b50   | b38   | 52    | 23    | 39    | 43    | 24    | 19    | 34    | 51    |
| 25    | 19    | 22    | 53    | 36    | b52   | 25    | 39    | 39    | 26    | 25    | 41    | 50    |
| 26    | 18    | 22    | 40    | 38    | 52    | 29    | 43    | 35    | 26    | 42    | 36    | 52    |
| 27    | 18    | b22   | b38   | 38    | 55    | 34    | 46    | 35    | 24    | 64    | 36    | 50    |
| 28    | 20    | b22   | b40   | 36    | 53    | 40    | 43    | 34    | 25    | 60    | 39    | 48    |
| 29    | 20    | b23   | b41   | 32    | 54    | 44    | 40    | 40    | 22    | 56    | 48    | 44    |
| 30    | 22    | b23   | b41   | 31    | ----- | 49    | 46    | 43    | 21    | 55    | 46    | 40    |
| 31    | 22    | ----- | b38   | 31    | ----- | 51    | ----- | 39    | ----- | 90    | 40    | ----- |
| Total | 575   | 704   | 1,171 | 1,032 | 1,615 | 1,274 | 1,259 | 1,293 | 908   | 808.1 | 1,342 | 1,259 |
| Mean  | 18.5  | 23.5  | 37.8  | 33.3  | 55.7  | 41.1  | 42.0  | 41.7  | 30.3  | 26.1  | 43.3  | 42.0  |
| Ac-ft | 1,140 | 1,400 | 2,320 | 2,050 | 3,200 | 2,530 | 2,500 | 2,560 | 1,600 | 1,600 | 2,660 | 2,500 |

Calendar year 1959: Max 215 Min 8.5 Mean 62.4 Ac-ft 45,160  
Water year 1959-60: Max 120 Min 9.1 Mean 36.2 Ac-ft 26,260

\* Discharge measurement made on this day.  
b Stage-discharge relation affected by ice.

## CARSON RIVER BASIN

3045. Silver Creek below Pennsylvania Creek, near Markleeville, Calif.

Location.--Lat 38°36'00", long 119°46'30", in SE $\frac{1}{4}$  sec. 28, T.9 N., R.20 E., on left bank a quarter of a mile downstream from Pennsylvania Creek, 4 miles upstream from mouth, and  $6\frac{1}{2}$  miles south of Markleeville.

Drainage area.--20 sq mi, approximately.

Records available.--October 1946 to September 1960. October and November 1946 monthly discharge only, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 6,500 ft (from topographic map). Prior to Aug. 3, 1954, at site 180 ft upstream at datum 3.20 ft higher. Aug. 3, 1954, to Sept. 16, 1957, at site 30 ft upstream at datum 1.00 ft higher.

Average discharge.--14 years, 42.7 cfs (30,910 acre-ft per year).

Extremes.--Maximum discharge during year, 269 cfs May 11 (gage height, 3.09 ft); minimum, 0.6 cfs Dec. 5.

1946-60: Maximum discharge, 1,520 cfs Dec. 23, 1955 (gage height, 6.09 ft, site and datum then in use), from rating curve extended above 450 cfs on basis of slope-area measurement of peak flow; minimum, that of Dec. 5, 1959.

Remarks.--Records good. Flow partly regulated by three small reservoirs (total capacity, about 1,700 acre-ft).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.7 | 0.6 | 1.6 | 26  |
| .9  | 2.0 | 2.1 | 50  |
| 1.1 | 4.4 | 2.5 | 95  |
| 1.3 | 6.4 | 3.0 | 210 |
| 1.5 | 14  |     |     |

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     | 4.0  | 2.4   | 2.0  | 1.9  | 5.1   | 4.6   | 25    | 56    | 112   | 10    | 3.8   | 5.7   |
| 2     | 3.6  | 2.4   | 2.3  | 1.9  | 2.9   | 4.4   | 39    | 40    | 122   | 10    | 3.5   | 3.3   |
| 3     | 3.7  | 2.5   | 2.2  | 1.9  | 2.9   | 4.4   | 53    | 37    | 102   | 10    | 2.9   | 2.4   |
| 4     | 3.6  | 2.3   | 1.6  | 1.9  | 2.6   | 4.4   | 61    | 34    | 97    | 9.4   | 2.9   | 2.2   |
| 5     | 3.4  | 1.8   | 1.3  | 1.9  | 5.1   | 5.1   | *71   | *38   | 91    | 9.2   | 2.7   | 1.6   |
| 6     | 3.3  | 2.2   | 1.7  | 1.9  | 3.4   | 8.2   | 67    | 53    | 65    | 6.9   | 2.9   | 1.8   |
| 7     | 3.3  | 2.2   | 1.8  | 1.8  | 7.3   | *29   | 68    | 61    | 71    | 6.7   | 7.0   | 1.7   |
| 8     | 3.5  | 2.1   | 1.8  | 1.8  | 30    | 17    | 61    | 96    | 65    | 6.4   | 25    | 1.7   |
| 9     | 4.9  | 2.2   | 1.8  | 1.8  | 12    | 13    | 67    | 124   | 60    | 6.2   | 26    | 1.9   |
| 10    | 3.6  | 2.2   | 1.9  | 1.9  | 9.7   | 11    | 91    | *146  | 69    | 7.3   | 25    | 4.4   |
| 11    | 3.3  | 2.0   | 1.8  | 2.0  | a8.5  | 11    | 73    | *174  | 64    | 8.7   | 24    | 2.4   |
| 12    | 3.1  | 2.1   | 1.8  | *2.0 | a8.0  | 11    | 54    | 187   | *62   | *7    | 24    | *2.1  |
| 13    | 3.0  | 1.9   | 1.9  | 1.9  | a7.5  | 10    | 57    | 143   | 56    | 17    | 23    | 1.8   |
| 14    | 3.0  | 2.1   | 2.0  | 2.1  | a7.0  | 10    | 60    | 132   | 50    | 16    | 25    | 1.8   |
| 15    | 2.9  | 2.0   | 2.0  | 2.1  | a6.5  | 10    | 55    | 128   | 45    | 17    | 19    | 1.8   |
| 16    | 2.9  | 2.0   | 2.1  | 2.1  | *6.2  | 10    | 54    | 112   | 45    | 22    | 16    | 1.8   |
| 17    | 2.9  | 2.1   | *2.1 | 2.2  | 8.0   | 11    | 58    | 102   | 42    | 22    | 15    | 1.8   |
| 18    | 2.8  | 2.2   | 1.8  | 2.2  | 8.0   | 14    | 62    | 92    | 34    | 21    | 15    | 1.8   |
| 19    | 2.8  | *2.2  | 1.6  | 2.2  | 5.8   | 18    | 65    | 84    | 30    | 20    | *14   | 1.7   |
| 20    | 2.8  | 2.0   | 1.7  | 2.2  | 5.5   | 24    | 80    | 94    | 25    | 20    | 14    | 1.7   |
| 21    | *2.8 | 2.0   | 1.5  | 2.3  | 5.5   | 29    | 85    | 81    | 23    | 20    | 13    | 1.7   |
| 22    | 2.8  | 2.0   | 1.3  | 2.3  | 5.3   | 32    | 87    | 84    | 21    | 20    | 16    | 1.6   |
| 23    | 2.8  | 2.2   | 1.3  | 2.3  | 8.1   | 38    | 51    | 55    | 20    | 19    | 24    | 1.8   |
| 24    | 2.8  | 2.0   | 1.4  | 2.4  | 6.1   | 43    | 43    | 49    | 18    | 19    | 23    | 1.8   |
| 25    | 2.7  | 2.1   | 1.4  | 2.6  | 6.1   | 47    | 37    | 49    | 16    | 18    | 22    | 1.7   |
| 26    | 2.7  | 1.8   | 1.4  | 2.5  | 4.9   | 46    | 34    | 60    | 15    | 18    | 21    | 1.7   |
| 27    | 2.7  | 1.9   | 1.5  | 2.5  | 4.9   | 40    | 32    | 68    | 13    | 16    | 19    | 1.6   |
| 28    | 2.6  | 2.0   | 1.6  | 2.5  | 4.9   | 30    | 30    | 75    | 13    | 17    | 16    | 1.6   |
| 29    | 2.4  | 1.8   | 1.7  | 2.6  | 4.8   | 27    | 28    | 78    | 12    | 17    | 15    | 1.8   |
| 30    | 2.9  | 2.1   | 1.6  | 2.6  | ----- | 25    | 51    | 84    | 11    | 18    | 8.4   | 1.8   |
| 31    | 2.3  | ----- | 1.9  | 2.1  | ----- | 22    | ----- | 97    | ----- | 13    | 6.9   | ----- |
| Total | 98.4 | 62.8  | 54.0 | 87.0 | 169.8 | 809.1 | 1,739 | 2,693 | 1,489 | 477.8 | 472.8 | 62.9  |
| Mean  | 3.17 | 2.09  | 1.74 | 2.16 | 6.54  | 19.6  | 58.0  | 86.9  | 49.6  | 15.1  | 15.3  | 2.10  |
| Ac-ft | 195  | 125   | 107  | 133  | 376   | 1,210 | 3,450 | 5,340 | 2,950 | 928   | 938   | 125   |

Calendar year 1959: Max 141 Min 1.3 Mean 24.1 Ac-ft 17,410  
 Water year 1959-60: Max 187 Min 1.3 Mean 21.9 Ac-ft 16,680

Peak discharge (base, 190 cfs).--May 11 (5 p.m.) 269 cfs (3.09 ft).

\* Discharge measurement made on this day.  
 a No gage-height record; discharge interpolated.

3090. East Fork Carson River near Gardnerville, Nev.

Location.--Lat 38°50'50", long 119°42'10", in SW 1/4 sec. 2, T.11 N., R.20 E., on left bank 2 miles east of Mud Lake Reservoir, 4½ miles downstream from Bryant Creek, and 7 miles southeast of Gardnerville.

Drainage area.--344 sq mi.

Records available.--January 1890 to December 1893, October 1900 to December 1906 (gage heights only August to December 1904 and July to December 1905), January 1908 to December 1910, June to October 1917, December 1924 to September 1928, June to September 1929, October 1935 to December 1937, May 1939 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Datum of gage is 4,985.11 ft above mean sea level (levels by Bureau of Reclamation). Prior to May 19, 1939, staff gages at several sites within 2 miles of present site at various datums.

Average discharge.--34 years (1890-93, 1900-1903, 1908-10, 1925-28, 1935-37, 1939-60), 395 cfs (286,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,160 cfs May 13 (gage height, 3.11 ft); minimum, 16 cfs Dec. 27, result of freezeup.  
1890-93, 1900-1906, 1908-10, 1917, 1924-28, 1929, 1935-37, 1939-60: Maximum discharge, 17,600 cfs Dec. 23, 1955 (gage height, 11.88 ft), from rating curve extended above 6,000 cfs on basis of slope-area measurements at gage heights, 9.66 and 11.88 ft; minimum observed, 8 cfs Dec. 4-10, 19-23, 1904.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Station is above all diversions in Carson Valley. Diversions for irrigation above station. Flow slightly regulated by several small reservoirs (total capacity, about 5,000 acre-ft). Records of water temperatures for the water year 1960 are given in WSP 1744.

Revisions (water years).--WSP 1060: Drainage area. WSP 1214: 1938(M), 1942-43(M), 1945(M). WSP 1514: 1909-10.

Correction.--The figures of discharge for Aug. 31, 1929, monthly mean, and runoff have been corrected to 35 cfs, 60.9 cfs, and 3,740 acre-ft, respectively, superseding those published in WSP 690 and 1314.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |       |
|-----|-----|-----|-------|
| 0.5 | 15  | 1.5 | 222   |
| .7  | 35  | 2.0 | 430   |
| .9  | 65  | 3.0 | 1,080 |
| 1.1 | 102 |     |       |

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     | 65    | 50    | 43    | 35    | 68    | 81     | 247    | 274    | 712    | 147   | 74    | 39    |
| 2     | 54    | 44    | 34    | 34    | 72    | 94     | 262    | 286    | 790    | 141   | 56    | 39    |
| 3     | 65    | 56    | 54    | 34    | 85    | 340    | 306    | 777    | 777    | 141   | 47    | 38    |
| 4     | 63    | 58    | 42    | 32    | 87    | 79     | 425    | 282    | 706    | 124   | 42    | 35    |
| 5     | 60    | 52    | 38    | 35    | 66    | 94     | 486    | 262    | 699    | 122   | 40    | 34    |
| 6     | 58    | 50    | 43    | 40    | 76    | 130    | 558    | 298    | 660    | 117   | 36    | 33    |
| 7     | 57    | 52    | 48    | 60    | 79    | 301    | 636    | 460    | 600    | 110   | 36    | 31    |
| 8     | 58    | 52    | 51    | 70    | 594   | 302    | 648    | 612    | 534    | 117   | 43    | 31    |
| 9     | 62    | 52    | 56    | 75    | 278   | 201    | 686    | 712    | 480    | 127   | 56    | 31    |
| 10    | 58    | 54    | 58    | 70    | 161   | 161    | 712    | 611    | 455    | 150   | 54    | 44    |
| 11    | 57    | 52    | 51    | 65    | 130   | 158    | 686    | 902    | 455    | 112   | 56    | 57    |
| 12    | 57    | 52    | 47    | *60   | 120   | 165    | 498    | 1,000  | 445    | 110   | 63    | 44    |
| 13    | 57    | 51    | 45    | 50    | 124   | 168    | 450    | 937    | 430    | 107   | 62    | 34    |
| 14    | 56    | 50    | 42    | 50    | 104   | 158    | 518    | 804    | 398    | 112   | 60    | 29    |
| 15    | 56    | 52    | 45    | 45    | 110   | 138    | 486    | 777    | 362    | 107   | 58    | 30    |
| 16    | 56    | 51    | 47    | 40    | *110  | 135    | 445    | *744   | *332   | 100   | 52    | 29    |
| 17    | 54    | 48    | 50    | 47    | 86    | 127    | 455    | 680    | 340    | 98    | 51    | 29    |
| 18    | 52    | 50    | *52   | 45    | 107   | 141    | 510    | 648    | 302    | 94    | 51    | 28    |
| 19    | 52    | 52    | 47    | 45    | 100   | 161    | *516   | 582    | 258    | 98    | 48    | 27    |
| 20    | 52    | *52   | 48    | 45    | 98    | 190    | 570    | 576    | 244    | *98   | 47    | *25   |
| 21    | *54   | 48    | 51    | 45    | 85    | 218    | 666    | 618    | 218    | 92    | 45    | 22    |
| 22    | 51    | 48    | 44    | 48    | 87    | 247    | 630    | 492    | 201    | 87    | 45    | 22    |
| 23    | 51    | 48    | 47    | 50    | 89    | 270    | 460    | 425    | 190    | 85    | *54   | 24    |
| 24    | 51    | 50    | 50    | 55    | 77    | 302    | 389    | 384    | 168    | 81    | 58    | 24    |
| 25    | 50    | 47    | 52    | 60    | 94    | 336    | 349    | 349    | 161    | 79    | 57    | 23    |
| 26    | 51    | 47    | 40    | 63    | 83    | 375    | 311    | 371    | 149    | 74    | 56    | 22    |
| 27    | 52    | 42    | 34    | 60    | 76    | 380    | 298    | 430    | 135    | 72    | 54    | 27    |
| 28    | 52    | 44    | 36    | 60    | 81    | 332    | 278    | 460    | *135   | 74    | 54    | 28    |
| 29    | 52    | 44    | 36    | 58    | 81    | 286    | 258    | 522    | 141    | 74    | 54    | 28    |
| 30    | 50    | 42    | 40    | 58    | ----- | 282    | 244    | 534    | 149    | 96    | 48    | 30    |
| 31    | 48    | ----- | 39    | 56    | ----- | 258    | -----  | 624    | -----  | 107   | 42    | ----- |
| Total | 1,722 | 1,498 | 1,418 | 1,582 | 3,400 | 6,333  | 13,995 | 17,162 | 11,626 | 3,233 | 1,603 | 937   |
| Mean  | 55.5  | 49.9  | 45.7  | 51.0  | 117   | 204    | 466    | 554    | 388    | 104   | 51.7  | 31.2  |
| Ac-ft | 3,420 | 2,970 | 2,810 | 3,140 | 6,740 | 12,560 | 27,760 | 34,040 | 23,060 | 6,410 | 3,180 | 1,860 |

Calendar year 1959: Max 909 Min 34 Mean 196 Ac-ft 141,900  
Water year 1959-60: Max 1,000 Min 22 Mean 176 Ac-ft 128,000

Peak discharge (base, 1,300 cfs).--No peak above base.

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 4-18, Dec. 27 to Jan. 25.

## 3100. West Fork Carson River at Woodfords, Calif.

Location (revised).--Lat 38°46'10", long 119°49'55", in NW¼SE¼ sec.34, T.11 N., R.19 E., on left bank 0.3 mile downstream from bridge on State Highways 88 and 89, 0.6 mile southwest of Woodfords, and 3¼ miles downstream from Willow Creek.

Drainage area.--66 sq mi, approximately.

Records available.--October 1900 to May 1907, 1910-11 (fragmentary), October 1938 to September 1960. January 1890 to March 1892 and June 1907 to September 1920 (except portions of 1910-11) at site 0.7 mile downstream; records not equivalent owing to diversions for irrigation. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,760 ft (from river-profile map). Prior to Oct. 1, 1938, staff gage at about same site at different datum. Oct. 1, 1938, to Nov. 11, 1958, water-stage recorder at site 150 ft upstream at datum 2.04 ft higher.

Average discharge.--29 years (1900-1907, 1938-60), 117 cfs (84,700 acre-ft per year).

Extremes.--Maximum discharge during year, 350 cfs Apr. 9 (gage height, 3.70 ft); minimum, 6.3 cfs Sept. 19-21, 26, 27, 1900-1907. 1910-11, 1938-60: Maximum discharge, 4,810 cfs Dec. 23, 1955 (gage height, 8.86 ft), from rating curve extended above 1,000 cfs on basis of slope-area measurements at gage heights 8.35 and 8.86 ft; minimum (1900-1907, 1938-60), that of Sept. 19-21, 26, 27, 1960.

Flood of Dec. 11, 1937, reached a stage of 11.0 ft (present datum), from floodmarks (discharge, 3,500 cfs by slope-area measurement).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. One small diversion above station for irrigation. Flow slightly regulated by several small reservoirs (total capacity, about 1,500 acre-ft). Records of chemical analyses for the water year 1960 are given in WSP 1744.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Aug. 26 to Sept. 30)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.8 | 6.0 | 2.0 | 44  |
| 1.0 | 9.0 | 2.5 | 90  |
| 1.2 | 13  | 3.0 | 172 |
| 1.5 | 21  | 3.5 | 290 |

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     | 20    | 16    | 16   | b16   | 18    | b20   | 94     | 114   | 139   | 38    | 14    | 11    |
| 2     | a20   | 17    | 16   | b16   | 14    | b21   | 128    | 121   | 155   | 39    | 13    | 9.6   |
| 3     | a20   | 18    | 16   | 17    | 16    | 21    | 173    | 123   | 153   | 38    | 12    | 8.1   |
| 4     | a19   | 17    | 15   | b16   | 17    | 21    | 204    | 115   | 142   | 36    | 31    | 7.6   |
| 5     | a18   | 16    | 12   | 16    | 18    | 23    | 225    | *104  | 140   | 64    | 31    | 7.4   |
| 6     | a17   | 17    | 14   | 16    | 18    | 25    | *260   | 121   | 135   | 70    | 29    | 6.9   |
| 7     | a17   | 17    | 14   | 16    | 23    | 35    | 290    | 166   | 130   | 67    | 25    | *6.9  |
| 8     | a18   | 17    | 14   | 16    | 47    | 38    | 285    | 186   | 114   | 66    | 14    | 6.8   |
| 9     | a18   | 17    | 16   | 16    | 20    | 42    | 272    | 199   | 106   | 55    | 12    | 6.9   |
| 10    | a17   | 17    | 16   | 17    | b21   | 38    | 278    | 215   | 102   | 34    | 11    | 7.2   |
| 11    | a17   | 17    | 16   | 16    | b27   | 40    | 250    | 228   | 108   | 24    | 10    | 7.2   |
| 12    | a19   | 17    | 15   | *16   | b28   | 40    | 190    | 240   | *103  | *21   | 9.8   | 7.2   |
| 13    | a20   | 17    | 15   | 16    | 28    | 36    | 194    | 218   | 96    | 24    | 9.6   | 6.9   |
| 14    | a20   | 17    | b14  | 17    | 29    | 34    | 206    | 188   | 90    | 27    | 9.4   | 6.8   |
| 15    | a19   | 17    | b17  | 17    | b27   | 33    | 188    | 182   | 84    | 26    | 20    | 6.8   |
| 16    | a18   | 17    | 18   | b16   | *29   | 33    | 178    | 172   | 80    | 23    | 31    | 6.6   |
| 17    | a17   | 17    | *18  | b17   | 33    | 33    | 182    | 159   | 85    | 18    | 27    | 6.8   |
| 18    | a16   | 17    | 18   | 17    | 28    | *38   | 194    | 151   | 74    | 34    | 23    | 6.6   |
| 19    | a16   | *18   | 17   | 17    | 28    | 46    | 199    | 137   | 63    | 46    | *20   | 6.6   |
| 20    | a16   | 17    | 17   | 17    | b26   | 58    | 208    | 135   | 58    | 45    | 18    | 6.3   |
| 21    | *16   | 18    | 18   | 16    | b27   | 72    | 222    | 144   | 52    | 44    | 17    | 6.4   |
| 22    | 16    | 17    | 17   | 16    | b27   | 87    | 199    | 115   | 62    | 50    | 11    | 6.4   |
| 23    | 16    | 18    | 17   | 17    | b25   | 106   | 157    | 104   | 81    | 48    | 9.4   | 6.4   |
| 24    | 16    | 17    | 18   | 17    | b27   | 126   | 146    | 95    | 86    | 40    | 9.0   | 6.4   |
| 25    | 16    | 17    | 16   | 17    | 24    | 144   | 132    | 80    | 85    | 17    | 8.7   | 6.4   |
| 26    | 16    | 17    | b15  | 17    | 23    | 162   | 118    | 79    | 76    | 14    | 8.5   | 6.4   |
| 27    | 16    | 16    | b17  | 17    | 23    | 157   | 116    | 87    | 40    | 14    | 8.4   | *6.4  |
| 28    | 16    | 18    | 18   | 17    | 22    | 114   | 116    | 95    | 36    | 14    | 8.2   | 6.4   |
| 29    | 16    | 15    | b16  | 17    | b21   | 100   | 109    | 106   | 34    | 16    | 9.8   | 6.6   |
| 30    | 16    | 16    | 17   | 17    | ----- | 100   | 106    | 110   | 38    | 16    | *13   | 6.8   |
| 31    | 16    | ----- | b16  | 17    | ----- | 85    | -----  | 126   | ----- | 15    | 12    | ----- |
| Total | 538   | 509   | 499  | 513   | 716   | 1,928 | 5,599  | 4,415 | 2,747 | 1,083 | 484.8 | 210.8 |
| Mean  | 17.4  | 17.0  | 16.1 | 16.5  | 24.7  | 62.2  | 187    | 142   | 91.6  | 34.9  | 15.6  | 7.03  |
| Ac-ft | 1,070 | 1,010 | 990  | 1,020 | 1,420 | 3,820 | 11,110 | 8,760 | 5,450 | 2,150 | 962   | 418   |

Calendar year 1959: Max 252 Min 8.6 Mean 55.3 Ac-ft 40,040  
Water year 1959-60: Max 290 Min 6.3 Mean 52.6 Ac-ft 38,180

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

\* Discharge measurement made on this day.  
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for nearby stations.  
b Stage-discharge relation affected by ice.

3105. Clear Creek near Carson City, Nev.

Location.--Lat 39°06'50", long 119°47'50", in NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec.1, T.14 N., R. 19 E., on left bank 3 miles upstream from mouth and 3 $\frac{1}{2}$  miles (revised) southwest of Carson City.

Drainage area.--15 sq mi, approximately.

Records available.--March 1948 to September 1960.

Gage.--Water-stage recorder and sharp-crested weir. Altitude of gage is 5,000 ft (revised), from topographic map.

Average discharge.--12 years, 5.85 cfs (4,240 acre-ft per year).

Extremes.--Maximum discharge during year, 37 cfs Feb. 8 (gage height, 1.24 ft); minimum, 0.7 cfs Aug. 15.

1948-60: Maximum discharge, 117 cfs Dec. 23, 1955 (gage height, 2.03 ft); minimum, that of Aug. 15, 1960.

Remarks.--Records good except those for period of no gage-height record, which are fair. Four small diversions for irrigation of about 150 acres of hay meadows and pasture above station.

Revisions (water years).--WSP 1444: 1950(M), 1951, 1952(P).

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|      |     |     |     |
|------|-----|-----|-----|
| 0.15 | 0.8 | 0.4 | 5.0 |
| .2   | 1.4 | .6  | 11  |
| .3   | 2.9 | .9  | 23  |

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     | 2.8  | 2.9   | 3.1   | 2.8   | 5.5   | 4.6   | 4.8   | 3.7  | 2.2  | 1.3  | 1.6  | 1.2   |
| 2     | 2.8  | 3.1   | 3.3   |       | 5.5   | 4.4   | 4.8   | 3.7  | *2.2 | 1.3  | 1.3  | 1.3   |
| 3     | 2.8  | 3.5   | 3.3   |       | 5.0   | 4.4   | 5.0   | 3.5  | 2.2  | 1.0  | 1.2  | 1.3   |
| 4     | 2.9  | 3.5   | 3.1   |       | 5.0   | 5.0   | 4.8   | 3.1  | 2.0  | 1.0  | 1.2  | 1.3   |
| 5     | 2.8  | 3.3   | 3.1   | a3.5  | *5.8  | 5.5   | *4.6  | 2.9  | 1.8  | 1.2  | *1.2 | 1.2   |
| 6     | 2.3  | 3.1   | 3.3   |       | 6.1   | 5.5   | 4.6   | 2.9  | 1.8  | 1.2  | 1.2  | 1.2   |
| 7     | 2.0  | 3.1   | 3.5   | a4.0  | 10    | 10    | 4.6   | 2.9  | 1.8  | 1.2  |      | *1.3  |
| 8     | 2.2  | 3.1   | 3.7   | *4.6  | *21   | 7.2   | 4.6   | 2.8  | 1.8  | 1.2  | 1.2  | 1.2   |
| 9     | 2.2  | 2.9   | 3.3   |       | 10    | 4.4   | 4.4   | 2.6  | 1.8  | 1.2  | 1.2  | 1.3   |
| 10    | 2.4  | 2.9   | 3.3   |       | 8.0   | 5.5   | 4.4   | *2.6 | 1.8  | 1.2  | 1.2  | 1.4   |
| 11    | 2.2  | 3.1   | 3.5   |       | 6.4   | 5.5   | 4.2   | 2.6  | 1.7  | 1.2  | 1.3  | 1.3   |
| 12    | *2.2 | 3.1   | 3.7   | a4.0  | 5.5   | 6.4   | 4.0   | 2.6  | 1.7  | *1.2 | 1.3  | 1.3   |
| 13    | 2.2  | 3.3   | 4.0   |       | 5.3   | 6.9   | 4.0   | 2.4  | 1.7  | 1.2  | 1.3  | 1.3   |
| 14    | 2.2  | 3.5   | 2.8   |       | 5.3   | 5.3   | 4.0   | 2.4  | 1.7  | 1.2  | 1.3  | 1.3   |
| 15    | 2.2  | 3.3   | *3.5  |       | 5.3   | 4.8   | 4.0   | 2.6  | 1.8  | 1.2  | 1.0  | 1.3   |
| 16    | 2.2  | *2.9  | 3.5   |       | 5.0   | 4.6   | 4.0   | 2.6  | 1.8  | 1.2  | .9   | 1.2   |
| 17    | 2.2  | 2.9   | 3.5   |       | 5.0   | 4.6   | 4.2   | 2.6  | 1.8  | 1.2  | .9   | 1.0   |
| 18    | 2.3  | 2.9   | 3.5   |       | 4.8   | 4.6   | 4.2   | 2.6  | 1.7  | 1.0  | .9   | 1.0   |
| 19    | 2.3  | 2.9   | 3.3   |       | 4.8   | 4.8   | 4.2   | 2.4  | 1.7  | 1.0  | .9   | 1.0   |
| 20    | 2.4  | 3.1   | 3.5   | a4.5  | 4.8   | 4.8   | 4.0   | 2.4  | 1.7  | 1.0  | .9   | 1.0   |
| 21    | 2.4  | 3.1   | 3.5   |       | 4.8   | 4.8   | 4.0   | 2.4  | 1.7  | 1.0  | .9   | 1.0   |
| 22    | 2.6  | 3.1   | 3.5   |       | 4.8   | 5.0   | 4.0   | 2.4  | 1.6  | 1.0  | 1.0  | 1.0   |
| 23    | 2.6  | 3.1   | 3.3   |       | 4.6   | 5.3   | 4.0   | 2.6  | 1.6  | 1.0  | 1.0  | 1.2   |
| 24    | 2.6  | 3.1   | 3.7   |       | 4.6   | 5.3   | 4.0   | 2.6  | 1.6  | 1.0  | 1.0  | 1.2   |
| 25    | 2.6  | 3.1   | 3.7   |       | 4.8   | 5.3   | 4.2   | 2.6  | 1.6  | 1.2  | 1.0  | 1.0   |
| 26    | 2.6  | 3.1   | 3.7   |       | 5.0   | 5.3   | 4.0   | 2.4  | 1.6  | 1.2  | 1.0  | 1.0   |
| 27    | 2.6  | 2.9   | 3.7   | a5.0  | 4.8   | 5.3   | 4.0   | 2.4  | 1.4  | 1.2  | 1.2  | 1.0   |
| 28    | 2.6  | 3.1   | 3.7   |       | 4.8   | 5.5   | 3.7   | 2.3  | 1.4  | 1.6  | 1.2  | 1.0   |
| 29    | 2.6  | 3.1   | 4.2   |       | 4.8   | 5.0   | 3.5   | 2.3  | 1.4  | 3.3  | 1.2  | .9    |
| 30    | 2.8  | 3.1   | 4.0   |       | ----- | 5.3   | 3.5   | 2.3  | 1.3  | 1.6  | 1.2  | .9    |
| 31    | 2.9  | ----- | 3.5   |       | ----- | 5.0   | ----- | 2.3  | 1.3  | 1.3  | 1.2  | ----- |
| Total | 76.5 | 93.2  | 108.3 | 132.4 | 177.1 | 167.6 | 126.3 | 82.5 | 51.9 | 38.6 | 35.1 | 34.6  |
| Mean  | 2.47 | 3.11  | 3.49  | 4.27  | 6.11  | 5.41  | 4.21  | 2.66 | 1.73 | 1.25 | 1.13 | 1.15  |
| Ac-ft | 152  | 185   | 215   | 263   | 351   | 332   | 251   | 164  | 103  | 77   | 70   | 69    |

Calendar year 1959: Max 17 Min 1.6 Mean 3.76 Ac-ft 2,720  
 Water year 1959-60: Max 21 Min 0.9 Mean 3.07 Ac-ft 2,250

Peak discharge (base, 15 cfs).--Feb. 8 (10:30 a.m.) 37 cfs (1.24 ft); Mar. 7 (1 p.m.) 15 cfs (0.68 ft); Aug. 1 (4 a.m.) 17 cfs (0.77 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby streams.

## 3110. Carson River near Carson City, Nev.

Location.--Lat 39°06'30", long 119°42'40", in SW 1/4 sec. 2, T.14 N., R.20 E., on left bank 2 miles downstream from Clear Creek, 3 miles (revised) upstream from bridge on road to Mexican Dam, and 5 miles southeast of Carson City.

Drainage area.--876 sq mi.

Records available.--May 1939 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 4,621.48 ft above mean sea level, datum of 1929. Prior to Dec. 23, 1955, water-stage recorder on right bank at same datum. Dec. 23, 1955, to Mar. 13, 1956, staff gage at present site and datum.

Average discharge.--21 years, 395 cfs (286,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,100 cfs Feb. 9 (gage height, 3.12 ft); minimum, 3.3 cfs Sept. 3, 4, 5, 6, 7, 8.  
1939-60: Maximum discharge, 30,000 cfs Dec. 24, 1955 (gage height, 15.0 ft, from floodmarks), from rating curve extended above 6,000 cfs on basis of slope-area measurements at gage heights 8.40 and 15.0 ft, computation of flow over dam at gage height 11.40 ft, and float measurement at gage height 9.60 ft; minimum, that of Sept. 3, 4, 5, 6, 7, 8, 1960.

Remarks.--Records good. Many diversions above station for irrigation. Flow slightly regulated by several small reservoirs on tributaries.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|      |     |     |     |
|------|-----|-----|-----|
| -0.3 | 5.1 | 0.9 | 77  |
| -2   | 5.1 | 1.2 | 127 |
| 0.0  | 12  | 1.5 | 199 |
| .3   | 25  | 2.0 | 396 |
| .6   | 44  | 2.9 | 930 |

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                                                            | 25    | a38   | 65    | b72   | 127    | 129    | 166    | 177    | 241   | 23    | 40    | 4.1   |
| 2                                                            | 34    | a40   | 68    | b68   | 177    | 123    | 149    | 166    | 365   | 21    | 31    | 3.9   |
| 3                                                            | 31    | a42   | 69    | b72   | 171    | 123    | 149    | 139    | 411   | 26    | 27    | 3.5   |
| 4                                                            | 33    | a44   | 64    | b56   | 131    | 127    | 185    | 155    | 421   | 30    | 25    | 3.5   |
| 5                                                            | a33   | a45   | b82   | b57   | *137   | 126    | 241    | 133    | 382   | 27    | 21    | 3.5   |
| 6                                                            | a32   | a46   | b62   | b78   | 139    | 135    | 245    | 125    | 372   | 26    | 18    | 3.5   |
| 7                                                            | a32   | a48   | b59   | *b104 | 135    | 168    | 348    | 145    | 344   | 28    | 18    | 3.5   |
| 8                                                            | a31   | a49   | b82   | 120   | 270    | 342    | 436    | 245    | 245   | 25    | 17    | 3.5   |
| 9                                                            | a34   | a50   | b63   | 114   | 874    | 285    | 472    | 408    | 234   | 20    | 17    | 3.7   |
| 10                                                           | a33   | *52   | b67   | 109   | 472    | 212    | 467    | 456    | 157   | 18    | 18    | 4.1   |
| 11                                                           | a33   | 49    | b70   | 107   | 339    | 196    | 540    | 524    | 154   | 19    | 18    | 4.3   |
| 12                                                           | *32   | 52    | b72   | 102   | 262    | 196    | 482    | 656    | 161   | 20    | 17    | 3.9   |
| 13                                                           | 35    | 54    | b76   | b97   | 234    | 212    | 335    | 750    | 166   | 23    | 17    | 4.5   |
| 14                                                           | 35    | 54    | b63   | b68   | 218    | 209    | 273    | 826    | 145   | 18    | 16    | 4.1   |
| 15                                                           | 36    | 56    | *b72  | b97   | 193    | 191    | 281    | 551    | 111   | 12    | 16    | 4.3   |
| 16                                                           | 34    | 62    | b73   | b92   | 191    | 169    | 255    | 540    | 83    | 12    | 15    | 4.1   |
| 17                                                           | 35    | 65    | 78    | b86   | 179    | 161    | 288    | 482    | 74    | 14    | 11    | 3.9   |
| 18                                                           | 31    | 64    | 83    | b100  | 171    | 159    | 322    | 451    | 72    | 13    | 8.5   | 4.3   |
| 19                                                           | 31    | 60    | 85    | 102   | 177    | 161    | *330   | 377    | 73    | 11    | 5.8   | 4.7   |
| 20                                                           | 29    | 57    | 80    | 99    | 166    | 169    | 322    | 335    | 61    | *10   | 5.8   | *5.1  |
| 21                                                           | 29    | 64    | 86    | b92   | 159    | *188   | 335    | 348    | 63    | 8.5   | 6.1   | 4.5   |
| 22                                                           | 34    | 84    | 89    | b97   | 149    | 179    | 436    | 358    | *80   | 7.1   | 8.2   | 4.3   |
| 23                                                           | 29    | 62    | 84    | 104   | 145    | 177    | 446    | *330   | 49    | 8.2   | *12   | 5.4   |
| 24                                                           | 27    | 62    | 84    | 104   | 143    | 188    | 377    | 317    | 49    | 8.5   | 6.5   | 6.5   |
| 25                                                           | 29    | 63    | 95    | 111   | 143    | 193    | 322    | 273    | 38    | 10    | 4.7   | 5.4   |
| 26                                                           | a30   | 63    | b88   | 116   | 145    | 191    | 258    | 258    | 29    | 6.8   | 4.1   | 6.8   |
| 27                                                           | a31   | 64    | b67   | 127   | 135    | 221    | 255    | 234    | 30    | 14    | 4.1   | 6.1   |
| 28                                                           | a32   | 65    | b76   | 133   | 131    | 241    | 273    | 221    | 29    | 20    | 4.9   | 6.5   |
| 29                                                           | a34   | 67    | b72   | 127   | *129   | 205    | 215    | 218    | 29    | 21    | 4.7   | 5.4   |
| 30                                                           | a35   | 68    | b80   | 125   | -----  | 161    | 171    | 228    | 25    | 55    | 4.3   | 6.1   |
| 31                                                           | a36   | ----- | b80   | 133   | -----  | 191    | -----  | 199    | ----- | 48    | 4.1   | ----- |
| Total                                                        | 995   | 1,689 | 2,290 | 3,089 | 6,042  | 5,705  | 9,374  | 10,403 | 4,661 | 600.1 | 425.8 | 137.0 |
| Mean                                                         | 32.1  | 55.6  | 73.9  | 99.6  | 208    | 184    | 312    | 336    | 155   | 19.4  | 13.7  | 4.57  |
| Ac-ft                                                        | 1,970 | 3,310 | 4,540 | 6,130 | 11,980 | 11,320 | 18,590 | 20,630 | 9,240 | 1,190 | 845   | 272   |
| Calendar year 1959: Max 1,450 Min 5.2 Mean 161 Ac-ft 118,200 |       |       |       |       |        |        |        |        |       |       |       |       |
| Water year 1959-60: Max. 874 Min 3.5 Mean 124 Ac-ft 90,020   |       |       |       |       |        |        |        |        |       |       |       |       |

Peak discharge (base, 1,600 cfs).--No peak above base.

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, adjacent trends of flow, and records for upstream stations.

b Stage-discharge relation affected by ice.

3120. Carson River near Fort Churchill, Nev.

Location.--Lat 39°17'30", long 119°18'40", in SW<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub> sec.32, T.17 N., R.24 E., on right bank 400 ft downstream from Buckland ditch, 2 miles west of Fort Churchill, and 4½ miles (revised) upstream from Weeks bridge on U.S. Highway 95 alternate.

Drainage area.--1,450 sq mi, approximately.

Records available.--April 1911 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Datum of gage is 4,214.70 ft above mean sea level, datum of 1929, supplementary adjustment of 1956. Prior to Apr. 25, 1924, staff gage at site 7½ miles upstream at different datum. Apr. 25, 1924, to Dec. 31, 1933, water-stage recorder at site 8 miles upstream at different datum. Jan. 1, 1934, to Sept. 30, 1957, water-stage recorder at present site at datum 1.36 ft higher (levels by Truckee-Carson Irrigation District).

Average discharge.--49 years, 362 cfs (262,100 acre-ft per year).

Extremes.--Maximum discharge during year, 836 cfs Feb. 10 (gage height, 3.87 ft); no flow for many days in August and September.

1911-60: Maximum daily discharge, 9,680 cfs Dec. 26, 1955; maximum gage height, about 11 ft in December 1955, present datum, from floodmarks; no flow for some periods in nearly every year since 1923.

Remarks.--Records good. Many diversions for irrigation above station, including diversions for irrigation of 720 acres between present site and sites used prior to Jan. 1, 1934. Buckland ditch diverts 400 ft upstream for irrigation below station.

Revisions (water years).--WSP 1514: 1917.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|      |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|
| 1.24 | 0   | 1.7 | 7.0 | 2.8 | 194 |
| 1.3  | .3  | 1.8 | 12  | 3.2 | 386 |
| 1.4  | 1.0 | 2.0 | 28  | 3.7 | 720 |
| 1.5  | 2.0 | 2.2 | 50  |     |     |
| 1.6  | 4.0 | 2.5 | 103 |     |     |

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     | 0.4  | 0.4  | 5.2     | b48   | 128    | 151   | 137    | 106    | 106     | 0.2  | 0.2  |       |
| 2     | .4   | .4   | *11     | b29   | *131   | 128   | 118    | *105   | *120    | .2   | .2   |       |
| 3     | .3   | *.4  | 20      | b43   | 158    | 126   | 101    | 95     | 194     | *.2  | .2   |       |
| 4     | .3   | .4   | 21      | b36   | 165    | 128   | *88    | 80     | 254     | .2   | .2   |       |
| 5     | .3   | .4   | 19      | b58   | 134    | 128   | 92     | 68     | 282     | .2   | .2   |       |
| 6     | .3   | .4   | 18      | b65   | 134    | 131   | 120    | 64     | 254     | .2   | .2   |       |
| 7     | .3   | .4   | 19      | 75    | 134    | 140   | 131    | 56     | 232     | .2   | .2   |       |
| 8     | .4   | .4   | 20      | 88    | 137    | 162   | 194    | 62     | 202     | .2   | .1   |       |
| 9     | .4   | .4   | 26      | 99    | 413    | 322   | 264    | 108    | 155     | .2   |      |       |
| 10    | .4   | .4   | 37      | 103   | 668    | 268   | 292    | 223    | 137     | .2   |      |       |
| 11    | .4   | .4   | 44      | 101   | 421    | 228   | 307    | 273    | 90      | .2   | a.1  |       |
| 12    | .4   | .4   | 48      | 97    | 332    | 207   | 370    | 327    | 70      | .2   |      |       |
| 13    | .4   | .4   | 49      | b92   | 268    | 198   | 292    | 456    | 68      | .2   |      |       |
| 14    | .4   | .4   | b46     | b88   | 236    | 190   | 207    | 531    | 65      | .2   |      |       |
| 15    | .4   | .4   | b46     | 84    | 223    | 180   | 172    | 432    | 56      | .2   |      |       |
| 16    | .4   | .4   | b46     | b77   | 202    | 162   | 165    | 415    | 46      | .3   |      |       |
| 17    | .4   | .4   | 56      | b74   | 194    | 146   | 152    | 392    | 29      | .3   |      |       |
| 18    | .4   | .5   | 58      | b82   | 187    | 137   | 169    | 337    | 22      | .3   |      |       |
| 19    | .4   | .5   | 59      | 99    | 176    | 134   | 190    | 312    | 13      | .3   |      |       |
| 20    | .4   | .5   | 62      | 92    | 172    | 137   | 190    | 264    | 9.5     | .3   |      |       |
| 21    | .4   | .5   | 65      | b82   | 169    | 137   | 187    | 219    | 7.3     | .3   |      |       |
| 22    | .4   | .5   | 65      | b86   | 162    | 146   | 202    | 236    | 1.5     | .3   |      |       |
| 23    | .4   | .5   | 68      | 90    | 152    | 149   | 297    | 232    | .6      | .3   |      |       |
| 24    | .4   | .5   | 68      | 97    | 146    | 140   | 297    | 207    | .5      | .3   |      |       |
| 25    | .4   | .5   | 68      | 99    | 143    | 149   | 264    | 194    | .4      | .3   |      |       |
| 26    | .4   | .5   | 68      | 99    | 143    | 149   | 223    | 190    | .5      | .3   |      |       |
| 27    | .4   | .5   | b60     | 106   | 143    | 152   | 169    | 183    | .4      | .3   |      |       |
| 28    | .4   | .5   | b56     | 113   | 137    | 172   | 155    | 149    | .2      | *.3  |      |       |
| 29    | .4   | .7   | *b44    | 123   | *134   | 180   | 158    | 140    | .2      | .3   |      |       |
| 30    | .4   | 3.2  | b49     | 126   | ---    | 152   | 131    | 134    | .2      | .3   |      |       |
| 31    | .4   | ---  | b56     | 120   | ---    | 126   | ---    | 128    | ---     | .2   | *0   | ---   |
| Total | 11.9 | 16.2 | 1,377.2 | 2,651 | 5,942  | 5,033 | 5,824  | 6,716  | 2,416.3 | 7.7  | 2.2  | 0     |
| Mean  | 0.38 | 0.54 | 44.4    | 85.5  | 205    | 162   | 194    | 217    | 80.5    | 0.25 | 0.07 | 0     |
| Ac-ft | 24   | 32   | 2,730   | 5,260 | 11,790 | 9,980 | 11,550 | 13,320 | 4,790   | 15   | 4.4  | 0     |

Calendar year 1959: Max 1,110 Min 0 Mean 126 Ac-ft 91,210

Water year 1959-60: Max 668 Min 0 Mean 82.0 Ac-ft 59,500

Peak discharge (base, 1,400 cfs).--No peak above base.

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage.

b Stage-discharge relation affected by ice.

## HUMBOLDT RIVER BASIN

3155. Marys River above Hot Springs Creek, near Deeth, Nev.

Location.--Lat 41°15', long 115°17', in NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.24, T.39 N., R.59 E., on right bank 1 mile upstream from Hot Springs Creek, 7 miles north of Cross Ranch, and 13 miles north of Deeth.

Drainage area.--415 sq mi.

Records available.--October 1943 to September 1960. Prior to October 1950, published as "below Hot Springs Creek, near Deeth."

Gage.--Water-stage recorder. Altitude of gage is 5,500 ft (from river-profile map). Prior to Nov. 3, 1950, at site  $1\frac{1}{2}$  miles downstream at different datum.

Average discharge.--17 years, 58.3 cfs (42,210 acre-ft per year).

Extremes.--Maximum discharge during year, 276 cfs Apr. 12 (gage height, 2.93 ft); minimum, 0.4 cfs Aug. 15.

1943-60: Maximum discharge, 1,250 cfs Apr. 29, 1952 (gage height, 6.57 ft); minimum, 0.1 cfs Sept. 5, 1950, Aug. 27, 1955.

Remarks.--Records good except those for periods of ice effect, which are fair. Several diversions for irrigation above station.

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     | 1.2  | 3.4   | 7.8   | 6.3   | b13  | b14   | 115   | 103   | 130     | 7.8  | 1.2  | 0.8   |
| 2     | 1.2  | *3.3  | 7.8   | 6.9   | 12   | b14   | 105   | *99   | 150     | 7.5  | 1.2  | .8    |
| 3     | 1.2  | 3.2   | *8.0  | 7.2   | b12  | 13    | 99    | 106   | 172     | 6.9  | 1.1  | .8    |
| 4     | 1.3  | 3.2   | b7.8  | 6.3   | 12   | 15    | *115  | 112   | 178     | 6.3  | .9   | .8    |
| 5     | 1.2  | 3.0   | b7.5  | 5.8   | 12   | 16    | 147   | 112   | 168     | 5.7  | .9   | .8    |
| 6     | *1.2 | 3.0   | 7.5   | 6.1   | 12   | 19    | 184   | 109   | 157     | 5.4  | .8   | .8    |
| 7     | 1.2  | 3.6   | 7.5   | 6.3   | 13   | 28    | 209   | 112   | *148    | 4.9  | .8   | .8    |
| 8     | 1.3  | 3.8   | 7.5   | 6.6   | 18   | 33    | 228   | 121   | 138     | 4.7  | .7   | *.8   |
| 9     | 1.4  | 4.1   | 7.2   | 6.6   | 16   | *32   | 246   | 132   | 143     | 4.4  | .7   | .8    |
| 10    | 1.6  | 5.0   | b7.2  | 6.9   | 16   | 29    | 252   | 146   | 142     | 4.2  | .7   | .8    |
| 11    | 1.4  | 5.8   | 7.5   | *b7.0 | b15  | 28    | 264   | 169   | 121     | 3.7  | .7   | .8    |
| 12    | 1.4  | 5.8   | 7.8   | b7.5  | *b15 | 33    | 271   | 208   | 101     | 3.5  | .6   | .7    |
| 13    | 1.6  | 6.3   | b7.8  | b7.5  | 15   | 39    | 254   | 243   | 86      | *2.9 | .6   | .8    |
| 14    | 1.6  | 6.1   | b7.8  | b7.2  | b15  | 40    | 225   | 266   | 69      | 2.5  | .7   | .8    |
| 15    | 1.6  | 5.5   | 7.2   | b7.5  | b15  | 38    | 208   | 255   | 63      | 2.5  | .6   | .8    |
| 16    | 1.9  | 5.5   | 7.2   | b8.0  | b15  | 35    | 184   | *214  | 60      | 2.0  | .6   | .8    |
| 17    | 2.1  | 5.5   | 7.2   | b8.0  | b15  | 32    | 162   | 184   | 58      | 1.8  | *.6  | .9    |
| 18    | 2.3  | 4.5   | 7.2   | b8.0  | b16  | 34    | 147   | 171   | 55      | 1.6  | .6   | .9    |
| 19    | 2.8  | 5.3   | b7.5  | b8.0  | 15   | 40    | 139   | 158   | 50      | 1.6  | .6   | .9    |
| 20    | 3.0  | 5.8   | b7.5  | b8.0  | b15  | 46    | 124   | 139   | 44      | 1.4  | .6   | .9    |
| 21    | 3.2  | 6.3   | 7.5   | b8.0  | b14  | 56    | 109   | 128   | 33      | 1.3  | .6   | 1.1   |
| 22    | 3.4  | 6.6   | 7.8   | b8.0  | b14  | 73    | 105   | 126   | 23      | 1.3  | .7   | 1.2   |
| 23    | 3.6  | 6.6   | 8.2   | b8.5  | b14  | 101   | 123   | 125   | 20      | 1.2  | .7   | 1.3   |
| 24    | 3.6  | 6.9   | 8.9   | b9.5  | b15  | 123   | 146   | 117   | 19      | 1.2  | .7   | 1.3   |
| 25    | 3.6  | 6.9   | b9.0  | 9.7   | 15   | 138   | 132   | 109   | 17      | 1.1  | .7   | 1.3   |
| 26    | 3.6  | 7.5   | b9.0  | 9.7   | 14   | 152   | 124   | 101   | 14      | 1.1  | .7   | 1.3   |
| 27    | 3.8  | b7.2  | b8.5  | 10    | b15  | 164   | 119   | 93    | 12      | 1.1  | .7   | 1.4   |
| 28    | 3.8  | 7.5   | 7.2   | 10    | b15  | 169   | 115   | 93    | 11      | 1.1  | .7   | 1.4   |
| 29    | 3.4  | 7.5   | 6.9   | b10   | b15  | 161   | 114   | 98    | *9.8    | 1.1  | .8   | 1.5   |
| 30    | 3.4  | 7.5   | 6.9   | 11    | ---  | 137   | 111   | 108   | 9.1     | 1.1  | .8   | 1.4   |
| 31    | 3.4  | ---   | 6.6   | 11    | ---  | 125   | ---   | 119   | ---     | 1.2  | .8   | ---   |
| Total | 71.1 | 162.2 | 237.0 | 247.1 | 418  | 1,977 | 4,876 | 4,376 | 2,400.9 | 94.1 | 23.1 | 29.5  |
| Mean  | 2.29 | 5.41  | 7.65  | 7.97  | 14.4 | 63.8  | 163   | 141   | 80.0    | 3.04 | 0.75 | 0.98  |
| Ac-ft | 141  | 322   | 470   | 490   | 829  | 3,920 | 9,670 | 8,680 | 4,760   | 187  | 46   | 59    |

Calendar year 1959: Max 123

Min 0.4

Mean 25.4

Ac-ft 18,400

Water year 1959-60: Max 271

Min 0.6

Mean 40.7

Ac-ft 29,570

Peak discharge (base, 200 cfs).--Apr. 12 (12:30 p.m.) 276 cfs (2.93 ft); May 14 (6 to 10 p.m.) 272 cfs (2.88 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## 3165. Lamoille Creek near Lamoille, Nev.

Location.--Lat 40°41'30", long 115°28'30", in NE $\frac{1}{4}$  sec. 6, T.32 N., R.58 E., on left bank at Lamoille Creek bridge at mouth of canyon, 300 ft downstream from Elko-Lamoille powerplant and 3 miles south of Lamoille.

Drainage area.--25 sq mi, approximately.

Records available.--May 1915 to June 1923, October 1943 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Concrete control since Oct. 30, 1950. Altitude of gage is 6,240 ft (from topographic map). Prior to Oct. 1, 1943, staff gages at various sites nearby at different datums.

Average discharge.--24 years (1915-22, 1943-60), 42.7 cfs (30,910 acre-ft per year).

Extremes.--Maximum discharge during year, 348 cfs June 2; minimum, 2.1 cfs Sept. 28. 1915-23, 1943-60: Maximum discharge recorded, 794 cfs June 4, 1957, caused by failure of diversion dam 200 ft upstream but may have been exceeded by that in June 1917 when gage washed out; minimum, 1 cfs Jan. 24, 1918, Dec. 8, 1954.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Records include flow of McDermott ditch, which diverts about 200 ft upstream from station. Elko-Lamoille powerplant diverts about 6 miles upstream, but flow is returned to channel at powerplant 300 ft above station.

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     | 8.4   | 9.9   | 5.2   | 3.7   |       | a3.5  | 10    | 32    | 254    | 67    | 16    | 5.9   |
| 2     | 7.9   | 9.4   | 5.2   | b3.7  |       | *a3.5 | 10    | 34    | 273    | 64    | 14    | 5.9   |
| 3     | 7.9   | 9.4   | 4.8   | b3.6  |       | 3.5   | 11    | *34   | 273    | 60    | 13    | 5.9   |
| 4     | 8.4   | 8.9   | 4.0   |       |       | 3.5   | 11    | 33    | *267   | 61    | 13    | 5.9   |
| 5     | 8.4   | *6.7  | 5.2   |       |       | 3.7   | 13    | 33    | 260    | 52    | 12    | 5.6   |
| 6     | 8.9   | 7.9   | 5.2   |       |       | 4.0   | 15    | 36    | 260    | 52    | 12    | 5.2   |
| 7     | 8.9   | 7.9   | *4.4  |       |       | 4.8   | 18    | 40    | 259    | 50    | 11    | 5.2   |
| 8     | *8.4  | 7.9   | 4.0   |       |       | 5.2   | 22    | 47    | 213    | 46    | 11    | 5.2   |
| 9     | 13    | 7.9   | 3.7   |       |       | 4.0   | 27    | 62    | 193    | 44    | 11    | *4.8  |
| 10    | 15    | 7.9   | 3.7   |       |       | 4.0   | 32    | 95    | 188    | 42    | 10    | 4.8   |
| 11    | 14    | 7.5   | 3.7   |       |       | 4.0   | 36    | 149   | 190    | *39   | 9.7   | 4.8   |
| 12    | 14    | 7.5   | 3.5   |       |       | 4.4   | 39    | 197   | 202    | 36    | 9.1   | 4.8   |
| 13    | 13    | 7.1   | 3.7   | (*)   |       | 4.4   | 37    | 200   | 219    | 34    | 9.1   | 4.8   |
| 14    | 13    | 6.5   | 3.7   |       |       | 4.8   | 36    | 180   | 208    | 32    | 9.1   | 4.4   |
| 15    | 12    | 7.1   | 3.5   |       |       | 5.2   | 34    | 174   | 204    | 30    | 9.1   | 4.4   |
| 16    | 12    | 6.7   | 3.5   |       | a3.7  | 5.2   | 32    | 177   | 214    | 28    | 8.5   | 4.4   |
| 17    | 12    | 6.3   | 3.5   |       |       | 4.8   | 31    | *160  | 208    | 25    | 8.4   | 4.4   |
| 18    | 12    | 6.7   | 3.5   |       | a3.5  | 4.8   | 32    | 138   | 181    | 23    | 7.9   | 4.4   |
| 19    | 12    | 6.3   | 3.5   |       |       | 5.2   | 32    | 116   | 164    | 23    | *7.5  | 4.0   |
| 20    | 12    | 5.9   | 3.5   |       |       | 5.2   | 32    | 105   | 133    | 21    | 7.1   | 4.0   |
| 21    | 11    | 5.9   | 3.5   |       |       | 5.9   | 39    | 99    | *111   | 20    | 7.1   | 4.4   |
| 22    | 11    | 5.9   | 3.5   |       | (*)   | 6.3   | 41    | 90    | 108    | 20    | 7.9   | 4.4   |
| 23    | 11    | 6.3   | 3.5   |       |       | 7.1   | 37    | 84    | 108    | 19    | 7.5   | 4.0   |
| 24    | 11    | 5.9   | 3.5   |       |       | 7.9   | 36    | 78    | 103    | 18    | 7.5   | 4.0   |
| 25    | 10    | 5.9   | 3.7   |       |       | 8.9   | 34    | 75    | 104    | 16    | 7.1   | 4.0   |
| 26    | 11    | 4.8   | 3.5   |       |       | 9.9   | 33    | 83    | 99     | 15    | 6.7   | 4.0   |
| 27    | 10    | 5.2   | b3.5  |       |       | 11    | 34    | 104   | 90     | 15    | 6.7   | 3.7   |
| 28    | 10    | 5.6   | b3.5  |       |       | *11   | 34    | 128   | 81     | 15    | 6.7   | 3.2   |
| 29    | 9.9   | 5.2   | b3.5  |       |       | 10    | 32    | 149   | 76     | 17    | 6.3   | 4.0   |
| 30    | 9.9   | 5.2   | 3.7   |       |       | 10    | 30    | 185   | 70     | 17    | 5.9   | 3.7   |
| 31    | 9.9   | ---   | 3.7   |       |       | 10    | ---   | 221   | ---    | 19    | 5.9   | ---   |
| Total | 335.9 | 207.3 | 120.1 | 109.0 | 107.3 | 185.7 | 860   | 3,336 | 5,313  | 1,020 | 283.8 | 138.2 |
| Mean  | 10.8  | 6.91  | 3.87  | 3.52  | 3.7   | 5.99  | 28.7  | 108   | 177    | 32.9  | 9.15  | 4.61  |
| Ac-ft | 666   | 411   | 238   | 216   | 213   | 368   | 1,710 | 6,620 | 10,540 | 2,020 | 563   | 274   |

Calendar year 1959: Max 186 Min 2.1 Mean 21.4 Ac-ft 15,520  
 Water year 1959-60: Max 273 Min - Mean 32.8 Ac-ft 23,840

Peak discharge (base, 310 cfs).--June 2 (7 p.m.) 348 cfs.

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 3 discharge measurements, weather records, and records for nearby streams.

b Stage-discharge relation affected by ice.

## HUMBOLDT RIVER BASIN

3175. North Fork Humboldt River at Devils Gate, near Halleck, Nev.

Location--Lat 41°11', long 115°29', in SE $\frac{1}{4}$  sec.13, T.38 N., R.57 E., on right bank 16 miles north of Halleck and 26 miles upstream from mouth.

Drainage area--830 sq mi, approximately.

Records available--October 1913 to December 1921, October 1943 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage--Water-stage recorder. Datum of gage is 5,368 ft above mean sea level (Geological Survey planetable bench mark). November 1913 to September 1921 at site a quarter of a mile upstream at different datum.

Average discharge--25 years, 72.4 cfs (52,420 acre-ft per year).

Extremes--Maximum discharge during year, 371 cfs Mar. 8 (gage height, 5.08 ft); minimum, 1.1 cfs July 26.  
1913-21, 1943-60: Maximum discharge, 2,450 cfs Apr. 20, 1952 (gage height, 9.63 ft); minimum, that of July 26, 1960.

Remarks--Records good except those for periods of ice effect, which are fair. Many diversions for irrigation above station.

Revisions (water years)--WSP 1314: 1913(m), 1946.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Mar. 5-12, Aug. 8 to Sept. 30)

Oct. 1 to Nov. 4

Nov. 5 to Sept. 30

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| 2.1 | 5.1 | 2.1 | 1.6 | 3.0 | 42  |
| 2.2 | 8.7 | 2.2 | 3.6 | 3.5 | 92  |
| 2.3 | 13  | 2.3 | 6.3 | 4.0 | 166 |
|     |     | 2.5 | 14  | 5.0 | 339 |

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     | 9.9   | 9.9   | (*)  |           |           | 17    | 160   | 69    | 44    | 17    | 3.6   | 4.5   |
| 2     | 9.9   | 11    |      |           |           | 16    | 168   | 67    | 46    | 14    | 3.2   | 4.5   |
| 3     | 9.5   | *11   |      |           |           | 16    | 190   | 71    | 52    | 12    | 2.8   | 4.2   |
| 4     | 9.5   | 10    |      |           |           | 16    | 200   | 80    | 58    | 11    | 2.4   | 4.8   |
| 5     | 9.1   | 9.0   |      |           |           | 15    | 205   | 78    | 93    | 12    | 2.4   | 4.0   |
| 6     | *9.5  | 9.5   |      |           |           | 19    | 215   | 73    | *88   | 12    | 2.8   | 4.0   |
| 7     | 9.1   | 9.5   |      |           |           | 80    | 215   | 67    | 104   | 11    | 3.0   | 4.0   |
| 8     | 9.1   | 9.0   |      |           |           | 261   | 219   | 63    | 118   | 11    | 3.0   | 4.5   |
| 9     | 9.9   | 8.5   |      |           |           | 261   | 214   | 65    | 112   | 11    | 3.0   | 4.8   |
| 10    | 9.9   | 8.5   |      |           |           | 125   | 202   | *67   | 102   | *12   | 3.2   | 5.1   |
| 11    | 9.5   | 9.0   |      | 12<br>(*) |           | *79   | 195   | 61    | 105   | 11    | 3.2   | 5.7   |
| 12    | 9.1   | 9.6   |      |           |           | 82    | 188   | 59    | 86    | 8.5   | 3.2   | *5.4  |
| 13    | 9.1   | 9.0   |      |           |           | 220   | 173   | 61    | 69    | 6.7   | 3.4   | 5.1   |
| 14    | 9.5   | 8.8   |      |           |           | 172   | *158  | 72    | 59    | 5.1   | 3.6   | 5.7   |
| 15    | 9.5   | 8.8   |      |           |           | 73    | 145   | 86    | 53    | 4.0   | 3.8   | 5.7   |
| 16    | 9.5   | 9.0   | 12   |           | 17<br>(*) | 53    | 130   | 92    | 52    | 3.4   | 4.5   | 5.7   |
| 17    | 9.5   | 9.0   |      |           |           | 41    | 112   | 86    | 53    | 3.0   | 4.5   | 5.7   |
| 18    | 9.5   | 9.0   |      |           |           | 69    | 100   | 77    | 48    | 2.6   | *4.5  | 5.7   |
| 19    | 9.5   | 9.0   |      |           |           | 106   | 93    | 88    | 43    | 2.4   | 4.2   | 5.7   |
| 20    | 9.5   | 8.8   |      |           |           | 126   | 91    | 100   | 38    | 2.4   | 4.2   | 6.0   |
| 21    | 9.9   | 9.6   |      |           |           | 152   | 91    | 87    | 35    | 2.4   | 4.0   | 5.7   |
| 22    | 11    | 9.5   |      |           |           | 176   | 81    | 84    | 32    | 2.4   | 4.0   | 6.0   |
| 23    | 11    | 10    |      |           |           | 208   | 87    | 95    | 31    | 2.4   | 4.0   | 5.7   |
| 24    | 11    | 8.9   |      |           |           | 283   | 98    | 90    | 29    | 2.4   | 4.0   | 5.4   |
| 25    | 10    | 8.9   |      |           |           | 276   | 98    | 82    | 27    | 2.6   | 4.0   | 6.0   |
| 26    | 11    | 8.5   |      | 14        |           | 270   | 96    | 70    | 22    | 2.2   | 4.0   | 5.7   |
| 27    | 10    | 8.5   |      |           |           | 265   | 95    | 58    | 19    | 2.4   | 4.2   | 4.5   |
| 28    | 10    | 9.0   |      |           |           | *266  | 97    | 53    | 16    | 2.4   | 4.2   | 4.5   |
| 29    | 10    | 10    |      |           |           | 237   | 97    | 50    | 14    | 2.2   | 4.2   | 5.3   |
| 30    | 10    | 11    |      |           |           | 203   | 84    | 48    | 16    | 3.2   | 4.5   | 5.3   |
| 31    | 10    |       |      |           |           | 185   |       | 47    |       | 3.2   | 4.5   |       |
| Total | 303.5 | 279.8 | 372  | 394       | 493       | 4,348 | 4,297 | 2,244 | 1,694 | 199.9 | 114.1 | 156.9 |
| Mean  | 9.79  | 9.33  | 12   | 12.7      | 17        | 140   | 143   | 72.4  | 56.5  | 6.45  | 3.68  | 5.23  |
| Ac-ft | 602   | 555   | 738  | 781       | 978       | 8,620 | 8,520 | 4,450 | 3,360 | 396   | 226   | 311   |

Calendar year 1959: Max 62 Min 2.0 Mean 14.8 Ac-ft 10,730  
Water year 1959-60: Max 276 Min 2.2 Mean 40.7 Ac-ft 29,540

Peak discharge (base, 170 cfs)--Mar. 8 (12 p.m.) 371 cfs (5.08 ft); Mar. 13 (11 a.m.) 265 cfs (4.49 ft); Mar. 25 (10 to 11 a.m.) 308 cfs (4.83 ft); Apr. 6 (2 p.m.) 237 cfs (4.47 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 5-11, 13-20, 22, Nov. 26 to Mar. 4.

## 3185. Humboldt River near Elko, Nev.

Location.--Lat 40°56', long 115°38', in NE¼ sec. 11, T.35 N., R.56 E., on right bank 1 mile southwest of Ryndon, 5 miles downstream from North Fork, and 10 miles northeast of Elko.

Drainage area.--2,800 sq mi (revised), approximately.

Records available.--June 1895 to October 1902, October 1944 to September 1950.

Gage.--Water-stage recorder. Datum of gage is 5,142.32 ft above mean sea level, datum of 1929. June 1895 to October 1902 staff gage at site 11 miles downstream at different datum.

Average discharge.--23 years, 228 cfs (165,100 acre-ft per year).

Extremes.--Maximum discharge during year, 453 cfs June 11 (gage height, 3.63 ft); minimum daily, 0.6 cfs Sept. 18, 19, 21.

1895-1902, 1944-60: Maximum discharge, 3,860 cfs Apr. 30, 1952 (gage height, 9.60 ft); no flow for many days in August and September 1948.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Diversions for irrigation above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Mar. 14, Mar. 25 to May 5,  
May 16-28, June 3-20)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.8 | 0.4 | 1.4 | 28  |
| .9  | 1.5 | 1.7 | 60  |
| 1.0 | 3.7 | 2.2 | 135 |
| 1.1 | 7.2 | 2.8 | 264 |
| 1.2 | 12  | 3.5 | 465 |

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     | 1.5  | 1.8   | 5.0   | 3.7   | 5.0   | b17    | 262    | 200    | 142    | 24    | 2.6  | 1.3   |
| 2     | 1.8  | 1.8   | *5.3  | 3.7   | 5.0   | b18    | 264    | *189   | 157    | 20    | 2.6  | 1.5   |
| 3     | 1.6  | *2.2  | 5.6   | 3.5   | 4.3   | 19     | 269    | 189    | 204    | 18    | 2.4  | 1.3   |
| 4     | 1.8  | 2.0   | 5.6   | 3.2   | 4.3   | 19     | *282   | 191    | 252    | 17    | 2.2  | 1.3   |
| 5     | *1.8 | 1.6   | b5.0  | 3.2   | 4.6   | 23     | 285    | 197    | 323    | 16    | 1.8  | 1.2   |
| 6     | 1.8  | 2.0   | b4.8  | 3.5   | 5.0   | 31     | 287    | 185    | *348   | 16    | 1.6  | 1.3   |
| 7     | 1.6  | 2.0   | b4.5  | 3.7   | 5.6   | 53     | 312    | 166    | 366    | 14    | 1.6  | 1.2   |
| 8     | 1.6  | 1.8   | 4.3   | 3.6   | 12    | 68     | 328    | 155    | 378    | 12    | 1.6  | 1.2   |
| 9     | 2.2  | 1.6   | 4.3   | 3.5   | 17    | *146   | 337    | 146    | 420    | 12    | 1.5  | 1.2   |
| 10    | 1.6  | 2.6   | 4.6   | 3.5   | 12    | 182    | 334    | 142    | 447    | *11   | 1.5  | 1.2   |
| 11    | 1.5  | 4.0   | 4.6   | *3.5  | *12   | 180    | 331    | 135    | 432    | 11    | 1.3  | 1.2   |
| 12    | 1.5  | 5.0   | b4.6  | 3.6   | b24   | 161    | 331    | 128    | 381    | 9.5   | 1.3  | *1.2  |
| 13    | 1.6  | 4.3   | b4.2  | 3.5   | b24   | 151    | 354    | 128    | 331    | 8.5   | 1.3  | 1.2   |
| 14    | 1.6  | 5.7   | b4.3  | 3.5   | b22   | 259    | 325    | 148    | 295    | 11    | 1.3  | 1.2   |
| 15    | 1.8  | 3.4   | 4.6   | 3.5   | b23   | 232    | 295    | 176    | 282    | 9.0   | 1.1  | 1.1   |
| 16    | 1.8  | 3.4   | 4.6   | 3.7   | b23   | 159    | 287    | 200    | 254    | 8.1   | 1.0  | .8    |
| 17    | 1.8  | 3.1   | 4.0   | 3.3   | b22   | 133    | 225    | 227    | 222    | 7.2   | 1.1  | .7    |
| 18    | 2.0  | 3.1   | 3.7   | 3.0   | 24    | 116    | 208    | 254    | 217    | 6.8   | *1.2 | .6    |
| 19    | 2.2  | 3.7   | 3.7   | 3.3   | 24    | 140    | 189    | 269    | 208    | 5.6   | 1.1  | .6    |
| 20    | 2.4  | 5.3   | 3.7   | 3.5   | b24   | 176    | 189    | 285    | 180    | 5.3   | 1.0  | .7    |
| 21    | 2.2  | 6.0   | 3.4   | 3.5   | b23   | 178    | 202    | 287    | 185    | 5.0   | 1.0  | .6    |
| 22    | 2.2  | 6.4   | 3.4   | 3.5   | b22   | 191    | 191    | 274    | 137    | 4.6   | 1.0  | .7    |
| 23    | 2.2  | 6.6   | 3.7   | 3.5   | b21   | 204    | 182    | 256    | 100    | 4.8   | 1.1  | .7    |
| 24    | 2.2  | 7.6   | 4.3   | 3.6   | b23   | 237    | 187    | 269    | 88     | 4.0   | 1.1  | .7    |
| 25    | 2.4  | 7.2   | 4.6   | 3.7   | 20    | 267    | 195    | 259    | 73     | 3.4   | 1.2  | .7    |
| 26    | 2.2  | 6.8   | 4.3   | 3.8   | 19    | 282    | 195    | 234    | 59     | 3.1   | 1.2  | .7    |
| 27    | 2.2  | 5.0   | b4.0  | 4.0   | 20    | 282    | 197    | 208    | *53    | 3.1   | 1.2  | .8    |
| 28    | 2.2  | 4.6   | b4.0  | 4.2   | b17   | 304    | 220    | 180    | 41     | 2.9   | 1.1  | .8    |
| 29    | 2.2  | 4.6   | b3.7  | 4.5   | b17   | 301    | 227    | 182    | 32     | 2.8   | 1.2  | .8    |
| 30    | 1.8  | 4.6   | 3.5   | 4.7   | ---   | 293    | 220    | 151    | 27     | 2.6   | 1.3  | .6    |
| 31    | 1.8  | ---   | 3.5   | 4.8   | ---   | 264    | ---    | 144    | ---    | 2.4   | 1.2  | ---   |
| Total | 56.9 | 116.2 | 133.4 | 113.3 | 478.8 | 5,106  | 7,668  | 6,130  | 6,580  | 280.3 | 43.7 | 29.3  |
| Mean  | 1.80 | 3.94  | 4.30  | 3.65  | 16.5  | 165    | 256    | 198    | 219    | 9.04  | 1.41 | 0.98  |
| Ac-ft | 117  | 234   | 265   | 225   | 950   | 10,130 | 15,210 | 12,180 | 13,050 | 556   | 87   | 58    |

Calendar year 1959: Max 135 Min 0.8 Mean 33.9 Ac-ft 24,560  
Water year 1959-60: Max 447 Min 0.6 Mean 73.1 Ac-ft 53,040

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Dec. 30 to Feb. 1 (affected by ice most of period); discharge estimated on basis of 1 discharge measurement, weather records, and records for stations near Carlin and at Palisade.

## 3195. Huntington Creek near Lee, Nev.

Location.--Lat 40°33', long 115°43', in SW $\frac{1}{4}$  sec.19, T.31 N., R.56 E., on right bank  $\frac{5}{8}$  miles upstream from mouth and 6 miles west of Lee.

Drainage area.--770 sq mi, approximately.

Records available.--October 1948 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,315 ft (from river-profile map).

Average discharge.--12 years, 30.9 cfs (22,370 acre-ft per year).

Extremes.--Maximum discharge during year, 72 cfs Mar. 7 (gage height, 2.19 ft); minimum, 0.6 cfs Aug. 21.

1948-60: Maximum discharge, 1,210 cfs Apr. 29, 1952 (gage height, 6.54 ft), from rating curve extended above 530 cfs on basis of logarithmic plotting; minimum daily, 0.2 cfs Aug. 7, 1959.

Remarks.--Records good except those for periods of ice effect, which are fair, and those for periods of no gage-height record, which are poor. Diversions for irrigation of 17,700 acres above station.

Revisions (water years).--WSP 1244: 1949(M). WSP 1344: 1953.

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     | 4.2   | 6.4   | *a5.0 |       | a7.5  | 12    | 17    | 7.3   | 5.1   | *3.7 | 2.5  | 1.8   |
| 2     | 4.2   | 6.1   | 5.0   |       | a7.5  | 12    | 16    | 11    | 5.1   | 3.7  | 2.5  | 2.1   |
| 3     | 2.8   | 5.4   | 4.4   |       | a8.0  | 10    | 15    | 12    | 5.7   | 3.7  | 2.1  | 2.1   |
| 4     | 2.8   | *7.4  | 4.7   |       | 9.0   | 7.7   | 15    | 12    | 7.3   | 3.3  | 2.0  | 2.3   |
| 5     | 4.8   | 5.0   |       |       | 10    | 11    | 14    | 9.1   | 16    | 3.5  | 1.8  | 2.3   |
| 6     | 4.4   | 4.9   |       |       | 9.5   | 21    | 14    | 7.3   | 17    | 3.5  | 1.8  | 2.1   |
| 7     | *3.7  | 4.6   |       |       | 10    | 40    | 14    | 7.3   | 15    | 3.5  | 1.8  | 2.1   |
| 8     | 3.3   | 4.6   |       |       | 12    | *37   | 14    | 7.3   | 18    | 3.0  | 1.7  | 2.1   |
| 9     | 3.3   | 4.3   |       |       | 19    | 33    | 14    | *7.7  | 20    | 3.0  | *1.8 | *2.1  |
| 10    | 3.7   | 4.3   |       |       | 14    | 33    | 14    | 7.7   | 20    | 2.8  | 1.7  | 2.0   |
| 11    | 4.0   | 4.3   |       | a6.0  | 14    | 32    | 17    | 7.7   | 15    | 2.6  | 1.7  | 2.1   |
| 12    | 4.0   | 4.0   |       | (*)   | 12    | 31    | 20    | 8.0   | 9.9   | 2.5  | 1.6  | 2.0   |
| 13    | 4.2   | 3.8   |       |       | 10    | 37    | 20    | 11    | 7.0   | 2.6  | 1.4  | 2.1   |
| 14    | 4.4   | 4.2   |       |       | 12    | 38    | 19    | 15    | 5.4   | 2.6  | 1.4  | 2.1   |
| 15    | 5.1   | 3.8   |       |       | 10    | 29    | *17   | 16    | 4.2   | 2.6  | 1.4  | 2.0   |
| 16    | 5.1   | 3.4   |       |       | 9.5   | 23    | 13    | 13    | 3.5   | 2.5  | 1.2  | 1.7   |
| 17    | 5.4   | 3.6   | a5.0  |       | 11    | 22    | 12    | 9.9   | 2.6   | 2.5  | 1.2  | 1.7   |
| 18    | 5.7   | 4.0   |       |       | 9.5   | 23    | 9.9   | 7.7   | 2.3   | 2.5  | 1.2  | 1.8   |
| 19    | 5.7   | 3.5   |       |       | 9.5   | 24    | 9.5   | 7.0   | 2.1   | 2.5  | 1.2  | 1.8   |
| 20    | 5.7   | a3.5  |       |       | 10    | 24    | 8.0   | 7.7   | 1.8   | 2.5  | 1.2  | 2.0   |
| 21    | 5.7   | a4.0  |       |       | 11    | 21    | 6.4   | 11    | 1.4   | 2.5  | 1.0  | 2.0   |
| 22    | 5.7   | a4.5  |       |       | 13    | 18    | 4.4   | 12    | 1.3   | 2.5  | 1.2  | 2.1   |
| 23    | 6.1   | a4.5  |       |       | *16   | 17    | 4.4   | 15    | 1.3   | 2.6  | 1.3  | 1.8   |
| 24    | 6.1   | a4.5  |       |       | 13    | 15    | 2.1   | 15    | 1.3   | 2.3  | 1.3  | 1.8   |
| 25    | 6.4   | a4.0  |       |       | 9.0   | *14   | 2.6   | 16    | 1.4   | 2.1  | 1.2  | 2.0   |
| 26    | 6.4   | a3.8  |       | a8.0  | 7.3   | 13    | 2.8   | 14    | 1.4   | 2.1  | 1.1  | 2.0   |
| 27    | 6.4   | a3.8  |       |       | 7.3   | 13    | 4.2   | 12    | 1.4   | 2.1  | 1.1  | 2.0   |
| 28    | 6.4   | a4.0  |       |       | 8.0   | 20    | 8.7   | 9.9   | 3.2   | 2.0  | 1.2  | 2.1   |
| 29    | 7.0   | a4.5  |       |       | 9.0   | 17    | 9.5   | 8.3   | 4.8   | 2.0  | 1.3  | 2.1   |
| 30    | 7.3   | a4.7  |       |       | ----- | 17    | ----- | 10    | 4.4   | 2.0  | 1.6  | 2.0   |
| 31    | 8.0   | ----- |       |       | ----- | 15    | ----- | *6.1  | ----- | 2.1  | 1.8  | ----- |
| Total | 158.0 | 133.4 | 154.1 | 208.0 | 307.6 | 679.7 | 347.5 | 318.0 | 204.9 | 83.4 | 47.3 | 60.2  |
| Mean  | 5.10  | 4.45  | 4.97  | 6.71  | 10.6  | 21.9  | 11.6  | 10.3  | 6.83  | 2.69 | 1.53 | 2.01  |
| Ac-ft | 313   | 265   | 306   | 413   | 610   | 1,350 | 689   | 631   | 406   | 165  | 94   | 119   |

Calendar year 1959: Max 22 Min 0.2 Mean 6.78 Ac-ft 4,900  
 Water year 1959-60: Max 40 Min 1.0 Mean 7.38 Ac-ft 5,360

Peak discharge (base, 200 cfs).--No peak above base.

\* Discharge measurement made on this day.

a No gage-height record (affected by ice most of time); discharge estimated on basis of 2 discharge measurements, weather records, recorded range in stage, and records for nearby stations.

Note.--Stage-discharge relation affected by ice Nov. 5-19, Dec. 2-4, Feb. 4, 5, 11-25, Feb. 27 to Mar. 3.

3200. South Fork Humboldt River above Dixie Creek, near Elko, Nev.

Location.--Lat 40°41'05", long 115°48'45", in NW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 5, T.32 N., R.55 E., on left bank  $\frac{1}{2}$  miles upstream from Dixie Creek and 10 $\frac{1}{2}$  miles south of Elko.

Drainage area.--1,150 sq mi, approximately.

Records available.--October 1948 to September 1960. Monthly discharge for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,140 ft (from topographic map).

Average discharge.--12 years, 101 cfs (73,120 acre-ft per year).

Extremes.--Maximum discharge during year, 499 cfs June 4 (gage height, 4.11 ft); minimum, 0.9 cfs Aug. 21, 22, Sept. 14, 15; minimum gage height, 1.87 ft Sept. 14, 15.  
1948-60: Maximum discharge, 1,700 cfs Apr. 29, 1952, June 6, 1957; maximum gage height, 5.58 ft June 6, 1957; minimum daily discharge, 0.1 cfs Sept. 9, 1959 (gage height, 1.62 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions for irrigation of 32,900 acres above station.

Revisions (water years).--WSP 1284: 1952(M).

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used June 16 to Sept. 5, Sept. 17-30)

|     |     |     |    |     |     |
|-----|-----|-----|----|-----|-----|
| 1.8 | 1.0 | 2.2 | 12 |     |     |
| 1.9 | 2.2 | 2.4 | 25 | 3.0 | 111 |
| 2.0 | 4.3 | 2.6 | 45 | 3.5 | 245 |
| 2.1 | 7.5 | 2.8 | 73 | 4.0 | 456 |

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     | 3.3   | 14   | (*)  |       |       | b23   | 58    | 82    | 352    | *40   | 10    | 1.5   |
| 2     | 3.3   | 13   |      |       |       | b23   | 58    | 75    | 406    | 42    | 9.8   | 1.5   |
| 3     | 3.6   | 14   |      |       |       | a25   | 55    | 87    | 436    | 44    | 8.4   | 1.6   |
| 4     | 3.6   | *13  |      |       |       | a45   | 55    | 80    | 451    | 43    | 6.8   | 1.6   |
| 5     | 3.3   | 13   |      |       |       | a70   | 61    | 77    | 446    | 41    | 5.8   | 1.5   |
| 6     | 3.6   | 13   |      |       |       | a90   | 68    | 70    | 436    | 38    | 4.8   | 1.4   |
| 7     | *5.4  | 12   |      |       |       | a95   | 77    | 87    | 416    | 42    | 4.3   | *1.2  |
| 8     | 5.1   | 12   |      |       |       | a90   | 80    | 70    | 397    | 32    | 4.0   | 1.0   |
| 9     | 5.4   | 13   |      |       |       | a80   | 84    | *78   | *339   | 30    | *3.6  | 1.0   |
| 10    | 5.1   | 13   |      |       |       | a75   | 93    | 101   | 303    | 30    | 3.1   | 1.2   |
| 11    | 4.8   | 14   |      |       |       | a78   | 97    | 150   | 273    | 32    | 3.1   | 1.3   |
| 12    | 4.3   | 14   |      |       |       | a85   | *101  | 229   | 262    | 30    | 2.5   | 1.3   |
| 13    | 4.6   | 14   |      |       |       | a90   | 95    | 288   | 276    | 25    | 2.4   | 1.1   |
| 14    | 4.8   | 14   |      |       |       | 73    | 91    | 280   | 284    | 21    | 2.4   | 1.0   |
| 15    | 4.8   | b14  |      |       |       | 61    | 82    | 262   | 259    | 19    | 2.2   | 1.0   |
| 16    | 5.1   | b13  |      |       |       | 49    | 70    | 259   | 252    | 17    | 2.0   | 1.0   |
| 17    | 5.4   | b13  |      |       |       | *48   | 64    | 248   | 252    | 14    | 2.4   | 1.3   |
| 18    | 5.4   | b13  |      |       |       | 48    | 80    | 229   | 219    | 13    | 2.4   | 1.4   |
| 19    | 5.1   | 13   |      |       |       | 49    | 53    | 204   | 193    | 12    | 2.2   | 1.4   |
| 20    | 4.8   | 13   |      |       |       | 50    | 52    | 184   | 168    | 11    | 1.8   | 1.3   |
| 21    | 5.1   | 13   |      |       |       | 52    | 46    | 181   | 133    | 11    | 1.1   | 1.2   |
| 22    | 5.4   | b13  |      |       |       | 49    | 61    | 173   | 120    | 11    | 1.0   | 1.2   |
| 23    | 6.1   | 14   |      |       |       | 50    | 75    | 160   | 103    | 10    | 2.2   | 1.5   |
| 24    | 6.4   | 14   |      |       |       | 50    | 70    | 143   | 93     | 9.8   | 2.9   | 1.6   |
| 25    | 6.8   | 15   |      |       |       | 50    | 64    | 131   | 86     | 8.4   | 2.7   | 1.9   |
| 26    | 7.1   | 14   |      |       |       | 54    | 60    | 126   | 77     | 8.4   | 2.2   | 1.9   |
| 27    | 6.8   | b13  |      |       |       | 57    | 60    | 129   | 70     | 8.4   | 1.8   | 1.9   |
| 28    | 6.4   | b13  |      |       |       | 75    | 70    | 150   | 66     | 8.8   | 1.6   | 1.9   |
| 29    | 6.8   | b14  |      |       |       | 67    | 73    | 187   | 53     | 8.0   | 1.6   | 1.6   |
| 30    | 7.1   | b15  |      |       |       | 60    | 67    | 216   | 45     | 7.5   | 1.5   | 1.8   |
| 31    | 8.8   |      |      |       |       | 60    |       | *273  |        | 9.3   | 1.6   |       |
| Total | 163.6 | 403  | 496  | 580   | 667   | 1,869 | 2,100 | 4,969 | 7,286  | 676.6 | 104.2 | 42.1  |
| Mean  | 5.28  | 13.4 | 16   | 18.7  | 23    | 60.3  | 70.0  | 160   | 242    | 21.8  | 3.36  | 1.40  |
| Ac-ft | 324   | 799  | 984  | 1,150 | 1,320 | 3,710 | 4,170 | 9,860 | 14,410 | 1,340 | 207   | 84    |

Calendar year 1959: Max 190 Min 0.1 Mean 26.0 Ac-ft 18,800  
Water year 1959-60: Max 451 Min 1.0 Mean 52.8 Ac-ft 38,360

Peak discharge (base, 400 cfs).--June 4 (9:30 a.m.) 499 cfs (4.11 ft).

\* Discharge measurement made on this day.  
a No gage-height record; discharge estimated on basis of weather records, trend of flow, and records for nearby streams.  
b Stage-discharge relation affected by ice.

## HUMBOLDT RIVER BASIN

3205. South Fork Humboldt River near Elko, Nev.

Location.--Lat 40°43'25", long 115°49'45", in NE¼NW¼ sec.30, T.33 N., R.55 E., on right bank 0.1 mile upstream from head of canyon, 1.7 miles downstream from highway bridge, 8.8 miles upstream from mouth, and 10 miles southwest of Elko.

Drainage area.--1,310 sq mi (revised), approximately.

Records available.--August 1896 to September 1922, October 1923 to September 1932, October 1936 to September 1960. Monthly discharge only for some periods, published in WSP 1314. Published as "at Mason's Ranch, near Elko" 1896-1902.

Gage.--Water-stage recorder. Altitude of gage is 5,100 ft (from topographic map). Prior to November 1913, staff gages at several sites about 1 mile upstream at various datums. November 1913 to February 1927 water-stage recorder near present site at different datum. March 1927 to September 1932 staff gage at site 1 mile upstream at different datum. October 1932 to Oct. 12, 1955, water-stage recorder at site 900 ft upstream at datum 1.97 ft higher.

Average discharge.--56 years (1896-1909, 1910-18, 1920-22, 1923-32, 1936-60), 125 cfs (90,500 acre-ft per year).

Extremes.--Maximum discharge during year, 488 cfs June 4 (gage height, 4.03 ft); no flow Aug. 22, 23, Aug. 29 to Sept. 30. 1896-1922, 1923-32, 1936-60: Maximum daily discharge, 2,400 cfs Jan. 26, 1914; maximum gage height observed, 12.0 ft Jan. 26, 1914, site and datum then in use (ice jam); no flow at times in many years.

Remarks.--Records good except those for periods of no gage-height record, which are fair, and those for periods of ice effect, which are poor. Many diversions for irrigation above station. Station is below all diversions except those of Hunter & Banks ranch 3 miles downstream.

Revisions (water years).--WSP 1090: 1932. WSP 1314: 1903. WSP 1514: 1906, 1927-29.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| 1.2 | 0   | 1.7 | 7.9 | 3.0 | 169 |
| 1.3 | .2  | 1.8 | 13  | 3.5 | 300 |
| 1.4 | .8  | 2.0 | 25  | 4.0 | 476 |
| 1.5 | 2.0 | 2.3 | 51  |     |     |
| 1.6 | 4.2 | 2.6 | 92  |     |     |

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                  | a0.3 | 8.5   |      |      |       | 20    | 65    | 63    | a320   | 31    | 3.9  |       |
| 2                  | a.3  | 8.3   |      |      |       | 20    | 71    | 76    | 388    | 32    | 5.7  |       |
| 3                  | a.6  | 8.3   | (*)  |      |       | 23    | 65    | 93    | 422    | 33    | 3.0  |       |
| 4                  | a.6  | 7.9   |      |      |       | 40    | 63    | 87    | *436   | 32    | 2.5  |       |
| 5                  | a.4  | *8.3  |      |      |       | 55    | 68    | 82    | 433    | 28    | 2.0  |       |
| 6                  | a1.0 | 8.3   |      |      |       | 70    | 76    | 76    | 422    | 28    | 1.6  |       |
| 7                  | a2.5 | 8.5   |      |      |       | 65    | 87    | 71    | 407    | 29    | 1.5  |       |
| 8                  | *2.5 | 8.5   |      |      |       | 90    | 90    | 72    | 386    | 22    | 1.2  |       |
| 9                  | 2.5  | 9.0   |      |      |       | 85    | 92    | 78    | 332    | 18    | 1.0  |       |
| 10                 | 2.3  | 8.5   |      |      |       | 75    | 100   | 92    | 291    | 18    | .9   |       |
| 11                 | 2.1  | 9.0   |      | 13   |       | 70    | 106   | *134  | 259    | *19   | .8   |       |
| 12                 | 1.6  | 9.0   |      |      |       | 80    | 108   | 220   | 248    | 17    | .8   |       |
| 13                 | 1.6  | 9.0   |      | (*)  |       | 85    | *100  | 300   | 264    | 15    | .6   |       |
| 14                 | 1.6  | 9.0   |      |      |       | 82    | 93    | 294   | 273    | 12    | .6   |       |
| 15                 | 1.8  | 8.5   |      |      |       | 67    | 87    | 276   | 245    | 9.2   | .5   |       |
| 16                 | 2.0  | 8.5   | 11   |      | 20    | 52    | 73    | 267   | 245    | 7.5   | .5   |       |
| 17                 | 2.3  | 8.5   |      |      |       | 47    | 67    | 259   | 239    | 5.9   | .4   |       |
| 18                 | 2.3  | 8.5   |      |      |       | *46   | 63    | 237   | 211    | 4.5   | .4   |       |
| 19                 | 2.3  | 8.5   |      |      |       | 55    | 55    | 209   | 180    | 4.2   | .4   |       |
| 20                 | 2.0  | 9.0   |      |      | (*)   | 62    | 54    | 183   | *156   | 3.7   | .5   |       |
| 21                 | 2.0  | 9.0   |      |      |       | 62    | 44    | 171   | 128    | 3.2   | .1   |       |
| 22                 | 2.1  | 9.5   |      |      |       | 60    | 52    | 165   | 107    | 3.2   | 0    |       |
| 23                 | 2.5  | 10    |      |      |       | 60    | 71    | 148   | 90     | 3.0   | 0    |       |
| 24                 | 2.5  | 10    |      |      |       | 60    | 68    | 134   | 78     | 3.0   | *.1  | (*)   |
| 25                 | 2.7  | 10    |      |      |       | 60    | 62    | 115   | 73     | 2.3   | .4   |       |
| 26                 | 3.2  | 9.5   |      | 16   |       | 60    | 57    | 104   | 64     | 2.0   | .4   |       |
| 27                 | 3.4  | 9.0   |      |      |       | 62    | 56    | 104   | 58     | 2.1   | .2   |       |
| 28                 | 2.7  | 9.0   |      |      |       | 95    | 65    | 117   | 54     | 2.0   | .1   |       |
| 29                 | 3.2  | 9.5   |      |      |       | 81    | 69    | a150  | 43     | 5.0   | 0    |       |
| 30                 | 4.5  | 10    |      |      |       | 71    | 67    | a185  | 37     | 3.2   | 0    |       |
| 31                 | 3.9  | ----- |      |      |       | 67    | ----- | a250  | -----  | 3.2   | 0    | ----- |
| Total              | 65.5 | 267.1 | 341  | 436  | 580   | 1,949 | 2,192 | 4,812 | 6,887  | 399.2 | 27.9 | 0     |
| Mean               | 2.11 | 8.90  | 11   | 14.1 | 20    | 62.9  | 73.1  | 155   | 230    | 12.9  | 0.90 | 0     |
| Ac-ft              | 130  | 550   | 676  | 865  | 1,150 | 3,670 | 4,350 | 9,540 | 13,680 | 792   | 55   | 0     |
| Calendar year 1959 | Max  | 190   |      | Min  | 0     | Mean  | 22.1  | Ac-ft | 16,290 |       |      |       |
| Water year 1959-60 | Max  | 436   |      | Min  | 0     | Mean  | 49.1  | Ac-ft | 35,620 |       |      |       |

Peak discharge (base, 410 cfs).--June 4 (11 a.m.) 488 cfs (4.03 ft).

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

No gage-height record; discharge estimated on basis of weather records, trend of flow, and records for nearby streams.

Note.--Stage-discharge relation affected by ice Nov. 7-22, Nov. 24 to Mar. 13 (no gage-height record Dec. 9 to Feb. 8, Mar. 1-4; discharge estimated on basis of 1 discharge measurement, weather records, and records for nearby streams).

3210. Humboldt River near Carlin, Nev.

Location.--Lat 40°43'40", long 116°00'30", in sec.21, T.33 N., R.53 E., on right bank 4 1/2 miles southwest of Moleen, 5 miles upstream from Susie Creek, 5 1/2 miles east of Carlin, and 15 miles southwest of Elko.

Drainage area.--4,310 sq mi, approximately.

Records available.--October 1943 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 4,931.91 ft above mean sea level (levels by State Highway Department).

Average discharge.--17 years, 318 cfs (230,200 acre-ft per year).

Extremes.--Maximum discharge during year, 679 cfs June 7 (gage height, 3.37 ft); minimum, 2.4 cfs Sept. 6.

1943-60: Maximum discharge, 5,220 cfs May 1, 1952 (gage height, 9.35 ft); minimum, 0.1 cfs Aug. 16, 1959.

High water in February 1943 reached a stage of 9.8 ft (discharge, 5,900 cfs, by slope-area measurement of peak flow).

Remarks.--Records good except those for periods of ice effect, which are fair. Many diversions for irrigation above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used May 26 to June 2)

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| 0.5 | 2.0 | 1.0 | 28  | 2.5 | 351 |
| .6  | 4.0 | 1.3 | 62  | 3.0 | 545 |
| .7  | 8.0 | 1.6 | 110 | 3.5 | 760 |
| .8  | 13  | 2.0 | 198 |     |     |

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     | 12    | 10    | 25    | 20    | 30    | *40    | 337    | 263    | *358   | 69    | 6.8   | *7.2  |
| 2     | 10    | 11    | 26    | *18   | 31    | 40     | 324    | 263    | 433    | 62    | 6.4   | 7.2   |
| 3     | 6.4   | 15    | 27    | 17    | 30    | 38     | 314    | *266   | 477    | 59    | 5.6   | 6.8   |
| 4     | 9.5   | 16    | 25    | 17    | 32    | 44     | 311    | 280    | 485    | 56    | 5.2   | 4.4   |
| 5     | *10   | 16    | 22    | 20    | 35    | 46     | 317    | 251    | 509    | 46    | 5.6   | 3.0   |
| 6     | 10    | 15    | 21    | 22    | 38    | 72     | 327    | 240    | 553    | 39    | 5.2   | 2.6   |
| 7     | 9.5   | 16    | 20    | 22    | 41    | 108    | 348    | 231    | 605    | 40    | 4.8   | 3.6   |
| 8     | 10    | 16    | 20    | 21    | 50    | 121    | 365    | 234    | 613    | 40    | *4.0  | 4.8   |
| 9     | 12    | 18    | 21    | 21    | 60    | 137    | 376    | 214    | 609    | 35    | 4.0   | 5.2   |
| 10    | 12    | 18    | 22    | 21    | *75   | 144    | 395    | 193    | 589    | 32    | 4.0   | 5.6   |
| 11    | 11    | 18    | 22    | 22    | 60    | 159    | 406    | 193    | 589    | 31    | 4.0   | 6.0   |
| 12    | 11    | 19    | 23    | 23    | 50    | 188    | 402    | 234    | 585    | 30    | 4.0   | 6.0   |
| 13    | 11    | 19    | 24    | 21    | 40    | 193    | 402    | 317    | *577   | 24    | 4.8   | 6.0   |
| 14    | 11    | 19    | 23    | 20    | 39    | 206    | 395    | 355    | 573    | 21    | 4.8   | 6.0   |
| 15    | 11    | 19    | 24    | 20    | 40    | 209    | 391    | 341    | 521    | 19    | 4.0   | 6.0   |
| 16    | 11    | 19    | 26    | 21    | 42    | 220    | 365    | 337    | 489    | 19    | 3.6   | 6.3   |
| 17    | 11    | 19    | 29    | 19    | 43    | 198    | 337    | 314    | 453    | 18    | 3.4   | 6.8   |
| 18    | 11    | 19    | 29    | 17    | 45    | 173    | 314    | 307    | 433    | 17    | 3.4   | 6.8   |
| 19    | 11    | 21    | 28    | 19    | 45    | 166    | 282    | 331    | 358    | 16    | 7.6   | 6.8   |
| 20    | 11    | 22    | 28    | 20    | 45    | 166    | 257    | 331    | 314    | 14    | 7.6   | 6.8   |
| 21    | 11    | 20    | 29    | 22    | 44    | 180    | 231    | 334    | 288    | 12    | 6.8   | 6.8   |
| 22    | 11    | 22    | 29    | 21    | 41    | 201    | 225    | 355    | 248    | 12    | 7.2   | 6.8   |
| 23    | 10    | 22    | 29    | 22    | 40    | 212    | 251    | 355    | 212    | 12    | 8.0   | 6.8   |
| 24    | 10    | 23    | 30    | 23    | 40    | 220    | 245    | 334    | 183    | 11    | 8.0   | 6.8   |
| 25    | 10    | 22    | 30    | 25    | 41    | 237    | 234    | 295    | 159    | 11    | 8.0   | 6.8   |
| 26    | 10    | 22    | 28    | 27    | 44    | 263    | 222    | 273    | 155    | 11    | 7.6   | 6.8   |
| 27    | 10    | 21    | 26    | 27    | 44    | 291    | 225    | 273    | 133    | 7.6   | 6.8   | 7.2   |
| 28    | 11    | 20    | 27    | 30    | 41    | 324    | 245    | 266    | 105    | 6.4   | 6.8   | 7.2   |
| 29    | 10    | 23    | 24    | 29    | 40    | *348   | 263    | 273    | 96     | 6.0   | 6.8   | 7.6   |
| 30    | 10    | *25   | 21    | 29    | ----- | 337    | 270    | 288    | *79    | 6.0   | 6.8   | 7.6   |
| 31    | *10   | ----- | 20    | 30    | ----- | 341    | -----  | 314    | -----  | 6.4   | 7.2   | ----- |
| Total | 324.4 | 565   | 778   | 686   | 1,246 | 5,622  | 9,379  | 8,835  | 11,761 | 788.4 | 178.8 | 184.4 |
| Mean  | 10.5  | 18.8  | 25.1  | 22.1  | 43.0  | 181    | 313    | 285    | 392    | 25.4  | 5.77  | 6.15  |
| Ac-ft | 643   | 1,120 | 1,540 | 1,360 | 2,470 | 11,150 | 18,600 | 17,520 | 23,330 | 1,560 | 355   | 366   |

Calendar year 1959: Max 198 Min 0.2 Mean 57.7 Ac-ft 41,760  
Water year 1959-60: Max 613 Min 2.6 Mean 110 Ac-ft 80,010

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 27 to Dec. 12, Dec. 14 to Feb. 15, Feb. 17, 20-24, Feb. 29 to Mar. 2.

## 3225. Humboldt River at Palisade, Nev.

Location.--Lat 40°36'25", long 116°12'05", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.35, T.32 N., R.51 E., on right bank a quarter of a mile downstream from Southern Pacific Railroad bridge, half a mile downstream from Palisade, and three-quarters of a mile upstream from Pine Creek.

Drainage area.--5,010 sq mi, approximately.

Records available.--October 1902 to October 1906, July 1911 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Datum of gage is 4,825.55 ft above mean sea level, datum of 1929. Prior to Apr. 1, 1939, staff or chain gages (water-stage recorder Apr. 22 to June 3, 1935) at several sites within half a mile of present site at various datums.

Average discharge.--53 years, 355 cfs (257,000 acre-ft per year).

Extremes.--Maximum discharge during year, 650 cfs June 8 (gage height, 3.68 ft); minimum, 8.8 cfs Aug. 19, 20.  
1902-6, 1911-60: Maximum discharge, 6,250 cfs Feb. 26, 1943 (gage height, 9.92 ft); minimum, 2 cfs Aug. 25-28, 1931.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Diver-sion for irrigation of about 150,000 acres of hay and pasture land above station.

Revisions (water years).--WSP 1514: 1903-4, 1912, 1914.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| 1.4 | 7.0 | 1.8 | 53  | 3.0 | 355 |
| 1.5 | 14  | 2.1 | 110 | 3.5 | 555 |
| 1.6 | 24  | 2.5 | 205 | 4.0 | 800 |

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                       | 24    | 25    | 33    | b29   | 39      | *58    | 380       | 269    | *334         | 85    | 19    | *15   |
| 2                       | 23    | 25    | 34    | *b29  | 42      | 55     | 368       | 266    | 380          | 80    | 17    | 16    |
| 3                       | 22    | 27    | 37    | b27   | 39      | 67     | 355       | 269    | 433          | 76    | 16    | 16    |
| 4                       | 20    | 29    | 33    | b24   | 40      | 68     | 348       | 254    | 457          | 70    | 14    | 15    |
| 5                       | 22    | 29    | 32    | b28   | 42      | 76     | 348       | 254    | 478          | 67    | 14    | 14    |
| 6                       | 22    | 30    | 33    | b32   | 43      | 137    | 358       | 245    | 524          | 62    | 13    | 12    |
| 7                       | 22    | 29    | 32    | 32    | 47      | 254    | 372       | 233    | 568          | 56    | 13    | 11    |
| 8                       | 22    | 30    | 32    | 29    | 74      | 296    | 390       | 225    | 605          | 56    | *13   | 11    |
| 9                       | 22    | 32    | 32    | 30    | 104     | 230    | 400       | 220    | 600          | 55    | 13    | 12    |
| 10                      | 24    | 32    | 33    | 30    | *103    | 192    | 411       | 195    | 582          | 50    | 12    | 12    |
| 11                      | 23    | 32    | 32    | 30    | 95      | 188    | 429       | 180    | 560          | 47    | 12    | 12    |
| 12                      | 23    | 32    | 33    | 32    | 80      | 215    | 425       | 198    | 568          | 43    | 12    | 13    |
| 13                      | 23    | 33    | b35   | b28   | 74      | 242    | 422       | 269    | *568         | 42    | 12    | 12    |
| 14                      | 24    | 32    | b32   | b27   | 67      | 263    | 418       | 338    | 568          | 37    | 12    | 12    |
| 15                      | 24    | 32    | b31   | b27   | 70      | 239    | 404       | 334    | 528          | 34    | 12    | 13    |
| 16                      | 24    | 32    | b32   | b29   | 70      | 254    | 380       | 334    | 483          | 32    | 11    | 15    |
| 17                      | 24    | 32    | 39    | b27   | 68      | 242    | 352       | 324    | 453          | 30    | 11    | 15    |
| 18                      | 24    | 32    | 34    | b25   | 74      | 220    | *320      | 302    | 433          | 29    | 10    | 16    |
| 19                      | 24    | 32    | 33    | b30   | 70      | 212    | 299       | 327    | 380          | 28    | 9.5   | 16    |
| 20                      | 24    | 33    | 33    | b30   | 70      | 215    | 266       | 334    | 338          | 27    | 11    | 16    |
| 21                      | 24    | 33    | 34    | 30    | 70      | 220    | 239       | 341    | 299          | 24    | 11    | 16    |
| 22                      | 24    | 33    | 34    | 29    | 67      | 236    | 222       | 362    | 266          | 22    | 12    | 16    |
| 23                      | 24    | 33    | 34    | 30    | 67      | 245    | 239       | 369    | 236          | 21    | 13    | 17    |
| 24                      | 24    | 33    | 37    | 32    | 62      | 254    | 245       | 366    | 210          | 21    | 15    | 17    |
| 25                      | 24    | 34    | 40    | 32    | 67      | 263    | 233       | 324    | 188          | 21    | 15    | 17    |
| 26                      | 24    | 34    | b34   | 33    | 67      | 278    | 222       | 305    | 175          | 21    | 15    | 17    |
| 27                      | 24    | 32    | b30   | 34    | 67      | 308    | 220       | 299    | 162          | 20    | 14    | 17    |
| 28                      | 24    | 28    | b34   | 36    | 65      | 348    | 236       | 290    | 137          | 17    | 14    | *16   |
| 29                      | 27    | 28    | b30   | 36    | b60     | *383   | 260       | 287    | 114          | 16    | 14    | 17    |
| 30                      | 27    | *32   | b30   | 37    | -----   | 376    | *272      | 296    | *97          | 17    | 14    | 17    |
| 31                      | *25   | ----- | b28   | 39    | -----   | 376    | -----     | 299    | -----        | 17    | 15    | ----- |
| Total                   | 731   | 930   | 1,030 | 943   | 1,903   | 7,010  | 9,831     | 8,908  | 11,724       | 1,223 | 408.5 | 441   |
| Mean                    | 23.6  | 31.0  | 33.2  | 30.4  | 65.6    | 226    | 328       | 287    | 391          | 39.5  | 13.2  | 14.7  |
| Ac-ft                   | 1,450 | 1,840 | 2,040 | 1,870 | 3,770   | 13,900 | 19,500    | 17,670 | 23,250       | 2,430 | 810   | 875   |
| Calendar year 1959: Max | 192   |       |       |       | Min 7.6 |        | Mean 70.2 |        | Ac-ft 50,840 |       |       |       |
| Water year 1959-60: Max | 605   |       |       |       | Min 9.5 |        | Mean 123  |        | Ac-ft 89,400 |       |       |       |

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

3235. Humboldt River near Argenta, Nev.

Location.--Lat 40°40'45", long 116°38'45", in SE¼NW¼ sec.2, T.32 N., R.47 E., on left bank 3 miles east of Argenta and 15½ miles east of Battle Mountain.

Drainage area.--7,490 sq mi, approximately.

Records available.--February 1946 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 4,580 ft (from topographic map).

Average discharge.--14 years, 276 cfs (199,800 acre-ft per year).

Extremes.--Maximum discharge during year, 462 cfs June 10 (gage height, 4.72 ft); minimum daily, 0.3 cfs Sept. 13, 14.

1946-60: Maximum daily discharge, 5,700 cfs May 2, 1952 (includes flow bypassing gage outside of main channel); minimum daily, 0.2 cfs Sept. 15 to Oct. 17, 1955.

Remarks.--Records good except those for periods of ice effect, which are fair. Many diversions above station for irrigation. Records do not include flow in secondary channels or ditches, much of which is used for irrigation.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Aug. 21 to Sept. 30)

Oct. 1 to Mar. 9

Mar. 10 to Sept. 30

|     |     |     |     |
|-----|-----|-----|-----|
| 1.9 | 0.5 | 2.7 | 47  |
| 2.0 | 1.3 | 3.0 | 86  |
| 2.1 | 3.4 | 3.5 | 168 |
| 2.2 | 7.2 | 4.0 | 288 |
| 2.4 | 19  |     |     |

|     |     |     |     |
|-----|-----|-----|-----|
| 1.6 | 0.3 | 2.5 | 44  |
| 1.7 | 1.2 | 3.0 | 102 |
| 1.8 | 2.9 | 3.5 | 182 |
| 1.9 | 5.6 | 4.0 | 286 |
| 2.0 | 9.5 | 5.0 | 561 |
| 2.2 | 20  |     |     |

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     | 0.5  | 0.6   | b27   | 15    | b30   | 32     | *328   | 193    | 234    | 86    | 1.6  | 0.5   |
| 2     | .5   | .6    | b28   | 16    | b31   | 35     | 331    | 203    | 253    | 77    | 1.1  | .4    |
| 3     | .5   | .7    | b25   | 16    | b37   | 49     | 326    | 203    | 284    | 68    | 1.0  | .6    |
| 4     | .5   | .6    | b20   | 14    | 29    | 47     | 321    | 203    | 323    | 59    | .9   | .4    |
| 5     | .5   | .6    | b18   | 12    | 33    | 49     | 311    | 197    | 346    | *46   | .9   | .4    |
| 6     | .5   | .6    | b12   | 12    | b35   | 52     | 311    | 195    | 363    | 30    | .9   | .4    |
| 7     | .5   | .6    | b10   | 12    | 34    | 78     | 311    | 192    | 361    | 25    | .9   | .4    |
| 8     | .6   | .6    | *b13  | 12    | 36    | 179    | 316    | 188    | 417    | 21    | .8   | .4    |
| 9     | .6   | *.6   | b15   | 16    | 49    | 223    | 328    | 180    | 448    | 18    | .8   | .4    |
| 10    | .6   | .6    | b15   | 17    | 92    | *206   | 338    | 175    | 454    | 14    | *.9  | .4    |
| 11    | .6   | .6    | b16   | 18    | 83    | 188    | 348    | 161    | 442    | 12    | .9   | .4    |
| 12    | .6   | .7    | b17   | 18    | 82    | 182    | 361    | 150    | 433    | 9.5   | .9   | .4    |
| 13    | *.5  | .7    | b15   | b12   | 69    | 205    | 366    | 157    | 439    | 7.8   | .9   | .3    |
| 14    | .5   | .7    | 11    | 9.6   | 62    | 225    | 368    | 197    | *439   | 5.9   | .7   | .3    |
| 15    | .5   | .7    | 8.6   | 9.1   | 55    | 242    | 366    | 246    | 433    | 4.7   | .7   | *.4   |
| 16    | .5   | 7.7   | 12    | 8.1   | *52   | 225    | 340    | 255    | 411    | 3.6   | .7   | .4    |
| 17    | .5   | 13    | 14    | 9.1   | 52    | 240    | 311    | 260    | 376    | 3.1   | .7   | .4    |
| 18    | .5   | 15    | 15    | *11   | 49    | 232    | 291    | 260    | 348    | 2.7   | .7   | .4    |
| 19    | .5   | 18    | 15    | 10    | 51    | 215    | 268    | 253    | 328    | 2.5   | .6   | .4    |
| 20    | .6   | 19    | 15    | 11    | 51    | 207    | 253    | 268    | 288    | 2.3   | .6   | .4    |
| 21    | .5   | 20    | 16    | 9.1   | 49    | 201    | 227    | 277    | 264    | 1.8   | .4   | .4    |
| 22    | .5   | 21    | 16    | 12    | 48    | 205    | 207    | 284    | 238    | 1.6   | .4   | .4    |
| 23    | .6   | 22    | 18    | 14    | 46    | 213    | 192    | 291    | 213    | 1.5   | .4   | .4    |
| 24    | .6   | 22    | 21    | 15    | 49    | 223    | 188    | 298    | 190    | 1.5   | .5   | .4    |
| 25    | .6   | 24    | b20   | 17    | 49    | 232    | 190    | *291   | 169    | 1.5   | .4   | .4    |
| 26    | .6   | 25    | b16   | 18    | 47    | 236    | 182    | 268    | 152    | 1.5   | .4   | .4    |
| 27    | .6   | b26   | b12   | 20    | 47    | 249    | 177    | 251    | 139    | 1.5   | .4   | .4    |
| 28    | .6   | b24   | 11    | 22    | 46    | 271    | 173    | 236    | 131    | 1.3   | .4   | .4    |
| 29    | .6   | b22   | 12    | 25    | 51    | 295    | *180   | 232    | 115    | 1.3   | .4   | .4    |
| 30    | .6   | b24   | 14    | 25    | ----- | 321    | 188    | 225    | 99     | 1.5   | .5   | .4    |
| 31    | .6   | ----- | 16    | b30   | ----- | 323    | -----  | 232    | -----  | 1.8   | .5   | ----- |
| Total | 17.0 | 312.2 | 493.6 | 465.0 | 1,444 | 5,880  | 8,397  | 7,021  | 9,150  | 514.9 | 21.9 | 12.1  |
| Mean  | 0.55 | 10.4  | 15.9  | 15.0  | 49.8  | 190    | 280    | 226    | 305    | 16.6  | 0.71 | 0.40  |
| Ac-ft | 34   | 619   | 979   | 922   | 2,860 | 11,660 | 16,680 | 13,930 | 18,150 | 1,020 | 43   | 24    |

Calendar year 1959: Max 151 Min 0.3 Mean 50.8 Ac-ft 36,740

Water year 1959-60: Max 454 Min 0.3 Mean 92.2 Ac-ft 66,900

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## HUMBOLDT RIVER BASIN

3245. Rock Creek near Battle Mountain, Nev.

Location.--Lat 40°49', long 116°35', in NE $\frac{1}{4}$  sec.17, T.34 N., R.48 E., on left bank at mouth of canyon, 22 miles northeast of Battle Mountain.

Drainage area.--875 sq mi, approximately.

Records available.--March to July 1896, March 1918 to September 1925 (fragmentary October 1923 to September 1925), March 1927 to May 1929 (fragmentary), October 1945 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,600 ft (estimated from nearby U. S. Coast and Geodetic Survey bench mark). Prior to Mar. 26, 1918, staff gage at site about 11 miles upstream at different datum. Mar. 26, 1918, to Jan. 3, 1946, water-stage recorder at present site at different datum.

Average discharge.--20 years (1918-23, 1945-60), 31.2 cfs (22,590 acre-ft per year).

Extremes.--Maximum discharge during year, 253 cfs Mar. 8 (gage height, 2.30 ft); no flow for many days.

1918-25, 1927-29, 1945-60: Maximum discharge, 3,000 cfs Apr. 7, 1952 (gage height, 5.60 ft); no flow at times in July, August, September, and October nearly every year.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Several diversions for irrigation in valleys upstream. Station is above all diversions in Boulder Flat and below all tributaries. Flow slightly affected by small reservoir in Squaw Valley, 30 miles upstream.

Revisions (water years).--WSP 1214: 1950(M). Revised figures of discharge, in cubic feet per second, for water year 1959, superseding those published in WSP 1634, are given herewith:

| 1959          |      | 1959-Con.     |      |
|---------------|------|---------------|------|
| Sept. 14..... | a1.0 | Sept. 19..... | a0.8 |
| 15.....       | a.5  | 20-25.....    | fa.5 |
| 18.....       | a.4  | 26-30.....    | fa.7 |

| Month                   | Cfs-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|-------------------------|----------|---------|---------|------|---------------------|
| September 1959.....     | 9.2      | 1.0     | 0       | 0.31 | 18                  |
| Water year 1958-59..... | -        | 13      | 0       | 3.78 | 2,740               |

† Average for period indicated.

a No gage-height record; discharge estimated on basis of weather records and records for nearby streams.

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     | a0.7 | 1.0   | 1.0  | 1.4  | 5.0   | a5.0    | *57   | 20    | 4.8   | 0.4  |      | 0     |
| 2     | a.7  | .9    | 1.4  | 1.2  | 7.0   | a6.5    | 48    | 18    | 3.5   | .2   |      | 0     |
| 3     | a.7  | .9    | 1.7  | 1.2  | 5.0   | a10     | 50    | 17    | 2.1   | .2   |      | 1.1   |
| 4     | a.7  | 1.0   | 1.4  | 1.0  | 4.0   | a15     | 48    | 18    | 2.2   | .1   |      | 0     |
| 5     | a.7  | .8    | 1.3  | 1.2  | 4.5   | a20     | 51    | 18    | 2.0   | *0   |      | 0     |
| 6     | a.6  | .7    | 1.1  | 1.4  | 4.5   | a35     | 60    | 20    | 2.0   | .1   |      | 0     |
| 7     | a.7  | .9    | .9   | 1.9  | 6.0   | 59      | 70    | 18    | 2.0   | .2   |      | 0     |
| 8     | a.8  | .9    | *.9  | 2.7  | 8.0   | 145     | 74    | 17    | 2.0   | .2   |      | 0     |
| 9     | a.9  | *1.1  | .8   | 2.5  | 100   | 111     | 73    | 17    | 2.4   | .2   |      | 0     |
| 10    | a.9  | 1.1   | 1.0  | 2.7  | 29    | *55     | 67    | 11    | 2.2   | .2   | (*)  | 0     |
| 11    | a.8  | 1.2   | 1.1  | 2.5  | 13    | 31      | 65    | 13    | 2.2   | .3   |      | 0     |
| 12    | a.7  | 1.2   | 1.3  | 2.5  | 9.0   | 27      | 59    | 18    | 1.7   | .2   |      | 0     |
| 13    | *.7  | 1.0   | 1.6  | 2.2  | 8.0   | 36      | 55    | 23    | 1.5   | 0    |      | *0    |
| 14    | .7   | .9    | 1.8  | 2.0  | 6.0   | 93      | 46    | 26    | 2.4   | 0    |      | 0     |
| 15    | .7   | .9    | 1.5  | 1.8  | 5.0   | 63      | 41    | 24    | 4.4   | 0    |      | 0     |
| 16    | .7   | .9    | 1.3  | 1.6  | *5.5  | 33      | 37    | 20    | 5.2   | 0    |      | 0     |
| 17    | .7   | .9    | 1.3  | 1.4  | *6.0  | 24      | 34    | 14    | 4.0   | 0    |      | 0     |
| 18    | .7   | .9    | 1.5  | *1.4 | 6.7   | 22      | 33    | 12    | 2.8   | 0    |      | 0     |
| 19    | .7   | 1.2   | 1.2  | 1.7  | 5.5   | 73      | 31    | 11    | 1.9   | 0    |      | 0     |
| 20    | .7   | 1.0   | 1.0  | 1.7  | 4.5   | 118     | 32    | 11    | 1.7   | 0    |      | 0     |
| 21    | .7   | 1.3   | 1.1  | 2.1  | 5.0   | 147     | 29    | 12    | 1.3   | 0    |      | 0     |
| 22    | .7   | 1.1   | 1.2  | 2.3  | 5.5   | 160     | 28    | 10    | .9    | 0    |      | 0     |
| 23    | .9   | 1.2   | 1.3  | 2.2  | a5.2  | 163     | 33    | 10    | .8    | 0    |      | 0     |
| 24    | .7   | 1.2   | 1.6  | 2.1  | a5.0  | 156     | 33    | 13    | .7    | 0    |      | 0     |
| 25    | .8   | 1.2   | 2.0  | 2.1  | a6.0  | 156     | 33    | *14   | .6    | 0    |      | 0     |
| 26    | .7   | .9    | 2.1  | 2.1  | a5.8  | 140     | 29    | 14    | .5    | 0    |      | 0     |
| 27    | .7   | .7    | 1.6  | 2.2  | a5.5  | 131     | 28    | 13    | .5    | 0    |      | 0     |
| 28    | .7   | .6    | 1.2  | 2.3  | a5.2  | 118     | 31    | 9.4   | .5    | 0    |      | *0    |
| 29    | .8   | .7    | 1.0  | 2.3  | a5.0  | 120     | *32   | 6.1   | .6    | 0    |      | 0     |
| 30    | .9   | .8    | 1.3  | 2.5  | ----- | 78      | 23    | 5.4   | .4    | 0    |      | 0     |
| 31    | .8   | ----- | 1.4  | 3.0  | ----- | 67      | ----- | 5.4   | ----- | 0    |      | 0     |
| Total | 22.9 | 29.1  | 40.9 | 61.2 | 290.4 | 2,417.5 | 1,330 | 460.3 | 59.8  | 2.3  | 0    | 1.1   |
| Mean  | 0.74 | 0.97  | 1.32 | 1.97 | 10.0  | 78.0    | 44.3  | 14.8  | 1.99  | 0.07 | 0    | 0.04  |
| Ac-ft | 45   | 58    | 81   | 121  | 576   | 4,800   | 2,640 | 913   | 119   | 4.6  | 0    | 2.2   |

Calendar year 1959: Max 13 Min 0 Mean 3.06 Ac-ft 2,210  
Water year 1959-60: Max 163 Min 0 Mean 12.9 Ac-ft 9,360

Peak discharge (base, 75 cfs).--Mar. 8 (7 a.m.) 253 cfs (2.30 ft); Mar. 14 (8 to 9 a.m.) 131 cfs (1.86 ft); Mar. 21 (8 to 9 p.m.) 207 cfs (2.11 ft); Apr. 9 (3 a.m.) 80 cfs (1.54 ft).

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

a No gage-height record; discharge estimated on basis of weather records, trend of flow, and records for nearby stations.

Note.--Stage-discharge relation affected by ice Dec. 25 to Jan. 5, Jan. 13 to Feb. 9, Feb. 11-17, 19-22.

3250. Humboldt River at Battle Mountain, Nev.

Location.--Lat 40°39'15", long 116°55'10", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.17, T.32 N., R.45 E., on left bank 1 mile northeast of Battle Mountain. Reese River enters Humboldt River several miles below station.

Drainage area.--8,870 sq mi, approximately.

Records available.--May 1896 to December 1897, March 1921 to April 1924, October 1945 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,500 ft from topographic map. Prior to Mar. 1, 1921, staff gage 1,500 ft upstream and Mar. 1, 1921, to Apr. 19, 1924, staff gage 900 ft downstream, both at different datums.

Average discharge.--18 years (1896-97, 1921-23, 1945-60), 309 cfs (223,700 acre-ft per year).

Extremes.--Maximum discharge during year, 396 cfs June 9 (gage height, 4.56 ft); minimum daily, 0.1 cfs Oct. 1-16, Sept. 11-30.

1896-97, 1921-24, 1945-60: Maximum daily discharge, 5,800 cfs May 3, 4, 1952 (includes flow bypassing gage outside of main channel); no flow Sept. 8 to Oct. 22, 1948, Sept. 21-26, 1949, Sept. 21-27, 1959.

Remarks.--Records good except those for periods of ice effect, which are fair. Records do not include flow in secondary channels or ditches, much of which is used for irrigation. Many diversions above station for irrigation.

Revisions (water years).--WSP 1564: 1897-98, 1923.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Oct. 1-13, Oct. 17 to Nov. 9)

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| 1.1 | 0.1 | 1.5 | 4.4 | 2.6 | 76  |
| 1.2 | .4  | 1.7 | 11  | 3.4 | 190 |
| 1.3 | 1.0 | 1.9 | 20  | 4.6 | 402 |
| 1.4 | 2.3 | 2.2 | 39  |     |     |

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   | b18   | 15    | b30   | 49     | 323    | 174    | 211    | 87    | 2.5   | 0.3   |
| 2     | .1   | .3    | b20   | 16    | 36    | 45     | 320    | 176    | 216    | 76    | 2.5   | .3    |
| 3     | .1   | .3    | b25   | 17    | b30   | 49     | 313    | 179    | 233    | 66    | 2.3   | .3    |
| 4     | .1   | .3    | b20   | b13   | b34   | 58     | 304    | 180    | 260    | 59    | 2.1   | .3    |
| 5     | .1   | .4    | b15   | b14   | 39    | 55     | 296    | 185    | 266    | *46   | 2.0   | .2    |
| 6     | .1   | .4    | b14   | 16    | b39   | 56     | 289    | 180    | 320    | 40    | 2.0   | .2    |
| 7     | .1   | .4    | b12   | 16    | 50    | 59     | 286    | 176    | 340    | 22    | 1.8   | .2    |
| 8     | .1   | .4    | *b11  | 16    | 48    | 115    | 281    | 172    | 358    | 11    | 1.7   | .2    |
| 9     | .1   | *.4   | b12   | 16    | 46    | 180    | 284    | 169    | 384    | 12    | 1.7   | .2    |
| 10    | .1   | .4    | b13   | 17    | 67    | 216    | 291    | 158    | 390    | 11    | *1.4  | .2    |
| 11    | .1   | .6    | b13   | 18    | 86    | 218    | 298    | 155    | 394    | 8.2   | 1.4   | .1    |
| 12    | .1   | .6    | b14   | 18    | 79    | 203    | 307    | 144    | 384    | 6.9   | 1.3   | .1    |
| 13    | *.1  | 1.1   | b14   | b12   | 78    | 201    | 307    | 127    | 378    | 6.6   | 1.2   | .1    |
| 14    | .1   | 1.3   | b12   | b12   | 67    | *216   | 307    | 126    | *382   | 6.4   | 1.1   | .1    |
| 15    | .1   | 1.3   | b11   | 13    | 63    | 233    | 305    | 177    | 382    | 6.1   | 1.0   | *.1   |
| 16    | .1   | 1.4   | b9.0  | b12   | *58   | 248    | 304    | 211    | 380    | 5.8   | 1.0   | .1    |
| 17    | .2   | 1.4   | 13    | 13    | 57    | 243    | 288    | 216    | 363    | 5.5   | .8    | .1    |
| 18    | .2   | 7.7   | 14    | *12   | 57    | 242    | 257    | 220    | 356    | 5.2   | .8    | .1    |
| 19    | .2   | 12    | b14   | 14    | 57    | 223    | 240    | 225    | 313    | 5.0   | .8    | .1    |
| 20    | .2   | 14    | b14   | 14    | 57    | 203    | 232    | 225    | 286    | 4.4   | .6    | .1    |
| 21    | .3   | 16    | 16    | 15    | 56    | 195    | 216    | 240    | 235    | 4.2   | .6    | .1    |
| 22    | .3   | 18    | 16    | 15    | 55    | 200    | 201    | 247    | 226    | 4.2   | .6    | .1    |
| 23    | .3   | 19    | 17    | 16    | 55    | 214    | 192    | 250    | 213    | 5.8   | .6    | .1    |
| 24    | .3   | 21    | 18    | 17    | 48    | 225    | 177    | 262    | 192    | 8.2   | .6    | .1    |
| 25    | .3   | 21    | 21    | 18    | 55    | 237    | 176    | *287   | 177    | 6.6   | .5    | .1    |
| 26    | .3   | 21    | b16   | 19    | 56    | 238    | 169    | 264    | 150    | 4.7   | .5    | .1    |
| 27    | .3   | 20    | b13   | 22    | 54    | 255    | *164   | *243   | 139    | 4.2   | .5    | .1    |
| 28    | .3   | b18   | b12   | 24    | 53    | 276    | 166    | 226    | 121    | 3.7   | .4    | .1    |
| 29    | .3   | b17   | b11   | 25    | 49    | 291    | 166    | 221    | 110    | 3.2   | .4    | .1    |
| 30    | .3   | b16   | 13    | 27    | ----- | *316   | 169    | 213    | 2.8    | .3    | ----- | .1    |
| 31    | .3   | ----- | 14    | 29    | ----- | 334    | -----  | 208    | 2.6    | .3    | ----- | .1    |
| Total | 5.7  | 232.0 | 455.0 | 521   | 1,559 | 5,893  | 7,628  | 6,218  | 8,259  | 540.3 | 35.3  | 4.4   |
| Mean  | 0.18 | 7.73  | 14.7  | 16.8  | 53.8  | 190    | 254    | 201    | 275    | 17.4  | 1.14  | 0.15  |
| Ac-ft | 11   | 460   | 902   | 1,030 | 3,090 | 11,690 | 15,130 | 12,330 | 16,380 | 1,070 | 70    | 8.7   |

Calendar year 1959: Max 155

Min 0

Mean 48.6

Ac-ft 35,220

Water year 1959-60: Max 394

Min 0.1

Mean 85.7

Ac-ft 62,170

\* Discharge measurement made on this day.  
b Stage-discharge relation affected by ice.

3255. Reese River near Ione, Nev.

Location.--Lat 38°51', long 117°28', in NE¼ sec.3, T.11 N., R.40 E., on right bank 2½ miles upstream from Indian Creek, 8 miles southeast of Ione, and 58 miles southwest of Austin.

Drainage area.--44 sq mi, approximately.

Records available.--August 1951 to September 1960.

Gage.--Water-stage recorder and, since Oct. 3, 1956, concrete control. Altitude of gage is 7,350 ft (from topographic map). Prior to Sept. 9, 1955, water-stage recorder at site 200 ft upstream at datum 2.85 ft higher.

Average discharge.--9 years, 10.5 cfs (7,600 acre-ft per year).

Extremes.--Maximum discharge during year, 12 cfs May 15 (gage height, 0.76 ft); no flow for part of each day Aug. 20-22.

1951-60: Maximum discharge, 512 cfs July 27, 1956 (gage height, 4.86 ft), from rating curve extended above 45 cfs on basis of slope-area measurement of peak flow; no flow at times in some years.

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

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.2 | 0   | 0.6 | 5.8 |
| .3  | 0.2 | .7  | 10  |
| .4  | 1.1 | .8  | 16  |
| .5  | 2.7 |     |     |

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     | 1.0  | 0.9   | 1.0  | b1.1 | 1.4   | b1.4 | 4.4   | 5.8   | 7.2   | 1.8  | 0.7  | 0.4   |
| 2     | 1.0  | .9    | 1.1  | b1.0 | 1.2   | b1.4 | 4.0   | 7.2   | 8.7   | 1.8  | .6   | .5    |
| 3     | 1.0  | .9    | 1.1  | b1.0 | 1.4   | 2.0  | 4.4   | 6.7   | 6.3   | 1.7  | .6   | .5    |
| 4     | 1.0  | .9    | .9   | b1.0 | 1.5   | 1.8  | 4.4   | 6.7   | 6.3   | 1.7  | .5   | .7    |
| 5     | .9   | .5    | b.7  | b1.1 | 1.8   | 2.0  | 4.7   | 6.3   | 6.3   | 1.8  | .4   | .8    |
| 6     | 1.0  | .6    | 1.0  | b1.4 | 1.7   | 2.0  | 5.1   | 6.7   | 5.8   | 1.8  | .4   | .7    |
| 7     | 1.0  | .6    | 1.2  | 1.7  | *1.8  | 2.3  | 5.1   | 7.2   | 5.8   | 1.8  | .4   | .6    |
| 8     | 1.1  | .7    | .9   | *1.5 | 1.8   | 2.2  | 5.4   | 7.7   | 5.4   | 1.8  | .2   | .6    |
| 9     | 1.1  | .7    | .9   | 1.5  | 1.5   | *2.0 | 5.4   | 8.6   | 5.4   | 1.7  | .2   | .6    |
| 10    | 1.0  | .7    | .9   | 1.5  | 1.5   | 1.5  | 5.8   | 8.6   | 5.4   | 1.7  | .2   | .7    |
| 11    | *1.1 | .8    | .8   | 1.5  | 1.5   | 2.0  | 5.8   | 8.6   | 5.1   | 1.5  | .2   | .8    |
| 12    | 1.1  | .8    | .8   | 1.5  | 1.4   | 2.0  | 5.8   | 9.1   | 4.7   | 1.4  | .4   | .7    |
| 13    | 1.1  | *.7   | *b.7 | b1.2 | 1.5   | 2.0  | 5.8   | 10    | 4.0   | 1.2  | .3   | .6    |
| 14    | 1.1  | 1.0   | b.8  | b.9  | 1.4   | 1.7  | 5.4   | 10    | 4.0   | 1.1  | .2   | .5    |
| 15    | 1.1  | .9    | b.9  | b.9  | 1.5   | 1.5  | 5.4   | 11    | 3.7   | 1.1  | .2   | .5    |
| 16    | 1.1  | 1.0   | 1.0  | b1.1 | 1.7   | 1.7  | 5.1   | 11    | 3.7   | 1.0  | .2   | .5    |
| 17    | 1.1  | 1.1   | 1.0  | b1.2 | 1.7   | 1.8  | 5.1   | *11   | 3.5   | .9   | .2   | .5    |
| 18    | 1.1  | 1.4   | .8   | b1.5 | 1.7   | 2.2  | 5.1   | 11    | 3.2   | .9   | .2   | .5    |
| 19    | 1.1  | 1.1   | .9   | 1.7  | 1.5   | 2.3  | *5.1  | 10    | 3.2   | .9   | *.1  | .5    |
| 20    | 1.2  | .8    | 1.4  | 1.5  | 1.8   | 2.5  | 5.1   | 9.6   | 3.2   | .9   | .1   | .5    |
| 21    | 1.2  | 1.1   | 1.4  | 1.4  | 2.0   | 3.0  | 5.1   | 9.6   | 3.0   | *.9  | .1   | .6    |
| 22    | 1.2  | 1.1   | 1.2  | 1.7  | 2.0   | 3.0  | 5.4   | 9.6   | 3.0   | .9   | .1   | .6    |
| 23    | 1.2  | 1.4   | 1.2  | 1.5  | 2.0   | 3.0  | 4.4   | 9.6   | *2.7  | 1.0  | .2   | *.6   |
| 24    | 1.2  | .7    | 1.4  | 1.5  | b1.5  | 3.7  | 4.4   | 9.1   | 2.3   | .8   | .4   | .6    |
| 25    | 1.2  | .8    | 1.2  | 1.4  | 1.7   | 4.0  | 4.4   | 9.1   | 2.3   | .7   | .4   | .6    |
| 26    | 1.2  | .7    | 1.2  | 1.4  | b1.4  | 4.0  | 4.0   | 8.6   | 2.2   | .6   | .3   | .5    |
| 27    | 1.2  | .7    | b1.1 | 1.4  | b1.2  | 4.4  | 4.0   | 8.2   | 2.2   | .6   | .3   | .5    |
| 28    | 1.2  | .9    | b1.2 | 1.2  | 1.7   | 4.7  | 3.2   | 7.7   | 2.0   | .6   | .3   | .6    |
| 29    | 1.2  | .8    | 1.2  | 1.5  | b1.5  | 4.0  | 4.0   | 7.7   | 2.0   | .5   | .2   | .6    |
| 30    | 1.1  | 1.0   | b1.1 | 1.4  | ----- | 4.4  | 4.7   | 7.7   | 2.0   | .7   | .3   | .7    |
| 31    | .9   | ----- | b1.1 | 1.2  | ----- | 4.0  | ----- | 7.2   | ----- | .9   | .4   | ----- |
| Total | 34.0 | 26.3  | 32.1 | 41.4 | 46.3  | 80.5 | 146.0 | 266.9 | 122.6 | 36.7 | 9.3  | 17.6  |
| Mean  | 1.10 | 0.88  | 1.04 | 1.34 | 1.60  | 2.60 | 4.87  | 8.61  | 4.09  | 1.18 | 0.30 | 0.59  |
| Ac-ft | 67   | 52    | 64   | 82   | 92    | 160  | 280   | 529   | 243   | 73   | 18   | 35    |

Calendar year 1959: Max 4.7 Min 0 Mean 2.00 Ac-ft 1,440  
 Water year 1959-60: Max 11 Min 0.1 Mean 2.35 Ac-ft 1,700

Peak discharge (base, 130 cfs).--No peak above base.

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## 3275. Humboldt River at Comus, Nev.

Location.--Lat 41°00', long 117°19', in SE $\frac{1}{4}$  sec.14, T 36 N., R.41 E., on left bank at Comus siding of Southern Pacific Railroad, 9 miles northeast of Golconda and 32 miles northwest of Battle Mountain.

Drainage area.--12,100 sq mi (revised), approximately.

Records available.--October 1894 to December 1909, September 1910 to September 1926, October 1945 to September 1960. Monthly discharge only for some periods, published in WSP 1314. Published as "near Golconda" prior to October 1917.

Gage.--Water-stage recorder. Datum of gage is 4,359.9 ft above mean sea level (from Soil Conservation Service reference mark). Prior to Sept. 25, 1917, staff or chain gages at several sites about 10 miles downstream at different datums. Sept. 25, 1917, to June 30, 1923, and May 23, 1925, to May 31, 1926, staff gages at several sites within half a mile of present site at different datum.

Average discharge.--46 years, 277 cfs (200,500 acre-ft per year).

Extremes.--Maximum discharge during year, 357 cfs Apr. 30 (gage height, 4.27 ft); no flow Sept. 9, 10.  
1894-1909, 1910-26, 1945-60: Maximum discharge, 5,860 cfs May 6, 1952 (gage height, 11.52 ft); no flow at times in some years.

Remarks.--Records good except those for periods of ice effect, which are fair. Diversions above station for irrigation.

Revisions (water years).--WSP 1514: 1921-22, 1926. WSP 1564: 1904, 1907-8, 1911-13, 1916-17.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.5 | 0   | 2.3 | 51  |
| 1.6 | 1.6 | 2.7 | 97  |
| 1.7 | 5.5 | 3.0 | 139 |
| 1.8 | 11  | 3.5 | 219 |
| 2.0 | 24  | 4.0 | 307 |

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  | 0.1  | 0.1   | b55   | 260    | 133   | 156    | 100   | 1.0  | 0.1   |
| 2     | .1   | .3    | .2   | .1   | .3    | 38    | 273    | 124   | 148    | 85    | .3   | .1    |
| 3     | .1   | .4    | .2   | .1   | .3    | 44    | 269    | 124   | 148    | 69    | .2   | .1    |
| 4     | .1   | .3    | .2   | .2   | 3.7   | 43    | 271    | 124   | 152    | 63    | .1   | .1    |
| 5     | .1   | .1    | .2   | .2   | 14    | 38    | 267    | 124   | 164    | 54    | .1   | .1    |
| 6     | .2   | .1    | .2   | .1   | 17    | 41    | 264    | 124   | 188    | 49    | .1   | .1    |
| 7     | .1   | .2    | .1   | .1   | 22    | 43    | 256    | 126   | 209    | 45    | .1   | .1    |
| 8     | .2   | .2    | .2   | .1   | 62    | 43    | 253    | 127   | 241    | 37    | .1   | .1    |
| 9     | .2   | .1    | .2   | .1   | 75    | 42    | 251    | 124   | 258    | 32    | *.1  | 0     |
| 10    | .2   | .1    | .1   | .1   | 43    | 65    | 246    | 124   | 271    | 25    | .1   | 0     |
| 11    | .2   | .1    | *.2  | .1   | 38    | 116   | 250    | 123   | 284    | 21    | .1   | .1    |
| 12    | .2   | *.2   | .2   | .1   | b30   | 150   | *255   | 114   | 294    | 15    | .1   | .1    |
| 13    | .1   | .2    | .2   | .1   | b40   | 162   | 258    | 105   | 300    | 13    | .1   | .1    |
| 14    | .2   | .2    | .2   | .1   | b40   | *160  | 273    | 96    | *303   | *11   | .1   | *.1   |
| 15    | .1   | .3    | .2   | .1   | b53   | 162   | 273    | 90    | 305    | 8.7   | .1   | .1    |
| 16    | *.1  | .3    | .1   | .1   | b50   | 170   | 262    | 97    | 307    | 8.1   | .1   | .1    |
| 17    | .2   | .2    | .1   | .1   | b47   | 184   | 269    | 132   | 305    | 7.0   | .1   | .2    |
| 18    | .2   | .2    | .1   | .1   | b43   | 197   | 267    | *144  | 305    | 6.0   | .1   | .2    |
| 19    | .3   | .3    | .1   | .1   | b38   | 199   | 246    | 146   | 289    | 5.5   | .1   | .2    |
| 20    | .3   | .3    | .1   | .1   | b35   | 199   | 229    | 160   | 269    | 4.6   | .1   | .2    |
| 21    | .2   | .4    | .1   | *.1  | b40   | *188  | 217    | 163   | 244    | 3.7   | .1   | .2    |
| 22    | .2   | .2    | .1   | .1   | 44    | 176   | 207    | 160   | 222    | 2.9   | .2   | .2    |
| 23    | .2   | .2    | .1   | .1   | b30   | 170   | 191    | 166   | 175    | 2.5   | .2   | .2    |
| 24    | .3   | .1    | .1   | .1   | *b36  | 175   | 181    | 166   | 170    | 1.6   | .2   | .2    |
| 25    | .2   | .2    | .2   | .1   | b40   | 183   | 170    | 163   | 157    | 1.3   | .2   | .2    |
| 26    | .3   | .1    | .2   | .1   | b36   | 192   | 146    | 184   | 139    | .8    | .2   | .2    |
| 27    | .4   | .1    | .1   | .1   | b35   | 199   | 134    | 189   | 127    | .6    | .2   | .2    |
| 28    | .4   | .1    | .1   | .1   | b41   | 205   | 116    | 185   | 111    | .4    | .1   | .3    |
| 29    | .4   | .1    | .1   | .1   | b36   | 212   | 100    | 180   | 101    | .4    | .1   | .2    |
| 30    | .6   | .1    | .1   | .1   | ----- | 228   | 149    | 173   | 100    | .6    | .1   | .2    |
| 31    | .3   | ----- | .1   | .1   | ----- | 243   | -----  | 164   | -----  | 3.3   | .1   | ----- |
| Total | 6.8  | 6.0   | 4.6  | 3.3  | 989.4 | 4,302 | 6,803  | 4,355 | 6,442  | 677.0 | 5.0  | 4.3   |
| Mean  | 0.22 | 0.20  | 0.15 | 0.11 | 34.1  | 139   | 227    | 140   | 215    | 21.8  | 0.16 | 0.14  |
| Ac-ft | 13   | 12    | 9.1  | 6.5  | 1,960 | 8,530 | 13,490 | 8,640 | 12,780 | 1,340 | 9.9  | 8.5   |

Calendar year 1959: Max 140 Min 0 Mean 40.3 Ac-ft 29,140  
Water year 1959-60: Max 307 Min 0 Mean 64.5 Ac-ft 46,800

\* Discharge measurement made on this day.  
b Stage-discharge relation affected by ice.

## 3290. Little Humboldt River near Paradise Valley, Nev.

Location.--Lat 41°25', long 117°22', in SE $\frac{1}{4}$  sec.20, T.41 N., R.41 E., on right bank  $\frac{3}{4}$  miles downstream from Bullshead Ranch and 9 $\frac{1}{2}$  miles southeast of Paradise Valley.

Drainage area.--1,030 sq mi, approximately.

Records available.--October 1921 to June 1928 (fragmentary), October 1943 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,470 ft (from river-profile map). Prior to Nov. 21, 1946, at site 1 mile downstream at different datum.

Average discharge.--22 years (1921-23, 1924-27, 1943-60), 25.0 cfs (18,100 acre-ft per year).

Extremes.--Maximum discharge during year, 64 cfs Mar. 28 (gage height, 2.10 ft); minimum daily, 6.2 cfs for many days in July, August, and September.  
1921-28, 1943-60: Maximum discharge, 1,100 cfs Feb. 2, 1952 (gage height, 7.71 ft); minimum, 4.5 cfs Aug. 12, 1954.

Remarks.--Records good. Bullshead Ranch diverts water for irrigation above station. Station is above all diversions in Paradise Valley.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |    |
|-----|-----|-----|----|
| 1.4 | 4.6 | 1.7 | 23 |
| 1.5 | 10  | 1.9 | 38 |
| 1.6 | 16  | 2.2 | 70 |

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     | 7.3   | 7.8   | 7.8   | 7.3   | 7.3   | 7.3   | 42    | 23    | 19    | 6.8   | 6.8   | 6.2   |
| 2     | 7.3   | 7.8   | 7.8   | 7.3   | 7.8   | 7.3   | 37    | 22    | 19    | 6.8   | 6.8   | 6.2   |
| 3     | 7.3   | 7.8   | 7.8   | 7.3   | 7.8   | 7.3   | 36    | 22    | 19    | 6.8   | 6.2   | 6.2   |
| 4     | 7.3   | 7.8   | 7.8   | 7.3   | 7.8   | 8.4   | 37    | 23    | 18    | 6.8   | 6.2   | 6.8   |
| 5     | 7.3   | 7.3   | 7.8   | 6.8   | 8.4   | 8.9   | 41    | 28    | 17    | 6.8   | 6.2   | 6.2   |
| 6     | 7.3   | 7.3   | 7.8   | 6.8   | 8.4   | 9.5   | 46    | 28    | 17    | 6.8   | 6.2   | 6.2   |
| 7     | 7.3   | 7.3   | 7.8   | 6.8   | 10    | 11    | *53   | 23    | 17    | *6.8  | 6.2   | 6.2   |
| 8     | 7.3   | 7.3   | 7.8   | 6.8   | 12    | 15    | 58    | 22    | 16    | 6.8   | 6.2   | 6.2   |
| 9     | 7.8   | 7.3   | 7.3   | 6.8   | 10    | 19    | 59    | 21    | 15    | 6.8   | 6.2   | 6.2   |
| 10    | 7.8   | 7.3   | *7.3  | 7.3   | 10    | 19    | 58    | 21    | 15    | 6.8   | 6.2   | 6.2   |
| 11    | 7.8   | *7.3  | 7.3   | 7.8   | 11    | 21    | 58    | 21    | 14    | 6.8   | 6.2   | 6.2   |
| 12    | 7.3   | 7.8   | 7.3   | 7.8   | 10    | 21    | 54    | 21    | 13    | 6.8   | *6.2  | 6.2   |
| 13    | 7.3   | 8.4   | 7.3   | 7.8   | 10    | 15    | 49    | 21    | 11    | 6.8   | 6.8   | 6.2   |
| 14    | 7.3   | 7.3   | 7.8   | 7.8   | 8.9   | *19   | 43    | 21    | 9.5   | 6.8   | 6.2   | 6.2   |
| 15    | *7.3  | 7.3   | 7.8   | 7.8   | 8.4   | 26    | 39    | 23    | 8.9   | 6.2   | 6.2   | *6.2  |
| 16    | 7.3   | 7.3   | 7.3   | 7.3   | 8.9   | 21    | 37    | 26    | 8.9   | 6.2   | 6.2   | 6.2   |
| 17    | 7.3   | 7.3   | 7.3   | 7.8   | 8.9   | 19    | 35    | 26    | 8.9   | 6.2   | 6.2   | 6.2   |
| 18    | 7.3   | 7.3   | 7.3   | 7.8   | *8.9  | 18    | 33    | 26    | 7.8   | 6.2   | 6.2   | 6.2   |
| 19    | 7.3   | 7.3   | 7.3   | 7.8   | 8.9   | 19    | 31    | 26    | 7.8   | 6.2   | 6.2   | 6.2   |
| 20    | 7.3   | 7.8   | 7.3   | *7.3  | 8.9   | 18    | 29    | 26    | 7.3   | 6.2   | 6.2   | 6.2   |
| 21    | 7.3   | 7.8   | 7.8   | 7.3   | 8.9   | 26    | 27    | 25    | 7.3   | 6.2   | 6.2   | 6.2   |
| 22    | 7.3   | 7.8   | 7.8   | 7.3   | 8.9   | 34    | 26    | 25    | 7.3   | 6.2   | 6.2   | 6.2   |
| 23    | 7.3   | 7.8   | 7.8   | 7.3   | 8.4   | 41    | 28    | 25    | 7.3   | 6.2   | 6.8   | 6.2   |
| 24    | 7.3   | 7.8   | 8.4   | 6.8   | 7.8   | 44    | 29    | 25    | 6.8   | 6.2   | 6.8   | 6.2   |
| 25    | 7.3   | 7.8   | 8.9   | 6.8   | 7.8   | 51    | 29    | 24    | 6.8   | 6.2   | 6.8   | 6.2   |
| 26    | 7.3   | 7.8   | 7.8   | 6.8   | 7.8   | 57    | 28    | 24    | 6.8   | 6.2   | 6.8   | 6.2   |
| 27    | 7.8   | 7.8   | 7.8   | 6.8   | 8.4   | 59    | *28   | *23   | 6.8   | 6.2   | 6.8   | 6.2   |
| 28    | 7.8   | 7.8   | 8.4   | 6.8   | 8.4   | 61    | 27    | 21    | 6.8   | 6.2   | 6.8   | 6.2   |
| 29    | 7.8   | 7.8   | 8.4   | 6.8   | 7.8   | 56    | 26    | 21    | 6.8   | 6.2   | 6.2   | 6.2   |
| 30    | 7.8   | 7.8   | 7.8   | 7.3   | ----- | *54   | 25    | 20    | 6.8   | 6.8   | 6.2   | 6.2   |
| 31    | 7.8   | ----- | 7.8   | 7.3   | ----- | 44    | ----- | 20    | ----- | 6.8   | 6.2   | ----- |
| Total | 230.3 | 228.1 | 239.7 | 224.8 | 256.5 | 836.7 | 1,148 | 723   | 338.6 | 201.8 | 197.6 | 186.6 |
| Mean  | 7.43  | 7.60  | 7.73  | 7.25  | 8.84  | 27.0  | 38.3  | 23.3  | 11.3  | 6.51  | 6.37  | 6.22  |
| Ac-ft | 457   | 452   | 475   | 446   | 509   | 1,680 | 2,280 | 1,430 | 672   | 400   | 392   | 370   |

Calendar year 1959: Max 21 Min 5.1 Mean 9.68 Ac-ft 7,010  
Water year 1959-60: Max 61 Min 6.2 Mean 13.1 Ac-ft 9,540

\* Discharge measurement made on this day.

## 3295. Martin Creek near Paradise Valley, Nev.

Location.--Lat 41°32'00", long 117°25'40", in NW¼SW¼ sec.12, T.42 N., R.40 E., on left bank 0.6 mile upstream from Humboldt County Recreation Park and 7 miles northeast of Paradise Valley.

Drainage area.--172 sq mi.

Records available.--October 1921 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,700 ft (from extension of river-profile map). Prior to Oct. 22, 1946, at several sites within 400 ft of present site at different datums.

Average discharge.--39 years, 30.5 cfs (22,080 acre-ft per year).

Extremes.--Maximum discharge during year, 265 cfs Mar. 7 (gage height, 3.01 ft); minimum daily, 4.7 cfs Aug. 8-13, 15, 21.

1921-60: Maximum discharge, 9,000 cfs Jan. 21, 1943 (gage height, 11.1 ft, site and datum then in use), by slope-area measurement of peak flow; minimum, 1.8 cfs Feb. 6, 1945.

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

Revisions (water years).--WSP 1514: 1925-27(M), 1930(M), 1933(M), 1938(M), 1947, 1945.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Oct. 30 to Nov. 11)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.0 | 4.0 | 1.5 | 27  |
| 1.1 | 6.0 | 1.7 | 45  |
| 1.2 | 9.1 | 2.0 | 81  |
| 1.3 | 14  | 2.5 | 152 |
| 1.4 | 20  |     |     |

Discharge, in cubic feet per second, water year October 1959 to September 1960

| Day   | Oct.  | Nov.  | Dec.  | Jan.  | Feb.  | Mar.    | Apr.  | May   | June    | July  | Avg.  | Sept. |
|-------|-------|-------|-------|-------|-------|---------|-------|-------|---------|-------|-------|-------|
| 1     | 7.4   | 8.0   | 8.0   | 7.7   | 9.5   | 9.8     | 53    | 36    | 64      | 9.1   | 6.5   | 5.3   |
| 2     | 7.4   | 8.4   | 8.0   | 7.7   | 10    | 12      | 63    | 41    | 67      | 8.7   | 6.0   | 5.5   |
| 3     | 7.4   | 8.7   | 8.4   | 7.7   | 8.4   | 14      | 74    | 45    | 66      | 8.7   | 5.3   | 5.5   |
| 4     | 7.4   | 8.7   | 6.8   | 7.4   | 9.5   | 18      | 88    | 49    | 62      | 8.4   | 5.1   | 6.5   |
| 5     | 7.1   | 8.7   | 6.3   | 6.8   | 9.5   | 18      | 100   | 45    | 58      | 7.7   | 5.1   | 6.3   |
| 6     | 7.1   | 9.1   | 6.8   | 6.8   | 9.9   | 30      | 109   | 44    | 55      | *7.6  | 4.9   | 6.0   |
| 7     | 7.1   | 9.5   | 6.8   | 6.8   | 11    | 31      | *48   | 52    | 7.7     | 4.9   | 6.0   |       |
| 8     | 7.4   | 10    | 7.1   | 9.1   | 32    | 82      | 110   | 44    | 49      | 7.4   | 4.7   | 5.8   |
| 9     | 8.0   | 10    | 7.4   | 8.4   | 28    | 42      | 106   | 57    | 47      | 7.1   | 4.7   | 5.8   |
| 10    | 8.0   | 10    | *7.4  | 8.4   | 23    | 27      | 101   | 66    | 44      | 6.8   | 4.7   | 5.8   |
| 11    | 7.7   | *9.6  | 7.4   | 8.7   | 19    | 25      | 92    | 76    | 42      | 6.3   | 4.7   | 6.0   |
| 12    | 7.7   | 9.1   | 7.4   | 8.7   | 14    | 34      | 74    | 82    | 40      | 6.0   | *4.7  | 6.3   |
| 13    | 7.7   | 8.2   | 7.4   | 8.4   | 16    | 63      | 63    | 86    | 38      | 6.0   | 4.7   | 6.0   |
| 14    | 7.7   | 7.7   | 7.1   | 8.0   | 11    | *50     | 62    | 78    | 38      | 5.8   | 4.9   | 6.3   |
| 15    | *7.4  | 8.3   | 6.5   | 7.7   | 14    | 31      | 57    | 74    | 36      | 5.5   | 4.7   | *6.3  |
| 16    | 7.4   | 9.2   | 6.8   | 8.0   | 13    | 25      | 48    | 72    | 36      | 5.5   | 4.9   | 6.3   |
| 17    | 7.4   | 8.7   | 7.4   | 8.4   | 11    | 42      | 45    | 69    | 32      | 5.5   | 5.1   | 6.3   |
| 18    | 7.4   | 9.0   | 8.0   | 8.4   | *13   | 79      | 42    | 64    | 30      | 5.3   | 4.9   | 6.3   |
| 19    | 7.4   | 9.1   | 8.0   | 8.4   | 12    | 95      | 45    | 57    | 25      | 5.3   | 4.9   | 6.3   |
| 20    | 7.4   | 9.1   | 7.4   | *8.4  | 10    | 109     | 44    | 54    | 22      | 5.1   | 4.9   | 6.3   |
| 21    | 7.4   | 9.1   | 7.4   | 8.4   | 11    | 121     | 52    | 57    | 20      | 5.1   | 4.7   | 6.3   |
| 22    | 7.7   | 8.0   | 7.7   | 8.4   | 9.9   | 123     | 56    | 53    | 18      | 5.1   | 4.9   | 6.3   |
| 23    | 7.7   | 8.7   | 8.0   | 8.7   | 10    | 129     | 49    | 49    | 17      | 5.1   | 5.5   | 6.3   |
| 24    | 8.0   | 8.4   | 8.4   | 8.7   | 9.7   | 131     | 45    | 46    | 15      | 5.1   | 5.5   | 6.3   |
| 25    | 8.0   | 8.7   | 9.1   | 9.1   | 13    | 123     | 42    | 43    | 14      | 5.1   | 5.5   | 6.3   |
| 26    | 8.4   | 8.0   | 7.7   | 9.1   | 12    | 119     | 39    | *42   | 13      | 5.1   | 5.3   | 6.3   |
| 27    | 8.7   | 7.1   | 7.1   | 9.5   | 10    | 103     | *42   | 43    | 12      | 5.1   | 5.3   | 6.3   |
| 28    | 8.7   | 7.7   | 6.8   | 9.5   | 8.9   | 103     | 39    | 46    | 11      | 5.1   | 5.3   | 6.3   |
| 29    | 8.7   | 8.4   | 7.1   | 9.5   | 8.6   | 74      | 36    | 50    | 10      | 5.1   | 5.3   | 6.3   |
| 30    | 7.7   | 8.4   | 7.7   | 8.5   | ----- | *68     | 36    | 53    | 9.5     | 5.1   | 5.5   | 6.3   |
| 31    | 8.0   | ----- | 7.7   | 9.5   | ----- | 58      | ----- | 57    | -----   | 6.0   | 5.3   | ----- |
| Total | 238.5 | 261.6 | 251.4 | 259.8 | 376.9 | 2,048.8 | 1,922 | 1,736 | 1,042.5 | 192.5 | 158.4 | 183.9 |
| Mean  | 7.69  | 8.72  | 7.46  | 8.38  | 13.0  | 66.1    | 64.1  | 56.0  | 34.8    | 6.21  | 5.11  | 6.13  |
| Ac-ft | 473   | 519   | 459   | 515   | 748   | 4,060   | 3,810 | 3,440 | 2,070   | 382   | 314   | 365   |

Calendar year 1959: Max 60 Min 5.3 Mean 14.1 Ac-ft 10,180  
Water year 1959-60: Max 131 Min 4.7 Mean 23.6 Ac-ft 17,160

Peak discharge (base, 100 cfs).--Mar. 7 (7:15 p.m.) 265 cfs (3.01 ft); Mar. 13 (8 p.m.) 142 cfs (2.43 ft); Mar. 20 (9:30 p.m.) 212 cfs (2.78 ft); Apr. 8 (2 a.m.) 124 cfs (2.34 ft).

\* Discharge measurement made on this day.

## 3315. Humboldt River near Rose Creek, Nev.

Location.--Lat 40°52'05", long 117°59'45", in SE¼NW¼ sec.36, T.35 N., R.35 E., on right bank 5½ miles southwest of Rose Creek and 15½ miles southwest of Winnemucca.

Drainage area.--15,200 sq mi (revised), approximately.

Records available.--April 1948 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 4,200 ft (from Soil Conservation Service levels).

Average discharge.--12 years, 219 cfs (153,500 acre-ft per year).

Extremes.--Maximum discharge during year, 203 cfs May 2 (gage height, 2.48 ft); minimum, 3.7 cfs Dec. 27, result of freezeup.

1948-60: Maximum discharge, 5,810 cfs May 8, 1952 (gage height, 11.41 ft); minimum, that of Dec. 27, 1959.

Remarks.--Records good except those for periods of ice effect, which are fair. Many diversions above station for irrigation.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used June 1 to Sept. 30)

|     |     |
|-----|-----|
| 1.5 | 7.0 |
| 1.6 | 16  |
| 1.8 | 46  |
| 2.0 | 85  |
| 2.5 | 190 |

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     | 13   | 13    | b15  | b18   | 23    | b43   | 165   | 58    | 92    | 67    | 24    | 11    |
| 2     | 13   | 15    | b15  | b17   | 23    | b45   | 165   | 96    | 67    | 23    | 11    | 11    |
| 3     | 13   | 15    | 15   | b15   | 23    | 46    | 167   | 152   | 149   | 62    | 20    | 13    |
| 4     | 13   | 15    | b13  | b12   | b23   | 46    | 171   | 144   | 142   | 38    | 20    | 17    |
| 5     | 13   | b15   | b12  | b12   | 23    | 54    | 177   | 140   | 121   | 36    | 18    | 13    |
| 6     | 13   | 15    | b12  | b14   | 23    | 54    | 184   | 127   | 116   | 72    | 18    | 12    |
| 7     | 15   | 15    | b13  | b16   | 25    | 54    | 184   | 106   | 112   | 92    | 17    | 11    |
| 8     | 15   | 15    | b14  | b18   | 27    | 54    | 183   | 100   | 108   | 73    | 17    | 10    |
| 9     | 15   | 15    | b14  | b20   | 27    | 54    | 135   | 94    | 112   | 63    | 16    | 10    |
| 10    | 15   | 15    | *b14 | b19   | 27    | 54    | 133   | 89    | 112   | 56    | 15    | 10    |
| 11    | 15   | *15   | b15  | b19   | 27    | 54    | 127   | 85    | 116   | 50    | *13   | 10    |
| 12    | 15   | 15    | b14  | b15   | 33    | 54    | 116   | 75    | 121   | 46    | 13    | 10    |
| 13    | 15   | 16    | b12  | b12   | 50    | 58    | 121   | 77    | 116   | 45    | 13    | 9.7   |
| 14    | 15   | b16   | b11  | b13   | 52    | 69    | 121   | 75    | *108  | 41    | 12    | 10    |
| 15    | *15  | b15   | b12  | b13   | 52    | *89   | *112  | 73    | 123   | *38   | 12    | 10    |
| 16    | 15   | 15    | b12  | b12   | 50    | 102   | 104   | 69    | 146   | 36    | 12    | *9.7  |
| 17    | 15   | 15    | b13  | b13   | 50    | 110   | 106   | 67    | 150   | 35    | 12    | 9.7   |
| 18    | 15   | 15    | b15  | b14   | 54    | 114   | 98    | 87    | 175   | 36    | 12    | 9.7   |
| 19    | 15   | 15    | b17  | b14   | 58    | 119   | 121   | *83   | 184   | 35    | 11    | 9.7   |
| 20    | 15   | 15    | b17  | *b15  | b58   | 123   | 114   | 77    | 184   | 33    | 10    | 9.7   |
| 21    | 15   | 15    | b18  | b16   | 56    | 125   | 127   | 81    | 152   | 30    | 9.7   | 9.7   |
| 22    | 15   | 16    | b18  | b17   | b56   | 123   | 125   | 81    | 133   | 28    | 10    | 9.7   |
| 23    | 15   | 16    | b20  | b17   | b54   | 131   | 106   | 77    | 144   | 27    | 11    | 9.7   |
| 24    | 15   | 15    | b21  | b18   | *b54  | 140   | 69    | 87    | 135   | 25    | 11    | 9.7   |
| 25    | 15   | 15    | b21  | b18   | 50    | 142   | 67    | 96    | 131   | 25    | 11    | 9.7   |
| 26    | 15   | 15    | b20  | *b19  | 46    | 138   | 63    | 100   | 119   | 24    | 10    | 9.7   |
| 27    | 15   | b14   | b19  | b20   | 48    | 127   | 69    | 94    | 108   | 23    | 10    | 9.7   |
| 28    | 15   | b14   | b19  | b21   | 50    | 131   | 75    | 92    | 100   | 21    | 10    | 9.7   |
| 29    | 15   | b14   | b18  | 21    | b43   | 138   | 77    | 100   | 89    | 20    | 10    | 9.7   |
| 30    | 13   | 16    | b18  | 21    | ----- | 150   | 50    | 106   | 73    | 21    | 10    | 9.7   |
| 31    | 13   | ----- | b18  | 21    | ----- | 154   | ----- | 79    | ----- | 25    | 10    | ----- |
| Total | 449  | 450   | 485  | 510   | 1,185 | 2,895 | 3,612 | 2,923 | 3,766 | 1,290 | 420.7 | 313.2 |
| Mean  | 14.5 | 15.0  | 15.6 | 16.5  | 40.9  | 93.4  | 120   | 94.3  | 125   | 41.6  | 13.6  | 10.4  |
| Ac-ft | 891  | 893   | 962  | 1,010 | 2,350 | 5,740 | 7,160 | 5,800 | 7,470 | 2,560 | 834   | 621   |

Calendar year 1959: Max 169 Min 11 Mean 48.0 Ac-ft 34,780  
Water year 1959-60: Max 184 Min 9.7 Mean 50.0 Ac-ft 36,290

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## 3325. Humboldt-Lovelock Irrigation, Light &amp; Power Co.'s feeder canal near Imlay, Nev.

Location.--Lat 40°40'05", long 118°11'55", in SE¼NE¼ sec.1, T.32 N., R.35 E., on left bank 3 miles northwest of Imlay and 9 miles downstream from headgates.

Records available.--October 1946 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 4,170 ft (from topographic map).

Extremes.--No flow for entire year.

1946-60: Maximum daily discharge, 153 cfs May 3, 1958 (gage height, 4.22 ft); no flow for long periods.

Remarks.--No flow since June 21, 1958. This canal diverts water from Humboldt River in NW¼ sec.29, T.33 N., R.35 E., for storage in Pitt-Taylor Reservoirs near Humboldt. During irrigation season water is released about 3 miles west of Humboldt and conveyed through Humboldt-Lovelock Irrigation, Light & Power Co.'s outlet canal to Rye Patch Reservoir, from which it is later released and carried in natural river channel to Lovelock district for irrigation.

3330. Humboldt River near Imlay, Nev.

Location.--Lat 40°41'30", long 118°12'10", in SW 1/4 sec. 25, T.33 N., R.33 E., on right bank 1 mile upstream from Old Calahan Dam and 4 miles northwest of Imlay.

Drainage area.--15,700 sq mi (revised), approximately.

Records available.--June 1935 to December 1941, April 1945 to September 1960. Monthly discharge only October to December 1941, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,130 ft (from Geological Survey vertical-angle bench mark). Prior to Apr. 28, 1945, at site 1 mile downstream at different datum. Apr. 28, 1945, to Aug. 20, 1947, at present site at datum 1 ft higher.

Average discharge.--21 years, 162 cfs (117,300 acre-ft per year).

Extremes.--Maximum discharge during year, 171 cfs Apr. 8 (gage height, 2.66 ft); minimum, 4.8 cfs Sept. 21.  
1935-41, 1945-60: Maximum discharge, 6,080 cfs May 9, 1952 (gage height, 12.15 ft); no flow at times in many years.

Remarks.--Records good except those for periods of ice effect, which are poor. Humboldt-Lovelock Irrigation, Light & Power Co.'s feeder canal diverts water from river above station to Pitt-Taylor Reservoirs (see preceding page). This water is ordinarily released during irrigation season through Rye Patch Reservoir to Humboldt River for irrigation in Lovelock district. Flow affected by many other diversions above station for irrigation.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Mar. 20 to Apr. 8, Apr. 30 to Aug. 15)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.0 | 4.4 | 1.6 | 38  |
| 1.1 | 9.2 | 2.0 | 75  |
| 1.3 | 18  | 2.8 | 177 |

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                       | 11   | 13    | 14   | 13   | 19      | 42        | 141          | 49    | 77    | 70    | 18    | 6.7   |
| 2                       | 10   | 13    | 14   | 13   | 20      | 47        | 149          | 49    | 70    | 60    | 18    | 6.5   |
| 3                       | 10   | 13    | 14   | 12   | 19      | 43        | 148          | 95    | 77    | 58    | 15    | 7.1   |
| 4                       | 10   | 13    | 13   | 10   | 19      | 45        | 151          | 128   | 110   | 56    | 14    | 10    |
| 5                       | 10   | 13    | 12   | 10   | 20      | 47        | 155          | 122   | 131   | 45    | 14    | 16    |
| 6                       | 10   | 12    | 11   | 11   | 21      | 49        | 161          | 124   | 109   | 38    | 13    | 10    |
| 7                       | 10   | 13    | 11   | 12   | 22      | 53        | 168          | 122   | 103   | 46    | 13    | 7.8   |
| 8                       | 11   | 13    | 11   | 14   | 24      | 52        | 170          | 104   | 100   | 74    | *12   | 7.1   |
| 9                       | 11   | 14    | 12   | 15   | 27      | 51        | 149          | 97    | 95    | 63    | 11    | 6.3   |
| 10                      | 11   | 13    | 12   | 15   | 28      | 50        | 124          | 90    | 96    | 53    | 10    | 6.3   |
| 11                      | 11   | 14    | 12   | 15   | 26      | 51        | 120          | 86    | 97    | 48    | 9.6   | 6.3   |
| 12                      | 11   | 13    | 12   | 13   | 26      | 52        | 101          | 81    | 102   | 44    | 9.2   | 6.3   |
| 13                      | 11   | 13    | 11   | 9    | 27      | 55        | *93          | 72    | *106  | 40    | 8.7   | 5.9   |
| 14                      | 11   | 12    | 10   | 10   | 37      | 54        | 94           | 72    | 104   | 38    | 8.2   | 5.9   |
| 15                      | 11   | 13    | 10   | 9    | 43      | *61       | 97           | 70    | 97    | *36   | 7.8   | 6.3   |
| 16                      | 11   | 14    | 11   | 10   | 45      | 77        | 93           | 69    | 107   | 33    | 7.1   | *5.9  |
| 17                      | 11   | 14    | 11   | 10   | 43      | 82        | 84           | *73   | 125   | 31    | 7.1   | 5.9   |
| 18                      | 11   | 15    | 12   | 11   | 43      | 97        | 83           | 69    | 133   | 29    | 7.1   | 5.9   |
| 19                      | 11   | 15    | 13   | 11   | 46      | 104       | 75           | 81    | 151   | 28    | 7.1   | 5.9   |
| 20                      | 11   | 15    | 14   | 11   | 46      | 109       | 84           | 88    | 165   | 28    | 6.7   | 5.5   |
| 21                      | 11   | 15    | *14  | 12   | 50      | 114       | 84           | 77    | 166   | 26    | 6.7   | 5.2   |
| 22                      | 12   | 15    | 15   | 13   | 48      | 116       | 93           | 78    | 144   | 24    | 5.9   | 5.5   |
| 23                      | 12   | 15    | 15   | 13   | *45     | *116      | 97           | 83    | 120   | 22    | 6.3   | 5.9   |
| 24                      | 12   | 16    | 16   | 14   | 47      | 118       | 88           | 75    | 130   | 21    | 6.7   | 6.3   |
| 25                      | 12   | *15   | 15   | *15  | 45      | 111       | 65           | 83    | 125   | 20    | 7.1   | 6.3   |
| 26                      | 12   | 15    | 15   | 16   | 46      | 112       | 61           | 93    | 121   | 20    | 7.1   | 6.7   |
| 27                      | 12   | 12    | 15   | 17   | 47      | 111       | 56           | 95    | 109   | 19    | 6.7   | 6.7   |
| 28                      | *12  | 12    | 15   | 17   | 42      | 107       | 58           | 89    | 98    | 18    | 6.7   | 6.7   |
| 29                      | 12   | 13    | 14   | 18   | 41      | 120       | 64           | 84    | 90    | 18    | 7.1   | 6.7   |
| 30                      | 13   | 13    | 14   | 18   | -----   | 125       | 56           | 88    | 82    | 17    | 7.1   | 6.3   |
| 31                      | 12   | ----- | 14   | 18   | -----   | 135       | -----        | 96    | ----- | 16    | 6.7   | ----- |
| Total                   | 346  | 409   | 402  | 405  | 1,010   | 2,501     | 3,162        | 2,682 | 3,340 | 1,139 | 290.7 | 205.7 |
| Mean                    | 11.2 | 13.6  | 13.0 | 13.1 | 34.8    | 80.7      | 86.5         | 86.5  | 111   | 36.7  | 9.38  | 6.86  |
| Ac-ft.                  | 686  | 811   | 797  | 803  | 2,000   | 4,960     | 6,270        | 5,320 | 6,620 | 2,260 | 577   | 408   |
| Calendar year 1959: Max | 162  |       |      |      | Min 0.3 | Mean 42.1 | Ac-ft 30,510 |       |       |       |       |       |
| Water year 1959-60: Max | 170  |       |      |      | Min 5.2 | Mean 43.4 | Ac-ft 31,510 |       |       |       |       |       |

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 15-17, Nov. 26 to Feb. 9, Feb. 20 to Mar. 4.

## 3345. Rye Patch Reservoir near Rye Patch, Nev.

Location.--Lat 40°28'15", long 118°18'30", in NW 1/4 sec. 18, T.30 N., R.33 E., at control works at left end of Rye Patch Dam, 2 miles northwest of Rye Patch.

Drainage area.--16,100 sq mi (revised), approximately.

Records available.--February 1936 to September 1960.

Gage.--Mercury-indicating gage. Datum of gage is at mean sea level (Southern Pacific Railroad datum).

Extremes.--Maximum contents during year, 29,170 acre-ft Apr. 7, 8 (elevation, 4,111.70 ft); minimum 3,540 acre-ft July 27 (elevation, 4,092.80 ft).  
1936-60: Maximum contents, 196,900 acre-ft Apr. 9, 1946 (elevation, 4,134.62 ft); no contents Aug. 7-11, 1955.

Remarks.--Reservoir is formed by earth-fill, rock-faced dam; storage began Feb. 20, 1936. Capacity, 179,100 acre-ft between elevations 4,072.5 (sill of trashrack structure) and 4,133.0 ft (top of spillway gates). Dead storage negligible. Elevation of spillway (gate sill) is 4,116 ft. Figures given herein represent usable contents. Water is used for irrigation in the Lovelock area.

Cooperation.--Records of daily elevation furnished by Pershing County Water Conservation District of Nevada.

Capacity table, water year 1959-60 (elevation, in feet,  
and contents, in acre-feet)

|       |       |       |        |
|-------|-------|-------|--------|
| 4,092 | 3,140 | 4,105 | 14,390 |
| 4,095 | 4,800 | 4,110 | 24,540 |
| 4,100 | 8,620 | 4,112 | 30,030 |

| Contents, in acre-feet, at 8 a.m., water year October 1959 to September 1960 |          |          |          |          |          |          |          |          |          |          |          |          |
|------------------------------------------------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Day                                                                          | Oct.     | Nov.     | Dec.     | Jan.     | Feb.     | Mar.     | Apr.     | May      | June     | July     | Aug.     | Sept.    |
| 1                                                                            | 18,950   | 19,050   | 19,760   | 20,530   | 21,760   | 25,860   | 28,040   | 18,340   | 10,470   | 11,590   | 3,860    | 4,080    |
| 2                                                                            | 18,950   | 19,050   | 19,760   | 20,530   | 21,760   | 25,860   | 28,320   | 17,740   | 10,690   | 11,710   | 3,970    | 3,970    |
| 3                                                                            | 18,950   | 19,150   | 19,760   | 20,530   | 21,870   | 26,120   | 28,600   | 17,200   | 10,800   | 10,910   | 4,030    | 3,920    |
| 4                                                                            | 18,950   | 19,150   | 19,760   | 20,530   | 21,870   | 26,260   | 28,890   | 16,470   | 11,030   | 10,580   | 4,080    | 3,970    |
| 5                                                                            | 18,950   | 19,150   | 19,860   | 20,650   | 21,990   | 26,390   | 29,030   | 16,100   | 11,250   | 10,320   | 4,140    | 4,030    |
| 6                                                                            | 18,950   | 19,150   | 19,860   | 20,650   | 21,990   | 26,520   | 29,030   | 15,770   | 11,310   | 9,960    | 4,200    | 4,060    |
| 7                                                                            | 18,950   | 19,150   | 19,860   | 20,760   | 22,100   | 26,650   | 29,170   | 15,280   | 11,310   | 9,510    | 4,200    | 4,060    |
| 8                                                                            | 18,950   | 19,260   | 19,860   | 20,760   | 22,220   | 26,780   | 29,170   | 14,800   | 11,250   | 9,090    | 4,230    | 4,080    |
| 9                                                                            | 18,950   | 19,260   | 19,980   | 20,760   | 22,340   | 26,920   | 29,030   | 14,320   | 11,250   | 8,670    | 4,230    | 4,110    |
| 10                                                                           | 18,950   | 19,260   | 19,980   | 20,870   | 22,460   | 27,050   | 29,030   | 13,610   | 11,190   | 8,270    | 4,260    | 4,110    |
| 11                                                                           | 18,950   | 19,260   | 19,980   | 20,870   | 22,590   | 27,180   | 29,030   | 13,180   | 11,140   | 7,840    | 4,320    | 4,140    |
| 12                                                                           | 18,950   | 19,260   | 19,980   | 20,870   | 22,710   | 27,320   | 28,890   | 12,650   | 11,030   | 7,340    | 4,350    | 4,140    |
| 13                                                                           | 18,950   | 19,260   | 20,090   | 20,980   | 22,830   | 27,470   | 28,750   | 12,210   | 10,910   | 6,780    | 4,290    | 4,030    |
| 14                                                                           | 18,950   | 19,260   | 20,090   | 20,980   | 22,950   | 27,470   | 28,600   | 11,830   | 10,800   | 6,360    | 4,230    | 3,920    |
| 15                                                                           | 18,950   | 19,260   | 20,090   | 20,980   | 23,070   | 27,320   | 28,320   | 11,480   | 10,690   | 5,920    | 4,170    | 3,750    |
| 16                                                                           | 18,950   | 19,260   | 20,090   | 21,090   | 23,200   | 27,470   | 27,610   | 11,030   | 10,630   | 5,600    | 4,080    | 3,700    |
| 17                                                                           | 18,950   | 19,360   | 20,200   | 21,090   | 23,320   | 27,610   | 26,780   | 10,800   | 10,630   | 5,230    | 4,030    | 3,720    |
| 18                                                                           | 18,950   | 19,360   | 20,200   | 21,090   | 23,440   | 27,750   | 26,120   | 10,580   | 10,690   | 4,930    | 4,030    | 3,750    |
| 19                                                                           | 18,950   | 19,360   | 20,200   | 21,200   | 23,560   | 27,890   | 25,730   | 10,370   | 10,910   | 4,680    | 4,030    | 3,750    |
| 20                                                                           | 18,950   | 19,360   | 20,200   | 21,200   | 23,680   | 28,040   | 24,800   | 10,270   | 11,190   | 4,500    | 4,060    | 3,780    |
| 21                                                                           | 18,950   | 19,360   | 20,200   | 21,320   | 23,810   | 28,040   | 24,170   | 10,170   | 11,480   | 4,380    | 4,060    | 3,780    |
| 22                                                                           | 18,950   | 19,360   | 20,310   | 21,320   | 23,930   | 28,040   | 23,680   | 10,070   | 11,700   | 4,260    | 4,080    | 3,810    |
| 23                                                                           | 18,950   | 19,460   | 20,310   | 21,430   | 24,050   | 28,040   | 22,950   | 9,860    | 12,020   | 4,140    | 4,080    | 3,810    |
| 24                                                                           | 18,950   | 19,460   | 20,310   | 21,430   | 24,290   | 28,040   | 22,220   | 9,760    | 12,140   | 3,970    | 4,080    | 3,810    |
| 25                                                                           | 19,050   | 19,460   | 20,310   | 21,430   | 24,540   | 27,890   | 21,650   | 9,760    | 12,210   | 3,840    | 4,110    | 3,840    |
| 26                                                                           | 19,050   | 19,560   | 20,310   | 21,540   | 24,800   | 27,750   | 21,090   | 9,760    | 12,270   | 3,700    | 4,110    | 3,840    |
| 27                                                                           | 19,050   | 19,560   | 20,310   | 21,540   | 25,070   | 27,610   | 20,530   | 9,760    | 12,270   | 3,540    | 4,110    | 3,860    |
| 28                                                                           | 19,050   | 19,660   | 20,420   | 21,540   | 25,330   | 27,610   | 20,090   | 9,860    | 12,210   | 3,390    | 4,140    | 3,860    |
| 29                                                                           | 19,050   | 19,660   | 20,420   | 21,650   | 25,730   | 27,610   | 19,560   | 10,020   | 12,140   | 3,640    | 4,140    | 3,890    |
| 30                                                                           | 19,050   | 19,760   | 20,420   | 21,650   | -----    | 27,750   | 18,950   | 10,170   | 11,890   | 3,700    | 4,170    | 3,920    |
| 31                                                                           | 19,050   | -----    | 20,420   | 21,650   | -----    | 27,750   | -----    | 10,270   | -----    | 3,750    | 4,170    | -----    |
| (†)                                                                          | 4,107.60 | 4,107.95 | 4,108.25 | 4,108.80 | 4,110.45 | 4,111.20 | 4,107.55 | 4,101.70 | 4,103.15 | 4,093.20 | 4,093.95 | 4,093.50 |
| (‡)                                                                          | +100     | +710     | +660     | +1,230   | +4,080   | +2,020   | -8,800   | -8,680   | +1,620   | -8,140   | +420     | -250     |

Calendar year 1959..... ‡ -90,780

Water year 1959-60..... ‡ -15,030

† Elevation, in feet, at end of month.  
‡ Change in contents, in acre-feet.

604023

## 3350. Humboldt River near Rye Patch, Nev.

Location.--Lat 40°28'00", long 118°18'20", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 18, T.30 N., R.33 E., on left bank 1,000 ft downstream from Rye Patch Dam and  $\frac{1}{2}$  miles northwest of Rye Patch.

Drainage area.--16,100 sq mi (revised), approximately.

Records available.--January 1896 to June 1898, June 1899 to December 1909, September 1910 to June 1917, September 1917 to September 1922, September 1924 to September 1930 (fragmentary), October 1930 to September 1932, October 1935 to September 1941, October 1943 to September 1960. Monthly discharge only for some periods, published in WSP 1314. Prior to October 1935, published as "near Oreana."

Gage.--Water-stage recorder. Datum of gage is 4,068.53 ft above mean sea level (levels by Bureau of Reclamation). Prior to Oct. 1, 1935, water-stage recorder or staff gages at site 7 miles downstream at different datum. Oct. 1, 1935, to Oct. 13, 1945, water-stage recorder at site half a mile downstream at different datum.

Average discharge.--46 years (1899-1909, 1910-16, 1917-22, 1930-32, 1935-41, 1943-60), 199 cfs (144,100 acre-ft per year).

Extremes.--Maximum discharge during year, 410 cfs May 3 (gage height, 2.91 ft); no flow Sept. 21. 1896-1922, 1924-32, 1935-41, 1943-60: Maximum discharge, 4,720 cfs May 11, 12, 1952 (gage height, 10.26 ft); no flow at times in some years.

Remarks.--Records good. Flow completely regulated by Rye Patch Reservoir (see preceding page). Many diversions above station for irrigation. Records of chemical analyses and water temperatures for the water year 1960 are given in WSP 1744.

Rating table, water year 1959-60 (gage height, in feet, and discharge,

in cubic feet per second)  
(Shifting-control method used Oct. 1 to Mar. 13, Mar. 18, 19,  
Mar. 31 to Apr. 4, May 31 to June 4, June 19-21, Sept. 15, 16)

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| 0.4 | 0   | 0.8 | 5.9 | 1.5 | 77  |
| .5  | .4  | .9  | 11  | 2.0 | 179 |
| .6  | 1.3 | 1.0 | 17  | 3.0 | 436 |
| .7  | 3.0 | 1.2 | 35  |     |     |

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     | 0.6  | 0.6   | 0.4  | 0.6  | 0.6   | 0.6     | 1.0     | 328    | 1.2     | 237     | 0.4   | 43    |
| 2     | .6   | .7    | .5   | .6   | .5    | .6      | .7      | 338    | 1.0     | 235     | .3    | 38    |
| 3     | .6   | .7    | .4   | .5   | .5    | .6      | .6      | 387    | .9      | 218     | .2    | .6    |
| 4     | .6   | .7    | .4   | .5   | .5    | .6      | 30      | 347    | 9.1     | 211     | .2    | .2    |
| 5     | .6   | .8    | .4   | .5   | .5    | .6      | 74      | 315    | 25      | 209     | .2    | .2    |
| 6     | .6   | .9    | .4   | .5   | .5    | .6      | 90      | 347    | 63      | 220     | .2    | .1    |
| 7     | .6   | .8    | .4   | .5   | .6    | .5      | 90      | 360    | 83      | 249     | .2    | .1    |
| 8     | .5   | .6    | .4   | .5   | .6    | .4      | 90      | 360    | 63      | 254     | *.2   | .1    |
| 9     | .5   | .7    | .4   | .4   | .5    | .4      | 136     | 380    | 67      | 269     | .2    | .1    |
| 10    | .4   | .7    | .4   | .4   | .5    | .4      | 218     | 355    | 105     | 274     | .2    | .1    |
| 11    | .4   | .7    | .4   | .4   | .6    | .4      | 247     | 333    | 128     | 276     | .2    | .1    |
| 12    | .4   | .6    | .4   | .4   | .6    | .4      | 216     | 307    | 142     | 284     | 15    | 31    |
| 13    | .4   | .6    | .4   | .4   | .6    | 34      | 200     | 307    | *153    | 264     | 29    | 58    |
| 14    | .4   | .6    | .4   | .4   | .6    | 58      | *230    | 307    | 155     | 225     | 28    | 58    |
| 15    | .4   | .6    | .4   | .4   | .6    | 34      | 289     | 272    | 138     | *209    | 28    | 42    |
| 16    | .4   | .6    | .4   | .4   | .6    | 22      | 307     | 209    | 111     | 197     | 28    | *.4   |
| 17    | .5   | .6    | .4   | .4   | .6    | 22      | 320     | *166   | 88      | 170     | 20    | .2    |
| 18    | .6   | .6    | .4   | .4   | .6    | 7.4     | 330     | 157    | 30      | 130     | .4    | .1    |
| 19    | .6   | .6    | .4   | .4   | .5    | 11      | 344     | 134    | .9      | 115     | .2    | .1    |
| 20    | .6   | .6    | .4   | .5   | .5    | 46      | 344     | 144    | .8      | 91      | .1    | .1    |
| 21    | .5   | .4    | *.4  | .5   | .5    | 97      | 349     | 155    | 4.0     | 81      | .1    | 0     |
| 22    | .4   | .4    | .4   | .5   | .5    | 97      | 371     | 157    | 25      | 79      | .1    | .1    |
| 23    | .4   | .4    | .4   | .5   | *.5   | *97     | 385     | 146    | 28      | 77      | .1    | .1    |
| 24    | .4   | .5    | .5   | .5   | .5    | 117     | 376     | 115    | 48      | 77      | .1    | .1    |
| 25    | .4   | *.4   | .5   | *.5  | .5    | 126     | 336     | 111    | 93      | 75      | .1    | .1    |
| 26    | .4   | .4    | .5   | .5   | .5    | 126     | 294     | 93     | 95      | 75      | .1    | .1    |
| 27    | .4   | .4    | .6   | .5   | .6    | 126     | 294     | 57     | 121     | 27      | .1    | .1    |
| 28    | *.4  | .4    | .8   | .5   | .5    | 79      | 309     | 33     | 153     | .6      | .1    | .1    |
| 29    | .4   | .4    | .6   | .6   | .6    | 55      | 294     | 34     | 186     | .4      | .1    | .1    |
| 30    | .2   | .4    | .6   | .6   | ----- | 54      | 298     | 34     | 225     | .4      | .1    | .1    |
| 31    | .5   | ----- | .6   | .6   | ----- | 21      | -----   | 14     | -----   | .4      | 18    | ----- |
| Total | 14.7 | 17.2  | 13.8 | 14.9 | 15.8  | 1,235.5 | 6,861.3 | 6,782  | 2,322.9 | 4,827.8 | 170.2 | 273.4 |
| Mean  | 0.47 | 0.57  | 0.45 | 0.48 | 0.54  | 39.9    | 229     | 219    | 77.4    | 156     | 5.49  | 9.11  |
| Ac-ft | 29   | 34    | 27   | 30   | 31    | 2,450   | 15,610  | 13,450 | 4,610   | 9,580   | 338   | 542   |

Calendar year 1959: Max 695 Min 0.2 Mean 141 Ac-ft 102,300  
Water year 1959-60: Max 387 Min 0 Mean 61.6 Ac-ft 44,730

\* Discharge measurement made on this day.

## 3365. Pyramid Lake near Nixon, Nev.

Location.--Lat 39°50'30", long 119°28'00", in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.24, T.23 N., R.22 E., at southwest corner of concrete bridge No. 296 B, 150 ft southwest of milepost 297, 6 miles west of Nixon, and 11.5 miles south along Southern Pacific Railroad from station at Sutcliffe.

Records available.--1867-1925 (occasional elevations in some years), June 1926 to September 1960 (occasional elevations in each year).

Gage.--Bench mark N-21 of U. S. Coast and Geodetic Survey at elevation of 3,940.29 ft above mean sea level, datum of 1929, supplementary adjustment of 1956. Prior to January 1934, elevations were determined from bench mark No. 1 of General Land Office using elevation of 3,882.26 ft, adjustment of 1912 (to convert these records to supplementary adjustment of 1956, add 0.81 ft). January 1934 to September 1955, elevations were determined from bench mark N-21 using elevation of 3,940.04 ft, datum of 1929 (to convert these records to supplementary adjustment of 1956, add 0.25 ft).

Extremes.--1926-60: Maximum elevation observed, 3,848.75 ft June 1926; minimum observed, 3,796.44 ft Sept. 21, 1960.

Revisions (water years).--WSP 880: 1934-38 (bench mark). WSP 1090: 1926(M).

| Elevation, in feet, October 1959 to September 1960 |          |              |          |
|----------------------------------------------------|----------|--------------|----------|
| Oct. 19.....                                       | 3,799.35 | May 25.....  | 3,797.78 |
| Nov. 18.....                                       | 3,799.10 | June 21..... | 3,797.68 |
| Dec. 21.....                                       | 3,798.71 | July 26..... | 3,796.78 |
| Jan. 27.....                                       | 3,798.47 | Aug. 23..... | 3,796.78 |
| Feb. 23.....                                       | 3,798.52 | Sept.20..... | 3,796.54 |
| Mar. 22.....                                       | 3,798.36 | 21.....      | 3,796.44 |
| Apr. 26.....                                       | 3,798.21 |              |          |

## 3370. Lake Tahoe at Tahoe, Calif.

Location.--Lat 39°10'04", long 120°08'23", in NE $\frac{1}{4}$  sec.7, T.15 N., R.17 E., at Tahoe, on pier 1,000 ft east of dam at lake outlet.

Drainage area.--506 sq mi (revised) at lake outlet.

Records available.--April 1900 to September 1943 and October 1957 to September 1960 in reports of Geological Survey. October 1943 to September 1957 in files of Truckee-Carson Irrigation District.

Gage.--Water-stage recorder. Datum of gage is 6,220.00 ft above mean sea level, datum of Bureau of Reclamation (6,219.01 ft, datum of 1929). Prior to Oct. 1, 1957, staff gages at several sites near outlet of lake at same datum. Oct. 1, 1957, to May 8, 1958, water-stage recorder on left wingwall of dam at outlet of lake at same datum.

Extremes.--Maximum elevation during year, 6,226.44 ft Oct. 1; minimum, 6,224.75 ft Sept. 30.  
1900-43, 1957-60: Maximum elevation, 6,231.26 ft July 14, 15, 17, 18, 1907; minimum, 6,221.74 ft Dec. 26, 1934.

Remarks.--Lake levels regulated by a 17-gate concrete dam at outlet of lake; storage began about 1874. Figures given herein represent usable contents. Usable capacity, 744,600 acre-ft between elevations 6,223 (natural rim of lake) and 6,229.1 ft (maximum permissible elevation by Federal Court decree). Water is used for domestic and recreational purposes in Lake Tahoe area and for irrigation and power in downstream areas. Lake elevations are referred to Bureau of Reclamation datum because that datum is used as the official reference point by all local, state, and federal agencies. One intermittent transmountain diversion from Echo Lake to South Fork American River for power and irrigation. Records of chemical analyses for the water year 1960 are given in WSP 1744.

Capacity table, water year 1959-60 (elevation,  
in feet, and contents, in acre-feet)

|         |         |
|---------|---------|
| 6,224.7 | 206,500 |
| 6,225   | 243,000 |
| 6,226   | 364,800 |
| 6,227   | 486,800 |

Elevation, in feet, at 12 p.m., water year October 1959 to September 1960

| Day | Oct.    | Nov.    | Dec.    | Jan.    | Feb.    | Mar.    | Apr.    | May     | June    | July    | Aug.    | Sept.   |
|-----|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1   | 6.42    | 5.90    | 5.50    | 5.14    | 5.19    | 5.47    | 5.83    | 6.00    | 6.22    | 6.21    | 5.94    | 5.22    |
| 2   | 6.40    | 5.89    | 5.48    | 5.12    | 5.20    | 5.45    | 5.83    | 6.00    | 6.22    | 6.22    | 5.89    | 5.20    |
| 3   | 6.40    | 5.87    | 5.46    | 5.13    | 5.20    | 5.45    | 5.84    | 6.01    | 6.24    | 6.21    | 5.89    | 5.15    |
| 4   | 6.38    | 5.85    | 5.45    | 5.09    | 5.23    | 5.45    | 5.85    | 6.00    | 6.26    | 6.22    | 5.86    | 5.16    |
| 5   | 6.36    | 5.82    | 5.42    | 5.08    | 5.25    | 5.45    | 5.85    | 6.00    | 6.27    | 6.21    | 5.85    | 5.13    |
| 6   | 6.33    | 5.82    | 5.42    | 5.06    | 5.27    | 5.48    | 5.87    | 6.01    | 6.28    | 6.20    | 5.84    | 5.12    |
| 7   | 6.30    | 5.80    | 5.41    | 5.05    | 5.35    | 5.57    | 5.88    | 6.00    | 6.28    | 6.22    | 5.82    | 5.10    |
| 8   | 6.28    | 5.80    | 5.41    | 5.10    | 5.43    | 5.57    | 5.90    | 6.02    | 6.30    | 6.19    | 5.82    | 5.09    |
| 9   | 6.27    | 5.78    | 5.40    | 5.11    | 5.52    | 5.56    | 5.91    | 6.03    | 6.30    | 6.19    | 5.79    | 5.09    |
| 10  | 6.26    | 5.78    | 5.38    | 5.14    | 5.58    | 5.56    | 5.90    | 6.05    | 6.30    | 6.14    | 5.78    | 5.08    |
| 11  | 6.24    | 5.76    | 5.37    | 5.17    | 5.60    | 5.58    | 5.92    | 6.06    | 6.31    | 6.15    | 5.77    | 5.07    |
| 12  | 6.22    | 5.75    | 5.35    | 5.18    | 5.60    | 5.66    | 5.93    | 6.06    | 6.32    | 6.15    | 5.76    | 5.05    |
| 13  | 6.20    | 5.73    | 5.36    | 5.14    | 5.58    | 5.66    | 5.91    | 6.09    | 6.32    | 6.15    | 5.73    | 5.04    |
| 14  | 6.20    | 5.72    | 5.32    | 5.13    | 5.57    | 5.66    | 5.93    | 6.10    | 6.32    | 6.13    | 5.68    | 5.02    |
| 15  | 6.19    | 5.70    | 5.31    | 5.12    | 5.56    | 5.66    | 5.93    | 6.11    | 6.32    | 6.13    | 5.66    | 5.00    |
| 16  | 6.19    | 5.69    | 5.30    | 5.12    | 5.57    | 5.66    | 5.95    | 6.12    | 6.31    | 6.12    | 5.65    | 4.98    |
| 17  | 6.18    | 5.68    | 5.29    | 5.11    | 5.57    | 5.65    | 5.94    | 6.12    | 6.30    | 6.12    | 5.62    | 4.97    |
| 18  | 6.16    | 5.66    | 5.27    | 5.11    | 5.60    | 5.65    | 5.95    | 6.13    | 6.30    | 6.12    | 5.60    | 4.95    |
| 19  | 6.14    | 5.65    | 5.26    | 5.10    | 5.61    | 5.66    | 5.95    | 6.14    | 6.30    | 6.11    | 5.58    | 4.94    |
| 20  | 6.13    | 5.63    | 5.25    | 5.10    | 5.59    | 5.66    | 5.96    | 6.10    | 6.30    | 6.10    | 5.55    | 4.92    |
| 21  | 6.11    | 5.62    | 5.25    | 5.12    | 5.57    | 5.67    | 5.95    | 6.13    | 6.27    | 6.09    | 5.46    | 4.88    |
| 22  | 6.09    | 5.59    | 5.22    | 5.11    | 5.55    | 5.68    | 5.95    | 6.13    | 6.29    | 6.09    | 5.45    | 4.85    |
| 23  | 6.07    | 5.59    | 5.25    | 5.11    | 5.54    | 5.69    | 5.97    | 6.14    | 6.29    | 6.06    | 5.36    | 4.84    |
| 24  | 6.04    | 5.59    | 5.25    | 5.13    | 5.53    | 5.70    | 5.96    | 6.13    | 6.27    | 6.07    | 5.38    | 4.83    |
| 25  | 6.02    | 5.58    | 5.27    | 5.16    | 5.53    | 5.70    | 5.96    | 6.15    | 6.26    | 6.04    | 5.32    | 4.81    |
| 26  | 5.97    | 5.56    | 5.25    | 5.15    | 5.52    | 5.70    | 5.97    | 6.15    | 6.26    | 6.03    | 5.32    | 4.81    |
| 27  | 5.95    | 5.55    | 5.23    | 5.15    | 5.50    | 5.77    | 5.97    | 6.15    | 6.25    | 6.03    | 5.30    | 4.78    |
| 28  | 5.92    | 5.54    | 5.21    | 5.14    | 5.48    | 5.78    | 5.98    | 6.16    | 6.24    | 6.02    | 5.30    | 4.77    |
| 29  | 5.91    | 5.52    | 5.19    | 5.13    | 5.47    | 5.80    | 5.98    | 6.17    | 6.23    | 6.01    | 5.27    | 4.76    |
| 30  | 5.91    | 5.51    | 5.17    | 5.13    | 5.47    | 5.82    | 5.98    | 6.18    | 6.22    | 5.98    | 5.26    | 4.75    |
| 31  | 5.90    | 5.51    | 5.15    | 5.12    | 5.47    | 5.83    | 5.98    | 6.19    | 6.22    | 5.96    | 5.23    | 4.75    |
| (†) | 352,600 | 305,100 | 261,300 | 257,600 | 300,200 | 344,100 | 362,400 | 388,000 | 391,600 | 359,900 | 271,000 | 212,600 |
| (‡) | -65,900 | -47,500 | -43,800 | -3,700  | +42,600 | +43,900 | +18,300 | +25,600 | +3,600  | -31,700 | -88,900 | -58,400 |

Calendar year 1959.....\$ -254,900

Water year 1959-60.....\$ -205,900

† Contents, in acre-feet, at end of month.

‡ Change in contents, in acre-feet.

Note.--Gage heights interpolated from once-daily staff-gage readings at 8 a.m. Oct. 1 to Nov. 1, Dec. 27-29, Feb. 1-29. Add 6,220 ft to obtain elevation above Bureau of Reclamation datum.

## 3375. Truckee River at Tahoe, Calif.

Location (revised).--Lat 39°10'00", long 120°08'40", in NE¼ sec. 7, T.15 N., R.17 E., at Tahoe, on left bank 510 ft downstream from dam at outlet of Lake Tahoe. Prior to July 11, 1960, at site 270 ft upstream.

Drainage area.--507 sq mi (revised).

Records available.--July 1895 to February 1896, June 1900 to December 1943, August 1957 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder and concrete control. Datum of gage is 6,216.75 ft above mean sea level, datum of 1929. Prior to Nov. 12, staff gage at site 370 ft upstream at different datum. Nov. 12, 1912, to Sept. 30, 1937, staff gage and Oct. 1, 1937, to Dec. 31, 1943, water-stage recorder, at datum 2.26 ft higher and Aug. 22, 1957, to July 10, 1960, at datum 2.42 ft higher; all at site 270 ft upstream.

Average discharge.--46 years (1900-43, 1957-60), 250 cfs (181,000 acre-ft per year).

Extremes.--Maximum discharge during year, 558 cfs July 25 (gage height, 4.92 ft); minimum observed, 1.8 cfs July 1.  
1895-96, 1900-43, 1957-60: Maximum discharge, 1,870 cfs Apr. 5, 6, 1958 (gage height, 7.30 ft, site and datum then in use); maximum gage height, 7.34 ft Apr. 5, 1958, site and datum then in use (backwater from snow in channel); no flow for parts of 1900, 1901, 1914, 1918-43.

Remarks.--Records good. Flow regulated by Lake Tahoe (see preceding page).

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to July 10

July 11 to Sept. 30

|      |     |     |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|-----|-----|
| 1.86 | 2.0 | 2.7 | 74  | 1.5 | 2.0 | 3.0 | 130 |
| 1.9  | 3.0 | 3.0 | 125 | 1.7 | 11  | 4.0 | 304 |
| 2.1  | 15  | 3.5 | 241 | 2.0 | 30  | 5.0 | 585 |
| 2.4  | 40  | 4.0 | 386 | 2.5 | 72  |     |     |

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                       | 513    | 328    | *313   | 254    | *161    | *350    | *4.2  | 2.8   | *a2.1   | (*)     | 490    | *437   |
| 2                       | 519    | *325   | 322    | 252    | 161     | 368     | 4.2   | *2.8  |         |         | 502    | 434    |
| 3                       | 519    | 325    | 331    | 252    | 161     | 313     | 4.2   | 2.8   |         |         | 512    | 431    |
| 4                       | 519    | 325    | 328    | 246    | 161     | 305     | 4.2   | 2.8   |         |         | 512    | 431    |
| 5                       | 519    | 322    | 325    | 246    | 133     | 279     | 4.2   | 2.8   |         |         | 509    | 428    |
| 6                       | 316    | 319    | 325    | 244    | 121     | 240     | 4.2   | 2.8   | a2.1    | a1.8    | 509    | 440    |
| 7                       | 322    | 319    | 322    | 241    | 102     | 149     | 4.2   | 2.8   |         |         | 509    | 476    |
| 8                       | 322    | 316    | 322    | 244    | 63      | 7.2     | 4.2   | 2.8   |         |         | 518    | 493    |
| 9                       | 322    | 316    | 325    | 249    | 43      | 5.4     | 4.2   | 2.8   |         |         | 528    | 490    |
| 10                      | 322    | 316    | 325    | 252    | 42      | 5.4     | 4.2   | 2.8   |         |         | 525    | 499    |
| 11                      | 288    | 316    | 322    | 254    | 42      | 90      | 4.2   | 2.8   |         | a2.0    | 525    | 493    |
| 12                      | 274    | 316    | 322    | 257    | 42      | 125     | 4.2   | 2.8   |         | a2.0    | 521    | 487    |
| 13                      | 305    | 316    | 328    | 257    | 41      | 69      | 4.2   | 2.8   |         | 2.0     | 518    | 481    |
| 14                      | 519    | 313    | 331    | 257    | 41      | 6.0     | 4.2   | 2.8   |         | 2.0     | 515    | 478    |
| 15                      | 519    | 313    | 328    | 257    | 41      | 18      | 4.2   | 2.8   | a2.0    | 2.0     | 499    | 472    |
| 16                      | 519    | 310    | 325    | 257    | 42      | 81      | 4.2   | 2.8   |         | 2.0     | 451    | 487    |
| 17                      | 519    | 310    | 325    | 254    | 42      | 148     | 4.2   | 2.8   |         | 2.0     | 451    | 506    |
| 18                      | 516    | 310    | 325    | 254    | 42      | 88      | 4.2   | 2.5   |         | 2.0     | 451    | 502    |
| 19                      | 516    | 313    | 322    | 254    | 42      | 15      | 4.2   | 2.5   |         | 2.4     | 454    | 493    |
| 20                      | 516    | 319    | 322    | 252    | 21      | 4.2     | 4.8   | 2.5   |         | 2.4     | 466    | 478    |
| 21                      | 516    | 319    | 319    | 244    | 6.0     | 4.2     | 4.8   | 2.3   |         | *34     | 466    | 472    |
| 22                      | 328    | 319    | 316    | 244    | 6.0     | 4.8     | 4.2   | 2.3   |         | *140    | 463    | 448    |
| 23                      | 337    | 322    | 313    | 244    | 5.4     | 4.8     | 3.6   | 2.3   |         | 410     | 460    | 445    |
| 24                      | 340    | 325    | 279    | 244    | 4.8     | 4.8     | 3.6   | 2.3   |         | 509     | 457    | 431    |
| 25                      | 340    | 322    | 263    | 246    | 4.8     | 5.4     | 3.0   | 2.0   | a1.9    | 487     | 454    | 428    |
| 26                      | 340    | 319    | 260    | 189    | 4.8     | 5.4     | 3.0   | 2.0   |         | *472    | 451    | 423    |
| 27                      | 340    | 319    | 257    | 164    | 4.8     | 5.4     | 3.0   | 2.0   |         | 490     | 448    | 414    |
| 28                      | 337    | 316    | 257    | 161    | 78      | 4.8     | 2.8   | 2.1   |         | 502     | 448    | 409    |
| 29                      | 352    | 313    | 257    | 161    | 276     | 4.2     | 2.8   | 2.1   |         | 493     | 445    | 401    |
| 30                      | 358    |        | *254   | 161    | -----   | 3.6     | 2.8   | 2.1   | a1.8    | 493     | 440    | 396    |
| 31                      | 349    | -----  | 254    | 161    | -----   | 3.6     | ----- | 2.1   |         | 493     | 440    | -----  |
| Total                   | 10,021 | 9,534  | 9,517  | 7,252  | 1,934.6 | 2,717.2 | 118.2 | 78.7  | 59.9    | 4,561.8 | 14,937 | 13,705 |
| Mean                    | 323    | 318    | 307    | 234    | 66.7    | 87.7    | 3.94  | 2.54  | 2.00    | 147     | 482    | 457    |
| Ac-ft                   | 19,880 | 18,910 | 18,880 | 14,380 | 3,840   | 5,390   | 234   | 156   | 119     | 9,050   | 29,630 | 27,180 |
| Calendar year 1959: Max |        | 503    |        |        | Min 3.6 | Mean    | 215   | Ac-ft | 155,600 |         |        |        |
| Water year 1959-60: Max |        | 528    |        |        | Min 1.8 | Mean    | 203   | Ac-ft | 147,600 |         |        |        |

\* Discharge measurement made on this day.

a No gage-height record; discharge interpolated.

## 3380. Truckee River near Truckee, Calif.

Location.--Lat 39°17'30", long 120°12'30", in SW 1/4 sec. 28, T.17 N., R.16 E., on left bank 1.4 miles upstream from Donner Creek and 2.5 miles southwest of Truckee.

Drainage area.--552 sq mi (revised).

Records available.--December 1944 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 5,860 ft (from topographic map).

Average discharge.--15 years (1945-60), 357 cfs (258,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,190 cfs Feb. 8 (gage height, 3.38 ft); minimum daily, 12 cfs July 21.

1944-60: Maximum discharge, 7,760 cfs Dec. 23, 1955 (gage height, 7.92 ft), from rating curve extended above 2,400 cfs on basis of slope-area measurements at gage heights 7.62 and 7.92 ft; maximum gage height, 9.69 ft Apr. 3, 1958 (backwater from snow in channel); minimum discharge, 11 cfs Jan. 27, 1948.

Remarks.--Records excellent. Flow regulated by Lake Tahoe (operating capacity, 744,600 acre-ft), see page 219. Records of chemical analyses for the water year 1960 are given in WSP 1744.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |    |     |     |
|-----|----|-----|-----|
| 1.0 | 11 | 1.7 | 153 |
| 1.1 | 21 | 2.0 | 272 |
| 1.2 | 36 | 2.5 | 540 |
| 1.4 | 73 | 2.8 | 740 |

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                   | 315     | 330    | *310     | 246           | *184  | 355    | *141   | 106    | *286  | *36   | *474   | *426   |
| 2                   | 320     | *325   | 320      | 250           | 184   | 420    | 153    | *119   | 325   | 36    | 480    | 426    |
| 3                   | 320     | 320    | 325      | 250           | 181   | 355    | 184    | 122    | 286   | 34    | 486    | 426    |
| 4                   | 315     | 320    | 325      | 250           | 178   | 350    | 232    | 117    | 259   | 32    | 486    | 420    |
| 5                   | 315     | 320    | 325      | *250          | 164   | 345    | 268    | 112    | 237   | 30    | 486    | 420    |
| 6                   | 315     | 315    | 320      | 250           | 144   | 330    | 310    | 131    | 224   | 30    | 486    | 426    |
| 7                   | 320     | 315    | 320      | 250           | 197   | 624    | 360    | 178    | 196   | 28    | 480    | 462    |
| 8                   | 325     | 310    | 320      | 254           | 699   | 284    | 325    | 208    | 170   | 26    | 486    | 474    |
| 9                   | 325     | 310    | 320      | 254           | 246   | 170    | 325    | 237    | 180   | 24    | 498    | 474    |
| 10                  | 320     | 310    | 320      | 259           | 156   | 134    | 320    | 268    | 153   | 21    | 498    | 480    |
| 11                  | 306     | 310    | 320      | 263           | 119   | 168    | 277    | 301    | 153   | 20    | 498    | 474    |
| 12                  | 277     | 310    | 320      | 263           | 101   | 277    | 224    | 286    | 153   | 19    | 492    | 474    |
| 13                  | 306     | 310    | 320      | 259           | 94    | 230    | 212    | 250    | 141   | 18    | 492    | 468    |
| 14                  | 320     | 310    | 330      | 259           | 87    | 109    | 216    | 241    | 128   | 18    | 492    | 462    |
| 15                  | 320     | 310    | 325      | 263           | 82    | 104    | 196    | 241    | 117   | 18    | 480    | 456    |
| 16                  | 320     | 306    | 325      | 259           | 80    | 142    | 184    | 237    | 119   | 15    | 438    | 468    |
| 17                  | 320     | 306    | 325      | 259           | 80    | 241    | 192    | 228    | 122   | 15    | 432    | 486    |
| 18                  | 315     | 301    | 320      | 254           | 82    | 232    | 200    | 212    | 101   | 14    | 432    | 492    |
| 19                  | 315     | 306    | 320      | 254           | 75    | 147    | 208    | 192    | 87    | 13    | 438    | 486    |
| 20                  | 315     | 310    | 320      | 254           | 71    | 150    | 216    | 200    | 75    | 13    | 450    | 468    |
| 21                  | 315     | 310    | 320      | 250           | 39    | 174    | 224    | 200    | 69    | 12    | 450    | 462    |
| 22                  | 325     | 310    | 315      | 250           | 38    | 192    | 200    | 150    | 63    | 101   | 444    | 444    |
| 23                  | 340     | 315    | 315      | 246           | 36    | 208    | 164    | 134    | 61    | 345   | 444    | 438    |
| 24                  | 340     | 315    | 296      | 250           | 36    | 228    | 144    | 128    | 61    | 492   | 444    | 426    |
| 25                  | 340     | 315    | 263      | 263           | *33   | 250    | 128    | 122    | 57    | 480   | 444    | 420    |
| 26                  | 340     | 310    | 254      | 220           | 33    | 259    | 119    | 122    | 50    | 456   | 444    | 415    |
| 27                  | 340     | 310    | 254      | 170           | 33    | 272    | 117    | 134    | 46    | 474   | 444    | 410    |
| 28                  | 340     | 310    | 254      | 170           | 34    | 228    | 106    | 160    | 41    | 486   | 438    | 405    |
| 29                  | 350     | 310    | 254      | 170           | 279   | 181    | 99     | 178    | 39    | 474   | 438    | 395    |
| 30                  | 360     | 310    | 254      | 170           | ----- | 167    | 99     | 204    | 58    | 474   | 432    | 390    |
| 31                  | 350     | -----  | 254      | 167           | ----- | 144    | -----  | 246    | ----- | 474   | 432    | -----  |
| Total               | 10,044  | 9,369  | 9,463    | 7,426         | 3,755 | 7,470  | 6,143  | 5,774  | 4,017 | 4,728 | 14,358 | 13,373 |
| Mean                | 324     | 312    | 305      | 240           | 129   | 241    | 205    | 186    | 134   | 153   | 463    | 446    |
| Ac-ft               | 19,920  | 18,580 | 18,770   | 14,730        | 7,450 | 14,820 | 12,180 | 11,450 | 7,970 | 9,380 | 28,480 | 26,520 |
| Calendar year 1959: | Max 510 | Min 32 | Mean 259 | Ac-ft 187,800 |       |        |        |        |       |       |        |        |
| Water year 1959-60: | Max 689 | Min 12 | Mean 262 | Ac-ft 190,200 |       |        |        |        |       |       |        |        |

\* Discharge measurement made on this day.

## PYRAMID AND WINNEMUCCA LAKES BASIN

3385. Donner Creek at Donner Lake, near Truckee, Calif.

Location.--Lat 39°19'25", long 120°14'00", in SW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> sec.17, T.17 N., R.16 E., on left bank 10 ft downstream from bridge on Donner Memorial State Park road, 0.2 mile downstream from Donner Lake outlet, 0.7 mile upstream from Cold Creek, and 2½ miles west of Truckee.

Drainage area.--14.5 sq mi.

Records available.--November 1909 to August 1910 (monthly discharge only), October 1958 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,930 ft (from topographic map). Nov. 1, 1909, to Aug. 31, 1910, staff gage at different datum.

Extremes.--Maximum discharge during year, 215 cfs Apr. 7 (gage height, 2.95 ft); no flow Sept. 9, parts of Aug. 10, 21, 31, Sept. 8, 10.  
1909-10, 1958-60: Maximum discharge, 408 cfs Apr. 14, 1959 (gage height, 3.76 ft); no flow Sept. 9, parts of Aug. 10, 21, 31, Sept. 8, 10, 1960.

Remarks.--Records good. Flow regulated by dam at outlet of Donner Lake (usable capacity, 9,500 acre-ft).

Revisions.--WSP 1634: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Aug. 24 to Sept. 30)

|      |     |     |     |
|------|-----|-----|-----|
| 0.86 | 0   | 1.3 | 7.8 |
| .9   | .2  | 1.5 | 16  |
| 1.0  | 1.2 | 1.8 | 37  |
| 1.1  | 2.6 | 2.3 | 97  |
| 1.2  | 4.8 | 2.9 | 208 |

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                       | 49      | 8.9   | *0.8 | 0.3  | *b0.6 | *1.5  | *70   | 41    | *60    | *1.0 | *0.3 | *1.5  |
| 2                       | 47      | *8.9  | .7   | .3   | b.7   | 1.5   | 48    | *40   | 60     | .9   | .3   | 1.1   |
| 3                       | 45      | 6.6   | .8   | .3   | .7    | 1.5   | 41    | 51    | 60     | 1.0  | .2   | .9    |
| 4                       | 44      | 4.5   | .8   | .3   | .7    | 1.5   | 41    | 70    | 63     | 1.0  | .2   | .6    |
| 5                       | 54      | 4.2   | .8   | .3   | .8    | 1.5   | 51    | 65    | 65     | .9   | .2   | .5    |
| 6                       | 63      | 4.2   | .8   | .3   | .7    | 1.5   | 115   | 60    | 59     | .9   | .6   | .3    |
| 7                       | 57      | 4.5   | .8   | .3   | b.8   | 1.6   | 198   | 65    | 54     | .9   | .2   | .3    |
| 8                       | 58      | 4.5   | .8   | b.3  | b4.5  | 1.7   | 198   | 91    | 38     | .8   | .3   | .1    |
| 9                       | 89      | 4.8   | .8   | b.3  | b3.4  | 1.7   | 173   | 120   | 18     | .8   | .2   | 0     |
| 10                      | 93      | 5.1   | .8   | b.5  | b3.0  | 1.6   | 150   | 130   | 14     | .7   | .2   | .1    |
| 11                      | 71      | 4.2   | .8   | b.4  | b2.6  | 1.6   | 128   | 126   | 14     | .6   | 1.6  | .2    |
| 12                      | 4.0     | 3.8   | .7   | b.7  | 2.2   | 1.6   | 96    | 148   | 14     | .4   | 1.7  | .1    |
| 13                      | 43      | 3.6   | .7   | .7   | 2.0   | 1.7   | 70    | 134   | 13     | .8   | 1.0  | .1    |
| 14                      | 89      | 3.6   | .7   | .7   | 2.0   | 1.7   | 70    | 97    | 13     | .9   | .5   | 1.2   |
| 15                      | 76      | 3.8   | .7   | .6   | 2.0   | 1.7   | 70    | 78    | 9.3    | .9   | .7   | 1.8   |
| 16                      | 66      | 3.6   | .7   | .6   | 1.8   | 1.8   | 70    | 62    | 7.2    | .8   | .4   | 1.7   |
| 17                      | 58      | 2.6   | .7   | .6   | 1.8   | 1.8   | 70    | 62    | 6.6    | .8   | .2   | 1.6   |
| 18                      | 51      | 2.2   | .7   | .5   | 1.8   | 1.8   | 82    | 62    | 6.0    | .8   | .2   | 1.4   |
| 19                      | 44      | .8    | .7   | .4   | 1.8   | 1.8   | 115   | 62    | 5.4    | .9   | .1   | 1.3   |
| 20                      | 40      | .2    | .6   | .4   | 1.8   | 1.8   | 123   | 60    | 4.5    | .9   | .1   | 1.2   |
| 21                      | 37      | .1    | .5   | .4   | 1.8   | 1.8   | 105   | 59    | 3.6    | .8   | .1   | 1.0   |
| 22                      | 34      | 1.0   | .5   | .5   | 1.8   | 2.0   | 105   | 58    | 2.2    | .9   | .2   | 1.2   |
| 23                      | 31      | 1.5   | .5   | .5   | 1.8   | 2.2   | 94    | 51    | 1.8    | 1.0  | .5   | .9    |
| 24                      | 28      | 1.4   | .5   | .4   | 1.7   | 2.4   | 66    | 36    | 1.6    | .9   | .5   | .8    |
| 25                      | 26      | 1.3   | .6   | .8   | 1.7   | 2.4   | 38    | 27    | 1.7    | .6   | .5   | .9    |
| 26                      | 20      | 1.2   | .5   | 1.1  | 1.6   | 2.6   | 31    | 23    | 1.5    | .3   | .4   | .7    |
| 27                      | 17      | 1.2   | .4   | .9   | 1.6   | 2.8   | 37    | 28    | 1.1    | .9   | .4   | .7    |
| 28                      | 16      | 1.1   | .4   | .6   | 1.5   | 2.4   | 42    | 39    | .9     | .5   | .2   | .8    |
| 29                      | 13      | .9    | .3   | .5   | 1.5   | 46    | 42    | 52    | .9     | .4   | .2   | .9    |
| 30                      | 8.9     | .8    | *.3  | .5   | ----- | 99    | 41    | 63    | .9     | .4   | .1   | .8    |
| 31                      | 9.3     | ----- | .3   | .5   | ----- | 89    | ----- | 60    | -----  | .4   | 1.0  | ----- |
| Total                   | 1,381.2 | 95.1  | 19.7 | 15.5 | 50.7  | 285.5 | 2,580 | 2,122 | 600.2  | 23.8 | 13.3 | 24.7  |
| Mean                    | 44.6    | 3.17  | 0.64 | 0.50 | 1.75  | 9.21  | 86.0  | 86.5  | 20.0   | 0.77 | 0.43 | 0.82  |
| Ac-ft                   | 2,740   | 189   | 39   | 31   | 101   | 566   | 5,120 | 4,210 | 1,190  | 47   | 26   | 49    |
| Calendar year 1959: Max |         | 190   |      | Min  | 0.1   | Mean  | 19.3  | Ac-ft | 13,950 |      |      |       |
| Water year 1959-60: Max |         | 198   |      | Min  | 0     | Mean  | 19.7  | Ac-ft | 14,310 |      |      |       |

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

3394. Martis Creek near Truckee, Calif.

Location.--Lat 39°20'20", long 120°07'00", in SE $\frac{1}{4}$  NW $\frac{1}{4}$  sec. 8, T.17 N., R.17 E., on left bank three-quarters of a mile upstream from mouth and  $\frac{3}{4}$  miles northeast of Truckee.

Drainage area.--40.4 sq mi.

Records available.--October 1958 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,700 ft (from topographic map).

Extremes.--Maximum discharge during year, 436 cfs Feb. 8 (gage height, 3.73 ft); minimum, 1.4 cfs July 10, 11.  
1958-60: Maximum discharge, that of Feb. 8, 1960; minimum, that of July 10, 11, 1960.

Remarks.--Records good except those for periods of ice effect, which are fair.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.8 | 0.7 | 1.6 | 26  |
| .9  | 1.7 | 2.0 | 58  |
| 1.0 | 3.1 | 2.5 | 124 |
| 1.1 | 5.1 | 3.2 | 270 |
| 1.3 | 11  |     |     |

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     | 5.4   | 5.6   | b7.3  | b7.6  | 14    | *b8.2   | 43    | 13    | 5.4  | 1.8   | 2.0  | 2.2   |
| 2     | 5.4   | 5.9   | b7.6  | b7.6  | b15   | b7.9    | 43    | 13    | 5.1  | 2.1   | 1.8  | 2.2   |
| 3     | 5.4   | 5.9   | b7.3  | b7.8  | *b14  | 8.6     | 46    | 12    | *5.1 | 2.2   | 1.8  | 2.2   |
| 4     | 5.4   | *5.6  | b6.1  | *b9.9 | b12   | 8.9     | 52    | *14   | 4.7  | 2.1   | 1.8  | 2.2   |
| 5     | 5.4   | b5.9  | b6.4  | b8.2  | 11    | 15      | 52    | 16    | 4.4  | 2.1   | 1.8  | 2.2   |
| 6     |       | *5.6  | b6.1  | b6.4  | b8.2  | 11      | 28    | 54    | 15   | 3.6   | *2.6 | 1.8   |
| 7     |       | 5.6   | b6.1  | b5.9  | 7.3   | 29      | *148  | *68   | 16   | 3.6   | 2.2  | 1.8   |
| 8     |       | 5.9   | b6.1  | b6.1  | 9.8   | 246     | 111   | 21    | 15   | 3.6   | 2.1  | 1.8   |
| 9     |       | 5.6   | b6.4  | *b5.9 | 8.6   | 60      | 67    | 54    | 14   | 3.8   | 1.8  | 2.4   |
| 10    |       | 5.4   | b6.1  | b6.7  | b9.9  | 43      | b48   | 49    | 12   | 3.6   | 1.6  | 1.7   |
| 11    |       | 5.4   | b6.1  | b7.0  | b7.9  | 34      | b49   | 44    | 12   | 3.6   | 1.6  | 1.7   |
| 12    |       | 5.1   | b6.1  | b7.3  | b9.9  | b25     | 58    | 38    | 12   | 3.6   | 1.7  | *1.7  |
| 13    |       | 5.4   | b6.1  | b6.4  | b9.6  | b19     | 67    | 36    | 11   | 3.1   | 1.8  | 1.7   |
| 14    |       | 5.6   | b6.1  | b7.3  | b10   | b15     | b49   | 33    | 11   | 3.0   | 1.8  | 1.6   |
| 15    |       | 5.6   | b7.3  | b6.4  | 10    | b16     | *b43  | 31    | 10   | 2.8   | 1.8  | 1.6   |
| 16    |       | 5.6   | b6.4  | b6.4  | b10   | b13     | 39    | 29    | 8.6  | 2.8   | 1.8  | 1.7   |
| 17    |       | 5.6   | b6.1  | 7.0   | b10   | b12     | 48    | 26    | 7.3  | 3.0   | 1.8  | 1.7   |
| 18    |       | 5.6   | b6.1  | 7.6   | 10    | b15     | 53    | 22    | 7.3  | 3.0   | 1.8  | 1.7   |
| 19    |       | 5.9   | 6.1   | b7.3  | 9.9   | b13     | 54    | 21    | 7.0  | 3.0   | 1.7  | 1.7   |
| 20    |       | 5.9   | b6.1  | b7.3  | b9.3  | b12     | 56    | 20    | 6.7  | 3.0   | 1.7  | 1.7   |
| 21    |       | 5.9   | b6.1  | b7.0  | b9.3  | b9.6    | 58    | 19    | 7.3  | 3.0   | 1.7  | 1.6   |
| 22    |       | 5.9   | b6.1  | b7.0  | 9.6   | b10     | 57    | 17    | 6.7  | 3.0   | 1.7  | 1.6   |
| 23    |       | 5.9   | 6.7   | b7.0  | 9.3   | b11     | 58    | 16    | 7.0  | 2.8   | 1.7  | 1.8   |
| 24    |       | 5.9   | b6.4  | 10    | 9.3   | b11     | 60    | 15    | 8.9  | 1.8   | 1.7  | 2.0   |
| 25    |       | 5.9   | b6.1  | 10    | b11   | 9.6     | 62    | 14    | 8.2  | 2.0   | 1.8  | 2.0   |
| 26    |       | 5.9   | b6.1  | b9.6  | b9.9  | b9.6    | 61    | 14    | 7.6  | 2.0   | 1.8  | 2.0   |
| 27    |       | 5.6   | b6.7  | b9.6  | 8.9   | b9.3    | 84    | 16    | 6.7  | 2.0   | 2.0  | 2.0   |
| 28    |       | 5.6   | b7.3  | b7.6  | 8.6   | b7.9    | 81    | 14    | 6.7  | 2.0   | 2.1  | 2.1   |
| 29    |       | 5.6   | b6.4  | b7.6  | 8.6   | b8.9    | 55    | 13    | 6.4  | 2.0   | 2.1  | 2.8   |
| 30    |       | 5.4   | b7.9  | b8.6  | 8.6   | -----   | 60    | 12    | 6.1  | 2.0   | 2.1  | 2.1   |
| 31    |       | 5.6   | ----- | b7.9  | b8.6  | -----   | 52    | ----- | 5.6  | ----- | 2.1  | 2.1   |
| Total | 174.0 | 188.0 | 227.6 | 283.0 | 715.9 | 1,654.6 | 972   | 310.1 | 96.4 | 58.9  | 56.3 | 71.1  |
| Mean  | 5.61  | 6.27  | 7.34  | 9.13  | 24.7  | 53.4    | 32.4  | 10.0  | 3.21 | 1.90  | 1.82 | 2.37  |
| Ac-ft | 345   | 373   | 451   | 561   | 1,420 | 3,280   | 1,930 | 615   | 191  | 117   | 112  | 141   |

Calendar year 1959: Max 100 Min 1.8 Mean 11.9 Ac-ft 8,620

Water year 1959-60: Max 246 Min 1.6 Mean 13.1 Ac-ft 9,540

Peak discharge (base, 170 cfs).--Feb. 8 (10 a.m.) 436 cfs (3.73 ft); Mar. 7 (5:30 p.m.) 239 cfs (3.08 ft); Mar. 27 (7:30 p.m.) 170 cfs (2.81 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

## PYRAMID AND WINNEMUCCA LAKES BASIN

3397. Prosser Creek at Hobart Mills, Calif.

Location--Lat 39°24'00", long 120°12'00", in NE<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec.21, T.18 N., R.16 E., on left bank 0.8 mile west of Hobart Mills, 3 miles upstream from Alder Creek, and 5 miles north of Truckee.

Drainage area--27.4 sq mi (revised).

Records available--October 1958 to September 1960.

Gage--Water-stage recorder. Altitude of gage is 5,840 ft (from topographic map).

Extremes--Maximum discharge during year, 521 cfs Feb. 8 (gage height, 3.77 ft); minimum, 2.7 cfs Dec. 11.  
1958-60: Maximum discharge, that of Feb. 8, 1960; minimum, that of Dec. 11, 1959.

Remarks--Records good except those for periods of ice effect, which are poor.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.8 | 2.8 | 1.5 | 35  |
| .9  | 4.0 | 1.9 | 86  |
| 1.0 | 7.0 | 2.5 | 203 |
| 1.1 | 11  | 3.0 | 322 |
| 1.3 | 21  |     |     |

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     | 4.5   | 4.7   | b4.7  | b5.2  | 11    | b17   | 88    | 85    | 194   | 34    | 6.3   | 3.4   |
| 2     | 4.5   | 4.7   | b4.5  | b4.7  | 12    | b18   | 106   | 106   | 212   | 33    | 5.6   | 3.4   |
| 3     | 4.5   | 4.7   | b4.7  | b4.7  | 13    | 19    | 135   | 104   | 201   | 31    | 5.2   | 3.4   |
| 4     | 4.5   | 4.7   | b4.5  | *b4.7 | *14   | 19    | 166   | 94    | 179   | 29    | 5.0   | 3.5   |
| 5     | 4.2   | b4.5  | b5.5  | b4.7  | 12    | 23    | 183   | 89    | 168   | 27    | 4.5   | 3.4   |
| 6     | *4.2  | b4.5  | b5    | b5.2  | 14    | 30    | 214   | 113   | *168  | *26   | 4.5   | 3.4   |
| 7     | 4.2   | b4.2  | b5    | 5.2   | 20    | 154   | *254  | 158   | 162   | 26    | 4.2   | 3.4   |
| 8     | 4.2   | b4.2  | b5    | 6.6   | *31.8 | 180   | 232   | 168   | 147   | 24    | 4.0   | 3.4   |
| 9     | 4.5   | *b4.2 | *b4   | 6.6   | 166   | 106   | 237   | 177   | 135   | 22    | 3.8   | 3.4   |
| 10    | 4.5   | b4.5  | b4    | 6.6   | 102   | b79   | 230   | *192  | 128   | 20    | 3.7   | 3.5   |
| 11    | 4.5   | b4.5  | b4    | 7.0   | b74   | b61   | *199  | 203   | 131   | 18    | 3.7   | 3.5   |
| 12    | 4.2   | b4.5  | b4    | 7.0   | b61   | b54   | 160   | 199   | 137   | 17    | *3.5  | 3.5   |
| 13    | 4.2   | b4.5  | b4    | b6.6  | b53   | b52   | 162   | 160   | 130   | 16    | 3.5   | 3.2   |
| 14    | 4.2   | b4.5  | b4    | b6.3  | b40   | b49   | 168   | 156   | 120   | 15    | 3.4   | 3.2   |
| 15    | 4.2   | b4.5  | b4    | b6.6  | b35   | b46   | 145   | 160   | 115   | 13    | 3.2   | 3.1   |
| 16    | 4.2   | b4.5  | b4    | b6.3  | b33   | 43    | 139   | 158   | 118   | 12    | 3.2   | 3.2   |
| 17    | 4.2   | b4.7  | b4    | b6.6  | b31   | *43   | 145   | 150   | 126   | 12    | 3.2   | 3.2   |
| 18    | 4.2   | b4.7  | b4    | b7.0  | b30   | 56    | 158   | 137   | 106   | 11    | 3.2   | 3.4   |
| 19    | 4.2   | b4.7  | b4    | 7.8   | b29   | 69    | 162   | 122   | 88    | 10    | 3.1   | *3.2  |
| 20    | 4.5   | b4.7  | b4    | 7.4   | b28   | 88    | 166   | 131   | 74    | 9.3   | 3.0   | 3.1   |
| 21    | 4.5   | b4.7  | b4    | 7.0   | b27   | 104   | 170   | 141   | 65    | 8.5   | 3.0   | 3.1   |
| 22    | 4.7   | b4.7  | b4    | 7.0   | b25   | 118   | 154   | 99    | 62    | 8.1   | 3.0   | 3.2   |
| 23    | 4.7   | b4.7  | b6    | 7.4   | b22   | 135   | 118   | 86    | 61    | 7.8   | 3.4   | 3.4   |
| 24    | 4.7   | b4.7  | b8    | 7.8   | b22   | 156   | 102   | 86    | 62    | 7.4   | 3.5   | 3.4   |
| 25    | 4.7   | b4.5  | b8    | 8.5   | b22   | 177   | 88    | 86    | 58    | 7.0   | 3.5   | 3.4   |
| 26    | 4.7   | b4.5  | b7    | 8.9   | b22   | 188   | 82    | 89    | 52    | 6.6   | 3.5   | 3.4   |
| 27    | 4.5   | b4.5  | b7    | 9.3   | b21   | 201   | 85    | 96    | 46    | 7.7   | 3.5   | 3.4   |
| 28    | 4.7   | b4.5  | b6    | 9.7   | b20   | 147   | 76    | 106   | 41    | 7.4   | 3.5   | 3.4   |
| 29    | 4.2   | b4.5  | b6    | 9.7   | b19   | 118   | 70    | 122   | 37    | 7.4   | 3.5   | 3.4   |
| 30    | 4.2   | b4.5  | b6    | 9.3   | ----- | 99    | 70    | 135   | 35    | 7.0   | 3.5   | 3.4   |
| 31    | 4.7   | ----- | b6    | 8.9   | ----- | 91    | ----- | 160   | ----- | 6.6   | 3.5   | ----- |
| Total | 136.7 | 136.5 | 146.9 | 216.3 | 1,316 | 2,718 | 4,464 | 4,066 | 3,358 | 486.1 | 117.2 | 100.3 |
| Mean  | 4.40  | 4.55  | 4.74  | 6.98  | 45.4  | 87.7  | 149   | 131   | 112   | 15.7  | 3.78  | 3.34  |
| Ac-ft | 271   | 271   | 291   | 429   | 2,610 | 5,390 | 8,850 | 8,060 | 6,660 | 964   | 232   | 199   |

Calendar year 1959: Max 189 Min 3 Mean 36.0 Ac-ft 26,080  
Water year 1959-60: Max 318 Min 3.0 Mean 47.2 Ac-ft 34,230

Peak discharge (base, 200 cfs)--Feb. 8 (1 p.m.) 521 cfs (3.77 ft); Mar. 7 (6 p.m.) 251 cfs (2.71 ft); Mar. 27 (1 p.m.) 230 cfs (2.62 ft); Apr. 9 (9:15 p.m.) 285 cfs (2.85 ft); May 11 (10 p.m.) 266 cfs (2.77 ft); June 2 (10:30 p.m.) 259 cfs (2.74 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

3399. Alder Creek near Truckee, Calif.

Location.--Lat 39°22'10", long 120°10'50", in SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.34, T.18 N., R.16 E., on right bank 2 miles upstream from mouth and 2 $\frac{1}{2}$  miles north of Truckee.

Drainage area.--7.36 sq mi (revised).

Records available.--October 1958 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,800 ft (from topographic map).

Extremes.--Maximum discharge during year, about 59 cfs Feb. 8 (gage height, 2.74 ft), backwater from ice; no flow July 2, 16-25, Aug. 21 to Sept. 30.  
1958-60: Maximum discharge, that of Feb. 8, 1960; no flow for some periods in each year.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used June 20 to Sept. 30)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.9 | 0.0 | 1.4 | 2.4 |
| 1.0 | .2  | 1.6 | 5.2 |
| 1.1 | .5  | 1.8 | 10  |
| 1.2 | .9  | 2.0 | 18  |
| 1.3 | 1.5 | 2.3 | 38  |

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     | 0.2  | 0.4  | 0.4  |      | 0.5   | 1.1   | 12    | 8.9   | 3.8  | 0.1  | (*)  |       |
| 2     | .2   | .4   | .4   |      | .6    | 1.0   | 14    | 9.7   | 3.8  | 0    |      |       |
| 3     | .2   | .3   | .4   |      | *.7   | *1.0  | 16    | 9.5   | *3.8 | .1   |      |       |
| 4     | .2   | *.3  | .4   | *0.3 | .8    | 1.0   | 20    | *8.9  |      | .1   |      |       |
| 5     | .2   | .3   |      |      | .9    | 1.3   | 22    | 8.4   |      | .1   |      |       |
| 6     | *.2  | .3   | .3   |      | 1.0   | 2.2   | 25    | 8.7   | 3    |      |      |       |
| 7     | .2   | .3   |      | .4   | 1.4   | 5.8   | *3.1  | 9.2   |      |      |      |       |
| 8     | .3   | .3   |      | .5   | 22    | 11    | 29    | 9.2   |      |      |      |       |
| 9     | .3   | .3   | *.2  | .5   | 38    | 12    | 30    | 8.7   |      |      |      |       |
| 10    | .3   | .3   |      | .8   | 35    | 9.2   | 29    | 8.7   |      | .1   |      |       |
| 11    | .3   | .2   |      | .5   | 25    | 5.8   | 24    | 8.7   | 2    |      | 0.1  |       |
| 12    | .2   | .2   | .2   |      | 13    | 5.4   | 21    | 8.7   |      |      |      |       |
| 13    | .2   | .2   |      |      | 6     | 5.8   | 20    | 8.4   |      |      |      |       |
| 14    | .2   | .2   |      |      | 3.8   | 5.2   | 19    | 7.8   |      |      |      |       |
| 15    | .2   | .2   |      |      | 2.2   | 4.9   | 17    | 7.6   |      |      |      |       |
| 16    | .2   | .2   |      |      | 1.7   | 4.4   | 16    | 7.3   | 1    |      |      |       |
| 17    | .2   | .3   |      |      | 1.7   | 4.8   | 17    | 7.1   |      |      |      |       |
| 18    | .2   | .3   |      |      | 1.6   | 5.6   | 17    | 6.7   |      | (*)  |      |       |
| 19    | .2   | .3   |      |      | 1.4   | 6.7   | 17    | 6.2   |      |      |      |       |
| 20    | .2   | .3   |      |      | 1.4   | 8.7   | 17    | 6.2   | *.9  | 0    |      |       |
| 21    | .2   | .3   |      | .4   | 1.3   | 10    | 17    | 6.9   | .8   |      |      |       |
| 22    | .2   | .3   |      |      | 1.3   | 12    | 16    | 6.2   | .8   |      |      |       |
| 23    | .2   | .4   |      |      | 1.4   | 14    | 14    | 6.0   | .7   |      |      |       |
| 24    | .2   | .4   | .3   |      | 1.4   | 15    | 12    | 7.1   | .7   |      |      |       |
| 25    | .2   | .4   |      |      | 1.3   | 17    | 11    | 7.3   | .6   |      |      |       |
| 26    | .2   | .3   |      |      | 1.2   | 18    | 9.7   | 6.7   | .6   |      | 0    |       |
| 27    | .2   | .3   |      |      | 1.2   | 23    | 10    | 5.8   | .5   |      |      |       |
| 28    | .2   | .4   |      |      | 1.2   | 19    | 8.9   | 5.0   | .4   | .1   |      | (*)   |
| 29    | .3   | .3   |      |      | 1.1   | *15   | 8.1   | 4.7   | .2   |      |      |       |
| 30    | .3   | .3   |      |      |       | 14    | 8.1   | 4.4   | .2   |      |      |       |
| 31    | .3   |      |      |      |       | 12    |       | 4.1   |      |      | (*)  |       |
| Total | 6.9  | 9.0  | 8.9  | 12.5 | 170.1 | 271.7 | 527.8 | 228.8 | 48.8 | 2.0  | 2.0  | 0     |
| Mean  | 0.22 | 0.30 | 0.29 | 0.40 | 5.87  | 8.76  | 17.6  | 7.38  | 1.63 | 0.06 | 0.06 | 0     |
| Ac-ft | 14   | 18   | 18   | 25   | 337   | 539   | 1,050 | 454   | 97   | 4.0  | 4.0  | 0     |

Calendar year 1959: Max 27 Min 0 Mean 2.51 Ac-ft 1,670

Water year 1959-60: Max 38 Min 0 Mean 3.52 Ac-ft 2,560

Peak discharge (base, 25 cfs).--Feb. 8, about 59 cfs; Mar. 27 (5 p.m.) 29 cfs (2.19 ft); Apr. 9 (7 p.m.) 38 cfs (2.28 ft).

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

Note.--Stage-discharge relation affected by ice Nov. 7 to Dec. 3, Dec. 9, Feb. 3, 7-14, 21-24. No gage-height record Dec. 4-8, Dec. 10 to Feb. 2, Feb. 4-6, June 4-19, July 5 to Aug. 31; discharge estimated on basis of adjacent flow, 6 discharge measurements, weather records, and records for nearby stations.

3405. Prosser Creek near Boca, Calif.

Location.--Lat 39°22'10", long 120°07'10", in SW<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> sec.32, T.18 N., R.17 E., on left bank a quarter of a mile upstream from mouth and 2 miles southwest of Boca.

Drainage area.--53.5 sq mi.

Records available.--October 1902 to June 1903 (gage heights only), June 1951 to September 1960. Records for April 1889 to November 1890, published in the 11th and 12th Annual Reports, Pt. 2, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 5,572.66 ft above mean sea level (levels by Bureau of Reclamation). June 1951 to September 1956 at datum 2.00 ft higher. April 1889 to November 1890 and October 1902 to June 1903, staff gages at same site at different datums.

Average discharge.--9 years, 91.0 cfs (65,880 acre-ft per year).

Extremes.--Maximum discharge during year, about 860 cfs Feb. 8 (gage height, 5.66 ft, backwater from ice); minimum, 2.5 cfs Dec. 3, result of freezeup.  
1951-60: Maximum discharge, 4,560 cfs Dec. 23, 1955 (gage height, 10.13 ft, present datum), from rating curve extended above 910 cfs on basis of slope-area measurement of peak flow; minimum, that of Dec. 3, 1959.  
Flood of Nov. 20, 1950, reached a stage of 11.0 ft, present datum, from floodmarks (discharge, 4,320 cfs by slope-area measurement).

Remarks.--Records good except those for periods of ice effect, which are poor.

Revisions (water years).--WSP 1564: Drainage area. See also Records available.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.1 | 2.0 | 2.0 | 64  |
| 1.2 | 3.8 | 2.5 | 137 |
| 1.3 | 7.0 | 3.0 | 235 |
| 1.5 | 18  | 3.5 | 385 |
| 1.7 | 33  | 4.0 | 610 |

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     | 7.5   | 8.5   | b9   | b10  | b17   | b23   | 132    | 91    | 187   | 38    | 7.0   | 4.1   |
| 2     | 7.5   | 8.5   |      | b10  | b17   | b24   | 146    | 114   | 226   | 38    | 8.4   | 4.1   |
| 3     | 7.5   | 8.5   |      | b9   | b19   | b25   | 172    | 114   | 212   | 36    | 6.0   | 4.4   |
| 4     | 7.5   | 8.0   |      | b10  | b16   | 26    | 206    | 104   | 193   | 34    | 5.7   | 4.8   |
| 5     | 7.0   | b8.0  |      | b10  | b16   | 33    | 221    | 94    | 176   | 31    | 5.4   | 4.8   |
| 6     | 7.0   | b8.5  | b8   | b11  | b20   | 48    | 263    | 114   | 172   | 30    | 5.4   | 4.8   |
| 7     | 7.0   | b8.0  |      | b12  | b40   | 214   | 321    | 154   | *161  | 28    | 5.1   | 4.4   |
| 8     | 7.0   | b8.5  |      | b16  | b600  | b212  | 232    | 170   | 144   | 27    | 4.4   | 4.4   |
| 9     | 7.5   | b9.0  |      | b11  | b320  | b142  | 288    | 176   | 134   | 24    | 4.4   | 4.8   |
| 10    | 8.0   | b8.0  |      | b13  | b160  | b108  | 280    | *191  | 127   | 22    | 4.1   | 5.7   |
| 11    | 8.0   | b8.5  | b10  | b14  | b130  | b96   | *240   | 212   | 129   | 20    | 4.1   | 5.7   |
| 12    | 7.5   | b8.5  |      | b13  | b110  | 103   | 187    | 212   | 134   | 19    | 3.8   | *5.4  |
| 13    | 8.0   | b8.0  |      | *b12 | b90   | 96    | 185    | 170   | 129   | 17    | 3.8   | 4.8   |
| 14    | 8.0   | b9.0  |      | b11  | b60   | 85    | 191    | 161   | 120   | 16    | 3.8   | 4.8   |
| 15    | 8.0   | b9.5  |      | b12  | *b50  | *77   | 168    | 165   | 118   | 14    | 3.6   | 4.8   |
| 16    | 8.0   | b9.5  | b10  | b11  | b42   | 73    | 159    | 167   | 120   | 13    | 3.6   | 4.8   |
| 17    | 8.0   | b9.5  |      | b11  | b37   | 77    | 163    | 158   | 129   | 13    | 3.6   | 4.8   |
| 18    | 7.5   | b8.5  |      | b11  | b35   | 94    | 174    | 149   | 109   | 12    | 3.6   | 5.1   |
| 19    | 8.0   | *b8.0 |      | b12  | b33   | 112   | 182    | 131   | 91    | 11    | 3.6   | 4.8   |
| 20    | *7.5  | b8.5  |      | b12  | b33   | 135   | 178    | 154   | 80    | *10   | 3.6   | 4.8   |
| 21    | 8.0   | b8.0  | b12  | b12  | b32   | 159   | 189    | 154   | 69    | 9.5   | 3.6   | 4.8   |
| 22    | 8.0   | b9.0  |      | b12  | b31   | 178   | 172    | 110   | 67    | 9.0   | *3.6  | 5.1   |
| 23    | 8.0   | b9.0  |      | b12  | b29   | 191   | 134    | 97    | 65    | 8.5   | 4.4   | 5.4   |
| 24    | 8.0   | b9.0  |      | b13  | b25   | 210   | 116    | 102   | 65    | 8.0   | 4.8   | 5.4   |
| 25    | 8.0   | b10   |      | b13  | b25   | 228   | 104    | 97    | 63    | 7.5   | 4.8   | 5.4   |
| 26    | 8.0   | b8.5  | b10  | b14  | b25   | 240   | *94    | 102   | 56    | 7.0   | 4.8   | 5.1   |
| 27    | 8.0   | b9.5  |      | b14  | b24   | 294   | 100    | 106   | 51    | 8.0   | 5.1   | 5.1   |
| 28    | 8.0   | b7.5  |      | b15  | b23   | 240   | 88     | 110   | 46    | 9.5   | 4.8   | 5.1   |
| 29    | 8.0   | b8.0  |      | b15  | b23   | 176   | 80     | 127   | 43    | 8.5   | 4.4   | 5.4   |
| 30    | 7.5   | b9.0  |      | b16  | ----- | 176   | 78     | 135   | 39    | 8.0   | 4.4   | 5.4   |
| 31    | 8.0   | ----- | b12  | b16  | ----- | 142   | -----  | 163   | ----- | 7.5   | 4.1   | ----- |
| Total | 239.5 | 258.5 | 304  | 386  | 2,087 | 4,037 | 5,293  | 4,304 | 3,455 | 544.0 | 139.8 | 148.3 |
| Mean  | 7.73  | 8.62  | 9.8  | 12.5 | 72.0  | 130   | 176    | 139   | 115   | 17.5  | 4.51  | 4.94  |
| Ac-ft | 475   | 513   | 603  | 766  | 4,140 | 8,010 | 10,500 | 8,540 | 6,850 | 1,087 | 277   | 294   |

Calendar year 1959: Max 208 Min 3.8 Mean 445 Ac-ft 32,190  
Water year 1959-60: Max 600 Min 3.6 Mean 57.9 Ac-ft 42,050

Peak discharge (base, 300 cfs).--Feb. 8, about 860 cfs; Mar. 7 (2 p.m.) 360 cfs (3.43 ft); Mar. 27 (8 p.m.) 396 cfs (3.53 ft); Apr. 9 (11 p.m.) 360 cfs (3.43 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

3420. Little Truckee River near Hobart Mills, Calif.

Location.--Lat 39°30'05", long 120°16'35", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.14, T.19 N., R.15 E., on right bank half a mile upstream from Independence Creek and  $7\frac{1}{2}$  miles northwest of Hobart Mills.

Drainage area.--36.6 sq mi (revised).

Records available.--December 1946 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 6,290 ft (from topographic map).

Average discharge.--13 years (1947-60), 89.1 cfs (64,510 acre-ft per year).

Extremes.--Maximum discharge during year, 390 cfs Apr. 9 (gage height, 3.24 ft); minimum, 1.7 cfs Nov. 26.

1946-60: Maximum discharge, 7,010 cfs Nov. 20, 1950 (gage height, 7.53 ft), from rating curve extended above 1,100 cfs on basis of slope-area measurement of peak flow; minimum, 1.1 cfs Aug. 19, 20, 23, 24, 1949.

Remarks.--Records good except those for periods of ice effect, which are poor. One trans-mountain diversion to Sierra Valley above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.7 | 1.3 | 1.5 | 46  |
| .8  | 2.8 | 2.0 | 107 |
| .9  | 5.0 | 2.5 | 197 |
| 1.0 | 8.2 | 3.0 | 320 |
| 1.2 | 19  | 3.5 | 480 |

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                                                          | 4.7   | 4.7   | b4.0  | b3.8  | b5.9  | b13   | 106    | 122    | 238     | 7.4   | 4.7  | a2.0  |
| 2                                                          | 4.7   | 4.7   | b3.8  | b3.8  | b5.6  | b15   | 116    | 139    | 289     | 7.4   | 4.4  | a2.0  |
| 3                                                          | 4.7   | 4.7   | b4.0  | b4.0  | b5.9  | *b16  | 141    | 136    | 284     | 6.8   | 4.4  | a2.0  |
| 4                                                          | 4.7   | *4.7  | b3.8  | *b4.4 | *b6.5 | b24   | 170    | *129   | 248     | 6.5   | 4.2  | a2.0  |
| 5                                                          | 4.7   | 4.4   | b3.6  | b5.0  | b6.5  | b40   | 204    | 118    | 219     | 6.5   | 4.2  | a2.0  |
| 6                                                          | 4.7   | 4.4   | b3.6  | b5.2  | 7.8   | b50   | 271    | 136    | *208    | 6.2   | 4.0  | a2.0  |
| 7                                                          | *4.7  | 4.7   | *b4.0 | 5.6   | 20    | 88    | 344    | 197    | 186     | 6.2   | 3.8  | a2.2  |
| 8                                                          | 4.7   | 4.7   | b4.4  | 5.9   | 106   | b120  | 331    | 243    | 159     | 5.6   | 3.6  | a2.2  |
| 9                                                          | 5.0   | 4.7   | b4.4  | 5.9   | 62    | b87   | 344    | 258    | 137     | 5.0   | 3.4  | a2.2  |
| 10                                                         | 5.0   | 4.7   | b4.4  | 13    | 55    | b75   | 344    | 273    | 125     | 5.0   | 3.2  | a2.2  |
| 11                                                         | 4.7   | 4.7   | b4.7  | b6.5  | b54   | b78   | 304    | 299    | 124     | 4.7   | 3.2  | a2.2  |
| 12                                                         | 4.7   | 4.7   | b4.4  | b5.6  | b52   | 78    | 236    | 307    | 122     | 4.7   | 3.0  | *2.2  |
| 13                                                         | 4.7   | 4.7   | b4.2  | b4.0  | b43   | 76    | 233    | 278    | 110     | *4.2  | 2.8  | 2.2   |
| 14                                                         | 4.7   | 4.4   | b4.2  | b4.0  | b38   | b64   | 246    | 236    | 97      | 3.8   | 2.8  | 2.4   |
| 15                                                         | 4.7   | 4.4   | b4.0  | b5.0  | b33   | b60   | 224    | 236    | 89      | 3.6   | 2.4  | 2.2   |
| 16                                                         | 4.7   | 4.4   | b4.2  | b4.0  | b28   | b57   | 215    | 231    | 89      | 3.8   | 2.4  | 2.4   |
| 17                                                         | 4.7   | 4.4   | b4.7  | b4.0  | b26   | b57   | 219    | 212    | 88      | 4.0   | 2.2  | 2.6   |
| 18                                                         | 4.7   | 4.4   | 5.0   | b4.7  | b26   | b62   | 238    | 182    | 72      | 4.4   | *2.2 | 2.6   |
| 19                                                         | 4.7   | 4.7   | b4.4  | 5.3   | 25    | b68   | 250    | 161    | 54      | 4.4   | 2.2  | 2.6   |
| 20                                                         | 4.7   | 4.4   | b4.4  | 5.3   | b23   | b75   | 256    | 168    | 38      | 4.4   | 2.0  | 2.8   |
| 21                                                         | 4.7   | 4.7   | b4.4  | b5.0  | b20   | b84   | 276    | 182    | 27      | 4.4   | 2.0  | 3.0   |
| 22                                                         | 4.7   | 4.4   | b4.4  | 5.3   | b18   | 97    | 258    | 137    | 21      | 4.4   | 2.0  | 3.0   |
| 23                                                         | 4.7   | 5.0   | 4.4   | 5.3   | b18   | 112   | 197    | 114    | 18      | 4.4   | 2.2  | 3.0   |
| 24                                                         | 4.7   | 4.4   | 5.6   | 5.9   | b18   | 129   | 161    | 113    | 15      | 4.4   | 2.2  | 3.2   |
| 25                                                         | 4.7   | 4.7   | b5.6  | 6.2   | b17   | 150   | 139    | 108    | 13      | 4.4   | 2.2  | 3.2   |
| 26                                                         | 4.7   | 4.4   | b5.0  | 5.3   | b17   | 174   | 127    | 112    | 12      | 4.4   | 2.2  | 3.2   |
| 27                                                         | 4.7   | b4.2  | b4.7  | 5.3   | b15   | 219   | 129    | 112    | 11      | 4.4   | 2.2  | 3.2   |
| 28                                                         | 4.7   | b4.2  | b4.7  | 5.3   | b14   | 186   | 113    | 117    | 9.8     | 5.0   | a2.2 | 3.4   |
| 29                                                         | 4.7   | b3.8  | b4.4  | 5.3   | b14   | *148  | 104    | 139    | 9.0     | 5.0   | a2.2 | 3.4   |
| 30                                                         | 4.7   | b4.0  | b4.4  | 5.6   | ----- | 134   | 108    | 163    | 8.6     | 5.0   | a2.0 | 3.4   |
| 31                                                         | 4.7   | ----- | b4.0  | b5.3  | ----- | 113   | -----  | 199    | -----   | 5.0   | a2.0 | ----- |
| Total                                                      | 146.3 | 135.4 | 135.8 | 164.8 | 780.2 | 2,749 | 6,402  | 5,529  | 3,120.4 | 155.4 | 88.5 | 77.0  |
| Mean                                                       | 4.72  | 4.51  | 4.38  | 5.32  | 26.9  | 88.7  | 213    | 178    | 104     | 5.01  | 2.85 | 2.57  |
| Ac-ft                                                      | 290   | 269   | 269   | 327   | 1,550 | 5,450 | 12,700 | 10,970 | 6,190   | 308   | 176  | 153   |
| Calendar year 1959: Max 558 Min 2.2 Mean 42.1 Ac-ft 30,460 |       |       |       |       |       |       |        |        |         |       |      |       |
| Water year 1959-60: Max 344 Min 2.0 Mean 53.2 Ac-ft 38,650 |       |       |       |       |       |       |        |        |         |       |      |       |

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

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage.

b Stage-discharge relation affected by ice.

## 3435. Sagehen Creek near Truckee, Calif.

Location.--Lat 39°25'50", long 120°14'10", in NE $\frac{1}{4}$ NE $\frac{1}{4}$  sec.7, T.18 N., R.16 E., on left bank 2.2 miles (revised) upstream from bridge on State Highway 89 and 7.5 miles north of Truckee.

Drainage area.--10.8 sq mi (revised).

Records available.--October 1953 to September 1960.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 6,320 ft, revised (from topographic map). Prior to Dec. 2, 1953, staff gage at site 100 ft upstream at different datum.

Average discharge.--7 years, 10.8 cfs (7,820 acre-ft per year).

Extremes.--Maximum discharge during year, 66 cfs Feb. 8 (gage height, 2.80 ft); minimum, 0.6 cfs Aug. 8, result of temporary regulation.  
1953-60: Maximum discharge, 495 cfs Dec. 23, 1955 (gage height, 4.28 ft), from rating curve extended above 70 cfs on basis of slope-area measurement of peak flow; minimum, that of Aug. 8, 1960.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No storage or diversion above station.

Revisions.--WSP 1564: Drainage area.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.4 | 0.9 | 1.9 | 9.5 |
| 1.5 | 1.8 | 2.1 | 17  |
| 1.6 | 2.9 | 2.3 | 28  |
| 1.7 | 4.5 | 2.6 | 48  |

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     | 1.9  | 2.0   | 2.0   | a2.2  | a2.6  | 3.4   | 18    | 17    | 12    | 2.6  | 1.5  | 1.1   |
| 2     | 1.9  | 2.0   | 2.0   |       |       | 3.4   | 22    | 18    | 12    | 2.8  | 1.5  | 1.1   |
| 3     | 1.9  | 2.0   | 2.0   |       |       | 3.4   | 27    | 18    | 12    | 2.6  | 1.5  | 1.3   |
| 4     | 1.9  | *2.0  | 1.9   | *2.1  | *2.9  | 3.4   | 31    | 18    | 12    | 2.6  | 1.5  | 1.1   |
| 5     | 1.9  | 1.9   | 1.9   |       | 2.8   | 4.5   | 34    | 16    | 12    | 2.5  | 1.4  | 1.1   |
| 6     | *1.9 | 2.0   | 1.9   | 2.2   | a2.8  | 5.8   | 38    | 19    | 11    | 2.4  | 1.4  | 1.1   |
| 7     | 1.9  | 2.0   | *1.9  | 2.3   | a3.6  | 26    | 44    | 21    | 10    | 2.3  | 1.4  | 1.1   |
| 8     | 2.0  | 2.0   | 1.9   | 2.4   | a2.7  | 21    | 42    | 21    | 9.8   | 2.2  | 1.3  | 1.1   |
| 9     | 1.9  | 2.0   | 2.0   | 2.6   | a3.0  | 11    | 44    | 22    | 8.9   | 2.1  | 1.3  | 1.1   |
| 10    | 1.9  | 2.0   | 2.0   | 3.6   | a7.0  | 9.5   | 43    | 23    | 8.4   | 2.0  | 1.3  | 1.1   |
| 11    | 1.9  | 2.0   | 1.9   | a4.0  | a4.0  | 8.7   | 38    | 24    | 8.1   | 1.9  | 1.3  | 1.1   |
| 12    | 1.8  | 2.0   | 1.9   |       |       | 8.7   | 34    | 23    | 7.6   | 1.8  | 1.3  | *1.1  |
| 13    | 1.8  | 2.0   | 1.9   |       |       | 8.7   | 34    | 21    | 7.1   | *1.8 | 1.4  | 1.0   |
| 14    | 1.9  | 2.0   | 2.1   |       |       | 7.8   | 34    | 20    | 6.6   | 1.7  | 1.3  | 1.0   |
| 15    | 1.9  | 2.0   | 2.1   |       |       | 7.3   | 31    | 20    | 6.3   | 1.7  | 1.3  | 1.0   |
| 16    | 1.9  | 2.0   | 2.1   | a3.0  | a3.0  | 6.8   | 30    | 18    | 6.1   | 1.6  | 1.3  | 1.1   |
| 17    | 1.9  | 2.0   | 2.3   |       |       | 7.3   | 30    | 17    | 5.6   | 1.6  | 1.3  | 1.1   |
| 18    | 1.9  | 2.0   | 2.3   |       |       | 8.4   | 32    | 16    | 4.9   | 1.5  | *1.2 | 1.1   |
| 19    | 1.9  | 2.1   | 2.1   |       |       | 9.8   | 31    | 14    | 4.7   | 1.5  | 1.2  | 1.1   |
| 20    | 1.9  | 2.1   | 2.1   |       |       | 12    | 32    | 15    | 4.3   | 1.5  | 1.1  | 1.1   |
| 21    | 2.0  | 2.1   | 2.2   | a2.3  | a2.3  | 14    | 32    | 16    | *4.1  | 1.5  | 1.1  | 1.1   |
| 22    | 2.0  | 2.0   | 2.2   |       |       | 16    | 28    | 13    | 3.9   | 1.5  | 1.1  | 1.1   |
| 23    | 2.0  | 2.1   | 2.2   |       |       | 19    | 24    | *13   | 3.8   | 1.5  | 1.2  | 1.1   |
| 24    | 2.0  | 2.1   | 3.0   |       |       | 22    | 21    | 14    | 3.6   | 1.5  | 1.1  | 1.1   |
| 25    | 2.0  | 2.1   | 2.3   |       |       | *3.8  | 27    | *18   | 16    | 3.6  | 1.5  | 1.1   |
| 26    | 2.0  | 2.0   | a2.3  | a2.3  | a2.3  | 3.8   | 29    | 18    | 14    | 3.3  | 1.5  | 1.1   |
| 27    | 2.0  | 2.0   |       |       |       | 3.6   | 34    | 18    | 12    | 3.2  | 1.5  | 1.1   |
| 28    | 2.0  | 2.0   |       |       |       | 3.6   | 25    | 16    | 12    | 3.0  | 1.5  | 1.1   |
| 29    | 2.0  | 1.9   |       |       |       | 3.6   | 21    | 14    | 11    | 2.9  | 1.5  | 1.1   |
| 30    | 2.0  | 2.0   |       |       |       | 18    | 15    | 11    | 11    | 2.9  | 1.5  | 1.1   |
| 31    | 2.1  | ----- | ----- | ----- | ----- | 16    | ----- | 11    | ----- | 1.5  | 1.1  | ----- |
| Total | 60.0 | 60.4  | 65.9  | 87.0  | 137.3 | 417.9 | 873   | 524   | 203.7 | 57.2 | 39.0 | 33.4  |
| Mean  | 1.94 | 2.01  | 2.13  | 2.81  | 4.73  | 13.5  | 29.1  | 16.9  | 6.78  | 1.83 | 1.28 | 1.11  |
| Ac-ft | 119  | 120   | 131   | 173   | 272   | 829   | 1,750 | 1,040 | 404   | 113  | 77   | 66    |

Calendar year 1959: Max 28

Min 1.3

Mean 5.59

Ac-ft 4,050

Water year 1959-60: Max 44

Min 1.0

Mean 6.99

Ac-ft 5,070

Peak discharge (base, 50 cfs).--Feb. 8 (time unknown) 66 cfs (2.80 ft); Apr. 9 (5 p.m.) 56 cfs (2.69 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, trend of flow, recorded range in stage, and records for nearby stations.

3444. Little Truckee River above Boca Reservoir, near Boca, Calif.

Location.--Lat 39°26'10", long 120°05'00", in SW<sup>1</sup>SW<sup>1</sup> sec.3, T.18 N., R.17 E., on left bank 1 mile upstream from Boca Reservoir, 1½ miles upstream from Dry Creek, and 3½ miles north of Boca.

Drainage area.--146 sq mi.

Records available.--June 1903 to October 1910, October 1957 to September 1960. Published as "at Pine Station" June 1903 to December 1907 and as "at Starr" January 1908 to October 1910. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Datum of gage is 5,618.67 ft above mean sea level (Bureau of Reclamation bench mark). June 1903 to October 1910, staff gages at different sites and datums.

Average discharge.--10 years, 238 cfs (172,300 acre-ft per year).

Extremes.--Maximum discharge during year, 1,430 cfs about Feb. 8 (gage height, 3.02 ft); minimum, 2.2 cfs Dec. 5.

1903-10, 1957-60: Maximum daily discharge, 1,920 cfs Jan. 15, 16, 1907; minimum, that of Dec. 5, 1959.

Maximum discharge for flood of Dec. 23, 1955, about 9,500 cfs (computed from change in contents of Boca Reservoir).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow slightly regulated by Independence Lake (capacity, about 17,500 acre-ft) and one transmountain diversion to Sierra Valley.

Revisions (water years).--WSP 1564: 1903-4, 1906-7, 1910, drainage area at site used 1903-7.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.3 | 3.5 | 1.2 | 112 |
| .4  | 6.8 | 1.5 | 209 |
| .6  | 18  | 2.0 | 460 |
| .8  | 39  | 2.5 | 840 |
| 1.0 | 70  |     |     |

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                       | 110   | 16    | 13    | b12<br>(*) | b20     | 37     | 276       | 161    | 249          | 14    | 9.2   | 6.8     |
| 2                       | 107   | 16    | b12   |            | b21     | 37     | 291       | 194    | 305          | 14    | 8.7   | 6.4     |
| 3                       | 107   | 16    | b11   |            | b20     | 39     | 330       | 194    | 330          | 14    | 8.2   | 6.4     |
| 4                       | 107   | 16    | b9.0  |            | b18     | 67     | 370       | 186    | 300          | 13    | 8.2   | 6.4     |
| 5                       | 107   | 16    | 9.2   |            | 20      | 103    | 390       | 165    | 258          | 13    | 7.8   | 6.1     |
| 6                       | 107   | 15    | 11    | b16        | 25      | 103    | 448       | 171    | 240          | 13    | 7.3   | 6.1     |
| 7                       | *107  | 15    | 10    |            | 53      | 222    | 555       | 231    | 222          | 11    | 6.8   | 6.8     |
| 8                       | 110   | 16    | 11    |            | 710     | 320    | 527       | 286    | 190          | 9.8   | 6.4   | 6.8     |
| 9                       | 107   | *15   | *12   |            | 300     | 227    | 520       | 325    | 161          | 8.7   | 6.4   | 7.3     |
| 10                      | 107   | 16    | b11   |            | 200     | 175    | 514       | 330    | 145          | 7.8   | 6.1   | 8.7     |
| 11                      | 105   | 16    | b11   | b12        | 150     | 171    | 472       | 355    | 139          | 7.8   | 6.4   | 8.7     |
| 12                      | 105   | 16    | 11    |            | 140     | 182    | 370       | 380    | 136          | 8.2   | 6.4   | 8.2     |
| 13                      | 103   | 15    |       |            | 135     | 182    | 350       | 320    | 131          | 8.7   | 6.4   | 7.3     |
| 14                      | 100   | 15    |       |            | 120     | 158    | 365       | 291    | 112          | 8.2   | 6.1   | 7.8     |
| 15                      | 94    | 14    |       |            | 100     | 139    | 335       | 291    | 103          | 7.8   | 5.7   | 8.2     |
| 16                      | 36    | 15    |       | b12        | 90      | 134    | 310       | 286    | 94           | 7.3   | 6.1   | 8.2     |
| 17                      | 21    | 15    |       |            | 80      | 149    | 310       | 267    | 98           | 7.3   | 6.4   | 7.8     |
| 18                      | 17    | 14    |       |            | 78      | 190    | 325       | 235    | 87           | *8.2  | 6.4   | 7.8     |
| 19                      | 16    | 16    |       |            | 76      | 218    | 345       | 201    | 67           | 8.2   | 6.4   | 8.2     |
| 20                      | 16    | 15    |       |            | 70      | 253    | 340       | 198    | *53          | 7.3   | 6.1   | 92      |
| 21                      | 16    | 15    |       | b12        | 65      | 286    | 365       | 231    | 40           | 7.3   | 6.1   | 115     |
| 22                      | 16    | 15    |       |            | 60      | 310    | 360       | 179    | 33           | 6.4   | *6.4  | 117     |
| 23                      | 16    | 15    |       |            | 55      | *335   | 291       | *149   | 29           | 6.4   | 7.3   | 120     |
| 24                      | 16    | 15    |       |            | *49     | 365    | 240       | 149    | 25           | 6.8   | 8.2   | 120     |
| 25                      | 16    | 14    |       |            | 47      | 390    | *213      | 145    | 22           | 6.8   | 8.2   | 120     |
| 26                      | 15    | 15    |       | b14        | 40      | 412    | 180       | 149    | 20           | 7.8   | 6.8   | 123     |
| 27                      | 15    | 14    |       |            | 42      | 502    | 194       | 142    | 18           | 9.8   | 6.4   | 123     |
| 28                      | 14    | 15    |       |            | 38      | 472    | 175       | 139    | 17           | 13    | 7.8   | 123     |
| 29                      | 14    | 13    |       |            | 38      | 365    | 155       | 158    | 16           | 11    | 7.8   | 128     |
| 30                      | 14    | 14    |       |            | -----   | 555    | 149       | -----  | 15           | 11    | 7.8   | 128     |
| 31                      | 14    | ----- |       |            | -----   | 291    | -----     | 213    | -----        | 10    | 7.3   | -----   |
| Total                   | 1,955 | 453   | 359.2 | 418        | 2,860   | 7,189  | 10,075    | 6,892  | 3,655        | 293.6 | 217.6 | 1,449.0 |
| Mean                    | 59.8  | 15.1  | 11.6  | 13.5       | 98.6    | 232    | 336       | 222    | 122          | 9.47  | 7.02  | 48.3    |
| Ac-ft                   | 3,680 | 899   | 712   | 829        | 5,670   | 14,260 | 19,980    | 13,670 | 7,250        | 582   | 432   | 2,870   |
| Calendar year 1959: Max | 330   |       |       |            | Min 5.7 |        | Mean 81.3 |        | Ac-ft 58,890 |       |       |         |
| Water year 1959-60: Max | 710   |       |       |            | Min 5.7 |        | Mean 97.6 |        | Ac-ft 70,830 |       |       |         |

Peak discharge (base, 500 cfs).--About Feb. 8, 1,430 cfs (3.02 ft); Mar. 27 (8 p.m.) 670 cfs (2.31 ft); Apr. 8 (12:30 a.m.) 606 cfs (2.23 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Feb. 5-23; discharge estimated on basis of weather records, trend of flow, recorded range in stage, and records for nearby stations.

## 3444.9. Boca Reservoir at Boca, Calif.

Location.--Lat 39°23'20", long 120°05'40", in NE $\frac{1}{4}$  sec. 28, T. 18 N., R. 17 E., in control house at Boca Dam, 1,800 ft upstream from mouth of Little Truckee River and half a mile northwest of Boca.

Drainage area.--172 sq mi.

Records available.--October 1957 to September 1960.

Gage.--Pressure gage with mercury column read once daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Extremes.--Maximum contents during year, 41,150 acre-ft June 1-4 (elevation, 5,605.26 ft); minimum, 4,980 acre-ft Oct. 1 (elevation, 5,550.05 ft).

1957-60: Maximum contents, 41,150 acre-ft June 22, 1958, June 1-4, 1960; maximum elevation, 5,605.26 ft. June 1-4, 1960; minimum contents, 659 acre-ft Sept. 10, 1959 (elevation, 5,529.10 ft).

Maximum contents known, 41,440 acre-ft Dec. 23, 1955 (elevation, 5,605.55 ft).

Remarks.--Reservoir is formed by earth-fill, rock-faced dam. Storage began Dec. 8, 1938. Usable capacity, 40,900 acre-ft between elevations 5,521 (outlet sill) and 5,605 ft. Dead storage, 240 acre-ft. Figures given herein represent usable contents. Water is used for irrigation in the State of Nevada and for power development.

Cooperation.--Daily elevations furnished by Washoe County Conservation District. Capacity table and maximum elevation for Dec. 23, 1955, furnished by Bureau of Reclamation.

Revisions.--WSP 1634: Drainage area.

Capacity table, water year 1959-60 (elevation, in feet, and contents, in acre-feet)

|       |        |         |        |
|-------|--------|---------|--------|
| 5,550 | 4,970  | 5,590   | 27,510 |
| 5,560 | 8,790  | 5,600   | 36,150 |
| 5,570 | 13,760 | 5,605.3 | 41,200 |
| 5,580 | 20,020 |         |        |

Contents, in acre-feet, at 8 a.m., water year October 1959 to September 1960

| Day | Oct.     | Nov.     | Dec.     | Jan.     | Feb.     | Mar.     | Apr.     | May      | June     | July     | Aug.     | Sept.    |
|-----|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1   | 4,980    | 8,440    | 9,280    | 10,160   | 10,040   | 5,300    | 23,020   | 39,400   | 41,150   | 31,990   | 9,620    | 6,490    |
| 2   | 5,220    | 8,460    | 9,300    | 10,180   | 9,950    | 5,380    | 23,620   | 39,350   | 41,150   | 31,040   | 9,510    | 6,380    |
| 3   | 5,420    | 8,480    | 9,330    | 10,210   | 9,760    | 5,470    | 24,300   | 39,300   | 41,150   | 30,110   | 9,400    | 6,280    |
| 4   | 5,640    | 8,500    | 9,350    | 10,240   | 9,600    | 5,570    | 25,060   | 39,250   | 41,150   | 29,190   | 9,330    | 6,190    |
| 5   | 6,060    | 8,550    | 9,370    | 10,260   | 9,420    | 5,740    | 25,920   | 39,200   | 41,050   | 28,200   | 9,220    | 6,080    |
| 6   | 6,260    | 8,610    | 9,400    | 10,280   | 9,240    | 6,060    | 26,750   | 39,110   | 41,050   | 27,270   | 9,100    | 5,990    |
| 7   | 6,490    | 8,660    | 9,420    | 10,300   | 9,100    | 6,380    | 27,840   | 39,110   | 41,050   | 26,350   | 9,010    | 5,920    |
| 8   | 6,690    | 8,680    | 9,420    | 10,400   | 9,190    | 7,180    | 28,980   | 39,160   | 41,100   | 25,450   | 8,900    | 5,920    |
| 9   | 6,910    | 8,710    | 9,440    | 10,450   | 10,020   | 7,910    | 30,070   | 39,350   | 41,050   | 24,450   | 8,790    | 5,920    |
| 10  | 7,140    | 8,730    | 9,480    | 10,540   | 10,480   | 8,420    | 31,170   | 39,590   | 41,050   | 23,540   | 8,710    | 5,920    |
| 11  | 7,140    | 8,770    | 9,540    | 10,560   | 10,760   | 8,730    | 32,190   | 39,830   | 41,050   | 22,510   | 8,590    | 5,940    |
| 12  | 7,320    | 8,810    | 9,560    | 10,620   | 10,900   | 8,990    | 32,990   | 40,120   | 41,050   | 21,540   | 8,480    | 5,960    |
| 13  | 7,520    | 8,830    | 9,600    | 10,620   | 11,000   | 9,460    | 33,750   | 40,410   | 41,000   | 20,540   | 8,360    | 5,990    |
| 14  | 7,740    | 8,830    | 9,650    | 10,620   | 10,930   | 9,970    | 34,540   | 40,560   | 40,950   | 19,570   | 8,290    | 5,990    |
| 15  | 7,930    | 8,860    | 9,670    | 10,620   | 10,860   | 10,320   | 35,270   | 40,700   | 40,900   | 18,560   | 8,160    | 5,990    |
| 16  | 8,080    | 8,900    | 9,670    | 10,640   | 10,660   | 10,740   | 35,940   | 40,900   | 40,700   | 17,510   | 8,080    | 5,990    |
| 17  | 8,160    | 8,920    | 9,690    | 10,660   | 10,400   | 11,080   | 36,610   | 40,950   | 40,560   | 16,500   | 7,950    | 6,010    |
| 18  | 8,180    | 8,940    | 9,740    | 10,690   | 10,090   | 11,500   | 37,260   | 40,900   | 40,310   | 15,500   | 7,850    | 6,010    |
| 19  | 8,180    | 8,990    | 9,760    | 10,740   | 9,740    | 12,020   | 37,920   | 40,750   | 40,020   | 14,500   | 7,770    | 6,010    |
| 20  | 8,180    | 9,010    | 9,790    | 10,760   | 9,400    | 12,570   | 38,630   | 40,800   | 39,590   | 13,480   | 7,660    | 6,030    |
| 21  | 8,230    | 9,060    | 9,810    | 10,790   | 9,040    | 13,300   | 39,350   | 40,850   | 39,010   | 12,440   | 7,560    | 6,080    |
| 22  | 8,270    | 9,080    | 9,830    | 10,820   | 8,680    | 14,020   | 39,350   | 41,000   | 38,440   | 11,400   | 7,460    | 6,470    |
| 23  | 8,290    | 9,100    | 9,860    | 10,840   | 8,180    | 14,820   | 39,540   | 41,000   | 37,820   | 10,520   | 7,320    | 6,690    |
| 24  | 8,340    | 9,100    | 9,880    | 10,860   | 7,680    | 15,650   | 39,730   | 41,000   | 37,220   | 10,210   | 7,240    | 6,930    |
| 25  | 8,310    | 9,150    | 9,930    | 10,930   | 7,180    | 16,500   | 39,780   | 41,000   | 36,560   | 10,160   | 7,140    | 7,160    |
| 26  | 8,310    | 9,190    | 10,000   | 10,980   | 6,660    | 17,420   | 39,730   | 41,000   | 35,870   | 10,110   | 7,040    | 7,380    |
| 27  | 8,400    | 9,220    | 10,020   | 11,000   | 6,190    | 18,360   | 39,730   | 41,050   | 35,140   | 10,000   | 6,940    | 7,600    |
| 28  | 8,420    | 9,220    | 10,070   | 10,790   | 5,700    | 19,700   | 39,680   | 41,000   | 34,330   | 9,900    | 6,850    | 7,850    |
| 29  | 8,440    | 9,240    | 10,090   | 10,590   | 5,220    | 20,640   | 39,580   | 40,950   | 33,560   | 9,830    | 6,730    | 8,100    |
| 30  | 8,440    | 9,260    | 10,110   | 10,320   | -----    | 21,500   | 39,490   | 41,000   | 32,820   | 9,810    | 6,640    | 8,340    |
| 31  | 8,440    | -----    | 10,140   | 10,210   | -----    | 22,320   | -----    | 41,050   | -----    | 9,720    | 6,560    | -----    |
| (†) | 5,559.20 | 5,561.05 | 5,562.95 | 5,563.12 | 5,550.75 | 5,583.25 | 5,603.55 | 5,605.15 | 5,596.28 | 5,562.08 | 5,554.55 | 5,558.95 |
| (‡) | +3,690   | +820     | +880     | +70      | -4,990   | +17,100  | +17,170  | +1,560   | -8,230   | -23,100  | -3,160   | +1,780   |

Calendar year 1959..... † +1,200

Water year 1959-60..... ‡ +3,580

† Elevation, in feet, at end of month

‡ Change in contents, in acre-feet.

## 3445. Little Truckee River at Boca, Calif.

Location.--Lat 39°23'10", long 120°05'40", in NE<sup>1</sup>/<sub>4</sub> NW<sup>1</sup>/<sub>4</sub> sec. 28, T.18 N., R.17 E., on right bank 800 ft upstream from mouth and 1,000 ft downstream from Boca Dam.

Drainage area.--172 sq mi.

Records available.--April to October 1890 (monthly discharge only), January 1911 to September 1915, October 1957 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 5,500 ft (from topographic map). Jan. 1, 1911, to Sept. 30, 1915, staff gage at site 650 ft downstream at different datum.

Average discharge.--7 years (1911-15, 1957-60), 181 cfs (131,000 acre-ft per year).

Extremes.--Maximum discharge during year, 526 cfs July 22 (gage height, 3.43 ft); minimum daily, 0.1 cfs Oct. 1-8.

1890, 1911-15, 1957-60: Maximum discharge observed, 2,870 cfs May 6, 1890; no flow Sept. 26 to Oct. 5, Oct. 10, 1911, Sept. 6, 7, Oct 6-13, 1913.

Maximum discharge during flood in December 1955, 8,800 cfs, from records of Washoe County Water Conservation District.

Remarks.--Records good. Flow regulated by Boca Reservoir (see preceding page), Independence Lake (capacity, about 17,500 acre-ft), and one transmountain diversion to Sierra Valley.

Revisions.--WSP 1564: Drainage area.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Oct. 1-30)

|      |     |     |     |     |     |
|------|-----|-----|-----|-----|-----|
| 0.05 | 0.1 | 0.5 | 3.2 | 2.0 | 147 |
| .1   | .2  | .6  | 5.6 | 2.5 | 247 |
| .2   | .5  | .7  | 9.0 | 3.0 | 372 |
| .3   | .9  | 1.9 | 20  | 3.5 | 537 |
| .5   | 1.8 | 1.4 | 60  |     |     |

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     | 0.2  | 0.2  | 0.2     | 111     | 0.3   | 0.4       | 210    | 247          | 453    | 61    | 55    |
| 2                   | .1      | .2   | .2   | .2      | 111     | .3    | .4        | 210    | 316          | 467    | 62    | 55    |
| 3                   | .1      | .2   | .2   | .2      | 110     | .3    | .4        | 210    | 324          | 463    | 58    | 55    |
| 4                   | .1      | .2   | .2   | .2      | 110     | .3    | .4        | 210    | 329          | 467    | 58    | 59    |
| 5                   | .1      | .2   | .2   | .2      | 110     | .3    | .4        | 210    | 262          | 470    | 58    | 58    |
| 6                   | .1      | .2   | .2   | .2      | 110     | .3    | .4        | 210    | 238          | 467    | 57    | 57    |
| 7                   | .1      | .2   | .2   | .2      | 111     | .4    | .4        | 210    | 208          | 470    | 57    | 5.6   |
| 8                   | .1      | .2   | .2   | .2      | 33      | .3    | .4        | 210    | 200          | 474    | 57    | .7    |
| 9                   | .2      | .2   | .2   | .2      | .3      | .3    | .5        | 212    | 174          | 474    | 57    | .7    |
| 10                  | .2      | .2   | .2   | .2      | .3      | 30    | .5        | 212    | 163          | 477    | 57    | .7    |
| 11                  | .2      | .2   | .2   | a4.0    | 13      | 106   | *.5       | 212    | 161          | 492    | 57    | .7    |
| 12                  | .2      | .2   | .2   | a7.4    | 75      | 34    | *.5       | 214    | 160          | 492    | 57    | .7    |
| 13                  | .2      | .2   | .2   | *a7.4   | 100     | .4    | .4        | 214    | 158          | 492    | 57    | .7    |
| 14                  | .2      | .2   | **2  | a7.4    | 124     | .4    | .5        | 214    | 156          | 492    | 57    | .7    |
| 15                  | .2      | .2   | .2   | a7.4    | *154    | *.4   | .5        | 214    | 180          | 503    | 57    | .7    |
| 16                  | .2      | .2   | .2   | a7.4    | 186     | .4    | .5        | *238   | 204          | 507    | 57    | .7    |
| 17                  | .2      | .2   | .2   | a7.4    | 204     | .4    | .6        | 265    | *202         | 507    | 57    | .7    |
| 18                  | .2      | .2   | .2   | a7.4    | 225     | .4    | .6        | 275    | 202          | *510   | 57    | .7    |
| 19                  | .2      | **2  | .2   | a7.4    | 225     | .4    | .7        | 199    | 240          | 510    | 57    | .7    |
| 20                  | **2     | .2   | .2   | a7.4    | 223     | .4    | .8        | 169    | 304          | 507    | 56    | .7    |
| 21                  | .2      | .2   | .2   | a7.4    | 221     | .4    | 186       | 151    | 335          | 510    | 56    | .7    |
| 22                  | .2      | .2   | .2   | a7.4    | 247     | .4    | 247       | 151    | 335          | 492    | *56   | .7    |
| 23                  | .2      | .2   | .2   | a7.4    | 272     | .4    | 210       | 154    | 332          | 238    | 56    | .7    |
| 24                  | .2      | .2   | .2   | a7.4    | 277     | .4    | 210       | 156    | 345          | 49     | 56    | .7    |
| 25                  | .2      | .2   | .2   | a7.4    | 284     | .4    | 210       | 156    | 350          | 44     | 56    | .7    |
| 26                  | .2      | .2   | .2   | a7.4    | 268     | .4    | 210       | 156    | 364          | 44     | 56    | .7    |
| 27                  | .2      | .2   | .2   | 92      | 256     | .4    | 210       | 169    | 380          | 57     | 55    | .8    |
| 28                  | .2      | .2   | .2   | 111     | 258     | .4    | 210       | 173    | 380          | 50     | 55    | *.8   |
| 29                  | .2      | .2   | .2   | 111     | 80      | .4    | 210       | 171    | 386          | 45     | 55    | .8    |
| 30                  | .2      | .2   | .2   | 111     | -----   | .4    | 210       | 173    | 409          | 46     | 55    | .8    |
| 31                  | .2      | .2   | .2   | 111     | -----   | .4    | -----     | 188    | -----        | 46     | 55    | ----- |
| Total               | 5.4     | 6.0  | 6.2  | 653.0   | 4,496.6 | 180.4 | 2,122.8   | 6,116  | 8,084        | 11,315 | 1,782 | 361.1 |
| Mean                | 0.17    | 0.20 | 0.20 | 21.1    | 155     | 5.82  | 70.8      | 197    | 269          | 365    | 56.8  | 12.0  |
| Ac-ft               | 11      | 12   | 12   | 1,300   | 8,920   | 358   | 4,210     | 12,130 | 15,990       | 22,440 | 3,490 | 716   |
| Calendar year 1959: | Max 415 |      |      | Min 0.1 |         |       | Mean 81.5 |        | Ac-ft 59,040 |        |       |       |
| Water year 1959-60: | Max 510 |      |      | Min 0.1 |         |       | Mean 95.9 |        | Ac-ft 69,590 |        |       |       |

\* Discharge measurement made on this day.

\*\* Field estimate made on this day.

a No gage-height record; discharge estimated on basis of 1 discharge measurement and records of released flow from Boca Reservoir.

## PYRAMID AND WINNEMUCCA LAKES BASIN

3460. Truckee River at Farad, Calif.

Location.--Lat 39°25'41", long 120°01'59", in NE $\frac{1}{4}$  sec.12, T.18 N., R.17 E., on left bank 0.7 mile downstream from Farad powerplant, 2.5 miles north of Floristor, 3.4 miles downstream from Bronco Creek, and 3.5 miles upstream from California-Nevada State line.

Drainage area.--932 sq mi (revised).

Records available.--March to October 1890 (monthly discharge only), September 1899 to December 1943, August 1957 to September 1960. Published as "near Boca" March to October 1890, "at or near Nevada-California State line" September 1899 to August 1912, and as "at Iceland" August 1912 to December 1937.

Gage.--Water-stage recorder. Datum of gage is 5,153.21 ft above mean sea level (Bureau of Reclamation bench mark). March to October 1890, staff gage at site about 7 miles upstream at different datum. Sept. 7, 1899, to May 31, 1909, staff gage at approximately same location at different datum. June 1, 1909, to July 31, 1912, staff gage at site about 2 $\frac{1}{2}$  miles downstream at different datum. Aug. 1, 1912, to Dec. 31, 1937, water-stage recorder at site 4.1 miles upstream at different datum. Jan. 1, 1938, to Dec. 31, 1943, water-stage recorder at approximately same location at different datum.

Average discharge.--47 years (1899-1943, 1957-60), 801 cfs (579,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,180 cfs Feb. 8 (gage height, 5.10 ft); minimum, 225 cfs Jan. 27.

1899-1943, 1957-60: Maximum daily discharge, 15,300 cfs Mar. 18, 1907 (gage height, 11.5 ft, datum then in use), from rating curve extended above 5,600 cfs on basis of slope-area measurement at gage height 14.5 ft, present datum; minimum, 28 cfs Dec. 18, 1930.

Maximum discharge known, 17,500 cfs Nov. 21, 1950 (gage height, 14.5 ft, present datum, from floodmarks), from slope-area measurement of peak flow.

Remarks.--Records excellent. Flow regulated by Lake Tahoe (see p. 219), Foca Reservoir (see p. 230), Donner and Independence Lakes, and by several powerplants. Records of chemical analyses for the water year 1960 are given in WSP 1744.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used June 28 to Aug. 12)

|     |     |     |       |
|-----|-----|-----|-------|
| 2.0 | 228 | 3.5 | 895   |
| 2.5 | 407 | 4.0 | 1,200 |
| 3.0 | 632 | 4.3 | 1,410 |

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     | 450    | 382    | *361   | b297   | *361   | *399   | *548   | 576    | *980   | *604   | *599   | *512   |
| 2     | 411    | *378   | 373    | b297   | 394    | 498    | 548    | *613   | 1,160  | 627    | 599    | 516    |
| 3     | 407    | 378    | 382    | b297   | 369    | 454    | 594    | 642    | 1,140  | 623    | 608    | 516    |
| 4     | 403    | 365    | 378    | b297   | 361    | 433    | 705    | 642    | 1,060  | 618    | 604    | 516    |
| 5     | 403    | 361    | 373    | b297   | 357    | 450    | 785    | 618    | 988    | 618    | 599    | 516    |
| 6     | 416    | 361    | 373    | b285   | 325    | 459    | 944    | 642    | 895    | 613    | 599    | 512    |
| 7     | 416    | 365    | 378    | 296    | 390    | 1,010  | 1,170  | 752    | 824    | 608    | 594    | 503    |
| 8     | 416    | 361    | 378    | 314    | 1,380  | 884    | 1,090  | 851    | 736    | 608    | 594    | 508    |
| 9     | 446    | 361    | 378    | 311    | 790    | 544    | 1,070  | 922    | 651    | 599    | 608    | 516    |
| 10    | 458    | 361    | 382    | 318    | 472    | 424    | 1,050  | 998    | 604    | 599    | 604    | 521    |
| 11    | 441    | 361    | 378    | 314    | 345    | 468    | 950    | 1,060  | 604    | 604    | 604    | 521    |
| 12    | 421    | 361    | 378    | 318    | 365    | 567    | 758    | 1,170  | 604    | 599    | 604    | 516    |
| 13    | 337    | 361    | 378    | b304   | 361    | 534    | 675    | 1,020  | 590    | 599    | 594    | 508    |
| 14    | 454    | 357    | 388    | b316   | 345    | 357    | 705    | 922    | 553    | 594    | 590    | 503    |
| 15    | 446    | 357    | 382    | 321    | 349    | 296    | 646    | 917    | 548    | 604    | 590    | 503    |
| 16    | 433    | 357    | 386    | b312   | 378    | 296    | 608    | 917    | 557    | 604    | 539    | 503    |
| 17    | 424    | 357    | 386    | b316   | 373    | 407    | 604    | 917    | 580    | 604    | 530    | 530    |
| 18    | 416    | 353    | 386    | 314    | 407    | 476    | 627    | 906    | 548    | 604    | 526    | 534    |
| 19    | 407    | 353    | 382    | 314    | 403    | 411    | 675    | 781    | 526    | 599    | 521    | 534    |
| 20    | 405    | 357    | 382    | 311    | 386    | 437    | 700    | 730    | 562    | 599    | 534    | 521    |
| 21    | 399    | 361    | 378    | 307    | 357    | 490    | 884    | 780    | 571    | 599    | 530    | 512    |
| 22    | 403    | 361    | 373    | 307    | 353    | 548    | 950    | 642    | 553    | 618    | 539    | 490    |
| 23    | 416    | 361    | 373    | 303    | 390    | 580    | 796    | 585    | 539    | 599    | 530    | 476    |
| 24    | 420    | 365    | 378    | 307    | 390    | 637    | 715    | 557    | 548    | 613    | 526    | 468    |
| 25    | 416    | 361    | 349    | 333    | 420    | 685    | 642    | 526    | 553    | 604    | 521    | 459    |
| 26    | 411    | 365    | 318    | 314    | 399    | 741    | 594    | 526    | 553    | 571    | 516    | 450    |
| 27    | 403    | 357    | 321    | 300    | 378    | 829    | 604    | 553    | 562    | 590    | 516    | 441    |
| 28    | 399    | 361    | 318    | 333    | 378    | 824    | 580    | 599    | 562    | 618    | 512    | 428    |
| 29    | 399    | 357    | 311    | 333    | 386    | 613    | 582    | 680    | 548    | 613    | 512    | 420    |
| 30    | 411    | 357    | *314   | 323    | -----  | 685    | 553    | 720    | 562    | 604    | 512    | 420    |
| 31    | 407    | -----  | 311    | 339    | -----  | 599    | -----  | 829    | -----  | 594    | 508    | -----  |
| Total | 12,793 | 10,853 | 11,324 | 9,648  | 12,362 | 17,035 | 22,332 | 23,593 | 20,241 | 18,750 | 17,362 | 14,864 |
| Mean  | 413    | 362    | 365    | 311    | 426    | 550    | 744    | 761    | 675    | 605    | 560    | 495    |
| Ac-ft | 25,370 | 21,530 | 22,460 | 19,140 | 24,520 | 33,790 | 44,290 | 46,800 | 40,150 | 37,190 | 34,440 | 29,480 |

Calendar year 1959: Max 895 Min 311 Mean 483 Ac-ft 349,400  
Water year 1959-60: Max 1,380 Min 285 Mean 522 Ac-ft 379,200

Peak discharge (base, 1,600 cfs).--Feb. 8 (4 p.m.) 2,180 cfs (5.10 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

3473. Dog Creek near Verdi, Nev.

Location.--Lat 39°33'55", long 120°01'25" in SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub> sec.30, T.20 N., R.18 E., on left bank  $3\frac{1}{2}$  miles upstream from mouth and 4 miles northwest of Verdi.

Drainage area.--16.2 sq mi.

Records available.--October 1956 to September 1960.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,660 ft (from topographic map).

Extremes.--Maximum discharge during year, 256 cfs Feb. 8 (gage height, 1.92 ft); minimum, 0.1 cfs for many days July to September.

1956-60: Maximum discharge, 550 cfs Feb. 24, 1958 (gage height, 2.75 ft), from rating curve extended above 250 cfs; minimum, 0.1 cfs Aug. 7-18, 1959, July to September 1960.

Maximum discharge known, 880 cfs Dec. 23, 1955, from slope-area measurement of peak flow.

Remarks.--Records good except those for period of no gage-height record, which are fair.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.1 | 0   | 0.6 | 9.2 |
| .2  | .2  | .8  | 24  |
| .3  | .3  | 1.0 | 47  |
| .4  | 1.9 | 1.2 | 77  |
| .5  | 4.6 | 1.4 | 115 |

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     | 0.2  | 0.2   | 0.3  | 0.2  | 1.0   | a0.9  | 11    | 1.2  | 0.2   | 0.1  | 0.1  | 0.1   |
| 2     | .2   | .2    | .3   | .4   | 1.3   | a.9   | 9.8   | 1.1  | .2    | .1   | .1   | .1    |
| 3     | .2   | .2    | .4   | .4   | 1.3   | a1.0  | 9.8   | 1.2  | .2    | .1   | .1   | .1    |
| 4     | .2   | .2    | .4   | 1.1  | a1.1  | 9.2   | 1.4   | .2   | .1    | .1   | .1   | .1    |
| 5     | .2   | .2    | .2   | .3   | 1.0   | a2.3  | 8.7   | 1.1  | .2    | .1   | .1   | .1    |
| 6     | .2   | .2    | .2   | .2   | 1.3   | a7.6  | 8.7   | 1.0  | .2    | .1   | .1   | .2    |
| 7     | .2   | .2    | .2   | .3   | 8.4   | a57   | 8.7   | .8   | .2    | .1   | .1   | .2    |
| 8     | .2   | .2    | .2   | .5   | 103   | a33   | 7.2   | .8   | .2    | .1   | .1   | .2    |
| 9     | .2   | .2    | .2   | .7   | 14    | 14    | 6.3   | .7   | .2    | .1   | .1   | .2    |
| 10    | .2   | .2    | .3   | .6   | 10    | 11    | 5.4   | .6   | .2    | .1   | .1   | .2    |
| 11    | .2   | .2    | .3   | .5   | 5.9   | 10    | 5.0   | .6   | .2    | .1   | .1   | .2    |
| 12    | .2   | .2    | .2   | .5   | 3.9   | 14    | 4.3   | .5   | .2    | .1   | .1   | .2    |
| 13    | .2   | .2    | .3   | .5   | 2.8   | 24    | 3.6   | .5   | .2    | .1   | .1   | .2    |
| 14    | .2   | .2    | *.3  | .5   | 2.1   | 14    | 3.0   | .5   | .2    | .1   | .1   | .2    |
| 15    | .2   | .2    | .3   | .5   | 1.9   | 10    | 2.5   | .5   | .2    | .1   | .1   | .2    |
| 16    | .2   | .2    | .3   | .5   | 1.8   | 9.2   | 2.3   | .5   | .2    | .1   | .1   | .2    |
| 17    | .2   | .2    | .4   | .5   | 1.5   | 9.8   | 1.9   | .5   | .2    | .1   | .1   | .2    |
| 18    | .2   | .2    | .4   | .4   | 1.4   | 12    | 1.8   | .5   | .2    | .1   | .1   | .2    |
| 19    | .2   | *.2   | .3   | .4   | 1.4   | 13    | 1.8   | .5   | .2    | *.1  | .1   | .2    |
| 20    | *.2  | .2    | .3   | .4   | 1.2   | 15    | 1.5   | .5   | *.2   | *.1  | .1   | .2    |
| 21    | .2   | .3    | .3   | .4   | 1.2   | 17    | 1.4   | .6   | .2    | .1   | .1   | .2    |
| 22    | .2   | .2    | .3   | .4   | 1.1   | 16    | 1.8   | .6   | .2    | .1   | .1   | .2    |
| 23    | .2   | .3    | .3   | .5   | 1.0   | 16    | 1.8   | *.6  | .2    | .1   | .1   | .2    |
| 24    | .2   | .3    | .6   | .5   | .9    | *14   | 1.6   | .7   | .2    | .1   | .1   | .2    |
| 25    | .2   | .3    | .6   | .6   | *1.0  | 14    | 1.6   | .6   | .2    | .1   | .1   | .2    |
| 26    | .2   | .2    | .4   | .6   | 1.0   | 13    | *1.6  | .5   | .2    | .1   | .1   | .2    |
| 27    | .2   | .2    | .4   | .6   | 1.0   | 18    | 1.8   | .4   | .2    | .2   | .1   | .2    |
| 28    | .2   | .3    | .4   | .6   | 1.0   | 22    | 1.5   | .4   | .2    | .2   | .1   | *.2   |
| 29    | .2   | .3    | .4   | *.6  | .9    | 14    | 1.4   | .4   | .2    | .2   | .1   | .2    |
| 30    | .2   | .2    | .3   | .7   | ----- | 17    | 1.3   | .4   | .2    | .2   | .1   | .2    |
| 31    | .2   | ----- | .3   | .7   | ----- | 14    | ----- | .3   | ----- | .1   | *.1  | ----- |
| Total | 6.2  | 6.6   | 9.9  | 14.9 | 175.4 | 434.8 | 128.3 | 20.5 | 6.0   | 3.5  | 3.1  | 5.5   |
| Mean  | 0.20 | 0.22  | 0.32 | 0.48 | 6.05  | 14.0  | 4.28  | 0.66 | 0.20  | 0.11 | 0.10 | 0.18  |
| Ac-ft | 12   | 13    | 20   | 30   | 348   | 862   | 254   | 41   | 12    | 6.9  | 6.1  | 11    |

Calendar year 1959: Max 16 Min 0.1 Mean 1.47 Ac-ft 1,060  
 Water year 1959-60: Max 103 Min 0.1 Mean 2.23 Ac-ft 1,620

Peak discharge (base, 40 cfs).--Feb. 8 (8:30 a.m.) 256 cfs (1.92 ft); Mar. 7 (time unknown) 122 cfs (1.43 ft); Mar. 13 (2:30 p.m.) 46 cfs (1.00 ft); Mar. 27 (7 p.m.) 40 cfs (0.95 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, trend of flow, and records for Matis Creek near Truckee, Calif.

3480. Truckee River at Reno, Nev.

Location.--Lat 39°31'55", long 119°47'05", in NW 1/4 sec. 7, T.19 N., R.20 E., on left bank 400 ft downstream from Kietzke Lane bridge, half a mile east of Reno, and 5 miles upstream from Steamboat Creek.

Drainage area.--1,067 sq mi (revised).

Records available.--July 1906 to September 1919, October 1946 to September 1960. Monthly discharge only October to December 1946, published in WSP 1314.

Gage.--Water-stage recorder. Datum of gage is 4,431.97 ft above mean sea level (levels by Corps of Engineers). July 1906 to September 1919, staff gage at site 1 mile upstream at different datum.

Average discharge.--27 years, 770 cfs (557,500 acre-ft per year).

Extremes.--Maximum discharge during year, 2,620 cfs Feb. 8 (gage height, 5.63 ft); minimum, 80 cfs Sept. 29.

1906-19, 1947-60: Maximum discharge, 20,800 cfs Dec. 23, 1955, from rating curve extended above 14,000 cfs; maximum gage height, 13.83 ft Nov. 21, 1950; minimum discharge observed, 18 cfs July 2, 3, 1912.

Remarks.--Records good. Flow regulated by Lake Tahoe (see p. 219), Boca Reservoir (see p. 230), Donner and Independence Lakes, and by several powerplants. Many diversions above station.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Dec. 10-31)

|     |     |     |       |
|-----|-----|-----|-------|
| 1.9 | 117 | 3.0 | 550   |
| 2.0 | 139 | 4.0 | 1,180 |
| 2.5 | 320 | 5.0 | 2,030 |

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     | 248    | 288    | 332    | b276   | 344    | 369    | 535    | 186    | 505    | 158    | 276    | 150   |
| 2     | 186    | 272    | 336    | b264   | 400    | 450    | 475    | 208    | 709    | 22C    | 240    | 150   |
| 3     | 176    | 276    | 340    | b280   | 348    | 465    | 490    | 252    | 775    | 20C    | 190    | 144   |
| 4     | 166    | 284    | 340    | b280   | 332    | 418    | 565    | 268    | 691    | 197    | 204    | 152   |
| 5     | 169    | 292    | 332    | b300   | 336    | 414    | 655    | *248   | 622    | 204    | 220    | 155   |
| 6     | 180    | 304    | 328    | b300   | 332    | 455    | 757    | 232    | 540    | 20C    | 197    | 155   |
| 7     | 197    | 308    | 336    | 304    | 360    | 855    | *864   | 320    | 480    | 197    | 183    | 144   |
| 8     | 204    | 312    | 336    | 288    | *1,780 | *1,180 | 944    | 441    | 387    | 20C    | 180    | 132   |
| 9     | 216    | 312    | 340    | 300    | 1,080  | 638    | 820    | 515    | 308    | 193    | 193    | 147   |
| 10    | 240    | *312   | 344    | 308    | 580    | 470    | 808    | 606    | 244    | 176    | 183    | 152   |
| 11    | 232    | 312    | 340    | 292    | 418    | 460    | 691    | 655    | 232    | 183    | 186    | 166   |
| 12    | 208    | 308    | 332    | 300    | 369    | 560    | 490    | 757    | 220    | 18C    | 193    | 155   |
| 13    | 176    | 316    | 340    | 280    | 378    | 600    | 378    | 685    | 220    | 173    | 204    | 144   |
| 14    | *216   | 312    | *340   | *b304  | 369    | 485    | 418    | 560    | 176    | 173    | 183    | 144   |
| 15    | 232    | 312    | 340    | b312   | 352    | 344    | 352    | 545    | 152    | 176    | 183    | 144   |
| 16    | 232    | 328    | 340    | b292   | 392    | 324    | 288    | 535    | 163    | 180    | 180    | 147   |
| 17    | 216    | 328    | 340    | b304   | 378    | 340    | 260    | 535    | 180    | 168    | 144    | 142   |
| 18    | 216    | 328    | 340    | b304   | 418    | 436    | 272    | 540    | 183    | 161    | 147    | 161   |
| 19    | 212    | 328    | 340    | 304    | 414    | 428    | 292    | 441    | 139    | 158    | 142    | 161   |
| 20    | 220    | 328    | 344    | 300    | 396    | 405    | 316    | 352    | 155    | 147    | 142    | 236   |
| 21    | 216    | 332    | 340    | 288    | 382    | 441    | 360    | 410    | 180    | *161   | 139    | *220  |
| 22    | 216    | 324    | 332    | 296    | 348    | 500    | 611    | 328    | 150    | 163    | 158    | 224   |
| 23    | 216    | 328    | 332    | 284    | 307    | 530    | 455    | 268    | 144    | 190    | 190    | 197   |
| 24    | 216    | 328    | 344    | 292    | 392    | 565    | 378    | 232    | 142    | 176    | *166   | 183   |
| 25    | 216    | 328    | 336    | 308    | 414    | 585    | 304    | 193    | 152    | 183    | 166    | 166   |
| 26    | 232    | 328    | 288    | 320    | 400    | 638    | 248    | 176    | 158    | 200    | 166    | 176   |
| 27    | 264    | 332    | 288    | 272    | 374    | 679    | 236    | 161    | 144    | 173    | 161    | 142   |
| 28    | 264    | 332    | 288    | 320    | 364    | 814    | 232    | 190    | 144    | 212    | 152    | 132   |
| 29    | 276    | 332    | 292    | 320    | 369    | 585    | 197    | 276    | 130    | 256    | 155    | 128   |
| 30    | 268    | 332    | 288    | 324    | -----  | 611    | 180    | 316    | *142   | 344    | 152    | 159   |
| 31    | 296    | -----  | 276    | 324    | -----  | 595    | -----  | *392   | -----  | 316    | 150    | ----- |
| Total | 6,842  | 9,456  | 10,164 | 9,240  | 13,206 | 16,639 | 13,971 | 11,823 | 8,577  | 6,019  | 5,525  | 4,788 |
| Mean  | 221    | 315    | 328    | 298    | 455    | 537    | 466    | 381    | 286    | 194    | 178    | 160   |
| Ac-ft | 13,570 | 18,760 | 20,160 | 18,330 | 26,190 | 33,000 | 27,710 | 23,450 | 17,010 | 11,940 | 10,960 | 9,500 |

Calendar year 1959: Max 879 Min 108 Mean 289 Ac-ft 209,600

Water year 1959-60: Max 1,780 Min 128 Mean 318 Ac-ft 230,600

Peak discharge (base, 1,600 cfs).--Feb. 8 (7:15 p.m.) 2,620 cfs (5.63 ft); Mar. 7 (11 p.m.) 1,770 cfs (4.71 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

3500. Truckee River at Vista, Nev.

Location (revised).--Lat 39°31'05", long 119°40'58", in NW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub> sec.13, T.19 N., R.20 E., on left bank 800 ft downstream from Southern Pacific railroad bridge, 0.9 mile south-east of Vista, 1½ miles downstream from Steamboat Creek, and 4 miles southeast of Sparks.

Drainage area.--1,429 sq mi (revised).

Records available.--August 1899 to December 1907, October 1958 to September 1960. Monthly discharge only for some periods, published in WSP 1314.

Gage.--Water-stage recorder. Datum of gage is 4,371.53 ft above mean sea level, datum of 1929, supplementary adjustment of 1956. Prior to Apr. 16, 1907, staff gages at several sites in vicinity of present site at various datums. May to December 1907 reference point on railroad bridge. October 1958 to Aug. 17, 1959, at site 1,200 ft upstream at datum 2.69 ft higher.

Average discharge.--10 years, 1,033 cfs (747,900 acre-ft per year).

Extremes.--Maximum discharge during year, 2,850 cfs Feb. 8 (gage height, 6.68 ft); minimum, 203 cfs June 28.

1899-1908, 1958-60: Maximum daily discharge, about 10,000 cfs (revised) Mar. 18, 1907, estimated on basis of discharge at Farad and at Reno; minimum daily, 38 cfs July 20-22, 1900.

Flood of Dec. 23, 1955, probably equalled or exceeded that of Mar. 18, 1907.

Remarks.--Records fair prior to Dec. 10, excellent thereafter. Flow regulated by Lake Tahoe (see p. 219), Boca Reservoir (see p. 230), and other lakes. Several powerplants and many diversions above station.

Revisions (water years).--WSP 1634: 1904.

Rating table, Dec. 10, 1959, to Sept. 30, 1960 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |       |
|-----|-----|-----|-------|
| 1.3 | 223 | 4.0 | 1,160 |
| 2.0 | 365 | 5.0 | 1,750 |
| 3.0 | 722 | 6.0 | 2,370 |

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                       | g456   | g461   | a480   | 358    | 517    | 416    | 610    | 338    | 564     | 246    | 440    | 259    |
| 2                       | g563   | a460   | a460   | 352    | 665    | 484    | 522    | 352    | 784     | 288    | 395    | 259    |
| 3                       | g548   | a460   | a440   | 365    | 512    | 516    | 553    | 365    | 880     | 306    | 340    | 266    |
| 4                       | g324   | g461   | *g456  | 378    | 464    | 464    | 603    | 395    | 804     | 295    | 330    | 262    |
| 5                       | *g327  | a470   | a415   | 368    | 455    | 455    | 688    | *390   | 760     | 290    | 328    | 259    |
| 6                       | a340   | a470   | a420   | 368    | 452    | 558    | 780    | 360    | 657     | 290    | 304    | 273    |
| 7                       | a360   | a480   | a420   | 378    | 455    | 847    | *990   | 405    | 578     | 284    | 268    | 253    |
| 8                       | a380   | g462   | a420   | 385    | *1,900 | *1,260 | 996    | 540    | 484     | 275    | 284    | 244    |
| 9                       | a400   | a460   | a420   | 395    | 1,470  | 704    | 888    | 603    | 419     | 266    | 277    | 248    |
| 10                      | g416   | *g440  | 422    | 400    | 772    | 522    | 896    | 698    | 352     | 266    | 284    | 273    |
| 11                      | g366   | a440   | 419    | 390    | 547    | 502    | 792    | 749    | 335     | 284    | 290    | 297    |
| 12                      | a350   | a440   | 410    | 395    | 461    | 604    | 600    | 868    | 325     | 295    | 290    | 286    |
| 13                      | g341   | a440   | 419    | *370   | 449    | 665    | 467    | 824    | 309     | 264    | 309    | 286    |
| 14                      | *g324  | a440   | *413   | 375    | 431    | 551    | 467    | 703    | 268     | 248    | 297    | 288    |
| 15                      | a320   | a440   | 422    | 398    | 416    | 392    | 413    | 676    | 240     | 240    | 293    | 279    |
| 16                      | a360   | a450   | 425    | 368    | 437    | 370    | 358    | 646    | *246    | 251    | 284    | 273    |
| 17                      | g346   | a450   | 425    | 378    | 434    | 360    | 350    | 661    | 255     | 248    | 273    | 275    |
| 18                      | a340   | a450   | 431    | 402    | 459    | 468    | 342    | 669    | 246     | 253    | 275    | 316    |
| 19                      | a340   | a450   | 428    | 390    | 461    | 484    | 352    | 589    | 238     | 229    | 270    | 311    |
| 20                      | a350   | *g440  | 425    | 385    | 449    | 452    | 368    | 470    | 225     | 236    | 246    | 360    |
| 21                      | g348   | a440   | 425    | 375    | 434    | 491    | 397    | 508    | 246     | *251   | 248    | *378   |
| 22                      | *g345  | a440   | 416    | 365    | 402    | 550    | 699    | 452    | 242     | 253    | 242    | 365    |
| 23                      | g366   | a440   | 416    | 375    | 425    | 575    | 575    | 395    | 231     | 268    | 316    | 362    |
| 24                      | g378   | a450   | 437    | 378    | 437    | 617    | 505    | 390    | 238     | 244    | *297   | 335    |
| 25                      | g381   | a450   | 440    | 400    | 458    | 654    | 449    | 362    | 244     | 275    | 281    | 335    |
| 26                      | g366   | a460   | 362    | 428    | 455    | 718    | 385    | 323    | 240     | 297    | 288    | 333    |
| 27                      | a380   | *g461  | 370    | 413    | 425    | 741    | 362    | 309    | 227     | 275    | 270    | 304    |
| 28                      | a420   | a460   | 372    | 474    | 416    | 903    | 360    | 323    | 223     | 306    | 257    | 293    |
| 29                      | a450   | a460   | 372    | 461    | 419    | 680    | 345    | 372    | 229     | 388    | 281    | 268    |
| 30                      | *g465  | a460   | 368    | 446    | -----  | 673    | 333    | 425    | *242    | 491    | 288    | 264    |
| 31                      | a463   | -----  | 368    | 455    | -----  | 676    | -----  | *464   | -----   | 505    | 277    | -----  |
| Total                   | 11,515 | 13,605 | 12,886 | 12,188 | 16,076 | 18,392 | 16,395 | 15,614 | 11,333  | 8,909  | 9,142  | 8,822  |
| Mean                    | 371    | 454    | 416    | 393    | 554    | 593    | 546    | 504    | 378     | 287    | 295    | 294    |
| Ac-ft                   | 22,840 | 26,990 | 25,560 | 24,170 | 31,890 | 36,460 | 32,520 | 30,970 | 22,480  | 17,870 | 18,130 | 17,500 |
| Calendar year 1959: Max |        |        | 1,580  | Min    | 219    | Mean   | 409    | Ac-ft  | 296,500 |        |        |        |
| Water year 1959-60: Max |        |        | 1,900  | Min    | 223    | Mean   | 423    | Ac-ft  | 307,200 |        |        |        |

Peak discharge (base, 1,800 cfs).--Feb. 8 (8 p.m.) 2,850 cfs (6.68 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge interpolated or estimated on basis of records for adjacent days, weather records, and records for station at Reno.

g Computed from once-daily temporary staff-gage readings.

## PYRAMID AND WINNEMUCCA LAKES BASIN

3516. Truckee River below Derby Dam, near Wadsworth, Nev.

Location.--Lat 39°35'05", long 119°26'25", in NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec.19, T.20 N., R.23 E., on right bank 1,500 ft downstream from Derby Dam, 3 $\frac{1}{4}$  miles downstream from Clark, and 9 miles southwest of Wadsworth.

Drainage area.--1,670 sq mi (revised).

Records available.--October 1958 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 4,200 ft (from topographic map).

Extremes.--Maximum discharge during year, 2,430 cfs Feb. 8 (gage height, 658 ft); minimum daily, 1.3 cfs Feb. 28, 29.  
1958-60: Maximum discharge, that of Feb. 8, 1960; minimum daily, that of Feb. 28, 29, 1960.

Remarks.--Records good. Flow regulated by Lake Tahoe (see p. 219), Boca Reservoir (see p. 230), other lakes, powerplants, many diversions for irrigation, and by Derby Dam. Truckee Canal diverts water at Derby Dam out of basin to Lahontan Reservoir.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |       |
|-----|-----|-----|-------|
| 0.8 | 1.0 | 2.0 | 77    |
| 9   | 2.0 | 2.5 | 160   |
| 1.0 | 3.9 | 3.0 | 275   |
| 1.1 | 7.0 | 3.5 | 425   |
| 1.4 | 20  | 4.0 | 630   |
| 1.7 | 44  | 5.0 | 1,150 |

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     | 7.8   | 5.8   | 4.6   | 2.7  | 4.6     | 1.4   | 3.7   | 15    | 14    | 9.8   | 31    | 31    |
| 2     | 6.6   | 4.6   | 4.6   | 2.1  | 9.8     | 1.6   | 3.3   | 73    | 18    | 11    | 32    | 31    |
| 3     | 5.8   | 4.3   | 4.6   | 3.3  | 7.0     | 1.9   | 2.9   | *176  | 17    | 11    | 33    | 30    |
| 4     | 5.8   | 4.3   | 5.2   | 2.7  | 4.1     | 1.8   | 2.7   | 208   | 9.8   | 11    | 33    | 29    |
| 5     | 5.2   | 4.6   | 4.9   | 2.7  | 3.9     | 1.8   | 2.7   | 158   | 9.8   | 10    | 33    | 29    |
| 6     | 4.9   | 4.6   | 4.6   | 2.9  | 3.7     | 1.9   | 3.7   | 16    | 11    | 15    | 33    | 29    |
| 7     | 4.1   | 4.9   | 4.6   | 3.1  | 3.7     | 2.3   | 4.6   | 20    | 11    | 20    | 33    | 29    |
| 8     | 4.1   | 4.9   | 4.6   | 3.7  | 610     | *420  | 116   | 32    | 11    | 21    | 33    | 29    |
| 9     | 4.1   | 4.9   | 4.6   | 3.5  | *1,030  | 38    | 51    | 16    | 12    | 21    | 33    | 29    |
| 10    | 4.1   | 4.6   | 4.6   | 3.3  | 83      | 5.8   | 37    | 18    | 11    | 21    | 33    | 27    |
| 11    | 4.1   | 4.6   | 4.9   | 3.1  | 8.2     | 3.1   | 15    | 15    | 12    | 22    | 33    | 25    |
| 12    | 3.7   | 4.6   | 4.3   | 3.1  | 4.1     | 3.3   | 9.0   | 13    | 12    | 32    | 33    | 24    |
| 13    | 3.9   | 4.9   | 4.6   | 3.1  | 3.5     | 5.2   | 4.6   | 12    | 13    | 33    | 33    | 24    |
| 14    | 3.7   | 4.9   | 4.6   | 3.1  | 2.9     | 3.9   | 3.5   | 11    | 12    | 33    | 37    | 24    |
| 15    | 4.1   | 4.9   | 4.3   | 3.3  | 2.9     | 2.5   | 8.2   | 13    | 11    | 33    | 30    | 20    |
| 16    | 4.1   | 4.9   | 4.1   | 2.9  | 2.9     | 1.9   | 13    | 13    | 11    | 33    | 31    | 16    |
| 17    | 4.6   | 4.9   | 4.3   | 2.0  | 2.9     | 1.7   | 15    | 13    | 11    | 33    | 29    | 16    |
| 18    | 4.3   | *4.9  | 4.6   | 2.5  | 2.9     | 1.8   | 15    | 15    | 11    | 33    | 33    | 16    |
| 19    | *4.6  | 4.3   | 4.6   | 3.1  | 2.9     | 2.1   | 15    | 13    | 10    | 33    | 31    | 16    |
| 20    | 4.3   | 4.3   | 4.3   | 2.9  | 2.7     | 1.8   | 15    | 11    | 9.8   | 33    | 29    | *16   |
| 21    | 4.6   | 4.3   | 4.3   | 2.9  | 1.9     | 1.9   | 15    | 12    | *10   | 33    | 29    | 16    |
| 22    | 4.3   | 4.3   | 4.6   | 2.9  | 1.9     | *2.1  | 30    | 14    | 11    | 33    | 29    | 16    |
| 23    | 4.3   | 4.6   | *4.3  | 2.9  | *1.8    | 2.7   | 18    | 12    | 11    | 33    | *32   | 16    |
| 24    | 4.1   | 4.6   | 4.6   | 2.9  | 1.8     | 2.7   | 16    | 11    | 11    | 33    | 30    | 15    |
| 25    | 4.3   | 4.6   | 4.9   | 2.9  | 1.7     | 3.3   | 16    | *11   | 11    | 33    | 30    | 15    |
| 26    | 4.1   | 4.6   | 4.6   | 2.9  | 1.5     | 3.5   | *16   | 11    | 11    | *33   | 31    | 15    |
| 27    | 4.3   | 5.2   | 3.9   | *3.3 | 1.4     | 4.9   | 18    | 11    | 11    | 33    | 31    | 15    |
| 28    | 4.3   | 4.9   | 3.9   | 3.3  | 1.3     | 38    | 18    | 11    | 9.8   | 32    | 32    | 15    |
| 29    | 4.3   | 4.9   | 3.5   | 4.3  | 1.3     | 8.6   | 17    | 14    | 2.4   | 27    | 32    | 14    |
| 30    | 5.2   | 4.9   | 12    | 4.1  | -----   | 4.1   | 16    | 22    | 9.8   | 30    | 32    | 13    |
| 31    | 6.2   | ----- | 4.6   | 4.3  | -----   | 3.9   | ----- | 12    | ----- | 32    | 32    | ----- |
| Total | 143.9 | 141.6 | 146.7 | 95.8 | 1,810.3 | 579.5 | 562.3 | 1,002 | 342.4 | 820.8 | 986   | 640   |
| Mean  | 4.64  | 4.72  | 4.73  | 3.09 | 62.4    | 18.7  | 18.7  | 32.3  | 11.4  | 26.5  | 31.8  | 21.3  |
| Ac-ft | 285   | 281   | 291   | 190  | 3,590   | 1,150 | 1,120 | 1,990 | 679   | 1,630 | 1,960 | 1,270 |

Calendar year 1959: Max 662 Min 1.4 Mean 16.4 Ac-ft 11,860  
Water year 1959-60: Max 1,030 Min 1.3 Mean 19.9 Ac-ft 14,440

\* Discharge measurement made on this day.

3517. Truckee River near Nixon, Nev.

Location.--Lat 39°46'40", long 119°20'10", in SW 1/4 sec.18, T.22 N., R.24 E., on right bank 1 mile upstream from Pyramid Indian Reservation diversion dam, 4 miles south of Nixon, and 13 miles upstream from mouth.

Drainage area.--1,869 sq mi (revised).

Records available.--October 1957 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 3,940 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,560 cfs Feb. 9 (gage height, 6.01 ft); minimum daily, 8.1 cfs July 7.

1957-60: Maximum discharge, 5,160 cfs May 21, 1958 (gage height, 8.77 ft); minimum daily, that of July 7, 1960.

Flood of Dec. 24, 1955, reached a stage of 14.1 ft, from floodmarks (discharge, 14,000 cfs by flow-over-dam measurement of peak flow).

Remarks.--Records good. Flow regulated by Lake Tahoe (see p. 219), Boca Reservoir (see p. 230), other lakes, powerplants, and many diversions for irrigation. Truckee Canal often diverts practically all flow at Derby Dam about 25 miles upstream out of basin to Lahontan Reservoir. Several diversions for irrigation between station and Truckee Canal. One irrigation canal diverts between station and mouth of river.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |       |
|-----|-----|-----|-------|
| 2.1 | 6.4 | 3.5 | 189   |
| 2.3 | 14  | 4.0 | 348   |
| 2.5 | 27  | 5.0 | 830   |
| 2.7 | 45  | 6.0 | 1,530 |
| 3.0 | 85  |     |       |

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                       | 25    | 24    | 26    | 28      | 26    | 26        | 30    | 29           | 24    | 9.6   | 38    | 38    |
| 2                       | 24    | 24    | 26    | 34      | 28    | 26        | 29    | 32           | 20    | 9.6   | 40    | 40    |
| 3                       | 25    | 25    | 26    | 30      | 26    | 25        | 29    | 270          | 18    | 10    | 37    | 41    |
| 4                       | 27    | 24    | 25    | 28      | 27    | 25        | 29    | 344          | 18    | 9.6   | 32    | 35    |
| 5                       | 28    | 24    | 25    | 28      | 27    | 24        | 28    | 396          | 18    | 9.6   | 36    | 33    |
| 6                       | 27    | 23    | 25    | 28      | 26    | 23        | 27    | 176          | 18    | 9.2   | 35    | 33    |
| 7                       | 25    | 23    | 24    | 29      | 26    | 24        | 27    | 65           | 17    | 8.1   | 31    | 31    |
| 8                       | 25    | 24    | 24    | 29      | 26    | 141       | 52    | 52           | 17    | a14   | 33    | 29    |
| 9                       | 26    | 24    | 24    | 29      | 1,020 | 241       | 112   | 57           | 16    | a14   | 32    | 29    |
| 10                      | 25    | 24    | 24    | 27      | 361   | 74        | 76    | 43           | 18    | a14   | 34    | 29    |
| 11                      | 24    | 24    | 24    | 27      | 105   | 46        | 64    | 36           | 19    | a14   | 29    | 33    |
| 12                      | 24    | 24    | 24    | 27      | 64    | 38        | 44    | 31           | 18    | a18   | 29    | 34    |
| 13                      | 24    | 25    | 25    | 26      | 51    | 35        | 34    | 29           | 16    | a22   | 27    | 41    |
| 14                      | 24    | 25    | 24    | 26      | 43    | 33        | 29    | 28           | 13    | a24   | 25    | 40    |
| 15                      | 24    | 25    | 24    | 26      | 39    | 32        | 24    | 28           | 12    | a25   | 27    | 40    |
| 16                      | 23    | 25    | 26    | 26      | 36    | 31        | 22    | a28          | 13    | a25   | 28    | 42    |
| 17                      | 23    | 22    | 26    | 25      | 33    | 28        | 21    | a27          | 12    | a25   | 24    | 38    |
| 18                      | 22    | *24   | 26    | 26      | 33    | 26        | 21    | a27          | 11    | 25    | 21    | 35    |
| 19                      | *21   | 25    | 26    | 25      | 33    | 26        | 21    | a28          | 10    | 23    | 23    | 35    |
| 20                      | 22    | 25    | 26    | 25      | 31    | 26        | 21    | a27          | 9.6   | 21    | 21    | *38   |
| 21                      | 23    | 25    | *26   | 25      | 30    | 26        | 21    | a25          | *13   | 22    | 22    | 37    |
| 22                      | 22    | 24    | 26    | 25      | 29    | *26       | 22    | a26          | 14    | 21    | 26    | 38    |
| 23                      | 23    | 24    | 26    | 25      | *29   | 25        | 25    | a27          | 14    | 21    | *33   | 38    |
| 24                      | 23    | 24    | 27    | 25      | 28    | 24        | 29    | a25          | 13    | 24    | 33    | 37    |
| 25                      | 22    | 24    | 28    | 26      | 28    | 24        | 26    | *24          | 11    | 24    | 36    | 33    |
| 26                      | 22    | 24    | 26    | 26      | 27    | 25        | *25   | 24           | 13    | *24   | 36    | 33    |
| 27                      | 22    | 24    | 26    | *26     | 27    | 26        | 25    | 24           | 14    | 29    | 32    | 36    |
| 28                      | 21    | 24    | 26    | 26      | 26    | 27        | 27    | 24           | 15    | 35    | 30    | 37    |
| 29                      | 19    | 25    | 26    | 26      | 26    | 46        | 27    | 24           | 11    | 32    | 38    | 29    |
| 30                      | 21    | 26    | 25    | 25      | 40    | 29        | 24    | 10           | 33    | 40    | 40    | 30    |
| 31                      | 24    | ---   | 27    | 25      | ---   | 33        | ---   | 32           | ---   | 32    | 35    | ---   |
| Total                   | 730   | 727   | 789   | 829     | 2,309 | 1,272     | 996   | 2,032        | 443.6 | 626.7 | 970   | 1,055 |
| Mean                    | 23.5  | 24.2  | 25.5  | 26.7    | 79.6  | 41.0      | 33.2  | 65.5         | 14.8  | 20.2  | 31.3  | 35.2  |
| Ac-ft                   | 1,450 | 1,440 | 1,560 | 1,640   | 4,580 | 2,520     | 1,980 | 4,030        | 880   | 1,240 | 1,920 | 2,090 |
| Calendar year 1959: Max | 488   |       |       | Min 14  |       | Mean 29.7 |       | Ac-ft 21,500 |       |       |       |       |
| Water year 1959-60: Max | 1,020 |       |       | Min 8.1 |       | Mean 34.9 |       | Ac-ft 25,330 |       |       |       |       |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for station near Wadsworth.

## 3525. McDermitt Creek near McDermitt, Nev.

Location.--Lat 41°58', long 117°50', in SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec.8, T.47 N., R.37 E., on left bank  $\frac{6}{2}$  miles southwest of McDermitt.

Drainage area.--225 sq mi.

Records available.--October 1948 to September 1960.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 4,545 ft (from topographic map).

Average discharge.--12 years, 31.0 cfs (22,440 acre-ft per year).

Extremes.--Maximum discharge during year, 298 cfs Mar. 22, 24 (gage height, 3.38 ft); no flow Aug. 16 to Sept. 30.

1948-60: Maximum discharge, 2,100 cfs Jan. 15, 1956 (gage height, 8.60 ft, from floodmark), from rating curve extended above 460 cfs on basis of slope-area measurements at gage heights 7.74 and 8.60 ft; no flow for several days in 1955, 1959-60.

Remarks.--Records good except those for periods of ice effect, which are poor.

Revisions (water years).--WSP 1214: 1949-50(P).

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.1 | 0   | 1.8 | 6.5 |
| 1.2 | .1  | 1.9 | 12  |
| 1.3 | .2  | 2.0 | 18  |
| 1.4 | .5  | 2.2 | 38  |
| 1.5 | 1.0 | 2.5 | 82  |
| 1.6 | 1.9 | 2.8 | 145 |
| 1.7 | 3.6 | 3.1 | 225 |

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                       | 2.2   | 4.3   | 3.5   | 4.0   | 9.0   | 11    | 61    | 25    | 21     | 3.3  | 8.8  |       |
| 2                       | 2.2   | 4.3   | 4.0   | 3.5   | 8.0   | 14    | 67    | 29    | 22     | 3.0  | 4.3  |       |
| 3                       | 2.2   | 4.8   | 5.0   | 4.0   | 6.1   | 14    | 91    | 33    | 23     | 2.8  | 3.0  |       |
| 4                       | 2.2   | 5.4   | 3.5   | 3.0   | 11    | 12    | 83    | 34    | 22     | 2.8  | 2.3  |       |
| 5                       | 2.2   | 4.2   | 3.5   | 4.0   | 12    | 12    | 102   | 29    | 20     | 2.4  | 1.9  |       |
| 6                       | 2.2   | 3.8   | 3.5   | 5.0   | 11    | 26    | 115   | 25    | 20     | *2.2 | 1.7  |       |
| 7                       | 2.2   | 4.4   | 3.5   | 6.0   | 14    | 29    | *115  | 28    | 20     | 2.2  | 1.5  |       |
| 8                       | 3.0   | 4.8   | 3.8   | 7.0   | 25    | 33    | 104   | 36    | 20     | 5.7  | 1.3  |       |
| 9                       | 3.1   | 5.1   | *4.0  | 6.5   | 38    | 33    | 91    | 36    | 19     | 6.9  | 1.2  |       |
| 10                      | 4.0   | *5.7  | 4.0   | 7.0   | 34    | 27    | 84    | 37    | 17     | 6.1  | 1.0  |       |
| 11                      | 3.8   | 5.7   | 4.5   | 7.0   | 34    | 28    | 77    | 39    | 15     | 5.1  | *.9  |       |
| 12                      | 3.6   | 6.5   | 4.5   | 5.0   | 27    | 28    | 69    | 43    | 14     | 4.8  | .7   |       |
| 13                      | 3.3   | 5.0   | 4.0   | 4.0   | 21    | 32    | 61    | 47    | 13     | 4.5  | .4   |       |
| 14                      | *3.6  | 3.8   | 3.0   | 5.0   | 20    | 32    | 57    | 43    | 12     | 4.0  | .2   |       |
| 15                      | 3.3   | 4.0   | 3.5   | 6.0   | 16    | *32   | 52    | 37    | 12     | 3.6  | .1   | (*)   |
| 16                      | 3.3   | 5.1   | 4.0   | 6.5   | 14    | 27    | 46    | 34    | 12     | 3.3  | 0    |       |
| 17                      | 3.1   | 4.8   | 4.0   | 6.5   | 10    | 30    | 39    | 30    | 11     | 3.1  | 0    |       |
| 18                      | 3.3   | 4.9   | 4.5   | 6.0   | 14    | 64    | 37    | 30    | 9.9    | 3.0  | 0    |       |
| 19                      | 3.6   | 7.9   | 4.5   | *5.8  | *14   | 105   | 36    | 30    | 8.8    | 2.8  | 0    |       |
| 20                      | 3.6   | 5.4   | 4.5   | 6.0   | 10    | 138   | 34    | 26    | 7.3    | 2.6  | 0    |       |
| 21                      | 3.6   | 7.3   | 5.0   | 6.0   | 11    | 178   | 34    | 32    | 7.3    | 2.3  | 0    |       |
| 22                      | 3.8   | 5.3   | 5.0   | 6.0   | 10    | 212   | 36    | 33    | 7.3    | 2.2  | 0    |       |
| 23                      | 4.0   | 6.9   | 5.5   | 5.5   | 10    | 206   | 34    | 27    | 6.9    | 2.2  | 0    |       |
| 24                      | 4.0   | 6.5   | 6.0   | 5.5   | 9.0   | 206   | 30    | 25    | 6.1    | 2.0  | 0    |       |
| 25                      | 4.0   | 6.9   | 5.5   | 7.0   | 14    | 190   | 26    | 25    | 5.4    | 1.9  | 0    |       |
| 26                      | 4.0   | 4.4   | 5.0   | 8.0   | 12    | 176   | 27    | *23   | 4.8    | 1.9  | 0    |       |
| 27                      | 4.0   | 3.2   | 5.0   | 8.0   | 6.9   | 140   | 26    | 21    | 4.8    | 1.9  | 0    |       |
| 28                      | 4.0   | 3.0   | 4.5   | 8.0   | 8.5   | 128   | *26   | 20    | 4.5    | 1.8  | 0    |       |
| 29                      | 4.0   | 3.5   | 4.5   | 8.5   | 9.0   | 93    | 25    | 20    | 4.3    | 1.7  | 0    |       |
| 30                      | 4.0   | 4.0   | 4.5   | 9.0   | ----- | 77    | 25    | 21    | 4.0    | 1.7  | 0    |       |
| 31                      | 4.0   | ----- | 4.5   | 9.0   | ----- | *65   | ----- | 21    | -----  | 2.3  | 0    |       |
| Total                   | 103.4 | 150.9 | 134.3 | 187.3 | 456.5 | 2,398 | 1,720 | 939   | 374.4  | 96.1 | 29.3 | 0     |
| Mean                    | 3.34  | 5.03  | 4.33  | 6.04  | 15.1  | 77.4  | 57.3  | 30.3  | 12.5   | 3.10 | 0.95 | 0     |
| Ac-ft                   | 205   | 299   | 266   | 372   | 866   | 4,760 | 3,410 | 1,860 | 743    | 191  | 58   | 0     |
| Calendar year 1959: Max | 36    |       |       | Min   | 0     | Mean  | 7.23  | Ac-ft | 5,230  |      |      |       |
| Water year 1959-60: Max | 212   |       |       | Min   | 0     | Mean  | 17.9  | Ac-ft | 13,030 |      |      |       |

Peak discharge (base, 150 cfs).--Mar. 22 (1:15 a.m.) 298 cfs (3.38 ft).

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

Note.--Stage-discharge relation affected by ice Nov. 28 to Feb. 2, Feb. 12-20, Feb. 28 to Mar. 2.

3530. East Fork Quinn River near McDermitt, Nev.

Location.--Lat 41°59', long 117°35', in sec.9, T.47 N., R.39 E., on right bank 1 mile downstream from South Fork and 7 miles east of McDermitt.

Drainage area.--140 sq mi, approximately.

Records available.--October 1948 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 4,700 ft (from topographic map).

Average discharge.--12 years, 26.6 cfs (19,260 acre-ft per year).

Extremes.--Maximum discharge during year, 290 cfs Mar. 25 (gage height, 5.45 ft); minimum, 0.4 cfs Aug. 30.

1948-60: Maximum discharge, 1,270 cfs Jan. 15, 1956 (gage height, 8.5? ft); minimum, 0.1 cfs Sept. 6, 7, 1955.

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

Rating tables, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Mar. 20-25)

Oct. 1 to Mar. 19

Mar. 20 to Sept. 30

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| 3.1 | 2.6 | 2.5 | 0   | 3.1 | 17  |
| 3.2 | 5.3 | 2.6 | .9  | 3.4 | 36  |
| 3.4 | 14  | 2.7 | 2.7 | 4.0 | 84  |
| 3.7 | 35  | 2.8 | 5.1 | 4.8 | 188 |
| 4.0 | 64  | 2.9 | 8.2 |     |     |

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     | 3.0   | 3.8   | 3.8   | 4.0   | 5.7   | 7.1     | 56    | 22    | 15    | 2.7  | 3.5  | 0.8   |
| 2     | 3.0   | 4.0   | 4.0   | 3.5   | 6.0   | 7.6     | 110   | 25    | 14    | 2.5  | 2.0  | .8    |
| 3     | 3.0   | 4.0   | 4.0   | 3.8   | 4.7   | 8.4     | 109   | 26    | 13    | 2.5  | 1.6  | .9    |
| 4     | 3.0   | 4.0   | 3.3   | 3.8   | 6.4   | 8.4     | 111   | 28    | 12    | 2.3  | 1.4  | 1.6   |
| 5     | 3.0   | 3.5   | 3.3   | 3.8   | 6.4   | 10      | 117   | 26    | 12    | 2.2  | 1.3  | 1.1   |
| 6     | 3.0   | 3.5   | 3.5   | 3.8   | 6.4   | 15      | *109  | 24    | 11    | *2.0 | 1.3  | 1.1   |
| 7     | 3.0   | 3.5   | 3.5   | 3.8   | 8.9   | 57      | 116   | 27    | 11    | 2.0  | 1.1  | 1.1   |
| 8     | 3.5   | 3.8   | 3.5   | 4.4   | 28    | 56      | 97    | 28    | 10    | 1.8  | .9   | 1.1   |
| 9     | 3.8   | 4.0   | *3.8  | 4.0   | 28    | 40      | 87    | 26    | 10    | 1.8  | .9   | .9    |
| 10    | 3.8   | *3.9  | 3.5   | 4.4   | 21    | 31      | 76    | 26    | 9.4   | 1.4  | .9   | .9    |
| 11    | 3.5   | 4.0   | 3.8   | 4.7   | 18    | 26      | 68    | 27    | 8.6   | 1.6  | *.8  | 1.1   |
| 12    | 3.5   | 4.0   | 3.5   | 4.7   | 15    | 31      | 59    | 27    | 8.2   | 1.4  | .9   | .9    |
| 13    | 3.5   | 3.8   | 3.8   | 4.0   | 14    | 33      | 50    | 27    | 7.6   | 1.3  | 1.1  | 1.1   |
| 14    | *3.8  | 3.3   | 3.5   | 4.7   | 12    | 31      | 48    | 26    | 7.3   | 1.3  | 1.1  | *1.3  |
| 15    | 3.8   | 3.5   | 3.5   | 4.7   | 12    | *30     | 44    | 25    | 7.3   | 1.3  | 1.3  | 1.3   |
| 16    | 3.8   | 3.8   | 3.5   | 4.7   | 11    | 28      | 40    | 24    | 7.0   | 1.1  | 1.4  | 1.3   |
| 17    | 3.8   | 3.5   | 3.5   | 4.7   | 9.8   | 28      | 37    | 24    | 7.0   | .9   | 1.3  | 1.3   |
| 18    | 3.8   | 3.8   | 3.8   | 4.7   | 10    | 34      | 33    | 24    | 7.0   | .9   | 1.3  | 1.3   |
| 19    | 3.8   | 4.4   | 3.8   | *5.0  | *9.8  | 53      | 32    | 22    | 6.0   | .9   | 1.1  | 1.4   |
| 20    | 3.8   | 4.0   | 3.8   | 5.0   | 8.4   | 83      | 32    | 21    | 5.7   | .9   | .9   | 1.4   |
| 21    | 3.8   | 4.4   | 4.0   | 4.7   | 9.3   | 134     | 33    | 26    | 5.7   | .9   | .9   | 1.6   |
| 22    | 3.8   | 4.0   | 3.8   | 4.7   | 8.4   | 153     | 35    | 25    | 5.4   | .9   | 1.6  | 1.8   |
| 23    | 3.8   | 4.0   | 4.0   | 4.4   | 7.6   | 168     | 35    | 24    | 5.1   | 1.1  | 1.8  | 1.8   |
| 24    | 3.8   | 4.4   | 4.0   | 4.4   | 7.2   | 184     | 32    | 22    | 4.4   | .9   | 1.6  | 1.6   |
| 25    | 3.8   | 4.4   | 4.4   | 4.7   | 8.8   | 183     | 30    | 21    | 4.1   | .9   | 1.4  | 1.6   |
| 26    | 3.8   | 3.5   | 3.5   | 4.7   | 8.4   | 164     | 28    | *19   | 4.1   | .8   | 1.4  | 1.6   |
| 27    | 3.8   | 3.3   | 3.5   | 5.0   | 7.2   | 139     | 28    | 19    | 3.7   | .8   | 1.4  | 1.6   |
| 28    | 3.8   | 3.5   | 3.8   | 5.0   | 6.8   | 120     | *28   | 18    | 3.2   | .9   | 1.3  | 1.6   |
| 29    | 4.0   | 3.5   | 3.5   | 5.3   | 6.8   | 89      | 24    | 17    | 2.9   | 1.1  | 1.1  | 1.7   |
| 30    | 3.8   | 3.8   | 4.0   | 5.7   | ----- | 80      | 22    | 16    | 2.9   | 1.4  | .9   | 1.9   |
| 31    | 3.8   | ----- | 4.0   | 5.3   | ----- | *61     | ----- | 16    | ----- | 3.9  | .9   | ----- |
| Total | 111.2 | 114.7 | 115.2 | 140.1 | 312.0 | 2,092.7 | 1,724 | 728   | 230.6 | 46.4 | 40.4 | 39.5  |
| Mean  | 3.59  | 3.82  | 3.72  | 4.52  | 10.8  | 67.5    | 57.5  | 23.5  | 7.69  | 1.50 | 1.30 | 1.32  |
| Ac-ft | 221   | 228   | 228   | 278   | 619   | 4,150   | 3,420 | 1,440 | 457   | 92   | 80   | 78    |

Calendar year 1959: Max 39

Min 0.9

Mean 6.86

Ac-ft 4,970

Water year 1959-60: Max 184

Min 0.8

Mean 15.6

Ac-ft 11,290

Peak discharge (base, 100 cfs).--Mar. 7 (6:15 p.m.) 138 cfs (4.54 ft); Mar. 25 (7 to 8 p.m.) 290 cfs (5.45 ft); Apr. 2 (4:30 p.m.) 196 cfs (4.89 ft).

\* Discharge measurement made on this day.

3535. Quinn River near McDermitt, Nev.

Location.--Lat 41°47', long 117°48', in SW $\frac{1}{4}$  sec.15, T.45 N., R.37 E., on left bank  $1\frac{1}{2}$  miles upstream from Flat Creek and  $15\frac{1}{2}$  miles south of McDermitt.

Drainage area.--1,100 sq mi, approximately.

Records available.--October 1948 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 4,240 ft (from river-profile map).

Average discharge.--12 years, 35.1 cfs (25,410 acre-ft per year).

Extremes.--Maximum discharge during year, 90 cfs Apr. 7 (gage height, 1.83 ft); minimum, 0.1 cfs Feb. 28.

1948-60: Maximum discharge, 1,580 cfs Apr. 27, 1952 (gage height, 8.39 ft); minimum, that of Feb. 28, 1960.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Several diversions above station for irrigation.

Rating table, water year 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |    |
|-----|-----|-----|----|
| 0.2 | 0.2 | 0.8 | 13 |
| .3  | .8  | 1.0 | 24 |
| .4  | 2.0 | 1.4 | 52 |
| .5  | 3.8 | 1.8 | 87 |
| .6  | 6.2 |     |    |

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     | 0.8  | 0.7   | 0.7  |      | 3.0   | 0.9   | 48    | 10    | 1.8   | 0.4  | 0.6  | 0.4   |
| 2     | .7   | .7    |      |      | 2.8   | .9    | 41    | 11    | 1.4   | .4   | .6   | .4    |
| 3     | .8   | .7    | .7   |      | 2.8   | .9    | 46    | 13    | 1.2   | .4   | .6   | .5    |
| 4     | .8   | .7    | .7   |      | 2.9   | .9    | 60    | 13    | 1.0   | .4   | .4   | .6    |
| 5     | .8   | .7    | .7   |      | 3.0   | 1.0   | 60    | 12    | .9    | .4   | .4   | .5    |
| 6     | .8   | .7    | .7   |      | 5.0   | 1.0   | *65   | 10    | .8    | *.4  | .4   | .5    |
| 7     | .8   | .7    | .8   |      | 10    | 3.9   | 81    | 11    | .8    | .4   | .3   | .6    |
| 8     | .9   | .7    | .8   |      | 15    | 1.0   | 77    | 12    | .8    | .4   | .3   | .4    |
| 9     | .8   | .8    | *.8  |      | 20    | .8    | 78    | 11    | .8    | .4   | .3   | .5    |
| 10    | .7   | *.8   | .8   |      | 17    | .8    | 81    | 9.4   | .8    | .3   | .3   | .5    |
| 11    | .8   | .8    | .8   |      | 13    | .8    | 77    | 8.8   | .8    | .4   | *.3  | .5    |
| 12    | .8   | .8    | .8   |      | 10    | 1.0   | 67    | 7.8   | .8    | .3   | .3   | .6    |
| 13    | .8   | .8    | .8   | 0.8  | 6.0   | 1.1   | 54    | 6.5   | .9    | .3   | .4   | .6    |
| 14    | *.7  | .8    | .8   |      | 4.0   | 1.0   | 43    | 6.2   | 1.0   | .3   | .3   | *.5   |
| 15    | .7   | .8    | .8   |      | 2.0   | *.8   | 36    | 6.2   | .8    | .3   | .3   | .5    |
| 16    | .7   | .8    | .8   |      | 1.0   | .8    | 32    | 5.9   | .7    | .3   | .4   | .5    |
| 17    | .7   | .8    | .8   |      | .8    | .8    | 29    | 5.7   | .7    | .3   | .4   | .6    |
| 18    | .7   | .8    | .8   |      | .8    | .8    | 27    | 5.9   | .6    | .3   | .3   | .6    |
| 19    | .7   | .8    | .8   | (*)  | *.8   | .8    | 23    | 5.9   | .6    | .3   | .3   | .6    |
| 20    | .7   | .8    | .8   |      | .8    | .8    | 19    | 5.9   | .6    | .3   | .3   | .6    |
| 21    | .7   | .8    | .8   |      | .8    | .8    | 17    | 8.5   | .6    | .3   | .3   | .6    |
| 22    | .7   | .8    | .8   |      | .8    | .8    | 17    | 7.8   | .8    | .3   | .4   | .6    |
| 23    | .7   | .8    | .8   |      | .8    | 1.9   | 16    | 7.8   | .5    | .3   | .4   | .6    |
| 24    | .7   | .8    | .8   |      | .8    | 20    | 14    | 7.2   | .5    | .3   | .4   | .6    |
| 25    | .7   | .7    | .8   |      | .8    | 41    | 13    | 6.8   | .5    | .4   | .4   | .6    |
| 26    | .7   | .7    | .8   |      | .8    | 60    | 13    | *6.2  | .5    | .4   | .4   | .6    |
| 27    | .7   | .7    | .8   |      | .8    | 75    | 15    | 5.4   | .4    | .4   | .4   | .6    |
| 28    | .7   | .7    | .8   |      | 1.1   | 81    | *16   | 4.9   | .4    | .5   | .4   | .6    |
| 29    | .7   | .7    | .8   | 3.0  | .9    | 78    | 14    | 4.2   | .4    | .5   | .4   | .6    |
| 30    | .7   | .7    | .8   |      | ----- | 62    | 12    | 3.8   | .4    | .8   | .4   | .6    |
| 31    | .7   | ----- | .8   |      | ----- | *52   | ----- | 2.8   | ----- | .8   | .4   | ----- |
| Total | 22.9 | 22.6  | 24.2 | 38.0 | 128.3 | 488.3 | 1,191 | 240.6 | 22.8  | 11.6 | 11.8 | 16.4  |
| Mean  | 0.74 | 0.75  | 0.78 | 1.23 | 4.42  | 15.8  | 39.7  | 7.76  | 0.75  | 0.37 | 0.38 | 0.55  |
| Ac-ft | 45   | 45    | 48   | 75   | 254   | 969   | 2,360 | 477   | 45    | 23   | 23   | 33    |

Calendar year 1959: Max 4.7 Min 0.6 Mean 1.36 Ac-ft 985  
 Water year 1959-60: Max 81 Min 0.3 Mean 6.06 Ac-ft 4,400

\* Discharge measurement made on this day.

Note.--No gage-height record Dec. 20 to Feb. 16, Mar. 9-14; discharge estimated on basis of 1 discharge measurement, weather records, recorded range in stage, and records for nearby streams.

3565. Susan River at Susanville, Calif.

Location.--Lat 40°25', long 120°40', in NE $\frac{1}{4}$  sec.31, T.30 N., R.12 E., on left bank 0.5 mile west of Susanville and 1.1 miles upstream from Piute Creek.

Drainage area.--192 sq mi.

Records available.--June 1900 to December 1905 (gage heights only August 1901 to January 1903), March to May 1913 (gage heights only), February 1917 to June 1921, October 1950 to September 1960. Published as "near Susanville" 1900-1905. Discharge records for August to September 1901 and January 1903, published in WSP 300, have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Datum of gage is 4,225.72 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1950, staff gages at several sites in vicinity of old powerplant about 0.9 mile upstream at various datums.

Average discharge.--16 years (1900-1901, 1903-5, 1917-20, 1950-60), 98.4 cfs (71,240 acre-ft per year).

Extremes.--Maximum discharge during year, 1,780 cfs Feb. 8 (gage height, 5.30 ft); minimum, 0.7 cfs July 25, Aug. 22.

1900-1905, 1913, 1917-21, 1950-60: Maximum discharge, 3,540 cfs Dec. 23, 1955 (gage height, 6.62 ft), from rating curve extended above 840 cfs on basis of slope-area measurement of peak flow; minimum, that of July 25, Aug. 22, 1960.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by McCoy Flat and Hog Flat Reservoirs (combined capacity, 25,300 acre-ft). Diversions for irrigation of about 1,400 acres above station. Records of chemical analyses for the water year 1960 are given in WSP 1744.

Revisions (water years).--WSP 1444: 1951, 1953-54(P). WSP 1564: 1900-1901, 1903-4, 1920. See also Records available.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 28

June 29 to Sept. 30

|     |     |     |       |     |     |
|-----|-----|-----|-------|-----|-----|
| 0.5 | 7.3 | 2.0 | 58    | 0.2 | 0.8 |
| .6  | 7.8 | 2.5 | 116   | .3  | 1.5 |
| .7  | 8.5 | 3.0 | 202   | .4  | 2.4 |
| 1.0 | 12  | 3.5 | 320   | .6  | 4.8 |
| 1.3 | 22  | 4.0 | 560   | .9  | 9.7 |
| 1.6 | 34  | 5.0 | 1,440 |     |     |

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     | 7.6   | 9.2   | 10    | b9.3  | 17    | 19    | 141   | 45    | 28      | 7.2  | 1.4  | 1.9   |
| 2     | 7.7   | 9.2   | 10    | b8.8  | 25    | 17    | 138   | 51    | 28      | 5.4  | 1.3  | 1.8   |
| 3     | 7.8   | 9.2   | *10   | 9.0   | 19    | 19    | 144   | 47    | 113     | 4.8  | 2.0  | 1.9   |
| 4     | 7.9   | 9.2   | b9.4  | b8.5  | 15    | 31    | 153   | 48    | 122     | 4.0  | 1.5  | 2.0   |
| 5     | 8.2   | 9.4   | b9.0  | *8.6  | 14    | 101   | 155   | 48    | 140     | 3.5  | 1.4  | 2.0   |
| 6     | 8.5   | 9.4   | b9.1  | 9.2   | 18    | 120   | 157   | 50    | 135     | 4.0  | 1.2  | 2.0   |
| 7     | 8.7   | 9.5   | b9.3  | 9.8   | 270   | 455   | 160   | 72    | 132     | 4.5  | 1.2  | 2.0   |
| 8     | *9.2  | 9.5   | b9.7  | 14    | 1,080 | 245   | 143   | 67    | 129     | 5.1  | 1.2  | 2.0   |
| 9     | 8.4   | 9.7   | 10    | 12    | 209   | 155   | 138   | 61    | 129     | 3.6  | 1.2  | 2.2   |
| 10    | 9.2   | 9.7   | 10    | 11    | *97   | 117   | 129   | 64    | 123     | 3.6  | 1.2  | 2.3   |
| 11    | 9.0   | 9.7   | 10    | 11    | 64    | 101   | 116   | 64    | 123     | *3.0 | .9   | a2.1  |
| 12    | 8.7   | 9.8   | b9.5  | 11    | 49    | 106   | 102   | 61    | 122     | 3.2  | 1.2  | a2.1  |
| 13    | 8.8   | 9.7   | 9.4   | b10   | 44    | 115   | 95    | 60    | 124     | 2.6  | 1.4  | a2.1  |
| 14    | 8.8   | 9.5   | b9.7  | 11    | 36    | 103   | 98    | 57    | 123     | 2.4  | 1.4  | a2.1  |
| 15    | 8.8   | 9.7   | b9.2  | 10    | 35    | 88    | 85    | 54    | 120     | 2.3  | 1.8  | a2.0  |
| 16    | 8.8   | 10    | b9.0  | b9.7  | 32    | 79    | 78    | 49    | 120     | 2.3  | 1.9  | a2.0  |
| 17    | 8.8   | 9.8   | 9.5   | 10    | 28    | 82    | 74    | 47    | 120     | 2.2  | 2.0  | a2.0  |
| 18    | 8.9   | 10    | 9.5   | 10    | 30    | 95    | 71    | 52    | 119     | 2.1  | 2.2  | a2.0  |
| 19    | 8.7   | 10    | 9.1   | 9.9   | 26    | 108   | *77   | 52    | 119     | 2.1  | 2.0  | a2.0  |
| 20    | 8.4   | 9.8   | 9.4   | 9.8   | 23    | 122   | 71    | 56    | 116     | 2.0  | 2.1  | a2.0  |
| 21    | 8.5   | 10    | 9.4   | 10    | 23    | *133  | 70    | 73    | 116     | 2.4  | 2.0  | 2.3   |
| 22    | 8.6   | 9.8   | 9.4   | 10    | 21    | 143   | 73    | 61    | 113     | 1.2  | .8   | 3.0   |
| 23    | 8.7   | 10    | 9.8   | 9.9   | 20    | 150   | 74    | 65    | 110     | .9   | 1.8  | 2.7   |
| 24    | 8.8   | 10    | 11    | 9.9   | 25    | 159   | 70    | *80   | 106     | 1.2  | 3.3  | 2.6   |
| 25    | 8.8   | 10    | 12    | 10    | 21    | 160   | 62    | 75    | 100     | .8   | 2.4  | 2.6   |
| 26    | 8.9   | 9.9   | b10   | 10    | 20    | 159   | 58    | 67    | 91      | 1.7  | 2.5  | 2.7   |
| 27    | 9.0   | 10    | b10   | 10    | 19    | 192   | 61    | 58    | 77      | 1.2  | 2.2  | 2.3   |
| 28    | 9.0   | 10    | 9.9   | 10    | 19    | 184   | 53    | 54    | 84      | 2.1  | 1.9  | 2.6   |
| 29    | 9.0   | 10    | b9.1  | 11    | 19    | 144   | 50    | 46    | 14      | 2.8  | 2.0  | 2.6   |
| 30    | 9.1   | 10    | b9.4  | 12    | ----- | 168   | 46    | 43    | 9.7     | 1.4  | 2.0  | 2.6   |
| 31    | 9.1   | ----- | b9.4  | 13    | ----- | 151   | ----- | 41    | -----   | 1.4  | 1.9  | ----- |
| Total | 268.4 | 291.7 | 299.2 | 318.4 | 2,318 | 4,021 | 2,949 | 1,767 | 3,055.7 | 87.0 | 53.3 | 66.5  |
| Mean  | 8.66  | 9.72  | 9.65  | 10.3  | 79.9  | 130   | 98.3  | 57.0  | 102     | 2.81 | 1.72 | 2.22  |
| Ac-ft | 532   | 579   | 593   | 632   | 4,600 | 7,980 | 5,650 | 3,500 | 6,060   | 173  | 106  | 132   |

Calendar year 1959: Max 350 Min 2.6 Mean 42.1 Ac-ft 30,470  
 Water year 1959-60: Max 1,080 Min 0.8 Mean 42.3 Ac-ft 30,740

Peak discharge (base, 300 cfs).--Feb. 8 (8 a.m.) 1,780 cfs (5.30 ft); Mar. 7 (3 p.m.) 644 cfs (4.12 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Willow Creek near Susanville.

b Stage-discharge relation affected by ice.

## 3585. Willow Creek near Susanville, Calif.

Location.--Lat 40°29', long 120°32', in NW¼ sec.5, T.30 N., R.13 E., on left bank 4 miles upstream from Peters Valley Creek and 8 miles northeast of Susanville.

Drainage area.--92.5 sq mi, excludes that of Eagle Lake basin.

Records available.--October 1950 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 4,836.27 ft above mean sea level, unadjusted.

Average discharge.--10 years, 32.2 cfs (23,310 acre-ft per year).

Extremes.--Maximum discharge during year, 596 cfs Feb. 8 (gage height, 5.09 ft); minimum daily, 11 cfs for many days in July, August, September.

1950-60: Maximum discharge, 712 cfs Dec. 23, 1955 (gage height, 5.36 ft), from rating curve extended above 420 cfs on basis of logarithmic plotting; minimum, 8.1 cfs Nov. 16, 1951.

Revisions.--The maximum discharge for the water year 1951 has been revised to 216 cfs Jan. 23, 1951 (gage height, 3.89 ft), superseding figure published in WSP 1244.

Remarks.--Records good. Diversions for irrigation of about 5,200 acres above station.

Some flow at times enters Willow Creek from Eagle Lake through abandoned tunnel.

Revisions (water years).--WSP 1445: 1952(M). Revised figures of discharge, in cubic feet per second, for high-water period in water year 1951, superseding those published in WSP 1244, are given herewith:

Jan. 23, 1951..... 198

| Month                   | Maximum | Minimum | Mean | Runoff in acre-feet |
|-------------------------|---------|---------|------|---------------------|
| January 1951.....       | 198     | 27      | 52.6 | 3,230               |
| Water year 1950-51..... | 198     | 9.2     | 21.8 | 15,780              |
| Calendar year 1951..... | 198     | 9.2     | 18.8 | 13,590              |

Rating table, water 1959-60 (gage height, in feet, and discharge, in cubic feet per second)

|      |    |     |     |
|------|----|-----|-----|
| 2.16 | 11 | 3.0 | 70  |
| 2.2  | 12 | 3.5 | 139 |
| 2.3  | 15 | 4.0 | 240 |
| 2.5  | 26 | 4.5 | 380 |
| 2.7  | 41 | 5.0 | 560 |

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     | 24    | 27    | a26   | 26    | 37    | 42    | 43    | 18    | 17    | 12   | 12   | 12    |
| 2     | 23    | 26    | a26   | 26    | 39    | 30    | 40    | 17    | 17    | 12   | 12   | 12    |
| 3     | 23    | 27    | *26   | 26    | 37    | 26    | 38    | 16    | 16    | 12   | 12   | 12    |
| 4     | 23    | 27    | 26    | 23    | 35    | 28    | 36    | 17    | 15    | 12   | 12   | 11    |
| 5     | 23    | 26    | 23    | *23   | 36    | 35    | 26    | 18    | 15    | 12   | 11   | 11    |
| 6     | 23    | 20    | 23    | 23    | 42    | 48    | 21    | 19    | 14    | 12   | 11   | 11    |
| 7     | *31   | 16    | 23    | 26    | 159   | 99    | 21    | 20    | 14    | 12   | 12   | 12    |
| 8     | 30    | 16    | 24    | 28    | 504   | 107   | 21    | 20    | 13    | 12   | 12   | 12    |
| 9     | 30    | 16    | 24    | 29    | 535   | 85    | 20    | 20    | 13    | 12   | 12   | 12    |
| 10    | 28    | 22    | 23    | 28    | 367   | 70    | 20    | 19    | 13    | 11   | 12   | 12    |
| 11    | 20    | 25    | 24    | 28    | *233  | 66    | 22    | 19    | 13    | 11   | 12   | 12    |
| 12    | 20    | 27    | 24    | 25    | 144   | 65    | 21    | 18    | 13    | *11  | 12   | 12    |
| 13    | 26    | 28    | 26    | 26    | 124   | 67    | 20    | 18    | 13    | 12   | 12   | 12    |
| 14    | 26    | 28    | 26    | 27    | 101   | 59    | 20    | 18    | 13    | 12   | 12   | 11    |
| 15    | 25    | 28    | 26    | 27    | 91    | 55    | 20    | 19    | 12    | 12   | 12   | 12    |
| 16    | 24    | 28    | 26    | 26    | 78    | 49    | 20    | 18    | 12    | 12   | 12   | 12    |
| 17    | 25    | 28    | 27    | 28    | 68    | 46    | 18    | 16    | 12    | 12   | 12   | 12    |
| 18    | 25    | 27    | 26    | 27    | 60    | 45    | 18    | 14    | 12    | 12   | 12   | 12    |
| 19    | 24    | 27    | 25    | 26    | 57    | 42    | *18   | 13    | 12    | 11   | 12   | 12    |
| 20    | 23    | 27    | 27    | 27    | 55    | 41    | 14    | 13    | 12    | 11   | 12   | 12    |
| 21    | 18    | 27    | 27    | 27    | 54    | 37    | 16    | 14    | 12    | 11   | 12   | *12   |
| 22    | 17    | 27    | 26    | 27    | 48    | *32   | 19    | 15    | 12    | 11   | 12   | 12    |
| 23    | 17    | 27    | 29    | 28    | 46    | 34    | 22    | 15    | 12    | 11   | 12   | 12    |
| 24    | 16    | 27    | 31    | 28    | 45    | 28    | 19    | 15    | 12    | 11   | 12   | 12    |
| 25    | 16    | 27    | 31    | 28    | 45    | 23    | 19    | *15   | 12    | 12   | 12   | 12    |
| 26    | 19    | 27    | 29    | 28    | 43    | 22    | 21    | 16    | 12    | 12   | 12   | 12    |
| 27    | 20    | 27    | 28    | 28    | 42    | 23    | 23    | 17    | 12    | 12   | 12   | 12    |
| 28    | 23    | a27   | 28    | 28    | 41    | 31    | 23    | 17    | 12    | 12   | 12   | 12    |
| 29    | 27    | a26   | 28    | 28    | 40    | 38    | 20    | 18    | 12    | 12   | 12   | 12    |
| 30    | 27    | a26   | 28    | 31    | ----- | 40    | 19    | 18    | 12    | 12   | 15   | 12    |
| 31    | 27    | ----- | 26    | 33    | ----- | 45    | ----- | 18    | ----- | 12   | 12   | ----- |
| Total | 718   | 764   | 814   | 839   | 3,226 | 1,458 | 678   | 528   | 391   | 363  | 371  | 356   |
| Mean  | 23.2  | 25.5  | 26.3  | 27.1  | 111   | 47.0  | 22.6  | 17.0  | 13.0  | 11.7 | 12.0 | 11.9  |
| Ac-ft | 1,420 | 1,520 | 1,610 | 1,660 | 6,400 | 2,890 | 1,340 | 1,050 | 776   | 720  | 736  | 706   |

Calendar year 1959: Max 150 Min 13 Mean 26.5 Ac-ft 19,180

Water year 1959-60: Max 535 Min 11 Mean 28.7 Ac-ft 20,830

Peak discharge (base, 200 cfs).--Feb. 8 (12 p.m.) 596 cfs (5.09 ft).

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage.

3595. Pine Creek near Westwood, Calif.

Location.--Lat 40°35', long 121°06', in SE $\frac{1}{4}$  sec. 5, T.31 N., R.8 E., on right bank 1 mile southwest of Bogard Guard Station and 19 miles north of Westwood.

Drainage area.--22.6 sq mi.

Records available.--October 1950 to September 1960.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 5,700 ft (from topographic map).

Average discharge.--10 years, 7.46 cfs (5,400 acre-ft per year).

Extremes.--Maximum discharge during year, 33 cfs Apr. 20 (gage height, 3.29 ft); no flow for part of Aug. 20.

1950-60: Maximum discharge, 174 cfs Dec. 23, 1955 (gage height, 3.95 ft), from rating curve extended above 90 cfs by logarithmic plotting; no flow at times in 1955, 1959-60.

Remarks.--Records good except those for periods of ice effect, which are poor. No regulation or diversion above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|      |     |     |     |
|------|-----|-----|-----|
| 2.45 | 0.1 | 2.9 | 6.6 |
| 2.5  | .2  | 3.0 | 11  |
| 2.6  | .6  | 3.1 | 16  |
| 2.7  | 1.6 | 3.2 | 23  |
| 2.8  | 3.4 |     |     |

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                       | 0.6  | 0.4   |      | b0.3 | 0.3   | 0.7   | 3.9   | 11    | 5.5   | 1.7  | 0.9  | 0.1   |
| 2                       | .6   |       |      | b.3  | .2    | .7    | 5.2   | 12    | 4.9   | 1.7  | .6   | .1    |
| 3                       | .5   | .4    |      | b.3  | .2    | .8    | 6.6   | 12    | 4.6   | 1.4  | .6   | .4    |
| 4                       | .5   | .4    |      | b.3  | .1    | .8    | 8.3   | 9.5   | 4.6   | 1.4  | .5   | .6    |
| 5                       | .5   | .2    |      | *.3  | .2    | 1.1   | 9.5   | 12    | 4.2   | 1.1  | .4   | .4    |
| 6                       | .5   | .3    |      | .3   | .3    | 2.2   | 11    | 14    | 3.9   | 1.3  | .3   | .3    |
| 7                       | *.5  | .4    |      | .4   | .6    | 4.2   | 14    | 20    | 3.9   | 1.3  | .4   | .2    |
| 8                       | .6   | .3    |      | .5   | .9    | 4.9   | 15    | 19    | 3.9   | 1.6  | .4   | .1    |
| 9                       | .6   | .3    |      | .4   | 1.3   | 2.6   | 16    | 19    | 3.7   | 1.4  | .3   | .3    |
| 10                      | .5   | .4    |      | .4   | 1.7   | 2.2   | 16    | 19    | 3.4   | 1.3  | .2   | .4    |
| 11                      | .5   | .4    |      | .4   | *2.0  | 1.9   | 14    | 19    | 3.1   | 1.1  | .3   | .3    |
| 12                      | .4   | .4    |      | .4   | b2.5  | 1.7   | 11    | 19    | 3.1   | *1.0 | .3   | .2    |
| 13                      | .4   | .3    |      | .4   | b2.9  | 1.6   | 12    | 18    | 2.8   | 1.0  | .6   | .2    |
| 14                      | .4   | .3    |      | .4   | 3.1   | 1.6   | 15    | 15    | 2.8   | .9   | .4   | .2    |
| 15                      | .4   | .3    |      | .3   | 2.8   | 1.4   | 12    | 14    | 2.8   | .9   | .3   | .2    |
| 16                      | .4   | .3    | b0.3 | .3   | 2.8   | 1.6   | 11    | 14    | 2.6   | 1.0  | .3   | .3    |
| 17                      | .4   | .3    |      | .3   | 1.9   | 1.6   | 13    | 12    | 2.6   | .9   | .2   | .3    |
| 18                      | .4   | .3    |      | .3   | 1.3   | 1.7   | 15    | 10    | 2.2   | .8   | .1   | .3    |
| 19                      | .4   | .4    |      | .3   | 1.2   | 2.0   | *18   | 8.7   | 2.2   | .6   | .1   | .2    |
| 20                      | .4   | .3    |      | .3   | .9    | 2.4   | 19    | 10    | 2.0   | .7   | .3   | .2    |
| 21                      | .4   | .4    |      | .3   | .9    | 3.4   | 19    | 13    | 1.9   | .6   | .2   | *.3   |
| 22                      | .5   | .3    |      | .3   | .8    | *4.2  | 15    | 9.5   | 2.0   | .8   | .2   | .3    |
| 23                      | .5   | .5    |      | .3   | .7    | 5.2   | 11    | 10    | 1.9   | .6   | .2   | .3    |
| 24                      | .5   | .3    |      | .3   | .7    | 6.3   | 9.1   | 11    | 2.0   | .6   | .3   | .3    |
| 25                      | .5   | .4    |      | .3   | .7    | 6.6   | 7.8   | *11   | 1.9   | .6   | .3   | .3    |
| 26                      | .4   | .4    |      | .3   | .6    | 7.4   | 8.3   | 11    | 1.9   | .6   | .3   | .3    |
| 27                      | .4   | b.4   |      | .3   | .6    | 8.3   | 8.7   | 9.5   | 1.8   | .4   | .3   | .3    |
| 28                      | .4   | b.4   |      | .3   | .6    | 7.4   | 8.3   | 7.8   | 1.7   | .9   | .4   | .3    |
| 29                      | .4   | b.4   |      | .3   | .6    | 5.5   | 8.7   | 7.4   | 1.7   | .8   | .3   | .3    |
| 30                      | .3   | b.4   |      | .3   | ----- | 4.6   | 9.5   | 6.6   | 1.6   | .7   | .2   | .3    |
| 31                      | .3   | ----- |      | .3   | ----- | 3.9   | ----- | 5.8   | ----- | .9   | .2   | ----- |
| Total                   | 14.1 | 10.7  | 9.3  | 10.2 | 33.4  | 100.5 | 350.9 | 389.8 | 87.2  | 30.6 | 10.4 | 8.3   |
| Mean                    | 0.45 | 0.36  | 0.30 | 0.33 | 1.15  | 3.24  | 11.7  | 12.6  | 2.91  | 0.99 | 0.34 | 0.28  |
| Ac-ft                   | 28   | 21    | 18   | 20   | 66    | 199   | 696   | 773   | 173   | 61   | 21   | 16    |
| Calendar year 1959: Max | 25   |       |      |      | 0.1   |       | 3.02  |       | 2,190 |      |      |       |
| Water year 1959-60: Max | 20   |       |      |      | 0.1   |       | 2.88  |       | 2,090 |      |      |       |

Peak discharge (base, 35 cfs).--No peak above base.

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

3660. Twentymile Creek near Adel, Oreg.

Location.--Lat 42°04', long 119°57', in NW¼ sec.25, T.40 S., R.23 E., on left bank 8 miles downstream from confluence of Twelvemile and Fifteenmile Creeks and 8 miles southwest of Adel.

Drainage area.--194 sq mi, including 46 sq mi in Cowhead Lake area.

Records available.--March 1910 to July 1916, December 1917 to September 1919, and March 1921 to June 1922 (published as "near Warner Lake"), September 1940 to November 1944, March 1945 to September 1960.

Gage.--Water-stage recorder and concrete control. Datum of gage is 4,560.83 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Sept. 21, 1940, staff gage or water-stage recorder at sites within 1 mile downstream at various datums. Sept. 21, 1940, to Nov. 30, 1944, water-stage recorder at site 1½ miles upstream at different datums. Mar. 12, 1945, to June 28, 1952, water-stage recorder at site 70 ft upstream at datum 0.88 ft higher.

Average discharge.--25 years (1910-15, 1918-19, 1940-44, 1945-60), 49.5 cfs (35,840 acre-ft per year).

Extremes.--Maximum discharge during year, 1,440 cfs Mar. 7 (gage height, 8.66 ft); minimum, 0.1 cfs Dec. 10.

1910-19, 1921-22, 1940-60: Maximum discharge, 3,260 cfs Dec. 23, 1955 (gage height, 14.80 ft), from rating curve extended above 630 cfs on basis of contracted-opening measurement of peak flow; no flow part of Sept. 7, 1955.

Remarks.--Records good except those for periods of ice effect, which are poor. No regulation. Divisions for irrigation of 240 acres above station.

Revisions (water years).--WSP 1090: 1945. WSP 1514: 1951-53, 1954(M).

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |     |       |
|-----|-----|-----|-----|-----|-------|
| 2.0 | 0.2 | 2.4 | 19  | 4.0 | 295   |
| 2.1 | 1.5 | 2.5 | 32  | 5.0 | 522   |
| 2.2 | 4.0 | 3.0 | 108 | 6.0 | 770   |
| 2.3 | 9.0 | 3.5 | 195 | 7.0 | 1,020 |

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     | 4.0   | 4.5   | 4.5   | 2.5   | 6.5   | 3.8     | 176   | 26    | 80      | 4.0  | 3.2  | 4.0   |
| 2     | 4.0   | 4.5   | 4.0   | 2.5   | 6.0   | 4.0     | 225   | 36    | 83      | 3.8  | 3.2  | 4.0   |
| 3     | *4.0  | 4.0   | 5.0   | 2.5   | 4.0   | 4.5     | 145   | 35    | 82      | 3.8  | 3.5  | 4.5   |
| 4     | 4.0   | *4.0  | *3.5  | 2.5   | 4.5   | 5.5     | 100   | 32    | 78      | 3.2  | 3.5  | 4.5   |
| 5     | 4.0   | 4.0   | 3.2   | 2.5   | 4.5   | 58      | 90    | 31    | 72      | 3.2  | 3.5  | 4.0   |
| 6     | 3.8   | 3.8   | 3.0   | 3.0   | 5.0   | 287     | 76    | 29    | 68      | 3.5  | 3.5  | 3.8   |
| 7     | 3.8   | 4.0   | 3.0   | 3.0   | 10    | 887     | 135   | 53    | *64     | 3.5  | 3.2  | 3.5   |
| 8     | 4.0   | 4.0   | 3.0   | 3.0   | 93    | *690    | 82    | 70    | 59      | 3.2  | 3.2  | 3.2   |
| 9     | 4.0   | 4.0   | 3.0   | 3.0   | 66    | 287     | 60    | 72    | 53      | 3.2  | 3.2  | 3.0   |
| 10    | 4.0   | 4.0   | 3.0   | 2.8   | 34    | 111     | 54    | 78    | 44      | 3.0  | 3.0  | 2.5   |
| 11    | 4.0   | 4.0   | 3.0   | 2.6   | 27    | 98      | 47    | 88    | 40      | 2.8  | 2.8  | 2.2   |
| 12    | 4.0   | *4.0  | 3.2   | 2.4   | 26    | 158     | 47    | 92    | 35      | 2.8  | 2.8  | 2.2   |
| 13    | 3.8   | 4.5   | 3.0   | 2.2   | 20    | 293     | 38    | 77    | 34      | 2.8  | 2.5  | 2.2   |
| 14    | 3.8   | 4.0   | 3.0   | 2.4   | 16    | 251     | 46    | 71    | 34      | 2.8  | 2.5  | 2.0   |
| 15    | 4.0   | 4.0   | 3.0   | 2.0   | 16    | 118     | 44    | 78    | 31      | 2.5  | 2.2  | 1.8   |
| 16    | 4.0   | 4.5   | 3.0   | 2.2   | *11   | 86      | 34    | 76    | 29      | 2.5  | 2.2  | 1.8   |
| 17    | 4.0   | 4.0   | 3.0   | 2.6   | 8.5   | 325     | 32    | 85    | 28      | 2.2  | 2.2  | 1.8   |
| 18    | 4.0   | 4.0   | 3.2   | 2.8   | 8     | 493     | 26    | 54    | 23      | 1.5  | 2.0  | 2.0   |
| 19    | 4.0   | 5.0   | 3.2   | 3.0   | 7     | 503     | 31    | *53   | 23      | 1.5  | 1.8  | 2.2   |
| 20    | 4.0   | 4.5   | 3.2   | 3.2   | 6.5   | 488     | 28    | 58    | 20      | 1.5  | 1.5  | 2.2   |
| 21    | 4.5   | 4.0   | 3.2   | 3.4   | 6.5   | 500     | 34    | 64    | 18      | 1.5  | 1.5  | 2.5   |
| 22    | 5.0   | 4.5   | 3.5   | 3.4   | 6.0   | 427     | *29   | 50    | 17      | 1.5  | 2.5  | 2.8   |
| 23    | 5.0   | 4.5   | 4.0   | 3.8   | 4.5   | 359     | 28    | 46    | 15      | 1.4  | 2.8  | *2.8  |
| 24    | 4.5   | 4.5   | 4.0   | 4.0   | 4.5   | 335     | 27    | 42    | 8.5     | 1.2  | *2.8 | 2.8   |
| 25    | 4.5   | 4.5   | 3.5   | 4.5   | 4.2   | 306     | 27    | 41    | 7.0     | 1.5  | 3.0  | 2.8   |
| 26    | 5.0   | 4.0   | 3.5   | 4.5   | 4.0   | 243     | 24    | 59    | 6.0     | 1.8  | 3.2  | 2.5   |
| 27    | 4.5   | 3.8   | 3.5   | 4.5   | 3.8   | 190     | 26    | 58    | 5.5     | *2.0 | 3.5  | 2.5   |
| 28    | 4.5   | 4.0   | 3.2   | 5.0   | 3.8   | 123     | 23    | 54    | 5.0     | 2.2  | 3.5  | 2.5   |
| 29    | 4.5   | 4.5   | 3.0   | 4.5   | 3.8   | 84      | 22    | 58    | 5.0     | 2.2  | 3.8  | 2.5   |
| 30    | 4.5   | 4.0   | 2.8   | 6.5   | ----- | 98      | 22    | 65    | 4.5     | 2.5  | 4.0  | ----- |
| 31    | 4.5   | ----- | 2.5   | 5.0   | ----- | 102     | ----- | 72    | -----   | 3.2  | 4.5  | ----- |
| Total | 130.2 | 125.6 | 102.7 | 101.8 | 420.6 | 7,917.8 | 1,780 | 1,783 | 1,071.5 | 78.3 | 90.6 | 83.3  |
| Mean  | 4.20  | 4.19  | 3.31  | 3.28  | 14.5  | 255     | 59.3  | 57.3  | 35.7    | 2.53 | 2.92 | 2.78  |
| Ac-ft | 258   | 249   | 204   | 202   | 834   | 15,700  | 3,530 | 3,540 | 2,130   | 155  | 180  | 165   |

Calendar year 1959: Max 97 Min 1.6 Mean 13.3 Ac-ft 9,640  
 Water year 1959-60: Max 887 Min 1.2 Mean 37.4 Ac-ft 27,150

Peak discharge (base, 510 cfs).--Mar. 7 (6 p.m.) 1,440 cfs (8.66 ft); Mar. 13 (8 p.m.) 612 cfs (5.37 ft); Mar. 18 (9 p.m.) 962 cfs (6.77 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 6-9, 11-21, Dec. 24 to Jan. 23, Feb. 18, 19, 25-27, Mar. 1, 2.

3700. Camas Creek near Lakeview, Oreg.

Location.--Lat 42°13', long 120°06', in NW<sup>1</sup> sec.2, T.39 S., R.22 E., on left bank 0.2 mile downstream from Blue Creek and 12 miles east of Lakeview.

Drainage area.--63 sq mi, approximately.

Records available.--September 1912 to November 1914, March to May 1915, December 1949 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 5,472.41 ft above mean sea level (State Highway Department bench mark). Sept. 11, 1912, to May 9, 1915, water-stage recorder or staff gage at site 500 ft upstream at different datum.

Average discharge.--12 years (1912-14, 1950-60), 47.6 cfs (34,460 acre-ft per year).

Extremes.--Maximum discharge during year, 318 cfs Apr. 7 (gage height, 2.97 ft); minimum, 0.9 cfs Aug. 16.

1912-15, 1949-60: Maximum discharge, 1,630 cfs Dec. 22, 1955 (gage height, 5.15 ft), from rating curve extended above 340 cfs on basis of slope-area measurement of peak flow; minimum, that of Aug. 16, 1960.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. No regulation. Diversions for irrigation of 1,200 acres above station.

Revisions.--WSP 410: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.2 | 0.8 | 1.0 | 28  |
| .3  | 1.7 | 1.5 | 66  |
| .4  | 3.1 | 2.0 | 127 |
| .5  | 5.0 | 2.5 | 215 |
| .7  | 12  | 3.0 | 325 |

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     | 3.3   | 3.5  | 2.6  | 2.0  | 4.0   | 6.0     | 76    | 72    | 43    | 5.3   | 2.1  | 2.1   |
| 2     | *3.0  | 3.5  | 2.4  | 2.0  | 4.0   | 5.0     | 107   | 99    | 39    | 5.3   | 1.8  | 2.1   |
| 3     | 3.1   | 3.7  | 2.4  | 2.0  | 4.0   | 4.6     | 126   | 99    | 35    | 5.3   | 1.7  | 2.3   |
| 4     | 3.1   | *3.5 | 2.2  | 2.0  | 4.4   | 5.0     | 146   | 114   | 32    | 5.3   | 1.7  | 2.4   |
| 5     | 3.0   | 3.1  | 2.0  | 2.0  | 6.0   | 6.0     | 182   | 99    | 29    | 5.0   | 1.7  | 2.4   |
| 6     | 2.8   | 3.3  | 2.0  | 2.2  | 8.0   | 10      | 225   | 82    | 26    | 5.0   | 1.7  | 2.4   |
| 7     | 3.1   | 3.3  | 2.0  | 2.4  | 10    | 20      | 288   | 115   | 24    | 5.3   | 1.6  | 2.4   |
| 8     | 4.0   | 3.5  | 2.2  | 2.4  | 14    | *46     | 251   | 108   | 21    | 5.0   | 1.6  | 2.4   |
| 9     | 4.8   | 3.5  | 2.2  | 2.6  | 20    | 44      | 239   | 87    | 20    | 4.6   | 1.7  | 2.4   |
| 10    | 4.4   | 3.9  | 2.3  | 2.4  | 15    | 42      | 205   | 76    | 18    | 4.6   | 1.4  | 2.4   |
| 11    | 3.7   | 3.9  | 2.4  | 2.2  | 14    | 40      | 176   | 70    | 16    | 4.2   | 1.5  | 2.5   |
| 12    | 3.5   | *3.9 | 2.4  | 2.0  | 12    | 40      | 124   | 70    | 15    | 4.2   | 1.5  | 2.5   |
| 13    | 3.1   | 3.5  | 2.2  | 1.8  | 11    | 47      | 115   | 74    | 13    | 4.0   | 1.6  | 2.5   |
| 14    | 3.1   | 3.3  | 2.0  | 1.8  | 10    | 70      | 148   | 64    | 11    | 3.5   | 1.7  | 2.5   |
| 15    | 3.1   | 3.3  | 2.0  | 1.8  | 10    | 60      | 103   | 57    | 11    | 3.3   | 1.8  | 2.5   |
| 16    | 3.1   | 3.3  | 2.0  | 2.0  | 10    | 56      | 83    | 52    | *10   | 2.4   | 1.5  | 2.5   |
| 17    | 3.0   | 3.3  | 2.2  | 2.0  | 9.5   | 62      | 80    | 48    | 8.8   | 2.0   | 1.7  | 2.5   |
| 18    | 3.0   | 3.5  | 2.2  | 2.2  | 8.0   | 77      | 77    | 43    | 8.0   | 1.8   | 1.6  | 2.4   |
| 19    | 3.0   | 3.3  | 2.4  | 2.4  | 7.5   | 87      | 88    | 40    | 7.4   | 1.7   | 1.6  | 2.4   |
| 20    | 2.8   | 3.0  | 2.4  | 2.6  | 7.5   | 95      | 87    | *42   | 7.1   | 1.8   | 1.6  | 2.4   |
| 21    | 3.1   | 3.1  | 2.6  | 2.6  | 7.5   | 111     | 95    | 56    | 7.4   | 1.8   | 1.6  | 2.5   |
| 22    | 3.5   | 3.1  | 2.6  | 3.0  | 7.0   | 122     | *75   | 60    | 7.1   | 1.8   | 2.0  | 2.5   |
| 23    | 3.5   | 3.3  | 2.6  | 3.2  | 7.0   | 124     | 72    | 57    | 6.8   | 1.8   | 2.4  | *2.5  |
| 24    | 3.5   | 3.1  | 2.8  | 3.6  | 7.0   | 141     | 62    | 56    | 6.2   | 1.7   | *2.5 | 2.5   |
| 25    | 3.0   | 3.1  | 2.6  | 4.0  | 6.5   | 156     | 59    | 69    | 5.9   | 1.7   | 2.5  | 2.7   |
| 26    | 3.1   | 2.5  | 2.6  | 4.0  | 6.0   | 209     | 55    | 138   | 5.6   | 2.1   | 2.3  | 2.7   |
| 27    | 3.1   | 2.3  | 2.4  | 4.0  | 6.5   | 225     | 59    | 98    | 5.6   | *2.0  | 2.3  | 2.5   |
| 28    | 3.1   | 3.0  | 2.4  | 4.0  | 7.0   | 182     | 59    | 69    | 5.6   | 1.8   | 2.4  | 2.5   |
| 29    | 3.1   | 2.8  | 2.2  | 4.0  | 6.5   | 121     | 56    | 59    | 5.6   | 2.1   | 2.3  | 2.5   |
| 30    | 3.1   | 2.6  | 2.2  | 4.0  | ---   | 95      | 67    | 53    | 5.3   | 2.1   | 2.3  | 2.5   |
| 31    | 3.0   | ---  | 2.0  | 4.0  | ---   | 72      | ---   | 48    | ---   | 2.3   | 2.1  | ---   |
| Total | 101.1 | 98.0 | 71.5 | 83.2 | 249.9 | 2,380.6 | 3,585 | 2,274 | 455.4 | 100.8 | 57.8 | 73.4  |
| Mean  | 3.26  | 3.27 | 2.31 | 2.68 | 8.62  | 76.8    | 120   | 73.4  | 15.2  | 3.25  | 1.86 | 2.45  |
| Ac-ft | 201   | 194  | 142  | 165  | 496   | 4,720   | 7,110 | 4,510 | 903   | 200   | 115  | 146   |

Calendar year 1959: Max 114 Min 1.5 Mean 15.1 Ac-ft 10,920

Water year 1959-60: Max 288 Min 1.4 Mean 26.0 Ac-ft 18,900

Peak discharge (base, 290 cfs).--Apr. 7 (11 p.m.) 318 cfs (2.97 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Jan. 19 to Feb. 7; discharge estimated on basis of records for Deep Creek above Adel and Drake Creek near Adel. Stage-discharge relation affected by ice Nov. 30 to Dec. 4, Dec. 6-9, 11, Dec. 13 to Jan. 18, Feb. 10 to Mar. 11.

## 3710. Drake Creek near Adel, Oreg.

Location.--Lat 42°12', long 120°00', near center of sec.9, T.39 S., R.23 E., on left bank 400 ft downstream from highway bridge, 700 ft downstream from Parsnip Creek, 1 mile upstream from mouth, and  $6\frac{1}{2}$  miles west of Adel.

Drainage area.--67 sq mi (revised), approximately.

Records available.--March to May 1915, December 1922 to May 1923, December 1949 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 5,076.42 ft above mean sea level (State Highway Department bench mark). Mar. 18 to May 10, 1915, and Dec. 21, 1922, to May 9, 1923, staff gage at site 400 ft upstream at different datums. Dec. 16, 1949, to June 21, 1951, water-stage recorder at site 900 ft upstream at different datum.

Average discharge.--10 years (1950-60), 14.2 cfs (10,280 acre-ft per year).

Extremes.--Maximum discharge during year, 318 cfs Mar. 7 (gage height, 2.46 ft), from rating curve extended above 100 cfs by logarithmic plotting; minimum, 1.6 cfs Feb. 28, 29.

1915, 1922-23, 1949-60: Maximum discharge, 1,100 cfs Dec. 23, 1955 (gage height, 3.93 ft), from rating curve extended above 300 cfs by logarithmic plotting; minimum, that of Feb. 28, 29, 1960.

Remarks.--Records fair except those for periods of ice effect, which are poor. Diversions for irrigation of about 620 acres above station.

Revisions (water years).--WSP 1564: 1923.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 0.4 | 1.5 | 1.0 | 28  |
| .5  | 3.0 | 1.2 | 48  |
| .6  | 6.0 | 1.5 | 89  |
| .7  | 9.5 | 1.7 | 125 |
| .8  | 15  | 2.0 | 195 |

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     | 4.2   | 4.2   | 4.8   | 2.6  | 3.0   | 3.0     | 8.4   | 4.8   | 4.2   | 7.0   | 4.8   | 5.1   |
| 2     | 4.2   | 4.2   | 4.8   | 2.6  | 3.0   | 3.0     | 17    | 6.0   | 4.2   | 7.8   | 4.5   | 5.4   |
| 3     | 3.3   | 4.8   | 4.5   | 2.6  | 3.2   | 2.8     | 20    | 5.7   | 3.9   | 7.0   | 4.5   | 5.7   |
| 4     | 3.3   | *3.9  | *4.8  | 2.6  | 3.3   | 3.5     | 17    | 7.0   | 3.6   | 7.4   | 4.2   | 5.7   |
| 5     | 3.3   | 3.6   | 4.8   | 2.6  | 3.6   | 38      | 10    | 5.7   | 3.6   | 7.0   | 4.2   | 5.7   |
| 6     | 3.3   | 3.9   | 4.5   | 2.6  | 3.9   | 104     | 7.4   | 5.7   | 4.2   | 7.4   | 3.9   | 6.0   |
| 7     | 3.3   | 3.9   | 4.8   | 2.8  | 7.0   | 156     | 17    | 6.0   | 3.9   | 7.4   | 3.6   | 6.0   |
| 8     | 3.9   | 4.2   | 4.8   | 3.0  | 11    | 56      | 16    | 5.7   | 4.2   | 7.0   | 3.6   | 5.4   |
| 9     | 4.2   | 4.2   | 4.2   | 3.0  | 7.4   | 27      | 8.4   | 5.1   | 4.2   | 6.7   | 2.8   | 5.4   |
| 10    | 3.9   | 3.9   | 4.2   | 2.8  | 5.7   | *18     | 6.4   | 4.8   | 3.9   | 6.7   | 2.7   | 5.7   |
| 11    | 3.9   | 4.2   | 3.9   | 2.4  | *4.5  | 15      | 6.0   | 4.8   | 4.2   | 6.7   | 2.8   | 5.7   |
| 12    | 3.3   | *4.2  | 3.9   | 2.4  | 4.4   | 22      | 3.6   | 4.8   | 4.2   | 6.7   | 3.0   | 5.7   |
| 13    | 3.0   | 3.3   | 3.6   | 2.2  | 4.2   | 49      | 3.6   | 5.4   | 4.5   | 6.7   | 2.8   | 5.1   |
| 14    | 3.0   | 3.4   | 3.4   | 2.0  | 4.0   | 34      | 5.4   | 4.5   | 4.5   | 6.7   | 2.8   | 4.8   |
| 15    | 3.0   | 4.2   | 3.2   | 2.0  | 4.0   | 19      | 4.5   | 4.8   | 4.8   | 5.4   | 2.7   | 5.4   |
| 16    | 3.0   | 3.8   | 3.0   | 2.0  | 4.0   | 15      | 3.6   | 4.5   | *4.5  | 4.8   | 2.7   | 3.9   |
| 17    | 3.0   | 3.8   | 3.0   | 2.2  | 3.8   | 45      | 4.8   | 4.2   | 3.9   | 4.5   | 2.7   | 4.5   |
| 18    | 3.0   | 3.8   | 3.0   | 2.2  | 3.6   | 76      | 4.8   | 4.2   | 3.8   | 4.5   | 2.7   | 4.5   |
| 19    | 3.0   | 3.9   | 3.4   | 2.4  | 3.6   | 82      | 4.8   | 4.2   | 4.2   | 4.2   | 2.7   | 4.5   |
| 20    | 3.0   | 3.9   | 3.6   | 2.4  | 3.6   | 80      | 4.8   | *5.1  | 3.0   | 3.9   | 2.8   | 4.2   |
| 21    | 3.3   | 4.5   | 4.0   | 2.6  | 3.4   | 83      | 4.5   | 5.7   | 3.0   | 3.9   | 2.8   | 3.6   |
| 22    | 3.9   | 3.6   | 3.8   | 2.6  | 3.4   | 76      | 4.2   | 4.8   | 3.9   | 4.2   | 3.3   | 3.3   |
| 23    | 3.0   | 3.9   | 3.8   | 2.8  | 3.2   | 63      | 4.8   | 4.5   | 3.6   | 3.9   | 3.3   | *3.9  |
| 24    | 3.3   | 3.6   | 4.0   | 2.8  | 3.0   | 66      | 5.4   | 5.1   | 3.6   | 3.6   | *3.6  | 3.9   |
| 25    | 3.3   | 3.9   | 3.6   | 3.0  | 3.0   | 64      | 5.1   | 5.7   | 3.9   | 3.9   | 3.6   | 3.9   |
| 26    | 3.3   | 3.0   | 3.2   | 3.0  | 3.2   | 64      | 4.8   | 5.1   | 3.0   | 3.9   | 4.2   | 3.6   |
| 27    | 3.6   | 3.6   | 3.0   | 3.0  | 3.3   | 35      | 5.4   | 4.8   | 4.2   | *3.9  | 4.5   | 4.5   |
| 28    | 3.9   | 4.2   | 3.0   | 3.0  | 3.3   | 22      | 5.1   | 4.2   | 6.7   | 4.2   | 5.1   | 4.5   |
| 29    | 3.3   | 4.4   | 3.0   | 3.0  | 3.2   | 16      | 5.1   | 5.1   | 7.0   | 5.1   | 5.4   | 3.9   |
| 30    | 3.0   | 4.6   | 2.8   | 3.0  | ----- | 12      | 5.1   | 4.5   | 7.0   | 5.4   | 5.1   | 3.9   |
| 31    | 3.6   | ----- | 2.6   | 3.0  | ----- | 11      | ----- | 3.9   | ----- | 5.4   | 5.1   | ----- |
| Total | 105.6 | 118.6 | 116.8 | 81.2 | 119.8 | 1,360.4 | 223.0 | 156.4 | 127.2 | 172.9 | 112.5 | 143.4 |
| Mean  | 3.41  | 3.95  | 3.77  | 2.62 | 4.13  | 43.9    | 7.43  | 5.05  | 4.24  | 5.59  | 3.63  | 4.78  |
| Ac-ft | 209   | 235   | 232   | 161  | 238   | 2,700   | 442   | 310   | 252   | 343   | 223   | 284   |

Calendar year 1959: Max 15 Min 2.6 Mean 4.96 Ac-ft 3,590

Water year 1959-60: Max 156 Min 2.0 Mean 7.75 Ac-ft 5,630

Peak discharge (base, 150 cfs).--Mar. 7 (3 p.m.) 318 cfs (2.46 ft); Mar. 18 (10:30 p.m.) 178 cfs (1.97 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 14-18, Nov. 26 to Dec. 2, Dec. 4, 5, Dec. 14 to Jan. 26, Jan. 29 to Feb. 3, Feb. 12-26, Feb. 29 to Mar. 2.

3715. Deep Creek above Adel, Oreg.

Location.--Lat 42°11', long 119°59', in E $\frac{1}{2}$  sec.15, T.39 S., R.23 E., on right bank a third of a mile downstream from Drake Creek and 5 miles west of Adel.

Drainage area.--249 sq mi.

Records available.--September 1922 to September 1923, October 1929 to September 1960. Monthly discharge only October 1929 to September 1932, published in WSP 1314.

Gage.--Water-stage recorder. Datum of gage is 4,966.7 ft above mean sea level (State Highway Department bench mark). Prior to Dec. 21, 1922, staff gage and Dec. 21, 1922, to Sept. 30, 1923, water-stage recorder, at same site at different datum.

Average discharge.--32 years, 119 cfs (86,150 acre-ft per year).

Extremes.--Maximum discharge during year, 805 cfs Mar. 7 (gage height, 3.65 ft); minimum, 4.5 cfs Sept. 2, 3.

1922-23, 1929-60: Maximum discharge, 5,030 cfs Dec. 11, 1937 (gage height, 7.5 ft, from floodmark), from rating curve extended above 1,200 cfs on basis of velocity-area studies and verified by slope-area measurement at gage height 7.3 ft for peak of Dec. 23, 1955; minimum, 1.7 cfs July 20, 27-29, 1934.

Remarks.--Records good except those for periods of ice effect, which are poor. No regulation. Diversions for irrigation of 5,500 acres above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |    |     |     |
|-----|-----|-----|----|-----|-----|
| 0.3 | 2.5 | 0.8 | 24 | 2.0 | 195 |
| .4  | 5.0 | 1.0 | 41 | 2.5 | 330 |
| .5  | 8.5 | 1.2 | 60 | 3.0 | 510 |
| .6  | 13  | 1.5 | 97 | 3.5 | 730 |

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     | *14  | 14    | 13   | 8    | 18    | 20     | 190    | 165    | 294   | 24    | 8.5   | 4.8   |
| 2     | 14   | 15    | 13   | 8    | 17    | 20     | 258    | 245    | 303   | 21    | 8.2   | 4.5   |
| 3     | 14   | 16    | 13   | 8    | 16    | 20     | 291    | 258    | 300   | 17    | 7.8   | 4.5   |
| 4     | 14   | *14   | 12   | 8    | 16    | 22     | 312    | 334    | 285   | 16    | 6.8   | 4.8   |
| 5     | 13   | 14    | 10   | 9    | 16    | 68     | 365    | 300    | 260   | 16    | 6.0   | 4.8   |
| 6     | 13   | 14    | 10   | 10   | 16    | 178    | 428    | 242    | 245   | 16    | 5.7   | 4.8   |
| 7     | 13   | 17    | 10   | 10   | 23    | 447    | 550    | 405    | 225   | 16    | 5.7   | 5.0   |
| 8     | 18   | 16    | 10   | 10   | 40    | *331   | 502    | 482    | 208   | 16    | 5.7   | 4.8   |
| 9     | 24   | 16    | 10   | 10   | 50    | 208    | 486    | 398    | 177   | 14    | 5.4   | 4.8   |
| 10    | 21   | 16    | 11   | 9    | 43    | 134    | 442    | 376    | 159   | 13    | 5.0   | 5.0   |
| 11    | 17   | 16    | 11   | 9    | *39   | 123    | 418    | 410    | 148   | 12    | 5.0   | 5.7   |
| 12    | 16   | *16   | 12   | 8    | 36    | 123    | 306    | 410    | 138   | 11    | 5.0   | 7.1   |
| 13    | 14   | 15    | 11   | 7    | 33    | 168    | 279    | 379    | 120   | 11    | 5.0   | 7.4   |
| 14    | 14   | 15    | 10   | 7    | 36    | 156    | 358    | 337    | 113   | 12    | 5.4   | 7.8   |
| 15    | 15   | 14    | 9    | 7    | 33    | 128    | 282    | 321    | 107   | 9.4   | 5.4   | 7.8   |
| 16    | 15   | 14    | 9    | 8    | 32    | 106    | 232    | 315    | *102  | 8.5   | 5.4   | 7.8   |
| 17    | 14   | 15    | 10   | 9    | 31    | 162    | 218    | 282    | 94    | 7.1   | 5.4   | 7.1   |
| 18    | 14   | 15    | 11   | 9    | 30    | 254    | 202    | 245    | 81    | 6.8   | 5.7   | 7.4   |
| 19    | 15   | 15    | 11   | 10   | 29    | 302    | 238    | *232   | 71    | 6.4   | 5.4   | 7.8   |
| 20    | 14   | 15    | 11   | 10   | 30    | 314    | 222    | 235    | 61    | 6.0   | 5.0   | 8.2   |
| 21    | 14   | 15    | 10   | 11   | 28    | 348    | 252    | 334    | 57    | 6.0   | 5.0   | 8.2   |
| 22    | 16   | 15    | 11   | 12   | 27    | 352    | *210   | 282    | 54    | 6.4   | 5.0   | 8.5   |
| 23    | 18   | 17    | 12   | 14   | 26    | 337    | 193    | 242    | 50    | 6.4   | 6.0   | *9.0  |
| 24    | 16   | 16    | 14   | 15   | 24    | 382    | 174    | 225    | 44    | 8.0   | *6.4  | 9.0   |
| 25    | 16   | 16    | 13   | 16   | 23    | 407    | 157    | 250    | 40    | 6.0   | 6.4   | 9.0   |
| 26    | 16   | 14    | 12   | 16   | 23    | 463    | 148    | 393    | 36    | 6.8   | 6.0   | 8.5   |
| 27    | 14   | 13    | 11   | 16   | 22    | 463    | 157    | 330    | 34    | *7.1  | 5.7   | 9.0   |
| 28    | 14   | 14    | 11   | 16   | 21    | 393    | 148    | 273    | 34    | 6.8   | 5.7   | 8.5   |
| 29    | 14   | 13    | 10   | 16   | 20    | 279    | 132    | 265    | 30    | 7.1   | 6.0   | 8.5   |
| 30    | 12   | 12    | 9    | 16   | ----- | 238    | 146    | 270    | 26    | 8.2   | 5.4   | 8.5   |
| 31    | 14   | ----- | 8    | 16   | ----- | 193    | -----  | 285    | ----- | 9.0   | 5.0   | ----- |
| Total | 470  | 447   | 358  | 339  | 798   | 7,149  | 8,296  | 9,518  | 3,894 | 335.0 | 180.1 | 208.6 |
| Mean  | 15.2 | 14.9  | 10.9 | 10.9 | 27.5  | 231    | 277    | 307    | 130   | 10.8  | 5.81  | 6.95  |
| Ac-ft | 932  | 887   | 670  | 672  | 1,580 | 14,180 | 16,450 | 18,880 | 7,720 | 664   | 357   | 414   |

Calendar year 1959: Max 280 Min 4.5 Mean 52.3 Ac-ft 37,880  
Water year 1959-60: Max 550 Min 4.5 Mean 87.4 Ac-ft 63,410

Peak discharge (base, 600 cfs).--Mar. 7 (4 p.m.) 805 cfs (3.65 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 14-19, 21, Nov. 29 to Jan. 22, Jan. 31, Feb. 3, 11-13, 16-18, 23, 24, Feb. 27 to Mar. 3.

## 3785. Honey Creek near Plush, Oreg.

Location.--Lat 42°25', long 119°55', in NW¼ sec.29, T.36 S., R.24 E., on right bank at mouth of canyon, 1 mile northwest of Plush and 4 miles downstream from Twelvemile Creek.

Drainage area.--170 sq mi (revised), approximately.

Records available.--May 1909 to September 1914 (prior to January 1910, gage heights only), March to May 1915, March to September 1921, March to June 1922, May 1930 to September 1960. Monthly discharge only May 1930 to September 1949, published in WSP 1314.

Gage.--Water-stage recorder. Datum of gage is 4,536.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Feb. 24, 1910, staff gage at site half a mile downstream at different datum. Feb. 24, 1910, to Jan. 12, 1912, staff gage; Jan. 13, 1912, to May 16, 1915, water-stage recorder; Mar. 15 to Apr. 6, 1921, staff gage; Apr. 7 to Sept. 30, 1921, water-stage recorder; and Mar. 19 to June 30, 1922, staff gage; all at site half a mile upstream from present site at different datums. May 1, 1930, to Aug. 30, 1959, water-stage recorder at site 10 ft upstream at datum 1.53 ft higher.

Average discharge.--34 years (1910-14, 1930-60), 26.9 cfs (19,470 acre-ft per year).

Extremes.--Maximum discharge during year, 418 cfs Mar. 7 (gage height, 5.54 ft), from rating curve extended above 49 cfs on basis of shape of former curve defined to 260 cfs; minimum, 0.1 cfs July 24, 25, July 27 to Aug. 11.

1910-15, 1921-22, 1930-60: Maximum discharge, 3,840 cfs Apr. 15, 1915 (gage height, 9.20 ft, site and datum then in use), from rating curve extended above 2,300 cfs (flood caused by failure of storage dam on Snyder Creek); maximum discharge due to natural causes, 2,240 cfs Feb. 24, 1910 (gage height, 6.30 ft, site and datum then in use); no flow at times.

Remarks.--Records fair except those for periods of ice effect, which are poor. No regulation. Diversions for irrigation of about 2,300 acres above station.

Revisions (water years).--WSP 410: Drainage area. WSP 1564: 1911-12.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Feb. 4-8, June 2-16)

|     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|
| 1.1 | 0.1 | 1.6 | 6.0 | 3.0 | 86  |
| 1.2 | .4  | 1.8 | 12  | 4.0 | 191 |
| 1.3 | 1.1 | 2.0 | 19  | 5.0 | 330 |
| 1.4 | 2.2 | 2.2 | 29  |     |     |
| 1.5 | 3.8 | 2.5 | 47  |     |     |

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     | *0.3 | 0.7   | 1.0  | 0.7  | 2.2   | 3.4     | 28    | 28    | 44    | 5.3  | 0.1  | 0.3   |
| 2     | .3   | .7    | 1.0  | .7   | 2.4   | 3.6     | 33    | 45    | 45    | 4.7  | .1   | .3    |
| 3     | *.4  | .8    | .9   | .7   | 2.4   | 3.6     | 42    | 43    | 42    | 4.2  | .1   | .3    |
| 4     | .4   | .8    | .9   | .7   | 2.6   | 5.6     | 67    | 48    | 34    | 3.8  | .1   | .3    |
| 5     | .4   | *.9   | .9   | .8   | 2.8   | 9.2     | 82    | 48    | 39    | 3.5  | .1   | .3    |
| 6     | .4   | .8    | .9   | .9   | 3.3   | 71      | 99    | 47    | 37    | 3.5  | .1   | .3    |
| 7     | .4   | .9    | .9   | .9   | 6.2   | 228     | 139   | 48    | *31   | 3.3  | .1   | .3    |
| 8     | .4   | .9    | .9   | .9   | 59    | *130    | 139   | 60    | 30    | 3.0  | .1   | .3    |
| 9     | .5   | 1.0   | .9   | .9   | 28    | 47      | 130   | 48    | 28    | 1.8  | .1   | .3    |
| 10    | .5   | 1.0   | 1.0  | .8   | 16    | 22      | 113   | 41    | 22    | 1.3  | .1   | .3    |
| 11    | .5   | 1.0   | 1.0  | .8   | 11    | 18      | 101   | 41    | 17    | 1.0  | .1   | .3    |
| 12    | .5   | *1.0  | 1.1  | .7   | 10    | 19      | 78    | 39    | 14    | 1.0  | .2   | .4    |
| 13    | .6   | 1.0   | 1.0  | .7   | 8.5   | 23      | 64    | *46   | 12    | .8   | .2   | .3    |
| 14    | .6   | 1.0   | .9   | .7   | 7.5   | 23      | 68    | 45    | 12    | .7   | .2   | .4    |
| 15    | .9   | 1.0   | .8   | .7   | 7.0   | 15      | 70    | 40    | 23    | .6   | .2   | .4    |
| 16    | .8   | .8    | .8   | .8   | *6.5  | 12      | 53    | 39    | 25    | .5   | .3   | .4    |
| 17    | .8   | .8    | .9   | .9   | 6.0   | 14      | 55    | 37    | 21    | .5   | .3   | .4    |
| 18    | .8   | .9    | 1.0  | 1.0  | 5.5   | 24      | 48    | 37    | 19    | .4   | .3   | .4    |
| 19    | .6   | .9    | 1.0  | 1.0  | 5.5   | 28      | 55    | *36   | 17    | .4   | .3   | .5    |
| 20    | 1.0  | .8    | 1.0  | 1.1  | 5.1   | 28      | 51    | 25    | 15    | .4   | .2   | .3    |
| 21    | 1.0  | .8    | 1.1  | 1.3  | 4.6   | 29      | 55    | 46    | 15    | .3   | .2   | *.3   |
| 22    | 1.0  | .8    | 1.2  | 1.4  | 4.0   | 31      | 50    | 46    | 14    | .2   | .3   | .3    |
| 23    | 1.1  | 1.0   | 1.2  | 1.5  | 3.8   | 22      | 45    | 40    | 12    | .2   | .4   | .3    |
| 24    | 1.0  | 1.0   | 1.3  | 1.5  | 3.6   | 26      | 40    | 39    | 10    | .1   | .3   | .3    |
| 25    | .8   | 1.0   | 1.1  | 1.5  | 3.6   | 34      | 36    | 46    | 9.1   | .1   | .3   | .3    |
| 26    | .8   | 1.0   | 1.0  | 1.6  | 3.4   | 54      | 28    | 69    | 8.5   | .2   | .3   | .3    |
| 27    | .8   | 1.1   | .9   | 1.8  | 3.4   | 56      | 27    | 75    | 8.0   | *.1  | .3   | .3    |
| 28    | .8   | 1.1   | .9   | 2.0  | 3.4   | 55      | 27    | 56    | 7.0   | .1   | .3   | .3    |
| 29    | .8   | 1.1   | .8   | 2.0  | 3.3   | *43     | 25    | 48    | 6.0   | .1   | .3   | .3    |
| 30    | .8   | 1.1   | .8   | 2.0  | ----- | 36      | 27    | 49    | 5.8   | .1   | .3   | .3    |
| 31    | .7   | ----- | .7   | 2.0  | ----- | 36      | ----- | 44    | ----- | .1   | .3   | ----- |
| Total | 20.5 | 27.7  | 29.8 | 35.0 | 230.6 | 1,147.4 | 1,895 | 1,401 | 622.4 | 42.3 | 6.6  | 9.6   |
| Mean  | 0.66 | 0.92  | 0.96 | 1.13 | 7.95  | 37.0    | 63.2  | 45.2  | 20.7  | 1.39 | 0.21 | 0.32  |
| Ac-ft | 41   | 55    | 59   | 69   | 457   | 2,280   | 3,760 | 2,780 | 1,230 | 8*   | 13   | 19    |

Calendar year 1959: Max 56 Min 0.2 Mean 7.57 Ac-ft 5,480  
Water year 1959-60: Max 228 Min 0.1 Mean 14.9 Ac-ft 10,850

Peak discharge (base, 200 cfs).--Mar. 7 (10:30 p.m.) 418 cfs (5.54 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 30 to Feb. 4, Feb. 17-19, 21, 22, 26-28, Mar. 1, 2.

3840. Chewaucan River near Paisley, Oreg.

Location.--Lat 42°42', long 120°35', in SW¼NW¼ sec.26, T.33 S., R.18 E., on left bank 1½ miles downstream from Mill Creek and 1½ miles southwest of Paisley.

Drainage area.--275 sq mi.

Records available.--April 1912 to September 1921, May 1924 to September 1960. Published as "above Conn ditch, near Paisley" April to September 1912 and May 1924 to September 1955, as "above Mill Creek, near Paisley" October 1912 to December 1913, and as "at Chewaucan Land & Cattle Co.'s gage, near Paisley" January to September 1914.

Gage.--Water-stage recorder. Datum of gage is 4,430 ft above mean sea level (river-profile survey). Prior to July 14, 1912, reference point at site 1½ miles upstream at different datum. Nov. 6, 1912, to Jan. 19, 1914, staff gage and Jan. 20, 1914, to Sept. 30, 1921, water-stage recorder, at various sites within half a mile upstream from Mill Creek at various datums. May 1, 1924, to Jan. 26, 1956, water-stage recorder at sites about 1½ miles upstream at different datums. Jan. 27 to Oct. 6, 1956, staff gage at sites about 1 mile downstream at different datums.

Average discharge.--45 years, 135 cfs (97,740 acre-ft per year).

Extremes.--Maximum discharge during year, 510 cfs May 12 (gage height, 3.74 ft); maximum gage height, 3.98 ft Mar. 7 (ice jam); minimum discharge, 11 cfs sometime between Nov. 15 and Dec. 11, from recorded range in stage. 1912-21, 1924-60: Maximum discharge, 3,260 cfs Dec. 22, 1955 (gage height, 7.8 ft, from floodmarks); no flow for part of each day Dec. 7, 1927, Dec. 12, 1932, result of freezeup.

Maximum discharge known, 4,000 cfs Nov. 23, 1909, from records at site 1 mile downstream, below Conn ditch, where records are equivalent at high flows.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation. Diversions for irrigation of about 2,500 acres above station.

Revisions.--WSP 860: Drainage area.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |    |     |     |
|-----|----|-----|-----|
| 1.8 | 11 | 2.5 | 105 |
| 1.9 | 18 | 3.0 | 225 |
| 2.0 | 29 | 3.5 | 400 |
| 2.2 | 52 | 4.0 | 650 |

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     | 37    | 45    | 30    | 36    | 60    | 34    | 195    | 200    | 364    | 58    | 26    | 19    |
| 2     | *37   | 44    | 30    | 34    | 60    | 36    | 192    | 220    | 372    | 55    | 21    | 18    |
| 3     | 36    | 42    | 30    | 34    | 55    | 36    | 210    | 240    | 380    | 51    | 18    | 18    |
| 4     | 36    | 40    | 30    | 34    | 55    | 40    | 234    | 269    | 368    | 48    | 17    | 21    |
| 5     | 36    | 34    | 24    | 36    | 55    | 60    | 280    | 234    | 350    | 46    | 17    | 19    |
| 6     | 36    | 41    | 24    | 40    | 56    | 158   | 311    | 240    | 332    | 44    | 16    | 17    |
| 7     | 36    | 38    | 24    | 44    | 78    | 340   | 384    | 318    | 304    | 42    | 16    | 15    |
| 8     | 41    | 37    | 24    | 50    | 270   | 228   | 353    | 336    | 280    | 41    | 16    | 14    |
| 9     | 58    | 37    | 24    | 55    | 157   | *148  | 368    | 339    | 249    | 40    | 17    | 13    |
| 10    | 46    | 36    | 24    | 55    | 101   | 97    | 328    | 350    | 228    | 38    | 17    | 13    |
| 11    | 40    | *36   | 24    | 50    | 93    | 101   | 328    | 388    | 215    | 34    | 17    | 13    |
| 12    | 37    | 34    | 26    | 46    | 76    | 103   | 266    | 422    | 200    | 31    | 17    | 14    |
| 13    | 37    | 30    | 26    | 46    | *66   | 109   | 246    | 427    | 192    | 29    | 19    | 14    |
| 14    | 36    | 32    | 28    | 40    | 62    | 103   | 297    | 364    | 180    | 29    | 20    | 15    |
| 15    | 36    | 41    | 30    | 34    | 54    | 81    | 243    | 350    | 170    | 29    | 21    | 16    |
| 16    | 34    | 38    | 34    | 30    | 52    | 74    | 198    | 336    | 160    | 27    | 21    | 17    |
| 17    | 36    | 36    | 34    | 32    | 50    | 97    | 202    | 311    | 142    | 27    | 22    | 17    |
| 18    | 36    | 36    | 34    | 32    | 46    | 132   | 190    | 286    | 158    | 27    | 22    | 18    |
| 19    | 37    | 36    | 34    | 34    | 46    | 152   | 222    | 269    | 119    | 27    | *22   | 20    |
| 20    | 37    | 36    | 38    | 36    | 44    | 172   | 208    | *290   | 109    | 27    | 22    | 21    |
| 21    | 38    | 36    | 40    | 38    | 44    | 195   | 237    | 356    | 105    | 27    | 22    | 22    |
| 22    | 41    | 36    | 44    | 40    | 42    | 215   | 205    | 294    | 101    | *26   | 25    | 25    |
| 23    | 44    | 36    | 50    | 44    | 40    | 212   | *190   | 272    | 97     | 26    | 26    | 27    |
| 24    | 42    | 38    | 55    | 50    | 40    | 228   | 175    | 280    | 83     | 26    | 27    | *28   |
| 25    | 41    | 36    | 60    | 55    | 38    | 243   | 172    | 286    | 76     | 26    | 28    | 28    |
| 26    | 42    | 34    | 55    | 60    | 36    | 266   | 165    | 339    | 71     | 26    | 27    | 28    |
| 27    | 42    | 30    | 50    | 60    | 36    | 266   | 172    | 436    | 67     | 25    | 26    | 28    |
| 28    | 41    | 30    | 46    | 65    | 36    | 243   | 168    | 368    | 64     | 24    | 25    | 28    |
| 29    | 41    | 30    | 40    | 70    | 34    | 200   | 168    | 356    | *62    | 24    | 25    | 28    |
| 30    | 38    | 30    | 38    | 70    | ----- | 225   | 180    | 353    | 61     | 28    | 24    | 28    |
| 31    | 42    | ----- | 36    | 65    | ----- | 198   | -----  | 353    | -----  | 33    | 21    | ----- |
| Total | 1,217 | 1,087 | 1,086 | 1,415 | 1,884 | 4,794 | 7,087  | 9,882  | 5,619  | 1,041 | 660   | 602   |
| Mean  | 39.3  | 36.2  | 35.0  | 45.6  | 65.0  | 155   | 236    | 319    | 187    | 33.6  | 21.3  | 20.1  |
| Ac-ft | 2,410 | 2,160 | 2,150 | 2,810 | 3,740 | 9,510 | 14,060 | 19,600 | 11,150 | 2,060 | 1,310 | 1,190 |

Calendar year 1959: Max 290 Min 21 Mean 76.1 Ac-ft 55,060  
Water year 1959-60: Max 436 Min 13 Mean 99.4 Ac-ft 72,150

Peak discharge (base, 500 cfs).--May 12 (11 to 12 p.m.) 510 cfs (3.74 ft); May 27 (8 a.m.) 505 cfs (3.73 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Nov. 16 to Dec. 10; discharge estimated on basis of records for Deep Creek above Adel and Silver Creek near Silver Lake. Stage-discharge relation affected by ice Dec. 11 to Feb. 5, Feb. 16-20, Feb. 23 to Mar. 5, Mar. 7.

## SUMMER LAKE BASIN

3880. Ana River near Summer Lake, Oreg.

Location.--Lat 43°00', long 120°45', in SE $\frac{1}{4}$  sec.6, T.30 S., R.17 E., on left bank 300 ft downstream from diversion dam and 2 miles northeast of town of Summer Lake.

Records available.--October 1929 to September 1939 (river only); June to September 1928, April 1931 to July 1938, and April 1940 to September 1942 (irrigation season records for Summer Lake Canal only); June 1951 to September 1960. Prior to June 1951 monthly discharge only, published in WSP 1314.

Gage.--Water-stage recorder. Altitude of gage is 4,160 ft (from plans of Ana River diversion dam). Oct. 1, 1929, to Sept. 30, 1939, at site 80 ft downstream at different datum.

Average discharge.--12 years (1930-32, 1935-36, 1951-60), 91.8 cfs (66,460 acre-ft per year).

Extremes.--Maximum discharge during year, 105 cfs Oct. 1, 2, 8; minimum daily, 41 cfs May 2.

1929-39, 1951-60: Maximum discharge, 186 cfs Sept. 15, 1936 (gage height, 3.87 ft), no flow in canal; minimum daily, 6 cfs May 16, 1952.

Remarks.--Records good. All records presented herein include flow in Summer Lake Canal which diverts 300 ft above station for irrigation of lands along west side of Summer Lake. Flow regulated by gates at diversion dam. Source of stream is Ana River Springs, three-quarters of a mile above station, which are flooded over by pondage behind diversion dam.

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                       | 105   | 93    | 101   | 98    | 99     | 99    | 93        | 89    | 86    | 84           | 93    | 94    |
| 2                       | 105   | 93    | 101   | 98    | 99     | 99    | 93        | 41    | 87    | 88           | 93    | 94    |
| 3                       | 104   | 97    | 101   | 98    | 99     | 99    | 93        | 51    | 86    | 85           | 93    | 95    |
| 4                       | 103   | 100   | 100   | 98    | 99     | 99    | 93        | 84    | 82    | 85           | 94    | 96    |
| 5                       | 103   | 99    | 100   | 98    | *99    | 99    | 93        | 89    | 84    | 85           | 94    | 94    |
| 6                       | 101   | 99    | 100   | 98    | 99     | 98    | 93        | 90    | 85    | 85           | 93    | 96    |
| 7                       | 100   | 98    | 100   | 98    | 99     | 98    | 93        | 90    | 85    | 83           | 93    | 99    |
| 8                       | 103   | 97    | 100   | 98    | 99     | 98    | 93        | 90    | 86    | 80           | 94    | 96    |
| 9                       | 103   | 95    | 100   | 98    | 99     | 97    | 92        | 90    | *86   | 82           | 95    | 92    |
| 10                      | 103   | 95    | 100   | 98    | 99     | 97    | 91        | 90    | 85    | 83           | 95    | 94    |
| 11                      | 100   | *95   | *100  | 99    | 99     | 97    | 83        | 91    | 85    | 85           | 96    | 96    |
| 12                      | 99    | 94    | 100   | 98    | 99     | 95    | 74        | 85    | 85    | 86           | 96    | 93    |
| 13                      | 98    | 94    | 100   | 98    | 99     | 95    | 76        | 86    | 85    | 87           | 96    | 90    |
| 14                      | 98    | 94    | 99    | 98    | 98     | *95   | 79        | 91    | 85    | 89           | 96    | 90    |
| 15                      | 98    | 95    | 99    | 98    | 99     | 95    | 83        | 88    | 85    | 92           | 94    | 90    |
| 16                      | 97    | 94    | 99    | 98    | 99     | 94    | 85        | 88    | 84    | 95           | 93    | 90    |
| 17                      | 97    | 95    | 99    | 99    | 98     | 94    | 86        | *81   | 84    | 86           | *93   | 90    |
| 18                      | 97    | 94    | 98    | 99    | 98     | 94    | 87        | 87    | 84    | 88           | 92    | 90    |
| 19                      | 98    | 95    | 98    | 99    | 98     | 94    | 87        | 87    | 83    | 87           | 91    | 90    |
| 20                      | 99    | 95    | 99    | 99    | 98     | 94    | 88        | 86    | 83    | 82           | 92    | 90    |
| 21                      | 98    | 95    | 98    | 99    | 98     | 94    | 89        | 87    | 83    | 83           | 91    | 90    |
| 22                      | 97    | 97    | 98    | 99    | 98     | 94    | 91        | 86    | 84    | *85          | 91    | 90    |
| 23                      | 95    | 95    | 99    | 99    | 98     | 94    | 91        | 86    | 84    | 85           | 92    | 90    |
| 24                      | 94    | 97    | 99    | 99    | 98     | 93    | 91        | 85    | 85    | 85           | 92    | *91   |
| 25                      | *93   | 97    | 99    | 99    | 99     | 93    | *92       | 85    | 85    | 86           | 91    | 92    |
| 26                      | 93    | 98    | 98    | 99    | 99     | 93    | 92        | 90    | 85    | 89           | 91    | 93    |
| 27                      | 93    | 98    | 98    | 99    | 99     | 93    | 92        | 89    | 80    | 89           | 91    | 93    |
| 28                      | 93    | 99    | 98    | 99    | 99     | 93    | 92        | 89    | 81    | 89           | 92    | 94    |
| 29                      | 93    | 100   | 98    | 99    | 99     | 93    | 93        | 88    | 83    | 89           | 92    | 94    |
| 30                      | 93    | 100   | 98    | 99    | -----  | 93    | 101       | 87    | 83    | 90           | 92    | 94    |
| 31                      | 93    | ----- | 98    | 99    | -----  | 93    | -----     | 87    | ----- | 90           | 93    | ----- |
| Total                   | 3,046 | 2,887 | 3,075 | 3,054 | 2,862  | 2,956 | 2,679     | 2,633 | 2,528 | 2,677        | 2,884 | 2,780 |
| Mean                    | 98.3  | 96.2  | 99.2  | 98.5  | 98.7   | 95.4  | 89.3      | 84.9  | 84.3  | 86.4         | 93.0  | 92.7  |
| Ac-ft                   | 6,040 | 5,730 | 6,100 | 6,060 | 5,680  | 5,860 | 5,310     | 5,220 | 5,010 | 5,310        | 5,720 | 5,510 |
| Calendar year 1959: Max | 106   |       |       |       | Min 48 |       | Mean 93.1 |       |       | Ac-ft 67,380 |       |       |
| Water year 1959-60: Max | 105   |       |       |       | Min 41 |       | Mean 93.1 |       |       | Ac-ft 67,550 |       |       |

\* Discharge measurement made on this day.

## SILVER LAKE BASIN

251

3900. Silver Creek near Silver Lake, Oreg.

Location.--Lat 43°07', long 121°04', in SW $\frac{1}{4}$  sec. 28, T.28 S., R.14 E., on right bank  $\frac{1}{2}$  miles downstream from diversion dam of Silver Lake Irrigation District,  $\frac{1}{2}$  miles southwest of town of Silver Lake, and 3 miles upstream from Bridge Creek.

Drainage area.--221 sq mi.

Records available.--January 1905 to March 1907, January 1909 to September 1927, February to December 1928, February 1929 to September 1960.

Gage.--Water-stage recorder and, since Sept. 15, 1932, concrete control. Datum of gage is 4,361.22 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to May 24, 1932, staff gage or water-stage recorder at practically same location at datum 1.00 ft higher, or staff gage at diversion dam outlet  $\frac{1}{2}$  miles upstream at different datum.

Average discharge.--48 years (1905-6, 1909-27, 1929-41, 1943-60), including diversion by Silver Lake Irrigation District Canal, 28.2 cfs (20,420 acre-ft per year).

Extremes.--Maximum discharge during year, 54 cfs June 26, 27, 28 (gage height, 2.51 ft); minimum, 1.4 cfs Dec. 13.

1905-7, 1909-60: Maximum discharge, 1,800 cfs Mar. 20, 1907 (gage height, 10.08 ft, present datum), from rating curve extended above 700 cfs; no flow at times in 1931-32, 1934, 1937.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Flow regulated by reservoir (capacity, 800 acre-ft) above diversion dam,  $\frac{1}{2}$  miles above station, and by Thompson Valley Reservoir (capacity, 17,400 acre-ft) 11 miles above station. Silver Lake Irrigation District Canal diverted  $\frac{1}{2}$  miles above station in 1923-43.

Revisions (water years).--WSP 1564: 1906, 1910, 1921(M).

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |    |
|-----|-----|-----|----|
| 1.5 | 1.0 | 1.9 | 12 |
| 1.6 | 2.3 | 2.0 | 18 |
| 1.7 | 4.5 | 2.2 | 30 |
| 1.8 | 8.0 | 2.5 | 53 |

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                   | *3.6   | 3.0     | 2.2       | 2.0          | 3.4   | 5.5   | 16    | 16    | 34    | 53    | 25    | 7.6   |
| 2                   | 3.4    | 3.0     | 2.2       | 2.0          | 3.4   | 5.0   | *16   | 23    | 34    | 52    | 22    | 7.6   |
| 3                   | 3.2    | 3.0     | 2.2       | 2.0          | 3.4   | 5.2   | 19    | 33    | 34    | 47    | 21    | 7.6   |
| 4                   | 3.0    | 3.0     | 2.2       | 2.0          | 3.4   | 5.2   | 24    | 34    | 38    | 43    | 21    | 7.6   |
| 5                   | 3.2    | 3.0     | 2.2       | 2.0          | 3.4   | 5.6   | 23    | 34    | 40    | 42    | 21    | 7.3   |
| 6                   | 3.2    | a3.0    | 2.2       | 2.2          | 3.4   | 5.6   | 23    | 34    | 40    | 42    | 20    | 6.6   |
| 7                   | 3.2    | a3.0    | 2.4       | 2.2          | 3.6   | 5.6   | 23    | 32    | 39    | 41    | 20    | 6.2   |
| 8                   | 3.2    | a2.8    | 2.6       | 2.2          | 4.0   | 6.2   | 24    | 32    | 39    | 4C    | 20    | 6.2   |
| 9                   | 3.2    | a2.6    | 2.4       | 2.2          | 5.0   | *6.2  | 25    | 33    | 38    | 38    | 20    | 5.9   |
| 10                  | 3.2    | a2.6    | 2.0       | 2.2          | a7.0  | 6.0   | 27    | 34    | 37    | 37    | 20    | 5.9   |
| 11                  | 3.0    | *2.5    | 1.9       | 2.0          | a7.0  | 6.2   | 25    | 35    | 39    | 36    | 20    | 5.9   |
| 12                  | 3.0    | 2.5     | 2.0       | 2.0          | a6.5  | 6.2   | 23    | 36    | 39    | 36    | 19    | 5.9   |
| 13                  | 3.0    | 2.5     | 2.5       | 2.0          | *6.2  | 6.6   | 22    | 37    | 38    | 36    | 19    | 5.9   |
| 14                  | 3.0    | 2.6     | 2.2       | 2.0          | 6.0   | 6.5   | 22    | 35    | 38    | 35    | 19    | 5.9   |
| 15                  | 3.0    | 2.6     | 2.0       | 2.0          | 6.0   | 7.3   | 22    | 32    | 38    | 34    | 19    | 5.6   |
| 16                  | 3.0    | 2.3     | 2.0       | 2.0          | 4.4   | 7.3   | 21    | 31    | 37    | 33    | 19    | 5.6   |
| 17                  | 3.0    | 2.2     | 2.0       | 2.0          | 4.4   | 8.4   | 20    | 31    | 36    | 33    | *19   | 5.6   |
| 18                  | 3.0    | 2.3     | 2.0       | 2.0          | 5.9   | 12    | 20    | 30    | 36    | *32   | 19    | 5.6   |
| 19                  | 2.7    | 2.3     | 2.0       | 2.0          | 6.0   | 14    | 19    | 36    | 36    | 32    | 19    | 5.6   |
| 20                  | 3.0    | 2.3     | 2.0       | 2.0          | 5.5   | 17    | 19    | *31   | 35    | 32    | 19    | 5.6   |
| 21                  | 3.0    | 2.3     | 2.0       | 2.2          | 5.5   | 18    | 19    | 31    | 36    | 31    | 19    | 5.6   |
| 22                  | 3.0    | 2.3     | 2.0       | 2.4          | 5.0   | 20    | 19    | 30    | 43    | 29    | 16    | 5.6   |
| 23                  | 3.0    | 2.3     | 2.2       | 2.6          | 4.8   | 19    | 18    | 29    | 45    | 29    | 13    | 5.9   |
| 24                  | 3.0    | 2.3     | 2.4       | 2.8          | 5.0   | 18    | 18    | 28    | 50    | 30    | 12    | *5.9  |
| 25                  | 3.0    | 2.3     | 2.2       | 3.0          | 5.2   | 17    | *18   | 29    | 53    | 30    | 11    | 6.2   |
| 26                  | 3.0    | 2.6     | 2.2       | 3.2          | 5.0   | 17    | 18    | 30    | 53    | 26    | 9.8   | 6.2   |
| 27                  | 3.0    | 2.6     | 2.2       | 3.4          | 5.0   | 17    | 17    | 34    | 53    | 23    | 9.4   | 7.0   |
| 28                  | 3.0    | 2.3     | 2.2       | 3.6          | 5.0   | 17    | 17    | 36    | 53    | 23    | 8.4   | 7.6   |
| 29                  | 3.0    | 2.2     | 2.0       | 3.6          | 5.5   | 17    | 17    | 34    | 53    | 22    | 8.0   | 9.4   |
| 30                  | 3.0    | 2.2     | 2.0       | 3.6          | ----- | 16    | 16    | 34    | 53    | 23    | 7.6   | 11    |
| 31                  | *3.0   | -----   | 2.0       | 3.6          | ----- | 16    | ----- | 34    | ----- | 26    | 7.6   | ----- |
| Total               | 95.1   | 76.5    | 66.6      | 75.0         | 143.9 | 339.6 | 810   | 980   | 1,237 | 1,067 | 522.8 | 196.1 |
| Mean                | 3.07   | 2.55    | 2.15      | 2.42         | 4.96  | 11.0  | 20.3  | 31.6  | 41.2  | 34.4  | 16.9  | 6.54  |
| Ac-ft               | 189    | 152     | 132       | 149          | 285   | 674   | 1,210 | 1,940 | 2,450 | 2,120 | 1,040 | 369   |
| Calendar year 1959: | Max 41 | Min 1.9 | Mean 15.2 | Ac-ft 11,010 |       |       |       |       |       |       |       |       |
| Water year 1959-60: | Max 53 | Min 1.9 | Mean 14.8 | Ac-ft 10,730 |       |       |       |       |       |       |       |       |

\* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Chewaucan River near Paisley.

Note.--Stage-discharge relation affected by ice Nov. 14, 15, 17, 26, 27, 29, Dec. 2-12, Dec. 14 to Feb. 9, Feb. 14-17, 19-24, Feb. 26 to Mar. 2, Mar. 10, 14.

## 3935. Silvies River near Burns, Oreg.

Location.--Lat 43°43', long 119°11', in NW¼ sec.31, T.21 S., R.30 E., on left bank 5 miles downstream from Emigrant Creek and 11 miles northwest of Burns.

Drainage area.--934 sq mi.

Records available.--May 1903 to July 1906, December 1908 to December 1912, March 1913 to September 1917 (irrigation seasons only), March 1918 to October 1920, March 1921 to July 1922 (irrigation seasons only), October 1922 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 4,195 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (river-profile survey). Prior to Dec. 1, 1911, and June 24, 1917, to Apr. 6, 1922, staff gage at site 3 miles downstream at different datums. Dec. 1, 1911, to June 23, 1917, water-stage recorder at site 1½ miles downstream at different datum. Apr. 7, 1922, to Oct. 1, 1941, water-stage recorder at present site and datum. Oct. 2, 1941, to Oct. 3, 1951, water-stage recorder at site 400 ft downstream at same datum.

Average discharge.--47 years (1903-5, 1909-12, 1917-21, 1922-60), 163 cfs (118,000 acre-ft per year).

Extremes.--Maximum discharge during year, 1,530 cfs Apr. 8 (gage height, 11.13 ft); minimum, 4.0 cfs Aug. 21, 22.  
1903-6, 1908-60: Maximum discharge, 4,960 cfs about Apr. 6, 1952 (gage height, 15.2 ft); no flow July 19 to Sept. 22, 1934.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation. Diversions for irrigation above station primarily by flooding during high flow.

Revisions (water years).--WSP 860: Drainage area. WSP 1564: 1909, 1911-12, 1929, 1938, 1940(M).

Rating table, water year 1959-60, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)  
(Shifting-control method used Nov. 4 to Dec. 12)

|     |     |      |       |
|-----|-----|------|-------|
| 0.8 | 4.0 | 2.0  | 85    |
| .9  | 7.0 | 3.0  | 203   |
| 1.0 | 11  | 7.0  | 755   |
| 1.2 | 20  | 11.0 | 1,500 |
| 1.5 | 38  |      |       |

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                                                            | 12    | 24    | 30    | 24    | 30    | 32     | 727    | 259    | 206   | 18    | 12    | 6.6   |
| 2                                                            | 13    | 25    | 30    | 22    | 30    | 30     | 824    | 263    | 183   | 18    | 11    | 6.6   |
| 3                                                            | 13    | 39    | 28    | 20    | 28    | 30     | 908    | 255    | *166  | 18    | 11    | 6.6   |
| 4                                                            | 13    | *31   | 26    | 20    | 26    | 36     | 1,030  | 274    | 155   | 16    | 10    | 6.8   |
| 5                                                            | *13   | 30    | 22    | 22    | 24    | 60     | 1,210  | 273    | 147   | 16    | 9.8   | 6.8   |
| 6                                                            | 13    | 30    | 20    | 24    | 30    | 158    | 1,360  | 281    | 123   | *16   | 9.4   | 7.0   |
| 7                                                            | 13    | 30    | 22    | 26    | 36    | 222    | 1,420  | 286    | 112   | 15    | 9.4   | 7.0   |
| 8                                                            | 15    | 30    | *24   | 30    | 40    | 460    | 1,480  | 288    | 117   | 15    | 9.0   | 7.0   |
| 9                                                            | 20    | 30    | 22    | 30    | 50    | 615    | 1,430  | 273    | 115   | 15    | 8.6   | 7.0   |
| 10                                                           | 24    | 30    | 22    | 30    | 100   | 427    | 1,290  | 259    | 99    | 14    | 7.8   | 7.0   |
| 11                                                           | 22    | 30    | 22    | 28    | 90    | 366    | 1,170  | 241    | 96    | 13    | 7.8   | 7.0   |
| 12                                                           | 24    | 28    | 24    | *24   | 70    | 327    | 1,030  | 221    | 85    | 13    | 7.4   | 7.0   |
| 13                                                           | 26    | 26    | 23    | 20    | 65    | 277    | 911    | 213    | *78   | 12    | 7.0   | 7.5   |
| 14                                                           | 24    | 26    | 24    | 20    | 60    | 269    | 797    | 210    | 70    | 12    | *6.6  | *7.8  |
| 15                                                           | 22    | 24    | 24    | 20    | 55    | 242    | 698    | 196    | 64    | 11    | 6.6   | 7.8   |
| 16                                                           | 22    | 24    | 26    | 20    | *55   | 251    | 623    | 180    | 61    | 11    | 6.2   | 7.8   |
| 17                                                           | 22    | 24    | 26    | 20    | 50    | 260    | 573    | 174    | 49    | 11    | 6.2   | 7.8   |
| 18                                                           | 21    | 26    | 28    | 20    | 48    | 404    | 544    | 174    | 39    | 11    | 5.9   | 7.4   |
| 19                                                           | 21    | 30    | 26    | 20    | 46    | 635    | 520    | 170    | 35    | 10    | 5.3   | 7.4   |
| 20                                                           | 22    | 30    | 26    | 20    | 44    | 839    | 489    | 162    | 32    | 9.8   | 4.7   | 7.4   |
| 21                                                           | 22    | 30    | 26    | 22    | 42    | 852    | *468   | 191    | 30    | 9.8   | 4.2   | 7.0   |
| 22                                                           | 22    | 30    | 26    | 24    | 40    | 868    | 434    | 202    | 28    | 9.0   | 4.2   | 7.0   |
| 23                                                           | 23    | 36    | 29    | 24    | 38    | *794   | 408    | 200    | 25    | 12    | 4.2   | 7.4   |
| 24                                                           | 24    | 40    | 33    | 24    | 36    | 892    | 390    | 200    | 22    | 11    | 5.3   | 7.8   |
| 25                                                           | 24    | 40    | 37    | 22    | 36    | 1,060  | 371    | 213    | 22    | 11    | 5.9   | 8.2   |
| 26                                                           | 24    | 30    | 36    | 20    | 34    | 1,210  | 348    | 237    | 26    | 11    | 5.9   | 8.6   |
| 27                                                           | 24    | 24    | 30    | 20    | 34    | 1,340  | 336    | 284    | 20    | 11    | 6.2   | 9.0   |
| 28                                                           | 24    | 26    | 26    | 20    | 34    | 1,310  | 331    | 281    | 20    | 11    | 6.6   | 9.0   |
| 29                                                           | 26    | 28    | 26    | 24    | 32    | 1,100  | 282    | 265    | 18    | 11    | 6.6   | 8.6   |
| 30                                                           | 24    | 30    | 26    | 28    | ----- | 970    | 252    | 260    | 16    | 11    | 6.6   | 8.2   |
| 31                                                           | 24    | ----- | 24    | 30    | ----- | 857    | -----  | 236    | ----- | 11    | 6.6   | ----- |
| Total                                                        | 635   | 881   | 814   | 720   | 1,303 | 17,193 | 22,654 | 7,221  | 2,261 | 393.6 | 224.0 | 224.1 |
| Mean                                                         | 20.5  | 29.4  | 26.3  | 23.2  | 44.9  | 555    | 755    | 233    | 75.4  | 12.7  | 7.23  | 7.47  |
| Ac-ft                                                        | 1,260 | 1,750 | 1,610 | 1,430 | 2,580 | 34,100 | 44,930 | 14,320 | 4,480 | 781   | 444   | 444   |
| Calendar year 1959: Max 419 Min 2.1 Mean 65.6 Ac-ft 47,510   |       |       |       |       |       |        |        |        |       |       |       |       |
| Water year 1959-60: Max 1,480 Min 4.2 Mean 149 Ac-ft 108,100 |       |       |       |       |       |        |        |        |       |       |       |       |

\* Discharge measurement made on this day.

Note.--No gage-height record Nov. 5 to Dec. 7, Sept. 1-13; discharge estimated on basis of records for Malheur River near Drewsey and North Fork Malheur River above Agency Valley Reservoir. Stage-discharge relation affected by ice Dec. 26 to Mar. 5.

3960. Donner und Blitzen River near Frenchglen, Oreg.

Location.--Lat 42°47', long 118°52', in NW $\frac{1}{4}$  sec.20, T.32 S., R.32 $\frac{1}{2}$  E., on left bank 1 $\frac{1}{2}$  miles upstream from upper diversions for Malheur Migratory Waterfowl Refuge, 2 miles downstream from Fish Creek, and 3 $\frac{1}{2}$  miles southeast of Frenchglen.

Drainage area.--200 sq mi (revised), approximately.

Records available.--March 1911 to September 1913, March 1914 to September 1916, April 1917 to September 1921, August to November 1929, April to September 1930, December 1937 to September 1960. Monthly discharge only for some periods, published in WSP 1314. Published as "near Diamond" 1911-21. Records of discharge for January 1909 to September 1910 (published in WSP 370 as "at mouth of canyon, near Diamond") and February 1909 to July 1910 (published in WSP 270, 290, and 370, for a nonequivalent site as "near Diamond") have been found to be unreliable and should not be used.

Gage.--Water-stage recorder. Concrete control since Nov. 27, 1937. Datum of gage is 4,254 ft above mean sea level (levels by Fish and Wildlife Service). Prior to December 1937, staff gage at several sites within 2 miles downstream at different datums.

Average discharge.--30 years (1911-13, 1914-16, 1917-21, 1938-60), 125 cfs (90,500 acre-ft per year).

Extremes.--Maximum discharge during year, 1,030 cfs Mar. 7 (gage height, 4.40 ft); minimum, 10 cfs Dec. 5.

1911-21, 1929-30, 1937-60: Maximum discharge, 2,750 cfs May 19, 1953 (gage height, 6.29 ft); minimum, 8 cfs Jan. 14, 1940, result of ice jam upstream.

Remarks.--Records excellent except those for periods of ice effect, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 330: Drainage area (former site). WSP 860: Drainage area (present site). WSP 1564: 1938-39(M), 1942-43(M), 1948(M), 1951(P), 1952-53. See also Records available.

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 6

Mar. 7 to Sept. 30

|     |    |     |     |     |    |     |     |
|-----|----|-----|-----|-----|----|-----|-----|
| 1.7 | 15 | 2.5 | 88  | 1.9 | 25 | 2.8 | 161 |
| 1.8 | 19 | 2.8 | 154 | 2.1 | 39 | 3.2 | 310 |
| 2.0 | 30 | 3.2 | 292 | 2.4 | 78 | 3.6 | 510 |
| 2.2 | 48 | 3.5 | 430 |     |    |     |     |

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     | *38   | 41    | b28   | b20   | 39    | b30    | 121    | 118    | 475    | 92    | 60    | 31    |
| 2     | 36    | 39    | b28   | b22   | 37    | 36     | 190    | 154    | 495    | 86    | 46    | 31    |
| 3     | 36    | 38    | 30    | b24   | b28   | 40     | 194    | 148    | 480    | 78    | 40    | 32    |
| 4     | 35    | 36    | b16   | b22   | 35    | 38     | 208    | 151    | 475    | 74    | 38    | 32    |
| 5     | 34    | *b30  | b16   | b24   | 38    | 48     | 253    | 138    | *455   | 69    | 37    | 36    |
| 6     | 33    | b34   | b20   | b26   | 40    | 111    | 288    | 141    | 425    | 66    | 37    | 33    |
| 7     | 33    | 36    | b22   | b28   | 176   | 486    | 430    | 229    | 415    | *64   | 36    | 33    |
| 8     | 38    | 34    | b20   | b30   | 419   | 306    | 415    | 245    | 340    | 63    | 34    | 32    |
| 9     | 164   | 34    | b22   | b28   | 160   | 156    | 410    | 274    | 278    | 62    | *34   | 32    |
| 10    | 98    | 34    | *b24  | b26   | 88    | 83     | 380    | 355    | 265    | 59    | 33    | 31    |
| 11    | 78    | 34    | 32    | b24   | 63    | 75     | 340    | 435    | 278    | 54    | 33    | 31    |
| 12    | 68    | 34    | 30    | b22   | 58    | 140    | 265    | 465    | 301    | 51    | 33    | 33    |
| 13    | 56    | b28   | 27    | b16   | 52    | 218    | 241    | 385    | 306    | 50    | 34    | 32    |
| 14    | 52    | b24   | 23    | *b17  | 44    | 173    | 245    | 330    | 296    | 49    | 34    | 31    |
| 15    | 49    | b32   | 32    | b20   | 42    | 103    | 200    | 335    | 306    | 48    | 33    | *31   |
| 16    | 47    | b30   | 30    | b19   | 39    | 70     | 176    | 330    | 292    | 46    | 34    | 32    |
| 17    | 46    | b30   | 29    | b17   | *35   | 194    | 170    | 278    | 249    | 46    | 34    | 32    |
| 18    | 45    | b32   | b30   | b16   | 41    | 358    | 156    | 241    | 187    | 45    | 33    | 31    |
| 19    | 44    | 33    | b26   | b20   | 37    | 450    | 158    | 211    | 176    | 43    | 33    | 31    |
| 20    | 43    | 31    | b22   | b19   | b30   | 486    | 151    | 208    | 158    | 42    | 32    | 31    |
| 21    | 43    | 32    | b24   | b24   | b32   | 459    | 170    | 208    | 129    | 41    | 31    | 31    |
| 22    | 46    | 29    | b26   | 36    | b30   | 343    | 148    | 187    | 118    | 40    | 37    | 31    |
| 23    | 46    | 32    | 32    | 34    | b24   | 283    | 136    | 170    | 121    | 39    | 38    | 32    |
| 24    | 43    | 32    | 35    | 32    | b28   | *256   | 132    | 158    | 118    | 38    | 37    | 32    |
| 25    | 42    | 32    | 33    | 33    | b32   | 225    | 123    | 158    | 123    | 37    | 36    | 31    |
| 26    | 41    | b24   | b20   | 33    | b28   | 225    | *118   | 194    | 110    | 37    | 34    | 31    |
| 27    | 41    | b20   | b18   | 32    | b22   | 194    | 123    | 190    | 101    | 38    | 34    | 30    |
| 28    | 40    | b26   | b20   | 33    | b26   | 181    | 118    | 208    | 101    | 38    | 34    | 30    |
| 29    | 39    | b24   | b18   | 36    | b24   | 146    | 112    | 249    | 95     | 38    | 33    | 30    |
| 30    | 38    | b24   | b26   | 52    | ----- | 136    | 114    | 330    | 93     | 42    | 33    | 30    |
| 31    | 39    | ----- | b22   | 39    | ----- | 118    | -----  | 410    | -----  | 55    | 32    | ----- |
| Total | 1,531 | 939   | 781   | 822   | 1,747 | 6,147  | 6,275  | 7,633  | 7,761  | 1,630 | 1,107 | 952   |
| Mean  | 49.4  | 31.3  | 25.2  | 26.5  | 60.2  | 198    | 209    | 246    | 259    | 52.6  | 35.7  | 31.7  |
| Ac-ft | 3,040 | 1,860 | 1,550 | 1,630 | 3,470 | 12,190 | 12,450 | 15,140 | 15,390 | 3,230 | 2,200 | 1,890 |

Calendar year 1959: Max 269 Min 16 Mean 59.7 Ac-ft 43,220  
Water year 1959-60: Max 495 Min 16 Mean 102 Ac-ft 74,040

Peak discharge (base, 650 cfs).--Feb. 8 (4 p.m.) 652 cfs (3.86 ft); Mar. 7 (5:30 p.m.) 1,030 cfs (4.40 ft); Mar. 20 (8:30 p.m.) 988 cfs (4.34 ft).

\* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

3970. Bridge Creek near Frenchglen, Oreg.

Location.--Lat 42°50', long 118°51', in NW $\frac{1}{4}$  sec.33, T.31 S., R.32 $\frac{1}{2}$  E., on right bank at mouth of canyon, 3 $\frac{1}{2}$  miles northeast of Frenchglen.

Drainage area.--30 sq mi, approximately.

Records available.--March to August 1911, January 1912 to September 1916, April to June 1930, December 1937 to September 1960. Monthly discharge only April to June 1930, published in WSP 1314. Published as "near Diamond" 1911-16.

Gage.--Water-stage recorder and, since Oct. 31, 1939, concrete control. Datum of gage is 4,184.93 ft above mean sea level (levels by Fish and Wildlife Service). Prior to Dec. 21, 1937, staff gage at sites within 1 mile upstream at different datums. Dec. 21, 1937, to May 17, 1938, staff gage at site 1,000 ft downstream at different datum. May 18, 1938, to Aug. 22, 1939, staff gage at present site and datum.

Average discharge.--26 years (1912-16, 1938-60), 14.0 cfs (10,140 acre-ft per year).

Extremes.--Maximum discharge during year, 90 cfs Mar. 7 (gage height, 1.92 ft); minimum, 6.0 cfs sometime during period Dec. 22 to Jan. 13. 1911-16, 1930, 1937-60: Maximum discharge, 301 cfs May 19, 1953 (gage height, 2.73 ft), from rating curve extended above 65 cfs by logarithmic plotting; minimum, 6.0 cfs sometime during period Dec. 22, 1959, to Jan. 13, 1960.

Remarks.--Records excellent except those for periods of no gage-height record or backwater from moss, which are good. No regulation or diversion above station. Low-water flow is sustained by large springs.

Revisions (water years).--WSP 1514: 1941-43(M), 1953(M), 1955(M).

Rating tables, water year 1959-60, except periods of backwater from moss (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 5

Feb. 6 to Sept. 30

|      |     |      |     |     |    |
|------|-----|------|-----|-----|----|
| 0.88 | 6.4 | 0.89 | 6.8 | 1.1 | 16 |
| .9   | 6.8 | .9   | 7.0 | 1.2 | 24 |
| 1.0  | 10  | 1.0  | 11  | 1.4 | 39 |

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     | *8.6  | 7.4   | 7.7   | 6.5   | 7.7   | 7.0   | 9.3   | 12    | 12    | 11   | 12   | 11    |
| 2     | 8.3   | 7.4   | 7.7   | 6.5   | 8.3   | 7.0   | 15    | 15    | 12    | 11   | 12   | 11    |
| 3     | 8.3   | 7.4   | 7.7   | 6.5   | 7.1   | 7.0   | 18    | 14    | 12    | 11   | 12   | 11    |
| 4     | 8.3   | 7.4   | 7.7   | 6.5   | 6.8   | 7.0   | 15    | 15    | *12   | 11   | 12   | 11    |
| 5     | 8.3   | *7.4  | 7.7   | 7     | 8.0   | 8.6   | 16    | 14    | 11    | 11   | 12   | 11    |
| 6     | 8.3   | 7.4   | 7.7   | 7     | 14    | 16    | 18    | 14    | 11    | 11   | 12   | 11    |
| 7     | 8.3   | 7.4   | 7.7   | 7.5   | 26    | 34    | 22    | 21    | 11    | *11  | 12   | 11    |
| 8     | 8.3   | 7.4   | 7.7   | 8     | 26    | 17    | 24    | 22    | 11    | 11   | 12   | 11    |
| 9     | 8.0   | 7.4   | *7.7  | 8     | 15    | 11    | 23    | 21    | 11    | 11   | *11  | 11    |
| 10    | 8.0   | 7.4   | 7.7   | 8     | 9.3   | 7.9   | 22    | 21    | 11    | 11   | 11   | 11    |
| 11    | 8.0   | 7.4   | 7.7   | 7.5   | 7.6   | 7.6   | 21    | 21    | 11    | 11   | 11   | 11    |
| 12    | 8.0   | 7.4   | 7.7   | 7.5   | 7.6   | 7.6   | 21    | 21    | 11    | 11   | 11   | 11    |
| 13    | 8.0   | 7.4   | 7.7   | 7.5   | 7.0   | 9.7   | 18    | 20    | 11    | 11   | 11   | 11    |
| 14    | 8.0   | 7.4   | 7.7   | *7.1  | 7.0   | 8.9   | 17    | 19    | 11    | 11   | 11   | 11    |
| 15    | 8.0   | 7.4   | 7.4   | 7.1   | 7.0   | 8.2   | 16    | 19    | 11    | 11   | 11   | *11   |
| 16    | 8.0   | 7.4   | 7.4   | 6.8   | 6.8   | 7.6   | 14    | 19    | 11    | 12   | 11   | 11    |
| 17    | 8.0   | 7.4   | 7.4   | 6.6   | *6.8  | 7.6   | 14    | 18    | 11    | 12   | 11   | 10    |
| 18    | 8.0   | 7.4   | 7.4   | 6.8   | 6.8   | 9.3   | 13    | 18    | 11    | 12   | 11   | 10    |
| 19    | 8.0   | 7.4   | 7.4   | 6.8   | 6.8   | 12    | 13    | 16    | 11    | 12   | 11   | 10    |
| 20    | 8.0   | 7.4   | 7.4   | 6.8   | 6.8   | 14    | 13    | 15    | 11    | 12   | 11   | 10    |
| 21    | 8.0   | 7.4   | 7.4   | 6.8   | 6.8   | 16    | 14    | 16    | 11    | 12   | 11   | 10    |
| 22    | 7.7   | 7.4   | 7     | 6.6   | 7.0   | 17    | 14    | 16    | 11    | 12   | 11   | 9.7   |
| 23    | 7.7   | 7.7   | 7     | 6.6   | 7.0   | 18    | 13    | 15    | 11    | 12   | 11   | 9.7   |
| 24    | 8.0   | 7.7   | 7.5   | 6.6   | 7.0   | 18    | 12    | 15    | 11    | 12   | 11   | 9.7   |
| 25    | 8.0   | 7.7   | 7.5   | 6.6   | 7.0   | *17   | 12    | 14    | 11    | 12   | 11   | 9.7   |
| 26    | 8.0   | 7.7   | 7     | 6.6   | 7.0   | 20    | *12   | 14    | 11    | 12   | 11   | 9.7   |
| 27    | 8.0   | 7.7   | 7     | 6.6   | 7.0   | 19    | 12    | 14    | 11    | 12   | 11   | 9.7   |
| 28    | 8.0   | 7.7   | 7     | 6.6   | 7.0   | 15    | 12    | 13    | 11    | 12   | 11   | 9.7   |
| 29    | 8.0   | 7.7   | 7     | 6.8   | 7.0   | 12    | 11    | 13    | 11    | 12   | 11   | 9.7   |
| 30    | 7.7   | 7.7   | 7     | 7.4   | ----- | 11    | 11    | 13    | 11    | 12   | 11   | 10    |
| 31    | 7.7   | ----- | 7     | 7.4   | ----- | 9.7   | ----- | 13    | ----- | 12   | 11   | ----- |
| Total | 249.5 | 224.4 | 230.6 | 216.6 | 260.9 | 387.7 | 464.3 | 511   | 334   | 357  | 349  | 313.6 |
| Mean  | 8.05  | 7.48  | 7.44  | 6.99  | 9.00  | 12.5  | 15.5  | 16.5  | 11.1  | 11.5 | 11.3 | 10.5  |
| Ac-ft | 495   | 445   | 457   | 430   | 517   | 769   | 921   | 1,010 | 662   | 708  | 692  | 622   |

Calendar year 1959: Max 12

Min 7

Mean 9.58

Ac-ft 6,930

Water year 1959-60: Max 34

Min 6.5

Mean 10.7

Ac-ft 7,730

Peak discharge (base, 30 cfs).--Feb. 6 (11 p.m.) 39 cfs (1.40 ft); Mar. 7 (4 p.m.) 90 cfs (1.92 ft); Apr. 2 (5 p.m.) 33 cfs (1.32 ft).

\* Discharge measurement made on this day.

Note.--No gage-height record Dec. 22 to Jan. 13; discharge estimated on basis of weather records, recorded range in stage, and records for Donner und Blitzen River near Frenchglen. Backwater from moss Oct. 1 to Feb. 5, June 18 to Aug. 23.

4030. Silver Creek near Riley, Oreg.

Location.--Lat 43°41', long 119°39', in E½ sec.1, T.22 S., R.25 E., on right bank 0.4 mile downstream from Rough Creek, 1.4 miles upstream from Nicoll Creek, and 14 miles northwest of Riley.

Drainage area.--228 sq mi.

Records available.--June 1951 to September 1960.

Gage.--Water-stage recorder. Altitude of gage is 4,450 ft (by barometer).

Average discharge.--9 years, 48.1 cfs (34,820 acre-ft per year).

Extremes.--Maximum discharge during year, 499 cfs Mar. 7 (gage height, 4.53 ft); no flow Jan. 13, result of freezeup.

1951-60: Maximum discharge, 1,300 cfs Apr. 6, 1952 (gage height, 6.65 ft); no flow Dec. 3, 1957, Jan. 13, 1960, result of freezeup.

Remarks.--Records excellent except those for periods of backwater from moss, which are good, and those for periods of ice effect, which are fair. Diversions for irrigation of 500 acres above station.

Rating table, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

|     |     |     |     |
|-----|-----|-----|-----|
| 1.0 | 0.4 | 1.9 | 26  |
| 1.1 | 1.0 | 2.3 | 60  |
| 1.2 | 2.0 | 3.0 | 155 |
| 1.3 | 3.4 | 4.0 | 365 |
| 1.5 | 8.0 | 5.0 | 640 |
| 1.7 | 16  |     |     |

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                       | 2.4  | 2.6   | 3.4  | 1.0  | 2.2   | 3.8     | 175    | 48    | 38    | 7.2   | 3.6    | 1.2   |
| 2                       | 2.4  | 2.8   | 2.8  | .9   | 2.0   | 3.8     | 195    | 48    | 35    | 7.0   | 5.0    | 1.1   |
| 3                       | 2.2  | 2.8   | 3.0  | 1.0  | 2.0   | 3.8     | 279    | 47    | 32    | 6.8   | 2.4    | 1.0   |
| 4                       | 2.2  | *3.1  | 2.2  | .9   | 2.6   | 4.2     | 335    | 48    | *30   | 6.5   | 2.2    | 1.1   |
| 5                       | 2.2  | 2.4   | 1.8  | 1.0  | 2.6   | 174     | 382    | 43    | 28    | 6.0   | 1.9    | 1.3   |
| 6                       | 2.2  | 2.5   | 1.9  | 1.2  | 2.6   | 239     | 385    | 40    | 26    | 5.5   | 1.7    | 1.3   |
| 7                       | 2.2  | 2.8   | 1.7  | 1.4  | 2.6   | 292     | 388    | 43    | 25    | *5.0  | 1.5    | 1.3   |
| 8                       | 3.2  | 2.8   | 1.4  | 1.2  | 5.0   | 62      | 348    | 44    | 24    | 4.8   | *1.3   | 1.3   |
| 9                       | 5.5  | 3.0   | *1.2 | 1.0  | 4.6   | 22      | 295    | 37    | 23    | 4.6   | 1.2    | 1.3   |
| 10                      | 5.0  | 2.8   | 1.1  | .9   | 4.4   | 13      | 281    | 35    | 21    | 4.2   | 1.0    | 1.3   |
| 11                      | 3.8  | 3.0   | 1.2  | 1.0  | 4.4   | 14      | 231    | 31    | 20    | 4.0   | .9     | 1.2   |
| 12                      | 3.1  | 2.8   | 1.2  | .9   | 4.4   | 15      | 191    | 32    | 19    | 3.8   | .9     | 1.3   |
| 13                      | 3.0  | 2.8   | 1.1  | *0   | 4.2   | 45      | 161    | 37    | 18    | 3.6   | .9     | 1.5   |
| 14                      | 2.8  | 2.6   | 1.0  | 1.4  | 4.6   | 23      | 148    | 32    | 18    | 3.4   | .9     | 2.2   |
| 15                      | 2.6  | 3.4   | 1.2  | 1.4  | 4.6   | 18      | 136    | 28    | 17    | 3.2   | .9     | *1.9  |
| 16                      | 2.6  | 3.2   | 1.2  | 1.4  | *4.4  | 23      | 114    | 27    | 16    | 3.1   | 1.0    | 1.8   |
| 17                      | 2.6  | 3.0   | 1.3  | 1.2  | 4.0   | 48      | 107    | 27    | 15    | 3.0   | 1.2    | 1.6   |
| 18                      | 2.6  | 3.8   | 1.3  | 1.0  | 4.8   | 57      | 100    | 27    | 14    | 2.6   | 1.3    | 1.5   |
| 19                      | 2.6  | 3.8   | 1.2  | 1.2  | 4.4   | 65      | 96     | 25    | 14    | 2.6   | 1.0    | 1.5   |
| 20                      | 2.6  | 3.6   | 1.2  | 1.2  | 3.8   | 89      | 87     | 26    | 13    | 2.5   | .9     | 1.4   |
| 21                      | 3.0  | 4.0   | 1.1  | 1.2  | 4.0   | 111     | 83     | 33    | 12    | 2.4   | .9     | 1.4   |
| 22                      | 3.6  | 3.1   | 1.2  | 1.4  | 4.0   | 132     | 78     | 30    | 12    | 2.2   | 1.0    | 1.5   |
| 23                      | 3.6  | 4.4   | 1.3  | 1.6  | 3.4   | 167     | 70     | 27    | 11    | 2.1   | 1.4    | 1.7   |
| 24                      | 3.2  | 3.6   | 1.4  | 1.6  | 4.0   | *229    | 68     | 29    | 10    | 2.0   | 1.8    | 1.7   |
| 25                      | 3.0  | 3.2   | 1.3  | 1.5  | 4.2   | 316     | *63    | 35    | 9.8   | 1.5   | 2.1    | 1.6   |
| 26                      | 2.8  | 3.6   | 1.3  | 1.4  | 3.8   | 375     | 58     | 41    | 9.4   | 1.6   | 2.0    | 1.7   |
| 27                      | 2.8  | 2.8   | 1.2  | 1.4  | 3.4   | 352     | 60     | 53    | 9.0   | 1.6   | 1.8    | 1.7   |
| 28                      | 2.8  | 3.2   | 1.1  | 1.8  | 4.0   | 315     | 60     | 48    | 8.4   | 1.7   | 1.7    | 1.7   |
| 29                      | 2.8  | 3.2   | 1.0  | 2.0  | 4.0   | 255     | 53     | 46    | 7.8   | 1.7   | 1.5    | 1.7   |
| 30                      | 2.8  | 3.0   | 1.1  | 2.4  | ----- | 225     | 50     | 44    | 7.5   | 2.6   | 1.4    | 1.7   |
| 31                      | 2.5  | ----- | 1.1  | 2.4  | ----- | 189     | -----  | 41    | ----- | 3.6   | 1.3    | ----- |
| Total                   | 90.7 | 93.7  | 45.5 | 39.9 | 109.0 | 3,880.6 | 5,077  | 1,148 | 542.9 | 113.5 | 46.6   | 44.5  |
| Mean                    | 2.93 | 3.12  | 1.47 | 1.29 | 3.76  | 125     | 169    | 37.0  | 18.1  | 3.66  | 1.50   | 1.48  |
| Ac-ft                   | 180  | 186   | 90   | 79   | 216   | 7,700   | 10,070 | 2,280 | 1,080 | 225   | 92     | 88    |
| Calendar year 1959: Max | 136  |       |      | Min  | 0.2   |         | Mean   | 11.0  |       | Ac-ft | 7,970  |       |
| Water year 1959-60: Max | 388  |       |      | Min  | 0     |         | Mean   | 30.7  |       | Ac-ft | 22,290 |       |

Peak discharge (base, 350 cfs).--Mar. 7 (10:30 a.m.) 499 cfs (4.53 ft); Mar. 26 (1 a.m.) 478 cfs (4.45 ft); Apr. 6 (4 a.m.) 440 cfs (4.30 ft).

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

Note.--Stage-discharge relation affected by ice Nov. 5, 7-13, 17, 20, 25, Nov. 30 to Feb. 14, Feb. 17, 20, 21, Mar. 10. Backwater from moss June 15 to Sept. 13.

## 4065. Trout Creek near Denio, Oreg.

Location.--Lat 42°10', long 118°28', in SW $\frac{1}{4}$  sec. 26, T.39 S., R.36 E., on right bank 0.4 mile upstream from bridge at mouth of canyon, 5 miles east of Trout Creek Ranch, and 14 miles northeast of Denio.

Drainage area.--88 sq mi (revised), approximately.

Records available.--March 1911 to March 1912, April 1922 to November 1923, March 1925 to September 1931 (irrigation seasons only), April 1932 to September 1960.

Gage.--Water-stage recorder. Datum of gage is 4,351.52 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Mar. 25, 1911, to Mar. 31, 1912, staff gage at bridge 0.4 mile downstream at different datum. Apr. 28, 1922, to June 14, 1932, water-stage recorder at site 10 ft upstream at datum 0.50 ft higher.

Average discharge.--29 years (1922-23, 1932-60), 14.9 cfs (10,790 acre-ft per year).

Extremes.--Maximum discharge during year, 80 cfs May 13 (gage height, 3.04 ft); minimum, 0.8 cfs Dec. 5.

1911-12, 1922-23, 1925-60: Maximum discharge, 470 cfs Aug. 1, 1933 (gage height, 5.26 ft), from rating curve extended above 230 cfs by logarithmic plotting; minimum observed, 0.1 cfs Aug. 4, 1930, Aug. 1, Sept. 12, 28, 1934. Probably no flow at times Sept. 1-19, 1931.

Maximum stage known, 6.0 ft (caused by cloudburst), probably occurred in 1924 or 1925.

Remarks.--Records good except those for periods of ice effect, which are poor. No regulation. Diversions for irrigation of 800 acres above station.

Revisions (water years).--WSP 1564: 1932, 1933-34(M), 1938(M).

Rating tables, water year 1959-60, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 6

Mar. 7 to Sept. 30

|     |     |     |    |     |     |     |    |
|-----|-----|-----|----|-----|-----|-----|----|
| 1.5 | 1.6 | 2.0 | 10 | 1.6 | 2.2 | 2.4 | 25 |
| 1.6 | 2.7 | 2.2 | 19 | 1.8 | 4.7 | 2.6 | 38 |
| 1.8 | 5.5 |     |    | 2.0 | 9.0 | 3.0 | 76 |
|     |     |     |    | 2.2 | 16  |     |    |

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     | *4.8  | 6.1   | 3.5  | 2.5  | 4.2   | 4.0   | 19    | 18    | 42    | 14    | 6.1   | 2.8   |
| 2     | 4.4   | 5.9   | 3.2  | 2.5  | 4.0   | 4.0   | 18    | 24    | 42    | 14    | 5.1   | 2.6   |
| 3     | 4.3   | 5.9   | 3.0  | 2.5  | 3.5   | 4.2   | 19    | 22    | 41    | 13    | 4.6   | 2.8   |
| 4     | 4.2   | 5.7   | 2.5  | 2.5  | 4.0   | 4.5   | 22    | 25    | 37    | 12    | 4.3   | 3.6   |
| 5     | *4.0  | 4.3   | 2.2  | 2.5  | 4.5   | 5.2   | 25    | 21    | *34   | 12    | 4.1   | 3.7   |
| 6     | 3.9   | 4.6   | 2.5  | 2.8  | 5.7   | 6.0   | 26    | 21    | 30    | 12    | 3.9   | 3.3   |
| 7     | 4.0   | 5.5   | 2.5  | 3.0  | 8.7   | 17    | 29    | 33    | 29    | 11    | 3.7   | 3.3   |
| 8     | 4.6   | 5.0   | 2.5  | 3.0  | 12    | 17    | 36    | 42    | 27    | 11    | 3.4   | 3.3   |
| 9     | 5.4   | 5.2   | 2.8  | 3.0  | 11    | 16    | 39    | 45    | 25    | 12    | 3.2   | 3.2   |
| 10    | 4.9   | 5.2   | *3.0 | 3.0  | 9.3   | 12    | 36    | 51    | 23    | 10    | 2.9   | 3.2   |
| 11    | 4.6   | 5.2   | 3.0  | 2.8  | 8.4   | 12    | 34    | 58    | 19    | 9.6   | 2.8   | 3.1   |
| 12    | 4.6   | 5.2   | 2.8  | 2.5  | 7.8   | 12    | 30    | 63    | 18    | 9.0   | 2.8   | 3.1   |
| 13    | 4.6   | 4.4   | 2.5  | 2.4  | 7.8   | 12    | 26    | 68    | 17    | 8.5   | 3.0   | 3.1   |
| 14    | 4.8   | 3.4   | 2.5  | 2.2  | 5.7   | 10    | 26    | 57    | 17    | 7.5   | *3.0  | 3.0   |
| 15    | 5.0   | 4.0   | 2.5  | 2.0  | 8.1   | 10    | 24    | 54    | 17    | 6.5   | 2.8   | 3.0   |
| 16    | 4.4   | 4.5   | 2.5  | 2.2  | 6.9   | 10    | 23    | 52    | 16    | 5.8   | 3.0   | 3.0   |
| 17    | 4.4   | 4.9   | 2.5  | 2.5  | 5.5   | 10    | 22    | 47    | 14    | 5.8   | 3.1   | 2.9   |
| 18    | 4.6   | 5.5   | 2.8  | 2.6  | *7.3  | 11    | 22    | 42    | 13    | 5.2   | 2.9   | 2.9   |
| 19    | 4.6   | 5.2   | 3.0  | 2.8  | 6.1   | 11    | 20    | 37    | 12    | 5.1   | 2.6   | 2.8   |
| 20    | 4.4   | 5.4   | 3.0  | 3.0  | 5.9   | 14    | *20   | 36    | 12    | 4.7   | 2.4   | 2.8   |
| 21    | 4.6   | 5.2   | 3.0  | 3.2  | 5.5   | 16    | 26    | 46    | 13    | 4.6   | 2.2   | 3.0   |
| 22    | 4.8   | 4.9   | 3.0  | 3.4  | 5.2   | 19    | 30    | 36    | 13    | 4.6   | 2.8   | 3.2   |
| 23    | 4.9   | 5.7   | 3.2  | 3.5  | 5.0   | 21    | 27    | 32    | 11    | 4.6   | 3.6   | 3.2   |
| 24    | 5.2   | 5.5   | 3.5  | 3.8  | 4.8   | 24    | 24    | 30    | 9.9   | 4.4   | 3.3   | 3.2   |
| 25    | 5.2   | 5.5   | 3.5  | 4.0  | 4.5   | 25    | 22    | 29    | 8.8   | 4.4   | 3.2   | 3.1   |
| 26    | 5.2   | 4.6   | 3.5  | 4.2  | 4.3   | 25    | 20    | 27    | 8.8   | 4.4   | 3.2   | 3.1   |
| 27    | 5.5   | 3.5   | 3.5  | 4.5  | 4.2   | 24    | 20    | 28    | 8.2   | 4.4   | 3.4   | 3.0   |
| 28    | 5.5   | 3.5   | 3.4  | 4.5  | 4.0   | 24    | 19    | 30    | 6.3   | 4.6   | 3.4   | 3.1   |
| 29    | 5.7   | 3.5   | 3.2  | 4.5  | 4.0   | 23    | 19    | 31    | 6.1   | 4.7   | 3.3   | 3.1   |
| 30    | 5.9   | 3.5   | 3.0  | 4.5  | ----- | 22    | 18    | 33    | 9.0   | 4.7   | 3.1   | 3.1   |
| 31    | 5.7   | ----- | 2.8  | 4.4  | ----- | 20    | ----- | 36    | ----- | 6.3   | 3.0   | ----- |
| Total | 148.7 | 146.5 | 90.4 | 96.8 | 177.9 | 444.9 | 741   | 1,174 | 579.1 | 240.4 | 104.2 | 92.6  |
| Mean  | 4.80  | 4.88  | 2.92 | 3.12 | 6.13  | 14.4  | 24.7  | 37.9  | 19.3  | 7.75  | 3.36  | 3.09  |
| Ac-ft | 295   | 291   | 179  | 192  | 353   | 882   | 1,470 | 2,350 | 1,150 | 477   | 207   | 184   |

Calendar year 1959: Max 30 Min 1.6 Mean 6.58 Ac-ft 4,760  
Water year 1959-60: Max 68 Min 2.0 Mean 11.0 Ac-ft 8,010

Peak discharge (base, 50 cfs).--May 13 (4:30 a.m.) 80 cfs (3.04 ft); June 1 (5:30 a.m.) 51 cfs (2.74 ft).

\* Discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 15, 16, Nov. 28 to Dec. 4, Dec. 6-26, Dec. 28 to Feb. 2, Feb. 4, 5, 21, Feb. 23 to Mar. 6.

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or flood-flow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Records collected at partial-record stations are generally presented in two tables. However, no records at low-flow partial-record stations are available for the 1960 water year. A table of annual maximum discharge at crest-stage stations is given first, followed by a table of measurements made at miscellaneous sites for both low flow and high flow.

## Crest-stage partial-record stations

The following table contains annual maximum discharges for crest-stage stations. A crest-stage gage is a device which will register the peak stage occurring between inspections 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 date 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 determined.

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) |
| Jordan River basin                                        |                                                    |                                                                                                                                                                           |                       |                       |                    |                    |                 |
| 1483                                                      | Dairy Fork near Thistle, Utah.                     | Center of sec. 11, T. 10 S., R. 5 E., 0.6 mile above mouth and 9 miles east of Thistle.                                                                                   | a11                   | 1959-60               | 7-14-58<br>7-31-6C | 14.18<br>11.31     | 805<br>191      |
| 1655                                                      | Dry Creek near Alpine, Utah.                       | NE $\frac{1}{4}$ sec. 18, T. 4 S., R. 2 E., 100 ft below Timber Road Bridge, 2 miles northeast of Alpine, and 3 $\frac{1}{2}$ miles above Fort Creek.                     | 9.82                  | 1947-55*,<br>1959-60* | 8-19-58<br>2-2-6C  | 4.96<br>1.98       | 294<br>154      |
| Skull Valley                                              |                                                    |                                                                                                                                                                           |                       |                       |                    |                    |                 |
| 1728.35                                                   | Skull Valley tributary near Delle, Utah.           | NW $\frac{1}{4}$ sec. 31, T. 1 S., R. 9 W., 300 ft above road crossing and 8 miles southwest of Delle.                                                                    | 1.51                  | 1960                  | 8-1-6C             | 10.29              | 30              |
| Great Salt Lake Desert                                    |                                                    |                                                                                                                                                                           |                       |                       |                    |                    |                 |
| 1728.8                                                    | Thomas Creek near Callao, Utah.                    | NW $\frac{1}{4}$ sec. 29, T. 11 S., R. 17 W., 100 ft above canal diverting from Indian Farm Creek and $5\frac{1}{2}$ miles southwest of Callao.                           | a6.8                  | 1959-60               | 5-15-58<br>6-15-6C | -<br>10.85         | (b)<br>(†)      |
| 1728.95                                                   | Deep Creek near Ibapah, Utah.                      | Lat 40°15', long 113°59', T. 6 S., R. 19 W. (unsurveyed), $\frac{1}{2}$ mile above mouth of Bar Creek and 15 miles north of Ibapah.                                       | a460                  | 1959-60               | 8-20-58<br>4-26-6C | 9.80<br>10.66      | (†)<br>(†)      |
| 1729                                                      | Bar Creek near Ibapah, Utah.                       | Lat 40°15', long 113°59', T. 6 S., R. 19 W. (unsurveyed), $\frac{1}{2}$ mile above mouth and 15 miles north of Ibapah.                                                    | a12                   | 1959-60               | 8-20-58<br>(c)     | 10.35<br>10.89     | (†)<br>(†)      |
| 1729.2                                                    | Cotton Creek near Grouse Creek, Utah.              | NE $\frac{1}{4}$ sec. 6, T. 12 N., R. 17 W., 2 miles above mouth and 7 miles northeast of Grouse Creek.                                                                   | a18                   | 1959-60               | 1958<br>196C       | -<br>-             | (b)<br>(b)      |
| Tributaries between Great Salt Lake Desert and Bear River |                                                    |                                                                                                                                                                           |                       |                       |                    |                    |                 |
| 1729.3                                                    | Right Hand Fork Dove Creek near Park Valley, Utah. | NE $\frac{1}{4}$ sec. 32, T. 13 N., R. 15 W., $\frac{1}{2}$ mile above mouth and 13 miles west of Park Valley.                                                            | a14                   | 1959-60               | 1958<br>196C       | -<br>-             | (b)<br>(b)      |
| 1729.6                                                    | West Fork Tenmile Creek near Park Valley, Utah.    | SW $\frac{1}{4}$ sec. 19, T. 13 N., R. 11 W., at culvert on State Highway 70 2 miles below Crystal Hollow, 10 miles east of Park Valley, 23 miles southwest of Snowville. | 5.93                  | 1959-60               | 9-23-58<br>196C    | 10.53<br>-         | 151<br>(d)      |

† Discharge not determined.

\* Operated as a continuous-record gaging station.

a Approximately.

b Peak flow too small to compute by indirect methods; no gage height or estimate of discharge obtained.

c Occurred sometime during period June 2 to July 6, 1960.

d No evidence of any flow above spring-fed flow.

## Annual maximum discharge at crest-stage partial-record stations--Continued

| Station No.                                                          | Station name                                              | Location                                                                                                                                                                    | Drainage area (sq mi) | Period of record | Annual maximum     |                    |                 |
|----------------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------|--------------------|--------------------|-----------------|
|                                                                      |                                                           |                                                                                                                                                                             |                       |                  | Date               | Gage height (feet) | Discharge (cfs) |
| Tributaries between Great Salt Lake Desert and Bear River--Continued |                                                           |                                                                                                                                                                             |                       |                  |                    |                    |                 |
| 1729.9                                                               | Blue Spring Creek near Snowville, Utah.                   | SW $\frac{1}{4}$ sec.17, T.13 N., R.5 W., at box culvert on U. S. Highway 305, 24 miles above Bear River Bay and 16 miles southeast of Snowville.                           | a180                  | 1959-60          | 9-23-59<br>4-28-60 | 13.15<br>11.85     | 282<br>(†)      |
| Sevier Lake basin                                                    |                                                           |                                                                                                                                                                             |                       |                  |                    |                    |                 |
| 1748                                                                 | Red Canyon tributary near Bryce Canyon, Utah.             | Sec.27, T.35 S., R.4 $\frac{1}{2}$ W. (unsurveyed), 500 ft above bridge, $\frac{1}{2}$ mile east of east tunnel on State Highway U-12, and 10 miles southeast of Panguitch. | a2.2                  | 1959-60          | 8-19-59<br>1960    | 10.13<br>10.48     | (†)<br>(†)      |
| 1844                                                                 | Deer Creek near Osiris, Utah.                             | NE $\frac{1}{4}$ sec.23, T.32 S., R.2 W., 400 ft above bridge on State Highway U-22, 1 $\frac{1}{2}$ miles southwest of Osiris.                                             | a28                   | 1959-60          | 1959<br>1960       | -<br>-             | (d)<br>(d)      |
| 2043                                                                 | Peterson Creek near Sigurd, Utah.                         | SE $\frac{1}{4}$ sec.29, T.23 S., R.1 W., at junction of State Highways U-24 and U-19, 5.6 miles southeast of Sigurd.                                                       | a27                   | 1959-60          | 1959<br>9- 5-60    | -<br>(e)           | (d)<br>2,150    |
| 2050.7                                                               | Cottonwood Creek near Salina, Utah.                       | NE $\frac{1}{4}$ sec.8, T.22 S., R.2 E., at culvert on State Highway U-10, 0.1 mile above mouth and 9.7 miles southeast of Salina.                                          | a7.8                  | 1959-60          | 7-30-59<br>4-11-60 | 10.02<br>10.19     | (†)<br>(†)      |
| 2163                                                                 | Sixmile Creek near Sterling, Utah.                        | SE $\frac{1}{4}$ sec.35, T.18 S., R.2 E., at diversion structure 0.6 mile below bridge and 2 miles east of Sterling.                                                        | a29                   | 1959-60          | 7-31-59<br>5-15-60 | 12.48<br>11.00     | (†)<br>(†)      |
| Pavant Valley                                                        |                                                           |                                                                                                                                                                             |                       |                  |                    |                    |                 |
| 2335                                                                 | Corn Creek near Kanosh, Utah.                             | N $\frac{1}{2}$ sec.34, T.23 S., R.5 W., 0.1 mile southeast of Fish Lake Forest boundary and 2.7 miles southeast of Kanosh.                                                 | a79                   | 1959-60          | 8- 1-59<br>5-19-60 | 10.12<br>10.58     | 20<br>68        |
| Beaver River basin                                                   |                                                           |                                                                                                                                                                             |                       |                  |                    |                    |                 |
| 2360                                                                 | North Fork North Creek near Beaver, Utah.                 | NE $\frac{1}{4}$ sec.29, T.28 S., R.6 W., at ford 0.7 mile east of Fish Lake Forest boundary, $\frac{1}{2}$ mile above South Fork, and 7.8 miles northeast of Beaver.       | 14.1                  | 1959-60          | 8-26-59<br>1960    | 10.45<br>10.25     | 64<br>31        |
| 2406                                                                 | Big Wash near Milford, Utah.                              | NE $\frac{1}{4}$ sec.26, T.27 S., R.12 W., 8.2 miles northwest of Milford and 16 miles east of Wah Wah Field station.                                                       | a51                   | 1959-60          | 9-17-59<br>7- 9-60 | 11.00<br>10.10     | (†)<br>(†)      |
| 2411                                                                 | Cove Creek near Black Rock, Utah.                         | SE $\frac{1}{4}$ sec.9, T.25 S., R.9 W., 7 miles southeast of Black Rock and 17 $\frac{1}{2}$ miles west of Cove Fort.                                                      | 226                   | 1959-60          | 8- 1-59<br>1960    | 11.66<br>-         | (†)<br>(g)      |
| Parowan Valley                                                       |                                                           |                                                                                                                                                                             |                       |                  |                    |                    |                 |
| 2413                                                                 | Fremont Wash near Paragonah, Utah.                        | SE $\frac{1}{4}$ sec.30, T.31 S., R.7 W., 50 ft above bridge on old U. S. Highway 91 and 14.5 miles north of Paragonah.                                                     | a120                  | 1959-60          | 8- 2-59<br>9- 5-60 | 10.21<br>10.25     | (†)<br>f15      |
| Cedar City Valley                                                    |                                                           |                                                                                                                                                                             |                       |                  |                    |                    |                 |
| 2419                                                                 | Coal Creek above Right Hand Creek, near Cedar City, Utah. | SE $\frac{1}{4}$ sec.21, T.36 S., R.10 W., 500 ft from junction with State Highway U-14, 600 ft above Right Hand Creek, and 5 miles southeast of Cedar City.                | 54.2                  | 1959-60          | 8- 3-59<br>9- 6-60 | 12.40<br>10.03     | 1,210<br>220    |
| 2421                                                                 | Shurtz Creek near Cedar City, Utah.                       | NE $\frac{1}{4}$ sec.5, T.37 S., R.11 W., 1.1 miles south of junction with U. S. Highway 91 and 5.3 miles southwest of Cedar City.                                          | 12.8                  | 1959-60          | 7-24-59<br>9- 1-60 | 11.20<br>11.70     | (†)<br>(†)      |
| 2422                                                                 | Duncan Creek near Cedar City, Utah.                       | SE $\frac{1}{4}$ sec.26, T.36 S., R.13 W., 65 ft above ford at junction with State Highway U-56 and 13 miles west of Cedar City.                                            | 11.9                  | 1959-60          | 8- 3-59<br>9- 6-60 | 12.62<br>12.00     | 363<br>(†)      |

† Discharge not determined.

a Approximately.

d No evidence of any flow above spring-fed flow.

e Gage height not determined.

f Estimated.

g No evidence of any flow during 1960 water year.

Annual maximum discharge at crest-stage partial-record stations--Continued

| Station No.        | Station name                                          | Location                                                                                                                                | Drainage area (sq mi) | Period of record | Annual maximum |                    |                  |
|--------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------|----------------|--------------------|------------------|
|                    |                                                       |                                                                                                                                         |                       |                  | Date           | Gage height (feet) | Dis-charge (cfs) |
| Snake Valley       |                                                       |                                                                                                                                         |                       |                  |                |                    |                  |
| 2432.4             | Baker Creek at narrows, near Baker, Nev.              | NE $\frac{1}{4}$ sec.22, T.13 N., R.69 E., at narrows 1,200 ft below Pole Canyon and 5 $\frac{1}{2}$ miles southwest of Baker.          | 16.4                  | 1948-55*, 1960†  | 9- 3-60        | - 2.36             | 73               |
| Death Valley       |                                                       |                                                                                                                                         |                       |                  |                |                    |                  |
| 2510               | Big Dip Creek near Stovepipe Wells, Calif.            | Lat 36°55'05", long 117°17'35", in Death Valley, at culvert on Scotty's Castle road, 21 miles northwest of Stovepipe Wells.             | 0.95                  | 1958-60          | 9- 3-60        | 12.55              | 32               |
| 2512               | Spring Creek at Furnace Creek Inn, Calif.             | S $\frac{1}{2}$ sec.23, T.27 N., R.1 E., at culvert on State Highway 190, 0.8 mile southeast of Furnace Creek Inn.                      | -                     | 1958-60          |                | -                  | (g)              |
| 2514               | Ibex Creek near Tecopa, Calif.                        | Lat 35°47'15", long 116°20'00", at culvert on State Highway 127, 7.5 miles southwest of Tecopa.                                         | -                     | 1959-60          | 11- 1-59       | 10.21              | 3.8              |
| 2515               | Yucca Creek near Yucca Grove, Calif.                  | SE $\frac{1}{4}$ sec.2, T.15 N., R.11 E., at culvert on U. S. Highways 91 and 466, 2.5 miles northeast of Yucca Grove.                  | -                     | 1959-60          | 9- 9-60        | 10.35              | 2.8              |
| 2516               | Salsberry Creek near Shoshone, Calif.                 | Lat 35°55'10", long 116°26'05", at culvert on Shoshone-Death Valley road, 10 miles south-west of Shoshone.                              | -                     | 1959-60          | 9- 2-60        | 10.82              | 2.2              |
| Bristol Lake basin |                                                       |                                                                                                                                         |                       |                  |                |                    |                  |
| 2527               | Creosote Creek near Cadiz, Calif.                     | NE $\frac{1}{4}$ sec.35, T.6 N., R.14 E., at culvert on U. S. Highway 66, 4 miles northeast of Cadiz.                                   | -                     | 1958-60          | 3- 2-60        | 11.10              | 12               |
| 2530               | Gourd Creek near Ludlow, Calif.                       | SW $\frac{1}{4}$ sec.23, T.7 N., R.9 E., at culvert on U. S. Highway 66, 8.5 miles southeast of Ludlow.                                 | -                     | 1959-60          | 11- 1-60       | 13.78              | 65               |
| Cadiz Lake basin   |                                                       |                                                                                                                                         |                       |                  |                |                    |                  |
| 2532.5             | Granite Wash near Rice, Calif.                        | Lat 34°02'50", long 115°13'05", at culvert on county road, 21 $\frac{1}{2}$ miles west of Rice.                                         | -                     | 1960             | 1-12-60        | 3.00               | f1               |
| 2532.55            | Granite Wash No. 2 near Rice, Calif.                  | Lat 34°02'55", long 115°13'00", at culvert on county road, 21 $\frac{1}{2}$ miles west of Rice.                                         | -                     | 1960             | 1-12-60        | 2.91               | f.5              |
| Chuckwalla Valley  |                                                       |                                                                                                                                         |                       |                  |                |                    |                  |
| 2537               | Palen Dry Lake tributary near Desert Center, Calif.   | Lat 33°41'45", long 115°28'45", at culvert on U. S. Highways 60 and 70, 4.7 miles southwest of Desert Center.                           | 0.04                  | 1960             | (h)            | 4.50               | 38               |
| 2537.5             | Monument Wash near Desert Center, Calif.              | Lat 33°42'30", long 115°21'50", at culvert on U. S. Highways 60 and 70, 2.1 miles east of Des-ert Center.                               | 4.29                  | 1960             | 7-22-60        | 4.75               | 77               |
| 2538               | Coxcomb Wash near Desert Center, Calif.               | NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.22, T.4 S., R.16 E., at culvert on county road, 9 $\frac{1}{2}$ miles northeast of Desert Center. | -                     | 1960             | 3-24-60        | 2.88               | 12               |
| Salton Sea basin   |                                                       |                                                                                                                                         |                       |                  |                |                    |                  |
| 2540.2             | Betz Wash near Sal-ton Beach, Calif.                  | NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.11, T.8 S., R.10 E., at culvert on Southern Pacific RR., 2.3 miles northwest of Salton Beach.     | -                     | 1959-60          | -              | -                  | (g)              |
| 2544.75            | Glamis Wash at Glamis, Calif.                         | Lat 32°59'53", long 115°04'10", at culvert on county road at Glamis.                                                                    | -                     | 1960             | 12-25-58       | 4.18               | 45               |
| 2552               | Myer Creek tribu-tary near Jacumba, Calif.            | NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec.20, T.17 S., R.9 E., at culvert on U. S. Highway 80, 7 $\frac{1}{2}$ miles northeast of Jacumba.  | 0.11                  | 1960             | 9- 1-60        | 10.88              | 4.9              |
| 2552.3             | Myer Creek tribu-tary No. 2 near Coyote Wells, Calif. | SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec.3, T.17 S., R.9 E., at culvert on U. S. Highway 80, 5 miles southwest of Coyote Wells.            | .08                   | 1960             | 9- 1-60        | 1.65               | .9               |
| 2557.3             | Pinyon Wash near Borrego, Calif.                      | NW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.13, T.12 S., R.6 E., at culvert on State Highway 78, 5.7 miles south of Borrego.                  | 20.9                  | 1960             | -              | -                  | (g)              |
| 2558.2             | Yaqui Pass Wash near Borrego, Calif.                  | SW $\frac{1}{4}$ sec.10, T.12 S., R.6 E., at culvert on county road, 4.8 miles southwest of Borrego.                                    | .04                   | 1960             | 8-31-60        | 4.23               | 11               |

\* Operated as a continuous-record gaging station.

† Estimated.

g No evidence of any flow during 1960 water year.

h Occurred sometime during period Sept. 4-6, 1960.

Annual maximum discharge at crest-stage partial-record stations--Continued

| Station No.                 | Station name                                   | Location                                                                                                                        | Drainage area (sq mi) | Period of record | Annual maximum |                    |                 |
|-----------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------|----------------|--------------------|-----------------|
|                             |                                                |                                                                                                                                 |                       |                  | Date           | Gage height (feet) | Discharge (cfs) |
| Salton Sea basin--Continued |                                                |                                                                                                                                 |                       |                  |                |                    |                 |
| 2558.25                     | Yaqui Pass Wash No. 2 near Borrego, Calif.     | NW $\frac{1}{4}$ sec.10, T.12 S., R.6 E., at culvert on county road, 4.5 miles southwest of Borrego.                            | 0.04                  | 1960             | 8-31-60        | 3.98               | 9.5             |
| 2595                        | Thermal Canyon tributary near Mecca, Calif.    | SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec.6, T.6 S., R.10 E., at culvert on U. S. Highways 60 and 70, 9.2 miles northeast of Mecca. | .18                   | 1960             | -              | -                  | (g)             |
| Mojave River basin          |                                                |                                                                                                                                 |                       |                  |                |                    |                 |
| 2618                        | Beacon Creek at Helendale, Calif.              | SE $\frac{1}{4}$ sec.29, T.8 N., R.4 W., at culvert on U. S. Highways 66 and 91, 0.5 mile northwest of Helendale.               | 0.72                  | 1958-60          | 12-24-59       | 10.52              | 0.5             |
| 2626                        | Boom Creek near Barstow, Calif.                | NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.2, T.9 N., R.1 W., at culvert on U. S. Highways 91 and 466, 4 miles east of Barstow.      | .24                   | 1958-60          | 9- 1-60        | -                  | (†)             |
| 2631                        | Zzyzx Creek near Baker, Calif.                 | Lat 35°11'40", long 116°09'05", at culvert on U. S. Highways 91 and 466, 6.5 miles southwest of Baker.                          | -                     | 1959-60          | -              | -                  | (g)             |
| Antelope Valley             |                                                |                                                                                                                                 |                       |                  |                |                    |                 |
| 2645.2                      | Amargosa Creek tributary near Palmdale, Calif. | SE $\frac{1}{4}$ sec.2, T.6 N., R.14 W., at culvert on Pine Canyon road, 12.5 miles northwest of Palmdale.                      | 0.05                  | 1958-60          | 12-24-59       | 10.34              | 0.7             |
| 2645.3                      | Pine Creek near Palmdale, Calif.               | SW $\frac{1}{4}$ sec.15, T.6 N., R.13 W., at culvert on Pine Canyon road, 7 $\frac{1}{2}$ miles northwest of Palmdale.          | -                     | 1958-60          | 4-28-60        | 10.32              | .5              |
| 2645.6                      | Spencer Canyon Creek near Fairmont, Calif.     | SW $\frac{1}{4}$ sec.15, T.8 N., R.16 W., at culvert on State Highway 138, 8.5 miles northwest of Fairmont.                     | -                     | 1958-60          | -              | -                  | (g)             |
| 2646.05                     | Joshua Creek near Mojave, Calif.               | SW $\frac{1}{4}$ sec.26, T.11 N., R.14 W., at culvert on Willow Springs road, 10 miles southwest of Mojave.                     | -                     | 1958-60          | 2-29-60        | 10.41              | f1              |
| Koehn Lake basin            |                                                |                                                                                                                                 |                       |                  |                |                    |                 |
| 2647                        | Pewee Creek near Randsburg, Calif.             | SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec.34, T.28 S., R.40 E., at culvert on U. S. Highway 395, 6.5 miles north of Randsburg.      | -                     | 1959-60          | -              | -                  | (g)             |
| Indian Wells Valley         |                                                |                                                                                                                                 |                       |                  |                |                    |                 |
| 2648.75                     | Sand Creek near Inyokern, Calif.               | SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec.33, T.26 S., R.38 E., at culvert on U. S. Highway 6, 4.8 miles southwest of Inyokern.     | 1.02                  | 1959-60          | 2- 2-60        | (j)                | f0.1            |
| 2649                        | Salt Wells Creek near Westend, Calif.          | NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec.27, T.26 S., R.42 E., at culvert on Trona road, 4.8 miles southwest of Westend.           | 61.6                  | 1959-60          | 12-25-59       | 10.22              | f7              |
| 2649.15                     | Crust Creek near Westend, Calif.               | NW $\frac{1}{4}$ sec.8, T.26 S., R.43 E., at culvert on Trona RR., 1.2 miles southeast of Westend.                              | -                     | 1959-60          | -              | -                  | (g)             |

† Discharge not determined.

f Estimated.

g No evidence of any flow during 1960 water year.

j Peak flow did not reach bottom of gage.

## Measurements at miscellaneous sites

Measurements of streamflow at points other than gaging stations or partial-record stations are given in the following table. Those that are measurements of base flow are designated by an asterick (\*); measurements of peak flow by a dagger (†).

Discharge measurements made at miscellaneous sites during water year 1960

| Discharge measurements made at miscellaneous sites during water year 1960 |                       |                                                                                                                                                                   |                       |                                   |                                                                                                               |                                                                                        |
|---------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Stream                                                                    | Tributary to          | Location                                                                                                                                                          | Drainage area (sq mi) | Measured previously (water years) | Measurements                                                                                                  |                                                                                        |
|                                                                           |                       |                                                                                                                                                                   |                       |                                   | Date                                                                                                          | Discharge (cfs)                                                                        |
| Bear River basin                                                          |                       |                                                                                                                                                                   |                       |                                   |                                                                                                               |                                                                                        |
| Boundary Creek.                                                           | East Fork Bear River. | Lat 40°50'40", long 110°47'00", in S½ sec.2, T.1 N., R.10 E., 1½ miles above mouth and 30 miles south of Evanston, Wyo.                                           | 3.50                  |                                   | 11-10-59                                                                                                      | *1.29                                                                                  |
| West Fork Bear River.                                                     | Bear River.....       | Lat 40°50'20", long 110°55'30", in E½ sec.9, T.1 N., R.9 E., 1 mile south of Whitney ranger station and 30 miles south of Evanston, Wyo.                          | 6.19                  |                                   | 11-10-59<br>12- 1-59<br>4-29-60<br>5-19-60<br>6- 1-60<br>6- 7-60<br>7-21-60                                   | *2.17<br>*1.92<br>4.51<br>31.3<br>43.6<br>36.9<br>*2.06                                |
| Malad River                                                               | ....do.....           | Sec.10, T.14 S., R.35 E., at springs 1 mile above dam on Samaria Reservoir No. 2, 5½ miles northwest of Malad City, Idaho, and 8½ miles above Little Malad River. | ab3.3                 | 1948-59                           | 10-13-59<br>11- 7-59<br>12-14-59<br>1-16-60<br>2-27-60<br>3-24-60<br>5- 7-60<br>6-10-60<br>7-15-60<br>8-17-60 | *6.82<br>*6.93<br>*6.87<br>*7.48<br>*9.74<br>*12.4<br>*11.1<br>*10.7<br>*8.72<br>*7.72 |
| Tooele Valley                                                             |                       |                                                                                                                                                                   |                       |                                   |                                                                                                               |                                                                                        |
| Middle Creek Canyon.                                                      | Great Salt Lake.      | Sec. 6, T.4 S., R.3 W., 3½ miles southeast of Tooele, Utah.                                                                                                       | -                     | 1959                              | 9-19-60                                                                                                       | *0.13                                                                                  |
| North Willow Creek.                                                       | ....do.....           | NW¼ sec.25, T.3 S., R.7 W., 8 miles southwest of Grantsville, Utah.                                                                                               | -                     | 1959                              | 9-19-60                                                                                                       | *1.78                                                                                  |
| South Willow Creek.                                                       | ....do.....           | NE¼ sec.6, T.4 S., R.6 W., 9 miles southwest of Grantsville, Utah.                                                                                                | -                     | 1959c                             | 9-19-60                                                                                                       | *.90                                                                                   |
| Sevier Lake basin                                                         |                       |                                                                                                                                                                   |                       |                                   |                                                                                                               |                                                                                        |
| Duck Creek.                                                               | Asay Creek....        | SW¼ sec.12, T.38 S., R.8 W., 18 miles southwest of Hatch, Utah.                                                                                                   | -                     | 1954-59*                          | 11-17-59<br>9-23-60                                                                                           | *1.37<br>*2.12                                                                         |
| Lower Asay Creek Spring.                                                  | ....do.....           | Sec.33, T.37 S., R.6 W., 9 miles southwest of Hatch, Utah.                                                                                                        | -                     | 1953-54, 1957                     | 9-23-60                                                                                                       | *15.8                                                                                  |
| Asay Creek above West Fork.                                               | Sevier River...       | NE¼ sec.33, T.37 S., R.6 W., 2 miles above West Fork Asay Creek and 8 miles southwest of Hatch, Utah.                                                             | -                     | 1954-59*                          | 9-23-60                                                                                                       | *18.2                                                                                  |
| Mammoth Spring.                                                           | Mammoth Creek..       | SE¼ sec.31, T.36 S., R.7 W., 13 miles west of Hatch, Utah.                                                                                                        | -                     | 1953-54                           | 9-27-60                                                                                                       | *3.59                                                                                  |
| Tenmile Creek.                                                            | Sevier River...       | NW¼ sec.28, T.28 S., R.3 W., 7 miles south of Marysville, Utah, on U. S. Highway 89.                                                                              | a9.9                  |                                   | 9- 6-60                                                                                                       | †937                                                                                   |
| East Fork Sevier River above Tropic Reservoir.                            | ....do.....           | NW¼ sec.8, T.37 S., R.4 W., 500 ft above high-water line of Tropic Reservoir and 9½ miles west of Tropic, Utah.                                                   | -                     | 1956                              | 9-21-60                                                                                                       | *4.06                                                                                  |
| Pine Creek.                                                               | ....do.....           | NW¼ sec.35, T.27 S., R.4 W., 3½ miles southwest of Marysville, Utah.                                                                                              | -                     |                                   | 9-19-60                                                                                                       | *3.38                                                                                  |
| Mill Canyon.                                                              | ....do.....           | SW¼ sec.1, T.24 S., R.2 W., 1 mile south of fish hatchery, ½ mile above flood dam, and 1½ miles southeast of Glenwood, Utah.                                      | al2                   |                                   | 9- 5-60                                                                                                       | †3,620                                                                                 |
| Manti Creek.                                                              | San Pitch River.      | SW¼ sec.11, T.18 S., R.3 E., 4½ miles east of Manti, Utah.                                                                                                        | -                     | 1959                              | 9-27-60                                                                                                       | *4.22                                                                                  |
| Pavant Valley                                                             |                       |                                                                                                                                                                   |                       |                                   |                                                                                                               |                                                                                        |
| Meadow Creek.                                                             | Pavant Valley..       | Sec.17, T.22 S., R.4 W., 4 miles east of Meadow, Utah.                                                                                                            | -                     | 1944-46, 1954, 1957, 1959         | 9-27-60                                                                                                       | *1.31                                                                                  |
| Pine Creek.                                                               | Chalk Creek....       | Sec.9, T.22 S., R.4 W., 4 miles southeast of Fillmore, Utah.                                                                                                      | -                     | 1913-14                           | 10-21-59<br>9-27-60                                                                                           | 0<br>0                                                                                 |

\* Base flow.

† Peak flow.

\* Operated as a continuous-record gaging station.

a Approximately.

b Flow derived largely from springs.

c Location description in error in WSP 1634.

Discharge measurements made at miscellaneous sites during water year 1960--Continued

| Stream                         | Tributary to        | Location                                                                                                                                      | Drainage area (sq mi) | Measured previously (water years)   | Measurements                                        |                                    |
|--------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------|-----------------------------------------------------|------------------------------------|
|                                |                     |                                                                                                                                               |                       |                                     | Date                                                | Discharge (cfs)                    |
| Beaver River basin             |                     |                                                                                                                                               |                       |                                     |                                                     |                                    |
| North Fork North Creek.        | Beaver River.....   | NE $\frac{1}{4}$ sec.10, T.28 S., R.6 W., 11 miles northeast of Beaver, Utah.                                                                 | -                     | 1947-49*, 1959                      | 9-27-60                                             | *0.96                              |
| South Creek.                   | ....do.....         | SE $\frac{1}{4}$ sec.17, T.30 S., R.6 W., 7 miles southeast of Beaver, Utah.                                                                  | -                     | 1959                                | 9-27-60                                             | *.13                               |
| Parowan Valley                 |                     |                                                                                                                                               |                       |                                     |                                                     |                                    |
| Center Creek.                  | Parowan Valley..... | SW $\frac{1}{4}$ sec.31, T.34 S., R.8 W., 2 $\frac{1}{2}$ miles south of Parowan, Utah.                                                       | -                     | 1959                                | 9-27-60                                             | *5.42                              |
| Snake Valley                   |                     |                                                                                                                                               |                       |                                     |                                                     |                                    |
| Baker Creek at Narrows.d/      | SNAKE VALLEY.....   | NE $\frac{1}{4}$ sec.22, T.13 N., R.69 E., 1 mile below Pole Canyon, 1 mile below narrows, and 4 $\frac{1}{2}$ miles southwest of Baker, Nev. | 16.4                  | 1947-55*                            | 10-21-59<br>9-29-60                                 | *2.96<br>*2.37                     |
| Lehman Creek.                  | Baker Creek.....    | Sec.10, T.13 N., R.69 E., 4 $\frac{1}{2}$ miles west of Baker, Nev.                                                                           | all                   | 1916, 1947-55*                      | 7-21-59<br>9-29-60                                  | *2.32<br>*2.46                     |
| Humboldt River basin           |                     |                                                                                                                                               |                       |                                     |                                                     |                                    |
| Rock Creek.                    | Humboldt River..... | NW $\frac{1}{4}$ sec.6, T.34 N., R.40 E., 6 miles south of Golconda, Nev., and 10 miles above Humboldt River.                                 | -                     |                                     | 6-13-60                                             | 0.70                               |
| Pole Creek.                    | ....do.....         | SE $\frac{1}{4}$ sec.12, T.35 N., R.39 E., 4 miles southeast of Golconda, Nev., and 5 miles above Humboldt River.                             | 10.7                  | 1953-60e                            | 5-18-60<br>6-13-60<br>7-14-70<br>8- 8-60<br>9-13-60 | 8.68<br>3.27<br>f.2<br>f.1<br>f.05 |
| Do.....                        | ....do.....         | At U. S. Highway 40, 2 miles above Humboldt River near Golconda, Nev.                                                                         | -                     |                                     | 6-13-60                                             | 1.97                               |
| Devils Canyon Creek.           | Pole Creek.....     | NW $\frac{1}{4}$ sec.11, T.35 N., R.39 E., 2 $\frac{1}{2}$ miles above Pole Creek and 4 miles from Golconda, Nev.                             | -                     |                                     | 5-18-60                                             | f.1                                |
| Harmony Canyon Creek.          | Humboldt River..... | NW $\frac{1}{4}$ sec.36, T.36 N., R.38 E., 4 miles east of Winnemucca, Nev., and 5 miles above Humboldt River.                                | -                     |                                     | 5-18-60                                             | f.5                                |
| Water Canyon Creek.            | ....do.....         | SE $\frac{1}{4}$ sec.11, T.35 N., R.38 E., 5 miles southeast of Winnemucca, Nev.                                                              | -                     |                                     | 5-19-60<br>6-15-60<br>8- 8-60<br>9-13-60            | 2.81<br>.90<br>.09<br>f.05         |
| Thomas Creek.                  | ....do.....         | SE $\frac{1}{4}$ sec.17, T.35 N., R.38 E., 4 $\frac{1}{2}$ miles south of Winnemucca, Nev., and 11 miles above Humboldt River.                | -                     |                                     | 5-19-60<br>6-15-60<br>8- 8-60<br>9-16-60            | 2.99<br>f.2<br>0<br>0              |
| Rose Creek.                    | ....do.....         | SW $\frac{1}{4}$ sec.2, T.34 N., R.36 E., 2 $\frac{1}{2}$ miles south of Rose Creek, Nev., and 4 miles above Humboldt River.                  | -                     |                                     | 6-16-60<br>8- 8-60<br>9-16-60                       | f.2<br>f.15<br>f.2                 |
| Malheur and Harney Lakes basin |                     |                                                                                                                                               |                       |                                     |                                                     |                                    |
| Silvies River.                 | Malheur Lake.....   | SE $\frac{1}{4}$ sec.14, T.19 S., R.31 E., 8 miles south of Silvies, Oreg.                                                                    | a510                  | 1903-4*, 1909-12*, 1916*, 1921-23*  | 8- 9-60                                             | 0                                  |
| Donner und Blitzen River.      | ....do.....         | SW $\frac{1}{4}$ sec.2, T.27 S., R.31 E., 2 miles southwest of Voltage, Oreg.                                                                 | a760                  | 1938-46*, 1947-49, 1951-55, 1957-59 | 8- 9-60                                             | 19.2                               |
| Malheur Lake outlet.           | Harney Lake.....    | Sec.26, T.26 S., R.31 E., at highway bridge in town of Narrows, Oreg.                                                                         | a2,150                | 1916*, 1943, 1952-53, 1955-59       | 8- 8-60                                             | 0                                  |

\* Base flow.

\* Operated as a continuous-record gaging station.

d Approximately.

e Also a crest-stage station.

e Nevada State engineer.

f Field estimate.

Note.--Discharge measurements listed under Humboldt River basin were made in connection with Humboldt River Research Project. For series of discharge measurements of Humboldt River see following page.

A series of discharge measurements was made on Apr. 12-15, June 14-16, and Aug. 9-11, 1960, on the Humboldt River, in Nevada, in a reach about 45 miles in length, between the gaging station at Comus and 1 mile downstream from the station near Rose Creek. The investigations of Apr. 12-15 and June 14-16 were made during the irrigation season and those of Aug. 9-11 during a period of fairly constant stage and very low flow at which time no diversions were being made. Indicated gains or losses may be substantially in error due to small inaccuracies in measurements.

| Miles above Rose Creek station | Location                                              | Discharge, in cubic feet per second <sup>a</sup> |              |                    |              |                    |              |
|--------------------------------|-------------------------------------------------------|--------------------------------------------------|--------------|--------------------|--------------|--------------------|--------------|
|                                |                                                       | Apr. 12-15                                       |              | June 14-16         |              | Aug. 9-11          |              |
|                                |                                                       | Measured discharge                               | Gain or loss | Measured discharge | Gain or loss | Measured discharge | Gain or loss |
| 44.5                           | Gaging station at Comus.....                          | 251                                              | -            | 310                | -            | 0.09               | -            |
| 43.5                           | Above RR. bridge 1.0 mile below Comus gaging station. | 283                                              | +32.0        | 293                | -17.0        | .02                | -0.07        |
| 41.0                           | 2.0 miles above Preble ranch.....                     | 267                                              | -16.0        | -                  | -            | .09                | + .07        |
| 39.0                           | At old wagon bridge at Preble ranch                   | -                                                | -            | -                  | -            | *.10               | + .01        |
| 37.5                           | 1.0 mile below bridge at Preble ranch.                | -                                                | -            | -                  | -            | -                  | -            |
| 36.0                           | At Stall dam 2 miles above Golconda                   | 224                                              | -43.0        | 232                | -61.0        | 2.74               | +2.14        |
| 34.0                           | At Golconda.....                                      | 220                                              | -4.0         | -                  | -            | 3.63               | +1.39        |
| 33.3                           | At Eden Valley road bridge.....                       | 222                                              | +2.0         | 258                | +26.0        | 3.72               | + .09        |
| 32.0                           | At Diamond S Ranch.....                               | 110                                              | -112         | -                  | -            | 4.33               | + .61        |
| 30.7                           | At diversion dam below Diamond S Ranch.               | 70.6                                             | -39.4        | 162                | -96.0        | 4.83               | + .50        |
| 26.7                           | At Bullhead ranch footbridge.....                     | 118                                              | +47.4        | 227                | +65.0        | 3.12               | -1.71        |
| 22.0                           | 200 ft below bridge and dam at Kearn ranch.           | 120                                              | +2.0         | 176                | -51.0        | 2.79               | -.83         |
| 17.5                           | At Rinehart ranch road bridge.....                    | 126                                              | +6.0         | 163                | -13.0        | 2.07               | -.22         |
| 16.0                           | Above Bridge Street bridge at Winnemucca.             | 118                                              | -8.0         | 169                | +6.0         | -                  | -            |
| 12.0                           | At dam at Harrer ranch.....                           | 112                                              | -6.0         | 148                | -21.0        | 1.60               | -.47         |
| 10.2                           | At bridge at upper Hilyer ranch....                   | 117                                              | +5.0         | 144                | -4.0         | 2.68               | + .98        |
| 7.0                            | At dam above lower Hilyer ranch....                   | 116                                              | -1.0         | 159                | +15.0        | 8.77               | +5.79        |
| 5.5                            | At lower Hilyer ranch.....                            | 119                                              | +3.0         | 163                | +4.0         | 12.7               | +4.33        |
| 4.0                            | At lower McNinch ranch.....                           | 116                                              | -3.0         | 158                | -5.0         | 14.7               | +2.00        |
| 3.4                            | Below lower McNinch ranch.....                        | 114                                              | -2.0         | 156                | -2.0         | 15.2               | + .50        |
| 0                              | Gaging station near Rose Creek.....                   | 114                                              | 0            | 148                | -8.0         | 13.6               | -1.40        |
| -1.0                           | 1.0 mile below Toby ranch.....                        | 114                                              | 0            | 153                | +5.0         | 13.4               | -.40         |
|                                | Over-all net gain or loss.....                        |                                                  | -137         |                    | -157         |                    | +13.3        |

\* Field estimate.

Note.--Measurements made May 18 indicated 150 cfs at mile 43.5 and 146 cfs at Comus to confirm doubtful gain indicated Apr. 12. Mileage indicated is from topographic maps, is generalized, and does not include the numerous meanders which occur throughout the reach.



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