# Surface Water Supply of the United States 1949

## Part 13. Snake River Basin

*Prepared under the direction of* C. G. PAULSEN, *Chief Hydraulic Engineer*

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# SURFACE WATER SUPPLY OF SNAKE RIVER BASIN, 1949

## SCOPE OF WORK

This volume is one of a series of 14 reports presenting results of measurements of stage and flow made on streams, lakes, and reservoirs in the United States during the water year ending September 30, 1949. The work was begun in 1888 in connection with special studies relating to irrigation. Measurements of the flow of streams and of the stage and contents of lakes and reservoirs have been made at about 11,680 gaging stations in the 48 States and also at many in the Territories of Alaska and Hawaii. On September 30, 1949, 6,240 gaging stations, including those in Hawaii and Alaska were being maintained by the Geological Survey and cooperating organizations. Miscellaneous discharge measurements were made during the water year at many other points.

In the execution of the work many State and private organizations have cooperated, either by furnishing data or by assisting in collecting data. Cooperation of the first kind is acknowedged in connection with the description of each station affected; cooperation of the second kind is acknowledged; under the heading "Cooperation," in the introductory matter that precedes the gaging-station records in each volume. In the present volume, the section on cooperation of the second kind appears on page 12.

## DEFINITION OF TERMS

The units in which stream-flow data are presented in this report and other terms used herein are defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot 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.

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the runoff is distributed uniformly both as regards time and area.

"Runoff in inches" is the depth to which an area would be covered if all the water draining from it in a given period were uniformly distributed on its surface. It is used for comparing runoff with rainfall, which is usually expressed in inches.

An "acre-foot" is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet. The term is commonly used in connection with storage for irrigation.

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

"Stage-discharge relation" is an abbreviation for the term "relation between gage height and discharge."

"Control" is a term used to designate a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural section, a reach of the channel, or an artificial structure.

"Contents" is a term applied to the volume of water in a reservoir. Unless otherwise indicated, it is computed on the basis of a level pool and does not include bank storage.

## EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the records of stage and discharge measurements 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 the fluctuations. Measurements of discharge are made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge. Typical structures in use at gaging stations are shown in figure 1.

Rating tables giving the discharge for any stage are prepared from the discharge measurements. 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. At times the stage-discharge relation for a station may be temporarily changed by the presence of aquatic growth or debris on the control. For such times the daily mean discharge is computed by what is essentially the "shifting-control" method, described above.

At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources, which necessitates the use of the "slope method," in which the slope or fall in a reach of the stream is a factor in the determination of 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, and for them the rate of change of 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, which makes it 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 stations in the same or nearby basins. For those stations at which the stage-discharge relation is affected by ice, the days included in the periods of ice effect either are indicated in the table by symbols referring to a footnote that states this fact or are given in a general note following the table. The days on which discharge measurements were made during or between periods of ice effect, shortly before the first period, or shortly after the last period are similarly indicated by a footnote.

For most of the gaging stations on streams in the area covered by this report the data presented comprise a description of the station, a table showing the daily discharge of

*A.* SNAKE RIVER AT KING HILL, IDAHO.

*B.* SNAKE RIVER NEAR MURPHY, IDAHO.

*C.* SNAKE RIVER NEAR CLARKSTON, WASH.

FIGURE 1.—GAGING-STATION STRUCTURES.

the stream, and a table of monthly and yearly discharge and runoff. Skeleton rating tables are published for all stations except those at which the daily discharge for the greater part of the year was determined by the shifting-control method, the slope method, or other special methods.

The description of the station gives the type of gage, location, drainage area, records available, average discharge, extremes of discharge, general remarks, and notations of revisions of previously published record. The location of the gaging station and the drainage area are obtained from the most accurate maps available. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations having less than 10 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). Unless otherwise qualified, the maximum discharge corresponds to the crest stage, obtained by use of a water-stage recorder or a nonrecording gage read at the time of the crest. Information pertaining to the accuracy of the records and conditions which affect the natural flow at the gaging station is given under "Remarks."

For some stations previously published records have been found to be in error on the basis of data or information obtained subsequently. 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 station description of all stations for which revised records have been published. Listed therein are all the reports in which revisions appear, each followed by the water years for which figures are revised in that report. In listing the report number, W. means Water-Supply Paper. In listing the years, water years are indicated by only 1 year, for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If there were no daily, monthly, or annual figures of discharge involved 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 second-feet 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 second-feet 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.

For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the 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 either once-daily readings of the gage, the mean of twice-daily readings, or 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 monthly discharge the column headed "Second-foot-days" gives the sum for each month of the figures given in the table of daily discharge. The column headed "Maximum" gives the maximum daily discharge, not the momentary discharge when the water surface was at crest stage. Likewise, in the column headed "Minimum" the quantity given is the minimum daily discharge. The column headed "Mean" gives the average flow in cubic feet per second during the month.

Peak discharges with the times of their occurrence are listed below the table of monthly discharge for most stations. 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.

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 usually given in the first report in which data for a station are published but is omitted from succeeding reports.

## ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of stream-flow data depends primarily on (1) the permanency 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 flow, and interpretation of records.

The station description gives a statement in regard to the general 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 accurate than the daily records.

Yield at some stations as indicated by monthly means may vary widely from natural yield, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or other factors. For such stations figures of "second-feet per square mile" and "runoff in inches" are not published unless storage or diversion records are included indicating the extent of the regulation or diversion or unless satisfactory adjustments can be made for changes in contents or 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 its inclusion is indicated. Even at those stations where adjustments are made, in some instances large errors in computed yields may occur when relatively large negative adjustments are applied or when evaporation is large in comparison with the observed discharge. Figures of second-feet per square mile and runoff in inches are also omitted if the drainage area includes large noncontributing areas or if the average annual rainfall over the drainage area is less than 20 inches.

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 show the water supply available for further development, as prior appropriations below the station must first be satisfied.

The table of monthly discharge presents in summary the distribution of the flow past the station. The table of daily discharge affords opportunity for more detailed studies of the variation in flow. As further observations in each succeeding year may be expected to throw new light on data previously published, it should be borne in mind that such data are subject to revision in succeeding water-supply papers.

## PUBLICATIONS

The results of stream-flow measurements are now published annually in 14 parts, each part covering an area whose boundaries coincide with natural drainage features as indicated below:

Part 1. North Atlantic slope bssins (St. John River to York River).
2. South Atlantic slope and eastern Gulf of Mexico basins (James River to Mississippi River).
3. Ohio River Basin.
4. St. Lawrence River Basin.
5. Hudson Bay and upper Mississippi River Basins.
6. Missouri River Basin.
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 bssins 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 obtained or consulted as explained below.

1. Copies may be purchased at nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D. C., who will, on application, furnish lists giving prices.

2. Sets of the reports may be consulted in the libraries of the principal cities in the United States.

3. Sets are available for consultation in the offices of the water resources division of the Geological Survey as follows:

East of the Mississippi River:
Albany, N. Y., 526 Federal Building.
Asheville, N. C., 220 Post Office Building.
Atlanta, Ga., 644 Peachtree Seventh.
Augusta, Maine, 420 Statehouse.
Baton Rouge, La., 850 North 5th Street.
Boston, Mass., 939 Post Office Building.
Champaign, Ill., 605 South Neil Street.
Charleston, W. Va., 408 Union Building.
Charlottesville, Va., Cabell Hall, Univsrsity of Virginia.
Chattanooga, Tenn., 442 Post Office Building.
College Park, Md., 106 Engineering Building, University of Maryland.
Columbia, S. C., 207 Creason Building.
Columbus, Ohio, 1509 Hess Street.
Harrisburg, Pa., 490 Educstion Building.
Hartford, Conn., 203 Federal Building.
Indianapolis, Ind., 311 West Washington Street.
Jackson, Miss., Room 1, Fidelity Building.
Knoxville, Tenn., 337 Post Office Building.
Louisville, Ky., 531 Federal Building.
Madison, Wis., 666 State Office Building.
Montgomery, Ala., 507 Post Office Building.
New Philadelphia, Ohio, Muskingum Watershed Conservancy District Building.
Ocala, Fla., Building 211, Camp Roosevelt.
Pittsburgh, Pa., 515 Plaza Building.
Raleigh, N. C., 908 Capitol Club Building.
St. Paul, Minn., 1427 New Post Office Building.
Trenton, N. J., 228 Federal Building.
Washington, D. C., General Services Administration Building.

West of the Mississippi River:
Austin, Tex., 302 West Fifteenth Street.
Bismarck, N. Dak., 7 Eltinge Building.
Boise, Idaho, 429 Federal Building.
Denver, Colo., 476 New Customhouse.
Fort Smith, Ark., 6 Post Office Building.
Helena, Mont., 408 Federal Building.
Honolulu, Hawaii, 225 Federal Building.
Idaho Falls, Idaho, 204 Federal Building.
Iowa City, Iowa, 508 Hydraulic Laboratory, University of Iowa.
Lincoln, Nebr., 510 Rudge-Guenzel Building.
Los Angeles, Calif., 429-F United States Post Office and Courthouse.
Oklahoma City, Okla., 405 Post Office Building.
Pierre, S. Dak., 207 Federal Building.
Portland, Oreg., 606 Post Office Building.
Rolla, Mo., 211 Ramsey Building.
St. Louis, Mo., 1004 New Federal Building.
Salt Lake City, Utah, 303 Federal Building.
San Francisco, Calif., 702 Appraisers Building.
Santa Fe, N. Mex., 204 United States Courthouse.
Tacoma, Wash., 207 Federal Building.
Topeka, Kans., 305 Federal Building.
Tucson, Ariz., 210 Post Office Building.

A list of Geological Survey publications may be obtained by applying to the Director, Geological Survey, Washington, D. C.

Prior to publication, records of discharge in provisional form for individual stations may usually be obtained from the district offices listed above.

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.

**Stream-flow data for the years 1884-1901, in reports of the Geological Survey**

**(A = Annual Report; B = Bulletin; W = Water-Supply Paper)**

| 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 | ....do..... | 1884-92. |
| 14th A, pt. 2 | Monthly discharge..... | 1888-93. |
| B 131..... | Descriptions, measurements, gage heights, and ratings..... | 1893-94. |
| 16th A, pt. 2 | Descriptive information only. | |
| B 140..... | Descriptions, measurements, gage heights, ratings, and monthly discharge. | 1895. |
| W 11..... | Gage heights..... | 1896. |
| 18th A, pt. 4 | Descriptions, measurements, ratings, and monthly discharge... | 1895-96. |
| W 15..... | Descriptions, measurements, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries above Kansas River. | 1897. |
| W 16..... | Descriptions, measurements, and gage heights of stream 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. |
| W 27..... | Measurements, ratings, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries. | 1898. |
| W 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. |
| W 35 to 39... | Descriptions, measurements, gage heights, and ratings..... | 1899. |
| 21st A, pt. 4 | Monthly discharge..... | 1899. |
| W 47 to 52... | Descriptions, measurements: gage heights, and ratings..... | 1900. |
| 22d A, pt. 4. | Monthly discharge..... | 1900. |
| W 85, 86..... | Descriptions, measurements, gage heights, and ratings..... | 1901. |
| W 75..... | Monthly discharge..... | 1901. |

Papers on surface water supply containing records from 1899 to date, grouped by years and drainage basins, are listed by number on page 8. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained. For example, the data for 1910 to 1920 for any station in the area covered by part 3 are published in Water-Supply Papers 283, 303, 323, 353, 403, 433, 453, 473, and 503, which contain records for the Ohio River Basin for those years.

Numbers of water-supply papers containing results of stream measurements, 1899-1949 (for basins included see p. 6).

| Year | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1899 a | 35 | b35, 36 | 36 | 36 | 36 | c36, 37 | 37 | 37 | d37, 38 | 38, e39 | 38, f39 | 38 | 38 | 38 |
| 1900 g | 47, h48 | 48 | 48, 149 | 49 | 49 | 49, j50 | 50 | 50 | 50 | 51 | 51 | 51 | 51 | 51 |
| 1901 | 65, 75 | 65, 75 | 65, 75 | 65, 75 | k65, 66, 75 | 66, 75 | k65, 66, 75 | 66, 75 | 66, 75 | 66, 75 | 66, 75 | 66, 75 | 66, 75 | 66, 75 |
| 1902 | 82 | b82, 83 | 83 | m82, 83 | k83, 85 | 84 | k83, 84 | 84 | 85 | 85 | 85 | 85 | 85 | 85 |
| 1903 | 97 | b97, 98 | 98 | 97 | k98, 99, n100 | 99 | k98, 99 | 99 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1904 | o124, p125, q126 | q126, 127 | 128 | 129 | k128, 130 | 130, r131 | k128, 131 | 132 | 133 | 133, s134 | 134 | 135 | 135 | 135 |
| 1905 | o165, p166, q167 | q167, 168 | 169 | 170 | 171 | 172 | k169, 173 | 174 | 175, t177 | 176, s177 | 177 | 178 | 178 | u177, 178 |
| 1906 | o201, p202, q203 | q203, 204 | 205 | 206 | 207 | 208 | k205, 209 | 210 | 211, t213 | 212, s213 | 213 | 214 | 214 | 214 |
| 1907-8 | 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250, s251 | 251 | 252 | 252 | 252 |
| 1909 | 261 | 262 | 263 | 264 | 265 | 266 | 267 | 268 | 269 | 270, s271 | 271 | 272 | 272 | 272 |
| 1910 | 281 | 282 | 283 | 284 | 285 | 286 | 287 | 288 | 289 | 290 | 291 | 292 | 292 | 292 |
| 1911 | 301 | 302 | 303 | 304 | 305 | 306 | 307 | 308 | 309 | 310 | 311 | 312 | 312 | 312 |
| 1912 | 321 | 322 | 323 | 324 | 325 | 326 | 327 | 328 | 329 | 330 | 331 | 332-A | 332-B | 332-C |
| 1913 | 351 | 352 | 353 | 354 | 355 | 356 | 357 | 358 | 359 | 360 | 361 | 362-A | 362-B | 362-C |
| 1914 | 381 | 382 | 383 | 384 | 385 | 386 | 387 | 388 | 389 | 390 | 391 | 392 | 393 | 394 |
| 1915 | 401 | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 | 411 | 412 | 413 | 414 |
| 1916 | 431 | 432 | 433 | 434 | 435 | 436 | 437 | 438 | 439 | 440 | 441 | 442 | 443 | 444 |
| 1917 | 451 | 452 | 453 | 454 | 455 | 456 | 457 | 458 | 459 | 460 | 461 | 462 | 463 | 464 |
| 1918 | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478 | 479 | 480 | 481 | 482 | 483 | 484 |
| 1919-20 | 501 | 502 | 503 | 504 | 505 | 506 | 507 | 508 | 509 | 510 | 511 | 512 | 513 | 514 |
| 1921 | 521 | 522 | 523 | 524 | 525 | 526 | 527 | 528 | 529 | 530 | 531 | 532 | 533 | 534 |
| 1922 | 541 | 542 | 543 | 544 | 545 | 546 | 547 | 548 | 549 | 550 | 551 | 552 | 553 | 554 |
| 1923 | 561 | 562 | 563 | 564 | 565 | 566 | 567 | 568 | 569 | 570 | 571 | 572 | 573 | 574 |
| 1924 | 581 | 582 | 583 | 584 | 585 | 586 | 587 | 588 | 589 | 590 | 591 | 592 | 593 | 594 |
| 1925 | 601 | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611 | 612 | 613 | 614 |
| 1926 | 621 | 622 | 623 | 624 | 625 | 626 | 627 | 628 | 629 | 630 | 631 | 632 | 633 | 634 |
| 1927 | 641 | 642 | 643 | 644 | 645 | 646 | 647 | 648 | 649 | 650 | 651 | 652 | 653 | 654 |
| 1928 | 661 | 662 | 663 | 664 | 665 | 666 | 667 | 668 | 669 | 670 | 671 | 672 | 673 | 674 |
| 1929 | 681 | 682 | 683 | 684 | 685 | 686 | 687 | 688 | 689 | 690 | 691 | 692 | 693 | 694 |
| 1930 | 696 | 697 | 698 | 699 | 700 | 701 | 702 | 703 | 704 | 705 | 706 | 707 | 708 | 709 |
| 1931 | 711 | 712 | 713 | 714 | 715 | 716 | 717 | 718 | 719 | 720 | 721 | 722 | 723 | 724 |
| 1932 | 726 | 727 | 728 | 729 | 730 | 731 | 732 | 733 | 734 | 735 | 736 | 737 | 738 | 739 |
| 1933 | 741 | 742 | 743 | 744 | 745 | 746 | 747 | 748 | 749 | 750 | 751 | 752 | 753 | 754 |
| 1934 | 756 | 757 | 758 | 759 | 760 | 761 | 762 | 763 | 764 | 765 | 766 | 767 | 768 | 769 |
| 1935 | 781 | 782 | 783 | 784 | 785 | 786 | 787 | 788 | 789 | 790 | 791 | 792 | 793 | 794 |
| 1936 | 801 | 802 | 803 | 804 | 805 | 806 | 807 | 808 | 809 | 810 | 811 | 812 | 813 | 814 |
| 1937 | 821 | 822 | 823 | 824 | 825 | 826 | 827 | 828 | 829 | 830 | 831 | 832 | 833 | 834 |
| 1938 | 851 | 852 | 853 | 854 | 855 | 856 | 857 | 858 | 859 | 860 | 861 | 862 | 863 | 864 |
| 1939 | 871 | 872 | 875 | 874 | 875 | 876 | 877 | 878 | 879 | 880 | 881 | 882 | 883 | 884 |
| 1940 | 891 | 892 | 895 | 894 | 895 | 896 | 897 | 898 | 899 | 900 | 901 | 902 | 903 | 904 |
| 1941 | 921 | 922 | 923 | 924 | 925 | 926 | 927 | 928 | 929 | 930 | 931 | 932 | 933 | 934 |
| 1942 | 951 | 952 | 953 | 954 | 955 | 956 | 957 | 958 | 959 | 960 | 961 | 962 | 963 | 964 |
| 1943 | 971 | 972 | 973 | 974 | 975 | 976 | 977 | 978 | 979 | 980 | 981 | 982 | 983 | 984 |
| 1944 | 1001 | 1002 | 1003 | 1004 | 1005 | 1006 | 1007 | 1008 | 1009 | 1010 | 1011 | 1012 | 1013 | 1014 |
| 1945 | 1031 | 1052 | 1033 | 1034 | 1035 | 1036 | 1037 | 1038 | 1039 | 1040 | 1041 | 1042 | 1043 | 1044 |
| 1946 | 1051 | 1052 | 1053 | 1054 | 1055 | 1056 | 1057 | 1058 | 1059 | 1060 | 1061 | 1062 | 1063 | 1064 |
| 1947 | 1081 | 1082 | 1083 | 1084 | 1085 | 1086 | 1087 | 1088 | 1089 | 1090 | 1091 | 1092 | 1093 | 1094 |
| 1948 | 1111 | 1112 | 1113 | 1114 | 1115 | 1116 | 1117 | 1118 | 1119 | 1120 | 1121 | 1122 | 1123 | 1124 |
| 1949 | 1141 | 1142 | 1143 | 1144 | 1145 | 1146 | 1147 | 1148 | 1149 | 1150 | 1151 | 1152 | 1153 | 1154 |

a Rating tables and index to WSP 35-39 contained in WSP 39. Monthly discharge for 1899 in 21st Annual Report, part 4.
b James River only.
c Gallatin River.
d Green and Gunnison Rivers and Colorado River above Gunnison River.
e Mojave River only.
f Kings and Kern Rivers and south Pacific slope.
g Rating tables and index to WSP 47-52 contained in WSP 52. Monthly discharge for 1900 in 22d Annual Report, part 4.
h Schuylkill River to James River.
i Scioto River.
j Loup, Platte, and Elkhorn Rivers and tributaries below Platte River.
k Tributaries of Mississippi River from east.
m Lake Ontario and tributaries to St. Lawrence River proper.
n Hudson Bay only.
o New England rivers only.
p Hudson River to Delaware River.
q Susquehanna River to Yadkin River.
r Platte and Kansas Rivers.
s The Great Basin in California, except Truckee and Carson River Basins.
t Below mouth of Gila River.
u Rogue, Umpqua, and Siletz Rivers only.

The records at most of the stations discussed in these reports extend over a series of years. Miscellaneous measurements at many points other than regular gaging stations have been made each year and are published under "Miscellaneous discharge measurements" at the end of each report, the streams and points of measurement listed appearing in the same relative order as the streams and gaging stations in the body of the report. An index of the records obtained prior to 1904 has been published in Water-Supply Paper 119.

Each of the reports on surface water supply for the year 1939, issued as Water-Supply Papers 871 to 884 (see table on p. 8), contains, for the area covered by that report, a summary of yearly discharge at gaging stations at which 10 or more complete years of record have been collected. These summaries are available also as separate reprints.

Reports have been published that are compilations of records for various areas, usually a single State or drainage basin. These reports contain records previously published (some of which have been revised), as well as some records not contained in the annual series of water-supply papers. The following table gives the numbers and titles of these reports, arranged alphabetically, some by States and some by drainage basins.

Reports containing compilations of records of discharge by States and drainage basins

| Report | Period | Water-Supply Paper |
|---|---|---|
| **STATE** | | |
| Alabama, Water powers of, with an appendix on stream measurements in Mississippi. | 1895-1903 | 107 |
| California, Water resources of, part 1, Stream measurements in Sacramento River Basin. | 1887-1912 | 298 |
| California, Water resources of, part 2, Stream measurements in San Joaquin River Basin. | 1878-1912 | 299 |
| California, Water resources of, part 3, Stream measurements in the Great Basin and Pacific Coast river basins. | 1891-1912 | 300 |
| California, southern, Surface water supply of Pacific slope of | 1890-1918 | 447 |
| California, Surface water supply of Sacramento River Basin | 1895-1927 | 597-E |
| California, Surface water supply of San Joaquin River Basin | 1895-1927 | 636-D |
| California, southern, Surface water supply of Pacific slope basins in | 1894-1927 | 636-E |
| California, Surface water supply of minor San Francisco Bay, northern Pacific, and Great basins in. | 1895-1927 | 637-A |
| Colorado, Water resources of | 1884-1900 | 74 |
| Georgia, Water resources of | 1895-1905 | 197 |
| Massachusetts, Surface waters of | 1848-1915 | 415 |
| Massachusetts, Hydrology of, Part 1, Summary of stream-flow and precipitation records. | 1863-1945 | 1105 |
| Nebraska, Surface water supply of | 1894-1906 | 230 |
| Oregon, Surface water supply of | 1878-1910 | 370 |
| Texas, Summary of records of surface waters of | 1898-1937 | 850 |
| Vermont, Surface waters of | 1875-1916 | 424 |
| Washington, Summary of hydrometric data in | 1878-1919 | 492 |
| Washington, Summary of records of surface waters of | 1919-35 | 870 |
| Wisconsin, northern, Water power of | 1895-1905 | 156 |
| Wyoming, Surface waters of, and their utilization | 1894-1921 | 469 |
| **DRAINAGE BASIN** | | |
| Colorado River (Ariz., Colo., N. Mex., Utah, Wyo.) and its utilization | 1888-1914 | 395 |
| Colorado River, upper (Colo., Utah), and its utilization | 1897-1927 | 617 |
| Colorado River Basin (Ariz., Calif., Colo., Utah, Wyo.), Surface waters at base stations in. | 1891-1938 | 918 |
| Colorado River Basin (Ariz., Calif., Nev., N. Mex., Utah), Surface waters at stations on tributaries in lower. | 1888-1938 | 1049 |
| Columbia River Basin, upper (Mont., Idaho), Surface waters of | 1898-1938 | 916 |
| Great Salt Lake Basin, Water powers of | 1889-1920 | 517 |
| Green River (Colo., Utah, Wyo.) and its utilization | 1894-1926 | 618 |
| Kennebec River Basin (Maine), Water resources of | 1890-1906 | 198 |
| Milk River. See St. Mary and Milk Rivers | | |
| Missouri and St. Mary River Basins (Mont.), Surface waters of | 1881-1938 | 917 |
| New-Kanawha River Basin (N. C., Va., W. Va.), Surface water supply of | 1895-1920 | 536 |
| Penobscot River Basin (Maine), Water resources of | 1904-9 | 279 |
| Potomac River Basin (D. C., Md., W. Va.) | 1895-1906 | 192 |
| Rio Grande Basin (Colo., N. Mex., Tex.), Water resources of | 1888-1913 | 358 |
| St. Mary and Milk Rivers (Mont., Canada), Water supply of | 1898-1917 | 491 |
| St. Mary River. See St. Mary and Milk Rivers; Missouri and St. Mary River Basin. | | |
| Sevier Lake Basin (Utah), Utilization of surface water resources of | 1889-1937 | 920 |
| Susquehanna River Basin (Pa., Md.) Hydrography of | 1890-1904 | 109 |

Records of discharge have been published also in State reports. Some of these are not contained in the publications of the Geological Survey or are revisions of records previously published in its water-supply papers. The following table contains a list of these reports.

State reports containing compilations of records of discharge

| State | Period | Report | Issued by |
|---|---|---|---|
| Alabama | 1895-1915 | Bull. 17, Water powers of Alabama | Geological Survey of Alabama. |
| Do | 1904-47 | Special Report 20, Water Resources and Hydrology of southeastern Alabama. | Do |
| Arkansas | 1857-1928 | Stream-gaging Rept. 1 | Arkansas Geological Survey. |
| Do | 1903-48 | Surface Water Resources of Arkansas | Arkansas Resources and Development Commission; University of Arkansas, Institute of Science and Technology. |
| Colorado | 1881-1935 | Water resources of Colorado, Appendix 2, Data on stream-gaging stations of Colorado.[1] | State Planning Commission, Water Conservation Board, State engineer. |
| Do | 1881-1938 | Water resources of Colorado, Appendix 3, vols. 1 and 2, Stream-flow data of Colorado. | Do. |
| Connecticut | 1900-1927 | Bull. 44, Water resources of Connecticut | State Geological and Natural History Survey. |
| Do | 1912-33 | 5th biennial report | State Water Commission. |
| Florida | 1898-1946 | Bull. 31, Springs of Florida | Florida Geological Survey. |
| Georgia | 1895-1906 | Bull. 16, Water powers of Georgia | Geological Survey of Georgia. |
| Do | 1907-19 | Bull. 38, Water powers of Georgia | Do. |
| Illinois | 1908-11 | Water resources of Illinois | Rivers and Lakes Commission. |
| Do | 1900-1934 | Stream-flow data of Illinois | Division of Waterways. |
| Indiana | 1923-27 | Pub. 72, Surface water supply of Indiana | Department of Conservation. |
| Do | 1927-30 | Pub. 112, Surface water supply of Indiana | Do. |
| Iowa | 1873-1932 | Stream-flow records of Iowa | State Planning Board. |
| Do | 1873-1940 | Water-Supply Bull. 1, Summaries of yearly and flood flow relating to Iowa streams | Iowa Geological Survey. |
| Do | 1941-42 | Water-Supply Bull. 2, Surface water resources of Iowa. | Do. |
| Kansas | 1895-1919 | Surface waters of Kansas | Kansas Water Commission. |
| Do | 1919-24 | ....do | Do. |
| Do | 1924-28 | Report of Division of Water Resources | State Board of Agriculture. |
| Do | 1928-35 | Stream-flow data of Kansas | Do. |
| Do | 1935-39 | ....do | Do. |
| Kentucky | 1910-20 | Surface waters of Kentucky | Kentucky Geological Survey. |
| Louisiana | 1903-38 | Geol. Bull. 16, Surface water supply of Louisiana. | Department of Conservation. |
| Maine | 1887-1920 | 1st annual report | Maine Water Power Commission. |
| Maryland | 1929-37 | Flow data and draft storage curves for major streams in Maryland. | State Planning Commission and Water Resources Commission. |
| Do | 1892-1943 | Bull. 1, Summary of records of surface waters of Maryland and the Potomac River Basin. | Department of Geology, Mines, and Water Resources. |
| Do | 1931-48 | Bull. 5, Anne Arundel County Water Resources | Do. |
| Minnesota | 1909-12 | Water-resources investigation of Minnesota. | State Drainage Commission. |
| Mississippi | 1900-1948 | Bull. 68, Surface Waters of Mississippi | Mississippi Geological Survey. |
| Misaeuri | 1857-1926 | Vol. 20, 2d series, Water resources of Missouri. | Missouri Bureau of Geology and Mines. |
| Do | 1927-39 | Vol. 26, 2d series, Surface waters of Missouri. | Missouri Geological Survey and Water Resources. |
| Montana | 1889-1911 | 5th biennial report | Office of the State Engineer. |
| Do | 1881-1938 | Special Rept. 10, vols. 1-4, Water resources of Montana. | Montana Agricultural Experiment Station. |
| Nebraska | 1894-1914 | 1st hydrographic report | Bureau of Water Power, Irrigation, and Drainage. |
| Do | 1914-28 | 2d hydrographic report | Do. |
| New Hampshire | 1889-1922 | Annual and statistical report, vol. 12 | Public Service Commission. |
| New Jersey | 1892-1928 | Bull. 33, Surface water supply of New Jersey. | Department of Conservation and Development. |
| Do | 1928-34 | Special Rept. 5, Surface water supply of New Jersey. | State Water Policy Commission. |
| Do | 1934-40 | Special Rept. 9, Surface water supply of New Jersey. | Do. |
| New Mexico | 1888-1925 | Surface water supply of New Mexico | Office of the State Engineer. |
| North Carolina | 1889-1923 | Bull. 34, Discharge records of North Carolina streams. | Department of Conservation and Development. |
| Do | 1889-1936 | Bull. 39, Discharge records of North Carolina streams.[2] | Do. |
| Do | 1866-1945 | Hydrologic Data on the Neuse River Basin. | Do. |
| Do | 1820-1945 | Hydrologic Data on the Cape Fear River Basin. | Do. |
| Do | 1866-1945 | Hydrologic Data on the Yadkin-Pee Dea River Basin. | Do. |
| Do | 1872-1945 | Hydrologic Data on the Catawba and Broad River Basins. | Do. |
| Do | 1857-1945 | Hydraulic Data on The French Broad River Basin. | Do. |
| North Dakota | 1919-21 | Report to Governor of North Dakota on flood control. | State chief engineer. |
| Do | 1882-1938 | Surface water in North Dakota | Stata Planning Board. |
| Do | 1882-1944 | Supplement B, 4th biennial report | State Water Conservation Commission. |
| Ohio | 1898-1921 | Bull. 73, Ohio stream flow, Part 1 | Engineering Experiment Station, Ohio State University. |
| Do | 1898-1944 | Bull. 127, Ohio stream flow, Part 2 | Do. |
| Do | 1902-39 | Bull. 200, Compilation of stream-flow records of Ohio. | Department of Agriculture, Division of Conservation and Natural Resources. |
| Do | 1898-1939 | Bull. 111, Ohio stream-drainage areas and flow-duration tables. | Engineering Experiment Station, Ohio State University. |
| Oregon | 1878-1914 | Bull. 4, Water resources of the State of Oregon. | Office of the State Engineer. |
| Do | 1914-24 | Bull. 7, Water resources of the State of Oregon. | Do. |
| Do | 1924-30 | Bull. 8, Water resources of the State of Oregon. | Do. |

1 Contains records of yearly discharge only.
2 Contains records of maximum and minimum daily, weekly, and monthly discharge and yearly mean discharge.

State reports containing compilations of records of discharge--Continued

| State | Period | Report | Issued by |
|---|---|---|---|
| Oregon..... | 1930-36 | Bull. 9, Water resources of the State of Oregon. | Office of the State Engineer. |
| Do..... | 1936-41 | Bull. 10, Water resources of the State of Oregon. | Do. |
| Pennsylvania.. | 1890-1911 | Report of the Water Supply Commission of Pennsylvania. | Water Supply Commission of Pennsylvania. |
| Do..... | 1928-32 | Stream-flow records of Pennsylvania..... | Department of Forests and Waters. |
| Rhode Island.. | 1929-41 | 7th annual report..... | Department of Public Works. |
| South Carolina | 1884-1946 | Bull. 17, Summary of records of surface water supply of South Carolina. | South Carolina Research, Planning and Development Board. |
| Tennessee..... | 1874-1924 | Bull. 34, Water resources of Tennessee[3].... | Department of Education. |
| Do..... | 1920-30 | Bull. 40, Surface waters of Tennessee..... | Do. |
| Utah..... | 1889-1905 | 5th biennial report..... | Office of the State Engineer. |
| Do..... | 1906-10 | 7th biennial report..... | Do. |
| Do..... | 1911-16 | 10th biennial report..... | Do. |
| Virginia..... | 1895-1927 | Bull. 31, Water resources of Virginia..... | Virginia Geological Survey. |
| Do..... | 1927-42 | Bull. 4, Surface water supply of Virginia (Potomac, Rappahannock, and York River Basins). | Virginia Conservation Commission. |
| Do..... | 1927-42 | Bull. 5, Surface water supply of Virginia (James River Basin). | Do. |
| Do..... | 1927-42 | Bull. 6, Surface water supply of Virginia (Roanoke and Chowan River Basins). | Do. |
| Do..... | 1927-42 | Bull. 7, Surface water supply of Virginia (New, Tennessee, and Big Sandy River Basins). | Do. |
| Washington.... | 1878-1933 | Bull. 5, Monthly and yearly summaries of hydrometric data. | Department of Conservation and Development. |
| Wisconsin..... | 1888-1914 | 1st report of Railroad Commission of Wisconsin to Legislature on water powers. | Railroad Commission of Wisconsin. |
| Do..... | 1914-23 | 2d report of Railroad Commission of Wisconsin to Legislature on water powers. | Do. |

3 Includes records of discharge for all stations in North Carolina in the Tennessee River Basin.

Note.- In addition to the records contained in the reports listed above, the following States have issued annual or biennial reports in which are contained records of discharge: California, Colorado, Connecticut, Idaho, Indiana, Kansas, Maine, Missouri, Montana, Nebraska, Nevada, New Mexico, New York (also New York City Board of Water Supply and city of Rochester), North Dakota, Oregon, Pennsylvania, Rhode Island, Washington, and Wyoming.

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. The more recent of these special reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier noteworthy floods. The following list gives the numbers and titles of these reports:

| Water-Supply Paper | Title |
|---|---|
| 88 | The Passaic flood of 1902. |
| 92 | The Passaic flood of 1903. |
| 96 | Destructive floods in the United States in 1903. |
| 147 | Destructive floods in the United States in 1904. |
| 162 | Destructive floods in the United States in 1905. |
| 334 | The Ohio Valley flood of March-April 1913. |
| 426 | Southern California floods of January 1916. |
| 487 | The Arkansas River flood of June 3-5, 1921. |
| 488 | The floods in central Texas in September 1921. |
| 520-G | Some floods in the Rocky Mountain region. |
| 636-C | The New England flood of November 1927. |
| 771 | Floods in the United States, magnitude and frequency. |
| 773-E | The New York State flood of July 1935. |
| 796-B | Flood on Republican and Kansas Rivers, May and June 1935. |
| 796-C | Flood in La Canada Valley, Calif., January 1, 1934. |
| 796-G | Major Texas floods of 1935. |
| 798 | The floods of March 1936, part 1, New England rivers. |
| 799 | The floods of March 1936, part 2, Hudson River to Susquehanna River region. |
| 800 | The floods of March 1936, part 3, Potomac, James, and upper Ohio Rivers. |
| 816 | Major Texas floods of 1936. |
| 836-A | Stages and flood discharges of the Connecticut River at Hartford, Conn. |
| 838 | Floods of Ohio and Mississippi Rivers, January-February, 1937. |
| 842 | Floods in Canadian and Pecos River Basins of New Mexico, May and June 1937. |
| 843 | Floods of December 1937 in northern California. |
| 844 | Floods of March 1938 in southern California. |
| 847 | Maximum discharges at stream-measurement stations through September 1938. |
| 867 | Hurricane floods of September 1938. |
| 869 | Flood of August 1935 in Muskingum River Basin, Ohio. |
| 914 | Texas floods of 1938 and 1939. |
| 966 | Minor floods of 1938 in North Atlantic States. |
| 967-A | Floods of September 1939 in Colorado River Basin below Boulder (Hoover) Dam. |
| 967-B | Flood of July 5, 1939, in eastern Kentucky. |
| 967-C | Flood of August 21, 1939, in town of Baldwin, Maine. |
| 994 | Cloudburst floods in Utah, 1850 to 1938. |
| 997 | Floods in Colorado. |
| 1046 | Texas floods of 1940. |
| 1066 | Floods of August 1940 in the southeastern States. |
| 1080 | Floods of May-June 1948 in Columbia River Basin. |

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

The following table contains a list of gaging stations for the area covered by this report at which records of daily discharge were collected during the water year October 1948 to September 1949 by agencies other than the Geological Survey. The records for these stations are not contained in the publications of the Geological Survey except as noted.

Records of discharge collected by agencies other than the Geological Survey

| Streams | Location | Period | Collected by |
|---|---|---|---|
| American Falls Reservoir, inflow to. | Near American Falls, Idaho..... | 1927-28, 1932-49 | Idaho Water District 36. |
| Lake Milner..... | Near Milner, Idaho..... | 1930-49† (gage heights only). | Do. |
| Malheur River..... | SW¼ sec. 32, T. 20 S., R. 41 E., near Namorf, Oreg. | 1932-49†..... | Oregon State engineer. |
| Do..... | SW¼ sec. 21, T. 18 S., R. 45 E., below Nevada Dam, near Vale, Oreg. | 1936-42, 1944-49† | Do. |
| Snake River tributaries. | Near Irwin, Idaho..... | 1940-49‡..... | Idaho Water District 36. |
| Teton River tributaries and diversions. | Near Driggs, Idaho..... | 1934-49‡..... | Do. |
| Wallowa Lake Reservoir. | Sec. 5, T. 3 S., R. 45 E., at outlet, near Joseph, Oreg. | 1925-49† (gage heights only). | Oregon State engineer. |
| Wallowa River..... | Sec. 5, T. 3 S., R. 45 E., below Wallowa Lake, near Joseph, Oreg. | 1926-49†..... | Do. |

† Records for some earlier years published in water-supply papers of the Geological Survey.
‡ Fragmentary.
Note.--Of the records for the stations operated by the Oregon State engineer, those for 1925-30 are published in Bulletin 8 of the State engineer, and those for 1931-36 (including some to December 1936) in Bulletin 9; those fot 1937-41 in Bulletin 10; those for 1942-49 have not been published.
Records for the stations operated by Idaho Water District 36 are published in the annual reports of that organization.

## COOPERATION

The work in the several States was done under cooperative agreements with the organizations listed below.

Idaho: Idaho Department of Reclamation, M. R. Kulp, State reclamation engineer.

Oregon: Office of the State Engineer, C. E. Stricklin.

Utah: Office of the State Engineer, E. H. Watson, succeeded by H. A. Linke.

Washington: State Department of Conservation and Development, F. A. Stewart, director, succeeded by J. V. Rogers, and C. J. Bartholet, consulting engineer for the department and supervisor of hydraulics.

Wyoming: Office of the State Engineer, L. C. Bishop.

Financial assistance was furnished by the Corps of Engineers in the operation of 18 gaging stations, of which 14 were in Idaho and 4 in Wyoming.

Financial assistance was furnished also by the Office of Indian Affairs and the Bureau of Reclamation of the United States Department of the Interior. Assistance was furnished by the Weather Bureau and the Forest Service of the United States Department of Commerce.

Assistance in collecting records was rendered by the following organizations and watermasters.

Idaho: City of Pocatello, Idaho Power Co., Board of Control for Boise Project, Idaho Water District 36, North Side Canal Co., Twin Falls Canal Co., Utah Power & Light Co., Washington Water Power Co., and watermasters for Big Lost, Little Lost, Big Wood, Little Wood, Boise, and Weiser Rivers, Lake Fork of Payette River, and Mud Lake.

Oregon: Malheur, Baker, Union, and Wallowa Counties, Pacific Power & Light Co., and Warmsprings Irrigation District.

Washington: Bonneville Power Administration, Washington Water Power Co.

The stream-gaging work was conducted by the water resources division of the Geological Survey--Carl G. Paulsen, chief hydraulic engineer, and Joseph V. B. Wells, chief of the surface water branch. The data for the stations in the several States were collected and prepared for publication under supervision of district engineers as listed below.

Idaho: Stations on Snake River between Heise and Milner, stations on tributaries of Snake River above American Falls Reservoir (except Teton River near Victor, Teton Creek and Horseshoe Creek near Driggs, and Packsaddle Creek and Spring Creek near Tetonia) and diversions from Snake River at and above Milner, Lynn Crandall; all other stations in Idaho, T. R. Newell.

Nevada: M. T. Wilson (except for Salmon Falls Creek near San Jacinto and above Upper Vineyard ditch, near Contact, T. R. Newell).

Oregon: K. N. Phillips (except for Jordan Creek above Lone Tree Creek, near Jordan Valley and Snake River at Oxbow, T. R. Newell), the work being done in collaboration with C. E. Stricklin, State engineer.

Utah: M. T. Wilson (Clear Creek near Naf, Idaho).

Washington: F. M. Veatch.

Wyoming: Grassy Lake, Jackson Lake, and Snake River at Moran, Lynn Crandall; Cottonwood Creek near Smoot, Salt River near Smoot and at Wyoming-Idaho State line, and Swift Creek near Afton, F. M. Bell; all other stations in Wyoming, T. R. Newell.

The records were reviewed and the manuscript prepared for publication under the direction of B. J. Peterson, chief, annual reports section.

## SNAKE RIVER MAIN STEM

### Jackson Lake at Moran, Wyo.

Location.--Electric tape gage, lat. 43°51', long. 110°35', in sec. 18, T. 45 N., R. 114 W., at dam on Snake River, at Moran. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Drainage area.--816 square miles.

Records available.--July 1908 to September 1949 (1908-10 fragmentary).

Extremes.--Maximum contents during year, 853,120 acre-feet June 20 (elevation, 6,769.24 feet); minimum, 234,880 acre-feet Oct. 1 (elevation, 6,742.61 feet).
1908-49: Maximum contents, 857,220 acre-feet June 23, 1937 (elevation, 6,769.40 feet); no usable contents on several days during period August to October 1919 (elevation, 6,730.00 feet).

Remarks.--Reservoir was formed by log crib dam in 1906 with a usable capacity of 300,000 acre-feet. The dam washed out in July 1910 and was replaced by an earth dam, forming a reservoir with a usable capacity of 380,000 acre-feet. The earth dam was raised in 1916 increasing the usable capacity to 790,000 acre-feet. In 1917, by dredging the outlet, the capacity was further increased to 847,000 acre-feet between elevations 6,730 feet (top of baffles to sluices) and 6,769 feet (top of spillway gates). Water is used for irrigation in Snake River Valley, Idaho. Gage read once daily at 8 a.m. Contents as given herein are computed from elevation at that time; all available for release.

Cooperation.--Reservoir elevations and capacity table furnished by Bureau of Reclamation.

Contents, in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 234,880 | 259,990 | 289,120 | 322,630 | 351,230 | 379,610 | 370,090 | 416,160 | 754,250 | 850,300 | 619,100 | 399,830 |
| 2 | 235,900 | 261,640 | 290,180 | 323,470 | 351,890 | 380,050 | 369,650 | 419,770 | 763,220 | 849,790 | 609,550 | 392,010 |
| 3 | 236,510 | 262,880 | 292,510 | 324,120 | 352,550 | 379,170 | 369,430 | 422,950 | 767,950 | 845,950 | 600,710 | 382,490 |
| 4 | 237,120 | 264,550 | 293,570 | 325,190 | 353,420 | 378,060 | 369,210 | 427,660 | 771,180 | 841,880 | 592,170 | 370,970 |
| 5 | 238,550 | 265,180 | 293,990 | 326,480 | 354,520 | 376,950 | 369,430 | 432,630 | 773,440 | 836,280 | 582,920 | 361,320 |
| 6 | 239,360 | 265,600 | 294,630 | 327,990 | 355,400 | 375,620 | 369,430 | 437,140 | 776,700 | 832,980 | 573,690 | 352,550 |
| 7 | 240,180 | 267,070 | 296,120 | 328,860 | 356,280 | 374,520 | 369,430 | 441,000 | 781,720 | 830,180 | 564,730 | 342,740 |
| 8 | 240,790 | 267,690 | 298,870 | 329,720 | 357,150 | 372,960 | 369,430 | 446,000 | 788,740 | 827,630 | 556,490 | 332,980 |
| 9 | 242,010 | 268,320 | 300,570 | 330,590 | 358,470 | 371,860 | 369,430 | 453,050 | 795,760 | 822,800 | 548,510 | 324,330 |
| 10 | 242,630 | 269,160 | 301,630 | 331,240 | 360,000 | 371,190 | 369,430 | 462,390 | 802,580 | 817,990 | 542,890 | 314,240 |
| 11 | 243,450 | 270,000 | 302,900 | 332,110 | 362,850 | 370,090 | 369,650 | 472,470 | 810,660 | 814,200 | 537,750 | 307,590 |
| 12 | 244,070 | 270,840 | 304,390 | 333,200 | 364,170 | 369,430 | 369,870 | 483,470 | 819,000 | 810,160 | 531,190 | 501,630 |
| 13 | 244,900 | 271,460 | 306,730 | 334,060 | 363,050 | 368,560 | 370,750 | 495,470 | 827,120 | 805,360 | 525,140 | 297,600 |
| 14 | 245,930 | 272,510 | 308,450 | 334,930 | 365,710 | 367,680 | 371,640 | 510,040 | 832,980 | 797,530 | 518,870 | 293,360 |
| 15 | 248,000 | 272,930 | 309,950 | 335,800 | 366,800 | 367,680 | 372,080 | 524,680 | 836,790 | 789,490 | 511,900 | 290,600 |
| 16 | 248,830 | 274,190 | 310,380 | 336,450 | 368,560 | 367,680 | 373,190 | 540,320 | 843,920 | 779,710 | 505,630 | 289,960 |
| 17 | 249,240 | 276,070 | 311,020 | 337,320 | 369,650 | 368,340 | 373,630 | 557,200 | 849,530 | 771,690 | 499,160 | 287,630 |
| 18 | 250,270 | 276,910 | 311,670 | 338,620 | 370,750 | 368,120 | 374,070 | 573,220 | 849,280 | 762,220 | 492,700 | 287,420 |
| 19 | 250,890 | 277,540 | 312,530 | 339,490 | 371,640 | 368,340 | 375,180 | 589,080 | 851,070 | 752,010 | 486,010 | 287,830 |
| 20 | 251,510 | 278,380 | 314,460 | 340,360 | 372,300 | 368,340 | 376,510 | 602,620 | 853,120 | 742,080 | 479,120 | 288,060 |
| 21 | 252,340 | 279,630 | 315,320 | 341,440 | 372,960 | 368,560 | 378,500 | 614,080 | 851,580 | 730,960 | 472,470 | 288,690 |
| 22 | 253,170 | 280,680 | 315,960 | 342,740 | 373,630 | 368,560 | 381,160 | 628,920 | 851,330 | 719,840 | 465,140 | 289,540 |
| 23 | 253,990 | 281,520 | 316,600 | 343,610 | 374,290 | 369,000 | 385,600 | 641,190 | 851,580 | 709,040 | 457,600 | 287,420 |
| 24 | 254,820 | 282,770 | 317,460 | 344,480 | 374,740 | 369,000 | 386,030 | 651,800 | 851,330 | 697,740 | 451,000 | 284,030 |
| 25 | 255,440 | 284,030 | 318,110 | 345,560 | 375,620 | 369,210 | 388,470 | 661,240 | 851,330 | 688,230 | 444,410 | 280,470 |
| 26 | 256,060 | 284,870 | 318,540 | 346,650 | 376,290 | 369,650 | 392,900 | 671,650 | 851,840 | 678,720 | 437,810 | 278,590 |
| 27 | 256,890 | 286,150 | 318,970 | 347,520 | 377,400 | 369,870 | 397,150 | 682,860 | 852,350 | 668,500 | 431,500 | 276,070 |
| 28 | 257,300 | 287,000 | 319,390 | 348,600 | 378,720 | 370,090 | 402,070 | 698,480 | 851,330 | 658,580 | 424,960 | 273,770 |
| 29 | 257,920 | 288,270 | 320,250 | 349,700 | - | 370,090 | 406,990 | 714,930 | 851,330 | 648,650 | 418,640 | 272,510 |
| 30 | 258,340 | 288,690 | 321,110 | 350,140 | - | 370,090 | 412,350 | 729,470 | 851,580 | 638,300 | 413,020 | 273,140 |
| 31 | 258,960 | - | 321,750 | 350,890 | - | 370,090 | - | 742,820 | - | 627,720 | 406,320 | - |

Monthly elevation and contents, water year October 1948 to September 1949

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept.30 | 6,742.58 | 234,260 | - |
| Oct. 31 | 6,743.78 | 258,960 | +24,700 |
| Nov. 30 | 6,745.20 | 288,690 | +29,730 |
| Dec. 31 | 6,746.75 | 321,750 | +33,060 |
| Calendar year 1948 | - | - | -226,760 |
| Jan. 31 | 6,748.09 | 350,890 | +29,140 |
| Feb. 28 | 6,749.36 | 378,720 | +27,830 |
| Mar. 31 | 6,748.97 | 370,090 | -8,630 |
| Apr. 30 | 6,750.87 | 412,350 | +42,260 |
| May 31 | 6,764.86 | 742,820 | +330,470 |
| June 30 | 6,769.18 | 851,580 | +108,760 |
| July 31 | 6,760.14 | 627,720 | -223,860 |
| Aug. 31 | 6,750.60 | 406,320 | -221,400 |
| Sept.30 | 6,744.46 | 273,140 | -133,180 |
| Water year 1948-49 | - | - | +38,880 |

## Snake River at Moran, Wyo.

Location.--Water-stage recorder, lat. 43°51', long. 110°35', in sec. 18, T. 45 N., R. 114 W., at Moran, 1,000 feet downstream from Jackson Lake Dam. Datum of gage is 6,725.61 feet above mean sea level (Bureau of Reclamation bench mark).

Drainage area.--816 square miles.

Records available.--September 1903 to September 1949.

Average discharge.--46 years, 1,417 second-feet.

Extremes.--Maximum discharge during year, 7,310 second-feet July 21 (gage height, 8.60 feet); minimum daily, 3 second-feet on many days.
1903-49: Maximum discharge, 15,100 second-feet June 12, 1918 (gage height, 10.41 feet, site and datum then in use); practically no flow for a few days in 1907 and 1909.

Remarks.--Records excellent except those for Oct. 1 to Feb. 27, which are good. Flow regulated by Jackson Lake (see preceding page).

Cooperation.--Gage-height record furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 27 | 3 | 3 | 3 | 4 | 640 | 386 | 363 | 1,020 | 3,050 | 6,080 | 4,520 |
| 2 | 27 | 3 | 3 | 3 | 4 | 972 | 386 | 363 | 1,680 | 3,970 | 5,890 | 5,270 |
| 3 | 27 | 3 | 3 | 3 | 4 | 972 | 386 | 358 | 2,420 | 5,980 | 5,880 | 6,160 |
| 4 | 27 | 3 | 3 | 3 | 4 | 1,000 | 386 | 354 | 3,160 | 5,540 | 5,840 | 6,300 |
| 5 | 15 | 3 | 3 | 3 | 4 | 1,000 | 386 | 350 | 3,370 | 4,040 | 5,650 | 5,620 |
| 6 | 6 | 3 | 3 | 3 | 4 | 1,000 | 386 | 350 | 3,520 | 3,810 | 5,600 | 5,590 |
| 7 | 3 | 3 | 3 | 3 | 4 | 1,000 | 386 | 350 | 3,300 | 3,650 | 5,510 | 5,620 |
| 8 | 3 | 3 | 3 | 3 | 4 | 993 | 386 | 350 | 3,410 | 3,910 | 5,300 | 5,440 |
| 9 | 3 | 3 | 3 | 3 | 4 | 993 | 386 | 53 | 3,440 | 4,740 | 4,500 | 5,410 |
| 10 | 4 | 3 | 3 | 3 | 4 | 993 | 386 | 44 | 3,500 | 4,220 | 3,600 | 5,060 |
| 11 | 4 | 3 | 3 | 3 | 4 | 993 | 386 | 46 | 3,560 | 3,920 | 3,790 | 4,490 |
| 12 | 6 | 3 | 3 | 3 | 4 | 986 | 386 | 46 | 3,640 | 4,310 | 3,950 | 3,250 |
| 13 | 6 | 3 | 3 | 3 | 4 | 986 | 386 | 46 | 3,720 | 5,520 | 4,010 | 2,410 |
| 14 | 6 | 3 | 3 | 3 | 4 | 614 | 386 | 46 | 3,740 | 6,080 | 4,180 | 2,310 |
| 15 | 6 | 3 | 3 | 3 | 4 | 390 | 386 | 46 | 2,570 | 5,940 | 4,220 | 1,640 |
| 16 | 6 | 3 | 3 | 3 | 4 | 394 | 412 | 47 | 1,200 | 6,330 | 3,840 | 1,210 |
| 17 | 6 | 3 | 3 | 3 | 4 | 394 | 426 | 48 | 4,380 | 6,590 | 4,020 | 723 |
| 18 | 6 | 3 | 3 | 3 | 4 | 394 | 426 | 47 | 4,400 | 6,710 | 4,100 | 292 |
| 19 | 6 | 3 | 3 | 3 | 4 | 390 | 440 | 47 | 4,780 | 6,790 | 4,140 | 43 |
| 20 | 3 | 3 | 3 | 3 | 4 | 390 | 462 | 47 | 6,930 | 7,100 | 4,260 | 16 |
| 21 | 4 | 3 | 3 | 3 | 4 | 390 | 471 | 47 | 4,980 | 7,220 | 4,320 | 4 |
| 22 | 4 | 3 | 3 | 3 | 4 | 390 | 485 | 48 | 4,240 | 7,060 | 4,420 | 968 |
| 23 | 3 | 3 | 3 | 3 | 4 | 390 | 495 | 48 | 4,220 | 7,000 | 4,430 | 1,930 |
| 24 | 3 | 3 | 3 | 3 | 4 | 390 | 510 | 48 | 4,000 | 6,660 | 4,430 | 2,180 |
| 25 | 3 | 3 | 3 | 3 | 4 | 390 | 515 | 48 | 3,180 | 6,230 | 4,250 | 1,820 |
| 26 | 3 | 3 | 3 | 3 | 4 | 386 | 520 | 48 | 3,280 | 6,300 | 4,040 | 1,570 |
| 27 | 3 | 3 | 3 | 3 | 4 | 386 | 525 | 46 | 3,710 | 6,490 | 3,910 | 1,670 |
| 28 | 3 | 3 | 3 | 3 | 120 | 386 | 535 | 43 | 3,290 | 6,300 | 3,880 | 1,420 |
| 29 | 3 | 3 | 3 | 3 | - | 386 | 415 | 41 | 2,430 | 6,270 | 3,820 | 624 |
| 30 | 3 | 3 | 3 | 3 | - | 386 | 358 | 41 | 2,630 | 6,270 | 3,820 | 175 |
| 31 | 3 | - | 3 | 3 | - | 386 | - | 286 | - | 6,180 | 3,950 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 232 | 27 | 3 | 7.5 | 460 |
| November | 90 | 3 | 3 | 3.0 | 179 |
| December | 93 | - | - | 3.0 | 184 |
| Calendar year 1948 | 633,134 | 8,430 | 3 | 1,730 | 1,256,000 |
| January | 93 | - | - | 3.0 | 184 |
| February | 228 | 120 | - | 8.1 | 452 |
| March | 19,760 | 1,000 | 386 | 637 | 39,190 |
| April | 12,785 | 535 | 358 | 426 | 25,360 |
| May | 4,145 | 363 | 41 | 134 | 8,220 |
| June | 103,700 | 6,930 | 1,020 | 3,457 | 205,700 |
| July | 174,180 | 7,220 | 3,050 | 5,619 | 345,500 |
| August | 139,680 | 6,080 | 3,600 | 4,506 | 277,100 |
| September | 83,735 | 6,300 | 4 | 2,791 | 166,100 |
| Water year 1948-49 | 538,721 | 7,220 | 3 | 1,476 | 1,069,000 |

Note.--Stage-discharge relation affected by ice Nov. 24 to Mar. 1. Discharge computed from staff-gage readings Oct. 1 to June 3.

## Snake River below Greys River, at Alpine, Idaho

Location.--Wire-weight gage, lat. 43°10'20", long. 111°02'30", in SW¼ sec. 19, T. 37 N., R. 118 W., sixth principal meridian, Wyoming, at State line bridge on U. S. Highway 89, a quarter of a mile south of Alpine, Idaho, post office, 1¼ miles upstream from Salt River, and 2 miles downstream from Greys River.

Drainage area.--3,940 square miles.

Records available.--October 1944 to September 1949.

Extremes.--Maximum discharge observed during year, 18,200 second-feet June 20 (gage height, 8.24 feet); minimum daily, 1,050 second-feet Jan. 25-31, during period of ice effect; minimum gage height observed, 2.62 feet Feb. 16, 25, 28.
1944-49: Maximum discharge observed, 24,200 second-feet June 3, 1948 (gage height, 9.66 feet); minimum daily, that of Jan. 25-31, 1949; minimum gage height observed, 2.29 feet Mar. 6, Apr. 3, 1945.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Gage read once daily except May 17 to June 25, when it was read twice daily. Diversions from tributaries above station. Some regulation by Jackson Lake (see p. 14).

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,990 | 1,650 | 1,560 | 1,340 | 1,100 | 1,410 | 1,810 | 5,970 | 13,200 | 10,200 | 9,140 | 6,000 |
| 2 | 1,940 | 1,840 | 1,560 | 1,320 | 1,180 | *1,440 | 1,970 | 5,620 | 12,200 | 9,170 | 8,790 | 6,480 |
| 3 | 1,860 | 1,830 | 1,560 | 1,300 | 1,200 | 2,250 | 1,950 | 5,940 | 11,500 | 8,860 | 8,690 | 8,010 |
| 4 | 1,910 | 1,750 | 1,560 | 1,280 | 1,200 | 2,320 | 2,050 | 7,000 | 12,100 | 13,100 | 8,450 | 8,350 |
| 5 | 2,050 | 1,650 | 1,540 | 1,260 | 1,200 | 2,230 | 2,110 | 6,510 | 12,300 | 11,200 | 8,420 | 7,850 |
| 6 | 2,020 | 1,680 | 1,590 | 1,240 | 1,200 | 2,280 | 2,160 | 5,910 | 12,300 | 10,700 | 8,320 | 7,530 |
| 7 | 2,000 | 1,700 | 1,640 | 1,220 | 1,200 | 2,270 | 2,300 | 6,220 | 13,500 | 10,400 | 8,280 | 7,400 |
| 8 | 1,970 | 1,560 | 1,600 | 1,210 | 1,200 | 2,270 | 2,440 | 6,810 | 14,700 | 9,700 | 7,880 | 7,090 |
| 9 | 1,940 | 1,560 | 1,560 | 1,190 | 1,240 | 2,250 | 2,600 | 7,590 | 15,800 | 10,600 | 7,780 | 7,000 |
| 10 | 1,890 | 1,620 | 1,560 | 1,180 | 1,280 | 2,230 | 2,650 | 8,320 | 15,900 | 10,400 | 7,120 | 7,060 |
| 11 | 1,840 | 1,620 | 1,560 | 1,180 | 1,280 | 2,200 | 2,790 | 9,200 | 16,900 | 9,620 | 6,480 | 6,690 |
| 12 | 1,810 | 1,620 | 1,560 | 1,250 | 1,280 | 2,230 | 3,050 | 10,700 | 17,600 | 9,200 | 6,540 | 6,140 |
| 13 | 1,750 | 1,590 | 1,560 | 1,320 | 1,280 | 2,230 | 3,280 | 12,800 | 17,800 | 10,200 | 6,500 | 4,480 |
| 14 | 1,790 | 1,590 | 1,560 | 1,350 | 1,300 | 2,230 | 3,100 | 12,500 | 16,700 | 10,800 | 6,490 | 4,830 |
| 15 | 1,920 | 1,700 | *1,520 | 1,320 | 1,330 | 2,050 | 3,160 | 13,400 | 15,600 | 10,800 | 6,480 | 4,210 |
| 16 | 1,920 | 1,680 | 1,460 | 1,250 | 1,380 | 1,830 | 3,220 | 14,000 | 13,100 | 10,800 | 6,450 | 3,550 |
| 17 | 1,830 | 1,580 | 1,420 | 1,220 | 1,460 | 1,830 | 3,590 | 15,600 | 12,200 | 10,900 | 6,310 | 3,220 |
| 18 | 1,790 | 1,530 | 1,400 | 1,160 | 1,540 | 1,840 | 3,900 | 15,300 | 14,900 | 10,800 | 6,310 | 2,870 |
| 19 | 1,700 | 1,530 | 1,400 | 1,100 | 1,480 | 1,870 | 4,480 | 14,600 | 15,500 | 10,600 | 6,360 | 2,560 |
| 20 | 1,710 | 1,530 | 1,390 | 1,100 | 1,480 | 1,870 | 5,310 | 14,200 | 18,200 | 10,900 | 6,420 | 2,320 |
| 21 | 1,680 | 1,540 | 1,380 | 1,100 | 1,480 | 1,910 | 5,410 | 13,000 | 17,000 | 10,500 | 6,340 | 2,150 |
| 22 | 1,670 | 1,560 | 1,360 | 1,100 | 1,530 | 1,970 | 5,940 | 12,000 | 14,700 | 10,400 | 6,450 | 2,180 |
| 23 | 1,670 | 1,580 | 1,320 | 1,100 | 1,520 | 1,970 | 6,450 | 11,500 | 14,100 | 10,300 | 6,600 | 3,030 |
| 24 | 1,680 | 1,590 | 1,260 | 1,060 | 1,460 | 1,910 | 6,720 | 10,600 | 13,200 | 10,200 | 6,720 | 3,510 |
| 25 | 1,670 | 1,600 | 1,250 | 1,050 | 1,380 | 1,890 | 7,140 | 10,300 | 12,200 | 9,480 | 6,220 | 3,710 |
| 26 | 1,650 | 1,540 | 1,250 | 1,050 | 1,440 | 1,870 | 7,560 | 10,800 | 12,100 | 9,420 | 6,160 | 3,350 |
| 27 | 1,640 | 1,520 | 1,250 | 1,050 | 1,400 | 1,790 | 7,620 | 11,800 | 12,800 | 9,620 | 6,020 | 3,310 |
| 28 | 1,640 | 1,530 | 1,250 | 1,050 | 1,380 | 1,780 | 8,150 | 13,100 | 11,800 | 9,100 | 5,890 | 3,220 |
| 29 | 1,650 | 1,560 | 1,270 | 1,050 | - | 1,730 | 7,240 | 14,100 | 10,500 | 9,200 | 5,860 | 2,970 |
| 30 | 1,640 | 1,520 | 1,290 | 1,050 | - | 1,710 | 6,690 | 13,900 | 9,840 | 9,200 | 5,720 | 2,630 |
| 31 | 1,640 | - | 1,320 | 1,050 | - | 1,750 | - | 13,800 | - | 9,200 | 5,720 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 55,860 | 2,050 | 1,640 | 1,820 | 110,800 |
| November | 48,350 | 1,840 | 1,520 | 1,612 | 95,900 |
| December | 44,760 | 1,640 | 1,250 | 1,444 | 88,780 |
| Calendar year 1948 | 1,898,800 | 23,900 | 1,090 | 5,188 | 3,766,000 |
| January | 36,500 | 1,350 | 1,050 | 1,177 | 72,400 |
| February | 37,400 | 1,540 | 1,100 | 1,336 | 74,180 |
| March | 61,410 | 2,320 | 1,410 | 1,981 | 121,800 |
| April | 126,840 | 8,150 | 1,810 | 4,228 | 251,600 |
| May | 333,090 | 15,600 | 5,620 | 10,740 | 660,700 |
| June | 420,240 | 18,200 | 9,840 | 14,010 | 833,500 |
| July | 315,570 | 13,100 | 8,860 | 10,180 | 625,900 |
| August | 214,910 | 9,140 | 5,720 | 6,933 | 426,300 |
| September | 143,700 | 8,350 | 2,150 | 4,790 | 285,000 |
| Water year 1948-49 | 1,838,630 | 18,200 | 1,050 | 5,037 | 3,647,000 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 17 to Feb. 15. No gage-height record Nov. 20-22, 24, 25, Dec. 18, 25, Jan. 16, Jan. 26 to Feb. 8, Apr. 25, June 14, Aug. 13-15; discharge computed on basis of weather records and records for stations near Heise and Irwin.

## Snake River near Irwin, Idaho

Location.--Staff gage, lat. 43°21', long. 111°13', in SE¼ sec. 6, T. 1 S., R. 45 E., 2 miles upstream from Palisades Creek and 5 miles southeast of Irwin.

Drainage area.--5,215 square miles.

Records available.--May to September 1949. April 1935 to October 1936 at site 3½ miles downstream.

Extremes.--Maximum discharge observed during period May to September 1949, 20,500 second-feet June 13 (gage height, 7.24 feet); minimum daily, 2,820 second-feet Sept. 22.
1935-36, 1949: Maximum daily discharge, 26,850 second-feet June 1, 1936; minimum daily recorded, 1,600 second-feet Apr. 1-7, 1936.

Remarks.--Records fair. Some regulation by Jackson Lake (see p. 14).

Cooperation.--Gage-height record furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1949 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | a9,000 | 15,700 | 10,500 | 9,670 | 6,580 |
| 2 | | | | | | | | 7,930 | 15,100 | 10,400 | 9,570 | 6,640 |
| 3 | | | | | | | | 8,710 | 14,100 | 10,200 | 9,310 | a7,750 |
| 4 | | | | | | | | 9,630 | 13,700 | 13,900 | 9,310 | 8,830 |
| 5 | | | | | | | | 9,220 | 14,100 | 12,900 | 9,250 | 8,100 |
| 6 | | | | | | | | 8,460 | 14,800 | 11,800 | a8,950 | 7,960 |
| 7 | | | | | | | | 8,740 | 15,300 | 11,300 | a8,750 | 7,840 |
| 8 | | | | | | | | 9,150 | 16,300 | 11,000 | a8,600 | 7,650 |
| 9 | | | | | | | | 10,000 | 17,800 | 11,300 | 8,430 | 7,480 |
| 10 | | | | | | | | 11,000 | 18,400 | a11,700 | 8,100 | a7,900 |
| 11 | | | | | | | | 11,900 | 19,100 | 11,000 | 7,120 | a7,700 |
| 12 | | | | | | | | 13,100 | 19,600 | 10,400 | 6,960 | 7,200 |
| 13 | | | | | | | | 14,400 | 20,400 | a10,300 | a6,960 | a5,600 |
| 14 | | | | | | | | 15,000 | 19,200 | 11,100 | a6,960 | 4,990 |
| 15 | | | | | | | | 15,700 | 17,600 | 11,400 | 6,960 | 4,660 |
| 16 | | | | | | | | 16,200 | 15,400 | a11,100 | 7,090 | 4,590 |
| 17 | | | | | | | | 18,000 | 14,800 | a11,300 | 6,990 | a4,000 |
| 18 | | | | | | | | 18,700 | 17,000 | 11,400 | 6,900 | a3,700 |
| 19 | | | | | | | | 18,000 | a17,300 | 11,300 | 6,960 | a3,300 |
| 20 | | | | | | | | 17,200 | 18,400 | 11,300 | a7,000 | a3,140 |
| 21 | | | | | | | | 16,000 | 19,400 | 11,200 | a7,050 | a2,900 |
| 22 | | | | | | | | 15,000 | 16,600 | 11,300 | 7,230 | a2,820 |
| 23 | | | | | | | | 14,400 | 15,700 | 11,100 | 7,260 | a3,800 |
| 24 | | | | | | | | 13,700 | 14,800 | a10,900 | 7,180 | a4,400 |
| 25 | | | | | | | | 13,200 | 13,400 | 10,600 | 7,090 | a4,600 |
| 26 | | | | | | | | 13,100 | a13,000 | 10,100 | 7,090 | a4,250 |
| 27 | | | | | | | | 14,300 | 13,500 | 10,100 | a6,860 | a4,100 |
| 28 | | | | | | | | 15,500 | 13,000 | 10,300 | a6,670 | a4,150 |
| 29 | | | | | | | | 16,500 | 12,100 | 10,000 | 6,550 | a3,850 |
| 30 | | | | | | | | 16,700 | 11,100 | 9,860 | 6,530 | a3,700 |
| 31 | | | | | | | | 16,300 | - | a9,750 | 6,500 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | 414,740 | 18,700 | 7,930 | 13,380 | 822,600 |
| June | 476,700 | 20,400 | 11,100 | 15,890 | 945,500 |
| July | 340,810 | 13,900 | 9,750 | 10,990 | 676,000 |
| August | 235,850 | 9,670 | 6,500 | 7,608 | 467,800 |
| September | 164,180 | 8,830 | 2,820 | 5,473 | 325,600 |
| The period | - | - | - | - | 3,238,000 |

a No gage-height record; discharge computed on basis of records for station near Heise.

## Snake River near Heise, Idaho

Location.--Water-stage recorder, lat. 43°37', long. 111°40', in sec. 5, T. 3 N., R. 41 E., 3 miles upstream from Heise and 23 miles upstream from Henrys Fork. Altitude of gage, 5,015 feet (from river-profile map).

Drainage area.--5,740 square miles.

Records available.--September 1910 to September 1949, except winters of 1914-24.

Average discharge.--39 years, 6,738 second-feet.

Extremes.--Maximum discharge during year, 21,000 second-feet June 13 (gage height, 7.45 feet); minimum daily, 1,950 second-feet Jan. 27-29.
1910-49: Maximum discharge, about 60,000 second-feet May 19, 1927, result of washing out of landslide of Gros Ventre River (gage height, about 16.0 feet, present datum); minimum, 1,210 second-feet Jan. 22, 1935 (gage height, 1.15 feet).

Remarks.--Records excellent except those for periods of ice effect, which are good. Station is above all irrigation diversions from main river except Riley ditch (4,850 acre-feet diverted during year), which diverts 1 mile upstream from station. About 110,000 acres in Wyoming and Idaho irrigated by diversions from tributaries above station. Some regulation by Jackson Lake (see p. 14).

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,060 | 2,830 | 2,610 | 2,350 | 2,050 | 2,290 | 2,810 | 10,100 | 17,100 | 11,100 | 10,200 | 6,990 |
| 2 | 3,050 | 2,970 | 2,560 | 2,300 | 2,070 | 2,280 | 2,830 | 8,990 | 16,500 | 11,400 | 10,100 | 7,240 |
| 3 | 3,050 | 3,140 | 2,680 | 2,250 | 2,100 | 2,460 | 2,870 | 9,280 | 15,200 | 11,900 | 9,940 | 7,840 |
| 4 | 3,030 | 3,190 | 2,730 | 2,200 | 2,100 | 3,190 | 2,960 | 10,500 | 14,500 | 14,600 | 9,690 | 8,890 |
| 5 | 3,120 | 3,060 | 2,710 | 2,150 | 2,150 | 3,320 | 3,080 | 10,400 | 14,700 | 14,400 | 9,720 | 9,280 |
| 6 | 3,300 | 2,940 | 2,640 | 2,160 | 2,150 | 3,400 | 3,280 | 9,620 | 15,300 | 12,800 | 9,490 | 8,670 |
| 7 | 3,190 | 2,960 | 2,680 | 2,170 | 2,200 | 3,440 | 3,600 | 9,590 | 16,000 | 12,100 | 9,350 | 8,510 |
| 8 | 3,100 | 2,880 | 2,680 | 2,150 | 2,200 | 3,420 | 3,970 | 10,100 | 17,000 | 11,500 | 9,250 | 8,510 |
| 9 | 3,060 | 2,760 | 2,600 | 2,100 | 2,250 | 3,440 | 4,300 | 11,100 | 18,600 | 11,300 | 9,050 | 8,300 |
| 10 | 3,050 | 2,760 | 2,630 | 2,050 | 2,250 | 3,440 | 4,500 | 12,300 | 19,100 | 12,400 | 8,760 | 8,300 |
| 11 | 3,050 | 2,810 | 2,680 | 2,100 | 2,250 | 3,440 | 4,730 | 13,300 | 19,600 | 11,600 | 7,780 | 8,420 |
| 12 | 3,030 | 2,810 | 2,690 | 2,200 | 2,300 | 3,340 | 5,210 | 14,400 | 20,200 | 11,000 | 7,610 | 8,050 |
| 13 | 2,990 | 2,850 | 2,710 | 2,300 | 2,300 | 3,210 | 5,610 | 15,700 | 20,900 | 10,900 | 7,660 | 7,240 |
| 14 | 2,990 | 2,830 | 2,660 | *2,330 | 2,250 | 3,190 | 5,540 | 16,600 | 20,300 | 11,700 | 7,610 | 5,910 |
| 15 | 3,120 | 2,850 | 2,640 | 2,250 | 2,250 | 3,190 | 5,360 | 17,200 | 18,800 | 12,100 | 7,640 | 6,060 |
| 16 | 3,210 | 2,900 | 2,530 | 2,200 | 2,200 | 2,880 | 5,660 | 17,900 | 16,800 | 11,800 | 7,750 | 5,280 |
| 17 | 3,150 | 2,940 | 2,480 | 2,200 | 2,180 | 2,830 | 6,110 | 19,300 | 14,700 | 11,900 | 7,380 | 4,820 |
| 18 | 3,080 | 2,850 | 2,470 | 2,150 | 2,290 | 2,830 | 6,780 | 20,500 | 16,700 | 12,100 | 7,430 | 4,450 |
| 19 | 3,010 | 2,600 | 2,450 | 2,120 | 2,380 | 2,830 | 7,580 | 20,300 | 17,600 | 12,000 | 7,430 | 4,050 |
| 20 | 2,970 | 2,640 | 2,400 | 2,100 | 2,400 | 2,940 | 8,640 | 19,300 | 18,400 | 11,700 | 7,380 | 3,750 |
| 21 | 2,960 | 2,730 | 2,350 | 2,080 | *2,320 | 3,010 | 8,420 | 18,400 | 20,500 | 11,800 | 7,490 | 3,440 |
| 22 | 2,960 | 2,710 | 2,300 | 2,050 | 2,320 | 3,030 | 7,810 | 17,300 | 17,900 | 11,800 | 7,490 | 3,320 |
| 23 | 2,940 | 2,710 | 2,240 | 2,050 | 2,350 | 3,100 | 10,000 | 16,400 | 16,500 | 11,500 | 7,610 | 3,270 |
| 24 | 2,920 | 2,810 | 2,220 | 2,020 | 2,380 | 3,080 | 10,900 | 15,500 | 15,900 | 11,400 | 7,960 | 4,410 |
| 25 | 2,920 | 2,850 | 2,200 | 2,000 | 2,310 | 2,940 | 12,000 | 14,500 | 14,800 | 11,100 | 7,930 | 4,990 |
| 26 | 2,900 | 2,780 | 2,180 | 1,980 | 2,280 | 2,850 | 12,800 | 14,500 | 13,800 | 10,600 | 7,720 | 5,110 |
| 27 | 2,900 | 2,680 | 2,150 | 1,950 | 2,270 | 2,830 | 12,600 | 15,400 | 14,500 | 10,500 | 7,410 | 4,590 |
| 28 | 2,880 | 2,560 | 2,200 | 1,950 | 2,240 | 2,830 | 13,000 | 16,600 | 13,900 | 10,700 | 7,270 | 4,610 |
| 29 | 2,870 | *2,640 | 2,250 | 1,950 | - | 2,760 | 13,200 | 17,600 | 12,900 | 10,400 | 7,180 | 4,660 |
| 30 | 2,630 | 2,630 | 2,300 | 1,980 | - | 2,760 | 11,800 | 18,000 | 11,700 | 10,300 | 7,100 | 4,340 |
| 31 | 2,610 | - | 2,350 | 2,000 | - | 2,780 | - | 17,400 | - | 10,300 | 7,020 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 93,500 | 3,300 | 2,810 | 3,016 | 185,500 |
| November | 84,670 | 3,190 | 2,560 | 2,822 | 167,900 |
| December | 76,970 | 2,730 | 2,150 | 2,483 | 152,700 |
| Calendar year 1948 | 2,509,050 | 30,100 | 2,050 | 6,855 | 4,977,000 |
| January | 65,840 | 2,350 | 1,950 | 2,124 | 130,600 |
| February | 62,790 | 2,400 | 2,050 | 2,242 | 124,500 |
| March | 93,330 | 3,440 | 2,280 | 3,011 | 185,100 |
| April | 207,950 | 13,200 | 2,810 | 6,932 | 412,500 |
| May | 458,080 | 20,500 | 8,990 | 14,780 | 908,800 |
| June | 500,400 | 20,900 | 11,700 | 16,680 | 992,500 |
| July | 360,700 | 14,600 | 10,300 | 11,640 | 715,400 |
| August | 253,400 | 10,200 | 7,020 | 8,174 | 502,800 |
| September | 185,280 | 9,280 | 3,270 | 6,109 | 363,500 |
| Water year 1948-49 | 2,440,910 | 20,900 | 1,950 | 6,687 | 4,841,000 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 18-22, Dec. 24 to Feb. 16.

Diversions from Snake River between Heise and Shelley gaging stations, Idaho

Between Heise and Shelley gaging stations, 47 canals divert water from Snake River for irrigation; of these 36 divert above mouth of Henrys Fork. Records available during each irrigation season from 1919 to 1949. One of the canals is equipped with a water-stage recorder, the others with staff gages, which are read once daily. Discharge combined to show total diverted flow. Records include Riley ditch which diverts 1 mile above Heise gaging station. Records good.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | 1,480 | 4,610 | 8,520 | 8,710 | 7,090 |
| 2 | | | | | | | | 1,780 | 4,160 | 8,870 | 8,550 | 7,120 |
| 3 | | | | | | | | 2,700 | 4,050 | 8,780 | 8,600 | 6,910 |
| 4 | | | | | | | | 3,850 | 4,120 | 9,190 | 8,280 | 7,040 |
| 5 | | | | | | | | 4,580 | 4,180 | 8,930 | 8,380 | 7,220 |
| 6 | | | | | | | | 5,670 | 4,980 | 8,740 | 8,210 | 7,500 |
| 7 | | | | | | | | 6,170 | 6,480 | 8,720 | 8,130 | 7,350 |
| 8 | | | | | | | | 6,650 | 7,390 | 8,710 | 8,100 | 7,280 |
| 9 | | | | | | | | 7,160 | 7,720 | 8,640 | 7,950 | 7,330 |
| 10 | | | | | | | | 7,560 | 8,140 | 8,680 | 7,760 | 7,230 |
| 11 | | | | | | | | 8,030 | 8,650 | 8,960 | 7,260 | 7,120 |
| 12 | | | | | | | | 8,110 | 8,800 | 8,340 | 6,990 | 6,810 |
| 13 | | | | | | | | 8,380 | 9,160 | 8,770 | 7,490 | 6,590 |
| 14 | | | | | | | | 8,130 | 9,390 | 8,700 | 7,160 | 6,050 |
| 15 | | | | | | | | 7,910 | 9,520 | 8,980 | 7,120 | 5,940 |
| 16 | | | | | | | | 7,660 | 9,320 | 9,040 | 7,310 | 5,590 |
| 17 | | | | | | | | 5,900 | 8,880 | 8,920 | 7,290 | 5,010 |
| 18 | | | | | | | | 4,170 | 8,570 | 8,950 | 7,260 | 4,700 |
| 19 | | | | | | | | 3,340 | 8,150 | 9,230 | 7,270 | 4,360 |
| 20 | | | | | | | | 3,490 | 7,800 | 9,270 | 7,260 | 4,150 |
| 21 | | | | | | | | 3,000 | 7,580 | 8,930 | 7,290 | 4,170 |
| 22 | | | | | | | | 2,840 | 7,560 | 9,300 | 7,210 | 4,040 |
| 23 | | | | | | | | 2,640 | 7,660 | 9,110 | 7,240 | 3,990 |
| 24 | | | | | | | | 2,540 | 7,780 | 8,880 | 7,110 | 4,630 |
| 25 | | | | | | | | 2,580 | 8,290 | 8,850 | 7,020 | 4,840 |
| 26 | | | | | | | | 2,810 | 8,220 | 8,950 | 6,760 | 4,850 |
| 27 | | | | | | | | 3,300 | 8,480 | 8,910 | 6,710 | 4,670 |
| 28 | | | | | | | | 3,680 | 8,670 | 8,940 | 6,570 | 4,690 |
| 29 | | | | | | | | 3,930 | 8,460 | 8,830 | 6,630 | 4,480 |
| 30 | | | | | | | | 4,500 | 8,320 | 8,850 | 6,760 | 4,180 |
| 31 | | | | | | | | 5,000 | - | 8,800 | 6,900 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | 149,540 | 8,380 | 1,480 | 4,824 | 296,600 |
| June | 225,090 | 9,520 | 4,050 | 7,503 | 446,500 |
| July | 275,020 | 9,300 | 8,340 | 8,872 | 545,500 |
| August | 231,280 | 8,710 | 6,570 | 7,461 | 458,700 |
| September | 172,930 | 7,500 | 3,990 | 5,764 | 343,000 |
| The period | - | - | - | - | 2,090,000 |

## Snake River near Shelley, Idaho

Location.--Water-stage recorder, lat. 43°25', long. 112°08', in sec. 17, T. 1 N., R. 37 E., a quarter of a mile east of Woodville and 3 miles north of Shelley. Altitude of gage, 4,596 feet (from river-profile map).

Records available.--March 1915 to September 1949 (summer months only during some years).

Extremes.--Maximum discharge during year, 25,700 second-feet May 20 (gage height, 12.00 feet); minimum, 1,370 second-feet Sept. 23 (gage height, 4.56 feet).
1915-49: Maximum discharge, 47,200 second-feet June 17, 1918 (gage height, 16.97 feet); minimum, 288 second-feet Nov. 5, 1934 (gage height, 2.22 feet).
Maximum discharge known, 70,000 second-feet (estimated) June 6, 1894, at former station at Eagle Rock (now Idaho Falls), 7 miles upstream from present site.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Some regulation by Jackson Lake (see p. 14), Henrys Lake (see p. 58), Island Park Reservoir (see p. 50), and Grassy Lake (see p. 58). Many diversions above station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,010 | 3,030 | 3,110 | 2,750 | 2,050 | 3,320 | 3,660 | 13,200 | 19,000 | 5,470 | 4,100 | 2,370 |
| 2 | 2,980 | 3,130 | 3,420 | 2,600 | 2,070 | 3,300 | 3,750 | 11,400 | 19,400 | 4,550 | 4,000 | 2,200 |
| 3 | 2,920 | 3,290 | 3,270 | 2,350 | 2,100 | 3,400 | 3,730 | 9,610 | 19,500 | 4,270 | 3,900 | 2,340 |
| 4 | 2,940 | 3,520 | 3,520 | 2,320 | 2,120 | 3,750 | 3,730 | 9,120 | 18,700 | 4,720 | 3,950 | 2,860 |
| 5 | 2,940 | 3,830 | 3,440 | 2,350 | 2,140 | 4,100 | 3,800 | 9,470 | 17,600 | 7,460 | 3,850 | 3,730 |
| 6 | 3,110 | 3,870 | 3,230 | 2,300 | 2,170 | 4,400 | 3,990 | 8,520 | 16,500 | 7,900 | 3,870 | 4,020 |
| 7 | 3,370 | 3,680 | 3,250 | 2,250 | 2,200 | 4,500 | 4,040 | 6,860 | 15,600 | 6,830 | 3,950 | 3,550 |
| 8 | 3,420 | 3,660 | 3,150 | 2,200 | 2,200 | 4,650 | 4,410 | 5,920 | 14,800 | 6,310 | 4,000 | 3,420 |
| 9 | 3,330 | 3,590 | 3,190 | 2,150 | 2,220 | *4,750 | 4,840 | 6,080 | 15,000 | 5,670 | 3,920 | 3,500 |
| 10 | 3,250 | 3,550 | 2,980 | 2,250 | 2,230 | 4,900 | 5,250 | 6,830 | 15,900 | 5,670 | 3,950 | 3,500 |
| 11 | 3,150 | 3,640 | 3,110 | 2,350 | 2,250 | 4,830 | 5,470 | 7,630 | 15,700 | 6,150 | 4,020 | 3,780 |
| 12 | 3,150 | 3,660 | 3,330 | 2,280 | 2,250 | 4,750 | 5,860 | 8,590 | a15,900 | 5,190 | 3,640 | 4,300 |
| 13 | 3,070 | 3,680 | 3,590 | 2,200 | 2,250 | 4,720 | 6,340 | 10,200 | a16,200 | 4,460 | 3,130 | 3,950 |
| 14 | 2,980 | 3,780 | *3,800 | 2,280 | 2,200 | 4,690 | 6,900 | 11,600 | 16,400 | 4,140 | 3,050 | 3,710 |
| 15 | 2,940 | 3,680 | 3,660 | 2,320 | 2,100 | 4,580 | 6,900 | 13,200 | 15,600 | 4,550 | 3,190 | 3,070 |
| 16 | 3,010 | *3,480 | 3,460 | 2,330 | 2,060 | 4,520 | 6,500 | 14,300 | 14,200 | 4,520 | 3,150 | 3,070 |
| 17 | 3,070 | 3,460 | 2,960 | 2,350 | 2,070 | 4,440 | 6,770 | 16,800 | 11,800 | 4,250 | 3,050 | 2,900 |
| 18 | 3,070 | 3,460 | 2,240 | 2,350 | 2,130 | 4,380 | 7,200 | 20,200 | 10,500 | 4,490 | 2,830 | 2,850 |
| 19 | 3,030 | 3,330 | 2,400 | 2,300 | 2,250 | 4,360 | 7,940 | 24,000 | 12,200 | 4,300 | 2,830 | 2,540 |
| 20 | 3,050 | 3,010 | 2,610 | 2,250 | 2,400 | 4,330 | 8,870 | 25,300 | 13,300 | 4,170 | 2,850 | 2,520 |
| 21 | 3,030 | 3,150 | 2,500 | 2,200 | 2,600 | 4,380 | 10,100 | 25,200 | 14,800 | 4,170 | 2,850 | 2,700 |
| 22 | 2,980 | 3,310 | 2,500 | 2,170 | 2,800 | 4,410 | 9,860 | 24,900 | 16,400 | 4,360 | 2,860 | 2,140 |
| 23 | 3,000 | 3,230 | 2,200 | 2,150 | 2,950 | 4,410 | 9,540 | 23,700 | 14,100 | 4,640 | 2,860 | 1,650 |
| 24 | 2,920 | 3,250 | 2,250 | 2,130 | 3,100 | 4,440 | 11,400 | 23,000 | 12,600 | 4,780 | 3,130 | 1,700 |
| 25 | 2,900 | 3,350 | 2,400 | 2,100 | 3,250 | 4,360 | 12,600 | 22,000 | 11,400 | 4,970 | 3,730 | 2,080 |
| 26 | 2,850 | 3,370 | 2,600 | 2,070 | 3,400 | 4,220 | 14,100 | 20,400 | 9,830 | 4,550 | 3,970 | 2,420 |
| 27 | 2,860 | 3,250 | 2,640 | 2,050 | 3,380 | 4,100 | 15,000 | 19,200 | 9,290 | 4,100 | 3,950 | 2,540 |
| 28 | 2,940 | 3,760 | 2,670 | 2,030 | 3,350 | 3,950 | 14,500 | 18,800 | 8,900 | 4,020 | 3,590 | 2,340 |
| 29 | 3,000 | 3,170 | 2,500 | 2,000 | - | 3,850 | 14,500 | 19,400 | 7,800 | 4,000 | 3,420 | 2,460 |
| 30 | 2,980 | 3,250 | 2,600 | 2,020 | - | 3,710 | 14,600 | 20,100 | 6,700 | 3,900 | 2,900 | 2,980 |
| 31 | 3,000 | - | 2,700 | 2,040 | - | 3,640 | - | 19,800 | - | 4,000 | 2,630 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 94,250 | 3,420 | 2,850 | 3,040 | 186,900 |
| November | 102,420 | 3,870 | 2,760 | 3,414 | 203,100 |
| December | 91,280 | 3,800 | 2,200 | 2,945 | 181,100 |
| Calendar year 1948 | 2,207,980 | 27,400 | 1,980 | 6,033 | 4,380,000 |
| January | 69,490 | 2,750 | 2,000 | 2,242 | 137,800 |
| February | 68,290 | 3,400 | 2,050 | 2,439 | 135,500 |
| March | 132,140 | 4,900 | 3,300 | 4,263 | 262,100 |
| April | 236,150 | 15,000 | 3,660 | 7,872 | 468,400 |
| May | 475,330 | 25,300 | 5,920 | 15,330 | 942,800 |
| June | 425,620 | 19,500 | 6,700 | 14,190 | 844,200 |
| July | 152,560 | 7,900 | 3,900 | 4,921 | 302,600 |
| August | 107,120 | 4,100 | 2,630 | 3,455 | 212,500 |
| September | 86,970 | 4,300 | 1,650 | 2,899 | 172,500 |
| Water year 1948-49 | 2,041,620 | 25,300 | 1,650 | 5,593 | 4,050,000 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of record for station near Blackfoot.
Note.--Stage-discharge relation affected by ice Dec. 21-27, Dec. 29 to Mar. 12.

## Diversions from Snake River between Shelley and Blackfoot gaging stations, Idaho

Between Shelley and Blackfoot gaging stations, 13 canals divert water from Snake River for irrigation. Records available during each irrigation season from 1919 to 1949. The two largest canals are equipped with recorders, the others with staff gages, which are read once daily. Discharge combined to show total diverted flow. Records good.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | 1,950 | 2,610 | 3,500 | 3,040 | 2,390 |
| 2 | | | | | | | | 2,170 | 2,570 | 3,390 | 3,170 | 2,010 |
| 3 | | | | | | | | 2,360 | 2,470 | 3,130 | 3,260 | 1,800 |
| 4 | | | | | | | | 2,880 | 2,720 | 3,140 | 3,010 | 2,060 |
| 5 | | | | | | | | 3,330 | 2,890 | 3,890 | 3,320 | 2,630 |
| 6 | | | | | | | | 3,400 | 3,110 | 3,780 | 3,320 | 2,760 |
| 7 | | | | | | | | 3,450 | 3,340 | 3,660 | 3,290 | 2,670 |
| 8 | | | | | | | | 3,600 | 3,530 | 3,690 | 3,200 | 2,670 |
| 9 | | | | | | | | 3,710 | 3,640 | 3,760 | 3,000 | 2,720 |
| 10 | | | | | | | | 3,900 | 3,850 | 3,700 | 2,800 | 2,610 |
| 11 | | | | | | | | 3,960 | 3,970 | 3,790 | 2,610 | 2,550 |
| 12 | | | | | | | | 3,930 | 3,950 | 3,760 | 2,530 | 2,340 |
| 13 | | | | | | | | 3,990 | 3,970 | 3,730 | 2,530 | 2,070 |
| 14 | | | | | | | | 4,000 | 4,010 | 3,680 | 2,530 | 2,080 |
| 15 | | | | | | | | 3,960 | 3,920 | 3,830 | 2,600 | 2,010 |
| 16 | | | | | | | | 3,670 | 3,830 | 3,900 | 2,590 | 2,080 |
| 17 | | | | | | | | 2,800 | 3,750 | 3,780 | 2,580 | 1,970 |
| 18 | | | | | | | | 2,170 | 3,250 | 3,810 | 2,520 | 1,820 |
| 19 | | | | | | | | 1,800 | 2,990 | 3,750 | 2,470 | 1,690 |
| 20 | | | | | | | | 1,780 | 3,060 | 3,720 | 2,440 | 1,540 |
| 21 | | | | | | | | 1,410 | 3,000 | 3,610 | 2,430 | 1,820 |
| 22 | | | | | | | | 1,400 | 3,000 | 3,580 | 2,490 | 1,870 |
| 23 | | | | | | | | 1,510 | 3,110 | 3,470 | 2,500 | 1,670 |
| 24 | | | | | | | | 1,560 | 3,240 | 3,390 | 2,230 | 1,320 |
| 25 | | | | | | | | 1,590 | 3,520 | 3,540 | 2,260 | 1,520 |
| 26 | | | | | | | | 1,650 | 3,490 | 3,570 | 2,340 | 1,940 |
| 27 | | | | | | | | 1,800 | 3,620 | 3,570 | 2,380 | 2,100 |
| 28 | | | | | | | | 1,960 | 3,600 | 3,540 | 2,330 | 1,940 |
| 29 | | | | | | | | 2,030 | 3,580 | 3,490 | 2,290 | 1,820 |
| 30 | | | | | | | | 2,200 | 3,560 | 3,440 | 2,360 | 1,800 |
| 31 | | | | | | | | 2,510 | - | 3,260 | 2,470 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | 82,430 | 4,000 | 1,400 | 2,659 | 163,500 |
| June | 101,150 | 4,010 | 2,470 | 3,372 | 200,600 |
| July | 111,850 | 3,900 | 3,130 | 3,608 | 221,900 |
| August | 82,890 | 3,320 | 2,230 | 2,674 | 164,400 |
| September | 62,270 | 2,760 | 1,320 | 2,076 | 123,500 |
| The period | - | - | - | - | 873,900 |

## Snake River near Blackfoot, Idaho

Location.--Water-stage recorder, lat. 43°07', long. 112°31', in SE¼ sec. 30, T. 3 S., R. 34 E., a quarter of a mile downstream from Blackfoot River and 14 miles southwest of Blackfoot. Altitude of gage, 4,401 feet (from river-profile map).

Records available.--June 1910 to September 1949.

Extremes.--Maximum discharge during year, 24,500 second-feet May 22 (gage height, 10.63 feet); minimum, 225 second-feet Sept. 3 (gage height, 0.50 foot).

1910-49: Maximum discharge, 46,200 second-feet June 18, 1918 (gage height, 14.80 feet); minimum, 111 second-feet Nov. 10, 1934 (gage height, 0.80 foot).

Late in summer of 1905 there was no flow in Snake River for a distance of 10 miles in vicinity of Blackfoot. On Aug. 9, 1905, discharge of Snake River just below mouth of Blackfoot River was 39 second-feet, supplied by groud-water inflow a short distance upstream.

Remarks.--Records excellent. Some regulation by Jackson Lake (see p.14), Henrys Lake (see p.58), Island Park Reservoir (see p.50), Grassy Lake (see p.58), and Blackfoot-Marsh Reservoir, having a combined capacity of 1,483,000 acre-feet. Many diversions above station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,280 | 2,820 | 3,110 | 2,570 | 1,660 | 3,030 | a3,480 | a10,500 | 16,900 | 2,840 | 996 | 340 |
| 2 | 2,370 | 2,950 | 2,800 | 2,390 | 1,680 | 2,960 | 3,420 | a9,500 | 16,900 | 1,740 | 1,080 | 270 |
| 3 | 2,320 | 3,080 | 3,390 | 1,920 | 1,730 | 3,030 | 3,390 | 8,580 | 17,400 | a1,430 | 793 | 270 |
| 4 | 2,340 | 3,250 | 3,650 | 1,940 | 1,790 | 3,120 | 3,390 | 6,360 | 16,800 | 1,120 | 808 | 440 |
| 5 | 2,390 | 3,440 | 3,120 | 1,960 | 1,780 | 3,360 | 3,410 | 5,840 | 15,800 | 2,800 | 758 | 779 |
| 6 | 2,540 | 3,720 | a3,000 | 1,780 | a1,850 | 4,030 | 3,510 | 5,650 | 14,500 | 4,230 | 654 | 1,160 |
| 7 | 2,810 | 3,170 | 2,900 | 1,690 | a1,900 | 4,280 | 3,540 | 4,280 | 12,900 | 3,390 | 800 | 1,080 |
| 8 | 2,960 | a3,250 | 2,750 | 1,620 | 1,930 | 4,410 | 3,780 | 2,840 | 11,700 | 3,110 | 904 | 744 |
| 9 | 2,900 | 3,390 | 2,560 | 1,610 | 1,870 | 4,500 | 4,190 | 2,340 | 11,400 | 2,660 | 1,080 | 730 |
| 10 | 2,690 | 3,390 | 2,750 | 1,870 | 1,870 | 4,710 | 4,560 | 2,740 | 11,900 | 2,390 | 1,130 | 816 |
| 11 | 2,570 | 3,540 | 3,140 | 2,020 | a1,900 | 4,650 | 4,820 | 3,370 | 11,700 | 2,520 | 1,530 | 920 |
| 12 | 2,580 | 3,610 | 3,370 | 1,930 | a1,950 | 4,610 | 6,250 | 4,320 | 12,400 | 2,250 | 1,570 | 1,620 |
| 13 | 2,520 | 3,630 | 3,650 | 1,730 | a1,980 | 4,520 | 6,250 | 5,510 | 11,900 | 1,180 | 1,050 | 2,300 |
| 14 | 2,370 | 3,760 | 3,760 | 1,780 | a1,950 | 4,350 | 6,270 | 6,940 | 12,200 | 660 | 793 | 2,130 |
| 15 | 2,240 | 3,700 | 3,290 | 1,910 | 1,660 | 4,420 | 6,320 | 8,720 | 12,200 | 576 | 751 | 1,680 |
| 16 | 2,240 | a3,550 | 3,030 | 1,920 | 1,640 | 4,800 | 6,140 | 10,300 | 11,100 | 880 | 786 | 1,250 |
| 17 | a2,550 | 3,390 | 2,820 | 1,970 | 1,690 | 4,740 | 6,070 | 13,100 | 9,580 | 793 | 751 | 1,250 |
| 18 | 2,860 | a3,200 | 2,570 | 2,040 | 1,820 | 4,260 | 6,450 | 16,700 | 7,740 | 832 | 654 | 1,300 |
| 19 | 2,870 | a3,000 | a2,100 | 1,920 | 1,900 | 4,080 | 7,020 | 20,400 | 9,100 | 912 | 534 | 1,180 |
| 20 | 2,880 | 2,760 | 1,810 | 1,820 | 1,980 | 4,050 | 7,960 | 23,000 | 10,600 | 688 | 510 | 1,230 |
| 21 | 2,870 | 2,800 | 1,610 | 1,800 | 2,270 | 4,120 | 9,270 | 23,900 | 11,400 | 642 | 516 | 1,290 |
| 22 | 2,840 | 2,960 | 1,870 | 1,810 | 2,410 | 4,150 | 9,860 | 24,300 | 13,700 | 832 | 522 | 928 |
| 23 | 2,780 | 2,960 | 1,690 | 1,760 | 2,680 | 4,190 | 9,330 | 23,500 | 12,400 | 960 | 480 | 510 |
| 24 | 2,740 | 2,950 | 1,720 | 1,690 | 2,800 | 4,260 | 11,000 | 22,400 | 10,800 | 1,360 | 702 | 314 |
| 25 | 2,690 | 3,000 | 1,380 | 1,690 | 2,930 | 4,210 | 11,900 | 21,600 | 8,990 | 1,580 | 1,370 | 455 |
| 26 | 2,660 | 3,030 | 1,860 | a1,650 | 3,110 | 4,120 | 12,900 | 19,800 | 7,480 | 1,360 | 1,720 | 674 |
| 27 | 2,660 | 2,820 | 1,900 | a1,550 | 3,090 | 3,970 | 13,600 | 18,400 | 6,410 | 896 | 1,900 | 600 |
| 28 | 2,700 | 2,510 | 2,080 | a1,450 | 3,060 | 3,790 | 13,500 | 17,600 | 5,940 | 606 | 1,730 | 612 |
| 29 | 2,700 | 2,810 | 1,840 | 1,410 | - | 3,760 | 12,800 | 17,700 | 5,010 | 612 | 1,440 | 709 |
| 30 | 2,750 | 3,000 | 2,130 | 1,450 | - | a3,650 | 12,700 | 18,000 | 3,880 | 606 | 1,110 | 1,100 |
| 31 | 2,750 | - | 2,210 | 1,580 | - | a3,550 | - | 17,900 | - | 702 | 588 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 81,420 | 2,960 | 2,240 | 2,626 | 161,500 |
| November | 95,440 | 3,760 | 2,510 | 3,181 | 189,300 |
| December | 79,860 | 3,760 | 1,380 | 2,576 | 158,400 |
| Calendar year 1948 | 1,770,413 | 25,600 | 318 | 4,837 | 3,512,000 |
| January | 56,230 | 2,570 | 1,410 | 1,814 | 111,500 |
| February | 58,880 | 3,110 | 1,640 | 2,103 | 116,800 |
| March | 125,680 | 4,800 | 2,960 | 4,054 | 249,300 |
| April | 217,080 | 13,600 | 3,390 | 7,236 | 430,600 |
| May | 396,090 | 24,300 | 2,340 | 12,777 | 785,600 |
| June | 340,730 | 17,400 | 3,880 | 11,358 | 675,800 |
| July | 47,157 | 4,230 | 576 | 1,521 | 93,530 |
| August | 30,010 | 1,900 | 480 | 968 | 59,520 |
| September | 28,681 | 2,300 | 270 | 956 | 56,890 |
| Water year 1948-49 | 1,557,258 | 24,300 | 270 | 4,267 | 3,089,000 |

a No gage-height record; discharge computed on basis of records for stations near Heise and Shelley.

## American Falls Reservoir at American Falls, Idaho

Location.--Water-stage recorder, lat. 42°46', long. 112°53', in sec. 30, T. 7 S., R. 31 E., at outlet gates of reservoir on Snake River at American Falls. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Records available.--March 1926 to September 1949.

Extremes.--Maximum contents during year, 1,720,310 acre-feet June 23 (elevation, 4,354.86 feet); minimum, 535,030 acre-feet Sept. 30 (elevations, 4,327.33 feet).
1926-49: Maximum contents, 1,726,580 acre-feet June 10, 1938 (elevation, 4,354.97 feet); minimum since full capacity was attained on July 13, 1927, 17,200 acre-feet Oct. 22, 1931 (elevation, 4,299.72 feet).

Remarks.--Reservoir is formed by concrete gravity dam with earth dikes at each end; partial storage began in 1926, full storage in 1927. Capacity, 1,700,000 acre-feet between elevations 4,295.66 feet (bottom of outlet gate) and 4,354.50 feet (top of spillway radial gates). Small amount of dead storage. Water is used for irrigation by canals diverting from Snake River at Minidoka and Milner Dams. Contents given herein are computed from mean daily elevations; all available for release.

Cooperation.--Reservoir elevations and capacity table furnished by Bureau of Reclamation.

Contents, in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. |
|---|---|---|---|---|---|---|
| 1 | 670,360 | 902,170 | 1,148,290 | 1,187,090 | 1,122,480 | 1,004,560 |
| 2 | 676,010 | 910,660 | 1,150,140 | 1,186,620 | 1,119,710 | 999,840 |
| 3 | 683,360 | 914,300 | 1,151,980 | 1,185,680 | 1,117,860 | 996,410 |
| 4 | 691,210 | 923,600 | 1,153,360 | 1,184,730 | 1,116,460 | 992,540 |
| 5 | 692,920 | 932,900 | 1,158,430 | 1,183,320 | 1,111,950 | 990,400 |
| 6 | 702,490 | 942,220 | 1,168,250 | 1,180,970 | 1,113,760 | 989,970 |
| 7 | 709,660 | 953,070 | 1,171,080 | 1,180,030 | 1,117,860 | 988,250 |
| 8 | 717,570 | 962,660 | 1,172,960 | 1,175,320 | 1,111,950 | 986,530 |
| 9 | 724,590 | 971,430 | 1,177,670 | 1,170,610 | 1,108,350 | 989,110 |
| 10 | 733,360 | 980,190 | 1,175,320 | 1,169,190 | 1,108,350 | 993,400 |
| 11 | 743,900 | 989,540 | 1,176,730 | 1,166,840 | 1,106,540 | 999,410 |
| 12 | 750,220 | 996,840 | 1,183,320 | 1,165,900 | 1,105,190 | 1,004,130 |
| 13 | 757,040 | 1,004,990 | 1,195,090 | 1,163,070 | 1,103,390 | 1,005,420 |
| 14 | 763,530 | 1,016,580 | 1,196,980 | 1,160,740 | 1,100,680 | 1,005,850 |
| 15 | 766,060 | 1,026,450 | 1,199,800 | 1,157,050 | 1,097,520 | 1,009,710 |
| 16 | 778,680 | 1,037,900 | 1,204,040 | 1,155,670 | 1,093,470 | 1,011,000 |
| 17 | 782,640 | 1,044,060 | 1,204,510 | 1,162,130 | 1,090,760 | 1,011,430 |
| 18 | 791,790 | 1,053,300 | 1,204,040 | 1,161,200 | 1,086,250 | 1,011,430 |
| 19 | 796,980 | 1,062,110 | 1,203,570 | 1,158,890 | 1,077,230 | 1,015,290 |
| 20 | 802,540 | 1,068,270 | 1,201,690 | 1,155,670 | 1,069,590 | 1,020,440 |
| 21 | 809,210 | 1,075,430 | 1,201,220 | 1,154,280 | 1,058,140 | 1,028,650 |
| 22 | 817,360 | 1,086,250 | 1,200,740 | 1,151,060 | 1,046,700 | 1,034,810 |
| 23 | 824,790 | 1,093,010 | 1,199,330 | 1,146,450 | 1,036,130 | 1,039,220 |
| 24 | 833,180 | 1,096,620 | 1,198,860 | 1,145,520 | 1,027,770 | 1,046,260 |
| 25 | 841,940 | 1,106,540 | 1,197,450 | 1,142,760 | 1,024,300 | 1,050,660 |
| 26 | 850,330 | 1,111,950 | 1,196,040 | 1,140,910 | 1,017,010 | 1,053,740 |
| 27 | 856,800 | 1,120,630 | 1,194,620 | 1,139,070 | 1,015,720 | 1,056,380 |
| 28 | 867,240 | 1,128,470 | 1,192,270 | 1,135,380 | 1,014,000 | 1,064,750 |
| 29 | 874,690 | 1,136,310 | 1,191,330 | 1,132,620 | - | 1,070,470 |
| 30 | 882,930 | 1,145,060 | 1,188,970 | 1,128,470 | - | 1,070,470 |
| 31 | 891,950 | - | 1,188,500 | 1,124,780 | - | 1,074,530 |

Contents, in acre-feet, of American Falls Reservoir at American Falls, Idaho, water year October 1948 to September 1949--Continued

| Day | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|
| 1 | 1,077,230 | 1,295,670 | 1,613,440 | 1,669,760 | 1,198,860 | 751,630 |
| 2 | 1,079,490 | 1,300,540 | 1,634,940 | 1,656,500 | 1,182,850 | 738,280 |
| 3 | 1,081,290 | 1,302,000 | 1,650,420 | 1,642,120 | 1,169,190 | 723,180 |
| 4 | 1,086,250 | 1,299,080 | 1,663,680 | 1,627,750 | 1,152,440 | 705,560 |
| 5 | 1,087,150 | 1,298,590 | 1,674,220 | 1,613,440 | 1,139,530 | 689,510 |
| 6 | 1,090,310 | 1,294,700 | 1,683,750 | 1,603,120 | 1,123,400 | 677,670 |
| 7 | 1,094,820 | 1,287,390 | 1,684,310 | 1,594,420 | 1,105,640 | 667,040 |
| 8 | 1,098,430 | 1,278,620 | 1,683,190 | 1,584,640 | 1,092,560 | 657,410 |
| 9 | 1,103,840 | 1,266,450 | 1,682,060 | 1,574,310 | 1,079,490 | 645,870 |
| 10 | 1,106,540 | 1,254,790 | 1,682,620 | 1,560,230 | 1,063,430 | 633,310 |
| 11 | 1,111,050 | 1,245,680 | 1,683,750 | 1,546,390 | 1,045,920 | 622,350 |
| 12 | 1,113,760 | 1,238,010 | 1,687,670 | 1,532,010 | 1,030,850 | 614,040 |
| 13 | 1,120,170 | 1,232,730 | 1,692,710 | 1,517,110 | 1,014,860 | 608,420 |
| 14 | 1,129,850 | 1,228,410 | 1,700,000 | 1,501,790 | 998,980 | 604,660 |
| 15 | 1,138,150 | 1,226,020 | 1,704,480 | 1,486,610 | 982,280 | 602,480 |
| 16 | 1,146,450 | 1,227,450 | 1,708,400 | 1,466,180 | 965,590 | 594,660 |
| 17 | 1,154,750 | 1,237,530 | 1,714,040 | 1,448,020 | 948,890 | 589,660 |
| 18 | 1,162,130 | 1,253,350 | 1,714,610 | 1,432,080 | 933,310 | 584,360 |
| 19 | 1,169,190 | 1,272,780 | 1,706,720 | 1,412,540 | 915,920 | 580,130 |
| 20 | 1,175,790 | 1,300,540 | 1,711,760 | 1,388,190 | 901,360 | 572,860 |
| 21 | 1,184,260 | 1,333,130 | 1,714,040 | 1,377,100 | 884,500 | 570,740 |
| 22 | 1,197,450 | 1,366,510 | 1,715,180 | 1,360,960 | 868,810 | 566,800 |
| 23 | 1,211,150 | 1,398,280 | 1,720,310 | 1,344,510 | 854,140 | 562,560 |
| 24 | 1,218,340 | 1,428,990 | 1,711,200 | 1,325,210 | 840,420 | 557,420 |
| 25 | 1,229,370 | 1,459,380 | 1,710,080 | 1,308,380 | 825,170 | 552,340 |
| 26 | 1,243,760 | 1,487,650 | 1,705,600 | 1,293,720 | 814,760 | 548,820 |
| 27 | 1,256,710 | 1,513,380 | 1,705,040 | 1,275,210 | 804,020 | 544,710 |
| 28 | 1,269,860 | 1,535,740 | 1,698,320 | 1,260,610 | 792,900 | 540,610 |
| 29 | 1,275,210 | 1,552,780 | 1,685,990 | 1,245,200 | 783,360 | 538,260 |
| 30 | 1,283,980 | 1,573,770 | 1,680,940 | 1,229,370 | 773,990 | 535,030 |
| 31 | - | 1,592,790 | - | 1,214,980 | 764,250 | - |

Monthly elevation and contents, water year October 1948 to September 1949

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept. 30 | 4,331.49 | 664,720 | - |
| Oct. 31 | 4,337.76 | 891,950 | +227,230 |
| Nov. 30 | 4,343.64 | 1,145,060 | +253,110 |
| Dec. 31 | 3,344.57 | 1,188,500 | +43,440 |
| Calendar year 1948 | - | - | -10,830 |
| Jan. 31 | 4,343.20 | 1,124,780 | -63,720 |
| Feb. 28 | 4,340.71 | 1,014,000 | -110,780 |
| Mar. 31 | 4,342.09 | 1,074,530 | +60,530 |
| Apr. 30 | 4,346.56 | 1,283,980 | +209,450 |
| May 31 | 4,352.56 | 1,592,790 | +308,810 |
| June 30 | 4,354.16 | 1,680,940 | +88,150 |
| July 31 | 4,345.15 | 1,214,980 | -465,960 |
| Aug. 31 | 4,334.37 | 764,250 | -450,730 |
| Sept. 30 | 4,327.33 | 535,030 | -229,220 |
| Water year 1948-49 | - | - | -129,690 |

## Snake River at Neeley, Idaho

Location.--Water-stage recorder, lat. 42°45', long. 112°54', in SW¼ sec. 31, T. 7 S., R. 31 E., 0.9 mile downstream from American Falls Dam. Datum of gage is 4,241.4 feet above mean sea level (river-profile survey). Records computed to show flow at former site in sec. 11, T. 8 S., R. 30 E., half a mile north of Neeley and 2½ miles downstream from present site, by adding inflow between sites.

Records available.--March 1906 to September 1949.

Extremes.--Maximum discharge during year, 16,800 second-feet June 23 (gage height, 7.74 feet); minimum, 72 second-feet Nov. 7, 8 (gage height, 0.98 foot).
1906-49: Maximum daily discharge, 48,400 second-feet June 20, 1918 (gage height, 13.5 feet, site and datum then in use); minimum, 50 second-feet Oct. 22, 23, Nov. 14-16, 1941.

Remarks.--Records excellent. Flow regulated by American Falls Reservoir (see preceding page) and other reservoirs, having a combined usable capacity of 3,200,000 acre-feet. About 700,000 acres of land irrigated by water diverted from river and tributaries upstream from station.

Cooperation.--Gage-height record furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,420 | 2,240 | 4,950 | 5,520 | 5,360 | 10,600 | 5,010 | 11,600 | 9,700 | 11,900 | 12,000 | 9,610 |
| 2 | 2,670 | 2,200 | 5,010 | 5,520 | 5,400 | 7,500 | 5,020 | 11,600 | 10,500 | 11,800 | 12,000 | 10,800 |
| 3 | 161 | 2,160 | 4,900 | 5,520 | 5,430 | 8,160 | 3,350 | 11,600 | 13,000 | 11,700 | 11,900 | 11,700 |
| 4 | 2,400 | 2,150 | 4,900 | 5,480 | 6,220 | 8,160 | 5,030 | 11,500 | 13,000 | 11,500 | 11,900 | 11,700 |
| 5 | 2,490 | 2,180 | 79 | 5,460 | 5,410 | 5,990 | 5,060 | 11,300 | 13,100 | 11,300 | 11,800 | 10,500 |
| 6 | 2,460 | 2,170 | 4,930 | 5,400 | 107 | 8,180 | 5,030 | 10,900 | 14,600 | 11,200 | 11,700 | 9,460 |
| 7 | 2,290 | 72 | 4,950 | 5,860 | 7,320 | 8,180 | 5,030 | 10,800 | 16,000 | 11,200 | 11,600 | 8,910 |
| 8 | 2,260 | 2,150 | 4,930 | 8,300 | 7,510 | 7,720 | 5,030 | 10,800 | 15,400 | 11,100 | 11,700 | 9,050 |
| 9 | 2,270 | 2,180 | 4,930 | 2,540 | 5,370 | 5,520 | 5,010 | 10,400 | 13,600 | 11,400 | 11,700 | 9,460 |
| 10 | 156 | 2,160 | 4,950 | 7,550 | 5,520 | 5,520 | 5,010 | 10,200 | 12,800 | 11,800 | 11,700 | 9,420 |
| 11 | 2,280 | 2,160 | 4,950 | 5,440 | 5,430 | 5,520 | 5,030 | 10,200 | 12,300 | 11,900 | 11,600 | 9,320 |
| 12 | 2,270 | 2,160 | 77 | 5,440 | 5,460 | 5,830 | 5,030 | 10,200 | 11,300 | 12,100 | 11,800 | 8,460 |
| 13 | 2,280 | 2,170 | 4,950 | 5,440 | 6,070 | 7,960 | 5,060 | 10,700 | 10,900 | 12,000 | 12,300 | 7,130 |
| 14 | 2,300 | 106 | 4,950 | 6,130 | 5,950 | 7,510 | 5,030 | 10,900 | 11,000 | 12,000 | 12,500 | 5,990 |
| 15 | 2,300 | 3,040 | 4,950 | 7,570 | 6,070 | 5,860 | 5,060 | 10,900 | 11,100 | 12,100 | 12,400 | 6,280 |
| 16 | 2,310 | 2,870 | 4,930 | 82 | 6,030 | 8,050 | 5,090 | 10,800 | 11,100 | 12,400 | 12,100 | 7,090 |
| 17 | 175 | 2,840 | 5,440 | 5,370 | 6,520 | 8,050 | 5,090 | 9,980 | 11,200 | 12,800 | 11,900 | 7,830 |
| 18 | 2,920 | 2,660 | 5,450 | 5,820 | 7,300 | 7,510 | 5,090 | 9,370 | 12,600 | 12,800 | 11,800 | 6,910 |
| 19 | 2,920 | 2,680 | 5,450 | 5,570 | 9,980 | 5,400 | 5,090 | 9,050 | 11,800 | 12,700 | 11,800 | 6,190 |
| 20 | 2,910 | 2,660 | 5,450 | 6,380 | 9,980 | 2,530 | 5,610 | 9,090 | 11,100 | 12,400 | 11,500 | 6,190 |
| 21 | 1,810 | 74 | 5,430 | 5,320 | 10,000 | 5,040 | 6,230 | 9,140 | 12,300 | 12,100 | 11,300 | 6,400 |
| 22 | 1,710 | 2,700 | 5,430 | 7,510 | 9,980 | 5,030 | 6,200 | 9,180 | 12,800 | 12,000 | 11,300 | 6,230 |
| 23 | 1,720 | 2,710 | 5,440 | 5,650 | 9,980 | 5,010 | 6,740 | 9,280 | 15,400 | 12,000 | 11,200 | 6,070 |
| 24 | 175 | 2,720 | 5,450 | 5,410 | 9,320 | 5,030 | 7,740 | 9,000 | 14,700 | 12,000 | 11,000 | 6,070 |
| 25 | 1,750 | 2,710 | 5,380 | 5,600 | 7,370 | 4,980 | 8,050 | 8,860 | 12,500 | 12,200 | 10,600 | 5,820 |
| 26 | 1,500 | 2,770 | 5,380 | 6,480 | 10,300 | 5,010 | 9,090 | 8,910 | 12,000 | 12,300 | 10,600 | 5,900 |
| 27 | 1,430 | 2,710 | 5,420 | 6,250 | 2,880 | 5,010 | 9,840 | 8,950 | 11,700 | 12,200 | 10,100 | 6,080 |
| 28 | 1,430 | 76 | 5,420 | 5,370 | 11,300 | 5,000 | 10,000 | 9,610 | 11,400 | 12,000 | 9,840 | 5,750 |
| 29 | 1,450 | 2,730 | 5,450 | 5,660 | - | 5,010 | 10,400 | 10,100 | 11,900 | 12,400 | 9,510 | 4,550 |
| 30 | 1,460 | 2,730 | 5,400 | 6,520 | - | 5,010 | 11,500 | 9,890 | 11,900 | 11,600 | 9,140 | 4,550 |
| 31 | 175 | - | 5,400 | 5,400 | - | 5,010 | - | 9,610 | - | 11,600 | 9,280 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 56,852 | 2,920 | 156 | 1,834 | 112,800 |
| November | 64,938 | 3,040 | 72 | 2,165 | 128,800 |
| December | 150,726 | 5,450 | 77 | 4,862 | 299,000 |
| Calendar year 1948 | 2,835,278 | 25,600 | 72 | 7,747 | 5,624,000 |
| January | 175,562 | 8,300 | 82 | 5,663 | 348,200 |
| February | 193,567 | 11,300 | 107 | 6,913 | 383,900 |
| March | 194,890 | 10,600 | 2,530 | 6,287 | 386,600 |
| April | 185,550 | 11,500 | 3,350 | 6,185 | 368,000 |
| May | 314,420 | 11,600 | 8,860 | 10,140 | 623,600 |
| June | 372,700 | 16,000 | 9,700 | 12,420 | 739,200 |
| July | 370,500 | 12,800 | 11,100 | 11,950 | 734,900 |
| August | 351,570 | 12,500 | 9,140 | 11,340 | 697,300 |
| September | 229,420 | 11,700 | 4,550 | 7,647 | 455,000 |
| Water year 1948-49 | 2,660,695 | 16,000 | 72 | 7,290 | 5,277,000 |

## Lake Walcott near Minidoka, Idaho

Location.--Staff gage, lat. 42°40', long. 113°29', in sec. 1, T. 9 S., R. 25 E., in powerhouse at Minidoka Dam on Snake River, 6 miles southeast of Minidoka. Datum of gage is 4,200.00 feet above datum of Bureau of Reclamation, which is 49.52 feet below mean sea level.

Records available.--April 1909 to September 1949.

Extremes.--Maximum contents during year, 98,560 acre-feet Sept. 5-6, 12 (gage height, 45.28 feet); minimum, 70,180 acre-feet Feb. 7 (gage height, 42.81 feet).
1909-49: Maximum contents, 110,740 acre-feet Aug. 8, 1922 (gage height, 46.28 feet); minimum, -101,410 acre-feet Nov. 17, 1941 (gage height, 15.19 feet).

Remarks.--Reservoir is formed by rock-fill dam with concrete core; storage began in 1909. Capacity, 107,240 acre-feet between gage heights 36.00 feet (sill of powerhouse penstock) and 46.00 feet (top of flashboards). Dead storage below gage height 36.00 feet, about 115,000 acre-feet. Gage read at 8 a.m. and 4 p.m. Contents given herein are computed from mean gage heights. Water used for power development and irrigation on Minidoka project of Bureau of Reclamation.

Cooperation.--Gage-height record and capacity table furnished by Bureau of Reclamation.

Contents, in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 88,430 | 88,200 | 89,130 | 93,550 | 77,000 | 83,310 | 89,130 | 90,640 | 92,620 | 96,150 | 96,870 | 92,160 |
| 2 | 89,360 | 89,600 | 90,530 | 93,200 | 77,000 | 79,930 | 89,360 | 91,230 | 93,320 | 96,150 | 96,750 | 90,760 |
| 3 | 88,900 | 88,550 | 90,760 | 93,320 | 76,770 | 80,040 | 87,960 | 92,620 | 95,550 | 96,390 | 97,110 | 93,550 |
| 4 | 85,980 | 90,290 | 90,990 | 93,090 | 77,450 | 79,370 | 86,220 | 93,550 | 96,390 | 96,030 | 96,750 | 96,150 |
| 5 | 85,640 | 91,690 | 91,920 | 93,320 | 77,790 | 79,030 | 91,110 | 95,180 | 96,510 | 96,150 | 96,630 | 98,560 |
| 6 | 88,080 | 92,160 | 85,400 | 93,320 | 75,650 | 79,710 | 92,160 | 95,790 | 97,470 | 95,670 | 96,150 | 98,560 |
| 7 | 89,360 | 92,860 | 87,030 | 93,670 | 70,180 | 80,380 | 92,390 | 95,670 | 97,590 | 95,670 | 94,720 | 98,080 |
| 8 | 90,290 | 89,600 | 88,200 | 95,670 | 78,800 | 80,380 | 91,570 | 95,910 | 97,110 | 94,950 | 94,250 | 96,990 |
| 9 | 91,460 | 90,530 | 89,600 | 95,670 | 77,680 | 77,230 | 92,970 | 96,390 | 96,390 | 94,250 | 94,250 | 96,870 |
| 10 | 91,230 | 91,920 | 90,640 | 95,430 | 76,770 | 76,320 | 93,200 | 95,670 | 96,150 | 94,490 | 94,600 | 96,630 |
| 11 | 89,480 | 92,860 | 91,920 | 94,250 | 76,770 | 75,650 | 93,550 | 94,720 | 95,070 | 94,950 | 94,840 | 97,350 |
| 12 | 89,940 | 94,250 | 91,920 | 93,670 | 76,550 | 75,200 | 91,690 | 94,020 | 95,670 | 95,180 | 94,250 | 98,560 |
| 13 | 90,990 | 94,950 | 85,870 | 93,320 | 76,770 | 78,130 | 92,390 | 93,550 | 95,430 | 95,070 | 94,370 | 98,320 |
| 14 | 91,570 | 95,180 | 86,920 | 93,790 | 77,450 | 79,590 | 93,550 | 93,670 | 96,150 | 95,070 | 94,840 | 97,230 |
| 15 | 91,230 | 92,860 | 88,430 | 94,950 | 77,560 | 78,770 | 93,550 | 93,550 | 95,910 | 94,720 | 96,270 | 95,430 |
| 16 | 92,390 | 94,950 | 89,600 | 93,550 | 77,680 | 78,350 | 93,200 | 93,550 | 95,790 | 94,020 | 96,990 | 94,250 |
| 17 | 91,230 | 94,490 | 91,110 | 86,800 | 77,900 | 79,820 | 93,080 | 93,550 | 96,750 | 94,250 | 96,990 | 95,180 |
| 18 | 89,480 | 96,750 | 92,390 | 89,250 | 77,560 | 79,930 | 92,510 | 93,900 | 96,390 | 96,150 | 97,350 | 96,630 |
| 19 | 90,180 | 97,590 | 92,620 | 92,160 | 81,510 | 76,770 | 90,760 | 92,620 | 96,150 | 96,150 | 96,870 | 96,270 |
| 20 | 92,040 | 98,200 | 93,550 | 95,670 | 82,640 | 73,170 | 87,730 | 91,230 | 96,630 | 95,180 | 97,350 | 95,430 |
| 21 | 94,250 | 97,350 | 93,320 | 94,950 | 82,860 | 71,830 | 89,600 | 91,920 | 96,270 | 96,870 | 96,870 | 95,430 |
| 22 | 94,250 | 94,250 | 93,090 | 95,180 | 82,980 | 75,310 | 89,830 | 92,860 | 95,670 | 96,630 | 96,270 | 96,390 |
| 23 | 93,550 | 94,020 | 93,090 | 95,430 | 83,200 | 76,770 | 89,250 | 93,900 | 95,550 | 96,630 | 96,630 | 97,110 |
| 24 | 92,740 | 92,860 | 93,200 | 90,060 | 83,090 | 77,560 | 88,900 | 95,070 | 94,950 | 95,550 | 96,750 | 97,590 |
| 25 | 90,290 | 94,600 | 93,200 | 84,470 | 79,140 | 77,230 | 89,600 | 95,910 | 95,070 | 95,180 | 96,630 | 97,720 |
| 26 | 90,180 | 92,270 | 93,090 | 84,010 | 82,980 | 75,200 | 90,290 | 95,790 | 94,020 | 95,910 | 96,150 | 96,390 |
| 27 | 90,640 | 94,720 | 93,320 | 83,540 | 77,340 | 75,420 | 91,460 | 94,840 | 95,910 | 95,670 | 96,510 | 95,550 |
| 28 | 90,990 | 94,140 | 93,090 | 78,800 | 79,260 | 78,130 | 92,160 | 93,790 | 95,670 | 97,350 | 96,390 | 96,870 |
| 29 | 91,460 | 90,180 | 93,550 | 77,110 | - | 79,710 | 89,830 | 93,670 | 94,840 | 97,590 | 96,510 | 96,150 |
| 30 | 91,230 | 91,690 | 93,320 | 78,690 | - | 82,980 | 88,900 | 95,180 | 96,150 | 97,840 | 95,910 | 95,310 |
| 31 | 90,640 | - | 93,090 | 78,020 | - | 86,570 | - | 93,550 | - | 96,870 | 93,550 | - |

Monthly gage height and contents, water year October 1948 to September 1949

| Date | Gage height (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept.30..... | 44.43 | 88,550 | - |
| Oct. 31..... | 44.61 | 90,640 | +2,090 |
| Nov. 30..... | 44.70 | 91,690 | +1,050 |
| Dec. 31..... | 44.82 | 93,090 | +1,400 |
| Calendar year 1948... | - | - | +11,690 |
| Jan. 31..... | 43.51 | 78,020 | -15,070 |
| Feb. 28..... | 43.62 | 79,260 | +1,240 |
| Mar. 31..... | 44.26 | 86,570 | +7,310 |
| Apr. 30..... | 44.46 | 88,900 | +2,330 |
| May 31..... | 44.86 | 93,550 | +4,650 |
| June 30..... | 45.08 | 96,150 | +2,600 |
| July 31..... | 45.14 | 96,870 | +720 |
| Aug. 31..... | 44.86 | 93,550 | -3,320 |
| Sept.30..... | 45.01 | 95,310 | +1,760 |
| Water year 1948-49... | - | - | +6,760 |

## Snake River near Minidoka, Idaho

Location.--Water-stage recorder, lat. 42°40', long. 113°30', in sec. 2, T. 9 S., R. 25 E., 1 mile downstream from Minidoka Dam and 6 miles southeast of Minidoka. Datum of gage is 4,132.2 feet above mean sea level (river-profile survey).

Records available.--April 1910 to September 1949. August 1895 to December 1899 and May 1901 to December 1910 at site at Montgomery Ferry, 6 miles downstream.

Extremes.--Maximum discharge during year, 14,300 second-feet June 8 (gage height, 9.27 feet); minimum, 96 second-feet Nov. 30 (gage height, 1.65 feet).
1910-49: Maximum discharge, 45,900 second-feet June 21, 1918 (gage height, 16.02 feet); minimum, 59 second-feet Nov. 18, 1936 (gage height, 1.56 feet).

Remarks.--Records good. Flow regulated by American Falls Reservoir (see p. 23), Lake Walcott (see preceding page), and other reservoirs, having a combined usable capacity of about 3,300,000 acre-feet; many diversions above station for irrigation.

Cooperation.--Gage-height record furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,690 | 2,320 | 4,630 | 5,800 | 6,250 | 8,600 | 4,410 | 8,600 | 8,450 | 8,450 | 8,690 | 8,420 |
| 2 | 1,640 | 2,120 | 4,610 | 5,750 | *5,940 | *9,110 | 5,140 | 8,510 | 8,390 | 8,480 | 8,750 | 8,420 |
| 3 | 1,690 | 1,880 | 4,000 | 5,750 | 5,750 | 8,330 | 5,140 | 8,330 | 11,000 | 8,630 | 8,780 | 8,120 |
| 4 | 1,640 | 1,980 | 3,950 | 5,750 | 5,700 | 8,420 | 4,180 | 8,330 | 11,400 | 8,630 | 8,870 | 8,210 |
| 5 | 1,600 | 1,950 | 3,950 | 5,750 | 5,700 | 7,970 | 3,470 | 8,390 | 11,200 | 8,630 | 8,780 | 8,060 |
| 6 | 1,480 | 1,910 | 4,000 | 5,750 | 5,200 | 8,030 | 5,050 | 8,480 | 12,300 | 8,450 | 8,900 | 7,730 |
| 7 | 1,450 | 1,900 | 4,300 | 5,700 | 4,900 | 8,480 | 5,100 | 8,270 | 14,100 | 8,420 | 9,050 | 7,730 |
| 8 | 1,280 | 1,690 | 4,600 | 5,850 | 5,100 | 8,540 | 5,190 | 8,360 | 13,800 | 8,480 | 9,080 | 7,410 |
| 9 | 1,280 | 1,690 | 5,120 | 6,350 | 5,600 | 7,020 | 5,080 | 8,180 | 12,100 | 8,600 | 8,780 | 7,500 |
| 10 | 1,290 | 1,670 | 4,870 | 6,350 | 6,300 | 6,380 | 5,120 | 8,060 | 10,400 | 8,540 | 8,540 | 7,270 |
| 11 | 1,280 | 1,680 | 4,810 | *6,350 | 6,200 | 6,080 | 5,100 | 8,060 | 9,890 | 8,510 | 8,600 | 7,300 |
| 12 | 1,290 | 1,580 | 4,550 | 6,000 | 5,800 | 5,950 | 5,170 | 8,060 | 8,930 | 8,750 | 8,840 | 7,020 |
| 13 | 1,290 | 1,580 | *4,400 | 5,900 | 5,800 | 7,100 | 5,210 | 8,120 | 8,420 | 8,840 | 8,930 | 6,410 |
| 14 | 1,310 | 1,580 | 4,300 | 5,850 | 6,100 | 7,970 | 5,140 | 8,330 | 8,390 | 8,810 | 9,210 | 5,440 |
| 15 | 1,350 | 2,570 | 4,200 | 6,800 | 6,300 | 6,900 | 5,120 | 8,360 | 8,420 | 8,600 | 9,210 | 5,560 |
| 16 | 1,330 | 2,460 | 4,200 | 5,900 | 6,500 | 7,530 | 5,080 | 8,330 | 8,450 | 8,810 | 8,990 | 5,540 |
| 17 | 1,310 | 2,560 | 4,500 | 4,900 | 6,900 | 8,150 | 4,980 | 8,390 | 8,660 | 9,080 | 8,870 | 6,150 |
| 18 | 1,380 | 2,470 | 5,000 | 4,800 | 7,300 | 8,270 | 4,960 | 8,060 | 9,640 | 9,110 | 8,870 | 5,850 |
| 19 | 1,660 | 2,440 | 5,600 | 4,850 | 8,200 | 6,760 | 5,120 | 8,480 | 9,790 | 9,240 | 8,900 | 5,240 |
| 20 | 1,390 | 2,470 | 6,000 | 5,500 | 9,400 | 5,880 | 5,260 | 8,330 | 8,510 | 9,480 | 8,810 | 5,300 |
| 21 | 1,670 | 2,440 | 5,800 | 6,000 | 10,400 | 4,190 | 5,240 | 8,240 | 9,610 | 9,140 | 8,840 | 5,010 |
| 22 | 1,720 | 2,830 | 5,700 | *6,500 | 10,800 | 4,120 | 5,420 | 8,060 | 9,860 | 9,110 | 8,900 | 4,480 |
| 23 | 1,930 | 2,790 | 5,700 | 7,800 | 11,000 | 4,850 | 5,370 | 7,940 | 12,000 | 9,110 | 8,840 | 4,280 |
| 24 | 1,930 | 2,910 | 5,700 | 8,400 | 10,700 | 5,370 | 5,640 | 7,820 | 12,900 | 9,240 | 8,720 | 4,370 |
| 25 | 1,950 | 2,800 | 5,700 | 7,900 | 9,000 | 5,330 | 5,950 | 7,730 | 9,980 | 9,330 | 8,810 | 4,480 |
| 26 | 1,440 | 2,960 | 5,700 | 7,100 | 8,000 | 5,350 | 6,360 | 7,880 | 8,960 | 9,300 | 8,870 | 4,390 |
| 27 | 1,440 | 2,890 | 5,700 | 7,200 | 8,500 | 5,240 | 6,820 | 7,880 | 8,870 | 9,240 | 8,330 | 4,040 |
| 28 | 1,450 | 2,520 | 5,800 | 7,000 | 6,900 | 5,050 | 7,330 | 7,910 | 8,030 | 9,110 | 8,120 | 3,230 |
| 29 | 1,450 | 2,490 | 6,000 | 6,500 | - | 4,120 | 8,270 | 8,120 | 8,180 | 8,960 | 8,090 | 3,170 |
| 30 | 1,450 | 3,290 | 5,850 | 6,350 | - | 3,490 | 8,930 | 8,240 | 8,450 | 8,900 | 8,150 | 3,230 |
| 31 | 1,700 | - | 5,750 | 6,250 | - | 3,560 | - | 8,270 | - | 8,720 | 8,660 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 46,760 | 1,950 | 1,280 | 1,508 | 92,750 |
| November | 68,420 | 3,290 | 1,580 | 2,281 | 135,700 |
| December | 154,990 | 6,000 | 3,950 | 5,000 | 307,400 |
| Calendar year 1948 | 2,471,020 | 22,500 | 1,280 | 6,751 | 4,901,000 |
| January | 192,650 | 8,400 | 4,800 | 6,215 | 382,100 |
| February | 200,240 | 11,000 | 4,900 | 7,151 | 397,200 |
| March | 202,140 | 9,110 | 3,490 | 6,521 | 400,900 |
| April | 164,350 | 8,930 | 3,470 | 5,478 | 326,000 |
| May | 254,120 | 8,600 | 7,730 | 8,197 | 504,000 |
| June | 299,080 | 14,100 | 8,030 | 9,969 | 593,200 |
| July | 274,700 | 9,480 | 8,420 | 8,861 | 544,900 |
| August | 271,780 | 9,210 | 8,090 | 8,767 | 539,100 |
| September | 179,360 | 8,420 | 3,170 | 5,979 | 355,800 |
| Water year 1948-49 | 2,308,590 | 14,100 | 1,280 | 6,325 | 4,578,000 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 3-8, Dec. 12 to Mar. 1.

## Snake River at Milner, Idaho

Location.--Water-stage recorder, lat. 42°32', long. 114°01', in sec. 29, T. 10 S., R. 21 E., at Milner, a quarter of a mile downstream from Milner Dam. Altitude of gage, 4,062 feet (from river-profile map).

Records available.--May 1909 to September 1949.

Extremes.--Maximum discharge during year, 11,300 second-feet Feb. 24 (gage height, 14.38 feet); minimum, 11 second-feet July 12-14 (gage height, 1.74 feet).
1909-49: Maximum discharge, 44,400 second-feet June 12, 1909 (gage height, 20.10 feet, site and datum then in use); minimum, 2 second-feet Mar. 17-28, 1936 (gage height, 1.18 feet).

Remarks.--Records good. Flow regulated by American Falls Reservoir (see p. 23), Lake Walcott (see p. 26) and other reservoirs having a combined usable capacity of about 3,300,000 acre-feet. About 1,330,000 acres of land irrigated by diversion from river and its tributaries above station, from which the return flow in large part enters Snake River between Milner and King Hill stations. Flow includes some stored water released for use downstream by Idaho Power Co.

Cooperation.-Gage-height record furnished by Twin Falls Canal Co. and North Side Canal Co.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 228 | 419 | 3,090 | 5,040 | 5,630 | 8,490 | 4,870 | 533 | 291 | 13 | 232 | 317 |
| 2 | 252 | 440 | 3,960 | 4,980 | 5,430 | 9,090 | 5,520 | 314 | 515 | 15 | 232 | 290 |
| 3 | 658 | 443 | 3,750 | 5,030 | 5,230 | 7,740 | 5,060 | 396 | 3,190 | 49 | 232 | 403 |
| 4 | 630 | 450 | 3,040 | 5,040 | 5,160 | 7,800 | 5,040 | 165 | 3,810 | 329 | 234 | 429 |
| 5 | 534 | 475 | 2,720 | 5,040 | 5,190 | 7,920 | 3,360 | 165 | 3,630 | 117 | 232 | 479 |
| 6 | 563 | 493 | 3,390 | 5,060 | 5,190 | 7,240 | 1,520 | 367 | 3,800 | 380 | 228 | 368 |
| 7 | 541 | 511 | 3,700 | 5,030 | 4,710 | 7,640 | 3,450 | 173 | 6,280 | 65 | 223 | 371 |
| 8 | 433 | 497 | 3,720 | 4,960 | 4,360 | 7,780 | 3,680 | 388 | 6,390 | 12 | 223 | 1,100 |
| 9 | 666 | 511 | 4,250 | 5,290 | 5,020 | 7,600 | 3,910 | 232 | 4,920 | 16 | 244 | 237 |
| 10 | 840 | 522 | 4,380 | 5,480 | 5,590 | 6,120 | 4,190 | 41 | 3,000 | 16 | 223 | 239 |
| 11 | 889 | 694 | 4,140 | 5,500 | 5,720 | 5,800 | 4,380 | 20 | 1,820 | 13 | 221 | 246 |
| 12 | 972 | 862 | 4,120 | 5,500 | 5,580 | 5,540 | 4,050 | 18 | 1,140 | 11 | 214 | 479 |
| 13 | 1,150 | 845 | 4,100 | 5,260 | 5,490 | 5,500 | 3,920 | 18 | 686 | 11 | 212 | 678 |
| 14 | 1,120 | 563 | 3,900 | 5,030 | 5,520 | 6,940 | 4,090 | 18 | 746 | 11 | 216 | 274 |
| 15 | 924 | 479 | 3,480 | 5,250 | 5,790 | 6,900 | 3,360 | 18 | 594 | 13 | 416 | 239 |
| 16 | 918 | 1,740 | 3,110 | 6,040 | 6,180 | 6,160 | 2,550 | 18 | 377 | 12 | 511 | 239 |
| 17 | 606 | 1,860 | 3,330 | 4,990 | 6,340 | 7,190 | 2,240 | 387 | 690 | 12 | 239 | 230 |
| 18 | 423 | 2,280 | 4,470 | 4,150 | 6,930 | 7,490 | 1,500 | 556 | 1,010 | 181 | 320 | 787 |
| 19 | 450 | 2,460 | 4,910 | 3,990 | 7,760 | 7,260 | 575 | 123 | 2,030 | 228 | 223 | 566 |
| 20 | 534 | 2,330 | 5,100 | 4,020 | 9,260 | 5,740 | 365 | 152 | 786 | 232 | 368 | 230 |
| 21 | 662 | 2,240 | 5,120 | 4,840 | 9,930 | 5,220 | 287 | 16 | 1,480 | 234 | 280 | 685 |
| 22 | 1,180 | 2,090 | 5,030 | 5,410 | 10,300 | 3,350 | 825 | 20 | 1,560 | 232 | 274 | 930 |
| 23 | 1,180 | 2,130 | 4,770 | 5,920 | 10,500 | 3,250 | 531 | 20 | 2,780 | 232 | 346 | 436 |
| 24 | 1,180 | 1,980 | 4,630 | 7,080 | 10,700 | 4,470 | 175 | 20 | 4,970 | 230 | 447 | 230 |
| 25 | 1,180 | 1,920 | 4,860 | 7,820 | 10,100 | 4,930 | 175 | 20 | 1,940 | 230 | 312 | 232 |
| 26 | 1,170 | 2,180 | 4,910 | 7,010 | 7,900 | 4,350 | 175 | 22 | 346 | 266 | 454 | 733 |
| 27 | 1,100 | 1,910 | 4,990 | 6,390 | 8,400 | 4,330 | 175 | 22 | 1,020 | 299 | 530 | 1,480 |
| 28 | 825 | 1,910 | 5,150 | 6,550 | 5,760 | 4,850 | 175 | 20 | 136 | 232 | 249 | 972 |
| 29 | 582 | 1,880 | 5,200 | 6,350 | - | 4,210 | 171 | 14 | 13 | 232 | 232 | 254 |
| 30 | 409 | 1,700 | 5,110 | 5,660 | - | 3,300 | 221 | 13 | 12 | 232 | 232 | 269 |
| 31 | 419 | - | 4,890 | 5,560 | - | 3,130 | - | 26 | - | 232 | 232 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 23,218 | 1,180 | 228 | 749 | 46,050 |
| November | 38,814 | 2,460 | 419 | 1,294 | 76,990 |
| December | 131,320 | 5,200 | 2,720 | 4,236 | 260,500 |
| Calendar year 1948 | 1,048,819 | 14,700 | 10 | 2,866 | 2,080,000 |
| January | 169,270 | 7,820 | 3,990 | 5,460 | 335,700 |
| February | 189,670 | 10,700 | 4,360 | 6,774 | 376,200 |
| March | 187,330 | 9,090 | 3,130 | 6,043 | 371,600 |
| April | 70,540 | 5,520 | 171 | 2,351 | 139,900 |
| May | 4,315 | 556 | 13 | 139 | 8,560 |
| June | 59,962 | 6,390 | 12 | 1,999 | 118,900 |
| July | 4,387 | 380 | 11 | 142 | 8,700 |
| August | 8,831 | 530 | 212 | 285 | 17,520 |
| September | 14,422 | 1,480 | 230 | 481 | 28,610 |
| Water year 1948-49 | 902,079 | 10,700 | 11 | 2,471 | 1,789,000 |

## Snake River near Kimberly, Idaho

Location.--Water-stage recorder, lat. 42°36', long. 114°22', in NW¼ sec. 4, T. 10 S., R. 18 E., 1,200 feet downstream from Twin Falls power plant, 2½ miles upstream from Shoshone Falls, and 4 miles north of Kimberly. Datum of gage is 3,362.67 feet above mean sea level (levels by Idaho Power Co.).

Records available.--July 1923 to September 1949.

Extremes.--Maximum discharge during year, 10,700 second-feet Feb. 24 (gage height, 14.96 feet); minimum, 16 second-feet May 15 (gage height, 1.24 feet); minimum daily, 211 second-feet May 15.

1923-49: Maximum discharge, 27,200 second-feet July 4, 1927 (gage height, 14.76 feet, site and datum then in use), from rating curve extended above 20,000 second-feet; minimum recorded, 10 second-feet May 17, 1944 (gage height, 1.15 feet); minimum daily recorded, 139 second-feet July 4, 1941.

Remarks.--Records good. Flow regulated by Twin Falls power plant and several reservoirs above station. Practically entire flow is diverted at Milner during irrigation season; no diversion between Milner and Kimberly.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 696 | a820 | 2,440 | 5,360 | a6,000 | 8,500 | 4,680 | 646 | 572 | 425 | 688 | 742 |
| 2 | 696 | a830 | 4,560 | 5,360 | a5,800 | 9,790 | 5,950 | 948 | 605 | 414 | 658 | 754 |
| 3 | 694 | a840 | 4,120 | 5,360 | a5,600 | 8,100 | 5,390 | 868 | 2,270 | 400 | 694 | 878 |
| 4 | 1,190 | a860 | 3,470 | 5,360 | 5,520 | 8,130 | 5,360 | 820 | 4,180 | 453 | 636 | 813 |
| 5 | 1,080 | a900 | 3,350 | 5,360 | 5,480 | 8,180 | 4,340 | 496 | 4,070 | 848 | 743 | 891 |
| 6 | 1,010 | 990 | 3,600 | a5,380 | 5,650 | 7,560 | 2,390 | 596 | 3,810 | 651 | 700 | 1,020 |
| 7 | 1,050 | 910 | 4,180 | a5,340 | 5,350 | 7,810 | 2,520 | 707 | 6,310 | 753 | 697 | 938 |
| 8 | 1,020 | 910 | 4,040 | a5,300 | 4,730 | 8,020 | 4,130 | 485 | 6,810 | 520 | 679 | 1,260 |
| 9 | 954 | 903 | 4,610 | a5,600 | 5,020 | 8,280 | 4,230 | 826 | 5,710 | 417 | 694 | 1,370 |
| 10 | 1,300 | 910 | 4,900 | a5,820 | 5,670 | 6,520 | 4,490 | 724 | 3,740 | 422 | 714 | 864 |
| 11 | 1,380 | 930 | 4,560 | a5,820 | 6,160 | 6,230 | 4,820 | 442 | 2,670 | 403 | 674 | 716 |
| 12 | 1,430 | 1,230 | 4,440 | a5,800 | 5,940 | 5,960 | 4,640 | 352 | 1,720 | 421 | 694 | 777 |
| 13 | 1,600 | 1,340 | 4,490 | a5,700 | 5,800 | 5,680 | 4,280 | 423 | 1,410 | 435 | 671 | 1,010 |
| 14 | 1,640 | 1,230 | 4,320 | a5,420 | 5,800 | 7,020 | 4,510 | 367 | 1,110 | 364 | 691 | 1,140 |
| 15 | 1,560 | 950 | 4,020 | a5,650 | 5,950 | 7,400 | 4,030 | 211 | 1,170 | 468 | 729 | 900 |
| 16 | 1,380 | 1,530 | 3,600 | a6,350 | 6,430 | 6,430 | 3,030 | 418 | 1,000 | 428 | 744 | 745 |
| 17 | 1,350 | 2,250 | 3,710 | 5,100 | 6,590 | 7,230 | 2,620 | 412 | 956 | 432 | 986 | 620 |
| 18 | 998 | 2,260 | 4,500 | 4,740 | 7,040 | 7,780 | 2,280 | 984 | 1,500 | 465 | 839 | 858 |
| 19 | 875 | 2,780 | 5,330 | 4,400 | 7,780 | 7,750 | 1,170 | 866 | 2,360 | 614 | 735 | 1,470 |
| 20 | 886 | 2,760 | 5,420 | 4,430 | 9,300 | 6,010 | 1,070 | 570 | 1,800 | 634 | 776 | 1,000 |
| 21 | 946 | 2,620 | 5,620 | 4,850 | 10,000 | 5,750 | 854 | 556 | 1,640 | 662 | 771 | 759 |
| 22 | 1,400 | 2,580 | 5,460 | 5,650 | 10,400 | 3,910 | 784 | 279 | 2,150 | 677 | 853 | 1,450 |
| 23 | 1,620 | 2,430 | 5,200 | 6,090 | 10,600 | 3,500 | 1,480 | 502 | 2,450 | 696 | 767 | 1,220 |
| 24 | 1,620 | 2,440 | 4,980 | 7,380 | 10,600 | 4,460 | 731 | 338 | 5,500 | 654 | 848 | 1,030 |
| 25 | 1,700 | 2,180 | 5,280 | 7,940 | 10,300 | 5,300 | 806 | 402 | 3,250 | 671 | 924 | 805 |
| 26 | 1,720 | 2,190 | 5,230 | 7,460 | 8,800 | 4,800 | 570 | 379 | 1,640 | 690 | 896 | 775 |
| 27 | 1,580 | 2,200 | 5,280 | 6,940 | 9,120 | 4,610 | 526 | 353 | 1,170 | 678 | 931 | 1,480 |
| 28 | 1,470 | 2,330 | 5,460 | a6,950 | 5,960 | 5,100 | 551 | 412 | 1,250 | 734 | 1,070 | 1,970 |
| 29 | 1,210 | 2,310 | 5,570 | a6,600 | - | 4,790 | 583 | 287 | 659 | 655 | 854 | 1,180 |
| 30 | a820 | 2,250 | 5,490 | a6,150 | - | 3,900 | 582 | 380 | 399 | 677 | 768 | 868 |
| 31 | a820 | - | 5,360 | a5,950 | - | 3,190 | - | 476 | - | 643 | 745 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 37,695 | 1,720 | 694 | 1,216 | 74,770 |
| November | 49,663 | 2,780 | 820 | 1,655 | 98,500 |
| December | 142,590 | 5,620 | 2,440 | 4,600 | 282,800 |
| Calendar year 1948 | 1,173,607 | 14,200 | 316 | 3,207 | 2,328,000 |
| January | 179,610 | 7,940 | 4,400 | 5,794 | 356,300 |
| February | 197,390 | 10,600 | 4,730 | 7,050 | 391,500 |
| March | 197,690 | 9,790 | 3,190 | 6,377 | 392,100 |
| April | 83,397 | 5,950 | 526 | 2,780 | 165,400 |
| May | 16,525 | 984 | 211 | 533 | 32,780 |
| June | 73,881 | 6,810 | 399 | 2,463 | 146,500 |
| July | 17,404 | 848 | 364 | 561 | 34,520 |
| August | 23,849 | 1,070 | 636 | 769 | 47,300 |
| September | 30,303 | 1,970 | 620 | 1,010 | 60,100 |
| Water year 1948-49 | 1,049,997 | 10,600 | 211 | 2,877 | 2,083,000 |

a No gage-height record; discharge computed on basis of records for stations at Milner and near Buhl.

## Snake River near Buhl, Idaho

Location.--Water-stage recorder, lat. 42°40', long. 114°43', in NW¼ sec. 9, T. 9 S., R. 15 E., 2 miles downstream from Niagara Springs, 3¾ miles upstream from outlet of Clear Lakes, and 6 miles northeast of Buhl. Datum of gage is 2,952.9 feet above mean sea level, by stadia levels.

Records available.--December 1946 to September 1949.

Extremes.--Maximum discharge during year, 12,400 second-feet Feb. 23 (gage height, 6.61 feet); minimum, 1,950 second-feet May 16 (gage height, 0.45 foot).
1946-49: Maximum discharge, 23,100 second-feet June 13, 1947 (gage height, 10.34 feet); minimum observed, 1,900 second-feet May 5, 1947 (gage height, 0.38 foot).

Remarks.--Records good. Flow regulated by Twin Falls and Shoshone Falls power plants and several reservoirs above station. No diversion except by small ranch ditches between this station and station at Milner, where practically entire flow is diverted during irrigation season.

Rating table, water year 1948-49 (gage height, in feet, and discharge in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 0.5 | 1,990 | 2.0 | 3,450 | 5.0 | 8,550 |
| .8 | 2,240 | 3.0 | 4,750 | 6.0 | 10,900 |
| 1.2 | 2,580 | 4.0 | 6,450 | 6.6 | 12,400 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,710 | 2,790 | 3,890 | 6,790 | 7,590 | 9,400 | 5,420 | 2,260 | 2,460 | 2,290 | 2,560 | 2,750 |
| 2 | 2,700 | 2,820 | 6,170 | 7,010 | 7,420 | 11,600 | 7,460 | 2,390 | 2,450 | 2,290 | 2,590 | 2,790 |
| 3 | 2,720 | 2,780 | 5,920 | 6,810 | 7,170 | 9,860 | 7,030 | 2,540 | 2,660 | 2,270 | 2,580 | 2,890 |
| 4 | 2,850 | 2,740 | 5,620 | 6,870 | 7,050 | 9,750 | 6,830 | 2,540 | 5,690 | 2,200 | 2,540 | 2,930 |
| 5 | 3,220 | 2,730 | 4,970 | 6,850 | 6,970 | 9,880 | 6,390 | 2,540 | 6,080 | 2,330 | 2,540 | 2,920 |
| 6 | 3,090 | 2,740 | 4,970 | 6,850 | 7,130 | 9,470 | 4,280 | 2,350 | 5,770 | 2,530 | 2,540 | 3,080 |
| 7 | 3,060 | 2,750 | 5,720 | 6,790 | 6,890 | 9,330 | 3,450 | 2,310 | 7,380 | 2,460 | 2,530 | 3,100 |
| 8 | 3,060 | 2,750 | 5,690 | 6,750 | 6,240 | 9,630 | 5,580 | 2,380 | 8,640 | 2,450 | 2,510 | 3,060 |
| 9 | 2,980 | 2,740 | 5,990 | 6,850 | 6,470 | 9,880 | 5,600 | 2,260 | 7,800 | 2,340 | 2,540 | 3,820 |
| 10 | 3,060 | 2,770 | 6,490 | 7,360 | 7,150 | 8,550 | 5,990 | 2,380 | 6,190 | 2,230 | 2,550 | 3,190 |
| 11 | 3,280 | 2,760 | 6,410 | 7,290 | 7,850 | 7,870 | 6,280 | 2,360 | 4,750 | 2,220 | 2,550 | 2,980 |
| 12 | 3,340 | 2,850 | 6,170 | 7,440 | 7,500 | 7,590 | 6,210 | 2,190 | 3,940 | 2,220 | 2,540 | 2,900 |
| 13 | 3,400 | 3,090 | 6,170 | 7,310 | 7,270 | 7,130 | 5,760 | 2,070 | 3,500 | 2,220 | 2,540 | 3,000 |
| 14 | 3,570 | 3,110 | 6,040 | 7,030 | 7,210 | 8,110 | 5,880 | 2,060 | 3,110 | 2,190 | 2,540 | 3,200 |
| 15 | 3,560 | 2,950 | 5,690 | 6,930 | 7,380 | 8,960 | 5,650 | 2,070 | 3,090 | 2,190 | 2,550 | 3,080 |
| 16 | 3,360 | 2,790 | 5,280 | 7,420 | 7,890 | 8,180 | 4,780 | 2,010 | 2,990 | 2,200 | 2,600 | 2,870 |
| 17 | 3,290 | 3,940 | 5,120 | 7,800 | 8,250 | 8,410 | 4,330 | 2,180 | 2,850 | 2,200 | 2,680 | 2,820 |
| 18 | 3,120 | 3,980 | 5,620 | 6,530 | 9,010 | 9,360 | 4,200 | 2,180 | 2,900 | 2,260 | 2,760 | 2,790 |
| 19 | 2,880 | 4,490 | 6,830 | 6,060 | 9,750 | 9,470 | 3,300 | 2,750 | 3,850 | 2,300 | 2,620 | 3,160 |
| 20 | 2,810 | 4,530 | 6,930 | 6,010 | 10,900 | 8,020 | 2,750 | 2,560 | 4,210 | 2,380 | 2,620 | 3,360 |
| 21 | 2,860 | 4,380 | 7,250 | 6,170 | 11,700 | 7,310 | 2,790 | 2,380 | 3,230 | 2,490 | 2,640 | 3,040 |
| 22 | 2,960 | 4,320 | 7,010 | 7,010 | 12,100 | 5,810 | 2,550 | 2,320 | 3,810 | 2,540 | 2,660 | 3,020 |
| 23 | 3,490 | 4,190 | 6,850 | 7,380 | 12,200 | 5,130 | 2,620 | 2,190 | 3,940 | 2,550 | 2,740 | 3,530 |
| 24 | 3,560 | 4,250 | 6,540 | 8,690 | 12,300 | 5,490 | 2,930 | 2,260 | 6,220 | 2,540 | 2,740 | 3,180 |
| 25 | 3,570 | 3,970 | 6,750 | 9,650 | 12,200 | 6,620 | 2,470 | 2,170 | 5,690 | 2,520 | 2,810 | 3,070 |
| 26 | 3,580 | 4,070 | 6,790 | 9,240 | 10,800 | 6,430 | 2,340 | 2,160 | 3,990 | 2,570 | 2,860 | 2,850 |
| 27 | 3,500 | 3,810 | 6,850 | 8,440 | 10,900 | 6,040 | 2,230 | 2,170 | 2,950 | 2,620 | 2,870 | 2,950 |
| 28 | 3,400 | 4,060 | 6,970 | 8,730 | 8,180 | 6,370 | 2,200 | 2,230 | 3,140 | 2,600 | 2,980 | 3,950 |
| 29 | 3,190 | 4,110 | 7,030 | 8,410 | - | 6,600 | 2,190 | 2,250 | 2,730 | 2,590 | 2,950 | 3,710 |
| 30 | 2,980 | 4,030 | 7,070 | 7,890 | - | 5,670 | 2,180 | 2,150 | 2,490 | 2,580 | 2,840 | 3,120 |
| 31 | 2,820 | - | 6,990 | 7,360 | - | 4,850 | - | 2,270 | - | 2,570 | 2,760 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 97,970 | 3,580 | 2,700 | 3,160 | 194,300 |
| November | 103,290 | 4,530 | 2,730 | 3,443 | 204,900 |
| December | 191,790 | 7,250 | 3,890 | 6,187 | 380,400 |
| Calendar year 1948 | 1,808,130 | 15,900 | 2,090 | 4,940 | 3,586,000 |
| January | 227,720 | 9,650 | 6,010 | 7,346 | 451,700 |
| February | 243,470 | 12,300 | 6,240 | 8,695 | 482,900 |
| March | 246,770 | 11,600 | 4,850 | 7,960 | 489,500 |
| April | 131,670 | 7,460 | 2,180 | 4,389 | 261,200 |
| May | 70,930 | 2,750 | 2,010 | 2,288 | 140,700 |
| June | 128,500 | 8,640 | 2,450 | 4,283 | 254,900 |
| July | 73,940 | 2,620 | 2,190 | 2,385 | 146,700 |
| August | 82,330 | 2,980 | 2,510 | 2,656 | 163,300 |
| September | 93,110 | 3,950 | 2,750 | 3,104 | 184,700 |
| Water year 1948-49 | 1,691,490 | 12,300 | 2,010 | 4,634 | 3,355,000 |

## Snake River below Lower Salmon Falls, near Hagerman, Idaho

Location.--Water-stage recorder, lat. 42°51'36", long. 114°54'42", in lot 3, sec. 2, T. 7 S., R. 13 E., half a mile downstream from lower Salmon Falls power plant, 1 mile upstream from Big Wood (Malad) River, and 3½ miles north of Hagerman. Datum of gage is 2,727.7 feet above sea level, datum of 1929, supplementary adjustment of 1947, by stadia levels.

Records available.--November 1937 to September 1949.

Extremes.--Maximum discharge during year, 17,300 second-feet Feb. 25; maximum gage height, 11.66 feet Sept. 21; minimum discharge, probably less than 1,500 second-feet at times on each day Sept. 19-30; minimum daily discharge, 4,880 second-feet July 10.
1937-49: Maximum discharge, 28,800 second-feet June 7, 1943 (gage height, 15.66 feet), from rating curve extended above 22,000 second-feet; minimum, probably less than 1,500 second-feet at times on each day Sept. 19-30, 1949; minimum daily, that of July 10, 1949.

Remarks.--Records excellent except those for periods of fragmentary or no gage-height record, which are good. Flow regulated by Lower Salmon Falls power plant and many reservoirs above station. Practically entire flow at Milner diverted during irrigation season; only minor diversions below Milner.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7,430 | 7,330 | 8,340 | 11,200 | 12,400 | 12,500 | 9,320 | 6,190 | 6,800 | 6,760 | 7,670 | 7,160 |
| 2 | 7,370 | 7,410 | 10,300 | 11,400 | 12,200 | 15,800 | 11,500 | 6,230 | 6,820 | 6,240 | 6,570 | 7,140 |
| 3 | 7,370 | 7,330 | 10,500 | 11,300 | 12,000 | 14,500 | 11,200 | 6,190 | 7,570 | 6,110 | 6,960 | 7,080 |
| 4 | 7,330 | 7,250 | 10,300 | 11,200 | 11,800 | 13,900 | 11,000 | 6,380 | 8,950 | 6,000 | 6,680 | 7,110 |
| 5 | 7,650 | 7,270 | 9,410 | 11,200 | 11,800 | 14,100 | 10,800 | 6,340 | 10,600 | 6,440 | 6,930 | 7,610 |
| 6 | 7,730 | 7,270 | 9,370 | 11,200 | 11,700 | 14,000 | 8,740 | 6,440 | 10,300 | 6,000 | 6,940 | 7,860 |
| 7 | 7,630 | 7,210 | 10,100 | 11,200 | f11,400 | 13,400 | 7,820 | 6,090 | 10,900 | 5,390 | 6,500 | 7,680 |
| 8 | 7,650 | 7,230 | 10,300 | 11,200 | 10,500 | 13,700 | 9,080 | 6,300 | 13,200 | 5,390 | 7,060 | 7,330 |
| 9 | 7,610 | 7,250 | 10,500 | 11,100 | 10,500 | 14,000 | 9,630 | 6,800 | 12,400 | 5,390 | 7,020 | 8,390 |
| 10 | 7,530 | 7,330 | 11,200 | 11,300 | 11,300 | 13,200 | 10,200 | 6,190 | 10,800 | 4,880 | 6,820 | 7,990 |
| 11 | 7,730 | 7,330 | 11,300 | 11,600 | 12,100 | 12,100 | 10,500 | 6,570 | 9,150 | 6,680 | 6,870 | 7,420 |
| 12 | 7,730 | 7,390 | 11,000 | 11,800 | 11,900 | 11,900 | 10,400 | 6,150 | 8,380 | 6,530 | 7,520 | 7,820 |
| 13 | 7,730 | 7,550 | 11,000 | 11,800 | 11,600 | 11,500 | 10,000 | 6,150 | 7,960 | 6,680 | 6,270 | 7,390 |
| 14 | 7,960 | 7,670 | 10,900 | 11,500 | 11,400 | 11,700 | 9,980 | 6,130 | 7,170 | 5,730 | 6,450 | 7,900 |
| 15 | 7,880 | 7,590 | 10,300 | 11,400 | 11,600 | 13,200 | 9,920 | 5,390 | 7,170 | 6,550 | 6,930 | 8,030 |
| 16 | 7,940 | 7,390 | 9,900 | 11,400 | 12,200 | 12,900 | 9,210 | 6,340 | 7,270 | 6,440 | 7,010 | 7,710 |
| 17 | 7,710 | 8,190 | 9,450 | 12,000 | 12,700 | 12,300 | 8,700 | 6,170 | 7,170 | 5,390 | 6,850 | 5,670 |
| 18 | 7,670 | 8,510 | 9,950 | 11,800 | 13,400 | 13,400 | 8,360 | 6,340 | 7,070 | 6,360 | 6,750 | f8,920 |
| 19 | 7,390 | 8,910 | 11,200 | 11,700 | 14,400 | 13,600 | 7,860 | 6,320 | 7,690 | 6,820 | 7,260 | f8,320 |
| 20 | 7,370 | 9,150 | 11,500 | 11,600 | 15,200 | 13,000 | 6,740 | 6,890 | 8,780 | 7,980 | 6,510 | f7,710 |
| 21 | 7,410 | 9,080 | 11,800 | 11,400 | 16,000 | 11,600 | 6,620 | 6,680 | 7,880 | 6,340 | 7,040 | f7,550 |
| 22 | 7,410 | 8,990 | 11,600 | 11,000 | 16,400 | 10,900 | 6,550 | 6,090 | 7,250 | 7,240 | 6,910 | f7,900 |
| 23 | 7,770 | 8,890 | 11,400 | 11,500 | 16,600 | 9,500 | 6,400 | 6,740 | 7,920 | 6,520 | 7,420 | f7,690 |
| 24 | 8,000 | 8,840 | 11,100 | 12,600 | 16,700 | 9,650 | 6,240 | 6,340 | 9,760 | 6,370 | 7,120 | f7,870 |
| 25 | 7,940 | 8,680 | 11,100 | f13,700 | 16,700 | 10,800 | 6,740 | 6,440 | 10,500 | 6,590 | 6,930 | f7,740 |
| 26 | 7,880 | 8,590 | 11,200 | f13,600 | 15,500 | 11,000 | 6,400 | 6,340 | 8,490 | 6,780 | 7,220 | f8,480 |
| 27 | 7,790 | 8,240 | 11,300 | f12,900 | 15,000 | 10,400 | 5,940 | 6,240 | 7,710 | 7,100 | 7,300 | f7,680 |
| 28 | 7,650 | 8,440 | 11,400 | 12,900 | 13,300 | 10,500 | 5,640 | 6,240 | 6,780 | 6,660 | 7,190 | f9,550 |
| 29 | 7,510 | 8,740 | 11,500 | 13,100 | - | 11,100 | 5,860 | 5,900 | 7,170 | 7,060 | 7,150 | f8,430 |
| 30 | 7,270 | 8,630 | 11,500 | 12,800 | - | 10,200 | 5,940 | 6,820 | 6,780 | 6,880 | 7,350 | f8,190 |
| 31 | 7,330 | - | 11,400 | 12,500 | - | 9,450 | - | 6,550 | - | 6,530 | 7,380 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 236,370 | 8,000 | 7,270 | 7,625 | 468,800 |
| November | 239,680 | 9,150 | 7,210 | 7,989 | 475,400 |
| December | 332,120 | 11,800 | 8,340 | 10,710 | 658,800 |
| Calendar year 1948 | 3,385,180 | 20,600 | 5,940 | 9,249 | 6,714,000 |
| January | 366,900 | 13,700 | 11,100 | 11,840 | 727,700 |
| February | 368,300 | 16,700 | 10,500 | 13,150 | 730,500 |
| March | 379,800 | 15,800 | 9,450 | 12,250 | 753,300 |
| April | 253,290 | 11,500 | 5,640 | 8,443 | 502,400 |
| May | 195,980 | 6,890 | 5,390 | 6,322 | 388,700 |
| June | 256,390 | 13,200 | 6,780 | 8,546 | 508,500 |
| July | 197,830 | 7,980 | 4,880 | 6,382 | 392,400 |
| August | 216,580 | 7,670 | 6,270 | 6,986 | 429,600 |
| September | 233,320 | 9,550 | 5,670 | 7,777 | 462,800 |
| Water year 1948-49 | 3,276,560 | 16,700 | 4,880 | 8,977 | 6,499,000 |

f Fragmentary gage-height record; discharge computed from partly estimated gage heights.
Note.--No gage-height record Jan. 10-24, Jan. 29 to Feb. 6; discharge computed on basis of records for stations near Buhl and at King Hill.

## Snake River at King Hill, Idaho

Location.--Water-stage recorder, lat. 43°00', long. 115°11', in SW¼ sec. 7, T. 5 S., R. 11 E., 300 feet east of railroad station at King Hill and 20 miles downstream from Big Wood River. Datum of gage is 2,492.3 feet above mean sea level, by stadia levels.

Records available.--May 1909 to September 1949.

Extremes.--Maximum discharge during year, 18,100 second-feet Feb. 25 (gage height, 9.54 feet); minimum, probably less than 2,500 second-feet at times when stage was below intake on several days during period Sept. 21-30; minimum daily, 5,790 second-feet July 10.

1909-49: Maximum discharge observed, 47,200 second-feet June 22, 1918 (gage height, 16.3 feet), from rating curve extended above 30,000 second-feet; minimum, probably less than 2,500 second-feet at times when stage was below intake on several days during period Sept. 21-30, 1949; minimum daily, 4,760 second-feet July 7-9, Aug. 15, 16, 1910.

Remarks.--Records good. Flow regulated by power plants at Lower Salmon Falls and near Bliss and many reservoirs above station. Practically entire flow at Milner diverted during irrigation season; flow at King Hill is then derived largely from springs and seepage entering below Milner.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9,200 | 9,240 | 10,200 | 13,100 | 13,500 | 13,400 | 10,700 | 7,210 | 8,160 | 8,040 | 8,810 | 8,690 |
| 2 | 9,000 | 9,320 | 11,100 | 13,100 | 13,500 | 16,600 | 12,700 | 6,980 | 8,380 | 7,510 | 8,160 | 8,560 |
| 3 | 8,930 | 9,300 | 12,500 | 13,000 | 13,300 | 16,400 | 13,300 | 7,180 | 8,740 | 7,480 | 8,030 | 8,750 |
| 4 | 8,900 | 9,200 | 12,400 | 13,000 | 13,200 | 15,500 | 12,900 | 7,300 | 9,830 | 7,160 | 8,000 | 8,750 |
| 5 | 9,200 | 9,120 | 11,300 | 12,900 | 13,100 | 15,800 | 12,900 | 7,280 | 12,000 | 7,670 | 8,080 | 9,040 |
| 6 | 9,270 | 9,120 | 11,100 | 13,000 | 13,000 | 15,800 | 11,400 | 7,320 | 11,800 | 7,710 | 8,080 | 9,380 |
| 7 | 9,200 | 9,120 | 11,700 | 13,000 | 13,200 | 15,300 | 9,970 | 7,140 | 11,700 | 6,880 | 7,710 | 9,510 |
| 8 | 9,220 | 9,100 | 12,100 | 13,000 | 12,400 | 15,600 | 10,400 | 7,210 | 14,500 | 6,680 | 8,420 | 9,210 |
| 9 | 9,220 | 9,100 | 12,100 | 12,900 | 12,100 | 15,800 | 11,600 | 7,440 | 14,000 | 6,300 | 8,080 | 9,790 |
| 10 | 9,300 | 9,170 | 12,800 | 13,200 | 12,800 | 15,500 | 11,800 | 7,210 | 12,400 | 5,790 | 8,210 | 9,810 |
| 11 | 9,500 | 9,200 | 13,200 | 13,400 | 13,700 | 14,300 | 12,100 | 7,090 | 10,800 | 7,920 | 8,170 | 9,190 |
| 12 | 9,520 | 9,170 | 12,900 | 13,600 | 13,600 | 14,600 | 12,100 | 7,140 | 9,670 | 7,580 | 8,410 | 9,570 |
| 13 | 9,520 | 9,320 | 12,800 | 13,500 | 13,300 | 13,800 | 11,700 | 7,090 | 9,200 | 8,020 | 7,950 | 9,160 |
| 14 | 9,720 | 9,520 | 12,500 | 13,400 | 13,100 | 14,000 | 11,200 | 7,000 | 8,660 | 7,390 | 7,720 | 9,810 |
| 15 | 9,770 | 9,520 | 12,100 | 13,100 | 13,200 | 15,500 | 11,200 | 6,790 | 8,500 | 7,460 | 8,210 | 9,710 |
| 16 | 9,740 | 9,270 | 11,700 | 13,200 | 13,600 | 16,000 | 10,700 | 6,930 | 8,620 | 8,040 | 8,180 | 9,980 |
| 17 | 9,540 | 9,770 | 11,100 | a13,900 | 14,300 | 15,500 | 9,870 | 7,280 | 8,520 | 6,680 | 8,220 | 7,480 |
| 18 | 9,520 | 10,500 | 11,400 | a13,600 | 14,800 | 15,900 | 9,700 | 7,440 | 8,470 | 7,640 | 8,110 | 10,500 |
| 19 | 9,220 | 10,700 | 12,500 | a13,400 | 15,700 | 16,300 | 9,370 | 7,530 | 8,930 | 7,870 | 8,440 | 10,300 |
| 20 | 9,120 | 11,200 | 13,200 | a13,300 | 16,400 | 16,300 | 8,380 | 8,020 | 10,200 | 8,230 | 7,760 | f9,860 |
| 21 | 9,240 | 11,000 | 13,400 | a13,200 | 17,200 | 14,500 | 7,690 | 7,870 | 9,640 | 8,210 | 8,950 | f9,440 |
| 22 | 9,270 | 10,900 | 13,300 | a13,100 | 17,600 | 13,700 | 7,940 | a7,640 | 8,620 | 7,710 | 8,690 | f9,860 |
| 23 | 9,520 | 10,800 | 13,200 | a13,500 | 17,900 | 11,700 | 7,870 | a7,600 | 9,270 | 7,920 | 8,630 | f9,580 |
| 24 | 9,870 | 10,700 | 12,900 | a13,800 | 18,000 | 11,700 | 7,830 | a7,400 | 10,300 | 7,510 | 8,600 | f9,500 |
| 25 | 9,840 | 10,600 | 12,700 | 15,400 | 17,900 | 12,700 | 7,690 | a7,500 | 12,400 | 8,260 | 8,480 | f9,840 |
| 26 | 9,740 | 10,500 | 12,900 | 15,700 | 17,100 | 12,900 | 7,320 | a7,420 | 9,920 | 8,020 | 8,470 | f10,800 |
| 27 | 9,640 | 10,300 | 13,000 | 15,000 | 16,100 | 12,100 | 7,280 | 7,370 | 9,140 | 8,200 | 8,680 | f9,250 |
| 28 | 9,520 | 10,000 | 13,100 | 14,500 | 15,400 | 11,900 | 6,660 | 7,320 | 8,110 | 8,030 | 8,680 | f9,340 |
| 29 | 9,420 | 10,500 | 13,200 | 14,700 | - | 12,500 | 7,050 | 7,140 | 8,470 | 8,240 | 8,950 | f10,600 |
| 30 | 9,140 | 10,500 | 13,200 | 14,300 | - | 11,800 | 6,820 | 7,830 | 8,160 | 7,990 | 8,830 | f10,000 |
| 31 | 9,200 | - | 13,200 | 13,500 | - | 11,100 | - | 7,990 | - | 7,870 | 8,970 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 291,010 | 9,870 | 8,900 | 9,387 | 577,200 |
| November | 295,760 | 11,200 | 9,100 | 9,859 | 586,600 |
| December | 384,800 | 13,400 | 10,200 | 12,410 | 763,200 |
| Calendar year 1948 | 3,959,150 | 21,700 | 7,180 | 10,820 | 7,853,000 |
| January | 421,300 | 15,700 | 12,900 | 13,590 | 835,600 |
| February | 409,000 | 18,000 | 12,100 | 14,610 | 811,200 |
| March | 444,500 | 16,600 | 11,100 | 14,340 | 881,700 |
| April | 298,140 | 13,300 | 6,660 | 9,938 | 591,400 |
| May | 227,660 | 8,020 | 6,790 | 7,344 | 451,600 |
| June | 297,110 | 14,500 | 8,110 | 9,904 | 589,300 |
| July | 236,010 | 8,260 | 5,790 | 7,613 | 468,100 |
| August | 258,680 | 8,970 | 7,710 | 8,345 | 513,100 |
| September | 285,260 | 10,800 | 7,480 | 9,509 | 565,800 |
| Water year 1948-49 | 3,849,230 | 18,000 | 5,790 | 10,550 | 7,635,000 |

a No gage-height record; discharge computed on basis of records for stations near Murphy and below Lower Salmon Falls, near Hagerman.

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

## Snake River near Murphy, Idaho

Location.--Water-stage recorder, lat. 43°18', long. 116°26', in NE¼ sec. 35, T. 1 S., R. 1 W., 4¼ miles downstream from Swan Falls power plant and 7½ miles northeast of Murphy. Datum of gage is 2,271.3 feet above mean sea level, by stadia levels.

Drainage area.--41,900 square miles.

Records available.--August to October 1912, August 1913 to September 1949.

Extremes.--Maximum discharge during year, 19,100 second-feet Mar. 3 (gage height, 7.62 feet); minimum recorded, 3,900 second-feet July 9 (gage height, 2.53 feet); minimum daily, 6,640 second-feet July 9.
1912-49: Maximum discharge, 47,300 second-feet June 22, 1918 (gage height, 13.95 feet, site and datum then in use); minimum recorded, that of July 9, 1949; minimum daily, 5,440 second-feet Aug. 4, 1914.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. Flow regulated by many reservoirs above station. Diurnal fluctuation caused by Swan Falls power plant. Several diversions by pumping between this station and station at King Hill.

Rating table, water year 1948-49 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used May 27 to Sept. 30)

| | | | |
|---|---|---|---|
| 3.7 | 6,630 | 5.5 | 11,900 |
| 4.0 | 7,450 | 6.0 | 13,500 |
| 4.5 | 8,890 | 6.6 | 15,400 |
| 5.0 | 10,400 | 7.4 | 18,200 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9,520 | 9,640 | 10,700 | 12,800 | 13,800 | 15,400 | 12,000 | 8,980 | 9,460 | 8,470 | 8,040 | 8,890 |
| 2 | 9,550 | 9,610 | 10,400 | 13,000 | 13,600 | 14,100 | 11,700 | 9,280 | 9,520 | 8,160 | 8,420 | 8,560 |
| 3 | 9,280 | 9,730 | 11,600 | 13,000 | 13,600 | 17,600 | 13,600 | 8,710 | 9,700 | 7,900 | 8,100 | 8,560 |
| 4 | 9,130 | 9,670 | 12,500 | 13,000 | 13,500 | 17,200 | 14,200 | 8,920 | 10,000 | 7,810 | 7,930 | 8,710 |
| 5 | 9,250 | 9,640 | 12,400 | 13,000 | 13,400 | 16,600 | 13,800 | 9,040 | 11,200 | 7,590 | 7,930 | 8,390 |
| 6 | 9,490 | 9,460 | 11,400 | 13,000 | 13,200 | 16,800 | 13,800 | 8,860 | 12,900 | 7,760 | 7,980 | 8,950 |
| 7 | 9,580 | 9,370 | 11,300 | 13,000 | 12,700 | 16,800 | 12,300 | 8,890 | 12,800 | 7,870 | 7,930 | 9,310 |
| 8 | 9,490 | 9,550 | 11,800 | 13,000 | 12,700 | 16,100 | 11,300 | 8,620 | 12,600 | 7,530 | 7,930 | 9,250 |
| 9 | 9,580 | 9,490 | 12,200 | 13,000 | 12,500 | 16,600 | 12,100 | 8,560 | 15,400 | 6,640 | 8,010 | 8,980 |
| 10 | 9,460 | 9,430 | 12,100 | 13,000 | 12,300 | 16,700 | 13,200 | 9,040 | 14,900 | 7,010 | 8,160 | 9,570 |
| 11 | 9,610 | 9,610 | 13,000 | 13,400 | 13,000 | 16,300 | 13,600 | 8,920 | 13,300 | 6,780 | 8,130 | 9,550 |
| 12 | 9,700 | 9,550 | 13,300 | 13,500 | 13,700 | 15,200 | 14,000 | 8,890 | 11,600 | 6,660 | 8,160 | 9,090 |
| 13 | 9,820 | 9,610 | 12,800 | 13,500 | 13,600 | 15,500 | 14,400 | 9,160 | 10,600 | 7,930 | 8,330 | 9,390 |
| 14 | 9,730 | 9,730 | 12,700 | 13,500 | 13,400 | 14,600 | 14,000 | 8,950 | 10,100 | 7,670 | 8,240 | 9,030 |
| 15 | 9,850 | 9,850 | 12,600 | 13,300 | 13,200 | 14,900 | 13,200 | 9,010 | 9,580 | 7,870 | 7,900 | 9,720 |
| 16 | 9,910 | 9,880 | 12,200 | 13,300 | 13,100 | 16,600 | 13,300 | 9,160 | 9,310 | 7,760 | 7,840 | 9,600 |
| 17 | 10,000 | 9,730 | 11,600 | 13,300 | 13,900 | 17,200 | 12,600 | 9,400 | 9,310 | 7,450 | 8,040 | 9,720 |
| 18 | 9,790 | 9,940 | 11,300 | 14,100 | 14,400 | 16,500 | 12,000 | 10,100 | 9,250 | 7,560 | 8,240 | 8,300 |
| 19 | 9,820 | 10,900 | 11,500 | 13,600 | 15,200 | 17,200 | 12,000 | 10,400 | 9,100 | 7,140 | 8,130 | 9,580 |
| 20 | 9,550 | 10,900 | 12,800 | 13,200 | 16,200 | 17,700 | 11,700 | 10,200 | 9,610 | 7,450 | 8,240 | 10,200 |
| 21 | 9,460 | 11,500 | 13,200 | 13,200 | 16,800 | 17,400 | 10,700 | 10,500 | 10,800 | 7,930 | 8,100 | 9,930 |
| 22 | 9,430 | 11,200 | 13,300 | 13,300 | 17,600 | 15,400 | 10,100 | 9,970 | 10,100 | 8,270 | 8,470 | 9,510 |
| 23 | 9,490 | 11,100 | 13,300 | 13,600 | 18,100 | 14,800 | 10,000 | 9,940 | 9,100 | 7,790 | 8,590 | 9,910 |
| 24 | 9,640 | 11,100 | 13,200 | 13,800 | 18,500 | 13,000 | 10,200 | 9,760 | 9,760 | 8,040 | 8,530 | 9,730 |
| 25 | 10,000 | 10,900 | 13,200 | 14,000 | 18,600 | 12,900 | 10,400 | 9,340 | 10,800 | 7,870 | 8,650 | 9,340 |
| 26 | 10,100 | 10,900 | 13,200 | 15,800 | 18,500 | 13,800 | 10,200 | 9,340 | 12,400 | 7,810 | 8,330 | 9,850 |
| 27 | 10,000 | 10,700 | 13,300 | 15,800 | 17,400 | 13,700 | 9,760 | 9,070 | 10,000 | 7,840 | 8,360 | 10,400 |
| 28 | 10,000 | 10,500 | 13,200 | 15,000 | 16,700 | 13,100 | 9,610 | 8,860 | 9,580 | 8,130 | 8,500 | 9,680 |
| 29 | 9,880 | 10,200 | 13,100 | 14,700 | - | 12,700 | 8,860 | 8,890 | 8,330 | 7,980 | 8,680 | 9,900 |
| 30 | 9,850 | 10,700 | 12,800 | 14,600 | - | 13,300 | 9,250 | 8,800 | 8,300 | 8,130 | 8,650 | 10,600 |
| 31 | 9,610 | - | 12,900 | 14,400 | - | 12,600 | - | 9,400 | - | 7,950 | 8,650 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 299,570 | 10,100 | 9,130 | 9,664 | 594,200 |
| November | 304,090 | 11,500 | 9,370 | 10,140 | 603,200 |
| December | 384,900 | 13,300 | 10,400 | 12,420 | 763,400 |
| Calendar year 1948 | 4,103,240 | 23,400 | 7,250 | 11,210 | 8,138,000 |
| January | 422,700 | 15,800 | 12,800 | 13,640 | 838,400 |
| February | 413,200 | 18,600 | 12,300 | 14,760 | 819,600 |
| March | 478,300 | 17,700 | 12,600 | 15,430 | 948,700 |
| April | 357,880 | 14,400 | 8,860 | 11,930 | 709,800 |
| May | 286,960 | 10,500 | 8,560 | 9,257 | 569,200 |
| June | 319,410 | 15,400 | 8,300 | 10,650 | 633,500 |
| July | 238,750 | 8,470 | 6,640 | 7,702 | 473,600 |
| August | 255,190 | 8,680 | 7,840 | 8,232 | 506,200 |
| September | 282,200 | 10,600 | 8,300 | 9,407 | 559,700 |
| Water year 1948-49 | 4,043,150 | 18,600 | 6,640 | 11,080 | 8,020,000 |

Note.--No gage-height record Dec. 24-29, Jan. 2-12, Jan. 14 to Feb. 15; discharge computed on basis of records for stations at King Hill and at Weiser.

## Snake River at Weiser, Idaho

Location.--Water-stage recorder, lat. 44°15', long. 116°59', in sec. 31, T. 11 N., R. 5 W., a third of a mile upstream from highway bridge at Weiser and half a mile downstream from Weiser River. Datum of gage is 2,087.09 feet above mean sea level, datum of 1929.

Records available.--October 1910 to September 1949. Fragmentary gage-height record obtained by U. S. Weather Bureau since 1895.

Extremes.--Maximum discharge during year, 34,300 second-feet Mar. 19 (gage height, 8.01 feet); minimum not determined, occurred during period of no gage-height record; minimum daily, 8,800 second-feet July 10.

1910-49: Maximum discharge observed, 83,100 second-feet May 23, 1921 (gage height, 13.60 feet); minimum observed, 5,100 second-feet Aug. 5, 1924 (gage height, 1.35 feet).

Flood of Mar. 3, 1910, reached a stage of 15.7 feet on old U. S. Weather Bureau gage (discharge, about 100,000 second-feet). Flood in June 1894 was considerably higher.

Remarks.--Records good. Flow regulated by many reservoirs above station. Some diurnal fluctuation caused by Swan Falls power plant. Some diversions below Murphy for irrigation.

Cooperation.--Gage-height record collected in cooperation with U. S. Weather Bureau.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | a13,700 | a13,000 | a13,100 | 16,200 | 16,400 | 25,100 | 22,600 | 19,000 | a28,100 | a10,600 | a10,600 | 11,000 |
| 2 | a13,500 | g12,900 | *13,000 | 15,900 | 16,400 | 24,400 | 22,000 | 20,200 | a27,000 | a10,300 | a10,800 | 11,100 |
| 3 | a13,300 | a13,200 | 13,300 | 15,000 | 16,400 | 22,700 | 21,700 | 21,100 | a24,500 | a10,300 | a10,800 | 11,100 |
| 4 | 13,100 | 13,100 | 14,000 | 15,000 | 15,800 | 27,300 | 23,500 | 20,400 | a22,800 | a10,200 | a10,800 | 10,900 |
| 5 | 13,100 | g13,300 | 15,400 | 14,500 | 15,800 | 27,500 | 25,000 | 19,500 | a21,900 | a9,800 | a10,300 | 11,000 |
| 6 | a12,800 | 12,800 | 15,200 | 15,300 | 15,000 | 26,900 | 25,300 | 17,700 | a22,600 | a9,600 | a10,200 | 11,000 |
| 7 | a13,200 | 12,300 | 14,500 | 14,700 | 15,000 | 28,000 | 26,200 | 18,700 | a24,100 | a9,600 | a10,000 | 11,100 |
| 8 | a13,500 | 11,900 | 14,300 | 15,300 | 15,000 | 27,500 | 25,700 | 19,100 | a24,000 | a9,600 | a10,000 | 11,500 |
| 9 | g14,100 | 12,100 | 14,500 | 15,000 | 15,000 | 26,400 | 24,200 | 19,800 | g23,300 | a9,200 | a10,000 | 11,700 |
| 10 | 13,800 | 12,100 | 15,200 | 15,800 | 15,500 | 27,600 | 25,200 | 20,300 | a24,100 | a8,800 | a10,300 | 11,700 |
| 11 | a13,400 | 12,000 | 15,200 | 15,800 | 16,500 | 29,200 | 26,800 | 21,800 | a24,600 | a9,400 | a10,300 | 11,800 |
| 12 | a13,100 | 11,900 | 16,100 | 15,800 | 17,500 | 30,100 | 27,400 | 23,500 | a23,000 | a9,400 | a10,500 | 12,700 |
| 13 | a13,100 | 12,300 | 17,200 | 16,000 | 17,000 | 30,200 | 28,400 | 24,300 | a21,200 | a9,000 | a10,600 | 12,500 |
| 14 | a13,100 | 12,300 | 16,700 | 15,700 | 17,000 | 29,400 | 26,800 | 25,300 | a19,000 | a10,000 | a10,700 | 12,400 |
| 15 | a13,000 | 12,400 | 16,200 | 15,200 | 17,500 | 27,800 | 25,400 | 26,300 | a16,800 | a9,800 | g10,300 | 12,500 |
| 16 | a13,300 | a12,500 | 16,100 | 16,000 | 18,200 | 29,200 | 24,200 | 27,900 | a15,100 | a10,200 | g10,400 | 12,500 |
| 17 | g13,400 | a12,500 | a15,200 | 16,500 | 21,000 | 31,900 | 24,000 | 29,500 | a13,800 | g10,500 | a10,200 | 12,600 |
| 18 | a13,400 | a12,600 | 14,300 | 16,500 | 22,600 | 32,700 | 24,400 | 28,500 | a13,000 | a10,200 | a10,300 | 12,900 |
| 19 | a13,100 | a13,000 | 14,100 | 16,300 | 26,000 | 33,900 | 24,600 | 28,500 | a12,800 | a10,200 | g10,500 | 12,300 |
| 20 | a13,200 | a13,500 | 14,100 | 16,200 | 27,300 | 33,200 | 24,600 | 29,600 | a12,800 | a9,900 | a10,500 | 11,900 |
| 21 | a13,100 | g13,600 | a15,500 | 15,800 | *25,800 | 32,900 | 23,000 | 29,400 | a13,100 | a10,000 | a10,500 | 13,100 |
| 22 | a12,800 | a14,200 | 16,300 | 15,800 | 25,200 | 32,400 | 20,800 | 28,400 | a13,500 | a10,600 | a10,800 | 13,100 |
| 23 | a12,700 | a14,200 | 16,100 | 16,000 | 27,200 | 30,100 | 20,100 | 27,100 | a13,100 | a10,800 | a10,800 | 12,900 |
| 24 | g12,700 | a13,900 | 15,000 | 16,300 | 29,200 | 28,200 | 20,600 | 25,700 | a12,100 | g11,000 | g10,600 | 12,700 |
| 25 | a12,800 | a13,900 | 15,000 | 16,500 | 29,000 | 25,600 | 21,300 | 24,200 | a11,800 | a11,000 | g10,800 | 12,900 |
| 26 | a13,100 | a13,900 | 14,500 | 17,500 | 28,000 | a26,500 | 21,300 | 23,800 | g13,000 | g10,900 | 10,700 | 12,400 |
| 27 | a13,000 | a13,700 | 15,400 | *18,000 | 27,300 | a26,500 | 20,600 | 24,100 | a13,800 | g10,400 | 10,900 | 12,600 |
| 28 | a13,000 | g13,500 | 15,600 | 17,500 | 26,300 | g24,800 | 20,200 | 24,800 | a12,900 | a10,500 | 10,700 | 13,000 |
| 29 | g13,100 | a13,200 | 15,700 | 17,500 | - | 23,600 | 20,300 | 26,000 | a11,600 | a10,600 | 11,000 | 13,100 |
| 30 | a13,000 | a13,000 | 16,000 | 17,000 | - | 22,800 | 19,100 | a27,000 | a10,700 | a10,500 | 11,200 | 12,900 |
| 31 | g12,900 | - | 16,100 | 16,500 | - | 22,800 | - | a28,000 | - | a10,500 | 11,100 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 408,400 | 14,100 | 12,700 | 13,170 | 810,000 |
| November | 388,800 | 14,200 | 11,900 | 12,960 | 771,200 |
| December | 468,900 | 17,200 | 13,000 | 15,130 | 930,000 |
| Calendar year 1948 | 6,295,210 | 47,400 | 9,640 | 17,200 | 12,480,000 |
| January | 497,100 | 18,000 | 14,500 | 16,040 | 986,000 |
| February | 574,900 | 29,200 | 15,000 | 20,530 | 1,140,000 |
| March | 867,200 | 33,900 | 22,700 | 27,970 | 1,720,000 |
| April | 705,300 | 28,400 | 19,100 | 23,510 | 1,399,000 |
| May | 749,500 | 29,600 | 17,700 | 24,180 | 1,487,000 |
| June | 540,100 | 28,100 | 10,700 | 18,000 | 1,071,000 |
| July | 313,400 | 11,000 | 8,800 | 10,110 | 621,600 |
| August | 327,200 | 11,200 | 10,000 | 10,550 | 649,000 |
| September | 364,900 | 13,100 | 10,900 | 12,160 | 723,800 |
| Water year 1948-49 | 6,205,700 | 33,900 | 8,800 | 17,000 | 12,310,000 |

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for stations at Oxbow and near Murphy.

g Computed from graph based on gage readings or fragmentary gage-height record.

Note.--Stage-discharge relation affected by ice Dec. 24-28, Jan. 3 to Feb. 15.

## Snake River at Oxbow, Oreg.

Location.--Water-stage recorder, lat. 44°57', long. 116°51', in NW¼ sec. 16, T. 7 S., R. 48 E., at Oxbow, five-eighths of a mile upstream from intake of diversion tunnel for Oxbow power plant and 2½ miles upstream from Indian Creek. Datum of gage is 1,696.71 feet above mean sea level, datum of 1929, supplementary adjustment of 1947.

Records available.--May 1923 to September 1949.

Extremes.--Maximum discharge during year, 37,400 second-feet Mar. 19; maximum gage height, about 29 feet (ice jam), from floodmark, sometime during period Jan. 17-27; minimum, 8,320 second-feet July 11 (gage height, 7.55 feet).
1923-49: Maximum discharge, 74,600 second-feet Apr. 21, 1943; maximum gage height, that of January 1949; minimum, 4,890 second-feet Aug. 6, 1924 (gage height, 6.30 feet).

Remarks.--Records excellent except those for period of ice effect, which are good. Flow regulated by many reservoirs above station. Diurnal fluctuation caused by Swan Falls power plant. Some diversions below Weiser for irrigation.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 29 to Sept. 30)

| | | | | | |
|---|---|---|---|---|---|
| 7.8 | 9,000 | 9.0 | 12,800 | 12.0 | 25,100 |
| 8.0 | 9,570 | 10.0 | 16,500 | 13.0 | 30,200 |
| 8.5 | 11,100 | 11.0 | 20,600 | 14.2 | 36,600 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14,100 | 13,400 | 13,500 | 16,300 | 16,700 | 26,300 | 23,800 | 20,700 | 30,200 | 10,700 | 10,700 | 11,000 |
| 2 | 14,000 | 13,600 | 13,800 | 16,300 | 16,700 | 26,100 | 23,200 | 21,800 | 30,400 | 11,100 | 10,600 | 10,900 |
| 3 | 13,600 | 13,400 | 14,000 | 15,900 | 16,700 | 24,200 | 22,800 | 22,600 | 27,600 | 10,800 | 10,500 | 11,000 |
| 4 | 13,500 | 13,700 | *14,000 | 15,000 | 16,700 | 25,200 | 23,600 | 22,600 | 25,200 | 10,900 | 10,900 | 10,800 |
| 5 | 13,200 | 13,900 | 15,400 | 15,800 | 16,200 | 29,400 | 26,100 | 21,400 | 24,400 | 10,500 | 11,000 | 10,800 |
| 6 | 13,200 | 13,700 | 15,900 | 15,000 | 16,200 | 28,600 | 26,600 | 19,800 | 23,800 | 10,200 | 10,200 | 11,000 |
| 7 | 13,500 | 13,200 | 15,900 | 15,800 | 15,700 | 29,300 | 27,600 | 19,800 | 26,000 | 10,000 | 10,000 | 10,900 |
| 8 | 13,800 | 12,700 | 14,900 | 15,200 | 15,700 | 29,600 | 28,200 | 20,700 | 26,600 | 10,000 | 9,800 | 11,300 |
| 9 | 14,200 | 12,600 | 14,800 | 15,600 | 15,700 | 28,800 | 26,600 | 21,600 | 25,000 | 9,890 | 9,920 | 11,700 |
| 10 | 14,100 | 12,700 | 15,500 | 15,400 | 16,000 | 28,100 | 26,400 | 22,400 | 24,500 | 9,540 | 10,100 | 11,700 |
| 11 | 13,900 | 12,600 | 15,800 | 16,200 | 17,000 | 30,100 | 28,100 | 24,200 | 26,700 | 9,030 | 10,100 | 11,600 |
| 12 | 13,800 | 12,500 | 16,200 | 16,200 | 18,000 | 31,400 | 29,000 | 26,200 | 25,200 | 9,600 | 10,400 | 12,300 |
| 13 | 13,500 | 12,700 | 17,300 | 16,200 | 17,500 | 32,400 | 30,100 | 27,200 | 23,400 | 9,540 | 10,500 | 12,700 |
| 14 | 13,500 | 12,800 | 17,900 | 16,400 | 17,500 | 31,600 | 29,600 | 28,100 | 21,300 | 9,110 | 10,500 | 12,300 |
| 15 | 13,500 | 12,800 | 17,100 | 16,200 | 17,500 | 30,900 | 28,100 | 29,300 | 18,900 | 10,300 | 10,700 | 12,600 |
| 16 | 13,400 | 13,000 | 16,700 | 15,700 | 18,000 | 29,900 | 26,600 | 30,900 | 16,800 | 10,100 | 10,700 | 12,300 |
| 17 | 13,700 | 13,000 | 16,200 | 16,200 | 18,900 | *33,100 | 25,900 | 32,400 | 15,200 | 10,300 | 10,200 | 12,600 |
| 18 | 13,800 | 13,000 | 15,300 | 16,900 | 22,100 | 34,900 | 26,200 | 32,400 | 14,000 | 10,200 | 10,100 | 12,800 |
| 19 | 13,800 | 13,000 | 14,600 | 16,900 | 25,000 | 36,800 | 26,800 | 31,600 | 13,600 | 10,200 | 10,300 | 12,900 |
| 20 | 13,500 | 13,500 | 14,400 | 16,700 | 27,600 | 36,400 | 27,300 | 32,200 | 13,500 | 10,300 | 10,300 | 11,600 |
| 21 | 13,600 | 14,000 | 14,900 | 16,600 | 26,600 | 35,600 | 26,000 | 33,000 | 13,600 | 10,000 | 10,300 | 12,700 |
| 22 | 13,500 | 14,100 | 16,200 | 16,100 | 25,600 | 35,200 | 24,200 | 31,400 | 14,100 | 10,400 | 10,300 | 13,300 |
| 23 | 13,200 | 14,700 | 16,300 | 16,000 | 26,200 | 33,000 | 22,100 | 30,200 | 14,400 | 10,900 | 10,300 | 13,000 |
| 24 | 13,100 | 14,700 | 15,900 | 16,200 | 29,200 | 31,100 | 22,100 | 28,800 | 13,300 | 11,300 | 10,700 | 12,700 |
| 25 | 13,100 | 14,400 | 15,500 | 16,600 | 30,200 | 28,500 | 23,200 | 26,800 | 12,300 | 10,800 | 10,700 | 12,900 |
| 26 | 13,200 | 14,400 | 15,500 | 16,800 | 29,200 | 26,900 | 23,400 | 26,400 | 12,700 | 11,100 | 10,700 | 12,700 |
| 27 | 13,500 | 14,400 | 15,000 | 17,800 | 28,400 | 26,800 | 22,800 | 26,400 | 14,300 | 10,700 | 10,700 | 12,400 |
| 28 | 13,400 | 14,200 | 15,900 | *18,000 | 27,700 | 26,800 | 22,800 | 27,300 | 14,500 | 10,600 | 10,600 | 12,600 |
| 29 | 13,400 | 14,000 | 16,300 | 18,000 | - | 25,200 | 22,200 | 27,800 | 12,500 | 10,600 | 10,700 | 13,300 |
| 30 | 13,400 | 13,700 | 16,300 | 18,000 | - | 24,100 | 21,600 | 29,700 | 11,800 | 10,800 | 10,900 | 13,000 |
| 31 | 13,400 | - | 16,300 | 17,500 | - | 23,700 | - | 30,600 | - | 10,700 | 11,100 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 420,400 | 14,200 | 13,100 | 13,560 | 833,900 |
| November | 404,400 | 14,700 | 12,500 | 13,480 | 802,100 |
| December | 483,300 | 17,900 | 13,500 | 15,590 | 958,600 |
| Calendar year 1948 | 6,697,690 | 54,200 | 9,630 | 18,300 | 13,280,000 |
| January | 507,500 | 18,000 | 15,000 | 16,370 | 1,007,000 |
| February | 584,500 | 30,200 | 15,700 | 20,880 | 1,159,000 |
| March | 920,000 | 36,800 | 23,700 | 29,680 | 1,825,000 |
| April | 763,000 | 30,100 | 21,600 | 25,430 | 1,513,000 |
| May | 826,300 | 33,000 | 19,800 | 26,650 | 1,639,000 |
| June | 585,800 | 30,400 | 11,800 | 19,530 | 1,162,000 |
| July | 320,210 | 11,300 | 9,030 | 10,330 | 635,100 |
| August | 324,520 | 11,100 | 9,800 | 10,470 | 643,700 |
| September | 363,400 | 13,300 | 10,800 | 12,110 | 720,800 |
| Water year 1948-49 | 6,530,330 | 36,800 | 9,030 | 17,820 | 12,900,000 |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Jan. 10 to Feb. 15 (no gage-height record Jan. 17-27; discharge computed on basis of weather records and records for stations at King Hill, at Weiser, and near Clarkston.

## Snake River near Clarkston, Wash.

Location.--Water-stage recorder, lat. 46°25'30", long. 117°10'30", in lot 1, sec. 16, T. 11 N., R. 45 E., 2 miles upstream from Alpowa Creek, 7 miles downstream from Clarkston, and 134 miles upstream from mouth. Datum of gage is 670 feet above mean sea level (Corps of Engineers bench mark).

Drainage area.--103,200 square miles.

Records available.--October 1935 to September 1949 in reports of Geological Survey. October 1915 to September 1922 and August 1928 to September 1935 at site 66 miles downstream, published as Snake River at Riparia, in reports of Geological Survey. October 1909 to September 1933 (at site at Riparia) in State Water-Supply Bulletin 5.

Extremes.--Maximum discharge during year, 248,900 second-feet May 16 (gage height, 33.83 feet); minimum, 14,700 second-feet Sept. 6 (gage height, 9.97 feet); minimum daily, 17,200 second-feet Sept. 3, 6.

1909-49: Maximum discharge, 369,000 second-feet May 29, 1948 (gage height, 40.36 feet, from high-water mark in well); minimum observed, 10,600 second-feet Aug. 14, 18, 20, 24-28, 30, 31, Sept. 1, 2, 5, 1931, but may have been less during period of ice effect in January 1937.

Maximum stage known, 24.7 feet, Riparia site and datum, June 5, 1894, determined from floodmarks by U. S. Weather Bureau (discharge, 409,000 second-feet).

Remarks.--Records excellent. Small diversions by pumping between this station and station at Oxbow, Oreg. Large diurnal fluctuation caused by power plant on Clearwater River above Lewiston, Idaho.

Revisions (water years).--W 463: 1916. W 933: 1937.

Rating table, water year 1948-49 (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 10.4 | 16,500 | 15.0 | 40,600 | 26.0 | 138,900 |
| 10.9 | 18,700 | 16.0 | 47,200 | 28.0 | 163,400 |
| 11.4 | 21,100 | 18.0 | 62,000 | 30.0 | 190,400 |
| 12.0 | 24,000 | 20.0 | 78,300 | 32.0 | 219,800 |
| 13.0 | 29,200 | 22.0 | 96,500 | 34.0 | 251,700 |
| 14.0 | 34,600 | 24.0 | 116,600 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24,400 | 23,200 | 25,000 | 27,400 | 28,600 | 67,800 | 51,500 | 120,800 | 150,800 | 42,100 | 21,600 | 17,800 |
| 2 | 24,000 | 24,300 | 24,700 | 27,400 | 28,000 | 69,000 | 54,400 | 121,300 | 141,200 | 40,900 | 21,300 | 17,800 |
| 3 | 23,600 | 26,200 | 25,600 | 27,800 | 28,200 | 68,400 | 55,900 | 152,100 | 126,900 | 41,600 | 21,000 | 17,200 |
| 4 | 23,100 | 29,300 | 26,500 | 27,500 | 27,200 | 69,000 | 57,200 | 136,100 | 115,700 | 38,600 | 20,900 | 17,500 |
| 5 | 23,600 | 28,500 | 26,400 | 27,100 | 28,000 | 63,600 | 64,700 | 119,600 | 112,800 | 38,000 | 20,700 | 17,300 |
| 6 | 26,100 | 26,900 | 27,600 | 26,100 | 27,100 | 58,500 | 76,100 | 109,300 | 118,900 | 37,200 | 21,100 | 17,200 |
| 7 | 25,900 | 25,600 | 27,700 | 23,200 | 26,400 | 58,000 | 86,900 | 105,500 | 127,600 | 36,900 | 18,300 | 17,800 |
| 8 | 25,600 | 24,500 | 27,700 | 25,300 | 26,500 | 56,300 | 95,300 | 111,000 | 132,900 | 35,100 | 18,900 | 17,900 |
| 9 | 26,900 | 23,400 | 26,400 | 26,400 | 26,300 | 59,300 | 97,100 | 127,600 | 127,400 | 33,900 | 18,400 | 18,300 |
| 10 | 25,600 | 22,500 | 26,200 | 26,600 | 27,400 | 62,900 | 92,600 | 150,700 | 121,400 | 32,400 | 18,500 | 18,300 |
| 11 | 24,500 | 22,400 | 27,200 | 24,700 | 27,600 | 65,000 | 96,200 | 175,800 | 120,400 | 31,400 | 18,700 | 18,600 |
| 12 | 24,800 | 22,700 | 28,600 | 26,200 | 26,800 | 61,600 | 106,600 | 200,300 | 116,300 | 30,000 | 18,600 | 19,100 |
| 13 | 24,200 | 23,300 | 29,500 | 25,600 | 27,400 | 64,100 | 106,200 | 217,800 | 106,100 | 29,800 | 19,200 | 20,800 |
| 14 | 23,600 | 23,600 | 30,100 | 25,600 | 27,900 | 68,900 | 98,800 | 225,500 | 97,100 | 28,700 | 19,500 | 21,500 |
| 15 | 23,600 | 24,100 | 29,800 | 26,500 | 28,500 | 69,500 | 91,800 | 234,600 | 89,100 | 27,400 | 19,800 | 20,400 |
| 16 | 23,300 | 24,900 | 28,200 | 25,800 | 29,300 | 73,500 | 90,700 | 242,300 | 81,700 | 27,800 | 19,700 | 20,700 |
| 17 | 23,100 | 25,300 | 27,000 | 27,600 | 30,900 | 77,000 | 95,800 | 243,100 | 75,600 | 27,000 | 19,300 | 24,100 |
| 18 | 23,700 | 25,300 | 24,800 | 29,200 | 38,800 | 81,900 | 106,500 | 221,800 | 70,500 | 26,300 | 18,500 | 21,900 |
| 19 | 23,500 | 24,900 | 22,400 | 26,200 | 46,200 | 95,100 | 118,000 | 193,900 | 64,400 | 25,800 | 18,100 | 22,200 |
| 20 | 23,200 | 24,400 | 23,400 | 26,400 | 46,400 | 102,900 | 126,600 | 184,800 | 61,200 | 25,600 | 18,500 | 21,100 |
| 21 | 22,900 | 25,100 | 24,900 | 26,900 | 47,200 | 98,900 | 119,500 | 186,200 | 59,400 | 25,100 | 18,500 | 19,800 |
| 22 | 22,900 | 25,600 | 26,400 | 25,800 | 47,600 | 92,400 | 109,500 | 173,200 | 57,900 | 24,900 | 18,400 | 20,100 |
| 23 | 22,500 | 26,300 | 26,600 | 24,300 | 55,600 | 86,600 | 103,500 | 163,100 | 58,700 | 25,200 | 18,000 | 20,700 |
| 24 | 22,900 | 30,500 | 24,900 | 24,700 | 60,600 | 80,000 | 110,300 | 155,600 | 57,000 | 25,100 | 17,400 | 21,500 |
| 25 | 21,900 | 33,400 | 23,200 | 24,700 | 61,900 | 75,200 | 118,000 | 150,900 | 53,300 | 22,900 | 18,300 | 19,600 |
| 26 | 22,500 | 30,700 | 23,800 | 26,100 | 63,300 | 68,400 | 115,100 | 152,200 | 50,800 | 23,700 | 18,500 | 19,200 |
| 27 | 22,900 | 28,700 | 25,900 | 24,700 | 65,200 | 63,400 | 114,900 | 162,600 | 53,000 | 23,600 | 18,500 | 19,700 |
| 28 | 23,200 | 27,500 | 25,600 | 26,900 | 66,700 | 59,800 | 121,300 | 170,900 | 51,000 | 23,200 | 18,200 | 19,200 |
| 29 | 22,800 | 26,700 | 26,300 | 28,200 | - | 56,100 | 137,100 | 172,000 | 49,100 | 22,800 | 17,600 | 19,500 |
| 30 | 22,700 | 25,800 | 27,100 | 28,600 | - | 53,400 | 136,500 | 170,000 | 48,700 | 22,600 | 17,500 | 20,600 |
| 31 | 22,800 | - | 27,200 | 27,700 | - | 51,500 | - | 160,300 | - | 22,300 | 17,900 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 736,300 | 26,900 | 21,900 | 23,750 | 1,460,000 |
| November | 775,600 | 33,400 | 22,400 | 25,850 | 1,538,000 |
| December | 816,700 | 30,100 | 22,400 | 26,350 | 1,620,000 |
| Calendar year 1948 | 22,667,600 | 349,500 | 20,200 | 61,930 | 44,970,000 |
| January | 817,200 | 29,200 | 23,200 | 26,360 | 1,621,000 |
| February | 1,071,600 | 66,700 | 26,300 | 38,270 | 2,125,000 |
| March | 2,178,000 | 102,900 | 51,500 | 70,260 | 4,320,000 |
| April | 2,954,600 | 137,100 | 51,500 | 98,490 | 5,860,000 |
| May | 5,210,900 | 243,100 | 105,500 | 168,100 | 10,340,000 |
| June | 2,696,900 | 150,800 | 48,700 | 89,900 | 5,349,000 |
| July | 917,900 | 42,100 | 22,300 | 29,610 | 1,821,000 |
| August | 589,400 | 21,600 | 17,400 | 19,010 | 1,169,000 |
| September | 587,400 | 24,100 | 17,200 | 19,580 | 1,165,000 |
| Water year 1948-49 | 19,352,500 | 243,100 | 17,200 | 53,020 | 38,390,000 |

## Pacific Creek near Moran, Wyo.

Location.--Water-stage recorder, lat. 43°51', long. 110°31', in sec. 23, T. 45 N., R. 114 W., 50 feet downstream from bridge on U. S. Highway 287, half a mile above mouth, and 3 miles southeast of Moran.

Drainage area.--160 square miles.

Records available.--July to November 1906 (gage heights only), July 1917 to September 1918 (no winter record), September 1944 to September 1949.

Extremes.--Maximum discharge during year, 2,150 second-feet June 13 (gage height, 4.53 feet); minimum discharge not determined, occurred during period of ice effect or no gage-height record.
1917-18, 1944-49: Maximum discharge observed, 3,030 second-feet June 15, 1918 (gage height, 3.98 feet, former site and datum); minimum recorded, 32 second-feet Dec. 17, 1946, but may have been less during period of ice effect.

Remarks.--Records fair except those for periods of ice effect, which are poor. No diversion or regulation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 57 | 54 | | | | 51 | 56 | 485 | 1,420 | 570 | 99 | 61 |
| 2 | 57 | 59 | | | | 52 | 58 | 455 | 1,240 | 550 | 95 | 60 |
| 3 | 57 | 62 | | | | 54 | 62 | 568 | 1,100 | 532 | 102 | 62 |
| 4 | 57 | 57 | | | | 56 | 66 | 623 | 1,080 | 496 | 102 | 64 |
| 5 | 64 | 54 | | | | *60 | 70 | 568 | 1,270 | 478 | 100 | 64 |
| 6 | 61 | 53 | | | | 60 | 72 | 530 | 1,410 | 436 | 90 | 60 |
| 7 | 57 | 52 | | | | 58 | 80 | 644 | 1,610 | 392 | 85 | 58 |
| 8 | 57 | 49 | | | | 56 | 82 | 809 | 1,750 | 351 | 85 | 57 |
| 9 | 57 | 46 | | | | 55 | 80 | 963 | 1,700 | 322 | 90 | 57 |
| 10 | 57 | 50 | | 54 | | 56 | 82 | 1,100 | 1,790 | 330 | 119 | 64 |
| 11 | 55 | 50 | | | | 58 | 91 | 1,210 | 1,840 | 296 | 100 | 80 |
| 12 | 56 | 52 | | | | 56 | 107 | 1,360 | 2,000 | 273 | 94 | 87 |
| 13 | 54 | 52 | | | | 52 | 108 | 1,480 | 1,900 | 254 | 92 | 79 |
| 14 | 54 | 50 | (*) | | | 54 | 103 | 1,570 | 1,640 | 234 | 87 | 76 |
| 15 | 65 | 53 | | | | 52 | 101 | 1,660 | 1,510 | f222 | 84 | 72 |
| | | | 58 | | 50 | | | | | | | |
| 16 | f67 | 49 | | | | 52 | 108 | 1,720 | 1,360 | 206 | 80 | 70 |
| 17 | 58 | 45 | | | | h52 | 125 | 1,900 | 1,280 | 190 | 76 | 69 |
| 18 | 57 | 43 | | | | 54 | 152 | 1,840 | 1,170 | 182 | 74 | 67 |
| 19 | 57 | 42 | | | | 54 | 197 | 1,780 | 1,480 | 174 | 73 | 66 |
| 20 | 57 | 50 | | | | 54 | 241 | 1,680 | 1,440 | 162 | 72 | 64 |
| 21 | 57 | 49 | | | | 52 | 208 | 1,510 | 1,150 | 155 | 69 | 61 |
| 22 | 57 | 48 | | | | 54 | 223 | 1,440 | 1,150 | 141 | 67 | 58 |
| 23 | 56 | 54 | | | | 53 | 274 | 1,380 | 1,100 | f132 | 72 | 60 |
| 24 | 54 | 58 | | 50 | | h51 | 372 | 1,280 | 970 | 130 | 80 | 60 |
| 25 | *53 | 52 | | | | 50 | 495 | 1,300 | 931 | 123 | 78 | 61 |
| 26 | 52 | 56 | | | | 50 | 535 | 1,460 | 950 | 119 | 72 | 61 |
| 27 | 52 | 50 | | | | 47 | 584 | 1,560 | 822 | 115 | 69 | 61 |
| 28 | 52 | 50 | | | | 45 | 634 | 1,700 | 744 | 110 | 67 | 61 |
| 29 | 53 | 58 | | | - | 45 | 650 | 1,700 | 696 | 106 | 67 | 62 |
| 30 | 52 | 50 | | | - | 49 | 568 | 1,600 | 605 | 104 | 67 | 73 |
| 31 | 52 | - | | | - | h50 | - | 1,580 | - | 102 | 66 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 1,751 | 67 | 52 | 56.5 | 0.353 | 0.41 | 3,470 |
| November | 1,547 | 62 | 42 | 51.6 | .322 | .36 | 3,070 |
| December | 1,798 | - | - | 58.0 | .362 | .42 | 3,570 |
| Calendar year 1948 | 96,460 | 2,210 | - | 264 | 1.65 | 22.43 | 191,300 |
| January | 1,610 | - | - | 51.9 | .324 | .37 | 3,190 |
| February | 1,400 | - | - | 50.0 | .312 | .33 | 2,780 |
| March | 1,642 | 60 | 45 | 53.0 | .331 | .38 | 3,260 |
| April | 6,584 | 650 | 56 | 219 | 1.37 | 1.53 | 13,060 |
| May | 39,455 | 1,900 | 455 | 1,273 | 7.96 | 9.17 | 78,260 |
| June | 39,108 | 2,000 | 605 | 1,304 | 8.15 | 9.09 | 77,570 |
| July | 7,987 | 570 | 102 | 258 | 1.61 | 1.86 | 15,840 |
| August | 2,573 | 119 | 66 | 83.0 | .519 | .60 | 5,100 |
| September | 1,955 | 87 | 57 | 65.2 | .408 | .45 | 3,880 |
| Water year 1948-49 | 107,410 | 2,000 | - | 294 | 1.84 | 24.97 | 213,000 |

Peak discharge (base, 1,300 sec.-ft.).--May 17 (7 a.m.) 1,980 sec.-ft.; May 29 (4 a.m.) 1,860 sec.-ft.; June 13 (2 a.m.) 2,150 sec.-ft.; June 19 (11:30 p.m.) 1,680 sec.-ft.

* Winter discharge measurement made on this day.

f Computed from partly estimated gage-height record.

h Computed from staff-gage reading.

Note.--Stage-discharge relation affected by ice Nov. 18 to Mar. 15. No gage-height record Nov. 23 to Dec. 13, Jan. 8-20, Mar. 13 to Apr. 7, Aug. 4-6 except about once-weekly staff-gage readings; discharge computed on basis of weather records and records for nearby Snake River tributaries.

## Buffalo Fork near Moran, Wyo.

Location.--Water-stage recorder, lat. 43°50', long. 110°31', in sec. 26, T. 45 N., R. 114 W., 30 feet below bridge on county road, half a mile above mouth, 2½ miles downstream from Lava Creek, and 4 miles southeast of Moran.

Drainage area.--378 square miles.

Records available.--July to November 1906 (gage heights only), July 1917 to September 1918 (no Winter records), September 1944 to September 1949.

Extremes.--Maximum discharge during year, 3,380 second-feet June 12 (gage height, 5.07 feet); minimum not determined, occurred during period of ice effect.
1917-18, 1944-49: Maximum discharge observed, 5,840 second-feet June 13, 1918 (gage height, 6.78 feet, datum then in use), from discharge measurement; minimum recorded, 86 second-feet Dec. 17, 1946 (gage height, 0.95 foot), but may have been less during periods of ice effect.

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

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 192 | 179 | | | | | 140 | 567 | 1,940 | 1,580 | 462 | 237 |
| 2 | 192 | 186 | | | | | 140 | 508 | 1,660 | 1,800 | 444 | 234 |
| 3 | 192 | 188 | | | | | 140 | 646 | 1,420 | 1,870 | 439 | 250 |
| 4 | 192 | 186 | | | | 125 | 145 | 720 | 1,340 | 1,810 | 422 | 260 |
| 5 | 204 | 173 | | | | (*) | 150 | 652 | 1,580 | 1,780 | 406 | 256 |
| 6 | 202 | 181 | | | | | 160 | 561 | 1,770 | 1,770 | 391 | 237 |
| 7 | 192 | 177 | | | | | 170 | 591 | 2,010 | 1,720 | 385 | 228 |
| 8 | 195 | 170 | 160 | | | | f188 | 713 | 2,490 | 1,610 | 375 | 225 |
| 9 | 192 | 170 | | | | | 195 | 854 | 2,430 | 1,500 | 366 | 225 |
| 10 | 192 | 165 | | | | | 195 | 1,030 | 2,710 | 1,450 | 385 | 225 |
| 11 | 192 | 170 | | | | | 207 | 1,170 | 2,920 | 1,360 | 356 | 256 |
| 12 | 190 | 180 | | 130 | | | 234 | 1,490 | 3,220 | 1,310 | 338 | 270 |
| 13 | 188 | 180 | | | | | 247 | 1,720 | 3,210 | 1,300 | 333 | 253 |
| 14 | 188 | 180 | (*) | | | | 225 | 1,770 | 2,850 | 1,230 | 317 | 247 |
| 15 | 212 | 186 | | | 125 | | 212 | 1,940 | 2,590 | 1,130 | 308 | 237 |
| 16 | 220 | 190 | | | | | 217 | 2,060 | 2,580 | 1,110 | 296 | 234 |
| 17 | 192 | 186 | | | | | 234 | 2,330 | 2,560 | 1,130 | 296 | 234 |
| 18 | 188 | | | | | | 278 | 2,230 | 2,250 | 902 | 295 | 228 |
| 19 | 192 | | | | | 140 | 347 | 2,050 | 2,640 | 808 | 281 | 225 |
| 20 | 190 | | | | | | 371 | 1,900 | 2,790 | 808 | 274 | 222 |
| 21 | 188 | | | | | | 325 | 1,730 | 2,330 | 713 | 270 | 220 |
| 22 | 186 | | | | | | 325 | 1,680 | 2,380 | 664 | 267 | 220 |
| 23 | 186 | | 130 | | | | 358 | 1,830 | 2,350 | 658 | 263 | 217 |
| 24 | 184 | 160 | | | | | 433 | 1,460 | 2,020 | 652 | 285 | 220 |
| 25 | *186 | | | | | | 579 | 1,470 | 2,040 | 627 | 281 | 217 |
| 26 | 181 | | | | | | 609 | 1,700 | 2,340 | 591 | 263 | 217 |
| 27 | 177 | | | 125 | | | 646 | 1,960 | 2,000 | 573 | 260 | 217 |
| 28 | 179 | | | | | | 745 | 2,210 | 1,740 | 561 | 253 | 215 |
| 29 | 179 | | | | - | | 776 | 2,380 | 1,780 | 514 | 250 | 217 |
| 30 | 179 | | | | - | | 689 | 2,340 | 1,660 | 531 | 244 | 263 |
| 31 | 175 | | | | - | | - | 2,250 | - | 473 | 240 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 5,897 | 220 | 175 | 190 | 0.503 | 0.58 | 11,700 |
| November | 5,127 | 190 | - | 171 | .452 | .50 | 10,170 |
| December | 4,480 | - | - | 145 | .384 | .44 | 8,890 |
| Calendar year 1948 | 202,765 | 3,770 | - | 554 | 1.47 | 19.94 | 402,100 |
| January | 3,995 | - | - | 129 | .341 | .39 | 7,920 |
| February | 3,500 | - | - | 125 | .331 | .34 | 6,940 |
| March | 4,235 | - | - | 137 | .362 | .42 | 8,400 |
| April | 9,678 | 776 | 140 | 323 | .854 | .95 | 19,200 |
| May | 46,292 | 2,360 | 508 | 1,493 | 3.95 | 4.55 | 91,820 |
| June | 67,600 | 3,220 | 1,340 | 2,253 | 5.96 | 6.65 | 134,100 |
| July | 34,535 | 1,870 | 473 | 1,114 | 2.95 | 3.40 | 68,500 |
| August | 10,035 | 462 | 240 | 324 | .857 | .99 | 19,900 |
| September | 7,006 | 270 | 215 | 234 | .619 | .69 | 13,900 |
| Water year 1948-49 | 202,380 | 3,220 | - | 554 | 1.47 | 19.90 | 401,400 |

Peak discharge (base, 3,100 sec.-ft.).--June 12 (9:45 a.m.) 3,380 sec.-ft.
* Winter discharge measurement made on this day.
f Computed from partly estimated gage-height record.
Note.--Stage-discharge relation affected by ice Nov. 8-14, Nov. 18 to Apr. 7. No gage-height record Dec. 17-30, Jan. 8 to Mar. 4 except staff-gage readings Dec. 18, 23, Jan. 14, 21, 27, Feb. 18, 25; discharge computed on basis of weather records and records for Gros Ventre River at Kelly and Hoback River near Jackson.

## Gros Ventre River at Kelly, Wyo.

Location.--Staff gage, lat. 43°37', long. 110°38', in NW¼ sec. 11, T. 42 N., R. 115 W., at bridge on private road, 0.3 mile south of Kelly post office and 3 miles downstream from Turpin Creek. Prior to Aug. 9, 1949, wire-weight gage on bridge, 25 feet downstream, at same datum.

Drainage area.--622 square miles.

Records available.--October 1944 to September 1949. June to September 1918 at site 1 mile upstream.

Extremes.--Maximum discharge observed during year, 2,480 second-feet June 12 (gage height, 5.55 feet); minimum observed, 125 second-feet Jan. 26 (gage height, 1.08 feet).

1918, 1944-49: Maximum discharge observed, 6,220 second-feet June 16, 1918 (gage height, 9.95 feet, site and datum then in use); minimum observed, 102 second-feet Dec. 16, 1944; minimum gage height observed, that of Jan. 26, 1949.

Flood of May 18, 1927, when landslide about 2 miles upstream washed out, releasing about 60,000 acre-feet of impounded water, was considerably higher; discharge not determined.

Remarks.--Records good. Diversions above and below station for irrigation.

Revisions.--W 1043: Drainage area.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 1.1 | 128 | 2.6 | 543 | 4.5 | 1,660 |
| 1.4 | 179 | 3.0 | 735 | 5.0 | 2,040 |
| 1.8 | 267 | 3.5 | 1,020 | 5.6 | 2,520 |
| 2.2 | 384 | 4.0 | 1,320 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 151 | 174 | 154 | 158 | 138 | 134 | 134 | 710 | 1,660 | 990 | 214 | 195 |
| 2 | 149 | 175 | 154 | 159 | 142 | 133 | 139 | 597 | 1,660 | 960 | 207 | 193 |
| 3 | 147 | 187 | 161 | 144 | 138 | 141 | 141 | 574 | 1,450 | 924 | 232 | 195 |
| 4 | 151 | 183 | 168 | 138 | 141 | 144 | 144 | 679 | 1,190 | 960 | 222 | 197 |
| 5 | 154 | 175 | 165 | 133 | 141 | 131 | 149 | 725 | 1,130 | 990 | 222 | 203 |
| 6 | 163 | 168 | 165 | 149 | 134 | 139 | 156 | 650 | 1,190 | 990 | 216 | 205 |
| 7 | 163 | 175 | 163 | 146 | 142 | *144 | 163 | 602 | 1,260 | 960 | 220 | 205 |
| 8 | 163 | 170 | 163 | 151 | 138 | 146 | 175 | 630 | 1,520 | 894 | 214 | 201 |
| 9 | 159 | 161 | 165 | 138 | 141 | 146 | 191 | 730 | 1,730 | 843 | 212 | 199 |
| 10 | 163 | 154 | 166 | 133 | 139 | 144 | 197 | 948 | 1,880 | 762 | 216 | 197 |
| 11 | 159 | 158 | 172 | 139 | b145 | 144 | 207 | 1,100 | 2,240 | 735 | 227 | 203 |
| 12 | 158 | 161 | 172 | 138 | 147 | 146 | 222 | 1,310 | 2,480 | 720 | 222 | 207 |
| 13 | 156 | 163 | 172 | 147 | 138 | 146 | 250 | 1,500 | 2,440 | 679 | 212 | 214 |
| 14 | 154 | 165 | *165 | 151 | 131 | 146 | 260 | 1,670 | 1,840 | 650 | 205 | 214 |
| 15 | 158 | 165 | 163 | 151 | 139 | 146 | 243 | 1,940 | 1,800 | 621 | 197 | 207 |
| 16 | 165 | 172 | 147 | 139 | 147 | 146 | 232 | 1,740 | 1,700 | 584 | 191 | 214 |
| 17 | 172 | a165 | 144 | 139 | 142 | 146 | 241 | 2,180 | 1,700 | 566 | 185 | 205 |
| 18 | 163 | a145 | 144 | 144 | 139 | 146 | 255 | 2,460 | 1,450 | 530 | 179 | 201 |
| 19 | 165 | a150 | 151 | 133 | 139 | 147 | 299 | 1,900 | 1,530 | 500 | 175 | 199 |
| 20 | 158 | a150 | 152 | 146 | 133 | 147 | 348 | 1,720 | 1,450 | 475 | 172 | 199 |
| 21 | 156 | a150 | 147 | 133 | 144 | 149 | 374 | 1,580 | 1,660 | 451 | 166 | 193 |
| 22 | 154 | a140 | 134 | 141 | 144 | 151 | 351 | 1,420 | 1,520 | 364 | 165 | 193 |
| 23 | 154 | a150 | 139 | 139 | 146 | 156 | 377 | 1,370 | 1,420 | 327 | 161 | 189 |
| 24 | 152 | a150 | 147 | 131 | 138 | 154 | 471 | 1,310 | 1,320 | 307 | 166 | 191 |
| 25 | 151 | a140 | 136 | 126 | 139 | 149 | 548 | 1,300 | 1,310 | 296 | 174 | 187 |
| 26 | 151 | a145 | 144 | 125 | 136 | 144 | 635 | 1,310 | 1,240 | 262 | 177 | 183 |
| 27 | 151 | a140 | 141 | 141 | 134 | 144 | 669 | 1,480 | 1,380 | 253 | 205 | 183 |
| 28 | 149 | 151 | 154 | 141 | 133 | 138 | 735 | 1,760 | 1,260 | 243 | 201 | 183 |
| 29 | 144 | 154 | 147 | 130 | - | 136 | 849 | 1,990 | 1,110 | 238 | 197 | 185 |
| 30 | 174 | 151 | 154 | 144 | - | 130 | 816 | 2,160 | 1,050 | 227 | 195 | 193 |
| 31 | 175 | - | 144 | 139 | - | 139 | - | 1,880 | - | 218 | 195 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 4,882 | 175 | 144 | 157 | 0.252 | 0.29 | 9,680 |
| November | 4,787 | 187 | 140 | 160 | .257 | .29 | 9,490 |
| December | 4,793 | 172 | 134 | 155 | .249 | .29 | 9,510 |
| Calendar year 1948 | 148,357 | 3,200 | 116 | 405 | .651 | 8.89 | 294,300 |
| January | 4,366 | 159 | 125 | 141 | .227 | .26 | 8,660 |
| February | 3,908 | 147 | 131 | 140 | .225 | .23 | 7,750 |
| March | 4,452 | 156 | 130 | 144 | .232 | .27 | 8,830 |
| April | 9,971 | 849 | 134 | 332 | .534 | .60 | 19,780 |
| May | 41,925 | 2,460 | 574 | 1,352 | 2.17 | 2.51 | 83,160 |
| June | 46,570 | 2,480 | 1,050 | 1,552 | 2.50 | 2.78 | 92,370 |
| July | 18,519 | 990 | 218 | 597 | .960 | 1.11 | 36,730 |
| August | 6,142 | 232 | 161 | 198 | .318 | .37 | 12,180 |
| September | 5,933 | 214 | 183 | 198 | .318 | .35 | 11,770 |
| Water year 1948-49 | 156,248 | 2,480 | 125 | 428 | .688 | 9.35 | 309,900 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Hoback River near Jackson and other nearby streams.
b Stage-discharge relation affected by snow from blizzard.

## Hoback River near Jackson, Wyo.

Location.--Staff gage, lat. 43°17'55", long. 110°40'10", in sec. 32, T. 39 N., R. 115 W., at Camp Creek Camp, a quarter of a mile downstream from Willow Creek, 4 miles upstream from mouth, and 13½ miles southeast of Jackson.

Drainage area.--564 square miles.

Records available.--November 1944 to September 1949. July 1917 to September 1918 at site a quarter of a mile above mouth, published as Hoback River near Cheney.

Extremes.--Maximum discharge observed during year, 3,280 second-feet May 17 (gage height, 5.62 feet); minimum observed, 142 second-feet Feb. 11 (gage height, 2.05 feet).
1917-18, 1944-49: Maximum discharge observed, 6,160 second-feet June 16, 1918 (gage height, 13.46 feet, former site and datum); minimum observed, 90 second-feet Dec. 18, 1946 (gage height, 1.70 feet).

Remarks.--Records fair. Gage read once daily. No regulation. Small diversions above station for irrigation.

Discharge in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 236 | 227 | 179 | b170 | 173 | 176 | 170 | 1,110 | 2,310 | 1,290 | 486 | 299 |
| 2 | 227 | 236 | 191 | b180 | b170 | 173 | 176 | 1,190 | 1,980 | 1,340 | 466 | 293 |
| 3 | 219 | 244 | 201 | 173 | b165 | 187 | 179 | 1,620 | 1,670 | 1,360 | 460 | 304 |
| 4 | 236 | 227 | 205 | b160 | 181 | 191 | 191 | 1,760 | 1,640 | 1,420 | 453 | 293 |
| 5 | 285 | 173 | 184 | b150 | 184 | 179 | 201 | 1,520 | 1,620 | 1,380 | 440 | 314 |
| 6 | 270 | 219 | 191 | 184 | 170 | 181 | 216 | 1,340 | 1,730 | 1,330 | 453 | 304 |
| 7 | 252 | 201 | 201 | 187 | 179 | *184 | 240 | 1,460 | 1,970 | 1,290 | 434 | 299 |
| 8 | 244 | 157 | 187 | 201 | 167 | 198 | 265 | 1,530 | 2,370 | 1,180 | 420 | 288 |
| 9 | 236 | 154 | 184 | b170 | 181 | 191 | 304 | 1,790 | 2,590 | 1,070 | 427 | 284 |
| 10 | 219 | 191 | 198 | 176 | 184 | 194 | 319 | 2,040 | 2,640 | 1,110 | 460 | 304 |
| 11 | 212 | 187 | 209 | 187 | 142 | 205 | 352 | 2,160 | 2,700 | 1,050 | 440 | 320 |
| 12 | 223 | 212 | 219 | b170 | 176 | 198 | 397 | 2,420 | 2,810 | 975 | 434 | 314 |
| 13 | 227 | 209 | 216 | 184 | b180 | 181 | 476 | 2,580 | 2,750 | 786 | 414 | 304 |
| 14 | 219 | 205 | 201 | 198 | 173 | 191 | 409 | 2,640 | 2,300 | 794 | 395 | 293 |
| 15 | 231 | 219 | *198 | 194 | 198 | 181 | 414 | 2,840 | 2,200 | 879 | 408 | 284 |
| 16 | 236 | 198 | 191 | b170 | 181 | 184 | 464 | 2,890 | 2,150 | 845 | 395 | 274 |
| 17 | 244 | 216 | 176 | b170 | 191 | 179 | 509 | 3,280 | 2,140 | 828 | 395 | 270 |
| 18 | 244 | 157 | 184 | 184 | 198 | 187 | 645 | 2,930 | 1,940 | 752 | 377 | 266 |
| 19 | 227 | b170 | 194 | b170 | 187 | 191 | 770 | 2,910 | 2,220 | 720 | 371 | 270 |
| 20 | 236 | 191 | 191 | b180 | 179 | 191 | 966 | 2,870 | 2,170 | 688 | 365 | 256 |
| 21 | 219 | 198 | 179 | b170 | 191 | 181 | 850 | 2,590 | 1,920 | 620 | 353 | 266 |
| 22 | 227 | 170 | b150 | b180 | 184 | 184 | 1,330 | 2,330 | 1,880 | 598 | 341 | 252 |
| 23 | 227 | 191 | b160 | b180 | 191 | 191 | 1,770 | 2,300 | 1,830 | 570 | 341 | 256 |
| 24 | *223 | 201 | b170 | b170 | 181 | 184 | 1,740 | 2,060 | 1,620 | 562 | 353 | 252 |
| 25 | 227 | 181 | b150 | b160 | 176 | 176 | 2,060 | 2,090 | 1,600 | 548 | 365 | 256 |
| 26 | 219 | 187 | 167 | b160 | 170 | 173 | 2,090 | 2,260 | 1,770 | 534 | 347 | 248 |
| 27 | 216 | b160 | 162 | b170 | 176 | 179 | 2,050 | 2,550 | 1,630 | 520 | 330 | 243 |
| 28 | 219 | b190 | b170 | 176 | 167 | 152 | 2,040 | 2,640 | 1,420 | 514 | 325 | 239 |
| 29 | 216 | 191 | b160 | b160 | - | 145 | 2,090 | 2,820 | 1,430 | 520 | 314 | 248 |
| 30 | 209 | 159 | b170 | 179 | - | 167 | 1,620 | 2,590 | 1,370 | 520 | 320 | 314 |
| 31 | 219 | - | b160 | b170 | - | 181 | - | 2,570 | - | 500 | 309 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 7,144 | 285 | 209 | 230 | 0.408 | 0.47 | 14,170 |
| November | 5,821 | 244 | 154 | 194 | .344 | .38 | 11,550 |
| December | 5,698 | 219 | 150 | 184 | .326 | .38 | 11,300 |
| Calendar year 1948 | 205,467 | 3,180 | 130 | 561 | .995 | 13.56 | 407,600 |
| January | 5,433 | 201 | 150 | 175 | .310 | .36 | 10,780 |
| February | 4,995 | 198 | 142 | 178 | .316 | .33 | 9,910 |
| March | 5,655 | 205 | 145 | 182 | .323 | .37 | 11,220 |
| April | 25,303 | 2,090 | 170 | 843 | 1.49 | 1.67 | 50,190 |
| May | 69,680 | 3,280 | 1,110 | 2,248 | 3.99 | 4.59 | 138,200 |
| June | 60,370 | 2,810 | 1,370 | 2,012 | 3.57 | 3.98 | 119,700 |
| July | 27,093 | 1,420 | 500 | 874 | 1.55 | 1.79 | 53,740 |
| August | 12,191 | 486 | 309 | 393 | .697 | .80 | 24,180 |
| September | 8,407 | 320 | 239 | 280 | .496 | .55 | 16,680 |
| Water year 1948-49 | 237,790 | 3,280 | 142 | 651 | 1.15 | 15.67 | 471,600 |

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

## Salt River near Smoot, Wyo.

Location.--Water-stage recorder, lat. 42°36', long. 110°55', in sec. 7, T. 30 N., R. 118 W., 1¼ miles south of Smoot and 1½ miles upstream from Willow Creek.

Drainage area.--47.8 square miles.

Records available.--June 1932 to September 1949 (no winter records 1933-35, 1936-37).

Average discharge.--13 years (1935-36, 1937-49), 35.4 second-feet.

Extremes.--Maximum discharge during year, 192 second-feet May 19 (gage height, 2.85 feet); no flow Jan. 25-28.
1932-49: Maximum discharge, 430 second-feet May 15, 1936, from rating curve extended above 200 second-feet; no flow Jan. 25-28, 1949.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. A few diversions above station for irrigation.

Revisions.--W 1093: Drainage area.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Mar. 15 to Apr. 24)

| | | | | | |
|---|---|---|---|---|---|
| 1.3 | 5 | 1.6 | 19 | 2.0 | 58 |
| 1.4 | 8 | 1.7 | 27 | 2.3 | 100 |
| 1.5 | 13 | 1.8 | 36 | 2.9 | 200 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11 | 11 | 8.1 | 2.9 | 0.4 | 3.2 | 7.4 | 78 | 152 | 56 | 18 | 9.0 |
| 2 | 10 | 13 | 8.1 | 2.3 | .5 | 3.5 | 7.4 | 79 | 134 | 55 | 17 | 9.0 |
| 3 | 10 | 13 | 10 | 1.5 | 1.0 | 4.5 | 7.7 | 92 | 122 | 55 | 17 | 9.5 |
| 4 | 12 | 12 | 9.0 | 1.4 | 1.2 | 4.0 | 7.7 | 93 | 113 | 55 | 16 | 9.0 |
| 5 | 13 | 12 | 8.6 | 1.5 | 1.0 | 3.7 | 8.5 | 85 | 111 | 54 | 17 | 8.5 |
| 6 | 13 | 12 | 9.3 | 1.9 | 1.0 | 3.8 | 10 | 79 | 108 | 48 | 15 | 8.0 |
| 7 | 12 | 10 | 8.8 | 2.0 | 1.2 | 4.4 | 12 | 79 | 106 | 45 | 15 | 7.7 |
| 8 | 12 | 9.0 | 8.5 | 2.0 | 1.1 | 4.9 | 15 | 82 | 113 | 44 | 15 | 7.7 |
| 9 | 12 | 10 | 7.6 | 2.1 | 1.3 | 4.5 | 15 | 92 | 122 | 42 | 14 | 7.4 |
| 10 | 11 | 10 | 9.5 | 1.8 | 1.6 | 4.8 | 17 | 111 | 132 | 40 | 12 | 7.7 |
| 11 | 10 | 9.6 | 9.0 | *1.6 | 1.7 | *5.2 | 20 | 137 | 140 | 39 | 12 | 8.0 |
| 12 | 10 | 10 | 11 | 1.7 | 1.3 | 5.6 | 25 | 144 | 137 | 38 | 12 | 8.0 |
| 13 | 10 | 12 | 12 | 1.9 | 1.1 | 6.2 | 23 | 144 | 140 | 33 | 10 | 10 |
| 14 | 10 | 11 | *11 | 2.3 | 1.2 | 6.8 | *21 | 147 | 137 | 32 | 10 | 10 |
| 15 | 14 | 11 | 11 | 2.0 | 1.6 | 7.4 | 23 | 158 | 130 | 32 | 10 | 9.5 |
| 16 | 12 | 12 | 8.0 | 1.7 | 2.4 | 7.7 | 29 | 163 | 121 | 31 | 9.0 | 9.0 |
| 17 | 11 | 17 | 7.0 | 1.6 | 3.5 | 7.4 | 35 | 176 | 119 | 30 | 9.0 | 9.0 |
| 18 | 11 | 7.8 | 7.8 | 1.8 | 3.7 | 7.1 | 46 | 188 | 119 | 30 | 9.0 | 9.5 |
| 19 | 11 | 7.1 | 6.8 | 1.7 | 4.2 | 7.4 | 56 | 186 | 124 | 28 | 8.0 | 9.0 |
| 20 | 10 | 8.4 | 7.4 | 2.3 | 3.3 | 7.7 | 69 | 178 | 113 | 27 | 8.0 | 8.5 |
| 21 | *10 | 8.0 | 4.5 | 1.6 | 5.0 | 7.4 | 57 | 171 | 100 | 25 | 7.7 | 8.0 |
| 22 | 10 | 7.9 | 2.6 | 2.0 | 4.6 | 7.4 | 72 | 168 | 94 | 26 | 7.7 | 8.0 |
| 23 | 10 | *8.1 | 3.0 | 2.0 | 6.8 | 7.4 | 106 | 164 | 86 | 27 | 9.5 | 8.0 |
| 24 | 10 | 8.6 | 3.5 | 1.6 | *6.0 | 7.4 | 122 | 152 | 82 | 27 | 9.5 | 8.0 |
| 25 | 11 | 8.0 | 2.0 | 0 | 4.2 | 7.4 | 124 | 149 | 79 | 26 | 8.5 | 8.0 |
| 26 | 10 | 7.6 | 2.2 | 0 | 3.1 | 7.1 | 116 | 151 | 80 | 25 | 8.0 | 8.0 |
| 27 | 9.0 | 5.7 | 2.4 | 0 | 3.0 | 7.1 | 118 | 154 | 73 | 25 | 9.0 | 7.7 |
| 28 | 10 | 6.6 | 2.7 | *0 | 3.1 | 7.4 | 124 | 161 | 68 | 21 | 9.0 | 7.7 |
| 29 | 11 | 7.7 | 3.1 | .1 | - | 8.0 | 116 | 171 | 64 | 19 | 9.0 | 8.5 |
| 30 | 10 | 6.4 | 2.8 | .2 | - | 7.7 | 93 | 171 | 59 | 18 | 8.5 | 10 |
| 31 | 10 | - | 2.9 | .2 | - | 7.7 | - | 161 | - | 18 | 9.0 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 336.0 | 14 | 9.0 | 10.8 | 666 |
| November | 292.5 | 17 | 5.7 | 9.75 | 580 |
| December | 210.2 | 12 | 2.0 | 6.78 | 417 |
| Calendar year 1948 | 13,253.8 | 241 | 2.0 | 36.2 | 26,290 |
| January | 45.7 | 2.9 | 0 | 1.47 | 91 |
| February | 70.1 | 6.8 | .4 | 2.50 | 139 |
| March | 191.8 | 8.0 | 3.2 | 6.19 | 380 |
| April | 1,502.7 | 124 | 7.4 | 50.1 | 2,980 |
| May | 4,264 | 188 | 78 | 138 | 8,460 |
| June | 3,278 | 152 | 59 | 109 | 6,500 |
| July | 1,071 | 56 | 18 | 34.5 | 2,120 |
| August | 348.4 | 18 | 7.7 | 11.2 | 691 |
| September | 255.9 | 10 | 7.4 | 8.53 | 508 |
| Water year 1948-49 | 11,866.3 | 188 | 0 | 32.5 | 23,530 |

Peak discharge (base, 170 sec.-ft.).--May 19 (7 a.m.) 192 sec.-ft.
* Winter discharge measurement or observation of no flow made on this day.
Note.--Stage-discharge relation affected by ice Nov. 8-12, 17, 18, Nov. 23 to Jan. 2, Jan. 11-15, Jan. 28 to Feb. 3, Mar. 11-14. No gage-height record Nov. 19-22, Jan. 3-10, 16-27, Feb. 4 to Mar. 10 (stage-discharge relation affected by ice during most of periods); discharge computed on basis of 1 discharge measurement, weather records, and records for stations on nearby streams.

## Salt River at Wyoming-Idaho State line

Location.--Water-stage recorder, lat. 43°10', long. 111°04', in sec. 16, T. 3 S., R. 46 E., just downstream from Trout Creek, half a mile upstream from mouth, and three-quarters of a mile west of Wyoming-Idaho State line.

Drainage area.--890 square miles.

Records available.--April 1934 to September 1949.

Average discharge.--15 years, 692 second-feet.

Extremes.--Maximum discharge during year, 1,850 second-feet May 22 (gage height, 3.43 feet); minimum daily, 384 second-feet Feb. 11.
1934-49: Maximum discharge, 3,520 second-feet May 6, 1936 (gage height, 4.64 feet), from rating curve extended above 2,600 second-feet; minimum, 216 second-feet May 17, 1934 (gage height, 1.30 feet); minimum daily, 220 second-feet May 17, 1934.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Diversions above station for irrigation. Flow partly regulated by many small power plants on tributaries.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| | |
|---|---|
| 1.5 | 360 |
| 1.8 | 460 |
| 2.2 | 705 |
| 2.6 | 1,010 |
| 3.0 | 1,380 |
| 3.4 | 1,820 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 611 | 611 | 569 | 515 | b410 | 411 | 466 | 1,390 | 1,440 | 705 | 599 | 563 |
| 2 | 611 | 642 | 581 | 515 | b410 | 411 | 471 | 1,320 | 1,510 | 698 | 605 | 569 |
| 3 | 605 | 649 | 581 | b470 | b410 | 417 | 476 | 1,350 | 1,440 | 719 | 605 | 569 |
| 4 | 611 | 649 | 587 | b455 | 399 | 414 | 493 | 1,390 | 1,330 | 754 | 599 | 581 |
| 5 | 629 | 623 | 581 | b495 | 399 | 411 | 533 | 1,350 | 1,290 | 761 | 593 | 593 |
| 6 | 623 | 623 | 575 | b520 | 393 | 408 | 587 | 1,300 | 1,240 | 768 | 581 | 581 |
| 7 | 623 | 617 | 581 | b517 | 399 | 408 | 656 | 1,320 | 1,210 | 747 | 581 | 569 |
| 8 | 611 | 593 | 581 | 493 | 393 | 408 | 740 | 1,320 | 1,200 | 726 | 593 | 575 |
| 9 | 605 | 587 | 557 | 493 | 387 | 405 | 820 | 1,380 | 1,190 | 726 | 593 | 569 |
| 10 | 611 | 587 | 569 | *b480 | 396 | 405 | 858 | 1,380 | 1,160 | 768 | 599 | 587 |
| 11 | 617 | 593 | 581 | b470 | 384 | 405 | 902 | 1,390 | 1,100 | 733 | 593 | 611 |
| 12 | 611 | 605 | 575 | b455 | 387 | 408 | 993 | 1,410 | 1,060 | 705 | 587 | 649 |
| 13 | 611 | 605 | 563 | b450 | b390 | 408 | 1,050 | 1,380 | 1,060 | 712 | 581 | 635 |
| 14 | 611 | 599 | 563 | 444 | b390 | 414 | 1,040 | 1,340 | 993 | 705 | 575 | 635 |
| 15 | 635 | 611 | 557 | 448 | b390 | 411 | 1,080 | 1,330 | 910 | 684 | 581 | 635 |
| 16 | 623 | 617 | 527 | 456 | b390 | 424 | 1,190 | 1,370 | 842 | 726 | 575 | 629 |
| 17 | 611 | 617 | 539 | b450 | 387 | 432 | 1,300 | 1,510 | 805 | 684 | 581 | 623 |
| 18 | 611 | 599 | 557 | b450 | 399 | 436 | 1,400 | 1,630 | 782 | 677 | 569 | 629 |
| 19 | 605 | 563 | 539 | b450 | 405 | 440 | 1,480 | 1,710 | 812 | 670 | 551 | 629 |
| 20 | 611 | 587 | 545 | b450 | 405 | 456 | 1,570 | 1,710 | 812 | 656 | 545 | 623 |
| 21 | 635 | 593 | 539 | b450 | 411 | 471 | 1,470 | 1,710 | 798 | 649 | 533 | 605 |
| 22 | 623 | 593 | *b425 | b450 | 411 | 488 | 1,440 | 1,820 | 782 | 642 | 545 | 605 |
| 23 | 623 | 593 | b465 | 440 | *414 | 488 | 1,610 | 1,760 | 747 | 635 | 563 | 599 |
| 24 | 623 | *599 | b520 | b440 | 424 | 476 | 1,720 | 1,660 | 719 | 617 | 587 | 599 |
| 25 | 617 | 587 | b470 | b410 | 420 | 466 | 1,790 | 1,540 | 698 | 605 | 587 | 599 |
| 26 | 617 | 581 | b520 | b440 | 420 | 466 | 1,760 | 1,480 | 719 | 611 | 587 | 599 |
| 27 | 617 | 563 | b560 | b460 | 414 | 460 | 1,720 | 1,440 | 740 | 605 | 587 | 587 |
| 28 | 623 | 551 | b540 | b440 | 411 | 466 | 1,730 | 1,380 | 726 | 617 | 581 | 581 |
| 29 | 623 | 569 | b495 | b425 | - | 466 | 1,710 | 1,360 | 726 | 611 | 575 | 587 |
| 30 | 617 | 557 | b500 | b420 | - | 460 | 1,590 | 1,360 | 712 | 599 | 569 | 623 |
| 31 | 611 | - | b510 | b410 | - | 466 | - | 1,330 | - | 593 | 575 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 19,115 | 635 | 605 | 617 | 37,910 |
| November | 17,963 | 649 | 551 | 599 | 35,630 |
| December | 16,852 | 587 | 425 | 544 | 33,430 |
| Calendar year 1948 | 279,762 | 2,080 | 375 | 764 | 554,900 |
| January | 14,261 | 520 | 410 | 460 | 28,290 |
| February | 11,248 | 424 | 384 | 402 | 22,310 |
| March | 13,505 | 488 | 405 | 436 | 26,790 |
| April | 34,645 | 1,790 | 466 | 1,155 | 68,720 |
| May | 45,120 | 1,820 | 1,300 | 1,455 | 89,490 |
| June | 29,553 | 1,510 | 698 | 985 | 58,620 |
| July | 21,108 | 768 | 593 | 681 | 41,870 |
| August | 17,975 | 605 | 533 | 580 | 35,650 |
| September | 18,038 | 649 | 563 | 601 | 35,780 |
| Water year 1948-49 | 259,383 | 1,820 | 384 | 711 | 514,500 |

Peak discharge (base, 850 sec.-ft.).--Apr. 23 (4 p.m.) 1,830 sec.-ft.; May 22 (9 a.m.) 1,850 sec.-ft.

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

## Cottonwood Creek near Smoot, Wyo.

Location.--Water-stage recorder, lat. 42°37', long. 110°53', in sec. 4, T. 30 N., R. 118 W., 1¢ miles downstream from Porcupine Creek and 1½ miles southeast of Smoot.

Drainage area.--26.3 square miles.

Records available.--October 1932 to September 1949.

Average discharge.--16 years, 42.2 second-feet.

Extremes.--Maximum discharge during year not determined; minimum daily, 14 second-feet Feb. 27 to Apr. 4.

1933-49: Maximum discharge observed, 332 second-feet (revised) June 17, 18, 1933 (gage height, 2.76 feet, site and datum then in use), from rating curve extended above 230 second-feet; minimum, 6.4 second-feet Mar. 11, 1948 (gage height, 1.02 feet).

Revisions.--The maximum discharge for the water year 1933 has been revised to 332 second-feet June 17, 18 (gage height, 2.76 feet, site and datum then in use), superseding figure published in Water-Supply Paper 753.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion above station. Flow regulated by Cottonwood Lake.

Revisions.--Revised figures of discharge for the water year 1933, superseding those published in Water-Supply Paper 753 are given herein (figures for October 1932 to April 1933 not previously published).

Rating table, water year 1948-49 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 20, Jan. 11-18, 21-31, Apr. 10 to May 26)

| | | | | | |
|---|---|---|---|---|---|
| 1.0 | 13 | 1.3 | 25 | 1.9 | 88 |
| 1.1 | 16 | 1.5 | 40 | 2.2 | 146 |
| 1.2 | 20 | 1.7 | 60 | 2.6 | 242 |

Discharge, in second-feet, 1932-33, 1948-49
1932-33

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | 24 | 126 | 119 | 50 | 29 |
| 2 | | | | | | | | 24 | 158 | 110 | 46 | 27 |
| 3 | | | | | | | | 24 | 178 | 101 | 43 | 27 |
| 4 | | | | | | | | 24 | 187 | 92 | 42 | 27 |
| 5 | | | | | | | | 24 | 194 | 87 | 40 | 27 |
| 6 | | | | | | | | 24 | 209 | 83 | 40 | 27 |
| 7 | | | | | | | | 24 | 203 | 83 | 40 | 27 |
| 8 | | | | | | | | 24 | 200 | 83 | 40 | 27 |
| 9 | | | | | | | | 24 | 200 | 79 | 40 | 27 |
| 10 | | | | | | | | 24 | 218 | 78 | 40 | 26 |
| 11 | | | | | | | | 24 | 239 | 89 | 40 | 26 |
| 12 | | | | | | | | 24 | 267 | 98 | 40 | 24 |
| 13 | | | | | | | | 24 | 289 | 92 | 38 | 24 |
| 14 | | | | | | | | 24 | 299 | 87 | 37 | 23 |
| 15 | | | | | | | | 25 | 313 | 80 | 35 | 23 |
| 16 | 23 | 19 | 17 | 15 | 14 | 13 | 17 | 26 | 315 | 78 | 33 | 23 |
| 17 | | | | | | | | 27 | 330 | 84 | 32 | 23 |
| 18 | | | | | | | | 29 | 332 | 82 | 32 | 23 |
| 19 | | | | | | | | 32 | 302 | 79 | 36 | 23 |
| 20 | | | | | | | | 33 | 271 | 74 | 33 | 23 |
| 21 | | | | | | | | 38 | 241 | 69 | 32 | 23 |
| 22 | | | | | | | | 46 | 224 | 62 | 32 | 23 |
| 23 | | | | | | | | 44 | 207 | 59 | 30 | 23 |
| 24 | | | | | | | | 43 | 189 | 57 | 30 | 23 |
| 25 | | | | | | | | 42 | 178 | 55 | 30 | 23 |
| 26 | | | | | | | | 49 | 177 | 52 | 30 | 23 |
| 27 | | | | | | | | 55 | 165 | 51 | 30 | 23 |
| 28 | | | | | | | | 59 | 150 | 51 | 30 | 23 |
| 29 | | | | | - | | | 78 | 142 | 51 | 30 | 22 |
| 30 | | | | | - | | | 91 | 128 | 51 | 30 | 22 |
| 31 | | - | | | - | | - | 106 | - | 51 | 29 | - |

Note.--No gage-height record Oct. 1 to May 8; discharge computed on basis of one discharge measurement, weather records, and depletion curves based on pattern of winter flow in later years.

Discharge, in second-feet, of Cottonwood Creek near Smoot, Wyo., 1932-33, 1948-49--Continued

1948-49

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 27 | 23 | 18 | a18 | 16 | 14 | 14 | 38 | a137 | 93 | 46 | 30 |
| 2 | 27 | 23 | 18 | a18 | 16 | 14 | 14 | 38 | a125 | 92 | 46 | 29 |
| 3 | 27 | 22 | 18 | a18 | 16 | 14 | 14 | 38 | a114 | 90 | 45 | 29 |
| 4 | 28 | 22 | 18 | a18 | 16 | 14 | 14 | 38 | a105 | 85 | 45 | 28 |
| 5 | 28 | 22 | 18 | a18 | 16 | 14 | 15 | 38 | a98 | 82 | 44 | 28 |
| 6 | 29 | 21 | 18 | a18 | 16 | 14 | 15 | 38 | a103 | 80 | 42 | 27 |
| 7 | 28 | 21 | 18 | a18 | 16 | 14 | 15 | 37 | a120 | 76 | 41 | 27 |
| 8 | 27 | 20 | 19 | a18 | 16 | 14 | 16 | 38 | a134 | 74 | 41 | 27 |
| 9 | 27 | 20 | 19 | a18 | 16 | 14 | 16 | 41 | a153 | 72 | 41 | 26 |
| 10 | 27 | 20 | 19 | a18 | 16 | 14 | 17 | 46 | a183 | 69 | 40 | 27 |
| 11 | 27 | 20 | 19 | 18 | a16 | 14 | 18 | 57 | a200 | 68 | 39 | 27 |
| 12 | 27 | 20 | 19 | 18 | a16 | 14 | 19 | 68 | a230 | 66 | 38 | 28 |
| 13 | 27 | 20 | 19 | 18 | a16 | 14 | 19 | 78 | a200 | 66 | 38 | 28 |
| 14 | 27 | 20 | 19 | 18 | a16 | 14 | 19 | 92 | 187 | 64 | 38 | 28 |
| 15 | 30 | 20 | 19 | 18 | a16 | 14 | 19 | 106 | 185 | 63 | 38 | 27 |
| 16 | 29 | 19 | 19 | 18 | a15 | 14 | 20 | 122 | 178 | 61 | 38 | 26 |
| 17 | 28 | 19 | 18 | 18 | a15 | 14 | 20 | 130 | 173 | 61 | 38 | 26 |
| 18 | 28 | 19 | 18 | 17 | a15 | 14 | 22 | 134 | 170 | 61 | 37 | 26 |
| 19 | 27 | 19 | 18 | 17 | a15 | 14 | 24 | 132 | 168 | 59 | 36 | 26 |
| 20 | 27 | 19 | 18 | 16 | a15 | 14 | 25 | 132 | 161 | 58 | 35 | 26 |
| 21 | 26 | 19 | a18 | 16 | a15 | 14 | 24 | 130 | 155 | 57 | 34 | 25 |
| 22 | 26 | 19 | a18 | 16 | a15 | 14 | 26 | 128 | 148 | 55 | 34 | 25 |
| 23 | 26 | 19 | a18 | 16 | a15 | 14 | 29 | 124 | 144 | 54 | 34 | 24 |
| 24 | 25 | 19 | 18 | 16 | 15 | 14 | 31 | 118 | 136 | 54 | 34 | 24 |
| 25 | 24 | 19 | 18 | 16 | 15 | 14 | 34 | 116 | 130 | 52 | 34 | 24 |
| 26 | 24 | 19 | a18 | 16 | 15 | 14 | 38 | 120 | 124 | 51 | 33 | 24 |
| 27 | 24 | 18 | a18 | 16 | 14 | 14 | 39 | a140 | 116 | 51 | 32 | 24 |
| 28 | 24 | 18 | a18 | 16 | 14 | 14 | 42 | a150 | 116 | 50 | 31 | 24 |
| 29 | 24 | 18 | a18 | 16 | - | 14 | 43 | a170 | 112 | 49 | 31 | 25 |
| 30 | 23 | 18 | a18 | 16 | - | 14 | 40 | a154 | 101 | 48 | 31 | 26 |
| 31 | 23 | - | a18 | 16 | - | 14 | - | a145 | - | 47 | 30 | - |

Peak discharge (base, 140 sec.-ft.).--June 12 (time and discharge unknown).

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

Monthly discharge, in second-feet, 1932-33, 1948-49

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October 1932 | /13 | - | - | 23 | 1,410 |
| November | 570 | - | - | 19 | 1,130 |
| December | 527 | - | - | 17 | 1,050 |
| Calendar year | - | - | - | - | - |
| January 1933 | 465 | - | - | 15 | 922 |
| February | 392 | - | - | 14 | 778 |
| March | 403 | - | - | 13 | 799 |
| April | 510 | - | - | 17 | 1,010 |
| May | 1,159 | 106 | 24 | 37.4 | 2,300 |
| June | 6,631 | 332 | 126 | 221 | 13,150 |
| July | 2,365 | 119 | 51 | 76.3 | 4,690 |
| August | 1,110 | 50 | 29 | 35.8 | 2,200 |
| September | 734 | 29 | 22 | 24.5 | 1,460 |
| Water year 1932-33 | 15,579 | 332 | - | 42.7 | 30,900 |
| December 1933 | 465 | - | - | 15 | 922 |
| January 1934 | 434 | - | - | 14 | 861 |
| February | 364 | - | - | 13 | 722 |
| March | 372 | - | - | 12 | 738 |
| Water year 1933-34 | 8,618 | 69 | - | 23.6 | 17,090 |
| Calendar year 1934 | 8,191 | 208 | - | 22.4 | 16,240 |
| October 1948 | 821 | 30 | 23 | 26.5 | 1,630 |
| November | 595 | 23 | 18 | 19.8 | 1,180 |
| December | 567 | 19 | 18 | 18.3 | 1,120 |
| Calendar year 1948 | 16,767 | 258 | 11 | 45.8 | 33,250 |
| January 1949 | 532 | 18 | 16 | 17.2 | 1,060 |
| February | 433 | 16 | 14 | 15.5 | 859 |
| March | 434 | 14 | 14 | 14.0 | 861 |
| April | 701 | 43 | 14 | 23.4 | 1,390 |
| May | 2,936 | 170 | 37 | 94.7 | 5,820 |
| June | 4,406 | 230 | 98 | 147 | 8,740 |
| July | 2,007 | 93 | 47 | 64.7 | 3,980 |
| August | 1,164 | 46 | 30 | 37.5 | 2,310 |
| September | 791 | 30 | 24 | 26.4 | 1,570 |
| Water year 1948-49 | 15,387 | 230 | 14 | 42.2 | 30,520 |

Note.--Monthly discharge for the period December 1933 to March 1934, not previously published.

## Swift Creek near Afton, Wyo.

Location.--Water-stage recorder, lat. 42°43'30", long. 110°54'00", in SE¼ sec. 29, T. 32 N., R. 118 W., 1 mile upstream from mouth of canyon and 1½ miles east of Afton.

Drainage area.--27.4 square miles.

Records available.--May 1943 to September 1949.

Extremes.--Maximum discharge during year, 495 second-feet June 12 (gage height, 3.19 feet), from rating curve extended above 320 second-feet; minimum daily, 36 second-feet Dec. 28, Feb. 19 to Mar. 11, Mar. 13, 14, 17-20, 22-25, 27-31.
1943-49: Maximum discharge, 560 second-feet June 10, 1948 (gage height, 3.39 feet), from rating curve extended above 320 second-feet; minimum daily, 28 second-feet Apr. 3, 4, 1945.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Pipe line (capacity, about 5 second-feet) diverts water above station for town of Afton. Diurnal fluctuation caused by small power plant and reservoir a quarter of a mile upstream.

Rating tables, water year 1948-49 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 31 to Dec. 10, Jan. 11 to Mar. 6, Mar. 31 to Apr. 23)

| Oct. 1 to Nov. 20 | | Nov. 21 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|
| 1.9 | 42 | 1.9 | 36 | 2.2 | 70 | 2.6 | 215 |
| 2.0 | 50 | 2.0 | 42 | 2.3 | 100 | 2.9 | 350 |
| 2.1 | 63 | 2.1 | 52 | 2.4 | 135 | 3.2 | 500 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 58 | 48 | 41 | 37 | 40 | 36 | 37 | 56 | 251 | 195 | 85 | 59 |
| 2 | 58 | 49 | 41 | 37 | 40 | 36 | 37 | 52 | 215 | 191 | 82 | 57 |
| 3 | 56 | 48 | 41 | 38 | 40 | 36 | 37 | 54 | 191 | 191 | 82 | 57 |
| 4 | 56 | 48 | 41 | 38 | 40 | 36 | 37 | 57 | 171 | 183 | 79 | 57 |
| 5 | 56 | 48 | 41 | 39 | 40 | 36 | 38 | 57 | 163 | 175 | 79 | 57 |
| 6 | 56 | 46 | 40 | 40 | 40 | 36 | 38 | 52 | 175 | 171 | 79 | 57 |
| 7 | 55 | 46 | 40 | 40 | 38 | 36 | 39 | 52 | 199 | 171 | 76 | 57 |
| 8 | 54 | 46 | 41 | 39 | 38 | 36 | 40 | 56 | 260 | 163 | 76 | 57 |
| 9 | 55 | 46 | 40 | 39 | 38 | 36 | 40 | 68 | 336 | 155 | 73 | 56 |
| 10 | 54 | 46 | 40 | 38 | 38 | 36 | 40 | 94 | 360 | 155 | 70 | 56 |
| 11 | 54 | 45 | 40 | 38 | 38 | 36 | 41 | 114 | 415 | 151 | 68 | 56 |
| 12 | 54 | 45 | 39 | 38 | 38 | 37 | 42 | 139 | 455 | 143 | 68 | 56 |
| 13 | 54 | 45 | 39 | 38 | 38 | 36 | 42 | 155 | 375 | 143 | 68 | 56 |
| 14 | 54 | 44 | 39 | 38 | 38 | 36 | 41 | 183 | 360 | 135 | 66 | 56 |
| 15 | 55 | 45 | 39 | 38 | 38 | 37 | 41 | 191 | 375 | 128 | 66 | 56 |
| 16 | 54 | 44 | 38 | 38 | 38 | 37 | 42 | 220 | 370 | 128 | 68 | 54 |
| 17 | 53 | 44 | 38 | 39 | 38 | 36 | 42 | 228 | 341 | 128 | 66 | 52 |
| 18 | 54 | 44 | 39 | 39 | 38 | 36 | 44 | 238 | 323 | 124 | 66 | 52 |
| 19 | 54 | 44 | 38 | 39 | 36 | 36 | 45 | 215 | 375 | 121 | 66 | 52 |
| 20 | 53 | 44 | 39 | 39 | 36 | 36 | 46 | 211 | 323 | 118 | 66 | 51 |
| 21 | 53 | 43 | 39 | 39 | 36 | 37 | 44 | 199 | 318 | 110 | 66 | 51 |
| 22 | 53 | 43 | 38 | 40 | 36 | 36 | 45 | 179 | 296 | 110 | 66 | 51 |
| 23 | 53 | 43 | 40 | 39 | 36 | 36 | 46 | 163 | 278 | 107 | 66 | 50 |
| 24 | 51 | 44 | 40 | 39 | 36 | 36 | 47 | 159 | 260 | 107 | 66 | 50 |
| 25 | 51 | 43 | 38 | 39 | 36 | 36 | 54 | 159 | 260 | 104 | 66 | 50 |
| 26 | 51 | 42 | 39 | 41 | 36 | 37 | 56 | 199 | 260 | 100 | 65 | 49 |
| 27 | 51 | 42 | 40 | 40 | 36 | 36 | 59 | 238 | 233 | 94 | 63 | 50 |
| 28 | 51 | 41 | 36 | 40 | 36 | 36 | 65 | 260 | 215 | 91 | 63 | 50 |
| 29 | 51 | 42 | 37 | 40 | - | 36 | 66 | 310 | 211 | 91 | 61 | 49 |
| 30 | 50 | 41 | 37 | 40 | - | 36 | 61 | 278 | 195 | 88 | 59 | 49 |
| 31 | 49 | - | 37 | 40 | - | 36 | - | 260 | - | 85 | 59 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,661 | 58 | 49 | 53.6 | 3,290 |
| November | 1,339 | 49 | 41 | 44.6 | 2,660 |
| December | 1,215 | 41 | 36 | 39.2 | 2,410 |
| Calendar year 1948 | 32,425 | 505 | 34 | 88.6 | 64,330 |
| January | 1,206 | 41 | 37 | 38.9 | 2,390 |
| February | 1,056 | 40 | 36 | 37.7 | 2,090 |
| March | 1,121 | 37 | 36 | 36.2 | 2,220 |
| April | 1,352 | 66 | 37 | 45.1 | 2,680 |
| May | 4,896 | 310 | 52 | 158 | 9,710 |
| June | 8,559 | 455 | 163 | 285 | 16,980 |
| July | 4,156 | 195 | 85 | 134 | 8,240 |
| August | 2,149 | 85 | 59 | 69.3 | 4,260 |
| September | 1,610 | 59 | 49 | 53.7 | 3,190 |
| Water year 1948-49 | 30,320 | 455 | 36 | 83.1 | 60,120 |

Peak discharge (base, 390 sec.-ft.).--June 12 (10:30 p.m.) 495 sec.-ft.
Note.--No gage-height recod Jan. 27, Jan. 30 to Feb. 17; discharge computed on basis of weather records and records for stations on nearby streams.

## Crow Creek near Fairview, Wyo.

Location.--Water-stage recorder, lat. 42°40'10", long. 111°01'20", in sec. 17, T. 31 N., R. 119 W., 1¼ miles upstream from Spring Creek, 1½ miles downstream from Idaho-Wyoming State line, and 2½ miles southwest of Fairview.
Drainage area.--114 square miles.
Records available.--March 1946 to November 1949 (discontinued).
Extremes.--Maximum discharge during period October 1948 to November 1949, 120 second-feet May 19; maximum gage height recorded, 3.02 feet Dec. 21 (ice jam); minimum discharge recorded, 31 second-feet Aug. 30 to Sept. 2 (gage height, 1.25 feet), but probably less during period of ice effect.

1946-49: Maximum discharge observed, 236 second-feet Apr. 19, 1946; maximum gage height observed, 3.52 feet Feb. 8, 1947; minimum discharge observed, 16 second-feet Mar. 5, 1948 (discharge measurement), but probably less during periods of ice effect; minimum gage height recorded, 1.22 feet Apr. 7, 1948.

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

Discharge, in second-feet, 1948-49

1948-49

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 38 | 45 | 44 | | | 37 | 44 | 68 | 89 | 49 | 35 | 32 |
| 2 | 38 | 51 | 44 | | | 39 | 45 | 65 | 89 | 48 | 39 | 32 |
| 3 | 39 | 50 | 45 | | | *41 | 46 | 69 | 76 | 52 | 41 | 32 |
| 4 | 40 | 48 | 47 | | | 40 | 49 | 75 | 73 | 57 | 59 | 32 |
| 5 | 45 | 44 | 46 | | | 40 | 54 | 70 | 72 | 57 | 39 | 34 |
| 6 | 45 | 43 | 45 | | | 42 | 61 | 67 | 70 | 51 | 38 | 34 |
| 7 | 45 | 43 | 43 | | | 41 | 66 | 66 | 70 | 46 | 38 | 33 |
| 8 | 43 | 43 | 42 | | 35 | 41 | 72 | 68 | 91 | 44 | 39 | 32 |
| 9 | 41 | 42 | 42 | | | 41 | 72 | 69 | 79 | 44 | 39 | 33 |
| 10 | 40 | 40 | 43 | | | 42 | 71 | 72 | 71 | 44 | 39 | 35 |
| 11 | 40 | 41 | 44 | | | 42 | 73 | 71 | 68 | 45 | 36 | 39 |
| 12 | 40 | 41 | 45 | | | 42 | 76 | 71 | 67 | 44 | 37 | 39 |
| 13 | 40 | 41 | 45 | | | 42 | 74 | 72 | 64 | 46 | 36 | 36 |
| 14 | 41 | 41 | 40 | | | 42 | 70 | 73 | 63 | 42 | 35 | 36 |
| 15 | 44 | 43 | *35 | | | 44 | 69 | 76 | 61 | 42 | 35 | 37 |
| 16 | 42 | 41 | 33 | 34 | | 46 | 71 | 88 | 61 | 42 | 35 | 36 |
| 17 | 41 | 44 | 34 | | | 46 | 73 | 108 | 61 | 41 | 34 | 36 |
| 18 | 41 | 42 | 35 | | | 46 | 75 | 99 | 61 | 41 | 34 | 36 |
| 19 | 42 | 40 | 36 | | | 49 | 77 | 113 | 77 | 43 | 34 | 36 |
| 20 | 43 | 42 | 38 | | | 50 | 78 | 101 | 68 | 42 | 33 | 36 |
| 21 | 42 | 44 | 36 | | | 47 | 72 | 88 | 65 | 41 | 33 | 38 |
| 22 | 41 | 41 | 33 | | | 47 | 70 | 96 | 59 | 39 | 33 | 37 |
| 23 | *41 | 42 | | | 36 | 47 | 75 | 102 | 57 | 39 | 35 | 37 |
| 24 | 44 | 43 | | | | 46 | 76 | 95 | 58 | 39 | 39 | 36 |
| 25 | 44 | 42 | | | | 45 | 76 | 89 | 56 | 36 | 37 | 37 |
| 26 | 44 | 43 | | | | 45 | 75 | 84 | 55 | 35 | 35 | 37 |
| 27 | 45 | 40 | 34 | | | 45 | 72 | 75 | 57 | 36 | 35 | 36 |
| 28 | 46 | 42 | | | | 46 | 73 | 72 | 53 | 36 | 35 | 36 |
| 29 | 46 | 43 | | | - | 46 | 76 | 67 | 50 | 36 | 35 | 39 |
| 30 | 45 | 44 | | | - | 44 | 74 | 70 | 49 | 36 | 34 | 46 |
| 31 | 45 | - | | | - | 44 | - | 73 | - | 36 | 33 | - |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 5, 8-10, 18-23, Nov. 27 to Mar. 10. No gage-height record Oct. 8-12, 19-22, Dec. 23 to Mar. 2 except staff-gage readings Dec. 29, Jan. 2, 29, Feb. 13, 25; discharge computed on basis of weather records and records for Stump Creek near Auburn and other nearby streams.

1949

| Day | Oct. | Nov. | Day | Oct. | Nov. | Day | Oct. | Nov. | Day | Oct. | Nov. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 45 | 41 | 9 | 40 | - | 17 | 42 | - | 25 | 44 | - |
| 2 | 40 | - | 10 | 40 | - | 18 | 64 | - | 26 | 44 | - |
| 3 | 37 | - | 11 | 44 | - | 19 | 52 | - | 27 | 44 | - |
| 4 | 37 | - | 12 | 43 | - | 20 | 49 | - | 28 | 43 | - |
| 5 | 38 | - | 13 | 42 | - | 21 | 46 | - | 29 | 44 | - |
| 6 | 41 | - | 14 | 41 | - | 22 | 44 | - | 30 | 42 | - |
| 7 | 39 | - | 15 | 41 | - | 23 | 46 | - | 31 | 41 | - |
| 8 | 40 | - | 16 | 41 | - | 24 | 44 | - | | | |

Monthly discharge, in second-feet, 1948-49

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October 1948 | 1,311 | 46 | 38 | 42.3 | 2,600 |
| November | 1,289 | 51 | 40 | 43.0 | 2,560 |
| December | 1,201 | 47 | - | 38.7 | 2,380 |
| Calendar year 1948 | 19,944 | 181 | 24 | 54.5 | 39,550 |
| January 1949 | 1,054 | - | - | 34.0 | 2,090 |
| February | 993 | - | - | 35.5 | 1,970 |
| March | 1,355 | 50 | 37 | 43.7 | 2,690 |
| April | 2,055 | 78 | 44 | 68.5 | 4,080 |
| May | 2,472 | 113 | 65 | 79.7 | 4,900 |
| June | 1,990 | 91 | 49 | 66.3 | 3,950 |
| July | 1,329 | 57 | 35 | 42.9 | 2,640 |
| August | 1,119 | 41 | 33 | 36.1 | 2,220 |
| September | 1,075 | 46 | 32 | 35.8 | 2,130 |
| Water year 1948-49 | 17,243 | 113 | - | 47.2 | 34,210 |
| October 1949 | 1,338 | 64 | 37 | 43.2 | 2,650 |

Stump Creek near Auburn, Wyo.

Location.--Water-stage recorder, lat. 42°47', long. 111°03', in sec. 26, T. 7 S., R. 46 E., 0.6 mile upstream from Wyoming-Idaho State Line, 0.8 mile downstream from Tygee Creek, and 2½ miles west of Auburn.
Drainage area.--103 square miles.
Records available.--March 1946 to November 1949 (discontinued).
Extremes.--Maximum discharge during period October 1948 to November 1949, 356 second-feet May 18 (gage height, 3.08 feet); minimum, 11 second-feet Mar. 1 (gage height, 0.81 foot), but may have been less during period of ice effect or no gage-height record.
1946-49: Maximum discharge, 490 second-feet May 18, 20, 1948 (gage height, 3.61 feet); minimum, 6.0 second-feet Feb. 5, 1947 (gage height, 0.66 foot), ice jam upstream.
Remarks.--Records good except those for periods of ice effect, which are fair. Some diversions above and below station for irrigation.

Discharge, in second-feet, 1948-49

1948-49

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | 24 | 24 | | | 21 | 24 | 154 | 189 | 53 | 26 | 23 |
| 2 | 24 | 29 | 26 | | | 20 | 25 | 145 | 174 | 53 | 26 | 22 |
| 3 | 24 | 31 | 26 | | | *23 | 26 | 174 | 154 | 63 | 26 | 23 |
| 4 | 27 | 28 | 24 | | | 21 | 29 | 185 | 140 | 67 | 26 | 23 |
| 5 | 31 | 26 | 22 | | 19 | 21 | 34 | 174 | 136 | 62 | 26 | 23 |
| 6 | 31 | 25 | 23 | | | 23 | 43 | 167 | 128 | 59 | 26 | 23 |
| 7 | 30 | 24 | 24 | | | 21 | 50 | 176 | 133 | 54 | 25 | 22 |
| 8 | 28 | 23 | 24 | | | 22 | 64 | 183 | 138 | 52 | 26 | 21 |
| 9 | 26 | 24 | 26 | | | 21 | 69 | 198 | 135 | 50 | 31 | 22 |
| 10 | 26 | 23 | 26 | | | 22 | 71 | 202 | 122 | 49 | 40 | 24 |
| 11 | 26 | 24 | 26 | | 20 | 21 | 79 | 206 | 117 | 47 | 31 | 25 |
| 12 | 25 | 24 | 26 | | 20 | 22 | 90 | 212 | 110 | 46 | 30 | 25 |
| 13 | 25 | 24 | 25 | | 20 | 21 | 91 | 218 | 104 | 44 | 29 | 24 |
| 14 | 26 | 24 | 23 | | 20 | 21 | 84 | 220 | 93 | 44 | 28 | 24 |
| 15 | 29 | 26 | 24 | | 20 | 22 | 90 | 220 | 87 | 44 | 27 | 23 |
| 16 | 27 | 25 | *21 | 19 | 20 | 23 | 110 | 256 | 83 | 41 | 28 | 23 |
| 17 | 25 | 25 | 19 | | 20 | 24 | 123 | 308 | 82 | 40 | 28 | 23 |
| 18 | 25 | 22 | 20 | | 21 | 23 | 131 | 320 | 87 | 40 | 27 | 23 |
| 19 | 25 | 23 | 21 | | 21 | 24 | 145 | 303 | 94 | 39 | 26 | 23 |
| 20 | 25 | 24 | 20 | | 20 | 26 | 163 | 286 | 83 | 38 | 25 | 22 |
| 21 | 24 | 24 | 19 | | 22 | 26 | 135 | 328 | 76 | 38 | 25 | 22 |
| 22 | 24 | 23 | 18 | | 21 | 26 | 145 | 293 | 70 | 38 | 25 | 22 |
| 23 | *24 | 25 | 19 | | 23 | 26 | 176 | 270 | 69 | 36 | 27 | 22 |
| 24 | 24 | 24 | 20 | | 21 | 25 | 189 | 239 | 70 | 35 | 29 | 21 |
| 25 | 24 | 25 | 18 | | 21 | 24 | 200 | 216 | 69 | 33 | 26 | 22 |
| 26 | 24 | 24 | 19 | | 23 | 24 | 200 | 204 | 75 | 31 | 24 | 22 |
| 27 | 24 | 21 | 19 | | 24 | 24 | 208 | 198 | 71 | 31 | 24 | 21 |
| 28 | 24 | 23 | 20 | | 24 | 24 | 220 | 189 | 66 | 30 | 24 | 23 |
| 29 | 24 | 26 | 20 | | - | 24 | 216 | 177 | 64 | 28 | 23 | 28 |
| 30 | 24 | 22 | 18 | | - | 24 | 176 | 163 | 54 | 26 | 22 | 34 |
| 31 | 23 | - | 18 | | - | 24 | - | 163 | - | 26 | 23 | - |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by iee Nov. 8, 18-20, 22, 27, 28, Nov. 30 to Dec. 2, Dec. 5, 6, 14, Dec. 16 to Feb. 17, Feb. 20, 22, Feb. 24 to Mar. 2, Mar. 5 (no gage-height record Dec. 18, 19, Dec. 23 to Jan. 13, Jan. 21 to Feb. 10; discharge computed on basis of weather records and records for nearby streams).

1949

| Day | Discharge | Day | Discharge | Day | Discharge | Day | Discharge |
|---|---|---|---|---|---|---|---|
| Oct. 1 | 33 | Oct. 9 | 27 | Oct. 17 | 32 | Oct. 25 | 31 |
| 2 | 27 | 10 | 29 | 18 | 54 | 26 | 30 |
| 3 | 26 | 11 | 28 | 19 | 40 | 27 | 29 |
| 4 | 24 | 12 | 28 | 20 | 38 | 28 | 28 |
| 5 | 31 | 13 | 27 | 21 | 34 | 29 | 32 |
| 6 | 31 | 14 | 26 | 22 | 33 | 30 | 30 |
| 7 | 28 | 15 | 26 | 23 | 32 | 31 | 28 |
| 8 | 27 | 16 | 27 | 24 | 31 | | |

Note.--Daily discharge for Nov. 1, 1949, was 26 sec.-ft.

Monthly discharge, in second-feet, 1948-49

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October 1948 | 792 | 31 | 23 | 25.5 | 1,570 |
| November | 735 | 31 | 21 | 24.5 | 1,460 |
| December | 678 | 26 | 18 | 21.9 | 1,340 |
| Calendar year 1948 | 21,101 | 432 | 16 | 57.7 | 41,850 |
| January 1949 | 589 | - | - | 19.0 | 1,170 |
| February | 571 | 24 | - | 20.4 | 1,130 |
| March | 713 | 26 | 20 | 23.0 | 1,410 |
| April | 3,406 | 220 | 24 | 114 | 6,760 |
| May | 6,747 | 328 | 145 | 218 | 13,380 |
| June | 3,073 | 189 | 54 | 102 | 6,100 |
| July | 1,337 | 67 | 26 | 43.1 | 2,650 |
| August | 829 | 40 | 22 | 26.7 | 1,640 |
| September | 698 | 34 | 21 | 23.3 | 1,380 |
| Water year 1948-49 | 20,168 | 328 | - | 55.3 | 39,990 |
| October 1949 | 947 | 54 | 24 | 30.5 | 1,880 |

## Strawberry Creek near Bedford, Wyo.

Location.--Water-stage recorder, lat. 42°54' (revised), long. 110°54', in sec. 27, T. 34 N., R. 118 W., at mouth of canyon, 1½ miles east of Bedford.

Drainage area.--21.3 square miles.

Records available.--June 1932 to September 1943 (discontinued).

Average discharge.--11 years, 62.4 second-feet.

Extremes.--1932-43: Maximum discharge recorded, 396 second-feet June 27, 1943 (gage height, 4.51 feet), from rating curve extended above 250 second-feet, but may have been higher during period of no gage-height record June 19-26, 1943; minimum not determined.
Revisions.--The maximum observed discharge for the period June to September 1932 has been revised to 316 second-feet June 25, and the maximum observed gage height for this period has been revised to 2.58 feet June 24. These figures supersede those published in Water-Supply Paper 738.

Remarks.--One small diversion above station.

Revisions.--Revised figures of discharge for the period June to September 1932, superseding those published in Water Supply Paper 738, are given herewith.

Discharge, in second-feet, June to September 1932

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | 220 | 88 | 71 |
| 2 | | | | | | | | | | 206 | 88 | 71 |
| 3 | | | | | | | | | | 195 | 88 | 68 |
| 4 | | | | | | | | | | 186 | 86 | 68 |
| 5 | | | | | | | | | a140 | 169 | 86 | 68 |
| 6 | | | | | | | | | | 166 | 83 | 68 |
| 7 | | | | | | | | | | 162 | 83 | 68 |
| 8 | | | | | | | | | | 159 | 83 | 68 |
| 9 | | | | | | | | | 118 | 154 | 83 | 66 |
| 10 | | | | | | | | | 110 | 146 | 83 | 66 |
| 11 | | | | | | | | | 112 | 142 | 83 | 66 |
| 12 | | | | | | | | | 122 | 134 | 83 | 66 |
| 13 | | | | | | | | | 154 | 126 | 83 | 64 |
| 14 | | | | | | | | | 222 | 123 | 81 | 64 |
| 15 | | | | | | | | | 266 | 120 | 79 | 64 |
| 16 | | | | | | | | | 260 | 117 | 79 | 64 |
| 17 | | | | | | | | | 222 | 117 | 81 | 62 |
| 18 | | | | | | | | | 204 | 114 | 78 | 59 |
| 19 | | | | | | | | | 211 | 111 | 78 | 57 |
| 20 | | | | | | | | | 186 | 104 | 78 | 55 |
| 21 | | | | | | | | | 204 | 102 | 76 | 55 |
| 22 | | | | | | | | | 237 | 99 | 76 | 55 |
| 23 | | | | | | | | | 252 | 99 | 73 | 55 |
| 24 | | | | | | | | | 296 | 97 | 73 | 55 |
| 25 | | | | | | | | | 316 | 97 | 73 | 55 |
| 26 | | | | | | | | | 304 | 94 | 71 | 55 |
| 27 | | | | | | | | | 274 | 94 | 71 | 55 |
| 28 | | | | | | | | | 278 | 91 | 71 | 55 |
| 29 | | | | | | | | | 264 | 91 | 81 | 55 |
| 30 | | | | | | | | | 239 | 88 | 71 | 55 |
| 31 | | | | | | | | | - | 88 | 71 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | - | - | - | - | - |
| June | 5,971 | 316 | 110 | 199 | 11,840 |
| July | 4,011 | 220 | 88 | 129 | 7,960 |
| August | 2,461 | 88 | 71 | 79.4 | 4,880 |
| September | 1,853 | 71 | 55 | 61.8 | 3,680 |
| The period | - | - | - | - | 28,360 |

a No gage-height record; discharge computed on basis of records for stations on nearby streams.

## Henrys Fork near Lake, Idaho

Location.--Water-stage recorder, lat. 44°36', long. 111°21', in SW¼ sec. 26, T. 15 N., R. 43 E., a quarter of a mile downstream from Henrys Lake Dam and 4 miles south of former Lake post office. Datum of gage is 6,450.62 feet above mean sea level, levels by Bureau of Reclamation (Corps of Engineers bench mark).

Drainage area.--104 square miles, including that of Dry Creek Basin.

Records available.--September 1922 to September 1949. May 1920 to September 1922 at site 3 miles downstream and below mouth of Dry Creek, floodwaters of which have been diverted into Henrys Lake at times since 1923.

Average discharge.--29 years, 48.1 second-feet.

Extremes.--Maximum discharge during year, 252 second-feet Aug. 1 (gage height, 3.07 feet); minimum daily, 5 second-feet during November (leakage through reservoir gates).
1920-49: Maximum discharge, 907 second-feet June 13, 1926 (gage height, 5.40 feet); minimum, 0.1 second-foot Oct. 3-31, 1937. Outflow from Henrys Lake entirely ceased late in summer of 1889.

Remarks.--Records good except those for Oct. 1 to May 7, which are fair. Flow regulated by Henrys Lake (see p. 58), gates of which remained closed Oct. 1 to July 17. No diversion from Dry Creek into Henrys Lake during year.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | 13 | 31 | 64 | 251 | 220 |
| 2 | | | | | | | | 13 | 34 | 64 | 249 | 219 |
| 3 | | | | | | | | 13 | 35 | 65 | 245 | 219 |
| 4 | | | | | | | | 13 | 34 | 67 | 243 | 219 |
| 5 | | | | | | | | 14 | 34 | 65 | 242 | 219 |
| 6 | | | | | | | | 14 | 36 | 65 | 240 | 219 |
| 7 | | | | | | | | 14 | 39 | 67 | 240 | 219 |
| 8 | | | | | | | | 14 | 43 | 68 | 238 | 220 |
| 9 | | | | | | | | 14 | 45 | 67 | 238 | 220 |
| 10 | | | | | | | | 14 | 50 | 68 | 235 | 220 |
| 11 | | | | | | | | 14 | 55 | 67 | 235 | 220 |
| 12 | | | | | | | | 14 | 60 | 59 | 233 | 148 |
| 13 | | | | | | | | 14 | 61 | 47 | 230 | 75 |
| 14 | | | | | | | | 14 | 61 | 48 | 228 | 75 |
| 15 | 9 | 5 | 6 | 8 | 10 | 11 | 13 | 16 | 62 | 52 | 225 | 74 |
| 16 | | | | | | | | 16 | 65 | 55 | 224 | 73 |
| 17 | | | | | | | | 17 | 67 | 57 | 224 | 73 |
| 18 | | | | | | | | 17 | 66 | 138 | 224 | 73 |
| 19 | | | | | | | | 17 | 67 | 245 | 224 | 73 |
| 20 | | | | | | | | 18 | 77 | 247 | 224 | 73 |
| 21 | | | | | | | | 18 | 77 | 249 | 222 | 73 |
| 22 | | | | | | | | 18 | 80 | 247 | 222 | 73 |
| 23 | | | | | | | | 18 | 77 | 245 | 222 | 73 |
| 24 | | | | | | | | 18 | 73 | 245 | 220 | 73 |
| 25 | | | | | | | | 19 | 71 | 245 | 220 | 73 |
| 26 | | | | | | | | 20 | 75 | 249 | 222 | 72 |
| 27 | | | | | | | | 19 | 69 | 249 | 222 | 72 |
| 28 | | | | | | | | 20 | 67 | 245 | 222 | 72 |
| 29 | | | | | - | | | 21 | 64 | 247 | 222 | 71 |
| 30 | | | | | - | | | 23 | 65 | 249 | 220 | 70 |
| 31 | | - | | | - | | - | 25 | - | 249 | 220 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 279 | - | - | 9 | 553 |
| November | 150 | - | - | 5 | 298 |
| December | 186 | - | - | 6 | 369 |
| Calendar year 1948 | 24,222 | 321 | - | 66.2 | 48,040 |
| January | 248 | - | - | 8 | 492 |
| February | 280 | - | - | 10 | 555 |
| March | 341 | - | - | 11 | 676 |
| April | 390 | - | - | 13 | 774 |
| May | 512 | 25 | 13 | 16.5 | 1,020 |
| June | 1,740 | 80 | 31 | 58.0 | 3,450 |
| July | 4,394 | 249 | 47 | 142 | 8,720 |
| August | 7,126 | 251 | 220 | 230 | 14,130 |
| September | 3,873 | 220 | 70 | 129 | 7,680 |
| Water year 1948-49 | 19,519 | 251 | - | 53.5 | 38,720 |

Note.--No gage-height record Oct. 1 to May 7; discharge computed on basis of discharge measurements made Oct. 15, Nov. 18, Mar. 10, Apr. 14.

## Island Park Reservoir near Island Park, Idaho

Location.--Electric-tape gage, lat. 44°25', long. 111°24', in gatehouse shaft at dam on Henrys Fork, a quarter of a mile south of quarter corner between secs. 28 and 29, T. 13 N., R. 43 E., a quarter of a mile upstream from Buffalo River and 2 miles west of Island Park post office. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Drainage area.--478 square miles.

Records available.--November 1938 to September 1949.

Extremes.--Maximum contents during year, 137,315 acre-feet May 22 (elevation, 6,303.26 feet); minimum, 28,890 acre-feet Sept. 29 (elevation, 6,281.50 feet).
1938-49: Maximum contents, 137,805 acre-feet June 8, 1945 (elevation, 6,303.32 feet); minimum after first filling of reservoir in May 1939, 16,855 acre-feet Sept. 27, 1940 (elevation, 6,274.22 feet).

Remarks.--Reservoir is formed by earth-fill, rock-faced dam. Storage began Nov. 15, 1938. Capacity, 127,265 acre-feet between elevations 6,239 feet (normal low-water level with outlet gates open) and 6,302 feet (crest of spillway). Natural flow passing through reservoir when outlet gates are open prevents withdrawal of storage to elevation 6,230 feet (sill of lower outlet). Dead storage negligible. Water is used for irrigation of lands in Fremont-Madison irrigation district between Ashton and Rexburg. Gage read daily at 8 a.m. Contents given herein are computed from elevations at that time; all available for release.

Cooperation.--Reservoir elevations and capacity table furnished by Bureau of Reclamation.

Contents, in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 33,230 | 33,130 | 50,960 | 73,370 | 97,545 | 108,375 | 102,665 | 117,220 | 136,340 | 133,030 | 90,920 | 47,025 |
| 2 | 33,205 | 33,560 | 51,660 | 74,465 | 98,275 | 108,090 | 102,595 | 118,265 | 136,340 | 133,030 | 88,465 | 46,320 |
| 3 | 33,205 | 33,890 | 52,645 | 75,185 | 99,075 | 107,385 | 102,525 | 119,235 | 136,095 | 132,710 | 86,175 | 45,350 |
| 4 | 33,180 | 34,120 | 53,730 | 75,855 | 99,880 | 106,755 | 102,525 | 120,740 | 136,015 | 131,910 | 84,355 | 44,095 |
| 5 | 33,305 | 34,145 | 54,590 | 76,650 | 100,895 | - | 102,460 | 121,120 | 135,690 | 131,355 | 81,725 | 43,270 |
| 6 | 33,280 | 34,145 | 55,465 | 77,370 | 101,845 | 106,335 | 102,460 | 122,565 | 135,450 | 130,880 | 79,440 | 42,365 |
| 7 | 33,255 | 34,145 | 56,310 | 78,115 | 102,665 | 106,055 | 102,460 | 124,475 | 135,450 | 130,405 | 77,090 | 41,420 |
| 8 | 33,305 | 34,145 | 57,165 | 78,860 | 103,420 | 105,775 | 102,390 | 126,405 | 135,365 | 130,010 | 74,795 | 40,405 |
| 9 | 33,305 | 34,095 | 58,120 | 79,615 | 104,385 | 105,495 | 102,320 | 128,045 | 135,205 | 129,615 | 72,500 | 39,465 |
| 10 | 33,305 | 34,095 | 59,185 | 80,485 | 105,430 | 105,360 | 102,255 | 130,090 | 134,960 | 129,380 | 70,220 | 38,705 |
| 11 | 33,305 | 34,070 | 60,080 | 81,250 | 106,895 | 105,220 | 102,185 | 131,590 | 134,960 | 129,220 | 68,615 | 38,075 |
| 12 | 33,305 | 34,070 | 60,945 | 82,080 | 107,740 | 105,220 | 102,185 | 132,950 | 134,880 | 128,830 | 67,090 | 37,590 |
| 13 | 33,305 | - | 61,920 | 82,910 | 108,375 | 105,150 | 102,185 | 134,235 | 134,800 | 128,360 | 65,550 | 37,000 |
| 14 | 33,330 | 34,605 | 62,805 | 83,630 | 109,015 | 105,080 | 102,320 | 135,205 | 134,475 | 127,345 | 64,190 | 36,450 |
| 15 | 33,355 | - | 63,660 | 84,720 | 109,655 | 104,870 | 102,255 | 135,855 | 134,395 | 126,565 | 62,900 | 35,905 |
| 16 | 33,355 | - | 64,530 | 85,445 | 110,300 | 104,595 | 102,185 | 136,260 | 134,075 | 125,165 | 61,455 | 35,795 |
| 17 | 33,355 | - | 65,405 | 86,175 | 110,945 | 104,595 | 102,320 | 136,905 | 134,075 | 124,165 | 60,080 | 35,450 |
| 18 | 33,355 | - | 66,195 | 87,040 | 111,665 | 104,455 | 102,460 | 137,150 | 133,430 | 122,640 | 58,740 | 35,000 |
| 19 | 33,330 | - | 67,040 | 87,780 | 111,305 | 104,250 | 102,390 | 137,230 | 133,910 | 121,500 | 56,860 | 32,375 |
| 20 | 33,330 | - | 66,990 | 88,655 | 110,870 | 103,970 | 102,665 | 137,070 | 133,590 | 119,835 | 56,180 | 30,835 |
| 21 | 33,330 | 41,545 | 66,940 | 89,470 | 110,515 | 103,835 | 103,075 | 137,230 | 133,750 | 117,740 | 55,130 | 30,835 |
| 22 | 33,280 | 42,655 | 66,840 | 90,290 | 110,230 | 103,695 | 103,490 | 137,315 | 133,590 | 115,375 | 54,260 | 30,285 |
| 23 | 33,280 | 43,465 | 66,790 | 91,110 | 110,015 | 103,490 | 104,110 | 136,990 | 133,590 | 112,745 | 53,245 | 29,480 |
| 24 | 33,255 | 44,665 | 66,740 | 91,745 | 109,725 | 103,280 | 104,870 | 136,665 | 133,590 | 110,370 | 52,245 | 29,500 |
| 25 | 33,255 | 45,420 | 67,445 | 92,320 | 109,440 | 103,075 | 106,195 | 136,095 | 133,590 | 107,950 | 51,345 | 29,500 |
| 26 | 33,180 | 46,390 | 68,205 | 93,095 | 109,155 | 103,075 | 107,740 | 136,095 | 133,430 | 105,290 | 50,610 | 29,480 |
| 27 | 33,180 | 47,455 | 68,920 | 93,805 | 108,875 | 103,005 | 109,800 | 136,095 | 133,350 | 102,870 | 50,080 | 29,435 |
| 28 | 33,155 | 48,145 | 69,700 | 94,520 | 108,660 | 102,940 | 111,880 | 136,095 | 133,190 | 100,490 | 49,395 | 29,040 |
| 29 | 33,130 | 49,175 | 70,480 | 95,235 | - | 102,870 | 114,060 | 136,260 | 133,350 | 98,075 | 48,765 | 28,890 |
| 30 | 33,130 | 50,115 | 71,435 | 95,960 | - | 102,800 | 116,110 | 136,175 | 133,110 | 95,435 | 48,215 | 29,060 |
| 31 | 33,130 | - | 72,395 | 96,750 | - | 102,730 | - | 136,015 | - | 93,225 | 47,635 | - |

Monthly elevation and contents, water year October 1948 to September 1949

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept. 30 | 6,283.37 | 33,230 | - |
| Oct. 31 | 6,283.33 | 33,130 | -100 |
| Nov. 30 | 6,288.82 | 50,115 | +16,985 |
| Dec. 31 | 6,293.71 | 72,395 | +22,280 |
| Calendar year 1948. | - | - | -36,265 |
| Jan. 31 | 6,297.76 | 96,750 | +24,355 |
| Feb. 28 | 6,299.50 | 108,660 | +11,910 |
| Mar. 31 | 6,298.65 | 102,730 | -5,930 |
| Apr. 30 | 6,300.53 | 116,110 | +13,380 |
| May 31 | 6,303.10 | 136,015 | +19,905 |
| June 30 | 6,302.74 | 133,110 | -2,905 |
| July 31 | 6,297.22 | 93,225 | -39,885 |
| Aug. 31 | 6,288.15 | 47,635 | -45,590 |
| Sept. 30 | 6,281.58 | 29,060 | -18,575 |
| Water year 1948-49. | - | - | -4,170 |

## Henrys Fork near Island Park, Idaho

Location.--Water-stage recorder, lat. 44°25', long. 111°24', in SW¼ sec. 28, T. 13 N., R. 43 E., an eighth of a mile upstream from Buffalo River, an eighth of a mile downstream from Island Park Dam, and 2 miles west of Island Park post office. Altitude of gage, 6,225 feet (from river-profile map).

Drainage area.--478 square miles.

Records available.--January 1933 to September 1949.

Average discharge.--16 years, 518 second-feet.

Extremes.--Maximum discharge during year, 1,940 second-feet July 22 (gage height, 5.19 feet); minimum daily, 5 second-feet Nov. 15 to Dec. 18, Dec. 25-31.
1933-49: Maximum discharge, 2,770 second-feet Apr. 26, 1946 (gage height, 6.15 feet); minimum daily, 1 second-foot Nov. 16 to Dec. 7, 1938.

Remarks.--Records good. Flow regulated by Henrys Lake (see p. 58) and Island Park Reservoir (see preceding page).

Cooperation.--Gage-height record furnished by Bureau of Reclamation.

*Discharge, in second-feet, water year October 1948 to September 1949*

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 504 | 514 | 5 | 6 | 7 | 481 | 486 | 576 | 961 | 495 | 1,880 | 1,000 |
| 2 | 504 | 514 | 5 | 6 | 7 | 481 | 490 | 576 | 966 | 567 | 1,880 | 1,100 |
| 3 | 504 | 514 | 5 | 6 | 7 | 610 | 490 | 576 | 930 | 816 | 1,870 | 1,140 |
| 4 | 509 | 514 | 5 | 6 | 7 | 557 | 490 | 576 | 900 | 920 | 1,870 | 1,170 |
| 5 | 509 | 514 | 5 | 6 | 7 | 486 | 495 | 232 | 870 | 821 | 1,860 | 1,160 |
| 6 | 504 | 514 | 5 | 6 | 7 | 486 | 500 | 9 | 826 | 738 | 1,850 | 1,160 |
| 7 | 504 | 514 | 5 | 6 | 7 | 486 | 509 | 10 | 816 | 689 | 1,850 | 1,160 |
| 8 | 509 | 514 | 5 | 6 | 7 | 486 | 509 | 11 | 797 | 655 | 1,860 | 1,150 |
| 9 | 509 | 514 | 5 | 6 | 7 | 406 | 519 | 101 | 777 | 630 | 1,840 | 1,060 |
| 10 | 509 | 514 | 5 | 6 | 7 | 490 | 524 | 244 | 758 | 610 | 1,730 | 981 |
| 11 | 509 | 514 | 5 | 6 | 7 | 490 | 528 | 409 | 748 | 650 | 1,490 | 981 |
| 12 | 514 | 514 | 5 | 6 | 7 | 490 | 528 | 567 | 748 | 797 | 1,470 | 981 |
| 13 | 461 | 514 | 5 | 6 | 7 | 490 | 533 | 704 | 738 | 890 | 1,430 | 925 |
| 14 | 514 | 132 | 5 | 6 | 7 | 490 | 528 | 802 | 708 | 875 | 1,430 | 806 |
| 15 | 514 | 5 | 5 | 6 | 7 | 490 | 533 | 885 | 694 | 981 | 1,430 | 748 |
| 16 | 514 | 5 | 5 | 6 | 7 | 490 | 538 | 971 | 674 | 1,060 | 1,420 | 669 |
| 17 | 514 | 5 | 5 | 6 | 7 | 490 | 543 | 1,060 | 635 | 1,070 | 1,410 | 581 |
| 18 | 514 | 5 | 5 | 6 | 7 | 490 | 543 | 1,060 | 606 | 1,090 | 1,400 | 1,620 |
| 19 | 514 | 5 | 272 | 6 | 310 | 490 | 548 | 1,200 | 625 | 1,220 | 1,310 | 1,490 |
| 20 | 514 | 5 | 463 | 6 | 481 | 490 | 548 | 1,380 | 610 | 1,610 | 1,180 | 778 |
| 21 | 514 | 5 | 463 | 6 | 481 | 490 | 548 | 1,380 | 610 | 1,850 | 1,180 | 683 |
| 22 | 514 | 5 | 445 | 6 | 481 | 490 | 552 | 1,380 | 596 | 1,880 | 1,170 | 935 |
| 23 | 514 | 5 | 445 | 6 | 481 | 490 | 557 | 1,340 | 572 | 1,930 | 1,170 | 693 |
| 24 | 514 | 5 | 207 | 6 | 481 | 490 | 562 | 1,250 | 572 | 1,930 | 1,160 | 552 |
| 25 | 514 | 5 | 5 | 6 | 481 | 490 | 567 | 1,020 | 562 | 1,930 | 1,110 | 552 |
| 26 | 514 | 5 | 5 | 6 | 481 | 490 | 572 | 930 | 572 | 1,920 | 976 | 562 |
| 27 | 514 | 5 | 5 | 6 | 481 | 490 | 572 | 930 | 533 | 1,910 | 971 | 660 |
| 28 | 514 | 5 | 5 | 6 | 481 | 490 | 576 | 930 | 538 | 1,910 | 971 | 699 |
| 29 | 514 | 5 | 5 | 6 | - | 349 | 576 | 930 | 543 | 1,910 | 971 | 581 |
| 30 | 514 | 5 | 5 | 6 | - | 500 | 576 | 930 | 495 | 1,910 | 971 | 557 |
| 31 | 514 | - | 5 | 6 | - | 495 | - | 925 | - | 1,900 | 971 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 15,801 | 514 | 461 | 510 | 31,340 |
| November | 6,894 | 514 | 5 | 230 | 13,670 |
| December | 2,420 | 463 | 5 | 78.1 | 4,800 |
| Calendar year 1948 | 232,053 | 1,910 | 5 | 634 | 460,300 |
| January | 186 | 6 | 6 | 6.0 | 369 |
| February | 4,765 | 481 | 7 | 170 | 9,450 |
| March | 15,133 | 610 | 349 | 488 | 30,020 |
| April | 16,040 | 576 | 486 | 535 | 31,810 |
| May | 23,894 | 1,380 | 9 | 771 | 47,390 |
| June | 20,980 | 966 | 495 | 699 | 41,610 |
| July | 38,164 | 1,930 | 495 | 1,231 | 75,700 |
| August | 44,081 | 1,880 | 971 | 1,422 | 87,430 |
| September | 27,134 | 1,620 | 552 | 904 | 53,820 |
| Water year 1948-49 | 215,492 | 1,930 | 5 | 590 | 427,400 |

Note.--Discharge computed from staff-gage readings Nov. 15 to Dec. 18, Dec. 25 to Mar. 2.

## Henrys Fork at Warm River, Idaho

Location.--Water-stage recorder, lat. 44°07', long. 111°20', in sec. 12, T. 9 N., R. 43 E., 1,000 feet upstream from Warm River and half a mile northwest of Warm River railroad station. Altitude of gage, 5,255 feet (from river-profile map).

Drainage area.--660 square miles.

Records available.--September 1910 to March 1915, April 1918 to September 1949.

Average discharge.--35 years, 989 second-feet.

Extremes.--Maximum discharge during year, 2,280 second-feet July 25 (gage height, 6.60 feet); minimum daily, 310 second-feet Feb. 14.
1910-15, 1918-49: Maximum discharge, 3,540 second-feet May 18, 1927; maximum gage height, 7.80 feet Apr. 27, 1946; minimum discharge, 218 second-feet Jan. 19, 1940 (gage height, 3.17 feet).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow regulated by Henrys Lake (see p. 58) and Island Park Reservoir (see p. 50). Some water diverted above station for irrigation of meadows on headwaters.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | a880 | a920 | 384 | 388 | b370 | 963 | 879 | 1,350 | 1,570 | a930 | 2,230 | 1,310 |
| 2 | a880 | a1,000 | 400 | 380 | b360 | 963 | 885 | 1,330 | 1,600 | a900 | 2,220 | 1,410 |
| 3 | h879 | a985 | 409 | 335 | b350 | 1,150 | 879 | 1,380 | 1,540 | a1,100 | 2,230 | 1,460 |
| 4 | a885 | a970 | 422 | 324 | b375 | 1,130 | 885 | 1,360 | 1,440 | a1,350 | 2,220 | 1,510 |
| 5 | a910 | a940 | 372 | 368 | b350 | 927 | 903 | 1,290 | 1,390 | 1,310 | 2,220 | 1,520 |
| 6 | a880 | a900 | 356 | 400 | b345 | 909 | 903 | 773 | 1,360 | 1,200 | 2,200 | 1,520 |
| 7 | a880 | a880 | 364 | 430 | b340 | 897 | 915 | 778 | 1,340 | 1,160 | 2,200 | 1,510 |
| 8 | a885 | a900 | 338 | 413 | b330 | 897 | 933 | 837 | 1,320 | 1,110 | 2,200 | 1,500 |
| 9 | a885 | a890 | 372 | 380 | b330 | 885 | 927 | 843 | 1,290 | 1,070 | 2,200 | 1,490 |
| 10 | a885 | a880 | 392 | a350 | b325 | 813 | 933 | 927 | 1,280 | 1,050 | 2,160 | 1,340 |
| 11 | a885 | a875 | 376 | a400 | b325 | 879 | 951 | 1,090 | 1,260 | 1,040 | 1,880 | 1,340 |
| 12 | 885 | h873 | 388 | 439 | b320 | 891 | 969 | 1,230 | 1,300 | 1,130 | 1,850 | 1,350 |
| 13 | 867 | a900 | 384 | 430 | b315 | 891 | 981 | 1,380 | 1,260 | 1,300 | 1,790 | 1,340 |
| 14 | 831 | a660 | 392 | 434 | b310 | 873 | 969 | 1,490 | 1,220 | 1,310 | 1,780 | 1,340 |
| 15 | 891 | a400 | 368 | 430 | b320 | 873 | 981 | 1,540 | 1,190 | 1,310 | 1,760 | 1,160 |
| 16 | 885 | a440 | 356 | 409 | b350 | 873 | 993 | 1,620 | 1,170 | 1,480 | 1,740 | 1,050 |
| 17 | 879 | 400 | 356 | 413 | b390 | 885 | 1,010 | 1,780 | 1,160 | 1,480 | 1,740 | 1,020 |
| 18 | 879 | 328 | 372 | 409 | 439 | 879 | 1,060 | 1,750 | 1,100 | 1,480 | 1,730 | 1,250 |
| 19 | 873 | 404 | 372 | *409 | 795 | 879 | 1,110 | 1,820 | 1,110 | 1,530 | 1,720 | 2,200 |
| 20 | 873 | 434 | b700 | 396 | 957 | 897 | 1,180 | 2,050 | 1,110 | 1,840 | 1,560 | 1,470 |
| 21 | 873 | 409 | b840 | 384 | 939 | 891 | 1,200 | 2,080 | 1,080 | 2,160 | 1,520 | 939 |
| 22 | 879 | 409 | *b800 | b370 | 957 | 891 | 1,240 | 2,140 | 1,080 | 2,200 | 1,510 | 1,220 |
| 23 | 879 | 409 | b780 | b360 | 969 | 897 | 1,360 | 2,090 | 1,080 | 2,260 | 1,540 | 1,260 |
| 24 | 873 | 396 | b820 | b340 | *981 | 891 | 1,580 | 1,940 | 1,050 | 2,260 | 1,520 | 921 |
| 25 | 873 | 400 | 511 | b350 | 969 | a895 | 1,720 | 1,750 | 1,040 | 2,260 | 1,500 | 935 |
| 26 | 873 | 413 | 328 | b360 | 981 | a910 | 1,730 | 1,520 | 1,040 | 2,260 | 1,360 | 927 |
| 27 | 879 | 353 | 426 | b370 | 969 | a895 | 1,630 | 1,510 | 1,050 | 2,250 | 1,310 | 939 |
| 28 | 873 | 400 | 448 | b375 | 981 | a885 | 1,560 | 1,510 | 1,000 | 2,240 | 1,310 | 1,080 |
| 29 | 879 | 413 | 413 | b380 | - | 873 | 1,560 | 1,490 | a980 | 2,250 | 1,310 | 1,000 |
| 30 | 879 | 388 | 388 | b375 | - | 761 | 1,500 | 1,470 | a960 | 2,250 | 1,310 | 993 |
| 31 | a880 | - | 360 | b370 | - | 909 | - | 1,490 | - | 2,240 | 1,310 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 27,237 | 910 | 831 | 879 | 54,020 |
| November | 18,969 | 1,000 | 328 | 632 | 37,620 |
| December | 13,987 | 840 | 328 | 451 | 27,740 |
| Calendar year 1948 | 388,693 | 2,320 | 328 | 1,062 | 770,900 |
| January | 11,971 | 439 | 324 | 386 | 23,740 |
| February | 15,742 | 981 | 310 | 562 | 31,220 |
| March | 28,052 | 1,150 | 761 | 905 | 55,640 |
| April | 34,326 | 1,730 | 879 | 1,144 | 68,080 |
| May | 45,608 | 2,140 | 773 | 1,471 | 90,460 |
| June | 36,370 | 1,600 | 960 | 1,212 | 72,140 |
| July | 49,710 | 2,260 | 900 | 1,604 | 98,600 |
| August | 55,130 | 2,230 | 1,310 | 1,778 | 109,300 |
| September | 38,302 | 2,200 | 921 | 1,277 | 75,970 |
| Water year 1948-49 | 375,404 | 2,260 | 310 | 1,029 | 744,500 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for stations near Ashton and near Island Park.
b Stage-discharge relation affected by ice.
h Computed from staff-gage reading.

## Henrys Fork near Ashton, Idaho

Location.--Water-stage recorder, lat. 44°05', long. 111°30', in sec. 28, T. 9 N., R. 42 E., a quarter of a mile downstream from power plant and 3 miles west of Ashton. Altitude of gage, 5,095 feet (from river profile map).

Drainage area.--1,030 square miles.

Records available.--August 1902 to June 1909, April 1920 to September 1949.

Average discharge.--30 years (1903-8, 1924-49), 1,294 second-feet.

Extremes.--Maximum discharge during year, 3,740 second-feet May 22 (gage height, 7.32 feet); minimum, 360 second-feet Jan. 29 (gage height, 5.36 feet); minimum daily, 570 second-feet Dec. 26.
1902-9, 1920-49: Maximum discharge, 6,220 second-feet May 7, 1925; minimum, 65 second-feet Dec. 5, 1931.

Remarks.--Records excellent except those for period of no gage-height record, which are good. Flow regulated by power plant above station and by Henrys Lake (see p. 58) and Island Park Reservoir (see p. 50). Some water diverted above station for irrigation of meadows on headwaters.

Cooperation.--Gage height record during nonirrigation season furnished by Utah Power & Light Co.

Discharge in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,140 | 1,230 | 747 | 699 | 676 | 1,230 | 1,210 | 2,260 | 2,570 | 1,360 | 2,610 | 1,680 |
| 2 | 1,140 | 1,400 | 707 | 702 | 656 | 1,240 | 1,240 | 2,200 | 2,660 | 1,330 | 2,630 | 1,830 |
| 3 | 1,160 | 1,340 | 726 | 614 | 665 | 1,450 | 1,280 | 2,380 | 2,440 | 1,470 | 2,660 | 1,880 |
| 4 | 1,170 | 1,340 | 768 | 581 | 718 | 1,450 | 1,320 | 2,360 | 2,240 | 1,810 | 2,660 | 1,960 |
| 5 | 1,230 | 1,260 | 728 | 614 | 656 | 1,240 | 1,330 | 2,260 | 2,140 | 1,790 | 2,630 | 1,980 |
| 6 | 1,160 | 1,240 | 706 | 727 | 636 | 1,230 | 1,360 | 1,650 | 2,100 | 1,630 | 2,630 | 1,940 |
| 7 | 1,160 | 1,230 | 716 | 748 | 646 | 1,210 | 1,390 | 1,790 | 2,100 | 1,580 | 2,610 | 1,960 |
| 8 | 1,170 | 1,210 | 669 | 769 | 636 | 1,210 | 1,440 | 1,860 | 2,020 | 1,500 | 2,630 | 1,920 |
| 9 | 1,170 | 1,260 | 677 | 661 | 608 | 1,210 | 1,400 | 1,920 | 1,940 | 1,470 | 2,610 | 1,940 |
| 10 | 1,170 | 1,230 | 757 | 646 | 618 | 1,120 | 1,400 | 2,040 | 1,900 | 1,440 | 2,590 | 1,770 |
| 11 | 1,160 | 1,230 | 706 | 722 | 656 | 1,190 | 1,440 | 2,280 | 1,880 | 1,420 | 2,280 | 1,750 |
| 12 | 1,160 | 1,260 | 744 | 781 | 608 | 1,230 | 1,480 | 2,440 | 1,940 | 1,500 | 2,220 | 1,810 |
| 13 | 1,160 | 1,290 | 745 | 812 | 618 | 1,210 | 1,470 | 2,590 | 1,840 | 1,680 | 2,140 | 1,750 |
| 14 | 1,120 | 1,030 | 759 | 771 | 589 | 1,190 | 1,450 | 2,720 | 1,790 | 1,680 | 2,140 | 1,630 |
| 15 | 1,200 | 720 | 694 | 781 | 627 | 1,170 | 1,440 | 2,740 | 1,730 | 1,650 | 2,140 | 1,530 |
| 16 | 1,190 | 812 | 666 | 711 | 696 | 1,170 | 1,470 | 2,800 | 1,730 | 1,860 | 2,120 | 1,400 |
| 17 | 1,200 | 772 | 652 | 702 | 718 | 1,200 | 1,520 | 3,060 | 1,680 | 1,830 | 2,100 | 1,390 |
| 18 | 1,190 | 608 | 737 | 742 | 728 | 1,170 | 1,630 | 2,930 | 1,600 | 1,880 | 2,100 | 1,560 |
| 19 | 1,190 | 721 | 698 | 707 | 976 | 1,190 | 1,770 | 3,040 | 1,600 | 1,900 | 2,080 | 2,820 |
| 20 | 1,200 | 763 | 1,040 | 678 | 1,200 | 1,210 | 1,920 | 3,240 | 1,630 | 2,240 | 1,920 | 1,960 |
| 21 | 1,190 | 752 | 1,150 | 670 | 1,230 | 1,210 | 1,940 | 3,240 | 1,560 | 2,590 | 1,860 | 1,280 |
| 22 | 1,190 | 742 | 1,080 | 665 | 1,210 | 1,200 | 1,980 | 3,420 | 1,550 | 2,610 | 1,840 | 1,550 |
| 23 | 1,200 | 742 | 1,080 | 650 | 1,270 | 1,200 | 2,220 | 3,420 | 1,550 | 2,700 | 1,940 | 1,680 |
| 24 | 1,210 | 773 | 1,250 | a630 | 1,270 | 1,200 | 2,570 | 3,100 | 1,500 | 2,700 | 1,920 | 1,260 |
| 25 | 1,190 | 749 | 772 | a640 | 1,240 | 1,210 | 2,780 | 2,820 | 1,470 | 2,680 | 1,920 | 1,280 |
| 26 | 1,200 | 810 | 570 | a650 | 1,230 | 1,240 | 2,740 | 2,530 | 1,480 | 2,700 | 1,750 | 1,270 |
| 27 | 1,210 | 608 | 696 | a670 | 1,230 | 1,200 | 2,680 | 2,470 | 1,500 | 2,660 | 1,680 | 1,300 |
| 28 | 1,200 | 719 | 749 | a680 | 1,230 | 1,200 | 2,630 | 2,490 | 1,440 | 2,660 | 1,700 | 1,470 |
| 29 | 1,210 | 747 | 707 | 678 | - | 1,160 | 2,700 | 2,440 | 1,420 | 2,660 | 1,720 | 1,380 |
| 30 | 1,200 | 652 | 712 | 656 | - | 1,090 | 2,570 | 2,420 | 1,400 | 2,660 | 1,720 | 1,450 |
| 31 | 1,200 | - | 642 | 665 | - | 1,240 | - | 2,380 | - | 2,630 | 1,720 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 36,640 | 1,230 | 1,120 | 1,182 | 72,670 |
| November | 29,240 | 1,400 | 608 | 975 | 58,000 |
| December | 24,050 | 1,250 | 570 | 776 | 47,700 |
| Calendar year 1948 | 538,451 | 3,120 | 570 | 1,471 | 1,068,000 |
| January | 21,422 | 812 | 581 | 691 | 42,490 |
| February | 23,841 | 1,270 | 589 | 851 | 47,290 |
| March | 37,670 | 1,450 | 1,090 | 1,215 | 74,720 |
| April | 53,770 | 2,780 | 1,210 | 1,792 | 106,700 |
| May | 79,290 | 3,420 | 1,650 | 2,558 | 157,300 |
| June | 54,400 | 2,660 | 1,400 | 1,813 | 107,900 |
| July | 62,270 | 2,700 | 1,330 | 2,009 | 123,500 |
| August | 67,270 | 2,660 | 1,680 | 2,170 | 133,400 |
| September | 50,380 | 2,820 | 1,260 | 1,679 | 99,930 |
| Water year 1948-49 | 540,243 | 3,420 | 570 | 1,480 | 1,072,000 |

a No gage-height record; discharge computed on basis of comparison with powerplant records and records for station at Warm River.

## Diversions from Henrys Fork between Ashton and St. Anthony gaging stations, Idaho

Between Ashton and St. Anthony gaging stations seven canals divert water from Henrys Fork for irrigation. Records available each irrigation season from 1919 to 1949. Discharge of canals computed from daily or biweekly staff-gage readings, or interpolated, and combined to show total diverted flow. Records good.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | 1,130 | 951 | 1,000 | 1,250 | 800 |
| 2 | | | | | | | | 1,110 | 763 | 1,010 | 1,280 | 758 |
| 3 | | | | | | | | 1,130 | 788 | 871 | 1,320 | 783 |
| 4 | | | | | | | | 1,100 | 859 | 866 | 1,300 | 746 |
| 5 | | | | | | | | 1,200 | 874 | 859 | 1,230 | 822 |
| 6 | | | | | | | | 1,180 | 839 | 841 | 1,160 | 817 |
| 7 | | | | | | | | 1,270 | 939 | 788 | 1,120 | 758 |
| 8 | | | | | | | | 1,280 | 1,030 | 845 | 1,120 | 730 |
| 9 | | | | | | | | 1,260 | 1,040 | 831 | 1,100 | 605 |
| 10 | | | | | | | | 1,310 | 1,060 | 902 | 1,000 | 588 |
| 11 | | | | | | | | 1,340 | 1,110 | 1,130 | 896 | 531 |
| 12 | | | | | | | | 1,370 | 1,140 | 1,080 | 935 | 529 |
| 13 | | | | | | | | 1,360 | 1,140 | 1,100 | 936 | 525 |
| 14 | | | | | | | | 1,400 | 1,090 | 1,030 | 959 | 496 |
| 15 | | | | | | | | 1,320 | 1,110 | 1,120 | 989 | 450 |
| 16 | | | | | | | | 938 | 1,150 | 1,210 | 903 | 445 |
| 17 | | | | | | | | 899 | 1,160 | 1,200 | 888 | 461 |
| 18 | | | | | | | | 739 | 1,170 | 1,230 | 887 | 486 |
| 19 | | | | | | | | 903 | 1,140 | 1,230 | 833 | 509 |
| 20 | | | | | | | | 837 | 879 | 1,270 | 811 | 482 |
| 21 | | | | | | | | 850 | 844 | 1,310 | 816 | 446 |
| 22 | | | | | | | | 874 | 884 | 1,320 | 825 | 427 |
| 23 | | | | | | | | 844 | 826 | 1,320 | 873 | 426 |
| 24 | | | | | | | | 783 | 827 | 1,260 | 788 | 428 |
| 25 | | | | | | | | 818 | 773 | 1,260 | 695 | 430 |
| 26 | | | | | | | | 844 | 978 | 1,300 | 669 | 431 |
| 27 | | | | | | | | 960 | 968 | 1,310 | 788 | 433 |
| 28 | | | | | | | | 997 | 969 | 1,300 | 801 | 436 |
| 29 | | | | | | | | 998 | 1,000 | 1,280 | 816 | 437 |
| 30 | | | | | | | | 994 | 1,010 | 1,130 | 796 | 437 |
| 31 | | | | | | | | 992 | - | 1,130 | 882 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | 33,030 | 1,400 | 739 | 1,065 | 65,520 |
| June | 29,311 | 1,170 | 763 | 977 | 58,140 |
| July | 34,333 | 1,320 | 788 | 1,108 | 68,100 |
| August | 29,666 | 1,320 | 669 | 957 | 58,840 |
| September | 16,652 | 822 | 426 | 555 | 33,030 |
| The period | - | - | - | - | 283,600 |

## Henrys Fork at St. Anthony, Idaho

Location.--Water-stage recorder, lat. 43°58', long. 111°41', in sec. 1, T. 7 N., R. 40 E., half a mile upstream from bridge on main street of St. Anthony. Altitude of gage, 4,950 feet (from river-profile map).

Drainage area.--1,730 square miles.

Records available.--March 1919 to September 1949 (irrigation seasons only).

Extremes.--Maximum discharge recorded during year, 6,820 second-feet May 22 (gage height, 6.03 feet); minimum daily recorded, 636 second-feet July 12.
1919-49: Maximum discharge recorded, 9,030 second-feet May 8, 1925 (gage height, 6.70 feet); minimum daily recorded, 413 second-feet July 22, 1931.

Remarks.--Records excellent. Diversions above station for irrigation. Flow regulated by power plant 17 miles above station and by Henrys Lake (see p. 58), Island Park Reservoir (see p. 50), and Grassy Lake (see p. 58).

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | - | 3,370 | 4,120 | 794 | 1,600 | 1,090 |
| 2 | | | | | | | - | 3,120 | a4,600 | 692 | 1,620 | 1,160 |
| 3 | | | | | | | - | 3,390 | a4,000 | 803 | 1,580 | 1,260 |
| 4 | | | | | | | - | 3,390 | 3,410 | 1,140 | 1,630 | 1,290 |
| 5 | | | | | | | - | a3,200 | 3,320 | 1,250 | 1,730 | 1,340 |
| 6 | | | | | | | - | 2,290 | 3,320 | 1,100 | 1,730 | 1,300 |
| 7 | | | | | | | - | 2,670 | 3,390 | 1,020 | 1,740 | 1,360 |
| 8 | | | | | | | - | 2,960 | 3,560 | 880 | 1,780 | 1,420 |
| 9 | | | | | | | - | 3,210 | 3,410 | 724 | 1,840 | 1,540 |
| 10 | | | | | | | - | 3,580 | 3,230 | 700 | 1,980 | 1,360 |
| 11 | | | | | | | - | 3,820 | 3,210 | 660 | 1,780 | 1,350 |
| 12 | | | | | | | - | 4,170 | 3,530 | 636 | 1,630 | 1,520 |
| 13 | | | | | | | - | 4,380 | 3,730 | 758 | 1,490 | 1,420 |
| 14 | | | | | | | - | 4,250 | 3,440 | 794 | 1,550 | 1,380 |
| 15 | | | | | | | - | 4,540 | 2,880 | 732 | 1,550 | 1,280 |
| 16 | | | | | | | - | 5,120 | 2,540 | 821 | 1,520 | 1,190 |
| 17 | | | | | | | - | 6,280 | 2,420 | 880 | 1,470 | 1,150 |
| 18 | | | | | | | - | 6,340 | 2,090 | 910 | 1,540 | 1,160 |
| 19 | | | | | | | - | a5,700 | 2,020 | 974 | 1,550 | 2,440 |
| 20 | | | | | | | - | a5,750 | 2,370 | 1,110 | 1,400 | 1,780 |
| 21 | | | | | | | - | 5,830 | 2,290 | 1,470 | 1,360 | 1,190 |
| 22 | | | | | | | - | 6,120 | 2,230 | 1,570 | 1,340 | 1,260 |
| 23 | | | | | | | - | 6,530 | 2,150 | 1,830 | 1,420 | 1,470 |
| 24 | | | | | | | - | 5,580 | 1,930 | 1,840 | 1,540 | 1,110 |
| 25 | | | | | | | - | 4,780 | 1,780 | 1,830 | 1,600 | 1,080 |
| 26 | | | | | | | - | 4,250 | 1,680 | 1,780 | 1,470 | 1,020 |
| 27 | | | | | | | - | 4,220 | 1,460 | 1,660 | 1,220 | 1,030 |
| 28 | | | | | | 3,750 | 4,300 | 1,170 | 1,660 | 1,200 | 1,160 | |
| 29 | | | | | | 3,820 | 4,380 | 1,080 | 1,710 | 1,190 | 1,150 | |
| 30 | | | | | | 3,730 | 4,120 | 952 | 1,790 | 1,220 | 1,260 | |
| 31 | | | | | | | - | 4,000 | - | 1,700 | 1,190 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | 135,640 | 6,530 | 2,290 | 4,375 | 269,000 |
| June | 81,312 | 4,600 | 952 | 2,710 | 161,300 |
| July | 36,218 | 1,840 | 636 | 1,168 | 71,840 |
| August | 47,460 | 1,980 | 1,190 | 1,531 | 94,140 |
| September | 39,520 | 2,440 | 1,020 | 1,317 | 78,390 |
| The period | - | - | - | - | 674,700 |

a No gage-height record; discharge computed on basis of records for stations near Ashton and near Rexburg.

## Diversions from Henrys Fork between St. Anthony and Rexburg gaging stations, Idaho

Between St. Anthony and Rexburg gaging stations four canals divert water from Henrys Fork for irrigation. Records available for part of each irrigation season from 1919 to 1949. Discharge of canals computed from daily or biweekly staff-gage readings, or interpolated, and combined to show total diverted flow. Records good.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | 1,070 | 675 | 781 | 751 | 576 |
| 2 | | | | | | | | 1,100 | 611 | 756 | 724 | 574 |
| 3 | | | | | | | | 1,110 | 630 | 749 | 735 | 634 |
| 4 | | | | | | | | 1,120 | 611 | 753 | 737 | 622 |
| 5 | | | | | | | | 1,130 | 635 | 719 | 744 | 584 |
| 6 | | | | | | | | 1,140 | 657 | 630 | 711 | 585 |
| 7 | | | | | | | | 1,150 | 688 | 607 | 711 | 581 |
| 8 | | | | | | | | 1,180 | 775 | 713 | 712 | 585 |
| 9 | | | | | | | | 1,180 | 845 | 720 | 712 | 601 |
| 10 | | | | | | | | 1,210 | 900 | 732 | 668 | 577 |
| 11 | | | | | | | | 1,210 | 895 | 750 | 629 | 551 |
| 12 | | | | | | | | 1,220 | 849 | 728 | 612 | 556 |
| 13 | | | | | | | | 1,210 | 829 | 714 | 614 | 542 |
| 14 | | | | | | | | 1,170 | 830 | 785 | 611 | 494 |
| 15 | | | | | | | | 1,180 | 869 | 792 | 611 | 435 |
| 16 | | | | | | | | 1,120 | 887 | 841 | 603 | 433 |
| 17 | | | | | | | | 829 | 848 | 860 | 634 | 438 |
| 18 | | | | | | | | 770 | 831 | 873 | 676 | 338 |
| 19 | | | | | | | | 704 | 800 | 856 | 652 | 338 |
| 20 | | | | | | | | 649 | 790 | 851 | 638 | 334 |
| 21 | | | | | | | | 610 | 747 | 835 | 655 | 331 |
| 22 | | | | | | | | 594 | 738 | 817 | 666 | 328 |
| 23 | | | | | | | | 597 | 772 | 814 | 676 | 324 |
| 24 | | | | | | | | 644 | 799 | 813 | 603 | 317 |
| 25 | | | | | | | | 611 | 795 | 807 | 606 | 313 |
| 26 | | | | | | | | 675 | 788 | 857 | 562 | 310 |
| 27 | | | | | | | | 733 | 749 | 840 | 526 | 310 |
| 28 | | | | | | | | 751 | 762 | 821 | 514 | 310 |
| 29 | | | | | | | | 779 | 746 | 778 | 513 | 310 |
| 30 | | | | | | | | 804 | 720 | 802 | 564 | 310 |
| 31 | | | | | | | | 809 | - | 801 | 579 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | 29,059 | 1,220 | 594 | 937 | 57,640 |
| June | 23,071 | 900 | 611 | 769 | 45,760 |
| July | 24,195 | 873 | 607 | 780 | 47,990 |
| August | 19,949 | 751 | 513 | 644 | 39,570 |
| September | 13,541 | 634 | 310 | 451 | 26,860 |
| The period | - | - | - | - | 217,800 |

## Henrys Fork near Rexburg, Idaho

Location.--Water-stage recorder, lat. 43°50', long. 111°54', in sec. 30, T. 6 N., R. 39 E., just downstream from highway bridge, downstream from all tributaries, and 7 miles west of Rexburg. Altitude of gage, 4,807 feet (from river-profile map).

Drainage area.--3,010 square miles.

Records available.--April 1909 to September 1949.

Average discharge.--41 years (1908-49), 1,920 second-feet.

Extremes.--Maximum discharge during year, 7,650 second-feet May 24 (gage height, 9.79 feet); minimum, 655 second-feet July 18 (gage height, 3.15 feet).
1909-49: Maximum discharge, 9,490 second-feet June 29, 1927 (gage height, 9.90 feet); minimum, 183 second-feet Mar. 24-28, 1934 (gage height, 1.45 feet).

Remarks.--Records good except those for period of ice effect, which are fair. Flow regulated by operation of power plant near Ashton and by Henrys Lake (see following page), Island Park Reservoir (see p. 50), and Grassy Lake (see following page). About 172,000 acres irrigated upstream from station, the return flow from which in part escapes westward beneath the Snake River plains above gaging station.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,740 | 1,900 | 1,520 | 1,200 | 1,070 | 1,850 | 1,560 | 3,790 | 5,800 | 1,310 | 1,500 | 1,160 |
| 2 | 1,750 | 2,000 | 1,640 | 1,220 | 1,070 | 1,900 | 1,510 | 3,200 | 6,110 | 1,040 | 1,480 | 1,100 |
| 3 | 1,770 | 2,180 | 1,620 | 1,220 | 1,070 | 2,050 | 1,500 | 2,950 | 6,320 | 904 | 1,480 | 1,140 |
| 4 | 1,770 | 2,250 | 1,580 | 1,150 | 1,070 | 2,050 | 1,480 | 3,340 | 5,900 | 950 | 1,500 | 1,200 |
| 5 | 1,790 | 2,200 | 1,540 | 1,100 | 1,120 | 1,950 | 1,480 | 3,060 | 5,290 | 1,450 | 1,590 | 1,280 |
| 6 | 1,870 | 2,030 | 1,480 | 1,130 | 1,100 | 1,850 | 1,450 | 2,720 | 4,910 | 1,730 | 1,640 | 1,290 |
| 7 | 1,870 | 2,020 | 1,420 | *1,160 | 1,080 | 1,850 | 1,510 | 2,160 | 4,650 | 1,690 | 1,640 | 1,290 |
| 8 | 1,880 | 1,950 | 1,350 | 1,170 | 1,070 | 1,850 | 1,650 | 2,400 | 4,590 | 1,520 | 1,640 | 1,380 |
| 9 | 1,860 | 1,940 | *1,300 | 1,180 | 1,060 | 1,850 | 1,790 | 2,830 | 4,590 | 1,220 | 1,700 | 1,460 |
| 10 | 1,850 | 2,040 | 1,300 | 1,100 | 1,050 | 1,700 | 1,800 | 3,060 | 4,390 | 1,050 | 1,810 | 1,450 |
| 11 | 1,820 | 2,080 | 1,320 | 1,080 | 1,030 | 1,750 | 1,910 | 3,430 | 4,100 | 1,010 | 1,920 | 1,380 |
| 12 | 1,790 | 2,100 | 1,350 | 1,250 | 1,020 | 1,780 | 2,040 | 3,770 | 3,990 | 861 | 1,720 | 1,520 |
| 13 | 1,770 | 2,100 | 1,350 | 1,350 | 1,020 | 1,810 | 2,270 | 4,160 | 4,300 | 792 | 1,690 | 1,620 |
| 14 | 1,760 | 2,070 | 1,350 | 1,450 | 1,000 | 1,800 | 2,300 | 4,500 | 4,530 | 803 | 1,610 | 1,680 |
| 15 | 1,780 | 1,860 | 1,350 | 1,350 | 1,030 | 1,820 | 2,100 | 4,790 | 4,160 | 735 | 1,600 | 1,660 |
| 16 | 1,850 | 1,770 | 1,300 | 1,350 | 1,100 | *1,800 | 1,990 | 5,240 | 3,470 | 670 | 1,570 | 1,620 |
| 17 | 1,840 | 1,760 | 1,280 | 1,200 | 1,200 | 1,820 | 1,910 | 6,030 | 3,070 | 660 | 1,500 | 1,490 |
| 18 | 1,850 | 1,690 | 1,250 | 1,180 | 1,300 | 1,880 | 1,930 | 7,020 | 2,870 | 665 | 1,480 | 1,570 |
| 19 | 1,880 | 1,460 | 1,300 | 1,250 | 1,400 | 1,850 | 2,090 | 7,380 | 2,660 | 705 | 1,490 | 2,040 |
| 20 | 1,860 | 1,580 | 1,350 | 1,150 | 1,800 | 1,850 | 2,230 | 7,460 | 2,800 | 760 | 1,470 | 2,630 |
| 21 | 1,860 | 1,640 | 1,700 | 1,130 | 1,880 | 1,910 | 2,470 | 7,560 | 3,230 | 976 | 1,360 | 2,080 |
| 22 | 1,850 | 1,630 | 1,800 | 1,100 | 1,890 | 1,900 | 2,370 | 7,490 | 3,100 | 1,270 | 1,310 | 1,640 |
| 23 | 1,850 | 1,600 | 1,750 | 1,100 | *1,890 | 1,880 | 2,350 | 7,550 | 2,930 | 1,340 | 1,320 | 1,850 |
| 24 | 1,850 | 1,630 | 1,750 | 1,100 | 1,880 | 1,850 | 2,670 | 7,580 | 2,760 | 1,540 | 1,500 | 1,790 |
| 25 | 1,840 | 1,580 | 1,900 | 1,100 | 1,870 | 1,800 | 3,070 | 7,170 | 2,490 | 1,590 | 1,600 | 1,520 |
| 26 | 1,840 | 1,560 | 1,400 | 1,090 | 1,860 | 1,770 | 3,580 | 6,570 | 2,320 | 1,520 | 1,680 | 1,500 |
| 27 | 1,840 | 1,530 | 1,150 | 1,080 | 1,850 | 1,720 | 3,830 | 6,130 | 2,250 | 1,500 | 1,520 | 1,470 |
| 28 | 1,870 | 1,420 | 1,300 | 1,080 | 1,850 | 1,670 | 3,740 | 5,880 | 1,990 | 1,480 | 1,460 | 1,480 |
| 29 | 1,860 | 1,550 | 1,300 | 1,080 | - | 1,820 | 3,770 | 5,930 | 1,740 | 1,520 | 1,360 | 1,600 |
| 30 | 1,900 | 1,520 | 1,300 | 1,080 | - | 1,820 | 3,860 | 5,960 | 1,580 | 1,570 | 1,290 | 1,610 |
| 31 | 1,900 | - | 1,250 | 1,070 | - | 1,510 | - | 5,840 | - | 1,580 | 1,270 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 56,790 | 1,900 | 1,740 | 1,832 | 112,640 |
| November | 54,640 | 2,250 | 1,420 | 1,821 | 108,400 |
| December | 44,550 | 1,900 | 1,150 | 1,437 | 88,360 |
| Calendar year 1948 | 765,636 | 6,650 | 595 | 2,092 | 1,519,000 |
| January | 36,250 | 1,450 | 1,070 | 1,169 | 71,900 |
| February | 37,630 | 1,890 | 1,000 | 1,344 | 74,640 |
| March | 56,310 | 2,050 | 1,510 | 1,816 | 111,700 |
| April | 68,210 | 3,860 | 1,450 | 2,274 | 135,300 |
| May | 156,950 | 7,580 | 2,160 | 5,063 | 311,300 |
| June | 112,890 | 6,320 | 1,580 | 3,763 | 223,900 |
| July | 36,411 | 1,730 | 660 | 1,175 | 72,220 |
| August | 47,700 | 1,920 | 1,270 | 1,539 | 94,610 |
| September | 46,500 | 2,630 | 1,100 | 1,550 | 92,230 |
| Water year 1948-49 | 754,831 | 7,580 | 660 | 2,068 | 1,497,000 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 8 to Mar. 11.

## Smaller reservoirs in Henrys Fork Basin

Henrys Lake.--Staff gage, lat. 44°36', long. 111°21', at dam on Henrys Fork in SW¼ sec. 26, T. 15 N., R. 43 E., 4 miles south of former Lake, Idaho, post office. Datum of gage is 6,457.16 feet above mean sea level (levels by Bureau of Reclamation). Drainage area, 104 square miles, including that of Dry Creek. Records available, June 1923 to September 1949 (fragmentary). Maximum contents observed during year, 80,114 acre-feet June 23 (gage height, 15.12 feet); minimum observed, 53,418 acre-feet Sept. 12 (gage height, 10.76 feet). Maximum contents observed during period 1923-49, 83,184 acre-feet June 12, 1947; minimum observed, 140 acre-feet Nov. 8, 1934 (gage height, 0.03 foot).

Reservoir is formed on natural lake by concrete dam; storage began Sept. 21, 1922; dam completed July 1923. Capacity, 79,351 acre-feet between gage heights 0.0 foot (normal low-water level of Henrys Lake prior to construction of dam) and 15.0 feet (top of 5-foot flashboards on spillway). Floodwaters of Dry Creek are diverted into Henrys Lake at times (none diverted during water year 1948-49). Water used for irrigation near St. Anthony. Gage read about once weekly during period of storage withdrawal and occasionally during remainder of year. Records given herein represent usable contents. Gage-height record and capacity table furnished by North Fork Reservoir Co.

Grassy Lake.--Mercury pressure gage, lat. 44°08', long. 110°49', in gatehouse at dam on Grassy Creek, approximately in sec. 7, T. 48 N., R. 116 W. (unsurveyed), half a mile upstream from mouth and 24 miles northwest of Moran, Wyo. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Drainage area, 12 square miles, including basin of Cascade Creek, from which water is diverted into Grassy Lake. Records available, October 1939 to September 1949. Maximum contents during year, 15,291 acre-feet May 23-25, June 13-15 (elevation, 7,210.35 feet); minimum, 11,930 acre-feet Aug. 28 to Sept. 30 (elevation, 7,199.10 feet). Maximum contents during period 1939-49, 15,446 acre-feet July 2, 1943 (elevation, 7,210.85 feet); no contents Oct. 2-5, 1940.

Reservoir is formed by earth-fill, rock-faced dam; storage began Oct. 18, 1939. Capacity, 15,182 acre-feet between elevations 7,135.0 feet (sill of trash rack) and 7,210.0 feet (crest of spillway) above mean sea level. Water is used for irrigation of lands in Fremont-Madison irrigation district, Idaho. Gage read once daily about 7 a.m. except for period November to April when occasional readings were made. Records given herein represent usable contents. Gage-height record and capacity table furnished by Bureau of Reclamation.

Monthly elevations or gage heights and contents, water year October 1948 to September 1949

| Date | Henrys Lake | | | Grassy Lake | | |
|---|---|---|---|---|---|---|
| | Gage height (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) | Elevation (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
| Sept. 30 | - | a53,300 | - | 7,199.80 | 12,129 | - |
| Oct. 31 | - | a55,500 | +2,200 | - | a12,187 | +58 |
| Nov. 30 | - | a57,700 | +2,200 | 7,200.40 | 12,303 | +116 |
| Dec. 31 | - | a59,800 | +2,100 | 7,201.35 | 12,578 | +275 |
| Calendar year 1948 | - | - | -5,700 | - | - | -1,002 |
| Jan. 31 | - | a61,900 | +2,100 | - | a12,700 | +122 |
| Feb. 28 | - | a63,800 | +1,900 | - | a12,840 | +140 |
| Mar. 31 | - | a66,000 | +2,200 | - | a12,999 | +159 |
| Apr. 30 | - | a70,000 | +4,000 | 7,203.50 | 13,205 | +206 |
| May 31 | - | a76,000 | +6,000 | 7,210.15 | 15,229 | +2,024 |
| June 30 | - | a79,300 | +3,300 | 7,210.15 | 15,229 | 0 |
| July 31 | - | a71,700 | -7,600 | 7,208.85 | 14,826 | -403 |
| Aug. 31 | - | a58,200 | -13,500 | 7,199.10 | 11,930 | -2,896 |
| Sept. 30 | - | a52,060 | -6,140 | 7,199.10 | 11,930 | 0 |
| Water year 1948-49 | - | - | -1,240 | - | - | -199 |

a No gage-height record; contents interpolated.

Diversions from Fall River above gaging station near Squirrel, Idaho

Above Squirrel gaging station two canals divert water from Fall River for irrigation. Records available for part of each irrigation season from 1919 to 1949. Discharge of canals computed from daily or biweekly staff-gage readings, or interpolated, and combined to show total diverted flow. Records good.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | 0 | 100 | 246 | 251 | 122 |
| 2 | | | | | | | | 0 | 120 | 251 | 250 | 122 |
| 3 | | | | | | | | 0 | 137 | 248 | 253 | 109 |
| 4 | | | | | | | | 0 | 137 | 252 | 253 | 98 |
| 5 | | | | | | | | 0 | 137 | 259 | 241 | 101 |
| 6 | | | | | | | | 0 | 157 | 257 | 253 | 99 |
| 7 | | | | | | | | 0 | 157 | 253 | 241 | 91 |
| 8 | | | | | | | | 0 | 155 | 245 | 230 | 91 |
| 9 | | | | | | | | 0 | 155 | 256 | 216 | 89 |
| 10 | | | | | | | | 0 | 150 | 262 | 229 | 86 |
| 11 | | | | | | | | 0 | 140 | 245 | 232 | 76 |
| 12 | | | | | | | | 0 | 137 | 234 | 216 | 77 |
| 13 | | | | | | | | 0 | 137 | 255 | 218 | 60 |
| 14 | | | | | | | | 30 | 147 | 254 | 214 | 59 |
| 15 | | | | | | | | 45 | 161 | 254 | 203 | 59 |
| 16 | | | | | | | | 50 | 167 | 255 | 177 | 0 |
| 17 | | | | | | | | 4 | 167 | 260 | 175 | 0 |
| 18 | | | | | | | | 4 | 167 | 260 | 171 | 0 |
| 19 | | | | | | | | 4 | 190 | 262 | 167 | 0 |
| 20 | | | | | | | | 4 | 218 | 259 | 167 | 0 |
| 21 | | | | | | | | 4 | 209 | 260 | 165 | 0 |
| 22 | | | | | | | | 4 | 242 | 257 | 167 | 0 |
| 23 | | | | | | | | 4 | 252 | 17 | 167 | 0 |
| 24 | | | | | | | | 4 | 252 | 0 | 169 | 0 |
| 25 | | | | | | | | 4 | 252 | 218 | 169 | 0 |
| 26 | | | | | | | | 30 | 263 | 233 | 161 | 0 |
| 27 | | | | | | | | 50 | 263 | 253 | 137 | 0 |
| 28 | | | | | | | | 60 | 263 | 250 | 127 | 0 |
| 29 | | | | | | | | 69 | 260 | 256 | 124 | 0 |
| 30 | | | | | | | | 69 | 264 | 256 | 122 | 0 |
| 31 | | | | | | | | 70 | - | 256 | 121 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | 509 | 70 | 0 | 16.4 | 1,010 |
| June | 5,556 | 264 | 100 | 185 | 11,020 |
| July | 7,323 | 262 | 0 | 236 | 14,520 |
| August | 5,986 | 253 | 121 | 193 | 11,870 |
| September | 1,339 | 122 | 0 | 44.6 | 2,660 |
| The period | - | - | - | - | 41,080 |

## Fall River near Squirrel, Idaho

Location.--Water-stage recorder, lat. 44°04', long. 111°15', in NE¼ sec. 34, T. 9 N., R. 44 E., 4 miles northeast of Squirrel and 10 miles upstream from Conant Creek.

Drainage area.--380 square miles.

Records available.--January 1904 to June 1909, May 1918 to September 1949. August 1902 to December 1903 at Wilson's sawmill, 3 miles upstream.

Average discharge.--36 years (1904-8, 1917-49), 746 second-feet.

Extremes.--Maximum discharge during year, 3,710 second-feet May 17 (gage height, 3.88 feet); minimum daily, 380 second-feet Feb. 14-16, 25-28.
1904-9, 1918-49: Maximum discharge observed, 6,440 second feet June 27, 1927; minimum observed, 72 second-feet Feb. 9, 1930.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow since October 1939 partly regulated by Grassy Lake (see p. 58). Two diversions above station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | h522 | 499 | 483 | 425 | 390 | 385 | 397 | 1,400 | 2,740 | 908 | 530 | 551 |
| 2 | a522 | 630 | 483 | 425 | 395 | 395 | 408 | 1,380 | 2,680 | 917 | 537 | 551 |
| 3 | a522 | 622 | 483 | 420 | 395 | 405 | 419 | 1,780 | 2,230 | 872 | 537 | 572 |
| 4 | a530 | 562 | 483 | 415 | 395 | 415 | 443 | 1,800 | 2,020 | 776 | 523 | 572 |
| 5 | a570 | 499 | 440 | 410 | 400 | 425 | 456 | 1,770 | 2,130 | 809 | 530 | 572 |
| 6 | a640 | 506 | 454 | 405 | 400 | 435 | 476 | 1,790 | 2,240 | 728 | 523 | 558 |
| 7 | a580 | 491 | 447 | 400 | 400 | 440 | 502 | 2,070 | 2,450 | 648 | 502 | 551 |
| 8 | 537 | 447 | 440 | 400 | 405 | 440 | 530 | 2,260 | 2,650 | 618 | 495 | 544 |
| 9 | 537 | 483 | 468 | 400 | 405 | 440 | 523 | 2,440 | 2,500 | 625 | 502 | 544 |
| 10 | 530 | 499 | 483 | 400 | 405 | 432 | 551 | 2,650 | 2,570 | 656 | 530 | 551 |
| 11 | 522 | 506 | 468 | 405 | 400 | 425 | 580 | 2,730 | 2,730 | 602 | 495 | 588 |
| 12 | 514 | 506 | 476 | 420 | 395 | 454 | 648 | 2,870 | 3,090 | 558 | 488 | 618 |
| 13 | 514 | 506 | 461 | 420 | 385 | 440 | 656 | 2,900 | 3,090 | 551 | 495 | 588 |
| 14 | 514 | 499 | 476 | 420 | 380 | 425 | 588 | 2,840 | 2,770 | 551 | 488 | 572 |
| 15 | 613 | 554 | 411 | 415 | 380 | 418 | 572 | 3,070 | 2,360 | 537 | 495 | 565 |
| 16 | 630 | 506 | 411 | 415 | 380 | 425 | 618 | 3,180 | 2,270 | 530 | 502 | 602 |
| 17 | 579 | *506 | 418 | 415 | 385 | 440 | 680 | 3,590 | 2,210 | 516 | 495 | 610 |
| 18 | 570 | 468 | 418 | 415 | 390 | 425 | 784 | 3,210 | 1,920 | 502 | 495 | 602 |
| 19 | 554 | 468 | 432 | *414 | 395 | 425 | 908 | 3,140 | 1,900 | 502 | 495 | 595 |
| 20 | 545 | 499 | 432 | 412 | 395 | 461 | 1,030 | 2,990 | 2,060 | 495 | 502 | 595 |
| 21 | 506 | 483 | *431 | 410 | 395 | 440 | 953 | 2,960 | 1,880 | 488 | 495 | 588 |
| 22 | 499 | 483 | 430 | 405 | 390 | 425 | 971 | 3,260 | 1,920 | 482 | 488 | 572 |
| 23 | 499 | 483 | 425 | 400 | 385 | 418 | 1,140 | 3,210 | 1,890 | 580 | 565 | 565 |
| 24 | 499 | 499 | 425 | 400 | *381 | 411 | 1,360 | 2,690 | 1,700 | 588 | 818 | 558 |
| 25 | 506 | 499 | 420 | 395 | 380 | 418 | 1,620 | 2,470 | 1,650 | 488 | 752 | 551 |
| 26 | 491 | 499 | 420 | 395 | 380 | 418 | 1,780 | 2,580 | 1,700 | 502 | 595 | 551 |
| 27 | 499 | 432 | 425 | 390 | 380 | 418 | 1,930 | 2,740 | 1,250 | 462 | 551 | 551 |
| 28 | 491 | 468 | 425 | 390 | 380 | 404 | 2,090 | 3,010 | 1,110 | 476 | 551 | 551 |
| 29 | 491 | 476 | 430 | 390 | - | *397 | 2,020 | 3,020 | 1,140 | 530 | 551 | 558 |
| 30 | 483 | 480 | 430 | 390 | - | 390 | 1,680 | 2,770 | 953 | 537 | 551 | 656 |
| 31 | 476 | - | 430 | 390 | - | 390 | - | 2,690 | - | 537 | 551 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 16,485 | 640 | 476 | 532 | 32,700 |
| November | 15,058 | 630 | 432 | 502 | 29,870 |
| December | 13,758 | 483 | 411 | 444 | 27,290 |
| Calendar year 1948 | 286,483 | 3,690 | 390 | 783 | 568,200 |
| January | 12,606 | 425 | 390 | 407 | 25,000 |
| February | 10,946 | 405 | 380 | 391 | 21,710 |
| March | 13,079 | 461 | 385 | 422 | 25,940 |
| April | 27,313 | 2,090 | 397 | 910 | 54,170 |
| May | 81,260 | 3,590 | 1,380 | 2,621 | 161,200 |
| June | 63,803 | 3,090 | 953 | 2,127 | 126,600 |
| July | 18,571 | 917 | 462 | 599 | 36,830 |
| August | 16,627 | 818 | 488 | 536 | 32,980 |
| September | 17,202 | 656 | 544 | 573 | 34,120 |
| Water year 1948-49 | 306,708 | 3,590 | 380 | 840 | 608,400 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Snake River near Heise.
h Computed from staff-gage reading.
Note.--Stage-discharge relation affected by ice Nov. 30 to Dec. 2, Dec. 21 to Mar. 6.

## Diversions from Fall River between Squirrel and Chester gaging stations, Idaho

Between Squirrel and Chester gaging stations eight canals divert water from Fall River for irrigation. Records available for part of each irrigation season from 1919 to 1949. Discharge of canals computed from daily or biweekly staff-gage readings, or interpolated, and combined to show total diverted flow. Records good.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | 316 | 481 | 688 | 466 | 436 |
| 2 | | | | | | | | 332 | 448 | 728 | 479 | 427 |
| 3 | | | | | | | | 336 | 449 | 724 | 492 | 424 |
| 4 | | | | | | | | 321 | 453 | 718 | 488 | 426 |
| 5 | | | | | | | | 320 | 455 | 736 | 489 | 436 |
| 6 | | | | | | | | 313 | 458 | 700 | 492 | 411 |
| 7 | | | | | | | | 318 | 547 | 686 | 454 | 355 |
| 8 | | | | | | | | 330 | 572 | 650 | 463 | 354 |
| 9 | | | | | | | | 389 | 607 | 652 | 460 | 363 |
| 10 | | | | | | | | 448 | 650 | 656 | 454 | 421 |
| 11 | | | | | | | | 453 | 669 | 592 | 434 | 418 |
| 12 | | | | | | | | 464 | 692 | 576 | 427 | 441 |
| 13 | | | | | | | | 471 | 705 | 562 | 423 | 435 |
| 14 | | | | | | | | 473 | 719 | 565 | 417 | 428 |
| 15 | | | | | | | | 510 | 736 | 553 | 426 | 427 |
| 16 | | | | | | | | 537 | 756 | 547 | 450 | 418 |
| 17 | | | | | | | | 428 | 764 | 473 | 440 | 425 |
| 18 | | | | | | | | 367 | 777 | 474 | 430 | 443 |
| 19 | | | | | | | | 351 | 787 | 500 | 407 | 476 |
| 20 | | | | | | | | 362 | 809 | 516 | 407 | 449 |
| 21 | | | | | | | | 360 | 795 | 499 | 403 | 429 |
| 22 | | | | | | | | 354 | 787 | 492 | 405 | 414 |
| 23 | | | | | | | | 357 | 741 | 466 | 424 | 413 |
| 24 | | | | | | | | 326 | 754 | 413 | 411 | 401 |
| 25 | | | | | | | | 331 | 734 | 402 | 376 | 381 |
| 26 | | | | | | | | 513 | 715 | 447 | 370 | 375 |
| 27 | | | | | | | | 560 | 705 | 427 | 356 | 375 |
| 28 | | | | | | | | 553 | 688 | 407 | 378 | 374 |
| 29 | | | | | | | | 528 | 669 | 409 | 390 | 374 |
| 30 | | | | | | | | 514 | 633 | 470 | 288 | 374 |
| 31 | | | | | | | | 503 | - | 470 | 397 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | 12,738 | 560 | 313 | 411 | 25,270 |
| June | 19,755 | 809 | 448 | 658 | 39,180 |
| July | 17,198 | 736 | 402 | 555 | 34,110 |
| August | 13,196 | 492 | 288 | 426 | 26,170 |
| September | 12,323 | 476 | 354 | 411 | 24,440 |
| The period | - | - | - | - | 149,200 |

## Fall River near Chester, Idaho

Location.--Water-stage recorder, lat. 44°01', long. 111°34', in sec. 13, T. 8 N., R. 41 E., half a mile upstream from mouth and 2 miles north of Chester. Altitude of gage, 5,060 feet (from river-profile map).

Drainage area.--560 square miles.

Records available.--April 1920 to September 1949 (irrigation seasons only).

Extremes.--Maximum discharge recorded during year, 4,040 second-feet May 17 (gage height, 5.27 feet); minimum recorded, 74 second-feet Aug. 4 (gage height, 1.36 feet).
1920-49: Maximum discharge recorded, 6,380 second-feet June 27, 1927 (gage height, 6.60 feet); minimum recorded, 9 second-feet Aug. 7, 1923 (gage height, 1.01 feet).

Remarks.--Records excellent except those for periods of no gage-height record, which are good. Flow since October 1939 partly regulated by Grassy Lake (see p. 58). Station is below all diversions for irrigation from Fall River.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | - | a1,500 | 2,610 | 333 | 86 | 126 |
| 2 | | | | | | | - | a1,400 | 2,630 | 320 | 80 | 117 |
| 3 | †331 | | | | | | - | a1,700 | 2,110 | 290 | 86 | 117 |
| 4 | | | | | | | - | a1,750 | 1,860 | 249 | 80 | 123 |
| 5 | | | | | | | - | a1,750 | a1,950 | 261 | 88 | 132 |
| 6 | | | | | | | - | 1,740 | a2,050 | 249 | 103 | 137 |
| 7 | | | | | | | - | 2,080 | a2,200 | 208 | 101 | 169 |
| 8 | | | | | | | - | 2,310 | a2,350 | 143 | 106 | 186 |
| 9 | | | | | | | - | 2,260 | a2,200 | 88 | 115 | 172 |
| 10 | | | | | | | - | 2,660 | a2,220 | 101 | 156 | 149 |
| 11 | | | | | | | - | 2,640 | 2,280 | 162 | 143 | 172 |
| 12 | | | | | | | - | 2,930 | 2,600 | 186 | 129 | 219 |
| 13 | | | | | | | - | a2,930 | 2,730 | 156 | 132 | 193 |
| 14 | | | | | | | - | 2,800 | 2,440 | 134 | 132 | 169 |
| 15 | | | | | | | - | 2,950 | 1,940 | 110 | 132 | 169 |
| 16 | | | | | | | - | 3,140 | 1,730 | 94 | 137 | 183 |
| 17 | | | | | | | - | 3,790 | 1,700 | 132 | 132 | 186 |
| 18 | | | | | | | - | 3,610 | 1,420 | 132 | 143 | 179 |
| 19 | | | | | | | - | 3,510 | 1,330 | 117 | 166 | 172 |
| 20 | | | | | | | - | 3,310 | 1,500 | 101 | 166 | 176 |
| 21 | | | | | | | - | 3,150 | 1,340 | 108 | 166 | 215 |
| 22 | | | | | | | - | 3,370 | 1,340 | 106 | 162 | 234 |
| 23 | | | | | | | - | 3,510 | 1,290 | 412 | 166 | 226 |
| 24 | | | | | | | - | 2,950 | 1,120 | 294 | 219 | 230 |
| 25 | | | | | | | - | 2,480 | 1,050 | 230 | 215 | 234 |
| 26 | | | | | | | - | 2,480 | 1,090 | 234 | 230 | 230 |
| 27 | | | | | | | - | 2,550 | 819 | 146 | 201 | 226 |
| 28 | | | | | | | 2,440 | 2,760 | 607 | 140 | 179 | 219 |
| 29 | | | | | | | 2,520 | 2,830 | 557 | 159 | 176 | 234 |
| 30 | | | | | | | a2,000 | 2,550 | 429 | 126 | 230 | 311 |
| 31 | | | | | | | - | 2,440 | - | 103 | 176 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | 81,830 | 3,790 | 1,400 | 2,640 | 162,300 |
| June | 51,492 | 2,730 | 429 | 1,716 | 102,100 |
| July | 5,624 | 412 | 88 | 8 | 11,160 |
| August | 4,533 | 230 | 80 | 146 | 8,990 |
| September | 5,605 | 311 | 117 | 187 | 11,120 |
| The period | - | - | - | - | 205,700 |

† Result of discharge measurement.
a No gage-height record; discharge computed on basis of records for station near Squirrel.

## Teton River near Victor, Idaho

Location.--Water-stage recorder, lat. 43°33'50", long. 111°04'00", on line between secs. 19 and 30, T. 3 N., R. 46 E., 100 feet downstream from Moose Creek, 200 feet upstream from String Canal, and 3½ miles southeast of Victor. Prior to July 29, at datum 1.54 feet higher. Altitude of gage, 6,450 feet, from topographic map.

Drainage area.--47.6 square miles.

Records available.--May 1946 to September 1949.

Extremes.--Maximum discharge during year, 338 second-feet June 11; maximum gage height, 1.87 feet (ice jam) sometime between Jan. 7 and Feb. 26; minimum discharge recorded, 23 second-feet Mar. 28 (gage height, -0.04 foot), but may have been less during periods of ice effect or no gage-height record.
1946-49: Maximum discharge observed, 398 second-feet June 8, 1948 (gage height, 2.03 feet); minimum recorded, 22 second-feet Feb. 20, 1947 (gage height, -0.15 foot), but may have been less during periods of ice effect or no gage-height record.

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

Discharge, in second-fee., water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 49 | 47 | 40 | 35 | 32 | 31 | 29 | 93 | 241 | 157 | 82 | 54 |
| 2 | 49 | 49 | 40 | 35 | 32 | 31 | 29 | 87 | 219 | 155 | 82 | 53 |
| 3 | 49 | 49 | 40 | 35 | 32 | 32 | 28 | 86 | 200 | 155 | 80 | 54 |
| 4 | 50 | 45 | 40 | 34 | 32 | 30 | 29 | 87 | 192 | 152 | 79 | 54 |
| 5 | 53 | 44 | 37 | 34 | 32 | 30 | 30 | 86 | 196 | 148 | 78 | 52 |
| 6 | 50 | 45 | 37 | 33 | 33 | 30 | 31 | 88 | 211 | 143 | 76 | 51 |
| 7 | 50 | 43 | 38 | 33 | 33 | 30 | 33 | 100 | 234 | 137 | 74 | 50 |
| 8 | 49 | 40 | 38 | 33 | 33 | 31 | 33 | 116 | 270 | 130 | 74 | 50 |
| 9 | 49 | 42 | 38 | 33 | 33 | 31 | 33 | 136 | 288 | 127 | 76 | 50 |
| 10 | 49 | 44 | 38 | 33 | 33 | 31 | 33 | 163 | 300 | 125 | 74 | 53 |
| 11 | 48 | 44 | 38 | 34 | 33 | 30 | 35 | 186 | 318 | 123 | 71 | 55 |
| 12 | 47 | 43 | 38 | 35 | 32 | 30 | 37 | 204 | 320 | 120 | 70 | 52 |
| 13 | 47 | 43 | *38 | 35 | 32 | 30 | 37 | 223 | 305 | 116 | 69 | 51 |
| 14 | 47 | 43 | 38 | 35 | 31 | 30 | 35 | 239 | 280 | 114 | 69 | 50 |
| 15 | 54 | 44 | 38 | 35 | 31 | 30 | 35 | 258 | 263 | 111 | 69 | 50 |
| 16 | 54 | 43 | 33 | 34 | 31 | 30 | 37 | 253 | 260 | 109 | 68 | 49 |
| 17 | 52 | 44 | 33 | 34 | 31 | 29 | 40 | 253 | 248 | 108 | 67 | 50 |
| 18 | 50 | 41 | 33 | 34 | 32 | 29 | 46 | 253 | 232 | 104 | 66 | 50 |
| 19 | 48 | 41 | 34 | 34 | 33 | 30 | 55 | 246 | 239 | 101 | 64 | 49 |
| 20 | 48 | 42 | 34 | 34 | 33 | 30 | 59 | 243 | 226 | 100 | 63 | 49 |
| 21 | 47 | 42 | 34 | 34 | 33 | 30 | 51 | 234 | 211 | 96 | 62 | 49 |
| 22 | 47 | 42 | 34 | 33 | 33 | 30 | 57 | 215 | 208 | 93 | 61 | 49 |
| 23 | 47 | 42 | 34 | 33 | 32 | 29 | 65 | 202 | 204 | 90 | 64 | 49 |
| 24 | 47 | 43 | 34 | 33 | 32 | 29 | 78 | 194 | 194 | 87 | 63 | 49 |
| 25 | 47 | 43 | 33 | 32 | 32 | 29 | 92 | 196 | 192 | 86 | 61 | 49 |
| 26 | 46 | 41 | 33 | 32 | *32 | 29 | 96 | 215 | 196 | 88 | 59 | 49 |
| 27 | 47 | 38 | 33 | 32 | 31 | 29 | 109 | 239 | 184 | 86 | 56 | 49 |
| 28 | 47 | 40 | 33 | 32 | 31 | 28 | 114 | 255 | 174 | 85 | 55 | 49 |
| 29 | 47 | 40 | 34 | 32 | - | 28 | 114 | 282 | 172 | 84 | 55 | 49 |
| 30 | 46 | 40 | 35 | 32 | - | 29 | 103 | 288 | 163 | 86 | 54 | 53 |
| 31 | 46 | - | 35 | 32 | - | 29 | - | 265 | - | 84 | 54 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff: Inches | Runoff: Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 1,506 | 54 | 46 | 48.6 | 1.02 | 1.18 | 2,990 |
| November | 1,287 | 49 | 38 | 42.9 | .901 | 1.01 | 2,550 |
| December | 1,115 | 40 | 33 | 36.0 | .756 | .87 | 2,210 |
| Calendar year 1948 | 29,041 | 383 | - | 79.3 | 1.67 | 22.69 | 57,610 |
| January | 1,039 | 35 | 32 | 33.5 | .704 | .81 | 2,060 |
| February | 900 | 33 | 31 | 32.1 | .674 | .70 | 1,790 |
| March | 924 | 32 | 28 | 29.8 | .626 | .72 | 1,830 |
| April | 1,603 | 114 | 28 | 53.4 | 1.12 | 1.25 | 3,180 |
| May | 5,985 | 288 | 86 | 193 | 4.05 | 4.68 | 11,870 |
| June | 6,940 | 320 | 163 | 231 | 4.85 | 5.42 | 13,770 |
| July | 3,498 | 157 | 84 | 113 | 2.37 | 2.73 | 6,940 |
| August | 2,095 | 82 | 54 | 67.6 | 1.42 | 1.64 | 4,160 |
| September | 1,520 | 55 | 49 | 50.7 | 1.07 | 1.19 | 3,010 |
| Water year 1948-49 | 28,412 | 320 | 28 | 77.8 | 1.63 | 22.20 | 56,360 |

Peak discharge (base, 200 sec.-ft.).--May 15 (11 p.m.) 265 sec.-ft.; May 30 (1:30 to 5 a.m.) 298 sec.-ft.; June 11 (11 p.m.) 338 sec.-ft.

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 8, 9, Dec. 16-19, Dec. 21 to about Feb. 15, Mar. 28, 29. No gage-height record Oct. 15-21, Nov. 17 to Dec. 12, Jan. 7 to Feb. 25, July 28; discharge computed on basis of weather records and records for Fall River near Squirrel, Teton River near Tetonia, and Teton Creek near Driggs.

## Teton River near Tetonia, Idaho

Location.--Water-stage recorder, lat. 43°51', long. 111°15', in sec. 15, T. 6 N., R. 44 E., 1¾ miles downstream from highway bridge, 4 miles downstream from Packsaddle Creek, and 6 miles northwest of Tetonia.

Drainage area.--460 square miles.

Records available.--October 1929, March 1930 to September 1932, May to September 1934; July to September 1935, May to September 1940, July 1941 to September 1949. Additional records collected by Water District 36, State of Idaho, October and November 1932, July to September 1936, July to September 1937.

Extremes.--Maximum discharge during year, 1,510 second-feet May 19 (gage height, 2.55 feet); minimum daily, 208 second-feet Jan. 17 to Feb. 8, Feb. 12-15.

1929-32, 1934-35, 1940-49: Maximum discharge observed, 1,900 second-feet June 28, 1945 (gage height, 2.97 feet); minimum observed, 62 second-feet Jan. 16, 17, 1943.

Remarks.--Records good except those for Nov. 7 to Apr. 22, which are fair. Many diversions from tributaries above station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 301 | *283 | 290 | 225 | 208 | 215 | 220 | 497 | 1,200 | 643 | 419 | 339 |
| 2 | 296 | 359 | 285 | 220 | 208 | 215 | 227 | 472 | 1,190 | 608 | 419 | 334 |
| 3 | 296 | 392 | 280 | 210 | 208 | 215 | 255 | 460 | 1,060 | 601 | 419 | 339 |
| 4 | 296 | 386 | 270 | 210 | 208 | 217 | 290 | 472 | 888 | 664 | 414 | 344 |
| 5 | 329 | 319 | 260 | 210 | 208 | 220 | 340 | 466 | 815 | 738 | 408 | 349 |
| 6 | 344 | 310 | 250 | 210 | 208 | 218 | 410 | 448 | 831 | 693 | 408 | 339 |
| 7 | 319 | 280 | 250 | 210 | 208 | 218 | 470 | 448 | 864 | 622 | 397 | 329 |
| 8 | 310 | 310 | 250 | 210 | 208 | 216 | *539 | 454 | 947 | 588 | 397 | 324 |
| 9 | 301 | 305 | *262 | 210 | 210 | 215 | 601 | 472 | 1,060 | 574 | 397 | 319 |
| 10 | 301 | 300 | 265 | 210 | 210 | 214 | 630 | 503 | 1,070 | 568 | 408 | 324 |
| 11 | 296 | 295 | 270 | 210 | 210 | 213 | 640 | 581 | 1,130 | 568 | 408 | 354 |
| 12 | 292 | 292 | 270 | 210 | 208 | 213 | 650 | 723 | 1,210 | 554 | 402 | 375 |
| 13 | 292 | 292 | 270 | 210 | 208 | 213 | 600 | 888 | 1,310 | 541 | 397 | 364 |
| 14 | 296 | 300 | 265 | 210 | 208 | 213 | 540 | 972 | 1,220 | 528 | 386 | 349 |
| 15 | 375 | 360 | 260 | 210 | 208 | 213 | 540 | 1,040 | 1,050 | 516 | 380 | 339 |
| 16 | 370 | 350 | 220 | 210 | 212 | 230 | 550 | 1,250 | 955 | 510 | 380 | 324 |
| 17 | 319 | 310 | 225 | 208 | 212 | 250 | 560 | 1,420 | 897 | 497 | 375 | 319 |
| 18 | 305 | 285 | 225 | *208 | 212 | 275 | 580 | 1,450 | 847 | 491 | 370 | 319 |
| 19 | 301 | 270 | 225 | 208 | 214 | 292 | 600 | 1,490 | 938 | 497 | 364 | 319 |
| 20 | 296 | 300 | 230 | 208 | 214 | 300 | 550 | 1,410 | 1,060 | 491 | 359 | 314 |
| 21 | 292 | 295 | 230 | 208 | 214 | 295 | 530 | 1,310 | 989 | 478 | 349 | 310 |
| 22 | 292 | 290 | 230 | 208 | 214 | 290 | 528 | 1,270 | 897 | 472 | 339 | 319 |
| 23 | 292 | 285 | 230 | 208 | 214 | 285 | 528 | 1,160 | 880 | 466 | 354 | 314 |
| 24 | 283 | 295 | 230 | 208 | 214 | 280 | 516 | 1,020 | 856 | 460 | 392 | 314 |
| 25 | 279 | 290 | 230 | 208 | *214 | 275 | 535 | 905 | 792 | 454 | 386 | 319 |
| 26 | 274 | 290 | 230 | 208 | 214 | 266 | 516 | 864 | 776 | 448 | 370 | 314 |
| 27 | 274 | 266 | 230 | 208 | 214 | 250 | 503 | 897 | 808 | 437 | 364 | 305 |
| 28 | 279 | 285 | 230 | 208 | 214 | 225 | 516 | 1,010 | 753 | 431 | 354 | 310 |
| 29 | 279 | 290 | 230 | 208 | - | 217 | 548 | 1,160 | 716 | 431 | 349 | 310 |
| 30 | 283 | 290 | 230 | 208 | - | 217 | 554 | 1,220 | 664 | 425 | 349 | 344 |
| 31 | 279 | - | 230 | 208 | - | 217 | - | 1,220 | - | 419 | 344 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 9,341 | 375 | 274 | 301 | 18,530 |
| November | 9,174 | 392 | 266 | 306 | 18,200 |
| December | 7,652 | 290 | 220 | 247 | 15,180 |
| Calendar year 1948 | 143,369 | 1,290 | 105 | 392 | 284,400 |
| January | 6,505 | 225 | 208 | 210 | 12,900 |
| February | 5,902 | 214 | 208 | 211 | 11,710 |
| March | 7,392 | 300 | 213 | 238 | 14,660 |
| April | 15,066 | 650 | 220 | 502 | 29,880 |
| May | 27,952 | 1,490 | 448 | 902 | 55,440 |
| June | 28,673 | 1,310 | 664 | 956 | 56,870 |
| July | 16,413 | 738 | 419 | 529 | 32,550 |
| August | 11,857 | 419 | 339 | 382 | 23,520 |
| September | 9,875 | 375 | 305 | 329 | 19,590 |
| Water year 1948-49 | 155,802 | 1,490 | 208 | 427 | 309,000 |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 7 to Apr. 22 (no gage-height record Nov. 8 to Apr. 22, except weekly readings on staff gage; discharge computed on basis of weekly readings of auxiliary staff gage 1¾ miles above station, 4 discharge measurements, weather records, and records for station near St. Anthony).

## Teton River near St. Anthony, Idaho

Location.--Water-stage recorder, lat. 43°56', long. 111°37', in sec. 15, T. 7 N., R. 41 E., half a mile upstream from railroad bridge and 4 miles southeast of St. Anthony.

Drainage area.--920 square miles.

Records available.--April 1903 to June 1909, April 1920 to September 1949.

Average discharge.--22 years (1903-8, 1921-22, 1933-49), 757 second-feet.

Extremes.--Maximum discharge during year, 3,660 second-feet May 17 (gage height, 6.36 feet); minimum, 332 second-feet Jan. 20.
1903-9, 1920-49: Maximum discharge, 7,820 second-feet June 5, 1909 (gage height, 6.90 feet, site and datum then in use); minimum, 88 second-feet Mar. 12, 1906 (gage height, 1.00 foot, site and datum then in use).

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Flow affected by diversions from streams in Teton Basin, 20 miles upstream, and by flow diverted from Henrys Fork through Cross Cut Canal into Teton River (6,870 acre-feet diverted into river during 1949 irrigation season).

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 516 | 471 | 507 | 400 | 350 | 405 | 417 | 1,320 | 2,460 | 1,090 | 823 | 573 |
| 2 | 503 | 498 | 484 | 390 | 350 | 410 | 417 | 1,140 | 2,380 | 1,080 | 823 | 563 |
| 3 | 489 | 582 | 480 | 370 | 350 | 410 | 430 | 1,140 | 2,140 | 1,060 | 823 | 563 |
| 4 | 489 | 592 | 476 | 350 | 350 | 415 | 448 | 1,270 | 1,890 | 1,090 | 762 | 582 |
| 5 | 507 | 539 | 453 | 350 | 355 | 417 | 480 | 1,250 | 1,790 | 1,230 | 737 | 587 |
| 6 | 535 | 526 | 426 | 350 | 355 | 408 | 544 | 1,200 | 1,850 | 1,150 | 731 | 587 |
| 7 | 521 | 521 | 450 | 350 | 355 | 408 | 628 | 1,310 | 1,980 | 1,070 | 725 | 573 |
| 8 | 503 | 471 | 440 | 350 | 360 | 412 | 731 | 1,560 | 2,080 | 1,010 | 719 | 563 |
| 9 | 489 | 539 | a460 | 350 | 360 | 399 | 810 | 1,760 | 2,270 | 969 | 719 | 558 |
| 10 | 484 | 535 | a490 | 350 | 360 | 395 | 844 | 2,010 | 2,250 | 946 | 743 | 558 |
| 11 | 480 | 521 | a490 | 350 | 360 | 391 | 909 | 2,250 | 2,360 | 924 | 743 | 587 |
| 12 | 480 | 526 | a490 | 360 | 355 | 408 | 1,070 | 2,570 | 2,500 | 902 | 737 | 623 |
| 13 | 480 | 516 | a480 | 360 | 350 | 399 | 1,180 | 2,800 | 2,530 | 902 | 719 | 618 |
| 14 | 480 | 512 | a480 | 360 | 355 | 399 | 976 | 2,810 | 2,320 | 917 | 683 | 602 |
| 15 | 516 | 558 | 458 | 355 | 370 | 404 | 909 | 2,950 | 2,040 | 837 | 678 | 592 |
| 16 | 592 | 597 | 386 | 350 | 380 | *426 | 969 | 3,280 | 1,860 | 816 | 678 | 582 |
| 17 | 535 | 544 | 400 | 350 | 390 | 458 | 1,010 | 3,530 | 1,760 | 816 | 666 | 573 |
| 18 | 516 | *476 | 400 | 350 | 395 | 466 | 1,090 | 3,590 | 1,620 | 810 | 634 | 563 |
| 19 | 498 | 448 | 410 | 350 | 400 | 471 | 1,150 | 3,450 | 1,650 | 810 | 608 | 563 |
| 20 | 489 | 498 | 410 | *350 | 400 | 516 | 1,190 | 3,440 | 1,960 | 830 | 597 | 554 |
| 21 | 489 | 503 | 410 | 350 | 400 | 549 | 1,110 | 3,130 | 1,820 | 866 | 608 | 554 |
| 22 | 489 | 466 | 410 | 350 | 400 | 535 | 969 | 2,870 | 1,660 | 859 | 608 | 568 |
| 23 | 489 | 484 | 410 | 350 | *400 | 530 | 1,040 | 2,810 | 1,600 | 859 | 602 | 568 |
| 24 | 484 | 494 | 405 | 350 | 400 | 526 | 1,160 | 2,630 | 1,550 | 859 | 634 | 549 |
| 25 | 476 | 471 | 405 | 350 | 400 | 489 | 1,370 | 2,310 | 1,440 | 844 | 689 | 544 |
| 26 | 471 | 498 | 405 | 350 | 400 | 480 | 1,440 | 2,260 | 1,390 | 852 | 644 | 544 |
| 27 | 466 | 426 | 400 | 350 | 400 | 458 | 1,440 | 2,370 | 1,380 | 852 | 602 | 539 |
| 28 | 471 | 444 | 400 | 350 | 400 | 430 | 1,500 | 2,540 | 1,280 | 844 | 587 | 535 |
| 29 | 471 | 512 | 403 | 350 | - | 426 | 1,590 | 2,800 | 1,220 | 844 | 582 | 535 |
| 30 | 476 | 489 | *408 | 350 | - | 428 | 1,560 | 2,740 | 1,150 | 837 | 582 | 573 |
| 31 | 471 | - | 405 | 350 | - | 417 | - | 2,620 | - | 830 | 578 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 15,355 | 592 | 466 | 495 | 30,460 |
| November | 15,257 | 597 | 426 | 509 | 30,260 |
| December | 13,529 | 507 | 386 | 436 | 26,830 |
| Calendar year 1948 | 289,570 | 3,480 | 310 | 791 | 574,400 |
| January | 10,995 | 400 | 350 | 355 | 21,810 |
| February | 10,500 | 400 | 350 | 375 | 20,830 |
| March | 13,683 | 549 | 391 | 441 | 27,140 |
| April | 29,381 | 1,590 | 417 | 979 | 58,280 |
| May | 73,710 | 3,590 | 1,140 | 2,378 | 146,200 |
| June | 56,180 | 2,530 | 1,150 | 1,873 | 111,400 |
| July | 28,605 | 1,230 | 810 | 923 | 56,740 |
| August | 21,064 | 823 | 578 | 679 | 41,780 |
| September | 17,073 | 623 | 535 | 569 | 33,860 |
| Water year 1948-49 | 305,332 | 3,590 | 350 | 837 | 605,600 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station on Fall River near Squirrel.

Note.--Stage-discharge relation affected by ice Dec. 7, Dec. 17 to Mar. 4 (no gage-height record Jan. 27 to Feb. 22, Feb. 26 to Mar. 1 except weekly readings on staff gage; discharge computed on basis of 3 discharge measurements, weather records, observed gage heights, and records for Fall River near Squirrel).

## Diversions from Teton River between St. Anthony gaging station and mouth, Idaho

Between St. Anthony gaging station and mouth 17 canals divert water from Teton River for irrigation. Records available for part of each irrigation season from 1919 to 1949. Discharge of canals computed from daily or biweekly staff-gage readings, or interpolated, and combined to show total diverted flow. Records good.

**Discharge, in second-feet, water year October 1948 to September 1949**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | 601 | 745 | 887 | 862 | 610 |
| 2 | | | | | | | | 608 | 755 | 1,030 | 856 | 608 |
| 3 | | | | | | | | 603 | 808 | 1,090 | 836 | 594 |
| 4 | | | | | | | | 646 | 660 | 1,090 | 810 | 615 |
| 5 | | | | | | | | 651 | 669 | 1,170 | 762 | 644 |
| 6 | | | | | | | | 712 | 748 | 1,000 | 743 | 637 |
| 7 | | | | | | | | 824 | 824 | 982 | 755 | 568 |
| 8 | | | | | | | | 945 | 960 | 926 | 775 | 547 |
| 9 | | | | | | | | 979 | 1,040 | 889 | 770 | 541 |
| 10 | | | | | | | | 992 | 1,150 | 863 | 698 | 575 |
| 11 | | | | | | | | 997 | 1,230 | 855 | 694 | 571 |
| 12 | | | | | | | | 1,060 | 1,280 | 831 | 535 | 589 |
| 13 | | | | | | | | 1,080 | 1,310 | 820 | 650 | 580 |
| 14 | | | | | | | | 1,070 | 1,300 | 822 | 634 | 585 |
| 15 | | | | | | | | 1,110 | 1,290 | 806 | 638 | 488 |
| 16 | | | | | | | | 1,080 | 1,270 | 789 | 632 | 432 |
| 17 | | | | | | | | 1,030 | 1,290 | 830 | 651 | 427 |
| 18 | | | | | | | | 968 | 1,270 | 815 | 656 | 413 |
| 19 | | | | | | | | 862 | 1,280 | 822 | 628 | 402 |
| 20 | | | | | | | | 902 | 1,240 | 803 | 623 | 398 |
| 21 | | | | | | | | 860 | 1,220 | 852 | 616 | 399 |
| 22 | | | | | | | | 799 | 1,220 | 792 | 593 | 402 |
| 23 | | | | | | | | 770 | 1,190 | 852 | 603 | 404 |
| 24 | | | | | | | | 754 | 1,150 | 831 | 615 | 401 |
| 25 | | | | | | | | 728 | 1,140 | 869 | 626 | 394 |
| 26 | | | | | | | | 741 | 1,120 | 850 | 596 | 390 |
| 27 | | | | | | | | 758 | 1,100 | 859 | 560 | 396 |
| 28 | | | | | | | | 754 | 1,130 | 908 | 549 | 383 |
| 29 | | | | | | | | 763 | 1,090 | 913 | 555 | 375 |
| 30 | | | | | | | | 774 | 1,030 | 874 | 541 | 375 |
| 31 | | | | | | | | 777 | - | 867 | 570 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | 26,178 | 1,110 | 601 | 844 | 51,920 |
| June | 32,409 | 1,310 | 660 | 1,080 | 64,280 |
| July | 27,587 | 1,170 | 789 | 890 | 54,720 |
| August | 20,632 | 862 | 535 | 666 | 40,920 |
| September | 14,743 | 644 | 375 | 491 | 29,240 |
| The period | - | - | - | - | 241,100 |

## Teton Creek near Driggs, Idaho

Location.--Water-stage recorder, lat. 43°45'30", long. 110°58', 1½ miles upstream from Mill Creek, 1.6 miles west of Boy Scout camp, 4.2 miles east of Wyoming-Idaho State line, and 7½ miles northeast of Driggs. Altitude of gage, 6,660 feet, from topographic map.

Drainage area.--33.8 square miles.

Records available.--June 1946 to September 1949.

Extremes.--Maximum discharge during year, 898 second-feet June 12 (gage height, 3.84 feet); minimum, 6.0 second-feet Mar. 30 (gage height, -0.07 foot).
1946-49: Maximum discharge, 925 second-feet June 8, 1948 (gage height, 3.91 feet); minimum recorded, 6.0 second-feet Apr. 7, 1948, Mar. 30, 1949; minimum gage height recorded, -0.06 foot Apr. 7, 1948.

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

Rating tables, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| Oct. 1 to June 12 | | | | | | June 13 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 7.5 | 0.5 | 28 | 1.7 | 193 | 0.2 | 12 | 0.9 | 59 | 2.3 | 340 |
| .1 | 10 | .7 | 42 | 2.1 | 293 | .3 | 17 | 1.1 | 76 | 2.8 | 500 |
| .2 | 13 | 1.0 | 67 | 2.5 | 414 | .4 | 23 | 1.3 | 101 | 3.3 | 680 |
| .3 | 17 | 1.1 | 79 | 3.0 | 587 | .5 | 30 | 1.5 | 137 | | |
| .4 | 22 | 1.3 | 111 | 3.6 | 807 | .7 | 43 | 1.8 | 205 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 15 | 17 | 14 | 12 | b9.0 | *8.3 | 8.0 | 132 | 357 | 294 | 59 | 20 |
| 2 | 15 | 18 | 14 | 12 | b9.0 | 8.3 | 8.3 | 106 | 277 | 331 | 57 | 19 |
| 3 | 15 | 17 | 14 | b11 | b9.0 | 8.3 | 8.5 | 102 | 226 | 349 | 55 | 22 |
| 4 | 15 | 16 | 15 | b11 | b9.0 | 8.5 | 9.1 | 108 | 226 | 308 | 54 | 21 |
| 5 | 18 | 15 | 14 | b11 | b9.0 | 8.5 | 10 | 106 | 288 | 291 | 51 | 21 |
| 6 | 17 | 17 | 14 | 11 | b9.0 | 8.5 | 11 | 106 | 363 | 283 | 51 | 18 |
| 7 | 17 | 16 | 14 | 11 | b9.0 | 8.5 | 13 | 150 | 461 | 283 | 49 | 18 |
| 8 | 18 | 14 | 14 | 12 | b9.0 | 8.8 | 17 | 233 | 562 | 264 | 46 | 17 |
| 9 | 19 | 15 | 14 | b11 | 9.1 | 8.8 | 17 | 307 | 594 | 240 | 42 | 17 |
| 10 | 19 | 15 | 14 | 11 | 9.1 | 8.8 | 17 | 395 | 674 | 243 | 43 | 21 |
| 11 | 18 | 15 | 14 | 11 | 9.3 | 9.1 | 21 | 440 | 740 | 222 | 39 | 25 |
| 12 | 17 | 15 | 13 | 11 | b9.0 | 8.8 | 30 | 512 | 777 | 203 | 38 | 25 |
| 13 | 16 | 15 | 14 | 11 | b8.5 | 8.8 | 32 | 540 | 676 | 183 | 35 | 24 |
| 14 | 16 | 15 | 14 | 11 | b9.5 | 8.8 | 28 | 526 | 600 | 174 | 34 | 23 |
| 15 | 35 | 16 | 13 | 11 | b9.5 | 8.8 | 27 | 630 | 578 | 167 | 32 | 21 |
| 16 | 33 | 15 | b12 | b11 | 9.3 | 8.8 | 29 | 609 | 603 | 167 | 30 | 20 |
| 17 | 26 | 16 | *b12 | b11 | 9.3 | 8.5 | 35 | 573 | 567 | 150 | 29 | 19 |
| 18 | 25 | 13 | b12 | 11 | 9.3 | 8.3 | 48 | 516 | 490 | 113 | 28 | 18 |
| 19 | 26 | 14 | 13 | 11 | 9.1 | 8.3 | 66 | 467 | 600 | 100 | 27 | 17 |
| 20 | 24 | 16 | 13 | 10 | 8.8 | 8.8 | 88 | 404 | 575 | 100 | 26 | 16 |
| 21 | 24 | 15 | 13 | b10 | 8.8 | 8.3 | 69 | 333 | 486 | 84 | 25 | 16 |
| 22 | 23 | 15 | b12 | 10 | 8.8 | 8.3 | 62 | 279 | 518 | 84 | 24 | 15 |
| 23 | 23 | 15 | b12 | 10 | 8.8 | 8.5 | 64 | 238 | 486 | 85 | 26 | 15 |
| 24 | 22 | 15 | b12 | 10 | 8.5 | 8.5 | 99 | 211 | 417 | 82 | 32 | 15 |
| 25 | 22 | 15 | b12 | b9.5 | 8.3 | 8.3 | 165 | 221 | 459 | 77 | 26 | 15 |
| 26 | 21 | 15 | 12 | b9.5 | 8.3 | 8.3 | 167 | 310 | 469 | 74 | 24 | 14 |
| 27 | 21 | 14 | 12 | b9.5 | 8.3 | 8.3 | 193 | 411 | 386 | 73 | 23 | 14 |
| 28 | 19 | 14 | 12 | b9.5 | 8.3 | b8.1 | 226 | 481 | 349 | 69 | 22 | 13 |
| 29 | 19 | 14 | 12 | b9.0 | - | 8.0 | 221 | 537 | 346 | 66 | 21 | 14 |
| 30 | 18 | 14 | 12 | b9.0 | - | 7.8 | 173 | 512 | 291 | 64 | 21 | 21 |
| 31 | 17 | - | 12 | b9.0 | - | 8.0 | - | 444 | - | 62 | 20 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 633 | 35 | 15 | 20.4 | 0.604 | 0.70 | 1,260 |
| November | 456 | 18 | 13 | 15.2 | .450 | .50 | 904 |
| December | 404 | 15 | 12 | 13.0 | .385 | .44 | 801 |
| Calendar year 1948 | 37,136.8 | 853 | 7.5 | 101 | 2.99 | 40.85 | 73,660 |
| January | 327.0 | 12 | 9.0 | 10.5 | .311 | .36 | 649 |
| February | 249.9 | 9.5 | 8.3 | 8.92 | .264 | .27 | 496 |
| March | 262.7 | 9.1 | 7.8 | 8.47 | .251 | .29 | 521 |
| April | 1,961.9 | 226 | 8.0 | 65.4 | 1.93 | 2.16 | 3,890 |
| May | 10,939 | 630 | 102 | 353 | 10.4 | 12.04 | 21,700 |
| June | 14,441 | 777 | 226 | 481 | 14.2 | 15.89 | 28,640 |
| July | 5,285 | 349 | 62 | 170 | 5.03 | 5.82 | 10,480 |
| August | 1,089 | 59 | 20 | 35.1 | 1.04 | 1.20 | 2,160 |
| September | 554 | 25 | 13 | 18.5 | .547 | .61 | 1,100 |
| Water year 1948-49 | 36,602.5 | 777 | 7.8 | 100 | 2.96 | 40.28 | 72,600 |

Peak discharge (base, 600 sec.-ft.).--May 15 (6 a.m.) 674 sec.-ft.; June 12 (2 a.m.) 898 sec.-ft.; June 19 (12 p.m.) 691 sec.-ft.

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

## Horseshoe Creek near Driggs, Idaho

Location.--Water-stage recorder, lat. 43°44', long. 111°15'30", in sec. 27, T. 5 N., R. 44 E., at mouth of canyon, 90 feet upstream from bridge on old railroad grade, 4 miles upstream from mouth, and 7½ miles west of Driggs. Altitude of gage, 6,200 feet (from topographic map).

Drainage area.--11.7 square miles.

Records available.--May 1946 to September 1949.

Extremes.--Maximum discharge during year, 77 second-feet May 19 (gage height, 3.62 feet); minimum daily, 2.2 second-feet on many days in January and February.
1946-49: Maximum discharge, that of May 19, 1949; minimum, 0.7 second-foot Nov. 12, 1946, but may have been less during winter period; minimum gage height observed, 0.96 foot Feb. 11, 1947.

Remarks.--Records good Apr. 15 to July 15, poor for remainder of year. No diversion or regulation above station.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.0 | 2.6 | 2.7 | 2.7 | 2.2 | 2.3 | 2.3 | 42 | 58 | 17 | 6.9 | 4.9 |
| 2 | 2.8 | 3.0 | 2.7 | 2.4 | 2.2 | 2.3 | 2.4 | 44 | 59 | 16 | 6.8 | 4.8 |
| 3 | 2.8 | 3.6 | 2.6 | 2.3 | 2.2 | 2.3 | 2.6 | 52 | 53 | 16 | 6.3 | 4.9 |
| 4 | 3.1 | 3.5 | 2.6 | 2.3 | 2.2 | 2.3 | 2.9 | 51 | 48 | 15 | 6.3 | 4.9 |
| 5 | 3.7 | 3.1 | 2.6 | 2.3 | 2.2 | 2.3 | 3.2 | 47 | 44 | 15 | 6.1 | 5.0 |
| 6 | 3.2 | 3.0 | 2.5 | 2.3 | 2.2 | 2.3 | 3.9 | 46 | 42 | 14 | 5.8 | 4.9 |
| 7 | 3.2 | 2.7 | 2.5 | 2.3 | 2.2 | 2.3 | 5.5 | 48 | 42 | 14 | 5.8 | 4.8 |
| 8 | 3.2 | 2.9 | 2.5 | 2.3 | 2.2 | 2.3 | 7.1 | 51 | 41 | 14 | 5.8 | 4.7 |
| 9 | 3.0 | 2.9 | 2.6 | 2.3 | 2.2 | 2.3 | 7.4 | 54 | 39 | 13 | 5.8 | 4.6 |
| 10 | 3.0 | 2.8 | 2.7 | 2.3 | 2.2 | 2.3 | 7.8 | 58 | 37 | 13 | 6.0 | 4.8 |
| 11 | 2.8 | 2.8 | 2.8 | 2.3 | 2.2 | 2.3 | 9.9 | 61 | 36 | 13 | 6.0 | 4.9 |
| 12 | 2.7 | 2.8 | 2.8 | 2.3 | 2.2 | 2.3 | 15 | 63 | 34 | 12 | 5.8 | 5.2 |
| 13 | 2.6 | 2.8 | 2.8 | 2.3 | 2.2 | 2.3 | 15 | 64 | 33 | 12 | 5.8 | 5.0 |
| 14 | 2.6 | 2.8 | 2.8 | 2.3 | 2.2 | 2.3 | 12 | 65 | 32 | 12 | 5.6 | 4.9 |
| 15 | 4.0 | 3.4 | 2.8 | 2.3 | 2.2 | 2.3 | 12 | 66 | 30 | 11 | 5.4 | 4.8 |
| 16 | 3.1 | 3.3 | 2.8 | 2.3 | 2.2 | 2.4 | 16 | 71 | 28 | 11 | 5.4 | 4.7 |
| 17 | 2.8 | 3.0 | *2.7 | 2.2 | 2.2 | 2.6 | 18 | 72 | 27 | 10 | 5.2 | 4.6 |
| 18 | 2.7 | 2.7 | 2.7 | 2.2 | 2.2 | 2.8 | 26 | 71 | 26 | 10 | 5.2 | 4.6 |
| 19 | 2.7 | 2.6 | 2.6 | 2.2 | 2.2 | 3.1 | 33 | 73 | 27 | 9.9 | 5.2 | 4.6 |
| 20 | 2.7 | 2.8 | 2.6 | 2.2 | 2.2 | 3.2 | 38 | 70 | 25 | 10 | 5.0 | 4.6 |
| 21 | 2.7 | 2.7 | 2.7 | 2.2 | 2.2 | 3.1 | 34 | 71 | 24 | 9.7 | 4.9 | 4.5 |
| 22 | 2.7 | 2.7 | 2.7 | 2.2 | 2.2 | 3.0 | 40 | 69 | 22 | 9.7 | 4.8 | 4.6 |
| 23 | 2.7 | 2.7 | 2.7 | 2.2 | 2.2 | 3.0 | 47 | 68 | 22 | 9.2 | 5.0 | 4.5 |
| 24 | 2.7 | 2.7 | 2.7 | 2.2 | 2.2 | 3.0 | 54 | 64 | 21 | 9.0 | 5.2 | 4.5 |
| 25 | 2.7 | 2.7 | 2.7 | 2.2 | 2.3 | 2.9 | 56 | 61 | 20 | 8.3 | 5.4 | 4.6 |
| 26 | 2.6 | 2.7 | 2.7 | 2.2 | 2.3 | 2.8 | 53 | 60 | 20 | 8.3 | 5.2 | 4.5 |
| 27 | 2.6 | 2.6 | 2.7 | 2.2 | *2.3 | 2.7 | 53 | 60 | 19 | 8.3 | 5.0 | 4.5 |
| 28 | 2.6 | 2.7 | 2.7 | 2.2 | 2.3 | 2.6 | 56 | 62 | 18 | 8.0 | 4.9 | 4.5 |
| 29 | 2.6 | 2.7 | 2.7 | 2.2 | - | 2.5 | 56 | 60 | 18 | 7.8 | 4.9 | 4.5 |
| 30 | 2.6 | 2.7 | 2.7 | 2.2 | - | 2.3 | 47 | 56 | 17 | 7.8 | 4.9 | 4.8 |
| 31 | 2.6 | - | 2.7 | 2.2 | - | 2.3 | - | 57 | - | 7.1 | 4.9 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 88.8 | 4.0 | 2.6 | 2.86 | 0.244 | 0.28 | 176 |
| November | 86.0 | 3.6 | 2.6 | 2.87 | .245 | .27 | 171 |
| December | 83.1 | 2.8 | 2.5 | 2.68 | .229 | .26 | 165 |
| Calendar year 1948 | 3,418.0 | 57 | - | 9.34 | .798 | 10.87 | 6,780 |
| January | 70.3 | 2.7 | 2.2 | 2.27 | .194 | .22 | 139 |
| February | 62.0 | 2.3 | 2.2 | 2.21 | .189 | .20 | 123 |
| Maroh | 78.8 | 3.2 | 2.3 | 2.54 | .217 | .25 | 156 |
| April | 736.0 | 56 | 2.3 | 24.5 | 2.09 | 2.34 | 1,460 |
| May | 1,857 | 73 | 42 | 59.9 | 5.12 | 5.90 | 3,680 |
| June | 962 | 59 | 17 | 32.1 | 2.74 | 3.06 | 1,910 |
| July | 351.1 | 17 | 7.1 | 11.3 | .966 | 1.12 | 696 |
| August | 171.3 | 6.9 | 4.8 | 5.53 | .473 | .54 | 340 |
| September | 141.7 | 5.2 | 4.5 | 4.72 | .403 | .45 | 281 |
| Water year 1948-49 | 4,688.1 | 73 | 2.2 | 12.8 | 1.09 | 14.89 | 9,300 |

Peak discharge (base, 50 sec.-ft.).--Apr. 24 (9 p.m.) 64 sec.-ft.; May 3 (6:30 to 9:30 p.m.) 55 sec.-ft.; May 19 (7 p.m.) 77 sec.-ft.
* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice about Dec. 10 to Mar. 15. No gage-height record Oct. 18-21, Oct. 31 to Dec. 16, Jan. 17 to Feb. 26, Feb. 28 to Apr. 5; discharge computed on basis of weather records and records for other stations in Teton River Basin. Stage-discharge relation affected by backwater from beaver dams Aug. 6 to Sept. 30; discharge computed on basis of 1 discharge measurement, gage-height record, weather records, and records for other stations in Teton River Basin.

## Packsaddle Creek near Tetonia, Idaho

Location.--Water-stage recorder, lat. 43°45'30", long. 111°18'30", in sec. 18, T. 5 N., R. 44 E., 0.9 mile upstream from North Fork and 8½ miles southwest of Tetonia. Altitude of gage is about 6,600 feet (from topographic map).

Drainage area.--5.7 square miles.

Records available.--June 1946 to September 1949.

Extremes.--Maximum discharge during year, 58 second-feet May 19 (gage height, 2.30 feet); minimum, 0.2 second-foot on several days in February and March, but may have been less during periods of ice effect or no gage-height record.
1946-49: Maximum discharge, that of May 19, 1949; minimum, 0.1 second-foot Jan. 22, 1947, and sometime between Dec. 18, 1947, and Jan. 26, 1948.

Remarks.--Records good except those for periods of ice effect or no gage-height record, and those below 1.0 second-foot, which are poor. No diversion or regulation above station.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-3, Oct. 13 to Dec. 3, Sept. 22-30)

| | | | | | |
|---|---|---|---|---|---|
| 0.4 | 0.2 | 0.8 | 5.8 | 1.4 | 24 |
| .5 | .8 | .9 | 8.3 | 1.7 | 34 |
| .6 | 2.0 | 1.0 | 11 | 2.1 | 50 |
| .7 | 3.7 | 1.2 | 17 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.5 | 0.5 | 0.4 | | | 0.2 | 0.3 | 12 | 38 | 6.8 | 1.2 | 0.6 |
| 2 | .5 | .9 | .4 | | | .2 | .3 | 14 | 35 | 6.6 | 1.2 | .6 |
| 3 | .5 | .7 | .4 | | | .2 | .3 | 17 | 31 | 6.3 | 1.2 | .7 |
| 4 | .5 | .5 | .5 | | | .2 | .4 | 16 | 29 | 6.3 | 1.2 | .7 |
| 5 | .6 | .5 | .5 | | | .2 | .5 | 15 | 28 | 6.0 | 1.2 | .7 |
| 6 | .5 | .5 | | | | .3 | .7 | 15 | 28 | 5.4 | 1.1 | .6 |
| 7 | .5 | .5 | | | | .3 | 1.0 | 16 | 29 | 5.0 | 1.0 | .6 |
| 8 | .5 | .4 | | | | .3 | 1.2 | 18 | 31 | 4.8 | 1.8 | .6 |
| 9 | .5 | .5 | | | | .3 | 1.5 | 21 | 31 | 4.5 | .8 | .6 |
| 10 | .5 | .4 | | | | .3 | 1.6 | 22 | 31 | 4.3 | 1.0 | .7 |
| 11 | .5 | .4 | | | | .3 | 2.2 | 24 | 31 | 3.9 | 1.0 | 1.1 |
| 12 | .5 | .4 | | | | .2 | 2.6 | 26 | 32 | 3.9 | 1.0 | .8 |
| 13 | .4 | .4 | | | | .2 | 2.3 | 27 | 30 | 3.7 | .9 | .7 |
| 14 | .5 | .4 | | | | .2 | 2.0 | 29 | 27 | 3.4 | 1.0 | .7 |
| 15 | .9 | .5 | | | | .2 | 2.2 | 31 | 24 | 3.2 | .9 | .6 |
| 16 | .5 | .5 | | 0.3 | 0.3 | .3 | 3.2 | 35 | 22 | 3.0 | .8 | .6 |
| 17 | .5 | .5 | | | | .3 | 4.3 | 43 | 20 | 2.8 | .8 | .6 |
| 18 | .5 | .4 | | | | .3 | 5.6 | 47 | 19 | 2.8 | .8 | .6 |
| 19 | .5 | .4 | .4 | | | .3 | 7.0 | 50 | 19 | 2.7 | .8 | .6 |
| 20 | .5 | .5 | | | | .3 | 8.3 | 49 | 16 | 2.7 | .7 | .6 |
| 21 | .4 | .5 | | | | .3 | 8.3 | 46 | 15 | 2.5 | .7 | .6 |
| 22 | .4 | .4 | | | | .3 | 11 | 42 | 13 | 3.4 | .7 | .7 |
| 23 | .4 | .4 | | | | .2 | 14 | 39 | 13 | 1.6 | 1.0 | .7 |
| 24 | .5 | .5 | | | | .2 | 17 | 37 | 11 | 2.0 | 1.0 | .6 |
| 25 | .4 | .5 | | | | .2 | 17 | 35 | 10 | 1.8 | .9 | .6 |
| 26 | .4 | .5 | | | | .2 | 17 | 37 | 10 | 2.8 | .7 | .6 |
| 27 | .4 | .4 | | | | .3 | 18 | 40 | 9.4 | 1.1 | .7 | .6 |
| 28 | .4 | .4 | | | | .3 | 18 | 45 | 8.6 | 1.5 | .7 | .6 |
| 29 | .4 | .5 | | | - | .3 | 17 | 44 | 8.0 | 1.5 | .7 | .6 |
| 30 | .4 | .4 | | | - | .3 | 14 | 42 | 7.3 | 1.5 | .7 | 1.0 |
| 31 | .4 | - | | | - | .3 | - | 42 | - | 1.2 | .7 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 14.9 | 0.9 | 0.4 | 0.48 | 0.084 | 0.10 | 30 |
| November | 14.3 | .9 | .4 | .48 | .084 | .09 | 28 |
| December | 12.6 | - | - | .41 | .072 | .08 | 25 |
| Calendar year 1948 | 1,363.3 | 33 | - | 3.72 | .653 | 8.89 | 2,710 |
| January | 9.3 | - | - | .30 | .053 | .06 | 18 |
| February | 8.3 | - | - | .30 | .053 | .05 | 16 |
| March | 8.0 | .3 | .2 | .26 | .046 | .05 | 16 |
| April | 198.8 | 18 | .3 | 6.63 | 1.16 | 1.30 | 394 |
| May | 976 | 50 | 12 | 31.5 | 5.53 | 6.37 | 1,940 |
| June | 656.3 | 38 | 7.3 | 21.9 | 3.84 | 4.28 | 1,300 |
| July | 109.0 | 6.8 | 1.1 | 3.52 | .618 | .71 | 216 |
| August | 28.9 | 1.8 | .7 | .93 | .163 | .19 | 57 |
| September | 19.9 | 1.1 | .6 | .66 | .116 | .13 | 39 |
| Water year 1948-49 | 2,056.3 | 50 | - | 5.63 | .988 | 13.41 | 4,080 |

Peak discharge (base, 25 sec.-ft.).--May 19 (5 p.m.) 58 sec.-ft.; May 28 (3 p.m.) 51 sec.-ft.
Note.--Stage-discharge relation affected by ice Nov. 8, 18-20, 24, Nov. 26 to Dec. 2, Dec. 4 to about Feb. 20, Apr. 7, 8, 10-13. No gage-height record Oct. 18-21, Dec. 19 to Feb. 27; discharge computed on basis of weather records and records for nearby streams.

## Spring Creek near Tetonia, Idaho

Location.--Water-stage recorder, lat. 43°50'30", long. 111°07', in sec. 14, T. 6 N., R. 45 E., 10 feet downstream from source of creek at spring and 3 miles northeast of Tetonia.

Records available.--June 1946 to September 1949.

Extremes.--Maximum discharge during year, 5.3 second-feet at times in May, June, and July; maximum gage height, 1.34 feet Dec. 12 (backwater from snow in channel); minimum discharge recorded, 1.9 second-feet Jan. 7-9, but may have been less during period of no gage-height record in January and February.

1946-49: Maximum discharge recorded, 9.5 second-feet Mar. 19, 1947, but may have been greater during period of no gage-height record Mar. 16-18, 1947; minimum, 1.9 second-feet Mar. 30, 31, 1948, Jan. 7-9, 1949, but may have been less during period of no gage-height record in January or February, 1949.

Remarks.--Records fair except those for Nov. 1 to July 31, which are poor. One diversion above station for irrigation. Approximately 137 acre-feet were diverted during year (15 in June, 31 in July, 46 in August, and 45 in September).

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.5 | 3.0 | 2.8 | 2.1 | | *2.3 | 2.8 | 4.4 | 5.1 | 5.3 | 3.7 | 3.7 |
| 2 | 3.5 | 3.0 | 2.8 | 2.1 | | 2.3 | 2.8 | 4.4 | 5.1 | 5.3 | 3.5 | 3.7 |
| 3 | 3.7 | 3.0 | 2.7 | 2.1 | | 2.3 | 2.8 | 4.4 | 5.1 | 5.3 | 3.5 | 3.7 |
| 4 | 3.7 | 3.2 | 2.7 | 2.1 | | 2.3 | 2.8 | 4.4 | 5.1 | 5.3 | 3.5 | 3.5 |
| 5 | 3.7 | 3.2 | 2.7 | 2.0 | | 2.3 | 3.0 | 4.4 | 5.1 | 5.1 | 3.5 | 3.5 |
| 6 | 3.7 | 3.2 | 2.7 | 2.0 | | 2.3 | 3.0 | 4.4 | 5.1 | 5.1 | 3.5 | 3.5 |
| 7 | 3.5 | 3.2 | 2.7 | 1.9 | | 2.3 | 3.2 | 4.6 | 5.1 | 5.1 | 3.5 | 3.5 |
| 8 | 3.2 | 3.0 | 2.5 | 1.9 | 2.0 | 2.5 | 3.2 | 4.8 | 5.1 | 5.1 | 3.5 | 3.3 |
| 9 | 3.2 | 3.0 | 2.5 | 1.9 | | 2.5 | 3.2 | 4.8 | 5.1 | 5.1 | 3.5 | 3.5 |
| 10 | 3.2 | 3.0 | 2.5 | 2.0 | | 2.5 | 3.2 | 4.8 | 5.1 | 5.1 | 3.5 | 3.5 |
| 11 | 3.4 | 3.0 | 2.5 | 2.0 | | 2.7 | 3.2 | 4.8 | 5.1 | 5.3 | 3.1 | 3.5 |
| 12 | 3.0 | 3.0 | b2.5 | 2.0 | | 2.7 | 3.4 | 4.8 | 5.1 | 5.3 | 3.1 | 3.1 |
| 13 | 3.0 | 3.0 | *2.5 | 2.0 | | 2.7 | 3.4 | 5.1 | 5.1 | 5.3 | 3.3 | 3.1 |
| 14 | 3.0 | 3.0 | 2.7 | | | 2.7 | 3.4 | 5.1 | 5.1 | 5.3 | 3.5 | 2.9 |
| 15 | 3.4 | 3.0 | 2.5 | | | 2.8 | 3.4 | 5.1 | 5.1 | 5.3 | 3.5 | 2.7 |
| 16 | 3.2 | 3.0 | 2.7 | | | 2.8 | 3.4 | 5.1 | 5.1 | 5.3 | 3.5 | 2.7 |
| 17 | 3.2 | 3.0 | 2.7 | | | 2.7 | 3.4 | 5.1 | 5.1 | 5.3 | 3.5 | 2.7 |
| 18 | 3.2 | 3.0 | 2.7 | | 2.1 | 2.7 | 3.7 | 5.1 | 5.1 | 5.1 | 3.5 | 2.7 |
| 19 | 3.2 | 3.0 | 2.5 | | | 2.7 | 3.9 | 5.3 | 5.1 | 5.1 | 3.5 | 2.7 |
| 20 | 3.2 | 2.8 | 2.5 | | | 2.7 | 3.9 | 5.1 | 5.1 | 5.1 | 3.5 | 2.7 |
| 21 | 3.2 | 3.0 | 2.5 | | | 2.7 | 3.9 | 5.1 | 5.1 | 5.1 | 3.7 | 2.7 |
| 22 | 3.0 | 2.8 | 2.4 | 2.0 | | 2.8 | 4.2 | 4.8 | 5.1 | 5.1 | 3.7 | 2.7 |
| 23 | 3.2 | 2.8 | 2.4 | | 2.2 | 2.8 | 4.2 | 4.8 | 5.3 | 5.1 | 3.7 | 2.7 |
| 24 | 3.2 | 2.8 | 2.4 | | | 2.8 | 4.2 | 4.8 | 5.3 | 5.1 | 3.7 | 2.7 |
| 25 | 3.0 | 2.8 | 2.4 | | | 2.8 | 4.2 | 4.8 | 5.3 | 5.1 | 3.7 | 2.7 |
| 26 | 3.0 | 3.0 | 2.4 | | 2.3 | 2.8 | 4.2 | 4.8 | 5.3 | 4.8 | 3.7 | 2.7 |
| 27 | 3.0 | 3.0 | 2.4 | | | 2.8 | 4.2 | 5.1 | 5.3 | 4.6 | 3.5 | 2.7 |
| 28 | 3.0 | 2.8 | 2.3 | | | 2.8 | 4.4 | 5.1 | 5.3 | 4.6 | 3.5 | 2.9 |
| 29 | 3.0 | 2.8 | 2.1 | | - | 3.0 | 4.4 | 5.1 | 5.3 | 4.4 | 3.7 | 3.1 |
| 30 | 3.0 | 2.8 | 2.1 | | - | 2.8 | 4.4 | 5.1 | 5.3 | 4.4 | 3.7 | 3.1 |
| 31 | 3.0 | - | 2.1 | | - | 2.8 | - | 5.1 | - | 4.0 | 3.7 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 100.3 | 3.7 | 3.0 | 3.24 | 199 |
| November | 89.2 | 3.2 | 2.8 | 2.97 | 177 |
| December | 77.9 | 2.8 | 2.1 | 2.51 | 155 |
| Calendar year 1948 | 1,427.0 | - | 1.9 | 3.90 | 2,833 |
| January | 62.1 | - | - | 2.00 | 123 |
| February | 58.5 | - | - | 2.09 | 116 |
| March | 81.7 | 3.0 | 2.3 | 2.64 | 162 |
| April | 107.4 | 4.4 | 2.8 | 3.58 | 213 |
| May | 150.6 | 5.3 | 4.4 | 4.86 | 299 |
| June | 154.6 | 5.3 | 5.1 | 5.15 | 307 |
| July | 156.5 | 5.3 | 4.0 | 5.05 | 310 |
| August | 109.5 | 3.7 | 3.1 | 3.53 | 217 |
| September | 92.2 | 3.7 | 2.7 | 3.07 | 183 |
| Water year 1948-49 | 1,240.5 | 5.3 | - | 3.40 | 2,460 |

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by snow in channel.
Note.--No gage-height record Jan. 14 to Feb. 28, June 6-18, July 31; discharge interpolated or computed on basis of weather records and records for Teton River near Tetonia.

## Blackfoot River near Blackfoot, Idaho

Location.--Water-stage recorder, lat. 43°08', long. 112°28', at east quarter corner of sec. 28, T. 3 S., R. 34 E., 2 miles upstream from mouth and 9 miles southwest of Blackfoot. Altitude of gage, 4,420 feet (river-profile survey).

Drainage area.--1,100 square miles.

Records available.--July 1913 to September 1949.

Extremes.--Maximum discharge during year, 605 second-feet Apr. 22 (gage height, 5.77 feet); minimum, 6 second-feet June 12 (gage height, 1.20 feet).
1913-49: Maximum discharge, 868 second-feet May 21, 1921; no flow for many days.

Remarks.--Records good except those for Dec. 4 to Mar. 16, which are poor. Flow regulated by Blackfoot Marsh Reservoir (capacity, 413,000 acre-feet). Many diversions above station for irrigation. Most of flow during nonirrigation season and part of that during irrigation season is supplied by waste from Snake River canals.

Cooperation.--Gage-height record furnished by Office of Indian Affairs.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 141 | 180 | 186 | 120 | 55 | *17 | 157 | 313 | 207 | 12 | 33 | 21 |
| 2 | 196 | 161 | 88 | 120 | 50 | 17 | 143 | 246 | 227 | 10 | 42 | 15 |
| 3 | 208 | 176 | 449 | 120 | 50 | 20 | 130 | 113 | 252 | 21 | 43 | 13 |
| 4 | 214 | 181 | 400 | 120 | 45 | 20 | 128 | 56 | 278 | 14 | 40 | 16 |
| 5 | 250 | 189 | 300 | 120 | 45 | 25 | 117 | 52 | 298 | 13 | 39 | 18 |
| 6 | 278 | a195 | 270 | 110 | 45 | 30 | 96 | 93 | a200 | 17 | 49 | 19 |
| 7 | 318 | a185 | *246 | 110 | 40 | 40 | 93 | 134 | a100 | 18 | 41 | 22 |
| 8 | 310 | 177 | 235 | 110 | 40 | 55 | 101 | 96 | 40 | 16 | 44 | 22 |
| 9 | 273 | 306 | 230 | 110 | 40 | 65 | 116 | 86 | 18 | 22 | 58 | 25 |
| 10 | 218 | 333 | 235 | 110 | 35 | 75 | 123 | 75 | 9 | 23 | 60 | 31 |
| 11 | 153 | 372 | 240 | 110 | 35 | 85 | 148 | 56 | 9 | 28 | 75 | 41 |
| 12 | 121 | 402 | 245 | 110 | 30 | 85 | 150 | 37 | 16 | 18 | 94 | 54 |
| 13 | 94 | 440 | 241 | 110 | 25 | 90 | 144 | 35 | 26 | 16 | 90 | 63 |
| 14 | 86 | 459 | 227 | 110 | 20 | 90 | 132 | 49 | 27 | 14 | 50 | 63 |
| 15 | 88 | 428 | 218 | 110 | 20 | 90 | 148 | 43 | 26 | 14 | 38 | 60 |
| 16 | 96 | 416 | 215 | 110 | 20 | 90 | 149 | 50 | 29 | 22 | 36 | 63 |
| 17 | 100 | 418 | 193 | 100 | 20 | 92 | 158 | 413 | 68 | 30 | 37 | 70 |
| 18 | 101 | 407 | 180 | 90 | 20 | 86 | 185 | 434 | 83 | 28 | 33 | 90 |
| 19 | 116 | 392 | 170 | 85 | 20 | 87 | 193 | 153 | 204 | 28 | 25 | 68 |
| 20 | 138 | 366 | 160 | 80 | 20 | 87 | 203 | 207 | 218 | 35 | 18 | 45 |
| 21 | 135 | 376 | 150 | 75 | 20 | 92 | 454 | 308 | 217 | 33 | 28 | 40 |
| 22 | 150 | 389 | 145 | 70 | 20 | *150 | 553 | 314 | 189 | 30 | 28 | 30 |
| 23 | 169 | 351 | 140 | 70 | 20 | 166 | 565 | 280 | 136 | 35 | 27 | 26 |
| 24 | 184 | 369 | 135 | 65 | 20 | 158 | 557 | 354 | 82 | 49 | 45 | 16 |
| 25 | 181 | 385 | 135 | 65 | 20 | 154 | 566 | 396 | 70 | 51 | 48 | 23 |
| 26 | 183 | 369 | 130 | 65 | 20 | 150 | 565 | 336 | 63 | 39 | 60 | 34 |
| 27 | 181 | 300 | 130 | 60 | 20 | 150 | 574 | 360 | 60 | 26 | 58 | 43 |
| 28 | 179 | 328 | 130 | 60 | 18 | 136 | 518 | 382 | 52 | 19 | 56 | 50 |
| 29 | 177 | 327 | *130 | 55 | - | 130 | 388 | 364 | 37 | 21 | 52 | 61 |
| 30 | 192 | 277 | 130 | 55 | - | 161 | 350 | 324 | 25 | 26 | 42 | 80 |
| 31 | 192 | - | 130 | *55 | - | 163 | - | 260 | - | 33 | 26 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 5,422 | 318 | 86 | 175 | 10,750 |
| November | 9,654 | 459 | 161 | 322 | 19,150 |
| December | 6,213 | 449 | 88 | 200 | 12,320 |
| Calendar year 1948 | 65,241 | 592 | 4 | 178 | 129,400 |
| January | 2,860 | 120 | 55 | 92.3 | 5,670 |
| February | 833 | 55 | 18 | 29.8 | 1,650 |
| March | 2,856 | 166 | 17 | 92.1 | 5,660 |
| April | 7,904 | 574 | 93 | 263 | 15,680 |
| May | 6,419 | 434 | 35 | 207 | 12,730 |
| June | 3,266 | 298 | 9 | 109 | 6,480 |
| July | 761 | 51 | 10 | 24.5 | 1,510 |
| August | 1,415 | 94 | 18 | 45.6 | 2,810 |
| September | 1,222 | 90 | 13 | 40.7 | 2,420 |
| Water year 1948-49 | 48,825 | 574 | 9 | 134 | 96,830 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.--Stage-discharge relation affected by ice Dec. 4-11, Dec. 19 to Mar. 16 (no gage-height record Dec. 21, 22, 25-28, Dec. 31 to Feb. 28, Mar. 8, 16; discharge computed on basis of 4 discharge measurements, occasional gage readings, and weather records.

## Portneuf River at Topaz, Idaho

Location.--Staff gage, lat. 42°38', long. 112°16', in sec. 23, T. 9 S., R. 37 E., at Oregon Short Line Railroad bridge, a quarter of a mile west of Topaz, 1¼ miles upstream from diversion dam of Portneuf-Marsh Valley Canal Co., and 6 miles southeast of McCammon.

Records available.--January 1913 to September 1915, July 1919 to September 1949.

Average discharge.--30 years (1913-14, 1919-22, 1923-49), 192 second-feet.

Extremes.--Maximum discharge observed during year, 378 second-feet Apr. 6 (gage height, 2.28 feet); minimum observed, 117 second-feet Sept. 28; minimum gage height observed, 1.00 foot Jan. 24, 25.

1913-15, 1919-49: Maximum discharge observed, 902 second-feet Apr. 3, 1913 (gage height, 6.1 feet, site and datum then in use); minimum observed, 65 second-feet Oct. 9, 1934 (gage height, 0.81 foot).

Remarks.--Records good except those for period of no gage-height record or backwater from snow, which are fair. Gage read once daily. Flow regulated by Portneuf-Marsh Valley Canal Co.'s reservoir near Chesterfield. Many ranch diversions above station.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 151 | 149 | 147 | 149 | 138 | 140 | 251 | 294 | 263 | 214 | 223 | 192 |
| 2 | 147 | 155 | 147 | 145 | 140 | 140 | 271 | 290 | 271 | 210 | 223 | 192 |
| 3 | 143 | 174 | 147 | 149 | 140 | 138 | 290 | 286 | 255 | 218 | 223 | 192 |
| 4 | 147 | 159 | 143 | 142 | 136 | 138 | 328 | 282 | 251 | 220 | 223 | 202 |
| 5 | 143 | 160 | 147 | 142 | 140 | 138 | 360 | 275 | 247 | 220 | 216 | 202 |
| 6 | 151 | 157 | 145 | 145 | a135 | 142 | 378 | 275 | 237 | 225 | 216 | 206 |
| 7 | 151 | 153 | 143 | 145 | a135 | 140 | 346 | 267 | 233 | 245 | 216 | 202 |
| 8 | 151 | 149 | 143 | 142 | a135 | 143 | 360 | 255 | 225 | 206 | 210 | 202 |
| 9 | 147 | 153 | 147 | 145 | a135 | 143 | 371 | 259 | 220 | 206 | 210 | 214 |
| 10 | 143 | 157 | 143 | 149 | b135 | 147 | 371 | 267 | 208 | 235 | 210 | 210 |
| 11 | 140 | 159 | 149 | 147 | b135 | 155 | 313 | 259 | 202 | 227 | 210 | 214 |
| 12 | 142 | 162 | 145 | 143 | b135 | 159 | 309 | 255 | 182 | 223 | 212 | 190 |
| 13 | 142 | 159 | 145 | 140 | b135 | 160 | 290 | 267 | 182 | 218 | 212 | 180 |
| 14 | 145 | 155 | 142 | 147 | b135 | 168 | 279 | 271 | 178 | 216 | 216 | 164 |
| 15 | 147 | 162 | 145 | 147 | b135 | 172 | 259 | 275 | 178 | 216 | 204 | 153 |
| 16 | 149 | 159 | 145 | 143 | b140 | 180 | 251 | 279 | 172 | 212 | 220 | 149 |
| 17 | 142 | 164 | 149 | 136 | b140 | 188 | 267 | 286 | 168 | 220 | 220 | 132 |
| 18 | 143 | 160 | 149 | 136 | 143 | 196 | 271 | 324 | 196 | 223 | 216 | 132 |
| 19 | 147 | 160 | 153 | 140 | 140 | 206 | 271 | 353 | 212 | 223 | 212 | 128 |
| 20 | 143 | 160 | 153 | *140 | 136 | 235 | 298 | 360 | 216 | 218 | 212 | 128 |
| 21 | 147 | 157 | 151 | 132 | 138 | 251 | 290 | 371 | 210 | 218 | 208 | 126 |
| 22 | 143 | 149 | 147 | 128 | 136 | 290 | 286 | 328 | 194 | 220 | 202 | 126 |
| 23 | 143 | 153 | 143 | 128 | *138 | 290 | 324 | 320 | 210 | 220 | 223 | 126 |
| 24 | 149 | 153 | 128 | 124 | 136 | 271 | 328 | 313 | 231 | 225 | 214 | 126 |
| 25 | 149 | 153 | 132 | 124 | 136 | 267 | 371 | 294 | 239 | 220 | 210 | 124 |
| 26 | 145 | 153 | 151 | 143 | 136 | 255 | 339 | 286 | 229 | 214 | 210 | 121 |
| 27 | 149 | 149 | 151 | 147 | 138 | 251 | 328 | 279 | 220 | 206 | 206 | 121 |
| 28 | 145 | 149 | 147 | 136 | 136 | 247 | 346 | 269 | 220 | 206 | 204 | 117 |
| 29 | 149 | 149 | 143 | 136 | - | 239 | 360 | 277 | 225 | 216 | 200 | 130 |
| 30 | 151 | 145 | 147 | 132 | - | 231 | 364 | 273 | 214 | 225 | 196 | 130 |
| 31 | 151 | - | 147 | 138 | - | 235 | - | 277 | - | 229 | 196 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 4,535 | 151 | 140 | 146 | 9,000 |
| November | 4,676 | 174 | 145 | 156 | 9,270 |
| December | 4,514 | 153 | 128 | 146 | 8,950 |
| Calendar year 1948 | 74,909 | 466 | 128 | 205 | 148,600 |
| January | 4,340 | 149 | 124 | 140 | 8,610 |
| February | 3,837 | 143 | 135 | 137 | 7,610 |
| March | 6,055 | 290 | 138 | 195 | 12,010 |
| April | 9,470 | 378 | 251 | 316 | 18,780 |
| May | 8,966 | 371 | 255 | 289 | 17,780 |
| June | 6,488 | 271 | 168 | 216 | 12,870 |
| July | 6,794 | 245 | 206 | 219 | 13,480 |
| August | 6,573 | 223 | 196 | 212 | 13,040 |
| September | 4,831 | 214 | 117 | 161 | 9,580 |
| Water year 1948-49 | 71,079 | 378 | 117 | 195 | 141,000 |

* Winter discharge measurement made on this day.

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

b Stage-discharge relation affected by snow in river channel.

## Portneuf River at Pocatello, Idaho

Location.--Water-stage recorder, lat. 42°52', long. 112°28', in sec. 27, T. 6 S., R. 34 E., at highway bridge at foot of Carson Street, in west end of Pocatello.

Records available.--August 1911 to September 1949. May 1897 to October 1899 at site 1 mile upstream.

Average discharge.--36 years (1912-16, 1917-49), 254 second-feet.

Extremes.--Maximum discharge during year, 686 second-feet Apr. 26 (gage height, 6.00 feet); minimum, 35 second-feet July 2 (gage height, 2.23 feet).
1897-99, 1911-49: Maximum discharge, more than 2,000 second-feet sometime during period May 13 to June 14, 1917; minimum, 5 second-feet July 31, 1942, from rating curve extended below 40 second-feet.

Remarks.--Records good except those for periods of ice effect, which are poor. Many diversions above station for irrigation. Flow regulated by storage reservoir near Chesterfield.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 169 | 250 | 263 | 268 | 230 | 286 | 408 | 571 | 304 | 40 | 59 | 67 |
| 2 | 178 | 268 | 265 | 260 | 230 | 311 | 426 | 531 | 317 | 36 | 58 | 71 |
| 3 | 174 | 299 | 267 | 215 | 230 | 324 | 446 | 487 | 313 | 44 | 60 | 73 |
| 4 | 176 | 304 | 274 | 236 | 230 | 326 | 462 | 466 | 295 | 66 | 69 | 75 |
| 5 | 184 | 290 | 272 | 250 | 230 | 324 | 493 | 444 | 270 | 133 | 71 | 79 |
| 6 | 189 | 279 | 268 | 270 | 225 | 326 | 533 | 430 | 255 | 151 | 66 | 82 |
| 7 | 233 | 277 | 274 | 280 | 225 | 342 | 565 | 418 | 240 | 105 | 64 | 84 |
| 8 | 263 | 267 | 263 | 250 | 225 | 342 | 588 | 386 | 226 | 84 | 64 | 86 |
| 9 | 258 | 258 | 265 | 240 | 225 | 333 | 618 | 365 | 229 | 71 | 67 | 84 |
| 10 | 255 | 267 | 293 | 240 | 225 | 342 | 629 | 340 | 223 | 71 | 71 | 84 |
| 11 | 253 | 274 | 295 | 240 | 225 | 356 | 627 | 333 | 192 | 69 | 72 | 93 |
| 12 | 252 | 282 | 291 | 250 | 225 | 373 | 731 | 311 | 160 | 66 | 67 | 104 |
| 13 | 246 | 284 | 288 | 260 | 225 | 388 | 627 | 272 | 145 | 68 | 68 | 102 |
| 14 | 246 | 286 | 291 | 270 | 225 | 408 | 605 | 263 | 138 | 69 | 69 | 101 |
| 15 | 268 | 291 | 290 | 250 | 225 | 434 | 586 | 291 | 120 | 68 | 72 | 112 |
| 16 | 277 | 297 | 272 | 240 | 230 | 454 | 577 | 335 | 97 | 68 | 68 | 101 |
| 17 | 270 | 300 | 265 | 220 | 230 | 460 | 584 | 337 | 89 | 67 | 72 | 95 |
| 18 | 263 | 297 | 270 | 220 | 230 | 458 | 594 | 333 | 91 | 66 | 68 | 91 |
| 19 | 257 | 279 | 281 | 220 | 230 | 462 | 609 | 375 | 102 | 69 | 64 | 91 |
| 20 | 257 | 275 | 282 | *220 | 230 | 478 | 636 | 404 | 100 | 68 | 64 | 88 |
| 21 | 257 | 275 | 260 | 220 | 230 | 491 | 634 | 468 | 101 | 64 | 64 | 88 |
| 22 | 255 | 275 | 234 | 220 | 233 | 510 | 618 | 492 | 101 | 60 | 62 | 87 |
| 23 | 257 | *277 | 230 | 210 | *228 | 514 | 629 | 489 | 97 | 66 | 62 | 83 |
| 24 | 253 | 282 | 210 | 210 | 229 | 516 | 658 | 456 | 87 | 67 | 62 | 83 |
| 25 | 250 | 293 | 210 | 210 | 228 | 502 | 675 | 422 | 75 | 67 | 63 | 84 |
| 26 | 248 | 295 | 240 | 230 | 228 | *478 | 682 | 388 | 72 | 64 | 67 | 83 |
| 27 | 248 | 284 | 260 | 230 | 236 | 458 | 678 | 377 | 68 | 58 | 66 | 83 |
| 28 | 240 | 268 | 280 | 220 | 250 | 444 | 667 | 360 | 68 | 56 | 64 | 86 |
| 29 | 252 | 265 | 280 | 220 | - | 416 | 651 | 339 | 62 | 57 | 64 | 88 |
| 30 | 252 | 263 | 280 | 220 | - | 410 | 609 | 320 | 44 | 56 | 69 | 91 |
| 31 | 248 | - | 270 | 220 | - | 408 | - | 304 | - | 59 | 69 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 7,428 | 277 | 169 | 240 | 14,730 |
| November | 8,401 | 304 | 250 | 280 | 16,660 |
| December | 8,283 | 295 | 210 | 267 | 16,430 |
| Calendar year 1948 | 102,787 | 730 | 33 | 281 | 203,900 |
| January | 7,309 | 280 | 210 | 236 | 14,500 |
| February | 6,412 | 250 | 225 | 229 | 12,720 |
| March | 12,674 | 516 | 286 | 409 | 25,140 |
| April | 17,745 | 682 | 408 | 592 | 35,200 |
| May | 12,107 | 571 | 263 | 391 | 24,010 |
| June | 4,681 | 317 | 44 | 156 | 9,280 |
| July | 2,153 | 151 | 36 | 69.5 | 4,270 |
| August | 2,045 | 72 | 58 | 66.0 | 4,060 |
| September | 2,619 | 112 | 67 | 87.3 | 5,190 |
| Water year 1948-49 | 91,857 | 682 | 36 | 252 | 182,200 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 21, 23-31, Jan. 2, Jan. 5 to about Feb. 21, Feb. 24 to Mar. 1. No gage-height record Feb. 1-11, 13-21; discharge computed on basis of westher records and records for station at Topaz.

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## Birch Creek near Downey, Idaho

Location.--Staff gage and wooden control, lat. 42°21', long. 112°15', in SE¼ sec. 28, T. 12 S., R. 36 E., just downstream from point where flow that is diverted through Malad power plant reenters stream, 8.6 miles southwest of Downey, and 10 miles upstream from confluence with Marsh Creek.

Records available.--September 1937 to September 1949 (discontinued). October 1911 to August 1914 at site 1¼ miles upstream.

Average discharge.--13 years (1911-12, 1937-49), 9.31 second-feet.

Extremes.--Maximum daily discharge during year, 25 second-feet May 21; maximum gage height observed, 1.26 feet May 24; minimum daily, 7.5 second-feet on several days in October, January, and February.
1911-14, 1937-49: Maximum discharge observed, 95 second-feet July 15, 1938, by velocity-area method on basis of floodmark at measuring section; minimum observed, 3.4 second-feet Dec. 24-27, 1913.

Remarks.--Records poor. Gage read twice daily Oct. 1 to Nov. 30, and once daily thereafter. Malad power plant, which has a small reservoir above station, may cause slight diurnal fluctuations. Water is diverted from Birch Creek half a mile below station and carried by transmountain canal to Devil Creek in Bear River Basin.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.7 | 7.7 | a7.7 | a7.8 | a8.2 | a7.7 | 7.9 | a17 | a21 | a9.5 | a8.8 | a8.5 |
| 2 | 7.7 | 7.7 | a7.7 | a7.7 | a8.2 | a7.7 | 7.7 | 17 | a20 | a9.5 | a8.8 | a8.5 |
| 3 | 7.7 | 7.7 | 7.7 | a7.6 | a8.2 | a7.7 | a7.8 | a16 | 20 | a9.5 | a8.8 | a8.5 |
| 4 | 7.7 | 7.7 | a7.7 | 7.5 | 8.2 | 7.7 | 7.9 | a16 | a20 | a9.5 | a8.8 | a8.5 |
| 5 | 7.5 | 7.7 | a7.7 | a7.7 | a8.1 | a7.7 | a9.0 | a16 | a20 | a9.0 | a8.8 | a8.5 |
| 6 | 7.7 | 7.7 | 7.7 | 7.9 | a8.0 | 7.7 | a12 | a15 | 20 | a9.0 | a8.7 | a8.5 |
| 7 | 7.7 | 7.7 | a7.7 | a7.9 | a7.9 | a7.8 | a11 | a15 | a19 | a9.0 | a8.7 | a8.5 |
| 8 | 7.7 | 7.7 | a7.7 | a7.9 | a7.8 | a8.0 | a12 | a16 | a19 | a9.0 | a8.7 | a8.5 |
| 9 | 7.7 | 7.7 | a7.7 | a7.9 | a7.7 | a8.0 | a12 | a17 | a18 | a9.0 | a8.7 | 8.5 |
| 10 | 7.7 | 7.7 | 7.7 | a7.9 | 7.7 | a8.0 | a12 | 17 | 16 | 9.0 | a8.7 | a8.5 |
| 11 | 7.7 | 7.7 | a7.7 | 7.9 | a7.9 | a8.0 | a11 | a18 | a16 | a9.0 | a8.7 | a8.5 |
| 12 | 7.7 | 7.7 | a7.7 | a7.7 | a8.0 | a8.0 | a11 | a18 | a16 | a9.0 | a8.7 | a8.5 |
| 13 | 7.7 | 7.7 | 7.7 | a7.6 | a8.1 | a8.0 | a11 | 19 | a16 | a9.0 | a8.7 | a8.5 |
| 14 | 7.7 | 7.7 | a7.7 | 7.5 | 8.2 | a8.0 | 11 | a19 | a16 | a9.0 | a8.7 | a8.5 |
| 15 | 7.7 | 7.7 | a7.7 | a7.5 | a8.2 | 8.2 | a11 | a18 | a15 | a9.0 | 8.7 | a8.5 |
| 16 | 7.7 | 7.7 | a7.7 | a7.5 | 8.2 | a8.2 | a10 | 18 | a15 | a9.0 | a8.7 | a8.5 |
| 17 | 7.7 | 7.7 | 7.7 | 7.5 | a8.2 | a8.2 | a11 | a18 | a14 | a9.0 | a8.7 | a8.5 |
| 18 | 7.7 | 7.7 | a7.7 | a7.5 | 8.2 | 8.2 | a11 | a18 | a14 | a9.0 | a8.7 | a8.5 |
| 19 | 7.7 | 7.7 | 7.7 | a7.5 | a8.2 | a8.2 | a11 | a22 | a14 | a9.0 | a8.7 | a8.5 |
| 20 | 7.7 | 7.7 | a7.7 | a7.6 | a8.2 | a8.2 | a12 | a24 | a13 | a8.9 | a8.7 | a8.5 |
| 21 | 7.7 | 7.7 | a7.7 | a7.6 | a8.2 | 8.2 | 13 | a25 | a13 | a8.9 | a8.7 | a8.5 |
| 22 | 7.7 | 7.9 | 7.7 | a7.7 | 8.2 | a8.1 | a13 | a24 | a13 | a8.9 | a8.7 | a8.5 |
| 23 | 7.7 | 7.7 | a7.8 | a7.7 | a7.8 | a8.0 | a15 | a23 | a12 | a8.9 | a8.7 | a8.5 |
| 24 | 7.7 | 7.7 | 7.9 | 7.7 | 7.5 | a7.9 | a17 | 22 | a12 | a8.9 | a8.6 | a8.5 |
| 25 | 7.7 | 7.7 | a7.9 | a7.7 | 7.7 | 7.9 | 18 | a22 | a12 | a8.9 | a8.6 | a8.5 |
| 26 | 7.7 | 7.7 | a7.9 | a7.7 | a7.7 | a8.0 | a17 | a22 | a11 | a8.9 | a8.6 | a8.5 |
| 27 | 7.7 | 7.7 | 7.9 | a7.7 | a7.7 | 8.2 | a16 | a22 | a11 | a8.9 | a8.6 | a8.5 |
| 28 | 7.7 | 7.7 | a7.9 | 7.7 | 7.7 | a8.1 | a16 | a21 | a11 | a8.8 | a8.6 | a8.5 |
| 29 | 7.7 | 7.7 | 7.9 | a7.8 | - | a8.0 | 17 | a21 | a10 | a8.8 | a8.6 | a8.5 |
| 30 | 7.7 | 7.7 | a7.9 | a8.0 | - | a8.0 | a17 | 21 | a10 | a8.8 | a8.6 | a8.5 |
| 31 | 7.7 | - | 7.9 | 8.2 | - | a7.9 | - | a21 | - | a8.8 | a8.6 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 238.5 | 7.7 | 7.5 | 7.69 | 473 |
| November | 231.2 | 7.9 | 7.7 | 7.71 | 459 |
| December | 240.4 | 7.9 | 7.7 | 7.75 | 477 |
| Calendar year 1948 | 3,348.2 | 25 | 6.2 | 9.15 | 6,640 |
| January | 239.1 | 8.2 | 7.5 | 7.71 | 474 |
| February | 223.9 | 8.2 | 7.5 | 8.00 | 444 |
| March | 247.5 | 8.2 | 7.7 | 7.98 | 491 |
| April | 368.3 | 18 | 7.7 | 12.3 | 731 |
| May | 598 | 25 | 15 | 19.3 | 1,190 |
| June | 457 | 21 | 10 | 15.2 | 906 |
| July | 279.4 | 9.5 | 8.8 | 9.01 | 554 |
| August | 269.4 | 8.8 | 8.6 | 8.69 | 534 |
| September | 255.0 | 8.5 | 8.5 | 8.50 | 506 |
| Water year 1948-49 | 3,647.7 | 25 | 7.5 | 9.99 | 7,240 |

a No gage-height record; discharge computed on basis of weather records and records for stations in Portneuf River and Malad River Basins.

## Raft River at Peterson Ranch, near Bridge, Idaho

Location.--Water-stage recorder, lat. 42°04', long. 113°27', in sec. 5, T. 16 S., R. 26 E., 100 feet upstream from One Mile Creek, 400 feet downstream from road bridge, 7½ miles southwest of Bridge, and 16 miles south of Malta.

Records available.--September 1946 to September 1949.

Extremes.--Maximum discharge during year, 338 second-feet May 17 (gage height, 3.41 feet); minimum, 2.0 second-feet Dec. 21 (gage height, 0.99 foot), caused by ice jam upstream. 1946-49: Maximum discharge, that of May 17, 1949; minimum, that of Dec. 21, 1948.

Remarks.--Records good except those for period of ice effect or no gage-height record, which are poor. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.7 | 7.0 | 12 | 12 | 12 | 21 | 30 | 87 | 97 | 12 | 8.3 | 7.0 |
| 2 | 6.4 | 7.0 | 12 | 11 | 12 | 23 | 30 | 81 | 89 | 12 | 8.3 | 7.0 |
| 3 | 6.4 | 7.4 | 12 | 10 | 12 | 22 | 31 | 77 | 76 | 12 | 8.3 | 7.0 |
| 4 | 6.4 | 7.4 | 11 | 10 | 12 | 26 | 32 | 75 | 67 | 50 | 8.3 | 7.0 |
| 5 | 6.4 | 7.0 | 12 | 10 | 12 | 26 | 32 | 69 | 63 | 26 | 8.3 | 7.0 |
| 6 | 6.4 | 7.4 | 12 | 10 | 12 | 26 | 38 | 62 | 55 | 25 | 8.0 | 7.0 |
| 7 | 6.4 | 7.4 | 13 | 10 | 12 | 24 | 42 | 60 | 53 | 18 | 7.7 | 7.0 |
| 8 | 6.4 | 7.7 | 11 | 11 | 12 | 24 | 47 | 60 | 47 | 14 | 7.7 | 7.0 |
| 9 | 6.4 | 7.4 | 12 | 11 | 12 | 23 | 52 | 61 | 41 | 14 | 7.7 | 7.0 |
| 10 | 6.4 | 7.7 | 13 | 11 | 13 | 25 | 52 | 61 | 37 | 14 | 7.7 | 7.0 |
| 11 | 6.4 | 8.0 | 14 | 11 | 13 | 26 | 67 | 63 | 32 | 13 | 7.4 | 7.0 |
| 12 | 6.4 | 8.3 | 14 | 11 | 12 | 29 | 98 | 64 | 29 | 13 | 7.4 | 7.0 |
| 13 | 6.4 | 8.6 | 14 | 11 | 12 | 29 | 132 | 65 | 28 | 12 | 7.4 | 7.4 |
| 14 | 6.4 | 8.6 | 14 | 11 | 12 | 31 | 123 | 66 | 26 | 11 | 7.4 | 7.4 |
| 15 | 8.0 | 8.6 | 11 | 11 | 12 | 32 | 115 | 64 | 23 | 9.9 | 7.4 | 7.4 |
| 16 | 7.0 | 8.6 | 11 | 11 | 15 | 33 | 93 | 111 | 19 | 9.4 | 7.4 | 7.0 |
| 17 | 6.7 | 9.4 | 12 | 11 | 17 | 31 | 91 | 266 | 16 | 8.9 | 7.4 | 7.0 |
| 18 | 6.7 | 8.9 | 11 | 11 | 18 | 32 | 94 | 242 | 15 | 9.9 | 7.4 | 7.7 |
| 19 | 6.7 | *8.9 | 11 | 11 | 18 | 32 | 90 | 266 | 15 | 11 | 7.4 | 7.7 |
| 20 | 6.7 | 10 | 12 | 11 | 18 | 35 | 108 | 220 | 15 | 9.9 | 7.0 | 7.4 |
| 21 | 6.7 | 10 | 11 | 11 | 18 | 36 | 124 | 197 | 15 | 10 | 7.0 | 7.4 |
| 22 | 7.0 | 11 | 11 | 12 | 18 | 33 | 118 | 195 | 14 | 10 | 6.7 | 7.7 |
| 23 | 7.0 | 13 | 11 | 12 | 18 | 39 | 117 | 165 | 13 | 9.9 | 8.0 | 8.0 |
| 24 | 7.0 | 14 | 11 | 12 | 17 | 41 | 120 | 145 | 13 | 9.9 | 8.3 | 7.7 |
| 25 | 7.0 | 14 | 10 | 12 | 17 | 35 | 115 | 129 | 13 | 9.9 | 7.4 | 7.7 |
| 26 | 7.0 | 14 | 10 | *12 | 17 | 31 | 101 | 118 | 13 | 9.9 | 7.4 | 7.7 |
| 27 | 7.0 | 9.4 | 11 | 12 | 18 | 31 | 93 | 112 | 12 | 9.9 | 7.0 | 7.7 |
| 28 | 7.0 | 11 | 11 | 12 | *18 | 31 | 89 | 120 | 12 | 9.4 | 7.0 | 7.7 |
| 29 | 7.4 | 11 | 11 | 12 | - | 30 | 89 | 112 | 12 | 8.9 | 7.0 | 7.7 |
| 30 | 7.4 | 11 | 11 | 12 | - | 30 | 90 | 98 | 12 | 8.6 | 7.0 | 7.7 |
| 31 | 7.0 | - | 11 | 12 | - | 31 | - | 100 | - | 8.6 | 7.0 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 209.2 | 8.0 | 6.4 | 6.75 | 415 |
| November | 279.7 | 14 | 7.0 | 9.32 | 555 |
| December | 363 | 14 | 10 | 11.7 | 720 |
| Calendar year 1948 | 5,042.4 | 72 | 5.4 | 13.8 | 10,000 |
| January | 347 | 12 | 10 | 11.2 | 688 |
| February | 409 | 18 | 12 | 14.6 | 811 |
| March | 918 | 41 | 21 | 29.6 | 1,820 |
| April | 2,453 | 132 | 30 | 81.8 | 4,870 |
| May | 3,613 | 268 | 60 | 117 | 7,170 |
| June | 972 | 97 | 12 | 32.4 | 1,930 |
| July | 410.0 | 50 | 8.6 | 13.2 | 813 |
| August | 233.7 | 8.3 | 6.7 | 7.54 | 464 |
| September | 220.0 | 8.0 | 7.0 | 7.33 | 436 |
| Water year 1948-49 | 10,427.6 | 268 | 6.4 | 28.6 | 20,690 |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Jan. 5-28. No gage-height record Jan. 19-25, Jan. 29 to Feb. 27; discharge computed on basis of weather records and records for nearby streams.

## Clear Creek near Naf, Idaho

Location.--Water-stage recorder, lat. 41°58'15", long. 113°17'15", in SW¼SW¼ sec. 1, T. 14 N., R. 13 W. Salt Lake meridian, 2 miles south of Utah-Idaho State line, 3 miles south of Naf post office, and 20 miles upstream from Raft River.

Drainage area.--19 square miles.

Records available.--January 1910 to June 1911 (fragmentary), June to December 1912 (gage heights only), November 1944 to September 1949.

Extremes.--Maximum discharge during year, 122 second-feet May 17 (gage height, 2.28 feet); minimum, 0.2 second-foot Aug. 15, caused by irrigation diversion.
1910-11, 1944-49: Maximum discharge observed, 180 second-feet May 13, 1910; minimum, that of Aug. 15, 1949.

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

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.5 | 2.0 | 2.0 | | | | | 24 | 50 | 13 | 2.9 | 1.4 |
| 2 | 1.4 | 2.0 | 2.0 | | | | | 22 | 42 | 12 | 2.9 | 1.4 |
| 3 | 1.1 | 2.2 | 1.8 | | | | a4 | 24 | 38 | 13 | 2.7 | 1.2 |
| 4 | 1.5 | 1.8 | b1.8 | | | | | 24 | 32 | 14 | 2.7 | 1.2 |
| 5 | 2.1 | 1.4 | b1.8 | | | | | 22 | 31 | 13 | 2.7 | 1.2 |
| 6 | 2.0 | 2.0 | 1.8 | | | a2.5 | | 20 | 32 | 9.7 | 1.8 | 1.0 |
| 7 | 2.0 | 1.8 | 1.6 | | | | | 21 | 37 | 8.3 | 1.0 | .9 |
| 8 | 1.8 | 1.6 | 1.8 | | a1.7 | | a5 | 25 | 39 | 8.7 | 2.4 | .8 |
| 9 | 1.5 | b1.7 | 1.6 | | | | | 37 | 40 | 9.2 | 2.4 | .9 |
| 10 | 1.6 | 1.8 | 1.5 | | | | | 60 | 40 | 8.7 | 2.2 | 1.1 |
| 11 | 1.5 | 1.8 | 1.6 | | | | | 68 | 43 | 8.0 | 2.2 | 1.1 |
| 12 | 1.4 | 1.6 | 1.6 | | | | | 62 | 45 | 7.3 | 2.1 | 1.4 |
| 13 | 1.4 | 1.6 | | | | a3.0 | a7 | 62 | 40 | 6.5 | 2.1 | 1.4 |
| 14 | 2.1 | 1.5 | | | | | | 72 | 38 | 6.9 | 1.6 | 1.1 |
| 15 | 6.2 | 1.8 | | a1.7 | | | | 85 | 35 | 6.5 | .9 | 1.0 |
| 16 | 3.2 | 1.6 | (*) | | | | | 81 | 34 | 6.2 | 1.6 | .6 |
| 17 | 2.4 | 1.8 | | | | | | 104 | 32 | 5.8 | 1.6 | 1.0 |
| 18 | *2.1 | 1.5 | b1.7 | | | | a10 | 109 | 28 | 5.8 | 1.5 | 1.0 |
| 19 | 2.0 | b1.8 | | | | | | 99 | 28 | 5.5 | 1.6 | .9 |
| 20 | 2.0 | 2.0 | | | | | | 92 | 26 | 5.1 | 1.5 | .8 |
| 21 | 2.0 | 1.8 | | (*) | | | 13 | 85 | 22 | 3.2 | 1.2 | .9 |
| 22 | 1.8 | b1.8 | | | a2.0 | | 13 | 78 | 21 | 2.2 | 1.1 | .9 |
| 23 | 2.0 | *1.8 | | | | | 15 | 66 | 21 | 4.1 | 2.6 | .7 |
| 24 | 1.6 | 1.8 | | | | a3.5 | 17 | 62 | 20 | 4.1 | 2.4 | .8 |
| 25 | 1.8 | 1.8 | | | | | 20 | 64 | 19 | 3.9 | 2.0 | .9 |
| 26 | 1.6 | b1.9 | | | | | 23 | 74 | 18 | 3.9 | 1.6 | 1.0 |
| 27 | 1.8 | b1.9 | a1.7 | | | | 24 | 81 | 16 | 3.7 | 1.5 | 1.0 |
| 28 | 2.1 | 2.0 | | | | | 28 | 85 | 16 | 3.7 | 1.5 | 1.2 |
| 29 | 2.1 | b2.0 | | | - | | 32 | 81 | 16 | 2.0 | 1.8 | 1.8 |
| 30 | 1.8 | b2.0 | | | - | | 27 | 68 | 14 | 1.5 | 1.8 | 1.8 |
| 31 | 1.8 | - | | | - | | - | 60 | - | 3.2 | 1.5 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 61.2 | 6.2 | 1.1 | 1.97 | 121 |
| November | 54.1 | 2.2 | 1.4 | 1.80 | 107 |
| December | 53.2 | - | - | 1.72 | 106 |
| Calendar year 1948 | 3,509.5 | 102 | .7 | 9.59 | 6,960 |
| January | 52.7 | - | - | 1.7 | 105 |
| February | 51.5 | - | - | 1.84 | 102 |
| March | 96 | - | - | 3.10 | 190 |
| April | 342 | 32 | - | 11.4 | 678 |
| May | 1,917 | 109 | 20 | 61.8 | 3,800 |
| June | 913 | 50 | 14 | 30.4 | 1,810 |
| July | 208.7 | 14 | 1.5 | 6.73 | 414 |
| August | 59.4 | 2.9 | .9 | 1.92 | 118 |
| September | 32.4 | 1.8 | .6 | 1.08 | 64 |
| Water year 1948-49 | 3,841.2 | 109 | .6 | 10.5 | 7,620 |

Peak discharge (base, 70 sec.-ft.).--May 17 (3 a.m.) 122 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record (stage-discharge relation affected by ice during most of period); discharge computed on basis of winter discharge measurements and weather records.
b Stage-discharge relation affected by ice.

## North Side Minidoka Canal near Minidoka, Idaho

Location.--Water-stage recorder, lat. 42°40', long. 113°29', in sec. 1, T. 9 S., R. 25 E., 600 feet downstream from head gates at Minidoka Dam and 6 miles south of Minidoka.

Records available.--May 1909 to September 1949.

Extremes.--Maximum discharge duirng year, 1,670 second-feet May 16 (gage height, 9.67 feet); no flow during winter.
1909-49: Maximum discharge, 1,780 second-feet July 11, 1943; maximum gage height, 10.00 feet May 7, 1943; no flow during winters.

Remarks.--Records excellent. Flow controlled by head gates. Canal diverts water from Snake River of 64,000 acres of land under North Side Minidoka project.

Cooperation.--Gage-height record furinished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 322 | | | | | | 0 | 1,590 | 1,140 | 1,630 | 1,400 | 1,010 |
| 2 | 322 | | | | | | 0 | 1,590 | 1,040 | 1,630 | 1,400 | 1,070 |
| 3 | 322 | | | | | | 0 | 1,610 | 1,010 | 1 640 | 1,400 | 1,080 |
| 4 | 317 | | | | | | 0 | 1,610 | 1,020 | 1,630 | 1,400 | 1,010 |
| 5 | 251 | | | | | | 0 | 1,630 | 1,020 | 1,630 | 1,440 | 958 |
| 6 | 228 | | | | | | 0 | 1,630 | 1,020 | 1,630 | 1,470 | 958 |
| 7 | 231 | | | | | | 0 | 1,620 | 1,150 | 1,630 | 1,470 | 956 |
| 8 | 229 | | | | | | 0 | 1,590 | 1,310 | 1,620 | 1,500 | 951 |
| 9 | 229 | | | | | | 0 | 1,580 | 1,460 | 1,620 | 1,560 | 951 |
| 10 | 228 | | | | | | 0 | 1,590 | 1,520 | 1,620 | 1,560 | 953 |
| 11 | 227 | | | | | | 0 | 1,590 | 1,380 | 1,620 | 1,530 | 956 |
| 12 | 263 | | | | | | 0 | 1,590 | 1,210 | 1,620 | 1,520 | 907 |
| 13 | 356 | | | | | | 0 | 1,620 | 1,210 | 1,610 | 1,520 | 742 |
| 14 | 399 | | | | | | 55 | 1,660 | 1,120 | 1,610 | 1,470 | 702 |
| 15 | 407 | | | | | | 164 | 1,660 | 1,170 | 1,600 | 1,440 | 678 |
| 16 | 342 | | | | | | 218 | 1,660 | 1,180 | 1,590 | 1,470 | 674 |
| 17 | 306 | | | | | | 249 | 1,570 | 1,210 | 1,600 | 1,490 | 678 |
| 18 | 305 | | | | | | 356 | 1,380 | 1,250 | 1,610 | 1,500 | 682 |
| 19 | 305 | | | | | | 566 | 1,200 | 1,270 | 1,630 | 1,500 | 680 |
| 20 | 166 | | | | | | 536 | 1,000 | 1,270 | 1,640 | 1,450 | 732 |
| 21 | 0 | | | | | | 896 | 937 | 1,320 | 1,650 | 1,410 | 780 |
| 22 | 0 | | | | | | 917 | 942 | 1,400 | 1,640 | 1,350 | 784 |
| 23 | 0 | | | | | | 1,050 | 944 | 1,540 | 1,620 | 1,300 | 786 |
| 24 | 0 | | | | | | 1,110 | 946 | 1,620 | 1,590 | 1,100 | 786 |
| 25 | 0 | | | | | | 1,210 | 1,050 | 1,620 | 1,560 | 933 | 788 |
| 26 | 0 | | | | | | 1,370 | 1,170 | 1,620 | 1,530 | 889 | 822 |
| 27 | 0 | | | | | | 1,530 | 1,210 | 1,630 | 1,480 | 855 | 844 |
| 28 | 0 | | | | | | 1,600 | 1,210 | 1,620 | 1,460 | 826 | 846 |
| 29 | 0 | | | | | | 1,580 | 1,210 | 1,620 | 1,460 | 826 | 782 |
| 30 | 0 | | | | | | 1,580 | 1,210 | 1,630 | 1,440 | 822 | 728 |
| 31 | 0 | | | | | | - | 1,210 | - | 1,400 | 882 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 5,755 | 407 | 0 | 186 | 11,420 |
| November | 0 | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 217,599 | 1,700 | 0 | 595 | 431,600 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 14,987 | 1,600 | 0 | 500 | 29,730 |
| May | 43,009 | 1,660 | 937 | 1,387 | 85,310 |
| June | 39,580 | 1,630 | 1,010 | 1,319 | 78,510 |
| July | 49,240 | 1,650 | 1,400 | 1,590 | 97,670 |
| August | 40,683 | 1,560 | 822 | 1,313 | 80,690 |
| September | 25,274 | 1,080 | 674 | 842 | 50,130 |
| Water year 1948-49 | 218,528 | 1,660 | 0 | 599 | 433,500 |

## South Side Minidoka Canal near Minidoka, Idaho

Location.--Water-stage recorder, lat. 42°40', long. 113°29', in sec. 12, T. 9 S., R. 25 E., 300 yards downstream from head gates at Minidoka Dam and 6 miles south of Minidoka.

Records available.--April 1909 to September 1949.

Extremes.--Maximum discharge during year, 1,380 second-feet Apr. 29 (gage height, 5.82 feet); no flow during winter.
1909-49: Maximum discharge, 1,400 second-feet June 10, 12, 14, 1948; no flow during winters.

Remarks.--Records excellent. Flow controlled by head gates. Canal diverts water from Snake River for irrigation of 54,000 acres of land under South Side Minidoka project.

Cooperation.--Gage-height record furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 200 | | | | | | 0 | 1,290 | 628 | 1,250 | 1,240 | 1,020 |
| 2 | 200 | | | | | | 0 | 1,270 | 593 | 1,250 | 1,240 | 1,040 |
| 3 | 200 | | | | | | 0 | 1,230 | 598 | 1,260 | 1,250 | 1,120 |
| 4 | 196 | | | | | | 0 | 1,190 | 630 | 1,260 | 1,250 | 1,100 |
| 5 | 200 | | | | | | 0 | 1,170 | 742 | 1,050 | 1,250 | 1,110 |
| 6 | 198 | | | | | | 0 | 1,140 | 1,010 | 1,140 | 1,250 | 1,070 |
| 7 | 196 | | | | | | 0 | 1,090 | 1,190 | 1,220 | 1,260 | 1,010 |
| 8 | 199 | | | | | | 0 | 1,030 | 1,310 | 1,230 | 1,270 | 986 |
| 9 | 238 | | | | | | 0 | 1,060 | 1,350 | 1,250 | 1,280 | 965 |
| 10 | 266 | | | | | | 0 | 1,100 | 1,360 | 1,250 | 1,280 | 926 |
| 11 | 312 | | | | | | 0 | 1,150 | 1,360 | 1,260 | 1,280 | 853 |
| 12 | 406 | | | | | | 0 | 1,200 | 1,360 | 1,260 | 1,280 | 789 |
| 13 | 438 | | | | | | 0 | 1,270 | 1,310 | 1,270 | 1,280 | 698 |
| 14 | 452 | | | | | | 0 | 1,320 | 1,190 | 1,290 | 1,280 | 641 |
| 15 | 454 | | | | | | 89 | 1,320 | 1,100 | 1,290 | 1,270 | 588 |
| 16 | 450 | | | | | | 134 | 1,300 | 1,060 | 1,290 | 1,260 | 568 |
| 17 | 448 | | | | | | 177 | 1,100 | 1,060 | 1,290 | 1,260 | 553 |
| 18 | 473 | | | | | | 275 | 713 | 1,040 | 1,290 | 1,250 | 496 |
| 19 | 518 | | | | | | 434 | 344 | 1,030 | 1,280 | 1,240 | 499 |
| 20 | 130 | | | | | | 503 | 286 | 1,020 | 1,270 | 1,200 | 506 |
| 21 | 0 | | | | | | 523 | 286 | 1,050 | 1,270 | 1,180 | 536 |
| 22 | 0 | | | | | | 677 | 310 | 1,120 | 1,270 | 1,190 | 598 |
| 23 | 0 | | | | | | 819 | 328 | 1,240 | 1,260 | 1,200 | 633 |
| 24 | 0 | | | | | | 935 | 382 | 1,280 | 1,270 | 1,170 | 711 |
| 25 | 0 | | | | | | 999 | 425 | 1,240 | 1,270 | 1,070 | 711 |
| 26 | 0 | | | | | | 1,070 | 466 | 1,250 | 1,270 | 1,040 | 706 |
| 27 | 0 | | | | | | 1,190 | 578 | 1,260 | 1,270 | 944 | 713 |
| 28 | 0 | | | | | | 1,330 | 656 | 1,270 | 1,270 | 905 | 716 |
| 29 | 0 | | | | | | 1,370 | 682 | 1,270 | 1,260 | 868 | 682 |
| 30 | 0 | | | | | | 1,350 | 708 | 1,270 | 1,250 | 891 | 616 |
| 31 | 0 | | | | | | - | 695 | - | 1,240 | 977 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 6,174 | 518 | 0 | 199 | 12,250 |
| November | 0 | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 179,541 | 1,390 | 0 | 491 | 356,100 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 11,875 | 1,370 | 0 | 396 | 23,550 |
| May | 27,089 | 1,320 | 286 | 874 | 53,730 |
| June | 33,191 | 1,360 | 593 | 1,106 | 65,830 |
| July | 38,850 | 1,290 | 1,050 | 1,253 | 77,060 |
| August | 36,605 | 1,280 | 868 | 1,181 | 72,600 |
| September | 23,160 | 1,120 | 496 | 772 | 45,940 |
| Water year 1948-49 | 176,944 | 1,370 | 0 | 485 | 351,000 |

## Goose Creek above Trapper Creek, near Oakley, Idaho

Location.--Water-stage recorder, lat. 42°07', long. 113°56', in sec. 13, T. 15 S., R. 21 E., 5 miles upstream from Trapper Creek and 10 miles south of Oakley.

Records available.--April 1911 to September 1916, March 1919 to September 1949.

Average discharge.--26 years (1911-14, 1926-49), 40.9 second-feet.

Extremes.--Maximum discharge during year, 304 second-feet May 1 (gage height, 3.86 feet); minimum, 4.1 second-feet Sept. 11.
1911-16, 1919-49: Maximum discharge, 1,670 second-feet Jan. 23 or Feb. 24, 1943 (gage height, 7.6 feet, from high-water mark), from rating curve extended above 600 second-feet by logarithmic plotting; no flow July 22 to Aug. 10, Aug. 22-30, 1934, Aug. 15 to Oct. 3, 1935, July 22 to Sept. 25, 1940, Sept. 14, 1947.

Remarks.--Records good except those for periods of ice effect, which are poor. Diversions above station for irrigation. Flow of artesian well, completed in 1935, enters below. Practically entire flow passing station is stored in Oakley Reservoir.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.1 | 12 | | | | | 61 | 302 | 150 | 14 | 7.1 | 6.1 |
| 2 | 8.1 | 12 | | | | | 60 | 291 | 142 | 14 | 6.8 | 6.1 |
| 3 | 7.8 | 13 | | | | 25 | 61 | 268 | 134 | 14 | 6.8 | 5.9 |
| 4 | 7.4 | 14 | | | | | 62 | 244 | 123 | 14 | 6.6 | 5.5 |
| 5 | 7.4 | 13 | 20 | 17 | | | 63 | 240 | 114 | 13 | 6.6 | 5.7 |
| 6 | 8.7 | 13 | | | | | 67 | 226 | 105 | 12 | 6.4 | 5.5 |
| 7 | 9.7 | 14 | | | | | 76 | 209 | 101 | 10 | 6.1 | 5.5 |
| 8 | 9.7 | 13 | | | | 35 | 89 | 197 | 97 | 9.0 | 6.1 | 5.3 |
| 9 | 9.4 | 13 | | | | | 103 | 195 | 93 | 8.4 | 6.1 | 5.0 |
| 10 | 9.0 | 15 | | | 15 | | 113 | 204 | 79 | 8.1 | 6.1 | 4.8 |
| 11 | 8.7 | 18 | | | | 45 | 119 | 204 | 70 | 9.0 | 6.1 | 4.4 |
| 12 | 8.4 | 17 | 22 | | | 60 | 126 | 206 | 65 | 9.4 | 6.1 | 4.4 |
| 13 | 7.8 | 17 | | | | 77 | 139 | 209 | 60 | 9.7 | 6.1 | 4.8 |
| 14 | 7.8 | 17 | | | | 85 | 151 | 209 | 57 | 9.0 | 5.7 | 4.8 |
| 15 | 17 | 17 | | | | 91 | 151 | 215 | 52 | 9.4 | 5.5 | 5.0 |
| 16 | 12 | 17 | | 16 | | 92 | 154 | 240 | 50 | 12 | 5.5 | 5.0 |
| 17 | 10 | 18 | | | | 81 | 158 | 256 | 46 | 14 | 5.5 | 4.8 |
| 18 | 9.0 | *18 | | | | 93 | 170 | 278 | 39 | 14 | 5.5 | 5.0 |
| 19 | 9.0 | 15 | | | (*) | 106 | 188 | 268 | 37 | 12 | 5.5 | 5.5 |
| 20 | 8.4 | 19 | 16 | | | 114 | 207 | 262 | 38 | 13 | 5.7 | 6.1 |
| 21 | 8.4 | 21 | | | | 95 | 228 | 246 | a34 | 12 | 6.1 | 6.8 |
| 22 | 8.4 | 18 | | | | 87 | 234 | 220 | a27 | 11 | 5.9 | 6.6 |
| 23 | 8.4 | 20 | | | 17 | 93 | 234 | 207 | a24 | 10 | 5.9 | 7.4 |
| 24 | 8.4 | 23 | | | | 91 | 242 | 193 | 22 | 9.4 | 7.4 | 8.1 |
| 25 | 8.4 | 23 | | | | 81 | 254 | 178 | 22 | 8.7 | 7.8 | 8.1 |
| 26 | 8.7 | 23 | | | | 80 | 260 | 166 | 22 | 8.7 | 7.4 | 8.1 |
| 27 | 8.7 | 20 | | 15 | 20 | 79 | 262 | 158 | 20 | 8.4 | 7.1 | 8.7 |
| 28 | 9.0 | 22 | 17 | | | *72 | 276 | 162 | 19 | 8.1 | 6.6 | 8.4 |
| 29 | 9.7 | 20 | | | - | 67 | 293 | 157 | 18 | 7.8 | 6.6 | 9.0 |
| 30 | 9.7 | 18 | | | - | 63 | 299 | 156 | 15 | 7.8 | 6.6 | 9.4 |
| 31 | 9.7 | - | | | - | 62 | - | 148 | - | 7.4 | 6.4 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 280.9 | 17 | 7.4 | 9.06 | 557 |
| November | 513 | 23 | 12 | 17.1 | 1,020 |
| December | 574 | - | - | 18.5 | 1,140 |
| Calendar year 1948 | 11,755.0 | 166 | 0.9 | 32.1 | 23,320 |
| January | 497 | - | - | 16.0 | 986 |
| February | 445 | - | - | 15.9 | 883 |
| March | 2,014 | 114 | - | 65.0 | 3,990 |
| April | 4,900 | 299 | 80 | 163 | 9,720 |
| May | 6,714 | 302 | 148 | 217 | 13,320 |
| June | 1,875 | 150 | 15 | 62.5 | 3,720 |
| July | 327.3 | 14 | 7.4 | 10.6 | 649 |
| August | 195.7 | 7.8 | 5.5 | 6.31 | 388 |
| September | 185.8 | 9.4 | 4.4 | 6.19 | 369 |
| Water year 1948-49 | 18,521.7 | 302 | 4.4 | 50.7 | 36,740 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for nearby streams.
Note.--Stage-discharge relation affected by ice Nov. 8-10, Nov. 27 to Mar. 12 (no gage-height record Jan. 11 to Feb. 18; discharge computed on basis of weather records, records for nearby streams, and storage records for Oakley Reservoir).

## Oakley Reservoir near Oakley, Idaho

Location.--Staff gage, lat. 42°12', long. 113°55', in sec. 19, T. 14 S., R. 22 E., just upstream from right abutment of dam on Goose Creek, 4 miles southwest of Oakley.

Records available.--October 1912 to September 1949.

Extremes.--Maximum contents observed during year, 31,700 acre-feet June 10 (gage height, 89.5 feet); minimum observed, 1,370 acre-feet Oct. 1 (gage height, 19.5 feet).
1912-49: Maximum contents observed, 74,600 acre-feet June 15, 1921 (gage height, 136.2 feet); reservoir drained at close of seasons in 1915, 1919, 1920, 1926, 1933.

Remarks.--Reservoir is formed by earth dam constructed in 1911-13; storage began in 1911. Capacity, 74,350 acre-feet between gage heights 0.0 foot (bottom of diversion tunnel) and 136.0 feet (crest of spillway). Dead storage negligible. Water is used for irrigation of lands along Goose Creek in Oakley Canal Co. project. Figures given herein represent usable contents. Gage read occasionally and contents shown on days observations were made.

Cooperation.--Gage readings and capacity table furnished by Oakley Canal Co.

Contents, in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,370 | - | 4,670 | 6,520 | - | - | 14,400 | 23,900 | 31,300 | 27,400 | - | 9,600 |
| 2 | 1,400 | - | - | - | - | - | - | - | - | - | - | - |
| 3 | - | - | - | - | - | - | - | - | 31,600 | 26,400 | - | - |
| 4 | - | - | - | - | - | 9,940 | - | - | - | - | - | 8,400 |
| 5 | 1,450 | - | - | - | - | - | - | - | - | - | - | - |
| 6 | - | - | - | - | - | - | - | - | - | - | - | - |
| 7 | - | - | 5,040 | - | - | - | - | - | - | 26,600 | 14,900 | - |
| 8 | - | - | - | - | - | - | 15,600 | 24,800 | - | 26,300 | - | - |
| 9 | - | 3,300 | - | 6,880 | - | - | - | - | - | - | - | - |
| 10 | 1,620 | - | - | - | - | 10,700 | - | - | 31,700 | 25,200 | - | - |
| 11 | - | - | - | - | - | - | - | - | - | - | 14,200 | 6,990 |
| 12 | - | - | - | - | - | - | - | - | 31,400 | - | - | - |
| 13 | - | - | - | - | - | - | - | - | - | - | - | - |
| 14 | - | 3,620 | - | - | 8,700 | - | - | - | - | - | 13,700 | - |
| 15 | 1,980 | - | 5,560 | 7,110 | - | - | 17,400 | 26,000 | 30,800 | 22,600 | - | 6,260 |
| 16 | - | - | - | - | - | 11,600 | - | - | - | - | - | - |
| 17 | - | - | - | - | - | - | - | - | - | 22,100 | - | - |
| 18 | - | - | - | 7,250 | - | - | - | - | - | - | - | - |
| 19 | - | 3,810 | - | 7,290 | - | - | - | - | 30,300 | - | - | - |
| 20 | 2,200 | - | - | - | 9,090 | 12,400 | 19,400 | - | - | - | - | - |
| 21 | - | 4,050 | - | - | - | - | - | 28,800 | - | - | 11,600 | - |
| 22 | - | - | 5,870 | - | - | - | - | 29,000 | - | - | - | - |
| 23 | - | - | - | - | 9,370 | - | - | - | - | - | - | - |
| 24 | - | - | - | - | - | - | 22,500 | - | - | 18,400 | - | 4,900 |
| 25 | - | - | - | - | - | - | - | - | - | - | - | - |
| 26 | 2,500 | - | - | - | - | - | - | - | 29,200 | - | - | - |
| 27 | - | - | - | - | - | - | - | - | - | - | - | - |
| 28 | - | 4,500 | - | - | 9,690 | 13,900 | - | - | - | - | 10,400 | - |
| 29 | - | - | - | - | - | - | 23,400 | 30,700 | - | - | - | - |
| 30 | - | 4,610 | - | - | - | - | 23,600 | - | 27,800 | - | - | 3,910 |
| 31 | 2,790 | - | 6,480 | 8,290 | - | 14,300 | - | 31,100 | - | 16,400 | 9,800 | - |

Monthly elevation and contents, water year October 1948 to September 1949

| Date | Gage height (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept. 30 | - | a1,420 | - |
| Oct. 31 | 27.2 | 2,790 | +1,370 |
| Nov. 30 | - | a4,610 | +1,820 |
| Dec. 31 | 40.5 | 6,480 | +1,870 |
| Calendar year 1948 | - | - | -820 |
| Jan. 31 | 45.7 | 8,290 | +1,810 |
| Feb. 28 | - | a9,690 | +1,400 |
| Mar. 31 | - | a14,300 | +4,610 |
| Apr. 30 | - | a23,600 | +9,300 |
| May 31 | - | a31,100 | +7,500 |
| June 30 | - | a27,800 | -3,300 |
| July 31 | 64.5 | 16,400 | -11,400 |
| Aug. 31 | - | a9,800 | -6,600 |
| Sept. 30 | - | a3,910 | -5,890 |
| Water year 1948-49 | - | - | +2,490 |

a No gage-height record; contents interpolated.

## Trapper Creek near Oakley, Idaho

Location.--Water-stage recorder and concrete control, lat. 42°10', long. 113°59', in sec. 34, T. 14 S., R. 21, E., 4 miles upstream from Oakley Dam and 7 miles southwest of Oakley.

Records available.--May 1911 to September 1916, March 1919 to September 1949.

Average discharge.--25 years (1911-12, 1913-14, 1926-49), 13.7 second-feet.

Extremes.--Maximum discharge during year, 57 second-feet May 15 (gage height, 5.42 feet); minimum, 2.3 second-feet Feb. 22 (gage height, 4.57 feet), ice jam upstream.
1911-16, 1919-49: Maximum discharge recorded, 270 second-feet Aug. 17, 1941 (gage height, 6.99 feet), during cloudburst, from rating curve extended above 100 second-feet on basis of velocity-area studies and flow over weir (a higher flow may have occurred during cloudburst about 12 p.m. Aug. 15, 1931); minimum recorded, that of Feb. 22, 1949.

Remarks.--Records good except those for period of no gage-height record, which are fair. A few small diversions above station. Flow of artesian well, completed in 1936, enters above. Practically entire flow passing station is stored in Oakley Reservoir.

Cooperation.--Water-stage recorder inspected by Oakley Canal Co.

Revisions (water years).--W 1063: 1941, 1943.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.5 | 10 | 9.5 | 10 | | 12 | 13 | 46 | 41 | 16 | 10 | 9.5 |
| 2 | 8.5 | 9.5 | 10 | 7.3 | | 12 | 14 | 45 | 40 | 15 | 10 | 9.5 |
| 3 | 8.5 | 10 | 10 | 4.5 | | 12 | 14 | 46 | 37 | 15 | 10 | 9.5 |
| 4 | 9.5 | 9.5 | 9.5 | | | 12 | 14 | 44 | 36 | 16 | 10 | 10 |
| 5 | 10 | 9.5 | 8.5 | | | 12 | 15 | 44 | 34 | 16 | 10 | 9.5 |
| 6 | 10 | 10 | 10 | | | 12 | 16 | 44 | 33 | 15 | 10 | 10 |
| 7 | 10 | 8.5 | 10 | | | 12 | 18 | 45 | 34 | 15 | 10 | 9.5 |
| 8 | 9.5 | 9.0 | 10 | | | 12 | 18 | 45 | 32 | 14 | 10 | 9.5 |
| 9 | 10 | 9.5 | 10 | | | 12 | 19 | 48 | 30 | 14 | 10 | 9.5 |
| 10 | 9.5 | 9.5 | 10 | | 10 | 12 | 20 | 50 | 30 | 14 | 10 | 9.5 |
| 11 | 10 | 9.5 | 11 | | | 14 | 20 | 52 | 28 | 14 | 9.5 | 10 |
| 12 | 10 | 9.5 | 10 | | | 14 | 24 | 53 | 27 | 13 | 10 | 10 |
| 13 | 10 | 9.0 | 10 | | | 14 | 28 | 53 | 26 | 12 | 10 | 10 |
| 14 | 12 | 8.5 | 9.5 | | | 14 | 27 | 54 | 25 | 12 | 10 | 10 |
| 15 | 10 | 9.5 | 7.3 | | | 14 | 26 | 56 | 25 | 12 | 9.5 | 9.5 |
| 16 | 10 | 10 | 7.3 | | | 15 | 28 | 54 | 25 | 12 | 10 | 9.5 |
| 17 | 9.5 | 10 | 9.5 | 9 | | 15 | 30 | 54 | 24 | 12 | 9.5 | 10 |
| 18 | 9.5 | 9.5 | 8.0 | | | 15 | 34 | 53 | 23 | 12 | 9.5 | 10 |
| 19 | 9.5 | 9.5 | 10 | | 12 | 17 | 36 | 52 | 24 | 12 | 10 | 9.5 |
| 20 | 9.5 | 10 | 12 | | 12 | 17 | 37 | 54 | 23 | 11 | 10 | 9.5 |
| 21 | 9.5 | 9.5 | 7.6 | | 12 | 16 | 36 | 54 | 22 | 12 | 10 | 9.5 |
| 22 | 9.5 | 10 | 5.2 | | 11 | 17 | 37 | 52 | 20 | 11 | 10 | 9.5 |
| 23 | 9.5 | 9.5 | 7.3 | | 12 | 17 | 40 | 50 | 20 | 11 | 12 | 9.5 |
| 24 | 9.5 | 10 | 9.0 | | 12 | 15 | 43 | 48 | 20 | 11 | 12 | 9.5 |
| 25 | 9.5 | 10 | 8.0 | | 12 | 14 | 43 | 46 | 20 | 11 | 10 | 10 |
| 26 | 9.5 | 8.5 | 9.5 | | 12 | 14 | 43 | 45 | 19 | 11 | 10 | 9.5 |
| 27 | 10 | 9.5 | 10 | | 12 | 14 | 45 | 45 | 19 | 11 | 9.5 | 10 |
| 28 | 10 | 9.5 | 12 | | 12 | 14 | 46 | 43 | 18 | 10 | 10 | 10 |
| 29 | 10 | 9.5 | 10 | | - | 13 | 49 | 44 | 18 | 10 | 10 | 10 |
| 30 | 10 | 9.5 | 10 | | - | 13 | 48 | 46 | 17 | 10 | 10 | 10 |
| 31 | 10 | - | 10 | | - | 13 | - | 45 | - | 10 | 9.5 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 301.0 | 10 | 8.5 | 9.71 | 597 |
| November | 285.5 | 10 | 8.5 | 9.52 | 566 |
| December | 290.7 | 12 | 5.2 | 9.38 | 577 |
| Calendar year 1948 | 4,629.7 | 32 | 5.2 | 12.6 | 9,190 |
| January | 273.8 | - | - | 8.83 | 543 |
| February | 299 | 12 | - | 10.7 | 593 |
| March | 429 | 17 | 12 | 13.8 | 851 |
| April | 881 | 49 | 13 | 29.4 | 1,750 |
| May | 1,510 | 56 | 43 | 48.7 | 3,000 |
| June | 790 | 41 | 17 | 26.3 | 1,570 |
| July | 390 | 16 | 10 | 12.6 | 774 |
| August | 311 | 12 | 9.5 | 10.0 | 617 |
| September | 291.5 | 10 | 9.5 | 9.72 | 578 |
| Water year 1948-49 | 6,052.5 | 56 | - | 16.6 | 12,020 |

Note.--No gage-height record Jan. 4 to Feb. 18; discharge computed on basis of weather records, records for nearby streams, and flow during adjacent periods.

## P. A. lateral near Milner, Idaho

Location.--Staff gage, lat. 42°32', long. 114°01', in sec. 22, T. 10 S., R. 21 E., 600 feet downstream from pumping station and 2½ miles northeast of Milner.

Records available.--April 1919 to September 1949. Records collected by North Side Canal Co. 1916 to 1918.

Extremes.--Maximum discharge during year, 73 second-feet Aug. 10-16; no flow Oct. 1 to Apr. 25, Sept. 26-30.
1919-49: Maximum discharge, that Aug. 10-16, 1949; no flow for many days.

Remarks.--Records excellent. Gage read twice daily. Flow regulated by pumping plant, which lifts water from Snake River for irrigation on North Side Twin Falls tract. An additional pump was installed in 1949.

Cooperation.--Gage-height record and five discharge measurements furnished by North Side Canal Co.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 0 | 59 | 59 | 59 | 70 | 59 |
| 2 | | | | | | | 0 | 59 | 59 | 59 | 70 | 57 |
| 3 | | | | | | | 0 | 59 | 59 | 59 | 70 | 57 |
| 4 | | | | | | | 0 | 58 | 59 | 59 | 70 | 57 |
| 5 | | | | | | | 0 | 59 | 59 | 59 | 72 | 57 |
| 6 | | | | | | | 0 | 59 | 59 | 70 | 72 | 57 |
| 7 | | | | | | | 0 | 59 | 59 | 69 | 72 | 55 |
| 8 | | | | | | | 0 | 59 | 59 | 69 | 72 | 53 |
| 9 | | | | | | | 0 | 59 | 59 | 69 | 72 | 53 |
| 10 | | | | | | | 0 | 59 | 59 | 69 | 73 | 53 |
| 11 | | | | | | | 0 | 59 | 59 | 69 | 73 | 53 |
| 12 | | | | | | | 0 | 59 | 59 | 69 | 73 | 53 |
| 13 | | | | | | | 0 | 59 | 59 | 70 | 73 | 53 |
| 14 | | | | | | | 0 | 59 | 59 | 70 | 73 | 53 |
| 15 | | | | | | | 0 | 59 | 59 | 70 | 73 | 53 |
| 16 | | | | | | | 0 | 59 | 59 | 70 | 73 | 53 |
| 17 | | | | | | | 0 | 59 | 59 | 70 | 72 | 53 |
| 18 | | | | | | | 0 | 59 | 59 | 70 | 72 | 50 |
| 19 | | | | | | | 0 | 59 | 59 | 70 | 72 | 50 |
| 20 | | | | | | | 0 | 59 | 59 | 70 | 66 | 50 |
| 21 | | | | | | | 0 | 59 | 59 | 70 | 66 | 44 |
| 22 | | | | | | | 0 | 59 | 59 | 70 | 71 | 44 |
| 23 | | | | | | | 0 | 59 | 59 | 70 | 71 | 44 |
| 24 | | | | | | | 0 | 59 | 59 | 70 | 70 | 44 |
| 25 | | | | | | | 0 | 59 | 59 | 68 | 68 | 40 |
| 26 | | | | | | | 17 | 59 | 59 | 68 | 68 | 0 |
| 27 | | | | | | | 32 | 59 | 59 | 68 | 68 | 0 |
| 28 | | | | | | | 58 | 59 | 59 | 68 | 68 | 0 |
| 29 | | | | | | | 57 | 59 | 59 | 68 | 68 | 0 |
| 30 | | | | | | | 59 | 59 | 59 | 68 | 68 | 0 |
| 31 | | | | | | | - | 59 | - | 68 | 67 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 0 | 0 | 0 | 0 | 0 |
| November | 0 | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 8,898 | 61 | 0 | 24.3 | 17,650 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 223 | 59 | 0 | 7.4 | 442 |
| May | 1,828 | 59 | 58 | 59.0 | 3,620 |
| June | 1,770 | 59 | 59 | 59.0 | 3,510 |
| July | 2,095 | 70 | 59 | 67.6 | 4,160 |
| August | 2,186 | 73 | 66 | 70.5 | 4,340 |
| September | 1,295 | 59 | 0 | 43.2 | 2,570 |
| Water year 1948-49 | 9,397 | 73 | 0 | 25.7 | 18,640 |

## Milner low-lift canal near Milner, Idaho

Location.--Pumping plant, lat. 42°31', long. 114°01', in sec. 32, T. 10 S., R. 21 E., at head of canal and 1½ miles south of Milner.

Records available.--June 1921 to September 1949.

Extremes.--Maximum discharge during year, 201 second-feet July 31 to Aug. 9; no flow for many days.
1921-49: Maximum discharge, 203 second-feet Aug. 26, 27, 1945; no flow for many days.

Remarks.--Records excellent. Flow controlled by pumping plant, which lifts water from Snake River above Milner Dam for irrigation of 9,000 acres of land in Milner low-lift irrigation district.

Cooperation.--Record of pump discharges furnished by Milner low-lift irrigation district.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 0 | 150 | 150 | 172 | 201 | 178 |
| 2 | | | | | | | 0 | 156 | 136 | 172 | 201 | 178 |
| 3 | | | | | | | 0 | 175 | 130 | 172 | 201 | 178 |
| 4 | | | | | | | 0 | 175 | 130 | 172 | 201 | 178 |
| 5 | | | | | | | 0 | 175 | 130 | 172 | 201 | 178 |
| 6 | | | | | | | 0 | 175 | 130 | 172 | 201 | 178 |
| 7 | | | | | | | 0 | 175 | 130 | 172 | 201 | 178 |
| 8 | | | | | | | 0 | 175 | 130 | 172 | 201 | 178 |
| 9 | | | | | | | 0 | 175 | 130 | 172 | 201 | 178 |
| 10 | | | | | | | 0 | 175 | 152 | 199 | 175 | 178 |
| 11 | | | | | | | 0 | 172 | 152 | 199 | 185 | 178 |
| 12 | | | | | | | 0 | 175 | 152 | 199 | 198 | 170 |
| 13 | | | | | | | 0 | 175 | 152 | 199 | 198 | 157 |
| 14 | | | | | | | 0 | 175 | 152 | 199 | 198 | 150 |
| 15 | | | | | | | 0 | 158 | 146 | 199 | 198 | 130 |
| 16 | | | | | | | 0 | 157 | 100 | 199 | 198 | 130 |
| 17 | | | | | | | 0 | 176 | 125 | 199 | 198 | 130 |
| 18 | | | | | | | 0 | 176 | 125 | 199 | 198 | 78 |
| 19 | | | | | | | 25 | 176 | 125 | 199 | 198 | 98 |
| 20 | | | | | | | 54 | 176 | 125 | 199 | 198 | 79 |
| 21 | | | | | | | 72 | 176 | 152 | 199 | 198 | 79 |
| 22 | | | | | | | 78 | 176 | 152 | 199 | 198 | 79 |
| 23 | | | | | | | 78 | 176 | 152 | 199 | 198 | 79 |
| 24 | | | | | | | 78 | 176 | 152 | 200 | 198 | 79 |
| 25 | | | | | | | 83 | 176 | 152 | 200 | 198 | 79 |
| 26 | | | | | | | 125 | 176 | 152 | 200 | 198 | 79 |
| 27 | | | | | | | 135 | 176 | 162 | 200 | 198 | 79 |
| 28 | | | | | | | 150 | 176 | 172 | 200 | 198 | 79 |
| 29 | | | | | | | 150 | 176 | 172 | 200 | 198 | 79 |
| 30 | | | | | | | 150 | 168 | 172 | 200 | 198 | 75 |
| 31 | | | | | | | - | 150 | - | 201 | 190 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 0 | 0 | 0 | 0 | 0 |
| November | 0 | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 26,821 | 198 | 0 | 73.3 | 53,190 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 1,178 | 150 | 0 | 39.3 | 2,140 |
| May | 5,324 | 176 | 150 | 172 | 10,560 |
| June | 4,292 | 172 | 100 | 143 | 8,510 |
| July | 5,935 | 201 | 172 | 191 | 11,770 |
| August | 6,121 | 201 | 175 | 197 | 12,140 |
| September | 3,866 | 178 | 75 | 129 | 7,670 |
| Water year 1948-49 | 26,716 | 201 | 0 | 73.2 | 52,790 |

## Gooding Canal at Milner, Idaho

Location.--Water-stage recorder on Milner-Gooding Canal in NW¼ sec. 18, staff gage on A Lateral in sec. 19, T. 10 S., R. 21 E., and differential recorder on control gates of North Side Canal Co. diversion in NE¼ sec. 13, T. 10 S., R. 20 E., about 3 miles downstream from head gates that are in sec. 28, T. 10 S., R. 21 E., lat. 42°31', long. 114°01'.

Records available.--May 1930 to September 1949.

Extremes.--Maximum daily discharge during year, 2,680 second-feet July 26, 28. No flow for many days.
1930-49: Maximum daily discharge that of July 26, 28, 1949; no flow for many days.

Remarks.--Records good. Gooding Canal diverts water from Snake River for Milner-Gooding project of Bureau of Reclamation and in part for project of North Side Canal Co. The latter project also receives water through North Side Twin Falls Canal and P. A. lateral. Discharge of canal is computed by combining the discharge of Milner-Gooding diversion and that of North Side Canal Co. diversions below their division point, and adding 35 second-feet to that sum for loss between head gates and division point.

Cooperation.--Gage-height record furnished by North Side Canal Co. and American Falls Reservoir District No. 2.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 0 | | | | | 0 | 2,020 | 2,190 | 2,460 | 2,630 | 2,420 |
| 2 | | 0 | | | | | 0 | 2,020 | 2,280 | 2,560 | 2,630 | 2,400 |
| 3 | | 0 | | | | | 0 | 2,020 | 2,300 | 2,580 | 2,610 | 2,410 |
| 4 | | 0 | | | | | 0 | 2,030 | 2,290 | 2,630 | 2,590 | 2,420 |
| 5 | | 0 | | | | | 0 | 2,160 | 2,290 | 2,630 | 2,620 | 2,420 |
| 6 | | 0 | | | | | 0 | 2,200 | 2,290 | 2,650 | 2,610 | 2,390 |
| 7 | | 0 | | | | | 0 | 2,210 | 2,310 | 2,630 | 2,600 | 2,310 |
| 8 | | 0 | | | | | 0 | 2,210 | 2,300 | 2,610 | 2,600 | 2,280 |
| 9 | | 380 | | | | | 0 | 2,220 | 2,300 | 2,640 | 2,620 | 2,260 |
| 10 | | 570 | | | | | 0 | 2,220 | 2,300 | 2,650 | 2,590 | 2,260 |
| 11 | | 470 | | | | | 0 | 2,210 | 2,300 | 2,610 | 2,550 | 2,260 |
| 12 | | 440 | | | | | 0 | 2,210 | 2,300 | 2,590 | 2,520 | 2,290 |
| 13 | | 150 | | | | | 0 | 2,190 | 2,300 | 2,590 | 2,500 | 2,200 |
| 14 | | 0 | | | | | 0 | 2,190 | 2,350 | 2,600 | 2,430 | 2,130 |
| 15 | | 0 | | | | | 0 | 2,200 | 2,370 | 2,620 | 2,420 | 2,100 |
| 16 | | 0 | | | | | 0 | 2,220 | 2,380 | 2,570 | 2,420 | 1,880 |
| 17 | | 0 | | | | | 0 | 2,220 | 2,400 | 2,570 | 2,400 | 1,790 |
| 18 | | 0 | | | | | 130 | 2,210 | 2,460 | 2,600 | 2,410 | 1,840 |
| 19 | | 0 | | | | | 740 | 2,200 | 2,470 | 2,570 | 2,430 | 1,780 |
| 20 | | 0 | | | | | 930 | 2,200 | 2,480 | 2,550 | 2,470 | 1,690 |
| 21 | | 0 | | | | | 950 | 2,150 | 2,460 | 2,610 | 2,420 | 1,630 |
| 22 | | 0 | | | | | 970 | 2,120 | 2,460 | 2,610 | 2,430 | 1,600 |
| 23 | | 0 | | | | | 1,090 | 2,050 | 2,460 | 2,620 | 2,430 | 1,580 |
| 24 | | 0 | | | | | 1,150 | 1,980 | 2,440 | 2,610 | 2,420 | 1,580 |
| 25 | | 0 | | | | | 1,480 | 1,980 | 2,430 | 2,650 | 2,430 | 1,600 |
| 26 | | 0 | | | | | 1,750 | 1,980 | 2,450 | 2,680 | 2,430 | 1,630 |
| 27 | | 0 | | | | | 1,920 | 2,050 | 2,460 | 2,630 | 2,410 | 1,600 |
| 28 | | 0 | | | | | 1,950 | 2,090 | 2,460 | 2,680 | 2,390 | 1,530 |
| 29 | | 0 | | | | | 1,950 | 2,080 | 2,390 | 2,670 | 2,370 | 1,000 |
| 30 | | 0 | | | | | 1,960 | 2,150 | 2,420 | 2,660 | 2,360 | 0 |
| 31 | | - | | | | | - | 2,210 | - | 2,660 | 2,400 | - |

| Month | Second-foot-days | Discharge in second-feet | | | Total runoff in acre-feet | Distribution (acre-feet) | |
|---|---|---|---|---|---|---|---|
| | | Maximum | Minimum | Mean | | To Milner-Gooding Project | To North Side Canal Co. project |
| October | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| November | 2,010 | 570 | 0 | 67.0 | 3,990 | 3,990 | 0 |
| December | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 358,540 | 2,580 | 0 | 980 | 711,100 | 417,580 | 293,560 |
| January | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| April | 16,970 | 1,960 | 0 | 566 | 33,660 | 25,010 | 8,650 |
| May | 66,200 | 2,220 | 1,980 | 2,135 | 131,300 | 75,530 | 55,780 |
| June | 71,090 | 2,480 | 2,190 | 2,370 | 141,000 | 84,220 | 56,790 |
| July | 80,990 | 2,680 | 2,460 | 2,613 | 160,600 | 92,710 | 67,930 |
| August | 77,140 | 2,630 | 2,360 | 2,488 | 153,000 | 84,380 | 68,630 |
| September | 57,280 | 2,420 | 0 | 1,909 | 113,600 | 64,560 | 49,050 |
| Water year 1948-49 | 371,680 | 2,680 | 0 | 1,018 | 737,200 | 430,400 | 306,830 |

## North Side Twin Falls Canal at Milner, Idaho

Location.--Water-stage recorder, lat. 42°32', long. 114°01', in sec. 20, T. 10 S., R. 21 E., half a mile north of Milner and three-quarters of a mile downstream from head gates at Milner Dam.

Records available.--May 1909 to September 1949.

Extremes.--Maximum discharge during year, 2,750 second-feet Aug. 15; no flow for many days.
1909-49: Maximum daily discharge, 3,200 second-feet July 5-7, 29-31, 1921, May 15, 1928, June 2, July 23, 1929; no flow at times when head gates were closed.

Remarks.--Records excellent October, November, March to September and good December to February. Flow controlled by head gates. Water diverted by this canal and by P. A. lateral and part of that diverted by Gooding Canal, all at Milner, is used for irrigation of 163,000 acres of land under North Side Canal Co. system. Diversions began in spring of 1909.

Cooperation.--Gage-height record furnished by North Side Canal Co.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 896 | 710 | 510 | 385 | 340 | 320 | 555 | 2,680 | 2,380 | 2,540 | 2,500 | 2,300 |
| 2 | 908 | 732 | 490 | 385 | 340 | 320 | 338 | 2,640 | 2,340 | 2,560 | 2,500 | 2,160 |
| 3 | 904 | 678 | 466 | 380 | *339 | *320 | 250 | 2,660 | 2,340 | 2,560 | 2,560 | 2,140 |
| 4 | 810 | 650 | 421 | 380 | 340 | 320 | 250 | 2,500 | 2,280 | 2,540 | 2,580 | 2,130 |
| 5 | 810 | 619 | 395 | 380 | 340 | 299 | 124 | 2,460 | 2,300 | 2,540 | 2,590 | 2,140 |
| 6 | 825 | 605 | 390 | 380 | 340 | 234 | 306 | 2,440 | 2,320 | 2,550 | 2,580 | 2,070 |
| 7 | 817 | 615 | 390 | 380 | 340 | 234 | 299 | 2,400 | 2,300 | 2,500 | 2,620 | 1,980 |
| 8 | 806 | 501 | 390 | 380 | 340 | 234 | 299 | 2,420 | 2,290 | 2,500 | 2,660 | 1,940 |
| 9 | 233 | 454 | 390 | 295 | 340 | 224 | 157 | 2,420 | 2,280 | 2,540 | 2,680 | 1,880 |
| 10 | 0 | 460 | 379 | 395 | 300 | 243 | 85 | 2,420 | 2,290 | 2,560 | 2,640 | 1,740 |
| 11 | 0 | 463 | 373 | 395 | 200 | 262 | 88 | 2,480 | 2,350 | 2,540 | 2,630 | 1,750 |
| 12 | 0 | 466 | 370 | *406 | 180 | 262 | 86 | 2,540 | 2,460 | 2,500 | 2,660 | 1,770 |
| 13 | 0 | 466 | 370 | 420 | 150 | 262 | 166 | 2,530 | 2,440 | 2,500 | 2,710 | 1,740 |
| 14 | 0 | 466 | 365 | 420 | 150 | 294 | 574 | 2,530 | 2,440 | 2,520 | 2,720 | 1,610 |
| 15 | 0 | 466 | 362 | 420 | 150 | 315 | 817 | 2,540 | 2,450 | 2,540 | 2,740 | 1,460 |
| 16 | 0 | 418 | 365 | 420 | 150 | 312 | 1,020 | 2,560 | 2,420 | 2,540 | 2,720 | 1,440 |
| 17 | 0 | 376 | 373 | 410 | 150 | 320 | 1,100 | 2,570 | 2,460 | 2,650 | 2,680 | 1,480 |
| 18 | 548 | 436 | 370 | 400 | 150 | 315 | 1,210 | 2,530 | 2,450 | 2,700 | 2,680 | 1,460 |
| 19 | 868 | 463 | 370 | 390 | 150 | 312 | 1,330 | 2,560 | 2,460 | 2,700 | 2,640 | 1,410 |
| 20 | 876 | *448 | 370 | 390 | 150 | 299 | 1,350 | 2,520 | 2,420 | 2,680 | 2,580 | 1,230 |
| 21 | 860 | 439 | 370 | 390 | 150 | 320 | 1,280 | 2,550 | 2,400 | 2,720 | 2,560 | 1,140 |
| 22 | 856 | 460 | 370 | 395 | 150 | 325 | 1,420 | 2,580 | 2,440 | 2,720 | 2,560 | 1,110 |
| 23 | 856 | 479 | 370 | 395 | 150 | 336 | 1,720 | 2,570 | 2,410 | 2,720 | 2,550 | 1,090 |
| 24 | 852 | 460 | 370 | 400 | 150 | 357 | 1,800 | 2,570 | 2,410 | 2,700 | 2,560 | 1,090 |
| 25 | 848 | 476 | 370 | 400 | 230 | 354 | 1,680 | 2,480 | 2,440 | 2,680 | 2,520 | 1,110 |
| 26 | 844 | 497 | 375 | 400 | 300 | 384 | 1,620 | 2,440 | 2,490 | 2,670 | 2,520 | 840 |
| 27 | 791 | 510 | 385 | 395 | 300 | 416 | 1,620 | 2,440 | 2,530 | 2,600 | 2,500 | 636 |
| 28 | 758 | 510 | 385 | 395 | 310 | 418 | 1,750 | 2,520 | 2,520 | 2,600 | 2,460 | 678 |
| 29 | 732 | 510 | 385 | 390 | - | 401 | 2,120 | 2,580 | 2,530 | 2,570 | 2,440 | 868 |
| 30 | 717 | 510 | 385 | 390 | - | 433 | 2,560 | 2,630 | 2,540 | 2,560 | 2,400 | 1,410 |
| 31 | 706 | - | 385 | 360 | - | 552 | - | 2,640 | - | 2,560 | 2,380 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 18,121 | 908 | 0 | 585 | 35,940 |
| November | 15,343 | 732 | 376 | 511 | 30,430 |
| December | 12,059 | 510 | 362 | 389 | 23,920 |
| Calendar year 1948 | 475,621 | 2,720 | 0 | 1,300 | 943,200 |
| January | 12,221 | 420 | 360 | 394 | 24,240 |
| February | 6,679 | 340 | 150 | 239 | 13,250 |
| March | 9,997 | 552 | 224 | 322 | 19,830 |
| April | 27,974 | 2,560 | 85 | 932 | 55,490 |
| May | 78,400 | 2,680 | 2,400 | 2,529 | 155,500 |
| June | 72,180 | 2,540 | 2,280 | 2,406 | 143,200 |
| July | 80,360 | 2,720 | 2,500 | 2,592 | 159,400 |
| August | 80,120 | 2,740 | 2,380 | 2,585 | 158,900 |
| September | 45,802 | 2,300 | 636 | 1,527 | 90,850 |
| Water year 1948-49 | 459,256 | 2,740 | 0 | 1,258 | 911,000 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 27 to Dec. 2, Dec. 6-9, Dec. 18 to Mar. 2.

## South Side Twin Falls Canal at Milner, Idaho

Location.--Water-stage recorder, lat. 42°31', long. 114°01', in sec. 29, T. 10 S., R. 21 E., 700 feet downstream from head gates at Milner Dam.

Records available.--May 1909 to September 1949.

Extremes.--Maximum discharge during year, 3,690 second-feet Aug. 15 (gage height, 10.45 feet); minimum, 14 second-feet Oct. 26, Apr. 4, 5.
1909-49: Maximum daily discharge, 4,600 second-feet Aug. 12, 1918, including about 1,200 second-feet wasted through spillway below station and returned to river; no flow Sept. 20, 1920.

Remarks.--Records excellent except those for periods of ice effect, which are good. Flow controlled by head gates. Canal has diverted water since March 1905 from Snake River at Milner Dam for irrigation of 202,000 acres of land in Twin Falls County.

Cooperation.--Gage-height record furnished by Twin Falls Canal Co.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 929 | 762 | 576 | *552 | 475 | 415 | 17 | 3,290 | 3,190 | 3,560 | 3,540 | 3,300 |
| 2 | 855 | 660 | 489 | 525 | 470 | 440 | 16 | 3,290 | 3,140 | 3,540 | 3,540 | 3,280 |
| 3 | 804 | 638 | 489 | 510 | *465 | *476 | 15 | 3,410 | 3,110 | 3,540 | 3,560 | 3,290 |
| 4 | 801 | 615 | 529 | 500 | 465 | 428 | 14 | 3,460 | 3,060 | 3,560 | 3,560 | 3,240 |
| 5 | 811 | 615 | 540 | 490 | 465 | 423 | 93 | 3,540 | 3,030 | 3,550 | 3,560 | 3,240 |
| 6 | 832 | 601 | 535 | 485 | 465 | 431 | 350 | 3,490 | 3,040 | 3,560 | 3,550 | 3,170 |
| 7 | 821 | 604 | 540 | 490 | 450 | 438 | 302 | 3,410 | 3,040 | 3,580 | 3,550 | 3,070 |
| 8 | 794 | 607 | 527 | 490 | 425 | 431 | 1,050 | 3,400 | 3,030 | 3,600 | 3,550 | 2,190 |
| 9 | 781 | 598 | 538 | 510 | 430 | 381 | 1,120 | 3,410 | 3,090 | 3,590 | 3,560 | 3,090 |
| 10 | 781 | 598 | 538 | 505 | 445 | 394 | 711 | 3,420 | 3,180 | 3,580 | 3,560 | 3,190 |
| 11 | 781 | 584 | 535 | 505 | 420 | 399 | 675 | 3,480 | 3,230 | 3,560 | 3,590 | 3,090 |
| 12 | 781 | 554 | 554 | *507 | 410 | 431 | 794 | 3,490 | 3,260 | 3,580 | 3,620 | 2,920 |
| 13 | 784 | 559 | 526 | 500 | 410 | 444 | 890 | 3,500 | 3,230 | 3,580 | 3,640 | 2,590 |
| 14 | 778 | 568 | 534 | 500 | 410 | 451 | 958 | 3,560 | 3,170 | 3,580 | 3,650 | 2,300 |
| 15 | 778 | 568 | 521 | 500 | 425 | 438 | 1,060 | 3,560 | 3,150 | 3,600 | 3,670 | 2,110 |
| 16 | 774 | 570 | 493 | 520 | 420 | 431 | 1,200 | 3,560 | 3,140 | 3,590 | 3,650 | 2,070 |
| 17 | 778 | 565 | 474 | 490 | 440 | 457 | 1,270 | 3,520 | 3,170 | 3,600 | 3,630 | 2,370 |
| 18 | 778 | 548 | 500 | 465 | 470 | 472 | 1,390 | 3,500 | 3,200 | 3,610 | 3,600 | 2,360 |
| 19 | 778 | 543 | 500 | 435 | 455 | 480 | 1,700 | 3,520 | 3,200 | 3,600 | 3,590 | 2,230 |
| 20 | 768 | *537 | 519 | 440 | 455 | 491 | 1,940 | 3,460 | 3,200 | 3,580 | 3,580 | 2,170 |
| 21 | 610 | 548 | 512 | 475 | 450 | 478 | 2,070 | 3,480 | 3,240 | 3,800 | 3,560 | 2,030 |
| 22 | 31 | 540 | 514 | 485 | 445 | 478 | 2,170 | 3,460 | 3,260 | 3,570 | 3,560 | 1,840 |
| 23 | 30 | 529 | 500 | 490 | 430 | 502 | 2,320 | 3,400 | 3,350 | 3,570 | 3,570 | 1,750 |
| 24 | 30 | 532 | 500 | 500 | 430 | 505 | 2,580 | 3,370 | 3,440 | 3,560 | 3,520 | 1,750 |
| 25 | 21 | 532 | 495 | 515 | 410 | 478 | 2,710 | 3,360 | 3,500 | 3,550 | 3,500 | 1,750 |
| 26 | 479 | 534 | 479 | 475 | 370 | 475 | 2,870 | 3,350 | 3,450 | 3,540 | 3,470 | 1,770 |
| 27 | 818 | 532 | 481 | 455 | 395 | 489 | 3,180 | 3,330 | 3,440 | 3,540 | 3,350 | 1,720 |
| 28 | 714 | 537 | 498 | 490 | 400 | 475 | 3,300 | 3,340 | 3,490 | 3,540 | 3,330 | 1,670 |
| 29 | 811 | 526 | 503 | 490 | - | 464 | 3,310 | 3,330 | 3,540 | 3,530 | 3,340 | 1,690 |
| 30 | 808 | 524 | 503 | 475 | - | 470 | 3,290 | 3,310 | 3,580 | 3,540 | 3,330 | 1,640 |
| 31 | 816 | - | 515 | 480 | - | 360 | - | 3,260 | - | 3,540 | 3,310 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 21,157 | 929 | 21 | 682 | 41,960 |
| November | 17,228 | 762 | 524 | 574 | 34,170 |
| December | 15,957 | 576 | 474 | 515 | 31,650 |
| Calendar year 1948 | 637,288 | 3,690 | 10 | 1,741 | 1,264,000 |
| January | 15,249 | 552 | 435 | 492 | 30,250 |
| February | 12,200 | 475 | 370 | 436 | 24,200 |
| March | 13,925 | 505 | 360 | 449 | 27,620 |
| April | 43,365 | 3,310 | 14 | 1,446 | 86,010 |
| May | 106,260 | 3,560 | 3,260 | 3,428 | 210,800 |
| June | 97,150 | 3,580 | 3,030 | 3,238 | 192,700 |
| July | 110,620 | 3,610 | 3,530 | 3,568 | 219,400 |
| August | 109,590 | 3,670 | 3,310 | 3,535 | 217,400 |
| September | 72,880 | 3,300 | 1,640 | 2,429 | 144,600 |
| Water year 1948-49 | 635,581 | 3,670 | 14 | 1,741 | 1,261,000 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 6-11, Dec. 15 to Mar. 3.

## Rock Creek near Rock Creek, Idaho

Location.--Water-stage recorder, lat. 42°22', long. 114°18', in sec. 25, T. 12 S., R. 18 E., 0.1 mile downstream from road bridge, three-quarters of a mile downstream from West Fork Rock Creek, 5 miles south of Rock Creek settlement, and 12 miles south of Hansen.

Records available.--November 1938 to July 1939, November 1943 to September 1949. November 1909 to August 1913 at site 2 miles downstream; records equivalent except for ranch diversions and small inflow from artesian wells developed in recent years.

Extremes.--Maximum discharge during year, 239 second-feet Apr. 25 (gage height, 2.94 feet); minimum recorded, 5.1 second-feet Aug. 27 (gage height, 0.85 foot).
1909-13, 1938-39, 1943-49: Maximum discharge observed, 429 second-feet May 21, 1912 (gage height, 10.4 feet, site and datum then in use); minimum observed, 3.6 second-feet Aug. 7-12, 1910 (gage height, 0.3 foot, site and datum then in use).

Remarks.--Records fair except those for periods of no gage-height record or ice effect, which are poor. Small ranch diversions above station.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.7 | 6 | 7.9 | 11 | 10 | 20 | 33 | 168 | 90 | 20 | 11 | 6.8 |
| 2 | 5.7 | 7 | 8.6 | 10 | 10 | 22 | 36 | 178 | 84 | 19 | 11 | 6.8 |
| 3 | 6 | 8 | 9 | 8 | 10 | 23 | 39 | 168 | 79 | 19 | 10 | 6.8 |
| 4 | 6 | 8 | 8.3 | 8 | 10 | 22 | 44 | 158 | 72 | 18 | 10 | 7.2 |
| 5 | 6 | 7 | 8.3 | 8 | 10 | 24 | 52 | 168 | 69 | 18 | 10 | 7.2 |
| 6 | 6 | 7 | 10 | 8 | 10 | 23 | 61 | 171 | 67 | 18 | 9 | 7.2 |
| 7 | 6 | 7 | 10 | 9 | 10 | 23 | 72 | 183 | 63 | 17 | 9 | 6.8 |
| 8 | 6 | 7 | 10 | 9 | 10 | 23 | 81 | 187 | 61 | 17 | 9 | 6.8 |
| 9 | 6 | 7 | 11 | 9 | 11 | 21 | 93 | 190 | 59 | 17 | 8 | 6.8 |
| 10 | 6 | 7 | 12 | 9 | 12 | 20 | 95 | 178 | 56 | 16 | 8 | 6.8 |
| 11 | 6 | 7 | 15 | 9 | 12 | 22 | 103 | 175 | 52 | 16 | 7.9 | 7.9 |
| 12 | 6 | 7 | 14 | 9 | 11 | 24 | 124 | 171 | 51 | 16 | 7.9 | 8.3 |
| 13 | 6 | 7 | 13 | 9 | 9 | 23 | 124 | 166 | 49 | 16 | 8 | 8.3 |
| 14 | 6 | 7 | 12 | 9 | 10 | 23 | 122 | 164 | 46 | 15 | 8 | 7.9 |
| 15 | 6 | 7 | 11 | 9 | 10 | 24 | 118 | 158 | 44 | 15 | 8 | 7.9 |
| 16 | 6 | 7 | 9 | 9 | 11 | 27 | 126 | 150 | 43 | 15 | 8 | 7.9 |
| 17 | 6 | 7 | 9 | 9 | 12 | 30 | 145 | 150 | 42 | 15 | 8 | 8.3 |
| 18 | 6 | *7.2 | 10 | 9 | 13 | 31 | 161 | 154 | 43 | 15 | 8 | 8.3 |
| 19 | 6 | 7.2 | 11 | *9 | 14 | 36 | 175 | 158 | 42 | 14 | 8 | 7.9 |
| 20 | 6 | 7.5 | 12 | 9 | 14 | 45 | 192 | 162 | 38 | 14 | 8 | 7.9 |
| 21 | 6 | 7.2 | 10 | 9 | *15 | 43 | 190 | 168 | 34 | 14 | 8 | 7.9 |
| 22 | 6 | 7.2 | 7 | 9 | 16 | 42 | 195 | 158 | 32 | 14 | 8 | 7.9 |
| 23 | 6 | 7.5 | 8 | 9 | 19 | 42 | 216 | 140 | 30 | 14 | 8 | 7.5 |
| 24 | 6 | 9 | 8 | 9 | 18 | 37 | 227 | 128 | 30 | 13 | 7.9 | 7.5 |
| 25 | 6 | 8.6 | 8 | 8 | 18 | 35 | 230 | 118 | 29 | 13 | 7.5 | 7.9 |
| 26 | 6 | 7.9 | 8 | 8 | 19 | 34 | 223 | 112 | 29 | 13 | 6.4 | 7.5 |
| 27 | 6 | 7.5 | 9 | 8 | 19 | 35 | 221 | 106 | 26 | 12 | 5.7 | 7.5 |
| 28 | 6 | 7.5 | 10 | 8 | 20 | *34 | 220 | 102 | 24 | 12 | 6.4 | 7.5 |
| 29 | 6 | 8.3 | 9 | 8 | - | 33 | 195 | 106 | 23 | 12 | 7.9 | 8.3 |
| 30 | 6 | 7.5 | 10 | 9 | - | 32 | 182 | 106 | 21 | 12 | 7.5 | 8.6 |
| 31 | 6 | - | 11 | 9 | - | 32 | - | 100 | - | 11 | 6.8 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 185.4 | 6 | 5.7 | 5.98 | 368 |
| November | 220.1 | 9 | 6 | 7.34 | 437 |
| December | 309.1 | 15 | 7 | 9.97 | 613 |
| Calendar year 1948 | 11,003.4 | 225 | 4.4 | 30.1 | 21,830 |
| January | 273 | 11 | 8 | 8.81 | 541 |
| February | 363 | 20 | 9 | 13.0 | 720 |
| March | 905 | 45 | 20 | 29.2 | 1,800 |
| April | 4,095 | 230 | 33 | 136 | 8,120 |
| May | 4,703 | 190 | 100 | 152 | 9,330 |
| June | 1,428 | 90 | 21 | 47.6 | 2,830 |
| July | 470 | 20 | 11 | 15.2 | 932 |
| August | 254.9 | 11 | 5.7 | 8.22 | 506 |
| September | 227.9 | 8.6 | 6.8 | 7.60 | 452 |
| Water year 1948-49 | 13,434.4 | 230 | 5.7 | 36.8 | 26,650 |

Peak discharge (base, 130 sec.-ft.).--Apr. 25 (4 a.m.) 239 sec.-ft. May 7 (4 p.m.) 197 sec.-ft.
* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 11-14, Dec. 17 to Feb. 20. No gage-height record Oct. 3 to Nov. 17, Jan. 4-18, Jan. 26 to Feb. 9, May 16-20, June 29 to July 6, July 8 to Aug. 10, Aug. 13-23; discharge computed on basis of weather records, records for nearby streams, and flow during adjacent periods.

## Salmon Falls Creek above upper Vineyard ditch, near Contact, Nev.

Location.--Water-stage recorder, lat. 41°44', long. 114°52'30", near northwest corner sec. 5, T. 44 N., R. 63 E., three-quarters of a mile above former diversion point for Upper Vineyard ditch, 1¼ miles above present diversion dam, and 6 miles southwest of Contact.

Drainage area.--439 square miles.

Records available.--October 1948 to September 1949. May 1914 to July 1915 at site three-quarters of a mile downstream.

Extremes.--Maximum discharge during year, 750 second-feet May 16 (gage height, 4.31 feet); minimum, 16 second-feet Sept. 6 (gage height, 1.21 feet).
1914-15, 1948-49: Maximum discharge, that of May 16, 1949; minimum, that of Sept. 6, 1949.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Many diversions above and below station for irrigation.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 21 to Dec. 15)

| | | | | | |
|---|---|---|---|---|---|
| 1.2 | 16 | 1.7 | 50 | 3.0 | 272 |
| 1.3 | 20 | 2.0 | 86 | 3.4 | 397 |
| 1.4 | 24 | 2.3 | 131 | 3.8 | 545 |
| 1.5 | 31 | 2.6 | 185 | 4.2 | 705 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 25 | 26 | | | 30 | 59 | 549 | 352 | 63 | 24 | 17 |
| 2 | | 26 | 30 | | | 30 | 62 | 481 | 302 | 60 | 24 | 17 |
| 3 | | 27 | 32 | | | 31 | 67 | 463 | 260 | 60 | 24 | 17 |
| 4 | | 26 | 31 | | | 32 | 76 | 474 | 235 | 65 | 27 | 17 |
| 5 | | 25 | 28 | | | 33 | 89 | 433 | 216 | 92 | 27 | 17 |
| 6 | | 25 | 29 | | | 33 | 106 | 397 | 218 | 71 | 26 | 17 |
| 7 | | 26 | 30 | | | 34 | 126 | 383 | 222 | 59 | 24 | 17 |
| 8 | | 25 | 26 | 23 | 23 | 34 | 152 | 397 | 235 | 53 | 23 | 17 |
| 9 | | 24 | 30 | | | 34 | 162 | 433 | 226 | 50 | 22 | 17 |
| 10 | | 26 | 33 | | | 36 | 164 | 492 | 205 | 50 | 22 | 17 |
| | 23 | | | | | | | | | | | |
| 11 | | 27 | 35 | | | 40 | 185 | 553 | 202 | 51 | 22 | 18 |
| 12 | | 28 | 36 | | | 40 | 222 | 557 | 193 | 50 | 22 | 18 |
| 13 | | 28 | 35 | | | 40 | 233 | 572 | 183 | 51 | 21 | 18 |
| 14 | | 28 | 35 | | | 40 | 224 | 612 | 172 | 50 | 21 | 18 |
| 15 | | 28 | 33 | | | 44 | 222 | 701 | 162 | 46 | 21 | 18 |
| 16 | | *28 | 30 | | 24 | 50 | 233 | 738 | 150 | 42 | 21 | 18 |
| 17 | | 30 | | | 25 | 51 | 260 | 726 | 138 | 36 | 20 | 18 |
| 18 | | 28 | | | 26 | 58 | 308 | 697 | 138 | 34 | 20 | 19 |
| 19 | | 28 | 27 | | 28 | 71 | 362 | 689 | 140 | 32 | 20 | 19 |
| 20 | | 30 | | | 29 | 86 | 426 | 664 | 131 | 30 | 20 | 18 |
| 21 | h24 | 30 | | | 30 | 86 | 433 | 608 | 118 | 28 | 19 | 18 |
| 22 | h24 | 29 | | | *30 | 92 | 440 | 537 | 106 | 28 | 19 | 18 |
| 23 | h24 | 29 | | | 30 | 85 | 518 | 470 | 100 | 28 | 19 | 19 |
| 24 | h24 | 30 | | 22 | 30 | 78 | 592 | 422 | 94 | 26 | 20 | 20 |
| 25 | h24 | 30 | | | 30 | 74 | 624 | 401 | 87 | 27 | 19 | 20 |
| 26 | 24 | 29 | 25 | | 30 | 71 | 632 | 394 | 85 | 27 | 19 | 20 |
| 27 | 24 | 27 | | | 30 | 68 | 620 | 401 | 78 | 26 | 19 | 20 |
| 28 | 26 | 25 | | | 30 | 63 | 624 | 419 | 74 | 25 | 18 | 20 |
| 29 | 25 | 27 | | | - | 55 | 656 | 415 | 68 | 26 | 18 | 20 |
| 30 | 24 | 26 | | | - | 58 | 632 | 376 | 67 | 24 | 19 | 21 |
| 31 | 25 | - | | | - | 59 | - | 380 | - | 24 | 18 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 728 | - | - | 23.5 | 1,440 |
| November | 820 | 30 | 24 | 27.3 | 1,630 |
| December | 882 | 36 | - | 28.5 | 1,750 |
| Calendar year | - | - | - | - | - |
| January | 697 | - | - | 22.5 | 1,380 |
| February | 717 | 30 | - | 25.6 | 1,420 |
| March | 1,636 | 92 | 30 | 52.8 | 3,240 |
| April | 9,509 | 656 | 59 | 317 | 18,860 |
| May | 15,834 | 738 | 376 | 511 | 31,410 |
| June | 4,957 | 352 | 67 | 165 | 9,830 |
| July | 1,334 | 92 | 24 | 43.0 | 2,650 |
| August | 658 | 27 | 18 | 21.2 | 1,310 |
| September | 548 | 21 | 17 | 18.3 | 1,090 |
| Water year 1948-49 | 38,320 | 738 | 17 | 105 | 76,010 |

* Winter discharge measurement made on this day.
h Computed from staff-gage reading.
Note.--Stage-discharge relation affected by ice Dec. 16 to about Feb. 15. No gage-height record Oct. 1-20, Jan. 14 to Feb. 21; discharge computed on basis of weather records and records for station near San Jacinto and nearby streams.

## Salmon Falls Creek near San Jacinto, Nev.

Location.--Water-stage recorder, lat. 41°57', long. 114°42', in sec. 23, T. 47 N., R. 64 E., in canyon, 200 yards downstream from highway bridge, 250 yards downstream from Shoshone Creek, and 5 miles north of San Jacinto.

Records available.--September 1909 to September 1916, October 1918 to September 1949.

Average discharge.--35 years (1910-16, 1919-20, 1921-49), 128 second-feet.

Extremes.--Maximum discharge during year, 998 second-feet May 18 (gage height, 7.75 feet); minimum, 10 second-feet Aug. 27 (gage height, 2.81 feet).
1909-16, 1918-49: Maximum discharge between 2,060 and 2,420 second-feet Feb. 24, 1943 (gage height exceeded range of recorder, 10.20 feet, but was not more than 1.2 feet higher), from rating curve extended above 1,400 second-feet; minimum, 2.8 second-feet Nov. 13, 1947, during channel improvement work upstream.

Remarks.--Records good except those for periods of staff-gage record, which are fair, and those for periods of no gage-height record, which are poor. Many diversions above station for irrigation. Salmon Dam of Salmon River Canal Co., 15 miles below station, forms a reservoir having a capacity of about 180,000 acre-feet.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 37 | 46 | 54 | | | 68 | 106 | 861 | h506 | h75 | 30 | 18 |
| 2 | 37 | 46 | 54 | | | 68 | 109 | 768 | g490 | h70 | 29 | 20 |
| 3 | 36 | 51 | 58 | | | 68 | 123 | 685 | g418 | h66 | 27 | 20 |
| 4 | 38 | 52 | 62 | | | 72 | 135 | 668 | h363 | h66 | 21 | 19 |
| 5 | 42 | 50 | 60 | | | 75 | 154 | 666 | h327 | h70 | 19 | 18 |
| 6 | 44 | 50 | 55 | | | 75 | 193 | 621 | h304 | h70 | 20 | 18 |
| 7 | 44 | 50 | 55 | | | 75 | 256 | 584 | h282 | 75 | 20 | 17 |
| 8 | 42 | 48 | 55 | | 48 | 75 | 330 | 571 | h282 | 72 | 17 | 17 |
| 9 | 42 | 48 | 52 | | | 75 | 393 | 584 | h282 | 75 | 16 | 16 |
| 10 | 42 | 51 | 58 | 45 | | 75 | 468 | 624 | h272 | h66 | 14 | 19 |
| 11 | 42 | 50 | 64 | | | 80 | 484 | 677 | h272 | h66 | 14 | 17 |
| 12 | 42 | 53 | 68 | | | 80 | 530 | 708 | h232 | h66 | 13 | 19 |
| 13 | 40 | 52 | 70 | | | 80 | 618 | 716 | h222 | h66 | 14 | 24 |
| 14 | 42 | 53 | 68 | | | 82 | 610 | 728 | h204 | h62 | 14 | 29 |
| 15 | 44 | 52 | 68 | | | 85 | 590 | 818 | h187 | h62 | 14 | 29 |
| 16 | 44 | 52 | 64 | | 50 | 88 | 562 | 849 | h179 | h57 | 14 | 29 |
| 17 | 42 | 58 | | | 53 | 93 | 584 | 935 | h164 | h57 | 13 | 30 |
| 18 | 42 | 59 | 55 | 46 | 55 | 96 | 629 | 935 | h156 | h53 | 12 | 31 |
| 19 | 44 | 65 | | | 59 | 101 | 688 | 887 | h156 | h49 | 12 | 33 |
| 20 | 44 | 59 | | | 61 | 107 | 751 | 884 | h149 | h45 | 12 | 32 |
| 21 | 44 | 55 | | | 65 | 114 | 809 | 861 | h142 | 40 | 12 | 32 |
| 22 | 44 | 55 | | | 65 | 123 | 771 | 809 | h129 | 40 | 11 | 32 |
| 23 | 44 | 55 | | | 69 | 128 | 771 | 713 | 119 | 37 | 12 | 32 |
| 24 | 42 | 55 | | | 72 | 116 | 815 | 626 | 114 | 36 | 12 | 32 |
| 25 | 44 | 55 | | 45 | 74 | 111 | 846 | 568 | 109 | 34 | 12 | 33 |
| 26 | 44 | 58 | 50 | | 74 | 101 | 884 | 528 | 103 | 35 | 12 | 34 |
| 27 | 44 | 59 | | | 68 | 96 | 893 | 517 | h100 | 34 | 10 | 34 |
| 28 | 46 | 58 | | | 68 | 101 | 878 | 526 | h95 | 33 | 12 | 35 |
| 29 | 46 | 53 | | | - | 107 | 873 | 534 | h85 | 31 | 12 | 37 |
| 30 | 46 | 54 | | | - | 106 | 896 | 534 | h80 | 31 | 16 | 38 |
| 31 | 46 | - | | | - | 104 | - | 534 | - | 31 | 16 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,320 | 46 | 36 | 42.6 | 2,620 |
| November | 1,602 | 65 | 46 | 53.4 | 3,180 |
| December | 1,735 | 70 | - | 56.0 | 3,440 |
| Calendar year 1948 | 45,630 | 533 | 10 | 125 | 90,510 |
| January | 1,396 | - | - | 45.0 | 2,770 |
| February | 1,553 | 74 | - | 55.5 | 3,080 |
| March | 2,825 | 128 | 68 | 91.1 | 5,600 |
| April | 16,749 | 896 | 106 | 558 | 33,220 |
| May | 21,519 | 935 | 517 | 694 | 42,680 |
| June | 6,523 | 506 | 80 | 217 | 12,940 |
| July | 1,670 | 75 | 31 | 53.9 | 3,310 |
| August | 482 | 30 | 10 | 15.5 | 956 |
| September | 794 | 38 | 16 | 26.5 | 1,570 |
| Water year 1948-49 | 57,374 | 935 | 10 | 157 | 115,400 |

g Computed from graph based on gage readings.
h Computed from staff-gage readings.
Note.--No gage-height record Nov. 30 to Jan. 17, Jan. 19 to Feb. 16, Feb. 28 to Mar. 13; discharge computed on basis of weather records and records for Salmon River Canal Co. reservoir and nearby streams.

## Salmon River Canal Co. reservoir near Rogerson, Idaho

Location.--Staff gage at dam on Salmon Falls Creek, lat. 42°13', long. 114°44', in sec. 18 (revised), T. 14 S., R. 15 E., 10 miles west of Rogerson. Datum of gage is 4,990.0 feet above mean sea level (surveys of Salmon River Canal Co.).

Records available.--January 1922 to September 1949.

Extremes.--Maximum contents observed during year, 65,820 acre-feet June 6, 7 (gage height, 38.2 feet); minimum observed, 8,010 acre-feet Sept. 22-30 (gage height, 6.0 feet).
1922-49: Maximum contents observed, 123,700 acre-feet May 30, 31, 1922 (gage height, 61.1 feet); minimum observed, 125 acre-feet Sept. 21 to Oct. 5, 1934 (gage height, 0.1 foot).

Remarks.--Reservoir is formed by gravity-section concrete-arch dam completed in 1911; storage began in 1910. Capacity, 182,650 acre-feet between gage heights 0.0 foot (bottom of outlet tunnel) and 80.0 feet (maximum operating level). Dead storage unknown. Water is used for irrigation of lands in Salmon River Canal Co. project. Figures given herein represent usable contents. Gage read once daily.

Cooperation.--Gage readings and capacity table furnished by Salmon River Canal Co.

Contents, in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8,735 | 9,750 | 11,200 | 13,510 | 14,550 | 16,050 | 23,200 | 51,000 | 65,390 | 52,800 | 29,150 | 11,200 |
| 2 | 8,880 | 9,895 | 11,340 | 13,510 | 14,550 | 16,200 | 23,370 | 52,000 | 65,390 | 52,400 | 28,470 | 10,620 |
| 3 | 8,880 | 9,895 | 11,340 | 13,510 | 14,700 | 16,350 | 23,540 | 53,000 | 65,390 | 52,400 | 27,960 | 10,040 |
| 4 | 8,880 | 9,895 | 11,490 | 13,510 | 14,700 | 16,500 | 23,710 | 53,600 | 65,600 | 52,400 | 27,280 | 9,460 |
| 5 | 8,880 | 9,605 | 11,490 | 13,510 | 14,700 | 16,650 | 23,880 | 54,000 | 65,600 | 52,600 | 26,600 | 9,025 |
| 6 | 8,880 | 9,605 | 11,490 | 13,510 | 14,700 | 16,800 | 24,050 | 54,800 | 65,820 | 51,800 | 25,750 | 8,445 |
| 7 | 8,880 | 9,750 | 11,640 | 13,660 | 14,850 | 16,950 | 24,390 | 55,400 | 65,820 | 50,800 | 24,900 | 8,300 |
| 8 | 8,880 | 9,750 | 11,640 | 13,660 | 14,850 | 16,950 | 24,730 | 56,000 | 65,600 | 49,800 | 24,220 | 8,300 |
| 9 | 9,025 | 9,750 | 11,780 | 13,660 | 14,850 | 17,100 | 24,900 | 56,200 | 65,600 | 48,800 | 23,540 | 8,300 |
| 10 | 9,025 | 9,895 | 11,780 | 13,660 | 15,000 | 17,250 | 26,090 | 56,600 | 65,600 | 48,000 | 22,690 | 8,300 |
| 11 | 9,025 | 9,895 | 11,920 | 13,660 | 15,000 | 17,400 | 26,600 | 56,800 | 65,390 | 47,000 | 21,840 | 8,300 |
| 12 | 9,025 | 9,895 | 12,070 | 13,660 | 15,000 | 17,700 | 27,280 | 57,230 | 65,180 | 46,000 | 21,180 | 8,300 |
| 13 | 9,025 | 9,895 | 12,220 | 13,800 | 15,000 | 18,000 | 28,300 | 57,660 | 64,740 | 45,000 | 20,380 | 8,300 |
| 14 | 9,025 | 9,895 | 12,350 | 13,800 | 15,150 | 18,150 | 29,320 | 58,300 | 64,320 | 44,000 | 19,580 | 8,155 |
| 15 | 9,025 | 9,895 | 12,500 | 13,800 | 15,150 | 18,300 | 30,340 | 58,950 | 63,670 | 43,000 | 18,940 | 8,155 |
| 16 | 9,170 | 10,040 | 12,640 | 13,950 | 15,150 | 18,620 | 31,530 | 59,380 | 63,250 | 42,060 | 18,300 | 8,155 |
| 17 | 9,170 | 10,040 | 12,640 | 13,950 | 15,150 | 18,780 | 32,620 | 59,810 | 62,600 | 41,140 | 17,550 | 8,155 |
| 18 | 9,170 | 10,180 | 12,640 | 14,100 | 15,150 | 18,940 | 33,550 | 60,460 | 61,960 | 40,210 | 16,800 | 8,155 |
| 19 | 9,170 | 10,180 | 12,780 | 14,100 | 15,300 | 19,100 | 34,660 | 61,320 | 61,320 | 39,280 | 15,900 | 8,155 |
| 20 | 9,315 | 10,330 | 12,780 | 14,100 | 15,300 | 19,420 | 36,140 | 62,180 | 60,880 | 38,360 | 15,150 | 8,155 |
| 21 | 9,315 | 10,480 | 12,780 | 14,250 | 15,300 | 19,740 | 37,620 | 63,040 | 60,460 | 37,250 | 14,400 | 8,155 |
| 22 | 9,315 | 10,480 | 12,930 | 14,250 | 15,450 | 20,060 | 39,100 | 63,880 | 59,810 | 36,320 | 13,660 | 8,010 |
| 23 | 9,315 | 10,620 | 12,930 | 14,250 | 15,450 | 20,380 | 40,580 | 64,530 | 59,160 | 35,400 | 12,930 | 8,010 |
| 24 | 9,315 | 10,760 | 13,080 | 14,250 | 15,600 | 20,700 | 42,060 | 65,180 | 58,520 | 34,660 | 12,350 | 8,010 |
| 25 | 9,460 | 10,760 | 13,080 | 14,400 | 15,600 | 21,020 | 43,600 | 65,390 | 58,090 | 33,920 | 12,070 | 8,010 |
| 26 | 9,460 | 10,910 | 13,220 | 14,400 | 15,750 | 21,340 | 45,200 | 65,600 | 57,440 | 33,180 | 12,070 | 8,010 |
| 27 | 9,460 | 11,060 | 13,220 | 14,400 | 15,750 | 21,670 | 46,600 | 65,390 | 56,800 | 32,440 | 12,070 | 8,010 |
| 28 | 9,460 | 11,060 | 13,360 | 14,400 | 15,900 | 22,010 | 48,000 | 65,390 | 55,800 | 31,700 | 12,070 | 8,010 |
| 29 | 9,460 | 11,060 | 13,360 | 14,400 | - | 22,350 | 49,000 | 65,390 | 54,800 | 31,020 | 11,920 | 8,010 |
| 30 | 9,605 | 11,060 | 13,510 | 14,550 | - | 22,690 | 50,000 | 65,180 | 53,800 | 30,340 | 11,920 | 8,010 |
| 31 | 9,605 | - | 13,510 | 14,550 | - | 22,860 | - | 65,390 | - | 29,660 | 11,780 | - |

Monthly gage height and contents, water year October 1948 to September 1949

| Date | Gage height (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept. 30 | 6.5 | 8,735 | - |
| Oct. 31 | 7.1 | 9,605 | +870 |
| Nov. 30 | 8.1 | 11,060 | +1,455 |
| Dec. 31 | 9.8 | 13,510 | +2,450 |
| Calendar year 1948 | - | - | +4,195 |
| Jan. 31 | 10.5 | 14,550 | +1,040 |
| Feb. 28 | 11.4 | 15,900 | +1,350 |
| Mar. 31 | 15.8 | 22,860 | +6,960 |
| Apr. 30 | 30.6 | 50,000 | +27,140 |
| May 31 | 38.0 | 65,390 | +15,390 |
| June 30 | 32.5 | 53,800 | -11,590 |
| July 31 | 19.8 | 29,660 | -24,140 |
| Aug. 31 | 8.6 | 11,780 | -17,880 |
| Sept. 30 | 6.0 | 8,010 | -3,770 |
| Water year 1948-49 | - | - | -725 |

## Salmon River Canal Co. canal near Rogerson, Idaho

Location.--Water-stage recorder, lat. 42°15', long. 114°45', in sec. 7, T. 14 S., R. 15 E., half a mile downstream from Salmon River Canal Co. reservoir and 7 miles west of Rogerson.

Records available.--April 1937 to September 1949.

Extremes.--Maximum discharge during year, 534 second-feet July 15 (gage height, 7.19 feet); no flow during long periods.
1937-49: Maximum discharge, 660 second-feet July 20-24, 1944; no flow during long periods in each year.

Remarks.--Records good. Canal diverts from Salmon River Canal Co. reservoir for irrigation of lands in Salmon River Canal Co. project.

Cooperation.--Gage-height record furnished by Salmon River Canal Co.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | 0 | | | | | 0 | 274 | 387 | 424 | 305 | 231 |
| 2 | | 0 | | | | | 0 | 274 | 330 | 0 | 313 | 243 |
| 3 | | h135 | | | | | 0 | 282 | 312 | 0 | 317 | 253 |
| 4 | | h137 | | | | | 0 | 282 | 285 | 0 | 326 | 251 |
| 5 | | 0 | | | | | 0 | 285 | 267 | 296 | 324 | 245 |
| 6 | | 0 | | | | | 0 | 277 | 256 | 465 | 345 | 183 |
| 7 | | 0 | | | | | 0 | 263 | 260 | 494 | 357 | 0 |
| 8 | | 0 | | | | | 0 | 264 | 265 | 505 | 363 | 0 |
| 9 | | 0 | | | | | 0 | 261 | 273 | 507 | 369 | 0 |
| 10 | | 0 | | | | | 0 | 268 | 286 | 506 | 364 | 0 |
| 11 | | 0 | | | | | 0 | 284 | 310 | 508 | 360 | 0 |
| 12 | | 0 | | | | | 0 | 301 | 345 | 509 | 344 | 0 |
| 13 | | 0 | | | | | 0 | 328 | 374 | 520 | 326 | 0 |
| 14 | | 0 | | | | | 0 | 358 | 402 | 530 | 336 | 0 |
| 15 | | 0 | | | | | 0 | 383 | 401 | 527 | 354 | 0 |
| 16 | | 0 | | | | | 0 | 394 | 401 | 519 | 361 | 0 |
| 17 | | 0 | | | | | 0 | 401 | 395 | 501 | 363 | 0 |
| 18 | | 0 | | | | | 0 | 412 | 392 | 476 | 369 | 0 |
| 19 | | 0 | | | | | 0 | 433 | 380 | 458 | 377 | 0 |
| 20 | | 0 | | | | | 0 | 420 | 367 | 427 | 378 | 0 |
| 21 | | 0 | | | | | 0 | 399 | 357 | 415 | 378 | 0 |
| 22 | | 0 | | | | | 0 | 409 | 342 | 394 | 353 | 0 |
| 23 | | 0 | | | | | 0 | 415 | 364 | 378 | 332 | 0 |
| 24 | | 0 | | | | | 0 | 429 | 389 | 365 | 262 | 0 |
| 25 | | 0 | | | | | 0 | 452 | 403 | 348 | 0 | 0 |
| 26 | | 0 | | | | | 0 | 470 | 426 | 335 | 0 | 0 |
| 27 | | 0 | | | | | 0 | 488 | 456 | 326 | 0 | 0 |
| 28 | | 0 | | | | | 183 | 478 | 497 | 316 | 0 | 0 |
| 29 | | 0 | | | | | 228 | 473 | 499 | 305 | 0 | 0 |
| 30 | | 0 | | | | | 248 | 454 | 510 | 290 | 0 | 0 |
| 31 | | - | | | | | - | 437 | - | 295 | 151 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 0 | 0 | 0 | 0 | 0 |
| November | 272 | 137 | 0 | 9.1 | 540 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 29,832 | 407 | 0 | 81.5 | 59,170 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 659 | 248 | 0 | 22.0 | 1,310 |
| May | 11,348 | 488 | 261 | 366 | 22,510 |
| June | 10,931 | 510 | 256 | 364 | 21,680 |
| July | 11,939 | 530 | 0 | 385 | 23,680 |
| August | 8,427 | 378 | 0 | 272 | 16,710 |
| September | 1,406 | 253 | 0 | 46.9 | 2,790 |
| Water year 1948-49 | 44,982 | 530 | 0 | 123 | 89,220 |

h Computed from staff-gage readings and time of gate changes.

## Mud Lake near Terreton, Idaho

Location.--Water-stage recorder, lat. 43°53', long. 112°24', in SW¼ sec. 1, T. 6 N., R. 34 E., 2 miles north of First Owsley pump house, 2½ miles northeast of Terreton, and 14 miles southwest of Hamer; supplemental staff gage at pump house. Datum of each gage is 4,775.33 feet above mean sea level.

Records available.--April 1921 to September 1949.

Extremes.--Maximum contents during year, 43,500 acre-feet Apr. 29 (gage height, 8.55 feet); minimum daily, 4,940 acre-feet Aug. 22; minimum gage height, 0.51 foot Sept. 16 (affected by wind).

1921-49: Maximum contents observed, 61,660 acre-feet May 5, 1923 (gage height, 9.20 feet); practically no contents Oct. 1 to Nov. 15, 1937 (at 4 p.m. Nov. 15 water was released from Camas Creek into lake).

Remarks.--Mud Lake is a perched body of water confined by earth dikes and fed by groundwater and surface tributaries augmented by well flows. For complete description of Mud Lake region see Water-Supply Paper 818. Water for irrigation is diverted from lake by pumping. During low-lake stages inflow from Camas Creek may be bypassed through Camas Creek diversion canal directly to lake outlet channel leading to First Owsley pumping plant. Bypass was not used during 1949. Other irrigation diversions are made by various means from adjacent lakes and wells and Camas Creek above lake. Area of Mud Lake is varied from time to time by changes in dikes. Figures given herein represent contents above gage height -4.0 feet. Capacity table prepared from surveys made by Geological Survey and adjusted for changes in dikes. High winds occasionally disturb the recording of lake stages.

Cooperation.--Water-stage recorder inspected by Water District No. 66 and supplemental staff-gage readings furnished by Owsley Canal Co.

Contents, in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7,740 | 7,680 | 13,700 | | - | 32,400 | 37,500 | 43,200 | 34,800 | 22,000 | 7,210 | 5,560 |
| 2 | 7,830 | 7,770 | 14,000 | | - | 32,400 | 37,600 | 43,100 | 35,100 | 21,700 | 7,050 | 5,650 |
| 3 | 7,890 | 7,950 | 14,300 | | 28,300 | 32,600 | 37,700 | 42,900 | 35,200 | 21,300 | 6,860 | 5,720 |
| 4 | 7,860 | 8,270 | 14,500 | | - | 32,700 | 37,700 | 42,900 | 35,300 | 20,900 | 6,640 | 5,720 |
| 5 | 8,020 | 8,430 | 14,800 | | - | 32,800 | 37,800 | 42,700 | 35,100 | 20,500 | 6,430 | 5,850 |
| 6 | 7,980 | 8,560 | 15,000 | | - | 32,900 | 37,900 | 42,000 | 35,100 | 20,100 | 6,230 | 5,850 |
| 7 | 7,980 | 8,690 | 15,300 | | - | 33,000 | 37,900 | 41,500 | 35,100 | 19,700 | 6,000 | 5,900 |
| 8 | 7,920 | 8,920 | 15,600 | | - | 33,100 | 38,100 | 40,900 | 34,800 | 19,400 | 5,780 | 5,920 |
| 9 | 7,800 | 9,150 | 15,900 | | - | 33,300 | 38,300 | 40,400 | 34,500 | 19,100 | 5,650 | 5,900 |
| 10 | 7,740 | 9,360 | 16,100 | | - | 33,400 | 38,400 | 39,700 | 34,000 | 18,600 | 5,560 | e5,880 |
| 11 | 7,650 | 9,570 | 16,300 | | - | 33,600 | 38,400 | 39,100 | 33,500 | 18,200 | 5,390 | 5,820 |
| 12 | 7,530 | 9,750 | 16,500 | | - | 33,600 | 38,400 | 38,400 | 32,700 | 17,700 | 5,320 | 5,920 |
| 13 | 7,390 | 9,920 | 16,800 | | - | 33,800 | 38,600 | 37,800 | 32,100 | 17,300 | 5,230 | 6,020 |
| 14 | 7,270 | 10,000 | 17,100 | | - | 34,000 | 38,700 | 37,200 | 31,400 | 16,700 | 5,210 | 6,100 |
| 15 | 7,160 | 10,100 | 17,300 | | - | 34,400 | 38,900 | 36,500 | 30,500 | 16,100 | 5,190 | e6,180 |
| 16 | 7,070 | 10,500 | 17,600 | | - | 34,500 | 39,100 | 36,100 | 29,500 | 15,300 | 5,160 | e6,180 |
| 17 | 6,910 | 10,700 | 17,800 | | - | 34,600 | 39,300 | 36,000 | 29,000 | 14,800 | 5,120 | 6,180 |
| 18 | 6,800 | 10,900 | 18,100 | | - | 35,000 | 39,600 | 35,400 | 28,300 | 14,100 | 5,080 | 6,330 |
| 19 | 6,770 | 11,100 | 18,300 | | - | 35,400 | 39,700 | 34,800 | 27,800 | 13,300 | 5,030 | 6,250 |
| 20 | 6,770 | 11,300 | 18,500 | | - | 35,600 | 39,900 | 34,600 | 27,400 | 12,800 | 5,010 | 6,300 |
| 21 | 6,800 | 11,500 | - | | - | 35,700 | 40,200 | 34,800 | 26,800 | 12,300 | 4,990 | 6,330 |
| 22 | 6,830 | 11,700 | - | | - | 35,900 | 40,500 | 35,000 | 26,000 | 11,600 | 4,940 | 6,330 |
| 23 | 6,860 | 12,000 | - | | - | 36,200 | 40,900 | 35,000 | 25,700 | 11,000 | 5,010 | 6,330 |
| 24 | 6,800 | 12,200 | - | | - | 36,500 | 41,100 | 35,000 | 24,900 | 10,300 | 5,030 | 6,280 |
| 25 | 6,960 | 12,400 | - | | 31,700 | 36,600 | 41,500 | 35,200 | 24,200 | 9,780 | e5,120 | 6,280 |
| 26 | 6,960 | 12,600 | - | | 31,800 | 36,600 | 42,000 | 35,300 | 23,700 | 9,360 | 5,190 | 6,300 |
| 27 | 7,100 | 12,900 | - | | 32,000 | 36,900 | 42,400 | 35,400 | 23,500 | 8,750 | 5,250 | 6,000 |
| 28 | 7,130 | 13,000 | - | | 32,200 | 36,900 | 42,900 | 35,400 | 23,100 | 8,520 | 5,250 | 5,700 |
| 29 | 7,240 | 13,200 | - | | - | 37,100 | 43,200 | 35,200 | 22,400 | 8,050 | 5,370 | 5,480 |
| 30 | 7,390 | 13,500 | h20,900 | | - | 37,200 | 43,200 | 35,000 | 22,400 | 7,680 | 5,460 | 5,370 |
| 31 | 7,470 | - | a21,000 | h27,100 | - | 37,300 | - | 34,800 | - | 7,390 | 5,530 | - |

a No gage-height record; contents interpolated.
e Gage height affected by wind; contents computed on basis of partial day gage height not affected by wind.
h Contents computed from staff-gage reading at supplemental gage; pumps not operating.

Monthly gage height and contents, water year October 1948 to September 1949

| Date | Gage height (feet)† | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept. 30 | 1.86 | 7,750 | - |
| Oct. 31 | 1.81 | 7,590 | -160 |
| Nov. 30 | 3.45 | 13,600 | +6,010 |
| Dec. 31 | - | a21,000 | +7,400 |
| Calendar year 1948 | - | - | -3,800 |
| Jan. 31 | h6.09 | 27,100 | +6,100 |
| Feb. 28 | 6.92 | 32,300 | +5,200 |
| Mar. 31 | 7.68 | 37,300 | +5,000 |
| Apr. 30 | 8.52 | 43,200 | +5,900 |
| May 31 | 7.32 | 34,900 | -8,300 |
| June 30 | 5.23 | 22,300 | -12,600 |
| July 31 | 1.71 | 7,300 | -15,000 |
| Aug. 31 | 1.03 | 5,530 | -1,770 |
| Sept. 30 | .94 | 5,320 | -210 |
| Water year 1948-49 | - | - | -2,430 |

a No gage-height record; contents interpolated.
† Gage height at 12 p.m.
h Staff-gage reading at supplemental gage; pumps not operating.

## Camas Creek at Eighteenmile shearing corral, near Kilgore, Idaho

Location.--Water-stage recorder, lat. 44°18', long. 111°52', in sec. 7, T. 11 N., R. 39 E., at bridge on county road at Eighteenmile shearing corral, just downstream from West Camas Creek, 7 miles south of Kilgore, and 18½ miles northeast of Dubois.

Drainage area.--210 square miles.

Records available.--May 1937 to September 1949 (no winter records prior to 1947).

Extremes.--Maximum discharge during year, 828 second-feet Apr. 21 (gage height, 4.46 feet); no flow for short periods in February.
1937-49: Maximum discharge, 1,340 second-feet Apr. 21, 1946 (gage height, 6.08 feet), from rating curve extended above 500 second-feet; no flow for short periods in February 1949.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions above and below station for irrigation and stock water.

Cooperation.--Water-stage recorder inspected occasionally by Water District No. 66.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 18 | 29 | | | | | 20 | 315 | 136 | 24 | 14 | 13 |
| 2 | 18 | 41 | | | | | 25 | 253 | 150 | 23 | 14 | 12 |
| 3 | 18 | 48 | | | | | 30 | 186 | 170 | 23 | 13 | 12 |
| 4 | 20 | 37 | | | | | 40 | 174 | 145 | 23 | 13 | 13 |
| 5 | 22 | 34 | | | | | 45 | 154 | 130 | 24 | 15 | 13 |
| | | | | | | 3 | | | | | | |
| 6 | 23 | 32 | | | | | 60 | 120 | 115 | 23 | 11 | 14 |
| 7 | 23 | 30 | | | | | 75 | 110 | 108 | 22 | 11 | 14 |
| 8 | 23 | 29 | 25 | | | | 100 | 107 | 102 | 22 | 10 | 14 |
| 9 | 22 | 29 | | | | | 150 | 110 | 97 | 22 | 10 | 13 |
| 10 | 23 | 32 | | | | | 250 | 115 | 90 | 18 | 12 | 12 |
| 11 | 22 | 34 | | | | | 250 | 123 | 78 | 18 | 12 | 14 |
| 12 | 22 | 34 | | | | | 280 | 131 | 73 | 18 | 12 | 15 |
| 13 | 22 | 34 | | | | | 250 | 143 | 67 | 18 | 11 | 15 |
| 14 | 23 | 32 | | | | | 200 | 151 | 58 | 16 | 12 | 14 |
| 15 | 23 | 34 | | | | | 180 | 160 | 52 | 15 | 13 | 14 |
| | | | | 10 | 2 | 5 | | | | | | |
| 16 | 24 | | | | | | 210 | 168 | 46 | 12 | 14 | 13 |
| 17 | 24 | | (*) | | | | 230 | 210 | 45 | 12 | 14 | 14 |
| 18 | 24 | | | | | | *f294 | 288 | 45 | 13 | 14 | 15 |
| 19 | 24 | | | | | | 402 | 272 | 46 | 12 | 13 | 15 |
| 20 | 26 | | | | | | 547 | 346 | 48 | 12 | 13 | 15 |
| 21 | 26 | | | | | | 607 | 384 | 43 | 13 | 13 | 15 |
| 22 | 26 | 30 | | | | | 559 | 489 | 37 | 14 | 12 | 15 |
| 23 | 26 | | | | | | 598 | 483 | 34 | 15 | 14 | 15 |
| 24 | 24 | | 20 | | (*) | | 518 | f359 | 35 | 14 | 15 | 15 |
| 25 | 26 | | | | | | 380 | h284 | 32 | 13 | 15 | 15 |
| | | | | | | 10 | | | | | | |
| 26 | *26 | | | | | | 322 | 200 | 29 | 15 | 14 | 15 |
| 27 | 26 | | | | | | 275 | 170 | 28 | 17 | 15 | 15 |
| 28 | 26 | | | | | | 238 | 150 | 26 | 15 | 14 | 15 |
| 29 | 26 | | | | - | | 244 | 140 | 28 | 15 | 13 | 15 |
| 30 | 26 | | | | - | | 340 | 135 | 28 | 14 | 13 | 16 |
| 31 | 26 | - | | | - | | - | 135 | - | 14 | 13 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 728 | 26 | 18 | 23.5 | 1,440 |
| November | 959 | 48 | - | 32.0 | 1,900 |
| December | 695 | - | - | 22.4 | 1,380 |
| Calendar year 1948 | 22,109 | 500 | - | 60.4 | 43,840 |
| January | 310 | - | - | 10 | 615 |
| February | 56 | - | - | 2 | 111 |
| March | 190 | - | - | 6.1 | 377 |
| April | 7,719 | 607 | 20 | 257 | 15,310 |
| May | 6,565 | 489 | 107 | 212 | 13,020 |
| June | 2,121 | 170 | 26 | 70.7 | 4,210 |
| July | 529 | 24 | 12 | 17.1 | 1,050 |
| August | 402 | 15 | 10 | 13.0 | 797 |
| September | 425 | 16 | 12 | 14.2 | 843 |
| Water year 1948-49 | 20,699 | 607 | - | 56.7 | 41,050 |

* Winter discharge measurement or observation of no flow made on this day.
f Computed on basis of partly estimated gage-height record.
h Computed from staff-gage reading.

Note.--Stage-discharge relation affected by ice Nov. 6-9, about Nov. 20 to about Apr. 15. No gage-height record Nov. 16 to Dec. 17, Dec. 22 to Mar. 26, Apr. 14-17, May 26 to June 8; discharge computed on basis of weather records, 1 discharge measurement, 1 observation of no flow, and records from other streams in Mud Lake Basin.

## Camas Creek at Camas, Idaho

Location.--Water-stage recorder, lat. 44°00', long. 112°13', in E½SE¼ sec. 21, T. 8 N., R. 36 E., 350 feet upstream from Oregon Short Line Railroad bridge at Camas and half a mile upstream from Beaver Creek.

Records available.--April 1925 to September 1949.

Average discharge.--23 years (1926-49), 24.2 second-feet.

Extremes.--Maximum discharge during year, 470 second-feet Apr. 24 (gage height, 4.60 feet); no flow for long periods.
1925-49: Maximum discharge, 900 second-feet probably May 3, 1938 (gage height, 3.98 feet, datum then in use, from floodmark), from rating curve extended above 400 second-feet; no flow June 1-7, 1926, and many periods during 1930-49.

Remarks.--Records good except those below 10 second-feet, which are fair, and those for periods of ice effect or no gage-height record, which are poor. Diversions above and below station for irrigation and stock water.

Cooperation.--Gage-height record collected in cooperation with Water District No. 66 and five winter field estimates furnished by that district.

Revisions (water years).--W 813: 1935. W 1123: 1947.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.7 | 8.3 | | | | | 10 | 211 | 71 | 8.3 | | |
| 2 | 3.2 | 9.3 | | | | | 13 | f175 | 87 | 8.3 | | |
| 3 | 3.2 | 14 | | | (*) | | 16 | f140 | 99 | 5.3 | | |
| 4 | 2.7 | 25 | | | | | 20 | f109 | 82 | 5.3 | | |
| 5 | 2.9 | 20 | | | | | 25 | f95 | 68 | 4.0 | | |
| 6 | 3.2 | 18 | | | | | 30 | f88 | 58 | 1.6 | | |
| 7 | 4.5 | 14 | | | | | 35 | 69 | 49 | 1.6 | | |
| 8 | 5.6 | 13 | (*) | | | | 50 | 62 | 44 | .9 | | |
| 9 | 4.9 | 12 | 12 | | | | 80 | 61 | 40 | .5 | | |
| 10 | 4.9 | 15 | | | | | 140 | 61 | 38 | 0 | | |
| 11 | 4.5 | 18 | | | | | 130 | 61 | 36 | 2.6 | | |
| 12 | 4.5 | 19 | | | | | 150 | 59 | 34 | 2.4 | | |
| 13 | 4.2 | 19 | | | | | 140 | 58 | 34 | 2.2 | | |
| 14 | 4.0 | 19 | | | | | h129 | 60 | 36 | .8 | | |
| 15 | 3.7 | 17 | | 5 | 0 | (†) | h112 | 61 | 33 | .3 | | |
| 16 | 4.0 | 15 | | | | 3 | 147 | 66 | 28 | 0 | | |
| 17 | 3.8 | 13 | | | | | 158 | 71 | 25 | 0 | | |
| 18 | 3.7 | 14 | | | | | 192 | f94 | 23 | 0 | | |
| 19 | 3.7 | 15 | | | | | f258 | 124 | 23 | 0 | | |
| 20 | 3.8 | 16 | | | | | 320 | 124 | 22 | 0 | | |
| 21 | 4.0 | 15 | | | | | 402 | 185 | 24 | 0 | | |
| 22 | 3.8 | 17 | | | | | 388 | 205 | 22 | 0 | | |
| 23 | 4.0 | 17 | 10 | | | | 378 | 270 | 18 | 0 | | |
| 24 | 4.0 | 16 | | | | | 385 | 244 | 16 | 0 | | |
| 25 | 4.0 | 15 | | | | | 336 | 168 | 15 | 0 | | |
| 26 | 4.0 | 14 | | | | | 235 | 124 | 14 | 0 | | |
| 27 | 2.7 | 13 | | | | | f196 | 101 | f12 | 0 | | |
| 28 | 4.2 | 15 | | | (†) | | 220 | 91 | 12 | .3 | | |
| 29 | 4.0 | 14 | | | - | | 230 | 83 | 10 | 0 | | |
| 30 | 6.8 | 14 | | | - | | 250 | 77 | 8.3 | 0 | | |
| 31 | 7.9 | - | (†) | (†) | - | (†) | - | 71 | - | 0 | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 128.1 | 7.9 | 2.7 | 4.13 | 254 |
| November | 463.6 | 25 | 8.3 | 15.5 | 920 |
| December | 340 | - | - | 11.0 | 674 |
| Calendar year 1948 | 12,449.2 | 402 | 0 | 34.0 | 24,700 |
| January | 155 | - | - | 5 | 307 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 93.0 | - | - | 3 | 184 |
| April | 5,175 | 402 | 10 | 172 | 10,260 |
| May | 3,468 | 270 | 58 | 112 | 6,880 |
| June | 1,081.3 | 99 | 8.3 | 36.0 | 2,140 |
| July | 44.4 | 8.3 | 0 | 1.43 | 88 |
| August | 0 | 0 | 0 | 0 | 0 |
| September | 0 | 0 | 0 | 0 | 0 |
| Water year 1948-49 | 10,948.4 | 402 | 0 | 30.0 | 21,710 |

* Winter discharge measurement or field observation of no flow made on this day.
† Field estimate by watermaster for Water District No. 66 made on this day.
f Computed on basis of partly estimated gage-height record.
h Computed on basis of staff-gage reading.
Note.--Stage-discharge relation affected by ice Nov. 6-13, Nov. 16 to about Apr. 5. No gage-height record Oct. 17-26, Nov. 23 to Apr. 13, Apr. 28-30 except staff-gage readings Nov. 30, Dec. 8; discharge computed on basis of weather records, 5 field estimates, 1 winter discharge measurement, 1 field observation of no flow, and records for other stations in Mud Lake Basin.

## Beaver Creek at Spencer, Idaho

Location.--Staff gage, lat. 44°21', long. 112°11', in NE¼ sec. 23, T. 12 N., R. 36 E., at highway bridge, 0.4 mile southeast of Spencer post office and 2½ miles upstream from Rattlesnake Creek.

Drainage area.--120 square miles.

Records available.--October 1940 to September 1949 (no winter records 1942-49).

Extremes.--Maximum discharge observed during year, 238 second-feet May 22 (gage height, 4.02 feet); minimum discharge observed, 1.3 second-feet Sept. 2-6 (gage height, 1.38 feet).

1940-49: Maximum discharge observed, 408 second-feet Apr. 13, 1942, from rating curve extended above 140 second-feet; maximum gage height observed, 5.95 feet Mar. 30, 1943 (ice jam); minimum discharge observed, 0.5 second-foot Jan. 26, 1942, Feb. 22, 1944.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. Gage read twice daily. Several ranch diversions above station.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-22)

| | | | | | |
|---|---|---|---|---|---|
| 1.3 | 0.5 | 1.8 | 12 | 2.9 | 96 |
| 1.4 | 1.5 | 2.0 | 20 | 3.2 | 131 |
| 1.5 | 3.1 | 2.2 | 32 | 3.5 | 168 |
| 1.6 | 5.6 | 2.4 | 46 | 4.0 | 235 |
| 1.7 | 8.7 | 2.6 | 64 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14 | 26 | | | | - | 31 | 103 | 90 | 12 | 6.8 | 1.5 |
| 2 | 14 | 46 | | | | - | 32 | 96 | 93 | 12 | 6.8 | 1.4 |
| 3 | 14 | 38 | | | | - | 32 | 74 | 87 | 20 | 6.5 | 1.3 |
| 4 | 15 | b30 | | | | - | 32 | 60 | 74 | 20 | 6.8 | 1.4 |
| 5 | 16 | b25 | | | | - | 40 | 56 | 60 | 20 | 5.1 | 1.3 |
| 6 | 17 | b23 | | | | - | 56 | 52 | 56 | 20 | 4.8 | 2.1 |
| 7 | 18 | b21 | | | | - | 70 | 47 | 51 | 14 | 5.1 | 4.6 |
| 8 | 18 | b19 | | | | - | 95 | 47 | 52 | 12 | 4.6 | 4.8 |
| 9 | 16 | b17 | | | | - | 153 | 46 | 51 | 12 | 3.6 | 4.8 |
| 10 | 16 | b18 | | | | - | 188 | 46 | 42 | 13 | 3.4 | 5.1 |
| 11 | 17 | b19 | | | | - | 168 | 46 | 38 | 13 | 3.6 | 7.8 |
| 12 | 17 | 20 | | | | - | 224 | 46 | 38 | 15 | 3.6 | 5.4 |
| 13 | 17 | 20 | | | | - | 168 | 46 | 35 | 20 | 3.4 | 5.1 |
| 14 | 17 | 20 | | | | - | 125 | 46 | 32 | 16 | 3.4 | 5.1 |
| 15 | 16 | 20 | | | | - | 95 | 46 | 27 | 12 | 3.1 | 5.1 |
| 16 | 15 | b19 | | | | - | 105 | 64 | 26 | 12 | 2.5 | 3.8 |
| 17 | 15 | b18 | | | | - | 138 | 178 | 26 | 12 | 2.0 | 4.8 |
| 18 | 15 | b17 | | | | - | 154 | 143 | 25 | 12 | 1.8 | 5.4 |
| 19 | 16 | b17 | | | | - | 156 | 107 | 25 | 11 | 1.7 | 4.8 |
| 20 | 18 | b17 | | | | - | 168 | 129 | 23 | 11 | 2.1 | 4.8 |
| 21 | 18 | } | | | | - | 143 | 168 | 20 | 12 | 2.1 | 4.1 |
| 22 | 18 | | | | | - | 100 | 229 | 20 | 7.5 | 2.6 | 3.8 |
| 23 | 18 | } a17 | | | | - | 109 | 137 | 20 | 6.2 | 3.4 | 5.1 |
| 24 | 18 | | | | | - | 124 | 99 | 18 | 5.6 | 4.1 | 5.1 |
| 25 | 18 | } | | | | - | 109 | 92 | 18 | 5.6 | 3.4 | 5.1 |
| 26 | 18 | } | | | | - | 98 | 80 | 18 | 6.2 | 3.4 | 5.1 |
| 27 | *18 | | | | | 20 | 84 | 74 | 16 | 9.4 | 2.9 | 5.1 |
| 28 | 20 | } a15 | | | | 18 | 80 | 74 | 13 | 8.4 | 2.6 | 5.1 |
| 29 | 20 | | | | | 23 | 94 | 74 | 12 | 6.2 | 2.3 | 5.9 |
| 30 | 20 | } | | | | 29 | 119 | 64 | 12 | 6.5 | 2.0 | 8.1 |
| 31 | 20 | - | | | | 32 | - | 70 | - | 6.5 | 1.5 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 527 | 20 | 14 | 17.0 | 1,050 |
| November | 610 | 46 | - | 20.3 | 1,210 |
| December | - | - | - | - | - |
| Calendar year | - | - | - | - | - |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March 27-31 | 122 | 32 | 18 | 24.4 | 242 |
| April | 3,290 | 224 | 31 | 110 | 6,530 |
| May | 2,639 | 229 | 46 | 85.1 | 5,230 |
| June | 1,118 | 93 | 12 | 37.3 | 2,220 |
| July | 369.1 | 20 | 5.6 | 11.9 | 732 |
| August | 111.0 | 6.8 | 1.5 | 3.58 | 220 |
| September | 132.9 | 8.1 | 1.3 | 4.43 | 264 |
| Water year | - | - | - | - | - |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for station at Dubois.
b Stage-discharge relation affected by ice.

## Beaver Creek at Dubois, Idaho

Location.--Water-stage recorder, lat. 44°11', long. 112°14', in NW¼ sec. 21, T. 10 N., R. 36 E., half a mile north of Dubois.

Drainage area.--220 square miles.

Records available.--April 1921 to September 1949.

Average discharge.--22 years (1921-24, 1928-29, 1931-49), 16.7 second-feet.

Extremes.--Maximum discharge recorded during year, 213 second-feet May 22 (gage height, 2.27 feet); no flow for long periods.
1921-49: Maximum discharge, 858 second-feet Apr. 7, 1930; maximum gage height, about 6.5 feet May 16, 1926; no flow during long periods.

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

Cooperation.--Five field estimates furnished and water-stage recorder inspected by Water District No. 66.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.8 | 9.5 | | | | | 12 | 81 | 65 | 5.3 | | |
| 2 | 7.8 | 19 | | | | | 14 | 59 | 71 | 4.9 | | |
| 3 | 7.4 | 23 | | | | | 17 | 50 | 59 | 4.2 | | |
| 4 | 6.7 | 17 | | | | | 22 | 48 | 53 | 4.5 | | |
| 5 | 12 | 8.5 | | | | | 30 | 41 | 43 | 11 | | |
| 6 | 14 | 7.0 | | | | | 45 | 37 | 39 | 9.7 | | |
| 7 | 12 | 5.9 | | | | | 55 | 35 | 36 | 10 | | |
| 8 | 11 | 4.8 | *7 | | | 2 | 80 | 34 | 33 | 6.8 | | |
| 9 | 10 | 3.5 | | | | | 130 | 32 | 36 | 5.3 | | |
| 10 | 9.5 | 4.5 | | | | | 170 | 31 | 34 | 5.1 | | |
| 11 | 8.6 | 5.5 | | | | | 160 | 31 | 28 | 6.6 | | |
| 12 | 8.6 | 7.0 | | | | | 200 | 30 | 26 | 5.7 | | |
| 13 | 8.2 | 9.0 | | | | | f156 | 30 | 24 | 6.4 | | |
| 14 | 7.8 | 12 | | | | | 108 | 28 | 21 | 9.1 | | |
| 15 | 7.8 | 12 | | | | (†) | *93 | 31 | 19 | 6.8 | | |
| | | | | 3 | 0 | | | | | | | |
| 16 | 7.8 | 11 | | | | | 103 | 40 | 18 | 5.7 | | |
| 17 | 8.2 | 3.5 | | | | | 106 | 81 | 16 | 4.9 | | |
| 18 | 7.4 | 7.8 | | | | | 122 | 126 | 18 | 4.4 | | |
| 19 | 8.2 | | | | | | 124 | 79 | 18 | 4.0 | | |
| 20 | 8.6 | | | | | | 136 | 95 | 15 | 3.5 | | |
| 21 | 9.0 | | | | | | 116 | 120 | 13 | 2.8 | | |
| 22 | 8.6 | | | | | | 81 | 196 | 11 | 3.3 | | |
| 23 | 9.0 | | | | | | 74 | 130 | 9.4 | 3.3 | | |
| 24 | 9.0 | 8 | 5 | | | 8 | 88 | 90 | 9.4 | 2.1 | | |
| 25 | 9.0 | | | | (*) | | 84 | 69 | 8.2 | .8 | | |
| 26 | 9.0 | | | | | | 68 | 60 | 7.0 | .3 | | |
| 27 | *8.2 | | | | | | 59 | 55 | 6.2 | .1 | | |
| 28 | 9.0 | | | | (†) | | 53 | 52 | 6.2 | 0 | | |
| 29 | 9.0 | | | | - | | 57 | 50 | 6.0 | 0 | | |
| 30 | 10 | | | | - | | 92 | 47 | 5.3 | 0 | | |
| 31 | 10 | - | (†) | (†) | - | (†) | - | 48 | - | 0 | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 279.2 | 14 | 6.7 | 9.01 | 554 |
| November | 266.5 | 23 | 3.5 | 8.88 | 529 |
| December | 185 | - | - | 6.0 | 367 |
| Calendar year 1948 | 9,211.0 | 230 | - | 25.2 | 18,260 |
| January | 93 | - | - | 3 | 184 |
| February | 0 | - | 0 | 0 | 0 |
| March | 158 | - | - | 5.1 | 313 |
| April | 2,655 | 200 | 12 | 88.5 | 5,270 |
| May | 1,936 | 196 | 28 | 62.5 | 3,840 |
| June | 753.7 | 71 | 5.3 | 25.1 | 1,490 |
| July | 136.6 | 11 | 0 | 4.41 | 271 |
| August | 0 | 0 | 0 | 0 | 0 |
| September | 0 | 0 | 0 | 0 | 0 |
| Water year 1948-49 | 6,463.0 | 200 | 0 | 17.7 | 12,820 |

* Winter discharge measurement made on this day.
† Winter field estimate made by watermaster for Water District No. 66 on this day.
f Computed from partly estimated gage-height record.
Note.--Stage-discharge relation affected by ice Nov. 5, 6, about Nov. 20 to about Mar. 31. No gage-height record Nov. 9-14, Nov. 19 to Dec. 7, Dec. 9 to Apr. 12; discharge computed on basis of weather records, 5 field estimates, 2 discharge measurements, and records for Beaver Creek at Spencer and Camas Creek at Camas.

## Beaver Creek at Camas, Idaho

Location.--Staff gage, lat. 44°01', long. 112°14', in NE¼ sec. 21, T. 8 N., R. 36 E., a quarter of a mile northwest of Oregon Short Line Railroad station at Camas and three-eighths of a mile upstream from mouth.

Records available.--April 1921 to September 1949.

Extremes.--Maximum discharge observed during year, 102 second-feet Apr. 13 (gage height, 2.80 feet); no flow most of year.

1921-49: Maximum discharge observed, 163 second-feet Apr. 7, 1930; usually no flow past station except for short period in spring of each year; none passed station during years 1931-36, 1940.

Remarks.--Records good except those below 10 second-feet, which are fair. Gage read twice daily. Flow affected by irrigation diversions above Dubois, about 14 miles above station, and by heavy channel losses below Dubois.

Rating table, water year 1948-49 (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 0.6 | 0.3 | 1.1 | 3.8 | 1.9 | 40 |
| .7 | .6 | 1.2 | 5.6 | 2.3 | 65 |
| .8 | 1.0 | 1.3 | 8.4 | 2.8 | 102 |
| .9 | 1.6 | 1.4 | 12 | | |
| 1.0 | 2.5 | 1.5 | 17 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 0 | 28 | 14 | | | |
| 2 | | | | | | | 0 | 15 | 28 | | | |
| 3 | | | | | | | 0 | 6.4 | 24 | | | |
| 4 | | | | | | | 0 | 2.0 | 18 | | | |
| 5 | | | | | | | 0 | 1.7 | 9.2 | | | |
| 6 | | | | | | | 0 | 0 | 3.0 | | | |
| 7 | | | | | | | 0 | 0 | 0 | | | |
| 8 | | | | | | | 0 | 0 | 0 | | | |
| 9 | | | | | | | 14 | 0 | 0 | | | |
| 10 | | | | | | | 39 | 0 | 0 | | | |
| 11 | | | | | | | 50 | 0 | 0 | | | |
| 12 | | | | | | | 76 | 0 | 0 | | | |
| 13 | | | | | | | 100 | 0 | 0 | | | |
| 14 | | | | | | | 82 | 0 | 0 | | | |
| 15 | | | | | | | 59 | 0 | 0 | | | |
| 16 | | | | | | | 56 | 0 | 0 | | | |
| 17 | | | | | | | 55 | 0 | 0 | | | |
| 18 | | | | | | | 58 | 22 | 0 | | | |
| 19 | | | | | | | 61 | 25 | 0 | | | |
| 20 | | | | | | | 62 | 27 | 0 | | | |
| 21 | | | | | | | 65 | 37 | 0 | | | |
| 22 | | | | | | | 43 | 78 | 0 | | | |
| 23 | | | | | | | 31 | 85 | 0 | | | |
| 24 | | | | | | | 33 | 47 | 0 | | | |
| 25 | | | | | | | 34 | 32 | 0 | | | |
| 26 | | | | | | | 24 | 28 | 0 | | | |
| 27 | | | | | | | 14 | 21 | 0 | | | |
| 28 | | | | | | | 7.0 | 7.6 | 0 | | | |
| 29 | | | | | | | 5.4 | 5.9 | 0 | | | |
| 30 | | | | | | | 11 | 5.9 | 0 | | | |
| 31 | | | | | | | - | 4.0 | - | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 0 | 0 | 0 | 0 | 0 |
| November | 0 | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 2,417.6 | 122 | 0 | 6.61 | 4,795 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 979.4 | 100 | 0 | 32.6 | 1,940 |
| May | 478.5 | 85 | 0 | 15.4 | 949 |
| June | 96.2 | 28 | 0 | 3.21 | 191 |
| July | 0 | 0 | 0 | 0 | 0 |
| August | 0 | 0 | 0 | 0 | 0 |
| September | 0 | 0 | 0 | 0 | 0 |
| Water year 1948-49 | 1,554.1 | 100 | 0 | 4.26 | 3,080 |

## Medicine Lodge Creek at Ellis Ranch, near Argora, Idaho

Location.--Water-stage recorder, lat. 44°17', long. 112°30', in sec. 7, T. 11 N., R. 34 E., 4 miles upstream from Middle Creek, 6½ miles southeast of Argora, and 17 miles northwest of Dubois.

Records available.--October 1940 to September 1949.

Extremes.--Maximum discharge during year, 85 second-feet May 21 (gage height, 2.58 feet); minimum, 13 second-feet Nov. 27 (gage height, 1.17 feet).
1940-49: Maximum discharge, 229 second-feet June 9, 1944 (gage height, 4.23 feet), from rating curve extended above 120 second-feet by logarithmic plotting; minimum, 9 second-feet Dec. 12, 1940.

Remarks.--Records good except those for periods of ice effect, which are poor. Several diversions above and below station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 46 | 38 | 21 | 44 | 40 | 41 | 41 | 61 | 63 | 60 | 44 | 38 |
| 2 | 46 | 40 | 21 | 42 | *41 | 41 | 41 | 59 | 59 | 59 | 44 | 37 |
| 3 | 46 | 37 | 23 | 27 | 42 | 41 | 44 | 58 | 56 | 59 | 44 | 38 |
| 4 | 46 | 35 | 28 | b24 | 43 | 41 | 44 | 58 | 52 | 63 | 43 | 38 |
| 5 | 46 | 35 | 22 | b21 | 42 | 41 | 44 | 58 | 51 | 63 | 43 | 39 |
| 6 | 45 | 35 | 23 | b22 | 43 | 41 | 44 | 57 | 52 | 63 | 43 | 40 |
| 7 | 43 | 33 | 22 | b24 | 43 | 41 | 45 | 56 | 56 | 58 | 42 | 39 |
| 8 | 44 | 28 | *21 | b23 | 43 | 41 | 41 | 54 | 58 | 57 | 41 | 39 |
| 9 | 44 | 26 | 20 | b21 | 43 | 41 | 38 | 54 | 58 | 56 | 42 | 39 |
| 10 | 43 | 30 | 21 | b19 | 44 | 41 | 37 | 54 | 58 | 56 | 44 | 39 |
| 11 | 43 | 35 | 23 | b22 | 44 | 41 | 37 | 56 | 60 | 55 | 42 | 39 |
| 12 | 43 | 42 | 33 | b27 | 32 | 41 | 36 | 56 | 61 | 56 | 41 | 39 |
| 13 | 43 | 43 | 50 | 34 | 23 | 41 | 34 | 55 | 60 | 56 | 41 | 39 |
| 14 | 43 | 43 | 60 | 36 | 26 | 41 | 33 | 56 | 64 | 54 | 40 | 38 |
| 15 | 43 | 43 | 50 | b34 | 31 | 41 | 34 | 58 | 63 | 53 | 39 | 38 |
| 16 | 43 | 43 | 34 | b28 | 35 | 42 | 33 | 61 | 63 | 52 | 39 | 37 |
| 17 | 43 | 43 | 26 | b24 | 38 | 42 | 34 | 66 | 66 | 52 | 39 | 38 |
| 18 | 43 | 35 | 21 | b21 | 45 | 42 | 33 | 65 | 67 | 52 | 40 | 38 |
| 19 | 43 | 39 | 21 | b23 | 48 | 44 | 32 | 65 | 66 | 50 | 40 | 38 |
| 20 | 43 | 41 | 23 | b24 | 44 | 46 | 30 | 63 | 65 | 50 | 40 | 37 |
| 21 | 43 | 45 | 23 | b24 | 42 | 44 | 30 | 75 | 64 | 51 | 39 | 37 |
| 22 | 41 | 45 | 20 | b24 | 41 | 42 | 29 | 65 | 63 | 50 | 39 | 37 |
| 23 | 37 | 44 | 19 | b24 | 41 | 42 | 29 | 64 | 63 | 48 | 39 | 37 |
| 24 | 37 | 45 | 19 | b20 | 41 | 41 | 36 | 63 | 61 | 48 | 41 | 37 |
| 25 | 36 | 41 | 19 | b22 | 41 | 41 | 48 | 63 | 59 | 48 | 40 | 37 |
| 26 | 37 | 42 | 20 | b23 | 41 | 41 | 48 | 63 | 60 | 47 | 39 | 37 |
| 27 | 38 | 20 | 21 | b28 | 41 | 41 | 62 | 63 | 60 | 47 | 39 | 37 |
| 28 | 37 | 30 | 22 | 35 | 41 | 40 | 62 | 64 | 58 | 46 | 38 | 37 |
| 29 | 35 | 28 | 26 | 37 | - | 39 | 63 | 65 | 57 | 46 | 38 | 37 |
| 30 | 35 | 24 | 35 | 39 | - | 40 | 64 | 65 | 61 | 45 | 38 | 40 |
| 31 | 36 | - | 41 | 39 | - | 41 | - | 65 | - | 45 | 38 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,291 | 46 | 35 | 41.6 | 2,560 |
| November | 1,106 | 45 | 20 | 36.9 | 2,190 |
| December | 828 | 60 | 19 | 26.7 | 1,640 |
| Calendar year 1948 | 16,367 | 71 | 16 | 44.7 | 32,450 |
| January | 855 | 44 | 19 | 27.6 | 1,700 |
| February | 1,119 | 48 | 23 | 40.0 | 2,220 |
| March | 1,283 | 46 | 39 | 41.4 | 2,540 |
| April | 1,226 | 64 | 29 | 40.9 | 2,430 |
| May | 1,885 | 75 | 54 | 60.8 | 3,740 |
| June | 1,804 | 67 | 51 | 60.1 | 3,580 |
| July | 1,645 | 63 | 45 | 53.1 | 3,260 |
| August | 1,259 | 44 | 38 | 40.6 | 2,500 |
| September | 1,140 | 40 | 37 | 38.0 | 2,260 |
| Water year 1948-49 | 15,441 | 75 | 19 | 42.3 | 30,620 |

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

## Medicine Lodge Creek near Small, Idaho

Location.--Water-stage recorder, lat. 44°16', long. 112°25', in NW¼ sec. 25, T. 11 N., R. 34 E., 400 feet west of H. W. Small's ranch house, 1 mile downstream from Indian Creek, 4 miles northwest of Small, and 11 miles northwest of Dubois.

Drainage area.--270 square miles.

Records available.--April 1921 to December 1923, October 1940 to February 1949 (discontinued).

Extremes.--Maximum daily discharge during period October 1948 to February 1949, 65 second-feet Dec. 14; maximum gage height observed, 5.91 feet Feb. 2 (ice jam); minimum daily discharge, 12 second-feet Jan. 9, 10.

1921-23, 1940-49: Maximum discharge recorded, 265 second-feet June 9, 1944, from rating curve extended above 150 second-feet; maximum gage height recorded, 6.49 feet Feb. 13, 1947 (ice jam); minimum discharge observed, 8 second-feet Dec. 14, 1940 (discharge measurement).

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

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 46 | 41 | 20 | 48 | 15 | | | | | | | |
| 2 | 46 | 44 | 19 | 44 | *15 | | | | | | | |
| 3 | 46 | 42 | 20 | 30 | - | | | | | | | |
| 4 | 48 | 40 | 25 | 20 | - | | | | | | | |
| 5 | 48 | 40 | 20 | 13 | - | | | | | | | |
| 6 | 46 | 38 | 20 | 13 | - | | | | | | | |
| 7 | 46 | 36 | 20 | 13 | - | | | | | | | |
| 8 | 48 | 32 | *18 | 13 | - | | | | | | | |
| 9 | 48 | 29 | 18 | 12 | - | | | | | | | |
| 10 | 47 | 34 | 18 | 12 | - | | | | | | | |
| 11 | 47 | 42 | 22 | 14 | - | | | | | | | |
| 12 | 46 | 46 | 30 | 17 | - | | | | | | | |
| 13 | 46 | 46 | 52 | 21 | - | | | | | | | |
| 14 | 46 | 46 | 65 | 30 | - | | | | | | | |
| 15 | 46 | 46 | 54 | 25 | - | | | | | | | |
| 16 | 45 | 46 | 40 | 21 | - | | | | | | | |
| 17 | 45 | 45 | 22 | 18 | - | | | | | | | |
| 18 | 45 | 40 | 19 | 15 | - | | | | | | | |
| 19 | 45 | 42 | 17 | 15 | - | | | | | | | |
| 20 | 44 | 45 | 18 | 15 | - | | | | | | | |
| 21 | 44 | 49 | 19 | 15 | - | | | | | | | |
| 22 | 44 | 50 | 17 | 15 | - | | | | | | | |
| 23 | 38 | 49 | 15 | 15 | - | | | | | | | |
| 24 | 37 | 49 | 14 | 15 | - | | | | | | | |
| 25 | 37 | 47 | 14 | 15 | - | | | | | | | |
| 26 | 37 | 46 | 15 | 15 | - | | | | | | | |
| 27 | 40 | 18 | 16 | 15 | - | | | | | | | |
| 28 | 41 | 27 | 18 | 15 | - | | | | | | | |
| 29 | 38 | 26 | 22 | 15 | - | | | | | | | |
| 30 | 39 | 24 | 30 | 15 | - | | | | | | | |
| 31 | 39 | - | 42 | 15 | - | | | | | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,358 | 48 | 37 | 43.8 | 2,690 |
| November | 1,205 | 50 | 18 | 40.2 | 2,390 |
| December | 759 | 65 | 14 | 24.5 | 1,510 |
| Calendar year 1948 | 18,727 | 103 | 12 | 51.2 | 37,140 |
| January | 574 | 48 | 12 | 18.5 | 1,140 |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | - | - | - | - | - |
| June | - | - | - | - | - |
| July | - | - | - | - | - |
| August | - | - | - | - | - |
| September | - | - | - | - | - |
| Water year | - | - | - | - | - |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 6-11, Nov. 17 to Feb. 2.

## Little Lost River near Howe, Idaho

Location.--Water-stage recorder, lat. 43°53', long. 11°06', in sec. 3, T. 6 N., R. 28 E., a quarter of a mile upstream from diversion dam of Blaine County Investment Co., 6 miles northwest of Berenice, and 7 miles northwest of Howe.

Records available.--April 1921 to September 1949 (no winter records except 1948, 1949).

Extremes.--Maximum discharge during year, 156 second-feet June 3; maximum gage height recorded, 4.45 feet Jan. 1 (ice jam); minimum discharge recorded, 26 second-feet Dec. 17, but may have been less during periods of ice effect or no gage-height record in winter.
1921-49: Maximum discharge, about 450 second-feet Aug. 11, 1936, during cloudburst (gage height, 3.1 feet, datum then in use, from floodmark), from rating curve extended above 100 second-feet; minimum observed, 4.1 second-feet Dec. 12, 1940.

Remarks.--Records good except those for periods of no gage-height record in March and those for periods of ice effect, which are poor. Many diversions above and below station for irrigation.

Cooperation.--Water-stage recorder inspected by Water District No. 9.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 87 | 81 | 50 | | | 35 | 55 | 93 | 154 | 99 | 60 | 56 |
| 2 | 86 | 81 | 50 | | | 35 | 56 | 90 | 154 | 91 | 59 | 58 |
| 3 | 88 | 78 | 45 | | | *h35 | 57 | 90 | 156 | 90 | 56 | 58 |
| 4 | 85 | 76 | 42 | | | 35 | 59 | 90 | 153 | 97 | 56 | 60 |
| 5 | 88 | 68 | 40 | | | 36 | 63 | 90 | 145 | 107 | 57 | 62 |
| 6 | 90 | 63 | 40 | | | 36 | 66 | 89 | 140 | 102 | 57 | 58 |
| 7 | 90 | 62 | 40 | | | 36 | 69 | 88 | 140 | 97 | 56 | 58 |
| 8 | 89 | 52 | 40 | | | 36 | 70 | 90 | 143 | 94 | 55 | 56 |
| 9 | 88 | 44 | 40 | | 30 | 37 | 68 | 97 | 145 | 94 | 57 | 57 |
| 10 | 87 | 52 | 42 | | | 37 | 68 | 103 | 145 | 95 | 67 | 57 |
| 11 | 86 | 56 | 43 | | | 38 | 65 | 107 | 146 | 91 | 65 | 59 |
| 12 | 86 | 64 | 43 | | | 39 | 66 | 113 | 145 | 89 | 60 | 63 |
| 13 | 85 | 70 | 42 | | | 40 | 65 | 120 | 146 | 87 | 59 | 63 |
| 14 | 82 | 82 | 43 | | | 42 | 68 | 126 | 120 | 84 | 60 | 62 |
| 15 | 84 | *93 | 40 | | | 44 | 78 | 134 | 117 | 81 | 59 | 60 |
| 16 | 84 | 89 | 38 | 30 | | f46 | 80 | 138 | 111 | 80 | 58 | 59 |
| 17 | 85 | 88 | 35 | | | 48 | 81 | 143 | 134 | 78 | 59 | 59 |
| 18 | 87 | 65 | 35 | | | 52 | 84 | 146 | 130 | 78 | 58 | 63 |
| 19 | 87 | 57 | 38 | | | 57 | 85 | 146 | 129 | 78 | 58 | 60 |
| 20 | 86 | 57 | *42 | | | 63 | 88 | 147 | 127 | 75 | 58 | 56 |
| 21 | 81 | 57 | | | | 63 | 88 | 149 | 122 | 76 | 56 | 58 |
| 22 | h79 | 56 | | | | 63 | 86 | 149 | 116 | 75 | 56 | 58 |
| 23 | h79 | 55 | | | 35 | 64 | 86 | 150 | 114 | 70 | 56 | 57 |
| 24 | h80 | 60 | | | | 62 | 86 | 150 | 114 | 66 | 60 | 56 |
| 25 | h80 | 58 | | | | 62 | 80 | 150 | 111 | 67 | 64 | 56 |
| 26 | 80 | 54 | 35 | | | 59 | 84 | 150 | 109 | 67 | 62 | 57 |
| 27 | h80 | 52 | | | | 52 | 88 | 150 | 113 | 66 | 58 | 57 |
| 28 | f81 | 50 | | | | 49 | 93 | 152 | 111 | 66 | 55 | 57 |
| 29 | 85 | 50 | | | - | 49 | 97 | 152 | 106 | 66 | 57 | 62 |
| 30 | 84 | 50 | | | - | 51 | 95 | 152 | 102 | 64 | 56 | 64 |
| 31 | 81 | - | | | - | 53 | - | 152 | - | 63 | 56 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 2,618 | 90 | 79 | 84.4 | 5,190 |
| November | 1,920 | 93 | 44 | 64.0 | 3,810 |
| December | 1,213 | 50 | - | 39.1 | 2,410 |
| Calendar year 1948 | 27,464 | 158 | - | 75.0 | 54,480 |
| January | 930 | - | - | 30.0 | 1,840 |
| February | 895 | - | - | 32.0 | 1,780 |
| March | 1,454 | 64 | 35 | 46.9 | 2,880 |
| April | 2,274 | 97 | 55 | 75.8 | 4,510 |
| May | 3,896 | 152 | 88 | 126 | 7,730 |
| June | 3,898 | 156 | 102 | 130 | 7,730 |
| July | 2,533 | 107 | 63 | 81.7 | 5,020 |
| August | 1,810 | 67 | 55 | 58.4 | 3,590 |
| September | 1,766 | 64 | 56 | 58.9 | 3,500 |
| Water year 1948-49 | 25,207 | 156 | - | 69.1 | 49,990 |

* Winter discharge measurement made on this day.
f Computed from partly estimated gage-height record.
h Computed from staff-gage reading.
Note.--Stage-discharge relation affected by ice Nov. 5-9, 18-23, Nov. 27 to Dec. 3, Dec. 5-12, Dec. 15 to about Feb. 28. No gage-height record Oct. 26, Nov. 14, Jan. 3 to Mar. 2, Mar. 4-15; discharge computed on basis of weather records and records for other nearby streams.

## Blaine County Investment Co.'s canal near Howe, Idaho

Location.--Staff gage and Cippoletti weir, lat. 43°53', long. 113°05', in NW¼NW¼ sec. 11, T. 6 N., R. 28 E., 300 yards downstream from head gates and 7 miles northwest of Howe.

Records available.--April 1924 to September 1949 (prior to 1939, irrigation seasons only).

Extremes.--Maximum discharge observed during year, 59 second-feet June 2-4 (gage height, 2.10 feet); no flow during long periods.
1924-49: Maximum discharge observed, 87 second-feet May 24, 25, 1928; no flow during long periods each year.

Remarks.--Records good except those for Apr. 1-11, which are poor. Gage read once daily. Canal diverts water from Little Lost River in sec. 2, T. 6 N., R. 28 E., for irrigation of lands in project of Blaine County Investment Co.

Cooperation.--Gage-readings furnished by Water District No. 9.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.0 | 54 | | | | | | 13 | 58 | 19 | 5.9 | 5.9 |
| 2 | 8.0 | 54 | | | | | | 12 | 59 | 22 | 5.9 | 5.9 |
| 3 | 8.0 | 54 | | | | | | 12 | 59 | 14 | 5.9 | 5.9 |
| 4 | 10 | 54 | | | | | | 12 | 59 | 7.6 | 5.6 | 5.9 |
| 5 | 10 | 54 | | | | | | 12 | 50 | 9.5 | 5.6 | 5.9 |
| 6 | 8.0 | 52 | | | | | a30 | 12 | 47 | 9.5 | 5.6 | 6.2 |
| 7 | 8.0 | 22 | | | | | | 12 | 47 | 9.1 | 5.6 | 5.9 |
| 8 | 9.1 | 0 | | | | | | 12 | 47 | 9.1 | 5.6 | 5.9 |
| 9 | 9.9 | 0 | | | | | | 14 | 47 | 8.7 | 5.6 | 5.9 |
| 10 | 9.9 | 0 | | | | | | 18 | 47 | 8.7 | 6.9 | 5.9 |
| 11 | 9.9 | 0 | | | | | | 21 | 47 | 8.7 | 6.9 | 5.9 |
| 12 | 9.9 | 0 | | | | | 37 | 26 | 47 | 7.6 | 6.9 | 5.9 |
| 13 | 9.9 | 0 | | | | | 45 | 29 | 47 | 7.6 | 6.9 | 5.9 |
| 14 | 9.9 | 0 | | | | | 42 | 29 | 23 | 6.9 | 6.9 | 5.9 |
| 15 | 9.9 | 0 | | | | | 48 | 37 | 23 | 6.9 | 5.5 | 5.9 |
| 16 | 9.9 | 0 | | | | | 46 | 40 | 15 | 6.9 | 0 | 5.9 |
| 17 | 9.9 | 0 | | | | | 26 | 45 | 42 | 6.9 | 1.2 | 5.9 |
| 18 | 13 | 0 | | | | | 22 | 48 | 42 | 6.9 | 6.2 | 5.9 |
| 19 | 13 | 0 | | | | | 21 | 52 | 42 | 6.9 | 6.2 | 5.9 |
| 20 | 13 | 0 | | | | | 26 | 52 | 34 | 6.9 | 6.2 | 5.9 |
| 21 | 13 | 0 | | | | | 28 | 52 | 34 | 6.9 | 5.9 | 5.9 |
| 22 | 14 | 0 | | | | | 28 | 52 | 24 | 6.9 | 5.9 | 5.9 |
| 23 | 20 | 0 | | | | | 28 | 55 | 24 | 6.9 | 5.9 | 5.9 |
| 24 | 20 | 0 | | | | | 20 | 55 | 24 | 6.2 | 5.9 | 5.9 |
| 25 | 20 | 0 | | | | | 20 | 55 | 17 | 6.2 | 5.9 | 5.9 |
| 26 | a20 | 0 | | | | | 10 | 55 | 17 | 6.2 | 5.9 | 5.9 |
| 27 | 27 | 0 | | | | | 9.9 | 55 | 20 | 6.2 | 5.9 | 5.9 |
| 28 | 34 | 0 | | | | | a9.7 | 55 | 20 | 6.2 | 5.9 | 5.9 |
| 29 | 39 | 0 | | | | | 9.5 | 58 | 19 | 6.2 | 5.9 | 5.9 |
| 30 | 54 | 0 | | | | | 13 | 57 | 19 | 5.9 | 5.9 | 5.9 |
| 31 | 54 | - | | | | | - | 57 | - | 5.9 | 5.9 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 512.2 | 54 | 8.0 | 16.5 | 1,020 |
| November | 344 | 54 | 0 | 11.5 | 682 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 4,751.0 | 62 | 0 | 13.0 | 9,420 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 819.1 | 48 | - | 27.3 | 1,620 |
| May | 1,114 | 58 | 12 | 35.9 | 2,210 |
| June | 1,100 | 59 | 15 | 36.7 | 2,180 |
| July | 259.1 | 22 | 5.9 | 8.36 | 514 |
| August | 176.0 | 6.9 | 0 | 5.68 | 349 |
| September | 177.3 | 6.2 | 5.9 | 5.91 | 352 |
| Water year 1948-49 | 4,501.7 | 59 | 0 | 12.3 | 8,930 |

a No gage-height record; discharge interpolated or computed on basis of weather records and records for preceding years.

## Big Lost River at Wild Horse, near Chilly, Idaho

Location.--Water-stage recorder, lat. 43°56', long. 114°07', in sec. 17, T. 7 N., R. 20 E., a quarter of a mile upstream from East Fork Big Lost River, 2 miles downstream from Wild Horse dam site, and 16 miles southwest of Chilly.

Drainage area.--114 square miles.

Records available.--March 1944 to September 1949.

Extremes.--Maximum discharge during year, 516 second-feet May 18 (gage height, 3.99 feet); minimum observed, 16 second-feet Mar. 17 (gage height, 1.33 feet).
1944-49: Maximum discharge, 876 second-feet June 9, 1948 (gage height, 4.99 feet); minimum recorded, 9 second-feet sometime during period Feb. 4 to Mar. 14, 1947 (from recorded range in stage); minimum gage height recorded, 1.12 feet Mar. 11, 1948.

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

Cooperation.--Water-stage recorder inspected by Water District No. 27.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 46 | 38 | | | | | 19 | 170 | 311 | 131 | 53 | 32 |
| 2 | 46 | 40 | 30 | | | | 20 | 170 | 275 | 137 | 52 | 31 |
| 3 | 45 | 40 | | | | | 21 | 155 | 244 | 139 | 51 | 30 |
| 4 | 49 | 36 | | | | | 22 | 152 | 220 | 148 | 49 | 30 |
| 5 | 52 | 32 | | | | | 25 | 147 | 237 | 154 | 50 | 31 |
| 6 | 50 | 32 | 28 | 20 | 18 | | 30 | 143 | 275 | 145 | 48 | 30 |
| 7 | 49 | 30 | | | | | 35 | 159 | 319 | 137 | 47 | 29 |
| 8 | 47 | 29 | | | | | 35 | 194 | 348 | 128 | 45 | 28 |
| 9 | 46 | 30 | 30 | | | 18 | 37 | 240 | 371 | 126 | 45 | 28 |
| 10 | 46 | 34 | 31 | | | | 40 | 270 | 414 | 122 | 49 | 28 |
| 11 | 45 | 32 | 32 | | | | 50 | 289 | 455 | 118 | 48 | 28 |
| 12 | 44 | 34 | 32 | | | | 55 | 333 | 449 | 113 | 44 | 28 |
| 13 | 43 | 33 | 31 | | 17 | | 50 | 356 | 389 | 110 | 43 | 28 |
| 14 | 43 | 32 | 29 | | | | 45 | 365 | 333 | 105 | 42 | 28 |
| 15 | 46 | 33 | | 21 | | | 48 | 429 | 313 | 102 | 41 | 27 |
| 16 | 43 | | | | | | 58 | 468 | 297 | 99 | 39 | 27 |
| 17 | 41 | | | | | 17 | 72 | 490 | 250 | 95 | 40 | 27 |
| 18 | 41 | | | | | 18 | 104 | 490 | 222 | 88 | 40 | 27 |
| 19 | 40 | | | | | 18 | 131 | 477 | 227 | 82 | 39 | 27 |
| 20 | 40 | | 24 | | | 18 | 132 | 452 | 205 | 78 | 37 | 25 |
| 21 | 39 | | | 20 | | 18 | 122 | 414 | 192 | 74 | 34 | 25 |
| 22 | 38 | | | | 18 | 18 | 124 | 380 | 199 | 72 | 34 | 25 |
| 23 | 37 | 30 | | | | 18 | 145 | 342 | 190 | 69 | 36 | 25 |
| 24 | 37 | | | | | | 168 | 319 | 183 | 68 | 37 | 25 |
| 25 | 37 | | | | | | 181 | 327 | 192 | 65 | 35 | 25 |
| 26 | 36 | | | | | | 179 | 348 | 185 | 62 | 34 | 26 |
| 27 | 37 | | | | | 18 | 188 | 386 | 162 | 60 | 32 | 25 |
| 28 | 36 | | 26 | 19 | | | 213 | 408 | 154 | 58 | 32 | 25 |
| 29 | 36 | | | | - | | 227 | 414 | 147 | 55 | 32 | 28 |
| 30 | 36 | | | | - | | 194 | 377 | 134 | 54 | 33 | 27 |
| 31 | 35 | - | | | - | | - | 339 | - | 54 | 33 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 1,306 | 52 | 35 | 42.1 | 0.369 | 0.43 | 2,590 |
| November | 955 | 40 | - | 31.8 | .279 | .31 | 1,890 |
| December | 837 | - | - | 27.0 | .237 | .27 | 1,660 |
| Calendar year 1948 | 39,370 | 825 | - | 108 | .947 | 12.86 | 78,080 |
| January | 620 | - | - | 20.0 | .175 | .20 | 1,230 |
| February | 499 | - | - | 17.8 | .156 | .16 | 990 |
| March | 557 | - | - | 18.0 | .158 | .18 | 1,100 |
| April | 2,770 | 227 | 19 | 92.3 | .810 | .90 | 5,490 |
| May | 10,003 | 490 | 143 | 323 | 2.83 | 3.26 | 19,840 |
| June | 7,892 | 455 | 134 | 263 | 2.31 | 2.58 | 15,650 |
| July | 3,048 | 154 | 54 | 98.3 | .862 | .99 | 6,050 |
| August | 1,274 | 53 | 32 | 41.1 | .361 | .42 | 2,530 |
| September | 825 | 32 | 25 | 27.5 | .241 | .27 | 1,640 |
| Water year 1948-49 | 30,586 | 490 | - | 83.8 | .735 | 9.97 | 60,660 |

Peak discharge (base, 300 sec.-ft.).--May 18 (4 a.m.) 516 sec.-ft.; May 29 (5 a.m.) 423 sec.-ft.; June 12 (4 a.m.) 481 sec.-ft.

Note.--No gage-height record Nov. 16 to Dec. 8, Dec. 12 to Mar. 16, Mar. 24 to Apr. 13; discharge computed on basis of weather records, records for Warm Springs Creek at Guyer Hot Springs, near Ketchum, and flow during adjacent periods.

## Big Lost River at Howell Ranch, near Chilly, Idaho

Location.--Water-stage recorder, lat. 44°01', long. 114°00', in sec. 30, T. 8 N., R. 21 E., at Howell Ranch, 9 miles southwest of Chilly and 21 miles northwest of Mackay.

Records available.--April 1904 to August 1906, July 1907 to November 1914, May 1920 to September 1949 (no winter records prior to 1949).

Extremes.--Maximum discharge during year, 1,550 second-feet May 16 (gage height, 3.57 feet); minimum not determined, probably occurred during winter.
1904-14, 1920-49: Maximum discharge, 3,500 second-feet June 12, 1921 (gage height, 5.94 feet); minimum observed, 19 second-feet (discharge measurement) Dec. 12, 1939.

Remarks.--Records good except those for Nov. 15 to Apr. 10, which are poor. No regulation. Several small diversions above station. Hammerly ditch (capacity, about 20 second-feet) diverts a quarter of a mile below station.

Cooperation.--Water-stage recorder inspected by Water District No. 27.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 142 | 108 | | | | | | 488 | 849 | 346 | 149 | 100 |
| 2 | 139 | 117 | | | | | | 468 | 762 | 376 | 146 | 98 |
| 3 | 139 | 119 | | | | | | 440 | 666 | 390 | 149 | 96 |
| 4 | 144 | 108 | | | | | | 426 | 606 | 416 | 142 | 96 |
| 5 | 154 | 104 | | 80 | | | | 412 | 660 | 430 | 144 | 102 |
| | | | | | 75 | | 85 | | | | | |
| 6 | 146 | 102 | | | | | | 408 | 762 | 412 | 142 | 96 |
| 7 | 144 | 99 | 95 | | | 70 | | 444 | 870 | 385 | 137 | 94 |
| 8 | 139 | 97 | | | | | | 529 | 989 | 355 | 130 | 89 |
| 9 | 137 | 97 | | | | | | 653 | 1,070 | 342 | 130 | 89 |
| 10 | 135 | 100 | | | | | 120 | 755 | 1,190 | 334 | 139 | 89 |
| 11 | 130 | 103 | | | | | 141 | 788 | 1,310 | 338 | 132 | 89 |
| 12 | 128 | 106 | | 84 | | | 159 | 905 | 1,260 | 318 | 123 | 92 |
| 13 | 123 | 108 | | | 70 | | 140 | 954 | 1,050 | 310 | 119 | 90 |
| 14 | 123 | *110 | | | | | 130 | 961 | 877 | 302 | 115 | 87 |
| 15 | 130 | | | | | | 137 | 1,220 | 842 | 287 | 113 | 85 |
| 16 | 123 | | | | | | 152 | 1,430 | 802 | 275 | 115 | 83 |
| 17 | 119 | | | | | (*) | 186 | 1,450 | 653 | 264 | 113 | 85 |
| 18 | 119 | | | 80 | | 72 | 236 | 1,360 | 578 | 232 | 115 | 85 |
| 19 | 117 | | | | | | 306 | 1,360 | 612 | 216 | 113 | 83 |
| 20 | 113 | | 85 | | | | 318 | 1,250 | 551 | 210 | 106 | 81 |
| | | | | | 74 | | | | | | | |
| 21 | 113 | | | | | | 291 | 1,140 | 509 | 197 | 102 | 79 |
| 22 | 113 | 100 | | | | | 294 | 1,040 | 545 | 189 | 100 | 79 |
| 23 | 110 | | | 78 | | | 355 | 919 | 514 | 189 | 102 | 79 |
| 24 | 108 | | | | | | 416 | 842 | 498 | 186 | 108 | 77 |
| 25 | 106 | | | | | | 478 | 849 | 524 | 186 | 106 | 79 |
| 26 | 104 | | | | | | 473 | 919 | 504 | 172 | 104 | 81 |
| 27 | 106 | | | | 72 | 70 | 498 | 1,040 | 430 | 166 | 102 | 79 |
| 28 | 104 | | 90 | 76 | | | 551 | 1,200 | 403 | 162 | 100 | 79 |
| 29 | 108 | | | | - | | 612 | 1,180 | 398 | 154 | 100 | 92 |
| 30 | 102 | | | | - | | 534 | 1,060 | 359 | 153 | 104 | 90 |
| 31 | 100 | - | | | - | | - | 912 | - | 152 | 102 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 3,818 | 154 | 100 | 123 | 7,570 |
| November | 3,078 | 119 | - | 103 | 6,100 |
| December | 2,805 | - | - | 90.5 | 5,560 |
| Calendar year 1948 | - | - | - | - | - |
| January | 2,470 | - | - | 79.7 | 4,900 |
| February | 2,056 | - | - | 73.4 | 4,080 |
| March | 2,190 | - | - | 70.6 | 4,340 |
| April | 7,292 | 612 | - | 243 | 14,460 |
| May | 27,802 | 1,450 | 408 | 897 | 55,140 |
| June | 21,643 | 1,310 | 359 | 721 | 42,930 |
| July | 8,443 | 430 | 152 | 272 | 16,750 |
| August | 3,702 | 149 | 100 | 119 | 7,340 |
| September | 2,623 | 102 | 77 | 87.4 | 5,200 |
| Water year 1948-49 | 87,922 | 1,450 | - | 241 | 174,400 |

Peak discharge (base, 900 sec.-ft.).--May 16 (6 a.m.) 1,550 sec.-ft.; May 28 (6 a.m.) 1,260 sec.-ft.; June 12 (4 a.m.) 1,430 sec.-ft.

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice during most of period Nov. 6 to Apr. 10. No gage-height record Nov. 7-9, 11-13, Nov. 15 to Mar. 15, Mar. 21 to Apr. 10, Apr. 13; discharge computed on basis of records for station at Wild Horse, near Chilly, weather records, and flow during adjacent periods.

## Big Lost River (east channel) above Mackay Reservoir, near Mackay, Idaho

Location.--Water-stage recorder and concrete control, lat. 43°59', long. 113°45', in sec. 32, T. 8 N., R. 23 E., above flow line of reservoir, 3 miles upstream from Mackay Dam and 7½ miles northwest of Mackay.

Records available.--May 1919 to September 1949.

Average discharge.--30 years, 65.2 second-feet.

Extremes.--Maximum discharge during year, 508 second-feet June 12; maximum gage height, 4.16 feet May 19; no flow Oct. 10 to Jan. 31, Sept. 5-8.
1919-49: Maximum discharge, 1,320 second-feet June 7, 1938; maximum gage height, 5.02 feet July 1, 1944; no flow during long periods in many years.

Remarks.--Records good except those below 10 second-feet, which are fair. Diversions above station for irrigation. The sum of the combined discharge of east and west channels of Big Lost River and of the combined discharge of east and west channels of Warm Spring Creek, near Mackay, represents practically entire surface flow of Big Lost River which enters Mackay Reservoir.

Cooperation.--Water-stage recorder graph furnished by Water District No. 37.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | | | | 1 | 3 | 5 | 3 | c333 | 151 | 26 | 8 |
| 2 | 2 | | | | 1 | 3 | 5 | 3 | c304 | 150 | 24 | 7 |
| 3 | 2 | | | | 1 | 3 | 5 | 3 | c281 | 144 | 22 | 5 |
| 4 | 2 | | | | 1 | 3 | 5 | 3 | c257 | 143 | 19 | 1 |
| 5 | 2 | | | | 1 | 3 | 5 | 2 | c244 | 146 | 19 | 0 |
| 6 | 2 | | | | 1 | 3 | 5 | 2 | c251 | 136 | 17 | 0 |
| 7 | 3 | | | | 1 | 3 | 5 | 2 | c274 | 127 | 16 | 0 |
| 8 | 1 | | | | 1 | 3 | 5 | 2 | c305 | 111 | 15 | 0 |
| 9 | 1 | | | | 1 | 4 | 5 | 1 | 344 | 96 | 16 | 1 |
| 10 | 0 | | | | 1 | 4 | 5 | 10 | 377 | 96 | 18 | 2 |
| 11 | 0 | | | | 2 | 4 | 5 | 46 | 441 | 92 | 17 | 2 |
| 12 | 0 | | | | 2 | 4 | 5 | 84 | 488 | 90 | 16 | 1 |
| 13 | 0 | | | | 2 | 5 | 5 | 136 | 441 | 88 | 16 | 1 |
| 14 | 0 | | | | 2 | 5 | 5 | 179 | 380 | 84 | 16 | 1 |
| 15 | 0 | | | | 2 | 5 | 5 | 259 | 347 | 79 | 16 | 1 |
| 16 | 0 | | | | 2 | 5 | 5 | 359 | 330 | 72 | 15 | 2 |
| 17 | 0 | | | | 2 | 5 | 5 | 418 | 300 | 64 | 14 | 2 |
| 18 | 0 | | | | 2 | 5 | 5 | 437 | 269 | 59 | 10 | 2 |
| 19 | 0 | | | | 2 | 5 | 5 | 452 | 262 | 55 | 8 | 2 |
| 20 | 0 | | | | 2 | 5 | 5 | 444 | 254 | 52 | 8 | 3 |
| 21 | 0 | | | | 3 | 5 | 4 | 407 | 230 | 47 | 9 | 5 |
| 22 | 0 | | | | 3 | 5 | 4 | 377 | 216 | 43 | 10 | 7 |
| 23 | 0 | | | | 3 | 5 | 3 | 339 | 209 | 44 | 9 | 7 |
| 24 | 0 | | | | 3 | 5 | 3 | 292 | 196 | 40 | 7 | 7 |
| 25 | 0 | | | | 3 | 5 | 3 | 277 | 185 | 38 | 9 | 7 |
| 26 | 0 | | | | 3 | 5 | 3 | 290 | 181 | 34 | 8 | 7 |
| 27 | 0 | | | | 3 | 5 | 3 | 317 | 177 | 33 | 8 | 7 |
| 28 | 0 | | | | 3 | 5 | 3 | 368 | 169 | 31 | 9 | 7 |
| 29 | 0 | | | | - | 5 | 3 | c395 | 160 | 31 | 8 | 7 |
| 30 | 0 | | | | - | 5 | 3 | c380 | 162 | 30 | 8 | 8 |
| 31 | 0 | | | | - | 5 | - | c340 | - | 28 | 8 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 18 | 3 | 0 | 0.6 | 36 |
| November | 0 | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 33,580 | 881 | 0 | 91.7 | 66,621 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 54 | 3 | 1 | 1.3 | 107 |
| March | 135 | 5 | 3 | 4.4 | 268 |
| April | 132 | 5 | 3 | 4.4 | 262 |
| May | 6,627 | 452 | 1 | 214 | 13,140 |
| June | 8,367 | 488 | 160 | 279 | 16,600 |
| July | 2,434 | 151 | 28 | 78.5 | 4,830 |
| August | 421 | 26 | 7 | 13.6 | 835 |
| September | 110 | 8 | 0 | 3.7 | 218 |
| Water year 1948-49 | 18,298 | 488 | 0 | 50.1 | 36,300 |

c Backwater from Mackay Reservoir; discharge computed on basis of percentage submergence of control and a standard submerged weir formula corrected on basis of discharge measurements.
Note.--No gage-height record Feb. 1-22; discharge computed on basis of weather records.

## Big Lost River (west channel) above Mackay Reservoir, near Mackay, Idaho

Location.--Water-stage recorder, lat. 43°58', long. 113°45', in sec. 5, T. 7 N., R. 23 E., above flow line of reservoir, 3 miles upstream from Mackay Dam and 7½ miles northwest of Mackay.

Records available.--May 1919 to September 1949.

Average discharge.--30 years, 59.0 second-feet.

Extremes.--Maximum discharge during year, 317 second-feet May 20 (gage height, 3.55 feet); minimum, 35 second-feet Feb. 21 to Mar. 31; minimum gage height, 2.12 feet Apr. 13 to May 8.

1919-49: Maximum discharge, 1,200 second-feet (estimated) sometime during period June 5-16, 1921 (gage height, 4.45 feet, site and datum then in use); minimum, 9 second-feet May 22, 26, 1935.

Remarks.--Records good. Diversions above station for irrigation. The sum of the combined discharge of east and west channels of Big Lost River and the combined discharge of east and west channels of Warm Spring Creek, near Mackay, represents practically the entire surface flow of Big Lost River which enters Mackay Reservoir (see p. 107).

Cooperation.--Water-stage recorder graph furnished by Water District No. 27.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 58 | 54 | 50 | 41 | 38 | 35 | 36 | 36 | 209 | 73 | 47 | 43 |
| 2 | 56 | 54 | 50 | 41 | 38 | 35 | 36 | 36 | 185 | 70 | 47 | 43 |
| 3 | 56 | 54 | 50 | 41 | 38 | 35 | 36 | 36 | 162 | 72 | 46 | 43 |
| 4 | 56 | 54 | 48 | 41 | 38 | 35 | 36 | 36 | 142 | 72 | 46 | 43 |
| 5 | 56 | 54 | 47 | 41 | 38 | 35 | 36 | 36 | 135 | 72 | 46 | 44 |
| 6 | 58 | 54 | 47 | 41 | 38 | 35 | 36 | 36 | 135 | 69 | 46 | 44 |
| 7 | 58 | 54 | 47 | 41 | 38 | 35 | 36 | 36 | 144 | 65 | 46 | 44 |
| 8 | 58 | 54 | 47 | 41 | 38 | 35 | 36 | 36 | 162 | 61 | 46 | 46 |
| 9 | 59 | 54 | 47 | 41 | 38 | 35 | 36 | 38 | 183 | 59 | 47 | 46 |
| 10 | 59 | 54 | 47 | 41 | 38 | 35 | 36 | 40 | 204 | 59 | 48 | 46 |
| 11 | 59 | 53 | 47 | 41 | 36 | 35 | 36 | 46 | 239 | 59 | 47 | 46 |
| 12 | 59 | 53 | 47 | 40 | 36 | 35 | 36 | 52 | 260 | 59 | 47 | 47 |
| 13 | 59 | 53 | 47 | 40 | 36 | 35 | 36 | 77 | 236 | 58 | 48 | 47 |
| 14 | 59 | 52 | 47 | 40 | 36 | 35 | 36 | 112 | 196 | 54 | 48 | 47 |
| 15 | 59 | 52 | 47 | 40 | 36 | 35 | 36 | 137 | 170 | 53 | 48 | 47 |
| 16 | 61 | 52 | 46 | 39 | 36 | 35 | 36 | 189 | 158 | 50 | 47 | 47 |
| 17 | 61 | 52 | 46 | 39 | 36 | 35 | 36 | 246 | 140 | 50 | 47 | 47 |
| 18 | 61 | 52 | 46 | 39 | 36 | 35 | 36 | 275 | 125 | 47 | 47 | 47 |
| 19 | 61 | 52 | 44 | 39 | 36 | 35 | 36 | 287 | 120 | 46 | 47 | 47 |
| 20 | 59 | 52 | 44 | 39 | 36 | 35 | 36 | 297 | 116 | 46 | 46 | 47 |
| 21 | 59 | 52 | 43 | 39 | 35 | 35 | 36 | 263 | 112 | 44 | 46 | 47 |
| 22 | 58 | 52 | 43 | 39 | 35 | 35 | 36 | 246 | 108 | 44 | 44 | 47 |
| 23 | 58 | 52 | 43 | 39 | 35 | 35 | 36 | 209 | 105 | 44 | 43 | 46 |
| 24 | 58 | 52 | 43 | 39 | 35 | 35 | 36 | 170 | 101 | 46 | 43 | 46 |
| 25 | 58 | 52 | 41 | 39 | 35 | 35 | 36 | 152 | 99 | 46 | 43 | 46 |
| 26 | 58 | 52 | 41 | 39 | 35 | 35 | 36 | 150 | 97 | 46 | 43 | 47 |
| 27 | 56 | 52 | 41 | 39 | 35 | 35 | 36 | 172 | 94 | 46 | 43 | 47 |
| 28 | 56 | 52 | 41 | 39 | 35 | 35 | 36 | 218 | 87 | 46 | 43 | 47 |
| 29 | 54 | 52 | 41 | 39 | - | 35 | 36 | 248 | 82 | 46 | 43 | 47 |
| 30 | 54 | 52 | 41 | 39 | - | 35 | 36 | 256 | 77 | 46 | 43 | 47 |
| 31 | 54 | - | 41 | 39 | - | 35 | - | 229 | - | 47 | 43 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,795 | 61 | 54 | 57.9 | 3,560 |
| November | 1,583 | 54 | 52 | 52.8 | 3,140 |
| December | 1,400 | 50 | 41 | 45.2 | 2,780 |
| Calendar year 1948 | 25,355 | 409 | 28 | 69.3 | 50,310 |
| January | 1,235 | 41 | 39 | 39.8 | 2,450 |
| February | 1,020 | 38 | 35 | 36.4 | 2,020 |
| March | 1,085 | 35 | 35 | 35.0 | 2,150 |
| April | 1,080 | 36 | 36 | 36.0 | 2,140 |
| May | 4,397 | 297 | 36 | 142 | 8,720 |
| June | 4,383 | 260 | 77 | 146 | 8,690 |
| July | 1,695 | 73 | 44 | 54.7 | 3,360 |
| August | 1,414 | 48 | 43 | 45.6 | 2,800 |
| September | 1,378 | 47 | 43 | 45.9 | 2,730 |
| Water year 1948-49 | 22,465 | 297 | 35 | 61.5 | 44,540 |

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Combined discharge, in second-feet, of Big Lost River (east and west channels) and Warm Spring Creek (east and west channels) above Mackay Reservoir, near Mackay, Idaho, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 180 | 183 | 174 | 163 | 156 | 151 | 150 | 116 | 757 | 334 | 166 | 143 |
| 2 | 175 | 186 | 174 | 162 | 155 | 151 | 149 | 115 | 690 | 328 | 164 | 144 |
| 3 | 173 | 185 | 174 | 152 | 155 | 151 | 149 | 115 | 628 | 332 | 159 | 142 |
| 4 | 175 | 180 | 173 | 156 | 155 | 151 | 148 | 115 | 569 | 334 | 155 | 140 |
| 5 | 183 | 183 | 172 | 157 | 154 | 151 | 148 | 114 | 539 | 339 | 154 | 140 |
| 6 | 185 | 183 | 173 | 158 | 153 | 151 | 148 | 113 | 547 | 319 | 152 | 141 |
| 7 | 186 | 183 | 173 | 158 | 153 | 151 | 147 | 113 | 589 | 304 | 151 | 140 |
| 8 | 184 | 184 | 172 | 158 | 152 | 152 | 146 | 113 | 651 | 280 | 150 | 143 |
| 9 | 188 | 184 | 171 | 157 | 150 | 153 | 144 | 116 | 726 | 264 | 155 | 145 |
| 10 | 190 | 184 | 171 | 157 | 151 | 152 | 142 | 129 | 796 | 266 | 163 | 145 |
| 11 | 191 | 184 | 171 | 158 | 149 | 152 | 140 | 178 | 921 | 261 | 159 | 147 |
| 12 | 191 | 184 | 171 | 156 | 147 | 153 | 139 | 231 | 1,010 | 257 | 158 | 147 |
| 13 | 190 | 185 | 171 | 156 | 148 | 153 | 135 | 321 | 924 | 253 | 159 | 152 |
| 14 | 191 | 185 | 171 | 157 | 149 | 153 | 130 | 423 | 798 | 242 | 159 | 150 |
| 15 | 191 | 185 | 171 | 157 | 148 | 153 | 130 | 548 | 722 | 233 | 159 | 150 |
| 16 | 194 | 184 | 169 | 156 | 148 | 153 | 130 | 739 | 679 | 221 | 157 | 150 |
| 17 | 193 | 183 | 169 | 156 | 148 | 153 | 129 | 893 | 618 | 210 | 156 | 150 |
| 18 | 192 | 182 | 169 | 156 | 149 | 153 | 127 | 964 | 557 | 200 | 152 | 150 |
| 19 | 192 | 182 | 166 | 155 | 150 | 153 | 123 | 1,010 | 541 | 194 | 150 | 150 |
| 20 | 188 | 182 | 166 | 154 | 150 | 153 | 118 | 1,020 | 528 | 190 | 149 | 152 |
| 21 | 189 | 178 | 165 | 155 | 150 | 151 | 115 | 929 | 492 | 181 | 150 | 154 |
| 22 | 188 | 177 | 163 | 155 | 150 | 151 | 115 | 867 | 469 | 180 | 149 | 155 |
| 23 | 188 | 176 | 164 | 155 | 150 | 151 | 114 | 766 | 457 | 180 | 147 | 153 |
| 24 | 186 | 177 | 164 | 156 | 151 | 151 | 114 | 654 | 435 | 179 | 145 | 153 |
| 25 | 185 | 176 | 162 | 155 | 151 | 151 | 114 | 608 | 419 | 177 | 146 | 154 |
| 26 | 186 | 176 | 163 | 155 | 151 | 151 | 114 | 616 | 414 | 172 | 144 | 157 |
| 27 | 184 | 176 | 164 | 154 | 151 | 151 | 114 | 681 | 404 | 170 | 143 | 156 |
| 28 | 184 | 176 | 164 | 154 | 151 | 151 | 114 | 803 | 382 | 166 | 145 | 156 |
| 29 | 181 | 176 | 163 | 155 | - | 150 | 117 | 886 | 359 | 167 | 144 | 156 |
| 30 | 183 | 176 | 163 | 155 | - | 150 | 116 | 881 | 352 | 166 | 143 | 157 |
| 31 | 182 | - | 163 | 155 | - | 150 | - | 798 | - | 168 | 142 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 5,768 | 194 | 173 | 186 | 11,440 |
| November | 5,435 | 186 | 176 | 181 | 10,780 |
| December | 5,219 | 174 | 162 | 168 | 10,350 |
| Calendar year 1948 | 107,434 | 1,700 | 109 | 294 | 213,100 |
| January | 4,843 | 163 | 152 | 156 | 9,610 |
| February | 4,225 | 156 | 147 | 151 | 8,380 |
| March | 4,701 | 153 | 150 | 152 | 9,320 |
| April | 3,919 | 150 | 114 | 131 | 7,770 |
| May | 15,975 | 1,020 | 113 | 515 | 31,690 |
| June | 17,973 | 1,010 | 352 | 599 | 35,650 |
| July | 7,267 | 339 | 166 | 234 | 14,410 |
| August | 4,725 | 166 | 142 | 152 | 9,370 |
| September | 4,472 | 157 | 140 | 149 | 8,870 |
| Water year 1948-49 | 84,522 | 1,020 | 113 | 232 | 167,600 |

## Mackay Reservoir near Mackay, Idaho

Location.--Staff gage on head-gate tower of dam on Big Lost River, lat. 43°57', long. 113°40', in sec. 12, T. 7 N., R. 23 E., 4 miles northwest of Mackay. Datum of gage is 6,000 feet above mean sea level.

Records available.--January 1919 to September 1949.

Extremes.--Maximum contents observed during year, 40,410 acre-feet May 31 (gage height, 63.55 feet); minimum observed, 230 acre-feet Sept. 29 (gage height, 8.35 feet).
1919-49: Maximum contents observed, 41,270 acre-feet May 30, 1938 (gage height, 64.20 feet); no available contents during periods in 1919, 1920, 1924, 1926, 1929, 1931-35; minimum gage height observed, 6.3 feet Aug. 5, 1934.

Remarks.--Reservoir is formed by earth- and rock-fill dam, which was reconstructed 1917-18; storage impounded by original dam not recorded. Capacity, 38,400 acre-feet between gage heights 7.0 feet (bottom of outlet tunnel) and 62.0 feet (crest of spillway). Dead storage reported to be about 125 acre-feet. Water is used for irrigation of lands in Big Lost River irrigation district. Considerable seepage around dam because of its porous foundation, but the greater part of this water returns to Big Lost River between reservoir and station below reservoir, near Mackay. Figures given herein represent usable contents, computed for 12 p.m. on basis of once-daily readings of staff gage.

Cooperation.--Gage readings and capacity table furnished by Water District No. 27.

Contents in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8,670 | 17,910 | 25,030 | 30,530 | 34,330 | 36,650 | 38,180 | 36,930 | 39,800 | 31,520 | 12,310 | 1,520 |
| 2 | 8,960 | 18,190 | 25,240 | 30,660 | 34,430 | 36,720 | 38,150 | 36,670 | 39,690 | 31,190 | 11,600 | 1,310 |
| 3 | 9,260 | 18,430 | 25,460 | 30,790 | 34,490 | 36,830 | 38,130 | 36,450 | 39,510 | 30,820 | 10,970 | 1,090 |
| 4 | 9,520 | 18,640 | 25,660 | 30,910 | 34,620 | 36,900 | 38,130 | 35,860 | 39,430 | 30,420 | 10,340 | 920 |
| 5 | 9,780 | 18,890 | 25,870 | 31,060 | 34,770 | 36,940 | 38,140 | 35,300 | 39,420 | 30,110 | 9,760 | 810 |
| 6 | 10,130 | 19,230 | 26,070 | 31,200 | 34,860 | 37,030 | 38,160 | 34,650 | 39,340 | 29,720 | 9,260 | 740 |
| 7 | 10,430 | 19,500 | 26,290 | 31,340 | 34,960 | 37,120 | 38,190 | 34,100 | 39,400 | 29,320 | 8,770 | 690 |
| 8 | 10,800 | 19,770 | 26,510 | 31,490 | 35,020 | 37,180 | 38,280 | 33,310 | 39,430 | 28,860 | 8,290 | 640 |
| 9 | 11,080 | 20,040 | 26,700 | 31,610 | 35,120 | 37,240 | 38,340 | 32,170 | 39,430 | 28,440 | 8,010 | 560 |
| 10 | 11,440 | 20,230 | 26,910 | 31,750 | 35,240 | 37,330 | 38,270 | 31,020 | 39,430 | 27,860 | 7,770 | 490 |
| 11 | 11,690 | 20,470 | 27,110 | 31,890 | 35,340 | 37,410 | 38,130 | 30,070 | 39,430 | 27,160 | 7,530 | 470 |
| 12 | 12,040 | 20,730 | 27,300 | 32,020 | 35,410 | 37,440 | 38,140 | 29,050 | 39,430 | 26,530 | 7,300 | 490 |
| 13 | 12,390 | 20,970 | 27,500 | 32,160 | 35,490 | 37,490 | 38,150 | 28,370 | 39,250 | 25,900 | 7,040 | 490 |
| 14 | 12,620 | 21,160 | 27,680 | 32,290 | 35,580 | 37,580 | 38,150 | 27,890 | 39,000 | 25,480 | 6,780 | 490 |
| 15 | 12,930 | 21,350 | 27,840 | 32,440 | 35,670 | 37,640 | 38,150 | 27,780 | 38,550 | 25,230 | 6,580 | 470 |
| 16 | 13,300 | 21,570 | 27,990 | 32,550 | 35,750 | 37,700 | 38,150 | 28,270 | 37,850 | 24,660 | 6,430 | 460 |
| 17 | 13,670 | 21,780 | 28,170 | 32,670 | 35,830 | 37,770 | 38,150 | 29,200 | 37,280 | 23,950 | 6,160 | 450 |
| 18 | 13,970 | 22,010 | 28,360 | 32,790 | 35,910 | 37,830 | 38,140 | 30,390 | 36,680 | 22,160 | 5,820 | 450 |
| 19 | 14,220 | 22,210 | 28,520 | 32,930 | 35,970 | 37,870 | 38,130 | 31,580 | 36,070 | 21,230 | 5,450 | 450 |
| 20 | 14,540 | 22,550 | 28,680 | 33,020 | 36,020 | 37,920 | 37,890 | 32,890 | 35,550 | 20,440 | 5,040 | 450 |
| 21 | 14,860 | 22,900 | 28,850 | 33,140 | 36,060 | 37,990 | 37,780 | 34,270 | 35,060 | 19,700 | 4,620 | 450 |
| 22 | 15,110 | 23,070 | 29,030 | 33,260 | 36,070 | 38,050 | 37,860 | 35,560 | 34,490 | 18,900 | 4,250 | 460 |
| 23 | 15,380 | 23,250 | 29,170 | 33,370 | 36,090 | 38,100 | 37,890 | 36,570 | 34,190 | 18,110 | 3,830 | 460 |
| 24 | 15,700 | 23,550 | 29,300 | 33,460 | 36,120 | 38,150 | 37,870 | 37,410 | 33,700 | 17,410 | 3,450 | 470 |
| 25 | 15,990 | 23,810 | 29,480 | 33,560 | 36,280 | 38,210 | 37,860 | 38,010 | 33,130 | 16,760 | 3,050 | 450 |
| 26 | 16,210 | 24,010 | 29,630 | 33,670 | 36,450 | 38,230 | 37,850 | 38,610 | 32,810 | 16,130 | 2,600 | 360 |
| 27 | 16,460 | 24,220 | 29,760 | 33,810 | 36,530 | 38,230 | 37,660 | 39,070 | 32,610 | 15,540 | 2,290 | 300 |
| 28 | 16,780 | 24,420 | 29,930 | 33,910 | 36,610 | 38,190 | 37,510 | 39,500 | 32,380 | 14,950 | 2,150 | 250 |
| 29 | 17,050 | 24,650 | 30,080 | 34,020 | - | 38,180 | 37,240 | 39,890 | 32,150 | 14,280 | 2,000 | 380 |
| 30 | 17,320 | 24,850 | 30,210 | 34,140 | - | 38,180 | 37,070 | 40,280 | 31,890 | 13,620 | 1,870 | 480 |
| 31 | 17,610 | - | 30,370 | 34,240 | - | 38,180 | - | 40,150 | - | 12,960 | 1,720 | - |

Monthly gage height and contents, water year October 1948 to September 1949

| Date | Gage height (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept.30 | 29.38 | 8,350 | - |
| Oct. 31 | 42.29 | 17,610 | +9,260 |
| Nov. 30 | 50.16 | 24,850 | +7,240 |
| Dec. 31 | 55.31 | 30,370 | +5,520 |
| Calendar year 1948 | - | - | +2,620 |
| Jan. 31 | 58.63 | 34,240 | +3,870 |
| Feb. 28 | 60.57 | 36,610 | +2,370 |
| Mar. 31 | 61.82 | 38,180 | +1,570 |
| Apr. 30 | 60.94 | 37,070 | -1,110 |
| May 31 | 63.35 | 40,150 | +3,080 |
| June 30 | 56.64 | 31,890 | -8,260 |
| July 31 | 36.31 | 12,960 | -18,930 |
| Aug. 31 | 14.28 | 1,720 | -11,240 |
| Sept.30 | 9.55 | 480 | -1,240 |
| Water year 1948-49 | - | - | -7,870 |

## Big Lost River below Mackay Reservoir, near Mackay, Idaho

Location.--Water-stage recorder, lat. 43°56', long. 113°38', in sec. 18, T. 7 N., R. 24 E., 450 feet downstream from Oleson Suspension Bridge, 1 mile downstream from head of Sharp ditch, 1½ miles downstream from Mackay Reservoir, and 2½ miles northwest of Mackay.

Records available.--December 1903 to August 1906, May 1912 to March 1915 (April 1913 to March 1915 at site 1 mile downstream), January 1919 to September 1949.

Average discharge.--33 years (1904-5, 1912-14, 1919-49), 272 second-feet.

Extremes.--Maximum discharge during year, 1,030 second-feet June 15 (gage height, 3.58 feet); minimum, 50 second-feet Oct. 6 (gage height, 1.68 feet).
1903-6, 1912-15, 1919-49: Maximum discharge, 2,990 second-feet June 10, 1921 (gage height, 5.79 feet); minimum, 18 second-feet Nov. 1, 1934; minimum gage height, 1.23 feet Nov. 5-8, 1926.

Remarks.--Records good. Sharp ditch is only diversion between station and reservoir; many diversions above reservoir. Flow regulated by Mackay Reservoir (see preceding page).

Cooperation.--Water-stage recorder inspected by Water District No. 27.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 72 | h65 | 85 | 104 | 125 | 135 | 166 | 193 | 821 | 527 | 527 | 268 |
| 2 | 72 | 67 | 86 | 104 | 126 | 135 | 162 | 236 | 737 | 539 | 527 | 287 |
| 3 | 75 | 69 | 86 | 107 | 126 | h135 | 162 | 342 | 659 | 539 | 516 | 292 |
| 4 | 75 | 71 | 87 | 107 | 127 | 136 | 155 | 363 | 607 | 539 | 527 | 268 |
| 5 | 70 | 73 | h88 | 107 | 127 | 137 | 155 | 384 | 584 | 539 | 500 | 245 |
| 6 | 50 | 75 | 89 | 108 | h128 | 138 | 166 | 417 | 561 | 522 | 444 | 223 |
| 7 | 54 | h76 | 91 | 108 | 128 | 138 | 155 | 461 | 555 | 516 | 406 | 201 |
| 8 | 54 | 76 | 92 | 109 | 128 | 138 | 145 | 533 | 590 | 561 | 379 | 189 |
| 9 | 56 | 76 | h93 | h110 | 129 | 138 | 135 | 612 | 695 | 590 | 347 | 197 |
| 10 | 56 | 77 | 90 | 111 | 129 | 138 | 142 | 683 | 779 | 618 | 332 | 210 |
| 11 | 54 | 77 | 93 | 112 | 130 | 138 | 148 | 665 | 881 | 612 | 312 | 197 |
| 12 | 56 | 78 | 93 | 113 | 130 | 142 | 152 | 648 | 929 | 595 | 302 | 189 |
| 13 | 58 | 78 | 93 | 115 | h131 | 142 | 148 | 630 | 941 | 607 | 287 | 189 |
| 14 | 60 | h78 | 93 | 116 | 131 | 142 | 145 | 636 | 899 | 607 | 283 | 193 |
| 15 | 63 | 83 | 96 | 118 | 131 | 142 | 142 | 590 | 923 | 607 | 283 | 193 |
| 16 | 63 | 83 | 96 | h119 | 131 | 142 | 138 | 500 | 911 | 653 | 302 | 189 |
| 17 | 63 | 83 | 96 | 119 | 131 | 145 | 135 | 434 | 863 | 659 | 327 | 185 |
| 18 | 65 | 83 | 96 | 119 | 131 | 142 | 135 | 412 | 851 | 719 | 342 | 185 |
| 19 | 65 | 83 | 98 | 119 | 131 | 145 | 131 | 395 | 851 | 689 | 358 | 185 |
| 20 | 65 | 83 | 98 | 119 | h131 | 148 | 135 | 363 | 815 | 642 | 374 | 189 |
| 21 | 69 | h83 | 98 | 119 | 132 | 152 | 125 | 337 | 749 | 636 | 374 | 185 |
| 22 | 69 | 83 | 98 | 119 | 134 | 155 | 119 | 342 | 719 | 642 | 384 | 185 |
| 23 | 63 | 83 | 98 | h119 | h135 | 162 | 113 | 327 | 695 | 630 | 390 | 178 |
| 24 | 65 | 83 | 98 | 120 | 135 | 166 | 113 | 302 | 671 | 555 | 384 | 178 |
| 25 | 63 | 83 | 98 | 121 | 135 | 166 | 148 | 307 | 636 | 561 | 374 | 205 |
| 26 | 70 | 83 | 101 | 121 | 135 | 166 | 182 | 358 | 595 | 533 | 358 | 219 |
| 27 | 72 | 83 | 101 | 122 | h135 | 166 | 178 | 456 | 561 | 522 | 322 | 201 |
| 28 | 72 | h83 | 101 | 123 | 135 | 166 | 170 | 578 | 505 | 500 | 297 | 170 |
| 29 | 69 | 84 | 104 | 124 | - | 166 | 182 | 665 | 472 | 516 | 268 | 166 |
| 30 | 66 | 84 | 104 | h125 | - | 166 | 193 | 743 | 494 | 505 | 232 | 185 |
| 31 | h63 | - | 104 | 125 | - | 166 | - | 815 | - | 500 | 232 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,987 | 75 | 50 | 64.1 | 3,940 |
| November | 2,366 | 84 | 65 | 78.9 | 4,690 |
| December | 2,944 | 104 | 85 | 95.0 | 5,840 |
| Calendar year 1948 | 111,137 | 1,770 | 50 | 304 | 220,400 |
| January | 3,582 | 125 | 104 | 116 | 7,100 |
| February | 3,657 | 135 | 125 | 131 | 7,250 |
| March | 4,593 | 166 | 135 | 148 | 9,110 |
| April | 4,475 | 193 | 113 | 149 | 8,880 |
| May | 14,727 | 815 | 193 | 475 | 29,210 |
| June | 21,549 | 941 | 472 | 718 | 42,740 |
| July | 17,980 | 719 | 500 | 580 | 35,660 |
| August | 11,290 | 527 | 232 | 364 | 22,390 |
| September | 6,146 | 292 | 166 | 205 | 12,190 |
| Water year 1948-49 | 95,296 | 941 | 50 | 261 | 189,000 |

h Computed from staff-gage reading.

Note.--No gage-height record except once-weekly staff-gage readings during periods Oct. 29 to Dec. 8, Jan. 5 to Mar. 7; discharge interpolated between days of staff-gage reading.

## Big Lost River near Arco, Idaho

Location.--Water-stage recorder, lat. 43°35', long. 113°17', in SW¼ sec. 17, T. 3 N., R. 27 E., 600 feet downstream from head of box canyon, 2,000 feet southeast of Mower ranch house, and 3 miles southeast of Arco.

Records available.--August 1946 to September 1949.

Extremes.--Maximum discharge during year, 237 second-feet June 3 (gage height, 2.42 feet); minimum, 9.9 second-feet May 7 (gage height, 1.10 feet).
1946-49: Maximum discharge, 285 second-feet June 6, 1947; maximum gage height, 3.83 feet Feb. 3, 4, 1947 (ice jam); minimum discharge, 3.0 second-feet May 20, 21, 1948 (gage height, 1.01 feet).

Remarks.--Records good except those for Dec. 28 to Mar. 14, which are poor. Station is below all large diversions for irrigation in Big Lost River Valley. Flow regulated by Mackay Reservoir (see p. 107).

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 82 | 35 | 34 | | | | 41 | 16 | 180 | 20 | 22 | 22 |
| 2 | 80 | 37 | 34 | | | | 41 | 16 | 218 | 20 | 24 | 22 |
| 3 | 80 | 33 | 34 | | | | 40 | 15 | 224 | 19 | 24 | 21 |
| 4 | 85 | 31 | 32 | | | | 40 | 15 | 171 | 20 | 24 | 22 |
| 5 | 80 | 30 | 32 | | | | 40 | 14 | 125 | 20 | 25 | 22 |
| 6 | 78 | 30 | 31 | | | | 40 | 14 | 82 | 20 | 25 | 21 |
| 7 | 76 | 34 | 30 | | | | 39 | 14 | 39 | 19 | 26 | 20 |
| 8 | 74 | 35 | 30 | | | 28 | 39 | 12 | 28 | 19 | 27 | 20 |
| 9 | 71 | 34 | 30 | | | | 38 | 12 | 27 | 20 | 25 | 19 |
| 10 | 67 | 34 | 30 | | | | 37 | 12 | 25 | 21 | 25 | 19 |
| 11 | 67 | 38 | 30 | | | | 36 | 13 | 22 | 21 | 25 | 20 |
| 12 | 64 | 40 | 31 | | | | 34 | 14 | 22 | 20 | 24 | 20 |
| 13 | 64 | 38 | 31 | | | | 33 | 14 | 22 | 21 | 25 | 19 |
| 14 | 62 | 37 | 31 | | | | 34 | 15 | 23 | 22 | 25 | 19 |
| 15 | 62 | *36 | 30 | | | *40 | 34 | 17 | 23 | 22 | 25 | 19 |
| 16 | 61 | 36 | 30 | 26 | 27 | 41 | 30 | 20 | 23 | 20 | 24 | 19 |
| 17 | 61 | 37 | 30 | | | 44 | 30 | 24 | 27 | 20 | 25 | 20 |
| 18 | 61 | 38 | 30 | | | 47 | 28 | 23 | 24 | 19 | 25 | 20 |
| 19 | 61 | 37 | 30 | | | 47 | 27 | 24 | 23 | 19 | 25 | 20 |
| 20 | 59 | 36 | *30 | | | 46 | 27 | 25 | 24 | 18 | 24 | 21 |
| 21 | 59 | 36 | 30 | | | 46 | 27 | 28 | 25 | 17 | 24 | 21 |
| 22 | 57 | 36 | 30 | | (*) | 45 | 26 | 29 | 24 | 18 | 23 | 21 |
| 23 | 56 | 36 | 30 | | | 45 | 26 | 33 | 23 | 19 | 24 | 21 |
| 24 | 56 | 35 | 29 | | | 44 | 25 | 35 | 22 | 15 | 25 | 20 |
| 25 | 54 | 35 | 29 | | | 44 | 20 | 31 | 22 | 15 | 24 | 18 |
| 26 | 54 | 36 | 29 | | | 43 | 18 | 27 | 22 | 16 | 22 | 18 |
| 27 | 56 | 36 | 29 | | | 43 | 17 | 26 | 22 | 17 | 22 | 18 |
| 28 | 53 | 35 | 29 | | | 43 | 18 | 26 | 23 | 17 | 22 | 16 |
| 29 | 44 | 35 | 29 | | - | 43 | 16 | 31 | 22 | 18 | 24 | 17 |
| 30 | 40 | 34 | 29 | | - | 43 | 16 | 80 | 21 | 18 | 24 | 18 |
| 31 | 38 | - | 29 | | - | 41 | - | 143 | - | 20 | 21 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,962 | 85 | 38 | 63.3 | 3,890 |
| November | 1,060 | 40 | 30 | 35.3 | 2,100 |
| December | 942 | 34 | 29 | 30.4 | 1,870 |
| Calendar year 1948 | 13,956 | 158 | 3.3 | 38.1 | 27,670 |
| January | 806 | - | - | 26 | 1,600 |
| February | 756 | - | - | 27 | 1,500 |
| March | 1,137 | 47 | - | 36.7 | 2,260 |
| April | 915 | 41 | 16 | 30.5 | 1,810 |
| May | 818 | 143 | 12 | 26.4 | 1,620 |
| June | 1,578 | 224 | 21 | 52.6 | 3,130 |
| July | 590 | 22 | 15 | 19.0 | 1,170 |
| August | 749 | 27 | 21 | 24.2 | 1,490 |
| September | 593 | 22 | 16 | 19.8 | 1,180 |
| Water year 1948-49 | 11,906 | 224 | 12 | 32.6 | 23,620 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 27 to Dec. 2, Dec. 5 to about Mar. 14 (no gage-height record Dec. 28 to Feb. 21, Feb. 25 to Mar. 14; discharge computed on basis of weather records and flow during adjacent periods).

## Warm Spring Creek (east channel) near Mackay, Idaho

Location.--Water-stage recorder, lat. 43°58', long. 113°45', in NE¼ sec. 5, T. 7 N., R. 23 E., 700 feet upstream from confluence with west channel and 7½ miles northwest of Mackay.

Records available.--May 1919 to September 1949.

Average discharge.--30 years, 28.7 second-feet.

Extremes.--Maximum discharge during year, 109 second-feet May 20 (gage height, 2.94 feet); minimum, 20 second-feet Apr. 20-28, May 1-8.
1919-49: Maximum discharge observed, 225 second-feet June 15, 1922 (gage height, 3.24 feet, site and datum then in use); minimum, 9 second-feet May 8, 9, 13, 14, 1919, May 18-21, 1920.

Remarks.--Records good except those for periods of no gage-height record and those for Sept. 14-30, which are fair. Practically all natural flow above station diverted during irrigation season. Discharge during summer represents return water from irrigation. The sum of the combined discharge of east and west channels of Warm Spring Creek and the combined discharge of east and west channels of Big Lost River, near Mackay, represents practically the entire surface flow of Big Lost River which enters Mackay Reservoir.

Cooperation.--Water-stage recorder graph furnished by Water District No. 27.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 31 | 35 | 35 | 35 | 34 | a35 | 34 | 20 | 71 | 30 | 27 | 24 |
| 2 | 30 | 37 | 35 | 34 | 33 | a35 | 34 | 20 | 66 | 30 | 27 | 25 |
| 3 | 29 | 37 | 35 | 30 | 33 | a35 | 34 | 20 | 60 | 32 | 27 | 25 |
| 4 | 30 | 36 | 36 | 31 | 33 | a35 | 33 | 20 | 53 | 35 | 26 | 26 |
| 5 | 32 | 36 | 36 | 32 | 33 | a35 | 33 | 20 | 49 | 35 | 26 | 26 |
| 6 | 32 | 36 | 37 | 33 | 32 | 35 | 33 | 20 | 50 | 32 | 26 | 26 |
| 7 | 32 | 36 | 37 | 33 | 32 | a35 | 32 | 20 | 54 | 32 | 26 | 25 |
| 8 | 32 | 36 | 36 | 33 | 31 | a36 | 32 | 20 | 60 | 30 | 26 | 24 |
| 9 | 32 | 36 | 35 | 33 | 30 | a36 | 32 | 21 | 65 | 31 | 28 | 24 |
| 10 | 33 | 36 | 35 | 33 | 31 | a36 | 31 | 22 | 72 | 30 | 30 | 23 |
| 11 | 33 | 36 | 35 | 34 | 31 | a36 | 30 | 24 | 83 | 30 | 25 | 24 |
| 12 | 33 | 36 | 35 | 34 | 31 | a37 | 30 | 28 | 91 | 30 | 29 | 23 |
| 13 | 32 | 36 | 35 | 34 | 32 | 37 | 28 | 35 | 87 | 30 | 29 | 24 |
| 14 | 34 | 37 | 35 | 35 | 33 | 37 | 26 | 45 | 78 | 29 | 29 | 24 |
| 15 | 34 | 38 | 35 | 35 | 32 | 37 | 26 | 52 | 71 | 28 | 29 | 24 |
| 16 | 35 | 38 | 35 | 35 | 32 | 37 | 26 | 68 | 66 | 28 | 29 | 24 |
| 17 | 34 | 38 | 35 | 35 | 32 | 37 | 25 | 83 | 61 | 27 | 29 | 24 |
| 18 | 33 | 38 | 35 | 35 | 33 | 37 | 24 | 91 | 55 | 26 | 29 | 24 |
| 19 | 33 | 38 | 35 | 34 | 34 | 37 | 22 | 97 | 52 | 26 | 29 | 24 |
| 20 | 33 | 38 | 35 | 34 | 34 | 37 | 20 | 102 | 52 | 26 | 29 | 24 |
| 21 | 32 | 36 | 35 | 35 | 34 | 35 | 20 | 93 | 49 | 24 | 29 | 24 |
| 22 | 32 | 35 | 33 | 35 | 34 | 35 | 20 | 86 | 46 | 26 | 29 | 24 |
| 23 | 32 | 35 | 34 | 35 | 34 | 35 | 20 | 75 | 45 | 26 | 29 | 24 |
| 24 | 32 | 36 | 34 | 35 | 35 | 35 | 20 | 64 | 43 | 26 | 29 | 24 |
| 25 | 32 | 35 | 34 | 34 | 35 | 35 | 20 | 60 | 42 | 26 | 28 | 24 |
| 26 | 32 | 35 | 35 | 34 | 35 | 35 | 20 | 58 | 42 | 26 | 27 | 25 |
| 27 | 32 | 35 | 36 | 33 | 35 | 35 | 20 | 64 | 41 | 25 | 26 | 25 |
| 28 | 32 | 35 | 36 | 33 | a35 | 35 | 20 | 74 | 38 | 25 | 26 | 25 |
| 29 | 32 | 35 | 35 | 33 | - | 35 | 22 | 84 | 33 | 26 | 26 | 25 |
| 30 | 35 | 35 | 35 | 33 | - | 35 | 21 | 84 | 31 | 26 | 25 | 25 |
| 31 | 35 | - | 35 | 33 | - | 35 | - | 77 | - | 27 | 24 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,005 | 35 | 29 | 32.4 | 1,990 |
| November | 1,086 | 38 | 35 | 36.2 | 2,150 |
| December | 1,089 | 37 | 33 | 35.1 | 2,160 |
| Calendar year 1948 | 13,691 | 166 | 16 | 37.4 | 27,130 |
| January | 1,045 | 35 | 30 | 33.7 | 2,070 |
| February | 923 | 35 | 30 | 33.0 | 1,830 |
| March | 1,107 | 37 | 35 | 35.7 | 2,200 |
| April | 788 | 34 | 20 | 26.3 | 1,560 |
| May | 1,647 | 102 | 20 | 53.1 | 3,270 |
| June | 1,706 | 91 | 31 | 56.9 | 3,380 |
| July | 880 | 35 | 24 | 28.4 | 1,750 |
| August | 857 | 30 | 24 | 27.6 | 1,700 |
| September | 732 | 26 | 23 | 24.4 | 1,450 |
| Water year 1948-49 | 12,865 | 102 | 20 | 35.2 | 25,510 |

a No gage-height record; discharge computed on basis of records for nearby streams.
Note.--Part of flow diverted around station Sept. 14-30 by beaver dams; published discharge includes diverted flow and was computed on basis of records for nearby streams.

## Warm Spring Creek (west channel) near Mackay, Idaho

Location.--Water-stage recorder, lat. 43°58', long. 113°45', in NE¼ sec. 5, T. 7 N., R. 23 E., 500 feet upstream from confluence with east channel and 7½ miles northwest of Mackay.

Records available.--May 1919 to September 1949.

Average discharge.--30 years, 92.4 second-feet.

Extremes.--Maximum discharge during year, 190 second-feet May 20 (gage height, 2.24 feet); minimum, 55 second-feet Apr. 21-28, May 6-8 (gage height, 1.08 feet).
1919-49: Maximum discharge, 600 second-feet (estimated) Aug. 11, 1936 (gage height, 4.42 feet, datum then in use, from high-water mark); minimum, 49 second-feet Apr. 27, 1935 (gage height, 0.62 foot, datum then in use).

Remarks.--Records good. Flow during summer represents return flow from irrigation. The sum of the combined discharge of east and west channels of Warm Spring Creek and the combined discharge of east and west channels of Big Lost River, near Mackay, represents practically the entire surface flow of Big Lost River which enters Mackay Reservoir.

Cooperation.--Water-stage recorder graph furnished by Water District No. 27.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 88 | 94 | 89 | 87 | 83 | 78 | 75 | 57 | 144 | 80 | 66 | 68 |
| 2 | 87 | 95 | 89 | 87 | 83 | 78 | 74 | 56 | 135 | 78 | 66 | 69 |
| 3 | 86 | 94 | 89 | 81 | 83 | 78 | 74 | 56 | 125 | 84 | 64 | 69 |
| 4 | 87 | 90 | 89 | 84 | 83 | 78 | 74 | 56 | 117 | 84 | 64 | 70 |
| 5 | 93 | 93 | 89 | 84 | 82 | 78 | 74 | 56 | 111 | 86 | 63 | 70 |
| 6 | 93 | 93 | 89 | 84 | 82 | 78 | 74 | 55 | 111 | 82 | 63 | 71 |
| 7 | 93 | 93 | 89 | 84 | 82 | 78 | 74 | 55 | 117 | 80 | 63 | 71 |
| 8 | 93 | 94 | 89 | 84 | 82 | 78 | 73 | 55 | 124 | 78 | 63 | 73 |
| 9 | 96 | 94 | 89 | 83 | 81 | 78 | 71 | 56 | 134 | 78 | 64 | 74 |
| 10 | 98 | 94 | 89 | 83 | 81 | 77 | 70 | 57 | 143 | 81 | 67 | 74 |
| 11 | 99 | 95 | 89 | 83 | 80 | 77 | 69 | 62 | 158 | 80 | 66 | 75 |
| 12 | 99 | 95 | 89 | 82 | 78 | 77 | 68 | 67 | 169 | 78 | 66 | 76 |
| 13 | 99 | 96 | 89 | 82 | 78 | 76 | 66 | 73 | 160 | 77 | 66 | 80 |
| 14 | 98 | 96 | 89 | 82 | 78 | 76 | 63 | 87 | 144 | 75 | 66 | 78 |
| 15 | 98 | 95 | 89 | 82 | 78 | 76 | 63 | 100 | 134 | 73 | 66 | 78 |
| 16 | 98 | 94 | 88 | 82 | 78 | 76 | 63 | 123 | 125 | 71 | 66 | 77 |
| 17 | 98 | 93 | 88 | 82 | 78 | 76 | 63 | 146 | 117 | 69 | 66 | 77 |
| 18 | 98 | 92 | 88 | 82 | 78 | 76 | 62 | 161 | 108 | 68 | 66 | 77 |
| 19 | 98 | 92 | 87 | 82 | 78 | 76 | 60 | 173 | 107 | 67 | 66 | 77 |
| 20 | 96 | 92 | 87 | 81 | 78 | 76 | 57 | 180 | 106 | 66 | 66 | 78 |
| 21 | 98 | 90 | 87 | 81 | 78 | 76 | 55 | 166 | 101 | 66 | 66 | 78 |
| 22 | 98 | 90 | 87 | 81 | 78 | 76 | 55 | 158 | 99 | 67 | 66 | 77 |
| 23 | 98 | 89 | 87 | 81 | 78 | 76 | 55 | 143 | 98 | 66 | 66 | 76 |
| 24 | 96 | 89 | 87 | 82 | 78 | 76 | 55 | 128 | 95 | 67 | 66 | 76 |
| 25 | 95 | 89 | 87 | 82 | 78 | 76 | 55 | 119 | 93 | 67 | 66 | 77 |
| 26 | 96 | 89 | 87 | 82 | 78 | 76 | 55 | 118 | 94 | 66 | 66 | 78 |
| 27 | 96 | 89 | 87 | 82 | 78 | 76 | 55 | 128 | 92 | 66 | 66 | 77 |
| 28 | 96 | 89 | 87 | 82 | 78 | 76 | 55 | 143 | 88 | 64 | 67 | 77 |
| 29 | 95 | 89 | 87 | 83 | - | 75 | 56 | 159 | 84 | 64 | 67 | 77 |
| 30 | 94 | 89 | 87 | 83 | - | 75 | 56 | 161 | 82 | 64 | 67 | 77 |
| 31 | 93 | - | 87 | 83 | - | 75 | - | 152 | - | 66 | 67 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 2,950 | 99 | 86 | 95.2 | 5,850 |
| November | 2,766 | 96 | 89 | 92.2 | 5,490 |
| December | 2,730 | 89 | 87 | 88.1 | 5,410 |
| Calendar year 1948 | 34,810 | 239 | 61 | 95.1 | 69,140 |
| January | 2,563 | 87 | 81 | 82.7 | 5,080 |
| February | 2,228 | 83 | 78 | 79.6 | 4,420 |
| March | 2,374 | 78 | 75 | 76.6 | 4,710 |
| April | 1,919 | 75 | 55 | 64.0 | 3,810 |
| May | 3,306 | 180 | 55 | 107 | 6,560 |
| June | 3,515 | 169 | 82 | 117 | 6,970 |
| July | 2,258 | 86 | 64 | 72.8 | 4,480 |
| August | 2,033 | 67 | 63 | 65.6 | 4,030 |
| September | 2,252 | 80 | 68 | 75.1 | 4,470 |
| Water year 1948-49 | 30,894 | 180 | 55 | 84.6 | 61,280 |

## Sharp ditch near Mackay, Idaho

Location.--Water-stage recorder and artificial control, lat. 43°57', long. 113°39', in sec. 7, T. 7 N., R. 24 E., 1,600 feet downstream from head of ditch, three-quarters of a mile downstream from Mackay Reservoir, and 3½ miles northwest of Mackay.

Records available.--April 1939 to September 1949. June 1912 to October 1914 and March 1919 to April 1939 at site 1,400 feet upstream, above Hintze ditch.

Extremes.--Maximum discharge during year, 41 second-feet June 18 (gage height, 1.51 feet); no flow for long periods during fall and winter.
1912-14, 1919-49: Maximum discharge, 50 second-feet July 10, 1947 (gage height, 1.63 feet); no flow at times.

Remarks.--Records good. Sharp ditch diverts from east side of Big Lost River in SE¼ sec. 12, T. 7 N., R. 23 E., half a mile below Mackay Reservoir and 1 mile above station on Big Lost River below Mackay Reservoir, near Mackay. Water used for irrigation northwest of Mackay and above Streeter ditch. Hintze ditch, which diverts from Sharp ditch above station, was reported by watermaster to have carried 110 acre-feet during year (43 in June, 26 in July, 12 in August, and 29 in September).

Cooperation.--Water-stage recorder graph furnished by Water District No. 27.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | a3.7 | 11 | | | | 0 | 1.0 | 7.9 | 14 | 17 | 27 | 19 |
| 2 | a3.7 | 7.1 | | | | 0 | 5.6 | 11 | 11 | 19 | 19 | 18 |
| 3 | 3.7 | 6.0 | | | | 0 | 5.6 | 6.6 | 11 | 25 | 15 | 18 |
| 4 | 3.0 | 4.3 | | | | 0 | 10 | 6.6 | 10 | 25 | 15 | 17 |
| 5 | 3.0 | 2.4 | | | | 0 | 5.8 | 6.6 | 9.9 | 25 | 12 | 15 |
| 6 | 2.8 | 2.4 | | | | 0 | .1 | 7.1 | 9.9 | 25 | 11 | 13 |
| 7 | 2.4 | 2.4 | | | | 0 | 7.7 | 8.2 | 12 | 26 | 11 | 13 |
| 8 | 2.4 | 0 | | | | 0 | 21 | 8.2 | 15 | 28 | 13 | 13 |
| 9 | 1.5 | 0 | | | | 0 | 28 | 9.9 | 16 | 29 | 16 | 13 |
| 10 | 2.6 | 0 | | | | 0 | 16 | 12 | 18 | 26 | 19 | 14 |
| 11 | 5.0 | 0 | | | | 0 | 12 | 11 | 21 | 23 | 20 | 12 |
| 12 | 5.0 | 0 | | | | 0 | 12 | 11 | 26 | 23 | 19 | 11 |
| 13 | 2.4 | 0 | | | | 0 | 12 | 12 | 31 | 20 | 17 | 11 |
| 14 | 1.8 | 0 | | | | 0 | 12 | 13 | 38 | 17 | 16 | 11 |
| 15 | 1.6 | 0 | | | | 0 | 13 | 12 | 38 | 17 | 16 | 12 |
| 16 | 1.2 | 0 | | | | 0 | 14 | 11 | 39 | 17 | 17 | 11 |
| 17 | 1.2 | 0 | | | | 0 | 16 | 10 | 39 | 17 | 20 | 9.9 |
| 18 | 1.2 | 0 | | | | 0 | 16 | 11 | 41 | 22 | 20 | 9.9 |
| 19 | h3.5 | 0 | | | | 0 | 16 | 12 | 35 | 24 | 15 | 9.3 |
| 20 | 1.3 | 0 | | | | 0 | 18 | 11 | 30 | 24 | 16 | 9.3 |
| 21 | .8 | 0 | | | | 0 | 20 | 11 | 26 | 23 | 19 | 9.0 |
| 22 | h4.1 | 0 | | | | 0 | 22 | 12 | 23 | 23 | 20 | 9.0 |
| 23 | h6.6 | 0 | | | | 0 | 25 | 11 | 23 | 23 | 21 | 8.5 |
| 24 | h4.9 | 0 | | | | 0 | 23 | 11 | 23 | 25 | 22 | 8.7 |
| 25 | 6.8 | 0 | | | | 0 | 23 | 11 | 23 | 25 | 21 | 11 |
| 26 | 1.1 | 0 | | | | 0 | 24 | 12 | 23 | 23 | 20 | 14 |
| 27 | .5 | 0 | | | | .3 | 26 | 13 | 22 | 24 | 18 | 12 |
| 28 | .4 | 0 | | | | .5 | 29 | 14 | 21 | 24 | 14 | 8.7 |
| 29 | h5.5 | 0 | | | | .5 | 12 | 18 | 20 | 27 | 12 | 1.4 |
| 30 | 11 | 0 | | | | .6 | 3.2 | 19 | 20 | 26 | 10 | 0 |
| 31 | 11 | - | | | | .1 | - | 18 | - | 29 | 16 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 105.7 | 11 | 0.4 | 3.41 | 210 |
| November | 35.6 | 11 | 0 | 1.19 | 71 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 3,735.7 | 38 | 0 | 10.2 | 7,400 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 2.0 | .6 | 0 | .06 | 4 |
| April | 449.0 | 29 | .1 | 15.0 | 891 |
| May | 348.1 | 19 | 6.6 | 11.2 | 690 |
| June | 688.8 | 41 | 9.9 | 23.0 | 1,370 |
| July | 721 | 29 | 17 | 23.3 | 1,430 |
| August | 527 | 27 | 10 | 17.0 | 1,050 |
| September | 341.7 | 19 | 0 | 11.4 | 678 |
| Water year 1948-49 | 3,218.9 | 41 | 0 | 8.82 | 6,390 |

a No gage-height record; discharge computed on basis of flow during adjacent periods.
h Computed from staff-gage reading.

## Big Wood River near Ketchum, Idaho

Location.--Staff gage, lat. 43°48', long. 114°26', in sec. 4, T. 5 N., R. 17 E., half a mile upstream from North Fork and 8 miles northwest of Ketchum. Altitude of gage, 6,240 feet (from topographic map).

Drainage area.--137 square miles.

Records available.--May 1948 to September 1949.

Extremes.--Maximum discharge observed during year, 721 second-feet May 19 (gage height, 2.38 feet); minimum observed, 38 second-feet Feb. 12, Mar. 25 (gage height, 0.27 foot).

Remarks.--Records fair. Gage read once daily. No diversion or regulation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 80 | 73 | 60 | 62 | 48 | 46 | 50 | 345 | 448 | 192 | 94 | 66 |
| 2 | 76 | 76 | 59 | 51 | 50 | 51 | 59 | 341 | 408 | 190 | 89 | 65 |
| 3 | 76 | 74 | 63 | 55 | 49 | 53 | 58 | 330 | 361 | 187 | 89 | 65 |
| 4 | 81 | 68 | 62 | 53 | 49 | 51 | 58 | 316 | 353 | 187 | 85 | 71 |
| 5 | 85 | 83 | 66 | 58 | 46 | 49 | 62 | 294 | 353 | 197 | 87 | 66 |
| 6 | 81 | 80 | 59 | 60 | 48 | *50 | 74 | 306 | 404 | 187 | 83 | 66 |
| 7 | 78 | 73 | 60 | 59 | 50 | 51 | 87 | 313 | 440 | 172 | 80 | 65 |
| 8 | 78 | 48 | 53 | 55 | 49 | 50 | 85 | 353 | 471 | 167 | 83 | 65 |
| 9 | 78 | 45 | 59 | 44 | 48 | 49 | 92 | 404 | 489 | 167 | 83 | 63 |
| 10 | 74 | e65 | 66 | b46 | 45 | 52 | 106 | 444 | 498 | 167 | 87 | 62 |
| 11 | 74 | 62 | 65 | b50 | 39 | 50 | 129 | 498 | 526 | 158 | 85 | 63 |
| 12 | 74 | 76 | 65 | b52 | 38 | 50 | 149 | 556 | 498 | 146 | 81 | 61 |
| 13 | 74 | 69 | 65 | b54 | 40 | 50 | 131 | 586 | 458 | 144 | 78 | 63 |
| 14 | 74 | 69 | 60 | 55 | 44 | 45 | 129 | 666 | 435 | 142 | 76 | 63 |
| 15 | 73 | 68 | 43 | 53 | 48 | 46 | 131 | 677 | 390 | 137 | 78 | 62 |
| 16 | 71 | 69 | 42 | 46 | 49 | 46 | 158 | 694 | 373 | 131 | 76 | 63 |
| 17 | 71 | 76 | 46 | b46 | 51 | 46 | 192 | 694 | 338 | 129 | 78 | 63 |
| 18 | 71 | 66 | 56 | b50 | 52 | 45 | 282 | 694 | 306 | 129 | 81 | 62 |
| 19 | 69 | e72 | 65 | 52 | 51 | 46 | 276 | 721 | 300 | 122 | 74 | 60 |
| 20 | 68 | e69 | 68 | 52 | 42 | 48 | 276 | 646 | 273 | 118 | 71 | 60 |
| 21 | 68 | 66 | 55 | 51 | 49 | 48 | 270 | 566 | 259 | 122 | 69 | 60 |
| 22 | 68 | e72 | 49 | 50 | 51 | 46 | 306 | 489 | 259 | 114 | 71 | 59 |
| 23 | 69 | 74 | 53 | 51 | 50 | 46 | 349 | 453 | 253 | 108 | 73 | 59 |
| 24 | 66 | 71 | 63 | 49 | 42 | 45 | 365 | 430 | 247 | 110 | 71 | 59 |
| 25 | 63 | 66 | 62 | 48 | 43 | e47 | 373 | 448 | 244 | 108 | 69 | 59 |
| 26 | 66 | 63 | 63 | 51 | 45 | 48 | 399 | 498 | 239 | 106 | 68 | 58 |
| 27 | 69 | 49 | 65 | 52 | 43 | 46 | 408 | 551 | 230 | 104 | 69 | 56 |
| 28 | 60 | 58 | 63 | 50 | 42 | e46 | 435 | 586 | 219 | 104 | 68 | 65 |
| 29 | 66 | 58 | *60 | 48 | - | e46 | 408 | 606 | 208 | 100 | 68 | 63 |
| 30 | 66 | 48 | 58 | 51 | - | 46 | 357 | 541 | 197 | 96 | 69 | 62 |
| 31 | 66 | - | 58 | 50 | - | 56 | - | 526 | - | 98 | 66 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 2,233 | 85 | 60 | 72.0 | 0.526 | 0.61 | 4,430 |
| November | 2,006 | 83 | 45 | 66.9 | .488 | .54 | 3,980 |
| December | 1,829 | 66 | 42 | 59.0 | .431 | .50 | 3,630 |
| Calendar year | - | - | - | - | - | - | - |
| January | 1,604 | 62 | 44 | 51.7 | .377 | .44 | 3,180 |
| February | 1,301 | 52 | 38 | 46.5 | .339 | .35 | 2,580 |
| March | 1,494 | 56 | 45 | 48.2 | .352 | .41 | 2,960 |
| April | 6,254 | 435 | 50 | 208 | 1.52 | 1.70 | 12,400 |
| May | 15,572 | 721 | 294 | 502 | 3.66 | 4.23 | 30,890 |
| June | 10,477 | 526 | 197 | 349 | 2.55 | 2.84 | 20,780 |
| July | 4,339 | 197 | 96 | 140 | 1.02 | 1.18 | 8,610 |
| August | 2,399 | 94 | 66 | 77.4 | .565 | .65 | 4,760 |
| September | 1,878 | 71 | 56 | 62.6 | .457 | .51 | 3,720 |
| Water year 1948-49 | 51,386 | 721 | 38 | 141 | 1.03 | 13.96 | 101,900 |

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
e Gage reading not representative of mean for the day; discharge computed on basis of weather records and records for combination of Big Wood River and Big Wood Slough at Hailey, and Warm Springs Creek at Guyer Hot Springs, near Ketchum.

## Big Wood River at Hailey, Idaho

Location.--Water-stage recorder, lat. 43°31', long. 114°20', in SW¼ sec. 9, T. 2 N., R. 18 E., at steel highway bridge a quarter of a mile southwest of Hailey and three-eighths of a mile above Croy Creek.
Drainage area.--640 square miles (total area above river and slough stations).
Records available.--July to December 1889, June 1915 to September 1949.
Average discharge.--34 years, 296 second-feet. Average combined discharge of Big Wood River and Big Wood Slough, 34 years, 408 second-feet.
Extremes.--Maximum discharge during year, 1,730 second-feet May 20 (gage height, 4.98 feet); minimum, 7 second-feet Aug. 16 (gage height, 0.96 foot).
1889, 1915-49 (river only): Maximum discharge, 4,480 second-feet June 7, 1938; maximum gage height, 8.66 feet June 12, 1921; practically no flow Sept. 15-23, Nov. 20, 22, 23, 1931, Oct. 25, 1937.
1889, 1915-49 (combined): Maximum daily discharge, 4,500 second-feet June 6, 7, 1938; minimum daily, 15 second-feet Dec. 27, 1921.
Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Water diverted around station through Big Wood Slough (see p. 121). Total flow of river at Hailey (combined flow of Big Wood River and Big Wood Slough) is given on following page. Diversions above station for irrigation.
Cooperation.--Water-stage recorder inspected, and one discharge measurement furnished, by Water District No. 7 AB.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Dec. 19, 20, 27-31, July 26 to Aug. 17)

| | | | | | |
|---|---|---|---|---|---|
| 1.0 | 8 | 1.9 | 120 | 4.0 | 1,060 |
| 1.1 | 13 | 2.2 | 192 | 4.5 | 1,380 |
| 1.2 | 20 | 2.5 | 282 | 5.0 | 1,750 |
| 1.4 | 38 | 3.0 | 486 | | |
| 1.6 | 65 | 3.5 | 762 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 147 | 144 | 135 | 165 | 150 | 135 | 118 | 874 | 1,230 | 378 | 12 | 84 |
| 2 | 147 | 159 | 152 | 150 | 160 | 135 | 122 | 856 | 1,100 | 382 | 11 | 82 |
| 3 | 144 | 164 | 152 | 150 | 160 | 142 | 129 | 815 | 994 | 378 | 11 | 82 |
| 4 | 152 | 152 | 156 | 150 | 160 | 142 | 138 | 768 | 916 | 374 | 11 | 86 |
| 5 | 161 | 138 | 147 | 170 | 140 | 143 | 152 | 721 | 934 | 369 | 10 | 87 |
| 6 | 156 | 149 | 131 | 170 | 150 | 144 | 174 | 697 | 1,020 | 361 | 10 | 84 |
| 7 | 154 | 135 | 144 | 170 | 160 | 142 | 203 | 716 | 1,100 | 338 | 10 | 80 |
| 8 | 152 | 122 | 149 | 160 | 150 | 147 | 212 | 809 | 1,160 | 316 | 10 | 77 |
| 9 | 147 | 118 | 144 | 150 | 150 | 144 | 226 | 922 | 1,170 | 309 | 10 | 77 |
| 10 | 144 | 133 | 159 | 160 | 140 | 144 | 235 | 1,020 | 1,240 | 302 | 10 | 80 |
| 11 | 144 | 138 | 161 | 160 | 130 | 144 | 269 | 1,060 | 1,310 | 323 | 10 | 86 |
| 12 | 144 | 135 | 164 | 160 | 120 | 147 | 457 | 1,190 | 1,330 | 323 | 10 | 93 |
| 13 | 142 | 138 | 164 | 170 | 120 | 147 | 416 | 1,280 | 1,170 | 313 | 9 | 95 |
| 14 | 142 | 138 | 164 | 170 | 150 | 144 | 382 | 1,280 | 1,020 | 302 | 8 | 93 |
| 15 | 147 | 144 | 133 | 170 | 150 | 144 | 382 | 1,380 | 978 | 296 | 8 | 91 |
| 16 | 144 | 142 | 114 | 165 | 150 | 144 | 416 | 1,550 | 940 | 276 | 8 | 89 |
| 17 | 144 | 140 | 124 | 150 | 160 | 147 | 491 | 1,620 | 827 | 217 | 68 | 93 |
| 18 | 142 | 122 | 131 | 150 | 165 | 149 | 597 | 1,560 | 739 | 217 | 112 | 93 |
| 19 | 142 | 124 | 156 | 170 | 160 | 154 | 716 | 1,620 | 721 | 214 | 110 | 89 |
| 20 | 142 | 131 | 189 | 170 | 130 | 161 | 797 | 1,610 | 676 | 206 | 108 | 87 |
| 21 | 140 | 129 | 150 | 170 | 140 | 166 | 756 | 1,460 | 625 | 200 | 104 | 87 |
| 22 | 138 | 144 | 140 | 170 | 142 | 164 | 809 | 1,350 | 625 | 187 | 104 | 87 |
| 23 | 138 | 164 | 145 | 170 | *152 | 133 | 964 | 1,250 | 591 | 176 | 120 | 86 |
| 24 | 138 | 171 | 166 | 165 | 120 | 116 | 1,020 | 1,170 | 569 | 171 | 120 | 82 |
| 25 | 138 | 159 | 176 | 155 | 124 | 116 | 1,020 | 1,170 | 580 | 166 | 118 | 80 |
| 26 | 138 | 161 | 176 | 160 | 130 | 116 | 934 | 1,220 | 553 | 124 | 110 | 75 |
| 27 | 138 | 140 | 192 | 160 | 130 | 118 | 940 | 1,320 | 486 | 14 | 86 | 72 |
| 28 | 138 | 140 | *189 | 160 | 130 | 112 | 1,010 | 1,440 | 457 | 13 | 87 | 77 |
| 29 | 138 | 149 | 184 | *155 | - | 112 | 1,040 | 1,460 | 434 | 13 | 87 | 89 |
| 30 | 138 | 131 | 187 | 160 | - | 116 | 964 | 1,440 | 412 | 12 | 87 | 89 |
| 31 | 135 | - | 179 | 155 | - | 116 | - | 1,380 | - | 12 | 87 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 4,454 | 161 | 135 | 144 | 8,830 |
| November | 4,254 | 171 | 118 | 142 | 8,440 |
| December | 4,853 | 192 | 114 | 157 | 9,630 |
| Calendar year 1948 | 131,603 | 2,670 | 48 | 360 | 261,000 |
| January | 5,010 | 170 | 150 | 162 | 9,940 |
| February | 4,023 | 165 | 120 | 144 | 7,980 |
| March | 4,284 | 166 | 112 | 138 | 8,500 |
| April | 16,089 | 1,040 | 118 | 536 | 31,910 |
| May | 37,008 | 1,620 | 697 | 1,194 | 73,400 |
| June | 25,905 | 1,330 | 412 | 864 | 51,380 |
| July | 7,282 | 382 | 12 | 235 | 14,440 |
| August | 1,666 | 120 | 8 | 53.7 | 3,300 |
| September | 2,552 | 95 | 72 | 85.1 | 5,060 |
| Water year 1948-49 | 117,380 | 1,620 | 8 | 322 | 232,800 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 15-18, 21-26, Jan. 1 to about Feb. 16. No gage-height record Feb. 17-21, 24, Feb. 26 to Mar. 2, Mar. 4, 5; discharge computed on basis of weather records and records for Big Wood River near Ketchum and Warm Springs Creek at Guyer Hot Springs, near Ketchum.

Combined discharge, in second-feet, of Big Wood River and Big Wood Slough at Hailey, Idaho, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 207 | 183 | 135 | 165 | 150 | 135 | 172 | 940 | 1,240 | 404 | 190 | 124 |
| 2 | 206 | 202 | 152 | 150 | 160 | 135 | 178 | 920 | 1,110 | 408 | 178 | 122 |
| 3 | 200 | 208 | 152 | 150 | 160 | 142 | 190 | 876 | 1,000 | 404 | 175 | 122 |
| 4 | 208 | 193 | 156 | 150 | 160 | 142 | 204 | 824 | 926 | 400 | 175 | 127 |
| 5 | 221 | 176 | 147 | 170 | 140 | 143 | 229 | 774 | 944 | 395 | 173 | 130 |
| 6 | 215 | 188 | 131 | 170 | 150 | 144 | 264 | 744 | 1,030 | 386 | 170 | 125 |
| 7 | 209 | 173 | 144 | 170 | 160 | 142 | 334 | 759 | 1,120 | 361 | 166 | 120 |
| 8 | 206 | 155 | 149 | 160 | 150 | 147 | 354 | 855 | 1,190 | 337 | 167 | 116 |
| 9 | 201 | 149 | 144 | 150 | 150 | 144 | 377 | 970 | 1,190 | 330 | 166 | 116 |
| 10 | 196 | 168 | 159 | 160 | 140 | 144 | 403 | 1,060 | 1,280 | 321 | 167 | 120 |
| 11 | 194 | 176 | 161 | 160 | 130 | 144 | 475 | 1,090 | 1,360 | 344 | 167 | 128 |
| 12 | 193 | 172 | 164 | 160 | 120 | 147 | 532 | 1,220 | 1,380 | 344 | 160 | 139 |
| 13 | 191 | 175 | 164 | 170 | 120 | 147 | 488 | 1,310 | 1,220 | 334 | 153 | 141 |
| 14 | 190 | 175 | 164 | 170 | 150 | 144 | 450 | 1,300 | 1,060 | 321 | 148 | 139 |
| 15 | 193 | 183 | 133 | 170 | 150 | 144 | 447 | 1,400 | 1,020 | 316 | 144 | 136 |
| 16 | 188 | 180 | 114 | 165 | 150 | 144 | 486 | 1,570 | 982 | 304 | 140 | 133 |
| 17 | 187 | 177 | 124 | 150 | 160 | 147 | 569 | 1,640 | 865 | 297 | 133 | 139 |
| 18 | 184 | 159 | 131 | 150 | 165 | 149 | 672 | 1,580 | 771 | 297 | 132 | 139 |
| 19 | 182 | 158 | 156 | 170 | 160 | 154 | 777 | 1,640 | 752 | 289 | 131 | 132 |
| 20 | 181 | 166 | 189 | 170 | 130 | 161 | 810 | 1,630 | 705 | 279 | 127 | 129 |
| 21 | 179 | 164 | 150 | 170 | 140 | 166 | 767 | 1,480 | 649 | 269 | 123 | 127 |
| 22 | 177 | 159 | 140 | 170 | 142 | 164 | 820 | 1,370 | 658 | 250 | 123 | 126 |
| 23 | 177 | 164 | 145 | 170 | 152 | 164 | 976 | 1,270 | 625 | 235 | 139 | 125 |
| 24 | 177 | 171 | 166 | 165 | 120 | 165 | 1,030 | 1,190 | 601 | 226 | 139 | 121 |
| 25 | 176 | 159 | 176 | 155 | 124 | 164 | 1,040 | 1,190 | 608 | 218 | 136 | 118 |
| 26 | 176 | 161 | 176 | 160 | 130 | 163 | 1,020 | 1,240 | 579 | 217 | 129 | 110 |
| 27 | 175 | 140 | 192 | 160 | 130 | 168 | 1,030 | 1,340 | 522 | 214 | 124 | 102 |
| 28 | 176 | 140 | 189 | 160 | 130 | 160 | 1,090 | 1,460 | 491 | 209 | 124 | 110 |
| 29 | 176 | 149 | 184 | 155 | - | 160 | 1,110 | 1,480 | 466 | 201 | 125 | 127 |
| 30 | 175 | 131 | 187 | 160 | - | 167 | 1,040 | 1,460 | 441 | 196 | 127 | 127 |
| 31 | 172 | - | 179 | 155 | - | 168 | - | 1,400 | - | 194 | 127 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 5,888 | 221 | 172 | 190 | 11,680 |
| November | 5,054 | 208 | 131 | 168 | 10,020 |
| December | 4,853 | 192 | 114 | 157 | 9,630 |
| Calendar year 1948 | 149,742 | 2,700 | 111 | 409 | 297,000 |
| January | 5,010 | 170 | 150 | 162 | 9,940 |
| February | 4,023 | 165 | 120 | 144 | 7,980 |
| March | 4,708 | 168 | 135 | 152 | 9,340 |
| April | 18,334 | 1,110 | 172 | 611 | 36,360 |
| May | 37,982 | 1,640 | 744 | 1,225 | 75,340 |
| June | 26,785 | 1,380 | 441 | 893 | 53,130 |
| July | 9,300 | 408 | 194 | 300 | 18,450 |
| August | 4,578 | 190 | 123 | 148 | 9,080 |
| September | 3,770 | 141 | 102 | 126 | 7,480 |
| Water year 1948-49 | 130,285 | 1,640 | 102 | 357 | 258,400 |

## Big Wood River near Bellevue, Idaho

Location.--Water-stage recorder, lat. 43°19', long. 114°21', in sec. 20, T. 1 S., R. 18 E., 1¾ miles upstream from flow line of Magic Reservoir, 3 miles upstream from Camas Creek, and 10 miles southwest of Bellevue.

Drainage area.--823 square miles.

Records available.--July 1911 to September 1949 (except winters of 1942 and prior to 1940).

Extremes.--Maximum discharge during year, 1,290 second-feet May 16 (gage height, 3.78 feet); minimum, 38 second-feet during periods in February and March (gage height, 1.64 feet).

1911-49: Maximum discharge recorded, 3,660 second-feet June 16, 1921 (gage height, 6.07 feet), from rating curve extended above 2,800 second-feet; minimum recorded, 7 second-feet Apr. 14, 1932 (gage height, 1.10 feet).

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

Cooperation.--Water-stage recorder inspected, and five discharge measurements furnished by Water District No. 7 AB.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 1 to Aug. 16)

| | | | | | |
|---|---|---|---|---|---|
| 1.6 | 33 | 2.0 | 107 | 3.0 | 600 |
| 1.7 | 46 | 2.2 | 176 | 3.3 | 825 |
| 1.8 | 62 | 2.4 | 263 | 3.6 | 1,110 |
| 1.9 | 82 | 2.7 | 415 | 3.7 | 1,210 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 87 | 146 | 87 | 51 | 43 | 38 | 59 | 635 | 753 | 126 | 92 | 70 |
| 2 | 84 | 184 | 90 | b50 | a40 | 38 | 64 | 574 | 607 | 120 | 84 | 68 |
| 3 | 82 | 184 | 97 | b50 | a40 | 38 | 80 | 487 | 517 | 120 | 84 | 64 |
| 4 | 84 | 184 | 100 | b50 | a40 | 38 | 97 | 398 | 415 | 126 | 82 | 68 |
| 5 | 92 | 169 | 94 | a50 | a40 | 38 | 123 | 330 | 382 | 123 | 82 | 70 |
| 6 | 94 | 150 | 84 | a50 | a40 | 40 | 158 | 282 | 398 | 113 | 84 | 68 |
| 7 | 92 | 150 | 78 | b50 | 40 | 40 | 214 | 227 | 457 | 107 | 90 | 66 |
| 8 | 87 | *126 | 72 | b50 | a40 | 40 | 258 | 236 | 499 | 104 | 90 | 68 |
| 9 | 82 | 117 | 72 | b50 | 40 | 38 | 272 | 305 | 535 | 107 | 90 | 70 |
| 10 | 82 | 120 | 74 | b50 | 40 | 38 | 291 | 382 | 574 | 107 | 94 | 70 |
| 11 | 80 | 123 | 80 | b50 | 40 | 40 | 315 | 421 | 649 | 107 | 94 | 76 |
| 12 | 78 | 120 | 87 | b50 | 38 | 40 | 427 | 499 | 715 | 107 | 97 | 76 |
| 13 | 78 | 126 | 107 | b50 | 40 | 38 | 433 | 587 | 594 | 110 | 92 | 72 |
| 14 | 84 | 129 | 117 | b50 | 40 | 38 | 404 | 649 | 481 | 100 | 92 | 70 |
| 15 | 87 | 143 | b97 | b50 | 40 | 40 | 388 | 730 | 427 | 97 | 90 | 72 |
| 16 | 87 | 146 | b82 | b50 | 40 | 41 | 404 | 934 | 410 | 100 | 82 | 70 |
| 17 | 90 | 143 | 70 | b50 | 40 | 43 | 469 | 1,030 | 371 | 100 | 78 | 74 |
| 18 | 92 | 129 | b68 | 49 | 40 | 43 | 542 | 1,010 | 335 | 102 | 78 | 64 |
| 19 | 94 | 120 | 66 | 49 | 40 | 46 | 628 | 1,070 | 345 | 102 | 76 | 59 |
| 20 | 94 | 129 | 60 | 49 | 40 | 51 | 685 | 1,140 | 335 | 100 | 76 | 56 |
| 21 | 94 | 133 | b60 | 45 | 38 | 54 | 670 | 1,060 | 296 | 100 | 70 | 56 |
| 22 | 100 | 133 | b60 | 45 | 38 | 52 | 692 | 972 | 277 | 92 | 70 | 56 |
| 23 | 117 | 133 | b60 | 45 | 38 | 52 | 761 | 972 | 272 | 87 | 70 | 56 |
| 24 | 120 | 136 | a60 | 45 | *38 | 56 | 801 | 870 | 268 | 84 | 68 | 54 |
| 25 | 123 | 136 | a55 | 45 | 38 | 59 | 852 | 801 | 250 | 84 | 68 | 56 |
| 26 | 123 | 129 | a55 | 45 | b38 | 56 | 852 | 777 | 245 | 87 | 68 | 54 |
| 27 | 126 | 117 | *54 | 45 | 38 | 54 | 843 | 793 | 232 | 87 | 70 | 54 |
| 28 | 129 | 113 | 54 | 45 | 38 | 52 | 852 | 906 | 218 | 92 | 72 | 54 |
| 29 | 133 | 113 | 54 | 45 | - | 51 | 834 | 982 | 184 | 97 | 72 | 57 |
| 30 | 133 | 94 | 54 | 45 | - | 51 | 745 | 953 | 154 | 100 | 70 | 60 |
| 31 | 136 | - | 52 | 45 | - | 54 | - | 879 | - | 92 | 68 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 3,064 | 136 | 78 | 98.8 | 6,080 |
| November | 4,075 | 184 | 94 | 136 | 8,080 |
| December | 2,300 | 117 | 52 | 74.2 | 4,560 |
| Calendar year 1948 | 78,268 | 1,640 | 49 | 214 | 155,200 |
| January | 1,493 | 51 | 45 | 48.2 | 2,960 |
| February | 1,105 | 43 | 38 | 39.5 | 2,190 |
| March | 1,397 | 59 | 38 | 45.1 | 2,770 |
| April | 14,213 | 852 | 59 | 474 | 28,190 |
| May | 21,891 | 1,140 | 227 | 706 | 43,420 |
| June | 12,195 | 753 | 154 | 406 | 24,190 |
| July | 3,180 | 126 | 84 | 103 | 6,310 |
| August | 2,493 | 97 | 68 | 80.4 | 4,940 |
| September | 1,928 | 76 | 54 | 64.3 | 3,820 |
| Water year 1948-49 | 69,334 | 1,140 | 38 | 190 | 137,500 |

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for Magic Reservoir and station at Hailey.

b Stage-discharge relation affected by ice.

## Magic Reservoir near Richfield, Idaho

Location.--Staff gage at dam on Big Wood River, lat. 43°15', long. 114°22', in NE¼SE¼ sec. 18, T. 2 S., R. 18 E., 18 miles northwest of Richfield. Datum of gage is 4,800 feet above datum of Idaho Irrigation Co., which is reported to be about 137 feet below mean sea level.

Drainage area.--1,500 square miles.

Records available.--February to April 1909 (gage heights only), April 1909 to September 1949.

Extremes.--Maximum contents observed during year, 193,100 acre-feet May 29 (gage height, 135.4 feet); minimum observed, 74,050 acre-feet Sept. 30 (gage height, 93.6 feet).
1909-49: Maximum contents observed, 193,500 acre-feet June 26-28, 1944 (gage height, 135.5 feet); no storage for several days in 1909, 1919, 1920, 1924, 1928, 1935.

Remarks.--Reservoir is formed by earth- and rock-fill dam, completed in 1909, and raised 5 feet in 1917. Capacity, 191,500 acre-feet between gage heights 21.4 feet (2.9 feet above bottom of outlet pipe) and 135.0 feet (top of 5-foot flashboards). Dead storage unknown. Water is used for irrigation of lands in Carey Act project of Big Wood Canal Co. Figures given herein represent usable contents including bank storage. Gage read in morning except during irrigation season when it was read morning and evening; contents computed from morning reading.

Cooperation.--Gage readings and yield table furnished by Water District No. 7 AB.

Contents, in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 86,170 | 91,830 | 96,980 | 102,000 | 107,000 | 110,300 | 97,460 | 190,700 | a192,000 | 174,800 | 131,400 | 97,220 |
| 2 | 86,170 | 92,290 | 97,220 | 102,000 | 107,000 | 110,660 | 97,690 | 191,100 | 191,500 | 173,300 | 129,700 | 96,270 |
| 3 | 86,400 | 92,520 | 97,460 | 102,300 | 107,000 | 111,100 | 98,650 | 191,100 | 191,500 | 172,200 | 128,500 | 95,320 |
| 4 | 86,840 | a92,900 | 97,690 | 102,300 | 107,300 | 111,100 | 99,860 | 191,100 | 191,100 | 171,500 | 127,200 | 94,380 |
| 5 | 86,840 | 93,450 | 97,930 | 103,000 | 107,300 | 111,400 | 101,100 | a190,700 | 190,700 | 170,400 | 126,000 | 92,980 |
| 6 | 87,290 | 93,680 | 98,170 | 103,300 | 107,500 | 111,400 | 102,300 | 190,300 | 190,300 | 168,300 | 124,700 | 92,290 |
| 7 | 87,290 | 93,920 | 98,410 | 103,500 | 107,800 | 111,400 | 103,800 | 190,300 | 189,900 | 167,600 | 123,300 | 91,830 |
| 8 | 87,510 | 94,380 | 98,650 | 103,800 | 108,000 | 111,600 | 106,500 | 189,200 | 189,500 | 166,200 | 121,900 | 91,140 |
| 9 | 87,510 | 94,380 | 98,890 | 104,000 | 108,300 | 111,600 | 109,600 | 188,400 | 189,200 | 164,100 | 120,600 | 90,450 |
| 10 | 87,730 | 94,850 | 99,130 | 104,000 | 108,500 | 110,300 | 114,500 | 188,000 | 189,200 | 163,000 | 119,200 | 89,540 |
| 11 | 87,960 | 95,090 | 99,370 | 104,300 | 108,800 | 108,800 | 118,400 | 187,600 | 188,800 | 161,700 | 118,400 | 88,640 |
| 12 | 88,180 | 95,320 | 99,620 | 104,500 | 108,800 | 108,000 | 123,800 | 187,200 | 188,800 | 161,000 | 116,600 | 87,290 |
| 13 | 88,410 | 95,560 | 99,860 | 104,800 | 108,800 | 107,300 | 130,200 | 187,200 | 188,400 | 159,300 | 116,000 | 86,620 |
| 14 | 88,640 | 95,800 | 100,300 | 105,000 | 108,800 | 105,300 | 137,400 | 187,200 | 188,000 | 158,300 | 115,000 | 85,950 |
| 15 | 88,860 | a96,000 | 100,600 | 105,300 | 109,000 | 104,300 | 143,800 | 187,600 | 187,600 | 156,900 | 113,700 | 84,850 |
| 16 | 89,090 | 96,270 | 100,800 | 105,500 | 109,300 | 103,500 | 148,800 | 188,000 | a187,000 | 155,300 | 112,600 | 84,190 |
| 17 | 89,320 | 96,500 | 101,300 | 105,500 | 109,300 | 101,800 | 153,600 | 189,200 | 186,400 | 153,600 | 111,100 | 83,100 |
| 18 | 89,540 | 96,980 | 101,600 | 105,800 | 109,600 | 100,800 | 158,300 | 190,300 | 185,700 | 152,000 | 110,100 | 82,240 |
| 19 | 89,540 | 97,220 | 101,300 | 105,800 | 109,600 | 99,620 | 161,700 | 191,500 | 184,900 | 150,700 | 109,600 | 81,590 |
| 20 | 89,770 | 97,460 | 101,600 | 105,800 | 109,800 | 99,130 | a166,000 | 192,300 | 184,100 | 149,100 | 108,300 | 81,160 |
| 21 | 89,770 | 97,460 | 101,600 | 106,000 | 109,800 | 97,460 | 169,400 | a192,300 | 183,400 | 147,500 | 107,300 | 80,080 |
| 22 | 90,220 | 96,980 | 101,600 | 106,000 | 110,100 | 96,740 | 172,200 | 192,300 | 182,600 | 146,000 | 106,500 | 79,460 |
| 23 | 90,220 | 96,270 | 101,800 | 106,300 | 110,100 | 96,030 | 175,900 | 192,700 | 181,900 | 144,400 | 105,800 | 78,820 |
| 24 | 90,220 | 95,560 | 101,800 | 106,300 | 110,100 | 95,320 | 178,500 | 192,300 | 181,100 | 143,100 | 104,800 | 78,190 |
| 25 | 90,450 | 95,800 | 101,800 | 106,500 | 110,100 | 94,380 | 180,700 | 192,300 | 180,000 | 141,300 | 103,800 | 77,560 |
| 26 | 90,680 | a96,100 | 101,600 | 106,500 | 110,300 | 94,850 | 182,600 | 191,900 | 179,600 | 139,800 | 102,500 | 76,730 |
| 27 | 90,910 | 96,500 | 101,800 | 106,500 | 110,300 | 95,090 | 184,500 | 191,900 | 178,500 | 138,300 | 101,800 | 76,110 |
| 28 | 91,140 | 96,500 | 101,800 | 106,800 | 110,300 | 95,320 | 186,400 | 192,300 | 177,700 | 136,800 | 101,100 | 75,280 |
| 29 | 91,140 | 96,740 | 101,800 | 106,800 | - | 95,800 | a188,200 | 192,700 | 176,600 | 135,400 | 100,100 | 74,660 |
| 30 | 91,370 | 96,740 | 101,800 | 106,800 | - | 96,030 | a189,600 | 192,700 | 175,900 | 133,900 | 99,130 | 74,050 |
| 31 | 91,600 | - | 102,000 | 106,800 | - | 96,740 | - | 192,300 | - | 132,800 | 97,930 | - |

a No gage-height record; contents computed on basis of measured inflow and outflow.

Monthly gage height and contents, water year October 1948 to September 1949

| Date | Gage height (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept.30 | 99.3 | 86,170 | - |
| Oct. 31 | 101.7 | 91,600 | +5,430 |
| Nov. 30 | 103.9 | 96,740 | +5,140 |
| Dec. 31 | 106.1 | 102,000 | +5,260 |
| Calendar year 1948 | - | - | +6,680 |
| Jan. 31 | 108.0 | 106,800 | +4,800 |
| Feb. 28 | 109.4 | 110,300 | +3,500 |
| Mar. 31 | 103.9 | 96,740 | -13,560 |
| Apr. 30 | - | 189,600 | +92,860 |
| May 31 | 135.2 | 192,300 | +2,700 |
| June 30 | 130.9 | 175,900 | -16,400 |
| July 31 | 117.7 | 132,800 | -43,100 |
| Aug. 31 | 104.4 | 97,930 | -34,870 |
| Sept.30 | 93.6 | 74,050 | -23,880 |
| Water year 1948-49 | - | - | -12,120 |

## Big Wood River below Magic Dam, near Richfield, Idaho

Location.--Water-stage recorder, lat. 43°14', long. 114°22', in sec. 18, T. 2 S., R. 18 E., half a mile downstream from Magic Dam and 18 miles northwest of Richfield.

Records available.--April 1911 to September 1949.

Average discharge.--37 years (1912-49), 400 second-feet.

Extremes.--Maximum discharge during year, 1,580 second-feet May 20 (gage height, 5.50 feet); minimum, 9 second-feet Dec. 4 to Feb. 28.
1911-49: Maximum discharge, 7,160 second-feet Apr. 13, 1943 (gage height, 13.31 feet); no flow Feb. 3, 1915.

Remarks.--Records good. Many ranch diversions in upper drainage area. Flow regulated by Magic Reservoir (see preceding page).

Cooperation.--Water-stage recorder inspected, and six discharge measurements furnished by Water District No. 7 AB.

Rating table, water year 1948-49 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 4, Mar. 25 to Apr. 22, June 13 to July 16, Sept. 6-29)

| | | | | | |
|---|---|---|---|---|---|
| 1.1 | 9 | 2.0 | 74 | 4.0 | 735 |
| 1.2 | 13 | 2.3 | 113 | 4.5 | 1,010 |
| 1.3 | 18 | 2.6 | 170 | 5.0 | 1,280 |
| 1.4 | 24 | 3.0 | 284 | 5.5 | 1,580 |
| 1.7 | 46 | 3.5 | 488 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16 | 14 | 10 | 9 | 9 | 10 | 14 | 768 | 1,120 | 719 | 796 | 539 |
| 2 | 16 | 13 | 10 | 9 | 9 | 10 | 14 | 1,020 | 900 | 740 | 790 | 539 |
| 3 | 16 | 13 | 10 | 9 | 9 | 10 | 14 | 988 | 812 | 757 | 774 | 539 |
| 4 | 16 | 13 | 9 | 9 | 9 | 11 | 14 | 972 | 762 | 768 | 762 | 539 |
| 5 | 16 | 12 | 9 | 9 | 9 | 11 | 14 | 856 | 779 | 762 | 740 | 534 |
| 6 | 16 | 12 | 9 | 9 | 9 | 11 | 14 | 762 | 757 | 762 | 724 | 529 |
| 7 | 16 | 12 | 9 | 9 | 9 | 299 | 14 | 790 | 752 | 757 | 740 | 529 |
| 8 | 16 | 12 | 9 | 9 | 9 | 544 | 14 | 845 | 752 | 779 | 724 | 529 |
| 9 | 16 | 12 | 9 | 9 | 9 | 544 | 14 | 850 | 752 | 812 | 682 | 529 |
| 10 | 14 | 12 | 9 | 9 | 9 | 539 | 15 | 828 | 752 | 812 | 672 | 529 |
| 11 | 14 | 12 | 9 | 9 | 9 | 539 | 15 | 818 | 762 | 801 | 656 | 529 |
| 12 | 14 | 12 | 9 | 9 | 9 | 534 | 15 | 850 | 757 | 796 | 651 | 529 |
| 13 | 14 | 12 | 9 | 9 | 9 | 534 | 15 | 867 | 752 | 812 | 651 | 520 |
| 14 | 14 | 12 | 9 | 9 | 9 | 529 | 16 | 867 | 752 | 818 | 646 | 502 |
| 15 | 14 | 12 | 9 | 9 | 9 | 616 | 16 | 872 | 740 | 812 | 616 | 497 |
| 16 | 14 | 12 | 9 | 9 | 9 | 796 | 16 | 872 | 730 | 806 | 606 | 493 |
| 17 | 14 | 12 | 9 | 9 | 9 | 867 | 16 | 840 | 730 | 806 | 606 | 493 |
| 18 | 14 | 12 | 9 | 9 | 9 | 862 | 16 | 818 | 703 | 801 | 587 | 466 |
| 19 | 13 | 12 | 9 | 9 | 9 | 862 | 16 | 922 | 693 | 796 | 592 | 448 |
| 20 | 13 | 136 | 9 | 9 | 9 | 850 | 16 | 1,270 | 687 | 823 | 558 | 443 |
| 21 | 13 | 367 | 9 | 9 | 9 | 586 | 16 | 1,410 | 672 | 850 | 553 | 430 |
| 22 | 13 | 430 | 9 | 9 | 9 | 493 | 17 | 1,330 | 656 | 850 | 553 | 422 |
| 23 | 12 | 452 | 9 | 9 | 9 | 367 | 91 | 1,320 | 656 | 850 | 577 | 422 |
| 24 | 12 | 179 | 9 | 9 | 9 | 122 | 543 | 1,160 | 677 | 856 | 587 | 422 |
| 25 | 12 | 10 | 9 | 9 | 9 | 14 | 529 | 1,030 | 677 | 850 | 582 | 422 |
| 26 | 13 | 10 | 9 | 9 | 9 | 14 | 461 | 928 | 677 | 834 | 568 | 422 |
| 27 | 14 | 10 | 9 | 9 | 9 | 14 | 466 | 938 | 687 | 818 | 563 | 422 |
| 28 | 14 | 10 | 9 | 9 | 9 | 14 | 470 | 850 | 708 | 818 | 563 | 417 |
| 29 | 13 | 10 | 9 | 9 | - | 14 | 548 | 1,250 | 687 | 818 | 548 | 417 |
| 30 | 13 | 10 | 9 | 9 | - | 14 | 592 | 1,300 | 687 | 818 | 539 | 173 |
| 31 | 13 | - | 9 | 9 | - | 14 | - | 1,180 | - | 812 | 539 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 438 | 16 | 12 | 14.1 | 869 |
| November | 1,857 | 452 | 10 | 61.9 | 3,680 |
| December | 282 | 10 | 9 | 9.1 | 559 |
| Calendar year 1948 | 109,882 | 1,030 | 9 | 300 | 217,900 |
| January | 279 | 9 | 9 | 9.0 | 553 |
| February | 252 | 9 | 9 | 9.0 | 500 |
| March | 10,644 | 867 | 10 | 343 | 21,110 |
| April | 4,031 | 592 | 14 | 134 | 8,000 |
| May | 30,391 | 1,410 | 762 | 980 | 60,280 |
| June | 22,228 | 1,120 | 656 | 741 | 44,090 |
| July | 24,913 | 856 | 719 | 804 | 49,410 |
| August | 19,745 | 796 | 539 | 637 | 39,160 |
| September | 14,224 | 539 | 173 | 474 | 28,210 |
| Water year 1948-49 | 129,284 | 1,410 | 9 | 354 | 256,400 |

Note.--No gage-height record Jan. 21 to Feb. 27; discharge computed on basis of record of operation of gates in dam.

## Big Wood River near Gooding, Idaho

Location.--Water-stage recorder, lat. 42°54', long. 114°48', in sec. 21, T. 6 S., R. 14 E., at Hudson Ranch, 2 miles downstream from bridge on Bliss-Gooding highway, 3½ miles downstream from Little Wood River, 5 miles upstream from diversion dam for King Hill project, and 6 miles southwest of Gooding.

Records available.--March 1916 to September 1949 (fragmentary 1922-37, 1941, 1942).

Extremes.--Maximum discharge during year, 1,910 second-feet Mar. 17 (gage height, 7.10 feet); minimum, 1 second-foot Oct. 7, 8; minimum daily, 4 second-feet Oct. 7. 1916-49: Maximum discharge, 5,220 second-feet Apr. 14, 1943 (gage height, 9.80 feet); no flow at times in many years.

Remarks.--Records good except those for periods of fragmentary gage-height record or those computed from shaft gage readings, which are fair, and those for periods of ice effect, which are poor. Diversions above and below station for irrigation. Flow regulated by Magic Reservoir (see p. 117) and affected by deliveries from canals diverting from Snake River at Milner.

Cooperation.--One discharge measurement furnished by Water District No. 7 AB.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.7 | 4 | 1.2 | 26 | 2.5 | 180 | 4.5 | 589 |
| .8 | 7 | 1.4 | 41 | 3.0 | 258 | 5.0 | 752 |
| .9 | 10 | 1.7 | 71 | 3.5 | 347 | 5.5 | 937 |
| 1.0 | 15 | 2.0 | 109 | 4.0 | 450 | 6.2 | 1,280 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 253 | 137 | 105 | | | 50 | 237 | g71 | f247 | 61 | 61 | 47 |
| 2 | 119 | 137 | 99 | | | 100 | 260 | h76 | h183 | 59 | 64 | 43 |
| 3 | 48 | 140 | 115 | | | 125 | 268 | h20 | 178 | 54 | 46 | 41 |
| 4 | 35 | 145 | 85 | | | 150 | 289 | 30 | 190 | 44 | 41 | 42 |
| 5 | 31 | 130 | 70 | | 40 | 180 | 310 | 36 | 184 | 32 | 43 | 55 |
| 6 | 20 | 129 | 60 | | | 200 | 347 | g63 | 208 | 39 | 35 | 73 |
| 7 | 4 | *130 | 46 | | | 250 | 380 | g91 | 202 | 44 | 42 | 82 |
| 8 | 16 | 119 | 45 | | | 450 | 321 | g69 | 194 | 38 | 44 | 86 |
| 9 | 24 | 109 | 45 | | | 600 | 362 | h59 | 183 | 30 | 58 | 84 |
| 10 | 25 | 116 | 50 | | | 700 | 272 | h51 | 161 | 18 | 69 | 90 |
| 11 | 15 | 119 | 71 | | 44 | 700 | 242 | g47 | 134 | 20 | 72 | 88 |
| 12 | 5 | 108 | 75 | | | 700 | 234 | 42 | 113 | 32 | 60 | 100 |
| 13 | 30 | 112 | 92 | | 22 | 700 | 189 | 40 | 123 | 35 | 55 | 117 |
| 14 | 30 | 109 | 90 | 35 | | *735 | 141 | 32 | 130 | 32 | 46 | 154 |
| 15 | 29 | 112 | 80 | | 22 | 910 | 124 | h25 | 122 | 37 | 49 | 151 |
| 16 | 28 | 112 | *70 | | 21 | 1,240 | 171 | h31 | 101 | 35 | 52 | 140 |
| 17 | 21 | 136 | 50 | | 21 | 1,320 | 198 | g136 | 97 | 35 | 46 | 148 |
| 18 | 7 | 239 | 35 | | 20 | 998 | 220 | g129 | h104 | 32 | 28 | 166 |
| 19 | 10 | 270 | 40 | | 20 | 1,030 | 117 | g105 | h117 | 37 | 19 | 218 |
| 20 | 56 | 195 | 45 | | 21 | 1,100 | 72 | g133 | h151 | 36 | 17 | 242 |
| 21 | 81 | 152 | 40 | | 24 | 990 | 115 | h148 | h159 | 30 | 26 | 177 |
| 22 | 101 | 159 | 30 | | 25 | 705 | 289 | g336 | h131 | 35 | 39 | 138 |
| 23 | 92 | 151 | 25 | | 25 | 592 | 242 | h376 | f88 | 37 | 39 | 109 |
| 24 | 83 | 171 | 25 | | 22 | 510 | 162 | g343 | 69 | 44 | 41 | 97 |
| 25 | 76 | 242 | 25 | | 18 | 458 | 154 | 223 | 57 | 45 | 38 | 112 |
| 26 | 76 | 204 | 25 | | 18 | 339 | 130 | 67 | 47 | 45 | 42 | 109 |
| 27 | 77 | 115 | 25 | (*) | *21 | 290 | 97 | 20 | 52 | 45 | 57 | 87 |
| 28 | 82 | 158 | 25 | | 30 | 266 | h61 | 7 | 70 | 46 | 72 | 90 |
| 29 | 83 | 159 | 30 | 40 | - | 234 | h28 | 49 | 61 | 46 | 76 | 93 |
| 30 | 86 | 112 | *33 | | - | 221 | h32 | 113 | 60 | 52 | 70 | 79 |
| 31 | 119 | - | 35 | | - | 221 | - | f207 | - | 59 | 55 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,762 | 253 | 4 | 56.8 | 3,490 |
| November | 4,427 | 270 | 108 | 148 | 8,780 |
| December | 1,686 | 115 | 25 | 54.4 | 3,340 |
| Calendar year 1948 | 37,640 | 584 | 3 | 103 | 74,650 |
| January | 1,110 | - | - | 35.8 | 2,200 |
| February | 818 | - | 18 | 29.2 | 1,620 |
| March | 17,064 | 1,320 | 50 | 550 | 33,850 |
| April | 6,064 | 380 | 28 | 202 | 12,030 |
| May | 3,175 | 376 | 7 | 102 | 6,300 |
| June | 3,916 | 247 | 47 | 131 | 7,770 |
| July | 1,236 | 61 | 18 | 39.9 | 2,450 |
| August | 1,502 | 76 | 17 | 48.5 | 2,980 |
| September | 3,258 | 242 | 41 | 109 | 6,460 |
| Water year 1948-49 | 46,018 | 1,320 | 4 | 126 | 91,270 |

* Winter discharge measurement made on this day.
f Computed from ~~partly estimated~~ gage-height record.
g Computed from graph based on gage readings.
h Computed from staff-gage reading.
Note.--Stage-discharge relation affected by ice Dec. 1, 4-6, 8, 9, Dec. 15 to Feb. 10, Feb. 12-14, Feb. 28 to Mar. 13 (no gage-height record Dec. 26, 27, Jan. 4-6, 21, 22, 24-26, Feb. 3, 4; discharge computed on basis of records for station below Magic Reservoir and Moore Creek near Arrowrock).

## Warm Springs Creek at Guyer Hot Springs, near Ketchum, Idaho

Location.--Water-stage recorder, lat. 43°41', long. 114°25', in NE¼ sec. 15, T. 4 N., R. 17 E., at Guyer Hot Springs, 2 1/8 miles upstream from mouth and 2.2 miles west of Ketchum.

Drainage area.--96 square miles.

Records available.--November 1940 to September 1949.

Extremes.--Maximum discharge during year, 416 second-feet May 20 (gage height, 2.64 feet); minimum recorded, 18 second-feet Nov. 18 (gage height, 0.91 foot), but may have been less during period of no gage-height record in winter.
1940-49: Maximum discharge, 696 second-feet May 30, 1943 (gage height, 3.36 feet); minimum, 6 second-feet Feb. 29, 1944 (gage height, 0.55 foot), ice jam upstream; minimum daily, 17 second-feet Dec. 17, 1946.

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

Rating table, water year 1948-49 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Dec. 16, Jan. 26 to Mar. 20, Sept. 11-30.)

| | | | |
|---|---|---|---|
| 1.0 | 27 | 1.8 | 155 |
| 1.2 | 48 | 2.0 | 205 |
| 1.4 | 76 | 2.2 | 263 |
| 1.6 | 112 | 2.5 | 364 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 32 | 31 | a30 | a31 | 28 | 34 | 192 | 211 | 72 | 40 | 30 |
| 2 | 35 | 34 | 34 | a28 | a32 | 31 | 36 | 192 | 192 | 70 | 39 | 30 |
| 3 | 34 | 36 | 33 | a29 | h32 | 31 | 37 | 187 | 174 | 66 | 38 | 30 |
| 4 | 35 | 31 | 33 | a29 | a32 | 31 | 40 | 182 | 165 | 68 | 37 | 32 |
| 5 | 37 | 30 | 29 | a33 | a27 | 30 | 47 | 177 | 160 | 68 | 37 | 32 |
| 6 | 36 | 34 | 29 | a34 | a30 | 31 | 61 | 165 | 165 | 67 | 37 | 31 |
| 7 | 35 | 26 | 30 | a34 | a31 | 30 | 74 | 187 | 169 | 62 | 36 | 31 |
| 8 | 34 | 28 | 30 | a32 | a30 | 31 | 72 | 208 | 174 | 61 | 36 | 30 |
| 9 | 34 | 29 | 33 | a29 | 30 | 30 | 76 | 230 | 172 | 60 | 37 | 30 |
| 10 | 34 | 32 | 35 | a30 | a28 | 31 | 88 | 239 | 172 | 60 | 38 | 30 |
| 11 | 33 | 33 | 35 | a30 | 26 | 31 | 110 | 236 | 177 | 58 | 38 | 31 |
| 12 | 32 | 34 | 34 | 30 | 24 | 31 | 125 | 257 | 172 | 57 | 36 | 32 |
| 13 | 31 | 34 | 33 | 33 | 24 | 31 | 104 | 273 | 165 | 54 | 36 | 32 |
| 14 | 31 | 33 | 33 | 33 | h30 | 30 | 95 | 295 | 148 | 53 | 35 | 32 |
| 15 | 32 | 34 | 28 | 33 | a31 | 30 | 99 | 329 | 137 | 53 | 35 | 31 |
| 16 | 32 | 34 | 28 | a31 | a31 | 30 | 118 | 343 | 129 | 52 | 34 | 31 |
| 17 | 32 | 33 | a29 | a30 | a32 | 30 | 146 | 340 | 120 | 49 | 34 | 33 |
| 18 | 31 | 27 | a32 | a30 | a33 | 32 | 172 | 326 | 114 | 49 | 34 | 33 |
| 19 | 32 | 32 | 34 | 35 | a32 | 32 | 184 | 371 | 112 | 48 | 34 | 33 |
| 20 | 32 | 31 | 39 | 35 | h26 | 33 | 184 | 386 | 104 | 47 | 33 | 32 |
| 21 | 31 | 29 | 30 | a35 | a30 | 33 | 167 | 343 | 101 | 47 | 33 | 32 |
| 22 | 31 | 31 | a29 | a34 | a31 | 33 | 184 | 309 | 95 | 46 | 33 | 32 |
| 23 | 31 | 31 | a30 | a34 | a30 | 33 | 200 | 279 | 91 | 45 | 36 | 33 |
| 24 | 30 | 33 | a35 | a32 | 25 | 33 | 211 | 260 | 90 | 44 | 35 | 32 |
| 25 | 30 | 30 | a37 | a31 | 26 | 32 | 222 | 254 | 86 | 44 | 34 | 32 |
| 26 | 30 | 32 | 37 | h32 | 26 | 32 | 211 | 254 | 84 | 44 | 33 | 31 |
| 27 | 30 | 27 | 37 | a32 | 26 | 33 | 213 | 263 | 83 | 44 | 32 | 31 |
| 28 | 30 | 31 | 37 | a32 | 27 | 30 | 225 | 276 | 81 | 42 | 31 | 34 |
| 29 | 30 | 31 | 37 | a31 | - | 30 | 227 | 263 | 76 | 42 | 32 | 38 |
| 30 | 29 | 31 | 35 | a33 | - | 32 | 216 | 251 | 74 | 41 | 33 | 36 |
| 31 | 28 | - | 31 | a32 | - | 33 | - | 233 | - | 41 | 31 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 998 | 37 | 28 | 32.2 | 1,980 |
| November | 943 | 36 | 26 | 31.4 | 1,870 |
| December | 1,017 | 39 | 28 | 32.8 | 2,020 |
| Calendar year 1948 | 25,440 | 439 | 21 | 69.5 | 50,470 |
| January | 986 | 35 | 28 | 31.8 | 1,960 |
| February | 813 | 33 | 24 | 29.0 | 1,610 |
| March | 968 | 33 | 28 | 31.2 | 1,920 |
| April | 3,978 | 227 | 34 | 133 | 7,890 |
| May | 8,100 | 386 | 165 | 261 | 16,070 |
| June | 3,993 | 211 | 74 | 133 | 7,920 |
| July | 1,654 | 72 | 41 | 53.4 | 3,280 |
| August | 1,087 | 40 | 31 | 35.1 | 2,160 |
| September | 957 | 38 | 30 | 31.9 | 1,900 |
| Water year 1948-49 | 25,494 | 386 | 24 | 69.8 | 50,580 |

Peak discharge (base, 300 sec.-ft.).--May 20 (2 a.m.) 416 sec.-ft.
a No gage-height record; discharge computed on basis of weather records and records for combination of Big Wood River and Big Wood Slough at Hailey and other nearby streams.
h Computed from staff-gage reading.

## Big Wood Slough at Hailey, Idaho

Location.--Water-stage recorder, lat. 43°31'00", long. 114°19'30", in sec. 9, T. 2 N., R. 18 E., at highway bridge an eighth of a mile northeast of steel highway bridge over Big Wood River and an eighth of a mile southwest of Hailey

Records available.--June 1915 to September 1949.

Average discharge.--34 years, 112 second-feet.

Extremes.--Maximum discharge during year, 219 second-feet July 27 (gage height, 3.07 feet); no flow Nov. 22 to Mar. 23.
1915-49: Maximum discharge observed, 419 second-feet June 6, 1921, from rating curve extended above 280 second-feet; maximum gage height, 5.55 feet (top of ice in well) Jan. 20-23, 1937; no flow May 8, 1931, Oct. 20 to Nov. 3, 1938, Nov. 22, 1948, to Mar. 23, 1949.

Remarks.--Records good. Flow controlled at inoperative power plant half a mile upstream to meet the requirements of irrigation diversion from slough and sewage dilution. Big Wood Slough is a natural channel of Big Wood River and its discharge plus the discharge of Big Wood River at Hailey (see p. 114) is total discharge of river at this point.

Cooperation.--Water-stage recorder inspected and one discharge measurement furnished by Water District No. 7 AB.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 60 | 39 | | | | 0 | 54 | 66 | 15 | 26 | 178 | 40 |
| 2 | 59 | 43 | | | | 0 | 56 | 64 | 11 | 26 | 167 | 40 |
| 3 | 56 | 44 | | | | 0 | 61 | 61 | 11 | 26 | 164 | 40 |
| 4 | 56 | 41 | | | | 0 | 66 | 56 | 10 | 26 | 164 | 41 |
| 5 | 60 | 38 | | | | 0 | 77 | 53 | 10 | 26 | 163 | 43 |
| 6 | 59 | 39 | | | | 0 | 90 | 47 | 10 | 25 | 160 | 41 |
| 7 | 55 | 38 | | | | 0 | 131 | 43 | 21 | 23 | 156 | 40 |
| 8 | 54 | 33 | | | | 0 | 142 | 46 | 27 | 21 | 157 | 39 |
| 9 | 54 | 31 | | | | 0 | 151 | 48 | 24 | 21 | 156 | 39 |
| 10 | 52 | 35 | | | | 0 | 168 | 37 | 35 | 19 | 157 | 40 |
| 11 | 50 | 38 | | | | 0 | 206 | 28 | 53 | 21 | 157 | 42 |
| 12 | 49 | 37 | | | | 0 | 75 | 26 | 52 | 21 | 150 | 46 |
| 13 | 49 | 37 | | | | 0 | 72 | 26 | 50 | 21 | 144 | 46 |
| 14 | 48 | 37 | | | | 0 | 68 | 22 | 45 | 19 | 140 | 46 |
| 15 | 46 | 39 | | | | 0 | 65 | 22 | 41 | 20 | 136 | 45 |
| 16 | 44 | 38 | | | | 0 | 70 | 20 | 42 | 28 | 132 | 44 |
| 17 | 43 | 37 | | | | 0 | 78 | 18 | 38 | 80 | 65 | 46 |
| 18 | 42 | 37 | | | | 0 | 75 | 18 | 32 | 80 | 20 | 46 |
| 19 | 40 | 34 | | | | 0 | 61 | 18 | 31 | 75 | 21 | 43 |
| 20 | 39 | 35 | | | | 0 | 13 | 18 | 29 | 73 | 19 | 42 |
| 21 | 39 | 35 | | | | 0 | 11 | 17 | 24 | 69 | 19 | 40 |
| 22 | 39 | 15 | | | | 0 | 11 | 16 | 33 | 63 | 19 | 39 |
| 23 | 39 | 0 | | | | 31 | 12 | 16 | 34 | 59 | 19 | 39 |
| 24 | 39 | 0 | | | | 49 | 12 | 16 | 32 | 55 | 19 | 39 |
| 25 | 38 | 0 | | | | 48 | 25 | 16 | 28 | 52 | 18 | 38 |
| 26 | 38 | 0 | | | | 47 | 87 | 16 | 26 | 93 | 19 | 35 |
| 27 | 37 | 0 | | | | 50 | 91 | 18 | 36 | 200 | 38 | 30 |
| 28 | 38 | 0 | | | | 48 | 79 | 18 | 34 | 196 | 37 | 33 |
| 29 | 38 | 0 | | | | 48 | 74 | 21 | 32 | 188 | 38 | 38 |
| 30 | 37 | 0 | | | | 51 | 72 | 21 | 29 | 184 | 40 | 38 |
| 31 | 37 | - | | | | 52 | - | 20 | - | 182 | 40 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,434 | 60 | 37 | 46.3 | 2,840 |
| November | 800 | 44 | 0 | 26.7 | 1,590 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 18,130 | 132 | 0 | 49.5 | 35,950 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 424 | 52 | 0 | 13.7 | 841 |
| April | 2,253 | 206 | 11 | 75.1 | 4,470 |
| May | 932 | 66 | 16 | 30.1 | 1,850 |
| June | 895 | 53 | 10 | 29.8 | 1,780 |
| July | 2,018 | 200 | 19 | 65.1 | 4,000 |
| August | 2,912 | 178 | 18 | 93.9 | 5,780 |
| September | 1,218 | 46 | 30 | 40.6 | 2,420 |
| Water year 1948-49 | 12,886 | 206 | 0 | 35.3 | 25,570 |

## Camas Creek near Blaine, Idaho

Location.--Water-stage recorder, lat. 43°20', long. 114°33', in sec. 15, T. 1 S., R. 16 E., a quarter of a mile north of Macon siding on Hill City branch of Oregon Short Line Railroad, three-eighths of a mile downstream from Willow Creek, 2¼ miles upstream from backwater of Magic Reservoir, and 4 miles southeast of Blaine.

Drainage area.--618 square miles.

Records available.--May 1912 to September 1949 (no winter records prior to 1945). Discharge measurements only for 1922.

Extremes.--Maximum discharge during year, 3,560 second-feet Apr. 13 (gage height, 9.64 feet); minimum recorded, 2.5 second-feet Aug. 20 (gage height, 0.92 foot).
1912-40: Maximum discharge recorded, 9,780 second-feet Apr. 8, 1943; maximum gage height, 15.48 feet about Apr. 18, 1938, from floodmark; minimum discharge recorded, 1.5 second-feet Aug. 29, 1940.

Remarks.--Records good except those below 10 second-feet, which are fair, and those for periods of no gage-height record, which are poor. Many small diversions above station; no appreciable regulation.

Cooperation.--Three discharge measurements and occasional inspections of recorder furnished by Water District No. 7 AB.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.0 | 7.8 | | | | h16 | 200 | 459 | 187 | 16 | 3.2 | 2.8 |
| 2 | 4.0 | 17 | | | | 16 | 300 | 425 | 179 | 14 | 3.2 | 2.6 |
| 3 | 4.0 | 18 | | | | 17 | 450 | 397 | 168 | 13 | 3.0 | 2.6 |
| 4 | 4.2 | 14 | | | | 17 | 500 | 376 | 153 | 11 | 3.2 | 2.8 |
| 5 | 4.6 | 11 | | | | 17 | 600 | 346 | 129 | 11 | 3.2 | 2.6 |
| 6 | 4.8 | 9.8 | | | | 17 | 650 | 323 | 118 | 12 | 3.0 | 2.8 |
| 7 | 4.8 | 9.0 | | | | 17 | 900 | 310 | 109 | 11 | 3.0 | 3.0 |
| 8 | 4.8 | 8.1 | | | 10 | 18 | 1,200 | 295 | 102 | 9.8 | 2.8 | 2.8 |
| 9 | 4.8 | 8.1 | | | | 18 | 1,600 | 285 | 96 | 8.4 | 3.0 | 2.8 |
| 10 | 4.6 | 8.4 | | | | 18 | 2,100 | 271 | 85 | 6.3 | 3.0 | 2.8 |
| 11 | 5.0 | 8.4 | | | | 19 | 2,300 | 293 | 80 | 6.6 | 3.0 | 3.0 |
| 12 | 4.6 | 8.4 | | | | 19 | 2,600 | 300 | 71 | 6.0 | 3.0 | 3.0 |
| 13 | 4.4 | 8.4 | | | | 19 | 3,250 | 300 | 60 | 5.2 | 3.2 | 3.2 |
| 14 | 4.2 | 8.4 | | | | 19 | 2,810 | 308 | 56 | 4.6 | 3.2 | 3.2 |
| 15 | 4.4 | 11 | | | | 20 | 2,210 | 310 | 52 | 4.2 | 3.2 | 3.2 |
| 16 | 4.4 | 12 | 10 | 10 | | 25 | 1,890 | 320 | 47 | 4.4 | 3.2 | 3.3 |
| 17 | 4.4 | 11 | | | | 30 | 1,820 | 330 | 45 | 4.2 | 3.0 | 3.3 |
| 18 | 4.4 | 8.7 | | | | 35 | 1,550 | 318 | 40 | 4.0 | 3.0 | 3.2 |
| 19 | 4.4 | 8.7 | | | | 40 | 1,240 | 330 | 37 | 4.0 | 2.8 | 3.3 |
| 20 | 4.4 | 9.8 | | | | 45 | 1,030 | 357 | 32 | 4.0 | 2.6 | 3.5 |
| 21 | 4.2 | 9.0 | | | | 55 | 908 | 343 | 29 | 4.0 | 2.6 | 3.3 |
| 22 | 4.4 | 9.0 | | | | 80 | 856 | 310 | 23 | 3.8 | 2.6 | 3.5 |
| 23 | 4.2 | 9.0 | | | 16 | 110 | 912 | 271 | 22 | 3.7 | 2.8 | 3.5 |
| 24 | 4.0 | 9.8 | | | | 130 | 894 | 248 | 20 | 3.8 | 2.6 | 3.5 |
| 25 | 4.0 | 9.8 | | | | 140 | 856 | 230 | 18 | 3.8 | 3.0 | 3.5 |
| 26 | 4.2 | 9.4 | | | | 140 | 747 | 213 | 18 | 4.0 | 2.8 | 3.5 |
| 27 | 4.0 | 6.9 | | | | 140 | 632 | 205 | 18 | 3.5 | 2.8 | 3.7 |
| 28 | 4.6 | | | | | 140 | 553 | 199 | 17 | 3.3 | 2.8 | 3.8 |
| 29 | 5.4 | 9.0 | | | - | 140 | 517 | 197 | 17 | 3.3 | 2.8 | 3.8 |
| 30 | 5.2 | | | | - | 150 | 488 | 193 | 16 | 3.3 | 2.8 | 4.0 |
| 31 | 5.6 | - | | | - | 160 | - | 193 | - | 3.2 | 2.6 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 139.0 | 5.6 | 4.0 | 4.48 | 276 |
| November | 295.9 | 18 | 6.9 | 9.86 | 587 |
| December | 310 | - | - | 10 | 615 |
| Calendar year 1948 | 30,099.0 | 1,040 | 2.5 | 822 | 59,700 |
| January | 310 | - | - | 10 | 615 |
| February | 358 | - | - | 12.8 | 710 |
| March | 1,827 | 160 | 16 | 58.9 | 3,620 |
| April | 36,563 | 3,250 | 200 | 1,219 | 72,520 |
| May | 9,255 | 459 | 193 | 299 | 18,360 |
| June | 2,044 | 187 | 16 | 68.1 | 4,050 |
| July | 199.4 | 16 | 3.2 | 6.43 | 396 |
| August | 91.0 | 3.2 | 2.6 | 2.94 | 180 |
| September | 95.9 | 4.0 | 2.6 | 3.20 | 190 |
| Water year 1948-49 | 51,488.2 | 3,250 | 2.6 | 141 | 102,100 |

Peak discharge (base, 500 sec.-ft.).--Apr. 13 (8 a.m.) 3,560 sec.-ft.
h Computed from staff-gage reading.
Note.--No gage-height record Nov. 28 to Feb. 28, Mar. 2-4, Mar. 11 to Apr. 12; discharge computed on basis of inflow-outflow studies for Magic Reservoir, weather records, and records for nearby streams.

## Little Wood River at Campbell Ranch, near Carey, Idaho

Location.--Water-stage recorder, lat. 43°28', long. 114°03', in SW¼NW¼ sec. 35, T. 2 N., R. 20 E., at Campbell Ranch, above flow line of Little Wood Reservoir, 1½ miles downstream from High Five Creek, 2½ miles downstream form Muldoon Creek, 11 miles east of Bellevue, and 12 miles northwest of Carey.

Drainage area.--267 square miles.

Records available.--February 1920 to September 1926 (published as Little Wood River near Carey); March 1941 to December 1942, April 1944 to September 1949 (no winter records except 1921-24, 1926.

Extremes.--Maximum discharge during year, 595 second-feet Apr. 17 (gage height, 2.76 feet); minimum recorded, 19 second-feet Sept. 2, 3, 6, 7 (gage height, 0.94 foot). 1920-26, 1941-42, 1944-49: Maximum discharge recorded, 1,420 second-feet Apr. 10, 1942 (gage height, 4.31 feet, former site and datum); minimum, 14 second-feet Aug. 29, 30, 1926).

Remarks.--Records good except those for Nov. 26-30, which are fair, and those for Apr. 1-11, which are poor. Flow may be slightly regulated by Campbell Reservoir (capacity, 2,700 acre-feet) on unnamed tributary. Diversions for irrigation from Muldoon Creek.

Cooperation.--Water-stage recorder inspected by Little Wood Reservoir Co. and Water District No. 11C.

Revisions.--W 633: Drainage area.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 47 | 58 | | | | | | 283 | 252 | 79 | 34 | 23 |
| 2 | 47 | 88 | | | | | | 259 | 245 | 82 | 34 | 22 |
| 3 | 48 | 82 | | | | | | 249 | 232 | 84 | 33 | 21 |
| 4 | 50 | 66 | | | | | | 239 | 207 | 84 | 33 | 24 |
| 5 | 50 | 60 | | | | | | 223 | 210 | 86 | 33 | 24 |
| 6 | 48 | 62 | | | | | a270 | 216 | 223 | 79 | 31 | 22 |
| 7 | 50 | 54 | | | | | | 223 | 232 | 73 | 30 | 20 |
| 8 | 50 | 48 | | | | | | 236 | 245 | 68 | 28 | 21 |
| 9 | 48 | 54 | | | | | | 249 | 252 | 64 | 30 | 22 |
| 10 | 48 | 64 | | | | | | 266 | 259 | 64 | 33 | 22 |
| 11 | 48 | 57 | | | | | | 283 | 262 | 64 | 32 | 24 |
| 12 | 48 | 57 | | | | | 530 | 306 | 252 | 60 | 29 | 27 |
| 13 | 48 | 57 | | | | | 437 | 317 | 213 | 60 | 29 | 27 |
| 14 | 48 | 57 | | | | | 376 | 329 | 186 | 58 | 29 | 27 |
| 15 | 48 | 63 | | | | | 363 | 386 | 177 | 58 | 27 | 27 |
| 16 | 50 | 62 | | | | | 418 | 433 | 177 | 62 | 26 | 26 |
| 17 | 50 | 58 | | | | | 478 | 452 | a164 | 60 | 26 | 27 |
| 18 | 50 | 47 | | | | | 467 | 413 | a151 | 58 | 27 | 28 |
| 19 | 50 | 50 | | | | | 457 | 483 | a138 | 58 | 26 | 27 |
| 20 | 50 | 51 | | | | | 433 | 483 | a124 | 56 | 24 | 22 |
| 21 | 48 | 52 | | | | | 376 | 423 | 110 | 54 | 24 | 23 |
| 22 | 48 | 52 | | | | | 381 | 386 | 119 | 51 | 24 | 24 |
| 23 | 48 | 52 | | | | | 386 | 346 | 114 | 51 | 24 | 25 |
| 24 | 48 | 54 | | | | | 394 | 306 | 107 | 50 | 24 | 26 |
| 25 | 48 | 51 | | | | | 386 | 294 | 107 | 47 | 21 | 26 |
| 26 | 48 | | | | | | 354 | 291 | 103 | 43 | 21 | 25 |
| 27 | 50 | | | | | | 342 | 306 | 94 | 39 | 21 | 25 |
| 28 | 50 | a50 | | | | | 350 | 321 | 86 | 38 | 22 | 27 |
| 29 | 50 | | | | | | 346 | 317 | 84 | 36 | 23 | 32 |
| 30 | 50 | | | | | | 313 | 294 | 82 | 35 | 24 | 32 |
| 31 | 50 | - | | | | | - | 266 | - | 33 | 23 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,514 | 50 | 47 | 48.8 | 3,000 |
| November | 1,706 | 88 | - | 56.9 | 3,380 |
| December | - | - | - | - | - |
| Calendar year | - | - | - | - | - |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | 10,557 | 530 | - | 352 | 20,940 |
| May | 9,874 | 483 | 216 | 319 | 19,580 |
| June | 5,207 | 262 | 82 | 174 | 10,330 |
| July | 1,834 | 86 | 33 | 59.2 | 3,640 |
| August | 845 | 34 | 21 | 27.3 | 1,680 |
| September | 748 | 32 | 20 | 24.9 | 1,480 |
| Water year | - | - | - | - | - |

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

## Little Wood River near Carey, Idaho

Location.--Water-stage recorder, lat. 43°23', long. 114°00', in E½ sec. 30, T. 1 N., R. 21 E., a third of a mile upstream from West Canal, 1 1/3 miles upstream from East Canal, 2 miles downstream from Little Fish Creek, 3 miles downstream from Little Wood Reservoir, and 6 miles northwest of Carey.

Drainage area.--312 square miles.

Records available.--April 1904 to May 1905, September 1926 to September 1949.

Average discharge.--20 years (1926-27, 1929-42, 1943-49), 126 second-feet.

Extremes.--Maximum discharge during year, 660 second-feet Apr. 17 (gage height, 4.80 feet); minimum, 8 second-feet Sept. 22 (gage height, 2.01 feet); minimum daily, 18 second-feet Sept. 6, 7.

1904-5, 1926-49: Maximum discharge, 6,000 second-feet (due to failure of reservoirs on Little Fish Creek) Apr. 20, 1938 (gage height, 12.07 feet, datum then in use, from floodmark), from rating curve extended above 1,800 second-feet; minimum, 1 second-foot Jan. 26, 1945, Jan. 20, 1948; minimum daily, 3 second-feet on several days during November, December 1943, January 1944, November, December 1947.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Regulation and diversions above station for irrigation. Storage in Little Wood Reservoir (capacity, 10,000 acre-feet), 3 miles above station, began Feb. 12, 1941. Flow is also affected by Condie, Cameron, and Howard Reservoirs (combined capacity, 990 acre-feet) on Little Fish Creek. Capacities are as shown in 11th Biennial Report of Department of Reclamation, State of Idaho.

Cooperation.--Water-stage recorder inspected by Little Wood Reservoir Co. and Water District No. 11C.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 34 | a38 | 40 | 45 | 45 | a60 | 34 | 326 | 264 | 114 | 98 | 56 |
| 2 | 34 | a38 | 40 | 45 | 45 | a60 | 37 | 297 | 253 | 124 | 107 | 40 |
| 3 | 34 | a38 | 40 | 45 | 45 | a60 | 41 | 277 | 248 | 130 | 112 | 39 |
| 4 | 34 | a38 | 40 | 45 | 45 | *61 | 42 | 266 | 220 | 137 | 114 | 36 |
| 5 | 35 | a38 | 40 | 45 | 45 | 61 | 48 | 251 | 210 | 145 | 114 | 24 |
| 6 | 35 | a38 | 40 | 48 | 44 | 60 | 59 | 243 | 220 | 165 | 118 | 18 |
| 7 | 35 | a38 | 40 | 50 | 44 | 66 | 53 | 243 | 238 | 172 | 114 | 18 |
| 8 | 36 | a38 | *40 | 50 | 44 | 60 | 59 | 253 | 245 | 174 | 112 | 19 |
| 9 | 37 | a38 | 42 | 50 | 44 | 60 | 54 | 269 | 256 | 200 | 109 | 40 |
| 10 | 37 | *38 | 44 | 53 | 44 | 60 | 54 | 288 | 277 | 225 | 107 | 40 |
| 11 | 36 | 38 | 44 | 56 | 44 | 60 | 54 | 308 | 280 | 232 | 105 | 47 |
| 12 | 37 | 38 | 44 | 56 | 44 | 60 | 53 | 329 | 285 | 230 | 107 | 52 |
| 13 | 37 | 38 | 45 | 56 | 44 | 61 | 49 | 341 | 264 | 225 | 105 | 49 |
| 14 | 37 | 38 | 45 | 56 | 44 | 61 | 46 | 350 | 258 | 220 | 86 | 36 |
| 15 | 37 | 39 | 45 | 56 | 44 | 55 | 66 | 373 | 302 | 210 | 60 | 30 |
| 16 | 38 | 39 | 45 | 50 | 44 | 50 | 432 | 415 | 283 | 198 | 46 | 28 |
| 17 | 39 | 39 | 48 | 45 | 44 | 52 | 576 | 446 | 243 | 186 | 28 | 28 |
| 18 | 39 | 39 | 50 | 45 | 44 | 52 | 596 | 419 | 205 | 186 | 20 | 29 |
| 19 | 40 | 39 | 50 | 45 | 44 | 53 | 576 | 468 | 184 | 179 | 20 | 29 |
| 20 | 40 | 39 | 50 | 45 | 44 | 55 | 561 | 486 | 168 | 177 | 19 | 27 |
| 21 | 38 | 40 | 50 | 45 | 44 | 54 | 471 | 436 | 145 | 163 | 25 | 24 |
| 22 | 41 | 39 | 50 | 45 | 44 | 55 | 457 | 402 | 135 | 118 | 46 | 22 |
| 23 | 42 | 39 | 48 | 45 | 48 | 56 | 453 | 369 | 122 | 87 | 64 | 26 |
| 24 | 41 | 40 | 45 | 45 | 55 | 50 | 450 | 326 | 107 | 112 | 70 | 30 |
| 25 | 34 | 40 | 45 | 45 | a56 | 43 | 443 | 311 | 99 | 135 | 69 | 27 |
| 26 | 33 | 40 | 45 | 45 | a58 | 43 | 415 | 302 | 99 | 139 | 68 | 27 |
| 27 | a33 | 40 | 45 | 45 | a60 | 39 | 392 | 294 | 92 | 135 | 68 | 27 |
| 28 | a33 | 40 | 45 | 45 | a60 | 32 | 392 | 332 | 96 | 139 | 68 | 28 |
| 29 | a34 | 40 | 45 | 45 | - | 30 | 396 | 332 | 107 | 133 | 69 | 31 |
| 30 | a36 | 40 | 45 | 45 | - | 30 | 369 | 317 | 112 | 116 | 86 | 33 |
| 31 | a37 | - | 45 | 45 | - | 31 | - | 283 | - | 98 | 81 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,133 | 42 | 33 | 36.5 | 2,250 |
| November | 1,164 | 40 | 38 | 38.8 | 2,310 |
| December | 1,380 | 50 | 40 | 44.5 | 2,740 |
| Calendar year 1948 | 43,468 | 592 | 5 | 119 | 86,220 |
| January | 1,481 | 56 | 45 | 47.8 | 2,940 |
| February | 1,310 | 60 | 44 | 46.8 | 2,600 |
| March | 1,630 | 66 | 30 | 52.6 | 3,230 |
| April | 7,728 | 596 | 34 | 258 | 15,330 |
| May | 10,352 | 486 | 243 | 334 | 20,530 |
| June | 6,017 | 302 | 92 | 201 | 11,930 |
| July | 5,004 | 232 | 87 | 161 | 9,920 |
| August | 2,415 | 118 | 19 | 77.9 | 4,790 |
| September | 960 | 56 | 18 | 32.0 | 1,900 |
| Water year 1948-49 | 40,574 | 596 | 18 | 111 | 80,470 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of gate changes for Little Wood Reservoir.
Note.--Stage-discharge relation affected by ice Nov. 18, 20, Nov. 25 to Dec. 1, Dec. 6 to Feb. 20. Feb. 24.

## Little Wood River near Richfield, Idaho

Location.--Water-stage recorder, lat. 43°03', long. 114°08', in sec. 30, T. 4 S., R. 20 E., half a mile upstream from Byrns Slough and heading of Dietrich Canal, 1 mile east of railroad station at Richfield, and 14 miles downstream from Silver Creek.

Records available.--January 1911 to September 1949 (irrigation seasons only).

Extremes.--Maximum discharge recorded during year, 195 second-feet Apr. 21 (gage height, 1.96 feet); minimum recorded, 68 second-feet May 12 (gage height, 1.27 feet).
1911-49: Maximum discharge recorded, 868 second-feet May 3, 1938 (gage height, 3.97 feet); minimum recorded, 7.6 second-feet June 24, 25, 1920 (gage height, 0.52 foot).

Remarks.--Records good. Diversions above station for irrigation. Flow partly regulated by Little Wood Reservoir and four small reservoirs on tributaries. River above Silver Creek is dry, except during freshet seasons, because of channel losses and irrigation diversions above Carey.

Cooperation.--Water-stage recorder graph and five discharge measurements furnished by Water DIstrict No. 11 AB.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 131 | 138 | | | | - | 171 | 105 | 122 | 118 | 82 | 117 |
| 2 | 129 | 142 | | | | - | 173 | 106 | 125 | 118 | 82 | 118 |
| 3 | 129 | 144 | | | | - | 178 | 98 | 125 | 117 | 82 | 117 |
| 4 | 129 | 148 | | | | - | 182 | 93 | 136 | 122 | 84 | 117 |
| 5 | 129 | 150 | | | | - | 182 | 90 | 150 | 125 | 80 | 118 |
| 6 | 129 | 146 | | | | - | 185 | 90 | 146 | 125 | 87 | 118 |
| 7 | 129 | *144 | | | | - | 188 | 89 | 140 | 120 | 89 | 117 |
| 8 | 131 | 144 | | | | - | 180 | 84 | 140 | 120 | 89 | 115 |
| 9 | 131 | 142 | | | | - | 169 | 86 | 136 | 120 | 90 | 112 |
| 10 | 131 | 142 | | | | - | 165 | 84 | 134 | 117 | 97 | 112 |
| 11 | 131 | 140 | | | | - | 162 | 75 | 124 | 120 | 98 | 108 |
| 12 | 133 | 140 | | | | - | 152 | 71 | 118 | 127 | 97 | 108 |
| 13 | 133 | 140 | | | | - | 150 | 72 | 118 | 129 | 103 | 106 |
| 14 | 133 | 140 | | | | - | 150 | 71 | 108 | 122 | 106 | 103 |
| 15 | 133 | 140 | | | | - | 150 | 76 | 101 | 112 | 108 | 101 |
| 16 | 133 | 142 | | | | - | 148 | 87 | 103 | 112 | 108 | 101 |
| 17 | 133 | 142 | | | | - | 146 | 97 | 108 | 108 | 108 | 105 |
| 18 | 133 | 142 | | | | - | 152 | 97 | 112 | 103 | 112 | 110 |
| 19 | 133 | 142 | | | | - | 180 | 110 | 115 | 97 | 115 | 112 |
| 20 | 133 | b140 | | | | - | 188 | 124 | 120 | 95 | 118 | 112 |
| 21 | 133 | 140 | | | | - | 190 | 146 | 115 | 92 | 118 | 113 |
| 22 | 133 | 138 | | | | - | 180 | 165 | 117 | 92 | 122 | 115 |
| 23 | 133 | 140 | | | | - | 173 | 171 | 117 | 93 | 124 | 112 |
| 24 | 134 | 140 | | | | - | 171 | 171 | 113 | 92 | 124 | 108 |
| 25 | 136 | 140 | | | | - | 167 | 160 | 113 | 98 | 127 | 108 |
| 26 | 136 | 140 | | | | - | 160 | 150 | 120 | 89 | 133 | 105 |
| 27 | 136 | 138 | | | | - | 150 | 133 | 118 | 86 | 131 | 100 |
| 28 | 136 | b130 | | | | h165 | 140 | 118 | 125 | 78 | 133 | 113 |
| 29 | 136 | b130 | | | | a167 | 125 | 108 | 127 | 76 | 134 | 113 |
| 30 | 136 | b130 | | | | 169 | 117 | 113 | 120 | 76 | 131 | 117 |
| 31 | 136 | - | | | | 169 | - | 117 | - | 80 | 124 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 4,111 | 136 | 129 | 133 | 8,150 |
| November | 4,214 | 150 | 130 | 140 | 8,360 |
| December | - | - | - | - | - |
| Calendar year | - | - | - | - | - |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | 4,924 | 190 | 117 | 164 | 9,770 |
| May | 3,357 | 171 | 71 | 108 | 6,660 |
| June | 3,666 | 150 | 101 | 122 | 7,270 |
| July | 3,279 | 129 | 76 | 106 | 6,500 |
| August | 3,336 | 134 | 80 | 108 | 6,620 |
| September | 3,331 | 118 | 100 | 111 | 6,610 |
| Water year | - | - | - | - | - |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for Silver Creek near Picabo.
b Stage-discharge relation affected by ice.
h Computed from staff-gage reading.

## Little Wood River at Shoshone, Idaho

Location.--Water-stage recorder, lat. 42°56', long. 114°24', in sec. 2, T. 6 S., R. 17 E., just upstream from diversion dam for town water supply and 400 feet upstream from highway bridge in Shoshone.

Records available.--April 1922 to September 1949 (irrigation seasons only).

Extremes.--Maximum discharge during year, 513 second-feet June 21 (gage height, 3.03 feet); minimum recorded, 44 second-feet Oct. 6; minimum gage height recorded, 0.75 foot Oct. 6, Mar. 2-5.
1922-49: Maximum discharge recorded, 664 second-feet June 18, 1922; maximum gage height recorded, 4.49 feet June 11, 1944; practically no flow July 29, 1931, Oct. 3, 1938.

Remarks.--Records good. Many diversions above and below station for irrigation. Flow affected by operation of Milner-Gooding Canal, which diverts from Snake River and crosses Little Wood River above station, by operation of several reservoirs above Carey, and by Big Wood River water deliveries through Byrns Slough for Dietrich Canal via Little Wood River at Richfield.

Cooperation.--Water-stage recorder graph and five discharge measurements furnished by Water District No. 11 AB.

Rating table, water year 1948-49 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Mar. 1 to Apr. 21, July 30 to Sept. 30)

| | | | | | |
|---|---|---|---|---|---|
| 0.8 | 54 | 1.2 | 159 | 2.0 | 398 |
| .9 | 75 | 1.4 | 231 | 2.3 | 438 |
| 1.0 | 100 | 1.6 | 311 | 2.6 | 472 |
| 1.1 | 128 | 1.8 | 362 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 134 | 103 | | | | 56 | 169 | 362 | 456 | 470 | 468 | 384 |
| 2 | 103 | 111 | | | | 56 | 173 | 366 | 463 | 458 | 466 | 390 |
| 3 | 98 | 111 | | | | 54 | 173 | 370 | 486 | 446 | 463 | 390 |
| 4 | 92 | 117 | | | | 54 | 176 | 351 | 489 | 445 | 451 | 398 |
| 5 | 66 | 117 | | | | 56 | 173 | 384 | 495 | 457 | 421 | 398 |
| 6 | 46 | 117 | | | | 62 | 173 | 453 | 489 | 456 | 422 | 400 |
| 7 | 60 | 111 | | | | 120 | 186 | 443 | 484 | 452 | 425 | 395 |
| 8 | 58 | 108 | | | | 137 | 183 | 425 | 479 | 439 | 426 | 381 |
| 9 | 58 | 106 | | | | 140 | 173 | 430 | 474 | 430 | 438 | 377 |
| 10 | 58 | 114 | | | | 125 | 162 | 436 | 463 | 434 | 440 | 375 |
| 11 | 58 | 106 | | | | 122 | 156 | 431 | 452 | 444 | 439 | 379 |
| 12 | 58 | 100 | | | | 122 | 150 | 420 | 445 | 443 | 437 | 384 |
| 13 | 58 | 103 | | | | 122 | 131 | 413 | 451 | 442 | 428 | 391 |
| 14 | 58 | 100 | | | | 131 | 140 | 407 | 454 | 443 | 431 | 377 |
| 15 | 58 | 106 | | | | 140 | 134 | 413 | 450 | 463 | 386 | 370 |
| 16 | 58 | 108 | | | | 153 | 125 | 451 | 446 | 465 | 377 | 366 |
| 17 | 58 | 108 | | | | 193 | 122 | 453 | 458 | 457 | 372 | 362 |
| 18 | 58 | 114 | | | | 201 | 114 | 452 | 473 | 460 | 370 | 370 |
| 19 | 60 | 108 | | | | 201 | 120 | 463 | 495 | 459 | 372 | 379 |
| 20 | 60 | 111 | | | | 204 | 150 | 475 | 506 | 446 | 377 | 368 |
| 21 | 60 | 120 | | | | 197 | 307 | 478 | 505 | 437 | 390 | 351 |
| 22 | 60 | 114 | | | | 201 | 328 | 465 | 494 | 451 | 383 | 334 |
| 23 | 60 | 137 | | | | 220 | 317 | 471 | 488 | 460 | 375 | 328 |
| 24 | 60 | 117 | | | | 227 | 379 | 434 | 476 | 466 | 383 | 342 |
| 25 | 60 | 111 | | | | 220 | 414 | 421 | 466 | 460 | 391 | 347 |
| 26 | 62 | 97 | | | | 212 | 422 | 401 | 473 | 466 | 401 | 347 |
| 27 | 62 | 166 | | | | 223 | 427 | 390 | 484 | 464 | 402 | 344 |
| 28 | 64 | 131 | | | 58 | 193 | 395 | 416 | 486 | 463 | 400 | 340 |
| 29 | 72 | 125 | | | - | 183 | 360 | 422 | 490 | 463 | 393 | 334 |
| 30 | 106 | 147 | | | - | 176 | 355 | 416 | 479 | 457 | 390 | 272 |
| 31 | 100 | - | | | - | 169 | - | 442 | - | 463 | 390 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 2,123 | 134 | 46 | 68.5 | 4,210 |
| November | 3,444 | 166 | 97 | 115 | 6,830 |
| December | - | - | - | - | - |
| Calendar year | - | - | - | - | - |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | 4,670 | 227 | 54 | 151 | 9,260 |
| April | 6,787 | 427 | 114 | 226 | 13,460 |
| May | 13,154 | 478 | 351 | 424 | 26,090 |
| June | 14,249 | 506 | 445 | 475 | 28,260 |
| July | 14,059 | 470 | 430 | 454 | 27,890 |
| August | 12,707 | 468 | 370 | 410 | 25,200 |
| September | 10,973 | 400 | 272 | 366 | 21,760 |
| Water year | - | - | - | - | - |

## Silver Creek near Picabo, Idaho

Location.--Water-stage recorder, lat. 43°17', long. 114°01', in sec. 1, T. 2 S., R. 20 E., 1½ miles downstream from drain ditch of Blaine County Drainage District No. 1 and 3 miles southeast of Picabo.

Records available.--May 1920 to September 1949 (1922-35, irrigation seasons only).

Average discharge.--16 years (1920-22, 1935-49), 148 second-feet.

Extremes.--Maximum discharge during year, 241 second-feet Apr. 6; maximum gage height recorded, 3.67 feet Jan. 2 (ice jam); minimum discharge recorded, 79 second-feet Dec. 15 (gage height, 1.34 feet).

1920-49: Maximum discharge, 312 second-feet Apr. 3, 1923; maximum gage height, 3.97 feet Jan. 8, 1942 (ice jam); minimum discharge, 26 second-feet June 2, 1920 (gage height, 0.48 foot).

Remarks.--Records good except those for period of ice effect or no gage-height record, which are poor. Many diversions above station for irrigation. Records of discharge do not include water bypassed around station at times by slough on right bank from which there is some diversion for irrigation.

Cooperation.--Water-stage recorder inspected during irrigation season by Water District No. 11 AB.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 186 | 184 | 158 | | | 150 | 212 | 109 | 153 | 170 | 126 | 151 |
| 2 | 184 | 190 | 158 | | | 150 | 220 | 108 | 153 | 174 | 122 | 149 |
| 3 | 182 | 209 | 161 | | | 151 | 227 | 104 | 171 | 176 | 121 | 150 |
| 4 | 181 | 210 | 159 | | | 154 | 230 | 109 | 192 | 182 | 121 | 152 |
| 5 | 183 | 201 | 155 | | | 156 | 235 | 113 | 184 | 189 | 125 | 156 |
| 6 | 185 | 192 | 191 | | | 157 | 236 | 113 | 181 | 183 | 122 | 155 |
| 7 | 182 | 187 | 159 | | 140 | 158 | 229 | 113 | 185 | 178 | 118 | 151 |
| 8 | 180 | 186 | 159 | | | 157 | 218 | 106 | 185 | 174 | 116 | 151 |
| 9 | 180 | 181 | 155 | | | 157 | 209 | 106 | 186 | 171 | 124 | 151 |
| 10 | 180 | *177 | 158 | | | 154 | 201 | 95 | 182 | 174 | 123 | 150 |
| 11 | 180 | 176 | 159 | | | 164 | 193 | 93 | 161 | 178 | 123 | 146 |
| 12 | 179 | 175 | 161 | | | 170 | 187 | 90 | 153 | 176 | 125 | 143 |
| 13 | 178 | 175 | 158 | | | 165 | 181 | 91 | 144 | 167 | 127 | 138 |
| 14 | 177 | 174 | 158 | | | 166 | 175 | 98 | 133 | 148 | 127 | 137 |
| 15 | 179 | 176 | 128 | | | 171 | 171 | 108 | 132 | 142 | 130 | 135 |
| 16 | 180 | 184 | | 140 | | 179 | 168 | 115 | 130 | 137 | 132 | 146 |
| 17 | 180 | 185 | | | | 184 | 165 | 117 | 129 | 130 | 134 | 151 |
| 18 | 179 | 180 | | | 150 | 189 | 162 | 125 | 129 | 128 | 141 | 153 |
| 19 | 176 | 173 | | | | 195 | 160 | 136 | 140 | 123 | 146 | 155 |
| 20 | 177 | 171 | | | | 204 | 158 | 141 | 138 | 111 | 146 | 158 |
| 21 | 177 | 170 | | | | 208 | 153 | 144 | 142 | 116 | 155 | 158 |
| 22 | 177 | 168 | | | | 212 | 150 | 147 | 149 | 123 | 157 | 153 |
| 23 | 178 | 168 | | | | 213 | 152 | 156 | 147 | 128 | 154 | 151 |
| 24 | 179 | 170 | 150 | | 153 | 213 | 151 | 151 | 144 | 129 | 158 | 155 |
| 25 | 179 | 170 | | | *154 | 222 | 148 | 148 | 149 | 126 | 164 | 150 |
| 26 | 179 | 168 | | | 152 | 220 | 138 | 145 | 151 | 124 | 159 | 146 |
| 27 | 179 | 162 | | | 151 | 216 | 128 | 142 | 159 | 119 | 158 | 146 |
| 28 | 180 | 161 | | | 150 | 211 | 119 | 135 | 170 | 119 | 157 | 149 |
| 29 | 180 | 161 | | | - | 205 | 113 | 137 | 169 | 120 | 154 | 157 |
| 30 | 178 | 159 | | | - | 204 | 110 | 143 | 161 | 121 | 150 | 162 |
| 31 | 180 | - | | | - | 207 | - | 148 | - | 123 | 150 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 5,574 | 186 | 176 | 180 | 11,060 |
| November | 5,343 | 210 | 159 | 178 | 10,600 |
| December | 4,777 | 191 | - | 154 | 9,480 |
| Calendar year 1948 | 54,428 | 216 | 88 | 149 | 108,000 |
| January | 4,340 | - | - | 140 | 8,610 |
| February | 4,070 | - | - | 145 | 8,070 |
| March | 5,662 | 222 | 150 | 183 | 11,230 |
| April | 5,299 | 236 | 110 | 177 | 10,510 |
| May | 3,786 | 156 | 90 | 122 | 7,510 |
| June | 4,702 | 192 | 129 | 157 | 9,330 |
| July | 4,559 | 189 | 111 | 147 | 9,040 |
| August | 4,265 | 164 | 116 | 138 | 8,460 |
| September | 4,505 | 162 | 135 | 150 | 8,940 |
| Water year 1948-49 | 56,882 | 236 | 90 | 156 | 112,800 |

* Winter discharge measurement made on this day.

Note.--Flow in bypass channel, which carries water around gage, measured as 7.90 sec.-ft. Nov. 10; 8.12 sec.-ft. Apr. 14; 0.43 sec.-ft. May 30; 1.37 sec.-ft. Aug. 27. Stage-discharge relation affected by ice Nov. 27, 28, Dec. 6-9, Dec. 16 to about Feb. 15 (no gage-height record Dec. 22-27, Jan. 5 to Feb. 23; discharge computed on basis of weather records and records for nearby streams).

## King Hill Canal near Hagerman, Idaho

Location.--Staff gage in concrete-lined channel above entrance to inverted siphon crossing Snake River, lat. 42°52', long. 114°55', in SW¼ sec. 27, T. 6 S., R. 13 E., half a mile west of highway bridge over Big Wood River and 3½ miles north of Hagerman. Prior to Apr. 12, 1949, staff gage at approximately same site, but at datum, 1.95 feet higher.

Records available.--March 1930 to September 1949 (irrigation seasons only except 1939, 1947-1949).

Extremes.--Maximum discharge observed during year, 338 second-feet May 30 (gage height, 5.14 feet, regular gage); no flow for long periods when gates were closed.
1930-49: Maximum discharge observed, 343 second-feet May 27, 1947; maximum gage height observed, 3.80 feet July 19-22, 26, 27, 1944 (site and datum then in use); no flow or small flow from leakage at head gate during nonirrigation seasons and other periods when gates were closed.

Remarks.--Records fair. Gage read twice daily Apr. 12 to May 31 and once daily during balance of irrigation season. This canal, which is operated by King Hill Irrigation District to provide water for irrigation of its project, diverts from Idaho Power Co.'s canal, which in turn diverts from Big Wood River (Malad Springs water). Diversion works and approach to siphon again reconstructed during nonirrigation season of 1948-49.

Cooperation.--Gage readings furnished by King Hill Irrigation District. Three discharge measurements furnished by Idaho Power Co.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 177 | | | | | | 0 | 310 | 322 | 314 | 299 | 319 |
| 2 | 192 | | | | | | 0 | 304 | 318 | 316 | 299 | 319 |
| 3 | 177 | | | | | | 0 | 308 | 316 | 309 | 302 | 319 |
| 4 | 177 | | | | | | 0 | 308 | 321 | 312 | 299 | 317 |
| 5 | 177 | | | | | | 0 | 310 | 328 | 305 | 303 | 312 |
| 6 | 177 | | | | | | 0 | 310 | 311 | 302 | 303 | 317 |
| 7 | 177 | | | | | | 0 | 310 | 307 | 305 | 303 | 310 |
| 8 | 158 | | | | | | 0 | 308 | 307 | 305 | 303 | 289 |
| 9 | 109 | | | | | | 0 | 311 | 309 | 303 | 301 | 285 |
| 10 | 0 | | | | | | 0 | 311 | 312 | 304 | 299 | 290 |
| 11 | 0 | | | | | | 0 | 313 | 301 | 305 | 301 | 282 |
| 12 | 0 | | | | | | 80 | 313 | 304 | 308 | 301 | 290 |
| 13 | 0 | | | | | | 149 | 315 | 306 | 308 | 301 | 290 |
| 14 | 0 | | | | | | 165 | 319 | 309 | 307 | 299 | 286 |
| 15 | 0 | | | | | | 178 | 324 | 309 | 311 | 298 | 289 |
| 16 | 0 | | | | | | 235 | 326 | 311 | 311 | 301 | 286 |
| 17 | 0 | | | | | | 248 | 324 | 315 | 311 | 301 | 286 |
| 18 | 0 | | | | | | 241 | 329 | 305 | 311 | 303 | 283 |
| 19 | 0 | | | | | | 235 | 333 | 140 | 309 | 305 | 286 |
| 20 | 0 | | | | | | 236 | 333 | 0 | 310 | 229 | 282 |
| 21 | 0 | | | | | | 245 | 333 | 0 | 311 | 0 | 282 |
| 22 | 0 | | | | | | 250 | 331 | 258 | 307 | 0 | 265 |
| 23 | 0 | | | | | | 248 | 333 | 312 | 307 | 269 | 269 |
| 24 | 0 | | | | | | 280 | 333 | 312 | 307 | 292 | 265 |
| 25 | 0 | | | | | | 298 | 331 | 307 | 311 | 302 | 260 |
| 26 | 0 | | | | | | 291 | 328 | 307 | 303 | 309 | 262 |
| 27 | 0 | | | | | | 292 | 333 | 304 | 303 | 314 | 260 |
| 28 | 0 | | | | | | 301 | 335 | 308 | 305 | 316 | 260 |
| 29 | 0 | | | | | | 306 | 333 | 304 | 303 | 316 | 260 |
| 30 | 0 | | | | | | 308 | 333 | 302 | 303 | 315 | 260 |
| 31 | 0 | | | | | | - | 331 | - | 299 | 319 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,521 | 192 | 0 | 49.1 | 3,020 |
| November | 0 | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 48,640 | 340 | 0 | 133 | 96,490 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 4,586 | 308 | 0 | 153 | 9,100 |
| May | 9,973 | 335 | 304 | 322 | 19,780 |
| June | 8,465 | 328 | 0 | 282 | 16,790 |
| July | 9,525 | 316 | 299 | 307 | 18,890 |
| August | 8,702 | 319 | 0 | 281 | 17,260 |
| September | 8,580 | 319 | 260 | 286 | 17,020 |
| Water year 1948-49 | 51,352 | 335 | 0 | 141 | 101,900 |

Note.--Discharge computed on basis of gage-height record at auxiliary gage 500 feet below inverted siphon June 1 to Sept. 30.

*Mountain Home feeder canal near Mountain Home, Idaho*

Location.--Water-stage recorder and concrete control, lat. 43°13', long. 115°42', in sec. 36, T. 2 S., R. 6 E., 40 feet downstream from point of diversion from Canyon Creek and 5 miles north of Mountain Home.

Records available.--April 1924 to September 1929, April 1931 to September 1949.

Extremes.--Maximum discharge during year, 167 second-feet May 15 (gage height, 2.39 feet); no flow for many days during winter.
1924-29, 1931-49: Maximum discharge, 226 second-feet Feb. 21, 1927 (gage height, 2.18 feet, datum then in use), from rating curve extended above 120 second-feet; no flow at times during most years.

Remarks.--Records good except those for Apr. 15 to May 10, which are fair, and those for periods of ice effect or no gage-height record, which are poor. Canal diverts from Canyon Creek in sec. 36, T. 2 S., R. 6 E., and delivers water to Mountain Home cooperative canal, which heads in Mountain Home feeder canal half a mile below station, for irrigation of about 5,000 acres in Mountain Home Irrigation District. During nonirrigation season and at times when there is a surplus of water for irrigation, canal feeds directly into Mountain Home Reservoir. No diversion from canal above station; two small diversions between station and headgates of Mountain Home cooperative canal. Flow regulated by headgates in Canyon Creek and by Long Tom and Little Camas Reservoirs.

**Discharge, in second-feet, water year October 1948 to September 1949**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.8 | 1.7 | b1.7 | | | b50 | 50 | 75 | 39 | 65 | 26 | 57 |
| 2 | .8 | 2.0 | 1.7 | | | *b44 | 54 | 71 | 28 | 57 | 26 | 54 |
| 3 | .8 | 2.4 | 1.7 | | | b36 | 58 | 65 | 23 | 56 | 41 | 56 |
| 4 | .8 | 2.7 | 1.7 | | | b47 | 58 | 61 | 20 | 56 | 44 | 55 |
| 5 | 1.4 | 2.7 | b1.8 | | | 77 | 57 | 56 | 19 | 56 | 44 | 58 |
| 6 | 1.4 | 2.7 | 2.0 | | | 80 | 56 | 69 | 20 | 64 | 44 | 53 |
| 7 | 1.5 | b2.6 | b2.1 | | b2 | 77 | 57 | 70 | 34 | 73 | 44 | 58 |
| 8 | 1.4 | b2.5 | b2.1 | | | 73 | 51 | 97 | 45 | 83 | 44 | 58 |
| 9 | 1.2 | b2.4 | 2.0 | | | 75 | 50 | 102 | 72 | 81 | 45 | 63 |
| 10 | 1.0 | b2.3 | 2.0 | | | 73 | 48 | 102 | 77 | 73 | 46 | 66 |
| 11 | .8 | b2.2 | 3.0 | | | 74 | 43 | 100 | 73 | 65 | 56 | 71 |
| 12 | .8 | b2.1 | 3.4 | | | 93 | 44 | 96 | 77 | 66 | 59 | 67 |
| 13 | .7 | 2.0 | 2.7 | | | 83 | 67 | 93 | 71 | 62 | 58 | 62 |
| 14 | .8 | 2.0 | 2.4 | | | 85 | 66 | 100 | 62 | 60 | 58 | 60 |
| 15 | .7 | 2.0 | b2.2 | | | 99 | 65 | 115 | 62 | 55 | 55 | 62 |
| 16 | .7 | 2.4 | b2.0 | b0 | | 113 | 97 | 105 | 69 | 46 | 58 | 61 |
| 17 | .7 | *2.7 | b1.8 | (*) | b5 | 113 | 118 | 97 | 70 | 50 | 46 | 58 |
| 18 | .7 | b2.0 | b1.6 | | | 112 | 114 | 95 | 58 | 51 | 44 | 16 |
| 19 | .8 | 2.0 | b1.4 | | | 109 | 111 | 85 | 57 | 48 | 55 | 6.4 |
| 20 | .8 | 1.7 | b1.2 | | | 121 | 108 | 51 | 65 | 46 | 57 | 5.0 |
| 21 | 1.0 | b1.7 | b1.0 | | | 127 | 98 | 43 | 67 | 56 | 57 | 3.6 |
| 22 | 1.0 | 1.7 | | | | *99 | 98 | 52 | 66 | 57 | 56 | 3.3 |
| 23 | 1.0 | 1.7 | | | b15 | 111 | 100 | 53 | 69 | 56 | 64 | 3.0 |
| 24 | 1.2 | 2.0 | | | | 101 | 101 | 50 | 69 | 56 | 62 | 3.0 |
| 25 | 1.2 | 2.0 | | | | 75 | 98 | 54 | 69 | 62 | 54 | 2.4 |
| 26 | 1.2 | 2.0 | b1.0 | | b60 | 56 | 97 | 63 | 65 | 56 | 52 | 2.4 |
| 27 | 1.4 | b1.9 | | | | 54 | 90 | 71 | 69 | 50 | 52 | 2.4 |
| 28 | 1.7 | b1.8 | | (*) | | 52 | 88 | 72 | 77 | 43 | 52 | 2.4 |
| 29 | 1.7 | b1.7 | | | - | 50 | 83 | 73 | 77 | 31 | 42 | 2.4 |
| 30 | 1.7 | b1.7 | | | - | 49 | 79 | 65 | 72 | 28 | 41 | 3.0 |
| 31 | 1.7 | - | | | - | 50 | - | 71 | - | 27 | 49 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 33.4 | 1.7 | 0.7 | 1.08 | 66.2 |
| November | 63.3 | 2.7 | 1.7 | 2.11 | 126 |
| December | 51.5 | 3.4 | - | 1.66 | 102 |
| Calendar year 1948 | 98,847 | 111 | 1.0 | 27.0 | 19,600 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 351 | - | - | 12.5 | 696 |
| March | 2,458 | 127 | 36 | 79.3 | 4,880 |
| April | 2,304 | 118 | 43 | 76.8 | 4,570 |
| May | 2,372 | 115 | 43 | 76.5 | 4,700 |
| June | 1,741 | 77 | 19 | 58.0 | 3,450 |
| July | 1,735 | 83 | 27 | 56.0 | 3,440 |
| August | 1,531 | 64 | 26 | 49.4 | 3,040 |
| September | 1,074.3 | 71 | 2.4 | 35.8 | 2,130 |
| Water year 1948-49 | 13,714.5 | 127 | 0 | 37.6 | 27,200 |

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice. No gage-height record Dec. 22 to Feb. 17; discharge computed on basis of weather records, reports of no flow by engineer Jan. 17, 28, and records for nearby streams of similar runoff characteristics.

## Bruneau River near Winter Camp Ranch, Idaho

Location.--Water-stage recorder, lat. 42°38', long. 115°42', in sec. 13, T. 9 S., R. 6 E., at Roberson Trail crossing, 6 miles downstream from East Fork, 11 miles northwest of Winter Camp Ranch, and 11 miles south of Hot Spring. Datum of gage is 3,015.68 feet above mean sea level, datum of 1929.

Records available.--November 1946 to September 1949.

Extremes.--Maximum discharge during year, 3,290 second-feet May 17 (gage height, 5.23 feet); minimum daily, 28 second-feet Dec. 17; minimum gage height, 0.61 foot Nov. 9. 1946-49: Maximum discharge, that of May 17, 1949; minimum daily, that of Dec. 17, 1948; minimum gage height, 0.48 foot Sept. 16, 1948.

Remarks.--Records good except those for period of ice effect, which are fair. Several small reservoirs and many small diversions for irrigation above station.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 47 | 60 | 72 | 72 | 70 | 110 | 205 | 1,900 | 1,460 | 294 | 78 | 44 |
| 2 | 49 | 60 | 60 | 74 | 70 | 120 | 199 | 1,700 | 1,480 | 272 | 76 | 43 |
| 3 | 46 | 66 | 104 | 60 | 65 | 120 | 202 | 1,700 | 1,380 | 263 | 78 | 42 |
| 4 | 44 | 72 | 91 | 40 | 65 | 130 | 215 | 1,700 | 1,150 | 252 | 78 | 41 |
| 5 | 44 | 74 | 72 | 35 | 70 | 135 | 263 | 1,560 | 1,020 | 248 | 76 | 41 |
| 6 | 51 | 69 | 74 | 40 | 65 | 140 | 389 | 1,420 | 980 | 240 | 72 | 41 |
| 7 | 57 | 66 | 74 | 45 | 65 | 146 | 529 | 1,350 | 980 | 222 | 67 | 41 |
| 8 | 56 | 64 | 80 | 50 | 65 | 151 | 747 | 1,360 | 1,000 | 208 | 66 | 41 |
| 9 | 56 | 49 | 80 | 60 | 55 | 151 | 988 | 1,460 | 1,060 | 195 | 66 | 41 |
| 10 | 54 | 59 | 85 | 65 | 65 | 151 | 1,110 | 1,600 | 1,050 | 184 | 66 | 42 |
| 11 | 53 | 80 | 89 | 60 | 75 | 151 | 1,200 | 1,710 | 1,040 | 181 | 66 | 42 |
| 12 | 53 | 76 | 97 | 55 | 85 | 151 | 1,460 | 1,770 | 1,030 | 175 | 60 | 42 |
| 13 | 51 | 71 | *104 | 45 | 80 | 151 | 1,600 | 1,840 | 1,000 | 164 | 59 | 43 |
| 14 | 51 | 71 | 99 | 50 | 55 | 151 | 1,410 | 1,960 | 912 | 161 | 57 | 44 |
| 15 | 51 | 71 | 80 | 60 | 60 | 159 | 1,360 | 2,160 | 838 | 154 | 59 | 44 |
| 16 | 53 | 72 | 30 | 65 | 75 | 175 | 1,360 | 2,490 | 789 | 143 | 60 | 43 |
| 17 | 60 | 76 | 28 | 65 | 85 | 189 | 1,500 | 3,140 | 740 | 136 | 60 | 42 |
| 18 | 59 | 76 | 40 | 65 | 95 | 195 | 1,750 | 2,900 | 679 | 128 | 60 | 44 |
| 19 | 59 | 71 | 50 | 65 | 100 | 202 | 1,930 | 2,700 | 634 | 121 | 60 | 46 |
| 20 | 57 | 80 | 120 | *62 | 95 | 240 | 2,040 | 2,400 | 608 | 116 | 56 | 46 |
| 21 | 57 | 84 | 90 | 60 | 95 | 290 | 2,000 | 2,300 | 558 | 112 | 53 | 44 |
| 22 | 57 | 82 | 45 | 60 | 95 | 308 | 1,970 | 2,150 | 529 | 108 | 51 | 43 |
| 23 | 57 | 78 | 30 | 65 | 95 | 337 | 2,170 | 1,900 | 496 | 101 | 53 | 42 |
| 24 | 57 | 80 | 35 | 65 | 96 | *308 | 2,380 | 1,650 | 468 | 99 | 53 | 42 |
| 25 | 56 | 80 | 33 | 65 | *96 | 276 | 2,460 | 1,550 | 442 | 95 | 54 | 42 |
| 26 | 56 | 84 | 35 | 55 | 96 | 255 | 2,340 | 1,570 | 426 | 93 | 53 | 42 |
| 27 | 54 | 74 | 40 | 45 | 96 | 248 | 2,200 | 1,580 | 405 | 93 | 50 | 42 |
| 28 | 54 | 57 | 50 | 60 | 100 | 244 | 2,180 | 1,600 | 373 | 87 | 49 | 46 |
| 29 | 56 | 67 | 70 | 65 | - | 222 | 2,230 | 1,600 | 342 | 85 | 49 | 50 |
| 30 | 57 | 78 | 80 | 70 | - | 195 | 2,180 | 1,550 | 318 | 84 | 49 | 51 |
| 31 | 57 | - | 70 | 70 | - | 205 | - | 1,500 | - | 82 | 49 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,669 | 60 | 44 | 53.8 | 3,310 |
| November | 2,147 | 84 | 49 | 71.6 | 4,260 |
| December | 2,107 | 120 | 28 | 68.0 | 4,180 |
| Calendar year 1948 | 98,751 | 1,590 | 24 | 271 | 195,900 |
| January | 1,813 | 74 | 35 | 58.5 | 3,600 |
| February | 2,229 | 100 | 55 | 79.6 | 4,420 |
| March | 6,006 | 337 | 110 | 194 | 11,910 |
| April | 42,567 | 2,460 | 199 | 1,419 | 84,430 |
| May | 57,770 | 3,140 | 1,350 | 1,864 | 114,600 |
| June | 24,187 | 1,480 | 318 | 806 | 47,970 |
| July | 4,896 | 294 | 82 | 158 | 9,710 |
| August | 1,883 | 78 | 49 | 60.7 | 3,730 |
| September | 1,297 | 51 | 41 | 43.2 | 2,570 |
| Water year 1948-49 | 148,571 | 3,140 | 28 | 407 | 294,700 |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 15 to Mar. 6. Doubtful gage-height record May 17 to June 12; discharge computed on basis of records for station near Hot Spring.

## Bruneau River near Hot Spring, Idaho

Location.--Water-stage recorder, lat. 42°46', long. 115°43'30", in SE¼ sec. 34, T. 7 S., R. 6 E., at Dunham Ranch, 1 mile downstream from Hot Creek, 1½ miles south of Hot Spring post office, 9 miles southeast of Bruneau, and about 16 miles downstream from East Fork. Datum of gage is 2,598.5 feet above mean sea level, datum of 1929 (from stadia level circuit by Topographic Branch in 1945).

Records available.--July 1909 to March 1915, October 1943 to September 1949.

Average discharge.--11 years (1909-14, 1943-49), 427 second-feet.

Extremes.--Maximum discharge during year, 3,100 second-feet May 16 (gage height, 8.99 feet); minimum, 54 second-feet Dec. 17 (gage height, 3.83 feet).
1909-15, 1943-49: Maximum discharge observed, 5,660 second-feet Mar. 1, 1910 (gage height, 10.6 feet, site and datum then in use), from rating curve extended above 1,200 second-feet; minimum observed, 40 second-feet Jan. 23, Nov. 29, 1911.

Remarks.--Records good. Several small reservoirs and many small diversions from tributaries above station for irrigation.

Revisions (water years).--W 1063: 1913.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 90 | 100 | 98 | 125 | 118 | 172 | 242 | 1,830 | 1,490 | 347 | 112 | 85 |
| 2 | 90 | 102 | 102 | 128 | 120 | 181 | 235 | 1,660 | 1,510 | 319 | 110 | 83 |
| 3 | 90 | 102 | 139 | 110 | 112 | 181 | 242 | 1,630 | 1,410 | 306 | 110 | 81 |
| 4 | 87 | 110 | 136 | 79 | 115 | 187 | 253 | 1,650 | 1,180 | 297 | 112 | 79 |
| 5 | 87 | 112 | 112 | 72 | 118 | 187 | 293 | 1,540 | 1,050 | 289 | 112 | 79 |
| 6 | 90 | 110 | 110 | 79 | 115 | 187 | 400 | 1,410 | 1,000 | 289 | 108 | 79 |
| 7 | 102 | 105 | 112 | 87 | 115 | 184 | 535 | 1,340 | 997 | 273 | 102 | 79 |
| 8 | 100 | 105 | 115 | 98 | 115 | 187 | 750 | 1,340 | 1,020 | 253 | 100 | 79 |
| 9 | 102 | 92 | 118 | 110 | 105 | 191 | 980 | 1,440 | 1,080 | 242 | 100 | 79 |
| 10 | 100 | 94 | 120 | 115 | 115 | 194 | 1,110 | 1,610 | 1,070 | 228 | 100 | 79 |
| 11 | 100 | 118 | 128 | 112 | 128 | 191 | 1,190 | 1,710 | 1,060 | 221 | 98 | 79 |
| 12 | 100 | 118 | 139 | 105 | 139 | 194 | 1,470 | 1,780 | 1,060 | 214 | 94 | 79 |
| 13 | 98 | 110 | 145 | 94 | 133 | 187 | 1,630 | 1,850 | 1,000 | 204 | 94 | 81 |
| 14 | 96 | 110 | 139 | 102 | 110 | 194 | 1,420 | 1,950 | 916 | 204 | 92 | 83 |
| 15 | 94 | 112 | 118 | 112 | 115 | 197 | 1,390 | 2,140 | 846 | 194 | 92 | 83 |
| 16 | 96 | 112 | 64 | 118 | 136 | 214 | 1,370 | 2,390 | 794 | 184 | 94 | 81 |
| 17 | 100 | 115 | 61 | 118 | 147 | 235 | 1,510 | 2,950 | 762 | 175 | 94 | 79 |
| 18 | 102 | 118 | 72 | 118 | 153 | 242 | 1,730 | 2,780 | 707 | 165 | 94 | 79 |
| 19 | 100 | 112 | 85 | 118 | 159 | 249 | 1,890 | 2,470 | 659 | 159 | 92 | 81 |
| 20 | 100 | 115 | 165 | 118 | 153 | 273 | 1,970 | 2,300 | 638 | 150 | 92 | 83 |
| 21 | 100 | 122 | 128 | 112 | 153 | 333 | 1,950 | 2,210 | 602 | 147 | 90 | 81 |
| 22 | 100 | 122 | 83 | 110 | 153 | 356 | 1,900 | 2,080 | 560 | 145 | 87 | 79 |
| 23 | 100 | 120 | 65 | 118 | 156 | 390 | 2,080 | 1,770 | 525 | 139 | 87 | 77 |
| 24 | 98 | 118 | 72 | 118 | 162 | 361 | 2,240 | 1,620 | 505 | 133 | 85 | 77 |
| 25 | 98 | 120 | 70 | 118 | 162 | 324 | 2,280 | 1,560 | 475 | 128 | 87 | 77 |
| 26 | 98 | 122 | 74 | 100 | 162 | 293 | 2,210 | 1,580 | 460 | 125 | 87 | 77 |
| 27 | 98 | 115 | 85 | 96 | 162 | 285 | 2,080 | 1,610 | 440 | 122 | 87 | 79 |
| 28 | 98 | 100 | 98 | 108 | 165 | 285 | 2,050 | 1,620 | 410 | 122 | 87 | 81 |
| 29 | 98 | 98 | 118 | 112 | - | 265 | 2,100 | 1,610 | 390 | 120 | 87 | 90 |
| 30 | 98 | 110 | 133 | 122 | - | 239 | 2,100 | 1,560 | 366 | 118 | 87 | 90 |
| 31 | 100 | - | 125 | 118 | - | 246 | - | 1,520 | - | 115 | 87 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 3,010 | 102 | 87 | 97.1 | 5,970 |
| November | 3,319 | 122 | 92 | 111 | 6,580 |
| December | 3,329 | 165 | 61 | 107 | 6,600 |
| Calendar year 1948 | 112,303 | 1,590 | 56 | 308 | 222,700 |
| January | 3,350 | 128 | 72 | 108 | 6,640 |
| February | 3,796 | 165 | 105 | 136 | 7,530 |
| March | 7,404 | 390 | 172 | 239 | 14,680 |
| April | 41,600 | 2,280 | 235 | 1,387 | 82,510 |
| May | 56,510 | 2,950 | 1,340 | 1,823 | 112,100 |
| June | 24,982 | 1,510 | 366 | 833 | 49,550 |
| July | 6,127 | 347 | 115 | 198 | 12,150 |
| August | 2,960 | 112 | 85 | 95.5 | 5,870 |
| September | 2,418 | 90 | 77 | 80.6 | 4,800 |
| Water year 1948-49 | 158,805 | 2,950 | 61 | 435 | 315,000 |

## Bruneau River near Grand View, Idaho

Location.--Water-stage recorder, lat. 42°56', long. 115°57', in SE¼ sec. 35, T. 5 S., R. 4 E., 0.8 mile downstream from diversion dam for Grand View Canal, 1 mile upstream from mouth, and 8½ miles southeast of Grand View. Datum of gage is 2,372.3 feet above mean sea level, datum of 1929 (from stadia level circuit by Topographic Branch in 1945).

Records available.--January 1895 to December 1903 (gage heights only January 1900 to December 1903), May 1909 to September 1916, December 1944 to October 1949 (discontinued).

Extremes.--Maximum discharge during period October 1948 to October 1949, 2,780 second-feet May 18 (gage height, 6.48 feet); minimum, 1 second-foot Oct. 14-17, 1948; minimum gage height, 0.49 foot Oct. 1, 1948.

1895-1903, 1909-16, 1944-49: Maximum discharge observed, 5,700 second-feet Mar. 2, 1910 (gage height, 10.1 feet, from floodmark, site and datum then in use), from rating curve extended above 1,200 second-feet; minimum, 0.9 second-foot Sept. 30, Oct. 7-9, 1947.

Remarks.--Records good except those during periods of ice effect or doubtful or no gage-height record, which are fair. Many diversions for irrigation above station.

Discharge, in second-feet, 1948-49

1948-49

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 28 | 146 | 150 | 169 | 208 | 274 | 1,760 | 1,310 | 160 | 10 | 7 |
| 2 | 2 | 29 | 146 | 150 | 156 | 220 | 284 | 1,480 | 1,300 | 140 | 10 | 7 |
| 3 | 2 | 28 | 159 | 140 | 159 | 248 | 287 | 1,340 | 1,270 | 125 | 9 | 7 |
| 4 | 2 | 29 | 159 | *129 | 159 | 248 | 297 | 1,380 | 1,120 | 110 | 8 | 7 |
| 5 | 2 | 35 | 146 | b115 | 164 | 245 | 320 | 1,320 | 930 | 90 | 8 | 7 |
| 6 | 2 | 47 | 134 | b115 | 152 | 245 | 408 | 1,200 | 840 | 80 | 8 | 7 |
| 7 | 2 | 49 | 142 | 114 | 154 | 255 | 509 | 1,100 | 805 | 55 | 8 | 7 |
| 8 | 2 | 47 | 139 | 107 | 156 | 242 | 689 | 1,060 | 835 | 36 | 8 | 7 |
| 9 | 2 | 46 | 142 | 119 | 154 | 236 | 880 | 1,140 | 875 | 30 | 8 | 7 |
| 10 | 2 | 36 | 142 | 122 | 167 | 258 | 980 | 1,270 | 905 | 22 | 8 | 7 |
| 11 | 2 | 46 | 152 | 130 | 169 | 255 | 1,040 | 1,370 | 890 | 22 | 8 | 7 |
| 12 | 2 | 72 | 154 | 140 | 172 | 258 | 1,200 | 1,460 | 865 | 23 | 8 | 7 |
| 13 | 2 | 66 | 159 | 125 | 197 | 242 | 1,460 | 1,530 | 835 | 25 | 8 | 7 |
| 14 | 1 | 66 | 164 | 135 | 167 | 245 | 1,340 | 1,630 | 720 | 21 | 8 | 7 |
| 15 | 1 | 119 | 152 | 150 | 156 | 248 | 1,220 | 1,810 | 662 | 19 | 8 | 7 |
| 16 | 1 | 154 | 112 | 150 | 180 | 264 | 1,140 | 2,030 | 599 | 19 | 8 | 7 |
| 17 | 1 | 152 | 78 | 150 | 220 | 271 | 1,180 | 2,240 | 563 | 19 | 7 | 8 |
| 18 | 2 | 162 | 72 | 150 | 208 | 277 | 1,380 | 2,700 | 514 | 19 | 8 | 8 |
| 19 | 15 | 162 | 120 | 148 | 208 | 320 | 1,570 | 2,570 | 473 | 20 | 8 | 7 |
| 20 | 12 | 154 | 180 | 145 | 205 | 350 | 1,660 | 2,310 | 451 | 21 | 7 | 8 |
| 21 | 12 | 162 | 155 | *142 | 211 | 380 | 1,730 | 2,130 | 401 | 20 | 7 | 9 |
| 22 | 16 | 164 | 120 | 139 | 205 | 410 | 1,680 | 2,000 | 386 | 16 | 7 | 8 |
| 23 | 12 | 164 | 100 | 149 | 200 | 423 | 1,680 | 1,790 | 451 | 10 | 7 | 7 |
| 24 | 11 | 159 | 110 | 154 | 220 | 419 | 1,870 | 1,490 | 451 | 10 | 7 | 7 |
| 25 | 11 | 159 | 120 | b150 | *217 | 372 | 2,000 | 1,340 | 404 | 10 | 8 | 7 |
| 26 | 11 | 159 | 130 | b145 | 205 | 344 | 2,000 | 1,300 | 290 | 10 | 8 | 7 |
| 27 | 18 | 136 | 130 | b140 | 223 | 334 | 1,910 | 1,340 | 250 | 10 | 8 | 7 |
| 28 | 19 | 53 | 130 | 152 | 217 | 320 | 1,820 | 1,330 | 220 | 10 | 8 | 7 |
| 29 | 19 | 100 | 145 | 156 | - | 313 | 1,800 | 1,380 | 200 | 10 | 8 | 7 |
| 30 | 23 | 152 | 150 | 162 | - | 290 | 1,850 | 1,330 | 180 | 10 | 7 | 8 |
| 31 | 25 | - | 150 | 164 | - | 271 | - | 1,330 | - | 10 | 7 | - |

* Winter discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Doubtful or no gage-height record Dec. 19 to Jan. 3, Jan. 11-20, Mar. 19-22, June 26 to July 7; discharge computed on basis of weather records and records for station near Hot Spring.

1949

| Day | Discharge | Day | Discharge | Day | Discharge | Day | Discharge |
|---|---|---|---|---|---|---|---|
| Oct. 1 | 8 | Oct. 9 | 10 | Oct. 17 | 18 | Oct. 25 | 56 |
| 2 | 7 | 10 | 15 | 18 | 18 | 26 | 56 |
| 3 | 7 | 11 | 17 | 19 | 18 | 27 | 58 |
| 4 | 7 | 12 | 17 | 20 | 18 | 28 | 55 |
| 5 | 7 | 13 | 18 | 21 | 18 | 29 | a55 |
| 6 | 7 | 14 | 18 | 22 | 25 | 30 | a54 |
| 7 | 8 | 15 | 18 | 23 | 51 | 31 | a54 |
| 8 | 8 | 16 | 18 | 24 | 53 | | |

a No gage-height record; discharge computed on basis of weather records and records for Bruneau River near Hot Spring.

Monthly discharge, in second-feet, 1948-49

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October 1948 | 236 | 25 | 1 | 7.6 | 468 |
| November | 2,935 | 164 | 28 | 97.8 | 5,820 |
| December | 4,238 | 180 | 72 | 137 | 8,410 |
| Calendar year 1948 | 86,949.4 | 1,390 | 1 | 238 | 172,500 |
| January 1949 | 4,337 | 164 | 107 | 140 | 8,600 |
| February | 5,170 | 223 | 152 | 185 | 10,250 |
| March | 9,011 | 423 | 208 | 291 | 17,870 |
| April | 36,438 | 2,000 | 274 | 1,215 | 72,270 |
| May | 49,440 | 2,700 | 1,060 | 1,595 | 98,060 |
| June | 19,995 | 1,310 | 180 | 666 | 39,660 |
| July | 1,180 | 160 | 10 | 38.1 | 2,340 |
| August | 245 | 10 | 7 | 7.9 | 486 |
| September | 217 | 9 | 7 | 7.2 | 430 |
| Water year 1948-49 | 133,442 | 2,700 | 1 | 366 | 264,700 |
| October 1949 | 797 | 58 | 7 | 25.7 | 1,580 |

## East Fork Bruneau River near Hot Spring, Idaho

Location.--Water-stage recorder, lat. 42°34', long. 115°31', in SE¼NE¼ sec. 16, T. 10 S., R. 8 E., at Winter Camp Ranch, 7 miles upstream from mouth, and 20 miles (revised) southeast of Hot Spring. Former gage at practically same site but at different datum.

Records available.--August 1910 to April 1915, December 1948 to September 1949.

Extremes.--Maximum discharge during period December 1948 to September 1949, 204 second-feet May 17 (gage height, 5.62 feet); minimum discharge, 1.6 second-feet Sept. 23; minimum gage height, 1.85 feet July 31.

1910-15, 1948-49: Maximum daily discharge, 450 second-feet Mar. 7, 8, 1911, during period of ice effect; maximum gage height observed, 10.65 feet Mar. 8, 1911, former site and datum; minimum observed, 0.4 second-foot Aug. 28, 29, Sept. 13, 1910.

Maximum stage known, 16.9 feet, from flookmark, former site and datum, during spring of 1910.

Remarks.--Records good except those for periods of ice effect or no gage-height record and those for Aug. 16 to Sept. 30, which are fair. Diversions for irrigation from main stem and tributaries above station. Water diverted from Deadwood Creek, tributary of East Fork, to Cedar Creek Reservoir in Salmon Falls Creek Basin for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | - | 15 | 7 | 19 | 32 | 187 | 128 | 13 | 3.1 | 4.2 |
| 2 | | | - | 15 | 7 | 20 | 34 | 176 | 125 | 13 | 3.4 | 3.6 |
| 3 | | | - | 12 | 7 | 21 | 36 | 156 | 120 | 12 | 3.1 | 3.9 |
| 4 | | | - | 10 | 7 | 21 | 37 | 141 | 105 | 11 | 3.3 | 4.0 |
| 5 | | | - | 8 | 7 | 22 | 46 | 144 | 90 | 10 | 3.3 | 4.0 |
| 6 | | | - | 8 | 7 | 23 | 58 | 142 | 88 | 11 | 3.9 | 3.9 |
| 7 | | | - | 8 | 7 | 25 | 77 | 133 | 72 | 12 | 4.0 | 4.4 |
| 8 | | | - | 8 | 7 | 26 | 79 | 126 | 68 | 10 | 3.7 | 4.7 |
| 9 | | | - | 8 | 7 | 28 | 88 | 119 | 66 | 8.2 | 3.4 | 4.7 |
| 10 | | | 10 | 8 | 7 | 30 | 103 | 119 | 64 | 7.0 | 3.4 | 4.8 |
| 11 | | | *12 | 8 | 8 | 32 | 100 | 133 | 58 | 5.8 | 4.7 | 4.7 |
| 12 | | | 14 | 8 | 9 | 34 | 99 | 146 | 52 | 6.4 | 5.9 | 4.8 |
| 13 | | | 16 | 8 | 9 | 36 | 109 | 150 | 48 | 9.1 | 4.7 | 5.4 |
| 14 | | | 19 | 7 | 9 | 34 | 120 | 150 | 46 | 7.9 | 5.0 | 4.2 |
| 15 | | | 16 | 7 | 10 | 32 | 112 | 157 | 44 | 7.3 | 6.4 | 3.9 |
| 16 | | | 13 | 7 | 11 | 37 | 104 | 166 | 42 | 6.4 | 6.8 | 5.4 |
| 17 | | | 14 | 7 | 13 | 47 | 99 | 187 | 40 | 6.0 | 6.4 | 6.6 |
| 18 | | | 11 | 7 | 14 | 40 | 102 | 197 | 39 | 5.4 | 4.7 | 6.6 |
| 19 | | | 19 | *7 | 15 | 34 | 112 | 186 | 37 | 4.5 | 4.7 | 6.8 |
| 20 | | | 25 | 7 | 15 | 36 | 117 | 191 | 32 | 4.7 | 3.7 | 4.4 |
| 21 | | | 30 | 7 | 15 | 47 | 136 | 178 | 35 | 4.7 | 5.6 | 2.4 |
| 22 | | | 24 | 7 | 16 | 54 | 143 | 176 | 32 | 4.2 | 6.0 | 2.1 |
| 23 | | | 16 | 7 | 16 | 62 | 133 | 160 | 28 | 4.4 | 5.6 | 2.1 |
| 24 | | | 12 | 7 | 17 | *54 | 133 | 143 | 24 | 4.2 | 4.8 | 3.6 |
| 25 | | | 11 | 7 | *17 | 44 | 142 | 132 | 22 | 4.0 | 5.0 | 4.7 |
| 26 | | | 12 | 7 | 17 | 44 | 155 | 126 | 20 | 3.7 | 5.4 | 5.2 |
| 27 | | | 14 | 7 | 18 | 49 | 161 | 121 | 15 | 3.6 | 3.9 | 6.0 |
| 28 | | | 15 | 7 | 18 | 49 | 160 | 117 | 15 | 3.7 | 4.0 | 6.2 |
| 29 | | | 15 | 7 | - | 44 | 162 | 115 | 15 | 4.0 | 4.4 | 7.3 |
| 30 | | | 16 | 7 | - | 34 | 171 | 120 | 15 | 3.6 | 4.7 | 10 |
| 31 | | | 16 | 7 | - | 34 | - | 125 | - | 2.8 | 4.0 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | - | - | - | - | - |
| November | - | - | - | - | - |
| December 10-31 | 350 | 30 | 10 | 15.9 | 694 |
| Calendar year | - | - | - | - | - |
| January | 250 | 15 | 7 | 8.1 | 496 |
| February | 317 | 18 | 7 | 11.3 | 629 |
| March | 1,112 | 62 | 19 | 35.9 | 2,210 |
| April | 3,160 | 171 | 32 | 105 | 6,270 |
| May | 4,619 | 197 | 115 | 149 | 9,160 |
| June | 1,585 | 128 | 15 | 52.8 | 3,140 |
| July | 213.6 | 13 | 2.8 | 6.9 | 424 |
| August | 140.1 | 6.8 | 3.1 | 4.5 | 278 |
| September | 144.6 | 10 | 2.1 | 4.8 | 287 |
| The period | - | - | - | - | 23,590 |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 26 to Mar. 11. No gage-height record Jan. 17, 18, 26-28, Feb. 6-24, May 27, 30, 31, June 2-12; discharge computed on basis of weather records and records for Bruneau River near Winter Camp Ranch.

## Wickahoney Creek near Bruneau, Idaho

Location.--Water-stage recorder, lat. 42°47', long. 115°49', in sec. 27, T. 7 S., R. 4 E., 0.3 mile upstream from mouth and 11 miles southwest of Bruneau.

Records available.--December 1938 to October 1949 (discontinued).

Extremes.--Maximum discharge during period October 1948 to October 1949, 198 second-feet Apr. 12 (gage height, 2.25 feet); no flow for long periods.
1938-49: Maximum discharge, 2,100 second-feet Jan. 22, 1943 (gage height, 12.4 feet, from high-water mark), by slope-area method; no flow during long periods during each year.

Remarks.--Records fair.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 0 | 38 | 14 | 1.9 | 0.5 | |
| 2 | | | | | | | 0 | 36 | 14 | 1.7 | .4 | |
| 3 | | | | | | | 0 | 36 | 13 | 1.6 | .4 | |
| 4 | | | | | | | 0 | 38 | 11 | 1.6 | .4 | |
| 5 | | | | | | | 0 | 36 | 10 | 1.5 | .3 | |
| 6 | | | | | | | 0 | 33 | 9.3 | 1.5 | .3 | |
| 7 | | | | | | | 0 | 31 | 8.2 | 1.5 | .2 | |
| 8 | | | | | | | 0 | 30 | 8.2 | 1.4 | .2 | |
| 9 | | | | | | | 38 | 29 | 8.2 | 1.2 | .2 | |
| 10 | | | | | | | 104 | 29 | 7.9 | 1.2 | .4 | |
| 11 | | | | | | | 94 | 28 | 4.7 | 1.1 | .4 | |
| 12 | | | | | | | 123 | 27 | 6.4 | 1.2 | .3 | |
| 13 | | | | | | | 76 | 26 | 5.5 | 1.1 | .3 | |
| 14 | | | | | | | 61 | 26 | 5.3 | 1.1 | .2 | |
| 15 | | | | | | | 54 | 26 | 5.3 | 1.0 | .2 | |
| 16 | | | | | | | 48 | 28 | 4.9 | 1.0 | .2 | |
| 17 | | | | | | | 70 | 30 | 5.1 | 1.0 | .2 | |
| 18 | | | | | | | 74 | 29 | 5.1 | 1.0 | .1 | |
| 19 | | | | | | | 60 | 28 | 4.7 | 1.0 | .1 | |
| 20 | | | | | | | 58 | 27 | 4.9 | 1.0 | 0 | |
| 21 | | | | | | | 47 | 25 | 4.3 | 1.0 | 0 | |
| 22 | | | | | | | 44 | 22 | 3.9 | .9 | 0 | |
| 23 | | | | | | | 44 | 19 | 3.4 | .9 | 0 | |
| 24 | | | | | | | 46 | 17 | 3.2 | .9 | 0 | |
| 25 | | | | | | | 44 | 16 | 3.0 | .9 | 0 | |
| 26 | | | | | | | 39 | 15 | 2.9 | .9 | 0 | |
| 27 | | | | | | | 36 | 14 | 3.0 | .9 | 0 | |
| 28 | | | | | | | 36 | 13 | 2.6 | .9 | 0 | |
| 29 | | | | | | | 36 | 12 | 2.3 | .8 | 0 | |
| 30 | | | | | | | 37 | 12 | 2.2 | .8 | 0 | |
| 31 | | | | | | | - | 15 | - | .6 | 0 | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October 1948 | 0 | 0 | 0 | 0 | 0 |
| November | 0 | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 235.8 | 52 | 0 | .64 | 468 |
| January 1949 | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 1,269 | 123 | 0 | 42.3 | 2,520 |
| May | 791 | 38 | 12 | 25.5 | 1,570 |
| June | 186.5 | 14 | 2.2 | 6.22 | 370 |
| July | 35.1 | 1.9 | .6 | 1.13 | 70 |
| August | 5.3 | .5 | 0 | .17 | 11 |
| September | 0 | 0 | 0 | 0 | 0 |
| Water year 1948-49 | 2,286.9 | 123 | 0 | 6.27 | 4,541 |
| October 1949 | 0 | 0 | 0 | 0 | 0 |

## Jacks Creek near Bruneau, Idaho

Location.--Water-stage recorder, lat. 42°47', long. 115°59', in sec. 27, T. 7 S., R. 4 E., 650 feet upstream from confluence with Wickahoney Creek and 11 miles southwest of Bruneau.

Records available.--November 1938 to October 1949 (discontinued).

Extremes.--Maximum discharge during period October 1948 to October 1949, 172 second-feet May 16 (gage height, 3.68 feet), from rating curve extended above 50 second-feet on basis of slope-area determination; no flow for long periods.
1938-49: Maximum discharge, 908 second-feet Jan. 21, 1943 (gage height, 7.2 feet, from high-water mark), from rating curve extended above 50 second-feet on basis of slope-area determination; no flow for long periods in each year.

Remarks.--Records fair. No regulation; ranch diversions above station.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 0 | 6.8 | 5.0 | 0.1 | | |
| 2 | | | | | | | 0 | 6.1 | 4.4 | .1 | | |
| 3 | | | | | | | 0 | 6.4 | 3.8 | 0 | | |
| 4 | | | | | | | 0 | 6.4 | 2.9 | 0 | | |
| 5 | | | | | | | 0 | 6.1 | 2.5 | 0 | | |
| 6 | | | | | | | 0 | 4.4 | 2.1 | 0 | | |
| 7 | | | | | | | 0 | 4.4 | 1.7 | 0 | | |
| 8 | | | | | | | 0 | 4.4 | 1.7 | 0 | | |
| 9 | | | | | | | 0 | 4.4 | 1.6 | 0 | | |
| 10 | | | | | | | 1.1 | 4.0 | 1.4 | 0 | | |
| 11 | | | | | | | 1.8 | 4.4 | 1.4 | 0 | | |
| 12 | | | | | | | 6.8 | 5.4 | 1.4 | 0 | | |
| 13 | | | | | | | 7.2 | 5.0 | 1.4 | 0 | | |
| 14 | | | | | | | 5.4 | 5.4 | 1.3 | 0 | | |
| 15 | | | | | | | 5.0 | 6.8 | 1.3 | 0 | | |
| 16 | | | | | | | 4.4 | 34 | 1.3 | 0 | | |
| 17 | | | | | | | 5.4 | 11 | 1.7 | 0 | | |
| 18 | | | | | | | 6.4 | 8.3 | 1.4 | 0 | | |
| 19 | | | | | | | 7.2 | 7.9 | 1.3 | 0 | | |
| 20 | | | | | | | 7.9 | 7.2 | 1.2 | 0 | | |
| 21 | | | | | | | 6.8 | 6.4 | .9 | 0 | | |
| 22 | | | | | | | 7.2 | 5.8 | .8 | 0 | | |
| 23 | | | | | | | 7.5 | 5.0 | .6 | 0 | | |
| 24 | | | | | | | 8.3 | 3.8 | .1 | 0 | | |
| 25 | | | | | | | 7.9 | 3.6 | 0 | 0 | | |
| 26 | | | | | | | 7.2 | 3.4 | .1 | 0 | | |
| 27 | | | | | | | 7.2 | 3.0 | .1 | 0 | | |
| 28 | | | | | | | 7.2 | 3.0 | .1 | 0 | | |
| 29 | | | | | | | 7.5 | 4.4 | .1 | 0 | | |
| 30 | | | | | | | 7.2 | 4.0 | .2 | 0 | | |
| 31 | | | | | | | - | 6.4 | - | 0 | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October 1948 | 0 | 0 | 0 | 0 | 0 |
| November | 0 | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 2.3 | 2.2 | 0 | .006 | 4.6 |
| January 1949 | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 132.6 | 8.3 | 0 | 4.42 | 263 |
| May | 197.6 | 34 | 3.0 | 6.37 | 392 |
| June | 43.8 | 5.0 | 0 | 1.46 | 87 |
| July | 0.2 | .1 | 0 | .01 | .4 |
| August | 0 | 0 | 0 | 0 | 0 |
| September | 0 | 0 | 0 | 0 | 0 |
| Water year 1948-49 | 374.2 | 34 | 0 | 1.03 | 742.4 |
| October 1949 | 0 | 0 | 0 | 0 | 0 |

## Wild Horse Reservoir near Gold Creek, Nev.

Location.--Reference point on Wild Horse Dam on Owyhee River, lat. 41°41'10", long. 115° 51'20", in NE¼NW¼ sec. 25, T. 44 N., R. 54 E., 8 miles west of Gold Creek. Datum of gage is 6,109.18 feet above mean sea level (levels by Office of Indian Affairs).

Drainage area.--209 square miles.

Records available.--March 1938 to September 1949.

Extremes.--Maximum contents observed during year, 33,530 acre-feet May 21 (gage height, 80.45 feet); minimum observed, 3,330 acre-feet Nov. 4.
1938-49: Maximum contents observed, 34,460 acre-feet Apr. 18, 1942 (gage height, 80.95 feet); no contents at times during each year 1938-41.

Remarks.--Reservoir is formed by concrete-arch dam; storage began Mar. 18, 1938. Capacity, 32,690 acre-feet between gage heights 20.0 feet (sill of outlet gate) and 80.0 feet (spillway crest). No dead storage. Water is used for irrigation on Duck Valley project.

Cooperation.--Most of gage-height record and base data for capacity table furnished by Office of Indian Affairs.

Contents, in acre-feet, water year October 1948 to September 1949

| Date | Contents | Date | Contents | Date | Contents |
|---|---|---|---|---|---|
| Oct. 22 | 3,440 | Feb. 28 | b4,950 | June 21 | 31,610 |
| 31 | 3,360 | Mar. 31 | 5,770 | 30 | 28,650 |
| Nov. 4 | 3,330 | Apr. 29 | 24,340 | July 18 | 22,860 |
| 29 | 3,610 | May 21 | 33,530 | Aug. 12 | 18,200 |
| Dec. 31 | 4,060 | 31 | 33,340 | 31 | 14,440 |
| Jan. 31 | 4,470 | June 15 | 32,840 | Sept.27 | 11,100 |
| | | | | 30 | 10,880 |

b Contents computed from gage readings corrected for ice cover.

## Owyhee River near Gold Creek, Nev.

Location.--Water-stage recorder, lat. 41°41'10", long. 115°51'30", in NW¼NE¼ sec. 25, T. 44 N., R. 54 E., 500 feet downstream from Wild Horse Dam and 8 miles west of Gold Creek. Altitude, 6,130 feet (from topographic map).

Drainage area.--209 square miles.

Records available.--March 1916 to September 1925, October 1936 to September 1949.

Average discharge.--20 years (1917-21, 1922-25, 1936-49), 41.4 second-feet (unadjusted).

Extremes.--Maximum discharge during year, 202 second-feet June 30; no flow Nov. 5 to Apr. 30.

1916-25, 1936-49: Maximum discharge, 1,810 second-feet May 5, 1922 (gage height, 10.11 feet, site and datum then in use), from rating curve extended above 400 second-feet; no flow at times when reservoir gates were closed.

Remarks.--Records good. Small diversions above station for irrigation. Flow regulated by Wild Horse Reservoir beginning Mar. 18, 1938 (see preceding page).

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14 | 3.9 | | | | | | a0.1 | 124 | 200 | 80 | 99 |
| 2 | 14 | 3.9 | | | | | | a.1 | 128 | 200 | 80 | 99 |
| 3 | 14 | 3.9 | | | | | | a.2 | 121 | 200 | 79 | 99 |
| 4 | 14 | 1.8 | | | | | | .2 | 109 | 200 | 79 | 99 |
| 5 | 12 | 0 | | | | | | .2 | 101 | 198 | 79 | 98 |
| 6 | 7.8 | 0 | | | | | | .2 | 90 | 197 | 79 | 98 |
| 7 | 7.8 | 0 | | | | | | .2 | 82 | 197 | 79 | 82 |
| 8 | 8.0 | 0 | | | | | | .1 | 78 | 197 | 79 | 45 |
| 9 | 8.0 | 0 | | | | | | .1 | 74 | 193 | 79 | 45 |
| 10 | 8.0 | 0 | | | | | | .2 | 67 | 153 | 79 | 45 |
| 11 | 8.0 | 0 | | | | | | .2 | 60 | 98 | 79 | 45 |
| 12 | 8.0 | 0 | | | | | | .2 | 52 | 98 | 79 | 45 |
| 13 | 8.0 | 0 | | | | | | .2 | 44 | 98 | 79 | 45 |
| 14 | 8.0 | 0 | | | | | | .2 | 39 | 97 | 78 | 44 |
| 15 | 8.3 | 0 | | | | | | .2 | 46 | 96 | 78 | 44 |
| 16 | 7.2 | 0 | | | | | | .2 | 81 | 96 | 77 | 44 |
| 17 | 5.0 | 0 | | | | | | .2 | 92 | 96 | 77 | 44 |
| 18 | 5.0 | 0 | | | | | | 14 | 109 | 96 | 77 | 44 |
| 19 | 5.0 | 0 | | | | | | 70 | 137 | 96 | 86 | 43 |
| 20 | 5.0 | 0 | | | | | | 113 | 138 | 96 | 103 | 43 |
| 21 | 5.0 | 0 | | | | | | 155 | 139 | 96 | 103 | 43 |
| 22 | 5.2 | 0 | | | | | | 169 | 138 | 96 | 103 | 43 |
| 23 | 5.2 | 0 | | | | | | 166 | 138 | 94 | 101 | 42 |
| 24 | 5.2 | 0 | | | | | | 156 | 137 | 94 | 101 | 42 |
| 25 | 5.0 | 0 | | | | | | 148 | 143 | 94 | 101 | 42 |
| 26 | 5.0 | 0 | | | | | | 138 | 161 | 94 | 101 | 42 |
| 27 | 5.0 | 0 | | | | | | 130 | 161 | 94 | 100 | 42 |
| 28 | 4.2 | 0 | | | | | | 123 | 161 | 94 | 100 | 42 |
| 29 | 3.9 | 0 | | | | | | 112 | 161 | 94 | 100 | 30 |
| 30 | 3.9 | 0 | | | | | | 107 | 176 | 89 | 100 | 19 |
| 31 | 3.9 | - | | | | | | 111 | - | 80 | 100 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 226.6 | 14 | 3.9 | 7.31 | 449 |
| November | 13.5 | 3.9 | 0 | .45 | 27 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 9,207.1 | 170 | 0 | 25.2 | 18,260 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 0 | 0 | 0 | 0 | 0 |
| May | 1,715 | 169 | 0 | 55.3 | 3,400 |
| June | 3,287 | 176 | 39 | 110 | 6,520 |
| July | 3,921 | 200 | 80 | 126 | 7,780 |
| August | 2,715 | 103 | 77 | 87.6 | 5,390 |
| September | 1,637 | 99 | 19 | 54.6 | 3,250 |
| Water year 1948-49 | 13,515.1 | 200 | 0 | 37.0 | 26,820 |

a No gage-height record; discharge computed on basis of 1 field estimate and engineer's notes.

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## Owyhee River above China diversion dam, near Owyhee, Nev.

Location.--Water-stage recorder, lat. 41°55'20", long. 116°04'10", in NW¼ sec. 6, T. 46 N., R. 53 E., 1,000 feet downstream from Skull Creek, 1 mile upstream from China diversion dam, and 2 miles southeast of Owyhee.

Drainage area.--458 square miles.

Records available.--March 1939 to September 1949.

Average discharge.--10 years, 142 second-feet.

Extremes.--Maximum discharge during year, 978 second-feet May 18 (gage height, 7.86 feet); minimum not determined, probably occurred during period of no gage-height record.
1939-49: Maximum discharge, 1,850 second-feet May 6, 1945 (gage height, 9.18 feet); minimum daily, 2 second-feet Sept. 15-18, 1940.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Diversions above station for irrigation. Flow partly regulated by Wild Horse Reservoir (see p. 136).

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 | 17 | | | | b28 | 63 | 566 | 507 | 222 | 84 | 101 |
| 2 | 20 | 18 | | | | b28 | 75 | 548 | 487 | 226 | 83 | 100 |
| 3 | 20 | 20 | | | | b28 | 96 | 559 | 422 | 228 | 83 | 99 |
| 4 | 20 | 20 | | | | b28 | 138 | 521 | 369 | 230 | 82 | 98 |
| 5 | 25 | 16 | | | | b28 | 192 | 468 | 327 | 232 | 82 | 98 |
| 6 | 24 | 17 | | | | | 244 | 427 | 302 | 226 | 81 | 98 |
| 7 | 18 | b16 | | | | | 317 | 427 | 277 | 221 | 80 | 97 |
| 8 | 19 | b15 | | | 18 | 28 | 425 | 433 | 272 | 218 | 80 | 75 |
| 9 | 19 | b15 | | | | | 494 | 453 | 257 | 216 | 80 | 56 |
| 10 | 18 | b16 | | | | | 463 | 485 | 243 | 214 | 80 | 54 |
| 11 | 18 | 18 | b15 | | | 40 | 537 | 492 | 228 | 153 | 79 | 54 |
| 12 | 18 | 16 | | | | *53 | 661 | 482 | 209 | 121 | 79 | 54 |
| 13 | 18 | 16 | | | | 57 | 536 | 482 | 192 | 114 | 76 | 54 |
| 14 | 19 | 16 | | | | 48 | 530 | 507 | 173 | 109 | 76 | 52 |
| 15 | 21 | 16 | (*) | 15 | | 49 | 488 | 568 | 162 | 107 | 76 | 51 |
| 16 | 20 | 16 | | | | 54 | 532 | 836 | 163 | 106 | 76 | 49 |
| 17 | 20 | 17 | | | | 65 | 622 | 858 | 188 | 103 | 76 | 49 |
| 18 | 18 | b15 | | | | 75 | 683 | 913 | 185 | 102 | 75 | 49 |
| 19 | 17 | b16 | | | 23 | 103 | 693 | 750 | 218 | 100 | 75 | 49 |
| 20 | 17 | 16 | | | | 132 | 761 | 761 | 231 | 101 | 90 | 49 |
| 21 | 17 | 16 | | | | 128 | 744 | 871 | 218 | 103 | 95 | 48 |
| 22 | *17 | 16 | 15 | | b23 | 124 | 800 | 778 | 202 | 100 | 96 | 47 |
| 23 | 17 | 16 | 15 | | b23 | 107 | 844 | 703 | 200 | 100 | 98 | 47 |
| 24 | 17 | 17 | | | b23 | 91 | 871 | 634 | 197 | 99 | 103 | 47 |
| 25 | 17 | 15 | | | b23 | 80 | 860 | 575 | 192 | 98 | 103 | 48 |
| 26 | 17 | b16 | | | b23 | 72 | 780 | 530 | 208 | 98 | 102 | 48 |
| 27 | 17 | b16 | b15 | | b23 | 69 | 736 | 499 | 215 | 98 | 103 | 48 |
| 28 | 17 | b17 | | | b23 | 65 | 727 | 463 | 212 | 97 | 103 | 49 |
| 29 | 17 | b16 | | | - | 63 | 742 | 443 | 205 | 97 | 101 | 49 |
| 30 | 16 | b16 | | | - | 67 | 645 | 427 | 204 | 97 | 100 | 41 |
| 31 | 16 | - | | | - | 63 | - | 441 | - | 90 | 101 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 574 | 25 | 16 | 18.6 | 1,140 |
| November | 493 | 20 | 15 | 16.4 | 978 |
| December | 465 | - | - | 15 | 922 |
| Calendar year 1948 | 33,819 | 433 | - | 92.4 | 67,080 |
| January | 465 | - | - | 15 | 922 |
| February | 569 | - | - | 20.3 | 1,130 |
| March | 1,885 | 132 | - | 60.8 | 3,740 |
| April | 16,299 | 871 | 63 | 543 | 32,330 |
| May | 17,900 | 913 | 427 | 577 | 35,500 |
| June | 7,465 | 507 | 162 | 249 | 14,810 |
| July | 4,426 | 232 | 90 | 143 | 8,780 |
| August | 2,698 | 103 | 75 | 87.0 | 5,350 |
| September | 1,858 | 101 | 41 | 61.9 | 3,690 |
| Water year 1948-49 | 55,097 | 913 | - | 151 | 109,300 |

Peak discharge (base, 380 sec.-ft.).--Apr. 12 (9:30 a.m.) 746 sec.-ft.; Apr. 24 (8 p.m.) 909 sec.-ft.; May 18 (3:30 p.m.) 978 sec.-ft.

* Winter discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Dec. 22, 23, Jan. 1 to Feb. 21, Mar. 6-11 (stage-discharge relation affected by ice most of periods); discharge computed on basis of weather records and engineer's notes.

## Owyhee River above Owyhee Reservoir, Oreg.

Location.--Water-stage recorder, lat. 43°13', long. 117°30', in SE¼ sec. 18, T. 27 S., R. 43 E., 3 miles upstream from flow line of Owyhee Reservoir and 8 miles southwest of Watson. Altitude of gage, about 2,690 feet above mean sea level (levels by Bureau of Reclamation.

Drainage area.--10,400 square miles.

Records available.--October 1930 to September 1949 in reports of Geological Survey. April 1929 to September 1941 in reports of Oregon State engineer.

Average discharge.--20 years, 835 second-feet.

Extremes.--Maximum discharge during year, 11,600 second-feet Apr. 13 (gage height, 11.44 feet); minimum, 99 second-feet Dec. 18 (gage height, 3.45 feet).

1929-49: Maximum discharge, 16,000 second-feet Mar. 20, 1932, Apr. 19, 1936; maximum gage height, 12.95 feet Mar. 20, 1932; minimum discharge, that of Dec. 18, 1948.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation. Flow slightly regulated by 11 small reservoirs which have a total capacity of 52,000 acre-feet.

Cooperation.--Water-stage recorder inspected and some discharge measurements made by Bureau of Reclamation.

Revisions (water year).--W 793: 1932(M).

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 3.7 | 149 | 5.4 | 890 | 9.0 | 5,200 |
| 3.9 | 198 | 5.9 | 1,240 | 10.0 | 7,380 |
| 4.2 | 288 | 6.5 | 1,730 | 11.0 | 10,200 |
| 4.5 | 400 | 7.2 | 2,450 | | |
| 4.9 | 585 | 8.0 | 3,480 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 190 | 218 | a200 | | b180 | 388 | 883 | 2,650 | 1,500 | 298 | 209 | 172 |
| 2 | 190 | 218 | a200 | | b180 | 396 | 932 | 2,500 | 1,630 | 285 | 209 | 172 |
| 3 | 190 | 215 | a200 | | b180 | 525 | 1,330 | 2,370 | 1,760 | 272 | 209 | 177 |
| 4 | 188 | 212 | a200 | | b180 | 495 | 1,780 | 2,230 | 1,780 | 272 | 201 | 175 |
| 5 | 188 | 215 | a200 | | b180 | 495 | 2,430 | 2,010 | 1,690 | 272 | 201 | 170 |
| 6 | 190 | 218 | a200 | | b180 | 550 | 3,630 | 1,840 | 1,510 | 278 | 198 | 167 |
| 7 | 193 | 218 | a210 | | b180 | 520 | 4,640 | 1,680 | 1,340 | 269 | 195 | 165 |
| 8 | 193 | 212 | a220 | | b180 | 525 | 5,870 | 1,570 | 1,170 | 266 | 190 | 170 |
| 9 | 190 | 209 | a230 | | b180 | 550 | 7,180 | 1,470 | 1,050 | 278 | 193 | 177 |
| 10 | 193 | 209 | a240 | | b180 | 540 | 8,280 | 1,420 | 911 | 278 | 193 | 172 |
| 11 | 193 | | a250 | | b190 | 545 | 7,680 | 1,350 | 827 | 278 | 190 | 180 |
| 12 | 195 | | a250 | | b200 | 640 | 9,250 | 1,390 | 772 | 278 | 188 | 180 |
| 13 | 195 | | a250 | | b210 | 624 | 9,960 | 1,450 | 730 | 278 | 188 | 182 |
| 14 | 198 | | a250 | | b220 | 618 | 7,740 | 1,450 | 658 | 282 | 185 | 182 |
| 15 | 206 | | a250 | | 238 | 694 | 7,460 | 1,420 | 585 | 312 | 182 | 185 |
| 16 | 206 | | a240 | b180 | 282 | 883 | 6,600 | 1,460 | 505 | 302 | 180 | 185 |
| 17 | 209 | | a230 | | 424 | 967 | 6,410 | 1,620 | 467 | 295 | 177 | 180 |
| 18 | 209 | | a230 | | 480 | 1,120 | 6,410 | 2,050 | 444 | 260 | 175 | 177 |
| 19 | 209 | | b220 | | 706 | 1,300 | 6,230 | 2,090 | 444 | 259 | 175 | 175 |
| 20 | 209 | | 220 | | 580 | 1,540 | 5,870 | 2,310 | 420 | 244 | 175 | 177 |
| 21 | 212 | a220 | b220 | | 420 | 1,700 | 5,460 | 2,230 | 408 | 235 | 172 | 177 |
| 22 | 212 | | b215 | | 330 | 1,780 | 4,850 | 2,140 | 392 | 238 | 172 | 172 |
| 23 | 212 | | b210 | | 330 | 1,790 | 4,660 | 2,110 | 368 | 229 | 172 | 175 |
| 24 | 218 | | b210 | | 345 | 1,700 | 4,410 | 2,060 | 364 | 226 | 172 | 170 |
| 25 | 215 | | 206 | | 408 | 1,550 | 4,170 | 1,890 | 364 | 220 | 172 | 170 |
| 26 | 215 | | 209 | | 376 | 1,380 | 3,830 | 1,710 | 349 | 215 | 175 | 167 |
| 27 | 212 | | b205 | | 376 | 1,310 | 3,580 | 1,580 | 334 | 209 | 185 | 170 |
| 28 | 212 | | b205 | | 372 | 1,200 | 3,310 | 1,460 | 327 | 204 | 188 | 172 |
| 29 | 215 | | b200 | | - | 1,130 | 3,030 | 1,410 | 316 | 209 | 188 | 188 |
| 30 | 215 | | b200 | | - | 1,030 | 2,860 | 1,340 | 309 | 204 | 182 | 182 |
| 31 | 215 | - | b200 | | - | 939 | - | 1,360 | - | 201 | 177 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 6,287 | 218 | 188 | 203 | 12,470 |
| November | 6,544 | - | - | 218 | 12,980 |
| December | 6,770 | 250 | 200 | 218 | 13,430 |
| Calendar year 1948 | 209,278 | 3,140 | 160 | 572 | 415,000 |
| January | 5,580 | - | - | 180 | 11,070 |
| February | 8,287 | 706 | 180 | 296 | 16,440 |
| March | 29,424 | 1,790 | 388 | 949 | 58,360 |
| April | 150,725 | 9,960 | 883 | 5,024 | 299,000 |
| May | 55,620 | 2,650 | 1,340 | 1,794 | 110,300 |
| June | 23,724 | 1,780 | 309 | 791 | 47,060 |
| July | 7,955 | 312 | 201 | 257 | 15,780 |
| August | 5,768 | 209 | 172 | 186 | 11,440 |
| September | 5,263 | 188 | 165 | 175 | 10,440 |
| Water year 1948-49 | 311,947 | 9,960 | - | 855 | 618,800 |

Peak discharge (base, 3,100 sec.-ft.).--Apr. 10 (2 a.m.) 10,400 sec.-ft.; Apr. 13 (3:30 a.m.) 11,600 sec.-ft.

a No gage-height record; discharge computed on basis of weather records and computed inflow to Owyhee Reservoir.

b Stage-discharge relation affected by ice.

## Owyhee Reservoir at Owyhee Dam, near Nyssa, Oreg.

Location.--Staff gage, lat. 43°38', long. 117°15', in sec. 20, T. 22 S., R. 45 E., at Owyhee Dam, 21 miles southwest of Nyssa. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Drainage area.--11,160 square miles.

Records available.--October 1932 to September 1949.

Extremes.--Maximum contents observed during year, 1,010,100 acre-feet June 7 (elevation, 2,660.88 feet); minimum observed, 630,600 acre-feet Oct. 1 (elevation, 2,622.30 feet). 1932-49: Maximum contents observed, 1,125,000 acre-feet June 11, 1936 (elevation, 2,670.27 feet); minimum observed since full capacity was attained on May 7, 1936, 630,500 acre-feet Sept. 30, 1948 (elevation, 2,622.29 feet).

Remarks.--Reservoir is formed by concrete arch-gravity dam, completed in September 1932; storage began Oct. 16, 1932. Capacity, 1,121,800 acre-feet between elevations 2,367.5 feet (bottom of sluice gates) and 2,670 feet (top of spillway gate), 715,000 acre-feet between elevations 2,590.2 feet (diversions tunnel) and 2,670 feet. Dead storage below elevation 2,367.5 feet negligible. Figures given herein are of contents above elevation 2,367.5 feet. The reservoir will generally not be drawn below elevation 2,590.2 feet. Water is released through diversion tunnel to South Canal for irrigation of lands west of Snake River in the vicinity of Homedale, Idaho, and to North Canal for irrigation of lands north and west of Owyhee River, and through sluice gates to river for Owyhee Canal, which diverts about 18 miles downstream. Gage read once daily.

Operation.--Gage-height record furnished by Bureau of Reclamation.

Monthly elevation and contents, water year October 1948 to September 1949

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept.30 | 2,622.29 | 630,500 | - |
| Oct. 31 | 2,623.39 | 639,600 | +9,100 |
| Nov. 30 | 2,625.02 | 653,200 | +13,600 |
| Dec. 31 | 2,626.68 | 667,200 | +14,000 |
| Calendar year 1948 | - | - | -14,600 |
| Jan. 31 | 2,627.90 | 677,600 | +10,400 |
| Feb. 28 | 2,630.55 | 700,600 | +23,000 |
| Mar. 31 | 2,637.35 | 762,200 | +61,600 |
| Apr. 30 | 2,659.85 | 998,000 | +235,800 |
| May 31 | 2,660.73 | 1,008,300 | +10,300 |
| June 30 | 2,656.50 | 959,600 | -48,700 |
| July 31 | 2,648.77 | 875,400 | -84,200 |
| Aug. 31 | 2,640.70 | 794,100 | -81,300 |
| Sept.30 | 2,634.45 | 735,500 | -58,600 |
| Water year 1948-49 | - | - | +105,000 |

## Owyhee River below Owyhee Dam, Oreg.

Location.--Water-stage recorder, lat. 43°39', long. 117°15', in sec. 17, T. 22 S., R. 45 E., three-quarters of a mile downstream from Owyhee Dam. Datum of gage is 2,343.67 feet above mean sea level (levels by Bureau of Reclamation).

Drainage area.--11,160 square miles.

Records available.--February 1929 to September 1949.

Average discharge.--20 years, 388 second-feet.

Extremes.--Maximum discharge during year, 199 second-feet May 2-4 (gage height, 1.52 feet); minimum observed, 4 second-feet Oct. 14 (gates closed at Owyhee Dam), but may have been less during periods of no gage-height record.
1924-49: Maximum discharge, 14,600 second-feet Mar. 21, 1932 (gage height, 12.79 feet); no flow for a few hours Aug. 8, 9, 1932, when temporary diversion tunnel at Owyhee Dam was closed.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Diversions above station for irrigation. Flow regulated by Wild Horse and Owyhee Reservoirs (see preceding page).

Cooperation.--Water-stage recorder inspected by Bureau of Reclamation.

Revisions (water years).--W 983: 1941, 1942.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | 187 | 132 | 50 | 55 | 24 |
| 2 | | | | | | | | 193 | 124 | 50 | 56 | 24 |
| 3 | | | | | | | | 199 | 124 | 51 | 56 | 22 |
| 4 | | | | | | | | 191 | 124 | 56 | 57 | 20 |
| 5 | | | | | | | | 184 | 124 | 59 | 57 | 19 |
| 6 | | | | | | | 4 | 184 | 137 | 60 | 57 | 19 |
| 7 | 4 | | | | | | | 189 | 150 | 60 | 58 | 18 |
| 8 | | | | | | | | 189 | 164 | 60 | 58 | 15 |
| 9 | | | | | | | | 193 | 170 | 59 | 58 | 13 |
| 10 | | | | | | | 93 | 193 | 170 | 59 | 54 | 13 |
| 11 | | | | | | | 150 | 191 | 174 | 59 | 52 | 13 |
| 12 | | | | | | | 137 | 187 | 174 | 59 | 52 | 11 |
| 13 | | | | | | | 137 | 189 | 126 | 58 | 52 | 7 |
| 14 | 4 | | | | | | 139 | 176 | 52 | 58 | 52 | |
| 15 | | 4 | 4 | 4 | 4 | 4 | 153 | 170 | 39 | 58 | 46 | |
| 16 | | | | | | | 168 | 170 | 58 | 58 | 40 | |
| 17 | | | | | | | 168 | 172 | 67 | 58 | 40 | |
| 18 | | | | | | | 161 | 168 | 67 | 57 | 40 | 5 |
| 19 | | | | | | | 172 | 157 | 69 | 57 | 40 | |
| 20 | | | | | | | 161 | 142 | 69 | 57 | 34 | |
| 21 | | | | | | | 151 | 139 | 59 | 57 | 28 | |
| 22 | 4 | | | | | | 159 | 141 | 53 | 56 | 31 | |
| 23 | | | | | | | 166 | 144 | 54 | 56 | 28 | |
| 24 | | | | | | | 174 | 146 | 54 | 56 | 25 | 5 |
| 25 | | | | | | | 172 | 148 | 54 | 56 | 25 | |
| 26 | | | | | | | 164 | 146 | 58 | 56 | 25 | |
| 27 | | | | | | | 164 | 146 | 63 | 55 | 26 | 5 |
| 28 | | | | | | | 178 | 146 | 63 | 56 | 26 | |
| 29 | | | | | - | | 182 | 148 | 58 | 55 | 25 | |
| 30 | | | | | - | | 184 | 148 | 51 | 55 | 24 | |
| 31 | | - | | | - | | - | 150 | - | 55 | 24 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 124 | - | - | 4.0 | 246 |
| November | 120 | - | - | 4 | 238 |
| December | 124 | - | - | 4 | 246 |
| Calendar year 1948 | 7,567 | 118 | - | 20.7 | 15,010 |
| January | 124 | - | - | 4 | 246 |
| February | 112 | - | - | 4 | 222 |
| March | 124 | - | - | 4 | 246 |
| April | 3,369 | 184 | - | 112 | 6,680 |
| May | 5,226 | 199 | 139 | 169 | 10,370 |
| June | 2,881 | 174 | 39 | 96.0 | 5,710 |
| July | 1,756 | 60 | 50 | 56.6 | 3,480 |
| August | 1,301 | 58 | 24 | 42.0 | 2,580 |
| September | 303 | 24 | - | 10.1 | 601 |
| Water year 1948-49 | 15,564 | 199 | - | 42.6 | 30,860 |

Note.--No gage-height record Oct. 1 to Apr. 9, Sept. 14-30; discharge (leakage only) computed on basis of measured discharge Oct. 14, Sept. 24.

## Jordan Creek above Lone Tree Creek, near Jordan Valley, Oreg.

Location.--Water-stage recorder, lat. 42°53', long. 116°59', in NW¼ sec. 19, T. 6 S., R. 5 W., 2 miles upstream from Lone Tree Creek and 7 miles southeast of Jordan Valley.

Records available.--October 1945 to September 1949.

Extremes.--Maximum discharge during year, 1,350 second-feet Apr. 19, 23; maximum gage height, 4.50 feet Apr. 19; no flow part of day Oct. 4, 5.
1945-49: Maximum discharge, 2,100 second-feet Apr. 19, 1946 (gage height, 5.44 feet); no flow part of day Oct. 4, 5, 1948.

Remarks.--Records fair. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.3 | 11 | 12 | 19 | | 54 | 163 | 532 | 284 | 21 | 5.4 | 1.2 |
| 2 | 4.1 | 13 | 17 | 18 | (*) | 67 | 210 | 526 | 277 | 19 | 5.4 | 1.3 |
| 3 | .4 | 15 | 16 | 18 | 19 | 72 | 224 | 510 | 246 | 18 | 4.3 | 1.3 |
| 4 | .1 | 15 | 15 | | | 83 | 295 | 475 | 212 | 19 | 3.1 | 1.2 |
| 5 | 3.7 | 14 | 16 | | | 105 | 440 | 435 | 184 | 18 | 2.5 | 1.2 |
| 6 | 7.6 | 14 | 15 | | | 102 | 598 | 411 | 168 | 12 | 1.8 | 1.2 |
| 7 | 7.3 | 12 | 13 | | | 102 | 748 | 420 | 150 | 8.6 | 2.0 | 1.1 |
| 8 | 7.3 | 10 | 15 | | | 105 | 852 | 430 | 134 | 9.5 | 1.6 | 1.1 |
| 9 | 7.0 | 11 | 18 | | | 94 | 818 | 500 | 118 | 10 | 1.6 | 1.2 |
| 10 | 7.0 | 13 | 18 | | 18 | 94 | 766 | 505 | 100 | 12 | 1.6 | 1.3 |
| 11 | 6.7 | 11 | 22 | | | 113 | 890 | 500 | 90 | 11 | 1.5 | 1.4 |
| 12 | 6.4 | 13 | 22 | | | 113 | 1,120 | 505 | 83 | 12 | 1.5 | 1.4 |
| 13 | 6.4 | 13 | 19 | | | 105 | 780 | 495 | 67 | 11 | 1.5 | 1.5 |
| 14 | 6.4 | 13 | 18 | | | *125 | 712 | 495 | 55 | 10 | 1.5 | 1.4 |
| 15 | 7.6 | 15 | 13 | | | 168 | 688 | 490 | 49 | 9.2 | 1.6 | 1.5 |
| 16 | 7.6 | 18 | 12 | | | 192 | 825 | 475 | 47 | 8.3 | 2.7 | 1.8 |
| 17 | 7.3 | 18 | 11 | 18 | 20 | 224 | 1,040 | 465 | 39 | 7.6 | 2.9 | 2.0 |
| 18 | 7.3 | 14 | 10 | | 22 | 274 | 1,220 | 420 | 34 | 6.7 | 2.0 | 2.3 |
| 19 | 7.6 | 15 | 15 | | 24 | 370 | 1,280 | 420 | 41 | 6.1 | 2.0 | 2.0 |
| 20 | 8.0 | 16 | 19 | | 26 | 411 | 1,160 | 411 | 46 | 5.6 | 1.8 | 1.8 |
| 21 | 8.3 | 15 | 14 | | 29 | 344 | 1,010 | 375 | 41 | 5.6 | 1.6 | 1.5 |
| 22 | 8.3 | 16 | *14 | | 31 | 303 | 1,120 | 357 | 37 | 7.0 | 1.8 | 1.5 |
| 23 | 8.6 | 15 | 14 | | 35 | 288 | 1,230 | 339 | 33 | 7.3 | 1.6 | 1.5 |
| 24 | 8.9 | 16 | 15 | | 39 | 243 | 1,210 | 314 | 31 | 7.6 | 1.4 | 1.5 |
| 25 | 8.9 | 15 | 15 | | 39 | 227 | 1,000 | 307 | 28 | 8.3 | 1.4 | 1.6 |
| 26 | 8.9 | 14 | 16 | | 40 | 204 | 844 | 307 | 26 | 7.6 | 1.4 | 2.3 |
| 27 | 8.9 | 11 | 16 | | 46 | 198 | 736 | 303 | 26 | 5.9 | 1.3 | 3.8 |
| 28 | 8.9 | 14 | 16 | | 52 | 171 | 718 | 291 | 22 | 5.9 | 1.3 | 4.1 |
| 29 | 9.5 | 12 | 18 | | - | 156 | 664 | 291 | 22 | 5.4 | 1.4 | 6.7 |
| 30 | 10 | 11 | 19 | | - | 163 | 586 | 295 | 22 | 5.6 | 1.3 | 6.7 |
| 31 | 10 | - | 19 | | - | 143 | - | 291 | - | 5.6 | 1.2 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 222.3 | 10 | 0.1 | 7.17 | 441 |
| November | 413 | 18 | 10 | 13.8 | 819 |
| December | 492 | 22 | 10 | 15.9 | 976 |
| Calendar year 1948 | 47,564.4 | 1,250 | .1 | 130 | 94,300 |
| January | 559 | - | - | 18.0 | 1,110 |
| February | 695 | 52 | - | 24.8 | 1,380 |
| March | 5,413 | 411 | 54 | 175 | 10,740 |
| April | 23,927 | 1,280 | 163 | 798 | 47,460 |
| May | 12,890 | 532 | 291 | 416 | 25,570 |
| June | 2,712 | 284 | 22 | 90.4 | 5,380 |
| July | 306.4 | 21 | 5.4 | 9.88 | 608 |
| August | 64.0 | 5.4 | 1.2 | 2.06 | 127 |
| September | 60.4 | 6.7 | 1.1 | 2.01 | 120 |
| Water year 1948-49 | 47,754.1 | 1,280 | .1 | 131 | 94,730 |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 30, Dec. 7, 16-19, 24-26, Jan. 4 to Feb. 22 (no gage-height record Jan. 6 to Feb. 1, Feb. 3-16; discharge computed on basis of weather records and records for Moore Creek near Arrowrock and Weiser River near Cambridge).

## Boise River near Twin Springs, Idaho

Location.--Water-stage recorder, lat. 43°40', long. 115°44', in sec. 27, T. 4 N., R. 6 E., a quarter of a mile upstream from Birch Creek, 1½ miles upstream from flow line of Arrowrock Reservoir, 4 miles downstream from Twin Springs, and 13 miles upstream from Arrowrock.

Drainage area.--830 square miles.

Records available.--March 1911 to September 1949.

Average discharge.--38 years, 1,124 second-feet.

Extremes.--Maximum discharge during year, 6,990 second-feet May 16 (gage height, 6.78 feet); minimum not determined, occurred about Feb. 9 as a result of snowslides upstream; minimum daily, 250 second-feet Feb. 9.

1911-49: Maximum discharge, 10,300 second-feet May 17, 1927 (gage height, 8.30 feet feet), from rating curve extended above 8,000 second-feet; minimum, 109 second-feet Dec. 10, 1944; minimum gage height, 1.56 feet Dec. 15, 16, 1935.

Remarks.--Records excellent except those below 500 second-feet, which are good, and those for periods of no gage-height record, which are fair. No diversions or regulation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 348 | 410 | 280 | 390 | 340 | 400 | 879 | 3,380 | 3,870 | 1,180 | 456 | 309 |
| 2 | 343 | 605 | 444 | 345 | 330 | 475 | 1,050 | 3,260 | 3,300 | 1,180 | 450 | 301 |
| 3 | 343 | 636 | 426 | 315 | 315 | 510 | 1,150 | 3,120 | 2,980 | 1,160 | 432 | 297 |
| 4 | 348 | 538 | 385 | 310 | 310 | 540 | 1,340 | 2,900 | 2,740 | 1,140 | 420 | 301 |
| 5 | 450 | 420 | 385 | 310 | 300 | 630 | 1,660 | 2,820 | 1,940 | 1,130 | 410 | 309 |
| 6 | 420 | 415 | 390 | 350 | 290 | 680 | 1,800 | 2,890 | 3,570 | 1,230 | 400 | 305 |
| 7 | 395 | 375 | 410 | 350 | 290 | 650 | 2,080 | 3,170 | 3,780 | 1,090 | 395 | 297 |
| 8 | 405 | 313 | 390 | 350 | 290 | 640 | 1,940 | 3,650 | 3,900 | 1,030 | 390 | 293 |
| 9 | 390 | 309 | 395 | 350 | 250 | 642 | 2,170 | 4,350 | 3,950 | 980 | 390 | 293 |
| 10 | 380 | 390 | 405 | 350 | 290 | 642 | 2,270 | 4,840 | 4,040 | 933 | 390 | 301 |
| 11 | 370 | 405 | 420 | 350 | 290 | *668 | 2,590 | 5,280 | 4,230 | 897 | 405 | 325 |
| 12 | 361 | 400 | 438 | 350 | 290 | 700 | 2,980 | 5,950 | 4,140 | 852 | 395 | 338 |
| 13 | 356 | 385 | 395 | 370 | 290 | 692 | 2,470 | 6,270 | 3,490 | 825 | 380 | 321 |
| 14 | 352 | 375 | 400 | *370 | 290 | 700 | 2,090 | 6,410 | 3,100 | 789 | 375 | 313 |
| 15 | 366 | 438 | 400 | 370 | 290 | 756 | 2,050 | 6,510 | 2,830 | 764 | 375 | 305 |
| 16 | 370 | 420 | 343 | 370 | 290 | 816 | 2,290 | 6,760 | 2,700 | 732 | 366 | 309 |
| 17 | 356 | 415 | 313 | 345 | 345 | 888 | 2,780 | 6,330 | 2,330 | 692 | 356 | 343 |
| 18 | 356 | *356 | 325 | 340 | 320 | 870 | 3,470 | 5,810 | 2,050 | 668 | 366 | 317 |
| 19 | 356 | 338 | 380 | 345 | 310 | 942 | 3,800 | 5,410 | 1,950 | 636 | 366 | 309 |
| 20 | 352 | 400 | 493 | 350 | 265 | 1,050 | 3,340 | 5,030 | 1,880 | 620 | 356 | 301 |
| 21 | 356 | 385 | 385 | 340 | 320 | 1,030 | 2,900 | 4,500 | 1,780 | 612 | 348 | 297 |
| 22 | 352 | 370 | 335 | 330 | 340 | 951 | 2,820 | 4,190 | 1,830 | 598 | 343 | 297 |
| 23 | 348 | 375 | 305 | 325 | 335 | 933 | 3,360 | 3,870 | 1,790 | 575 | 356 | 297 |
| 24 | 348 | 405 | 315 | 330 | 370 | 906 | 3,830 | 3,700 | 1,740 | 560 | 356 | 289 |
| 25 | 348 | 395 | 315 | 312 | 370 | 924 | 3,990 | 3,850 | 1,720 | 545 | 348 | 289 |
| 26 | 343 | 385 | 322 | 312 | 365 | 897 | 3,830 | 4,160 | 1,650 | 532 | 338 | 285 |
| 27 | 338 | 361 | 328 | 340 | 390 | 825 | 3,900 | 4,530 | 1,490 | 532 | 330 | 289 |
| 28 | 338 | 361 | 350 | 340 | 420 | 748 | 4,120 | 5,070 | 1,370 | 506 | 321 | 297 |
| 29 | 352 | 370 | 365 | 325 | - | 716 | 4,240 | 4,980 | 1,340 | 500 | 325 | 343 |
| 30 | 348 | 297 | 365 | 330 | - | 740 | 3,800 | 4,750 | 1,250 | 480 | 321 | 330 |
| 31 | 348 | - | 325 | 330 | - | 780 | - | 4,390 | - | 468 | 313 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 11,236 | 450 | 338 | 362 | 0.436 | 0.50 | 22,290 |
| November | 12,047 | 636 | 297 | 402 | .484 | .54 | 23,890 |
| December | 11,527 | 493 | 280 | 372 | .448 | .52 | 22,860 |
| Calendar year 1948 | 426,910 | 7,790 | 230 | 1,166 | 1.40 | 19.13 | 846,800 |
| January | 10,594 | 390 | 310 | 342 | .412 | .47 | 21,010 |
| February | 8,895 | 420 | 250 | 318 | .383 | .40 | 17,640 |
| March | 23,341 | 1,050 | 400 | 753 | .907 | 1.05 | 46,300 |
| April | 80,989 | 4,240 | 879 | 2,700 | 3.25 | 3.63 | 160,600 |
| May | 142,130 | 6,760 | 2,820 | 4,585 | 5.52 | 6.37 | 281,900 |
| June | 79,730 | 4,230 | 1,250 | 2,658 | 3.20 | 3.57 | 158,100 |
| July | 23,436 | 1,230 | 468 | 788 | .949 | 1.09 | 48,470 |
| August | 11,572 | 456 | 313 | 373 | .449 | .52 | 22,950 |
| September | 9,200 | 343 | 285 | 207 | .370 | .41 | 18,250 |
| Water year 1948-49 | 425,697 | 6,760 | 250 | 1,166 | 1.40 | 19.07 | 844,300 |

Peak discharge (base, 3,700 sec.-ft.).--Apr. 19 (5 a.m.) 3,990 sec.-ft.; Apr. 29 (6-10 a.m.) 4,320 sec.-ft.; May 16 (7:30 a.m.) 6,990 sec.-ft.; May 28 (8 a.m.) 5,220 sec.-ft.; June 12 (5 a.m.) 4,570 sec.-ft.

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 22 to about Feb. 5. No gage-height record Dec. 28 to Jan. 12, Jan. 15 to Mar. 10; discharge computed on basis of weather records and records for Middle Fork Boise River near Twin Springs and inflow to Arrowrock and Anderson Ranch Reservoirs.

## Arrowrock Reservoir at Arrowrock, Idaho

Location.--Graduations on upstream face of dam on Boise River, lat. 43°36', long. 115°55', in E½ sec. 13, T. 3 N., R. 4 E., at Arrowrock, 22 miles by road east of Boise. Datum of gage is at mean sea level (surveys of Bureau of Reclamation).

Drainage area.--2,210 square miles.

Records available.--October 1917 to September 1949.

Extremes.--Maximum contents observed during year, 299,700 acre-feet June 12 (elevation, 3,218.6 feet); minimum observed, 31,250 acre-feet Sept. 30 (elevation, 3,075.1 feet). 1917-49: Maximum contents observed, 301,200 acre-feet May 29, 1948 (elevation, 3,219.1 feet); no usable contents during period in each of several years when sluice gates were open and natural flow was passing through reservoir.

Remarks.--Reservoir is formed by gravity-section concrete-arch dam completed in 1915 and raised 5 feet in 1937; storage began in 1915. Capacity, 291,600 acre-feet between elevations 2,956 feet (11 feet below center line of sluice gates, 8.5 feet below sill) and 3,216 feet (crest of movable spillway at highest position). Dead storage negligible. Figures given herein represent original total contents (including bank storage), which, according to survey by Bureau of Reclamation completed in December 1947, has been reduced 7,700 acre-feet by deposition of silt. Water is used for irrigation of lands in Boise Valley. Gage read once daily about 8 a.m.

Cooperation.--Gage readings and yield table furnished by Bureau of Reclamation.

Contents, in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 70,400 | 53,890 | 63,770 | 88,940 | 115,700 | 202,200 | 112,500 | 183,200 | 297,800 | 262,500 | 212,800 | 108,600 |
| 2 | 67,800 | 55,200 | 63,770 | 90,240 | 116,600 | 209,000 | 107,600 | 188,500 | 297,200 | 259,000 | 212,800 | 105,200 |
| 3 | 65,070 | 57,360 | 64,030 | 91,020 | 117,500 | 214,500 | 103,700 | 193,600 | 296,600 | 255,400 | 213,800 | 101,300 |
| 4 | 62,210 | 58,560 | 64,290 | 91,660 | 118,400 | 219,500 | 100,300 | 197,900 | 296,200 | 252,000 | 214,000 | 97,370 |
| 5 | 59,400 | 59,520 | 64,550 | 92,300 | 119,300 | 225,000 | 97,710 | 202,200 | 296,900 | 248,600 | 214,000 | 94,860 |
| 6 | 57,000 | 60,520 | 64,940 | 93,260 | 120,200 | 227,800 | 96,180 | 206,800 | 297,500 | 247,800 | 213,200 | 88,780 |
| 7 | 54,480 | 61,690 | 65,980 | 94,220 | 121,300 | 230,700 | 95,500 | 211,000 | 297,600 | 241,900 | 212,000 | 84,650 |
| 8 | 52,130 | 62,470 | 67,020 | 95,180 | 122,300 | 233,000 | 95,020 | 216,000 | 297,500 | 238,200 | 210,000 | 79,860 |
| 9 | 50,480 | 63,250 | 67,800 | 96,180 | 123,000 | 232,500 | 94,540 | 221,900 | 297,800 | 234,100 | 207,500 | 79,160 |
| 10 | 48,400 | 64,030 | 68,970 | 97,030 | 123,600 | 226,800 | 94,540 | 229,400 | 298,700 | 229,900 | 205,300 | 78,600 |
| 11 | 46,700 | 65,070 | 70,140 | 97,880 | 124,200 | 219,500 | 94,860 | 237,500 | 299,000 | 225,800 | 201,700 | 78,040 |
| 12 | 45,000 | 66,110 | 71,180 | 98,560 | 124,900 | 212,200 | 96,010 | 246,700 | 299,700 | 221,600 | 197,600 | 77,760 |
| 13 | 43,500 | 67,020 | 72,480 | 99,240 | 125,500 | 205,100 | 97,200 | 257,300 | 299,400 | 218,800 | 193,100 | 77,760 |
| 14 | 42,150 | 67,930 | 73,560 | 100,300 | 126,100 | 198,300 | 97,540 | 268,000 | 299,000 | 218,000 | 188,500 | 77,760 |
| 15 | 40,710 | 68,840 | 74,680 | 101,400 | 127,400 | 191,700 | 98,220 | 277,100 | 298,400 | 217,500 | 183,700 | 76,080 |
| 16 | 40,620 | 70,010 | 75,520 | 102,600 | 128,700 | 187,400 | 101,100 | 286,700 | 296,900 | 217,000 | 178,800 | 72,610 |
| 17 | 41,520 | 70,920 | 76,360 | 103,300 | 130,200 | 183,500 | 106,000 | 291,900 | 295,500 | 216,200 | 174,200 | 69,100 |
| 18 | 42,510 | 71,960 | 77,060 | 104,000 | 132,000 | 179,900 | 111,500 | 294,700 | 294,400 | 215,500 | 169,300 | 65,980 |
| 19 | 43,410 | 71,960 | 77,760 | 105,000 | 135,400 | 176,400 | 118,300 | 295,000 | 293,200 | 214,800 | 164,200 | 62,600 |
| 20 | 44,400 | 71,050 | 78,740 | 105,700 | 140,200 | 173,800 | 124,500 | 295,000 | 291,800 | 214,000 | 159,200 | 59,280 |
| 21 | 45,300 | 70,400 | 79,580 | 106,600 | 146,200 | 171,200 | 125,300 | 294,400 | 290,400 | 214,000 | 154,400 | 55,920 |
| 22 | 45,800 | 69,620 | 80,300 | 107,400 | 150,200 | 168,800 | 128,200 | 293,800 | 289,100 | 214,200 | 149,400 | 52,570 |
| 23 | 46,500 | 69,620 | 80,900 | 108,100 | 156,900 | 166,100 | 132,200 | 293,200 | 287,300 | 214,500 | 144,600 | 49,380 |
| 24 | 47,300 | 67,930 | 81,650 | 109,100 | 164,000 | 163,000 | 135,000 | 293,500 | 284,900 | 214,800 | 140,000 | 46,500 |
| 25 | 48,100 | 67,280 | 82,400 | 109,600 | 171,200 | 157,700 | 141,000 | 293,800 | 282,200 | 214,800 | 135,400 | 43,500 |
| 26 | 48,940 | 66,500 | 83,150 | 110,300 | 178,400 | 151,000 | 148,600 | 295,300 | 279,500 | 214,800 | 130,600 | 40,800 |
| 27 | 50,040 | 66,500 | 84,200 | 111,300 | 186,700 | 144,000 | 155,600 | 295,900 | 276,500 | 214,500 | 126,800 | 38,190 |
| 28 | 50,700 | 66,500 | 85,250 | 112,200 | 194,000 | 137,400 | 163,000 | 297,800 | 273,200 | 214,200 | 123,000 | 35,290 |
| 29 | 51,470 | 65,850 | 86,300 | 113,200 | - | 130,600 | 170,100 | 298,400 | 269,700 | 214,200 | 119,300 | 32,800 |
| 30 | 52,240 | 64,940 | 87,500 | 114,100 | - | 123,800 | 177,300 | 298,400 | 266,200 | 214,000 | 115,700 | 31,250 |
| 31 | 53,010 | - | 88,140 | 115,000 | - | 118,100 | - | 298,100 | - | 213,500 | 112,200 | - |

Monthly elevation and contents, water year October 1948 to September 1949

| Date | Elevation (feet)† | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept.30 | 3,115.0 | 73,000 | - |
| Oct. 31 | 3,099.1 | 53,010 | -19,990 |
| Nov. 30 | 3,108.8 | 64,940 | +11,930 |
| Dec. 31 | 3,125.4 | 88,140 | +23,200 |
| Calendar year 1948 | - | - | -13,460 |
| Jan. 31 | 3,141.4 | 115,000 | +26,860 |
| Feb. 28 | 3,179.8 | 194,000 | +79,000 |
| Mar. 31 | 3,143.1 | 118,100 | -75,900 |
| Apr. 30 | 3,172.4 | 177,300 | +59,200 |
| May 31 | 3,218.1 | 298,100 | +120,800 |
| June 30 | 3,207.5 | 266,200 | -31,900 |
| July 31 | 3,187.8 | 213,500 | -52,700 |
| Aug. 31 | 3,139.8 | 112,200 | -101,300 |
| Sept.30 | 3,075.1 | 31,250 | -80,950 |
| Water year 1948-49 | - | - | -41,750 |

† Elevation at about 8 a.m.

## Boise River at Dowling Ranch, near Arrowrock, Idaho

Location.--Water-stage recorder, lat. 43°35', long. 115°58', in sec. 15, T. 3 N., R. 4 E., at Dowling Ranch, three-quarters of a mile upstream from Moore Creek and 4 miles downstream from Arrowrock.

Drainage area.--2,220 square miles.

Records available.--March 1911 to September 1949.

Average discharge.--38 years, 2,242 second-feet.

Extremes.--Maximum discharge during year, 8,500 second-feet May 29 (gage height, 7.14 feet); minimum, 4 second-feet Oct. 19-23, Nov. 10-18, Dec. 16, 18, 19, but may have been less during period of ice effect; minimum gage height, 0.84 foot Dec. 16.
1911-49: Maximum discharge, 18,800 second-feet Apr. 20, 1943 (gage height, 9.93 feet); minimum, 1 second-foot Jan. 3, 1945, Jan. 13, 1948; minimum gage height, 0.62 foot Nov. 21, 22, 1935; minimum daily discharge, 2 second-feet for many days in 1935, 1936, 1942.

Remarks.--Records excellent except those below 20 second-feet and those for period of ice effect, which are poor. Flow regulated by Arrowrock Reservoir (see preceding page) and Anderson Ranch Reservoir (see p. 152). No diversion above station.

Cooperation.--Two discharge measurements furnished by Water District No. 12 A.

Revisions.--W 883: Drainage area.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,720 | 6 | 643 | | | 928 | 3,850 | 4,590 | 7,700 | 4,010 | 3,240 | 2,300 |
| 2 | 1,690 | 6 | 430 | | | 1,120 | 3,650 | 4,590 | 6,710 | 3,990 | 3,260 | 2,380 |
| 3 | 1,690 | 6 | 430 | | | 910 | 3,520 | 4,550 | 6,190 | 3,910 | 3,260 | 2,460 |
| 4 | 1,770 | 6 | 430 | | | 919 | 3,370 | 4,490 | 5,010 | 3,870 | 3,280 | 2,480 |
| 5 | 1,730 | 5 | 335 | | | 937 | 3,280 | 4,400 | 5,060 | 3,850 | 3,260 | 2,540 |
| 6 | 1,650 | 5 | 10 | | | 946 | 3,220 | 3,970 | 5,500 | 3,870 | 3,260 | 2,590 |
| 7 | 1,640 | 5 | 6 | (*) | | 874 | 3,210 | 4,380 | 5,430 | 3,970 | 3,280 | 2,600 |
| 8 | 1,470 | 5 | 5 | | | 1,310 | 3,190 | 4,380 | 5,170 | 4,030 | 3,330 | 1,550 |
| 9 | 1,320 | 5 | 5 | | | 3,600 | 3,170 | 4,340 | 5,040 | 4,010 | 3,330 | 618 |
| 10 | 1,310 | 5 | 5 | | 6 | 4,900 | 3,190 | 4,340 | 5,170 | 3,970 | 3,350 | 618 |
| 11 | 1,300 | 4 | 6 | | | 5,130 | 3,210 | 4,360 | 5,310 | 3,930 | 3,310 | 618 |
| 12 | 1,210 | 5 | 6 | | | 4,990 | 3,260 | 4,360 | 5,590 | 3,930 | 3,280 | 478 |
| 13 | 1,140 | 6 | 6 | | | 4,880 | 3,430 | 4,420 | 5,170 | 3,910 | 3,260 | 365 |
| 14 | 1,130 | 4 | 5 | (*) | | 4,770 | 3,560 | 5,220 | 4,750 | 3,930 | 3,240 | 432 |
| 15 | 933 | 5 | 5 | | | 4,170 | 3,620 | 5,590 | 4,590 | 3,910 | 3,240 | 2,090 |
| 16 | 17 | 5 | 5 | | 6 | 3,870 | 3,750 | 5,720 | 4,360 | 3,830 | 3,210 | 2,060 |
| 17 | 5 | 5 | 5 | | | 3,830 | 3,970 | 5,620 | 4,360 | 3,730 | 3,220 | 2,010 |
| 18 | 5 | 196 | 5 | | 43 | 3,810 | 4,050 | 6,160 | 4,280 | 3,690 | 3,260 | 1,950 |
| 19 | 4 | 657 | | | 119 | 3,810 | 4,190 | 6,420 | 4,190 | 3,640 | 3,260 | 1,950 |
| 20 | 4 | 874 | | | 122 | 3,790 | 4,030 | 6,290 | 4,110 | 3,560 | 3,190 | 1,940 |
| 21 | 4 | 874 | | | *130 | 3,730 | 3,870 | 5,860 | 4,070 | 3,520 | 3,100 | 1,980 |
| 22 | 4 | *883 | | | 132 | 3,730 | 4,050 | 5,400 | 4,030 | 3,460 | 3,040 | 1,940 |
| 23 | 5 | 883 | | | 225 | 3,690 | 4,130 | 5,130 | 4,030 | 3,440 | 2,990 | 1,860 |
| 24 | 5 | 883 | | | 460 | 4,070 | 4,170 | 5,240 | 4,010 | 3,430 | 2,970 | 1,790 |
| 25 | 5 | 883 | | 5 | 625 | 4,700 | 4,210 | 5,590 | 4,030 | 3,390 | 2,920 | 1,730 |
| 26 | 5 | 635 | | | 708 | 4,860 | 4,320 | 6,480 | 4,030 | 3,350 | 2,720 | 1,630 |
| 27 | 5 | 435 | | | 555 | 4,680 | 4,400 | 6,820 | 4,070 | 3,310 | 2,490 | 1,510 |
| 28 | 5 | 526 | | | 701 | 4,530 | 4,470 | 7,890 | 4,070 | 3,280 | 2,430 | 1,470 |
| 29 | 5 | 874 | | | - | 4,380 | 4,470 | 8,410 | 4,110 | 3,210 | 2,400 | 1,460 |
| 30 | 5 | 874 | | | - | 4,210 | 4,490 | 8,380 | 4,090 | 3,210 | 2,380 | 1,160 |
| 31 | 5 | - | | | - | 4,010 | - | 8,120 | - | 3,220 | 2,370 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 21,791 | 1,770 | 4 | 703 | 43,220 |
| November | 9,565 | 883 | 4 | 319 | 18,970 |
| December | 2,407 | 643 | - | 77.6 | 4,770 |
| Calendar year 1948 | 775,573 | 11,800 | - | 2,119 | 1,538,000 |
| January | 186 | - | - | 6 | 369 |
| February | 3,922 | 708 | - | 140 | 7,780 |
| March | 106,084 | 5,130 | 874 | 3,422 | 210,400 |
| April | 113,300 | 4,490 | 3,170 | 3,777 | 224,700 |
| May | 171,510 | 8,410 | 3,970 | 5,533 | 340,200 |
| June | 144,230 | 7,700 | 4,010 | 4,808 | 286,100 |
| July | 114,360 | 4,030 | 3,210 | 3,689 | 226,800 |
| August | 95,130 | 3,350 | 2,370 | 3,069 | 188,700 |
| September | 50,559 | 2,600 | 365 | 1,685 | 100,300 |
| Water year 1948-49 | 833,044 | 8,410 | - | 2,282 | 1,652,000 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 19 to Feb. 23.

## Diversions from Boise River between Dowling Ranch and Boise gaging stations, Idaho

Between Dowling Ranch and Boise gaging stations, 6 canals divert water from Boise River for irrigation.

Records of total diversion during irrigation seasons for each canal for years 1919-46, and daily flow of New York Canal February 1939 to October 1948 in reports of Geological Survey. Records of daily diversion for each canal during irrigation seasons from 1916 to 1949 on file in office of Idaho State Reclamation Engineer.

Records show summation of discharge for the six canals. Gage readings obtained daily or several times weekly and frequent discharge measurements made. Records summarized under direction of E. B Karn, watermaster for Boise River.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 1,460 | 3,520 | 3,450 | 3,070 | 2,570 | 1,990 |
| 2 | | | | | | | 1,470 | 3,530 | 3,450 | 3,090 | 2,640 | 1,930 |
| 3 | | | | | | | 1,470 | 3,530 | 3,460 | 3,080 | 2,630 | 1,990 |
| 4 | | | | | | | 1,600 | 3,530 | 3,460 | 3,020 | 2,610 | 1,980 |
| 5 | | | | | | | 1,600 | 3,180 | 3,470 | 2,990 | 2,620 | 1,990 |
| 6 | | | | | | | 1,660 | 3,320 | 3,490 | 2,940 | 2,570 | 2,010 |
| 7 | | | | | | | 1,700 | 3,420 | 3,490 | 2,990 | 2,580 | 2,060 |
| 8 | | | | | | | 1,840 | 3,430 | 3,490 | 3,010 | 2,570 | 1,670 |
| 9 | | | | | | | 1,920 | 3,430 | 3,490 | 3,080 | 2,580 | 51 |
| 10 | | | | | | | 2,010 | 3,480 | 3,490 | 3,050 | 2,580 | 51 |
| 11 | | | | | | | 2,540 | 3,510 | 3,510 | 3,000 | 2,620 | 51 |
| 12 | | | | | | | 2,900 | 3,510 | 3,520 | 3,010 | 2,570 | 51 |
| 13 | | | | | | | 2,990 | 3,510 | 3,520 | 3,050 | 2,540 | 50 |
| 14 | | | | | | | 3,020 | 3,500 | 3,530 | 3,090 | 2,570 | 50 |
| 15 | | | | | | | 3,100 | 3,500 | 3,520 | 3,080 | 2,490 | 1,270 |
| 16 | | | | | | | 3,200 | 3,490 | 3,230 | 3,040 | 2,420 | 1,760 |
| 17 | | | | | | | 3,230 | 3,500 | 3,080 | 3,030 | 2,510 | 1,750 |
| 18 | | | | | | | 3,310 | 3,500 | 3,140 | 3,020 | 2,490 | 1,670 |
| 19 | | | | | | | 3,320 | 3,500 | 3,110 | 3,000 | 2,610 | 1,680 |
| 20 | | | | | | | 3,340 | 3,490 | 3,120 | 2,900 | 2,560 | 1,740 |
| 21 | | | | | | | 3,330 | 3,470 | 3,100 | 2,880 | 2,470 | 1,700 |
| 22 | | | | | | | 3,310 | 3,470 | 3,100 | 2,900 | 2,410 | 1,680 |
| 23 | | | | | | | 3,360 | 3,460 | 3,110 | 2,840 | 2,410 | 1,530 |
| 24 | | | | | | | 3,330 | 3,480 | 3,080 | 2,820 | 2,340 | 1,390 |
| 25 | | | | | | | 3,370 | 3,480 | 3,040 | 2,800 | 2,280 | 1,380 |
| 26 | | | | | | | 3,390 | 3,490 | 3,040 | 2,700 | 2,280 | 1,310 |
| 27 | | | | | | | 3,400 | 3,500 | 3,030 | 2,720 | 2,200 | 1,220 |
| 28 | | | | | | | 3,440 | 3,500 | 3,040 | 2,640 | 2,110 | 1,220 |
| 29 | | | | | | | 3,440 | 3,500 | 3,080 | 2,620 | 2,080 | 1,250 |
| 30 | | | | | | | 3,450 | 3,500 | 3,080 | 2,560 | 2,080 | 951 |
| 31 | | | | | | | - | 3,500 | - | 2,580 | 2,060 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | 81,500 | 3,450 | 1,460 | 2,717 | 161,700 |
| May | 107,730 | 3,530 | 3,180 | 3,475 | 213,700 |
| June | 98,720 | 3,530 | 3,030 | 3,291 | 195,800 |
| July | 90,600 | 3,090 | 2,560 | 2,923 | 179,700 |
| August | 76,050 | 2,640 | 2,060 | 2,453 | 150,800 |
| September | 39,425 | 2,060 | 50 | 1,314 | 78,200 |
| The period | - | - | - | - | 979,900 |

## Boise River at Boise, Idaho

Location.--Water-stage recorder, lat. 43°37', long. 116°13', in SW¼ sec. 10, T. 3 N., R. 2 E., at Capitol Boulevard Bridge at Boise. Datum of gage is 2,675.46 feet above mean sea level (datum of Corps of Engineers, Boise River Surveys).

Records available.--March 1938 to September 1949 (gage heights only), February 1940 to September 1949.

Extremes.--Maximum discharge during year, 5,760 second-feet May 30 (gage height, 6.58 feet); minimum, 19 second-feet Nov. 30 (gage height, 2.53 feet); minimum daily, 21 second-feet Nov. 30.

1940-49: Maximum discharge, 21,000 second-feet Apr. 20, 1943 (gage height, 10.00 feet, site and datum then in use); minimum, 7 second-feet Dec. 16, 1942 (gage height, 1.79 feet, site and datum then in use); minimum daily, 8 second-feet Mar. 8-15, Dec. 6, 1941.

Remarks.--Records good except those below 200 second-feet, which are fair, and those for periods of ice effect or no gage-height record, which are poor. Flow regulated by Arrowrock Reservoir (see p. 144) and Anderson Ranch Reservoir (see p. 152). New York, Ridenbaugh, and four smaller canals divert between Moore Creek and this station (see preceding page).

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 235 | 63 | 23 | 122 | 84 | 81 | 3,140 | 2,140 | 5,250 | 1,120 | 690 | 359 |
| 2 | 198 | 119 | 24 | b120 | 84 | 81 | 3,020 | 2,200 | 4,300 | 1,070 | 681 | 415 |
| 3 | 184 | 162 | 26 | b110 | 84 | 65 | 2,940 | 2,110 | 3,460 | 1,060 | 709 | 511 |
| 4 | 246 | 184 | 23 | b100 | 87 | 65 | 2,870 | 2,000 | 2,360 | 1,040 | 748 | 504 |
| 5 | 280 | 148 | 23 | b100 | 87 | 96 | 2,830 | 1,910 | 2,050 | 1,040 | 709 | 560 |
| 6 | 235 | 105 | 54 | a100 | 87 | 188 | 2,800 | 1,850 | 2,460 | 1,040 | 738 | 601 |
| 7 | 225 | 87 | 115 | a100 | 90 | 241 | 2,890 | 1,890 | 2,520 | 1,070 | 748 | 576 |
| 8 | 220 | 72 | 105 | a100 | 90 | 292 | 2,690 | 1,940 | 2,240 | 1,080 | 827 | 619 |
| 9 | 214 | 55 | 100 | a100 | 90 | 2,590 | 2,650 | 1,940 | 2,070 | 1,060 | 817 | 576 |
| 10 | 214 | a60 | 133 | a95 | 96 | 4,220 | 2,520 | 1,960 | 2,090 | 1,040 | 827 | 610 |
| 11 | 193 | a70 | 152 | a90 | 93 | 4,620 | 2,300 | 1,980 | 2,200 | 1,060 | 827 | 593 |
| 12 | 240 | a70 | 170 | a85 | 93 | 4,580 | 2,110 | 2,010 | 2,520 | 1,050 | 807 | 544 |
| 13 | 184 | a95 | 180 | *b85 | 96 | 4,500 | 1,910 | 2,050 | 2,260 | 1,000 | 796 | 365 |
| 14 | 193 | a85 | 166 | b85 | 96 | 4,420 | 1,750 | 2,610 | 1,750 | 956 | 796 | 346 |
| 15 | 224 | a90 | 141 | b85 | 93 | 4,600 | 1,640 | 3,200 | 1,570 | 933 | 827 | 346 |
| 16 | 122 | a110 | 65 | b85 | 93 | 4,880 | 1,680 | 3,370 | 1,350 | 922 | 827 | 346 |
| 17 | 108 | a30 | *65 | b85 | 90 | 4,880 | 2,000 | 3,340 | 1,350 | 879 | 807 | 332 |
| 18 | 105 | a28 | 60 | b85 | 111 | 4,820 | 2,280 | 3,490 | 1,560 | 807 | 807 | 313 |
| 19 | 81 | a26 | 60 | b85 | 141 | 4,850 | 2,320 | 3,880 | 1,450 | 807 | 786 | 282 |
| 20 | 114 | a25 | 90 | b85 | 258 | 4,850 | 2,200 | 3,750 | 1,440 | 807 | 757 | 258 |
| 21 | 93 | a24 | 122 | b85 | 93 | 4,800 | 1,800 | 3,340 | 1,320 | 767 | 719 | 252 |
| 22 | 76 | 24 | 84 | b85 | 87 | 4,600 | 1,850 | 2,890 | 1,250 | 728 | 709 | 313 |
| 23 | 76 | 24 | 84 | b85 | 102 | 3,820 | 2,030 | 2,500 | 1,260 | 709 | 700 | 365 |
| 24 | 67 | 23 | 79 | b85 | 124 | 3,610 | 2,200 | 2,540 | 1,260 | 709 | 728 | 415 |
| 25 | 65 | 23 | 81 | b85 | 94 | 4,250 | 2,180 | 2,830 | 1,280 | 728 | 700 | 379 |
| 26 | 67 | 23 | 96 | b85 | 72 | 4,450 | 2,110 | 3,580 | 1,290 | 728 | 610 | 372 |
| 27 | 70 | 23 | 108 | a85 | 81 | 4,200 | 2,110 | 4,050 | 1,290 | 728 | 379 | 306 |
| 28 | 65 | 22 | 118 | *81 | 76 | 3,950 | 2,160 | 4,900 | 1,290 | 719 | 359 | 230 |
| 29 | 65 | 22 | 122 | 81 | - | 3,660 | 2,180 | 5,630 | 1,260 | 700 | 372 | 258 |
| 30 | 53 | 21 | 126 | 81 | - | 3,460 | 2,130 | 5,710 | 1,220 | 690 | 359 | 235 |
| 31 | 53 | - | 122 | 84 | - | 3,250 | - | 5,500 | - | 690 | 372 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 4,565 | 280 | 53 | 147 | 9,050 |
| November | 1,913 | 184 | 21 | 63.8 | 3,790 |
| December | 2,917 | 180 | 23 | 94.1 | 5,790 |
| Calendar year 1948 | 376,243 | 9,500 | 16 | 1,028 | 746,200 |
| January | 2,824 | 122 | 81 | 91.1 | 5,600 |
| February | 2,772 | 258 | 72 | 99.0 | 5,500 |
| March | 98,969 | 4,880 | 65 | 3,193 | 196,300 |
| April | 69,290 | 3,140 | 1,640 | 2,310 | 137,400 |
| May | 93,090 | 5,710 | 1,850 | 3,003 | 184,600 |
| June | 58,970 | 5,250 | 1,220 | 1,966 | 117,000 |
| July | 27,737 | 1,120 | 690 | 895 | 55,020 |
| August | 21,538 | 827 | 359 | 695 | 42,720 |
| September | 12,181 | 619 | 230 | 406 | 24,160 |
| Water year 1948-49 | 396,766 | 5,710 | 21 | 1,087 | 786,900 |

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for Moore Creek near Arrowrock and other Boise River stations.

b Stage-discharge relation affected by ice.

## Diversions from Boise River between Boise and Notus gaging stations, Idaho

Between Boise and Notus gaging stations, 21 principal canals and several small farm laterals divert water from Boise River for irrigation.

Records of total diversion during irrigation seasons for each canal for years 1919-46 in reports of Geological Survey. Records of daily diversion for each canal during irrigation seasons from 1916 to 1949 on file in office of Idaho State Reclamation Engineer.

Records show summation of discharge for these diversions. Gage reading obtained daily or several times weekly and frequent discharge measurements made. Records summarized under direction of E. B. Karn, watermaster for Boise River.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 26 | 2,300 | 2,210 | 2,030 | 1,370 | 1,090 |
| 2 | | | | | | | 35 | 2,290 | 2,120 | 1,970 | 1,350 | 986 |
| 3 | | | | | | | 35 | 1,980 | 2,130 | 1,940 | 1,350 | 1,170 |
| 4 | | | | | | | 155 | 2,250 | 2,090 | 1,970 | 1,380 | 1,200 |
| 5 | | | | | | | 185 | 2,280 | 2,020 | 1,930 | 1,340 | 1,250 |
| 6 | | | | | | | 178 | 2,210 | 2,060 | 1,920 | 1,320 | 1,260 |
| 7 | | | | | | | 221 | 2,280 | 2,090 | 1,920 | 1,320 | 1,280 |
| 8 | | | | | | | 236 | 2,300 | 2,090 | 1,920 | 1,340 | 1,300 |
| 9 | | | | | | | 236 | 2,320 | 2,100 | 1,910 | 1,400 | 1,300 |
| 10 | | | | | | | 280 | 2,340 | 2,120 | 1,940 | 1,430 | 1,360 |
| 11 | | | | | | | 386 | 2,340 | 2,130 | 1,950 | 1,430 | 1,350 |
| 12 | | | | | | | 492 | 2,360 | 2,160 | 1,910 | 1,450 | 1,330 |
| 13 | | | | | | | 647 | 2,370 | 2,140 | 1,870 | 1,450 | 1,170 |
| 14 | | | | | | | 760 | 2,380 | 2,120 | 1,670 | 1,490 | 969 |
| 15 | | | | | | | 883 | 2,360 | 2,130 | 1,590 | 1,520 | 947 |
| 16 | | | | | | | 1,160 | 2,380 | 2,080 | 1,760 | 1,500 | 933 |
| 17 | | | | | | | 1,490 | 2,320 | 2,080 | 1,780 | 1,470 | 973 |
| 18 | | | | | | | 1,680 | 2,300 | 2,070 | 1,730 | 1,450 | 930 |
| 19 | | | | | | | 1,730 | 2,300 | 2,090 | 1,660 | 1,440 | 982 |
| 20 | | | | | | | 1,880 | 2,250 | 2,060 | 1,610 | 1,430 | 953 |
| 21 | | | | | | | 1,890 | 2,230 | 2,070 | 1,520 | 1,400 | 977 |
| 22 | | | | | | | 2,060 | 2,190 | 2,060 | 1,570 | 1,380 | 980 |
| 23 | | | | | | | 2,080 | 2,160 | 2,040 | 1,490 | 1,390 | 1,000 |
| 24 | | | | | | | 2,130 | 2,170 | 2,040 | 1,440 | 1,400 | 1,080 |
| 25 | | | | | | | 2,170 | 2,190 | 2,100 | 1,480 | 1,390 | 1,100 |
| 26 | | | | | | | 2,180 | 1,880 | 2,120 | 1,500 | 1,380 | 1,090 |
| 27 | | | | | | | 2,200 | 2,180 | 2,130 | 1,480 | 1,010 | 1,070 |
| 28 | | | | | | | 2,210 | 2,180 | 2,220 | 1,480 | 1,150 | 950 |
| 29 | | | | | | | 2,240 | 2,160 | 2,200 | 1,420 | 1,140 | 921 |
| 30 | | | | | | | 2,250 | 2,170 | 2,150 | 1,400 | 1,130 | 951 |
| 31 | | | | | | | - | 2,230 | - | 1,390 | 1,090 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | 34,105 | 2,250 | 26 | 1,137 | 67,650 |
| May | 69,650 | 2,380 | 1,880 | 2,247 | 138,100 |
| June | 63,220 | 2,220 | 2,020 | 2,107 | 125,400 |
| July | 53,150 | 2,030 | 1,390 | 1,715 | 105,400 |
| August | 42,090 | 1,520 | 1,010 | 1,358 | 83,480 |
| September | 32,852 | 1,360 | 921 | 1,095 | 65,160 |
| The period | - | - | - | - | 585,200 |

## Boise River at Notus, Idaho

Location.--Water-stage recorder, lat. 43°43', long. 116°48', in SE¼ sec. 34, T. 5 N., R. 4 W., 360 yards upstream from steel highway bridge, a quarter of a mile southeast of Notus, and 7 miles northwest of Caldwell. Datum of gage is 2,288.55 feet above mean sea level (datum of Corps of Engineers, Boise River Surveys).

Records available.--April 1920 to September 1949.

Average discharge.--27 years (1920-22, 1924-49), 1,080 second-feet.

Extremes.--Maximum discharge during year, 5,710 second-feet Mar. 17 (gage height, 6.66 feet); minimum, 21 second-feet Aug. 6 (gage height, 1.11 feet); minimum daily, 23 second-feet Aug. 6.

1920-49: Maximum discharge, 20,500 second-feet Apr. 20, 1943 (gage height, 10.43 feet); minimum observed, 10 second-feet Aug. 18, 21, 1920.

Remarks.--Records good. Station is below all large diversions for irrigation in Boise Valley; many diversions above station. Flow regulated by Arrowrock Reservoir (see p. 144).

Rating tables, water year 1948-49 (gage height, in feet, and discharge, in second-feet (Shifting-control method used July 8 to Sept. 30)

| Oct. 1 to Feb. 10 | | | | Feb. 11 to Sept. 30 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.2 | 235 | 2.9 | 595 | 1.0 | 18 | 1.5 | 83 | 2.4 | 337 | 4.3 | 1,880 |
| 2.4 | 324 | 3.3 | 860 | 1.1 | 27 | 1.7 | 120 | 2.7 | 485 | 5.0 | 2,790 |
| 2.6 | 425 | | | 1.2 | 38 | 1.9 | 167 | 3.1 | 755 | 5.8 | 4,090 |
| | | | | 1.3 | 51 | 2.1 | 226 | 3.7 | 1,260 | 6.6 | 5,580 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 244 | 764 | 565 | 589 | 436 | 571 | 3,800 | 624 | 4,850 | 112 | 44 | 57 |
| 2 | 278 | 764 | 589 | 559 | 436 | 571 | 3,660 | 902 | 4,310 | 103 | 44 | 50 |
| 3 | 301 | 777 | 628 | 508 | 442 | 584 | 3,560 | 961 | 3,110 | 92 | 39 | 47 |
| 4 | 306 | 784 | 595 | 502 | 442 | 571 | 3,480 | 830 | 2,410 | 94 | 39 | 57 |
| 5 | 363 | 790 | 571 | 513 | 442 | 571 | 3,350 | 680 | 1,270 | 103 | 36 | 63 |
| 6 | 425 | 777 | 571 | 524 | 430 | 578 | 3,330 | 597 | 1,360 | 85 | 23 | 58 |
| 7 | 425 | 751 | 595 | 524 | 430 | 638 | 3,360 | 545 | 1,660 | 68 | 26 | 56 |
| 8 | 430 | 725 | 634 | 524 | 447 | 680 | 3,380 | 558 | 1,460 | 52 | 30 | 68 |
| 9 | 425 | 712 | 628 | 496 | 447 | 1,400 | 3,140 | 571 | 1,190 | 51 | 39 | 76 |
| 10 | 399 | 706 | 634 | 480 | 508 | 3,950 | 3,000 | 533 | 978 | 51 | 34 | 85 |
| 11 | 389 | 706 | 712 | 474 | 862 | 4,900 | 2,660 | 521 | 986 | 52 | 39 | 90 |
| 12 | 373 | 706 | 846 | 469 | 762 | 4,790 | 2,200 | 539 | 1,110 | 54 | 38 | 87 |
| 13 | 399 | 706 | 853 | 469 | 624 | 4,830 | 1,860 | 558 | 1,440 | 51 | 38 | 101 |
| 14 | 378 | 706 | 790 | 464 | 564 | 4,890 | 1,540 | 652 | 936 | 51 | 46 | 124 |
| 15 | 469 | 725 | 744 | 464 | 521 | 5,060 | 1,170 | 2,020 | 558 | 44 | 50 | 152 |
| 16 | 660 | 712 | 692 | 464 | 604 | 5,540 | 862 | 2,340 | 396 | 39 | 44 | 170 |
| 17 | 692 | 686 | 640 | 480 | 862 | 5,580 | 718 | 2,410 | 267 | 36 | 41 | 220 |
| 18 | 660 | 634 | 621 | 469 | 894 | 5,560 | 886 | 2,140 | 317 | 37 | 39 | 246 |
| 19 | 660 | 640 | 621 | 464 | 1,360 | 5,580 | 1,000 | 2,880 | 415 | 63 | 41 | 246 |
| 20 | 647 | 634 | 621 | 452 | 1,440 | 5,560 | 862 | 3,170 | 458 | 54 | 42 | 204 |
| 21 | 712 | 608 | 614 | 464 | 1,050 | 5,460 | 521 | 2,940 | 372 | 44 | 41 | 170 |
| 22 | 764 | 595 | 614 | 469 | 732 | 5,360 | 381 | 2,370 | 305 | 39 | 54 | 131 |
| 23 | 758 | 589 | 565 | 464 | 878 | 4,870 | 346 | 1,910 | 260 | 39 | 57 | 122 |
| 24 | 744 | 589 | 547 | 452 | 894 | 4,020 | 441 | 1,510 | 210 | 41 | 51 | 109 |
| 25 | 725 | 583 | 541 | 447 | 710 | 4,560 | 515 | 1,600 | 133 | 41 | 56 | 99 |
| 26 | 738 | 583 | 553 | 436 | 624 | 5,020 | 463 | 1,980 | 118 | 39 | 50 | 103 |
| 27 | 744 | 571 | 565 | 442 | 584 | 4,830 | 415 | 2,740 | 135 | 37 | 48 | 88 |
| 28 | 744 | 565 | 583 | 430 | 578 | 4,560 | 430 | 3,090 | 154 | 35 | 54 | 94 |
| 29 | 751 | 559 | 583 | 430 | - | 4,270 | 463 | 4,470 | 160 | 38 | 54 | 99 |
| 30 | 738 | 565 | 583 | 436 | - | 4,060 | 497 | 5,080 | 129 | 38 | 57 | 131 |
| 31 | 738 | - | 565 | 436 | - | 3,890 | - | 4,890 | - | 42 | 58 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 17,079 | 764 | 244 | 551 | 33,880 |
| November | 20,212 | 790 | 559 | 674 | 40,090 |
| December | 19,463 | 853 | 541 | 628 | 38,600 |
| Calendar year 1948 | 323,902 | 7,590 | 29 | 885 | 642,500 |
| January | 14,794 | 589 | 430 | 477 | 29,340 |
| February | 19,003 | 1,440 | 430 | 679 | 37,690 |
| March | 113,304 | 5,580 | 571 | 3,655 | 224,700 |
| April | 52,290 | 3,800 | 346 | 1,743 | 103,700 |
| May | 56,611 | 5,080 | 521 | 1,826 | 112,300 |
| June | 31,457 | 4,850 | 118 | 1,049 | 62,390 |
| July | 1,725 | 112 | 35 | 55.6 | 3,420 |
| August | 1,352 | 58 | 23 | 43.6 | 2,680 |
| September | 3,403 | 246 | 47 | 113 | 6,750 |
| Water year 1948-49 | 350,693 | 5,580 | 23 | 961 | 695,500 |

## Middle Fork Boise River near Twin Springs, Idaho

Location.--Water-stage recorder, lat. 43°42'45", long. 115°37'50" in sec. 4, T. 4 N., R. 7 E., 1,000 feet upstream from confluence with North Fork Boise River, 1,000 feet upstream from Troutdale ranger station, and 4½ miles northeast of Twin Springs.

Drainage area.--382 square miles.

Records available.--October 1946 to September 1949.

Extremes.--Maximum discharge during year, 3,320 second-feet May 16; maximum gage height, about 11.0 feet Feb. 10 (result of snowslide); minimum, 65 second-feet Feb. 6 (gage height, 1.12 feet), result of snowslide upstream.
1946-49: Maximum discharge, 4,370 second-feet May 29, 1948; maximum gage height, that of Feb. 10, 1949; minimum discharge that of Feb. 6, 1949.

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

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 180 | 210 | b150 | 202 | 175 | 225 | 420 | 1,440 | 1,970 | 701 | 259 | 178 |
| 2 | 178 | 295 | 216 | 180 | 170 | 243 | 498 | 1,380 | 1,670 | 712 | 253 | 175 |
| 3 | 172 | 306 | 219 | b165 | 168 | 253 | 546 | 1,310 | 1,470 | 696 | 246 | 172 |
| 4 | 180 | 256 | 196 | b160 | b160 | 262 | 616 | 1,230 | 1,400 | 690 | 246 | 175 |
| 5 | 231 | 219 | 196 | b160 | 153 | 299 | 728 | 1,210 | 1,570 | 718 | 243 | 180 |
| 6 | 210 | 219 | 202 | b180 | b150 | 341 | 784 | 1,240 | 1,950 | 767 | 237 | 175 |
| 7 | 205 | 193 | 205 | b180 | b150 | 327 | 894 | 1,360 | 2,070 | 665 | 231 | 172 |
| 8 | 210 | 168 | 199 | b180 | b150 | 316 | 860 | 1,590 | 2,210 | 611 | 228 | 168 |
| 9 | 202 | 170 | 202 | b180 | 128 | 323 | 952 | 1,930 | 2,300 | 583 | 228 | 170 |
| 10 | 196 | 205 | 216 | b180 | b150 | 320 | 982 | 2,170 | 2,390 | 546 | 228 | 175 |
| 11 | 191 | 205 | 219 | b180 | b150 | *331 | 1,100 | 2,380 | 2,530 | 533 | 234 | 185 |
| 12 | 185 | 199 | 228 | b180 | b150 | 345 | 1,260 | 2,740 | 2,450 | 506 | 225 | 191 |
| 13 | 182 | 193 | 213 | *b190 | b150 | 327 | 1,050 | 2,930 | 2,040 | 489 | 219 | 185 |
| 14 | 180 | 188 | 219 | b190 | a150 | 334 | 904 | 3,060 | 1,770 | 473 | 216 | 182 |
| 15 | 196 | 234 | 216 | b190 | a150 | 367 | 872 | 3,160 | 1,640 | 452 | 213 | 178 |
| 16 | 191 | 219 | 175 | b190 | a150 | 401 | 952 | 3,180 | 1,560 | 432 | 210 | 185 |
| 17 | 185 | .213 | 160 | 178 | b175 | 440 | 1,150 | 3,000 | 1,320 | 409 | 207 | 199 |
| 18 | 185 | *182 | 170 | b175 | 165 | 428 | 1,400 | 2,800 | 1,170 | 393 | 205 | 185 |
| 19 | 180 | 196 | 193 | 178 | 158 | 473 | 1,540 | 2,670 | 1,130 | 375 | 207 | 182 |
| 20 | 180 | 213 | 237 | b180 | 136 | 528 | 1,390 | 2,450 | 1,080 | 364 | 202 | 178 |
| 21 | 178 | 199 | 180 | 175 | 162 | 498 | 1,230 | 2,180 | 1,040 | 356 | 196 | 175 |
| 22 | 175 | 196 | 162 | 172 | 178 | 460 | 1,190 | 2,040 | 1,100 | 341 | 199 | 172 |
| 23 | 175 | 196 | a150 | 168 | 168 | 456 | 1,400 | 1,870 | 1,080 | 327 | 199 | 172 |
| 24 | 172 | 216 | a160 | b168 | 185 | 440 | 1,580 | 1,820 | 1,060 | 320 | 199 | 168 |
| 25 | 178 | 205 | a160 | b160 | 188 | 448 | 1,660 | 1,960 | 1,070 | 313 | 191 | 170 |
| 26 | 175 | 202 | a165 | b160 | 182 | 428 | 1,620 | 2,200 | 1,020 | 306 | 191 | 168 |
| 27 | 175 | 193 | b165 | 175 | 191 | 386 | 1,650 | 2,400 | 888 | 295 | 188 | 165 |
| 28 | 175 | 193 | b180 | 175 | 210 | 352 | 1,770 | 2,770 | 822 | 289 | 185 | 175 |
| 29 | 178 | 193 | b190 | b165 | - | 327 | 1,790 | 2,720 | 806 | 282 | 188 | 199 |
| 30 | 178 | 156 | 191 | 170 | - | 331 | 1,610 | 2,540 | 740 | 269 | 182 | 182 |
| 31 | 178 | - | 170 | 170 | - | 360 | - | 2,330 | - | 262 | 178 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 5,756 | 231 | 172 | 186 | 0.487 | 0.56 | 11,420 |
| November | 6,232 | 306 | 156 | 208 | .545 | .61 | 12,360 |
| December | 5,904 | 237 | 150 | 190 | .497 | .57 | 11,710 |
| Calendar year 1948 | 216,603 | 4,070 | 114 | 592 | 1.55 | 21.09 | 429,600 |
| January | 5,456 | 202 | 160 | 176 | .461 | .53 | 10,820 |
| February | 4,552 | 210 | 128 | 163 | .427 | .44 | 9,030 |
| March | 11,369 | 528 | 225 | 367 | .961 | 1.11 | 22,550 |
| April | 34,398 | 1,790 | 420 | 1,147 | 3.00 | 3.35 | 68,230 |
| May | 68,060 | 3,180 | 1,210 | 2,195 | 5.75 | 6.63 | 135,000 |
| June | 45,316 | 2,530 | 740 | 1,511 | 3.96 | 4.41 | 89,880 |
| July | 14,475 | 767 | 262 | 467 | 1.22 | 1.41 | 28,710 |
| August | 6,633 | 259 | 178 | 214 | .560 | .65 | 13,160 |
| September | 5,336 | 199 | 165 | 178 | .466 | .52 | 10,580 |
| Water year 1948-49 | 213,487 | 3,180 | 128 | 585 | 1.53 | 20.79 | 423,400 |

Peak discharge (base, 1,900 sec.-ft.).--May 16 (3 a.m.) 3,320 sec.-ft.; May 28 (7 a.m.) 2,870 sec.-ft.; June 12 (3 a.m.) 2,830 sec.-ft.

* Winter discharge measurement madeon this day.

a No gage-height record; discharge computed on basis of weather records, records for other Boise River stations, and inflow into Arrowrock and Anderson Ranch Reservoirs.

b Stage-discharge relation affected by ice.

## South Fork Boise River near Featherville, Idaho

Location.--Water-stage recorder, lat. 43°29'40", long. 115°18'20", in lot 6, NE¼ sec. 19, T. 2 N., R. 10 E., 2½ miles upstream from Deer Creek and 8 miles southwest of Featherville. Altitude of gage, about 4,220 feet, from topographic map of U. S. Bureau of Reclamation.

Drainage area.--635 square miles.

Record available.--April 1945 to September 1949.

Extremes.--Maximum discharge during year, 3,880 second-feet May 17 (gage height, 6.15 feet); minimum, 30 second-feet Feb. 10 (gage height, 0.60 foot), result of snow slide upstream.
1945-49: Maximum discharge, 4,750 second-feet May 29, 1948 (gage height, 6.87 feet); minimum, that of Feb. 10, 1949.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Small ranch diversions above station. No regulation.

Rating tables, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 3-5, Sept. 25-30)

| Oct. 1 to Nov. 5 | | Nov. 6 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|
| 1.7 | 192 | 1.3 | 94 | 2.1 | 319 | 4.0 | 1,580 |
| 1.8 | 220 | 1.5 | 129 | 2.4 | 460 | 5.0 | 2,570 |
| 2.0 | 288 | 1.7 | 177 | 2.8 | 680 | 6.1 | 3,820 |
| 2.2 | 369 | 1.9 | 241 | 3.3 | 1,010 | | |

Discharge in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 220 | 256 | 161 | 220 | 210 | 224 | 391 | 2,070 | 2,380 | 716 | 252 | 169 |
| 2 | 217 | 352 | 248 | 210 | 200 | 231 | 450 | 1,980 | 2,090 | 698 | 248 | 169 |
| 3 | 214 | 365 | 234 | 200 | 190 | *245 | 490 | 1,920 | 1,870 | 680 | 241 | 167 |
| 4 | 220 | 304 | 221 | 190 | 190 | 245 | 582 | 1,830 | 1,760 | 662 | 234 | 169 |
| 5 | 263 | 249 | 214 | 190 | 180 | 256 | 716 | 1,800 | 1,820 | 668 | 231 | 175 |
| 6 | 252 | 256 | 214 | 200 | 175 | 263 | 844 | 1,840 | 2,050 | 668 | 227 | 169 |
| 7 | 242 | 207 | 227 | *220 | 170 | 267 | 975 | 1,990 | 2,170 | 604 | 221 | 169 |
| 8 | 242 | 174 | 217 | 220 | 160 | 263 | 961 | 2,260 | 2,300 | 565 | 217 | 164 |
| 9 | 233 | 180 | 207 | 210 | 150 | 271 | 1,060 | 2,610 | 2,330 | 548 | 210 | 164 |
| 10 | 223 | 227 | 234 | 210 | 94 | 267 | 1,140 | 2,800 | 2,390 | 526 | 217 | 167 |
| 11 | 220 | 245 | 245 | 210 | 147 | 267 | 1,310 | 2,930 | 2,470 | 510 | 224 | 172 |
| 12 | 220 | 238 | 252 | 210 | 149 | 271 | 1,440 | 3,260 | 2,390 | 485 | 217 | 180 |
| 13 | 214 | 227 | 234 | 210 | 174 | 267 | 1,270 | 3,530 | 2,090 | 470 | 214 | 180 |
| 14 | 214 | 227 | 234 | 220 | 186 | 274 | 1,150 | 3,760 | 1,870 | 450 | 201 | 183 |
| 15 | 223 | 271 | 221 | 220 | 201 | 303 | 1,170 | 3,760 | 1,730 | 435 | 198 | 183 |
| 16 | 220 | *252 | 186 | 224 | 210 | 307 | 1,310 | 3,780 | 1,620 | 425 | 198 | 172 |
| 17 | 217 | 241 | 167 | 214 | 221 | 311 | 1,580 | 3,710 | 1,440 | 405 | 198 | 183 |
| 18 | 217 | 186 | 164 | 207 | 245 | 319 | 1,870 | 3,530 | 1,310 | 396 | 198 | 177 |
| 19 | 217 | 183 | 177 | 214 | 271 | 345 | 2,050 | 3,570 | 1,250 | 382 | 195 | 177 |
| 20 | 226 | 227 | 256 | 207 | 248 | 372 | 1,980 | 3,320 | 1,180 | 363 | 189 | 172 |
| 21 | 226 | 214 | 231 | 214 | 248 | 391 | 1,770 | 3,000 | 1,110 | 354 | 189 | 172 |
| 22 | 220 | 198 | 204 | 210 | 238 | 391 | 1,830 | 2,840 | 1,100 | 337 | 189 | 172 |
| 23 | 217 | 207 | 186 | 210 | 238 | 396 | 2,100 | 2,670 | 1,070 | 323 | 189 | 169 |
| 24 | 217 | 227 | 190 | 200 | 231 | 391 | 2,210 | 2,580 | 1,040 | 311 | 195 | 169 |
| 25 | 214 | 214 | 190 | 200 | 224 | 405 | 2,360 | 2,660 | 1,010 | 307 | 189 | 167 |
| 26 | 212 | 207 | 190 | 200 | 214 | 396 | 2,290 | 2,800 | 947 | 303 | 183 | 167 |
| 27 | 212 | 189 | 200 | 210 | 214 | 386 | 2,310 | 2,960 | 891 | 298 | 177 | 167 |
| 28 | 212 | 177 | 200 | 210 | 217 | 345 | 2,440 | 3,140 | 838 | 290 | 177 | 169 |
| 29 | 214 | 198 | 210 | 200 | - | 337 | 2,490 | 3,140 | 805 | 278 | 180 | 198 |
| 30 | 214 | 159 | 210 | 200 | - | 354 | 2,300 | 2,940 | 760 | 267 | 174 | 198 |
| 31 | 217 | - | 210 | 200 | - | 359 | - | 2,790 | - | 252 | 169 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 6,889 | 263 | 212 | 222 | 0.350 | 0.40 | 13,660 |
| November | 6,857 | 365 | 159 | 229 | .361 | .40 | 13,600 |
| December | 6,534 | 256 | 161 | 211 | .332 | .38 | 12,960 |
| Calendar year 1948 | 240,306 | 4,470 | 147 | 657 | 1.04 | 14.06 | 476,700 |
| January | 6,460 | 224 | 190 | 208 | .328 | .38 | 12,810 |
| February | 5,595 | 271 | 94 | 200 | .315 | .33 | 11,100 |
| March | 9,719 | 405 | 224 | 314 | .494 | .57 | 19,280 |
| April | 44,839 | 2,490 | 391 | 1,495 | 2.35 | 2.63 | 88,940 |
| May | 87,770 | 3,780 | 1,800 | 2,831 | 4.46 | 5.14 | 174,100 |
| June | 48,081 | 2,470 | 760 | 1,603 | 2.52 | 2.82 | 95,370 |
| July | 13,976 | 716 | 252 | 451 | .710 | .82 | 27,720 |
| August | 6,341 | 252 | 169 | 205 | .323 | .37 | 12,580 |
| September | 5,209 | 198 | 164 | 174 | .274 | .31 | 10,330 |
| Water year 1948-49 | 248,270 | 3,780 | 94 | 680 | 1.07 | 14.55 | 492,400 |

Peak discharge (base, 2,000 sec.-ft.).--Apr. 29 (5 a.m.) 2,570 sec.-ft.; May 17 (2 a.m.) 3,880 sec.-ft.; June 12 (4 a.m.) 2,650 sec.-ft.

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 24 to about Jan. 15, Jan. 22 to Feb. 9 (no gage-height record Jan. 5, 6, 12-15, Jan. 23 to Feb. 3, Feb. 8; discharge computed on basis of weather records, records for nearby streams, and computed inflow into Arrowrock and Anderson Ranch Reservoirs).

## Anderson Ranch Reservoir at Anderson Ranch Dam, Idaho

Location.--Staff gage, lat. 43°21'30", long. 115°27'10", in SE¼ sec. 1, T. 1 S., R. 8 E., on inlet structure of outlet works of dam on South Fork Boise River, 1½ miles downstream from Camas Creek and 3 miles northwest of Bennett (Dixie Store). Datum of gage is at mean sea level (surveys by Bureau of Reclamation).

Drainage area.--980 square miles.

Records available.--December 1945 to September 1949.

Extremes.--Maximum contents observed during year, 140,200 acre-feet June 28 (elevation, 4,101.2 feet); minimum observed, 1,676 acre-feet Aug. 30 to Sept. 2 (elevation, 3,994.6 feet).

1945-49: Maximum contents observed, 140,700 acre-feet June 28, 29, 1948 (elevation, 4,101.4 feet); no usable contents prior to Jan. 27, 1946.

Remarks.--Reservoir is formed by earth-fill dam. Storage began Dec. 15, 1945. Usable contents, 464,200 acre-feet between elevations 3,992 and 4,196 feet (top of spillway gates). Elevation of spillway crest, 4,174 feet, and of top of dam, 4,206 feet. Dead storage below 3,992 feet is 28,980 acre-feet. Figures given herein represent usable contents. Water is used for irrigation of lands in Boise Valley. Gage read once daily about 8 a.m. Oct. 1 to May 10 and about 4:30 p.m. May 11 to Sept. 30.

Cooperation.--Gage readings and capacity table furnished by Bureau of Reclamation.

Contents, in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12,090 | 28,980 | 47,730 | - | 81,320 | 26,640 | 13,610 | - | 119,700 | 139,800 | 42,580 | 1,676 |
| 2 | - | 29,870 | 48,190 | - | 82,100 | 19,450 | - | 60,810 | 118,300 | 139,500 | 36,360 | 1,676 |
| 3 | - | 30,780 | 48,900 | 65,400 | 82,740 | 14,350 | - | 59,240 | 117,100 | - | 30,570 | - |
| 4 | 13,530 | 31,680 | 49,490 | 65,680 | 83,530 | 10,220 | 18,140 | 57,440 | 116,900 | - | 25,210 | - |
| 5 | 14,100 | 32,400 | - | 66,370 | - | - | 20,070 | 55,550 | 116,500 | 138,600 | 20,430 | - |
| 6 | 14,760 | 33,010 | 50,680 | 67,630 | - | - | 22,600 | 53,690 | 116,900 | 138,400 | 16,260 | 1,742 |
| 7 | 15,340 | - | 51,400 | 68,060 | - | 3,813 | 25,590 | 52,000 | 118,500 | 137,900 | - | 2,270 |
| 8 | 15,920 | 34,260 | 52,000 | - | 86,100 | 3,205 | 28,780 | 50,920 | 121,000 | 137,200 | 9,692 | 2,669 |
| 9 | - | 34,670 | 52,600 | - | - | 2,870 | 32,090 | 50,560 | 123,700 | 136,600 | 6,813 | 3,071 |
| 10 | - | 35,200 | 53,080 | 69,480 | - | 2,669 | - | 51,040 | 126,200 | - | 4,772 | 3,473 |
| 11 | 17,620 | - | 53,820 | 69,910 | - | 2,602 | 39,700 | 52,240 | 128,800 | 135,400 | 3,609 | - |
| 12 | 18,230 | 36,570 | - | 70,480 | - | - | 44,160 | 53,690 | - | 134,800 | 2,870 | 4,358 |
| 13 | 18,750 | 37,210 | 55,170 | 71,350 | - | - | 48,660 | 55,670 | 133,600 | 130,100 | 2,535 | 4,772 |
| 14 | 19,270 | - | 55,920 | 72,220 | 89,540 | 2,468 | 50,560 | 58,080 | 135,200 | 125,600 | - | 5,257 |
| 15 | 19,800 | 38,390 | 56,550 | - | 89,540 | 2,468 | 51,760 | - | 136,800 | 121,000 | 2,138 | 5,677 |
| 18 | - | 39,150 | 57,060 | - | 89,710 | 2,535 | 50,320 | 65,130 | 139,100 | 116,500 | 2,006 | 6,100 |
| 17 | - | 39,810 | 57,700 | 73,250 | - | 2,535 | - | 73,550 | 139,300 | - | 1,940 | 6,526 |
| 18 | 21,410 | 40,470 | 57,700 | 73,850 | 88,720 | 2,669 | 48,540 | 81,480 | 139,300 | 107,600 | 1,874 | - |
| 19 | 21,960 | 41,020 | - | 74,440 | 87,240 | - | 48,900 | 88,880 | - | 103,200 | 1,874 | 7,390 |
| 20 | 22,510 | - | 58,720 | 75,190 | - | - | 51,520 | 96,180 | 139,100 | 98,820 | 1,808 | 7,901 |
| 21 | 23,060 | - | 59,240 | 75,940 | 81,480 | 3,004 | 56,800 | 102,400 | 138,600 | 93,760 | - | 8,344 |
| 22 | 23,620 | 42,690 | 59,760 | - | - | 3,071 | 57,700 | - | 138,200 | 88,720 | 1,808 | 8,789 |
| 23 | 24,180 | 43,250 | 60,160 | - | 69,910 | 3,138 | 58,980 | 112,800 | 138,600 | 83,690 | 1,742 | 9,239 |
| 24 | - | 43,820 | - | 77,450 | 63,350 | 4,289 | - | 115,300 | 139,100 | - | 1,742 | 9,692 |
| 25 | 25,210 | - | - | 77,760 | 57,060 | 5,537 | 64,170 | 117,100 | 139,500 | 73,700 | 1,742 | - |
| 26 | 25,690 | 44,950 | - | 78,220 | - | - | 64,030 | 117,900 | - | 68,910 | 1,742 | 10,530 |
| 27 | 26,260 | 45,640 | 61,740 | 78,830 | - | - | 63,620 | 119,100 | 140,000 | 64,300 | 1,742 | 10,920 |
| 28 | 26,840 | - | 62,280 | 79,300 | 34,670 | 9,239 | 63,350 | 119,500 | 140,200 | 59,760 | - | 11,390 |
| 29 | 27,320 | 46,330 | 62,950 | - | - | 10,300 | 63,220 | 120,200 | 140,000 | 55,170 | 1,742 | 11,860 |
| 30 | 27,800 | 47,140 | 63,490 | - | - | 11,390 | 62,810 | 120,400 | 140,000 | 50,920 | 1,676 | 12,330 |
| 31 | 28,390 | - | 64,170 | 80,850 | - | 12,490 | - | 120,400 | - | a46,750 | 1,676 | - |

a No gage reading; contents interpolated.

Monthly elevation and contents, water year October 1948 to September 1949

| Date | Elevation (feet)† | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept.30 | 4,008.5 | 11,620 | - |
| Oct. 31 | 4,027.5 | 28,390 | +16,770 |
| Nov. 30 | 4,045.0 | 47,140 | +18,750 |
| Dec. 31 | 4,058.6 | 64,170 | +17,030 |
| Calendar year 1948 | - | - | +29,600 |
| Jan. 31 | 4,070.0 | 80,850 | +16,680 |
| Feb. 28 | 4,033.7 | 34,670 | -46,180 |
| Mar. 31 | 4,009.6 | 12,490 | -22,180 |
| Apr. 30 | 4,057.6 | 62,810 | +50,320 |
| May 31 | 4,092.1 | 120,400 | +57,590 |
| June 30 | 4,101.1 | 140,000 | +19,600 |
| July 31 | - | a46,750 | -93,250 |
| Aug. 31 | 3,994.6 | 1,676 | -45,074 |
| Sept.30 | 4,009.4 | 12,330 | +10,654 |
| Water year 1948-49 | - | - | +710 |

† Elevation about 8 a.m. Sept. 30 to Apr. 30 and about 4:30 p.m. May 31 to Sept. 30.
a No gage reading; contents interpolated.

## South Fork Boise River at Anderson Ranch Dam, Idaho

Location.--Water-stage recorder, lat. 43°20', long. 115°29', in SW¼ sec. 11, T. 1 S., R. 8 E., 600 feet upstream from Dixie Creek, 1½ miles downstream from Anderson Ranch Reservoir, and 2¼ miles northwest of Bennett (Dixie store). Altitude of gage, about 3,850 feet from topographic map of U. S. Bureau of Reclamation.

Drainage area.--982 square miles.

Records available.--April 1943 to September 1949 (include flow of Dixie Creek prior to October 1946 and exclude Dixie Creek thereafter).

Extremes.--Maximum discharge during year, 4,320 second-feet Feb. 25 (gage height, 7.12 feet); minimum, 0.8 second-foot Nov. 29 (gage height, 1.06 feet), but may have been less during period of ice effect.
1943-49: Maximum discharge, 9,100 second-feet Apr. 17, 1943 (gage height, 10.06 feet); minimum, less than 1 second-foot on several days each year 1947-49.

Remarks.--Records excellent except those for period of ice effect and those below 10 second-feet, which are poor. Some water stored in Little Camas Reservoir and diverted for irrigation of about 5,000 acres of land in vicinity of Mountain Home. Flow regulated by Anderson Ranch Reservoir beginning Dec. 15, 1945.

Cooperation.--Water-stage recorder inspected by Bureau of Reclamation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.5 | 2.2 | | | | 3,900 | 8.0 | 3,520 | 3,450 | 936 | 2,610 | 226 |
| 2 | 2.5 | 2.0 | | | | 3,150 | 8.6 | 3,500 | 3,250 | 936 | 3,260 | 219 |
| 3 | 2.5 | 2.2 | | | | 2,560 | 8.0 | 3,450 | 2,670 | 936 | 3,030 | 219 |
| 4 | 2.8 | 1.5 | | | | 2,320 | 8.0 | 3,410 | 2,310 | 936 | 2,800 | 216 |
| 5 | 3.0 | 1.2 | | | | 1,620 | 8.6 | 3,390 | 2,290 | 929 | 2,550 | 216 |
| 6 | 2.5 | 1.0 | | | | 1,090 | 8.6 | 3,350 | 2,030 | 929 | 2,230 | 83 |
| 7 | 2.5 | 1.2 | | (*) | 1.3 | 810 | 8.6 | 3,320 | 1,550 | 929 | 2,000 | 6.6 |
| 8 | 2.0 | 1.5 | | | | 637 | 9.3 | 3,310 | 1,390 | 929 | 1,750 | 5.3 |
| 9 | 2.0 | 1.5 | | | | 544 | 9.8 | 3,310 | 1,390 | 929 | 1,720 | 4.8 |
| 10 | 2.0 | 1.2 | | | | 492 | 9.8 | 3,330 | 1,400 | 922 | 1,230 | 3.5 |
| 11 | 1.2 | 1.2 | | | | 463 | 10 | 3,370 | 1,410 | 915 | 804 | 3.5 |
| 12 | 1.5 | 1.2 | | | | 450 | 11 | 3,400 | 1,430 | 1,460 | 570 | 3.2 |
| 13 | 1.2 | 1.0 | | | 34 | 440 | 579 | 3,450 | 1,480 | 2,830 | 440 | 3.5 |
| 14 | 1.0 | .9 | | | 180 | 436 | 1,230 | 3,500 | 1,440 | 2,810 | 367 | 3.2 |
| 15 | 1.0 | 2.0 | 1.3 | 1.3 | 275 | 440 | 2,120 | 3,550 | 1,040 | 2,790 | 327 | 3.2 |
| 16 | 1.0 | 1.5 | | | 319 | 463 | 2,980 | 1,970 | 1,080 | 2,760 | 300 | 3.0 |
| 17 | 1.0 | *1.2 | | | 598 | 483 | 2,950 | 649 | 1,570 | 2,720 | 281 | 2.8 |
| 18 | 1.0 | 1.2 | | | 1,110 | 492 | 2,930 | 667 | 1,570 | 2,690 | 270 | 2.5 |
| 19 | 1.0 | 1.0 | | | 1,670 | 522 | 2,920 | 685 | 1,570 | 2,660 | 262 | 2.8 |
| 20 | 1.0 | 1.0 | | | 1,670 | 559 | 168 | 703 | 1,560 | 2,740 | 255 | 2.8 |
| 21 | .9 | 1.0 | | | 2,230 | 592 | 1,710 | 715 | 1,560 | 3,030 | 251 | 2.5 |
| 22 | 1.0 | 1.0 | | | 2,840 | 620 | 2,450 | 727 | 1,280 | 2,980 | 248 | 2.8 |
| 23 | .9 | 1.0 | | | 3,190 | 276 | 1,460 | 1,280 | 1,010 | 2,920 | 244 | 2.5 |
| 24 | 1.0 | 1.8 | | | 3,460 | 12 | 2,450 | 1,880 | 957 | 2,870 | 244 | 2.2 |
| 25 | 1.2 | 1.5 | | | 3,850 | 9.8 | 3,270 | 2,460 | 950 | 2,800 | 244 | 2.0 |
| 26 | 1.2 | 1.2 | | | 3,950 | 9.2 | 3,430 | 2,820 | 943 | 2,740 | 244 | 1.8 |
| 27 | 1.0 | 1.0 | | | 3,690 | 8.0 | 3,520 | 3,050 | 943 | 2,690 | 240 | 1.8 |
| 28 | 1.0 | 1.0 | | | *3,900 | 8.0 | 3,520 | 3,450 | 943 | 2,620 | 237 | 2.0 |
| 29 | 1.0 | 1.2 | | | - | 7.6 | 3,520 | 3,460 | 943 | 2,560 | 233 | 2.0 |
| 30 | 1.0 | 1.2 | | | - | 7.6 | 3,520 | 3,460 | 943 | 2,480 | 230 | 2.0 |
| 31 | 1.0 | - | | | - | 7.6 | - | 3,460 | - | 2,390 | 230 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 45.4 | 3.0 | 0.9 | 1.46 | 90 |
| November | 39.6 | 2.2 | .9 | 1.32 | 79 |
| December | 40.3 | - | - | 1.3 | 80 |
| Calendar year 1948 | 288,206.3 | 4,190 | - | 787 | 571,700 |
| January | 40.3 | - | - | 1.3 | 80 |
| February | 32,981.6 | 3,950 | - | 1,178 | 65,420 |
| March | 23,428.8 | 3,900 | 7.6 | 756 | 46,470 |
| April | 44,835.8 | 3,520 | 8.0 | 1,495 | 88,930 |
| May | 82,596 | 3,550 | 649 | 2,664 | 163,800 |
| June | 46,302 | 3,450 | 943 | 1,543 | 91,840 |
| July | 63,766 | 3,030 | 915 | 2,057 | 126,500 |
| August | 29,701 | 3,260 | 230 | 958 | 58,910 |
| September | 1,251.3 | 226 | 1.8 | 41.7 | 2,480 |
| Water year 1948-49 | 325,028.1 | 3,950 | - | 890 | 644,700 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 30 to Feb. 15 (no gage-height record Jan. 5, 6, 30).

## Lime Creek near Bennett, Idaho

Location.--Water-stage recorder, lat. 43°25', long. 115°16', in SW¼NE¼ sec. 16, T. 1 N., R. 10 E., 0.4 mile upstream from flow line of Anderson Ranch Reservoir, 2 miles upstream from mouth, and 12 miles northeast of Bennett. Altitude of gage, about 4,250 feet (from topographic map of Bureau of Reclamation).

Drainage area.--131 square miles.

Records available.--June 1945 to September 1949.

Extremes.--Maximum discharge during year, 531 second-feet Apr. 19; maximum gage height, 8.02 feet Feb. 15 (snowslide downstream); minimum, 2.5 second-feet Feb. 11 (gage height, 1.67 feet), result of snowslide upstream.
1945-49: Maximum discharge, 1,180 second-feet Apr. 19, 1946; maximum gage height, that of Feb. 15, 1949; minimum, that of Feb. 11, 1949.

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

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Feb. 21)

| | | | |
|---|---|---|---|
| 2.2 | 16 | 3.0 | 115 |
| 2.4 | 33 | 3.3 | 180 |
| 2.6 | 54 | 3.7 | 282 |
| 2.8 | 81 | 4.2 | 432 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 17 | 31 | 34 | 26 | 22 | 32 | 71 | 330 | 162 | 45 | 16 | 12 |
| 2 | 17 | 45 | 28 | 25 | 23 | *33 | 84 | 316 | 146 | 43 | 16 | 12 |
| 3 | 17 | 40 | 28 | 24 | 24 | 34 | 97 | 296 | 139 | 41 | 15 | 12 |
| 4 | 18 | 29 | 24 | 21 | 24 | 35 | 115 | 282 | 125 | 39 | 15 | 14 |
| 5 | 25 | 25 | 25 | 22 | 24 | 38 | 137 | 271 | 115 | 40 | 15 | 15 |
| 6 | 22 | 28 | 27 | *23 | 24 | 43 | 166 | 268 | 113 | 39 | 14 | 14 |
| 7 | 21 | 16 | 25 | 23 | 4.2 | 43 | 182 | 277 | 110 | 36 | 14 | 14 |
| 8 | 20 | 16 | 21 | 23 | 20 | 42 | 190 | 288 | 106 | 34 | 14 | 13 |
| 9 | 20 | 20 | 24 | 21 | 11 | 40 | 219 | 307 | 102 | 32 | 14 | 13 |
| 10 | 20 | 26 | 27 | 19 | 7.2 | 40 | 234 | 319 | 97 | 34 | 15 | 13 |
| 11 | 19 | 25 | 27 | 19 | 3.2 | 40 | 266 | 316 | 95 | 31 | 15 | 15 |
| 12 | 20 | 25 | 27 | 19 | 7.7 | 40 | 285 | 316 | 91 | 29 | 14 | 17 |
| 13 | 19 | 24 | 27 | 20 | 11 | 39 | 255 | 316 | 87 | 28 | 14 | 18 |
| 14 | 20 | 24 | 26 | 22 | 13 | 41 | 245 | 316 | 83 | 26 | 14 | 17 |
| 15 | 20 | 30 | 23 | 23 | 20 | 47 | 260 | 316 | 77 | 25 | 14 | 16 |
| 16 | 20 | *26 | 21 | 23 | 25 | 50 | 304 | 313 | 74 | 25 | 14 | 17 |
| 17 | 20 | 23 | 19 | 23 | 30 | 53 | 375 | 293 | 73 | 24 | 14 | 19 |
| 18 | 20 | 12 | 17 | 22 | 35 | 55 | 426 | 274 | 71 | 23 | 14 | 19 |
| 19 | 20 | 22 | 20 | 20 | 40 | 66 | 426 | 313 | 70 | 22 | 14 | 18 |
| 20 | 20 | 25 | 26 | 19 | 38 | 74 | 439 | 285 | 67 | 22 | 13 | 18 |
| 21 | 20 | 21 | 28 | 19 | 37 | 75 | 432 | 247 | 63 | 22 | 12 | 18 |
| 22 | 20 | 25 | 23 | 19 | 37 | 73 | 432 | 224 | 60 | 21 | 13 | 18 |
| 23 | 20 | 23 | 19 | 19 | 37 | 70 | 432 | 204 | 59 | 21 | 14 | 15 |
| 24 | 20 | 25 | 17 | 20 | 34 | 68 | 426 | 192 | 57 | 20 | 15 | 15 |
| 25 | 20 | 22 | 17 | 21 | 33 | 74 | 419 | 180 | 54 | 20 | 14 | 15 |
| 26 | 20 | 22 | 18 | 21 | 32 | 70 | 397 | 178 | 52 | 20 | 14 | 15 |
| 27 | 22 | 21 | 18 | 21 | 32 | 64 | 391 | 171 | 51 | 19 | 13 | 15 |
| 28 | 22 | 23 | 21 | 21 | 32 | 62 | 394 | 168 | 50 | 19 | 13 | 17 |
| 29 | 22 | 22 | 23 | 22 | - | 59 | 388 | 168 | 48 | 18 | 14 | 20 |
| 30 | 21 | 22 | 25 | 22 | - | 59 | 357 | 164 | 46 | 18 | 13 | 19 |
| 31 | 22 | - | 25 | 22 | - | 62 | - | 204 | - | 17 | 12 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 624 | 25 | 17 | 20.1 | 0.153 | 0.18 | 1,240 |
| November | 738 | 45 | 12 | 24.6 | .188 | .21 | 1,460 |
| December | 730 | 34 | 17 | 23.5 | .179 | .21 | 1,450 |
| Calendar year 1948 | 18,869 | 352 | 12 | 51.6 | .394 | 5.37 | 37,420 |
| January | 664 | 26 | 19 | 21.4 | .163 | .19 | 1,320 |
| February | 680.3 | 40 | 3.2 | 24.3 | .185 | .19 | 1,350 |
| March | 1,621 | 75 | 32 | 52.3 | .399 | .46 | 3,220 |
| April | 8,844 | 439 | 71 | 295 | 2.25 | 2.51 | 17,540 |
| May | 8,112 | 330 | 164 | 262 | 2.00 | 2.30 | 16,090 |
| June | 2,543 | 162 | 46 | 84.8 | .647 | .72 | 5,040 |
| July | 853 | 45 | 17 | 27.5 | .210 | .24 | 1,690 |
| August | 435 | 16 | 12 | 14.0 | .107 | .12 | 863 |
| September | 473 | 20 | 12 | 15.8 | .121 | .13 | 938 |
| Water year 1948-49 | 26,317.3 | 439 | 3.2 | 72.1 | .550 | 7.46 | 52,200 |

Peak discharge (base, 230 sec.-ft.).--Apr. 11 (9 p.m.) 296 sec.-ft.; Apr. 19 (9:30 p.m.) 531 sec.-ft.

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 16 to Feb. 5, Feb. 15-21. No gage-height record Sept. 18-30; discharge computed on basis of weather records and records for Fall Creek near Anderson Ranch Dam and South Fork Boise River near Featherville.

## Fall Creek near Anderson Ranch Dam, Idaho

Location.--Water-stage recorder, lat. 43°26'00", long. 115°23'10", in SE¼ sec. 9, T. 1 N., R. 9 E., 1½ miles below Mill Creek and 6 miles northeast of Anderson Ranch Dam. Altitude of gage, about 4,350 feet (from topographic map of Bureau of Reclamation).

Drainage area.--55.3 square miles.

Records available.--April 1945 to September 1949.

Extremes.--Maximum discharge during year, 390 second-feet Apr. 24; maximum gage height, 4.84 feet Apr. 22; minimum, 1.6 second-feet Feb. 9 (gage height, 1.94 feet), result of snowslide upstream.

1945-49: Maximum discharge, 793 second-feet Apr. 17, 1946; maximum gage height recorded, 6.07 feet Jan. 5, 1947 (ice jam); minimum discharge, that of Feb. 9, 1949.

Remarks.--Records good except those for periods of ice effect or backwater from debris, which are fair. No diversion or regulation.

Rating tables, water year 1948-49 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-31, Feb. 17 to Mar. 23, Apr. 23-27)

| Oct. 1 to Apr. 22 | | | | Apr. 23 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 2.5 | 11 | 3.6 | 110 | 2.4 | 11 | 3.6 | 113 |
| 2.7 | 19 | 3.9 | 161 | 2.5 | 14 | 3.9 | 165 |
| 3.0 | 38 | 4.2 | 221. | 2.7 | 23 | 4.2 | 228 |
| 3.3 | 68 | 4.6 | 316 | 3.0 | 42 | 4.5 | 303 |
| | | | | 3.3 | 72 | 4.7 | 362 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11 | 19 | 14 | 17 | 15 | *18 | 50 | 249 | 154 | 40 | 17 | 13 |
| 2 | 11 | 22 | 19 | 16 | 15 | 19 | 60 | 235 | 138 | 37 | 17 | 13 |
| 3 | 11 | 26 | 16 | 15 | 15 | 19 | 70 | 224 | 126 | 36 | 17 | 13 |
| 4 | 12 | 19 | 16 | 17 | 15 | 20 | 85 | 213 | 119 | 35 | 17 | 13 |
| 5 | 15 | 17 | 15 | 17 | 15 | 22 | 100 | 208 | 119 | 36 | 16 | 14 |
| 6 | 14 | 17 | 15 | 17 | 14 | 24 | 130 | 213 | 121 | 34 | 16 | 13 |
| 7 | 13 | 14 | 15 | *17 | 13 | 25 | 140 | 228 | 119 | 32 | 16 | 13 |
| 8 | 13 | 12 | 15 | 16 | 12 | 25 | 140 | 258 | 116 | 31 | 16 | 13 |
| 9 | 13 | 14 | 15 | 14 | 10 | 26 | 170 | 292 | 113 | 30 | 16 | 13 |
| 10 | 12 | 15 | 15 | 15 | 10 | 28 | 180 | 309 | 113 | 30 | 16 | 13 |
| 11 | 12 | 15 | 16 | 16 | 10 | 28 | 208 | 318 | 110 | 28 | 16 | 13 |
| 12 | 12 | 15 | 17 | 16 | 10 | 28 | 234 | 332 | 104 | 27 | 15 | 14 |
| 13 | 12 | 15 | 17 | 16 | 12 | 28 | 196 | 338 | 95 | 26 | 15 | 14 |
| 14 | 12 | 15 | 17 | 16 | 17 | 29 | 186 | 344 | 89 | 26 | 15 | 14 |
| 15 | 13 | 19 | 16 | 16 | 17 | 32 | 194 | 338 | 83 | 25 | 15 | 14 |
| 16 | 13 | 17 | 14 | 16 | 17 | 35 | 223 | 329 | 77 | 25 | 15 | 15 |
| 17 | 13 | *16 | 13 | 16 | 17 | 38 | 273 | 315 | 72 | 24 | 15 | 15 |
| 18 | 13 | 14 | 13 | 15 | 17 | 42 | 324 | 281 | 68 | 24 | 14 | 15 |
| 19 | 13 | 15 | 14 | 16 | 17 | 48 | 336 | 274 | 67 | 23 | 15 | 14 |
| 20 | 13 | 15 | 18 | 16 | 18 | 54 | 306 | 242 | 65 | 22 | 14 | 14 |
| 21 | 13 | 15 | 16 | 16 | 17 | 57 | 280 | 224 | 60 | 22 | 14 | 14 |
| 22 | 13 | 15 | 15 | 15 | 19 | 57 | 306 | 208 | 58 | 21 | 14 | 14 |
| 23 | 13 | 15 | 15 | 15 | 18 | 57 | 353 | 198 | 54 | 20 | 14 | 13 |
| 24 | 13 | 16 | 15 | 15 | 18 | 54 | 353 | 191 | 52 | 20 | 15 | 13 |
| 25 | 13 | 15 | 15 | 15 | 18 | 56 | 353 | 189 | 50 | 20 | 14 | 13 |
| 26 | 13 | 15 | 15 | 15 | 18 | 52 | 338 | 189 | 49 | 20 | 14 | 13 |
| 27 | 13 | 15 | 15 | 15 | 18 | 50 | 335 | 193 | 47 | 19 | 14 | 13 |
| 28 | 13 | 16 | 16 | 15 | 19 | 48 | 347 | 191 | 45 | 18 | 14 | 15 |
| 29 | 13 | 15 | 17 | 16 | - | 45 | 338 | 187 | 42 | 18 | 14 | 16 |
| 30 | 13 | 14 | 16 | 15 | - | 45 | 281 | 175 | 41 | 18 | 14 | 15 |
| 31 | 14 | - | 17 | 15 | - | 45 | - | 175 | - | 18 | 13 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 395 | 15 | 11 | 12.7 | 0.230 | 0.27 | 783 |
| November | 482 | 26 | 12 | 16.1 | .291 | .32 | 956 |
| December | 482 | 19 | 13 | 15.5 | .280 | .32 | 956 |
| Calendar year 1948 | 17,668 | 300 | 11 | 48.3 | .873 | 11.88 | 35,060 |
| January | 487 | 17 | 14 | 15.7 | .284 | .33 | 966 |
| February | 431 | 19 | 10 | 15.4 | .278 | .29 | 855 |
| March | 1,154 | 57 | 18 | 37.2 | .673 | .78 | 2,290 |
| April | 6,889 | 353 | 50 | 230 | 4.16 | 4.63 | 13,660 |
| May | 7,660 | 344 | 175 | 247 | 4.47 | 5.15 | 15,190 |
| June | 2,566 | 154 | 41 | 85.5 | 1.55 | 1.73 | 5,090 |
| July | 805 | 40 | 18 | 26.0 | .470 | .54 | 1,600 |
| August | 467 | 17 | 13 | 15.1 | .273 | .31 | 926 |
| September | 412 | 16 | 13 | 13.7 | .248 | .28 | 817 |
| Water year 1948-49 | 22,230 | 353 | 10 | 60.9 | 1.10 | 14.95 | 44,090 |

Peak discharge (base, 300 sec.-ft.).--Apr. 18 (9 p.m.) 368 sec.-ft.; Apr. 24 (9 p.m.) 390 sec.-ft.; May 13 (10 p.m.) 359 sec.-ft.

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 8, 9, Nov. 30 to Dec. 2, Dec. 4-10, 16-28, Feb. 6-13. Backwater from debris Mar. 24 to Apr. 10.

## Little Camas Canal at heading, near Bennett, Idaho

Location.--Staff gage, lat. 43°21'30", long. 115°23', in sec. 9, T. 1 S., R. 9 E., 400 feet downstream from Little Camas Reservoir, 4 miles northeast of Bennett, and 22 miles northeast of Mountain Home.

Records available.--June to November 1917, April 1924 to September 1949.

Extremes.--Maximum discharge observed during year, 54 second-feet June 10-15, 29, 30, July 1-3; maximum gage height observed, 2.10 feet June 10-15, 29, 30, July 1-3, 13-15; no flow during long periods.
1917, 1924-49: Maximum discharge observed, 77 second-feet Apr. 27-30, May 1, 3, 9, 1924; no flow during nonirrigation seasons.

Remarks.--Records good. Gage read once daily. Canal diverts from Little Camas Reservoir (South Fork Boise River drainage) in sec. 9, T. 1 S., R. 9 E., and discharges into Long Tom Creek Basin, where water is stored in Long Tom Reservoir for irrigation of 5,000 acres of land near Mountain Home. No diversion above station. Flow regulated by head gates at Little Camas Reservoir.

Cooperation.--Gage readings furnished by Mountain Home Irrigation District.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | 0 | 50 | 54 | 49 | |
| 2 | | | | | | | | 0 | 50 | 54 | 49 | |
| 3 | | | | | | | | 0 | 50 | 54 | 49 | |
| 4 | | | | | | | | 0 | 50 | 53 | 49 | |
| 5 | | | | | | | | 0 | 50 | 53 | 49 | |
| 6 | | | | | | | | 0 | 50 | 53 | 49 | |
| 7 | | | | | | | | 0 | 50 | 53 | 49 | |
| 8 | | | | | | | | 0 | 50 | 52 | 49 | |
| 9 | | | | | | | | 0 | 50 | 52 | 49 | |
| 10 | | | | | | | | 0 | 52 | 52 | 49 | |
| 11 | | | | | | | | 0 | 54 | 52 | 49 | |
| 12 | | | | | | | | 0 | 54 | 52 | 49 | |
| 13 | | | | | | | | 0 | 54 | 53 | 49 | |
| 14 | | | | | | | | 0 | 54 | 53 | 48 | |
| 15 | | | | | | | | 0 | 51 | 53 | 48 | |
| 16 | | | | | | | | 0 | 46 | 52 | 49 | |
| 17 | | | | | | | | 0 | 46 | 52 | 48 | |
| 18 | | | | | | | | 6 | 46 | 52 | 47 | |
| 19 | | | | | | | | 10 | 46 | 52 | 48 | |
| 20 | | | | | | | | 14 | 46 | 52 | 49 | |
| 21 | | | | | | | | 26 | 46 | 52 | 48 | |
| 22 | | | | | | | | 34 | 46 | 52 | 47 | |
| 23 | | | | | | | | 34 | 46 | 52 | 48 | |
| 24 | | | | | | | | 34 | 47 | 52 | 47 | |
| 25 | | | | | | | | 34 | 50 | 52 | 47 | |
| 26 | | | | | | | | 36 | 51 | 52 | 47 | |
| 27 | | | | | | | | 39 | 51 | 52 | 48 | |
| 28 | | | | | | | | 39 | 51 | 52 | 47 | |
| 29 | | | | | | | | 39 | 52 | 52 | 46 | |
| 30 | | | | | | | | 39 | 54 | 51 | 47 | |
| 31 | | | | | | | | 43 | - | 50 | 32 | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 0 | 0 | 0 | 0 | 0 |
| November | 0 | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 4,814 | 52 | 0 | 13.2 | 9,550 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 0 | 0 | 0 | 0 | 0 |
| May | 427 | 43 | 0 | 13.8 | 847 |
| June | 1,493 | 54 | 46 | 49.8 | 2,960 |
| July | 1,622 | 54 | 50 | 52.3 | 3,220 |
| August | 1,478 | 49 | 32 | 47.7 | 2,930 |
| September | 0 | 0 | 0 | 0 | 0 |
| Water year 1948-49 | 5,020 | 54 | 0 | 13.8 | 9,960 |

## Moore Creek near Arrowrock, Idaho

Location.--Staff gage, lat. 43°35', long. 115°59', in sec. 21, T. 3 N., R. 4 E., 150 feet below bridge on Boise-Arrowrock highway, a quarter of a mile upstream from mouth and 3 miles southwest of Arrowrock. Datum of gage is 2,896.11 feet above mean sea level, unadjusted. Prior to Oct. 1, 1948, staff gage at bridge at datum 0.23 foot higher.

Drainage area.--426 square miles.

Records available.--October 1914 to November 1915 (discharge measurements only), December 1915 to September 1949.

Average discharge.--33 years (1916-49), 293 second-feet.

Extremes.--Maximum discharge observed during year, 1,670 second-feet Apr. 19 (gage height, 3.84 feet); minimum observed, 28 second-feet Aug. 26, 28-31, Sept. 1-4, 6-14; minimum gage height observed, 0.34 foot Sept. 3, 4, 8, 10, 11.
1915-49: Maximum discharge, 6,610 second-feet Apr. 8, 1943 (gage height, 7.1 feet, from high-water mark); minimum observed, 7.9 second-feet Aug. 13-15, 17, 18, 1924.

Remarks.--Records good. Gage read once daily except Mar. 1 to June 30, when it was read twice daily. No large diversions above station.

Cooperation.--Gage readings furnished by Water District No. 12-A.

Rating table, water year 1948-49 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 26 to Sept. 30)

| | | | | | |
|---|---|---|---|---|---|
| 0.4 | 24 | 1.2 | 143 | 2.5 | 615 |
| .5 | 33 | 1.5 | 212 | 2.9 | 860 |
| .7 | 56 | 1.8 | 300 | 3.3 | 1,170 |
| .9 | 86 | 2.1 | 415 | 3.8 | 1,630 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 42 | 67 | 31 | 90 | 76 | 210 | 604 | 994 | 555 | 115 | 36 | 28 |
| 2 | 42 | 104 | 86 | 93 | 76 | 239 | 712 | 978 | 495 | 112 | 35 | 28 |
| 3 | 43 | 135 | 104 | 86 | 76 | 265 | 784 | 881 | 433 | 112 | 31 | 28 |
| 4 | 42 | 115 | 76 | 83 | 76 | 278 | 916 | 784 | 386 | 106 | 32 | 28 |
| 5 | 54 | 104 | 64 | 83 | 64 | 343 | 1,080 | 718 | 358 | 99 | 31 | 29 |
| 6 | 64 | 86 | 70 | 83 | 73 | 377 | 1,200 | 712 | 390 | 106 | 31 | 28 |
| 7 | 57 | 83 | 83 | 84 | 70 | 386 | 1,320 | 730 | 369 | 84 | 28 | 28 |
| 8 | 56 | 56 | 76 | 86 | 70 | 381 | 1,230 | 766 | 358 | 83 | 29 | 28 |
| 9 | 59 | 51 | 76 | 83 | 80 | 358 | 1,390 | 874 | 339 | 80 | 30 | 28 |
| 10 | 54 | 67 | 93 | 80 | 73 | 354 | 1,380 | 874 | 324 | 69 | 29 | 28 |
| 11 | 51 | 62 | 90 | 76 | 64 | 358 | 1,470 | 909 | 310 | 70 | 33 | 28 |
| 12 | 51 | 90 | 112 | 76 | 64 | 394 | 1,590 | 902 | 290 | 66 | 32 | 28 |
| 13 | 50 | 73 | 119 | 76 | 73 | 411 | 1,310 | 916 | 265 | 63 | 31 | 28 |
| 14 | 51 | 76 | 112 | 76 | 76 | 442 | 1,160 | 946 | 254 | 55 | 31 | 28 |
| 15 | 54 | 83 | 93 | 76 | 80 | 515 | 1,130 | 902 | 234 | 52 | 31 | 29 |
| 16 | 54 | 112 | 70 | 76 | 83 | 480 | 1,180 | 1,020 | 215 | 54 | 30 | 29 |
| 17 | 51 | 100 | 51 | 80 | 90 | 620 | 1,380 | 909 | 207 | 51 | 29 | 35 |
| 18 | 51 | 86 | 37 | 80 | 90 | 632 | 1,550 | 839 | 202 | 51 | 29 | 37 |
| 19 | 51 | 76 | 54 | 80 | 100 | 712 | 1,610 | 784 | 204 | 48 | 29 | 35 |
| 20 | 51 | 86 | 93 | 80 | 108 | 730 | 1,420 | 742 | 215 | 48 | 29 | 35 |
| 21 | 51 | 80 | 83 | 76 | 119 | 730 | 1,290 | 700 | 190 | 48 | 29 | 34 |
| 22 | 51 | 80 | 59 | 76 | 123 | 659 | 1,240 | 632 | 176 | 49 | 29 | 34 |
| 23 | 54 | 97 | 56 | 80 | 135 | 682 | 1,360 | 593 | 164 | 45 | 29 | 33 |
| 24 | 54 | 83 | 62 | 76 | 151 | 659 | 1,360 | 560 | 158 | 43 | 29 | 33 |
| 25 | 54 | 80 | 64 | 76 | 164 | 712 | 1,310 | 545 | 151 | 41 | 30 | 33 |
| 26 | 54 | 86 | 76 | 76 | 164 | 626 | 1,210 | 545 | 145 | 38 | 28 | 33 |
| 27 | 51 | 70 | 86 | 76 | 173 | 566 | 1,190 | 550 | 143 | 40 | 29 | 34 |
| 28 | 51 | 80 | 86 | 76 | 187 | 490 | 1,150 | 593 | 135 | 40 | 28 | 52 |
| 29 | 54 | 90 | 93 | 76 | - | 451 | 1,150 | 566 | 127 | 41 | 28 | 50 |
| 30 | 54 | 42 | 93 | 76 | - | 490 | 1,040 | 545 | 127 | 38 | 28 | 45 |
| 31 | 54 | - | 86 | 76 | - | 500 | - | 588 | - | 38 | 28 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 1,610 | 64 | 42 | 51.9 | 0.122 | 0.14 | 3,190 |
| November | 2,500 | 135 | 42 | 83.3 | .196 | .22 | 4,960 |
| December | 2,434 | 119 | 31 | 78.5 | .184 | .21 | 4,830 |
| Calendar year 1948 | 100,442 | 2,620 | 28 | 274 | .643 | 8.76 | 199,200 |
| January | 2,467 | 93 | 76 | 79.6 | .187 | .22 | 4,890 |
| February | 2,778 | 187 | 64 | 99.2 | .233 | .24 | 5,510 |
| March | 15,050 | 730 | 210 | 485 | 1.14 | 1.31 | 29,850 |
| April | 36,716 | 1,610 | 604 | 1,224 | 2.87 | 3.21 | 72,830 |
| May | 23,597 | 1,020 | 545 | 761 | 1.79 | 2.06 | 46,800 |
| June | 7,919 | 555 | 127 | 264 | .620 | .69 | 15,710 |
| July | 1,985 | 115 | 38 | 64.0 | .150 | .17 | 3,940 |
| August | 931 | 36 | 28 | 30.0 | .070 | .08 | 1,850 |
| September | 974 | 52 | 28 | 32.5 | .076 | .09 | 1,930 |
| Water year 1948-49 | 98,961 | 1,610 | 28 | 271 | .636 | 8.64 | 196,300 |

## Lake Lowell near Caldwell, Idaho

Location.--Staff gage attached to outlet structures at each end of reservoir. One gage is at lower embankment, lat. 43°35', long. 116°45', in SE¼ sec. 19, T. 3 N., R. 3 W., 5 miles south and 2 miles west of Caldwell; the other is at upper embankment, lat. 43°34', long. 116°39', in NW¼ sec. 36, T. 3 N., R. 3 W., 1 mile south and 4 miles west of Nampa. Datum of gage is 2,500.5 feet above mean sea level (surveys of Bureau of Reclamation).

Records available.--October 1917 to September 1949.

Extremes.--Maximum contents observed during year, 173,600 acre-feet Apr. 16 (gage height, 29.64 feet); minimum observed, 22,630 acre-feet Sept. 30.
1917-49: Maximum contents observed, 178,900 acre-feet Apr. 27, 28, 1922, Apr. 24, 1932 (gage height, 30.18 feet); minimum observed, 5,390 acre-feet Oct. 22, 1924.

Remarks.--Reservoir is formed by two earth embankments; dams were completed and storage began in 1908. Capacity, 177,150 acre-feet between gage heights 0.0 foot (sill of outlet gates) and 30.0 feet (maximum operating level). Dead storage, about 13,000 acre-feet. Below gage height 12.0 feet reservoir divides into two pools. In addition to water received from local drainage, reservoir receives water from Boise River through New York Canal of Boise project. Water is used for irrigation of lower project lands. Figures given herein represent usable contents. Gages read once daily.

Cooperation.--Gage readings and capacity table furnished by Board of Control for Boise project.

Contents, in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 40,990 | 59,300 | 81,070 | 89,040 | 89,680 | 102,200 | 151,800 | 154,500 | 137,400 | 107,700 | 70,680 | 35,900 |
| 2 | 42,600 | 59,780 | 82,160 | 89,040 | 89,680 | 103,900 | 153,600 | 153,300 | 137,300 | 106,400 | 68,950 | 35,260 |
| 3 | 44,130 | 59,840 | 83,740 | 89,040 | 89,820 | 106,200 | 155,700 | 152,300 | 137,800 | 105,200 | 67,680 | 34,520 |
| 4 | 45,080 | 59,960 | 85,120 | 89,040 | 89,820 | 108,900 | 157,900 | 151,500 | 138,500 | 104,200 | 66,360 | 33,790 |
| 5 | 45,880 | 60,080 | 86,160 | 89,040 | 89,960 | 111,200 | 160,000 | 150,600 | 139,300 | 103,300 | 64,740 | 33,160 |
| 6 | 46,640 | 60,080 | 87,210 | 89,040 | 89,960 | 113,300 | 161,900 | 150,100 | 140,400 | 101,700 | 63,380 | 32,490 |
| 7 | 47,340 | 60,260 | 87,980 | 89,040 | 90,100 | 115,300 | 164,000 | 149,400 | 140,900 | 100,100 | 61,720 | 31,820 |
| 8 | 47,940 | 60,440 | 88,410 | 89,040 | 90,100 | 117,800 | 165,600 | 148,800 | 141,300 | 98,570 | 60,080 | 31,360 |
| 9 | 49,100 | 60,440 | 87,910 | 89,040 | 90,240 | 119,700 | 167,100 | 148,100 | 140,900 | 96,740 | 58,520 | 30,750 |
| 10 | 50,260 | 60,560 | 88,050 | 89,180 | 90,240 | 121,800 | 168,800 | 147,200 | 140,600 | 95,280 | 57,040 | 30,200 |
| 11 | 51,330 | 60,620 | 88,190 | 89,180 | 90,390 | 124,000 | 170,400 | 146,200 | 139,900 | 93,760 | 55,510 | 29,640 |
| 12 | 52,570 | 60,810 | 88,480 | 89,180 | 90,390 | 126,300 | 171,400 | 145,300 | 139,100 | 92,600 | 54,010 | 29,100 |
| 13 | 53,600 | 60,810 | 88,760 | 89,180 | 90,530 | 128,600 | 172,400 | 143,900 | 138,200 | 91,170 | 52,690 | 28,350 |
| 14 | 54,350 | 60,930 | 88,970 | 89,180 | 90,530 | 131,100 | 173,200 | 142,500 | 137,200 | 89,610 | 51,500 | 27,900 |
| 15 | 54,930 | 61,050 | 88,970 | 89,180 | 90,670 | 133,400 | 173,500 | 141,100 | 136,400 | 88,260 | 50,540 | 27,410 |
| 18 | 55,570 | 61,600 | 89,040 | 89,180 | 90,670 | 135,200 | 173,600 | 139,800 | 134,700 | 86,790 | 49,430 | 26,830 |
| 17 | 57,210 | 61,840 | 89,040 | 89,180 | 90,670 | 135,200 | 173,400 | 138,600 | 133,200 | 85,400 | 48,320 | 26,550 |
| 18 | 57,330 | 61,960 | 89,040 | 89,180 | 90,820 | 135,000 | 172,900 | 137,500 | 131,600 | 84,220 | 47,020 | 26,500 |
| 19 | 57,390 | 62,210 | 89,040 | 89,180 | 90,820 | 134,900 | 172,100 | 136,500 | 129,500 | 83,050 | 45,720 | 26,460 |
| 20 | 57,630 | 62,880 | 89,040 | 89,390 | 91,240 | 134,800 | 171,300 | 136,000 | 127,500 | 81,880 | 45,080 | 26,120 |
| 21 | 57,870 | 64,670 | 89,040 | 89,390 | 91,960 | 134,600 | 170,100 | 136,200 | 125,700 | 81,000 | 43,700 | 25,700 |
| 22 | 58,040 | 66,550 | 89,040 | 89,390 | 92,680 | 134,300 | 168,500 | 136,600 | 123,800 | 80,320 | 43,020 | 25,220 |
| 23 | 58,220 | 68,640 | 89,040 | 89,390 | 93,610 | 134,400 | 166,800 | 137,500 | 121,800 | 79,440 | 42,310 | 24,810 |
| 24 | 58,460 | 70,680 | 89,040 | 89,390 | 94,700 | 134,800 | 165,200 | 138,200 | 120,000 | 78,770 | 41,510 | 24,300 |
| 25 | 58,520 | 72,820 | 89,040 | 89,390 | 96,220 | 137,100 | 163,900 | 139,000 | 118,100 | 77,900 | 40,250 | 24,080 |
| 26 | 58,640 | 74,980 | 89,040 | 89,390 | 97,690 | 138,900 | 162,200 | 139,500 | 116,300 | 77,100 | 39,470 | 23,710 |
| 27 | 58,760 | 76,830 | 89,040 | 89,390 | 99,160 | 141,000 | 160,700 | 139,600 | 114,300 | 76,170 | 38,800 | 23,350 |
| 28 | 58,880 | 77,760 | 89,040 | 89,390 | 100,600 | 143,200 | 158,900 | 139,200 | 112,500 | 75,180 | 38,250 | 23,170 |
| 29 | 59,000 | 78,570 | 89,040 | 89,390 | - | 145,600 | 157,100 | 138,600 | 110,800 | 74,060 | 37,650 | 22,860 |
| 30 | 59,060 | 79,580 | 89,040 | 89,390 | - | 148,000 | 155,800 | 138,100 | 109,200 | 72,880 | 37,040 | 22,630 |
| 31 | 59,120 | - | 89,040 | 89,610 | - | 149,900 | - | 137,600 | - | 71,840 | 36,390 | - |

Monthly gage height and contents, water year October 1948 to September 1949

| Date | Gage height (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept. 30 (upper) | 11.42 | 39,810 | - |
| Sept. 30 (lower) | 11.30 | - | - |
| Oct. 31 | 14.86 | 59,120 | +19,310 |
| Nov. 30 | 18.07 | 79,580 | +20,460 |
| Dec. 31 | 19.44 | 89,040 | +9,460 |
| Calendar year 1948 | - | - | -13,560 |
| Jan. 31 | 19.52 | 89,610 | +570 |
| Feb. 28 | 21.04 | 100,600 | +10,990 |
| Mar. 31 | 27.08 | 149,900 | +49,300 |
| Apr. 30 | 27.73 | 155,800 | +5,900 |
| May 31 | 25.66 | 137,600 | -18,200 |
| June 30 | 22.17 | 109,200 | -28,400 |
| July 31 | 16.90 | 71,840 | -37,360 |
| Aug. 31 (upper) | 10.78 | 36,390 | -35,450 |
| Aug. 31 (lower) | 10.55 | - | - |
| Sept. 30 (upper) | 7.68 | 22,630 | -13,760 |
| Sept. 30 (lower) | 7.45 | - | - |
| Water year 1948-49 | - | - | -17,180 |

## Malheur River near Drewsey, Oreg.

Location.--Water-stage recorder, lat. 43°47', long. 118°20', in SE¼ sec. 31, T. 20 S., R. 36 E., 300 feet downstream from crossing of Burns-Ontario highway, half a mile downstream from Cottonwood Creek, and 3 miles southeast of Drewsey. Datum of gage is 3,479.29 feet above mean sea level, datum of 1929.
Drainage area.--982 square miles.
Records available.--June to December 1920, April to September 1921, June 1939 to September 1949. April to September 1923 and June 1926 to June 1939 at site 7 miles downstream. Records practically equivalent.
Average discharge.--23 years (1926-49), 157 second-feet.
Extremes.--Maximum discharge during year, 2,920 second-feet Feb. 19 (gage height, 9.8 feet); minimum, 1.8 second-feet Sept. 24, 25 (gage height, 2.42 feet).
1920-21, 1923, 1926-49: Maximum discharge, 4,290 second-feet Feb. 27, 1940 (gage height, 11.35 feet), from rating curve extended above 2,500 second-feet; no flow at times.
Remarks.--Records good except those for periods of ice effect, which are poor. Several small diversions above station for irrigation.
Revisions (water year).--W 1093: 1927.

Rating tables, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 19

| | | | | | |
|---|---|---|---|---|---|
| 2.7 | 19 | 3.6 | 157 | 5.5 | 680 |
| 2.8 | 27 | 3.9 | 225 | 6.2 | 930 |
| 3.0 | 49 | 4.3 | 325 | 7.0 | 1,270 |
| 3.3 | 97 | 4.8 | 460 | 7.8 | 1,670 |

Feb. 20 to Sept. 30

| | | | | | |
|---|---|---|---|---|---|
| 2.4 | 1.5 | 2.9 | 29 | 3.9 | 220 |
| 2.5 | 3.0 | 3.0 | 41 | 4.3 | 320 |
| 2.6 | 6.5 | 3.2 | 70 | 4.8 | 460 |
| 2.7 | 13 | 3.4 | 108 | | |
| 2.8 | 20 | 3.7 | 170 | | |

Note.--Same as preceding table above 4.8 feet.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22 | 56 | 56 | | | 282 | 275 | 496 | 218 | 16 | 3.7 | 2.7 |
| 2 | 22 | 74 | 57 | | | 312 | 332 | 556 | 192 | 16 | 3.4 | 2.7 |
| 3 | 26 | 76 | 76 | | | 322 | 358 | 628 | 168 | 15 | 3.4 | 2.7 |
| 4 | 29 | 79 | 68 | | | 415 | 391 | 556 | 150 | 14 | 3.7 | 2.7 |
| 5 | 30 | 71 | 62 | | | 517 | 466 | 475 | 134 | 13 | 3.7 | 2.8 |
| 6 | 37 | 68 | 73 | | | 442 | 550 | 415 | 124 | 12 | 3.0 | 3.4 |
| 7 | 41 | 65 | 66 | b50 | b45 | 388 | 628 | 362 | 118 | 12 | 3.0 | 2.8 |
| 8 | 43 | 48 | 68 | | | 345 | 676 | 348 | 112 | 12 | 3.0 | 2.8 |
| 9 | 43 | 33 | 62 | | | 290 | 673 | 342 | 100 | 12 | 4.0 | 2.8 |
| 10 | 39 | 52 | *65 | | | 282 | 698 | 348 | 79 | 11 | 4.4 | 2.8 |
| 11 | 41 | 63 | 73 | | | 328 | 764 | 362 | 58 | 10 | 4.8 | 2.8 |
| 12 | 42 | 63 | 134 | | | 388 | 869 | 379 | 54 | 11 | 3.4 | 2.8 |
| 13 | 39 | 63 | 99 | | | 409 | 930 | 382 | 52 | 11 | 3.0 | 2.8 |
| 14 | 49 | 62 | 88 | | | 397 | 774 | 406 | 44 | 10 | 2.8 | 2.8 |
| 15 | 49 | 73 | 81 | | b100 | 457 | 750 | 484 | 39 | 9.8 | 2.8 | 2.8 |
| 16 | 44 | 63 | b79 | | b250 | 478 | 746 | 487 | 36 | 9.1 | 2.7 | 3.0 |
| 17 | 44 | 66 | b76 | | b500 | 538 | 806 | 448 | 35 | 9.1 | 2.7 | 3.4 |
| 18 | 44 | 63 | b55 | | b1,000 | 673 | 876 | 427 | 34 | 9.1 | 2.6 | 3.4 |
| 19 | 45 | 52 | 45 | | 1,630 | 894 | 934 | 388 | 33 | 8.4 | 2.4 | 3.7 |
| 20 | 48 | 68 | 47 | | 799 | 750 | 1,060 | 388 | 34 | 8.4 | 2.6 | 2.8 |
| 21 | 48 | 68 | b56 | | 403 | 592 | 934 | 382 | 29 | 8.4 | 2.4 | 2.2 |
| 22 | 48 | 66 | b84 | (*) | 338 | 511 | 816 | 330 | 28 | 8.4 | 2.4 | 2.2 |
| 23 | 49 | 71 | b81 | b45 | 475 | 562 | 771 | 305 | 27 | 7.8 | 2.7 | 2.1 |
| 24 | 48 | 69 | b68 | | 439 | 442 | 750 | 275 | 25 | 6.5 | 2.8 | 2.1 |
| 25 | 48 | 74 | b60 | | 320 | 388 | 736 | 250 | 24 | 6.5 | 2.8 | 2.1 |
| 26 | 48 | 69 | b68 | | 290 | 350 | 662 | 232 | 23 | 6.2 | 2.7 | 2.7 |
| 27 | 48 | 60 | b70 | | 292 | 342 | 592 | 225 | 21 | 5.4 | 2.6 | 3.0 |
| 28 | 50 | b52 | b70 | | 290 | 312 | 556 | 218 | 20 | 5.1 | 2.7 | 2.8 |
| 29 | 50 | b56 | b70 | | - | 280 | 541 | 225 | 19 | 4.4 | 3.0 | 3.0 |
| 30 | 53 | 57 | b60 | | - | 280 | 532 | 242 | 17 | 3.7 | 3.0 | 7.8 |
| 31 | 48 | - | b50 | | - | 270 | - | 225 | - | 3.7 | 2.8 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,315 | 53 | 22 | 42.4 | 2,610 |
| November | 1,900 | 79 | 33 | 63.3 | 3,770 |
| December | 2,167 | 134 | 45 | 69.9 | 4,300 |
| Calendar year 1948 | 54,766.0 | 906 | 9.4 | 150 | 108,600 |
| January | 1,470 | - | - | 47.4 | 2,920 |
| February | 7,756 | 1,630 | - | 277 | 15,380 |
| March | 13,216 | 894 | 262 | 426 | 26,210 |
| April | 20,446 | 1,060 | 275 | 682 | 40,550 |
| May | 11,586 | 628 | 218 | 374 | 22,980 |
| June | 2,047 | 218 | 17 | 68.2 | 4,060 |
| July | 295.0 | 16 | 3.7 | 9.52 | 585 |
| August | 95.0 | 4.8 | 2.4 | 3.06 | 188 |
| September | 88.5 | 7.8 | 2.1 | 2.95 | 176 |
| Water year 1948-49 | 62,381.5 | 1,630 | 2.1 | 171 | 123,700 |

Peak discharge (base, 800 sec.-ft.).--Feb. 19 (1:30 a.m.) 2,920 sec.-ft.; Mar. 19 (1:30 p.m.) 938 sec.-ft.; Apr. 13 (5 a.m.) 1,010 sec.-ft.; Apr. 20 (6 a.m.) 1,120 sec.-ft.
* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Malheur River below Warmsprings Reservoir, near Riverside, Oreg.

Location.--Hook gage, lat. 43°34', long. 118°12', in SW¼ sec. 17, T. 23 S., R. 37 E., 1 mile downstream from Warmsprings Dam, 3 miles upstream from South Fork, and 4 miles northwest of Riverside.

Drainage area.--1,100 square miles.

Records available.--December 1914 to July 1917, March 1919 to September 1949. January 1906 to March 1907 and December 1908 to September 1910 at site at Riverside, 4 miles downstream in reports of Geological Survey. October 1910 to November 1914 at site at Riverside, in reports of State engineer.

Average discharge.--37 years (1909-16, 1919-49), 172 second-feet.

Extremes.--Maximum discharge observed during year, 620 second-feet June 14-29 (gage height, 5.14 feet); minimum daily, 1 second-foot Oct. 1 to Nov. 30, Feb. 20 to Apr. 14.
1906-7, 1908-17, 1919-49: Maximum discharge observed, 5,490 second-feet Mar. 2, 1910 (gage height, 10.7 feet, former site and datum), from rating curve extended above 820 second-feet; no flow at times.

Remarks.--Records good above 300 second-feet, fair below except those for periods of no gage-height record, which are poor. Gage read once daily. Flow completely regulated since November 1919 by Warmsprings Reservoir (see p. 163). Several small diversions above station for irrigation.

Revisions (water years).--W 833: 1936. W 1063: 1942-45.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | | | | | | | 405 | 332 | 600 | 346 | 246 |
| 2 | 1 | | | | | | | 405 | 306 | 600 | 328 | 246 |
| 3 | | | | | | | | 405 | 290 | 600 | 342 | 246 |
| 4 | | | | | | | | 405 | 266 | 600 | 373 | 246 |
| 5 | | | | | | | | 405 | 242 | 595 | 373 | 223 |
| 6 | | | | | | | | 405 | 250 | 580 | 386 | 192 |
| 7 | a1 | | | | | | | 405 | 306 | 580 | 391 | 186 |
| 8 | | | | | | | a1 | 405 | 350 | 575 | 391 | 162 |
| 9 | | | | | | | | 405 | 405 | 570 | 391 | 132 |
| 10 | | | | | a2 | | | 405 | 450 | 570 | 391 | 128 |
| 11 | | | | | | | | 405 | 530 | 570 | 391 | 128 |
| 12 | 1 | | | | | | | 405 | 560 | 560 | 391 | 112 |
| 13 | | | | | | | | 405 | 560 | 545 | 391 | 103 |
| 14 | | | | | | | | 405 | 595 | 535 | 391 | 97 |
| 15 | | a1 | a2 | a2 | | a1 | 78 | 405 | 620 | 510 | 391 | 76 |
| 16 | | | | | | | 195 | 405 | 620 | 500 | 391 | 68 |
| 17 | | | | | | | 206 | 405 | 620 | 485 | 391 | 68 |
| 18 | | | | | | | 250 | 405 | 620 | 485 | 391 | 68 |
| 19 | | | | | | | 250 | 405 | 620 | 460 | 391 | 68 |
| 20 | | | | | | | 250 | 405 | 620 | 425 | 391 | 80 |
| 21 | | | | | | | 250 | 386 | 620 | 410 | 391 | 88 |
| 22 | a1 | | | | | | 250 | 355 | 620 | 386 | 391 | 84 |
| 23 | | | | | | | 282 | 314 | 620 | 386 | 373 | 66 |
| 24 | | | | | a1 | | 310 | 262 | 620 | 386 | 364 | 46 |
| 25 | | | | | | | 310 | 286 | 620 | 386 | 364 | 30 |
| 26 | | | | | | | 346 | 310 | 620 | 378 | 364 | 18 |
| 27 | | | | | | | 378 | 324 | 620 | 360 | 328 | 13 |
| 28 | | | | | | | 386 | 368 | 620 | 346 | 310 | 9 |
| 29 | | | | | - | | 405 | 368 | 615 | 346 | 290 | 5 |
| 30 | | | | | - | | 405 | 368 | 600 | 346 | 270 | 5 |
| 31 | | | | | - | | - | 355 | - | 346 | 262 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 31 | - | - | 1.0 | 61 |
| November | 30 | - | - | 1 | 60 |
| December | 62 | - | - | 2 | 123 |
| Calendar year 1948 | 54,530 | 615 | 0 | 149 | 108,200 |
| January | 62 | - | - | 2 | 123 |
| February | 47 | - | - | 1.7 | 93 |
| March | 31 | - | - | 1 | 61 |
| April | 4,565 | 405 | - | 152 | 9,050 |
| May | 11,796 | 405 | 262 | 381 | 23,400 |
| June | 15,337 | 620 | 242 | 511 | 30,420 |
| July | 15,021 | 600 | 346 | 485 | 29,790 |
| August | 11,329 | 391 | 262 | 365 | 22,470 |
| September | 3,239 | 246 | 5 | 108 | 6,420 |
| Water year 1948-49 | 61,550 | 620 | - | 169 | 122,100 |

a No gage-height record; discharge computed on basis of measured flow Oct. 12 and observer's estimates of leakage.

## Malheur River at Little Valley, near Hope, Oreg.

Location.--Water-stage recorder, lat. 43°54', long. 117°30', in SE¼ sec. 24, T. 19 S., R. 42 E., at Little Valley, 8 miles southwest of Hope and 13 miles southwest of Vale. Datum of gage is 2,424.12 feet above sea level, datum of 1929, supplementary adjustment of 1947.

Drainage area.--3,010 square miles.

Records available.--April to September 1949. May 1919 to September 1949 at site 4 miles downstream, published as Malheur River near Hope; records equivalent except during irrigation seasons when return flow from Vale-Oregon Canal enters river between sites.

Extremes.--Maximum discharge April to September 1949, 1,160 second-feet May 19 (gage height, 4.66 feet), from rating curve extended above 330 second-feet on basis of peak discharge at station near Hope; minimum, 45 second-feet Sept. 25.
The two greatest floods known occurred in March 1894 and March 1910.

Remarks.--Records good. Vale-Oregon Canal diverts at Namorf; no other large diversions above station, but many small ones. Flow regulated by Warmsprings and Agency Valley Reservoirs (see p. 163).

Rating table, April to September 1949 (gage height, in feet, and discharge, in second-feet)
(Backwater from moss Aug. 15 to Sept. 30)

| | | | |
|---|---|---|---|
| 1.9 | 40 | 2.5 | 170 |
| 2.0 | 56 | 2.8 | 265 |
| 2.1 | 75 | 3.1 | 380 |
| 2.3 | 119 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | - | 332 | 165 | 221 | 67 | 98 |
| 2 | | | | | | | - | 344 | 147 | 230 | 64 | 81 |
| 3 | | | | | | | - | 328 | 142 | 237 | 64 | 90 |
| 4 | | | | | | | - | 308 | 117 | 248 | 66 | 105 |
| 5 | | | | | | | - | 308 | 112 | 251 | 79 | 119 |
| 6 | | | | | | | - | 308 | 94 | 240 | 114 | 108 |
| 7 | | | | | | | - | 293 | 77 | 224 | 119 | 88 |
| 8 | | | | | | | - | 290 | 86 | 227 | 139 | 81 |
| 9 | | | | | | | - | 286 | 114 | 224 | 162 | 81 |
| 10 | | | | | | | - | 276 | 134 | 224 | 179 | 94 |
| 11 | | | | | | | - | 282 | 129 | 237 | 200 | 86 |
| 12 | | | | | | | - | 290 | 160 | 234 | 203 | 79 |
| 13 | | | | | | | - | 282 | 182 | 224 | 188 | 98 |
| 14 | | | | | | | - | 286 | 203 | 215 | 179 | 77 |
| 15 | | | | | | | - | 324 | 227 | 206 | 182 | 73 |
| 16 | | | | | | | - | 336 | 237 | 191 | 162 | 69 |
| 17 | | | | | | | 290 | 312 | 240 | 191 | 152 | 66 |
| 18 | | | | | | | 244 | 272 | 230 | 176 | 157 | 60 |
| 19 | | | | | | | 248 | 304 | 254 | 185 | 152 | 58 |
| 20 | | | | | | | 268 | 293 | 279 | 179 | 152 | 53 |
| 21 | | | | | | | 265 | 272 | 258 | 165 | 152 | 53 |
| 22 | | | | | | | 237 | 197 | 254 | 154 | 152 | 53 |
| 23 | | | | | | | 230 | 182 | 258 | 122 | 147 | 48 |
| 24 | | | | | | | 265 | 173 | 268 | 122 | 154 | 48 |
| 25 | | | | | | | 296 | 110 | 262 | 119 | 144 | 46 |
| 26 | | | | | | | 282 | 88 | 248 | 114 | 132 | 48 |
| 27 | | | | | | | 290 | 110 | 244 | 103 | 139 | 51 |
| 28 | | | | | | | 296 | 114 | 251 | 101 | 132 | 56 |
| 29 | | | | | | | 300 | 144 | 258 | 77 | 132 | 62 |
| 30 | | | | | | | 316 | 188 | 251 | 66 | 132 | 51 |
| 31 | | | | | | | - | 154 | - | 67 | 108 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | | | | | |
| November | | | | | |
| December | | | | | |
| Calendar year | | | | | |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April 17-30 | 3,827 | 316 | 230 | 273 | 7,590 |
| May | 7,786 | 344 | 88 | 251 | 15,440 |
| June | 5,881 | 279 | 77 | 196 | 11,660 |
| July | 5,574 | 251 | 66 | 180 | 11,060 |
| August | 4,304 | 203 | 64 | 139 | 8,540 |
| September | 2,180 | 119 | 46 | 72.7 | 4,320 |
| The period | - | - | - | - | 58,610 |

## Malheur River near Hope, Oreg.

Location.--Water-stage recorder, lat. 43°57', long. 117°29', in SW¼ sec. 5, T. 19 S., R. 43 E., half a mile upstream from intake of Vines Canal and 6½ miles west of Hope.

Drainage area.--3,030 square miles.

Records available.--May 1919 to September 1949 (incomplete prior to October 1922), discontinued.

Average discharge.--26 years (1922-25, 1926-49), 211 second-feet.

Extremes.--Maximum discharge during year, 1,180 second-feet May 19; maximum gage height, 3.88 feet Feb. 13 (affected by ice); minimum discharge, 19 second-feet Nov. 8, 16-18 (gage height, 0.63 foot).

1919-49: Maximum discharge, 8,100 second-feet Feb. 5, 1925 (gage height, 8.1 feet), from rating curve extended above 3,000 second-feet; minimum, 3.5 second-feet Sept. 2, 1919 (gage height, 0.02 foot).

The two greatest floods known occurred in March 1894 and March 1910.

Remarks.--Records good except those for periods of ice effect or no gage-height, which are poor. Vale-Oregon Canal diverts at Namorf; no other large diversions above station, but many small ones. Flow regulated by Warmsprings and Agency Valley Reservoirs (see following page).

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 0.6 | 17 | 1.0 | 55 | 1.8 | 245 |
| .7 | 24 | 1.2 | 86 | 2.0 | 330 |
| .8 | 33 | 1.4 | 128 | 2.2 | 440 |
| .9 | 43 | 1.6 | 180 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 84 | 32 | b40 | | | a175 | 110 | 316 | 153 | 217 | 103 | 112 |
| 2 | 91 | 31 | b42 | | | *169 | 112 | 335 | 140 | 228 | 81 | 101 |
| 3 | 80 | 27 | 45 | | | 166 | 112 | 321 | 133 | 231 | 72 | 119 |
| 4 | 76 | 24 | b41 | | | 180 | 119 | 298 | 114 | 245 | 72 | 146 |
| 5 | 73 | 24 | b42 | | | 198 | 126 | 303 | 107 | 242 | 83 | 164 |
| 6 | 72 | 26 | b33 | | | 210 | 110 | 316 | 90 | 234 | 123 | 164 |
| 7 | 68 | 22 | b43 | | a30 | 198 | 123 | 294 | 86 | 220 | 130 | 126 |
| 8 | 64 | 20 | 44 | | | 172 | 136 | 281 | 81 | 220 | 150 | 114 |
| 9 | 61 | 23 | b48 | | | 153 | 92 | 281 | 112 | 220 | 169 | 110 |
| 10 | 60 | 23 | 49 | | | 133 | 136 | 269 | 133 | 220 | 177 | 112 |
| 11 | 58 | 23 | 53 | | | 123 | 143 | 273 | 121 | 231 | 192 | 103 |
| 12 | 56 | 20 | b52 | | | 126 | 94 | 285 | 148 | 234 | 201 | 114 |
| 13 | 55 | 22 | b50 | | | 133 | 117 | 277 | 177 | 224 | 186 | 116 |
| 14 | 51 | 22 | b50 | | b35 | 143 | 214 | 277 | 189 | 214 | 177 | 97 |
| 15 | 53 | 21 | *b47 | | b50 | 150 | 198 | 326 | 220 | 204 | 183 | 92 |
| 16 | 53 | 20 | b45 | 130 | b100 | 164 | 207 | 340 | 231 | 189 | 172 | 78 |
| 17 | 50 | 19 | b40 | | a200 | 189 | 261 | 330 | 234 | 201 | 158 | 75 |
| 18 | 41 | 20 | b35 | | a350 | 195 | 220 | 312 | 228 | 198 | 166 | 72 |
| 19 | 38 | 23 | b25 | | a400 | 245 | 228 | 331 | 242 | 201 | 169 | 70 |
| 20 | 36 | 28 | b25 | | a300 | 281 | 253 | 303 | 277 | 186 | 172 | 67 |
| 21 | 33 | 42 | b30 | | a250 | 269 | 242 | 277 | 249 | 172 | 175 | 64 |
| 22 | 31 | 44 | b40 | | a200 | 224 | 220 | 204 | 245 | 161 | 180 | 61 |
| 23 | 30 | 43 | a45 | | a250 | 136 | 214 | 175 | 249 | 126 | 175 | 60 |
| 24 | 29 | 42 | a40 | | a230 | 186 | 238 | 166 | 261 | 126 | 180 | 56 |
| 25 | 28 | 42 | a35 | | a210 | 177 | 277 | 103 | 253 | 123 | 172 | 55 |
| 26 | 28 | 41 | a40 | | a200 | 146 | 265 | 83 | 238 | 123 | 158 | 54 |
| 27 | 33 | 40 | a40 | | a190 | 175 | 269 | 99 | 238 | 123 | 166 | 61 |
| 28 | 37 | 42 | a40 | | a180 | 164 | 281 | 101 | 242 | 130 | 161 | 70 |
| 29 | 36 | 40 | a40 | | - | 130 | 281 | 136 | 253 | 110 | 164 | a75 |
| 30 | 27 | b40 | a35 | | - | 123 | 308 | 175 | 249 | 101 | 161 | a65 |
| 31 | 26 | - | a30 | | - | 116 | - | 153 | - | 101 | 121 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,548 | 84 | 26 | 49.9 | 3,070 |
| November | 886 | 44 | 19 | 29.5 | 1,760 |
| December | 1,264 | 53 | 25 | 40.8 | 2,510 |
| Calendar year 1948 | 38,264 | 300 | 16 | 105 | 75,890 |
| January | 930 | - | - | 30 | 1,840 |
| February | 3,535 | 400 | - | 126 | 7,010 |
| March | 5,349 | 281 | 116 | 173 | 10,610 |
| April | 5,706 | 308 | 92 | 190 | 11,320 |
| May | 7,740 | 340 | 83 | 250 | 15,350 |
| June | 5,693 | 277 | 81 | 190 | 11,290 |
| July | 5,755 | 245 | 101 | 186 | 11,410 |
| August | 4,749 | 201 | 72 | 153 | 9,420 |
| September | 2,773 | 164 | 54 | 92.4 | 5,500 |
| Water year 1948-49 | 45,928 | 400 | 19 | 126 | 91,090 |

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for stations at Drewsey and Little Valley and North Fork Malheur River above Agency Valley Reservoir, near Beulah.

b Stage-discharge relation affected by ice.

Reservoirs in Malheur River Basin, Oreg.

Warmsprings Reservoir.--Tape gage, lat. 43°35', long. 118°12', in SE¼ sec. 8, T. 23 S., R. 37 E., at dam on Malheur River, 4 miles upstream from South Fork and 4 miles northwest of Riverside. Datum of gage is 3,327 feet above mean sea level (surveys of Bureau of Reclamation); gage readings have been reduced to elevations above mean sea level. Drainage area, 1,100 square miles. Records available, January 1920 to September 1949. Maximum contents observed during year, 99,310 acre-feet May 5 (elevation, 3,382.70 feet); minimum observed, 70 acre-feet Sept. 28-30 (elevation, 3,328.30 feet). Maximum contents observed during period 1920-49, 196,000 acre-feet Apr. 7, 1942 (elevation, 3,407.08 feet); no contents Sept. 18 to Nov. 1, 1929, Aug. 26 to sometime in November 1935.

Reservoir is formed by concrete-arch dam; capacity, 191,000 acre-feet between elevations 3,327 feet (bottom of outlet tunnel) and 3,406 feet (top of 5-foot flashboards). Dead storage, 1,400 acre-feet below elevation 3,327 feet. Records given herein represent contents above elevation 3,327 feet. Storage began in 1919. In 1926 a half interest in reservoir was purchased by the Federal Government for Vale project of Bureau of Reclamation. Water used to irrigate lands on both sides of river between Namorf and Ontario. Once-daily gage readings and data for computing capacity table furnished by Bureau of Reclamation.

Agency Valley Reservoir.--Pressure gage with mercury column, lat. 43°55', long. 118°09', in SW¼ sec. 15, T. 19 S., R. 37 E., at dam on North Fork Malheur River, a quarter of a mile northwest of Beulah. Gage readings are elevations above mean sea level by original surveys of Bureau of Reclamation, or 7.72 feet less than elevations above mean sea level, datum of 1929. Drainage area, 420 square miles. Records available, December 1935 to September 1949. Maximum contents observed during year, 58,550 acre-feet Apr. 22 (elevation, 3,339.27 feet); minimum observed, 10,160 acre-feet Sept. 30 (elevation, 3,301.80 feet). Maximum contents observed during period 1935-49, 62,770 acre-feet May 3, 1941 (elevation, 3,341.50 feet); minimum observed since full capacity was attained Apr. 9, 1938, that of Sept. 30, 1949.

Reservoir is formed by earth-fill, rock-faced dam; storage began in December 1935. Capacity, 59,920 acre-feet between elevations 3,263.21 feet (bottom of outlet tunnel) and 3,340 feet (top of 17-foot spillway gates); with gates lowered the capacity is 32,220 acre-feet. No dead storage. Water is used for irrigation of lands below Juntura, on Vale project of Bureau of Reclamation. Capacity table and daily gage readings furnished by Bureau of Reclamation.

Other reservoirs.--There are several other reservoirs in the Malheur River Basin, all with less than 3,500 acre-feet capacity except Willow Creek No. 3 Reservoir near Malheur, which has a capacity of 49,000 acre-feet.

Monthly elevation and contents, water year October 1948 to September 1949

| Date | Warmsprings Reservoir | | | Agency Valley Reservoir | | |
|---|---|---|---|---|---|---|
| | Elevation (feet)† | Contents (acre-feet) | Change in contents during month (acre-feet) | Elevation (feet)‡ | Contents (acre-feet) | Change in contents during month (acre-feet) |
| Sept.30 | - | a1,340 | - | 3,319.35 | 27,440 | - |
| Oct. 31 | - | a4,670 | +3,330 | 3,316.95 | 24,510 | -2,930 |
| Nov. 30 | - | a8,950 | +4,280 | 3,320.01 | 28,260 | +3,750 |
| Dec. 31 | - | a13,120 | +4,170 | 3,322.70 | 31,820 | +3,560 |
| Calendar year 1948 | - | - | -4,180 | - | - | -160 |
| Jan. 31 | - | a14,300 | +1,180 | 3,325.05 | 35,100 | +3,280 |
| Feb. 28 | - | a34,890 | +20,590 | 3,328.67 | 40,480 | +5,380 |
| Mar. 31 | 3,371.40 | 64,160 | +29,270 | 3,336.48 | 53,440 | +12,960 |
| Apr. 30 | 3,382.40 | 98,320 | +34,160 | 3,338.63 | 57,350 | +3,910 |
| May 31 | 3,382.35 | 98,160 | -160 | 3,337.96 | 56,120 | -1,230 |
| June 30 | 3,372.65 | 67,780 | -30,380 | 3,334.15 | 49,340 | -6,780 |
| July 31 | 3,359.15 | 33,420 | -34,360 | 3,328.19 | 39,740 | -9,600 |
| Aug. 31 | 3,342.74 | 7,790 | -25,630 | 3,317.72 | 25,440 | -14,300 |
| Sept.30 | 3,328.30 | 70 | -7,720 | 3,301.80 | 10,160 | -15,280 |
| Water year 1948-49 | - | - | -1,270 | - | - | -17,280 |

† Gage reading observed about 10 a.m.
‡ Gage reading observed about 8 a.m.
a No gage-height record; contents interpolated.

## North Fork Malheur River above Agency Valley Reservoir, near Beulah, Oreg.

Location.--Water-stage recorder, lat. 43°58', long. 118°11', in sec. 33, T. 18 S., R. 37 E., at W. W. Scott's ranch, 3 miles upstream from Warm Springs Creek and 4 miles northwest of Agency Valley Dam and Beulah.

Drainage area.--355 square miles.

Records available.--January to September 1914, June 1936 to September 1949.

Average discharge.--13 years, 123 second-feet.

Extremes.--Maximum discharge during year, 623 second-feet Apr. 20 (gage height, 3.11 feet); minimum, 22 second-feet Nov. 8, 9.

1914, 1936-49: Maximum discharge recorded, 1,010 second-feet Feb. 12, 1947; maximum gage height, 4.60 feet Mar. 26, 1940; minimum discharge recorded, 12 second-feet Jan. 27, 1948, but may have been less at times during periods of ice effect.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. A few diversions above station for irrigation.

Revisions (water years).--W 883: 1938(M). W 1093: 1944(m).

Rating tables, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Feb. 20 | | | | Feb. 21 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0.6 | 22 | 1.0 | 65 | 0.5 | 32 | 1.1 | 105 | 2.1 | 325 |
| .7 | 30 | 1.2 | 95 | .7 | 48 | 1.4 | 160 | 2.6 | 470 |
| .8 | 40 | 1.5 | 146 | .9 | 74 | 1.7 | 225 | 3.0 | 590 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 56 | 64 | 70 | | | 164 | 172 | 398 | 189 | 60 | 44 | 38 |
| 2 | 55 | 77 | 77 | | | 140 | 200 | 434 | 172 | 58 | 45 | 38 |
| 3 | 53 | 80 | 76 | | | 152 | 200 | 404 | 158 | 54 | 44 | 38 |
| 4 | 55 | 68 | 45 | | | 158 | 228 | 365 | 144 | 54 | 44 | 38 |
| 5 | 64 | 60 | 56 | | | 178 | 282 | 338 | 131 | 53 | 43 | 39 |
| 6 | 62 | 57 | 66 | | | 158 | 328 | 320 | 126 | 53 | 43 | 40 |
| 7 | 61 | 45 | 65 | | a40 | 142 | 356 | 315 | 126 | 52 | 42 | 40 |
| 8 | 60 | 38 | 60 | a55 | | 122 | 365 | 318 | 120 | 49 | 43 | 41 |
| 9 | 56 | 53 | 61 | | | 107 | 383 | 332 | 115 | 48 | 43 | 41 |
| 10 | 55 | 64 | 65 | | | 103 | 413 | 353 | 107 | 46 | 44 | 42 |
| 11 | 53 | 57 | *64 | | | 122 | 476 | 392 | 100 | 48 | 44 | 43 |
| 12 | 53 | 56 | 74 | | | 191 | 509 | 404 | 95 | 47 | 44 | 44 |
| 13 | 52 | 55 | 57 | | | 172 | 440 | 410 | 92 | 44 | 45 | 43 |
| 14 | 55 | 55 | 61 | | | 170 | 410 | 425 | 88 | 44 | 44 | 44 |
| 15 | 56 | 56 | 47 | | a50 | 204 | 401 | 470 | 84 | 43 | 43 | 44 |
| 16 | 55 | 57 | 29 | | a60 | 240 | 431 | 419 | 84 | 43 | 39 | 44 |
| 17 | 55 | 58 | 36 | | a80 | 255 | 485 | 389 | 83 | 42 | 36 | 44 |
| 18 | 55 | a50 | a40 | | a150 | 395 | 533 | 350 | 82 | 41 | 40 | 44 |
| 19 | 56 | a40 | a45 | | a120 | 416 | 590 | 325 | 82 | 41 | 38 | 44 |
| 20 | 56 | a50 | a50 | | a90 | 322 | 575 | 356 | 80 | 42 | 37 | 43 |
| 21 | 56 | a60 | a55 | a50 | b80 | 285 | 521 | 302 | 76 | 43 | 38 | 42 |
| 22 | 56 | a65 | a60 | (*) | b150 | 280 | 485 | 278 | 73 | 42 | 38 | 41 |
| 23 | 55 | a70 | a60 | | b250 | 262 | 491 | 255 | 70 | 42 | 40 | 41 |
| 24 | 55 | a70 | a55 | | b210 | 230 | 500 | 235 | 70 | 43 | 40 | 42 |
| 25 | 56 | a75 | a50 | | b200 | 216 | 476 | 223 | 68 | 44 | 39 | 42 |
| 26 | 56 | a65 | b55 | | b190 | 191 | 434 | 216 | 67 | 44 | 39 | 41 |
| 27 | 53 | a60 | a60 | | b180 | 180 | 410 | 211 | 70 | 45 | 40 | 41 |
| 28 | 53 | a50 | a60 | a40 | 174 | 152 | 404 | 209 | 67 | 46 | 40 | 44 |
| 29 | 56 | a55 | a65 | | - | 144 | 410 | 225 | 64 | 44 | 39 | 63 |
| 30 | 55 | a60 | a60 | | - | 156 | 374 | 240 | 61 | 43 | 37 | 56 |
| 31 | 55 | - | a55 | | - | 144 | - | 204 | - | 44 | 37 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,729 | 64 | 52 | 55.8 | 3,430 |
| November | 1,770 | 80 | 38 | 59.0 | 3,510 |
| December | 1,779 | 77 | 29 | 57.4 | 3,530 |
| Calendar year 1948 | 43,442 | 684 | 29 | 119 | 86,170 |
| January | 1,565 | - | - | 50.5 | 3,100 |
| February | 2,544 | 250 | - | 90.9 | 5,050 |
| March | 6,157 | 416 | 103 | 199 | 12,210 |
| April | 12,282 | 590 | 172 | 409 | 24,360 |
| May | 10,115 | 470 | 204 | 326 | 20,060 |
| June | 2,944 | 189 | 61 | 98.1 | 5,840 |
| July | 1,442 | 60 | 41 | 46.5 | 2,860 |
| August | 1,272 | 45 | 36 | 41.0 | 2,520 |
| September | 1,285 | 63 | 38 | 42.8 | 2,550 |
| Water year 1948-49 | 44,884 | 590 | - | 123 | 89,020 |

Peak discharge (base, 400 sec.-ft.).--Mar. 18 (12 p.m.) 554 sec.-ft.; Apr. 12 (5 a.m.) 536 sec.-ft.; Apr. 20 (3 a.m.) 623 sec.-ft.; May 15 (1 a.m.) 500 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record (stage-discharge relation affected by ice during most of winter period); discharge computed on basis of records for Malheur River near Drewsey and computed inflow to Agency Valley Reservoir.

b Stage-discharge relation affected by ice.

## North Fork Malheur River at Beulah, Oreg.

Location.--Staff gage, lat. 43°54', long. 118°09', in NW¼NE¼ sec. 22, T. 19 S., R. 37 E., at Beulah, a quarter of a mile downstream from Agency Valley Dam and 12 miles northwest of Juntura. Datum of gage is 3,262.47 feet above mean sea level, datum of 1929.
Drainage area.--420 square miles.
Records available.--January 1936 to September 1949. March 1909 to June 1912 and November 1913 to July 1914 at site 6 miles downstream. June 1926 to December 1935 at site three-quarters of a mile downstream, below intakes of two canals with combined capacity of about 10 second-feet.
Average discharge.--14 years (1935-49), 127 second-feet.
Extremes.--Maximum discharge observed during year, 505 second-feet Apr. 23 to May 2 (gage height, 2.70 feet); practically no flow Sept. 28.
1909-12, 1913-14, 1926-49: Maximum discharge, 7,000 second-feet (regulated by sudden storage release) May 7, 1942 (gage height, 8.4 feet, from floodmark); maximum unregulated, 5,910 second-feet Mar. 20, 1910; no flow at times; minimum prior to construction of dam, 5 second-feet Dec. 28, 1910, Jan. 26, 27, 1911.
Remarks.--Records fair except those for periods of no gage-height record, which are poor. Gage read once daily, twice daily at times. Flow regulated by Agency Valley Reservoir (see p. 163). Small diversions above station for irrigation; practically entire summer flow is diverted below station and above Juntura.

Rating table, water year 1948-49 (gage height, in feet, and discharge, in second-feet)

| | | | |
|---|---|---|---|
| 0.8 | 53 | 1.7 | 227 |
| 1.0 | 82 | 2.0 | 304 |
| 1.2 | 116 | 2.3 | 385 |
| 1.4 | 156 | 2.7 | 505 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 232 | | | | | | 116 | 505 | 227 | 208 | 181 | 322 |
| 2 | 232 | | | | | | 116 | 490 | 227 | 208 | 181 | 330 |
| 3 | 232 | | | | | | 116 | 475 | 215 | 208 | 198 | 330 |
| 4 | 232 | | | | | | 116 | 475 | 203 | 208 | 225 | 330 |
| 5 | 225 | | | | | | 116 | 460 | 189 | 208 | 247 | 330 |
| | | | 1 | | | | | | | | | |
| 6 | 215 | | | | | | 116 | 427 | 179 | 208 | 247 | 330 |
| 7 | 215 | | | | | | 116 | 427 | 179 | 208 | 247 | 330 |
| 8 | 215 | | | | | | 148 | 427 | 179 | 208 | 247 | 330 |
| 9 | 215 | | | | | | 215 | 412 | 179 | 208 | 262 | 330 |
| 10 | 215 | | | | | | 215 | 400 | 179 | 208 | 270 | 330 |
| 11 | 203 | | 1 | | | 2 | 215 | 400 | 179 | 208 | 273 | 330 |
| 12 | 196 | | | | | | 344 | 400 | 179 | 208 | 273 | 314 |
| 13 | 196 | | | | | | 415 | 400 | 179 | 196 | 273 | 288 |
| 14 | 196 | | | | | | 436 | 400 | 179 | 181 | 273 | 273 |
| 15 | 66 | 1 | | 1 | 2 | | 466 | 400 | 179 | 181 | 273 | 273 |
| 16 | | | | | | | 466 | 400 | 179 | 181 | 273 | 257 |
| 17 | | | | | | | 463 | 349 | 198 | 181 | 273 | 247 |
| 18 | | | | | | | 463 | 312 | 227 | 181 | 273 | 247 |
| 19 | | | | | | 2 | 472 | 312 | 227 | 181 | 273 | 247 |
| 20 | | | | | | 2 | 475 | 294 | 227 | 181 | 273 | 247 |
| 21 | | | 1 | | | 2 | 475 | 227 | 227 | 181 | 273 | 247 |
| 22 | | | | | | 2 | 490 | 227 | 227 | 181 | 273 | 247 |
| 23 | | | | | | 2 | 505 | 227 | 227 | 181 | 273 | 262 |
| 24 | 1 | | | | | 2 | 505 | 227 | 220 | 181 | 273 | 309 |
| 25 | | | | | | 8 | 505 | 227 | 208 | 181 | 273 | 325 |
| 26 | | | | | | 116 | 505 | 227 | 208 | 181 | 273 | 314 |
| 27 | | | | | | 116 | 505 | 227 | 208 | 181 | 299 | 299 |
| 28 | | | | | | 116 | 505 | 227 | 208 | 181 | 314 | 258 |
| 29 | | | | | - | 116 | 505 | 227 | 208 | 181 | 314 | 278 |
| 30 | | | | | - | 116 | 505 | 227 | 208 | 181 | 314 | 257 |
| 31 | | - | | | - | 116 | - | 227 | - | 181 | 314 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 3,101 | 232 | - | 100 | 6,150 |
| November | 30 | - | - | 1 | 60 |
| December | 31 | - | - | 1.0 | 61 |
| Calendar year 1948 | 44,823.9 | 469 | - | 122 | 88,900 |
| January | 31 | - | - | 1 | 61 |
| February | 56 | - | - | 2 | 111 |
| March | 822 | 116 | - | 26.5 | 1,630 |
| April | 10,610 | 505 | 116 | 354 | 21,040 |
| May | 10,662 | 505 | 227 | 344 | 21,150 |
| June | 6,058 | 227 | 179 | 202 | 12,020 |
| July | 5,950 | 208 | 181 | 192 | 11,800 |
| August | 8,228 | 314 | 181 | 265 | 16,320 |
| September | 8,811 | 330 | 247 | 294 | 17,480 |
| Water year 1948-49 | 54,390 | 505 | - | 149 | 107,900 |

Note.--No gage-height record Oct. 16 to Dec. 10, Dec. 12 to Mar. 18, Mar. 20-24; discharge interpolated or computed on basis of observer's notes and estimates of flow Dec. 11, Mar. 19.

## Bully Creek near Vale, Oreg.

Location.--Water-stage recorder, lat. 43°58', long. 117°21', in SW¼ sec. 33, T. 18 S., R. 44 E., 5 miles southwest of Vale.

Records available.--October 1945 to September 1949 in reports of Geological Survey; March 1937 to September 1941 in reports of State engineer; October 1941 to September 1945 in files of State engineer. August 1903 to March 1907, February 1910 to May 1917, March 1922 to June 1923 at site 9 miles upstream, in reports of Geological Survey; February to June 1919 in reports of State engineer. April 1904 to December 1905 at site at Vale, 6 miles downstream, in reports of Geological Survey; May to September 1938 in files of State engineer. April 1933 to May 1936 (fragmentary) at site 3 miles upstream, in files of State engineer. Records at various sites not equivalent because of diversions and increasing return flow from Vale-Oregon Canal since 1931.

Average discharge.--13 years (1933-34, 1937-49), 39.6 second-feet.

Extremes.--Maximum discharge during year, 310 second-feet Mar. 23; maximum gage height, 3.4 feet Feb. 16 (ice jam); minimum daily discharge, 3 second-feet Jan. 11, 12, 24-26. 1903-7, 1910-17, 1919, 1922-23, 1933-49: Maximum discharge, 6,240 second-feet Mar. 1, 1910 (gage height, 8.6 feet, site and datum then in use), from rating curve extended above 1,200 second-feet; no flow at times.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. Occasional fluctuations caused by releases from Vale-Oregon Canal of Vale-Oregon Irrigation District, which diverts water from Malheur River for irrigation of lands west of Vale; considerable return flow at times enters Bully Creek above station. Small diversions above station for irrigation.

Cooperation.--Water-stage recorder inspected by employees of Vale-Oregon Irrigation District.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10 | 11 | 5 | a5 | a4 | *31 | 48 | 21 | 20 | 15 | 14 | 14 |
| 2 | 10 | 12 | 6 | a6 | a5 | 33 | 74 | 22 | 18 | 14 | 13 | 13 |
| 3 | 10 | 11 | 7 | a5 | a5 | 34 | 69 | 25 | 17 | 14 | 13 | 12 |
| 4 | 10 | 10 | 6 | a4 | a6 | 34 | 40 | 24 | 16 | 15 | 13 | 20 |
| 5 | 10 | 10 | 5 | a4 | a7 | 46 | 16 | 22 | 28 | 14 | 13 | 29 |
| 6 | 10 | 9 | 4 | a4 | a6 | 52 | 52 | 21 | 40 | 15 | 13 | 32 |
| 7 | 11 | 9 | 6 | a5 | a7 | 47 | 34 | 24 | 16 | 13 | 13 | 31 |
| 8 | 11 | 9 | 4 | a5 | a7 | 41 | 22 | 35 | 15 | 14 | 19 | 31 |
| 9 | 11 | 9 | 6 | a5 | a7 | 36 | 27 | 30 | 11 | 14 | 19 | 34 |
| 10 | 11 | 9 | 5 | a4 | a10 | 32 | 26 | 24 | 12 | 12 | 12 | 36 |
| 11 | 11 | 9 | 6 | a3 | a20 | 29 | 18 | 20 | 11 | 13 | 11 | 36 |
| 12 | 10 | 9 | 8 | a3 | a22 | 31 | 17 | 15 | 13 | 14 | 12 | 35 |
| 13 | 11 | 9 | 8 | a4 | *b20 | 37 | 16 | 14 | 13 | 13 | 13 | 24 |
| 14 | 10 | 9 | *8 | a4 | a30 | 38 | 12 | 16 | 18 | 13 | 14 | 17 |
| 15 | 10 | 8 | 6 | a5 | a40 | 38 | 11 | 18 | 19 | 13 | 12 | 16 |
| 16 | 10 | 8 | 5 | a6 | b50 | 41 | 10 | 43 | 13 | 12 | 13 | 16 |
| 17 | 10 | 8 | 5 | a5 | b40 | 50 | 11 | 17 | 16 | 12 | 20 | 16 |
| 18 | 10 | 6 | b5 | a4 | b35 | 63 | 12 | 15 | 15 | 14 | 27 | 16 |
| 19 | 10 | 8 | 5 | a4 | b41 | 102 | 42 | 14 | 17 | 13 | 25 | 14 |
| 20 | 10 | 8 | 5 | a5 | b30 | 100 | 35 | 34 | 17 | 14 | 14 | 13 |
| 21 | 10 | 8 | b4 | a5 | 23 | 86 | 14 | 38 | 16 | 13 | 12 | 13 |
| 22 | 10 | 10 | b4 | a5 | b22 | 80 | 12 | 29 | 16 | 11 | 19 | 12 |
| 23 | 9 | 9 | a4 | a4 | b41 | 118 | 12 | 78 | 13 | 10 | 14 | 12 |
| 24 | 8 | 7 | a4 | a3 | 67 | 97 | 12 | 36 | 13 | 12 | 12 | 11 |
| 25 | 8 | 7 | a4 | a3 | 52 | 76 | 12 | 23 | 12 | 11 | 19 | 10 |
| 26 | 8 | 6 | a5 | a3 | 41 | 65 | 16 | 20 | 12 | 10 | 21 | 23 |
| 27 | 8 | 6 | a5 | a4 | 40 | 57 | 14 | 17 | 15 | 20 | 17 | 20 |
| 28 | 9 | 6 | a5 | a5 | 38 | 52 | 14 | 21 | 15 | 22 | 24 | 17 |
| 29 | 8 | 6 | a6 | a5 | - | 100 | 15 | 26 | 14 | 15 | 27 | 11 |
| 30 | 8 | 5 | a6 | a4 | - | 100 | 17 | 20 | 14 | 13 | 23 | 11 |
| 31 | 8 | - | a5 | a4 | - | 82 | - | 22 | - | 13 | 16 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 300 | 11 | 8 | 9.7 | 595 |
| November | 251 | 12 | 5 | 8.4 | 498 |
| December | 167 | 8 | 4 | 5.4 | 331 |
| Calendar year 1948 | 3,142 | 22 | 4 | 8.6 | 6,230 |
| January | 135 | 6 | 3 | 4.4 | 268 |
| February | 716 | 67 | 4 | 25.6 | 1,420 |
| March | 1,828 | 118 | 29 | 59.0 | 3,630 |
| April | 730 | 74 | 10 | 24.3 | 1,450 |
| May | 784 | 78 | 14 | 25.3 | 1,560 |
| June | 485 | 40 | 11 | 16.2 | 962 |
| July | 421 | 22 | 10 | 13.6 | 835 |
| August | 507 | 27 | 11 | 16.4 | 1,010 |
| September | 595 | 36 | 10 | 19.8 | 1,180 |
| Water year 1948-49 | 6,919 | 118 | 3 | 19.0 | 13,740 |

Peak discharge (base, 130 sec.-ft.).--Feb. 16 (7:30 p.m.) discharge unknown; Mar. 23 (12 m.) 310 sec.-ft.; May 20 (10 p.m.) 130 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for Malheur River near Hope.

b Stage-discharge relation affected by ice.

## South Fork Payette River at Lowman, Idaho

Location.--Water-stage recorder, lat. 44°05', long. 115°37'30", in SW¼ sec. 27, T. 9 N., R. 7 E., 1,200 feet upstream from Rock Creek, half a mile northwest of Lowman post office, and 4,100 feet downstream from Clear Creek. Altitude of gage, 3,790 feet (from river-profile map).

Drainage area.--456 square miles.

Records available.--May 1941 to September 1949.

Extremes.--Maximum discharge during year, 4,530 second-feet May 16; maximum gage height, 6.70 feet Jan. 29 (ice jam); minimum daily discharge, 220 second-feet Dec. 26, Feb. 13; minimum gage height, 2.60 feet Dec. 18.
1941-49: Maximum discharge, 5,250 second-feet May 28, 1948 (gage height, 6.73 feet); minimum, 148 second-feet Dec. 9, 1944 (gage height, 2.40 feet).

Remarks.--Records excellent except those for periods of ice effect, which are fair. No regulation. Several small diversions for irrigation and placer mining, the return flow from which enters river above station.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 338 | 363 | 323 | 260 | 240 | 290 | 406 | 1,600 | 3,070 | 1,120 | 494 | 348 |
| 2 | 333 | 458 | 348 | 250 | 240 | 310 | 464 | 1,620 | 2,690 | 1,100 | 488 | 348 |
| 3 | 328 | 464 | 363 | 240 | 240 | 320 | 488 | 1,490 | 2,460 | 1,080 | 488 | 343 |
| 4 | 358 | 395 | 328 | 230 | 240 | 320 | 567 | 1,440 | 2,360 | 1,080 | 476 | 343 |
| 5 | 434 | 358 | 323 | 230 | 240 | 330 | 697 | 1,370 | 2,510 | 1,100 | 470 | 348 |
| 6 | 368 | 353 | 323 | 240 | 240 | 338 | 790 | 1,410 | 2,860 | 1,140 | 464 | 343 |
| 7 | 358 | 318 | 328 | 250 | 240 | 323 | 898 | 1,560 | 3,130 | 1,050 | 458 | 338 |
| 8 | 358 | 287 | 328 | 260 | 240 | 318 | 756 | 1,790 | 3,210 | 998 | 452 | 328 |
| 9 | 348 | 310 | 318 | 250 | 240 | 318 | 916 | 2,130 | 3,240 | 970 | 446 | 328 |
| 10 | 338 | 353 | 333 | 240 | 240 | 310 | 970 | 2,440 | 3,290 | 925 | 452 | 328 |
| 11 | 333 | 328 | 333 | 250 | 240 | 310 | 1,120 | 2,810 | 3,400 | 898 | 470 | 353 |
| 12 | 328 | 328 | 333 | 260 | 230 | 323 | 1,260 | 3,160 | 3,340 | 871 | 452 | 353 |
| 13 | 323 | 323 | 328 | 260 | 220 | 323 | 1,060 | 3,390 | 2,930 | 853 | 440 | 343 |
| 14 | 323 | 318 | 323 | 260 | 230 | 323 | 934 | 3,620 | 2,640 | 826 | 422 | 333 |
| 15 | 338 | 358 | 333 | 260 | 240 | 338 | 934 | 3,920 | 2,440 | 808 | 417 | 328 |
| 16 | 338 | 343 | 296 | 270 | 250 | 353 | 1,040 | 4,420 | 2,310 | 782 | 406 | 338 |
| 17 | 333 | 338 | 250 | 270 | 250 | 368 | 1,220 | 4,080 | 2,080 | 748 | 400 | 343 |
| 18 | 328 | 287 | 250 | 280 | 260 | 368 | 1,450 | 3,800 | 1,890 | 714 | 406 | 338 |
| 19 | 323 | 328 | 305 | 270 | 260 | 378 | 1,540 | 3,520 | 1,840 | 689 | 395 | 328 |
| 20 | 323 | 338 | 338 | 260 | 270 | 417 | 1,370 | 3,260 | 1,770 | 665 | 384 | 323 |
| 21 | 318 | 323 | 310 | 250 | 290 | 406 | 1,240 | 2,990 | 1,680 | 649 | 384 | 318 |
| 22 | 318 | 323 | 270 | 250 | 270 | 395 | 1,280 | 2,870 | 1,660 | 625 | 378 | 318 |
| 23 | 314 | *314 | 250 | 250 | 280 | *384 | 1,420 | 2,720 | 1,640 | 611 | 390 | 314 |
| 24 | 314 | 338 | 240 | *240 | 270 | 384 | 1,620 | 2,640 | 1,570 | 596 | 390 | 310 |
| 25 | 314 | 328 | 250 | 240 | 270 | 395 | 1,710 | 2,750 | 1,560 | 582 | 373 | 305 |
| 26 | 314 | 328 | 220 | 250 | 270 | 390 | 1,680 | 3,020 | 1,500 | 575 | 368 | 305 |
| 27 | 310 | 310 | 240 | 260 | 280 | 373 | 1,730 | 3,310 | 1,370 | 553 | 363 | 305 |
| 28 | 310 | 314 | 260 | 250 | 280 | 358 | 1,840 | 3,680 | 1,280 | 546 | 363 | 318 |
| 29 | 314 | 300 | 270 | 230 | - | 348 | 1,940 | 3,760 | 1,240 | 527 | 363 | 353 |
| 30 | 310 | 254 | 260 | 240 | - | 353 | 1,770 | 3,640 | 1,180 | 514 | 358 | 333 |
| 31 | 318 | - | 250 | 230 | - | 368 | - | 3,390 | - | 508 | 353 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff: Inches | Runoff: Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 10,305 | 434 | 310 | 332 | 0.728 | 0.84 | 20,440 |
| November | 10,080 | 464 | 254 | 336 | .737 | .82 | 19,990 |
| December | 9,224 | 363 | 220 | 298 | .654 | .75 | 18,300 |
| Calendar year 1948 | 309,722 | 4,910 | 190 | 846 | 1.86 | 25.27 | 614,300 |
| January | 7,780 | 280 | 230 | 251 | .550 | .63 | 15,430 |
| February | 7,060 | 290 | 220 | 252 | .553 | .58 | 14,000 |
| March | 10,832 | 417 | 290 | 349 | .765 | .88 | 21,480 |
| April | 35,110 | 1,940 | 406 | 1,170 | 2.57 | 2.86 | 69,640 |
| May | 87,600 | 4,420 | 1,370 | 2,826 | 6.20 | 7.14 | 173,800 |
| June | 68,140 | 3,400 | 1,180 | 2,271 | 4.98 | 5.56 | 135,200 |
| July | 24,703 | 1,140 | 508 | 797 | 1.75 | 2.01 | 49,000 |
| August | 12,963 | 494 | 353 | 418 | .917 | 1.06 | 25,710 |
| September | 9,954 | 353 | 305 | 332 | .728 | .81 | 19,740 |
| Water year 1948-49 | 293,751 | 4,420 | 220 | 805 | 1.77 | 23.96 | 582,700 |

Peak discharge (base, 2,500 sec.-ft.).--May 16 (4 a.m.) 4,530 sec.-ft.; May 28 (11 p.m.) 3,850 sec.-ft.; June 11 (10 p.m.) 3,460 sec.-ft.
* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 24 to Mar. 5.

## South Fork Payette River near Garden Valley, Idaho

Location.--Water-stage recorder, lat. 44°04', long. 115°56', in sec. 1, T. 8 N., R. 4 E., at Garden Valley ranger station, 300 feet upstream from Station Creek, 2.7 miles southeast of Garden Valley, and 5.9 miles upstream from Middle Fork. Altitude of gage, 3,090 feet (from river-profile map).

Drainage area.--779 square miles.

Records available.--May 1921 to September 1949.

Average discharge.--25 years (1924-49), 1,227 second-feet.

Extremes.--Maximum discharge during year, 7,560 second-feet May 17 (gage height, 6.40 feet); minimum recorded, 279 second-feet Nov. 30 (gage height, 1.46 feet), but was probably less during period of ice effect; minimum daily, 280 second-feet Dec. 26.
1921-49: Maximum discharge observed, 10,600 second-feet May 26, 1928 (gage height, 8.0 feet); minimum, 75 second-feet Dec. 15, 1935, Jan. 26, 1936 (gage height, 0.07 foot), from rating curve extended below 280 second-feet; minimum daily, 196 second-feet Dec. 10, 1944.

Remarks.--Records good except those for periods of ice effect, which are fair. Practically no diversions above station. Since Nov. 2, 1930, flow has been regulated by Deadwood Reservoir (see p. 174).

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 782 | 468 | 368 | 320 | 310 | 495 | 609 | 2,500 | 5,130 | 2,120 | 642 | 982 |
| 2 | 658 | 634 | 454 | 310 | 310 | 509 | 701 | 2,540 | 4,250 | 2,110 | 968 | 1,050 |
| 3 | 577 | 667 | 482 | 300 | 310 | 516 | 745 | 2,440 | 3,220 | 2,120 | 1,630 | 1,050 |
| 4 | 584 | 569 | 428 | 290 | 310 | 516 | 847 | 2,260 | 3,060 | 2,260 | 642 | 1,070 |
| 5 | 634 | 488 | 416 | 290 | 310 | 546 | 1,030 | 2,160 | 3,200 | 2,420 | 600 | 1,120 |
| 6 | 502 | 468 | 416 | 300 | 310 | 584 | 1,170 | 2,200 | 3,580 | 2,130 | 584 | 1,180 |
| 7 | 468 | 428 | 422 | 310 | 310 | 577 | 1,330 | 2,400 | 3,900 | 1,320 | 592 | 1,140 |
| 8 | 468 | 368 | 422 | 330 | 310 | 546 | 1,280 | 2,740 | 3,970 | 1,230 | 819 | 1,200 |
| 9 | 454 | 368 | 410 | 310 | 310 | 539 | 1,380 | 3,250 | 4,000 | 1,160 | 791 | 1,260 |
| 10 | 441 | 447 | 428 | 290 | 310 | 524 | 1,470 | 3,780 | 4,040 | 1,130 | 810 | 1,470 |
| 11 | 435 | 447 | 435 | 300 | 310 | 531 | 1,800 | 4,290 | 4,130 | 1,080 | 953 | 1,690 |
| 12 | 428 | 441 | 475 | 310 | 300 | 546 | 2,660 | 4,860 | 4,040 | 1,050 | 943 | 1,680 |
| 13 | 422 | 435 | 441 | 320 | 290 | 562 | 2,520 | 5,260 | 3,580 | 1,020 | 904 | 1,600 |
| 14 | 416 | 422 | 428 | 330 | 300 | 577 | 2,500 | 5,480 | 3,200 | 1,000 | 895 | 1,630 |
| 15 | 422 | 488 | 435 | 330 | 315 | 600 | 2,520 | 5,780 | 2,930 | 972 | 885 | 1,530 |
| 16 | 428 | 468 | 385 | 340 | 330 | 634 | 2,670 | 6,890 | 2,740 | 943 | 895 | 1,550 |
| 17 | 428 | 461 | 330 | 340 | 350 | 667 | 2,900 | 7,200 | 2,490 | 914 | 943 | 1,540 |
| 18 | 428 | 391 | 320 | 350 | 390 | 658 | 3,250 | 6,700 | 2,260 | 895 | 866 | 1,470 |
| 19 | 422 | 397 | 390 | 340 | 425 | 684 | 3,150 | 6,280 | 2,190 | 866 | 895 | 1,480 |
| 20 | 416 | 454 | 430 | 320 | 460 | 745 | 2,220 | 5,940 | 2,130 | 837 | 828 | 1,560 |
| 21 | 410 | 435 | 400 | 320 | 509 | 745 | 1,920 | 5,500 | 1,980 | 819 | 772 | 1,800 |
| 22 | 410 | 422 | 360 | 320 | 461 | 701 | 1,940 | 5,070 | 1,950 | 791 | 810 | 1,510 |
| 23 | 404 | 422 | 330 | 320 | *502 | 684 | 2,250 | 4,730 | 1,980 | 772 | 828 | 1,190 |
| 24 | 404 | *454 | 300 | 300 | 488 | 667 | 2,500 | 4,470 | 1,950 | 754 | 828 | 1,240 |
| 25 | 404 | 428 | 320 | *290 | 468 | 675 | 2,680 | 4,500 | 1,950 | 754 | 810 | 1,280 |
| 26 | 404 | 422 | 280 | 305 | 468 | 658 | 2,610 | 4,820 | 1,960 | 737 | 800 | 1,290 |
| 27 | 397 | 397 | 300 | 325 | 475 | 625 | 2,680 | 5,190 | 1,910 | 728 | 800 | 1,350 |
| 28 | 397 | 397 | 320 | 310 | 482 | 577 | 2,870 | 5,620 | 2,070 | 710 | 875 | 1,350 |
| 29 | 404 | 385 | 340 | 300 | - | 554 | 3,010 | 5,900 | 2,020 | 684 | 934 | 1,260 |
| 30 | 404 | 317 | 330 | 310 | - | 569 | 2,780 | 5,860 | 2,090 | 667 | 924 | 1,160 |
| 31 | 410 | - | 310 | 300 | - | 562 | - | 5,640 | - | 650 | 924 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 14,261 | 782 | 397 | 460 | 28,290 |
| November | 13,388 | 667 | 317 | 446 | 26,550 |
| December | 11,905 | 482 | 280 | 384 | 23,610 |
| Calendar year 1948 | 507,828 | 7,670 | 280 | 1,388 | 1,007,000 |
| January | 9,730 | 350 | 290 | 314 | 19,300 |
| February | 10,423 | 509 | 290 | 372 | 20,670 |
| March | 18,573 | 745 | 495 | 599 | 36,840 |
| April | 61,992 | 3,250 | 609 | 2,066 | 123,000 |
| May | 142,250 | 7,200 | 2,160 | 4,589 | 282,100 |
| June | 87,900 | 5,130 | 1,910 | 2,930 | 174,300 |
| July | 35,643 | 2,420 | 650 | 1,150 | 70,700 |
| August | 26,390 | 1,630 | 584 | 851 | 52,340 |
| September | 40,682 | 1,800 | 982 | 1,356 | 80,690 |
| Water year 1948-49 | 473,137 | 7,200 | 280 | 1,296 | 938,400 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice most of period Dec. 17 to Feb. 20 (no gage-height record Dec. 21 to Jan. 24, Jan. 26 to Feb. 20; discharge computed on basis of weather records and records for stations at Lowman and near Banks).

## South Fork Payette River near Banks, Idaho

Location.--Water-stage recorder, lat. 44°05'30", long. 116°06', in sec. 28, T. 9 N., R. 3 E., 1 mile upstream from North Fork Payette River and 1½ miles northeast of Banks. Altitude of gage, 2,805 feet (from river-profile map).

Drainage area.--1,200 square miles.

Records available.--August 1921 to September 1949.

Average discharge.--28 years, 1,639 second-feet.

Extremes.--Maximum discharge during year, 10,100 second-feet May 17 (gage height, 9.25 feet); minimum daily, 340 second-feet Dec. 26.
1921-49: Maximum discharge, 13,800 second-feet May 17, 1927 (gage height, 10.6 feet, from floodmarks); minimum, about 225 second-feet Dec. 15, 1935, Jan. 26, 1936, Dec. 26, 1939.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Small diversions above station for irrigation. Since Nov. 2, 1930, flow has been regulated by Deadwood Reservoir (see p. 174).

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 0.2 | 345 | 2.0 | 1,390 | 6.0 | 5,390 |
| .5 | 485 | 3.0 | 2,160 | 7.0 | 6,760 |
| 1.0 | 750 | 4.0 | 3,100 | 8.0 | 8,210 |
| 1.5 | 1,050 | 5.0 | 4,150 | 9.0 | 9,720 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 936 | 668 | 485 | 480 | | 800 | 1,090 | 4,000 | 6,690 | 2,400 | 780 | 1,040 |
| 2 | 816 | 924 | 678 | 450 | | 840 | 1,260 | 4,100 | 5,670 | 2,360 | 816 | 1,130 |
| 3 | 739 | 978 | 717 | 400 | | 894 | 1,360 | 3,960 | 4,330 | 2,360 | 1,920 | 1,130 |
| 4 | 739 | 852 | 646 | 350 | | 918 | 1,550 | 3,660 | 4,080 | 2,430 | 804 | 1,140 |
| 5 | 888 | 690 | 596 | 350 | | 978 | 1,880 | 3,460 | 4,210 | 2,600 | 728 | 1,200 |
| 6 | 712 | 662 | 602 | 400 | 450 | 1,110 | 2,160 | 3,520 | 4,590 | 2,550 | 717 | 1,250 |
| 7 | 656 | 618 | 624 | 450 | | 1,080 | 2,470 | 3,780 | 4,890 | 1,570 | 700 | 1,240 |
| 8 | 651 | 520 | 618 | 470 | | 1,040 | 2,380 | 4,260 | 4,930 | 1,460 | 894 | 1,230 |
| 9 | 634 | 510 | 607 | 430 | | 1,010 | 2,620 | 4,960 | 4,870 | 1,400 | 894 | 1,310 |
| 10 | 618 | 607 | 629 | 380 | | 978 | 2,700 | 5,790 | 4,850 | 1,350 | 888 | 1,460 |
| 11 | 602 | 651 | 629 | 400 | | 996 | 3,110 | 6,560 | 4,930 | 1,300 | 1,040 | 1,800 |
| 12 | 596 | 634 | 722 | 430 | 400 | 1,040 | 4,100 | 7,340 | 4,790 | 1,260 | 1,030 | 1,820 |
| 13 | 585 | 618 | 684 | 450 | 380 | 1,090 | 3,710 | 7,820 | 4,230 | 1,230 | 1,000 | 1,700 |
| 14 | 585 | 596 | 656 | 450 | 430 | 1,130 | 3,530 | 8,060 | 3,800 | 1,200 | 990 | 1,750 |
| 15 | 590 | 700 | 656 | 460 | 450 | 1,200 | 3,530 | 8,360 | 3,490 | 1,170 | 978 | 1,650 |
| 16 | 596 | 684 | 585 | 470 | 500 | 1,240 | 3,750 | 9,360 | 3,290 | 1,130 | 972 | 1,660 |
| 17 | 585 | 662 | 470 | 480 | 540 | 1,350 | 4,220 | 9,660 | 3,020 | 1,090 | 1,050 | 1,670 |
| 18 | 585 | 580 | 460 | 490 | 580 | 1,320 | 4,830 | 8,960 | 2,770 | 1,060 | 960 | 1,590 |
| 19 | 585 | 555 | 530 | 480 | 620 | 1,430 | 4,920 | 8,340 | 2,680 | 1,030 | 1,000 | 1,580 |
| 20 | 585 | 651 | 620 | 450 | 680 | 1,530 | 3,780 | 7,920 | 2,670 | 1,000 | 942 | 1,650 |
| 21 | 580 | 634 | 560 | 450 | 730 | 1,480 | 3,340 | 7,350 | 2,440 | 984 | 876 | 1,810 |
| 22 | 575 | 602 | 450 | 450 | *680 | 1,370 | 3,330 | 6,800 | 2,380 | 966 | 912 | 1,750 |
| 23 | 575 | 607 | 380 | 450 | 730 | 1,380 | 3,840 | 6,370 | 2,370 | 936 | 918 | 1,300 |
| 24 | 570 | *646 | 370 | 430 | 700 | *1,310 | 4,290 | 6,050 | 2,320 | 918 | 924 | 1,320 |
| 25 | 575 | 629 | 400 | 430 | 670 | 1,310 | 4,410 | 6,010 | 2,300 | 900 | 912 | 1,380 |
| 26 | 575 | 618 | 340 | *480 | 700 | 1,240 | 4,260 | 6,350 | 2,300 | 882 | 900 | 1,380 |
| 27 | 575 | 585 | 380 | 500 | 730 | 1,160 | 4,340 | 6,790 | 2,230 | 870 | 894 | 1,420 |
| 28 | 570 | 585 | 430 | 450 | 760 | 1,050 | 4,560 | 7,240 | 2,380 | 846 | 942 | 1,450 |
| 29 | 570 | 565 | 470 | 420 | - | 990 | 4,750 | 7,600 | 2,290 | 834 | 1,000 | 1,370 |
| 30 | 570 | 412 | 480 | 450 | - | 1,000 | 4,400 | 7,510 | 2,380 | 810 | 990 | 1,280 |
| 31 | 580 | - | 450 | 430 | - | 1,000 | - | 7,240 | - | 792 | 978 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 19,598 | 936 | 570 | 632 | 38,870 |
| November | 19,243 | 978 | 412 | 641 | 38,170 |
| December | 16,924 | 722 | 340 | 546 | 33,570 |
| Calendar year 1948 | 664,491 | 9,300 | 340 | 1,816 | 1,318,000 |
| January | 13,660 | 500 | 350 | 441 | 27,090 |
| February | 15,230 | 760 | 380 | 544 | 30,210 |
| March | 35,264 | 1,530 | 800 | 1,138 | 69,950 |
| April | 100,470 | 4,920 | 1,090 | 3,349 | 199,300 |
| May | 199,180 | 9,660 | 3,460 | 6,425 | 395,100 |
| June | 108,170 | 6,690 | 2,230 | 3,606 | 214,600 |
| July | 41,688 | 2,600 | 792 | 1,345 | 82,690 |
| August | 29,349 | 1,920 | 700 | 947 | 58,210 |
| September | 43,460 | 1,820 | 1,040 | 1,449 | 86,200 |
| Water year 1948-49 | 642,236 | 9,660 | 340 | 1,760 | 1,274,000 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice during much of period Dec. 20 to Mar. 2 (no gage-height record Dec. 22 to Jan. 25, Jan. 27 to Feb. 20, Feb. 26 to Mar. 2; discharge computed on basis of weather records and records for other stations in Payette River Basin).

## Payette River near Horseshoe Bend, Idaho

Location.--Water-stage recorder, lat. 43°56', long. 116°11'30", in SW¼SW¼ sec. 14, T. 7 N., R. 2 E., 100 feet east of tracks of Idaho Northern branch of Oregon Short Line Railroad and 1½ miles north of Horseshoe Bend. Datum of gage is 2,623.5 feet above mean sea level (levels by Corps of Engineers).

Drainage area.--2,230 square miles.

Records available.--November 1912 to September 1916, July 1919 to September 1949. February 1906 to November 1912 at site 2 miles upstream.

Average discharge.--38 years (1907-15, 1919-49), 3,028 second-feet.

Extremes.--Maximum discharge during year, 13,600 second-feet May 17 (gage height, 7.41 feet); minimum daily, 400 second-feet Dec. 26; minimum gage height, 0.51 foot Dec. 18.
1906-16, 1919-49: Maximum discharge, 22,100 second-feet June 9, 1921 (gage height, 9.57 feet); minimum, 350 second-feet Dec. 17, 1935 (gage height, 0.26 foot), from rating curve extended below 600 second-feet.

Remarks.--Records good except those for period of ice effect, which are fair. Flow regulated by Deadwood Reservoir (see p. 174), Payette Lake (see p. 177), Lake Fork Reservoir (see p. 184) and Cascade Reservoir (see p. 179). Several diversions from tributaries above station for irrigation.

Revisions.--W 533: Drainage area.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,310 | 784 | 562 | 800 | 1,550 | 1,510 | 2,240 | 6,700 | 10,200 | 2,880 | 3,280 | 2,910 |
| 2 | 1,140 | 1,220 | 768 | 850 | 1,480 | 1,550 | 2,410 | 7,340 | 8,770 | 3,120 | 3,240 | 2,950 |
| 3 | 1,120 | 1,410 | 845 | 700 | 1,400 | 1,610 | 2,600 | 7,200 | 7,410 | 3,040 | 4,230 | 2,900 |
| 4 | 1,140 | 1,150 | 792 | 650 | 1,400 | 1,510 | 2,840 | 6,740 | 7,290 | 2,970 | 3,300 | 2,810 |
| 5 | 1,310 | 854 | 720 | 650 | 1,400 | 1,720 | 3,340 | 5,420 | 7,360 | 3,130 | 3,190 | 2,830 |
| 6 | 1,140 | 768 | 699 | 700 | 1,400 | 1,910 | 3,870 | 5,820 | 7,720 | 3,180 | 3,140 | 2,870 |
| 7 | 1,490 | 736 | 720 | 900 | 1,400 | *1,860 | 4,430 | 6,580 | 8,050 | 2,810 | 3,120 | 2,830 |
| 8 | 1,550 | 615 | 706 | 1,000 | 1,400 | 1,800 | 4,550 | 7,110 | 7,640 | 3,020 | 3,280 | 2,700 |
| 9 | 1,410 | 568 | 685 | 1,100 | 1,400 | 1,730 | 5,230 | 7,450 | 7,520 | 3,260 | 3,300 | 2,740 |
| 10 | 1,300 | 678 | 720 | 1,200 | 1,400 | 1,580 | 5,460 | 8,300 | 8,030 | 3,470 | 3,280 | 2,770 |
| 11 | 1,170 | 744 | 720 | 1,200 | 1,400 | 1,770 | 5,860 | 9,400 | 8,030 | 3,500 | 3,380 | 3,040 |
| 12 | 1,040 | 736 | 836 | 1,050 | 1,400 | 1,870 | 7,180 | 10,500 | 7,840 | 3,490 | 3,380 | 3,040 |
| 13 | 935 | 706 | *800 | 1,000 | 1,400 | 1,900 | 6,560 | 11,000 | 6,670 | 3,420 | 3,330 | 2,900 |
| 14 | 890 | 685 | 760 | 900 | 1,400 | 1,930 | 6,140 | 11,400 | 5,630 | 3,390 | 3,310 | 2,910 |
| 15 | 706 | 792 | 752 | 1,110 | 1,450 | 2,000 | 6,160 | 11,600 | 5,170 | 3,470 | 3,280 | 2,740 |
| 16 | 685 | 836 | 692 | 1,200 | 1,500 | 2,060 | 6,360 | 12,700 | 4,380 | 3,470 | 3,250 | 2,690 |
| 17 | 671 | 784 | 544 | 1,160 | 1,600 | 2,210 | 6,790 | 13,100 | 3,700 | 3,620 | 3,300 | 2,670 |
| 18 | 657 | 699 | 490 | 1,150 | 1,900 | 2,210 | 7,450 | 12,100 | 3,420 | 3,570 | 3,200 | 2,550 |
| 19 | 692 | 629 | 601 | *1,130 | 1,800 | 2,260 | 8,170 | 11,500 | 3,330 | 3,500 | 3,220 | 2,490 |
| 20 | 713 | 736 | 827 | 1,100 | 1,700 | 2,260 | 7,110 | 11,500 | 3,410 | 3,500 | 3,160 | 2,530 |
| 21 | 678 | 760 | 744 | 1,200 | 1,800 | 2 240 | 6,600 | 10,800 | 3,080 | 3,500 | 3,060 | 2,690 |
| 22 | 678 | 699 | 615 | 1,400 | 2,000 | 2,360 | 6,560 | 10,400 | 2,970 | 3,500 | 3,060 | 2,780 |
| 23 | 685 | 706 | 550 | 1,400 | 1,800 | 2,560 | 7,200 | 9,900 | 2,950 | 3,490 | 3,040 | 2,630 |
| 24 | 685 | 728 | 450 | 1,450 | 1,600 | 2,500 | 7,550 | 9,430 | 2,900 | 3,460 | 3,040 | 2,600 |
| 25 | 685 | 728 | 500 | 1,450 | 1,550 | 2,600 | 7,620 | 9,250 | 2,870 | 3,420 | 3,010 | 2,570 |
| 26 | 692 | * 713 | 400 | 1,500 | 1,540 | 2,520 | 7,450 | 9,510 | 2,840 | 3,390 | 2,970 | 2,490 |
| 27 | 685 | 671 | 600 | 1,550 | 1,490 | 2,390 | 7,480 | 9,900 | 2,760 | 3,410 | 2,920 | 2,460 |
| 28 | 671 | 664 | 860 | 1,600 | 1,480 | 2,210 | 7,290 | 10,400 | 2,870 | 3,390 | 2,940 | 2,600 |
| 29 | 671 | 657 | 860 | 1,600 | - | 2,150 | 6,790 | 10,800 | 2,730 | 3,360 | 2,950 | 2,390 |
| 30 | 685 | 526 | 700 | 1,600 | - | 2,190 | 6,290 | 10,800 | 2,810 | 3,340 | 2,940 | 2,210 |
| 31 | 692 | - | 720 | 1,600 | - | 2,130 | - | 10,500 | - | 3,300 | 2,870 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 28,576 | 1,550 | 657 | 922 | 56,680 |
| November | 22,982 | 1,410 | 526 | 766 | 45,580 |
| December | 21,238 | 860 | 400 | 685 | 42,120 |
| Calendar year 1948 | 1,202,234 | 14,900 | 400 | 3,285 | 2,385,000 |
| January | 35,890 | 1,600 | 650 | 1,158 | 71,190 |
| February | 43,040 | 2,000 | 1,400 | 1,537 | 85,370 |
| March | 63,100 | 2,600 | 1,510 | 2,035 | 125,200 |
| April | 175,580 | 8,170 | 2,240 | 5,853 | 348,300 |
| May | 295,150 | 13,100 | 5,420 | 9,521 | 585,400 |
| June | 160,350 | 10,200 | 2,730 | 5,345 | 318,000 |
| July | 103,370 | 3,620 | 2,810 | 3,335 | 205,000 |
| August | 98,940 | 4,230 | 2,870 | 3,192 | 196,200 |
| September | 81,290 | 3,040 | 2,210 | 2,710 | 161,200 |
| Water year 1948-49 | 1,129,506 | 13,000 | 400 | 3,095 | 2,240,000 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 23 to Feb. 25 (no gage-height record Jan 5 to Feb. 20 except for staff-gage readings Jan. 9, 11, 16, 19, 30, Feb. 5, 13, 19; discharge computed on basis of 1 discharge measurement, staff-gage readings, weather records and records for Payette River near Emmett and North and South Forke Payette River near Banks).

## Payette River near Emmett, Idaho

Location.--Water-stage recorder, lat. 43°56', long. 116°27', in sec. 22, T. 7 N., R. 1 W., three-eighths of a mile downstream from Black Canyon Dam and 5 miles northeast of Emmett.
Records available.--June 1925 to September 1949.
Average discharge.--24 years, 2,882 second-feet.
Extremes.--Maximum discharge during year, 14,000 second-feet May 17 (gage height, 9.65 feet); minimum, 22 second-feet Dec. 20 (gage height, 0.79 foot); minimum daily, 341 second-feet Dec. 27.
1925-49: Maximum discharge, 22,800 second-feet May 1, 1938 (gage height, 12.90 feet); minimum daily, 3 second-feet Jan. 10-14, Feb. 2, 22-25, 1938, when gates in dam were closed.
Revisions.--The minimum discharge for the water year 1946 has been revised to 360 second-feet Nov. 10, 11, 1945, superseding figure published in Water-Supply Paper 1063, and that for water year 1948 has been revised to 318 second-feet Dec. 17, 18, 1947, superseding figure publised in Water-Supply Paper 1123.
Remarks.--Records good except those for periods of no gage-height record, which are fair. Diversions above station for irrigation. Flow regulated by diversion at and operation of gates in Black Canyon Dam and by Cascade Reservoir (see p. 179), Deadwood Reservoir (see p. 174), Payette Lake (see p. 177), and Lake Fork Reservoir (see p. 184).
Cooperation.--Gage-height record collected in cooperation with Bureau of Reclamation.

Rating table, water year 1948-49 (gage height, in feet, and discharge, in second-feet)

| | | | |
|---|---|---|---|
| 1.9 | 360 | 5.0 | 4,170 |
| 2.1 | 495 | 6.0 | 5,880 |
| 2.4 | 760 | 7.0 | 7,780 |
| 3.0 | 1,420 | 8.0 | 9,860 |
| 4.0 | 2,690 | 9.5 | 13,600 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 850 | 760 | 670 | 762 | 1,910 | 2,340 | 2,330 | 5,880 | 10,200 | 1,620 | 2,070 | 1,840 |
| 2 | 840 | 932 | 790 | 834 | 1,820 | 2,370 | 2,540 | 6,730 | 8,660 | 1,940 | 2,000 | 1,940 |
| 3 | 665 | 1,200 | 1,120 | 876 | 1,700 | 2,610 | 2,930 | 6,720 | 6,980 | 1,790 | 2,750 | 1,880 |
| 4 | 665 | 1,450 | 1,120 | a760 | 1,710 | 2,620 | 3,250 | 6,130 | 6,940 | 1,700 | 2,190 | 1,840 |
| 5 | 820 | 1,210 | 993 | a660 | 1,590 | 2,770 | 3,740 | 4,900 | 6,940 | 1,860 | 1,890 | 1,790 |
| 6 | 780 | 771 | 945 | 657 | 1,610 | 2,790 | 4,310 | 4,950 | 7,280 | 1,900 | 1,830 | 1,840 |
| 7 | 1,020 | 773 | 1,010 | 727 | 1,500 | 2,890 | 5,080 | 5,880 | 7,540 | 1,710 | 1,760 | 1,850 |
| 8 | 1,240 | 793 | 1,010 | 1,190 | 1,560 | 2,720 | 5,140 | 6,320 | 7,380 | 1,640 | 1,910 | 1,740 |
| 9 | 1,170 | 696 | 1,070 | 1,270 | 1,540 | 2,470 | 5,790 | 7,000 | 6,560 | 1,800 | 1,980 | 1,740 |
| 10 | 1,020 | 703 | 1,040 | 1,310 | 1,530 | 2,190 | 5,990 | 7,740 | 7,420 | 2,110 | 1,910 | 1,730 |
| 11 | 915 | 566 | 1,080 | 1,410 | 1,720 | 1,650 | 6,260 | 9,000 | 7,320 | 2,170 | 2,030 | 2,030 |
| 12 | 840 | 830 | 1,160 | a1,250 | 1,760 | 1,680 | 7,540 | 10,300 | 7,170 | 2,120 | 2,120 | 2,190 |
| 13 | 780 | 787 | 1,330 | a1,200 | 1,620 | 1,720 | 6,980 | 10,900 | 6,040 | 2,000 | 2,030 | 1,940 |
| 14 | 703 | 767 | 1,200 | a1,100 | 1,610 | 1,310 | 6,370 | 11,500 | 4,970 | 2,040 | 2,070 | 2,000 |
| 15 | 760 | 913 | 1,120 | a1,100 | 1,620 | 1,600 | 6,190 | 11,700 | 4,330 | 2,060 | 2,040 | 1,900 |
| 16 | 732 | 890 | 993 | a1,350 | 1,850 | 2,970 | 6,350 | 12,600 | 3,670 | 2,030 | 1,980 | 1,800 |
| 17 | 750 | 834 | 722 | a1,340 | 2,080 | 3,150 | 6,750 | 13,500 | 2,830 | 2,220 | 2,100 | 1,790 |
| 18 | 757 | 784 | 735 | a1,330 | 2,580 | 3,030 | 7,460 | 11,900 | 2,500 | 2,170 | 2,000 | 1,710 |
| 19 | 800 | 756 | 529 | a1,320 | 2,910 | 3,340 | 8,160 | 11,100 | 2,330 | 2,080 | 1,950 | 1,650 |
| 20 | 863 | 714 | 889 | a1,300 | 2,620 | 3,180 | 7,060 | 11,200 | 2,480 | 2,150 | 1,950 | 1,660 |
| 21 | 791 | 711 | 1,120 | a1,350 | 2,220 | 3,100 | 6,320 | 10,500 | 2,190 | 2,220 | 1,890 | 1,700 |
| 22 | 702 | 954 | 966 | a1,650 | 2,280 | 3,070 | 6,040 | 10,000 | 1,940 | 2,240 | 1,910 | 1,940 |
| 23 | 647 | 1,070 | 754 | a1,600 | 3,000 | 3,280 | 6,790 | 9,550 | 1,900 | 2,220 | 1,890 | 1,940 |
| 24 | 652 | 910 | 568 | a1,700 | 2,760 | 3,030 | 7,150 | 9,150 | 1,790 | 2,250 | 1,930 | 1,770 |
| 25 | 838 | 1,130 | 426 | a1,650 | 2,420 | 3,120 | 7,230 | 8,920 | 1,780 | 2,170 | 1,880 | 1,830 |
| 26 | 666 | 1,150 | 554 | a1,700 | 2,320 | 3,030 | 7,060 | 9,080 | 1,680 | 2,170 | 1,860 | 1,710 |
| 27 | 664 | 1,040 | 341 | 1,710 | 2,330 | 2,760 | 6,870 | 9,860 | 1,650 | 2,150 | 1,880 | 1,640 |
| 28 | 740 | 1,170 | 793 | 1,800 | 2,280 | 2,480 | 6,620 | 10,200 | 1,660 | 2,170 | 1,860 | 1,930 |
| 29 | 740 | 1,130 | 898 | 1,930 | - | 2,380 | 6,390 | 10,600 | 1,660 | 2,160 | 1,880 | 1,840 |
| 30 | 583 | 853 | 892 | 1,890 | - | 2,420 | 5,900 | 10,800 | 1,620 | 2,170 | 1,890 | 1,780 |
| 31 | 649 | - | 749 | 1,960 | - | 2,340 | - | 10,100 | - | 2,070 | 1,850 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 24,642 | 1,240 | 583 | 795 | 48,880 |
| November | 27,247 | 1,450 | 568 | 908 | 54,040 |
| December | 27,587 | 1,330 | 341 | 890 | 54,720 |
| Calendar year 1948 | 1,154,561 | 15,100 | 341 | 3,155 | 2,290,000 |
| January | 40,686 | 1,960 | 657 | 1,312 | 80,700 |
| February | 56,450 | 3,000 | 1,500 | 2,016 | 112,000 |
| March | 80,410 | 3,340 | 1,310 | 2,594 | 159,500 |
| April | 176,590 | 8,160 | 2,330 | 5,886 | 350,300 |
| May | 284,510 | 13,500 | 4,900 | 9,178 | 564,300 |
| June | 137,410 | 10,200 | 1,620 | 4,580 | 272,500 |
| July | 63,100 | 2,250 | 1,620 | 2,035 | 125,200 |
| August | 61,280 | 2,750 | 1,760 | 1,977 | 121,500 |
| September | 54,940 | 2,190 | 1,640 | 1,831 | 109,000 |
| Water year 1948-49 | 1,034,852 | 13,500 | 341 | 2,835 | 2,053,000 |

a No gage-height record except occasional staff-gage reading; discharge computed on basis of weather records and records for stations near Horseshoe Bend and near Payette.

## Payette River near Payette, Idaho

Location.--Water-stage recorder, lat. 44°02'30", long. 116°55'30", in SW¼ sec. 10, T. 8 N., R. 5 W., at highway bridge, 1¾ miles south of Payette.

Records available.--August 1935 to September 1949. January 1895 to July 1897 (incomplete) at site 2 miles downstream.

Average discharge.--14 years (1935-49), 3,018 second-feet.

Extremes.--Maximum discharge during year, 13,200 second-feet May 17; maximum gage height, 11.18 feet Feb. 21 (ice jam); minimum discharge, 304 second-feet Dec. 27 (gage height, 4.14 feet); minimum daily, 500 second-feet Dec. 28.
1895-97, 1935-49: Maximum discharge observed, 28,300 second-feet June 4, 1896 (gage height, 9.30 feet, site and datum then in use); minimum, 180 second-feet Oct. 13, 20, 1935 (gage height, 2.04 feet); minimum daily, 220 second-feet Oct. 5, 1935.

Remarks.--Records excellent except those for Nov. 1 to Dec. 15, which are good, and those for periods of ice effect or no gage-height record, which are fair. Many diversions above station for irrigation. Flow regulated by Black Canyon Dam and reservoirs on tributary streams.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 12 to Dec. 5)

| Oct. 1 to Dec. 5 | | Dec. 6 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|
| 4.5 | 800 | 4.3 | 480 | 5.4 | 2,030 | 8.0 | 7,090 |
| 4.7 | 1,060 | 4.4 | 600 | 6.0 | 3,020 | 9.0 | 9,800 |
| 5.0 | 1,520 | 4.8 | 1,140 | 7.0 | 4,900 | 9.9 | 12,800 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,280 | 962 | 962 | 900 | 2,150 | 2,800 | 2,600 | 5,250 | 10,300 | 1,100 | 1,660 | 1,560 |
| 2 | 1,000 | 1,000 | 884 | 950 | 2,100 | 2,830 | 2,650 | 6,170 | 8,920 | 1,110 | 1,680 | 1,560 |
| 3 | 896 | 1,300 | 1,250 | 1,000 | 2,000 | 2,950 | 2,800 | 6,550 | 7,310 | 1,420 | 1,780 | 1,600 |
| 4 | 824 | 1,500 | 1,280 | 1,050 | 1,900 | 3,220 | 3,200 | 6,150 | 6,780 | 1,320 | 2,210 | 1,550 |
| 5 | 860 | 1,500 | 1,260 | 900 | 1,900 | 3,150 | 3,600 | 5,500 | 6,620 | 1,250 | 1,560 | 1,520 |
| 6 | 1,000 | 1,120 | 1,180 | 850 | 1,750 | 3,090 | 4,310 | 4,200 | 6,780 | 1,370 | 1,490 | 1,540 |
| 7 | 948 | 976 | 1,210 | 850 | 1,800 | 3,040 | 4,880 | 5,330 | 6,990 | 1,300 | 1,420 | 1,560 |
| 8 | 1,170 | 990 | 1,180 | 950 | 1,700 | 3,110 | 5,160 | 5,860 | 6,990 | 1,130 | 1,460 | 1,490 |
| 9 | 1,300 | 948 | 1,170 | 1,400 | 1,750 | 2,850 | 5,600 | 6,320 | 6,040 | 1,180 | 1,580 | 1,440 |
| 10 | 1,160 | 896 | 1,200 | 1,500 | 1,700 | 2,710 | 5,880 | 6,710 | 6,990 | 1,360 | 1,580 | 1,490 |
| 11 | 1,050 | 934 | 1,250 | 1,500 | 1,700 | *2,030 | 6,100 | 7,870 | 6,760 | 1,620 | 1,600 | 1,540 |
| 12 | 934 | 812 | 1,360 | 1,600 | 2,000 | 2,020 | 6,830 | 9,090 | 6,570 | 1,600 | 1,730 | 1,820 |
| 13 | 872 | 1,020 | 1,730 | 1,500 | 2,050 | 2,090 | 7,160 | 9,770 | 5,820 | 1,550 | 1,700 | 1,850 |
| 14 | 824 | 920 | 1,380 | 1,450 | 1,900 | 2,050 | 6,320 | 10,400 | 4,700 | 1,480 | 1,660 | 1,760 |
| 15 | 800 | 920 | 1,280 | 1,350 | 1,900 | 1,370 | 5,910 | 10,900 | 3,870 | 1,520 | 1,660 | 1,780 |
| 16 | 800 | 1,130 | 1,220 | 1,350 | 2,100 | 2,760 | 5,910 | 11,500 | 3,340 | 1,550 | 1,640 | 1,680 |
| 17 | 824 | 976 | *1,110 | 1,550 | 2,300 | 3,360 | 5,970 | 12,800 | 2,510 | 1,670 | 1,620 | 1,640 |
| 18 | 824 | 1,030 | 900 | 1,550 | 2,600 | 3,330 | 6,760 | 11,800 | 2,050 | 1,760 | 1,640 | 1,660 |
| 19 | 836 | 962 | 920 | 1,550 | 3,000 | 3,540 | 7,280 | 11,000 | 1,910 | 1,740 | 1,550 | 1,540 |
| 20 | 948 | 908 | 700 | 1 550 | 3,500 | 3,490 | 6,900 | 11,100 | 1,960 | 1,680 | 1,620 | 1,500 |
| 21 | 1,100 | 908 | 1,200 | 1,550 | 3,000 | 3,380 | 6,130 | 10,700 | 1,910 | 1,780 | 1,500 | 1,550 |
| 22 | 1,020 | 990 | 1,250 | 1,600 | 2,600 | 3,250 | 5,620 | 9,920 | 1,610 | 1,790 | 1,540 | 1,680 |
| 23 | 934 | 1,230 | 1,130 | 1,850 | 2,700 | 3,430 | 5,990 | 9,380 | 1,540 | 1,820 | 1,540 | 1,780 |
| 24 | 872 | 1,070 | 900 | 1,800 | 3,500 | 3,430 | 6,410 | 8,780 | 1,400 | 1,790 | 1,550 | 1,660 |
| 25 | 884 | 1,130 | 700 | 1,900 | 3,180 | 3,380 | 6,570 | 8,420 | 1,310 | 1,700 | 1,540 | 1,610 |
| 26 | 948 | 1,250 | 600 | *1,850 | 2,970 | 3,350 | 6,530 | 8,290 | 1,220 | 1,660 | 1,540 | 1,610 |
| 27 | 848 | 1,200 | 700 | 2,000 | 2,880 | 3,200 | 6,300 | 8,700 | 1,220 | 1,720 | 1,520 | 1,520 |
| 28 | 848 | 1,090 | 500 | 2,000 | 2,830 | 3,000 | 6,020 | 9,060 | 1,130 | 1,760 | 1,550 | 1,560 |
| 29 | 908 | 1,220 | 1,000 | 2,100 | - | 2,700 | 6,100 | 9,620 | 1,150 | 1,760 | 1,550 | 1,800 |
| 30 | 908 | 1,120 | 1,050 | 2,100 | - | 2,600 | 5,580 | 9,980 | 1,100 | 1,730 | 1,580 | 1,730 |
| 31 | 812 | - | 1,050 | 2,100 | - | 2,650 | - | 9,860 | - | 1,680 | 1,580 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 29,232 | 1,300 | 800 | 943 | 57,980 |
| November | 32,012 | 1,500 | 812 | 1,067 | 63,490 |
| December | 33,506 | 1,730 | 500 | 1,081 | 66,460 |
| Calendar year 1948 | 1,141,068 | 15,200 | 500 | 3,118 | 2,263,000 |
| January | 46,150 | 2,100 | 850 | 1,489 | 91,540 |
| February | 65,460 | 3,500 | 1,700 | 2,338 | 129,800 |
| March | 90,160 | 3,540 | 1,370 | 2,908 | 178,800 |
| April | 167,070 | 7,280 | 2,600 | 5,569 | 331,400 |
| May | 266,980 | 12,800 | 4,200 | 8,612 | 529,500 |
| June | 126,800 | 10,300 | 1,100 | 4,227 | 251,500 |
| July | 47,900 | 1,820 | 1,100 | 1,545 | 95,010 |
| August | 49,830 | 2,210 | 1,420 | 1,607 | 98,840 |
| September | 48,580 | 1,850 | 1,440 | 1,619 | 96,360 |
| Water year 1948-49 | 1,003,680 | 12,800 | 500 | 2,750 | 1,991,000 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 18-20, Dec. 24 to Feb. 24; no gage-height record Jan. 30 to Feb. 9, Feb. 13-15, Mar. 26 to Apr. 5; discharge computed on basis of weather records and records for station near Emmett.

## Clear Creek at Lowman, Idaho

Location.--Staff gage, lat. 44°05', long. 115°37', in SW¼SE¼ sec. 27, T. 9 N., R. 7 E., at highway bridge at Lowman, 550 feet upstream from mouth. Altitude of gage, 3,820 feet (from river-profile map).

Drainage area.--59.6 square miles.

Records available.--May 1941 to January 1949 (discontinued).

Extremes.--Maximum daily discharge during period, 56 second-feet Nov. 3; maximum gage height observed, 2.45 feet Dec. 20 (ice jam); minimum discharge observed, 18 second-feet Nov. 18.

1941-49: Maximum discharge observed, 754 second-feet May 31, 1943; maximum gage height observed, 6.10 feet Jan. 9, 10, 1942 (ice jam), site and datum then in use; minimum daily discharge, 16 second-feet Dec. 10, 1944.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. Gage read once daily. Feeder canal for small power plant diverts about 1 mile above gage; water is returned to creek above station except that used for irrigation of small pasture adjacent to Lowman.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 36 | a19 | 32 | | | | | | | | |
| 2 | 36 | 37 | b33 | 31 | | | | | | | | |
| 3 | a36 | a56 | b41 | a30 | | | | | | | | |
| 4 | 37 | a40 | b38 | b28 | | | | | | | | |
| 5 | a40 | a35 | b36 | b28 | | | | | | | | |
| 6 | 45 | a35 | a36 | b32 | | | | | | | | |
| 7 | 41 | a25 | a36 | a32 | | | | | | | | |
| 8 | 37 | a19 | b36 | 29 | | | | | | | | |
| 9 | 36 | a25 | a36 | 28 | | | | | | | | |
| 10 | 36 | a41 | a36 | a29 | | | | | | | | |
| 11 | a36 | 39 | b40 | 29 | | | | | | | | |
| 12 | 36 | 37 | a43 | a29 | | | | | | | | |
| 13 | a36 | 37 | b41 | 29 | | | | | | | | |
| 14 | 36 | 39 | b38 | a29 | | | | | | | | |
| 15 | 34 | a41 | b36 | 29 | | | | | | | | |
| 16 | 34 | 37 | b30 | 29 | | | | | | | | |
| 17 | 34 | 34 | a28 | a30 | | | | | | | | |
| 18 | 34 | 18 | b28 | a30 | | | | | | | | |
| 19 | 34 | 36 | a33 | a29 | | | | | | | | |
| 20 | 34 | 41 | b36 | 28 | | | | | | | | |
| 21 | a34 | 36 | a29 | 29 | | | | | | | | |
| 22 | 34 | 36 | b24 | 29 | | | | | | | | |
| 23 | 34 | *32 | a24 | 28 | | | | | | | | |
| 24 | a34 | 34 | b27 | *b28 | | | | | | | | |
| 25 | a33 | a32 | a28 | a26 | | | | | | | | |
| 26 | a33 | 31 | a26 | 26 | | | | | | | | |
| 27 | 32 | 31 | a28 | 28 | | | | | | | | |
| 28 | 32 | 29 | a30 | a28 | | | | | | | | |
| 29 | 32 | b25 | a32 | 28 | | | | | | | | |
| 30 | 32 | b22 | 34 | 28 | | | | | | | | |
| 31 | 34 | - | a33 | 26 | | | | | | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 1,092 | 45 | 32 | 35.2 | 0.591 | 0.68 | 2,170 |
| November | 1,016 | 56 | 18 | 33.9 | .569 | .63 | 2,020 |
| December | 1,015 | 43 | 19 | 32.7 | .549 | .63 | 2,010 |
| Calendar year 1948 | 35,261 | 692 | 18 | 96.3 | 1.62 | 21.99 | 69,950 |
| January | 894 | 32 | 26 | 28.8 | .483 | .56 | 1,770 |
| February | - | - | - | - | - | - | - |
| March | - | - | - | - | - | - | - |
| April | - | - | - | - | - | - | - |
| May | - | - | - | - | - | - | - |
| June | - | - | - | - | - | - | - |
| July | - | - | - | - | - | - | - |
| August | - | - | - | - | - | - | - |
| September | - | - | - | - | - | - | - |
| Water year | - | - | - | - | - | - | - |

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for South Fork South Fork River at Lowman and Deadwood River near Lowman.

b Stage-discharge relation affected by ice.

## Deadwood Reservoir near Lowman, Idaho

Location.--Staff gage, lat. 44°18', long. 115°39', in SE¼ sec. 8, T. 11 N., R. 7 E., at dam on Deadwood River, 15 miles north of Lowman. Datum of gage is at mean sea level (levels by Bureau of Reclamation).

Drainage area.--108 square miles.

Records available.--October 1935 to September 1949.

Extremes.--Maximum elevation observed during year, 5,334.6 feet June 26, 27; minimum observed, 5,298.6 feet Oct. 4.
1935-49: Maximum elevation observed, 5,337.1 feet June 1, 2, 1943; minimum observed, 5,260.1 feet Oct. 1, 1935.

Remarks.--Reservoir is formed by concrete arch dam completed in 1930; storage began Nov. 2, 1930. Reported capacity, 160,400 acre-feet between elevations 5,230.0 feet (minimum operating level because of fish protection, 27 feet above still of emergency gate in front of needle valve) and 5,334.0 feet (crest of spillway). Storage below elevation 5,230.0 feet, about 1,500 acre-feet. Water is used to augment flow of Payette River at Black Canyon power plant near Emmett. During late fall of 1936, Bureau of Reclamation cut a transmountain canal to divert a small flow of water from a tributary of Johnson Creek in Salmon River Basin to Deadwood River Basin for supplemental storage in Deadwood Reservoir. Discharge of 3.12 second-feet measured in this canal July 20. Reservoir gage read once daily about 8 a.m.

Cooperation.--Gage-readings furnished by Bureau of Reclamation.

Elevation, in feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 298.9 | 300.35 | 302.75 | 304.2 | 305.0 | 306.85 | 309.95 | 309.9 | 325.0 | 333.75 | 333.25 | 327.8 |
| 2 | 298.8 | 300.45 | 302.8 | 304.25 | 305.05 | 306.95 | 310.05 | 310.5 | 325.0 | 333.4 | 333.3 | 327.45 |
| 3 | 298.7 | 300.6 | 302.95 | 304.25 | 305.05 | 307.05 | 310.15 | 311.1 | 325.6 | 333.1 | 332.55 | 327.1 |
| 4 | 298.6 | 300.8 | 303.0 | 304.3 | 305.1 | 307.15 | 310.25 | 311.6 | 326.1 | 332.65 | 332.55 | 326.7 |
| 5 | 298.7 | 300.9 | 303.05 | 304.3 | 305.1 | 307.25 | 310.35 | 312.0 | 326.7 | 332.1 | 332.57 | 326.3 |
| 6 | 298.85 | 300.95 | 303.1 | 304.35 | 305.15 | 307.35 | 310.45 | 312.5 | 327.3 | 331.5 | 332.6 | 325.8 |
| 7 | 298.95 | 301.0 | 303.2 | 304.35 | 305.2 | 307.45 | 310.55 | 313.0 | 328.0 | 331.6 | 332.65 | 325.3 |
| 8 | 299.0 | 301.05 | 303.25 | 304.4 | 305.25 | 307.55 | 310.65 | 313.45 | 328.6 | 331.7 | 332.55 | 324.9 |
| 9 | 299.1 | 301.1 | 303.3 | 304.4 | 305.3 | 307.65 | 310.75 | 314.0 | 329.2 | 331.8 | 332.45 | 324.4 |
| 10 | 299.2 | 301.15 | 303.35 | 304.45 | 305.35 | 307.75 | 310.85 | 314.75 | 329.8 | 331.9 | 332.35 | 323.7 |
| 11 | 299.25 | 301.2 | 303.4 | 304.45 | 305.4 | 307.85 | 311.0 | 315.65 | 330.35 | 332.0 | 332.2 | 322.9 |
| 12 | 299.3 | 301.25 | 303.5 | 304.5 | 305.45 | 307.95 | 310.6 | 316.7 | 330.9 | 332.1 | 332.0 | 322.0 |
| 13 | 299.35 | 301.3 | 303.6 | 304.5 | 305.45 | 308.05 | 310.15 | 317.75 | 331.35 | 332.2 | 331.8 | 321.2 |
| 14 | 299.4 | 301.35 | 303.65 | 304.55 | 305.5 | 308.15 | 309.45 | 318.9 | 331.7 | 332.25 | 331.6 | 320.3 |
| 15 | 299.45 | 301.45 | 303.7 | 304.55 | 305.55 | 308.25 | 308.8 | 320.0 | 332.1 | 332.35 | 331.45 | 319.5 |
| 16 | 299.5 | 301.6 | 303.75 | 304.6 | 305.6 | 308.35 | 308.05 | 321.4 | 332.45 | 332.45 | 331.25 | 318.7 |
| 17 | 299.55 | 301.65 | 303.8 | 304.6 | 305.65 | 308.45 | 307.35 | 321.7 | 332.7 | 332.55 | 331.0 | 317.9 |
| 18 | 299.6 | 301.7 | 303.8 | 304.65 | 305.7 | 308.55 | 306.55 | 321.9 | 333.0 | 332.55 | 330.8 | 317.1 |
| 19 | 299.6 | 301.75 | 303.85 | 304.65 | 305.75 | 308.65 | 305.8 | 322.0 | 333.25 | 332.6 | 330.6 | 316.3 |
| 20 | 299.65 | 301.85 | 303.85 | 304.7 | 305.85 | 308.75 | 305.9 | 322.1 | 333.55 | 332.65 | 330.45 | 315.5 |
| 21 | 299.7 | 301.9 | 303.9 | 304.7 | 305.9 | 308.85 | 306.1 | 322.1 | 333.8 | 332.7 | 330.3 | 314.6 |
| 22 | 299.75 | 302.0 | 303.9 | 304.75 | 306.0 | 308.95 | 306.5 | 322.2 | 334.0 | 332.75 | 330.1 | 313.5 |
| 23 | 299.8 | 302.05 | 303.95 | 304.75 | 306.1 | 309.05 | 306.8 | 322.4 | 334.2 | 332.8 | 329.9 | 312.9 |
| 24 | 299.85 | 302.2 | 303.95 | 304.8 | 306.25 | 309.15 | 307.0 | 322.55 | 334.35 | 332.85 | 329.7 | 312.3 |
| 25 | 299.9 | 302.25 | 304.0 | 304.8 | 306.4 | 309.25 | 307.3 | 322.8 | 334.5 | 332.9 | 329.55 | 311.5 |
| 26 | 299.95 | 302.3 | 304.0 | 304.85 | 306.55 | 309.35 | 307.7 | 323.1 | 334.6 | 332.95 | 329.35 | 310.8 |
| 27 | 300.0 | 302.4 | 304.05 | 304.9 | 306.65 | 309.45 | 308.1 | 323.45 | 334.6 | 333.0 | 329.2 | 310.1 |
| 28 | 300.1 | 302.5 | 304.05 | 304.9 | 306.75 | 309.55 | 308.55 | 323.9 | 334.5 | 333.05 | 328.95 | 309.3 |
| 29 | 300.2 | 302.6 | 304.1 | 304.95 | - | 309.65 | 309.0 | 324.3 | 334.35 | 333.1 | 328.7 | 308.7 |
| 30 | 300.25 | 302.7 | 304.1 | 304.95 | - | 309.75 | 309.4 | 324.6 | 334.1 | 333.15 | 328.45 | 308.1 |
| 31 | 300.3 | - | 304.15 | 305.0 | - | 309.85 | - | 324.8 | - | 333.2 | 328.2 | - |

Note.--Add 5,000 feet to obtain elevation above mean sea level.

## Deadwood River below Deadwood Reservoir, near Lowman, Idaho

Location.--Water-stage recorder, lat. 44°18', long. 115°39', in NE¼ sec. 17, T. 11 N., R. 7 E., 300 feet upstream from Wilson Creek, a quarter of a mile downstream from Deadwood Dam at lower end of Deadwood Basin, 15 miles north of Lowman, and 18 miles upstream from mouth. Altitude of gage, 5,180 feet (from river-profile map).

Drainage area.--108 square miles.

Records available.--October 1926 to September 1949.

Average discharge.--22 years (1927-49), 199 second-feet.

Extremes.--Maximum discharge during year, 2,090 second-feet Aug. 2 (gage height, 5.65 feet); minimum not determined, occurred during period of no gage-height record when gates in dam were closed.
1926-49: Maximum discharge, 2,150 second-feet May 26, 1928 (gage height, 5.67 feet, site and datum then in use); small amount of leakage from reservoir for long periods during 1930-49 when gates in dam were closed.

Remarks.--Records good except those below 10 second-feet, which are poor. Flow regulated since Nov. 2, 1930, by Deadwood Reservoir (see preceding page). During late fall of 1936, Bureau of Reclamation cut a transmountain canal to divert a small flow from a tributary of Johnson Creek in Salmon River Basin to Deadwood River Basin for supplemental storage in Deadwood Reservoir. Discharge of 3.12 second-feet measured in this canal July 20.

Revisions (water years).--W 1123: 1943.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 252 | | | a5 | | | a6 | | 1,000 | 700 | h7 | 551 |
| 2 | 173 | | a4 | h5 | a6 | a6 | h6 | a6 | 381 | 704 | 855 | 594 |
| 3 | 140 | a5 | | | | | a6 | | a6 | 787 | 427 | 598 |
| 4 | 53 | | h4 | | | | h6 | | h6 | 955 | a6 | 635 |
| 5 | h4 | | | a5 | h6 | h6 | a6 | | | 1,060 | a6 | 695 |
| 6 | a4 | h5 | a4 | | | | a6 | a7 | a6 | 417 | h6 | 713 |
| 7 | a5 | | | | | | | | | a6 | 162 | 731 |
| 8 | a5 | | | h5 | | | a7 | h7 | | a6 | 200 | 790 |
| 9 | h6 | | a5 | | a6 | a6 | | | a7 | h6 | 200 | 915 |
| 10 | | a5 | | | | | h7 | | | | 272 | 1,140 |
| 11 | a6 | | h5 | a5 | | | 363 | a7 | h7 | | 323 | 1,220 |
| 12 | | | | | h6 | h6 | 708 | | a7 | | 326 | 1,160 |
| 13 | | h5 | | | | | 900 | | a7 | a6 | 326 | 1,170 |
| 14 | a5 | | | | | | 1,040 | h7 | a8 | | 326 | 1,150 |
| 15 | | | a5 | h5 | | | 1,050 | a7 | a8 | | 326 | 1,110 |
| 16 | h5 | a5 | | | a6 | a6 | 1,060 | 753 | a9 | | 383 | 1,110 |
| 17 | | | | | | | 1,070 | 1,240 | a9 | h6 | 357 | 1,070 |
| 18 | | | h5 | | | | 1,070 | 1,240 | h9 | a6 | 348 | 1,020 |
| 19 | | | | a5 | h6 | h6 | 508 | 1,200 | | a6 | 337 | 1,080 |
| 20 | a5 | h5 | | | | | 44 | 1,160 | a9 | h6 | 288 | 1,140 |
| 21 | | | | | a6 | | | 1,040 | | a6 | 298 | 1,200 |
| 22 | | | | h5 | | a6 | a6 | 890 | 23 | a6 | 312 | 905 |
| 23 | h5 | | | | | | | 786 | 54 | h6 | 315 | 786 |
| 24 | | a5 | | a5 | | | h6 | 704 | 99 | | 317 | 847 |
| 25 | | | a5 | | | | | 686 | 134 | | 320 | 871 |
| 26 | a5 | | | | h6 | h6 | a6 | 691 | 158 | a6 | 323 | 900 |
| 27 | | h5 | | a6 | a6 | | | 691 | 343 | | 354 | 960 |
| 28 | | | | | a6 | | | 758 | 444 | | 413 | 852 |
| 29 | | a5 | | h6 | - | a6 | | 925 | 511 | | 432 | 726 |
| 30 | h5 | | | a6 | - | | h6 | 1,000 | 639 | h6 | 432 | 673 |
| 31 | a5 | - | | a6 | - | | - | 1,000 | - | a6 | 473 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 756 | 252 | - | 24.4 | 1,500 |
| November | 150 | - | - | 5.0 | 298 |
| December | 148 | - | - | 4.8 | 294 |
| Calendar year 1948 | 77,454 | 1,570 | - | 212 | 153,600 |
| January | 161 | - | - | 5.2 | 319 |
| February | 168 | - | - | 6.0 | 333 |
| March | 186 | - | - | 6.0 | 369 |
| April | 7,937 | 1,070 | - | 265 | 15,740 |
| May | 14,865 | 1,240 | - | 480 | 29,480 |
| June | 3,928 | 1,000 | - | 131 | 7,790 |
| July | 4,753 | 1,060 | - | 153 | 9,430 |
| August | 9,470 | 855 | 6 | 305 | 18,780 |
| September | 27,312 | 1,220 | 551 | 910 | 54,170 |
| Water year 1948-49 | 69,834 | 1,240 | - | 191 | 138,500 |

a No gage-height record; gates closed; discharge interpolated or computed on basis of weather records.
h Computed from staff-gage reading.

## Deadwood River near Lowman, Idaho

Location.--Water-stage recorder, lat. 44°05', long. 115°40', in sec. 29, T. 9 N., R. 7 E., 700 feet upstream from mouth and 2½ miles west of Lowman. Altitude of gage, 3,680 feet (from topograph map).

Records available.--August 1921 to September 1949.

Average discharge.--28 years, 375 second-feet.

Extremes.--Maximum discharge during year, 2,610 second-feet May 16 (gage height, 4.28 feet); minimum, 42 second-feet Nov. 8, 18 (gage height, 1.02 feet), but may have been less during periods of ice effect; minimum daily, 45 second-feet Dec. 1.
1921-49: Maximum discharge, 4,230 second-feet May 9, 1928 (gage height, 5.17 feet), from rating curve extended above 3,200 second-feet; minimum recorded, 28 second-feet Nov. 4, 1935 (gage height, 0.83 foot); minimum daily, 34 second-feet Nov. 4, 1935.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Flow regulated since Nov. 2, 1930, by Deadwood Reservoir (see p. 174). Small amount of water diverted from tributary of Johnson Creek in Salmon River Basin to Deadwood River Basin during year.

Revisions.--W 633: Drainage area.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 380 | 80 | 45 | | | | 131 | 613 | 1,660 | 873 | 93 | 606 |
| 2 | 273 | 129 | 70 | | | | 153 | 654 | 1,200 | 864 | 658 | 654 |
| 3 | 210 | 144 | 80 | | | | 156 | 626 | 640 | 898 | 805 | 654 |
| 4 | 186 | 102 | 70 | | | 80 | 177 | 580 | 613 | 1,020 | 95 | 667 |
| 5 | 114 | 78 | 70 | | | | 225 | 568 | 613 | 1,130 | 84 | 724 |
| 6 | 80 | 77 | 70 | | | | 261 | 600 | 620 | 798 | 82 | 746 |
| 7 | 72 | 61 | 70 | | | | 296 | 667 | 620 | 167 | 162 | 724 |
| 8 | 72 | 48 | 70 | | 55 | 110 | 287 | 769 | 620 | 150 | 310 | 792 |
| 9 | 68 | 58 | 70 | | | 108 | 329 | 898 | 600 | 144 | 314 | 856 |
| 10 | 67 | 84 | 70 | | | 104 | 349 | 1,040 | 587 | 142 | 359 | 1,090 |
| 11 | 67 | 78 | 75 | | | 106 | 614 | 1,180 | 574 | 136 | 446 | 1,270 |
| 12 | 66 | 75 | 85 | 60 | | 110 | 1,050 | 1,300 | 524 | 131 | 446 | 1,200 |
| 13 | 66 | 70 | 80 | | | 112 | 1,120 | 1,340 | 475 | 131 | 440 | 1,180 |
| 14 | 66 | 67 | 75 | | | 117 | 1,260 | 1,370 | 440 | 129 | 440 | 1,180 |
| 15 | 66 | 82 | 70 | | | 122 | 1,290 | 1,380 | 412 | 124 | 435 | 1,120 |
| 16 | 64 | 73 | 60 | | | 131 | 1,340 | 2,020 | 391 | 122 | 469 | 1,120 |
| 17 | 64 | 72 | 55 | | | 136 | 1,400 | 2,510 | 364 | 117 | 487 | 1,100 |
| 18 | 64 | 50 | 55 | | | 134 | 1,470 | 2,360 | 344 | 114 | 446 | 1,060 |
| 19 | 64 | 64 | 65 | | | 144 | 1,130 | 2,270 | 354 | 112 | 458 | 1,090 |
| 20 | 64 | 80 | 70 | | | 156 | 548 | 2,120 | 339 | 110 | 407 | 1,160 |
| 21 | 62 | 68 | 60 | | | 156 | 440 | 1,930 | 314 | 112 | 391 | 1,360 |
| 22 | 62 | 67 | 50 | | 65 | 147 | 469 | 1,720 | 301 | 110 | 418 | 1,030 |
| 23 | 62 | *67 | 50 | | | *147 | 568 | 1,580 | 329 | 108 | 423 | 823 |
| 24 | 64 | 70 | 55 | | | 139 | 626 | 1,520 | 334 | 106 | 423 | 881 |
| 25 | 64 | 67 | 60 | (*) | | 142 | 640 | 1,490 | 385 | 108 | 418 | 873 |
| 26 | 64 | 66 | 60 | | | 136 | 640 | 1,520 | 418 | 106 | 423 | 924 |
| 27 | 64 | 60 | 65 | | | 129 | 667 | 1,530 | 512 | 104 | 435 | 977 |
| 28 | 62 | 66 | 65 | 55 | | 119 | 703 | 1,570 | 674 | 102 | 493 | 950 |
| 29 | 66 | 53 | 65 | | - | 114 | 739 | 1,700 | 696 | 99 | 512 | 808 |
| 30 | 66 | 50 | 65 | | - | 117 | 667 | 1,740 | 808 | 97 | 512 | 761 |
| 31 | 67 | - | 60 | | - | 117 | - | 1,770 | - | 95 | 536 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 2,876 | 380 | 62 | 92.8 | 5,700 |
| November | 2,206 | 144 | 48 | 73.5 | 4,380 |
| December | 2,030 | 85 | 45 | 65.5 | 4,030 |
| Calendar year 1948 | 146,335 | 2,020 | 45 | 400 | 290,200 |
| January | 1,825 | - | - | 58.9 | 3,620 |
| February | 1,670 | - | - | 59.6 | 3,310 |
| March | 3,613 | 156 | - | 117 | 7,170 |
| April | 19,745 | 1,470 | 131 | 658 | 39,160 |
| May | 42,935 | 2,510 | 568 | 1,385 | 85,160 |
| June | 16,761 | 1,660 | 301 | 559 | 33,240 |
| July | 8,559 | 1,130 | 95 | 276 | 16,980 |
| August | 12,420 | 805 | 82 | 401 | 24,630 |
| September | 28,380 | 1,270 | 606 | 946 | 56,290 |
| Water year 1948-49 | 143,020 | 2,510 | 45 | 392 | 283,700 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 30 to about Mar. 7 (no gage-height record Dec. 26, 27, Dec. 29 to Jan. 13, Jan. 27 to Mar. 7; discharge computed on basis of weather records and records for South Fork Payette River at Lowman and near Garden Valley and other nearby streams).

## Payette Lake at McCall, Idaho

Location.--Water-stage recorder, lat. 44°55', long. 116°07', in sec. 8, T. 18 N., R. 3 E., at outlet of lake on North Fork Payette River, at McCall. Datum of gage is 4,982.24 feet above sea level, adjustment of 1912.

Drainage area.--144 square miles.

Records available.--August 1921 to September 1949 (fragmentary prior to Nov. 23, 1943).

Extremes.--Maximum gage height during year, 7.06 feet June 27; minimum, 2.20 feet Feb. 1-3. 1921-49: Maximum gage height observed, 8.75 feet July 13, 1935; minimum observed, 0.95 foot Oct. 3, 1931.

Remarks.--Flow from Payette Lake is regulated within natural range by taintor gates and removable stop logs of a buttress and slab-type dam completed in November 1943. During period 1923 to 1943 lake was regulated by structure consisting of a series of concrete-filled cribs supporting removable flashboards. Some regulation is reported to have been effected by timber flashboards for several years prior to 1923. Lake area is approximately 5,000 acres. No capacity table has been developed. Water is used for irrigation of lands in vicinity of Emmett. No diversion above station.

Cooperation.--Water-stage recorder inspected by U. S. Forest Service.

Revisions (water years).--W 753: 1931. W 1013: Drainage area.

Gage height, in feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.92 | 3.95 | 2.31 | 2.39 | 2.21 | 2.35 | 2.29 | 4.10 | 5.88 | 6.99 | 5.29 | 4.82 |
| 2 | 4.90 | 3.86 | 2.34 | 2.39 | 2.20 | 2.34 | 2.28 | 4.24 | 5.58 | 6.82 | 5.28 | 4.80 |
| 3 | 4.90 | 3.72 | 2.39 | 2.38 | 2.21 | 2.33 | 2.28 | 4.65 | 5.28 | 6.54 | 5.27 | 4.77 |
| 4 | 4.91 | 3.55 | 2.38 | 2.37 | 2.23 | 2.32 | 2.29 | 4.71 | 5.16 | 6.23 | 5.25 | 4.69 |
| 5 | 4.93 | 3.38 | 2.38 | 2.37 | 2.24 | 2.30 | 2.29 | 4.58 | 5.51 | 5.94 | 5.23 | 4.59 |
| 6 | 4.93 | 3.23 | 2.38 | 2.36 | 2.26 | 2.29 | 2.31 | 4.44 | 6.02 | 5.74 | 5.20 | 4.49 |
| 7 | 4.89 | 3.07 | 2.40 | 2.35 | 2.28 | 2.29 | 2.34 | 4.41 | 6.40 | 5.73 | 5.18 | 4.39 |
| 8 | 4.84 | 2.93 | 2.38 | 2.34 | 2.28 | 2.28 | 2.38 | 4.50 | 6.58 | 5.72 | 5.15 | 4.32 |
| 9 | 4.83 | 2.82 | 2.40 | 2.33 | 2.30 | 2.29 | 2.41 | 4.72 | 6.59 | 5.72 | 5.13 | 4.22 |
| 10 | 4.84 | 2.71 | 2.41 | 2.32 | 2.36 | 2.29 | 2.45 | 5.07 | 6.54 | 5.71 | 5.11 | 4.12 |
| 11 | 4.81 | 2.62 | 2.43 | 2.32 | 2.39 | 2.28 | 2.52 | 5.53 | 6.56 | 5.71 | 5.10 | 4.05 |
| 12 | 4.78 | 2.55 | 2.47 | 2.31 | 2.38 | 2.29 | 2.59 | 6.00 | 6.53 | 5.70 | 5.09 | 3.93 |
| 13 | 4.78 | 2.48 | 2.45 | 2.30 | 2.36 | 2.29 | 2.65 | 6.31 | 6.52 | 5.68 | 5.08 | 3.83 |
| 14 | 4.77 | 2.42 | 2.45 | 2.29 | 2.37 | 2.29 | 2.69 | 6.55 | 6.53 | 5.67 | 5.07 | 3.72 |
| 15 | 4.72 | 2.38 | 2.45 | 2.29 | 2.39 | 2.29 | 2.73 | 6.72 | 6.53 | 5.64 | 5.05 | 3.62 |
| 16 | 4.61 | 2.37 | 2.43 | 2.28 | 2.39 | 2.29 | 2.80 | 6.88 | 6.64 | 5.63 | 5.04 | 3.52 |
| 17 | 4.51 | 2.34 | 2.41 | 2.28 | 2.38 | 2.29 | 2.89 | 6.90 | 6.68 | 5.60 | 5.03 | 3.43 |
| 18 | 4.42 | 2.28 | 2.40 | 2.27 | 2.37 | 2.31 | 2.96 | 6.67 | 6.72 | 5.59 | 5.01 | 3.32 |
| 19 | 4.39 | 2.29 | 2.40 | 2.26 | 2.36 | 2.31 | 3.09 | 6.41 | 6.80 | 5.56 | 5.01 | 3.22 |
| 20 | 4.38 | 2.30 | 2.42 | 2.25 | 2.35 | 2.31 | 3.22 | 6.32 | 6.90 | 5.53 | 5.00 | 3.12 |
| 21 | 4.37 | 2.29 | 2.41 | 2.25 | 2.36 | 2.32 | 3.29 | 6.20 | 6.96 | 5.51 | 4.98 | 3.02 |
| 22 | 4.37 | 2.28 | 2.40 | 2.25 | 2.40 | 2.32 | 3.31 | 6.01 | 7.00 | 5.48 | 4.96 | 2.93 |
| 23 | 4.36 | 2.29 | 2.38 | 2.23 | 2.41 | 2.31 | 3.35 | 5.82 | 7.02 | 5.46 | 4.94 | 2.83 |
| 24 | 4.35 | 2.32 | 2.38 | 2.23 | 2.40 | 2.31 | 3.44 | 5.68 | 7.02 | 5.44 | 4.92 | 2.74 |
| 25 | 4.35 | 2.32 | 2.36 | 2.22 | 2.39 | 2.30 | 3.55 | 5.63 | 7.02 | 5.42 | 4.91 | 2.64 |
| 26 | 4.35 | 2.33 | 2.35 | 2.23 | 2.37 | 2.31 | 3.64 | 5.72 | 7.04 | 5.39 | 4.89 | 2.56 |
| 27 | 4.33 | 2.33 | 2.34 | 2.23 | 2.36 | 2.31 | 3.75 | 5.92 | 7.04 | 5.38 | 4.89 | 2.51 |
| 28 | 4.33 | 2.33 | 2.34 | 2.23 | 2.36 | 2.31 | 3.91 | 6.16 | 7.03 | 5.36 | 4.88 | 2.51 |
| 29 | 4.32 | 2.32 | 2.34 | 2.22 | - | 2.30 | 4.06 | 6.31 | 7.01 | 5.34 | 4.87 | 2.55 |
| 30 | 4.27 | 2.31 | 2.35 | 2.21 | - | 2.29 | 4.12 | 6.27 | 6.99 | 5.32 | 4.85 | 2.57 |
| 31 | 4.10 | - | 2.35 | 2.21 | - | 2.29 | - | 6.12 | - | 5.30 | 4.83 | - |

## North Fork Payette River at McCall, Idaho

Location.--Water-stage recorder, lat. 44°54'30", long. 116°07'30", in sec. 8, T. 18 N., R. 3 E., at McCall, a quarter of a mile downstream from outlet of Payette Lake.

Drainage area.--144 square miles.

Records available.--September 1908 to June 1917, May 1919 to September 1949.

Average discharge.--38 years (1908-16, 1919-49), 349 second-feet.

Extremes.--Maximum discharge during year, 3,230 second-feet May 16 (gage height, 6.77 feet); minimum, 4 second-feet Sept. 29, 30; minimum gage height, 1.18 feet Sept. 30. 1908-17, 1919-49: Maximum discharge, 4,260 second-feet June 10, 1933, June 4, 1948; maximum gage height, 7.71 feet June 4, 1948; practically no flow Nov. 5-8, 1931, Nov. 17-24, 1933, Nov. 14-27, 1935, Oct. 22 to Nov. 11, 1938.

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

Cooperation.--Water-stage recorder inspected by employee of U. S. Forest Service.

Revisions.--W 963: Drainage area.

Rating tables, water year 1948-49 (gage height, in feet, and discharge, in second-feet)

| Oct. 1-30 | | | | Oct. 31 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.7 | 26 | 2.5 | 134 | 1.2 | 4 | 2.2 | 74 | 4.4 | 1,030 |
| 1.8 | 34 | 2.7 | 184 | 1.3 | 6 | 2.4 | 108 | 5.2 | 1,670 |
| 1.9 | 42 | 2.9 | 243 | 1.4 | 9 | 2.6 | 154 | 6.0 | 2,430 |
| 2.1 | 65 | 3.0 | 276 | 1.6 | 17 | 2.9 | 241 | 6.8 | 3,260 |
| 2.3 | 95 | | | 1.8 | 30 | 3.3 | 393 | | |
| | | | | 2.0 | 48 | 3.7 | 591 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 559 | 59 | 73 | 42 | 64 | 56 | 967 | 2,330 | 255 | 58 | 15 |
| 2 | 35 | 542 | 63 | 73 | 41 | 63 | 55 | 1,060 | 2,050 | 854 | 56 | 15 |
| 3 | 35 | 522 | 71 | 71 | 42 | 60 | 54 | 1,340 | 1,790 | 890 | 52 | 61 |
| 4 | 108 | 501 | 70 | 69 | 46 | 59 | 55 | 1,390 | 1,260 | 925 | 47 | 241 |
| 5 | 35 | 462 | 70 | 69 | 47 | 56 | 55 | 1,300 | 848 | 890 | 43 | 244 |
| 6 | 106 | 420 | 70 | 67 | 50 | 55 | 54 | 1,190 | 1,030 | 406 | 38 | 232 |
| 7 | 187 | 376 | 72 | 65 | 52 | 54 | 60 | 1,180 | 1,540 | 184 | 35 | 213 |
| 8 | 153 | 335 | 74 | 64 | 52 | 52 | 70 | 1,250 | 1,800 | 181 | 32 | 186 |
| 9 | 35 | 301 | 75 | 62 | 56 | 53 | 77 | 1,410 | 1,810 | 181 | 28 | 248 |
| 10 | 34 | 268 | 79 | 60 | 67 | 53 | 87 | 1,690 | 1,720 | 178 | 27 | 258 |
| 11 | 165 | 241 | 82 | 60 | 73 | 52 | 99 | 2,080 | 1,470 | 176 | 25 | 251 |
| 12 | 37 | 219 | 90 | 58 | 71 | 53 | 115 | 2,480 | 1,330 | 173 | 24 | 244 |
| 13 | 36 | 198 | 87 | 57 | 67 | 55 | 126 | 2,760 | 967 | 170 | 24 | 244 |
| 14 | 144 | 178 | 85 | 55 | 67 | 54 | 137 | 2,930 | 772 | 162 | 22 | 241 |
| 15 | 250 | 168 | 85 | 55 | 73 | 53 | 149 | 3,070 | 320 | 157 | 21 | 238 |
| 16 | 243 | 162 | 82 | 53 | 73 | 54 | 162 | 3,200 | 343 | 149 | 20 | 238 |
| 17 | 243 | 157 | 79 | h54 | 71 | 54 | 274 | 3,180 | 359 | 142 | 20 | 236 |
| 18 | 211 | 124 | 75 | 52 | 69 | 56 | 372 | 2,980 | 342 | 132 | 20 | 235 |
| 19 | 33 | 58 | 75 | 52 | 67 | 59 | 416 | 2,770 | 204 | 126 | 18 | 233 |
| 20 | 61 | 59 | 79 | 49 | 65 | 58 | 476 | 2,700 | 261 | 117 | 18 | 231 |
| 21 | 33 | 58 | 77 | 49 | 65 | 59 | 501 | 2,590 | 339 | 113 | 17 | 230 |
| 22 | 33 | 56 | 75 | 49 | 75 | 60 | 512 | 2,420 | 328 | 105 | 17 | 229 |
| 23 | 33 | 56 | 71 | 45 | 77 | 60 | 532 | 2,250 | 385 | 99 | 16 | 228 |
| 24 | 33 | 56 | 71 | 45 | 75 | 58 | 591 | 2,130 | 359 | 94 | 16 | 227 |
| 25 | 32 | 60 | 67 | 44 | 73 | 58 | 648 | 2,100 | 279 | 88 | 16 | 225 |
| 26 | 31 | 60 | 65 | 45 | 69 | 58 | 690 | 2,170 | 265 | 83 | 16 | 224 |
| 27 | 28 | 61 | 64 | 45 | 67 | 59 | 758 | 2,340 | 320 | 79 | 16 | f118 |
| 28 | 28 | 60 | 64 | 45 | 64 | 59 | 842 | 2,550 | 275 | 72 | 15 | 7 |
| 29 | 28 | 60 | 64 | 44 | - | 58 | 946 | 2,690 | 255 | 67 | 15 | 5 |
| 30 | 32 | 59 | 65 | 42 | - | 58 | 981 | 2,660 | 197 | 63 | 15 | 4 |
| 31 | 575 | 59 | 65 | 42 | - | 56 | - | 2,550 | - | 60 | 15 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 3,073 | 575 | 28 | 99.1 | 6,100 |
| November | 6,439 | 559 | 56 | 215 | 12,770 |
| December | 2,270 | 90 | 59 | 73.0 | 4,500 |
| Calendar year 1948 | 166,581 | 4,180 | 28 | 455 | 330,400 |
| January | 1,713 | 73 | 42 | 55.3 | 3,400 |
| February | 1,756 | 77 | 41 | 62.7 | 3,480 |
| March | 1,760 | 64 | 52 | 56.8 | 3,490 |
| April | 9,950 | 981 | 54 | 332 | 19,740 |
| May | 67,377 | 3,200 | 967 | 2,173 | 133,600 |
| June | 25,548 | 2,330 | 197 | 852 | 50,670 |
| July | 7,371 | 925 | 60 | 238 | 14,620 |
| August | 802 | 58 | 15 | 25.9 | 1,590 |
| September | 5,601 | 258 | 4 | 187 | 11,110 |
| Water year 1948-49 | 133,660 | 3,200 | 4 | 366 | 265,100 |

f Computed from partly estimated gage-height record.
h Computed from staff-gage reading.
Note.--No gage-height record Dec. 17 to Jan. 5, Jan. 8-16, 18, Jan. 20 to Feb. 27, Sept. 17-26; discharge computed on basis of records for Payette Lake and record of gate changes.

## Cascade Reservoir at Cascade, Idaho

Location.--Staff gage, lat. 44°31'30", long. 116°03', in NE¼NE¼ sec. 26, T. 14 N., R. 3 E., just upstream from left abutment of dam on North Fork Payette River, half a mile downstream from Willow Creek and three-quarters of a mile northwest of Cascade. Datum of gage is at mean sea level (preliminary, unadjusted levels of U. S. Coast and Geodetic Survey).

Drainage area.--620 square miles.

Records available.--January 1948 to December 1948 (fragmentary); January to September 1949.

Extremes.--Maximum contents observed during year, 290,100 acre-feet July 6 (elevation, 4,808.61 feet); minimum not determined, occurred during period of no gage-height record.

1948-49: Maximum contents observed, that of July 6, 1949; no contents at times during March and September 1948.

Remarks.--Reservoir is formed by earth-fill dam completed in May 1949. Storage began Nov. 7, 1947. Capacity, 703,200 acre-feet between elevation 4,766 feet (4.0 feet above sill of outlet tunnel) and 4,828 feet (top of spillway gates). Figures herein represent contents currently usable. The Bureau of Reclamation plans to limit withdrawal to elevation 4,787.5 feet, retaining 50,000 acre-feet capacity as dead storage. Contents table computed from tables furnished by Bureau of Reclamation (revised 1950). Water is used for irrigation of lands in the Payette Division of the Boise project and for power at Black Canyon power plant near Emmett pending construction of Scriver Creek power development and Garden Valley Reservoir. Gage read once daily about 8 a.m.

Cooperation.--Gage readings and capacity table furnished by the Bureau of Reclamation.

Contents, in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | - | | 70,400 | 38,940 | 6,870 | 3,850 | 61,490 | 246,100 | 285,800 | 186,500 | 58,210 |
| 2 | | - | | 71,120 | 37,460 | 6,690 | 3,850 | 63,490 | 251,200 | 285,300 | 182,200 | 54,870 |
| 3 | | - | | 71,120 | 35,580 | 6,690 | 4,150 | 67,580 | 254,700 | 286,100 | 178,300 | 51,550 |
| 4 | | - | | 71,850 | 34,670 | 6,690 | 5,200 | 70,400 | 256,700 | 287,100 | 173,800 | 48,350 |
| 5 | | - | | 71,850 | 33,320 | 6,870 | 5,830 | 75,100 | 257,800 | 288,900 | 169,100 | 45,580 |
| 6 | | - | | 72,590 | 32,000 | 7,050 | 7,050 | 77,690 | 258,100 | 290,100 | 164,600 | 42,720 |
| 7 | | - | | 73,340 | 30,680 | 7,050 | 7,970 | 79,640 | 259,400 | 289,100 | 159,800 | 40,460 |
| 8 | | - | | 72,590 | 29,390 | 7,050 | 9,440 | 82,140 | 262,600 | 286,800 | 155,600 | 38,440 |
| 9 | | - | | 71,850 | 28,120 | 6,870 | 10,820 | 85,160 | 266,300 | 284,000 | 151,100 | 37,460 |
| 10 | | - | | 70,400 | 26,470 | 6,690 | 13,090 | 89,620 | 268,500 | 280,100 | 146,400 | 36,500 |
| 11 | | - | | 69,690 | 24,870 | 6,690 | 15,900 | 94,620 | 270,400 | 276,800 | 142,100 | 34,220 |
| 12 | | - | | 68,280 | 23,700 | 6,510 | 18,710 | 100,200 | 271,200 | 273,600 | 137,400 | 31,780 |
| 13 | | 32,880 | | 67,580 | 22,200 | 6,510 | 23,700 | 107,900 | 273,400 | 269,900 | 133,500 | 30,250 |
| 14 | | 34,220 | | 66,890 | 20,750 | 6,510 | 25,670 | 117,000 | 274,900 | 266,300 | 129,000 | 29,390 |
| 15 | | - | | 65,520 | 19,370 | 6,690 | 28,960 | 126,400 | 275,900 | 262,500 | 124,800 | 27,700 |
| 16 | | - | | 64,840 | 17,740 | 6,510 | 32,000 | 136,300 | 276,700 | 258,300 | 120,100 | 26,880 |
| 17 | | 38,440 | | 64,160 | 15,900 | 6,510 | 35,120 | 146,800 | 277,600 | 253,600 | 116,500 | 24,870 |
| 18 | | - | | 62,820 | 14,460 | 6,690 | 36,500 | 157,100 | 278,400 | 248,900 | 111,900 | 23,320 |
| 19 | | - | | 62,150 | 13,090 | 6,870 | 39,440 | 166,400 | 278,900 | 244,700 | 107,900 | 22,200 |
| 20 | | - | | 60,830 | 12,050 | 6,870 | 41,500 | 174,700 | 280,400 | 240,500 | 103,800 | 21,830 |
| 21 | | - | | 59,510 | 11,300 | 6,870 | 43,100 | 181,800 | 281,500 | 236,000 | 99,820 | 20,750 |
| 22 | | 42,560 | | 57,560 | 10,580 | 6,870 | 44,740 | 189,000 | 282,200 | 231,400 | 95,720 | 20,050 |
| 23 | | - | | 55,640 | 9,890 | 6,170 | 45,860 | 194,500 | 282,800 | 226,700 | 91,420 | 18,640 |
| 24 | | - | | 53,740 | 9,440 | 6,510 | 47,580 | 199,700 | 283,300 | 222,200 | 87,380 | 16,800 |
| 25 | | - | | 51,860 | 8,790 | 6,870 | 48,770 | 204,000 | 284,100 | 218,000 | 82,990 | 15,030 |
| 26 | | - | | 50,000 | 8,170 | 6,340 | 49,380 | 208,700 | 284,600 | 213,400 | 78,230 | 14,180 |
| 27 | | - | | 48,170 | 7,590 | 5,830 | 50,620 | 213,800 | 284,800 | 208,800 | 75,490 | 13,090 |
| 28 | | - | | 46,430 | 7,050 | 5,510 | 52,480 | 218,900 | 285,100 | 204,300 | 71,700 | 11,300 |
| 29 | | - | | 44,740 | - | 5,350 | 56,280 | 225,100 | 285,300 | 200,000 | 68,140 | 9,890 |
| 30 | | - | | 42,560 | - | 4,600 | 60,170 | 232,000 | 285,800 | 196,100 | 64,840 | 8,580 |
| 31 | | - | | 40,980 | - | 3,850 | - | 238,400 | - | 190,700 | 61,490 | - |

Monthly elevation and contents, water year October 1948 to September 1949

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept. 30 | - | - | - |
| Oct. 31 | - | - | - |
| Nov. 30 | - | - | - |
| Dec. 31 | - | - | - |
| Calendar year | - | - | - |
| Jan. 31 | 4,785.9 | 40,980 | - |
| Feb. 28 | 4,776.0 | 7,050 | -33,930 |
| Mar. 31 | 4,774.0 | 3,850 | -3,200 |
| Apr. 30 | 4,789.1 | 60,170 | +56,320 |
| May 31 | 4,805.33 | 238,400 | +178,230 |
| June 30 | 4,808.35 | 285,800 | +47,400 |
| July 31 | 4,801.98 | 190,700 | -95,100 |
| Aug. 31 | 4,789.30 | 61,490 | -129,210 |
| Sept. 30 | 4,776.80 | 8,580 | -52,910 |
| Water year | - | - | - |

Note.--Records for North Fork Payette River at Cascade indicate that gates were practically closed Oct. 13th to Dec. 17th except for short periods, and that outflow was regulated Oct. 1-13, Dec. 18-31.

## North Fork Payette River at Cascade, Idaho

Location.--Water-stage recorder, lat. 44°31', long. 116°02', in NE¼ sec. 36, T. 14 N., R. 3 E., at Cascade, 285 feet downstream from Halleck and Howard mill dam, half a mile upstream from Beaver Creek, and 1½ miles downstream from Cascade Dam. Altitude of gage, 4,730 feet (from topographic map of Bureau of Reclamation).

Drainage area.--626 square miles.

Records available.--May 1941 to September 1949.

Extremes.--Maximum discharge during year, 2,880 second-feet May 19 (gage height, 2.99 feet); minimum, 3 second-feet or less Dec. 14-15 when stage was below intake.
1941-49: Maximum discharge recorded, 7,320 second-feet May 10, 1947 (gage height, 6.29 feet); minimum, 2 second-feet or less in January 1948 when stage was below intake.

Remarks.--Records good except those below 10 second-feet, which are poor. Flow regulated by Cascade Reservoir since Nov. 6, 1947 (see p. 179), Payette Lake (see p. 177), Lake Fork Reservoir (see p. 184), and occasionally by Halleck and Howard mill dam. Several diversions from tributaries above station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 237 | 4 | 14 | 357 | 1,010 | 364 | 644 | 2,060 | 2,040 | 572 | 2,430 | 1,820 |
| 2 | 316 | 8 | 14 | 370 | 883 | 350 | 644 | 2,080 | 1,860 | 504 | 2,020 | 1,750 |
| 3 | 338 | 8 | 17 | 383 | 907 | 212 | 653 | 2,100 | 2,370 | 293 | 2,410 | 1,640 |
| 4 | 252 | 7 | 15 | 383 | 907 | 357 | 692 | 1,400 | 2,320 | 287 | 2,410 | 1,610 |
| 5 | 298 | 6 | 11 | 390 | 883 | 383 | 816 | 948 | 2,300 | 282 | 2,390 | 1,590 |
| 6 | 773 | 5 | 7 | 396 | 883 | 390 | 907 | 2,040 | 2,160 | 754 | 2,370 | 1,560 |
| 7 | 859 | 5 | 6 | 505 | 883 | 344 | 1,030 | 2,000 | 2,200 | 1,180 | 2,350 | 1,510 |
| 8 | 741 | 4 | 5 | 712 | 919 | 327 | 1,250 | 1,660 | 1,310 | 1,630 | 2,350 | 1,420 |
| 9 | 644 | 5 | 5 | 762 | 907 | 208 | 1,360 | 1,150 | 2,500 | 1,970 | 2,340 | 1,300 |
| 10 | 522 | 5 | 5 | 751 | 895 | 390 | 1,380 | 1,420 | 2,440 | 2,140 | 2,300 | 1,220 |
| 11 | 396 | 6 | 4 | 617 | 883 | 376 | 1,370 | 1,800 | 2,370 | 2,200 | 2,280 | 1,180 |
| 12 | 257 | 6 | 4 | 581 | 883 | 364 | 1,460 | 1,800 | 1,930 | 2,200 | 2,260 | 1,140 |
| 13 | 184 | 7 | 6 | 407 | 883 | 364 | 1,420 | 2,100 | 1,340 | 2,180 | 2,240 | 1,080 |
| 14 | 29 | 8 | a3 | 663 | 883 | 364 | 1,370 | 2,020 | 1,280 | 2,200 | 2,200 | 1,030 |
| 15 | 27 | 12 | a3 | 608 | 907 | 370 | 1,370 | 2,240 | 1,000 | 2,160 | 2,180 | 955 |
| 16 | 32 | 34 | 6 | 608 | 931 | 383 | 1,170 | 2,200 | 278 | 2,460 | 2,160 | 907 |
| 17 | 34 | 74 | 18 | 608 | 1,010 | 396 | 1,020 | 1,730 | 316 | 2,410 | 2,160 | 848 |
| 18 | 27 | 16 | 40 | 608 | 967 | 285 | 1,560 | 1,990 | 321 | 2,350 | 2,120 | 816 |
| 19 | 8 | 8 | 71 | 608 | 883 | 166 | 1,970 | 2,340 | 333 | 2,340 | 2,100 | 751 |
| 20 | 7 | 8 | 108 | 836 | 731 | 174 | 2,200 | 1,990 | 282 | 2,430 | 2,020 | 722 |
| 21 | 5 | 8 | 144 | 931 | 617 | 422 | 2,160 | 2,370 | 287 | 2,460 | 1,910 | 791 |
| 22 | 5 | 9 | 181 | 895 | 498 | 673 | 2,220 | 2,350 | 298 | 2,480 | 2,020 | 1,280 |
| 23 | 4 | 12 | 215 | 1,010 | 409 | 712 | 2,180 | 2,280 | 310 | 2,460 | 2,180 | 1,190 |
| 24 | 4 | 26 | 237 | 1,010 | 376 | 816 | 1,990 | 2,240 | 316 | 2,460 | 2,140 | 1,140 |
| 25 | 4 | 11 | 262 | 1,020 | 357 | 773 | 2,160 | 2,060 | 316 | 2,440 | 2,100 | 1,060 |
| 26 | 4 | 12 | 287 | 871 | 357 | 692 | 2,160 | 2,180 | 310 | 2,410 | 2,060 | 883 |
| 27 | 4 | 13 | 304 | 1,140 | 364 | 673 | 1,560 | 2,200 | 272 | 2,460 | 1,990 | f919 |
| 28 | 4 | 14 | 321 | 1,140 | 370 | 692 | 1,120 | 2,350 | 202 | 2,440 | 1,950 | f907 |
| 29 | 5 | 14 | 333 | 1,120 | - | 712 | 467 | 2,160 | 206 | 2,440 | 1,890 | f702 |
| 30 | 2 | 14 | 344 | 1,110 | - | 673 | 1,220 | 2,140 | 272 | 2,440 | 1,860 | f859 |
| 31 | 2 | - | 357 | 1,100 | - | 673 | - | 2,240 | - | 2,440 | 1,840 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 6,022 | 859 | 2 | 194 | 11,940 |
| November | 369 | 74 | 4 | 12.3 | 732 |
| December | 3,347 | 357 | 3 | 108 | 6,640 |
| Calendar year 1948 | 424,190 | 5,260 | - | 1,159 | 841,400 |
| January | 22,500 | 1,140 | 357 | 726 | 44,630 |
| February | 21,386 | 1,010 | 357 | 764 | 42,420 |
| March | 14,078 | 816 | 166 | 454 | 27,920 |
| April | 41,523 | 2,220 | 467 | 1,384 | 82,360 |
| May | 61,638 | 2,370 | 948 | 1,988 | 122,300 |
| June | 33,739 | 2,500 | 202 | 1,125 | 66,920 |
| July | 59,472 | 2,480 | 282 | 1,918 | 118,000 |
| August | 67,030 | 2,430 | 1,840 | 2,162 | 133,000 |
| September | 34,580 | 1,820 | 702 | 1,153 | 68,590 |
| Water year 1948-49 | 365,684 | 2,500 | 2 | 1,002 | 725,500 |

a No gage-height record; discharge estimated.
f Computed from partly eatimated gage-height record.

## North Fork Payette River near Banks, Idaho

Location.--Water-stage recorder, lat. 44°07', long. 116°06', in SE¼ sec. 16, T. 9 N., R. 3 E., 40 feet downstream from steel highway bridge, 2½ miles north of Banks, and 3 miles upstream from confluence with South Fork. Datum of gage is 3,081.13 feet above mean sea level, preliminary unadjusted elevation.

Drainage area.--933 square miles.

Records available.--April 1947 to September 1949.

Extremes.--Maximum discharge during year, 3,540 second-feet May 21; maximum gage height, 10.68 feet Jan. 28 (ice jam); minimum recorded, 50 second-feet Dec. 17 (gage height, 3.15 feet ), but may have been less during period of ice effect.

1947-49: Maximum discharge, 8,830 second-feet May 11, 1947, computed on basis of records for station near Smiths Ferry; minimum recorded, 36 second-feet Dec. 31, 1947 (gage height, 3.01 feet).

Remarks.--Records excellent except those below about 500 second-feet, which are good, and those for periods of ice effect or no gage-height record, which are fair. Flow regulated by Payette Lake (see p. 177), Lake Fork Reservoir (see p. 184), Cascade Reservoir (see p. 179) and occasionally by mill dam at Cascade. Many diversions from tributaries above station for irrigation.

Rating tables, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 14 to Dec. 17)

| Oct. 1 to Dec. 17 | | | | | | Jan. 26 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.3 | 56 | 3.9 | 125 | 5.0 | 379 | 4.6 | 281 | 7.0 | 1,410 | | |
| 3.4 | 65 | 4.2 | 176 | 5.6 | 593 | 5.0 | 408 | 8.0 | 2,110 | | |
| 3.6 | 86 | 4.6 | 263 | 6.2 | 862 | 5.6 | 660 | 9.7 | 3,550 | | |
| | | | | | | 6.2 | 950 | | | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 306 | 86 | 72 | 370 | 1,100 | 470 | 895 | 2,610 | 3,360 | 404 | 2,480 | 1,850 |
| 2 | 295 | 159 | 96 | 370 | 1,020 | 460 | 925 | 2,960 | 2,830 | 730 | 2,370 | 1,810 |
| 3 | 366 | 230 | 102 | 390 | 960 | 450 | 1,010 | 2,980 | 3,050 | 602 | 2,210 | 1,740 |
| 4 | 399 | 211 | 98 | 400 | 960 | 268 | 1,130 | 2,870 | 3,130 | 423 | 2,420 | 1,650 |
| 5 | 350 | 148 | 108 | 400 | 960 | 394 | 1,340 | 1,640 | 3,140 | 416 | 2,410 | 1,620 |
| 6 | 501 | 119 | 94 | 410 | 950 | 482 | 1,600 | 2,430 | 3,130 | 419 | 2,410 | 1,600 |
| 7 | 819 | 101 | 87 | 420 | 950 | 454 | 1,840 | 2,680 | 3,080 | 1,220 | 2,390 | 1,550 |
| 8 | 862 | 80 | 82 | 500 | 950 | 435 | 2,060 | 2,690 | 2,470 | 1,560 | 2,380 | 1,460 |
| 9 | 744 | 85 | 76 | 700 | 950 | 412 | 2,410 | 2,410 | 2,680 | 1,830 | 2,370 | 1,380 |
| 10 | 647 | 99 | 86 | 800 | 960 | 318 | 2,520 | 2,440 | 3,090 | 2,090 | 2,360 | 1,270 |
| 11 | 547 | 92 | 79 | 800 | 960 | 490 | 2,580 | 2,830 | 3,030 | 2,130 | 2,340 | 1,230 |
| 12 | 439 | 98 | 76 | 600 | 950 | 486 | 2,680 | 3,030 | 2,880 | 2,150 | 2,330 | 1,180 |
| 13 | 353 | 94 | *76 | 580 | 950 | 466 | 2,490 | 3,150 | 2,270 | 2,130 | 2,310 | 1,130 |
| 14 | 253 | 92 | 83 | 400 | 950 | 462 | 2,300 | 3,290 | 1,710 | 2,130 | 2,290 | 1,070 |
| 15 | 136 | 115 | 84 | 620 | 980 | 474 | 2,360 | 3,300 | 1,640 | 2,240 | 2,280 | 1,000 |
| 16 | 114 | 130 | 74 | 620 | 1,000 | 499 | 2,310 | 3,330 | 855 | 2,320 | 2,250 | 965 |
| 17 | 117 | 112 | 60 | 620 | 1,050 | 528 | 2,300 | 3,200 | 656 | 2,450 | 2,250 | 910 |
| 18 | 115 | 93 | 55 | 620 | 1,100 | 558 | 2,300 | 2,950 | 646 | 2,430 | 2,220 | 865 |
| 19 | 111 | 93 | 55 | 620 | 1,080 | 423 | 2,780 | 3,000 | 656 | 2,400 | 2,210 | 826 |
| 20 | 94 | 98 | 70 | 620 | 960 | 386 | 2,960 | 3,410 | 628 | 2,470 | 2,190 | 801 |
| 21 | 85 | 110 | 120 | 800 | *905 | 416 | 2,930 | 3,420 | 593 | 2,460 | 2,170 | 787 |
| 22 | 82 | 99 | 150 | 940 | 748 | 660 | 3,020 | 3,490 | 562 | 2,510 | 2,150 | 950 |
| 23 | 76 | 93 | 180 | 920 | 660 | 880 | 3,050 | 3,410 | 558 | 2,490 | 2,110 | 1,270 |
| 24 | 75 | 97 | 220 | 1,020 | 554 | 950 | 2,920 | 3,320 | 541 | 2,490 | 2,100 | 1,210 |
| 25 | 76 | 108 | 240 | 1,020 | 466 | 1,020 | 2,890 | 3,180 | 520 | 2,470 | 2,070 | 1,130 |
| 26 | 77 | 90 | 260 | 1,040 | 450 | 1,000 | 2,870 | 3,210 | 499 | 2,450 | 2,050 | 1,020 |
| 27 | 77 | 93 | 290 | 1,100 | 450 | 960 | 2,780 | 3,230 | 486 | 2,490 | 2,020 | 1,000 |
| 28 | 74 | 92 | 310 | 1,150 | 460 | 910 | 2,400 | 3,350 | 419 | 2,480 | 1,990 | 1,040 |
| 29 | 71 | 79 | 320 | 1,150 | - | 900 | 1,720 | 3,400 | 365 | 2,470 | 1,950 | 915 |
| 30 | 74 | 68 | 330 | 1,140 | - | 925 | 1,590 | 3,290 | 365 | 2,470 | 1,900 | 860 |
| 31 | 70 | - | 340 | 1,120 | - | 890 | - | 3,340 | - | 2,440 | 1,870 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 8,405 | 862 | 70 | 271 | 16,670 |
| November | 3,264 | 230 | 68 | 109 | 6,470 |
| December | 4,373 | 340 | 55 | 141 | 8,670 |
| Calendar year 1948 | 527,490 | 5,740 | 55 | 1,441 | 1,046,000 |
| January | 22,260 | 1,150 | 370 | 718 | 44,150 |
| February | 24,433 | 1,100 | 450 | 873 | 48,460 |
| March | 18,426 | 1,020 | 268 | 594 | 36,550 |
| April | 66,960 | 3,050 | 895 | 2,232 | 132,800 |
| May | 93,840 | 3,490 | 1,640 | 3,027 | 186,100 |
| June | 49,839 | 3,360 | 365 | 1,661 | 98,850 |
| July | 59,764 | 2,510 | 404 | 1,928 | 118,500 |
| August | 68,850 | 2,480 | 1,870 | 2,221 | 136,600 |
| September | 36,089 | 1,850 | 787 | 1,203 | 71,580 |
| Water year 1948-49 | 456,503 | 3,490 | 55 | 1,251 | 905,400 |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice most of period Dec. 18 to Feb. 20; no gage-height record Dec. 18 to Jan. 25, Feb. 26 to Mar. 3, Mar. 23, 24; discharge computed on basis of weather records and records for North Fork Payette River at Cascade, Payette River near Horseshoe Bend, and South Fork Payette River near Banks.

## Fish hatchery diversion at McCall, Idaho

Location.--Staff gage and Parshall flume, lat. 44°54'30", long. 116°07', in sec. 8, T. 18 N., R. 3 E., immediately below outlet from fish hatchery tanks, just above point of return to North Fork Payette River, and 1 mile west of McCall.
Records available.--October 1942 to September 1949.
Extremes.--Maximum discharge observed during year, 2.2 second-feet June 6-14; maximum gage height observed, 0.94 foot May 15, affected by backwater from North Fork Payette River; minimum observed, 0.6 second-foot Sept. 28-30; minimum gage height observed, 0.35 foot Sept. 30.
1942-49: Maximum discharge observed, 4.8 second-feet Apr. 18-24, 26-28, May 1, 2, 4, 5, 7-11, July 2, 4, 1943; maximum gage height observed. 1.60 feet June 11, 1948; no flow Sept. 22 to Nov. 7, 1943.
Revisions.--Maximum discharge observed for water year 1947 has been revised to 4.0 second-feet May 5-14, 1947, superseding figure published in Water-Supply Paper 1093.
Remarks.--Records fair except those for period of backwater from North Fork Payette River, which are poor. Gage read once daily. Flow regulated by fish hatchery, water for * which is diverted from Payette Lake or North Fork Payette River and bypasses gaging station on that stream.
Cooperation.--Gage readings furnished by Idaho State Fish and Game Commission.
Revisions.--Revised figures of discharge, in second-feet, for period in the water year 1947, are given herewith:

| | | |
|---|---|---|
| May 7 ..... 4.0 | May 9 ..... 4.0 | May 11 ..... 4.0 |
| 8 ..... 4.0 | 10 ..... 4.0 | 12 ..... 4.0 |

| Month | Second-foot-days | Discharge in second-feet | | | Runoff in acre-feet |
|---|---|---|---|---|---|
| | | Maximum | Minimum | Mean | |
| May | 118.0 | 4.0 | 3.6 | 3.81 | 234 |
| Water year 1946-47 | 1,141.0 | 4.0 | 2.1 | 3.13 | 2,260 |
| Calendar year 1947 | 965.5 | 4.0 | .8 | 2.65 | 1,920 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.6 | 2.0 | 1.7 | 2.0 | 1.8 | 1.8 | 1.8 | 1.7 | 2.0 | 1.9 | 1.7 | 1.3 |
| 2 | 1.5 | 2.0 | 1.7 | 2.0 | 1.8 | 1.8 | 1.8 | 1.8 | 2.0 | 1.9 | 1.6 | 1.3 |
| 3 | 1.6 | 2.0 | 1.6 | 2.0 | 1.8 | 1.8 | 1.8 | 1.8 | 2.1 | 1.9 | 1.6 | 1.3 |
| 4 | 1.6 | 1.8 | 1.7 | 2.0 | 1.8 | 1.8 | 1.8 | 1.8 | 2.1 | 1.9 | 1.6 | 1.3 |
| 5 | 1.5 | 1.8 | 1.8 | 2.0 | 1.8 | 1.8 | 1.8 | 1.8 | 2.1 | 1.9 | 1.6 | 1.3 |
| 6 | 1.5 | 1.8 | 2.0 | 2.0 | 1.8 | 1.8 | 1.8 | 1.8 | 2.2 | 1.9 | 1.6 | 1.3 |
| 7 | 1.6 | 1.8 | 2.0 | 2.0 | 1.8 | 1.8 | 1.8 | 1.8 | 2.2 | 2.0 | 1.6 | 1.3 |
| 8 | 1.5 | 1.8 | 2.0 | 2.0 | 1.8 | 1.8 | 1.8 | 1.7 | 2.2 | 2.0 | 1.6 | 1.3 |
| 9 | 1.4 | 1.8 | 2.0 | 1.9 | 1.8 | 1.8 | 1.8 | 1.7 | 2.2 | 2.0 | 1.6 | 1.3 |
| 10 | 1.4 | 1.8 | 2.0 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 2.2 | 2.0 | 1.6 | 1.1 |
| 11 | 1.4 | 1.8 | 2.1 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 2.2 | 2.0 | 1.6 | 1.1 |
| 12 | 1.4 | 1.8 | 2.1 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 2.2 | 2.0 | 1.6 | 1.0 |
| 13 | 1.4 | 1.8 | 2.0 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 2.2 | 1.9 | 1.6 | 1.0 |
| 14 | 1.4 | 1.8 | 2.0 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 2.2 | 1.9 | 1.6 | 1.0 |
| 15 | 1.4 | 1.8 | 2.0 | 1.8 | 1.8 | 1.8 | 1.8 | 1.7 | 1.9 | 1.9 | 1.6 | 1.0 |
| 16 | 1.4 | 1.8 | 2.0 | 1.9 | 1.8 | 1.8 | 1.8 | 1.7 | 1.8 | 1.9 | 1.6 | 1.0 |
| 17 | 1.4 | 1.8 | 2.0 | 1.9 | 1.9 | 1.8 | 1.8 | 1.7 | 1.8 | 1.8 | 1.6 | 1.0 |
| 18 | 1.4 | 1.8 | 2.0 | 1.9 | 2.0 | 1.8 | 1.8 | 1.7 | 1.8 | 1.8 | 1.4 | 1.0 |
| 19 | 1.4 | 1.8 | 2.1 | 1.9 | 2.0 | 1.8 | 1.8 | 1.7 | 1.9 | 1.8 | 1.4 | 1.0 |
| 20 | 1.4 | 1.8 | 2.1 | 1.9 | 2.0 | 1.8 | 1.8 | 1.7 | 1.8 | 1.8 | 1.4 | 1.0 |
| 21 | 1.4 | 1.8 | 2.1 | 1.9 | 2.0 | 1.8 | 1.8 | 1.7 | 1.9 | 1.8 | 1.4 | .9 |
| 22 | 1.4 | 1.8 | 2.1 | 1.9 | 1.9 | 1.8 | 1.8 | 1.7 | 1.9 | 1.8 | 1.4 | .9 |
| 23 | 1.4 | 1.8 | 2.1 | 1.9 | 1.9 | 1.8 | 1.8 | 1.7 | 1.9 | 1.8 | 1.4 | .9 |
| 24 | 1.4 | 1.8 | 2.1 | 1.9 | 1.9 | 1.8 | 1.8 | 1.7 | 1.9 | 1.8 | 1.4 | .9 |
| 25 | 1.4 | 1.8 | 2.1 | 1.9 | 1.9 | 1.8 | 1.8 | 1.7 | 1.9 | 1.7 | 1.4 | .9 |
| 26 | 1.4 | 1.8 | 2.0 | 1.9 | 1.9 | 1.8 | 1.7 | 1.7 | 1.9 | 1.7 | 1.4 | .8 |
| 27 | 1.4 | 1.8 | 2.1 | 1.9 | 1.9 | 1.8 | 1.7 | 1.7 | 1.9 | 1.7 | 1.4 | .8 |
| 28 | 1.4 | 1.8 | 2.1 | 1.9 | 1.9 | 1.8 | 1.7 | 1.8 | 1.9 | 1.7 | 1.4 | .6 |
| 29 | 1.4 | 1.7 | 2.0 | 1.9 | - | 1.8 | 1.7 | 1.8 | 1.9 | 1.7 | 1.4 | .6 |
| 30 | 1.6 | 1.7 | 2.0 | 1.9 | - | 1.8 | 1.7 | 1.9 | 1.9 | 1.7 | 1.4 | .6 |
| 31 | 1.6 | - | 2.0 | 1.8 | - | 1.8 | - | 1.9 | - | 1.7 | 1.3 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 45.0 | 1.6 | 1.4 | 1.45 | 89.3 |
| November | 54.4 | 2.0 | 1.7 | 1.81 | 108 |
| December | 61.6 | 2.1 | 1.6 | 1.99 | 122 |
| Calendar year 1948 | 616.4 | 2.1 | 1.4 | 1.68 | 1,220.0 |
| January | 59.0 | 2.0 | 1.8 | 1.90 | 117 |
| February | 52.0 | 2.0 | 1.8 | 1.86 | 103 |
| March | 55.8 | 1.8 | 1.8 | 1.80 | 111 |
| April | 53.5 | 1.8 | 1.7 | 1.78 | 106 |
| May | 53.9 | 1.9 | 1.7 | 1.74 | 107 |
| June | 60.1 | 2.2 | 1.8 | 2.00 | 119 |
| July | 57.3 | 2.0 | 1.7 | 1.85 | 114 |
| August | 46.8 | 1.7 | 1.3 | 1.51 | 92.8 |
| September | 30.8 | 1.3 | .6 | 1.03 | 61.1 |
| Water year 1948-49 | 630.2 | 2.2 | .6 | 1.72 | 1,250.2 |

Note.--Backwater from North Fork Payette River May 11-23, 27-31 (no gage-height record May 16-20, 30, 31); discharge computed on basis of 1 discharge measurement and flow before and after period of backwater.

## Lake Fork Payette River above Jumbo Creek, near McCall, Idaho

Location.--Water-stage recorder, lat. 44°55', long. 115°59', in NE¼ sec. 8, T. 18 N., R. 4 E., 200 feet upstream from bridge at abandoned power plant, a quarter of a mile upstream from Jumbo Creek, 3½ miles upstream from Lake Fork Reservoir dam, and 5½ miles east of McCall.

Drainage area.--48.9 square miles.

Records available.--October 1945 to September 1949.

Extremes.--Maximum discharge during year, 1,350 second-feet May 14 (gage height, 7.87 feet); minimum, 8.9 second-feet Sept. 28 (gage height, 1.89 feet).
1945-49: Maximum discharge, 2,600 second-feet June 3, 1948 (gage height, 9.19 feet), from rating curve extended above 1,000 second-feet by logarithmic plotting; minimum, that of Sept. 28, 1949.

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

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 17 | *22 | 28 | | | *21 | 26 | 317 | 586 | 117 | 32 | 11 |
| 2 | 17 | 54 | 30 | | | 21 | 28 | 552 | 453 | 118 | 32 | 11 |
| 3 | 16 | 54 | 32 | | | 21 | 30 | 520 | 408 | 115 | 34 | 11 |
| 4 | 21 | 35 | 31 | | | 21 | 35 | 335 | 519 | 112 | 30 | 11 |
| 5 | 44 | 28 | 31 | | | 21 | 45 | 303 | 730 | 107 | 27 | 12 |
| 6 | 27 | 27 | 30 | | | 21 | 56 | 313 | 783 | 99 | 28 | 12 |
| 7 | 26 | 20 | 30 | | | 21 | 72 | 370 | 788 | 91 | 21 | 11 |
| 8 | 30 | 18 | *29 | | 20 | 21 | 78 | 495 | 730 | 83 | 36 | 10 |
| 9 | 27 | 22 | 30 | | | 21 | 90 | 659 | 676 | 77 | 34 | 10 |
| 10 | 24 | 24 | 30 | | | 22 | 104 | 824 | 680 | 73 | 26 | 11 |
| 11 | 22 | 25 | 30 | | | 22 | 139 | 980 | 676 | 68 | 22 | 21 |
| 12 | 20 | 26 | 29 | | | 22 | 169 | 1,030 | 544 | 65 | 20 | 17 |
| 13 | 19 | 27 | 27 | | | 22 | 133 | 1,040 | 456 | 61 | 21 | 14 |
| 14 | 20 | 28 | 28 | | | 22 | 117 | 1,080 | 408 | 60 | 20 | 12 |
| 15 | 24 | 31 | 29 | | | 22 | 126 | 1,140 | 378 | 56 | 18 | 12 |
| 16 | 21 | 30 | 26 | 20 | | 23 | 160 | 1,140 | 339 | 52 | 18 | 17 |
| 17 | 19 | 30 | 25 | | | 24 | 230 | 934 | 272 | 50 | 17 | 20 |
| 18 | 19 | 26 | 24 | | | 25 | 307 | 783 | 237 | 48 | 16 | 17 |
| 19 | 19 | 30 | 25 | (*) | | 28 | 344 | 749 | 230 | 45 | 16 | 16 |
| 20 | 18 | 30 | 28 | | | 29 | 301 | 773 | 224 | 43 | 16 | 14 |
| 21 | 18 | 29 | 25 | | | 28 | 225 | 721 | 221 | 41 | 15 | 13 |
| 22 | 17 | 28 | 24 | | 21 | 28 | 218 | 642 | 250 | 39 | 14 | 12 |
| 23 | 17 | 28 | 23 | | | 27 | 291 | 621 | 222 | 45 | 14 | 11 |
| 24 | 17 | 29 | 22 | | | 27 | 400 | 634 | 206 | 40 | 14 | 10 |
| 25 | 19 | 29 | 21 | | | 26 | 386 | 702 | 198 | 36 | 14 | 10 |
| 26 | 19 | 28 | 20 | | | 26 | 386 | 840 | 184 | 34 | 13 | 9.6 |
| 27 | 18 | 26 | 20 | | | 26 | 462 | 1,010 | 155 | 32 | 13 | 9.4 |
| 28 | 17 | 28 | 21 | | | 25 | 537 | 956 | 148 | 31 | 12 | 10 |
| 29 | 17 | 26 | 24 | | - | 25 | 505 | 912 | 139 | 29 | 12 | 16 |
| 30 | 17 | 24 | 21 | | - | *26 | 368 | 744 | 119 | 28 | 12 | 17 |
| 31 | 18 | - | 20 | | - | 25 | - | 680 | - | 28 | 11 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 644 | 44 | 16 | 20.8 | 0.425 | 0.49 | 1,280 |
| November | 862 | 54 | 18 | 28.7 | .587 | .66 | 1,710 |
| December | 813 | 32 | 20 | 26.2 | .536 | .62 | 1,610 |
| Calendar year 1948 | 58,732 | 1,910 | 14 | 160 | 3.27 | 44.69 | 116,500 |
| January | 620 | - | - | 20.0 | .409 | .47 | 1,230 |
| February | 573 | - | - | 20.5 | .419 | .44 | 1,140 |
| March | 739 | 29 | 21 | 23.8 | .487 | .56 | 1,470 |
| April | 6,368 | 537 | 26 | 212 | 4.34 | 4.84 | 12,630 |
| May | 22,799 | 1,140 | 303 | 735 | 15.03 | 17.34 | 45,220 |
| June | 11,959 | 788 | 119 | 399 | 8.16 | 9.10 | 23,720 |
| July | 1,923 | 118 | 28 | 620 | 1.27 | 1.46 | 3,810 |
| August | 628 | 36 | 11 | 203 | .415 | .48 | 1,250 |
| September | 388.0 | 21 | 9.4 | 12.9 | .264 | .30 | 770 |
| Water year 1948-49 | 48,316 | 1,140 | 9.4 | 132 | 2.70 | 36.76 | 95,840 |

Peak discharge (base, 850 sec.-ft.).--May 14 (11 p.m.) 1,350 sec.-ft.; May 27 (10 p.m.) 1,280 sec.-ft.; June 5 (10 p.m.) 944 sec.-ft.
* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 8, 18, 19, 27, 29, 30, Dec. 1, 4, Dec. 12 to Mar. 21, Mar. 29; no gage-height record Dec. 24 to Mar. 14, May 3 except staff-gage readings Jan. 19, Mar. 1; discharge computed on basis of weather records and records for Lake Fork Payette River below Lake Irrigation District Canal, Johnson Creek at Yellow Pine, and other nearby streams.

## Lake Fork Reservoir near McCall, Idaho

Location.--Staff gage and graduations on concrete gate-control structure of dam on Lake Fork Payette River, lat. 44°54', long. 116°03', in NW¼NW¼ sec. 13, T. 18 N., R. 3 E., 3 miles east of McCall. Datum of gage is at mean sea level (levels by Lake Irrigation District).

Records available.--April 1926 to September 1949.

Extremes.--Maximum contents observed during year, 19,120 acre-feet June 17 (elevation, 5,118.37 feet); practically no storage at times during fall and winter.
1926-49: Maximum contents observed, 19,740 acre-feet June 19, 1941 (elevation, 5,118.75 feet); practically no storage above elevation 5,101.0 feet for long periods during fall and winter of most years.

Remarks.--Reservoir is formed by earth- and rock-fill dam completed in 1926. Capacity, 16,940 acre-feet between elevations 5,101.0 feet (lower limit of capacity table, 4.0 feet above gate sill of outlet) and 5,117.0 feet (top of flashboards, 5.0 feet above spillway crest). Dead storage unknown. Water is used for irrigation of about 6,800 acres of land in vicinity of Norwood. Figures given herein represent contents above 5,101.0 feet. There is some usable storage below elevation 5,101.0 feet, but natural flow passing through reservoir when outlet gates are operating prevents withdrawal of storage to elevation of sill of gates. Gage reading of 5,099.64 feet observed Apr. 2. Gage read once daily. Time of reading variable. Storage figures from gage heights as observed.

Cooperation.--Elevation record and capacity table furnished by Lake Irrigation District.

Contents, in acre-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | | | | | | - | - | - | 17,430 | 7,840 | 1,152 |
| 2 | - | 2,469 | | | | | - | 11,490 | - | 17,100 | 7,449 | 1,073 |
| 3 | - | | | | | | - | - | - | 17,030 | 7,160 | 940 |
| 4 | - | | | | | | - | 13,390 | 17,570 | 16,780 | 6,832 | 838 |
| 5 | - | | | | | | - | - | - | 16,550 | 6,594 | 736 |
| 6 | - | | | | | | - | - | - | 16,360 | 6,360 | 638 |
| 7 | - | | | | | | - | - | - | 16,010 | 6,093 | 569 |
| 8 | - | | | | | | - | 13,770 | - | 15,700 | 5,838 | 481 |
| 9 | 2,807 | | | | | | - | - | - | 15,390 | 5,606 | 422 |
| 10 | 2,807 | | 682 | | | | - | - | - | 14,950 | 5,341 | 346 |
| 11 | - | | | | | | - | - | 18,680 | 14,800 | 5,076 | 326 |
| 12 | - | | | | | | - | - | - | 14,460 | 4,864 | 302 |
| 13 | - | | | | | | - | - | - | 14,120 | 4,652 | 188 |
| 14 | - | | | | | | - | 15,930 | 18,800 | 13,850 | 4,408 | 120 |
| 15 | - | | | | | | - | - | 18,910 | 13,390 | 4,173 | 72 |
| 16 | 2,700 | | | | | | - | - | 19,100 | 13,160 | 3,987 | - |
| 17 | - | | | | | | - | - | 19,120 | 12,850 | 3,754 | - |
| 18 | - | | | | | | - | - | 19,040 | 12,390 | 3,534 | - |
| 19 | - | | | | | | - | - | 18,990 | 12,170 | 3,332 | - |
| 20 | - | | | | | | - | 15,160 | 18,970 | 11,660 | 3,088 | - |
| 21 | - | | | | | | - | 15,230 | 18,910 | 11,300 | 2,855 | - |
| 22 | - | | | | | | - | - | 18,930 | 10,940 | 2,686 | - |
| 23 | 2,385 | | | | | | 2,967 | 14,690 | 18,890 | 10,390 | 2,511 | - |
| 24 | - | | | | | | - | 14,620 | 18,830 | 10,240 | 2,329 | - |
| 25 | - | | | | | | - | 14,850 | 18,780 | 9,954 | 2,112 | - |
| 26 | - | | | | | | - | - | 18,680 | 9,666 | 1,946 | - |
| 27 | - | | | | | | - | 16,010 | 18,520 | 9,379 | 1,812 | - |
| 28 | - | | | | | | - | 16,320 | 18,280 | 9,081 | 1,654 | - |
| 29 | - | | | | | | - | - | 18,030 | 8,730 | 1,486 | - |
| 30 | - | | | | | | - | - | 17,760 | 8,366 | 1,359 | - |
| 31 | - | | | | | | - | - | - | 8,096 | 1,232 | - |

Monthly elevation and contents, water year October 1948 to September 1949

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| June 30..... | 5,117.52 | 17,760 | - |
| July 31..... | 5,111.05 | 8,096 | -9,664 |
| Aug. 31..... | 5,103.50 | 1,232 | -6,864 |

## Lake Fork Payette River below Lake Irrigation District Canal, near McCall, Idaho

Location.--Water-stage recorder, lat. 44°54', long. 116°03', in SW¼ sec. 13, T. 18 N., R. 3 E., 300 feet downstream from diversion dam for Lake Irrigation District Canal, half a mile downstream from Lake Fork Reservoir, and 3 miles southeast of McCall.

Records available.--October 1940 to September 1949.

Extremes.--Maximum discharge during year 1,410 second-feet May 17 (gage height, 6.28 feet); minimum, 9.9 second-feet Sept. 28 (gage height, 2.36 feet).
1940-49: Maximum discharge, 2,120 second-feet June 3, 1948 (gage height, 7.09 feet), from rating curve extended above 1,200 second-feet by logarithmic plotting; minimum, 0.4 second-foot Mar. 27, 28, 1944; minimum gage height, 1.76 feet Mar. 28, 1944.

Remarks.--Records good except those for period of no gage-height record, which are poor. Flow regulated by Lake Fork Reservoir (see prededing page). Lake Irrigation District Canal diverts above station.

Revisions (water years).--W 963: 1941.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 2.3 | 7.5 | 2.9 | 54 | 4.5 | 436 |
| 2.4 | 12 | 3.1 | 79 | 5.0 | 635 |
| 2.5 | 17 | 3.4 | 128 | 5.5 | 900 |
| 2.6 | 24 | 3.7 | 194 | 6.3 | 1,420 |
| 2.7 | 33 | 4.0 | 273 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19 | 27 | 46 | 28 | 23 | 24 | 36 | 50 | 436 | 84 | 62 | 29 |
| 2 | 19 | 28 | 45 | 28 | 23 | 24 | *36 | 53 | 263 | 85 | 65 | 26 |
| 3 | 19 | 31 | 46 | 27 | 23 | 24 | 37 | 123 | 136 | 82 | 64 | 25 |
| 4 | 20 | 31 | 44 | 27 | 23 | 24 | 39 | 237 | 172 | 82 | 60 | 24 |
| 5 | 20 | 29 | 43 | 26 | 23 | 24 | 42 | 276 | 303 | 88 | 56 | 20 |
| 6 | 20 | 29 | 42 | 26 | 23 | 24 | 45 | 303 | 514 | 88 | 51 | 17 |
| 7 | 21 | 28 | 42 | 25 | 23 | 24 | 48 | 357 | 796 | 92 | 48 | 18 |
| 8 | 25 | 28 | 41 | 25 | 23 | 24 | 54 | 429 | 670 | 94 | 48 | 19 |
| 9 | 26 | 40 | 40 | 24 | 23 | 25 | 60 | 518 | 398 | 92 | 48 | 20 |
| 10 | 26 | 132 | *39 | 24 | 23 | 25 | 69 | 675 | 374 | 96 | 50 | 17 |
| 11 | 26 | 187 | 39 | 23 | 23 | 25 | 79 | 924 | 443 | 96 | 48 | 19 |
| 12 | 25 | 170 | 39 | 23 | 23 | 25 | 92 | 1,110 | 440 | 91 | 43 | 20 |
| 13 | 26 | 159 | 38 | 23 | 23 | 26 | 107 | 1,220 | 306 | 82 | 40 | 21 |
| 14 | 27 | 148 | 37 | 23 | 23 | 26 | 114 | 1,280 | 202 | 78 | 45 | 22 |
| 15 | 27 | 136 | 37 | 23 | 24 | 26 | 121 | 1,310 | 97 | 78 | 46 | 19 |
| 16 | 25 | 124 | 36 | 23 | 24 | 26 | 130 | 1,360 | 108 | 82 | 46 | 16 |
| 17 | 25 | 114 | 36 | 23 | 24 | 27 | 146 | 1,300 | 108 | 80 | 47 | 15 |
| 18 | 25 | 104 | 35 | *23 | 24 | 28 | 163 | 1,080 | 88 | 82 | 47 | 15 |
| 19 | 25 | 96 | 35 | 23 | 24 | 28 | 184 | 906 | 78 | 80 | 52 | 15 |
| 20 | 25 | 90 | 34 | 23 | 24 | 30 | 214 | 850 | 76 | 79 | 54 | 14 |
| 21 | 25 | 84 | 34 | 23 | 24 | 32 | 227 | 823 | 71 | 78 | 53 | 13 |
| 22 | 25 | 79 | 33 | 23 | 24 | 34 | 132 | 752 | 78 | 78 | 51 | 13 |
| 23 | 25 | 75 | 33 | 23 | 24 | 34 | 43 | 690 | 79 | 75 | 50 | 13 |
| 24 | 25 | 70 | 32 | 23 | 24 | 35 | 45 | 570 | 75 | 65 | 48 | 12 |
| 25 | 25 | 65 | 32 | 23 | 24 | 35 | 46 | 483 | 74 | 61 | 48 | 11 |
| 26 | 24 | 61 | 31 | 23 | 24 | 35 | 46 | 590 | 74 | 62 | 47 | 11 |
| 27 | 24 | 56 | 31 | 23 | 24 | 36 | 46 | 796 | 86 | 64 | 45 | 10 |
| 28 | 24 | 53 | 30 | 23 | *24 | 36 | 47 | 948 | 86 | 66 | 45 | 9.9 |
| 29 | 24 | 51 | 30 | 23 | - | 36 | 48 | 966 | 86 | 67 | 32 | 10 |
| 30 | 24 | 48 | 29 | 23 | - | 36 | 48 | 845 | 84 | 61 | 22 | 10 |
| 31 | 25 | - | 29 | 23 | - | 36 | - | 675 | -. | 61 | 27 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 741 | 27 | 19 | 23.9 | 1,470 |
| November | 2,371 | 187 | 27 | 79.0 | 4,700 |
| December | 1,138 | 46 | 29 | 36.7 | 2,260 |
| Calendar year 1948 | 56,347.6 | 1,850 | 6.3 | 154 | 111,800 |
| January | 743 | 28 | 23 | 24.0 | 1,470 |
| February | 658 | 24 | 23 | 23.5 | 1,310 |
| March | 894 | 36 | 24 | 28.8 | 1,770 |
| April | 2,544 | 227 | 36 | 84.8 | 5,050 |
| May | 22,499 | 1,360 | 50 | 726 | 44,630 |
| June | 6,801 | 796 | 71 | 227 | 13,490 |
| July | 2,449 | 96 | 61 | 79.0 | 4,860 |
| August | 1,488 | 65 | 22 | 48.0 | 2,950 |
| September | 503.9 | 29 | 9.9 | 16.8 | 999 |
| Water year 1948-49 | 42,829.9 | 1,360 | 9.9 | 117 | 84,960 |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 16 to about Feb. 20, Mar. 1, 2, 4, 5, 7, 8, 10, 11, 24-26, 28, 29, 31, Apr. 1; no gage-height record Dec. 16 to Jan. 17, Jan. 19 to Feb. 27; discharge computed on basis of weather records, records for Lake Fork Payette River above Jumbo Creek, near McCall, Lake Fork Reservoir near McCall, and records for nearby streams.

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## Lake Irrigation District Canal near McCall, Idaho

Location.--Staff gage, lat. 44°54', long. 116°03', in SW¼ sec. 13, T. 18 N., R. 3 E., 600 feet downstream from head of canal, half a mile south of Lake Fork Reservoir, and 3 miles southeast of McCall.

Records available.--May 1926 to September 1949.

Extremes.--Maximum discharge observed during year, 198 second-feet June 16 (gage height, 4.09 feet); no flow for long periods.
1926-49: Maximum discharge observed, 201 second-feet June 30, July 1, 1948 (gage height, 4.05 feet); no flow or small amount of leakage through head gate during non-irrigation seasons.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Staff gage read once or twice daily. No diversion between head and station. Canal diverts from right bank of Lake Fork Payette River in SW¼ sec. 13, T. 18 N., R. 3 E., for irrigation of 6,800 acres of land near McCall and Norwood, in the Lake Irrigation District project.

Cooperation.--Gage readings furnished by Lake Irrigation District.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | a14 | a8 | | | | | | 0 | 125 | 163 | 105 | 42 |
| 2 | a20 | 7 | | | | | | 0 | 125 | 156 | 102 | 42 |
| 3 | 36 | | | | | | | 0 | 129 | 150 | 102 | 41 |
| 4 | 36 | | | | | | | 0 | 141 | 147 | 103 | 40 |
| 5 | 36 | | | | | | | 0 | 152 | 145 | 103 | 40 |
| 6 | 36 | a7 | | | | | | a0 | 152 | 144 | 102 | 36 |
| 7 | 36 | | | | | | | a0 | 154 | 138 | 101 | 28 |
| 8 | 8 | | | | | | | a0 | 160 | 133 | 101 | 25 |
| 9 | 8 | | | | | | | a0 | 167 | 131 | 100 | 25 |
| 10 | 8 | | | | | | | a0 | 172 | 131 | 100 | 30 |
| 11 | 8 | | | | | | | 8 | 184 | 128 | 97 | 30 |
| 12 | 8 | | | | | | | 8 | a185 | 131 | 93 | 28 |
| 13 | 8 | | | | | | | 14 | a186 | 133 | 90 | 22 |
| 14 | 8 | | | | | | | 26 | 187 | 135 | 89 | 23 |
| 15 | 8 | | | | | | | 40 | 187 | 134 | 86 | 26 |
| 16 | 8 | | | | | | | 40 | 194 | 134 | 81 | a24 |
| 17 | 8 | | | | | | | 52 | 195 | 135 | 79 | 20 |
| 18 | 8 | | | | | | | 55 | 197 | 135 | 78 | a20 |
| 19 | 8 | | | | | | | 55 | 186 | 134 | 77 | a19 |
| 20 | 8 | | | | | | | 54 | 178 | 133 | 71 | a18 |
| 21 | 8 | a0 | | | | | | 54 | 172 | 132 | 67 | a18 |
| 22 | 8 | | | | | | | 54 | 174 | 127 | 66 | a17 |
| 23 | 8 | | | | | | | 59 | 174 | 122 | 64 | a16 |
| 24 | a8 | | | | | | | 66 | 167 | 122 | 63 | a16 |
| 25 | a8 | | | | | | | 77 | 166 | 122 | 59 | a15 |
| 26 | a8 | | | | | | | 88 | 172 | 122 | 58 | a15 |
| 27 | a8 | | | | | | | 95 | 177 | 122 | 56 | a14 |
| 28 | a8 | | | | | | | a100 | 178 | 119 | 55 | 14 |
| 29 | a8 | | | | | | | 121 | 175 | 119 | 52 | a14 |
| 30 | a8 | | | | | | | 121 | 170 | 116 | 42 | a13 |
| 31 | a8 | - | | | | | | 125 | - | 112 | 42 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 406 | 36 | 8 | 13.1 | 805 |
| November | 71 | - | 0 | 2.4 | 141 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 12,012 | 201 | 0 | 32.8 | 23,820 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 0 | 0 | 0 | 0 | 0 |
| May | 1,312 | 125 | 0 | 42.3 | 2,600 |
| June | 5,081 | 197 | 125 | 169 | 10,080 |
| July | 4,105 | 163 | 112 | 132 | 8,140 |
| August | 2,484 | 105 | 42 | 80.1 | 4,930 |
| September | 731 | 42 | 13 | 24.4 | 1,450 |
| Water year 1948-49 | 14,190 | 197 | 0 | 38.9 | 28,150 |

a No gage-height record; discharge computed on basis of inflow-outflow study of Lake Fork Reservoir, record of gate changes, and records for Lake Fork Payette River below Lake Irrigation District Canal.

## Weiser River at Tamarack, Idaho

Location.--Staff gage, lat. 44°57', long. 116°23', in sec. 30, T. 19 N., R. 1 E., 0.4 mile southeast of Tamarack.

Drainage area.--36.5 square miles.

Records available.--September 1936 to September 1949.

Average discharge.--13 years, 41.5 second-feet.

Extremes.--Maximum discharge observed during year, 309 second-feet Apr. 20 (gage height, 3.86 feet); minimum daily, 3.4 second-feet Jan. 30 to Feb. 4; minimum gage height observed, 0.80 foot Oct. 9, 11, 13, 16, Aug. 22, 23.
1936-49: Maximum discharge observed, 775 second-feet Mar. 27, 1940 (gage height, 6.00 feet); minimum observed, 1.0 second-foot Sept. 2, 1947 (gage height, 0.55 foot).

Remarks.--Records fair except those for periods of ice effect, no gage-height record, indefinite stage-discharge relation, or when gage readings were not representative of mean for the day, which are poor. Gage read once daily. No diversions above station. Diurnal fluctuation caused by millpond at Tamarack. Small flow from Boulder Creek in Salmon River Basin enters Weiser River above station through transmountain diversion during late irrigation season.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.9 | a12 | a6.0 | 6.0 | 3.4 | a15 | 67 | 211 | 22 | a9.2 | 5.5 | 4.5 |
| 2 | 8.9 | a18 | a6.0 | a6.0 | a3.4 | a15 | a120 | a220 | 20 | 9.2 | 5.5 | 4.5 |
| 3 | a8.0 | 8.9 | 6.2 | 6.0 | a3.4 | 15 | a150 | 234 | a20 | 8.5 | 5.5 | 4.8 |
| 4 | a8.0 | a7.0 | a5.5 | a5.5 | a3.4 | a14 | a180 | a180 | 19 | 8.0 | 5.5 | a4.8 |
| 5 | 8.3 | 6.2 | a6.0 | 5.5 | 3.6 | 15 | 194 | 131 | 17 | a8.0 | 5.5 | 4.8 |
| 6 | 7.1 | 6.2 | 6.2 | a5.5 | a3.5 | 14 | 208 | a128 | 16 | 8.0 | 5.0 | 4.8 |
| 7 | 7.7 | 6.2 | 5.8 | a5.5 | b3.5 | a14 | a250 | 126 | a18 | a7.5 | a5.0 | 4.8 |
| 8 | a7.5 | a6.0 | a6.0 | 5.5 | a3.5 | 15 | 242 | a130 | 16 | a7.0 | 5.0 | 4.5 |
| 9 | 6.5 | a6.0 | a6.2 | a5.3 | a3.5 | a16 | 266 | a135 | 14 | 7.5 | 5.0 | 4.5 |
| 10 | a6.5 | 5.8 | a6.2 | 4.8 | a3.5 | 17 | a230 | a140 | a13 | a7.5 | 5.0 | 4.8 |
| 11 | 6.5 | 6.8 | a6.2 | a5.0 | a3.5 | a18 | 279 | 139 | 13 | 7.5 | 5.0 | a5.5 |
| 12 | a6.5 | a6.8 | a6.6 | 5.5 | b3.5 | 21 | a270 | 126 | 12 | 7.0 | 5.0 | 5.0 |
| 13 | 6.5 | 6.8 | a6.4 | a6.0 | a4.0 | 28 | 260 | 109 | 12 | 7.0 | 5.0 | 5.0 |
| 14 | a6.5 | a6.8 | a6.4 | a6.0 | b4.0 | a40 | 225 | 98 | 12 | a7.0 | a5.0 | 5.0 |
| 15 | a7.0 | a6.8 | a6.2 | 5.8 | a4.0 | 50 | 232 | a82 | a12 | a7.0 | 5.0 | 5.0 |
| 16 | 6.5 | 6.8 | a5.8 | a6.0 | a4.0 | a60 | 240 | 70 | 12 | 7.0 | 5.0 | 5.0 |
| 17 | a6.2 | a6.8 | a5.0 | b6.0 | b4.0 | a70 | a250 | a64 | a12 | 7.0 | 5.0 | 5.0 |
| 18 | a6.4 | a6.4 | a4.5 | *b6.0 | a4.5 | 103 | 254 | 57 | 12 | 7.0 | 5.0 | a5.0 |
| 19 | 7.1 | *7.1 | a5.0 | 5.5 | b5.0 | 115 | 268 | a52 | a12 | a7.0 | 5.0 | a5.0 |
| 20 | a7.0 | 7.7 | a6 | a5.5 | b6.0 | 133 | 309 | a48 | 13 | 7.0 | 5.0 | a5.0 |
| 21 | 7.1 | 6.0 | a6.0 | a5.5 | a6.5 | a120 | 290 | 44 | a12 | a7.0 | a5.0 | a5.0 |
| 22 | a7.7 | a6.0 | a5.8 | 5.5 | b8.0 | 109 | a260 | a43 | a12 | a7.0 | 5.0 | a5.0 |
| 23 | 7.1 | a6.0 | a5.8 | 5.5 | *b9.0 | a110 | 273 | 42 | 12 | 7.0 | 5.0 | a5.0 |
| 24 | a7.0 | 6.0 | a5.8 | a5.5 | a11 | 118 | a300 | 41 | a11 | 7.0 | 5.0 | a5.0 |
| 25 | 7.1 | a6.0 | a6.0 | 5.0 | b13 | a122 | 271 | a35 | 10 | 6.5 | 5.0 | a5.0 |
| 26 | a7.0 | 6.5 | a6.2 | a5.0 | b13 | *97 | 252 | a30 | a10 | 6.5 | 5.0 | a5.0 |
| 27 | a6.6 | a5.5 | 6.5 | 5.0 | a14 | 80 | a240 | 26 | a10 | 6.0 | 5.0 | a5.0 |
| 28 | a6.5 | a6.0 | a6.3 | a5.0 | b14 | a72 | a250 | 26 | 10 | 6.0 | a4.8 | a5.0 |
| 29 | 6.5 | a6.0 | 6.0 | 3.6 | - | a66 | 203 | 26 | a10 | 6.0 | 4.8 | a6.0 |
| 30 | a6.5 | 5.0 | a6.0 | 3.4 | - | a66 | 205 | a28 | 9.2 | 6.0 | 4.5 | a6.0 |
| 31 | 7.1 | - | a5.7 | a3.4 | - | 70 | - | 24 | - | a5.5 | 4.5 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 219.8 | 8.9 | 6.2 | 7.09 | 436 |
| November | 210.1 | 18 | 5.0 | 7.00 | 417 |
| December | 184.5 | 6.6 | 4.5 | 5.95 | 366 |
| Calendar year 1948 | 21,152.2 | 628 | 4.5 | 57.8 | 41,950 |
| January | 165.3 | 60 | 3.4 | 5.33 | 328 |
| February | 165.7 | 14 | 3.4 | 5.92 | 329 |
| March | 1,818 | 133 | 14 | 58.6 | 3,610 |
| April | 7,038 | 309 | 67 | 235 | 13,960 |
| May | 2,845 | 234 | 24 | 91.8 | 5,640 |
| June | 403.2 | 22 | 9.2 | 13.4 | 800 |
| July | 221.4 | 9.2 | 5.5 | 7.14 | 439 |
| August | 156.1 | 5.5 | 4.5 | 5.04 | 310 |
| September | 149.3 | 6.0 | 4.5 | 4.98 | 296 |
| Water year 1948-49 | 13,576.4 | 309 | 3.4 | 37.2 | 26,930 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated or computed on basis of weather records and records for other Weiser River stations.
b Stage-discharge relation affected by ice.
Note.--Stage-discharge relation indefinite because of beaver dams or gage readings not representative of mean for day Nov. 30, July 3 to Sept. 17; discharge computed on basis of 3 discharge measurements, weather records, and records for Weiser River at Starkey and Mud Creek near Tamarack.

## Weiser River at Starkey, Idaho

Location.--Water-stage recorder, lat. 44°51', long. 116°27', in sec. 34, T. 18 N., R. 1 W., at Starkey Hot Springs, 200 feet upstream from Warm Springs Creek and 10 miles north of Council.

Drainage area.--106 square miles.

Records available.--August to September 1920, March 1939 to October 1949 (discontinued).

Average discharge.--10 years (1939-49), 128 second-feet.

Extremes.--Maximum discharge during period October 1948 to October 1949, 786 second-feet Apr. 20 (gage height, 4.32 feet); minimum, 13 second-feet Aug. 29, Sept. 2 (gage height, 1.39 feet).

Extremes.--Maximum discharge during October 1948 to October 1949, 786 second-feet Apr. 20 (gage height, 4.32 feet); minimum, 13 second-feet Aug. 29, Sept. 2 (gage height, 1.39 feet).

1920, 1939-49: Maximum discharge, 2,450 second-feet Mar. 27, 1940 (gage height, 6.00 feet), from rating curve extended above 700 second-feet by logarithmic plotting; minimum, 8.0 second-feet Aug. 31, 1939, Aug. 23, 1940; minimum gage height, 1.04 feet Aug. 31, 1939.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Diurnal fluctuation at low flow caused by millpond at Tamarack. Several small diversions from river and tributaries above station.

Discharge, in second-feet, 1948-49

1948-49

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 21 | 55 | 30 | 39 | 28 | 61 | 244 | 465 | 159 | 38 | 18 | 14 |
| 2 | 21 | 86 | 34 | 40 | 28 | 65 | 315 | 545 | 140 | 36 | 18 | 14 |
| 3 | 20 | 78 | 36 | 38 | 28 | 74 | 370 | 622 | 129 | 35 | 17 | 14 |
| 4 | 26 | 56 | 27 | 35 | 27 | 89 | 453 | 541 | 120 | 29 | 17 | 14 |
| 5 | 30 | 44 | 33 | 35 | 26 | 96 | 520 | 453 | 117 | 28 | 16 | 14 |
| 6 | 26 | 40 | 35 | 35 | 26 | 104 | 572 | 405 | 120 | 29 | 16 | 15 |
| 7 | 25 | 34 | 30 | 35 | 25 | 109 | 622 | 386 | 140 | 28 | 16 | 14 |
| 8 | 22 | 30 | 34 | 35 | 26 | 107 | 581 | 405 | 124 | 27 | 17 | 14 |
| 9 | 21 | 30 | 36 | 34 | 26 | 101 | 585 | 433 | 114 | 26 | 16 | 14 |
| 10 | 21 | 36 | 36 | 33 | 24 | 98 | 563 | 465 | 107 | 26 | 16 | 15 |
| 11 | 21 | 35 | 36 | 32 | 25 | 104 | 608 | 490 | 104 | 24 | 16 | 18 |
| 12 | 20 | 34 | 38 | 32 | 25 | 114 | 626 | 478 | 95 | 24 | 17 | 18 |
| 13 | 20 | 33 | 37 | 32 | 26 | 122 | 541 | 449 | 88 | 22 | 18 | 17 |
| 14 | 20 | 33 | 37 | 32 | 27 | 131 | 469 | 425 | 82 | 22 | 17 | 17 |
| 15 | 21 | 34 | 36 | 32 | 29 | 144 | 457 | 401 | 75 | 22 | 17 | 17 |
| 16 | 20 | 34 | 27 | 32 | 28 | 164 | 490 | 367 | 74 | 23 | 17 | 17 |
| 17 | 20 | 34 | 20 | *30 | 29 | 183 | 567 | 311 | 67 | 22 | 17 | 16 |
| 18 | 20 | 26 | 22 | 30 | 31 | 264 | 636 | 270 | 65 | 22 | 17 | 17 |
| 19 | 20 | 35 | 27 | 30 | 33 | 340 | 684 | 238 | 63 | 21 | 17 | 17 |
| 20 | 21 | *35 | 37 | 30 | 35 | 333 | 745 | 229 | 62 | 20 | 16 | 17 |
| 21 | 20 | 31 | 35 | 30 | 37 | 297 | 655 | 212 | 58 | 20 | 16 | 17 |
| 22 | 21 | 31 | 30 | 30 | *38 | 273 | 576 | 196 | 56 | 20 | 16 | 16 |
| 23 | 19 | 31 | 29 | 29 | 50 | 277 | 599 | 186 | 52 | 20 | 16 | 16 |
| 24 | 20 | 33 | 32 | 29 | 57 | 280 | 669 | 173 | 49 | 20 | 16 | 17 |
| 25 | 20 | 31 | 33 | 28 | 56 | 294 | 613 | 166 | 48 | 20 | 16 | 17 |
| 26 | 21 | 30 | 36 | 27 | 56 | 251 | 550 | 166 | 47 | 19 | 16 | 17 |
| 27 | 27 | 27 | 38 | 27 | 58 | *212 | 520 | 171 | 45 | 20 | 15 | 16 |
| 28 | 27 | 31 | 38 | 27 | 58 | 181 | 545 | 171 | 44 | 20 | 15 | 18 |
| 29 | 27 | 26 | 40 | 27 | - | 164 | 590 | 196 | 44 | 20 | 14 | 21 |
| 30 | 30 | 21 | 40 | 27 | - | 169 | 515 | 199 | 40 | 19 | 14 | 20 |
| 31 | 35 | - | 38 | 28 | - | 186 | - | 178 | - | 18 | 14 | - |

Peak discharge (base, 500 sec.-ft.).--Apr. 7 (1 a.m.) 660 sec.-ft.; Apr. 20 (3:30 a.m.) 786 sec.-ft.; May 3 (2 a.m.) 645 sec.-ft.; May 11 (10 to 12 p.m.) 507 sec.-ft.

* Winter discharge measurament made on this day.

Note.--Stage-discharge relation affected by ice Dec. 18 to Feb. 24 (no gage-height record Dec. 23-25, Dec. 27 to Jan. 2, Jan. 4-8, 10-15, 19, 20, 22-29, Jan. 30 to Feb. 9, Feb. 13-15; discharge computed on basis of weather records and records for station near Cambridge and other nearby streams).

1949

| Day | Discharge | Day | Discharge | Day | Discharge |
|---|---|---|---|---|---|
| Oct. 1 | 22 | Oct. 6 | 27 | Oct. 11 | 25 |
| 2 | 19 | 7 | 26 | 12 | 28 |
| 3 | 20 | 8 | 25 | 13 | 28 |
| 4 | 20 | 9 | 24 | 14 | 28 |
| 5 | 28 | 10 | 25 | 15 | 28 |

Monthly discharge, in second-feet, 1948-49

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October 1948 | 703 | 35 | 19 | 22.7 | 1,390 |
| November | 1,114 | 86 | 21 | 37.1 | 2,210 |
| December | 1,037 | 40 | 20 | 33.5 | 2,060 |
| Calendar year 1948 | 57,414 | 1,270 | 15 | 157 | 113,900 |
| January 1949 | 980 | 40 | 27 | 31.6 | 1,940 |
| February | 962 | 58 | 24 | 34.4 | 1,910 |
| March | 5,387 | 340 | 61 | 174 | 10,680 |
| April | 16,480 | 745 | 244 | 549 | 32,690 |
| May | 10,392 | 622 | 166 | 335 | 20,610 |
| June | 2,528 | 159 | 40 | 84.3 | 5,010 |
| July | 740 | 38 | 18 | 23.9 | 1,470 |
| August | 504 | 18 | 14 | 16.3 | 1,000 |
| September | 488 | 21 | 14 | 16.3 | 968 |
| Water year 1948-49 | 41,315 | 745 | 14 | 113 | 81,940 |
| October 1-15, 1949 | 373 | 28 | 19 | 24.9 | 740 |

## Weiser River near Council, Idaho

Location.--Water-stage recorder, lat. 44°41', long. 116°29', in sec. 29, T. 16 N., R. 1 W., 0.7 mile downstream from Cottonwood Creek, 2 miles upstream from Middle Fork, and 3½ miles southwest of Council.

Drainage area.--390 square miles.

Records available.--April 1937 to September 1949.

Average discharge.--12 years, 410 second-feet.

Extremes.--Maximum discharge during year, 2,320 second-feet Mar. 18 (gage height, 6.09 feet); minimum, 36 second-feet July 9 (gage height, 0.71 foot).
1937-49: Maximum discharge, 6,7000 second-feet Mar. 16 or 17, 1938 (gage height, 7.6 feet, from floodmark, site and datum then in use), from rating curve extended above 3,500 second-feet; minimum, 22 second-feet June 29, 1940.

Remarks.--Records good except those for Dec. 16 to Feb. 11, June 10-16, which are fair, and those for Feb. 12-25, which are poor. Flow partly regulated by Lost Valley Reservoir (see p. 193) and other reservoirs. Many diversions above station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 62 | 101 | 78 | 100 | 78 | *533 | 660 | 1,190 | 519 | 63 | 60 | 51 |
| 2 | 63 | 217 | 107 | 100 | 78 | 561 | 786 | 1,290 | 446 | 54 | 60 | 48 |
| 3 | 63 | 188 | 111 | 95 | 76 | 660 | 890 | 1,410 | 400 | 50 | 58 | 55 |
| 4 | 69 | 134 | 88 | 90 | 74 | 846 | 1,020 | 1,260 | 382 | 48 | 58 | 58 |
| 5 | 88 | 106 | 91 | 90 | 72 | 955 | 1,180 | 1,100 | 379 | 44 | 57 | 59 |
| 6 | 78 | 98 | 93 | 90 | 72 | 1,040 | 1,300 | 1,000 | 373 | 40 | 58 | 57 |
| 7 | 74 | 85 | 87 | 90 | 70 | 1,040 | 1,410 | 985 | 427 | 37 | 59 | 59 |
| 8 | 72 | 73 | 94 | 90 | 76 | 970 | 1,340 | 1,040 | 376 | 37 | 59 | 61 |
| 9 | 68 | 73 | 93 | 90 | 78 | 895 | 1,380 | 1,100 | 339 | 37 | 59 | 61 |
| 10 | 67 | 85 | 96 | 84 | 66 | 875 | 1,340 | 1,210 | 306 | 50 | 59 | 64 |
| 11 | 66 | 85 | 99 | 84 | 65 | 900 | 1,410 | 1,350 | 296 | 58 | 58 | 69 |
| 12 | 64 | 82 | 132 | 84 | 66 | 1,100 | 1,490 | 1,380 | 275 | 59 | 57 | 70 |
| 13 | 66 | 81 | 132 | 84 | 80 | 1,140 | 1,310 | 1,370 | 240 | 61 | 61 | 70 |
| 14 | 66 | 79 | 125 | 84 | 90 | 1,140 | 1,130 | 1,320 | 205 | 59 | 58 | 69 |
| 15 | 68 | 81 | 118 | 84 | 120 | 1,230 | 1,080 | 1,270 | 181 | 54 | 57 | 69 |
| 16 | 69 | 88 | 100 | 84 | 140 | 1,380 | 1,140 | 1,250 | 154 | 50 | 57 | 106 |
| 17 | 66 | 96 | 80 | 84 | 160 | 1,340 | 1,280 | 1,120 | 140 | 47 | 57 | 119 |
| 18 | 67 | 74 | 70 | 84 | 200 | 1,890 | 1,470 | 990 | 136 | 45 | 59 | 118 |
| 19 | 68 | 84 | 87 | *83 | 260 | 1,930 | 1,620 | 875 | 142 | 40 | 60 | 118 |
| 20 | 68 | 90 | 120 | 84 | 340 | 1,670 | 1,790 | 846 | 144 | 38 | 59 | 114 |
| 21 | 68 | 85 | 100 | 84 | 459 | 1,470 | 1,600 | 782 | 130 | 39 | 58 | 114 |
| 22 | 67 | 82 | 80 | 84 | 502 | 1,260 | 1,430 | 721 | 116 | 58 | 57 | 109 |
| 23 | 67 | 82 | 80 | 84 | 750 | 1,180 | 1,420 | 680 | 109 | 66 | 55 | 106 |
| 24 | 66 | *91 | 80 | 84 | 700 | 1,100 | 1,550 | 652 | 99 | 68 | 55 | 104 |
| 25 | 66 | 88 | 85 | 78 | 660 | 1,040 | 1,470 | 621 | 90 | 67 | 55 | 102 |
| 26 | 66 | 84 | 95 | 76 | 579 | 900 | 1,330 | 602 | 87 | 68 | 56 | 101 |
| 27 | 66 | 77 | 100 | 76 | 547 | 768 | 1,270 | 613 | 84 | 66 | 56 | 99 |
| 28 | 67 | 82 | 100 | 78 | 536 | 648 | 1,300 | 610 | 77 | 66 | 54 | 99 |
| 29 | 67 | 75 | 105 | 78 | - | 576 | 1,410 | 613 | 77 | 63 | 54 | 109 |
| 30 | 68 | 64 | 105 | 76 | - | 561 | 1,290 | 629 | 73 | 62 | 52 | 111 |
| 31 | 72 | - | 100 | 80 | - | 569 | - | 554 | - | 60 | 50 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 2,112 | 88 | 62 | 68.1 | 4,190 |
| November | 2,809 | 217 | 64 | 93.6 | 5,570 |
| December | 3,031 | 132 | 70 | 97.8 | 6,010 |
| Calendar year 1948 | 176,800 | 3,090 | 54 | 483 | 350,600 |
| January | 2,636 | 100 | 76 | 85.0 | 5,230 |
| February | 6,994 | 750 | 65 | 250 | 13,870 |
| March | 32,167 | 1,930 | 533 | 1,038 | 63,800 |
| April | 39,096 | 1,790 | 660 | 1,303 | 77,550 |
| May | 30,433 | 1,410 | 554 | 982 | 60,360 |
| June | 6,802 | 519 | 73 | 227 | 13,490 |
| July | 1,654 | 68 | 37 | 53.4 | 3,280 |
| August | 1,772 | 61 | 50 | 57.2 | 3,510 |
| September | 2,549 | 119 | 48 | 85.0 | 5,060 |
| Water year 1948-49 | 132,055 | 1,930 | 37 | 362 | 261,900 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 16 to Feb. 20, Feb. 23, 24.

## Weiser River near Cambridge, Idaho

Location.--Water-stage recorder, lat. 44°35', long. 116°38', in NE¼ sec. 1, T. 14 N., R. 3 W., 2¼ miles northeast of Cambridge and 2½ miles upstream from Rush Creek.

Drainage area.--605 square miles.

Records available.--March 1939 to September 1949.

Average discharge.--10 years, 642 second-feet.

Extremes.--Maximum discharge during year, 4,010 second-feet Mar. 18 (gage height, 6.94 feet); minimum discharge, 44 second-feet Aug. 18 (gage height, 0.85 foot); minimum daily, 48 second-feet July 20, 21.
1939-49: Maximum discharge, 6,670 second-feet Mar. 31, 1940 (gage height, 8.30 feet); minimum, 23 second-feet Oct. 1, 1943 (gage height, 0.78 foot); minimum daily, 27 second-feet Sept. 2, 3, 1940.

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. Flow partly regulated by Lost Valley Reservoir (see p. 193) and other reservoirs. Diversions above station for irrigation.

Rating tables, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Feb. 28 | | | | Mar. 1 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1.1 | 73 | 2.4 | 379 | 0.8 | 39 | 2.0 | 273 | 4.8 | 1,840 |
| 1.2 | 87 | 2.8 | 535 | .9 | 49 | 2.4 | 412 | 5.6 | 2,570 |
| 1.4 | 119 | 3.2 | 729 | 1.1 | 73 | 2.8 | 574 | 6.3 | 3,290 |
| 1.7 | 180 | 3.6 | 965 | 1.3 | 105 | 3.3 | 823 | | |
| 2.0 | 255 | 4.2 | 1,350 | 1.6 | 168 | 4.0 | 1,260 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 94 | 136 | 105 | a160 | 116 | 964 | 940 | 1,840 | 1,160 | 139 | 64 | 49 |
| 2 | 92 | 376 | 154 | a160 | 116 | 994 | 1,080 | 2,000 | 1,000 | 120 | 64 | 49 |
| 3 | 88 | 307 | 178 | a150 | 114 | 1,120 | 1,200 | 2,160 | 886 | 113 | 63 | 49 |
| 4 | 92 | 234 | 128 | a140 | 110 | 1,500 | 1,340 | 1,930 | 852 | 105 | 59 | 57 |
| 5 | 152 | 165 | 138 | a140 | 107 | 1,650 | 1,540 | 1,700 | 857 | 96 | 57 | 58 |
| 6 | 121 | 146 | 144 | h138 | 107 | 1,840 | 1,680 | 1,600 | 857 | 86 | 57 | 60 |
| 7 | 110 | 127 | 119 | a140 | 104 | 1,920 | 1,810 | 1,640 | 946 | 78 | 58 | 60 |
| 8 | 107 | 110 | 142 | a140 | 112 | 1,740 | 1,720 | 1,760 | 852 | 72 | 59 | 63 |
| 9 | 100 | 102 | 142 | a140 | 114 | 1,600 | 1,800 | 1,940 | 747 | 70 | 60 | 63 |
| 10 | 96 | 123 | 146 | a130 | 100 | 1,560 | 1,750 | 2,170 | 675 | 70 | 60 | 66 |
| 11 | 94 | 130 | 152 | a130 | b100 | 1,630 | 1,870 | 2,460 | 632 | 86 | 60 | 74 |
| 12 | 93 | 127 | 199 | a130 | b100 | 2,070 | 1,980 | 2,600 | 574 | 79 | 59 | 79 |
| 13 | 92 | 125 | 222 | h128 | b120 | 2,130 | 1,760 | 2,660 | 499 | 76 | 60 | 80 |
| 14 | 88 | 123 | 216 | a130 | b140 | 2,120 | 1,550 | 2,620 | 443 | 70 | 61 | 80 |
| 15 | 92 | 128 | 199 | a130 | b180 | 2,190 | 1,490 | 2,560 | 412 | 64 | 60 | 82 |
| 16 | 94 | 132 | 162 | a130 | 212 | 2,400 | 1,560 | 2,510 | 374 | 60 | 58 | 98 |
| 17 | 92 | 146 | a120 | a130 | 232 | 2,320 | 1,790 | 2,300 | 345 | 57 | 58 | 124 |
| 18 | 90 | 117 | a90 | h128 | 310 | 2,970 | 2,040 | 1,990 | 321 | 53 | 58 | 128 |
| 19 | 93 | 123 | a138 | a130 | b450 | 3,280 | 2,190 | 1,760 | 318 | 51 | 60 | 120 |
| 20 | 93 | 134 | a190 | *127 | b750 | 2,790 | 2,410 | 1,700 | 331 | 48 | 58 | 114 |
| 21 | 93 | 132 | h165 | 125 | *b680 | 2,450 | 2,160 | 1,620 | 292 | 48 | 58 | 114 |
| 22 | 92 | 127 | a120 | 127 | b750 | 2,130 | 1,930 | 1,490 | 270 | 51 | 58 | 111 |
| 23 | 92 | 127 | a115 | 125 | b1,100 | 1,950 | 1,960 | 1,420 | 247 | 69 | 57 | 105 |
| 24 | 87 | 132 | a120 | 123 | b1,300 | 1,750 | 2,240 | 1,350 | 228 | 69 | 56 | 105 |
| 25 | 92 | 134 | a130 | 116 | b1,150 | 1,620 | 2,150 | 1,320 | 207 | 69 | 56 | 105 |
| 26 | 92 | 132 | a150 | 112 | b1,050 | 1,390 | 2,000 | 1,320 | 190 | 69 | 56 | 102 |
| 27 | 93 | 116 | a160 | 114 | b1,000 | 1,210 | 1,960 | 1,360 | 187 | 69 | 55 | 102 |
| 28 | 92 | 125 | a160 | 116 | b960 | 1,000 | 2,040 | 1,350 | 170 | 68 | 52 | 100 |
| 29 | 94 | 114 | h162 | 116 | - | 880 | 2,160 | 1,330 | 163 | 68 | 53 | 124 |
| 30 | 96 | 77 | a160 | 114 | - | 852 | 1,980 | 1,400 | 154 | 65 | 52 | 128 |
| 31 | 99 | - | a160 | 117 | - | 840 | - | 1,220 | - | 64 | 49 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 2,995 | 152 | 87 | 96.6 | 5,940 |
| November | 4,327 | 376 | 77 | 144 | 8,580 |
| December | 4,686 | 222 | 90 | 151 | 9,290 |
| Calendar year 1948 | 263,937 | 4,060 | 58 | 721 | 523,600 |
| January | 4,036 | 160 | 112 | 130 | 8,010 |
| February | 11,684 | 1,300 | 100 | 417 | 23,170 |
| March | 54,860 | 3,280 | 840 | 1,770 | 108,800 |
| April | 54,080 | 2,410 | 940 | 1,803 | 107,300 |
| May | 57,080 | 2,660 | 1,220 | 1,841 | 113,200 |
| June | 15,189 | 1,160 | 154 | 506 | 30,130 |
| July | 2,302 | 139 | 48 | 74.3 | 4,570 |
| August | 1,795 | 64 | 49 | 57.9 | 3,560 |
| September | 2,649 | 128 | 49 | 88.3 | 5,250 |
| Water year 1948-49 | 215,683 | 3,280 | 48 | 591 | 427,800 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for stations near Council and near Weiser and nearby streams.
b Stage-discharge relation affected by ice.
h Computed from wire-weight gage reading.

## Weiser River above Crane Creek, near Weiser, Idaho

Location.--Water-stage recorder, lat. 44°18', long. 116°48', in sec. 10, T. 11 N., R. 4 W., 1 mile upstream from Crane Creek and 9 miles northeast of Weiser.

Drainage area.--1,160 square miles.

Records available.--July 1920 to September 1949.

Average discharge.--28 years (1921-49), 859 second-feet.

Extremes.--Maximum discharge during year, 6,560 second-feet Mar. 19; maximum gage height, 8.59 feet Feb. 23 (ice jam); minimum discharge, 27 second-feet Sept. 5 (gage height, 0.80 foot).
1920-49: Maximum discharge, 16,900 second-feet Mar. 19, 1932 (gage height, 10.8 feet, from floodmarks), from rating curve extended above 9,000 second-feet by logarithmic plotting; minimum, 5 second-feet (estimated) Aug. 11 to Sept. 10, 1931.

Remarks.--Records good except those for Nov. 30 to Feb. 10, which are fair, and those for Feb. 11 to Mar. 5, July 1-20, which are poor. Flow partly regulated by Lost Valley Reservoir (see p. 193) and other reservoirs. Diversions above station for irrigation.

Revisions (water years).--W 903: 1932(M).

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 153 | 156 | *110 | 210 | 160 | 1,600 | 1,340 | 2,370 | 1,940 | 143 | 48 | 34 |
| 2 | 143 | 306 | 220 | 210 | 160 | 1,600 | 1,500 | 2,520 | 1,610 | 127 | 48 | 31 |
| 3 | 140 | 429 | 230 | 200 | 160 | 1,900 | 1,620 | 2,760 | 1,420 | 124 | 48 | 32 |
| 4 | 140 | 402 | 180 | 190 | 150 | 2,500 | 1,780 | 2,520 | 1,350 | 118 | 50 | 30 |
| 5 | 167 | 278 | 190 | 190 | 150 | 2,900 | 2,010 | 2,210 | 1,350 | 110 | 52 | 30 |
| 6 | 219 | 223 | 200 | 180 | 150 | 3,100 | 2,220 | 2,010 | 1,360 | 99 | 50 | 37 |
| 7 | 185 | 204 | 170 | 180 | 150 | 3,300 | 2,440 | 2,020 | 1,390 | 88 | 47 | 42 |
| 8 | 167 | 185 | 190 | 180 | 160 | 3,000 | 2,400 | 2,180 | 1,360 | 77 | 44 | 50 |
| 9 | 160 | 160 | 190 | 180 | 160 | 2,600 | 2,430 | 2,460 | 1,180 | 68 | 44 | 52 |
| 10 | 153 | 156 | 200 | 170 | 150 | 2,500 | 2,390 | 2,790 | 1,060 | 79 | 41 | 52 |
| 11 | 143 | 178 | 210 | 170 | 140 | 2,600 | 2,460 | 3,230 | 968 | 81 | 41 | 55 |
| 12 | 140 | 185 | 275 | 170 | 140 | 3,500 | 2,660 | 3,520 | 880 | 81 | 45 | 66 |
| 13 | 137 | 181 | 300 | 170 | 170 | 3,500 | 2,500 | 3,690 | 778 | 73 | 48 | 70 |
| 14 | 134 | 178 | 290 | 170 | 225 | 3,500 | 2,140 | 3,690 | 697 | 68 | 47 | 73 |
| 15 | 130 | 178 | 270 | 170 | 300 | 3,700 | 1,980 | 3,740 | 608 | 64 | 48 | 77 |
| 16 | 130 | 181 | 240 | 170 | 350 | *4,270 | 2,020 | 3,720 | 549 | 61 | 52 | 84 |
| 17 | 130 | 192 | 170 | 170 | *450 | 4,370 | 2,220 | 3,590 | 499 | 55 | 53 | 96 |
| 18 | 124 | 200 | 130 | 170 | 540 | 5,020 | 2,580 | 3,100 | 463 | 48 | 42 | 118 |
| 19 | 127 | 170 | 200 | 170 | 800 | 5,830 | 2,800 | 2,700 | 446 | 44 | 45 | 118 |
| 20 | 127 | 189 | 250 | 170 | 1,300 | 4,780 | 3,090 | 2,550 | 452 | 41 | 45 | 112 |
| 21 | 127 | 196 | 220 | 170 | 1,200 | 4,250 | 2,900 | 2,520 | 418 | 40 | 55 | 112 |
| 22 | 127 | 189 | 170 | 170 | 1,400 | 3,740 | 2,560 | 2,260 | 359 | 38 | 53 | 115 |
| 23 | 127 | 185 | 160 | *170 | 2,100 | 3,330 | 2,500 | 2,180 | 334 | 38 | 57 | 112 |
| 24 | 124 | 185 | 170 | 170 | 2,600 | 2,900 | 2,800 | 2,100 | 310 | 38 | 52 | 107 |
| 25 | 124 | 192 | 180 | 160 | 2,400 | 2,640 | 2,800 | 2,010 | 269 | 41 | 41 | 104 |
| 26 | 127 | 196 | 200 | 160 | 2,000 | 2,260 | 2,600 | 1,990 | 235 | 42 | 41 | 102 |
| 27 | 130 | 174 | 210 | 160 | 1,700 | 2,020 | 2,500 | 2,030 | 211 | 42 | 42 | 96 |
| 28 | 130 | 170 | 210 | 160 | 1,600 | 1,630 | 2,560 | 2,060 | 192 | 45 | 45 | 96 |
| 29 | 130 | 164 | 210 | 160 | - | 1,410 | 2,740 | 2,020 | 170 | 47 | 45 | 96 |
| 30 | 134 | 140 | 210 | 160 | - | 1,340 | 2,610 | 2,150 | 156 | 47 | 40 | 124 |
| 31 | 137 | - | 210 | 160 | - | 1,260 | - | 1,870 | - | 48 | 38 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 4,366 | 219 | 124 | 141 | 8,660 |
| November | 6,122 | 429 | 140 | 204 | 12,140 |
| December | 6,365 | 300 | 110 | 205 | 12,620 |
| Calendar year 1948 | 367,831 | 5,360 | 57 | 1,005 | 729,600 |
| January | 5,390 | 210 | 160 | 174 | 10,690 |
| February | 20,965 | 2,600 | 140 | 749 | 41,580 |
| March | 92,850 | 5,830 | 1,260 | 2,995 | 184,200 |
| April | 71,150 | 3,090 | 1,340 | 2,372 | 141,100 |
| May | 80,560 | 3,740 | 1,870 | 2,599 | 159,800 |
| June | 23,014 | 1,940 | 156 | 767 | 45,650 |
| July | 2,115 | 143 | 38 | 68.2 | 4,200 |
| August | 1,447 | 57 | 38 | 46.7 | 2,870 |
| September | 2,323 | 124 | 30 | 77.4 | 4,610 |
| Water year 1948-49 | 316,667 | 5,830 | 30 | 868 | 628,100 |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 30 to Mar. 15 (no gage-height record Dec. 12 to Jan. 22, Jan. 24 to Feb. 16, Feb. 24 to Mar. 3; discharge computed on basis of weather records and records for other Weiser River stations and nearby streams).

## West Fork Weiser River near Fruitvale, Idaho

Location.--Staff gage, lat. 44°50', long. 116°28', in NW¼ sec. 9, T. 17 N., R. 1 W., at bridge 1¼ miles northwest of Fruitvale and 1½ miles upstream from mouth.
Drainage area.--78 square miles.
Records available.--October 1910 to January 1913, October 1919 to September 1925, April 1937 to October 1949 (discontinued).
Average discharge.--17 years (1911-12, 1919-22, 1924-25, 1937-49), 92.5 second-feet.
Extremes.--Maximum discharge observed during period October 1948 to October 1949, 578 second-feet Apr. 20 (gage height, 3.95 feet); minimum observed, 6.6 second-feet Nov. 8, July 7-9; minimum gage height observed, 1.37 feet July 7-9.
1910-13, 1919-25, 1937-49: Maximum discharge observed, 1,170 second-feet Mar. 31, 1940; minimum observed, 0.5 second-foot July 23-27, 1911.
Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. Gage usually read once daily. Several diversions above and below station for irrigation. Flow regulated by Lost Valley Reservoir (see following page).
Revisions.--W 833: Drainage area.

Discharge, in second-feet, 1948-49

1948

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9.4 | 14 | 10 | 16 | a12 | 56 | 101 | 408 | 30 | 9.7 | 49 | 45 |
| 2 | 9.7 | 23 | 19 | 16 | a12 | 59 | 125 | 408 | 27 | 9.4 | 49 | 45 |
| 3 | 9.0 | 17 | 19 | 16 | a12 | 61 | 140 | 425 | 24 | 9.4 | 47 | 57 |
| 4 | 10 | 14 | 13 | 15 | a11 | 81 | 163 | 416 | 23 | 7.2 | 47 | 56 |
| 5 | 10 | 13 | 12 | 15 | a11 | 95 | 199 | 376 | 20 | 7.6 | 47 | 54 |
| 6 | 12 | 11 | 15 | a15 | a11 | 104 | 211 | 330 | 19 | 7.6 | 47 | 54 |
| 7 | 10 | 9.7 | 13 | 15 | 11 | 107 | 248 | 309 | 22 | 6.6 | 48 | 57 |
| 8 | 10 | 6.6 | 14 | 15 | 11 | 114 | 235 | 323 | 17 | 6.6 | 48 | 57 |
| 9 | 10 | 10 | 15 | 15 | 11 | a100 | 248 | 345 | 14 | 6.6 | 48 | 57 |
| 10 | 10 | 14 | 15 | 14 | 10 | 83 | 242 | 376 | 13 | 37 | 47 | 57 |
| 11 | 9.7 | 14 | 16 | 13 | 10 | 89 | 254 | 416 | 12 | 32 | 47 | 57 |
| 12 | 10 | 14 | 17 | 13 | 10 | 95 | 288 | 450 | 11 | 39 | 47 | 57 |
| 13 | 10 | 10 | 18 | 13 | 11 | 101 | 248 | 450 | 9.7 | 41 | 47 | 57 |
| 14 | 10 | 12 | 16 | 13 | 13 | 110 | 229 | 425 | 9.4 | 34 | 47 | 57 |
| 15 | 11 | 12 | 15 | 13 | 15 | 121 | 242 | 392 | 9.0 | 30 | 48 | 57 |
| 16 | 10 | 12 | 13 | 13 | 17 | 132 | 288 | 376 | 8.3 | 26 | 48 | 101 |
| 17 | 10 | 12 | 10 | 13 | 19 | 153 | 353 | 330 | 8.0 | 22 | 48 | 101 |
| 18 | 9.7 | 11 | 12 | 13 | 21 | 178 | 441 | 281 | 7.2 | 20 | 48 | 101 |
| 19 | 9.7 | 13 | 14 | *13 | 24 | 229 | 512 | 242 | 7.2 | 16 | 49 | 98 |
| 20 | 9.4 | *14 | 16 | 13 | 27 | 229 | 578 | 223 | 9.4 | 15 | 48 | 98 |
| 21 | 9.4 | 13 | 15 | 13 | 30 | 194 | 526 | 194 | 7.6 | 17 | 48 | 98 |
| 22 | 9.0 | 12 | 14 | 13 | 40 | 163 | 467 | 178 | 8.0 | 49 | 48 | 95 |
| 23 | 9.0 | 12 | 13 | 13 | 60 | 168 | 476 | 153 | 8.0 | 50 | 49 | 92 |
| 24 | 9.0 | 13 | 14 | 13 | 56 | 163 | 503 | 145 | 8.0 | 50 | 45 | 92 |
| 25 | 9.4 | 11 | 14 | 13 | 49 | 153 | 485 | 132 | 7.6 | 50 | 45 | 89 |
| 26 | 9.4 | 11 | 15 | 12 | 47 | 132 | 450 | 110 | 7.6 | 53 | 45 | 89 |
| 27 | 10 | 11 | 18 | 12 | 50 | 110 | 433 | 107 | 8.6 | 49 | 45 | 89 |
| 28 | 9.4 | 13 | 18 | 12 | *54 | 93 | 433 | 101 | 9.4 | 49 | 45 | 83 |
| 29 | 9.4 | 14 | 17 | a12 | - | 81 | 467 | 54 | 10 | 51 | 45 | 83 |
| 30 | 9.7 | 7.2 | 17 | a12 | - | 78 | 441 | 37 | 10 | 52 | 45 | 81 |
| 31 | 10 | - | 16 | a12 | - | 82 | - | 32 | - | 50 | 45 | - |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records, records for Lost Creek near Tamarack, and inflow between stations on Weiser River at Starkey and near Council.
Note.--Stage-discharge relation affected by ice Nov. 18, 19, 26, 27, Dec. 1, Dec. 6 to Feb. 23.

1949

| Day | Discharge | Day | Discharge | Day | Discharge |
|---|---|---|---|---|---|
| Oct. 1 | 81 | Oct. 6 | 86 | Oct. 11 | 34 |
| 2 | 98 | 7 | 82 | 12 | 16 |
| 3 | 98 | 8 | 83 | 13 | 12 |
| 4 | 92 | 9 | 81 | 14 | 11 |
| 5 | 92 | 10 | 57 | 15 | 12 |

Monthly discharge, in second-feet, 1948-49

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October 1948 | 303.3 | 12 | 9.0 | 9.78 | 602 |
| November | 373.5 | 23 | 6.6 | 12.4 | 741 |
| December | 463 | 19 | 10 | 14.9 | 918 |
| Calendar year 1948 | 42,359.8 | 858 | 6.6 | 116 | 84,020 |
| January 1949 | 419 | 16 | 12 | 13.5 | 831 |
| February | 665 | 60 | 10 | 23.8 | 1,320 |
| March | 3,714 | 229 | 56 | 120 | 7,370 |
| April | 10,026 | 578 | 101 | 334 | 19,890 |
| May | 8,544 | 450 | 32 | 276 | 16,950 |
| June | 585.0 | 30 | 7.2 | 12.8 | 764 |
| July | 902.7 | 53 | 6.6 | 29.1 | 1,790 |
| August | 1,459 | 49 | 45 | 47.1 | 2,890 |
| September | 2,214 | 101 | 45 | 73.8 | 4,390 |
| Water year 1948-49 | 29,468.5 | 578 | 6.6 | 80.7 | 58,460 |
| October 1-15, 1949 | 935 | 98 | 11 | 62.3 | 1,850 |

## Lost Valley Reservoir near Tamarack, Idaho

Location.--Staff gage, lat. 44°57'30", long. 116°28', in sec. 28, T. 19 N., R. 1 W., a short distance upstream from outlet gates near left end of dam on Lost Creek, 4 miles west of Tamarack and 16 miles north of Council. Datum of gage is 4,748.8 feet above mean sea level (river-profile survey).

Drainage area.--29.4 square miles.

Records available.--May to September 1924, May 1926 to September 1949.

Extremes.--Maximum gage height observed during year, 25.44 feet June 28; minimum observed, 10.27 feet Sept. 30.
1924, 1926-49: Maximum gage height observed, 26.90 feet May 14, 1940; no storage at times during several years prior to 1938.

Remarks.--Reservoir is formed by earth dam completed in 1910 and raised 6 feet in 1929. Permanent spillway crest is at gage height 22.26 feet; flashboard structure built in 1938 to permit storage to gage height about 26 feet. Water is used for irrigation of lands in Weiser River Basin.

Cooperation.--Several gage readings furnished by Lost Valley Reservoir Co.

Revisions.--W 833: Drainage area.

Gage height, in feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 19.76 | - | 24.20 | - | - | - |
| 2 | | | | | | | | - | - | - | - | 18.50 |
| 3 | | | | | | | | - | - | - | - | - |
| 4 | | | | | | | | - | - | - | - | - |
| 5 | | | | | | | | - | - | - | - | - |
| 6 | | | | | | | | - | - | - | - | - |
| 7 | | | | | | | | - | 24.76 | - | - | - |
| 8 | | | | | | | | - | - | - | - | - |
| 9 | 17.20 | | | | | | | - | - | - | - | - |
| 10 | | | | | | | | 24.60 | - | - | - | - |
| 11 | | | | | | | | - | - | - | - | - |
| 12 | | | | | | | | - | - | - | - | - |
| 13 | | | | | | | | - | - | - | - | - |
| 14 | | | | | | | | - | - | - | - | - |
| 15 | | | | | | | | - | - | - | - | - |
| 16 | | | | | | | | - | - | - | - | - |
| 17 | | | | | | | | - | - | - | - | - |
| 18 | | | | | | | | - | 25.24 | - | 20.60 | - |
| 19 | | | | | | | | 24.40 | - | - | - | - |
| 20 | | 17.60 | | | | | | - | - | - | - | - |
| 21 | | | | | | | | - | - | 24.60 | - | 13.53 |
| 22 | | | | | | | | - | - | - | - | - |
| 23 | | | | | | | | - | - | - | - | - |
| 24 | | | | | | | | - | - | 24.14 | - | - |
| 25 | | | | | | | | - | - | - | - | - |
| 26 | | | | | | | | - | - | - | - | - |
| 27 | | | | | | | | - | - | - | - | - |
| 28 | | | | | | | | 23.60 | 25.44 | - | - | - |
| 29 | | | | | | | | - | - | - | 18.92 | - |
| 30 | | | | | | | | - | - | - | - | 10.27 |
| 31 | | - | | | | | - | - | - | - | - | - |

## Lost Creek near Tamarack, Idaho

Location.--Water-stage recorder, lat. 44°57', long. 116°28', in sec. 28, T. 19 N., R. 1 W., a quarter of a mile downstream from dam of Lost Valley Reservoir, 4 miles west of Tamarack, and 16 miles north of Council. Datum of gage is 4,729.6 feet above mean sea level (river-profile survey).

Drainage area.--29.4 square miles.

Records available.--January 1910 to August 1914, May 1920 to September 1921, May 1924 to September 1949.

Average discharge.--19 years (1930-49), 36.9 second-feet.

Extremes.--Maximum discharge during year, 350 second-feet May 12 (gage height, 3.08 feet); minimum, 2 second-feet June 7-19; minimum gage height, 0.94 foot June 12.
1910-14, 1920-21, 1924-49: Maximum discharge, about 688 second-feet May 17, 18, 1921 (gage height, 4.29 feet); practically no flow at times when gates in dam were closed.

Remarks.--Records good except those below 10 second-feet and those for periods of no gage-height record, which are fair. No diversion between reservoir and station; practically entire flow diverted below station during irrigation season. Flow regulated since 1910 by Lost Valley Reservoir (see preceding page).

Cooperation.--Water-stage recorder inspected by Lost Valley Reservoir Co.

Revisions.--W 833: Drainage area.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8 | 7 | 7 | 7 | 7 | 7 | 8 | 294 | 5 | 6 | 53 | 51 |
| 2 | 8 | 7 | 7 | 7 | 7 | 7 | 8 | 298 | 5 | 6 | 53 | 61 |
| 3 | 8 | 7 | 7 | 7 | 7 | 7 | 8 | 312 | 4 | 6 | 53 | 69 |
| 4 | 8 | 7 | 7 | 7 | 7 | 7 | 9 | 308 | 4 | 6 | 54 | 69 |
| 5 | 8 | 7 | 7 | 7 | 7 | 7 | 9 | 260 | 4 | 5 | 54 | 68 |
| 6 | 8 | 7 | 7 | 7 | 7 | 8 | 9 | 235 | 4 | 5 | 53 | 68 |
| 7 | 8 | 7 | 7 | 7 | 7 | 8 | 9 | 225 | 3 | 5 | 53 | 66 |
| 8 | 8 | 7 | 7 | 7 | 7 | 8 | 9 | 225 | 2 | 7 | 52 | 66 |
| 9 | 8 | 7 | 7 | 7 | 7 | 8 | 9 | 241 | 2 | 29 | 53 | 66 |
| 10 | 7 | 7 | 7 | 7 | 7 | 8 | 9 | 264 | 2 | 35 | 53 | 66 |
| 11 | 7 | 7 | 7 | 7 | 7 | 8 | 10 | 308 | 2 | 35 | 53 | 66 |
| 12 | 7 | 7 | 7 | 7 | 7 | 8 | 22 | 340 | 2 | 40 | 52 | 65 |
| 13 | 7 | 7 | 7 | 7 | 7 | 8 | 45 | 329 | 2 | 36 | 52 | 65 |
| 14 | 7 | 7 | 7 | 7 | 7 | 8 | 61 | 308 | 2 | 32 | 52 | 65 |
| 15 | 7 | 7 | 7 | 7 | 7 | 8 | 83 | 294 | 2 | 26 | 52 | 88 |
| 16 | 7 | 7 | 7 | 7 | 7 | 8 | 106 | 270 | 2 | 22 | 52 | 109 |
| 17 | 7 | 7 | 7 | 7 | 7 | 8 | 138 | 250 | 2 | 19 | 52 | 108 |
| 18 | 8 | 7 | 7 | 7 | 7 | 8 | 176 | 222 | 2 | 16 | 52 | 106 |
| 19 | 7 | 7 | 7 | 7 | 7 | 8 | 216 | 202 | 3 | 14 | 53 | 104 |
| 20 | 7 | 7 | 7 | 7 | 7 | 8 | 264 | 184 | 3 | 13 | 53 | 102 |
| 21 | 7 | 7 | 7 | 7 | 7 | 8 | 287 | 165 | 3 | 39 | 53 | 102 |
| 22 | 7 | 7 | 7 | 7 | 7 | 8 | 284 | 153 | 4 | 54 | 52 | 101 |
| 23 | 6 | 7 | 7 | 7 | 7 | 8 | 277 | 141 | 4 | 53 | 52 | 98 |
| 24 | 7 | 7 | 7 | 7 | 7 | 8 | 290 | 130 | 5 | 53 | 53 | 98 |
| 25 | 7 | 7 | 7 | 7 | 7 | 8 | 298 | 116 | 5 | 54 | 52 | 96 |
| 26 | 7 | 7 | 7 | 7 | 7 | 8 | 290 | 102 | 6 | 54 | 52 | 94 |
| 27 | 7 | 7 | 7 | 7 | 7 | 8 | 284 | 94 | 6 | 54 | 51 | 93 |
| 28 | 7 | 7 | 7 | 7 | 7 | 8 | 280 | 71 | 6 | 53 | 51 | 92 |
| 29 | 7 | 7 | 7 | 7 | - | 8 | 298 | 21 | 6 | 53 | 51 | 90 |
| 30 | 7 | 7 | 7 | 7 | - | 8 | 301 | 5 | 6 | 54 | 51 | 88 |
| 31 | 7 | - | 7 | 7 | - | 8 | - | 5 | - | 54 | 51 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 226 | 8 | 6 | 7.3 | 488 |
| November | 210 | 7 | 7 | 7.0 | 417 |
| December | 217 | 7 | 7 | 7.0 | 430 |
| Calendar year 1948 | 19,462 | 441 | 5 | 53.2 | 38,610 |
| January | 217 | 7 | 7 | 7.0 | 430 |
| February | 196 | 7 | 7 | 7.0 | 389 |
| March | 243 | 8 | 7 | 7.8 | 482 |
| April | 4,097 | 301 | 8 | 137 | 8,130 |
| May | 6,372 | 340 | 5 | 206 | 12,640 |
| June | 108 | 6 | 2 | 3.6 | 214 |
| July | 938 | 54 | 5 | 30.3 | 1,860 |
| August | 1,623 | 54 | 51 | 52.4 | 3,220 |
| September | 2,480 | 109 | 51 | 82.7 | 4,920 |
| Water year 1948-49 | 16,927 | 340 | 2 | 46.4 | 33,580 |

Note.--No gage-height record Dec. 15 to Mar. 31 when gates were nearly closed and were not reset; discharge computed on basis of records for adjacent periods and reservoir records.

## Middle Fork Weiser River near Mesa, Idaho

Location.--Staff gage, lat. 44°39', long. 116°27', in NW¼ sec. 10, T. 15 N., R. 1 W., at old highway bridge, 1¾ miles north of Mesa and 2½ miles upstream from mouth.
Drainage area.--86.5 square miles.
Records available.--August 1919 to November 1921, April 1937 to October 1949 (discontinued). October 1910 to August 1913 at site three-quarters of a mile upstream.
Average discharge.--12 years (1937-49), 118 second-feet.
Extremes.--Maximum discharge observed during period October 1948 to October 1949, 725 second-feet May 14; maximum gage height observed, 4.60 feet Feb. 11 (ice jam); minimum discharge observed, 0.1 second-foot Aug. 30, 31, Sept. 2-4; minimum gage height observed, 1.28 feet Sept. 2, 3.

1919-21, 1937-49: Maximum discharge observed, 1,380 second-feet May 1, 1938, from rating curve extended above 1,000 second-feet; no flow at times in 1937, 1939-41.

Remarks.--Records good except those for periods of ice effect, which are fair, and those below 0.5 second-foot, which are poor. Gage read twice daily. Mesa Orchards Canal diverts about 6½ miles above station.

Rating table, Oct. 1, 1948, to Oct. 15, 1949, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 26 to Oct. 15, 1949)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.5 | 0.1 | 1.8 | 2.8 | 2.1 | 16 | 2.4 | 50 | 2.7 | 116 | 3.5 | 450 |
| 1.6 | .2 | 1.9 | 6.0 | 2.2 | 24 | 2.5 | 68 | 2.9 | 180 | 4.0 | 725 |
| 1.7 | .8 | 2.0 | 10 | 2.3 | 35 | 2.6 | 90 | 3.1 | 260 | | |

Discharge, in second-feet, 1948-49

1948-49

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19 | 31 | 26 | 28 | 20 | 163 | 111 | 365 | 450 | 50 | 0.4 | 0.2 |
| 2 | 16 | 166 | 30 | 28 | 20 | 137 | 113 | 375 | 395 | 47 | .6 | .1 |
| 3 | 15 | 106 | 32 | 27 | 20 | 153 | 128 | 410 | 365 | 40 | .6 | .1 |
| 4 | 21 | 40 | 25 | 27 | 20 | 149 | 134 | 395 | 360 | 35 | .4 | .1 |
| 5 | 24 | 30 | 26 | 27 | 20 | 160 | 184 | 314 | 360 | 33 | .4 | .2 |
| 6 | 27 | 27 | 27 | 27 | 20 | 163 | 214 | 336 | 360 | 28 | .5 | .2 |
| 7 | 20 | 20 | 30 | 27 | 20 | 156 | 231 | 355 | 360 | 26 | .4 | .2 |
| 8 | 19 | 16 | 33 | 27 | 20 | 125 | 243 | 405 | 360 | 22 | .4 | .2 |
| 9 | 18 | 19 | 33 | 27 | 20 | 108 | 256 | 495 | 314 | 22 | .5 | .2 |
| 10 | 16 | 28 | 33 | 25 | 20 | 103 | 274 | 577 | 296 | 22 | .6 | .2 |
| 11 | 18 | 26 | 34 | 25 | 19 | 106 | 287 | 577 | 278 | 20 | .3 | .2 |
| 12 | 18 | 23 | 33 | 25 | 19 | 180 | 292 | 654 | 269 | 16 | .2 | .4 |
| 13 | 18 | 28 | 41 | 25 | 19 | 153 | 260 | 643 | 260 | 14 | .3 | .4 |
| 14 | 18 | 31 | 36 | 25 | 21 | 160 | 256 | 701 | 243 | 11 | .2 | .3 |
| 15 | 18 | 30 | 32 | 25 | 23 | 156 | 239 | 695 | 214 | 9.5 | .2 | .2 |
| 16 | 16 | 27 | 25 | 25 | 26 | 180 | 282 | 638 | 146 | 8.6 | .2 | .3 |
| 17 | 14 | 27 | 20 | 25 | 30 | 188 | 360 | 616 | 137 | 8.2 | .2 | .3 |
| 18 | 13 | 28 | 23 | 25 | 40 | 278 | 380 | 555 | 131 | 7.8 | .2 | .4 |
| 19 | 12 | 27 | 24 | 25 | 65 | 269 | 425 | 544 | 111 | 6.4 | .2 | .4 |
| 20 | 12 | 26 | 26 | *23 | 55 | 235 | 390 | 566 | 111 | 5.7 | .2 | .5 |
| 21 | 12 | 27 | 27 | 23 | 60 | 218 | 350 | 516 | 93 | 4.7 | .2 | .6 |
| 22 | 12 | 28 | 24 | 23 | *80 | 210 | 310 | 511 | 77 | 4.1 | .2 | .5 |
| 23 | 12 | 27 | 22 | 23 | 150 | 146 | 405 | 522 | 72 | 3.8 | .2 | .5 |
| 24 | 12 | *27 | 23 | 23 | 137 | 140 | 410 | 485 | 68 | 3.1 | .2 | .6 |
| 25 | 14 | 30 | 25 | 22 | 122 | 134 | 390 | 490 | 64 | 2.0 | .2 | .6 |
| 26 | 15 | 27 | 27 | 22 | 111 | 103 | 380 | 495 | 64 | 3.8 | .3 | .6 |
| 27 | 16 | 26 | 28 | 22 | 111 | *103 | 420 | 490 | 63 | 2.2 | .2 | .6 |
| 28 | 16 | 27 | 28 | 22 | 116 | 90 | 440 | 500 | 57 | .8 | .2 | 8.6 |
| 29 | 16 | 27 | 28 | 23 | - | 93 | 410 | 572 | 54 | .6 | .2 | 30 |
| 30 | 18 | 22 | 28 | 23 | - | 86 | 365 | 500 | 54 | .4 | .1 | 27 |
| 31 | 22 | - | 28 | 22 | - | 83 | - | 465 | - | .4 | .1 | - |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 30 to Dec. 9, Dec. 15 to Feb. 23.

1949

| Day | Discharge | Day | Discharge | Day | Discharge |
|---|---|---|---|---|---|
| Oct. 1 | 10 | Oct. 6 | 19 | Oct. 11 | 14 |
| 2 | 8.6 | 7 | 16 | 12 | 15 |
| 3 | 9.1 | 8 | 16 | 13 | 16 |
| 4 | 10 | 9 | 18 | 14 | 16 |
| 5 | 48 | 10 | 18 | 15 | 16 |

Monthly discharge, in second-feet, 1948-49

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October 1948 | 517 | 27 | 12 | 16.7 | 1,030 |
| November | 1,024 | 166 | 16 | 34.1 | 2,030 |
| December | 877 | 41 | 20 | 28.3 | 1,740 |
| Calendar year 1948 | 46,516.7 | 965 | .6 | 127 | 92,260 |
| January 1949 | 766 | 28 | 22 | 24.7 | 1,520 |
| February | 1,404 | 150 | 19 | 50.1 | 2,780 |
| March | 4,728 | 278 | 83 | 153 | 9,380 |
| April | 8,939 | 440 | 111 | 298 | 17,730 |
| May | 15,762 | 701 | 314 | 508 | 31,260 |
| June | 6,186 | 450 | 54 | 206 | 12,270 |
| July | 458.1 | 50 | .4 | 14.8 | 909 |
| August | 9.1 | .6 | .1 | .29 | 18 |
| September | 74.7 | 30 | .1 | 2.49 | 148 |
| Water year 1948-49 | 40,744.9 | 701 | .1 | 112 | 80,820 |
| October 1-15, 1949 | 249.7 | 48 | 8.6 | 16.6 | 495 |

## Mesa Orchards Canal near Mesa, Idaho

Location.--Staff gage, lat. 44°38', long. 116°25', in sec. 14, T. 15 N., R. 1 W., 1,500 feet upstream from end of flume, 1½ miles northeast of Mesa, and 3 miles downstream from head gates.

Records available.--1924, 1928-49 (irrigation seasons only except 1947-49).

Extremes.--Maximum discharge observed during year, 36 second-feet June 24, 25, July 5-16, 19-22, 25-28; maximum gage height observed, 2.56 feet June 24, 25, July 6, 12-15, 22; no flow for long periods during nonirrigation season.
1924, 1928-49: Maximum discharge observed, 39 second-feet July 17, 1945, July 18-23, 27, 30, 1947; maximum gage height observed, 2.71 feet July 18, 21-23, 1947; no flow during nonirrigation seasons.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Gage usually read twice daily and gate changes noted. Canal diverts from Middle Fork Weiser River in SE¼NW¼ sec. 9, T. 15 N., R. 1 E., for irrigation of Mesa orchards and for domestic supply of Mesa. Flow regulated by gates in diversion dam and waste gates in flume above gage.

Cooperation.--Gage readings furnished by The Mesa Co.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | 0 | 14 | 33 | 33 | 32 | 18 |
| 2 | | | | | | | 0 | 15 | 31 | 33 | 30 | 18 |
| 3 | | | | | | | 0 | 16 | 30 | a34 | 30 | 19 |
| 4 | | | | | | | 0 | 14 | 29 | a35 | 29 | a19 |
| 5 | a6.5 | | | | | | 0 | 11 | 30 | 36 | 28 | a19 |
| 6 | | | | | | | 0 | 12 | 30 | 36 | 28 | a18 |
| 7 | | | | | | | 0 | 15 | 31 | 36 | 25 | 18 |
| 8 | | | | | | | 0 | 13 | 31 | 36 | 27 | 18 |
| 9 | | | | | | | 0 | 18 | 30 | 36 | 27 | 18 |
| 10 | 6.6 | | | | | | 0 | 22 | 31 | 36 | 27 | 18 |
| 11 | | | | | | | 0 | 23 | 33 | 35 | 26 | 17 |
| 12 | | | | | | | 0 | 31 | 34 | 36 | 26 | 20 |
| 13 | | | | | | | 0 | 28 | 34 | 36 | 28 | 20 |
| 14 | | | | | | | 0 | 32 | 34 | 36 | a27 | 19 |
| 15 | | | | | | | 0 | 33 | 35 | 36 | 25 | 18 |
| 16 | | | | | | | 0 | 32 | 34 | 35 | 25 | 19 |
| 17 | | | | | | | 0 | 32 | 35 | 35 | 23 | 18 |
| 18 | | | | | | | 0 | 34 | 33 | 34 | 23 | 17 |
| 19 | | | | | | | 0 | 34 | 33 | 36 | 24 | 17 |
| 20 | a6.5 | | | | | | 0 | 33 | 33 | 36 | 23 | 17 |
| 21 | | | | | | | 10 | 29 | 33 | 36 | a22 | 17 |
| 22 | | | | | | | 18 | 28 | 35 | 36 | 21 | 17 |
| 23 | | | | | | | 20 | 22 | 35 | 35 | 22 | 16 |
| 24 | | | | | | | 23 | 8.5 | 36 | 34 | 21 | 18 |
| 25 | | | | | | | 12 | 22 | 34 | 35 | 22 | 14 |
| 26 | | | | | | | 13 | 30 | 32 | 35 | 21 | 15 |
| 27 | | | | | | | 17 | 33 | 32 | 35 | 21 | 14 |
| 28 | | | | | | | 17 | 34 | 33 | 35 | a20 | 14 |
| 29 | | | | | | | 21 | 34 | 34 | 34 | 19 | 11 |
| 30 | a5.0 | | | | | | 21 | 34 | 34 | 33 | 19 | 11 |
| 31 | | | | | | | - | 31 | - | 32 | 18 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 197.1 | - | - | 6.36 | 391 |
| November | 0 | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 3,605.7 | 37 | 0 | 9.85 | 7,150 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 0 | 0 | 0 | 0 | 0 |
| March | 0 | 0 | 0 | 0 | 0 |
| April | 172 | 23 | 0 | 5.73 | 341 |
| May | 767.5 | 34 | 8.5 | 24.8 | 1,520 |
| June | 982 | 36 | 29 | 32.7 | 1,950 |
| July | 1,086 | 36 | 32 | 35.0 | 2,150 |
| August | 759 | 32 | 18 | 24.5 | 1,510 |
| September | 512 | 20 | 11 | 17.1 | 1,020 |
| Water year 1948-49 | 4,475.6 | 36 | 0 | 12.3 | 8,880 |

a No gage-height record; discharge computed on basis of reported gate changes, weather records, and records for Bacon Creek and Middle Fork Weiser River near Mesa.

## Johnson Creek below Johnson Park, near Council, Idaho

Location.--Water-stage recorder, lat. 44°46', long. 116°38', in SE¼ sec. 36, T. 17 N., R. 3 W., 50 feet downstream from Johnson Park Creek, three-quarters of a mile southeast of Johnson Park, and 10 miles northwest of Council.
Drainage area.--5 square miles.
Records available.--March 1941 to October 1949 (no winter records), discontinued.
Extremes.--Maximum discharge during period October 1948 to October 1949, 104 second-feet May 16 (gage height, 1.97 feet); minimum recorded, 0.6 second-foot Oct. 27, 1948 (gage height, 0.30 foot).
1941-49: Maximum discharge, 222 second-feet June 3, 1948 (gage height, 3.35 feet); minimum recorded, 0.4 second-foot Oct. 16, 1946; minimum gage height recorded, that of Oct. 27, 1948.
Remarks.--Records poor. No diversion or regulation.
Revisions (water years).--W 1093: 1945(M).

Discharge, in second-feet, 1948-49

1948-49

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.2 | 4.5 | | | | | * 2.4 | 24 | 42 | 6.5 | 2.3 | 1.6 |
| 2 | 2.0 | 19 | | | | | 2.6 | 24 | 37 | 6.2 | 2.3 | 1.5 |
| 3 | 1.8 | 16 | | | | | 2.6 | a30 | 34 | 5.8 | 2.2 | 1.5 |
| 4 | 3.9 | 5.4 | | | | | 2.4 | a27 | 31 | 5.6 | 2.0 | 1.5 |
| 5 | 3.9 | a2.8 | | | | | 2.3 | a25 | 31 | 5.2 | 2.0 | 1.6 |
| 6 | 2.4 | a2.0 | | | | | 2.3 | a27 | 32 | 5.2 | 2.2 | 1.6 |
| 7 | 2.3 | a1.7 | | | | | 2.4 | a30 | 39 | 5.0 | 2.2 | 1.6 |
| 8 | 2.2 | a1.5 | | | | | 2.4 | a35 | 30 | 4.8 | 2.2 | 1.5 |
| 9 | 2.1 | a1.9 | | | | | 2.6 | a40 | 27 | 4.6 | 2.0 | 1.5 |
| 10 | 2.0 | a1.8 | | | | | 2.4 | a50 | 26 | 4.5 | 2.0 | 1.5 |
| 11 | 1.8 | a1.8 | | | | | 2.3 | a70 | 24 | 4.3 | 2.0 | 1.6 |
| 12 | 1.8 | a1.8 | | | | | 2.8 | a82 | 22 | 4.1 | 2.0 | 1.5 |
| 13 | 1.8 | a1.8 | | | | | 2.4 | 84 | 19 | 3.9 | 1.8 | 1.5 |
| 14 | 1.8 | a1.8 | | | | | 2.6 | 86 | 18 | 3.7 | 1.8 | 1.5 |
| 15 | 1.8 | a1.8 | | | | | 2.3 | 87 | 17 | 3.7 | 1.8 | 1.5 |
| 16 | 1.7 | a1.8 | | | | | 2.0 | 93 | 16 | 3.6 | 1.8 | 1.5 |
| 17 | 1.8 | a1.8 | | | | | 6.6 | 80 | 16 | 3.4 | 1.7 | 1.4 |
| 18 | 1.7 | a1.4 | | | | | 14 | 70 | 14 | 3.4 | 1.8 | 1.4 |
| 19 | 1.7 | a1.6 | | | | | 23 | 68 | 16 | 3.4 | 1.8 | 1.4 |
| 20 | 1.7 | a1.7 | | | | | 22 | 65 | 15 | 3.4 | 1.8 | 1.4 |
| 21 | 1.7 | *b1.8 | | | | | 24 | 58 | 12 | 3.2 | 1.7 | 1.4 |
| 22 | 1.6 | b1.8 | | | | | 24 | 57 | 11 | 2.6 | 1.7 | 1.4 |
| 23 | 1.5 | b1.8 | | | | | 14 | 54 | 10 | a2.7 | 1.7 | 1.4 |
| 24 | 1.5 | b1.8 | | | | | 18 | 53 | 9.4 | a2.8 | 1.6 | 1.3 |
| 25 | 1.5 | a1.8 | | | | | 19 | 53 | 8.8 | 2.9 | 1.6 | 1.3 |
| 26 | 1.5 | a1.8 | | | | | 19 | 54 | 8.8 | 2.9 | 1.7 | 1.3 |
| 27 | 1.4 | a1.7 | | | | | 20 | 57 | 8.2 | 2.8 | 1.6 | 1.2 |
| 28 | 2.0 | a1.6 | | | | | 20 | 58 | 7.6 | 2.8 | 1.6 | 1.6 |
| 29 | 1.6 | a1.6 | | | | | 21 | 58 | 7.6 | 2.6 | 1.6 | 2.6 |
| 30 | 1.7 | a1.4 | | | | | 22 | 51 | 7.0 | 2.4 | 1.6 | 1.5 |
| 31 | 1.8 | - | | | | | - | 48 | - | 2.3 | 1.6 | - |

Peak discharge (base, 80 sec.-ft.).--May 16 (2 to 3 p.m.) 104 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for stations on other Weiser River tributaries and for Warren Creek near Warren and Secesh River near Burgdorf.
b Stage-discharge relation affected by ice.

1949

| Day | Discharge | Day | Discharge | Day | Discharge |
|---|---|---|---|---|---|
| Oct. 1 | 1.4 | Oct. 5 | 2.6 | Oct. 9 | 1.4 |
| 2 | 1.3 | 6 | 1.6 | 10 | 1.6 |
| 3 | 1.2 | 7 | 1.5 | 11 | 1.5 |
| 4 | 1.3 | 8 | 1.4 | 12 | 1.6 |

Monthly discharge, in second-feet, 1948-49

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October 1948 | 60.2 | 3.9 | 1.4 | 1.94 | 119 |
| November | 91.0 | 19 | 1.4 | 3.03 | 180 |
| December | - | - | - | - | - |
| Calendar year | - | - | - | - | - |
| January 1949 | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | 305.4 | 24 | 2.0 | 10.2 | 606 |
| May | 1,698 | 93 | 24 | 54.8 | 3,370 |
| June | 596.4 | 42 | 7.0 | 19.9 | 1,180 |
| July | 120.2 | 6.4 | 2.3 | 3.88 | 238 |
| August | 57.7 | 2.3 | 1.6 | 1.86 | 114 |
| September | 45.1 | 2.6 | 1.2 | 1.50 | 89 |
| Water year | - | - | - | - | - |
| October 1-12, 1949 | 18.4 | 2.6 | 1.2 | 1.53 | 36 |

## Bacon Creek near Mesa, Idaho

Location.--Water-stage recorder, lat. 44°37'30", long. 116°28'40", in NE¼ sec. 20, T. 15 N., R. 1 W., 1¾ miles west of Mesa and 5½ miles upstream from mouth.

Records available.--June 1944 to January 1949 (discontinued).

Extremes.--Maximum discharge during period October 1948 to January 1949, 23 second-feet Nov. 1 (gage height, 2.24 feet), from rating curve extended above 15 second-feet; minimum recorded, 0.7 second-foot Dec. 4; minimum gage height observed, 0.49 foot Jan. 20. 1944-49: Maximum discharge recorded, 50 second-feet Mar. 20, 1946; minimum observed, 0.6 second-foot (discharge measurement) Dec. 11, 1944.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. Bacon Creek is the natural wasteway for irrigation water on Mesa orchards tract, and natural flow is augmented by surface and sub-surface runoff from this source.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 7.5 | 9.2 | 1.1 | | | | | | | | | |
| 2 | 7.2 | 6.9 | 1.3 | | | | | | | | | |
| 3 | 6.5 | 6.1 | 1.5 | | | | | | | | | |
| 4 | 7.4 | 4.6 | b1.1 | | | | | | | | | |
| 5 | 7.5 | 4.8 | 1.1 | | | | | | | | | |
| 6 | 7.5 | 4.5 | 1.0 | | | | | | | | | |
| 7 | 7.2 | 3.6 | 1.1 | | | | | | | | | |
| 8 | 6.8 | 3.0 | 1.1 | | | | | | | | | |
| 9 | 6.6 | 2.7 | 1.1 | | | | | | | | | |
| 10 | 6.1 | 2.8 | 1.2 | 1.1 | | | | | | | | |
| 11 | 5.7 | 2.5 | 1.4 | | | | | | | | | |
| 12 | 5.1 | 2.3 | 2.2 | | | | | | | | | |
| 13 | 5.1 | 2.1 | 1.7 | | | | | | | | | |
| 14 | 6.1 | 1.9 | 1.6 | | | | | | | | | |
| 15 | 6.8 | 2.2 | 1.5 | | | | | | | | | |
| 16 | 7.5 | 2.3 | b1.3 | | | | | | | | | |
| 17 | 7.0 | 1.9 | b1.2 | | | | | | | | | |
| 18 | 8.2 | 1.6 | | | | | | | | | | |
| 19 | 8.1 | 1.6 | | | | | | | | | | |
| 20 | 8.5 | 1.7 | | *h1.1 | | | | | | | | |
| 21 | 8.2 | 1.5 | | | | | | | | | | |
| 22 | 8.2 | 1.5 | | | | | | | | | | |
| 23 | 7.3 | 1.5 | | | | | | | | | | |
| 24 | 6.9 | *1.4 | | | | | | | | | | |
| 25 | 6.8 | 1.3 | 1.2 | | | | | | | | | |
| 26 | 7.7 | 1.3 | | 1.0 | | | | | | | | |
| 27 | 6.6 | 1.2 | | | | | | | | | | |
| 28 | 6.9 | 1.2 | | | | | | | | | | |
| 29 | 5.7 | 1.1 | | | | | | | | | | |
| 30 | 5.5 | 1.1 | | | | | | | | | | |
| 31 | 6.5 | - | | | | | | | | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 214.7 | 8.5 | 5.1 | 6.93 | 426 |
| November | 81.4 | 9.2 | 1.1 | 2.71 | 161 |
| December | 39.3 | 2.2 | - | 1.27 | 78 |
| Calendar year 1948 | 2,629.5 | 21 | - | 7.18 | 5,220 |
| January | 33.0 | - | - | 1.06 | 65 |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | - | - | - | - | - |
| June | - | - | - | - | - |
| July | - | - | - | - | - |
| August | - | - | - | - | - |
| September | - | - | - | - | - |
| Water year | - | - | - | - | - |

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
h Computed from staff-gage reading.

Note.--No gage-height record Dec. 18 to Jan. 19, Jan. 21-31; discharge computed on basis of weather records and records for stations on other Weiser River tributaries.

## Pine Creek near Cambridge, Idaho

Location.--Staff gage, lat. 44°35', long. 116°44', in SW¼ sec. 32, T. 15 N., R. 3 W., 300 feet upstream from West Fork and 3.2 miles northwest of Cambridge.

Records available.--April 1938 to September 1949.

Average discharge.--11 years, 38.0 second-feet.

Extremes.--Maximum discharge observed during year, 259 second-feet May 16 (gage height, 2.80 feet); minimum observed, 0.7 second-foot Aug. 3 (gage height, 0.46 foot).

1938-49: Maximum discharge observed, 505 second-feet May 27, 1948 (gage height, 3.60 feet), from rating curve extended above 200 second-feet by logarithmic plotting, but may have been more when gage was overtopped June 3, 1948; minimum observed, that of Aug. 3, 1949; minimum gage height observed, 0.43 foot Aug. 27, 28, 1947.

Remarks.--Records fair except those for periods of ice effect or nonrepresentative gage readings, which are poor. Gage read twice daily. Several diversions above station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6.9 | 14 | 12 | 13 | 10 | 32 | 79 | 92 | 68 | 5.0 | 0.8 | 2.5 |
| 2 | 7.7 | 16 | 13 | 13 | 11 | 34 | 80 | 89 | 57 | 4.0 | .8 | 2.5 |
| 3 | 6.9 | 13 | 13 | 13 | 11 | 39 | 82 | 83 | 46 | 3.8 | .8 | 2.5 |
| 4 | 8.0 | 9.8 | 11 | 13 | 11 | 58 | 83 | 79 | 41 | 4.2 | .8 | 2.4 |
| 5 | 8.8 | 10 | 13 | 13 | 11 | 66 | 87 | 67 | 43 | 4.5 | 1.4 | 2.2 |
| 6 | 8.4 | 11 | 13 | 12 | 11 | 79 | 88 | 77 | 42 | 4.8 | 2.4 | 2.2 |
| 7 | 9.3 | 9.3 | 8.8 | 12 | 11 | 74 | 93 | 79 | 39 | 5.4 | 4.0 | 2.2 |
| 8 | 9.3 | 8.8 | 12 | 12 | 11 | 71 | 96 | 84 | 37 | 3.2 | 4.5 | 2.2 |
| 9 | 8.4 | 8.0 | 12 | 12 | 11 | 70 | 100 | 103 | 32 | 2.5 | 4.5 | 1.9 |
| 10 | 8.4 | 8.8 | 12 | 12 | 11 | 70 | 97 | 118 | 28 | 2.8 | 4.5 | 2.2 |
| 11 | 8.4 | 8.8 | 13 | 9.8 | 11 | 79 | 94 | 184 | 25 | 2.8 | 4.0 | 2.5 |
| 12 | 8.4 | 9.8 | 14 | 11 | 11 | 93 | 98 | 213 | 21 | 2.0 | 3.8 | 2.8 |
| 13 | 8.4 | 9.8 | 13 | 11 | 11 | 93 | 90 | 211 | 20 | 1.6 | 3.8 | 2.8 |
| 14 | 8.4 | 11 | 12 | 12 | 11 | 98 | 85 | 193 | 19 | 1.6 | 4.8 | 2.5 |
| 15 | 9.3 | 11 | 11 | 12 | 12 | 103 | 77 | 211 | 17 | 1.9 | 4.2 | 3.2 |
| 16 | 9.3 | 11 | 10 | 12 | 12 | 103 | 84 | 247 | 14 | 1.6 | 4.0 | 3.0 |
| 17 | 8.4 | 10 | 9.5 | 12 | 13 | 122 | 89 | 195 | 12 | 1.4 | 4.0 | 3.5 |
| 18 | 9.3 | 9.8 | 9.0 | 12 | 14 | 182 | 90 | 161 | 12 | 1.6 | 4.5 | 2.8 |
| 19 | 8.4 | 12 | 10 | 11 | 14 | 198 | 94 | e150 | 11 | 1.3 | 4.5 | 3.0 |
| 20 | 9.3 | 11 | 12 | 12 | 14 | 193 | 98 | e140 | 11 | .9 | 4.2 | 2.2 |
| 21 | 9.3 | 11 | 11 | *12 | *14 | 170 | 87 | e120 | 10 | .9 | 4.5 | 2.0 |
| 22 | 8.8 | 11 | 10 | 11 | 21 | 143 | 80 | e100 | 9.8 | .8 | 3.8 | 1.9 |
| 23 | 9.3 | 12 | 10 | 10 | 26 | 131 | 77 | 87 | 9.8 | .9 | 3.5 | 2.0 |
| 24 | 9.3 | 12 | 10 | 12 | 31 | 119 | 83 | 83 | 8.4 | .9 | 3.5 | 1.8 |
| 25 | 9.8 | 9.8 | 11 | 11 | 31 | 119 | 84 | 84 | 8.4 | .9 | 3.2 | 2.2 |
| 26 | 9.3 | *10 | 12 | 12 | 30 | 114 | 88 | 100 | 8.8 | .9 | 2.2 | 2.2 |
| 27 | 9.8 | 9.8 | 14 | 10 | 33 | 114 | 87 | 97 | 8.4 | .9 | 1.6 | 2.0 |
| 28 | 9.3 | 9.8 | 14 | 11 | 33 | 93 | 89 | 90 | 6.9 | 1.0 | 1.6 | 2.2 |
| 29 | 9.3 | 9.8 | 14 | 12 | - | 94 | 87 | 87 | 5.8 | .8 | 1.9 | 2.4 |
| 30 | 9.3 | 10 | 14 | 11 | - | 84 | 85 | 84 | 6.1 | .8 | 1.9 | 2.5 |
| 31 | 10 | - | 13 | 12 | - | 83 | - | 88 | - | .8 | 2.2 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 273.2 | 10 | 6.9 | 8.81 | 542 |
| November | 318.1 | 16 | 8.0 | 10.6 | 631 |
| December | 366.3 | 14 | 8.8 | 11.8 | 727 |
| Calendar year 1948 | 16,343.3 | 459 | 1.9 | 44.7 | 32,420 |
| January | 363.8 | 13 | 9.8 | 11.7 | 722 |
| February | 451 | 33 | 10 | 16.1 | 895 |
| March | 3,121 | 198 | 32 | 101 | 6,190 |
| April | 2,629 | 100 | 77 | 87.6 | 5,210 |
| May | 3,796 | 247 | 67 | 122 | 7,530 |
| June | 677.4 | 68 | 5.8 | 22.6 | 1,340 |
| July | 66.5 | 5.4 | .8 | 2.15 | 132 |
| August | 96.2 | 4.8 | .8 | 3.10 | 191 |
| September | 72.3 | 3.5 | 1.8 | 2.41 | 143 |
| Water year 1948-49 | 12,230.8 | 247 | .8 | 33.5 | 24,250 |

* Winter discharge measurement made on this day.

e Gage readings in error or not representative of mean for day; discharge computed on basis of weather records and records for other stations in Weiser River Basin.

Note.--Stage-discharge relation affected by ice Dec. 4, Dec. 15 to Jan. 8, Jan. 15-17, Feb. 9-17.

## Little Weiser River near Indian Valley, Idaho

Location.--Staff gage, lat. 44°30', long. 116°24', in NE¼ sec. 1, T. 13 N., R. 1 W., 60 feet downstream from barn at Richardson Ranch, 1 mile upstream from diversion feeding C. Benn Ross Reservoir, and 4¾ miles southeast of Indian Valley.

Drainage area.--81.9 square miles.

Records available.--April 1938 to September 1949. June 1920 to February 1921, March to September 1923, and February 1924 to October 1927 at nearby sites.

Extremes.--Maximum discharge observed during year, 620 second-feet May 14 (gage height, 3.88 feet); minimum observed, 7.3 second-feet Sept. 7 (gage height, 0.36 foot). 1920-21, 1923-27, 1938-49: Maximum discharge observed, about 1,840 second-feet Feb. 4, 1925; minimum observed, 3.6 second-feet Aug. 23-30, Sept. 4, 5, 1924.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Gage read twice daily. One small racch diversion above station. Many diversions below station for irrigation including feeder canal to C. Ben Ross Reservoir.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | a13 | 16 | 14 | 20 | 15 | 72 | 87 | 300 | 348 | 57 | 14 | 8.5 |
| 2 | a12 | 60 | 17 | 20 | 14 | 76 | 101 | 311 | 415 | 52 | 13 | 8.5 |
| 3 | a12 | 45 | 20 | 19 | 14 | 89 | 109 | 300 | 276 | 49 | 12 | 8.1 |
| 4 | a12 | 28 | 13 | b19 | 14 | 101 | 147 | 269 | 286 | 50 | 12 | 8.1 |
| 5 | a20 | 20 | 16 | b19 | 14 | 94 | 175 | 238 | 316 | 47 | 11 | 8.1 |
| 6 | a18 | 20 | 17 | b19 | 14 | 93 | 197 | 257 | 290 | 45 | 11 | 7.7 |
| 7 | a16 | 13 | 20 | b19 | 14 | 96 | 206 | 278 | 306 | 45 | 11 | 7.5 |
| 8 | a15 | 12 | 20 | b19 | 14 | 82 | 212 | 321 | 276 | 45 | 11 | a7.7 |
| 9 | a14 | 11 | 20 | 19 | 14 | 76 | 221 | 364 | 243 | 42 | 11 | 8.1 |
| 10 | 14 | 16 | 20 | b18 | 14 | 77 | 218 | a365 | 223 | 40 | 11 | 8.5 |
| 11 | a13 | 18 | 20 | b18 | b14 | 78 | 264 | a430 | 204 | 38 | 11 | 9.3 |
| 12 | 12 | 16 | 29 | b18 | b14 | 107 | 269 | a500 | 185 | 36 | 11 | 8.9 |
| 13 | 12 | 16 | 26 | b18 | b15 | 98 | 210 | 571 | 169 | 32 | 11 | a8.5 |
| 14 | 12 | 15 | 22 | b18 | b18 | 98 | 193 | 599 | 160 | 31 | 11 | 8.1 |
| 15 | 16 | 19 | 22 | b18 | 20 | 106 | 199 | 592 | a150 | 31 | 10 | 8.5 |
| 16 | 14 | 17 | 18 | b18 | 22 | 114 | 232 | 610 | 134 | 28 | 10 | 8.5 |
| 17 | 13 | 18 | 14 | b18 | 20 | 128 | 266 | 547 | a120 | 26 | 10 | 8.1 |
| 18 | 13 | 13 | 16 | b18 | 68 | 195 | 290 | 492 | a110 | 26 | 10 | 8.1 |
| 19 | 12 | 17 | 17 | b18 | 98 | 221 | 296 | 448 | a100 | 24 | 10 | 8.1 |
| 20 | 12 | 20 | 18 | b17 | 65 | 197 | 288 | 464 | 97 | 24 | 10 | 8.1 |
| 21 | 12 | 15 | 19 | *b17 | 68 | 164 | 264 | 427 | 88 | 22 | 10 | 8.5 |
| 22 | 12 | 16 | b16 | b17 | *133 | 133 | 254 | 401 | 87 | 23 | 10 | 8.5 |
| 23 | 12 | 16 | b15 | b17 | 169 | 130 | 283 | 378 | 83 | 20 | 9.3 | 8.5 |
| 24 | 12 | 17 | b16 | b17 | 105 | 120 | 329 | 378 | 76 | 20 | 9.3 | a8.1 |
| 25 | 14 | 16 | b17 | b16 | 89 | 113 | 298 | 375 | 76 | 19 | 9.3 | 8.1 |
| 26 | 13 | *16 | 19 | b16 | 85 | 103 | 296 | 436 | 76 | 18 | 10 | 8.1 |
| 27 | 13 | 14 | 20 | b16 | 81 | 93 | 311 | 470 | 67 | 17 | 10 | 8.3 |
| 28 | 13 | 16 | 20 | b16 | 77 | 77 | 334 | 439 | 62 | a16 | 9.1 | 13 |
| 29 | 13 | 16 | 20 | 17 | - | 70 | 348 | 392 | 64 | 16 | 8.7 | 15 |
| 30 | 13 | 15 | 20 | 17 | - | 70 | 298 | 381 | 60 | 16 | 8.5 | 16 |
| 31 | 14 | - | 20 | 16 | - | 71 | - | 430 | - | 14 | 8.5 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 416 | 20 | 12 | 13.4 | 0.164 | 0.19 | 825 |
| November | 567 | 60 | 11 | 18.9 | .231 | .26 | 1,120 |
| December | 581 | 29 | 13 | 18.7 | .228 | .26 | 1,150 |
| Calendar year 1948 | 37,664.9 | 810 | 7.1 | 103 | 1.26 | 17.11 | 74,710 |
| January | 552 | 20 | 16 | 17.8 | .217 | .25 | 1,090 |
| February | 1,312 | 169 | 14 | 46.9 | .573 | .60 | 2,600 |
| March | 3,342 | 221 | 70 | 108 | 1.32 | 1.52 | 6,630 |
| April | 7,195 | 348 | 87 | 240 | 2.93 | 3.27 | 14,270 |
| May | 12,763 | 610 | 238 | 412 | 5.03 | 5.80 | 25,320 |
| June | 5,147 | 415 | 60 | 172 | 2.10 | 2.34 | 10,210 |
| July | 969 | 57 | 14 | 31.3 | .383 | .44 | 1,920 |
| August | 323.7 | 14 | 8.5 | 10.4 | .127 | .15 | 642 |
| September | 267.1 | 16 | 7.5 | 8.90 | .109 | .12 | 530 |
| Water year 1948-49 | 33,434.8 | 610 | 7.5 | 91.6 | 1.12 | 15.20 | 66,310 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for other stations in Weiser River Basin.
b Stage-discharge relation affected by ice.

## Crane Creek Reservoir near Midvale, Idaho

Location.--Staff gage, lat. 44°22', long. 116°37', in SE¼ sec. 19, T. 12 N., R. 2 W., at gate-control structure near left end of dam on Crane Creek, 10 miles southeast of Midvale.

Drainage area.--242 square miles.

Records available.--November 1923 to September 1949.

Extremes.--Maximum gage height observed during year, 46.8 feet Mar. 8; minimum observed, 21.5 feet Sept. 22.
1923-49: Maximum gage height observed, 56.3 feet Feb. 22, 1927; no usable contents Sept. 23, 1928, to Feb. 28, 1929, Sept. 25 to Dec. 1, 1929.

Remarks.--Reservoir is formed by earth dam completed in 1910 and raised in 1920-21. Capacity is reported to be about 60,000 acre-feet at gage height 55.0 feet (elevation of spillway crest). Water is used for irrigation of lands in lower Weiser Valley.

Cooperation.--Gage readings furnished by Crane Creek Reservoir Administration Board.

Revisions.--W 833: Drainage area.

Gage height, in feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | - | - | - | - | - | - | - | - | - | - | - | 29.0 |
| 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3 | - | - | 34.5 | - | - | - | - | 45.5 | - | - | - | 28.0 |
| 4 | - | - | - | - | - | 46.4 | - | 45.5 | - | 43.5 | - | - |
| 5 | - | - | - | - | - | - | 44.8 | - | - | - | - | 27.0 |
| 6 | - | - | - | - | - | - | - | - | - | - | - | 26.0 |
| 7 | 35.1 | 34.3 | - | - | - | - | - | - | - | - | - | - |
| 8 | - | - | - | - | - | 46.8 | - | - | - | 42.9 | - | 25.5 |
| 9 | - | - | - | - | - | - | - | - | - | - | - | 25.0 |
| 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| 11 | 34.3 | - | 34.8 | - | - | - | - | 45.3 | - | - | 35.1 | 24.0 |
| 12 | - | - | - | - | - | - | - | - | - | 42.3 | - | - |
| 13 | - | - | - | - | - | 45.8 | - | - | - | - | - | - |
| 14 | - | - | - | - | - | 45.7 | - | - | 44.8 | - | - | - |
| 15 | - | - | - | - | - | - | - | - | 44.8 | - | - | - |
| 16 | - | - | - | - | - | - | - | - | - | - | - | - |
| 17 | - | - | 35.1 | - | - | - | - | - | - | - | - | - |
| 18 | - | - | - | - | 36.7 | 45.1 | 45.5 | - | - | - | - | - |
| 19 | - | 34.3 | - | - | - | - | - | - | - | 40.7 | - | - |
| 20 | - | - | - | 35.2 | - | - | - | - | - | - | - | 22.5 |
| 21 | - | - | - | - | - | - | - | - | - | 40.3 | - | - |
| 22 | - | - | - | - | 41.5 | 45.1 | - | - | - | - | - | 21.5 |
| 23 | - | - | - | - | - | - | - | - | - | - | - | - |
| 24 | - | - | 35.3 | - | 45.2 | - | - | - | 44.6 | - | - | - |
| 25 | - | - | - | - | - | - | - | - | - | - | 31.0 | - |
| 26 | - | - | - | - | - | - | - | 45.3 | - | - | - | 21.7 |
| 27 | 34.3 | 34.4 | - | 35.3 | - | 44.3 | - | - | - | - | - | - |
| 28 | - | - | - | - | 46.2 | - | - | - | - | - | - | - |
| 29 | - | - | - | - | - | - | - | - | - | 38.4 | - | - |
| 30 | - | - | - | - | - | - | - | - | - | 38.2 | - | - |
| 31 | - | - | - | - | - | - | - | - | - | - | 29.5 | - |

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## Crane Creek near Midvale, Idaho

Location.--Water-stage recorder and concrete control, lat. 44°22', long. 116°37'30", in SE¼ sec. 19, T. 12 N., R. 2 W., 400 feet downstream from Crane Creek Dam and 10 miles southeast of Midvale.
Drainage area.--242 square miles.
Records available.--October 1910 to April 1916, May 1924 to September 1949.
Average discharge.--28 years (1912-15, 1924-49), 70.1 second-feet.
Extremes.--Maximum discharge during year, 680 second-feet Mar. 8 (gage height, 3.29 feet); no flow for long periods.
1910-16, 1924-49: Maximum discharge observed, 4,240 second-feet Dec. 3, 1910 (gage height, 8.9 feet), from rating curve extended above 3,500 second-feet; practically no flow at times in many years when gates in dam were closed.
Remarks.--Records good except those below 1 second-foot, which are poor. Flow regulated since 1911 by Crane Creek Reservoir (see p. 201). No large diversion above station.
Cooperation.--Water-stage recorder inspected by Crane Creek Reservoir Administration Board.
Revisions (water years).--W 833: Drainage area. W 963: 1941(M).

Rating table, water year 1948-49 (gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 0.0 | 0 | 0.5 | 18 | 1.9 | 168 |
| .1 | .5 | .7 | 31 | 2.2 | 232 |
| .2 | 3.0 | 1.0 | 56 | 2.5 | 323 |
| .3 | 6.5 | 1.3 | 88 | 2.8 | 442 |
| .4 | 12 | 1.6 | 124 | 3.3 | 685 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 127 | | | | | 500 | 1.8 | 13 | 12 | 85 | 158 | 148 |
| 2 | 127 | | | | | 500 | 1.8 | 13 | 12 | 85 | 158 | 145 |
| 3 | 128 | | | | | 504 | 1.5 | 13 | 12 | 103 | 158 | 145 |
| 4 | 127 | | | | | 504 | 1.5 | 13 | 12 | 120 | 157 | 148 |
| 5 | 127 | | | | 0 | 509 | 1.8 | 12 | 12 | 120 | 157 | 143 |
| 6 | 125 | | | | | 509 | 1.8 | 12 | 12 | 120 | 157 | 132 |
| 7 | 125 | | | | | 514 | 1.5 | 12 | 12 | 120 | 166 | 145 |
| 8 | 123 | | | | | 580 | 1.5 | 12 | 12 | 123 | 177 | 143 |
| 9 | 124 | | | | | 672 | 1.5 | 12 | 12 | 129 | 177 | 135 |
| 10 | 123 | | | | | 672 | 1.5 | 12 | 12 | 145 | 177 | 125 |
| 11 | 87 | | | | | 667 | 1.5 | 12 | 12 | 163 | 188 | 124 |
| 12 | 0.4 | | | | | 667 | 1.8 | 12 | 13 | 177 | 205 | 118 |
| 13 | 0 | | | | .3 | 635 | 1.8 | 12 | 13 | 192 | 203 | 104 |
| 14 | 0 | | | | | 551 | 1.8 | 13 | 13 | 190 | 203 | 98 |
| 15 | 0 | | | | | 527 | 1.8 | 13 | 13 | 190 | 201 | 85 |
| 16 | 0 | | | | | 527 | 1.8 | 13 | 12 | 188 | 201 | 85 |
| 17 | 0 | | | | | 527 | 1.8 | 13 | 12 | 188 | 199 | 85 |
| 18 | 0 | | | | .3 | 451 | 2.5 | 13 | 12 | 188 | 199 | 84 |
| 19 | 0 | | | | .3 | 376 | 5.8 | 13 | 12 | 188 | 177 | 84 |
| 20 | 0 | | | | .3 | 380 | 5.8 | 12 | 12 | 186 | 151 | 67 |
| 21 | 0 | | | | .2 | 384 | 5.4 | 12 | 12 | 186 | 151 | 57 |
| 22 | 0 | | | | .4 | 384 | 5.4 | 12 | 12 | 186 | 149 | 49 |
| 23 | 0 | | | | .4 | 384 | 5.4 | 12 | 12 | 182 | 148 | 23 |
| 24 | 0 | | | | 185 | 384 | 5.4 | 12 | 64 | 181 | 146 | 24 |
| 25 | 0 | | | | 491 | 384 | 5.4 | 12 | 85 | 179 | 146 | 24 |
| 26 | 0 | | | | 491 | 384 | 5.4 | 12 | 85 | 184 | 146 | 22 |
| 27 | 0 | | | | 495 | 183 | 5.4 | 12 | 85 | 201 | 146 | 20 |
| 28 | 0 | | | | 500 | 1.8 | 6.2 | 12 | 85 | 199 | 143 | 18 |
| 29 | .1 | | | | - | 1.8 | 12 | 12 | 85 | 199 | 143 | 18 |
| 30 | 0 | | | | - | 1.8 | 13 | 12 | 85 | 175 | 138 | 18 |
| 31 | 0 | | | | - | 1.8 | - | 12 | - | 160 | 132 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,343.5 | 128 | 0 | 43.3 | 2,660 |
| November | 0 | 0 | 0 | 0 | 0 |
| December | 0 | 0 | 0 | 0 | 0 |
| Calendar year 1948 | 15,816.9 | 238 | 0 | 43.2 | 31,360 |
| January | 0 | 0 | 0 | 0 | 0 |
| February | 2,166.6 | 500 | 0 | 77.4 | 4,300 |
| March | 13,266.2 | 672 | 1.8 | 428 | 26,310 |
| April | 111.6 | 13 | 1.5 | 3.72 | 221 |
| May | 382 | 13 | 12 | 12.3 | 758 |
| June | 854 | 85 | 12 | 28.5 | 1,690 |
| July | 5,032 | 201 | 85 | 162 | 9,980 |
| August | 5,157 | 205 | 132 | 166 | 10,230 |
| September | 2,616 | 148 | 18 | 87.2 | 5,190 |
| Water year 1948-49 | 30,928.9 | 672 | 0 | 84.7 | 61,340 |

Note.--No gage-height record Nov. 29 to Feb. 17 when gates in dam were closed; discharge computed or interpolated on basis of adjacent record, weather records, engineers' and observer's notes, and records for Crane Creek Reservoir.

## Crane Creek at mouth, near Weiser, Idaho

Location.--Water-stage recorder and concrete control, lat. 44°18', long. 116°47', in sec. 14, T. 11 N., R. 4 W., just downstream from steel highway bridge at Harris Ranch, a quarter of a mile upstream from mouth and 10 miles northeast of Weiser.

Drainage area.--288 square miles.

Records available.--July 1920 to September 1949.

Average discharge.--28 years (1921-49), 77.7 second-feet.

Extremes.--Maximum discharge during year, 1,010 second-feet Mar. 12 (gage height, 5.58 feet); minimum, 1.2 second-feet Apr. 19, 29 (gage height, 1.60 feet); minimum daily, 1.6 second-feet Apr. 28.
1920-49: Maximum discharge, 2,350 second-feet about Feb. 7, 1925 (gage height, 6.80 feet, from well-defined marks on gage), from rating curve extended above 1,000 second-feet; minimum, 0.2 second-foot May 26, 1931; minimum daily, 1 second-foot or less at times during many years; minimum gage height, 1.30 feet Jan. 21, 1922.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Flow regulated since 1911 by Crane Creek Reservoir (see p. 201). Several small ditches divert above station for irrigation.

Revisions.--W 833: Drainage area.

**Discharge, in second-feet, water year October 1948 to September 1949**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 130 | 5.2 | 4.2 | a6.2 | a4.5 | 569 | 10 | 6.2 | 11 | 74 | 148 | 136 |
| 2 | 128 | 5.5 | 4.5 | h6.0 | a4.8 | 569 | 9.3 | 6.5 | 11 | 74 | 146 | 136 |
| 3 | 128 | 5.0 | 5.5 | a5.6 | a5.2 | 629 | 8.6 | 7.6 | 9.6 | 82 | 142 | 136 |
| 4 | 130 | 4.5 | 4.8 | a5.4 | a5.4 | 645 | 7.9 | 8.2 | 11 | 108 | 140 | 132 |
| 5 | 130 | 4.2 | 5.2 | a5.2 | a4.5 | 651 | 7.6 | 7.6 | 11 | 110 | 140 | 140 |
| 6 | 130 | 4.0 | 4.8 | a6.0 | h4.8 | 619 | 6.5 | 5.5 | 11 | 110 | 140 | 111 |
| 7 | 128 | 3.8 | 5.2 | a5.6 | a6.0 | 619 | 5.8 | 7.2 | 9.6 | 110 | 146 | 136 |
| 8 | 128 | 3.7 | 5.2 | a5.4 | a10 | 656 | 5.5 | 7.9 | 9.6 | 110 | 162 | 136 |
| 9 | 128 | 3.7 | 5.0 | a5.6 | a20 | 834 | 5.2 | 6.8 | 7.9 | 117 | 162 | 132 |
| 10 | 128 | 3.7 | 5.8 | h6.0 | f21 | 847 | 5.0 | 6.0 | 6.5 | 126 | 167 | 117 |
| 11 | 126 | 3.7 | 7.2 | a5.2 | 25 | 834 | 5.0 | 7.2 | 8.9 | 152 | 173 | 110 |
| 12 | 22 | 3.7 | 15 | a5.2 | 18 | 923 | 4.8 | 7.2 | 7.6 | 162 | 200 | 110 |
| 13 | 6.2 | 3.7 | 10 | a5.2 | f16 | 834 | 4.2 | 5.5 | 6.0 | 182 | 200 | 92 |
| 14 | 5.2 | 3.8 | 8.2 | a5.4 | a18 | 667 | 3.8 | 7.9 | 6.5 | 182 | 200 | 88 |
| 15 | 5.0 | 3.8 | 6.8 | a5.4 | a20 | 603 | 3.5 | 8.6 | 8.2 | 182 | 193 | 77 |
| 16 | 4.8 | 3.8 | 5.2 | h5.5 | a22 | 603 | 3.3 | 9.6 | 9.3 | 182 | 193 | 74 |
| 17 | 4.5 | 4.0 | 5.5 | a5.8 | f26 | 593 | 3.5 | 10 | 10 | 184 | 193 | 76 |
| 18 | 4.5 | 3.8 | 5.5 | a5.4 | 120 | 609 | 2.5 | 9.6 | 7.2 | 184 | 191 | 74 |
| 19 | 4.2 | 4.0 | 6.0 | a5.5 | 237 | 430 | 1.8 | 9.6 | 6.0 | 184 | 180 | 73 |
| 20 | 4.2 | 4.2 | 6.2 | a5.8 | 111 | 404 | 3.8 | 12 | 8.2 | 177 | 140 | 65 |
| 21 | 4.2 | 4.0 | 6.0 | a5.4 | 80 | 412 | 4.0 | 13 | 8.6 | 173 | 138 | 51 |
| 22 | 4.2 | 4.0 | 5.8 | 6.5 | 118 | 404 | 5.5 | 11 | 6.5 | 180 | 138 | 49 |
| 23 | 4.0 | 4.0 | a5.6 | 5.2 | 285 | 394 | 6.0 | 10 | 5.8 | 173 | 138 | 28 |
| 24 | 4.0 | 4.0 | a5.4 | a4.8 | 283 | 390 | 5.0 | 8.9 | 24 | 173 | 138 | 22 |
| 25 | 4.0 | 4.0 | a5.8 | a4.5 | 574 | 387 | 5.0 | 8.9 | 74 | 171 | 136 | 21 |
| 26 | 4.2 | 4.0 | h7.2 | a4.9 | 559 | 384 | 2.6 | 7.6 | 76 | 173 | 136 | 19 |
| 27 | 4.0 | 3.8 | a7.6 | a5.4 | 559 | 276 | 2.3 | 8.2 | 77 | 197 | 132 | 18 |
| 28 | 4.0 | 3.8 | a7.6 | a5.0 | 574 | 21 | 1.6 | 7.6 | 78 | 200 | 130 | 16 |
| 29 | 4.0 | 4.0 | a8.0 | a4.7 | - | 14 | 2.5 | 6.5 | 78 | 197 | 128 | 16 |
| 30 | 4.0 | 3.8 | a7.2 | h5.0 | - | 12 | 3.2 | 11 | 76 | 180 | 128 | 16 |
| 31 | 4.2 | - | a5.8 | a4.7 | - | 11 | - | 12 | - | 148 | 111 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,519.4 | 130 | 4.0 | 49.0 | 3,010 |
| November | 121.2 | 5.5 | 3.7 | 4.04 | 240 |
| December | 197.8 | 15 | 4.2 | 6.38 | 392 |
| Calendar year 1948 | 17,982.3 | 339 | 3.0 | 49.1 | 35,660 |
| January | 166.5 | 6.2 | 4.5 | 5.37 | 330 |
| February | 3,731.2 | 574 | 4.5 | 133 | 7,400 |
| March | 15,843 | 923 | 11 | 511 | 31,420 |
| April | 145.3 | 10 | 1.6 | 4.84 | 288 |
| May | 261.4 | 13 | 5.5 | 8.43 | 518 |
| June | 680 | 78 | 5.8 | 22.7 | 1,350 |
| July | 4,757 | 200 | 74 | 153 | 9,440 |
| August | 4,807 | 200 | 111 | 155 | 9,530 |
| September | 2,407 | 140 | 16 | 80.2 | 4,770 |
| Water year 1948-49 | 34,636.8 | 923 | 1.6 | 94.9 | 68,688 |

a No gage-height record; discharge computed on basis of weather records and records for other Weiser River tributaries.
f Computed from partly estimated gage-height record.
h Computed from staff-gage reading.

## Weiser Irrigation District Canal near Weiser, Idaho

Location.--Water-stage recorder, lat. 44°15', long. 116°51', in sec. 32, T. 11 N., R. 4 W., 3¼ miles downstream from headworks of canal and 7 miles east of Weiser.

Records available.--April 1920 to September 1949 (winter records fragmentary).

Extremes.--Maximum discharge observed during year, 204 second-feet June 28, 29 (gage height, 2.90 feet); dry or practically dry for long periods during nonirrigation season when gates were closed.

1920-49: Maximum discharge, 221 second-feet July 15, 1932; maximum gage height, 3.43 feet May 5, 1926; no flow at times when gates were closed.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Canal diverts water from Weiser River in sec. 35, T. 11 N., R. 4 W., 3¼ miles above station for irrigation of about 9,000 acres included in projects of Weiser and Weiser Bench Irrigation Districts. One farm lateral diverts a quarter of a mile above station.

Cooperation.--Water-stage recorder graph and gage readings furnished by Weiser Irrigation District.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 116 | | | | | - | | 180 | | 191 | 171 | 130 |
| 2 | 114 | | | | | - | | 180 | | 178 | 166 | 134 |
| 3 | 114 | | | | | - | | 183 | | 168 | 161 | 135 |
| 4 | 116 | | | | | - | | | | 191 | 155 | 135 |
| 5 | 75 | | | | | - | 0 | | | 185 | 155 | 142 |
| 6 | 42 | | | | | - | | | | 172 | 163 | 123 |
| 7 | 150 | | | | | - | | | 190 | 191 | 152 | 140 |
| 8 | 150 | | | | | - | | | | 165 | 161 | 149 |
| 9 | 150 | | | | | - | | | | 153 | 162 | 152 |
| 10 | f148 | | | | | - | | | | 144 | 163 | 141 |
| 11 | f137 | | | | | - | | | | 172 | 165 | 142 |
| 12 | 102 | | | | | - | 100 | | | 175 | 182 | 149 |
| 13 | 95 | | | | | - | | | | 194 | 184 | 141 |
| 14 | 89 | | | | | - | | | | 198 | 185 | 133 |
| 15 | 88 | | | | | - | | | 191 | 194 | 182 | 124 |
| 16 | 89 | | | | | 0 | | | | 194 | 179 | 122 |
| 17 | - | | | | | - | | 185 | | 178 | 184 | 126 |
| 18 | - | | | | | - | | | | 178 | 181 | 132 |
| 19 | - | | | | | - | | | | 174 | 179 | 133 |
| 20 | - | | | | | - | | | | 173 | 154 | 133 |
| 21 | - | | | | | - | | | 195 | 172 | 156 | 126 |
| 22 | - | | | | | 0 | | | | 173 | 154 | 122 |
| 23 | - | | | | | - | 170 | | | 172 | 154 | 111 |
| 24 | - | | | *b0.7 | | - | | | | 173 | 154 | 104 |
| 25 | - | | | | | - | | | | 180 | 149 | 99 |
| 26 | - | | | | | - | | | | 178 | 144 | 98 |
| 27 | - | | | | | - | | | | 187 | 144 | 91 |
| 28 | - | | | | | - | | | 204 | 187 | 141 | 85 |
| 29 | - | | | | | - | | | 204 | 186 | 139 | 90 |
| 30 | - | | | | | - | | | 198 | 182 | 132 | 96 |
| 31 | - | | | | | - | - | | - | 174 | 116 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October 1-16 | 1,775 | 150 | - | 111 | 3,520 |
| November | - | - | - | - | - |
| December | - | - | - | - | - |
| Calendar year | - | - | - | - | - |
| January | - | - | - | - | - |
| February | - | - | - | - | - |
| March | - | - | - | - | - |
| April | 3,150 | - | - | 105 | 6,250 |
| May | 5,723 | - | - | 185 | 11,350 |
| June | 5,797 | 204 | - | 193 | 11,500 |
| July | 5,532 | 198 | 144 | 178 | 10,970 |
| August | 4,967 | 185 | 116 | 160 | 9,850 |
| September | 3,738 | 152 | 85 | 125 | 7,410 |
| Water year | - | - | - | - | - |

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
f Computed on basis of partly estimated gage-height record.

Note.--Computed from staff-gage readings May 3, June 15, June 28 to July 18. No gage-height record Apr. 1 to May 2, May 4 to June 14, June 16-27; discharge computed on basis of records for Crane Creek at mouth, near Weiser, Weiser River above Crane Creek, Boise River diversions, and flow during adjacent periods.

## Mann Creek near Weiser, Idaho

Location.--Staff gage, lat. 44°24', long. 116°54', in sec. 11, T. 12 N., R. 5 W., at Richards Ranch, 11 miles northeast of Weiser and 12 miles upstream from mouth.

Drainage area.--56 square miles.

Records available.--March 1911 to September 1913, July to November 1920, April 1937 to September 1949.

Average discharge.--14 years (1911-13, 1937-49), 41.8 second-feet.

Extremes.--Maximum discharge observed during year, 322 second-feet Mar. 18 (gage height, 2.00 feet, auxiliary gage); minimum observed, 0.7 second-foot Aug. 31 to Sept. 2.
1911-13, 1920, 1937-49: Maximum discharge, 1,540 second-feet Mar. 27, 1940 (gage height, 5.45 feet, from floodmark, site and datum then in use), from rating curve extended above slope-area determination at gage height 4.21 feet; no flow Aug. 18 to Sept. 22, 1937, July 31 to Sept. 13, 1939.

Remarks.--Records fair except those for period of ice effect, which are poor. Gage read twice daily. One diversion above station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.6 | 5.9 | *4.1 | 5.8 | 5.0 | 44 | 72 | 116 | 25 | 6.6 | 1.7 | 0.8 |
| 2 | 3.6 | 10 | 5.0 | 5.8 | 5.0 | 47 | 99 | 104 | 21 | 6.6 | 1.7 | .8 |
| 3 | 3.4 | 6.6 | 5.0 | 5.8 | 5.0 | 62 | 111 | 96 | 19 | 5.9 | 1.6 | .8 |
| 4 | 3.9 | 5.2 | 4.5 | 5.8 | 5.0 | 96 | 141 | 88 | 16 | 5.9 | 1.5 | .9 |
| 5 | 6.2 | 4.9 | 5.0 | 5.8 | 5.0 | 100 | 155 | 62 | 16 | 5.9 | 1.3 | 1.0 |
| 6 | 5.4 | 4.1 | 5.0 | 5.5 | 5.0 | 105 | 204 | 75 | 16 | 5.7 | 1.3 | 1.3 |
| 7 | 5.4 | 3.9 | 4.0 | 5.5 | 5.0 | 106 | 244 | 78 | 15 | 5.4 | 1.2 | 1.5 |
| 8 | 4.6 | 3.6 | 5.0 | 5.5 | 5.0 | 115 | 222 | 79 | 15 | 5.4 | 1.5 | 1.8 |
| 9 | 4.4 | 4.9 | 5.0 | 5.5 | 5.2 | 109 | 214 | 83 | 14 | 5.4 | 1.2 | 2.2 |
| 10 | 4.1 | 4.6 | 5.0 | 5.5 | 4.9 | 86 | 217 | 86 | 14 | 5.2 | 1.2 | 2.3 |
| 11 | 4.1 | 4.4 | 5.5 | 4.5 | 4.9 | 102 | 238 | 85 | 14 | 4.6 | 1.2 | 2.5 |
| 12 | 3.6 | 4.6 | 5.5 | 5.0 | 5.2 | 120 | 238 | 83 | 12 | 4.4 | 1.2 | 2.5 |
| 13 | 3.6 | 4.6 | 5.5 | 5.0 | 4.9 | 116 | 204 | 83 | 11 | 4.1 | 1.4 | 2.3 |
| 14 | 3.6 | 4.6 | 5.0 | 5.5 | 4.4 | 118 | 171 | 85 | 13 | 3.9 | 1.4 | 2.0 |
| 15 | 3.6 | 4.6 | 4.5 | 5.5 | 6.6 | 137 | 164 | 85 | 12 | 3.6 | 1.3 | 2.0 |
| 16 | 3.6 | 4.6 | 4.3 | 5.5 | *8.5 | 148 | 169 | 80 | 11 | 3.6 | 1.2 | 2.2 |
| 17 | 3.6 | 4.6 | 4.0 | 5.5 | 8.5 | 146 | 198 | 65 | 11 | 3.4 | 1.3 | 2.0 |
| 18 | 3.6 | 2.7 | 3.8 | 5.5 | 7.7 | 249 | 238 | 54 | 11 | 3.2 | 1.3 | 1.8 |
| 19 | 3.6 | 4.9 | 4.0 | 5.0 | 8.9 | 247 | 263 | 47 | 10 | 3.2 | 1.3 | 2.0 |
| 20 | 3.6 | 5.4 | 5.0 | 5.0 | 12 | 171 | 255 | 41 | 10 | 3.4 | 1.1 | 1.8 |
| 21 | 3.6 | 5.2 | 4.5 | 5.5 | 15 | 137 | 241 | 37 | 10 | 3.6 | 1.0 | 1.8 |
| 22 | 3.6 | 4.9 | 4.0 | *5.5 | 18 | 109 | 230 | 35 | 9.2 | 3.4 | 1.2 | 1.6 |
| 23 | 3.6 | 4.9 | 4.0 | 5.0 | 20 | 107 | 214 | 32 | 9.2 | 3.2 | 1.0 | 1.5 |
| 24 | 3.9 | 4.9 | 4.0 | 5.5 | 22 | 107 | 196 | 29 | 8.9 | 3.2 | 1.1 | 1.5 |
| 25 | 3.9 | 5.2 | 4.5 | 5.5 | 25 | 104 | 176 | 28 | 8.5 | 3.2 | 1.3 | 1.5 |
| 26 | 3.9 | 4.6 | 5.0 | 5.0 | 26 | 92 | 157 | 28 | 8.5 | 2.7 | 1.2 | 1.6 |
| 27 | 3.9 | 4.6 | 6.0 | 5.5 | 36 | 78 | 135 | 27 | 8.5 | 2.7 | 1.1 | 1.6 |
| 28 | 3.9 | 4.6 | 6.0 | 5.5 | 40 | 72 | 139 | 25 | 8.1 | 2.7 | .9 | 1.6 |
| 29 | 3.9 | 3.2 | 6.0 | 5.5 | - | 60 | 128 | 25 | 7.3 | 2.7 | 1.1 | 1.8 |
| 30 | 3.9 | 3.1 | 6.0 | 5.5 | - | 62 | 120 | 25 | 7.0 | 2.5 | 1.0 | 1.8 |
| 31 | 3.9 | - | 5.8 | 5.5 | - | 64 | - | 25 | - | 1.8 | .8 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 123.1 | 6.2 | 3.4 | 3.97 | 244 |
| November | 143.9 | 10 | 2.7 | 4.80 | 285 |
| December | 150.5 | 6.0 | 3.8 | 4.85 | 299 |
| Calendar year 1948 | 12,537.1 | 251 | 2.2 | 34.3 | 24,860 |
| January | 168.0 | 5.8 | 4.5 | 5.42 | 333 |
| February | 323.7 | 40 | 4.4 | 11.6 | 642 |
| March | 3,416 | 249 | 44 | 110 | 6,780 |
| April | 5,553 | 263 | 72 | 185 | 11,010 |
| May | 1,891 | 116 | 25 | 61.0 | 3,750 |
| June | 371.2 | 25 | 7.0 | 12.4 | 736 |
| July | 127.1 | 6.6 | 1.8 | 4.10 | 252 |
| August | 38.6 | 1.7 | .8 | 1.25 | 76.6 |
| September | 50.8 | 2.5 | .8 | 1.69 | 101 |
| Water year 1948-49 | 12,356.9 | 263 | .8 | 33.9 | 24,510 |

* Winter discharge measurement made on this day.

Note.--Maximum discharge Mar. 18 and daily discharge Mar. 8-27, Mar. 29 to May 22 based on record at auxiliary gage 100 feet downstream. Stage-discharge relation affected by ice Dec. 2 to Feb. 8 (no gage-height record Dec. 13-27; discharge computed on basis of weather records and records for other Weiser River tributaries).

## Monroe Creek above Sheep Creek, near Weiser, Idaho

Location.--Staff gage, lat. 44°20', long. 116°56', in SW¼ sec. 34, T. 12 N., R. 5 W., on farm road bridge adjacent to U. S. Highway 95, 0.5 mile above Sheep Creek and 6 miles north of Weiser.

Records available.--October 1945 to February 1949 (discontinued).

Extremes.--Maximum discharge observed during period October 1948 to February 1949, 7.6 second-feet Nov. 2; maximum gage height observed, 1.54 feet Dec. 26 (ice jam); minimum discharge observed, 0.3 second-foot Nov. 12 (gage height, 0.72 foot).
1945-49: Maximum discharge observed, 170 second-feet Mar. 18, 19, 1946 (gage height, 2.40 feet); no flow Aug. 1 to Sept. 7, Sept. 16, 17, 1947, July 8, 9, 1948.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. Diversions above station for irrigation and storage in Barton Reservoir.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.4 | 3.7 | *0.5 | b2.3 | b2.1 | | | | | | | |
| 2 | .4 | 6.6 | .6 | b2.3 | b2.1 | | | | | | | |
| 3 | a.5 | 7.1 | .8 | b2.3 | b2.1 | | | | | | | |
| 4 | .4 | 6.1 | .6 | a2.3 | b2.1 | | | | | | | |
| 5 | .4 | 4.0 | .6 | a2.3 | b2.1 | | | | | | | |
| 6 | .7 | 2.2 | b.6 | b2.3 | - | | | | | | | |
| 7 | .8 | a1.4 | b.5 | b2.3 | - | | | | | | | |
| 8 | 1.0 | .7 | b.6 | b2.3 | - | | | | | | | |
| 9 | 1.4 | a.6 | .6 | a2.3 | - | | | | | | | |
| 10 | 1.0 | .4 | 1.7 | a2.3 | - | | | | | | | |
| 11 | 1.0 | .4 | 4.7 | b2.3 | - | | | | | | | |
| 12 | .8 | .3 | a6.0 | a2.3 | - | | | | | | | |
| 13 | .7 | .4 | 7.1 | b2.3 | - | | | | | | | |
| 14 | .7 | a.4 | 6.6 | a2.3 | - | | | | | | | |
| 15 | .8 | .4 | 3.7 | b2.3 | - | | | | | | | |
| 16 | .7 | .4 | b2.5 | b2.1 | - | | | | | | | |
| 17 | a.7 | .4 | b1.5 | a2.1 | - | | | | | | | |
| 18 | 1.2 | .5 | a1.5 | b2.1 | - | | | | | | | |
| 19 | 1.0 | .5 | a2.0 | b2.1 | - | | | | | | | |
| 20 | a1.4 | .8 | b2.5 | b2.1 | - | | | | | | | |
| 21 | a1.4 | .5 | b2.4 | b2.1 | - | | | | | | | |
| 22 | a1.4 | .5 | b2.0 | *b2.1 | - | | | | | | | |
| 23 | a1.5 | .6 | b2.0 | b2.1 | - | | | | | | | |
| 24 | a1.8 | .6 | b2.0 | b2.1 | - | | | | | | | |
| 25 | 2.2 | a.4 | b2.3 | b2.1 | - | | | | | | | |
| 26 | 2.2 | .5 | b2.5 | b2.1 | - | | | | | | | |
| 27 | 2.2 | .6 | a2.5 | b2.1 | - | | | | | | | |
| 28 | 2.2 | .6 | b2.5 | b2.1 | - | | | | | | | |
| 29 | 2.7 | .4 | b2.5 | b2.1 | - | | | | | | | |
| 30 | a3.0 | b.4 | b2.5 | a2.1 | - | | | | | | | |
| 31 | a3.4 | - | a2.5 | b2.1 | - | | | | | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 40.0 | 3.4 | 0.4 | 1.29 | 79 |
| November | 42.4 | 7.1 | 0.3 | 1.41 | 84 |
| December | 70.9 | 7.1 | 0.5 | 2.29 | 141 |
| Calendar year 1948 | 1,613.8 | 70 | 0.1 | 4.41 | 3,200 |
| January | 68.1 | - | - | 2.20 | 135 |
| February 1-5 | 10.5 | - | - | 2.10 | 21 |
| March | - | - | - | - | - |
| April | - | - | - | - | - |
| May | - | - | - | - | - |
| June | - | - | - | - | - |
| July | - | - | - | - | - |
| August | - | - | - | - | - |
| September | - | - | - | - | - |
| The period | - | - | - | - | 460 |

* Winter discharge measurement made on this day.
a No gage-height record, discharge interpolated or computed on basis of weather records and records for other Weiser River tributaries.
b Stage-discharge relation affected by ice.

## Unity Reservoir near Unity, Oreg.

Location.--Staff gage and low-water reference mark, lat. 44°30', long. 118°11', in SW¼ sec. 21, T. 12 S., R. 37 E., at Unity Dam on Burnt River, just downstream from Job Creek, half a mile downstream from confluence of North, Middle, and South Forks of Burnt River, and 4½ miles north of Unity. Datum of gage is at mean sea level, datum of Bureau of Reclamation. (To convert elevations to datum of 1929, add 0.12 foot.)

Drainage area.--309 square miles.

Records available.--March 1938 to September 1949.

Extremes.--Maximum contents observed during year, 25,220 acre-feet May 17 (elevation, 3,820.0 feet); minimum observed, 2,284 acre-feet Sept. 30 (elevation, 3,785.9 feet). 1938-49: Maximum contents observed, 25,770 acre-feet Apr. 13, 1942 (elevation, 3,820.6 feet); minimum observed, 256 acre-feet Oct. 7, 1947 (elevation, 3,778.2 feet).

Remarks.--Reservoir is formed by earth-fill dam with concrete spillway and outlet works, completed by Bureau of Reclamation in 1937; storage began Feb. 19, 1938. Capacity, 25,220 acre-feet between elevations 3,776.5 feet (bottom of outlet gates) and 3,820.0 feet (top of radial gates on spillway when closed). Dead storage, 600 acre-feet below elevation 3,776.5 feet. Records given herein represent usable contents. Water used for irrigation of lands in Burnt River Irrigation District near Hereford and Bridgeport. Gage read or water surface elevation measured from reference mark once daily by employee of Burnt River Irrigation District. Contents computed from capacity table based on surveys by Bureau of Reclamation.

Monthly elevation and contents, water year October 1948 to September 1949

| Date | Elevation (feet) | Contents (acre-feet) | Change in contents during month (acre-feet) |
|---|---|---|---|
| Sept.30 | 3,797.2 | 7,870 | - |
| Oct. 31 | 3,792.1 | 5,052 | -2,818 |
| Nov. 30 | 3,795.4 | 6,834 | +1,782 |
| Dec. 31 | 3,798.0 | 8,350 | +1,516 |
| Calendar year 1948 | - | - | +4,790 |
| Jan. 31 | 3,798.3 | 8,536 | +186 |
| Feb. 28 | 3,798.2 | 8,474 | -62 |
| Mar. 31 | 3,805.0 | 12,960 | +4,486 |
| Apr. 30 | 3,818.0 | 23,410 | +10,450 |
| May 31 | 3,818.4 | 23,770 | +360 |
| June 30 | 3,811.9 | 18,180 | -5,590 |
| July 31 | 3,805.1 | 13,030 | -5,150 |
| Aug. 31 | 3,795.2 | 6,722 | -6,308 |
| Sept.30 | 3,785.9 | 2,284 | -4,438 |
| Water year 1948-49 | - | - | -5,586 |

## Burnt River near Hereford, Oreg.

Location.--Water-stage recorder, lat. 44°30', long. 118°11', in SE¼ sec. 21, T. 12 S., R. 37 E., at entrance to canyon, 1,250 feet downstream from Unity Dam, 0.7 mile downstream from South Fork, and 7 miles west of Hereford. Datum of gage is 3,756.75 feet above mean sea level, datum of 1929, supplementary adjustment of 1947.

Drainage area.--309 square miles.

Records available.--March 1915 to September 1916, October 1928 to September 1949.

Average discharge.--20 years (1929-49), 75.2 second-feet.

Extremes.--Maximum discharge during year, 455 second-feet Apr. 25 (gage height, 4.05 feet); minimum, 1 second-foot Oct. 31.

1915-16, 1928-49: Maximum discharge, 2,220 second-feet Apr. 17, 1943 (caused by opening of automatic spillway gates), from rating curve extended above 1,300 second-feet by logarithmic plotting; maximum gage height, 6.91 feet Apr. 14, 1936 (site and datum then in use); no flow at times; minimum discharge before construction of Unity Reservoir Dam, 1.6 second-feet Aug. 31, 1935.

Remarks.--Records good except those below 10 second-feet, which are poor. Many small diversions above station for irrigation; Van Cleve ditch diverts below gage but above cableway. Flow regulated by Unity Reservoir (see preceding page) and partly regulated by reservoir (capacity, about 700 acre-feet) on South Fork Burnt River, 3 miles above mouth.

Revisions (water years).--W 903: 1939.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 92 | 57 | 27 | 30 | 52 | 62 | 251 | 248 | 112 | 98 | 105 | 96 |
| 2 | 92 | 65 | 27 | 30 | 52 | 62 | 251 | 248 | 113 | 86 | 107 | 100 |
| 3 | 92 | 38 | 27 | 30 | 52 | 62 | 248 | 284 | 122 | 82 | 105 | 102 |
| 4 | 91 | 24 | 27 | 30 | 52 | 62 | 248 | 329 | 120 | 91 | 105 | 101 |
| 5 | 90 | 24 | 27 | 30 | 52 | 62 | 248 | 329 | 120 | 86 | 104 | 101 |
| 6 | 87 | 24 | 28 | 30 | 52 | 65 | 284 | 323 | 119 | 85 | 113 | 101 |
| 7 | 87 | 24 | 28 | 30 | 52 | 90 | 350 | 320 | 118 | 89 | 119 | 101 |
| 8 | 87 | 24 | 28 | 44 | 56 | 105 | 359 | 281 | 118 | 86 | 118 | 100 |
| 9 | 86 | 24 | 27 | 55 | 62 | 140 | 365 | 236 | 116 | 83 | 118 | 100 |
| 10 | 86 | 24 | 27 | 55 | 62 | 166 | 380 | 176 | 113 | 83 | 128 | 104 |
| 11 | 85 | 24 | 27 | 55 | 62 | 164 | 392 | 142 | 107 | 83 | 135 | 105 |
| 12 | 85 | 24 | 28 | 54 | 62 | 200 | 416 | 137 | 101 | 82 | 135 | 104 |
| 13 | 84 | 24 | 28 | 53 | 62 | 218 | 434 | 140 | 120 | 87 | 134 | 102 |
| 14 | 83 | 24 | 28 | 53 | 62 | 218 | 299 | 139 | 132 | 90 | 132 | 101 |
| 15 | 83 | 24 | 29 | 53 | 62 | 220 | 251 | 137 | 128 | 101 | 130 | 101 |
| 16 | 82 | 24 | 29 | 52 | 62 | 220 | 185 | 147 | 120 | 102 | 128 | 100 |
| 17 | 81 | 24 | 29 | 52 | 62 | 225 | 188 | 155 | 122 | 102 | 120 | 106 |
| 18 | 80 | 24 | 29 | 52 | 62 | 228 | 260 | 176 | 127 | 104 | 113 | 110 |
| 19 | 78 | 24 | 29 | 52 | 62 | 233 | 356 | 208 | 120 | 105 | 113 | 96 |
| 20 | 78 | 24 | 30 | 52 | 62 | 239 | 434 | 192 | 119 | 98 | 112 | 93 |
| 21 | 78 | 25 | 30 | 52 | 62 | 242 | 440 | 190 | 119 | 86 | 110 | 95 |
| 22 | 77 | 26 | 30 | 52 | 62 | 242 | 440 | 188 | 120 | 83 | 109 | 93 |
| 23 | 77 | 26 | 29 | 52 | 62 | 222 | 446 | 162 | 120 | 81 | 107 | 92 |
| 24 | 77 | 26 | 29 | 52 | 62 | 88 | 449 | 147 | 120 | 81 | 106 | 91 |
| 25 | 76 | 26 | 29 | 52 | 62 | 57 | 440 | 144 | 118 | 83 | 106 | 93 |
| 26 | 76 | 26 | 29 | 52 | 62 | 187 | 428 | 142 | 119 | 87 | 105 | 96 |
| 27 | 76 | 26 | 29 | 52 | 62 | 245 | 404 | 139 | 125 | 85 | 104 | 96 |
| 28 | 75 | 26 | 29 | 52 | 62 | 245 | 398 | 137 | 122 | 87 | 102 | 95 |
| 29 | 75 | 26 | 29 | 52 | - | 182 | 329 | 135 | 120 | 91 | 101 | 95 |
| 30 | 74 | 27 | 29 | 52 | - | 242 | 266 | 134 | 119 | 96 | 100 | 93 |
| 31 | 51 | - | 30 | 52 | - | 254 | - | 124 | - | 98 | 97 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 2,521 | 92 | 51 | 81.3 | 5,000 |
| November | 828 | 65 | 24 | 27.6 | 1,640 |
| December | 881 | 30 | 27 | 28.4 | 1,750 |
| Calendar year 1948 | 40,482 | 507 | 16 | 111 | 80,290 |
| January | 1,464 | 55 | 30 | 47.2 | 2,900 |
| February | 1,660 | 62 | 52 | 59.3 | 3,290 |
| March | 5,247 | 254 | 57 | 169 | 10,410 |
| April | 10,239 | 449 | 185 | 341 | 20,310 |
| May | 5,989 | 329 | 124 | 193 | 11,880 |
| June | 3,569 | 132 | 101 | 119 | 7,080 |
| July | 2,781 | 105 | 81 | 89.7 | 5,520 |
| August | 3,521 | 135 | 97 | 114 | 6,980 |
| September | 2,963 | 110 | 91 | 98.8 | 5,880 |
| Water year 1948-49 | 41,663 | 449 | 24 | 114 | 82,640 |

## Powder River at Salisbury, Oreg.

Location.--Water-stage recorder, lat. 44°39', long. 117°52', in NE¼ sec. 36, T. 10 S., R. 39 E., 700 feet downstream from Salisbury siding of Sumpter Valley Railroad and Stices Gulch and 8½ miles south of Baker. Datum of gage is 3,632.31 feet above mean sea level, datum of 1929, supplementary adjustment of 1947.
Drainage area.--219 square miles.
Records available.--December 1903 to August 1914 and October 1928 to September 1949 in reports of Geological Survey. January 1904 to July 1914 and June 1926 to September 1941 in reports of State engineer.
Average discharge.--31 years (1904-13, 1926-28, 1929-49), 110 second-feet.
Extremes.--Maximum discharge during year, 876 second-feet May 15 (gage height, 5.17 feet); minimum, 6.0 second-feet Sept. 5 (gage height, 1.15 feet).
1903-14, 1926-49: Maximum discharge, 1,820 second-feet Mar. 20, 1910 (gage height, 7.05 feet, site and datum then in use); no flow Aug. 31, 1909, Sept. 7, 1931.
Remarks.--Records good, except those for periods of ice effect or no gage-height record, and those below 10 second-feet, which are poor. Diversions above station for irrigation.
Revisions (water years).--W 813: 1935. W 1093: Drainage area.

Rating tables, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Nov. 7 | | Nov. 8 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|
| 1.2 | 7.0 | 1.1 | 4.0 | 1.6 | 44 | 2.5 | 203 |
| 1.3 | 12 | 1.2 | 8.0 | 1.7 | 58 | 2.9 | 289 |
| 1.4 | 20 | 1.3 | 14 | 1.8 | 73 | 3.5 | 430 |
| 1.5 | 30 | 1.4 | 22 | 2.0 | 107 | 4.2 | 609 |
| 1.6 | 43 | 1.5 | 32 | 2.2 | 144 | 5.1 | 856 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10 | *21 | 25 | | b25 | 75 | 154 | 428 | 291 | 50 | 16 | 8.0 |
| 2 | 12 | 25 | 28 | | b25 | 81 | 181 | 482 | 247 | 45 | 16 | 7.2 |
| 3 | 12 | 33 | 32 | | b25 | *89 | 195 | 515 | 226 | 44 | 16 | 7.2 |
| 4 | 13 | 30 | 27 | | b25 | 94 | 224 | 468 | 209 | 40 | 15 | 7.2 |
| 5 | 18 | 28 | 27 | | b25 | 100 | 305 | 406 | 203 | 38 | 14 | 7.6 |
| 6 | 19 | 26 | 28 | | b25 | 114 | 418 | 365 | 205 | 38 | 13 | 8.6 |
| 7 | 25 | b22 | 27 | | b25 | 118 | 478 | 349 | 207 | 40 | 13 | 8.0 |
| 8 | 24 | b22 | 27 | | b25 | 111 | 502 | 375 | 189 | 39 | 13 | 6.8 |
| 9 | 24 | b21 | 31 | | b25 | 105 | 513 | 460 | 179 | 34 | 13 | 7.2 |
| 10 | 24 | 22 | 29 | | b25 | 107 | 508 | 606 | 171 | 33 | 12 | 7.6 |
| 11 | 24 | 22 | 29 | | b26 | 116 | 588 | 772 | 159 | 36 | 11 | 8.0 |
| 12 | 23 | 21 | b27 | | *b26 | 136 | 647 | 834 | 146 | 36 | 9.8 | 8.6 |
| 13 | 21 | 21 | *b26 | | b26 | 144 | 541 | 797 | 136 | 33 | 10 | 10 |
| 14 | 21 | 21 | b26 | | b27 | 157 | 435 | 766 | 120 | 29 | 9.8 | 8.6 |
| 15 | 20 | 22 | b27 | b25 | b27 | 187 | 394 | 834 | 112 | 27 | 9.8 | 10 |
| 16 | 18 | 23 | b27 | | b27 | 207 | 420 | 803 | 102 | 28 | 10 | 9.8 |
| 17 | 18 | 25 | b27 | | b30 | 228 | 518 | 712 | 103 | 27 | 10 | 9.8 |
| 18 | 18 | b20 | b26 | | b35 | 282 | 641 | 583 | 98 | 26 | 9.8 | 9.8 |
| 19 | 18 | 24 | b25 | | b40 | 363 | 797 | 475 | 93 | 25 | 10 | 9.2 |
| 20 | 14 | 24 | b27 | | b45 | 337 | 758 | 438 | 86 | 24 | 9.2 | 12 |
| 21 | 14 | 26 | b30 | | b50 | 298 | 636 | 406 | 83 | 24 | 8.6 | 10 |
| 22 | 14 | 25 | b30 | | b60 | 265 | 552 | 389 | 79 | 22 | 9.2 | 10 |
| 23 | 15 | 28 | b28 | | 75 | 241 | 531 | 363 | 75 | 21 | 8.6 | 10 |
| 24 | 16 | 29 | b26 | | 66 | 228 | 570 | 335 | 67 | 22 | 8.6 | 9.8 |
| 25 | 16 | 30 | b25 | | 61 | 218 | 549 | 326 | 64 | 22 | 8.6 | 8.6 |
| 26 | 22 | 27 | b25 | | 62 | 199 | 498 | 335 | 62 | 21 | 8.6 | 7.6 |
| 27 | 19 | b25 | b25 | | 62 | 187 | 482 | 351 | 62 | 16 | 8.0 | 8.6 |
| 28 | 18 | b24 | b25 | | 68 | 159 | 515 | 360 | 58 | 17 | 8.0 | 8.6 |
| 29 | 19 | b20 | b25 | | - | a155 | 528 | 351 | 55 | 17 | 7.6 | 14 |
| 30 | 18 | 19 | b25 | | - | a150 | 460 | 326 | 52 | 16 | 8.0 | 11 |
| 31 | 19 | - | b25 | | - | 140 | - | 305 | - | 16 | 8.0 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 566 | 25 | 10 | 18.3 | 1,120 |
| November | 726 | 33 | 19 | 24.2 | 1,440 |
| December | 837 | 32 | 25 | 27.0 | 1,660 |
| Calendar year 1948 | 47,534.0 | 1,040 | 9.0 | 130 | 94,280 |
| January | 775 | - | - | 25.0 | 1,540 |
| February | 1,063 | 75 | 25 | 38.0 | 2,110 |
| March | 5,391 | 363 | 75 | 174 | 10,690 |
| April | 14,538 | 797 | 154 | 485 | 28,840 |
| May | 15,315 | 834 | 305 | 494 | 30,380 |
| June | 3,939 | 291 | 52 | 131 | 7,810 |
| July | 906 | 50 | 16 | 29.2 | 1,800 |
| August | 332.2 | 16 | 7.6 | 10.7 | 659 |
| September | 269.4 | 14 | 6.8 | 8.98 | 534 |
| Water year 1948-49 | 44,657.6 | 834 | 6.8 | 122 | 88,580 |

Peak discharge (base, 300 sec.-ft.).--Mar. 19 (8 p.m.) 413 sec.-ft.; Apr. 12 (12 m.) 668 sec.-ft.; Apr. 19 (7 p.m.) 834 sec.-ft.; May 12 (3 p.m.) 870 sec.-ft.; May 15 (5 p.m.) 876 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Powder River at Haines and Wolf Creek near North Powder.
b Stage-discharge relation affected by ice (no gage-height record, Jan. 23 to Feb. 3; discharge computed as explained in footnote a).

## Powder River near Haines, Oreg.

Location.--Water-stage recorder, lat. 44°56', long. 117°57', in S½ sec. 21, T. 7 S., R. 39 E., a tenth of a mile upstream from Muddy Creek, 1 mile downstream from Rock Creek, and 1.7 miles north of Haines.

Drainage area.--572 square miles.

Records available.--October 1946 to September 1949.

Extremes.--Maximum discharge during year, 884 second-feet May 15 (gage height, 5.68 feet), minimum, 1.4 second-feet Aug. 8.
1946-49: Maximum discharge, 1,300 second-feet June 8, 9, 1948, (gage height, 6.67 feet); minimum, that of Aug. 8, 1949.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Many diversions above station for irrigation; no seasonal regulation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 20 | 30 | 33 | 28 | 340 | 208 | 404 | 323 | 8.9 | 3.8 | 3.5 |
| 2 | 12 | 31 | 35 | 34 | b35 | 358 | 210 | 417 | 288 | 8.5 | 3.1 | 3.3 |
| 3 | 11 | 33 | 41 | b34 | 29 | 368 | 226 | 420 | 246 | 7.7 | 2.2 | 3.5 |
| 4 | 12 | 28 | 38 | b32 | 29 | 363 | 237 | 424 | 211 | 9.3 | 2.2 | 3.5 |
| 5 | 14 | 25 | 34 | b31 | 30 | 368 | 252 | 417 | 193 | 8.5 | 2.4 | 3.8 |
| 6 | 16 | 25 | 36 | 30 | b30 | 384 | 272 | 382 | 158 | 8.1 | 2.9 | 4.2 |
| 7 | 16 | 27 | 38 | 30 | b30 | 363 | 318 | 340 | 143 | 7.0 | 2.7 | 4.0 |
| 8 | 16 | 25 | 40 | b30 | b30 | 319 | 295 | 304 | 120 | 6.7 | 2.0 | 4.2 |
| 9 | 16 | 22 | 42 | b30 | 31 | 298 | 367 | 288 | 82 | 5.8 | 2.0 | 4.2 |
| 10 | 16 | 26 | 46 | b32 | 32 | 275 | 485 | 312 | 57 | 6.4 | 2.0 | 4.8 |
| 11 | 15 | 29 | 48 | b33 | *34 | 264 | 495 | 409 | 41 | 7.7 | 2.2 | 5.4 |
| 12 | 14 | 27 | 54 | b34 | 33 | 288 | 512 | 479 | 55 | 8.1 | 2.4 | 5.1 |
| 13 | 14 | 27 | *58 | 34 | b32 | 312 | 561 | 527 | 38 | 7.0 | 2.7 | 5.4 |
| 14 | 14 | 27 | 59 | 33 | 33 | 312 | 577 | 641 | 30 | 5.8 | 2.9 | 5.1 |
| 15 | 14 | 29 | 57 | 31 | 33 | 307 | 519 | 839 | 22 | 5.8 | 2.4 | 5.4 |
| 16 | 14 | 30 | 58 | 32 | 33 | 331 | 447 | 854 | 15 | 5.4 | 2.4 | 6.4 |
| 17 | 13 | 31 | b52 | a30 | 36 | 340 | 406 | 854 | 15 | 4.8 | 2.7 | 6.1 |
| 18 | 14 | 30 | b40 | a29 | 42 | 360 | 415 | 803 | 15 | 6.4 | 2.9 | 18 |
| 19 | 14 | 34 | 36 | a30 | 54 | 390 | 533 | 775 | 13 | 7.0 | 3.1 | 17 |
| 20 | 15 | 42 | 38 | a30 | 130 | 424 | 633 | 768 | 13 | 7.7 | 3.3 | 11 |
| 21 | 14 | 39 | 42 | a31 | 208 | 474 | 700 | 710 | 14 | 7.7 | 3.3 | 10 |
| 22 | 14 | 40 | b42 | a28 | 275 | 457 | 682 | 646 | 16 | 7.3 | 3.3 | 9.3 |
| 23 | 14 | 42 | b40 | a26 | 288 | 429 | 599 | 582 | 15 | 7.3 | 3.5 | 9.3 |
| 24 | 14 | 47 | b35 | a30 | 388 | 382 | 523 | 500 | 13 | 6.4 | 3.3 | 8.9 |
| 25 | 15 | 47 | 32 | a32 | 478 | 343 | 493 | 438 | 12 | 6.4 | 3.3 | 8.5 |
| 26 | 16 | 42 | 30 | a30 | 460 | 323 | 489 | 368 | 11 | 6.1 | 3.5 | 8.5 |
| 27 | 15 | 38 | 29 | a29 | 372 | 304 | 460 | 370 | 11 | 5.4 | 3.5 | 8.1 |
| 28 | 15 | b33 | 30 | a30 | 341 | 271 | 429 | 387 | 11 | 4.5 | 8.1 | 8.5 |
| 29 | 17 | b31 | 29 | a29 | - | 243 | 399 | 380 | 12 | 3.8 | 4.0 | 8.5 |
| 30 | 17 | 30 | b30 | a27 | - | 228 | 393 | 375 | 12 | 4.0 | 3.5 | 9.3 |
| 31 | 16 | - | b32 | a27 | - | 220 | - | 356 | - | 4.0 | 3.5 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 449 | 17 | 11 | 14.5 | 891 |
| November | 957 | 47 | 20 | 31.9 | 1,900 |
| December | 1,251 | 59 | 29 | 40.4 | 2,480 |
| Calendar year 1948 | 59,439.8 | 1,250 | 5.1 | 162 | 117,900 |
| January | 951 | 34 | 26 | 30.7 | 1,890 |
| February | 3,574 | 478 | 28 | 128 | 7,090 |
| March | 10,438 | 474 | 220 | 337 | 20,700 |
| April | 13,235 | 700 | 208 | 441 | 26,250 |
| May | 15,769 | 854 | 288 | 509 | 31,280 |
| June | 2,205 | 323 | 11 | 73.5 | 4,370 |
| July | 205.5 | 9.3 | 3.8 | 6.63 | 408 |
| August | 95.1 | 8.1 | 2.0 | 3.07 | 189 |
| September | 212.8 | 18 | 3.3 | 7.09 | 422 |
| Water year 1948-49 | 49,342.4 | 854 | 2.0 | 135 | 97,870 |

Peak discharge (base, 300 sec.-ft.).--Feb. 25 (8 p.m.) 545 sec.-ft.; Mar. 21 (12 m. to 3 p.m.) 481 sec.-ft.; Apr. 14 (2 a.m.) 585 sec.-ft.; Apr. 21 (11:30 p.m.) 712 sec.-ft.; May 15 (6 to 10 p.m.) 884 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records and records for Wolf Creek near North Powder and Powder River at Salisbury.

b Stage-discharge relation affected by ice.

## Powder River near Robinette, Oreg.

Location.--Water-stage recorder, lat. 44°46', long. 117°04', in SE¼ sec. 22, T. 9 S., R. 46 E., downstream from all tributaries, 2 miles northwest of Robinette and 2½ miles upstream from mouth. Prior to Nov. 1, 1948, staff gage at same datum, 50 feet upstream. Datum of gage is 1,937.01 feet above mean sea level, datum of 1929, supplemental adjustment of 1947.
Drainage area.--1,710 square miles.
Records available.--September 1928 to September 1949.
Average discharge.--21 years, 497 second-feet.
Extremes.--Maximum discharge during year, 3,620 second-feet May 17; maximum gage height, 5.85 feet Feb. 23 (ice jam); minimum discharge, 54 second-feet Sept. 3.
1928-49: Maximum discharge, 5,320 second-feet May 28, 1948; maximum gage height observed, 6.9 feet June 15, 16, 1933, site and datum then in use; minimum discharge observed, 18 second-feet Sept. 2-10, 1930.
Remarks.--Records good except those for periods of ice effect or no gage-height record and those above 2,000 second-feet, which are fair. Gage read once daily Oct. 1-31. Many diversions above station for irrigation, none below. One canal with capacity of about 5 second-feet diverts around station on left bank. Flow partly regulated by several reservoirs, the largest being Thief Valley Reservoir near North Powder (capacity, 17,400 acre-feet).

Rating tables, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| Oct. 1-31 | | Nov. 1 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|
| 0.7 | 141 | 0.2 | 58 | 1.1 | 263 | 3.0 | 1,410 |
| .9 | 195 | .3 | 70 | 1.4 | 383 | 3.5 | 1,870 |
| 1.1 | 255 | .4 | 85 | 1.7 | 525 | 4.0 | 2,400 |
| | | .6 | 124 | 2.0 | 685 | 5.0 | 3,700 |
| | | .8 | 172 | 2.5 | 1,000 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | h170 | 218 | 178 | 290 | a210 | a720 | 1,090 | 1,690 | 1,810 | 362 | 107 | 64 |
| 2 | h173 | 237 | 230 | 240 | a220 | a800 | 1,120 | 1,780 | 1,650 | 366 | 103 | 60 |
| 3 | h159 | 233 | 246 | 190 | a240 | *870 | 1,120 | 1,690 | 1,550 | 388 | 105 | 59 |
| 4 | h164 | 218 | 180 | 170 | a270 | 1,080 | 1,160 | 1,590 | 1,590 | 383 | 96 | 60 |
| 5 | h201 | 212 | 206 | 200 | a300 | 1,140 | 1,270 | 1,500 | 1,770 | 383 | 79 | 65 |
| 6 | h222 | 209 | 227 | 230 | a280 | 1,290 | 1,380 | 1,460 | 1,940 | 370 | 70 | 69 |
| 7 | h234 | 203 | 233 | 280 | a310 | 1,380 | 1,460 | 1,490 | 2,030 | 336 | 69 | 65 |
| 8 | h234 | 192 | 209 | 230 | a340 | 1,310 | 1,500 | 1,600 | 1,690 | 308 | 70 | 68 |
| 9 | h225 | 224 | 230 | 190 | a370 | 1,280 | 1,520 | 1,810 | 1,380 | 274 | 98 | 70 |
| 10 | h234 | 209 | 224 | 170 | a400 | 1,230 | 1,510 | 2,060 | 1,320 | 274 | 99 | 73 |
| 11 | h222 | 212 | 189 | 180 | a410 | 1,270 | 1,620 | 2,540 | 1,270 | 282 | 85 | 70 |
| 12 | h231 | 206 | 221 | 170 | 340 | 1,370 | 1,720 | 2,830 | 1,100 | 270 | 85 | 69 |
| 13 | h219 | 203 | 197 | 190 | 310 | 1,460 | 1,640 | 2,740 | 949 | 246 | 94 | 74 |
| 14 | h219 | 206 | *312 | 220 | 330 | 1,430 | 1,530 | 2,770 | 870 | 230 | 92 | 76 |
| 15 | h216 | 203 | 263 | 260 | 390 | 1,480 | 1,500 | 3,130 | 818 | 224 | 76 | 84 |
| 16 | h210 | 206 | 233 | 240 | 450 | 1,510 | 1,540 | 3,130 | 775 | 194 | 89 | 87 |
| 17 | h210 | 206 | 186 | 230 | 520 | 1,550 | 1,690 | 3,440 | 658 | 180 | 79 | 80 |
| 18 | h210 | 197 | 200 | 200 | 490 | 1,660 | 1,860 | 3,170 | 597 | 178 | 76 | 79 |
| 19 | h213 | 212 | 250 | 230 | a520 | 1,750 | 2,030 | 2,820 | 555 | 162 | 78 | 79 |
| 20 | h213 | 218 | 330 | 260 | a540 | 1,640 | 1,870 | 2,720 | 535 | 147 | 85 | 76 |
| 21 | h213 | 215 | 260 | 220 | a520 | 1,540 | 1,610 | 2,480 | 545 | 142 | 92 | 78 |
| 22 | h213 | 212 | 200 | 190 | a560 | 1,470 | 1,460 | 2,420 | 597 | 138 | 79 | 78 |
| 23 | h210 | 215 | 160 | 190 | a600 | 1,410 | 1,420 | 2,300 | 575 | 140 | 74 | 76 |
| 24 | h210 | 215 | 155 | 180 | a590 | 1,380 | 1,570 | 2,280 | 570 | 138 | 72 | 70 |
| 25 | h207 | 215 | 180 | 170 | a580 | 1,350 | 1,690 | 2,270 | 550 | 129 | 72 | 72 |
| 26 | h204 | 212 | 210 | 200 | a590 | 1,290 | 1,650 | 2,310 | 505 | 129 | 70 | 72 |
| 27 | h204 | 206 | 250 | 240 | a620 | 1,230 | 1,680 | 2,370 | 456 | 118 | 70 | 70 |
| 28 | h207 | 209 | 300 | 220 | a660 | 1,170 | 1,780 | 2,370 | 442 | 111 | 72 | 70 |
| 29 | h204 | 178 | 350 | 200 | - | 1,120 | 1,880 | 2,320 | 419 | 118 | 70 | 80 |
| 30 | h201 | 175 | 280 | 195 | - | 1,100 | 1,760 | 2,160 | 374 | 120 | 65 | 85 |
| 31 | h201 | - | 340 | 200 | - | 1,080 | - | 2,030 | - | 111 | 65 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 6,453 | 234 | 159 | 208 | 12,800 |
| November | 6,276 | 237 | 175 | 209 | 12,450 |
| December | 7,229 | 350 | 155 | 233 | 14,340 |
| Calendar year 1948 | 2/5,135 | 4,870 | 104 | 752 | 545,800 |
| January | 6,575 | 290 | 170 | 212 | 13,040 |
| February | 11,960 | 660 | 210 | 427 | 23,720 |
| March | 40,360 | 1,750 | 720 | 1,302 | 80,050 |
| April | 46,630 | 2,030 | 1,090 | 1,554 | 92,490 |
| May | 71,270 | 3,440 | 1,460 | 2,299 | 141,400 |
| June | 29,890 | 2,030 | 374 | 996 | 59,290 |
| July | 6,951 | 388 | 111 | 224 | 13,790 |
| August | 2,536 | 107 | 65 | 81.8 | 5,030 |
| September | 2,178 | 87 | 59 | 72.6 | 4,320 |
| Water year 1948-49 | 238,308 | 3,440 | 59 | 653 | 472,700 |

Peak discharge (base, 1,100 sec.-ft.).--Mar. 18 (9 p.m.) 1,790 sec.-ft.; Apr. 20 (1 a.m.) 2,140 sec.-ft.; May 17 (3:30 a.m.) 3,620 sec.-ft.; June 7 (2 a.m.) 2,210 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for other Powder River stations and Imnaha River above Gumboot Creek.
h Computed from staff-gage reading.
Note.--Stage-discharge relation affected by ice Dec. 19 to Feb. 21.

## Wolf Creek near North Powder, Oreg.

Location.--Water-stage recorder, lat. 45°03', long. 118°01', in SE¼ sec. 11, T. 6 S., R. 38 E., 5 miles northwest of North Powder.

Drainage area.--32.9 square miles.

Records available.--May 1913 to July 1914 (incomplete), September 1946 to September 1949.

Extremes.--Maximum discharge during year, 275 second-feet May 10 (gage height, 3.72 feet); minimum, 0.5 second-foot Nov. 7.
1913-14, 1946-49: Maximum discharge, 433 second-feet May 23, 1948 (gage height, 4.46 feet); minimum, 0.2 second-foot Sept. 12-14, 1948.

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

Rating tables, water year 1948-49, except periods of ice effect or shifting-control (gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 10

| | | | | | |
|---|---|---|---|---|---|
| 1.4 | 0.2 | 1.9 | 14 | 2.4 | 52 |
| 1.5 | 1.1 | 2.0 | 19 | 2.7 | 94 |
| 1.6 | 3.1 | 2.1 | 25 | 3.1 | 160 |
| 1.7 | 5.9 | 2.2 | 32 | 3.6 | 252 |
| 1.8 | 9.3 | 2.3 | 41 | | |

May 11 to Sept. 30

| | | | | | |
|---|---|---|---|---|---|
| 1.5 | 0.6 | 2.0 | 12 | 2.6 | 70 |
| 1.6 | 1.1 | 2.1 | 16 | 3.0 | 138 |
| 1.7 | 2.5 | 2.2 | 24 | 3.7 | 271 |
| 1.8 | 4.5 | 2.3 | 32 | | |
| 1.9 | 7.5 | 2.4 | 42 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.0 | 5.3 | b4.0 | b3.0 | b2.5 | b6.5 | 28 | 157 | 31 | 6.6 | 1.0 | 0.8 |
| 2 | 1.0 | 5.1 | 4.2 | b2.5 | b2.5 | b6.5 | 36 | 162 | 29 | 6.3 | 1.0 | .8 |
| 3 | 1.0 | 6.6 | b4.5 | b2.5 | b2.5 | b7.0 | 41 | 160 | 29 | 5.7 | .9 | .8 |
| 4 | 1.7 | 4.8 | b4.5 | b3.0 | b2.5 | *b7.0 | 55 | 145 | 32 | 5.4 | .8 | .8 |
| 5 | 2.7 | 3.9 | 4.5 | b3.0 | b2.5 | 9.3 | 66 | 134 | 30 | 5.1 | .8 | .9 |
| 6 | 2.9 | 3.1 | 4.5 | b3.0 | b2.5 | 12 | 75 | 126 | 29 | 5.1 | .9 | .9 |
| 7 | 4.2 | .9 | 3.9 | b3.0 | b2.5 | 14 | 79 | 134 | 29 | 4.5 | 1.0 | .8 |
| 8 | 3.7 | 1.7 | b4.0 | b3.0 | b2.5 | 14 | 79 | 152 | 25 | 4.3 | 1.0 | .8 |
| 9 | 3.4 | 3.4 | b4.0 | b3.0 | b2.5 | 11 | 82 | 187 | 24 | 3.9 | .9 | .8 |
| 10 | 3.1 | 3.7 | b4.0 | b3.0 | b2.0 | 10 | 94 | 235 | 22 | 3.7 | .9 | 1.0 |
| 11 | 2.9 | 2.9 | b4.0 | b3.0 | *b3.1 | 11 | 113 | 263 | 21 | 3.7 | 1.1 | 1.2 |
| 12 | 2.7 | 2.7 | b4.0 | b3.0 | b3.5 | 13 | 112 | 251 | 21 | 2.9 | 1.1 | 1.1 |
| 13 | 2.5 | 3.1 | *b3.0 | b3.0 | b4.0 | 16 | 94 | 219 | 16 | 2.4 | 1.0 | 1.0 |
| 14 | 2.5 | 3.4 | 3.1 | b3.0 | 5.1 | 18 | 84 | 190 | 11 | 2.2 | 1.0 | 1.0 |
| 15 | 2.7 | 3.7 | b3.0 | b3.0 | b5.0 | 20 | 86 | 171 | 8.7 | 2.2 | 1.0 | 1.0 |
| 16 | 2.3 | 3.4 | b3.0 | b2.5 | 5.1 | 23 | 102 | 151 | 12 | 2.2 | 1.0 | 1.4 |
| 17 | 2.3 | 2.7 | b3.0 | b2.5 | 5.1 | 24 | 131 | 127 | 14 | 2.1 | 1.0 | 1.4 |
| 18 | 2.5 | 1.3 | b3.0 | b2.5 | 5.1 | *26 | 153 | 105 | 12 | 1.9 | 1.0 | 1.2 |
| 19 | 2.3 | 2.9 | b3.0 | b2.5 | 5.1 | 34 | 218 | 91 | 10 | 1.9 | 1.0 | 1.2 |
| 20 | 2.1 | 3.4 | b3.0 | b2.5 | 5.1 | 28 | 209 | 91 | 8.7 | 2.2 | 1.0 | 1.2 |
| 21 | 2.1 | 3.1 | b3.0 | b2.5 | 5.3 | 27 | 171 | 84 | 8.7 | 1.9 | 1.0 | 1.1 |
| 22 | 1.9 | 3.7 | b2.5 | b2.5 | 5.6 | 25 | 160 | 81 | 8.7 | 1.8 | .9 | 1.1 |
| 23 | 2.1 | 3.1 | b2.5 | b2.5 | 5.6 | 26 | 185 | 75 | 9.9 | 1.8 | .9 | 1.1 |
| 24 | 2.1 | 3.7 | b2.5 | b2.5 | 5.9 | 30 | 203 | 66 | 9.1 | 1.4 | .9 | 1.1 |
| 25 | 2.3 | 2.5 | b2.5 | b2.5 | b5.5 | 29 | 178 | 58 | 7.9 | 1.2 | .9 | 1.1 |
| 26 | 2.7 | 3.1 | b3.0 | b2.5 | b5.5 | 25 | 162 | 51 | 8.7 | 1.4 | .9 | 1.1 |
| 27 | 2.7 | 3.9 | b3.0 | b2.5 | b6.0 | 21 | 167 | 45 | 8.3 | 1.2 | .8 | 1.1 |
| 28 | 2.3 | 3.9 | b3.0 | b2.5 | b6.0 | 18 | 191 | 39 | 7.9 | 1.2 | .8 | 1.1 |
| 29 | 3.4 | b4.0 | b3.0 | b2.5 | - | 17 | 185 | 36 | 7.5 | 1.5 | .8 | 1.4 |
| 30 | 3.1 | b4.0 | b3.0 | b2.5 | - | 17 | 164 | 34 | 6.9 | 1.1 | .8 | 1.5 |
| 31 | 4.2 | - | b3.0 | b2.5 | - | 21 | - | 34 | - | 1.0 | .8 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 78.4 | 4.2 | 1.0 | 2.53 | 156 |
| November | 103.0 | 6.6 | .9 | 3.43 | 204 |
| December | 105.2 | 4.5 | 2.5 | 3.39 | 209 |
| Calendar year 1948 | 12,021.2 | 368 | .2 | 32.8 | 23,850 |
| January | 84 | 3.0 | 2.5 | 2.71 | 167 |
| February | 116.1 | 6.0 | 2.0 | 4.15 | 230 |
| March | 565.3 | 34 | 6.5 | 18.2 | 1,120 |
| April | 3,703 | 218 | 28 | 123 | 7,340 |
| May | 3,854 | 263 | 34 | 124 | 7,640 |
| June | 498.0 | 32 | 6.9 | 16.6 | 988 |
| July | 89.8 | 6.6 | 1.0 | 2.90 | 178 |
| August | 28.9 | 1.1 | .8 | .93 | 57 |
| September | 31.8 | 1.5 | .8 | 1.06 | 63 |
| Water year 1948-49 | 9,257.5 | 263 | .8 | 25.4 | 18,350 |

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Shifting-control method used Oct. 1 to Mar. 19.

## Imnaha River above Gumboot Creek, Oreg.

Location.--Water-stage recorder, lat. 45°11', long. 116°53', in sec. 30 or 31, T. 4 S., R. 48 E., 0.1 mile upstream from Gumboot Creek and 5 miles northeast of Coverdale forest guard station.

Drainage area.--98 square miles.

Records available.--October 1944 to September 1949.

Extremes.--Maximum discharge during year, 2,160 second-feet May 15 (gage height, 4.51 feet); minimum not determined occurred sometime during period of ice effect or no gage-height record; minimum daily, 20 second-feet Dec. 17, result of ice jam upstream.
1944-49: Maximum discharge, 2,400 second-feet May 27, 1948 (gage height, 5.07 feet); minimum recorded, 14 second-feet Dec. 10, 1944.

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

Rating tables, water year 1948-49, except periods of ice effect or shifting control
(gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Apr. 10 | | | | Apr. 11 to Sept. 30 | | | |
|---|---|---|---|---|---|---|---|
| 0.4 | 21 | 1.1 | 104 | 1.9 | 288 | 3.5 | 1,120 |
| .5 | 29 | 1.3 | 138 | 2.1 | 355 | 4.0 | 1,600 |
| .6 | 38 | 1.6 | 204 | 2.5 | 515 | 4.3 | 1,930 |
| .7 | 49 | 1.9 | 288 | 3.0 | 780 | | |
| .9 | 75 | | | | | | |

Note.--Same as preceding table below 1.9 feet.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 83 | 78 | 53 | a50 | b50 | 48 | 90 | 498 | 750 | 334 | 133 | 74 |
| 2 | 83 | 89 | 65 | a45 | a50 | 52 | 106 | 750 | 660 | 352 | 131 | 74 |
| 3 | 81 | 106 | 67 | a35 | a50 | 56 | 112 | 704 | 616 | 362 | 127 | 72 |
| 4 | 92 | 82 | 49 | a30 | a48 | 58 | 138 | 586 | 687 | 362 | 124 | 71 |
| 5 | 106 | 76 | 59 | a34 | a47 | 66 | 178 | 520 | 853 | 355 | 120 | 72 |
| 6 | 92 | 72 | 63 | a38 | a46 | 70 | 214 | 506 | 1,030 | 352 | 117 | 74 |
| 7 | 90 | 67 | 61 | a40 | a45 | 70 | 252 | 543 | 1,120 | 320 | 114 | 71 |
| 8 | 92 | 56 | 57 | a44 | a45 | 67 | 273 | 626 | 1,020 | 304 | 112 | 68 |
| 9 | 89 | 78 | 65 | a35 | a42 | 65 | 279 | 756 | 931 | 291 | 110 | 68 |
| 10 | 86 | 79 | 68 | a34 | b33 | 62 | 291 | 886 | 1,040 | 294 | 109 | 74 |
| 11 | 85 | 67 | 68 | a38 | b21 | 63 | 344 | 1,140 | 998 | 285 | 107 | 74 |
| 12 | 83 | 66 | 65 | a42 | a22 | 65 | 366 | 1,360 | 853 | 276 | 106 | 70 |
| 13 | 82 | 66 | 49 | a45 | a23 | 67 | 298 | 1,390 | 750 | 255 | 106 | 67 |
| 14 | 82 | 65 | b42 | a50 | a24 | 67 | 270 | 1,500 | 704 | 241 | 102 | 65 |
| 15 | 83 | 67 | b30 | a53 | a25 | 76 | 279 | 1,910 | 676 | 230 | 100 | 63 |
| 16 | 79 | 67 | a25 | a49 | a29 | 89 | 317 | 1,700 | 621 | 220 | 96 | 66 |
| 17 | 79 | 65 | a20 | a46 | a34 | 94 | 388 | 1,530 | 529 | 207 | 95 | 65 |
| 18 | 78 | 53 | a30 | a45 | a35 | 125 | 443 | 1,110 | 485 | 197 | 94 | 62 |
| 19 | 78 | 72 | b38 | a43 | a36 | 160 | 511 | 1,000 | 464 | 192 | 92 | 59 |
| 20 | 78 | 68 | b47 | a42 | 38 | 160 | 520 | 938 | 464 | 182 | 90 | 58 |
| 21 | 75 | 61 | a54 | a43 | 36 | 140 | 452 | 834 | 472 | 176 | 89 | 57 |
| 22 | 75 | 61 | a56 | a45 | 35 | 125 | 423 | 792 | 511 | 171 | 88 | 56 |
| 23 | 74 | 61 | a57 | a48 | 39 | 118 | 472 | 780 | 494 | 167 | 86 | 54 |
| 24 | 74 | 63 | a58 | a44 | 37 | 120 | 506 | 816 | 485 | 165 | 85 | 54 |
| 25 | 75 | 62 | a65 | a42 | 36 | 117 | 476 | 892 | 476 | 160 | 83 | 54 |
| 26 | 72 | 59 | a70 | a44 | 36 | 109 | 468 | 1,010 | 456 | 156 | 82 | 54 |
| 27 | 71 | 58 | a80 | a45 | 39 | 101 | 502 | 1,140 | 404 | 152 | 81 | 54 |
| 28 | 70 | 62 | a80 | *b46 | 42 | 94 | 586 | 1,160 | 388 | 146 | 79 | 54 |
| 29 | 71 | 46 | a70 | a48 | - | 89 | 610 | 1,090 | 374 | 142 | 78 | 66 |
| 30 | 70 | 42 | a55 | a50 | - | 88 | 524 | 918 | 334 | 138 | 76 | 62 |
| 31 | 71 | - | a50 | b50 | - | 86 | - | 872 | - | 134 | 75 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 2,499 | 106 | 70 | 80.6 | 0.822 | 0.95 | 4,960 |
| November | 2,014 | 106 | 42 | 67.1 | .685 | .76 | 3,990 |
| December | 1,716 | 80 | 20 | 55.4 | .565 | .65 | 3,400 |
| Calendar year 1948 | 104,377 | 1,920 | 20 | 285 | 2.91 | 39.62 | 207,000 |
| January | 1,343 | 53 | 30 | 43.3 | .442 | .51 | 2,660 |
| February | 1,043 | 50 | 21 | 37.2 | .380 | .40 | 2,070 |
| March | 2,767 | 160 | 48 | 89.3 | .911 | 1.05 | 5,490 |
| April | 10,688 | 610 | 90 | 356 | 3.63 | 4.06 | 21,200 |
| May | 30,257 | 1,910 | 498 | 976 | 9.96 | 11.48 | 60,010 |
| June | 19,645 | 1,120 | 334 | 655 | 6.68 | 7.46 | 38,970 |
| July | 7,318 | 362 | 134 | 236 | 2.41 | 2.78 | 14,520 |
| August | 3,087 | 133 | 75 | 99.6 | 1.02 | 1.17 | 6,120 |
| September | 1,932 | 74 | 54 | 64.4 | .657 | .73 | 3,830 |
| Water year 1948-49 | 84,309 | 1,910 | 20 | 231 | 2.36 | 32.00 | 167,200 |

Peak discharge (base, 800 sec.-ft.).--May 15 (5 a.m.) 2,160 sec.-ft.; May 27 (10 p.m.)11,370 sec.-ft.; June 7 (10 p.m.) 1,300 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record (stage-discharge relation affected by ice most of period); discharge computed on basis of records for Imnaha River at Imnaha and Grande Ronde River at Troy.

b Stage-discharge relation affected by ice.

Note.-- Shifting-control method used Oct. 1 to Nov. 20.

## Imnaha River at Imnaha, Oreg.

Location.--Water-stage recorder, lat. 45°34', long. 116°51', in SW¼ sec. 16, T. 1 N., R. 48 E., at Imnaha, three-eighths of a mile downstream from Sheep Creek.

Drainage area.--705 square miles.

Records available.--June 1928 to September 1949.

Average discharge.--21 years, 459 second-feet.

Extremes.--Maximum discharge during year, 2,570 second-feet May 15 (gage height, 4.91 feet); minimum, 24 second-feet Dec. 18 (gage height, 1.28 feet), result of ice jam upstream.
1928-49: Maximum discharge, 5,700 second-feet May 28, 1948 (gage height, 7.06 feet); minimum observed, 16 second-feet Nov. 22, 1931.

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

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Dec. 1)

| | | | |
|---|---|---|---|
| 1.3 | 26 | 2.4 | 350 |
| 1.4 | 41 | 2.8 | 554 |
| 1.5 | 59 | 3.2 | 805 |
| 1.6 | 81 | 3.7 | 1,200 |
| 1.8 | 134 | 4.3 | 1,790 |
| 2.1 | 232 | 4.8 | 2,430 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 161 | 187 | 128 | 165 | 170 | 312 | a300 | 1,180 | 1,310 | 436 | 180 | 106 |
| 2 | 158 | 218 | 150 | 140 | 170 | 333 | a340 | 1,530 | 1,130 | 446 | 177 | a105 |
| 3 | 155 | 250 | 160 | 105 | 165 | 350 | a380 | 1,690 | 1,010 | 451 | 174 | a105 |
| 4 | 161 | 228 | 155 | 90 | 165 | 359 | 436 | 1,450 | 1,030 | 441 | 164 | a105 |
| 5 | 204 | 190 | 131 | 105 | 160 | 387 | 629 | 1,270 | 1,170 | 436 | 155 | a105 |
| 6 | 187 | 187 | 152 | 130 | 150 | 421 | 805 | 1,180 | 1,380 | 446 | 155 | a105 |
| 7 | 180 | 177 | 155 | 135 | 150 | 421 | 935 | 1,230 | 1,500 | 416 | 152 | a105 |
| 8 | 177 | 155 | a150 | 135 | 145 | 391 | 966 | 1,360 | 1,450 | 382 | 152 | a100 |
| 9 | 174 | 143 | a160 | 105 | 145 | 359 | 966 | 1,570 | 1,340 | 364 | 152 | a105 |
| 10 | 167 | 194 | a165 | 105 | 130 | 325 | 982 | 1,760 | 1,320 | 359 | 146 | a110 |
| 11 | 167 | 190 | a170 | 120 | 100 | 308 | 1,180 | 2,010 | 1,360 | 355 | 143 | a110 |
| 12 | 164 | 177 | a170 | 145 | 100 | 321 | 1,250 | 2,180 | 1,230 | 350 | 143 | a110 |
| 13 | 161 | 174 | a130 | 160 | 110 | 337 | 1,030 | 2,180 | 1,070 | 325 | 152 | a110 |
| 14 | 167 | 171 | a110 | 170 | 115 | 382 | 847 | 2,240 | 1,010 | 308 | 149 | 112 |
| 15 | 171 | 174 | a90 | 180 | 120 | 426 | 826 | 2,430 | 958 | 296 | 143 | 112 |
| 16 | 164 | 177 | a70 | 160 | 140 | 451 | 920 | 2,330 | 912 | 288 | 140 | 120 |
| 17 | 164 | 184 | *50 | 150 | 174 | 611 | 1,130 | 2,240 | 791 | 277 | 128 | 123 |
| 18 | 164 | 164 | 37 | 150 | 174 | 770 | 1,300 | 1,850 | 709 | 269 | 128 | 117 |
| 19 | 161 | 161 | 70 | 150 | 180 | 702 | 1,470 | 1,700 | 658 | 258 | 137 | 112 |
| 20 | 161 | 180 | 130 | 145 | 177 | 600 | 1,450 | 1,700 | 640 | 254 | 128 | 109 |
| 21 | 161 | 177 | 140 | 150 | 180 | 538 | 1,290 | 1,530 | 629 | 247 | 123 | 106 |
| 22 | 164 | 167 | 145 | 170 | 204 | 504 | 1,170 | 1,420 | 683 | 239 | 123 | 104 |
| 23 | 167 | 171 | 150 | 160 | 236 | 499 | 1,300 | 1,360 | 652 | 232 | 123 | 101 |
| 24 | 171 | 177 | 155 | 150 | 243 | 457 | 1,420 | 1,350 | 640 | 225 | 123 | 101 |
| 25 | 174 | 174 | 170 | a155 | 243 | 411 | 1,340 | 1,390 | 629 | 222 | 123 | 106 |
| 26 | 171 | 167 | 210 | a160 | 250 | 373 | 1,240 | 1,510 | 623 | 214 | 123 | 106 |
| 27 | 171 | 161 | 270 | a165 | 262 | 333 | 1,270 | 1,650 | 554 | 208 | 120 | 106 |
| 28 | 167 | 161 | 270 | a170 | 285 | 325 | 1,420 | 1,740 | 521 | 204 | 117 | 106 |
| 29 | 164 | 155 | 200 | 170 | - | 308 | 1,550 | 1,680 | 516 | 190 | 114 | 120 |
| 30 | 167 | 140 | 165 | *170 | - | a300 | 1,340 | 1,490 | 462 | 187 | 112 | 128 |
| 31 | 171 | - | 165 | 170 | - | a290 | - | 1,440 | - | 180 | 109 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 5,216 | 204 | 155 | 168 | 10,350 |
| November | 5,331 | 250 | 140 | 178 | 10,570 |
| December | 4,573 | 270 | 37 | 148 | 9,070 |
| Calendar year 1948 | 266,886 | 4,560 | 37 | 729 | 529,400 |
| January | 4,535 | 180 | 90 | 146 | 9,000 |
| February | 4,843 | 285 | 100 | 173 | 9,610 |
| March | 12,904 | 770 | 290 | 416 | 25,590 |
| April | 31,482 | 1,550 | 300 | 1,049 | 62,440 |
| May | 51,640 | 2,430 | 1,180 | 1,660 | 102,400 |
| June | 27,887 | 1,500 | 462 | 930 | 55,310 |
| July | 9,505 | 451 | 180 | 307 | 18,850 |
| August | 4,308 | 180 | 109 | 139 | 8,540 |
| September | 3,270 | 128 | 100 | 109 | 6,490 |
| Water year 1948-49 | 165,494 | 2,430 | 37 | 453 | 328,200 |

Peak discharge (base, 1,300 sec.-ft.).--Apr. 12 (6 a.m.) 1,320 sec.-ft.; Apr. 20 (2 a.m.) 1,600 sec.-ft.; Apr. 29 (3 a.m.) 1,680 sec.-ft.; May 3 (1 to 4 a.m.) 1,790 sec.-ft.; May 15 (9 a.m.) 2,570 sec.-ft.; June 8 (5:30 a.m.) 1,660 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records, recorded range in stage, and records for station at Gumboot Creek.

Note.--Stage-discharge relation affected by ice Dec. 2, 3, Dec. 17 to Feb. 16.

## Salmon River near Obsidian, Idaho

Location.--Water-stage recorder, lat. 43°58', long. 114°48', in sec. 3, T. 7 N., R. 14 E., three-eighths of a mile below irrigation diversion dam, 1 mile upstream from Lost Creek, and 2½ miles southeast of Obsidian.
Drainage area.--94.7 square miles.
Records available.--November 1940 to September 1949.
Extremes.--Maximum discharge during year, 416 second-feet May 29; maximum gage height, 5.50 feet probably between Jan. 27 and Mar. 1, from ice mark in well (ice jam); minimum, 4.1 second-feet Aug. 26-29 (gage height, 1.19 feet).
1940-49: Maximum discharge, 706 second-feet June 3, 1948; maximum gage height, that during period Jan. 27 to Mar. 1, 1949; minimum discharge, 2 second-feet Sept. 7-11, 1942, Apr. 1, 1945.
Remarks.--Records good except those for July, which are fair, and those for periods of ice effect or no gage-height record, which are poor. Several diversions above station for irrigation.

Rating tables, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-11, Sept. 17)

| Oct. 1 to Sept. 17 | | | | | | Sept. 18-30 | |
|---|---|---|---|---|---|---|---|
| 1.1 | 2.6 | 1.6 | 20 | 2.7 | 145 | 1.5 | 12 |
| 1.2 | 4.3 | 1.7 | 26 | 3.0 | 211 | 1.6 | 17 |
| 1.3 | 6.7 | 1.9 | 41 | 3.3 | 296 | 1.7 | 22 |
| 1.4 | 10 | 2.1 | 60 | 3.6 | 407 | | |
| 1.5 | 14 | 2.4 | 96 | | | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 48 | 50 | 32 | | | | 24 | 138 | 287 | 71 | 7.4 | 4.8 |
| 2 | 47 | 53 | 34 | | | | 24 | 153 | 262 | 72 | 7.0 | 4.8 |
| 3 | 46 | 53 | 34 | | | | *24 | 145 | 232 | 72 | 6.2 | 4.8 |
| 4 | 48 | *46 | 26 | | | | 25 | 143 | 206 | 71 | 6.2 | 4.8 |
| 5 | 51 | 45 | 26 | | | | 27 | 145 | 211 | 83 | 5.7 | 4.8 |
| 6 | 48 | 45 | | | | | 27 | 155 | 245 | 77 | 5.3 | 4.8 |
| 7 | 47 | 41 | | | | | 28 | 172 | 271 | 69 | 5.3 | 4.8 |
| 8 | 47 | 39 | | | | | 28 | 199 | 299 | 58 | 5.5 | 4.8 |
| 9 | 46 | 46 | | | | | 30 | 237 | 323 | 48 | 5.5 | 4.8 |
| 10 | 45 | 43 | | | | | 29 | 259 | 341 | 47 | 5.5 | 4.5 |
| 11 | 45 | 43 | | | | | 31 | 277 | 367 | 46 | 5.5 | 4.8 |
| 12 | 45 | 42 | | | | | 32 | 316 | 367 | 44 | 5.5 | 4.8 |
| 13 | 45 | 42 | 30 | | | | 32 | 337 | 323 | 42 | 5.5 | 4.5 |
| 14 | 45 | 42 | | | | | 31 | 356 | 277 | 36 | 5.3 | 4.5 |
| 15 | 46 | * 42 | | | | | 32 | 330 | 254 | 30 | 5.3 | 4.5 |
| | | | | 26 | 24 | 24 | | | | | | |
| 16 | 49 | 42 | | | | | 32 | 334 | 229 | 30 | 5.3 | 4.5 |
| 17 | 52 | 40 | | | | | 43 | 323 | 192 | 28 | 5.3 | 8.2 |
| 18 | 52 | 37 | | | | | 52 | 327 | 172 | 23 | 5.3 | 18 |
| 19 | 51 | 42 | | | | | 58 | 320 | 165 | 19 | 5.3 | 17 |
| 20 | 51 | 42 | | | | | 61 | 296 | 155 | 17 | 5.0 | 17 |
| 21 | 50 | 39 | | | | | 61 | 265 | 149 | 14 | 4.8 | 17 |
| 22 | 50 | 39 | | | | | 71 | 257 | 138 | 13 | 4.5 | 17 |
| 23 | 49 | 39 | | | | | 79 | 245 | 131 | 12 | 4.5 | 17 |
| 24 | 49 | 39 | | | | | 86 | 257 | 127 | 11 | 4.3 | 17 |
| 25 | 48 | 39 | 27 | | | | 92 | 265 | 125 | 9.3 | 4.3 | 17 |
| 26 | 47 | 39 | | | | | 104 | 290 | 121 | 8.4 | 4.1 | 17 |
| 27 | 47 | 39 | | | | | 125 | 323 | 110 | 8.4 | 4.1 | 17 |
| 28 | 47 | 39 | | | | | 145 | 363 | 90 | 8.0 | 4.1 | 16 |
| 29 | 47 | 36 | | | - | | 155 | 395 | 84 | 7.7 | 4.1 | 14 |
| 30 | 47 | 30 | | | - | | 140 | 348 | 77 | 7.7 | 4.3 | 16 |
| 31 | 47 | - | | | - | | - | 330 | - | 7.4 | 4.5 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,482 | 52 | 45 | 47.8 | 2,940 |
| November | 1,252 | 53 | 30 | 41.7 | 2,480 |
| December | 899 | 34 | - | 29.0 | 1,780 |
| Calendar year 1948 | 28,091 | 625 | 6 | 76.8 | 55,720 |
| January | 806 | - | - | 26.0 | 1,600 |
| February | 672 | - | - | 24.0 | 1,330 |
| March | 744 | - | - | 24.0 | 1,480 |
| April | 1,728 | 155 | 24 | 57.6 | 3,430 |
| May | 8,300 | 395 | 138 | 268 | 16,460 |
| June | 6,330 | 367 | 77 | 211 | 12,560 |
| July | 1,089.9 | 83 | 7.4 | 35.2 | 2,160 |
| August | 160.5 | 7.4 | 4.1 | 5.18 | 318 |
| September | 300.5 | 18 | 4.5 | 10.0 | 596 |
| Water year 1948-49 | 23,763.9 | 395 | 4.1 | 65.1 | 47,130 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 1-3, Dec. 6 to about Mar. 15. No gage-height record Dec. 26 to Jan. 9, Jan. 11-20, Jan. 27 to Apr. 2; discharge computed on basis of weather records and records for upper Salmon River tributaries and other nearby streams.

## Salmon River below Valley Creek, at Stanley, Idaho

Location.--Water-stage recorder, lat. 44°14', long. 114°55', in SE¼SE¼ sec. 34, T. 11 N., R. 13 E., three-quarters of a mile downstream from Valley Creek and 1¼ miles northeast of upper Stanley. Datum of gage is 6,190.32 feet above mean sea level, datum of 1929.
Drainage area.--535 square miles.
Records available.--July 1925 to September 1949.
Average discharge.--24 years, 612 second-feet.
Extremes.--Maximum discharge during year, 2,840 second-feet May 16, June 12; maximum gage height observed, 3.27 feet Feb. 24 (ice jam); minimum daily discharge, 290 second-feet Feb. 11, Mar. 28.
1925-49: Maximum discharge, 5,020 second-feet June 27, 1927 (gage height, 4.41 feet), from rating curve extended above 4,000 second-feet; minimum, 100 second-feet (estimated) Nov. 20-30, 1929.
Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Diversions above station for irrigation.

Rating table, water year 1948-49, except period of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 19 to Dec. 15)

| | | | |
|---|---|---|---|
| 0.8 | 254 | 1.7 | 906 |
| .9 | 296 | 2.2 | 1,410 |
| 1.1 | 404 | 2.7 | 2,000 |
| 1.3 | 550 | 3.3 | 2,930 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 418 | 458 | 375 | 350 | 330 | 360 | h301 | 1,300 | 2,390 | 992 | 436 | 326 |
| 2 | 418 | 584 | 404 | 350 | 330 | 370 | 310 | 1,480 | 2,130 | 973 | 431 | 326 |
| 3 | 411 | 600 | 404 | 340 | 330 | 370 | 320 | 1,400 | 1,920 | 954 | 424 | 326 |
| 4 | 431 | 511 | 398 | 340 | 330 | 370 | 330 | 1,280 | 1,740 | 964 | 418 | 321 |
| 5 | 495 | *445 | 346 | 360 | 330 | 370 | 350 | 1,240 | 1,700 | 1,040 | 411 | 326 |
| 6 | 458 | 452 | 369 | 370 | 330 | 380 | 390 | 1,250 | 1,830 | 1,070 | 404 | 326 |
| 7 | 445 | 398 | 363 | 370 | 320 | 360 | h411 | 1,300 | 2,010 | 992 | 392 | 326 |
| 8 | 438 | 392 | 369 | 370 | 330 | 370 | 400 | 1,390 | 2,160 | 954 | 387 | 326 |
| 9 | 424 | 369 | 381 | 350 | 340 | 370 | 420 | 1,510 | 2,320 | 916 | 392 | 326 |
| 10 | 418 | 411 | 404 | 330 | 330 | 360 | 450 | 1,640 | 2,450 | 887 | 404 | 326 |
| 11 | 411 | 404 | 404 | 340 | 290 | h375 | 500 | 1,770 | 2,630 | 860 | 411 | 346 |
| 12 | 404 | 411 | 398 | 350 | 300 | 380 | 560 | 2,000 | 2,770 | 832 | 404 | 346 |
| 13 | 398 | 411 | 375 | 360 | 310 | 380 | 500 | 2,190 | 2,580 | 804 | 392 | 336 |
| 14 | 411 | 411 | 392 | 370 | 330 | 370 | 430 | 2,400 | 2,330 | 777 | 387 | 331 |
| 15 | 411 | 445 | 398 | 390 | 370 | 360 | *h438 | 2,630 | 2,160 | 740 | 375 | 326 |
| 16 | 398 | 431 | 350 | 360 | 380 | 360 | 527 | 2,790 | 1,990 | 713 | 363 | 341 |
| 17 | 404 | 424 | 350 | 350 | 370 | 360 | 575 | 2,750 | 1,820 | 687 | 363 | 346 |
| 18 | 404 | 381 | *360 | 350 | 380 | 340 | 669 | 2,750 | 1,650 | 669 | 363 | 346 |
| 19 | 404 | 398 | 370 | 360 | 370 | h341 | 740 | 2,730 | 1,550 | 643 | 358 | 346 |
| 20 | 398 | 418 | 360 | 350 | 370 | 350 | 777 | 2,630 | 1,500 | 617 | 346 | 341 |
| 21 | 398 | 398 | 350 | 350 | 380 | 350 | 749 | 2,380 | 1,390 | 584 | 336 | 336 |
| 22 | 398 | 398 | 330 | 340 | 380 | 340 | h916 | 2,270 | 1,360 | 558 | 336 | 336 |
| 23 | 398 | 392 | 330 | 330 | 390 | 330 | h1,090 | 2,130 | 1,340 | 542 | 346 | 336 |
| 24 | 398 | 411 | 340 | 330 | *380 | 320 | h1,210 | 1,970 | 1,320 | 527 | 346 | 336 |
| 25 | 398 | 404 | 350 | 320 | 370 | 320 | h1,380 | 1,940 | 1,320 | 511 | 336 | 336 |
| 26 | 392 | 404 | 350 | 330 | 370 | h301 | h1,150 | 2,010 | 1,320 | 503 | 331 | 331 |
| 27 | 387 | 392 | 360 | 340 | 370 | 310 | h1,380 | 2,160 | 1,260 | 488 | 326 | 326 |
| 28 | 392 | 404 | 360 | 330 | 360 | 290 | h1,360 | 2,340 | 1,170 | 472 | 326 | 336 |
| 29 | 404 | 375 | 360 | 330 | - | 300 | 1,450 | 2,560 | 1,090 | 458 | 331 | 358 |
| 30 | 398 | 363 | 360 | 340 | - | 310 | 1,330 | 2,580 | 1,040 | 452 | 331 | 346 |
| 31 | 411 | - | 360 | 330 | - | 310 | - | 2,560 | - | 445 | 331 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 12,773 | 495 | 387 | 412 | 0.770 | 0.89 | 25,330 |
| November | 12,695 | 600 | 363 | 423 | .791 | .88 | 25,180 |
| December | 11,420 | 404 | 330 | 368 | .688 | .79 | 22,650 |
| Calendar year 1948 | 275,156 | 3,990 | 280 | 752 | 1.41 | 19.12 | 545,800 |
| January | 10,780 | 390 | 320 | 348 | .650 | .75 | 21,380 |
| February | 9,770 | 390 | 290 | 349 | .652 | .68 | 19,380 |
| March | 10,777 | 380 | 290 | 348 | .650 | .75 | 21,380 |
| April | 21,413 | 1,450 | 301 | 714 | 1.33 | 1.49 | 42,470 |
| May | 63,330 | 2,790 | 1,240 | 2,043 | 3.82 | 4.40 | 125,600 |
| June | 54,240 | 2,770 | 1,040 | 1,808 | 3.38 | 3.77 | 107,600 |
| July | 22,624 | 1,070 | 445 | 730 | 1.36 | 1.57 | 44,870 |
| August | 11,539 | 438 | 326 | 372 | .695 | .80 | 22,890 |
| September | 10,037 | 358 | 321 | 335 | .626 | .70 | 19,910 |
| Water year 1948-49 | 251,398 | 2,790 | 290 | 689 | 1.29 | 17.47 | 498,600 |

Peak discharge (base, 1,700 sec.-ft.).--May 16 (11 a.m. to 1 p.m.) 2,840 sec.-ft.; May 31 (1 to 3 p.m.) 2,650 sec.-ft.; June 12 (1 p.m.) 2,840 sec.-ft.
* Winter discharge measurement made on this day.
h Computed from staff-gage reading.
Note.--Stage-discharge relation affected by ice Dec. 18 to about Mar. 10. No gage-height record Dec. 16 to Apr. 14 except for staff-gage readings Dec. 18, 24, 30, Feb. 24, Mar. 11, 19, 26, Apr. 1, 7; discharge computed on basis of weather records and records for other Salmon River stations.

## Salmon River below Yankee Fork, near Clayton, Idaho

Location.--Water-stage recorder, lat. 44°16', long. 114°44', in sec. 20, T. 11 N., R. 15 E., a quarter of a mile downstream from Sunbeam Dam and Yankee Fork and 18 miles upstream from Clayton.

Drainage area.--841 square miles.

Records available.--October 1921 to September 1949.

Average discharge.--26 years (1922-24, 1925-49), 894 second-feet.

Extremes.--Maximum discharge during year, 4,920 second-feet May 16 (gage height, 7.92 feet); minimum, 251 second-feet Feb. 11 (gage height, 1.97 feet).
1921-49: Maximum discharge, 8,000 second-feet (estimated) June 27, 1927; minimum, 160 second-feet (estimated) Nov. 25-30, 1929.

Remarks.--Records good except those for periods of ice effect or backwater from tree, which are fair. All diversions above station for irrigation are above Stanley.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 511 | 506 | 457 | 410 | 377 | 414 | 358 | 1,850 | 3,650 | 1,240 | 620 | 428 |
| 2 | 506 | 663 | 511 | 400 | 381 | 423 | 372 | 2,020 | 3,230 | 1,210 | 605 | 423 |
| 3 | 501 | 679 | 520 | 390 | 377 | 423 | 381 | 1,970 | 2,860 | 1,190 | 594 | 418 |
| 4 | 511 | 578 | 490 | 390 | 377 | 428 | 390 | 1,790 | 2,610 | 1,180 | 584 | 418 |
| 5 | 610 | *501 | 450 | 410 | 372 | 418 | 433 | 1,730 | 2,640 | 1,290 | 568 | 423 |
| 6 | 558 | 532 | 460 | 420 | 386 | 433 | 486 | 1,780 | 2,940 | 1,320 | 563 | 428 |
| 7 | 542 | 452 | 470 | 430 | 367 | 409 | 532 | 1,960 | 3,170 | 1,200 | 542 | 423 |
| 8 | 537 | 442 | 460 | 430 | 386 | 418 | 522 | 2,220 | 3,340 | 1,160 | 537 | 418 |
| 9 | 522 | 447 | 450 | 400 | 390 | 423 | 542 | 2,500 | 3,510 | 1,110 | 537 | 418 |
| 10 | 511 | 496 | 490 | 380 | 381 | 409 | 610 | 2,840 | 3,650 | 1,090 | 552 | 423 |
| 11 | 501 | 491 | 490 | 390 | 327 | 414 | 732 | 3,300 | 3,850 | 1,060 | 563 | 452 |
| 12 | 491 | 511 | 500 | 400 | 340 | 433 | 826 | 3,740 | 3,860 | 1,020 | 542 | 457 |
| 13 | 486 | 501 | 450 | 410 | 360 | 433 | 722 | 4,070 | 3,550 | 992 | 537 | 442 |
| 14 | 491 | 496 | 420 | 420 | 381 | 418 | 658 | 4,460 | 3,190 | 968 | 522 | 433 |
| 15 | 506 | 532 | 430 | 442 | 423 | 414 | 679 | 4,710 | 2,900 | 945 | 511 | 428 |
| 16 | 486 | 511 | 410 | 410 | 433 | 414 | 776 | 4,870 | 2,690 | 922 | 496 | 442 |
| 17 | 481 | 511 | *400 | 400 | 428 | 409 | 939 | 4,710 | 2,410 | 894 | 486 | 447 |
| 18 | 481 | 433 | 390 | 404 | 433 | 404 | 1,160 | 4,580 | 2,180 | 871 | 486 | 442 |
| 19 | 481 | 481 | 440 | 409 | 428 | 404 | 1,300 | 4,430 | 2,060 | 837 | 476 | 437 |
| 20 | 476 | 516 | 430 | 400 | 428 | 414 | 1,300 | 4,200 | 1,980 | 815 | 466 | 433 |
| 21 | 476 | 496 | 400 | 395 | 442 | 404 | 1,160 | 3,860 | 1,840 | 787 | 452 | 428 |
| 22 | 476 | 491 | 390 | 390 | 442 | 400 | 1,310 | 3,650 | 1,780 | 770 | 442 | 428 |
| 23 | 471 | 476 | 380 | 380 | 452 | 390 | 1,540 | 3,450 | 1,740 | 749 | 452 | 423 |
| 24 | 466 | 506 | 390 | 380 | *433 | 381 | 1,900 | 3,200 | 1,700 | 738 | 457 | 418 |
| 25 | 466 | 496 | 400 | 360 | 418 | 372 | 2,060 | 3,200 | 1,680 | 738 | 442 | 418 |
| 26 | 457 | 491 | 410 | 380 | 418 | 377 | 2,020 | 3,390 | 1,670 | 716 | 437 | 414 |
| 27 | 452 | 462 | 420 | 395 | 414 | 386 | 2,170 | 3,640 | 1,590 | 695 | 437 | 409 |
| 28 | 452 | 476 | 420 | 381 | 409 | 340 | 2,190 | 3,900 | 1,470 | 689 | 433 | 418 |
| 29 | 476 | 462 | 420 | 386 | - | 349 | 2,280 | 4,160 | 1,370 | 668 | 437 | 452 |
| 30 | 466 | 414 | 420 | 395 | - | 367 | 1,990 | 4,120 | 1,300 | 642 | 433 | 437 |
| 31 | 471 | - | 420 | 381 | - | 367 | - | 4,020 | - | 626 | 428 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 15,318 | 610 | 452 | 494 | 0.587 | 0.68 | 30,380 |
| November | 15,049 | 679 | 414 | 502 | .597 | .67 | 29,850 |
| December | 13,588 | 520 | 380 | 438 | .521 | .60 | 26,950 |
| Calendar year 1948 | 400,824 | 6,830 | 358 | 1,095 | 1.30 | 17.74 | 795,000 |
| January | 12,368 | 442 | 360 | 399 | .474 | .55 | 24,530 |
| February | 11,203 | 452 | 327 | 400 | .476 | .50 | 22,220 |
| March | 12,488 | 433 | 340 | 403 | .479 | .55 | 24,770 |
| April | 32,338 | 2,280 | 358 | 1,078 | 1.28 | 1.43 | 34,140 |
| May | 104,320 | 4,870 | 1,730 | 3,365 | 4.00 | 4.61 | 206,900 |
| June | 76,410 | 3,860 | 1,300 | 2,547 | 3.03 | 3.38 | 151,600 |
| July | 29,132 | 1,320 | 626 | 940 | 1.12 | 1.29 | 57,780 |
| August | 15,637 | 620 | 428 | 504 | .599 | .69 | 31,020 |
| September | 12,878 | 457 | 409 | 429 | .510 | .57 | 25,540 |
| Water year 1948-49 | 350,729 | 4,870 | 327 | 961 | 1.14 | 15.52 | 695,680 |

Peak discharge (base, 2,350 sec.-ft.).--Apr. 28 (11:30 p.m.) 2,520 sec.-ft.; May 16 (8 to 11 a.m.) 4,920 sec.-ft.; May 29 (9 p.m.) 4,250 sec.-ft.; June 11 (11:30 p.m.) 3,930 sec.-ft.
* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice or fallen tree Dec. 3 to Jan. 14, Jan. 16, 17, 23-26, Feb. 12, 13.

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## Salmon River near Challis, Idaho

Location.--Water-stage recorder, lat. 44°23', long. 114°15', in sec. 7, T. 12 N., R. 19 E., 250 feet downstream from Bayhorse Creek and 9 miles south of Challis. Datum of gage is 5,163.99 feet above mean sea level, datum of 1929.

Drainage area.--1,800 square miles.

Records available.--October 1928 to September 1949.

Average discharge.--21 years, 1,324 second-feet.

Extremes.--Maximum discharge during year, 6,710 second-feet May 16; maximum gage height, 7.06 feet Jan. 13 (ice jam); minimum discharge, 358 second-feet Jan. 10 (gage height, 1.55 feet).
1928-49: Maximum discharge, 10,500 second-feet May 30, 1943 (gage height, 8.07 feet); minimum, 160 second-feet Dec. 14, 1940.

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

Revisions.--W 1043: Drainage area.

**Discharge, in second-feet, water year October 1948 to September 1949**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 872 | 794 | 682 | 676 | 580 | 710 | 580 | 2,780 | 5,090 | 2,000 | 968 | 666 |
| 2 | 860 | 942 | 776 | 627 | 600 | 693 | 595 | 2,640 | 4,510 | 1,960 | 955 | 654 |
| 3 | 848 | 988 | 812 | 585 | 590 | 682 | 610 | 2,620 | 4,040 | 1,950 | 929 | 649 |
| 4 | 860 | 955 | 770 | 541 | 580 | 666 | 627 | 2,450 | 3,660 | 1,950 | 916 | 654 |
| 5 | 968 | 812 | 698 | 555 | 560 | 649 | 682 | 2,370 | 3,680 | 2,030 | 896 | 666 |
| 6 | 942 | 824 | 710 | 649 | 590 | 649 | 764 | 2,360 | 4,080 | 2,210 | 884 | 671 |
| 7 | 903 | 754 | 726 | 754 | 560 | 644 | 842 | 2,500 | 4,510 | 2,020 | 872 | 654 |
| 8 | 896 | 660 | 715 | 726 | 600 | 632 | 854 | 2,820 | 4,820 | 1,940 | 848 | 649 |
| 9 | 884 | 680 | 688 | 595 | 610 | 638 | 854 | 3,160 | 5,050 | 1,870 | 842 | 644 |
| 10 | 866 | 800 | 776 | 436 | 600 | 622 | 903 | 3,570 | 5,350 | 1,800 | 872 | 644 |
| 11 | 848 | 794 | 764 | 494 | 520 | 632 | 1,050 | 4,100 | 5,690 | 1,740 | 890 | 671 |
| 12 | 836 | 800 | 782 | 600 | 530 | 666 | 1,260 | 4,840 | 5,920 | 1,680 | 866 | 720 |
| 13 | 824 | 800 | 704 | 620 | 570 | 666 | 1,160 | 5,330 | 5,330 | 1,650 | 854 | 693 |
| 14 | 818 | 782 | 654 | 650 | 600 | 649 | 1,050 | 5,850 | 4,720 | 1,610 | 830 | 671 |
| 15 | 848 | 818 | 676 | 680 | 650 | 654 | 1,030 | 6,260 | 4,340 | 1,560 | 824 | 660 |
| 16 | 830 | 818 | 622 | 700 | 700 | 654 | 1,110 | 6,630 | 4,040 | 1,520 | 806 | 666 |
| 17 | 800 | 812 | *550 | 650 | 710 | 649 | 1,310 | 6,540 | 3,660 | 1,460 | 788 | 710 |
| 18 | 806 | 704 | 521 | 640 | 720 | 638 | 1,590 | 6,360 | 3,290 | 1,430 | 788 | 693 |
| 19 | 800 | 710 | 644 | 640 | 730 | 638 | 1,840 | 6,200 | 3,100 | 1,370 | 776 | 688 |
| 20 | 800 | 818 | 748 | 640 | 750 | 649 | 1,890 | 5,870 | 2,960 | 1,300 | 759 | 676 |
| 21 | 788 | 800 | 622 | 630 | 760 | 632 | 1,710 | 5,370 | 2,770 | 1,260 | 737 | 660 |
| 22 | 788 | 770 | 580 | 620 | 780 | 622 | 1,740 | 5,010 | 2,690 | 1,220 | 720 | 654 |
| 23 | 776 | 764 | 507 | 600 | 780 | 610 | 2,000 | 4,800 | 2,660 | 1,180 | 715 | 649 |
| 24 | 770 | 788 | 531 | 580 | 770 | 600 | 2,300 | 4,430 | 2,610 | 1,150 | 737 | 649 |
| 25 | 770 | 770 | 545 | 570 | *760 | 585 | 2,560 | 4,390 | 2,600 | 1,120 | 715 | 632 |
| 26 | 754 | 759 | 570 | 590 | 750 | 580 | 2,500 | 4,680 | 2,560 | 1,090 | 693 | 632 |
| 27 | 754 | 688 | 610 | 620 | 740 | 600 | 2,640 | 5,090 | 2,450 | 1,070 | 693 | 627 |
| 28 | 737 | 710 | 638 | 600 | 726 | 555 | 2,880 | 5,600 | 2,310 | 1,050 | 682 | 632 |
| 29 | 764 | 737 | 632 | 600 | - | 545 | 3,060 | 6,040 | 2,180 | 1,030 | 682 | 693 |
| 30 | 770 | 610 | 644 | 620 | - | 570 | 2,920 | 5,870 | 2,080 | 1,000 | 676 | 710 |
| 31 | 764 | - | 622 | 600 | - | 595 | - | 5,550 | - | 981 | 676 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff: Inches | Runoff: Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 25,544 | 968 | 737 | 824 | 0.458 | 0.53 | 50,670 |
| November | 23,461 | 988 | 610 | 782 | .434 | .48 | 46,530 |
| December | 20,519 | 812 | 507 | 662 | .368 | .42 | 40,700 |
| Calendar year 1948 | 588,143 | 9,790 | 489 | 1,607 | .893 | 12.14 | 1,167,000 |
| January | 19,088 | 754 | 436 | 616 | .342 | .39 | 37,860 |
| February | 18,416 | 780 | 520 | 658 | .366 | .38 | 36,530 |
| March | 19,574 | 710 | 545 | 631 | .351 | .40 | 38,820 |
| April | 44,911 | 3,060 | 580 | 1,497 | .832 | .93 | 89,080 |
| May | 142,080 | 6,630 | 2,360 | 4,583 | 2.55 | 2.94 | 281,800 |
| June | 112,750 | 5,920 | 2,080 | 3,758 | 2.09 | 2.33 | 223,600 |
| July | 47,201 | 2,210 | 981 | 1,523 | .846 | .98 | 93,620 |
| August | 24,889 | 968 | 676 | 803 | .446 | .51 | 49,370 |
| September | 19,937 | 720 | 627 | 665 | .369 | .41 | 39,540 |
| Water year 1948-49 | 518,370 | 6,630 | 436 | 1,420 | .789 | 10.70 | 1,028,000 |

Peak discharge (base, 3,800 sec.-ft.).--May 16 (1 to 2 p.m.) 6,710 sec.-ft.; May 29 (2:30 p.m.) 6,200 sec.-ft.; June 12 (6:30 a.m.) 6,150 sec.-ft.
* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Jan. 12 to Feb. 27. No gage-height record Nov. 9, Feb. 4-23, Apr. 30, May 1; discharge computed on basis of weather records and records for other Salmon River stations and nearby streams.

## Salmon River at Salmon, Idaho

Location.--Water-stage recorder, lat. 45°11', long. 113°54', in sec. 6, T. 21 N., R. 22 E., just upstream from Lemhi River, near Rose ranch buildings, 1,000 feet downstream from island and three-eighths of a mile downstream from highway bridge at Salmon.

Drainage area.--3,760 square miles.

Records available.--April 1912 to September 1916, July 1919 to September 1949.

Average discharge.--32 years (1913-16, 1920-49), 1,814 second-feet.

Extremes.--Maximum discharge during year, 7,590 second-feet May 17 (gage height, 6.15 feet); minimum recorded, 802 second-feet Dec. 18 (gage height, 2.52 feet), but may have been less during period of ice effect.
1912-16, 1919-49: Maximum discharge observed, 16,400 second-feet June 12, 1921 (gage height, 9.35 feet, staff gage at site 700 feet upstream); minimum, 242 second-feet Jan. 8, 1937 (gage height, 1.50 feet).

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

Revisions.--W 1043: Drainage area.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,320 | 1,380 | 1,220 | 1,250 | 1,100 | 1,260 | 1,060 | 3,110 | 6,400 | 2,330 | 1,220 | 877 |
| 2 | 1,320 | 1,480 | 1,350 | 1,200 | 1,100 | 1,250 | 1,050 | 2,940 | 5,830 | 2,250 | 1,210 | 868 |
| 3 | 1,320 | 1,640 | 1,480 | 1,100 | 1,100 | 1,250 | 1,050 | 3,070 | 5,270 | 2,210 | 1,180 | 859 |
| 4 | 1,310 | 1,650 | 1,440 | 1,000 | 1,100 | 1,250 | 1,050 | 2,940 | 4,750 | 2,210 | 1,140 | 859 |
| 5 | 1,370 | 1,570 | 1,380 | 1,000 | 1,050 | 1,250 | 1,070 | 2,720 | 4,470 | 2,250 | 1,110 | 904 |
| 6 | 1,480 | 1,460 | 1,320 | 1,200 | 1,100 | 1,250 | 1,130 | 2,650 | 4,600 | 2,450 | 1,090 | 922 |
| 7 | 1,470 | 1,460 | 1,340 | 1,400 | 1,050 | 1,250 | 1,220 | 2,720 | 5,030 | 2,450 | 1,070 | 922 |
| 8 | 1,460 | 1,380 | 1,360 | 1,300 | 1,100 | 1,260 | 1,290 | 2,940 | 5,370 | 2,270 | 1,060 | 904 |
| 9 | 1,460 | 1,340 | 1,340 | 1,100 | 1,100 | 1,250 | 1,290 | 3,360 | 5,570 | 2,190 | 1,050 | 904 |
| 10 | 1,430 | 1,350 | 1,350 | 850 | 1,100 | 1,240 | 1,280 | 3,830 | 5,750 | 2,130 | 1,050 | 913 |
| 11 | 1,420 | 1,460 | *1,380 | 950 | 950 | 1,250 | 1,350 | 4,400 | 5,990 | 2,120 | 1,070 | 931 |
| 12 | 1,400 | 1,460 | 1,380 | 1,100 | 1,000 | 1,280 | 1,520 | 5,030 | 6,300 | 2,070 | 1,100 | 985 |
| 13 | 1,380 | 1,460 | 1,370 | 1,150 | 1,050 | 1,320 | 1,670 | 5,650 | 6,140 | 1,960 | 1,090 | 1,020 |
| 14 | 1,380 | 1,460 | 1,260 | 1,200 | 1,100 | 1,340 | 1,540 | 6,190 | 5,540 | 1,900 | 1,090 | 1,000 |
| 15 | 1,380 | 1,460 | 1,240 | 1,250 | 1,150 | 1,320 | 1,430 | 6,660 | 5,060 | 1,850 | 1,090 | 985 |
| 16 | 1,400 | 1,490 | 1,230 | 1,300 | 1,200 | 1,310 | 1,410 | 7,200 | 4,710 | 1,810 | 1,070 | 985 |
| 17 | 1,410 | 1,480 | 1,070 | 1,200 | 1,250 | 1,300 | 1,520 | 7,530 | 4,380 | 1,740 | 1,060 | 994 |
| 18 | 1,380 | 1,440 | 904 | 1,200 | 1,250 | *1,280 | 1,740 | 7,390 | 4,060 | 1,710 | 1,060 | 1,030 |
| 19 | 1,380 | 1,350 | 913 | 1,200 | 1,250 | 1,290 | 2,020 | 7,170 | 3,830 | 1,670 | 1,040 | 1,020 |
| 20 | 1,380 | 1,380 | 1,210 | 1,200 | 1,300 | 1,320 | 2,240 | 7,060 | 3,700 | 1,580 | 1,030 | 1,000 |
| 21 | 1,370 | 1,470 | 1,470 | 1,200 | 1,350 | 1,320 | 2,240 | 6,610 | 3,440 | 1,530 | 1,010 | 994 |
| 22 | 1,360 | 1,430 | 1,120 | 1,150 | 1,400 | 1,280 | 2,080 | 6,250 | 3,280 | 1,480 | 976 | 985 |
| 23 | 1,370 | 1,420 | 994 | 1,150 | 1,400 | 1,230 | 2,180 | 5,990 | 3,180 | 1,420 | 949 | 976 |
| 24 | 1,360 | 1,420 | 913 | 1,100 | 1,350 | 1,180 | 2,450 | 5,570 | 2,130 | 1,380 | 949 | 967 |
| 25 | 1,360 | 1,430 | 895 | 1,100 | 1,350 | 1,170 | 2,860 | 5,300 | 2,990 | 1,370 | 958 | 949 |
| 26 | 1,370 | 1,420 | 958 | 1,100 | 1,300 | 1,120 | 2,990 | 5,320 | 2,960 | 1,350 | 931 | 940 |
| 27 | 1,350 | 1,370 | 1,020 | 1,150 | 1,300 | 1,100 | 2,990 | 5,620 | 2,900 | 1,300 | 922 | 949 |
| 28 | 1,350 | 1,310 | 1,100 | 1,100 | *1,300 | 1,100 | 3,200 | 6,090 | 2,770 | 1,260 | 922 | 949 |
| 29 | 1,340 | 1,360 | 1,160 | 1,150 | - | 1,030 | 3,500 | 6,530 | 2,570 | 1,230 | 922 | 967 |
| 30 | 1,370 | 1,320 | 1,200 | 1,150 | - | 1,030 | 3,480 | 6,740 | 2,450 | 1,210 | 913 | 1,020 |
| 31 | 1,370 | - | 1,200 | 1,100 | - | 1,060 | - | 6,560 | - | 1,200 | 895 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 42,820 | 1,480 | 1,310 | 1,381 | 84,930 |
| November | 43,100 | 1,650 | 1,310 | 1,437 | 85,490 |
| December | 37,567 | 1,480 | 895 | 1,212 | 74,510 |
| Calendar year 1948 | 788,299 | 10,800 | 760 | 2,154 | 1,564,000 |
| January | 35,600 | 1,400 | 850 | 1,148 | 70,610 |
| February | 33,150 | 1,400 | 950 | 1,184 | 65,750 |
| March | 38,140 | 1,340 | 1,030 | 1,230 | 75,650 |
| April | 55,900 | 3,500 | 1,050 | 1,863 | 110,900 |
| May | 161,140 | 7,530 | 2,650 | 5,198 | 319,600 |
| June | 132,420 | 6,400 | 2,450 | 4,414 | 262,700 |
| July | 55,880 | 2,450 | 1,200 | 1,803 | 110,800 |
| August | 32,227 | 1,220 | 895 | 1,040 | 63,920 |
| September | 28,578 | 1,030 | 859 | 953 | 56,680 |
| Water year 1948-49 | 696,522 | 7,530 | 850 | 1,908 | 1,382,000 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 28 to Mar. 7 (no gage-height record Jan. 3 to Feb. 22; discharge computed on basis of weather records and records for other Salmon River stations).

## Salmon River near Shoup, Idaho

Location.--Staff gage, lat. 45°19'30", long. 114°25', in sec. 13, T. 23 N., R. 17 E., 200 feet downstream from highway bridge, 1 mile downstream from Panther Creek, and 8 miles southwest of Shoup. Dec. 12 to Apr. 12, auxiliary wire-weight gage 200 feet upstream at different datum. Datum of staff gage is 3,169.96 feet above mean sea level (unadjusted).

Drainage area.--6,270 square miles.

Records available.--October 1944 to September 1949.

Extremes.--Maximum discharge observed during year, 11,400 second-feet May 17 (gage height, 5.80 feet); minimum daily, 1,200 second-feet Dec. 18, 19, 24, 25, Jan. 10, Sept. 4.
1944-49: Maximum discharge observed, 16,900 second-feet June 4, 1948 (gage height, 7.90 feet); minimum observed, 1,040 second-feet Sept. 12, 13, 1945 (gage height, 1.93 feet, site and datum then in use), but may have been less during winter periods.

Remarks.--Records fair. Gage read once daily. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2,070 | 1,990 | 1,720 | 1,650 | 1,500 | 2,000 | 1,660 | 5,070 | 9,700 | 3,520 | 1,510 | 1,240 |
| 2 | 1,930 | 2,070 | 1,930 | 1,600 | 1,500 | *2,000 | 1,600 | 5,070 | 9,190 | 3,250 | 1,480 | 1,240 |
| 3 | 1,930 | 2,220 | 2,040 | 1,500 | 1,500 | 2,000 | 1,680 | 4,410 | 8,710 | 3,100 | 1,460 | 1,220 |
| 4 | 1,930 | 2,220 | 2,040 | 1,320 | 1,500 | 2,000 | 1,660 | 4,630 | 7,770 | 2,990 | 1,430 | 1,200 |
| 5 | 2,070 | 2,220 | 1,930 | 1,350 | 1,450 | 2,000 | 1,680 | 4,200 | 7,510 | 2,960 | 1,410 | 1,340 |
| 6 | 2,220 | 2,220 | 1,790 | 1,550 | 1,400 | 2,000 | 1,850 | 4,200 | 7,280 | 3,320 | 1,390 | 1,370 |
| 7 | 2,220 | 2,070 | e1,790 | 1,800 | 1,450 | 2,000 | 2,030 | 4,200 | 7,510 | 3,300 | 1,370 | 1,370 |
| 8 | 2,220 | 1,930 | 1,790 | 1,700 | 1,400 | 2,000 | 2,140 | 4,850 | 7,740 | 3,150 | 1,340 | 1,340 |
| 9 | 2,220 | 1,790 | 1,790 | 1,500 | 1,500 | 2,000 | 2,190 | 5,290 | 7,950 | 2,980 | 1,340 | 1,340 |
| 10 | 2,070 | 1,930 | 1,790 | 1,200 | 1,500 | 2,000 | 2,240 | 6,180 | 8,180 | 2,810 | 1,370 | 1,340 |
| 11 | 2,070 | 1,930 | 1,790 | 1,300 | 1,400 | 2,000 | 2,380 | 7,100 | 7,950 | 2,810 | 1,370 | 1,410 |
| 12 | 2,070 | 2,070 | e1,900 | 1,500 | 1,300 | 2,100 | 2,460 | 7,790 | 8,630 | 2,710 | 1,390 | 1,510 |
| 13 | 2,070 | 2,100 | e1,800 | 1,550 | 1,400 | 2,240 | 2,520 | 8,730 | 8,870 | 2,660 | 1,410 | 1,510 |
| 14 | 1,990 | 2,070 | e1,700 | 1,600 | 1,500 | 2,310 | 2,580 | e9,300 | 8,160 | 2,540 | 1,430 | 1,530 |
| 15 | 1,990 | 2,070 | *e1,650 | 1,700 | 1,600 | 2,340 | 2,370 | 9,900 | 7,680 | 2,420 | 1,430 | 1,530 |
| 16 | 1,930 | 2,100 | e1,600 | 1,750 | 1,700 | 2,210 | 2,370 | 10,900 | e7,000 | 2,350 | 1,390 | 1,510 |
| 17 | 1,990 | 2,130 | 1,480 | 1,600 | 1,800 | e2,200 | 2,540 | 11,400 | 6,360 | 2,260 | 1,390 | 1,510 |
| 18 | 1,990 | 2,070 | e1,200 | 1,600 | 1,800 | e2,200 | 2,840 | 10,200 | 6,300 | 2,240 | 1,410 | 1,530 |
| 19 | 2,040 | 2,010 | e1,200 | 1,600 | 1,800 | *2,300 | 3,380 | 10,400 | 5,840 | 2,220 | 1,390 | e1,450 |
| 20 | 2,040 | 1,930 | e1,600 | 1,600 | 1,900 | 2,270 | 3,580 | 10,600 | 5,620 | 2,160 | 1,370 | e1,400 |
| 21 | 2,040 | 2,070 | 2,010 | 1,600 | 2,000 | 2,210 | 3,580 | 9,900 | 5,400 | 2,070 | 1,370 | e1,380 |
| 22 | 1,930 | 2,010 | 1,700 | 1,500 | 2,100 | 2,080 | 3,380 | 9,580 | 4,960 | 2,010 | 1,320 | e1,400 |
| 23 | 1,930 | 1,990 | 1,400 | 1,500 | 2,100 | 2,110 | 3,580 | 9,210 | 4,960 | 1,930 | 1,340 | 31,380 |
| 24 | 1,930 | 2,070 | 1,200 | 1,450 | 2,050 | 1,930 | 3,900 | 9,210 | e4,800 | 1,820 | 1,370 | e1,380 |
| 25 | 1,930 | 2,070 | 1,200 | 1,450 | 2,050 | 1,860 | 4,410 | 8,970 | 4,330 | 1,790 | 1,370 | e1,340 |
| 26 | 1,930 | 1,930 | 1,300 | 1,450 | 2,000 | 1,790 | 4,850 | 8,970 | 4,330 | 1,760 | 1,330 | e1,340 |
| 27 | 1,930 | 1,900 | 1,400 | 1,500 | 2,000 | 1,650 | 5,070 | 8,730 | 4,120 | e1,700 | 1,320 | e1,340 |
| 28 | 1,930 | 1,790 | 1,500 | 1,450 | 2,000 | 1,590 | 5,070 | 8,730 | 4,120 | e1,650 | 1,320 | e1,310 |
| 29 | 1,930 | 1,790 | 1,550 | 1,500 | - | 1,530 | 5,290 | 9,700 | e3,800 | e1,600 | 1,280 | e1,310 |
| 30 | 1,930 | 1,720 | 1,600 | 1,500 | - | 1,570 | 5,510 | 9,900 | 3,700 | 1,580 | 1,260 | 1,410 |
| 31 | 1,930 | - | 1,600 | 1,450 | - | 1,610 | - | 9,700 | - | 1,530 | 1,260 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 62,400 | 2,220 | 1,930 | 2,013 | 123,800 |
| November | 60,480 | 2,220 | 1,720 | 2,016 | 120,000 |
| December | 50,990 | 2,040 | 1,200 | 1,645 | 101,100 |
| Calendar year 1948 | 1,160,960 | 16,900 | 1,100 | 3,172 | 2,303,000 |
| January | 47,320 | 1,800 | 1,200 | 1,526 | 93,860 |
| February | 47,200 | 2,100 | 1,300 | 1,686 | 93,620 |
| March | 62,100 | 2,340 | 1,530 | 2,003 | 123,200 |
| April | 90,480 | 5,510 | 1,600 | 3,016 | 179,500 |
| May | 247,020 | 11,400 | 4,200 | 7,968 | 490,000 |
| June | 198,470 | 9,700 | 3,700 | 6,616 | 393,700 |
| July | 75,190 | 3,520 | 1,530 | 2,425 | 149,100 |
| August | 42,620 | 1,510 | 1,260 | 1,375 | 84,540 |
| September | 41,480 | 1,530 | 1,200 | 1,383 | 82,270 |
| Water year 1948-49 | 1,025,750 | 11,400 | 1,200 | 2,810 | 2,035,000 |

* Winter discharge measurement made on this day.
e Gage reading inaccurate or not representative of mean for day; discharge computed on basis of records for other Salmon River stations.
Note.--Stage-discharge relation affected by ice Dec. 22 to Mar. 12 (no gage-height record Dec. 26 to Mar. 1; discharge computed on basis of weather records and records for other Salmon River stations).

## Salmon River near French Creek, Idaho

Location.--Staff gage, lat. 45°26', long. 115°59', in sec. 8, T. 24 N., R. 4 E., 100 feet downstream from Fall Creek, 2½ miles northeast of French Creek post office, and 16 miles east of Riggins.

Drainage area.--12,270 square miles.

Records available.--October 1944 to September 1949.

Extremes.--Maximum discharge observed during year, 60,400 second-feet May 16 (gage height, 27.86 feet); minimum observed, 2,300 second-feet Dec. 18 (gage height, 1.71 feet).
1944-49: Maximum discharge observed, 75,300 second-feet May 29, 1948 (gage height, 33.50 feet); minimum observed, 1,890 second-feet Dec. 12, 1944 (gage height, 1.44 feet).

Remarks.--Records excellent except those for period of ice effect, which are good. Gage read twice daily. Amount of water diverted above station for irrigation is a negligible percentage of total flow.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4,590 | 4,380 | 3,490 | 3,500 | 3,000 | 4,500 | 3,970 | 21,300 | 42,900 | 11,100 | 4,530 | 3,210 |
| 2 | 4,450 | 4,640 | 3,710 | 3,300 | 3,000 | 4,500 | 4,030 | 21,300 | 38,700 | 10,600 | 4,520 | 3,150 |
| 3 | 4,420 | 5,200 | 4,350 | 3,000 | 3,100 | 4,700 | 4,280 | 23,300 | 35,100 | 10,200 | 4,480 | 3,100 |
| 4 | 4,430 | 5,260 | 4,560 | 2,900 | 3,000 | 5,000 | 4,460 | 21,300 | 32,300 | 9,930 | 4,290 | 3,040 |
| 5 | 4,880 | 4,940 | 4,300 | 2,900 | 3,000 | 5,200 | 4,990 | 19,000 | 33,100 | 9,740 | 4,170 | 3,060 |
| 6 | 5,190 | 4,640 | 3,990 | 3,200 | 3,000 | 5,400 | 5,840 | 18,400 | 35,200 | 9,920 | 4,070 | 3,400 |
| 7 | 5,060 | 4,390 | 3,900 | 3,600 | 3,100 | 5,630 | 6,880 | 18,700 | 37,400 | 9,750 | 3,960 | 3,440 |
| 8 | 5,040 | 4,110 | 3,840 | 3,700 | 2,900 | 5,730 | 7,670 | 23,300 | 37,700 | 9,430 | 3,900 | 3,340 |
| 9 | 4,990 | 3,850 | 3,900 | 3,500 | 3,100 | 5,510 | 7,710 | 26,400 | 36,500 | 8,960 | 3,890 | 3,280 |
| 10 | 4,880 | 3,770 | 3,910 | 3,000 | 3,100 | 5,290 | 7,940 | 32,900 | 36,000 | 8,620 | 3,890 | 3,220 |
| 11 | 4,720 | 4,220 | 4,080 | 2,800 | 3,000 | 4,940 | 8,790 | 40,000 | 34,200 | 8,380 | 3,940 | 3,470 |
| 12 | 4,590 | 4,380 | 4,300 | 3,000 | 2,600 | 4,900 | 10,600 | 46,000 | 33,700 | 8,190 | 4,060 | 3,620 |
| 13 | 4,520 | 4,420 | *4,280 | 3,300 | 2,800 | 5,150 | 11,300 | 49,300 | 30,900 | 7,920 | 4,130 | 3,780 |
| 14 | 4,440 | 4,390 | 4,070 | 3,500 | 3,000 | 5,110 | 10,100 | 52,600 | 28,300 | 7,600 | 4,100 | 3,690 |
| 15 | 4,600 | 4,500 | 3,390 | 3,600 | 3,000 | 5,200 | 9,290 | 55,300 | 25,700 | 7,240 | 3,920 | 3,520 |
| 16 | 4,620 | 4,580 | 3,460 | 3,700 | 3,100 | 5,360 | 9,360 | 60,400 | 23,400 | 7,000 | 3,860 | 3,510 |
| 17 | 4,430 | 4,520 | 3,150 | 3,500 | 3,400 | 5,490 | 10,700 | 57,800 | 21,500 | 6,780 | 3,780 | 3,720 |
| 18 | 4,360 | 4,390 | 2,330 | 3,400 | 3,600 | 5,410 | 12,800 | 52,600 | 20,000 | 6,540 | 3,770 | 3,750 |
| 19 | 4,330 | 4,220 | 2,400 | 3,400 | 3,900 | 5,670 | 15,300 | 48,300 | 18,500 | 6,360 | 3,780 | 3,630 |
| 20 | 4,300 | 4,080 | 2,600 | 3,300 | 4,100 | 5,720 | 15,800 | 48,400 | 18,600 | 6,240 | 3,760 | 3,490 |
| 21 | 4,290 | 4,250 | 3,100 | 3,300 | 4,300 | 5,630 | 15,600 | 46,600 | 17,300 | 6,070 | 3,640 | 3,390 |
| 22 | 4,260 | 4,340 | 3,500 | 3,400 | 4,600 | 5,620 | 13,600 | 44,100 | 16,400 | 5,920 | 3,550 | 3,320 |
| 23 | 4,220 | 4,260 | 3,200 | 3,400 | 4,800 | *5,170 | 14,600 | 42,700 | 15,800 | 5,760 | 3,450 | 3,290 |
| 24 | 4,180 | 4,340 | 2,700 | 3,200 | 4,800 | 5,000 | 17,200 | 41,200 | 15,000 | 5,550 | 3,460 | 3,240 |
| 25 | 4,240 | 4,320 | 2,600 | 3,000 | 4,700 | 4,760 | 19,400 | 40,100 | 14,300 | 5,400 | 3,520 | 3,180 |
| 26 | 4,260 | 4,260 | 2,700 | 2,800 | 4,700 | 4,580 | 19,900 | 42,200 | 14,200 | 5,290 | 3,440 | 3,120 |
| 27 | 4,220 | 4,220 | 2,900 | 2,900 | 4,600 | 4,390 | 20,700 | 45,200 | 13,900 | 5,170 | 3,420 | 3,100 |
| 28 | 4,130 | 3,990 | 3,300 | 3,000 | 4,600 | 4,280 | 23,000 | 48,200 | 13,100 | 5,080 | 3,370 | 3,060 |
| 29 | 4,070 | 3,910 | 3,400 | 3,000 | - | 4,060 | 25,200 | 50,100 | 12,400 | 4,960 | 3,300 | 3,270 |
| 30 | 4,130 | 3,770 | 3,600 | 3,000 | - | 3,930 | 25,300 | 49,000 | 11,700 | 4,810 | 3,250 | 3,480 |
| 31 | 4,200 | - | 3,600 | 3,000 | - | 3,950 | - | 45,100 | - | 4,700 | 3,220 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 139,040 | 5,190 | 4,070 | 4,485 | 0.366 | 0.42 | 275,800 |
| November | 130,540 | 5,260 | 3,770 | 4,351 | .355 | .40 | 258,900 |
| December | 108,610 | 4,560 | 2,330 | 3,504 | .286 | .33 | 215,400 |
| Calendar year 1948 | 4,091,510 | 74,800 | 2,330 | 11,180 | .911 | 12.40 | 8,116,000 |
| January | 100,100 | 3,700 | 2,800 | 3,229 | .263 | .30 | 198,500 |
| February | 99,900 | 4,800 | 2,600 | 3,568 | .291 | .30 | 198,100 |
| March | 155,780 | 5,730 | 3,930 | 5,025 | .410 | .47 | 309,000 |
| April | 366,310 | 25,300 | 3,970 | 12,210 | .995 | 1.11 | 726,600 |
| May | 1,231,100 | 60,400 | 18,400 | 39,710 | 3.24 | 3.73 | 2,442,000 |
| June | 763,800 | 42,900 | 11,700 | 25,460 | 2.07 | 2.32 | 1,515,000 |
| July | 229,210 | 11,100 | 4,700 | 7,394 | .603 | .69 | 454,600 |
| August | 118,420 | 4,530 | 3,220 | 3,820 | .311 | .36 | 234,900 |
| September | 100,870 | 3,780 | 3,040 | 3,362 | .274 | .31 | 200,100 |
| Water year 1948-49 | 3,543,680 | 60,400 | 2,330 | 9,709 | .791 | 10.74 | 7,029,000 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 19 to Mar. 6.

## Salmon River at Whitebird, Idaho

Location.--Water-stage recorder, lat. 45°45', long. 116°20', in sec. 22, T. 28 N., R. 1 E., just upstream from Whitebird Creek, half a mile downstream from Canfield-Joseph highway bridge, and 1 mile southwest of Whitebird. Datum of gage is 1,412.65 feet above mean sea level, datum of 1929, supplementary adjustment of 1947.

Drainage area.--13,550 square miles, including that of Whitebird Creek.

Records available.--August 1910 to September 1917, October 1919 to September 1949.

Average discharge.--37 years, 10,510 second-feet.

Extremes.--Maximum discharge during year, 76,500 second-feet May 16 (gage height, 29.04 feet); minimum, 2,430 second-feet Dec. 19 (gage height, 11.53 feet), but may have been less during period of ice effect.

1910-17, 1919-49: Maximum discharge, 103,000 second-feet June 3, 1948 (gage height, 32.95 feet); minimum, 1,580 second-feet Dec. 11, 1932 (gage height, 10.23 feet), from rating curve extended below 2,200 second-feet.

Maximum stage known, about 37.5 feet, present datum, June 1894 (discharge, 120,000 second-feet).

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Amount of water diverted above station for irrigation is a negligible percentage of total flow.

Revisions (water years).--W 753: 1932. W 1043: Drainage area.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5,330 | 4,950 | 4,120 | a4,200 | 3,400 | 5,360 | 5,140 | 25,100 | 51,300 | 12,600 | 5,160 | 3,480 |
| 2 | 5,170 | 5,340 | 4,070 | a4,000 | 3,400 | 5,310 | 5,250 | 25,600 | 46,200 | 12,100 | 5,060 | 3,450 |
| 3 | 5,100 | 6,020 | 4,720 | 3,600 | 3,500 | 5,360 | 5,400 | 29,300 | 40,400 | 11,600 | 5,010 | 3,390 |
| 4 | 5,080 | 6,240 | 5,060 | 3,300 | 3,400 | 5,590 | 5,670 | 26,600 | 36,800 | 11,200 | 4,900 | 3,360 |
| 5 | 5,440 | 5,940 | 4,970 | 3,300 | 3,400 | 5,800 | 6,220 | 23,700 | 36,600 | 11,000 | 4,740 | 3,380 |
| 6 | 5,900 | 5,520 | 4,660 | 3,500 | 3,400 | 6,140 | 7,310 | 21,900 | 39,200 | 11,000 | 4,630 | 3,540 |
| 7 | 5,900 | 5,210 | 4,560 | 3,900 | 3,500 | 6,280 | 8,760 | 22,100 | 41,900 | 10,900 | 4,520 | 3,780 |
| 8 | 5,840 | 4,950 | 4,390 | 4,400 | 3,300 | 6,360 | 9,860 | 25,000 | 43,500 | 10,700 | 4,450 | 3,700 |
| 9 | 5,820 | 4,630 | 4,360 | 4,100 | 3,600 | 6,260 | 10,200 | 30,200 | 41,600 | 9,960 | 4,380 | 3,610 |
| 10 | 5,690 | 4,480 | 4,470 | 3,600 | 3,600 | 5,980 | 10,300 | 37,200 | 40,300 | 9,620 | 4,340 | 3,530 |
| 11 | 5,520 | 4,630 | 4,570 | 3,000 | 3,600 | 5,780 | 10,900 | 46,000 | 39,700 | 9,290 | 4,380 | 3,650 |
| 12 | 5,360 | 5,040 | 4,770 | 3,500 | 3,000 | 5,760 | 12,400 | 54,400 | 37,600 | 9,090 | 4,360 | 3,950 |
| 13 | 5,290 | 5,080 | 4,860 | 3,700 | 3,200 | 5,960 | 13,500 | 60,000 | 35,000 | 8,650 | 4,470 | 4,100 |
| 14 | 5,140 | 5,040 | 4,650 | 3,900 | 3,400 | 6,220 | 12,500 | 64,600 | f31,200 | 8,350 | 4,470 | 4,030 |
| 15 | 5,170 | 5,080 | 4,260 | 4,000 | 3,500 | 6,280 | 11,500 | 69,000 | 28,400 | 8,030 | 4,290 | 3,930 |
| 16 | 5,290 | 5,190 | 3,810 | 4,100 | 3,560 | 6,600 | 11,400 | 73,700 | 26,100 | 7,770 | 4,170 | 3,880 |
| 17 | 5,210 | 5,210 | 3,650 | 4,000 | 3,700 | 6,890 | 12,500 | 73,900 | 23,900 | 7,500 | 4,100 | 3,930 |
| 18 | 5,100 | 5,120 | *2,920 | 3,900 | 4,030 | 7,080 | 14,700 | 65,800 | 22,200 | 7,270 | 4,080 | 4,120 |
| 19 | 5,020 | 4,950 | 2,760 | 3,800 | 4,340 | 7,500 | 17,200 | 59,600 | 20,500 | 7,100 | 4,100 | 3,970 |
| 20 | 4,990 | 4,790 | 3,060 | 3,700 | 4,660 | 7,900 | 19,000 | 59,700 | 20,000 | 7,000 | 4,100 | 3,850 |
| 21 | 4,930 | 4,830 | 3,850 | 3,800 | 4,810 | 7,830 | 18,100 | 57,200 | 19,300 | 6,830 | 4,050 | 3,770 |
| 22 | 4,900 | 4,930 | 4,100 | 3,800 | 5,060 | 7,460 | 16,700 | 53,400 | 18,100 | 6,680 | 3,920 | 3,690 |
| 23 | 4,860 | 4,970 | 3,810 | 3,900 | *5,480 | 7,170 | 16,600 | 50,200 | 17,600 | 6,540 | 3,860 | 3,640 |
| 24 | 4,830 | 5,010 | 3,000 | 3,700 | 5,650 | 6,830 | 19,600 | 49,000 | 16,700 | 6,360 | 3,850 | 3,570 |
| 25 | 4,840 | 5,020 | 2,990 | 3,500 | 5,630 | 6,560 | 22,200 | 47,200 | 16,000 | 6,180 | 3,860 | 3,530 |
| 26 | 4,860 | 4,970 | 3,060 | 3,100 | 5,610 | 6,200 | 22,800 | 48,400 | 15,700 | 6,020 | 3,830 | 3,460 |
| 27 | 4,840 | 4,880 | 3,440 | 3,300 | 5,520 | 5,800 | 23,500 | 52,800 | 15,600 | 5,940 | 3,770 | 3,390 |
| 28 | 4,750 | 4,700 | 3,850 | *3,400 | 5,380 | 5,540 | 25,800 | 57,200 | 14,700 | 5,820 | 3,690 | 3,360 |
| 29 | 4,700 | 4,540 | a4,000 | 3,400 | - | 5,270 | 28,200 | 59,200 | 14,000 | 5,690 | 3,620 | 3,530 |
| 30 | 4,720 | 4,450 | a4,200 | 3,400 | - | 5,080 | 27,800 | 61,200 | 13,400 | 5,590 | 3,560 | 3,750 |
| 31 | 4,750 | - | a4,300 | 3,400 | - | 5,040 | - | 54,600 | - | 5,420 | 3,530 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff: Inches | Runoff: Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 160,340 | 5,900 | 4,700 | 5,172 | 0.382 | 0.44 | 318,000 |
| November | 151,710 | 6,240 | 4,450 | 5,057 | .373 | .42 | 300,900 |
| December | 125,290 | 5,060 | 2,760 | 4,042 | .298 | .34 | 248,500 |
| Calendar year 1948 | 5,077,560 | 99,200 | 2,760 | 13,870 | 1.02 | 13.93 | 10,070,000 |
| January | 114,200 | 4,400 | 3,000 | 3,684 | .272 | .31 | 226,500 |
| February | 114,630 | 5,650 | 3,000 | 4,094 | .302 | .31 | 227,400 |
| March | 193,190 | 7,900 | 5,040 | 6,232 | .460 | .53 | 383,200 |
| April | 431,010 | 28,200 | 5,140 | 14,370 | 1.06 | 1.18 | 854,900 |
| May | 1,483,800 | 73,900 | 21,900 | 47,860 | 3.53 | 4.07 | 2,943,000 |
| June | 863,500 | 51,300 | 13,400 | 28,780 | 2.12 | 2.37 | 1,713,000 |
| July | 257,800 | 12,600 | 5,420 | 8,316 | .614 | .71 | 511,300 |
| August | 131,250 | 5,160 | 3,530 | 4,234 | .312 | .36 | 260,300 |
| September | 110,320 | 4,120 | 3,360 | 3,677 | .271 | .30 | 218,800 |
| Water year 1948-49 | 4,137,040 | 73,900 | 2,760 | 11,330 | .836 | 11.34 | 8,206,000 |

Peak discharge (base, 29,700 sec.-ft.).--May 3 (10 a.m.) 29,800 sec.-ft.; May 16 (9 p.m.) 76,500 sec.-ft.; May 29 or 30 (time unknown) about 63,000 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of weather records, records for other Salmon River stations, and nearby streams.

f Computed from partly estimated gage-height record.

Note.--Stage-discharge relation affected by ice Jan. 3 to Feb. 15. Discharge computed from staff-gage readings May 21 to June 13.

## Alturas Lake Creek near Obsidian, Idaho

Location.--Water-stage recorder, lat. 43°56', long. 114°50', in SW¼ sec. 9, T. 7 N., R. 14 E., 1 mile downstream from outlet of Perkins Lake, 1½ miles downstream from outlet of Alturas Lake, and 4 miles south of Obsidian.

Drainage area.--35.7 square miles.

Records available.--November 1940 to September 1949.

Extremes.--Maximum discharge during year, 489 second-feet June 12 (gage height, 4.88 feet); minimum recorded, 9.4 second-feet Sept. 26 (gage height, 1.90 feet).
1940-49: Maximum discharge, 612 second-feet May 31, 1943; maximum gage height, 5.41 feet June 9, 1948; minimum discharge recorded, that of Sept. 26, 1949.

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

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19 | 16 | | | | | 14 | 142 | 366 | 128 | 33 | 14 |
| 2 | 19 | 21 | | | | | 14 | 150 | 326 | 121 | 32 | 14 |
| 3 | 19 | 23 | | | | | *14 | 149 | 278 | 118 | 31 | 14 |
| 4 | 20 | *22 | | | | | 14 | 142 | 240 | 116 | 30 | 14 |
| 5 | 22 | 21 | | | | | 14 | 138 | 230 | 118 | 28 | 14 |
| 6 | 21 | 21 | | | | | 14 | 137 | 255 | 121 | 26 | 14 |
| 7 | 21 | 21 | | | | | 16 | 139 | 301 | 117 | 25 | 14 |
| 8 | 21 | 20 | | | | | 16 | 150 | 341 | 111 | 24 | 14 |
| 9 | 21 | 19 | 20 | 19 | | | 16 | 173 | 387 | 104 | 23 | 14 |
| 10 | 19 | 19 | | (*) | | | 16 | 202 | 424 | 98 | 24 | 13 |
| 11 | 19 | 18 | | | | | 16 | 236 | 459 | 95 | 23 | 14 |
| 12 | 19 | 17 | | | | | 17 | 269 | 484 | 90 | 23 | 13 |
| 13 | 19 | 17 | | | | | 19 | 311 | 459 | 85 | 22 | 13 |
| 14 | 19 | 17 | | | | | 19 | 366 | 413 | 80 | 21 | 13 |
| 15 | 19 | 19 | | | 16 | 15 | 21 | 410 | 371 | 76 | 21 | 13 |
| 16 | 19 | 20 | | | | | 22 | 445 | 341 | 73 | 21 | 14 |
| 17 | 18 | 21 | | | | | 25 | 464 | f301 | 68 | 20 | 13 |
| 18 | 18 | 21 | | | | | 28 | 467 | 270 | 64 | 20 | 13 |
| 19 | 17 | 21 | | | | | 35 | 456 | 240 | 60 | 19 | 13 |
| 20 | 17 | 19 | | | | | 42 | 435 | f211 | 58 | 19 | 12 |
| 21 | 17 | 19 | | | | | 49 | 387 | 194 | 54 | 18 | 12 |
| 22 | 16 | 19 | | | | | 57 | 356 | 189 | 51 | 17 | 12 |
| 23 | 16 | 19 | 19 | 17 | | | 62 | 328 | 185 | 50 | 17 | 12 |
| 24 | 16 | 21 | | | | | 69 | 299 | 184 | 47 | 16 | 19 |
| 25 | 16 | 21 | | | | | 79 | 287 | 182 | 45 | 16 | 15 |
| 26 | 15 | 21 | | | | | 89 | 301 | 179 | 43 | 16 | 12 |
| 27 | 14 | 21 | | | | | 101 | 341 | 168 | 41 | 16 | 12 |
| 28 | 14 | 21 | | | | | 118 | 387 | 156 | 39 | 15 | 14 |
| 29 | 14 | 21 | | | - | | 134 | 426 | 145 | 37 | 15 | 15 |
| 30 | 14 | 20 | | | - | | 141 | 426 | 136 | 36 | 15 | 15 |
| 31 | 14 | - | | | - | | - | 410 | - | 35 | 14 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 552 | 22 | 14 | 17.8 | 0.499 | 0.58 | 1,090 |
| November | 596 | 23 | 16 | 19.9 | .557 | .62 | 1,180 |
| December | 604 | - | - | 19.5 | .546 | .63 | 1,200 |
| Calendar year 1948 | 26,814 | 601 | 13 | 73.3 | 2.05 | 27.95 | 53,190 |
| January | 557 | - | - | 18.0 | .504 | .58 | 1,100 |
| February | 448 | - | - | 16.0 | .448 | .47 | 889 |
| March | 465 | - | - | 15.0 | .420 | .48 | 922 |
| April | 1,291 | 141 | 14 | 43.0 | 1.20 | 1.34 | 2,560 |
| May | 9,329 | 467 | 137 | 301 | 8.43 | 9.72 | 18,500 |
| June | 8,415 | 484 | 136 | 280 | 7.84 | 8.77 | 16,690 |
| July | 2,379 | 128 | 35 | 76.7 | 2.15 | 2.48 | 4,720 |
| August | 660 | 33 | 14 | 21.3 | .597 | .69 | 1,310 |
| September | 408 | 19 | 12 | 13.6 | .381 | .43 | 809 |
| Water year 1948-49 | 25,704 | 484 | - | 70.4 | 1.97 | 26.79 | 50,970 |

Peak discharge (base, 250 sec.-ft.).--May 18 (12 m.) 470 sec.-ft.; May 29 (2 p.m.) to May 30 (9 a.m.) 435 sec.-ft.; June 12 (10 a.m. to 1 p.m.) 489 sec.-ft.

* Winter discharge measurement made on this day.

f Computed from partly estimated gage-height record.

Note.--Stage-discharge relation affected by ice Nov. 7-9, 18, 24, 25, 27, Nov. 29 to Apr. 1, Apr. 4, 5, 9, 14. No gage-height record Dec. 14 to Jan. 9, Jan. 12 to Apr. 2, June 18, 19, July 25-28; discharge computed on basis of recorded range in stage, weather records, and records for nearby streams.

## Valley Creek at Stanley, Idaho

Location.--Water-stage recorder, lat. 44°13', long. 114°56', in sec. 3, T. 10 N., R. 13 E., a quarter of a mile upstream from mouth, three-eighths of a mile downstream from upper Stanley, and three-quarters of a mile upstream from lower Stanley. Prior to May 1, 1949, staff gage at site 20 feet upstream at same datum.

Drainage area.--176 square miles.

Records available.--December 1910 to October 1913, May 1921 to September 1949.

Average discharge.--29 years (1911-13, 1922-49), 185 second-feet.

Extremes.--Maximum discharge during year, 947 second-feet May 16 (gage height, 3.01 feet); minimum daily discharge, 67 second-feet Feb. 12; minimum gage height recorded, 0.98 foot Aug. 21.

1910-13, 1921-49: Maximum discharge observed, 1,850 second-feet May 29, 1921 (gage height, 4.4 feet), from rating curve extended above 1,300 second-feet; minimum, 40 second-feet (estimated) Nov. 17-30, 1929, Dec. 8-13, 1932.

Remarks.--Records good May 1 to Sept. 30, fair for remainder of year. Gage read about three times weekly Oct. 1 to Apr. 8 and once daily Apr. 15-29. Diversions above station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | a98 | 102 | 83 | a76 | a78 | a84 | 102 | 469 | 769 | 260 | 106 | 82 |
| 2 | 98 | a125 | a95 | a74 | b78 | 83 | a102 | 531 | 647 | 253 | 104 | 80 |
| 3 | a100 | 154 | 102 | b72 | a78 | a84 | a93 | 478 | 565 | 246 | 103 | 82 |
| 4 | a110 | a137 | a102 | a70 | a78 | 86 | 84 | 413 | 521 | 246 | 104 | 82 |
| 5 | 146 | *111 | a92 | b72 | b76 | a85 | a93 | 394 | 536 | 256 | 101 | 84 |
| 6 | a128 | a110 | 98 | a76 | a75 | a84 | 100 | 408 | 595 | 256 | 99 | 88 |
| 7 | 115 | a95 | a95 | b78 | b75 | 83 | a105 | 436 | 674 | 231 | 95 | 86 |
| 8 | a115 | 102 | 84 | a74 | a75 | a87 | 113 | 473 | 715 | 221 | 94 | 84 |
| 9 | 104 | a102 | a96 | a71 | b76 | 92 | a120 | 507 | 732 | 214 | 92 | 84 |
| 10 | a102 | 102 | 102 | b69 | a74 | a96 | a130 | 550 | 744 | 211 | 95 | 86 |
| 11 | a100 | a100 | a102 | a68 | a68 | 104 | a150 | 605 | 694 | 201 | 99 | 99 |
| 12 | 98 | 98 | a102 | b70 | a67 | a100 | a175 | 686 | 688 | 198 | 99 | 101 |
| 13 | a100 | a98 | 102 | a72 | a75 | a98 | a160 | 757 | 697 | 194 | 95 | 95 |
| 14 | 107 | a95 | a94 | b74 | b86 | 96 | a145 | 814 | 615 | 182 | 94 | 92 |
| 15 | a110 | 94 | b90 | a76 | a86 | a94 | 143 | 863 | 863 | 176 | 92 | 89 |
| 16 | d100 | a93 | a85 | a74 | b84 | 92 | 167 | 912 | 541 | 165 | 86 | 99 |
| 17 | a94 | 90 | a75 | a76 | a84 | a94 | 190 | 877 | 483 | 162 | 88 | 97 |
| 18 | a90 | a87 | *b69 | a78 | 86 | 96 | 209 | 849 | 436 | 159 | 90 | 94 |
| 19 | a90 | 94 | a77 | b80 | a87 | a100 | 236 | 842 | 417 | 154 | 86 | 90 |
| 20 | a88 | a90 | b88 | a78 | a87 | a100 | 271 | 794 | 413 | 144 | 84 | 89 |
| 21 | 86 | a100 | a80 | a76 | 90 | 86 | 250 | 732 | 376 | 139 | 82 | 88 |
| 22 | a86 | 111 | b70 | a74 | a90 | a86 | 287 | 703 | 372 | 132 | 82 | 88 |
| 23 | 86 | a108 | a70 | a74 | 92 | 86 | 354 | 680 | 376 | 125 | 88 | 88 |
| 24 | a86 | 107 | b72 | a73 | *75 | a88 | 430 | 620 | 367 | 125 | 92 | 89 |
| 25 | 86 | a105 | a73 | a72 | 86 | 94 | 532 | 610 | 367 | 123 | 86 | 88 |
| 26 | a84 | 102 | a70 | b74 | a85 | a95 | 508 | 647 | 372 | 121 | 84 | 88 |
| 27 | 83 | a88 | b73 | a78 | a84 | a97 | 592 | 686 | 345 | 116 | 83 | 89 |
| 28 | a84 | a92 | a76 | b76 | b84 | 98 | 508 | 732 | 312 | 116 | 84 | 92 |
| 29 | 86 | 86 | b77 | a78 | - | a90 | 532 | 794 | 291 | 112 | 84 | 97 |
| 30 | a84 | a84 | a76 | b80 | - | 94 | a500 | 807 | 272 | 108 | 83 | 94 |
| 31 | a88 | - | b76 | a79 | - | a96 | - | 828 | - | 106 | 84 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff: Inches | Runoff: Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 3,032 | 146 | 83 | 97.8 | 0.556 | 0.64 | 6,010 |
| November | 3,058 | 154 | 84 | 102 | .580 | .65 | 6,070 |
| December | 2,656 | 102 | 69 | 95.7 | .487 | .56 | 5,270 |
| Calendar year 1948 | 78,881 | 1,290 | 65 | 216 | 1.23 | 16.68 | 156,500 |
| January | 2,312 | 80 | 68 | 74.6 | .424 | .49 | 4,590 |
| February | 2,259 | 92 | 67 | 80.7 | .459 | .48 | 4,480 |
| March | 2,848 | 104 | 83 | 91.9 | .522 | .60 | 5,650 |
| April | 7,381 | 592 | 84 | 246 | 1.40 | 1.56 | 14,640 |
| May | 20,497 | 912 | 394 | 661 | 3.76 | 4.33 | 40,660 |
| June | 15,707 | 794 | 272 | 524 | 2.98 | 3.32 | 31,150 |
| July | 5,452 | 260 | 106 | 176 | 1.00 | 1.15 | 10,810 |
| August | 2,838 | 106 | 82 | 91.5 | .520 | .60 | 5,630 |
| September | 2,685 | 101 | 80 | 89.5 | .509 | .57 | 5,330 |
| Water year 1948-49 | 70,725 | 912 | 67 | 194 | 1.10 | 14.95 | 140,300 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated or 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 on basis of weather records and records for nearby streams.

## Yankee Fork Salmon River near Clayton, Idaho

Location.--Water-stage recorder, lat. 44°17', long. 114°44', in sec. 17, T. 11 N., R. 15 E., half a mile upstream from mouth and 17 miles west of Clayton.

Drainage area.--195 square miles.

Records available.--May 1921 to February 1949 (discontinued).

Average discharge.--25 years (1922-24, 1925-48), 194 second-feet.

Extremes.--Maximum discharge during period October 1948 to February 1949, 96 second-feet Oct. 5; maximum gage height, 2.86 feet Dec. 1 (ice jam); minimum discharge not determined, occurred during period of ice effect.
1921-49: Maximum discharge, 3,360 second-feet June 12, 1921 (gage height, 6.79 feet, site and datum then in use), from rating curve extended above 2,300 second-feet; minimum, 10 second-feet (estimated) Dec. 5, 6, 1927.

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

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb | Mar | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 74 | 70 | | | | | | | | | | |
| 2 | 74 | 79 | | | | | | | | | | |
| 3 | 72 | 80 | | | | | | | | | | |
| 4 | 75 | 72 | | | | | | | | | | |
| 5 | 91 | *58 | | | | | | | | | | |
| 6 | 82 | 68 | | | | | | | | | | |
| 7 | 81 | 52 | | | | | | | | | | |
| 8 | 83 | 54 | 60 | | 45 | | | | | | | |
| 9 | 81 | 58 | | | | | | | | | | |
| 10 | 80 | 68 | | | | | | | | | | |
| 11 | 76 | 72 | | | | | | | | | | |
| 12 | 75 | 72 | | | | | | | | | | |
| 13 | 74 | 70 | | | | | | | | | | |
| 14 | 73 | 66 | | | | | | | | | | |
| 15 | 76 | 70 | | 45 | | | | | | | | |
| 16 | 73 | 65 | | | | | | | | | | |
| 17 | 70 | 65 | | | | | | | | | | |
| 18 | 70 | 48 | | | | | | | | | | |
| 19 | 70 | 68 | (*) | | | | | | | | | |
| 20 | 69 | 70 | | | | | | | | | | |
| 21 | 70 | 68 | | | | | | | | | | |
| 22 | 72 | 68 | | | | | | | | | | |
| 23 | 69 | 68 | | | 50 | | | | | | | |
| 24 | 68 | 72 | 50 | | (*) | | | | | | | |
| 25 | 68 | 72 | | | | | | | | | | |
| 26 | 64 | 71 | | | | | | | | | | |
| 27 | 66 | 68 | | | | | | | | | | |
| 28 | 62 | 70 | | | | | | | | | | |
| 29 | 69 | 62 | | | - | | | | | | | |
| 30 | 67 | 70 | | | - | | | | | | | |
| 31 | 67 | - | | | - | | | | | | | |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 2,261 | 91 | 62 | 72.9 | 0.374 | 0.43 | 4,480 |
| November | 2,004 | 80 | 48 | 66.8 | .343 | .38 | 3,970 |
| December | 1,700 | - | - | 54.8 | .281 | .32 | 3,370 |
| Calendar year 1948 | 88,796 | 2,180 | - | 243 | 1.25 | 16.93 | 176,100 |
| January | 1,395 | - | - | 45.0 | .231 | .27 | 2,770 |
| February | 1,325 | - | - | 47.3 | .243 | .25 | 2,630 |
| March | - | - | - | - | - | - | - |
| April | - | - | - | - | - | - | - |
| May | - | - | - | - | - | - | - |
| June | - | - | - | - | - | - | - |
| July | - | - | - | - | - | - | - |
| August | - | - | - | - | - | - | - |
| September | - | - | - | - | - | - | - |
| Water year | - | - | - | - | - | - | - |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 8-11, 19-24, Nov. 28 to Feb. 28. No gage-height record Dec. 9, 11-14, 21-31, Jan. 2-6, 11-14, Jan. 16 to Feb. 28; discharge computed on basis of 1 discharge measurement, weather records, inflow between stations on Salmon River below Yankee Fork and below Valley Creek, and records for nearby streams.

## Challis Creek near Challis, Idaho

Location.--Water-stage recorder, lat. 44°34', long. 114°19', in sec. 2, T. 14 N., R. 18 E., 0.1 mile downstream from Eddy Creek, 6 miles northwest of Challis, and 6¾ miles upstream from mouth. Prior to Nov. 11, 1948, water-stage recorder at site 350 feet downstream at same datum.

Drainage area.--85 square miles.

Records available.--October 1943 to September 1949.

Extremes.--Maximum discharge during year, 193 second-feet May 17 (gage height, 5.52 feet); minimum, 9 second-feet Mar. 29 (gage height, 3.59 feet), but may have been less during winter period.

1943-49: Maximum discharge, 418 second-feet June 4, 1948 (gage height, 2.30 feet, site then in use); minimum, 8 second-feet Mar. 17, 1946, Mar. 9, 1948.

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

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 27 | 25 | | | | 14 | 15 | 59 | 137 | 47 | 24 | 16 |
| 2 | 27 | 27 | | | | 14 | 16 | 59 | 129 | 45 | 24 | 15 |
| 3 | 26 | 27 | | | | 14 | 16 | 59 | 117 | 45 | 23 | 14 |
| 4 | 28 | 24 | | | | 14 | 17 | 57 | 109 | 43 | 22 | 16 |
| 5 | 31 | 23 | | | | 14 | 18 | 55 | 108 | 47 | 28 | 18 |
| 6 | 29 | 23 | | | | 14 | 20 | 55 | 106 | 47 | 25 | 18 |
| 7 | 29 | 21 | | | | 14 | 20 | 59 | 108 | 43 | 22 | 16 |
| 8 | 29 | 20 | 19 | | | 14 | 21 | 71 | 108 | 43 | 22 | 16 |
| 9 | 28 | 21 | | | | 14 | 20 | 83 | 104 | 40 | 22 | 16 |
| 10 | 28 | 22 | | | | 14 | 22 | 100 | 104 | 38 | 24 | 17 |
| 11 | 27 | *22 | | | | 14 | 25 | 119 | 104 | 39 | 23 | 20 |
| 12 | 27 | 22 | | | | 15 | 29 | 138 | 101 | 36 | 23 | 21 |
| 13 | 27 | | | | | 15 | 26 | 153 | 98 | 35 | 21 | 19 |
| 14 | 26 | | | | | 15 | 24 | 162 | 93 | 34 | 22 | 19 |
| 15 | 27 | | | 15 | 14 | 15 | 25 | 175 | 88 | 33 | 22 | 18 |
| 16 | 27 | | *17 | | | 16 | 28 | 187 | 83 | 31 | 22 | 18 |
| 17 | 25 | | | | | 17 | 32 | 190 | 84 | 33 | 21 | 18 |
| 18 | 26 | | | | | *18 | 36 | 182 | 82 | 33 | 20 | 18 |
| 19 | 26 | | | | | 18 | 39 | 180 | 81 | 32 | 20 | 17 |
| 20 | 25 | | | | | 18 | 39 | 171 | 76 | 31 | 20 | 18 |
| 21 | 25 | 22 | | | | 17 | 39 | 167 | 70 | 32 | 19 | 16 |
| 22 | 25 | | | | | 16 | 39 | 158 | 66 | 29 | 19 | 16 |
| 23 | 25 | | | | | 16 | 40 | 146 | 64 | 28 | 20 | 16 |
| 24 | 24 | | 16 | | | 16 | 47 | 138 | 61 | 27 | 19 | 15 |
| 25 | 25 | | | | (*) | 16 | 49 | 137 | 59 | 27 | 19 | 16 |
| 26 | 23 | | | | | 16 | 51 | 139 | 59 | 27 | 19 | 16 |
| 27 | 25 | | | | | 16 | 55 | 143 | 59 | 25 | 18 | 16 |
| 28 | 23 | | | | | 15 | 62 | 150 | 55 | 25 | 18 | 16 |
| 29 | 24 | | | | - | 17 | 68 | 154 | 51 | 25 | 17 | 18 |
| 30 | 24 | | | | - | 17 | 65 | 147 | 51 | 24 | 17 | 18 |
| 31 | 25 | - | | | - | 16 | - | 150 | - | 24 | 17 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 813 | 31 | 23 | 26.2 | 1,610 |
| November | 673 | 27 | - | 22.4 | 1,330 |
| December | 542 | - | - | 17.5 | 1,080 |
| Calendar year 1948 | 18,971 | 403 | - | 51.8 | 37,630 |
| January | 465 | - | - | 15.0 | 922 |
| February | 392 | - | - | 14.0 | 778 |
| March | 479 | 18 | 14 | 15.5 | 950 |
| April | 1,003 | 68 | 15 | 33.4 | 1,990 |
| May | 3,943 | 190 | 55 | 127 | 7,820 |
| June | 2,611 | 137 | 51 | 87.0 | 5,180 |
| July | 1,068 | 47 | 24 | 34.5 | 2,120 |
| August | 652 | 28 | 17 | 21.0 | 1,290 |
| September | 511 | 21 | 14 | 17.0 | 1,010 |
| Water year 1948-49 | 13,152 | 190 | - | 36.0 | 26,080 |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 7-10, Nov. 17 to Feb. 28. No gage-height record Nov. 9, 10, Nov. 13 to Dec. 15, Dec. 17 to Feb. 24, Feb. 26 to Mar. 2, Mar. 5-17; discharge computed on basis of recorded range in stage, weather records, and records for nearby streams.

## Pahsimeroi River near May, Idaho

Location.--Staff gage, lat. 44°42', long. 114°03', in W½ sec. 25, T. 16 N., R. 20 E., a quarter of a mile downstream from old highway bridge on Challis-Salmon River highway, a quarter of a mile upstream from mouth, and 10 miles northwest of May. Datum of gage is 4,636.95 feet above mean sea level, adjustment of 1912.

Records available.--October 1929 to September 1949.

Average discharge.--19 years, (1930-49), 204 second-feet.

Extremes.--Maximum discharge observed during year, 371 second-feet Nov. 18; maximum gage height observed, 3.14 feet Jan. 12 (ice jam); minimum discharge observed, 96 second-feet May 7.
1929-49: Maximum discharge observed, 454 second-feet May 30, 1943; maximum gage height observed, 3.21 feet June 4, 1948; minimum discharge observed, 75 second-feet Apr. 28, 1934.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Gage read once daily. Many diversions above station for irrigation.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 337 | 360 | 303 | 247 | 262 | 291 | 291 | 111 | 146 | 132 | 148 | 160 |
| 2 | 337 | 352 | 306 | 254 | 258 | 295 | 291 | 111 | 150 | 130 | 148 | 163 |
| 3 | 341 | 344 | 322 | 254 | 262 | 287 | 291 | 111 | 153 | 132 | 150 | 163 |
| 4 | a342 | 337 | 325 | 254 | 258 | 287 | 276 | 106 | 160 | 128 | 153 | 163 |
| 5 | a343 | 333 | 318 | 258 | 258 | 291 | 265 | 99 | 155 | 150 | 153 | 166 |
| 6 | a344 | 333 | 310 | 258 | 265 | 295 | 258 | 101 | a152 | 146 | 153 | 166 |
| 7 | a345 | 333 | 295 | 262 | 262 | 295 | 254 | 96 | a149 | 139 | 150 | 171 |
| 8 | a346 | 333 | 295 | 251 | 254 | 291 | 258 | 98 | a146 | 143 | 148 | 173 |
| 9 | a347 | 322 | 299 | 244 | 254 | 295 | 254 | 99 | a143 | 143 | 146 | 179 |
| 10 | 348 | 318 | *299 | b230 | 254 | 299 | 254 | 101 | a141 | 146 | 143 | 179 |
| 11 | 352 | 333 | 303 | b235 | 251 | 303 | 251 | 101 | a139 | 148 | 141 | 195 |
| 12 | 360 | 337 | 322 | b240 | 251 | 306 | 247 | 103 | a136 | 148 | 141 | 192 |
| 13 | 356 | *341 | 314 | b250 | 254 | 314 | 244 | 107 | a134 | 148 | 141 | 188 |
| 14 | 344 | 341 | 310 | 254 | 254 | 310 | 237 | 124 | 132 | 148 | 139 | 182 |
| 15 | 344 | 360 | 299 | 269 | 254 | 303 | 240 | 124 | 132 | 153 | 141 | 182 |
| 16 | 341 | 367 | 295 | 262 | 254 | 322 | 240 | 126 | 135 | 153 | 141 | 185 |
| 17 | 337 | 367 | 280 | 258 | 265 | 322 | 224 | 126 | 137 | 155 | 143 | 188 |
| 18 | 344 | 371 | 272 | 269 | 265 | 322 | 217 | 122 | 135 | 155 | 141 | 188 |
| 19 | 344 | 367 | 272 | 265 | 295 | 322 | 188 | 124 | 146 | 153 | 141 | 192 |
| 20 | 348 | 360 | 251 | 258 | 306 | 322 | 173 | 130 | 153 | 153 | 143 | 198 |
| 21 | 344 | 352 | 230 | 262 | 291 | 318 | 168 | 139 | 150 | 150 | 143 | 198 |
| 22 | 341 | 348 | 237 | 258 | 299 | 310 | 158 | 146 | 150 | 148 | 148 | 201 |
| 23 | 337 | 337 | b230 | 258 | 295 | 303 | 155 | 150 | 148 | 148 | 150 | 201 |
| 24 | 333 | 333 | 237 | 254 | 295 | 299 | 155 | 153 | 146 | 148 | 155 | 198 |
| 25 | 337 | 329 | 251 | b250 | 295 | 287 | 150 | 148 | 141 | 150 | 155 | 201 |
| 26 | 341 | 329 | 244 | 284 | 295 | 291 | 146 | 150 | 139 | 146 | 158 | 207 |
| 27 | 341 | 322 | 244 | 272 | 291 | 291 | 137 | 139 | 139 | 146 | 160 | 214 |
| 28 | 341 | 303 | 247 | 272 | *295 | 284 | 122 | 143 | 135 | 148 | 163 | 214 |
| 29 | 344 | 299 | 251 | 280 | - | 284 | 117 | 146 | 135 | 148 | 160 | 220 |
| 30 | 344 | 299 | 244 | 269 | - | 287 | 113 | 148 | 135 | 148 | 160 | 227 |
| 31 | 348 | - | 247 | 262 | - | 291 | - | 143 | - | 148 | 160 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 10,651 | 360 | 333 | 344 | 21,130 |
| November | 10,160 | 371 | 299 | 339 | 20,150 |
| December | 8,652 | 325 | 230 | 279 | 17,160 |
| Calendar year 1948 | 93,798 | 438 | 101 | 256 | 186,000 |
| January | 7,993 | 284 | 230 | 258 | 15,850 |
| February | 7,592 | 306 | 251 | 271 | 15,060 |
| March | 9,317 | 322 | 284 | 301 | 18,480 |
| April | 6,374 | 291 | 113 | 212 | 12,640 |
| May | 3,825 | 153 | 96 | 123 | 7,590 |
| June | 4,292 | 160 | 132 | 143 | 8,510 |
| July | 4,531 | 155 | 128 | 146 | 8,990 |
| August | 4,616 | 163 | 139 | 149 | 9,160 |
| September | 5,654 | 227 | 160 | 188 | 11,210 |
| Water year 1948-49 | 83,657 | 371 | 96 | 229 | 165,900 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records, inflow between Salmon River near Challis and Salmon River at Salmon, and records for nearby streams.
b Stage-discharge relation affected by ice.

## Panther Creek near Shoup, Idaho

Location.--Staff gage, lat. 45°19', long. 114°23', in sec. 19, T. 23 N., R. 18 E., 25 feet downstream from bridge on private road, 1 mile upstream from mouth, and 7 miles southwest of Shoup.

Drainage area.--529 square miles.

Records available.--October 1944 to September 1949.

Extremes.--Maximum discharge observed during year, 1,450 second-feet May 17; maximum gage height observed, 3.20 feet Dec. 21 (ice jam); minimum discharge observed, 64 second-feet Apr. 1 (gage height, 0.16 foot), but may have been less during period of ice effect.

1944-49: Maximum discharge observed, 2,500 second-feet May 9, 1947; maximum gage height observed, 4.4 feet Jan. 6, 1947 (backwater from ice)1 minimum discharge observed, 35 second-feet Dec. 17, 1946 (gage height, -0.08 foot).

Remarks.--Records good except those for periods of ice effect, which are fair. Gage read once daily. Small diversions above station for irrigation.

Revisison (water years).--W 1063: 1945.

Rating tables, water year 1948-49, except period of ice effect
(gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Mar. 3 | | Mar. 4 to Sept. 30 | | | |
|---|---|---|---|---|---|
| 0.1 | 58 | 0.1 | 56 | 1.4 | 405 |
| .2 | 73 | .2 | 70 | 1.8 | 601 |
| .3 | 92 | .4 | 106 | 2.2 | 834 |
| .4 | 113 | .7 | 172 | 2.6 | 1,100 |
| | | 1.0 | 256 | 3.1 | 1,490 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 118 | 118 | | | | 90 | 64 | 495 | 1,030 | 244 | 116 | 84 |
| 2 | 118 | 123 | | | | *95 | 70 | 495 | 996 | 238 | 116 | 80 |
| 3 | 113 | 123 | | | | 90 | 73 | 486 | 897 | 241 | 116 | 80 |
| 4 | 115 | 118 | | | | 84 | 91 | 472 | 744 | 226 | 116 | 78 |
| 5 | 118 | 92 | | | | 80 | 110 | 440 | 761 | 226 | 110 | 96 |
| 6 | 118 | 102 | | | | 84 | 126 | 449 | 773 | 220 | 110 | 102 |
| 7 | 118 | 92 | | | | 84 | 137 | 472 | 866 | 220 | 106 | 91 |
| 8 | 113 | 84 | 105 | | 85 | 87 | 160 | 569 | 866 | 215 | 106 | 87 |
| 9 | 113 | 73 | | | | 87 | 137 | 686 | 810 | 209 | 106 | 84 |
| 10 | 115 | 82 | | | | 87 | 160 | 834 | 773 | 193 | 114 | 87 |
| 11 | 115 | 84 | | | | 84 | 198 | 1,030 | 773 | 193 | 110 | 95 |
| 12 | 115 | *118 | | | | 84 | 256 | 1,140 | 657 | 193 | 110 | 96 |
| 13 | 115 | 109 | | | | 87 | 226 | 1,210 | 601 | 182 | 110 | 96 |
| 14 | 118 | 113 | | | | 87 | 185 | 1,330 | 579 | 182 | 106 | 95 |
| 15 | 123 | 113 | (*) | | 85 | 87 | 188 | 1,330 | 569 | 167 | 106 | 95 |
| 16 | 118 | 96 | | | | 91 | 220 | 1,410 | 521 | 160 | 106 | 95 |
| 17 | 115 | 109 | | | | 91 | 263 | 1,450 | 467 | 160 | 106 | 95 |
| 18 | 115 | 102 | | | | 98 | 326 | 1,210 | 440 | 160 | 106 | 102 |
| 19 | 113 | 84 | | | | 106 | 349 | 1,210 | 440 | 160 | 102 | 91 |
| 20 | 113 | 113 | | | | 106 | 380 | 1,250 | 405 | 148 | 102 | 87 |
| 21 | 113 | 102 | | | | 102 | 319 | 1,250 | 380 | 148 | 95 | 87 |
| 22 | 113 | 113 | | | 90 | 102 | 319 | 1,100 | 356 | 144 | 91 | 84 |
| 23 | 109 | 109 | 90 | | | 87 | 356 | 1,030 | 345 | 144 | 91 | 84 |
| 24 | 109 | 109 | | | | 84 | 472 | 962 | 334 | 137 | 102 | 84 |
| 25 | 109 | 102 | | | | 84 | 486 | 949 | 308 | 137 | 98 | 84 |
| 26 | 109 | 96 | | | | 87 | 526 | 996 | 349 | 137 | 96 | 78 |
| 27 | 109 | 88 | | | | 84 | 569 | 1,030 | 319 | 137 | 91 | 73 |
| 28 | 109 | 96 | | | | 80 | 629 | 1,100 | 283 | 130 | 87 | 73 |
| 29 | 109 | 88 | | | | 87 | 686 | 1,030 | 276 | 122 | 91 | 91 |
| 30 | 105 | 72 | | | - | 70 | 590 | 1,060 | 256 | 122 | 87 | 96 |
| 31 | 113 | - | | | - | 67 | - | 1,030 | - | 116 | 87 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 3,526 | 123 | 105 | 114 | 0.216 | 0.25 | 6,990 |
| November | 3,023 | 123 | 72 | 101 | .191 | .21 | 6,000 |
| December | 3,015 | - | - | 97.3 | .184 | .21 | 5,980 |
| Calendar year 1948 | 106,673 | 2,250 | - | 291 | .550 | 7.49 | 211,600 |
| January | 2,635 | - | - | 85.0 | .161 | .19 | 5,230 |
| February | 2,445 | - | - | 87.3 | .165 | .17 | 4,850 |
| March | 2,723 | 106 | 67 | 87.8 | .166 | .19 | 5,400 |
| April | 8,671 | 686 | 64 | 289 | .546 | .61 | 17,200 |
| May | 29,505 | 1,450 | 440 | 952 | 1.80 | 2.07 | 58,520 |
| June | 17,174 | 1,030 | 256 | 572 | 1.08 | 1.21 | 34,060 |
| July | 5,411 | 244 | 116 | 175 | .331 | .38 | 10,730 |
| August | 3,196 | 116 | 87 | 103 | .195 | .22 | 6,340 |
| September | 2,650 | 102 | 73 | 88.3 | .167 | .19 | 5,260 |
| Water year 1948-49 | 83,974 | 1,450 | - | 230 | .435 | 5.90 | 166,600 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 1 to Mar. 3.

## Middle Fork Salmon River near Cape Horn, Idaho

Location.--Water-stage recorder, lat. 44°25', long. 115°11', in sec. 34, T. 13 N., R. 11 E., 1,100 feet downstream from Little Beaver Creek, half a mile downstream from confluence of Marsh and Beaver Creeks, and 2 miles northwest of Cape Horn.

Drainage area.--138 square miles.

Records available.--September 1928 to September 1949 (no winter records 1941-45).

Average discharge.--17 years (1928-41, 1945-49), 212 second-feet.

Extremes.--Maximum discharge during year, 1,690 second-feet May 15 (gage height, 5.68 feet); minimum recorded, 43 second-feet Nov. 7 (gage height, 2.22 feet), but may have been less during winter period.
1928-49: Maximum discharge, 2,340 second-feet June 9, 1933, about May 31, 1943, June 3, 1948; maximum gage height, 6.26 feet June 9, 1933, June 3, 1948; minimum discharge recorded, 31 second-feet Apr. 14, 1945 (gage height, 2.12 feet), but may have been less during some winters.

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

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 101 | 99 | | | | | 68 | 386 | 1,080 | 264 | 127 | 89 |
| 2 | 99 | 117 | | | | | 66 | 431 | 930 | 251 | 127 | 89 |
| 3 | 99 | 111 | | | | | f66 | 402 | 814 | 238 | 121 | 89 |
| 4 | 117 | 98 | | | | | 68 | 371 | 779 | 235 | 119 | 89 |
| 5 | 132 | 96 | | | | | 73 | 382 | 838 | 235 | 117 | 94 |
| 6 | 117 | 96 | | | | | 80 | 431 | 1,000 | 229 | 117 | 94 |
| 7 | 115 | 83 | | | | | 83 | 518 | 1,060 | 215 | 113 | 90 |
| 8 | 113 | 80 | 85 | | | | 85 | 615 | 1,020 | 206 | 113 | 89 |
| 9 | 107 | 82 | | (*) | | | 87 | 740 | 982 | 201 | 113 | 87 |
| 10 | 103 | 95 | | | | | 92 | 923 | 975 | 198 | 117 | 89 |
| 11 | 99 | 95 | | | | | 103 | 1,090 | 988 | 201 | 117 | 99 |
| 12 | 98 | 95 | | | | | 113 | 1,220 | 892 | 195 | 113 | 98 |
| 13 | 96 | 90 | | | | | 103 | 1,310 | 768 | 187 | 109 | 92 |
| 14 | 99 | 90 | | | | | 103 | 1,410 | 686 | 182 | 107 | 89 |
| 15 | 105 | 92 | | 65 | 65 | 70 | 107 | 1,480 | 620 | 174 | 107 | 89 |
| 16 | 98 | 92 | | | | | 117 | 1,540 | 570 | 164 | 107 | 103 |
| 17 | 94 | 92 | | | | | 141 | 1,470 | 509 | 164 | 107 | 96 |
| 18 | 94 | | | | | | 172 | 1,390 | 469 | 162 | 107 | 90 |
| 19 | 92 | | | | | | 198 | 1,300 | 496 | 159 | 103 | 89 |
| 20 | 92 | | | | | | 201 | 1,190 | 456 | 157 | 101 | 85 |
| 21 | 92 | | | | | | 190 | 1,140 | 406 | 155 | 99 | 85 |
| 22 | 90 | | | | | | 209 | 1,100 | 386 | 150 | 98 | 83 |
| 23 | 90 | | | | | | 242 | 1,040 | 371 | 147 | 105 | 83 |
| 24 | 90 | 90 | 70 | | | | 280 | 1,000 | 355 | 145 | 101 | 82 |
| 25 | 92 | | | | | | 308 | 1,040 | 340 | 143 | 98 | 82 |
| 26 | 89 | | | | | | 333 | 1,120 | 340 | 143 | 96 | 82 |
| 27 | 87 | | | | | | 375 | 1,210 | 322 | 141 | 94 | 80 |
| 28 | 87 | | | | | | 423 | 1,300 | 298 | 138 | 94 | 83 |
| 29 | 89 | | | | - | | 456 | 1,390 | 284 | 134 | 92 | 92 |
| 30 | 89 | | | | - | | 414 | 1,300 | 274 | 130 | 92 | 87 |
| 31 | 92 | - | | | - | | - | 1,240 | - | 130 | 90 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 3,057 | 132 | 87 | 98.6 | 0.714 | 0.82 | 6,060 |
| November | 2,773 | 117 | 80 | 92.4 | .670 | .75 | 5,500 |
| December | 2,395 | - | - | 77.3 | .560 | .65 | 4,750 |
| Calendar year 1948 | 98,726 | - | - | 270 | 1.96 | 26.62 | 195,800 |
| January | 2,015 | - | - | 65.0 | .471 | .54 | 4,000 |
| February | 1,820 | - | - | 65.0 | .471 | .49 | 3,610 |
| March | 2,170 | - | - | 70.0 | .507 | .58 | 4,300 |
| April | 5,356 | 456 | 66 | 179 | 1.30 | 1.44 | 10,620 |
| May | 31,479 | 1,540 | 371 | 1,015 | 7.36 | 8.48 | 62,440 |
| June | 19,308 | 1,080 | 274 | 644 | 4.67 | 5.20 | 38,300 |
| July | 5,573 | 264 | 130 | 180 | 1.30 | 1.50 | 11,050 |
| August | 3,321 | 127 | 90 | 107 | .775 | .89 | 6,590 |
| September | 2,668 | 103 | 80 | 88.9 | .644 | .72 | 5,290 |
| Water year 1948-49 | 81,935 | 1,540 | - | 224 | 1.62 | 22.06 | 162,500 |

Peak discharge (base, 930 sec.-ft.).--May 15 (10 p.m.) 1,690 sec.-ft.; May 29 (7 p.m.) 1,450 sec.-ft.; June 6 (9 p.m.) 1,170 sec.-ft.

* Winter discharge measurement made on this dazy

f Computed from partly estimated gage-height record.

Note.--Stage-discharge relation affected by ice Nov. 8-12, about Nov. 17 to about Mar. 15. No gage-height record Nov. 18 to Jan. 8, Jan. 18 to Apr. 2; discharge computed on basis of weather records and records for nearby streams.

## Bear Valley Creek near Cape Horn, Idaho

Location.--Water-stage recorder, lat. 44°26', long. 115°17', in sec. 29, T. 13 N., R.1 E., 250 feet downstream from Fir Creek, 3 miles upstream from mouth, and 7 miles northwest of Cape Horn.

Drainage area.--180 square miles.

Records available.--September 1921 to September 1928 (fragmentary); October 1928 to September 1949 (no winter records 1941-45).

Average discharge.--17 years (1928-41, 1945-49), 258 second-feet.

Extremes.--Maximum discharge during year, 2,530 second-feet May 16 (gage height, 4.83 feet); minimum recorded, 57 second-feet Nov. 7 (gage height, 1.07 feet), but may have been less during period of ice effect or no gage-height record.
1921-49: Maximum discharge, 3,450 second-feet June 9, 1933 (gage height, 5.49 feet), from rating curve extended above 2,000 second-feet; minimum recorded, 28 second-feet Nov. 11, 1931.

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

Revisions.--W 573: Drainage area.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 117 | 124 | | | | | 93 | 516 | 1,550 | 304 | 135 | 100 |
| 2 | 114 | 164 | | | | | 97 | 603 | 1,270 | 288 | 133 | 98 |
| 3 | 112 | 170 | | | | | *102 | 615 | 1,110 | 275 | 128 | 98 |
| 4 | 124 | 143 | | | | | 104 | 550 | 1,070 | 267 | 126 | 98 |
| 5 | 182 | 121 | | | | | 110 | 567 | 1,100 | 263 | 121 | 100 |
| 6 | 151 | 124 | | | | | 119 | 657 | 1,190 | 259 | 119 | 102 |
| 7 | 140 | 98 | | | | | 121 | 779 | 1,230 | 244 | 117 | 100 |
| 8 | 140 | 98 | 95 | | | 85 | 130 | 924 | 1,190 | 233 | 119 | 98 |
| 9 | 130 | 98 | | | | | 130 | 1,100 | 1,150 | 225 | 119 | 96 |
| 10 | 124 | 110 | | (*) | | | 151 | 1,310 | 1,110 | 222 | 121 | 96 |
| 11 | 119 | 109 | | | | | 170 | 1,510 | 1,100 | 215 | 133 | 108 |
| 12 | 117 | 108 | | | | | 188 | 1,740 | 1,020 | 211 | 128 | 119 |
| 13 | 114 | 107 | | | | | 179 | 1,860 | 889 | 201 | 121 | 110 |
| 14 | 117 | 104 | | | | | 170 | 1,930 | 798 | 191 | 117 | 104 |
| 15 | 119 | 104 | | 75 | 75 | | 176 | 2,050 | 727 | 185 | 114 | 102 |
| 16 | 114 | | | | | | 191 | 2,380 | 669 | 182 | 112 | 114 |
| 17 | 110 | | | | | | 222 | 2,130 | 609 | 176 | 112 | 117 |
| 18 | 110 | | | | | | 259 | 1,970 | 567 | 173 | 124 | 108 |
| 19 | 110 | | | | | | 296 | 1,680 | 603 | 170 | 119 | 104 |
| 20 | 110 | | | | | | 288 | 1,590 | 633 | 167 | 112 | 102 |
| 21 | 108 | | | | | | 271 | 1,560 | 516 | 167 | 108 | 100 |
| 22 | 108 | | | | | | 292 | 1,540 | 472 | 164 | 106 | 100 |
| 23 | 108 | 100 | | | | | 357 | 1,450 | 445 | 158 | 112 | 100 |
| 24 | 108 | | 80 | | | 90 | 405 | 1,370 | 420 | 156 | 112 | 98 |
| 25 | 112 | | | | | | 456 | 1,360 | 395 | 153 | 108 | 96 |
| 26 | 108 | | | | | | 500 | 1,430 | 390 | 151 | 106 | 96 |
| 27 | 104 | | | | | | 555 | 1,550 | 381 | 148 | 104 | 96 |
| 28 | 102 | | | | | | 615 | 1,650 | 353 | 145 | 104 | 100 |
| 29 | 110 | | | | | | 657 | 1,730 | 330 | 143 | 104 | 119 |
| 30 | 106 | | | | - | | 573 | 1,750 | 317 | 138 | 102 | 112 |
| 31 | 110 | - | | | - | | - | 1,570 | - | 135 | 100 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 3,658 | 182 | 102 | 118 | 0.656 | 0.76 | 7,260 |
| November | 3,282 | 170 | - | 109 | .606 | .68 | 6,510 |
| December | 2,705 | - | - | 87.3 | .485 | .56 | 5,370 |
| Calendar year 1948 | 115,221 | 2,620 | - | 315 | 1.75 | 23.81 | 228,500 |
| January | 2,325 | - | - | 75.0 | .417 | .48 | 4,610 |
| February | 2,100 | - | - | 75.0 | .417 | .43 | 4,170 |
| March | 2,715 | - | - | 87.6 | .487 | .56 | 5,390 |
| April | 7,977 | 657 | 93 | 266 | 1.48 | 1.65 | 15,820 |
| May | 43,421 | 2,380 | 516 | 1,401 | 7.78 | 8.97 | 86,120 |
| June | 23,604 | 1,550 | 317 | 787 | 4.37 | 4.88 | 46,820 |
| July | 6,109 | 304 | 135 | 197 | 1.09 | 1.26 | 12,120 |
| August | 3,596 | 135 | 100 | 116 | .644 | .74 | 7,130 |
| September | 3,091 | 119 | 96 | 103 | .572 | .64 | 6,130 |
| Water year 1948-49 | 104,583 | 2,380 | - | 287 | 1.59 | 21.61 | 207,400 |

Peak discharge (base, 1,200 sec.-ft.).--May 16 (9:30 a.m.) 2,530 sec.-ft.; May 30 (8 a.m.) 1,870 sec.-ft.

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 8-14, Nov. 16 to Mar. 15. No gage-height record Dec. 11 to Jan. 9, Jan. 11 to Apr. 2; discharge computed on basis of weather records and records for nearby streams.

## Big Creek near Big Creek, Idaho

Location.--Water-stage recorder, lat. 45°07', long. 114°55', in sec. 31, T. 21 N., R. 13 E., 1 mile downstream from Cabin Creek, 1½ miles southeast of Wallace Ranch, and 19 miles east of Big Creek post office. Prior to Oct. 22, 1948, staff gage at site a quarter of a mile downstream at different datum.

Drainage area.--470 square miles.

Records available.--September 1944 to September 1949.

Extremes.--Maximum discharge during year, 3,460 second-feet May 16 (gage height, 5.65 feet); minimum not determined, occurred during period of ice effect or no gage-height record.

1944-49: Maximum discharge, 5,800 second-feet June 3, 1948 (gage height, 7.12 feet, from floodmark, former site and datum), from rating curve extended above 3,000 second-feet by logarithmic plotting; minimum observed, 66 second-feet Dec. 17, 1946 (discharge measurement), but may have been less during period of ice effect.

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

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 224 | 176 | 179 | | | | 132 | 978 | 1,990 | 532 | 238 | 162 |
| 2 | 208 | 207 | 176 | | | | 139 | 1,110 | 1,740 | 518 | 238 | 159 |
| 3 | 210 | 221 | 170 | | | | 142 | 1,170 | 1,560 | 504 | 230 | 159 |
| 4 | 235 | 199 | 149 | | | | 151 | 996 | 1,480 | 504 | 225 | 159 |
| 5 | 350 | 176 | 139 | | | | 179 | 888 | 1,630 | 497 | 221 | 168 |
| 6 | 280 | 179 | 144 | | | | 230 | 862 | 1,910 | 490 | 217 | 173 |
| 7 | 260 | 156 | 144 | | | | 284 | 942 | 2,030 | 458 | 214 | 165 |
| 8 | 290 | 146 | 146 | | 120 | | 293 | 1,140 | 2,010 | 433 | 214 | 163 |
| 9 | 270 | 132 | 146 | | | | 293 | 1,400 | 1,910 | 421 | 214 | 165 |
| 10 | 250 | 173 | 154 | | | | 324 | 1,730 | 1,890 | 409 | 221 | 165 |
| 11 | 240 | 173 | 149 | (*) | | | 421 | 2,150 | 1,840 | 398 | 238 | 196 |
| 12 | 230 | 162 | 149 | | | | 567 | 2,580 | 1,690 | 386 | 217 | 185 |
| 13 | 222 | 159 | 124 | | | | 477 | 2,790 | 1,500 | 368 | 225 | 173 |
| 14 | 222 | 156 | 132 | | | | 403 | 3,200 | 1,360 | 352 | 210 | 168 |
| 15 | 204 | 173 | 140 | | | 130 | 392 | 3,290 | 1,250 | 340 | 203 | 159 |
| 16 | 197 | 162 | 120 | 120 | | | 440 | 3,410 | 1,180 | 330 | 199 | 196 |
| 17 | 187 | 162 | 110 | | | | 588 | 3,110 | 1,090 | 318 | 199 | 196 |
| 18 | 187 | 146 | 110 | | | | 750 | 2,400 | 978 | 308 | 199 | 176 |
| 19 | 184 | 154 | 120 | | | | 838 | 2,140 | 906 | 303 | 196 | 170 |
| 20 | 184 | 162 | 130 | | | | 782 | 2,150 | 888 | 298 | 189 | 162 |
| 21 | 180 | 156 | 120 | | | | 670 | 2,110 | 814 | 293 | 185 | 159 |
| 22 | 176 | 154 | 110 | | 125 | | 616 | 1,990 | 822 | 288 | 182 | 159 |
| 23 | 173 | 156 | 100 | | | | 678 | 1,940 | 790 | 274 | 179 | 159 |
| 24 | 176 | 156 | 100 | | | | 951 | 1,850 | 742 | 269 | 179 | 156 |
| 25 | 185 | 154 | 102 | | | | 1,010 | 1,930 | 726 | 269 | 176 | 154 |
| 26 | 176 | 151 | 110 | | | | 996 | 2,160 | 718 | 260 | 173 | 154 |
| 27 | 173 | 144 | 120 | | | | 1,080 | 2,490 | 670 | 255 | 170 | 151 |
| 28 | 170 | 149 | 120 | | | | 1,210 | 2,760 | 609 | 255 | 168 | 151 |
| 29 | 173 | 132 | 130 | | - | *122 | 1,250 | 2,890 | 595 | 251 | 168 | 165 |
| 30 | 173 | 111 | 130 | | - | 139 | 1,120 | 2,430 | 560 | 242 | 165 | 168 |
| 31 | 170 | - | 130 | | - | 134 | - | 2,220 | - | 242 | 162 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 6,559 | 350 | 170 | 212 | 0.451 | 0.52 | 13,010 |
| November | 4,837 | 221 | 111 | 161 | .343 | .38 | 9,590 |
| December | 4,103 | 179 | 100 | 132 | .281 | .32 | 8,140 |
| Calendar year 1948 | 219,834 | 5,480 | - | 601 | 1.28 | 17.38 | 436,000 |
| January | 3,720 | - | - | 120 | .255 | .29 | 7,380 |
| February | 3,425 | - | - | 122 | .260 | .27 | 6,790 |
| March | 4,035 | - | - | 130 | .277 | .32 | 8,000 |
| April | 17,406 | 1,250 | 132 | 580 | 1.23 | 1.38 | 34,520 |
| May | 63,206 | 3,410 | 862 | 2,039 | 4.34 | 5.00 | 125,400 |
| June | 37,878 | 2,030 | 560 | 1,263 | 2.69 | 3.00 | 75,130 |
| July | 11,065 | 532 | 242 | 357 | .760 | .88 | 21,950 |
| August | 6,214 | 238 | 162 | 200 | .426 | .49 | 12,330 |
| September | 4,997 | 196 | 151 | 167 | .355 | .40 | 9,910 |
| Water year 1948-49 | 167,445 | 3,410 | - | 459 | .977 | 13.25 | 332,200 |

Peak discharge (base, 2,000 sec.-ft.).--May 16 (7 a.m.) 3,460 sec.-ft.; May 29 (5 a.m.) 3,110 sec.-ft.; June 7 (5 a.m.) 2,120 sec.-ft.

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 15 to Mar. 15. No gage-height record Oct. 1-13, Dec. 25 to Jan. 10, Jan. 12 to Mar. 28, Sept. 8-10; discharge computed on basis of weather records and records for Johnson Creek at Yellow Pine and other nearby streams.

## South Fork Salmon River near Knox, Idaho

Location.--Water-stage recorder, lat. 44°39', long. 115°42', in NW¼ sec. 11, T. 15 N., R. 6 E., 800 feet downstream from Curtis Creek, 1 mile upstream from Warm Lake Creek, 1½ miles southwest of Knox, and 21 miles northeast of Cascade.

Drainage area.--92 square miles.

Records available.--September 1928 to September 1949.

Average discharge.--21 years, 133 second-feet.

Extremes.--Maximum discharge during year, 1,310 second-feet May 16 (gage height, 5.95 feet); minimum, 20 second-feet Oct. 28 (gage height, 2.30 feet), but may have been less during winter period.
1928-49: Maximum discharge observed, 1,560 second-feet June 9, 1933 (gage height, 4.69 feet, site and datum then in use), from rating curve extended above 1,000 second-feet; minimum observed, 16 second-feet Feb. 17, Aug. 19, 20, 1931, Nov. 16, 1944.

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

Revisions (water years).--W 1043: 1943.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 2.4 | 28 | 3.0 | 116 | 4.5 | 580 |
| 2.5 | 37 | 3.3 | 179 | 5.0 | 817 |
| 2.6 | 48 | 3.6 | 254 | 5.9 | 1,280 |
| 2.7 | 62 | 4.0 | 384 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 42 | 49 | 43 | | | 35 | 52 | 370 | 782 | 140 | 59 | 37 |
| 2 | 41 | 106 | 45 | | | *35 | 56 | 530 | 670 | 130 | 58 | 36 |
| 3 | 40 | 90 | 45 | | | 38 | 58 | 489 | 606 | 128 | 55 | 36 |
| 4 | 58 | 62 | 43 | | | 38 | 65 | 398 | 602 | 122 | 52 | 36 |
| 5 | 76 | 49 | 41 | | | 39 | 81 | 370 | 652 | 118 | 51 | 36 |
| 6 | 54 | 47 | 42 | | | 39 | 95 | 380 | 694 | 116 | 49 | 38 |
| 7 | 51 | 35 | 41 | | | 39 | *108 | 420 | 689 | 112 | 49 | 37 |
| 8 | 51 | 35 | 41 | | | 40 | 114 | 493 | 665 | 108 | 49 | 35 |
| 9 | 48 | 35 | 42 | | | 40 | 130 | 589 | 638 | 105 | 49 | 34 |
| 10 | 46 | 45 | 43 | | | 40 | 142 | 713 | 611 | 101 | 49 | 34 |
| 11 | 45 | 45 | 43 | | | 40 | 179 | 856 | 584 | 95 | 54 | 44 |
| 12 | 42 | 45 | 42 | | | 41 | 212 | 962 | 513 | 93 | 51 | 42 |
| 13 | 42 | 46 | 40 | | | 41 | 175 | 1,010 | 447 | 90 | 49 | 39 |
| 14 | 44 | 46 | 40 | | | 41 | 161 | 1,080 | 398 | 86 | 47 | 37 |
| 15 | 46 | 56 | 40 | | | 42 | 170 | 1,200 | 363 | 84 | 45 | 36 |
| | | | | 35 | 35 | | | | | | | |
| 16 | 42 | 47 | | | | 45 | 197 | 1,250 | 329 | 81 | 45 | 42 |
| 17 | 41 | *47 | | | | 47 | 251 | 1,160 | 296 | 81 | 44 | 39 |
| 18 | 41 | 40 | | | | 48 | 318 | 1,030 | 271 | 81 | 44 | 38 |
| 19 | 40 | 47 | | | | 51 | 296 | 922 | 289 | 79 | 44 | 36 |
| 20 | 40 | 48 | | | | 54 | 280 | 897 | 268 | 76 | 44 | 36 |
| 21 | 41 | 46 | | (*) | | 54 | 251 | 862 | 238 | 76 | 41 | 35 |
| 22 | 41 | 46 | | | | 51 | 289 | 812 | 222 | 74 | 40 | 35 |
| 23 | 40 | 45 | | | | 51 | 346 | 762 | 210 | 72 | 41 | 35 |
| 24 | 42 | 44 | 35 | | | 49 | 406 | 747 | 197 | 72 | 41 | 34 |
| 25 | 47 | 42 | | | | 48 | 388 | 772 | 188 | 70 | 39 | 33 |
| 26 | 44 | 41 | | | | 52 | 380 | 862 | 181 | 69 | 39 | 34 |
| 27 | 41 | 40 | | | | 49 | 406 | 962 | 170 | 67 | 39 | 33 |
| 28 | 39 | 46 | | | | 55 | 439 | 1,000 | 164 | 65 | 38 | 36 |
| 29 | 40 | 46 | | | | 52 | 450 | 1,120 | 155 | 65 | 38 | 48 |
| 30 | 40 | 38 | | | - | 51 | 380 | 994 | 146 | 62 | 38 | 40 |
| 31 | 42 | - | | | - | 49 | - | 927 | - | 59 | 37 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff: Inches | Runoff: Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 1,387 | 76 | 39 | 44.7 | 0.486 | 0.56 | 2,750 |
| November | 1,454 | 106 | 35 | 48.5 | .527 | .59 | 2,880 |
| December | 1,191 | 45 | - | 38.4 | .417 | .48 | 2,360 |
| Calendar year 1948 | 59,621 | 1,260 | - | 163 | 1.77 | 24.11 | 118,200 |
| January | 1,085 | - | - | 35.0 | .380 | .44 | 2,150 |
| February | 980 | - | - | 35.0 | .380 | .40 | 1,940 |
| March | 1,394 | 55 | 35 | 45.0 | .489 | .56 | 2,760 |
| April | 6,875 | 450 | 52 | 229 | 2.49 | 2.78 | 13,640 |
| May | 24,940 | 1,250 | 370 | 805 | 8.75 | 10.08 | 49,470 |
| June | 12,238 | 782 | 146 | 408 | 4.43 | 4.95 | 24,270 |
| July | 2,777 | 140 | 59 | 89.6 | .974 | 1.12 | 5,510 |
| August | 1,418 | 59 | 37 | 45.7 | .497 | .57 | 2,810 |
| September | 1,111 | 48 | 33 | 37.0 | .402 | .45 | 2,200 |
| Water year 1948-49 | 56,850 | 1,250 | - | 156 | 1.70 | 22.98 | 112,700 |

Peak discharge (base, 600 sec.-ft.).--May 16 (2:30 a.m.) 1,310 sec.-ft.; May 29 (10 p.m.) 1,230 sec.-ft.; June 6 (9 p.m.) 762 sec.-ft.
* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 7-12, 18, 24-27, Nov. 29 to Mar. 2. No gage-height record Dec. 18 to Jan. 20, Jan. 26 to Mar. 1; discharge computed on basis of weather records and records for Johnson Creek at Yellow Pine and other nearby streams.

## Johnson Creek near Landmark ranger station, Idaho

Location.--Water-stage recorder, lat. 44°41', long. 115°33', in sec. 31, T. 16 N., R. 8 E., 0.5 mile downstream from Bob Cat Creek, 0.8 mile upstream from Lunch Creek, 1½ miles north of Landmark ranger station, and 20 miles south of Yellow Pine.
Drainage area.--54.7 square miles.
Records available.--October 1942 to October 1949 (discontinued).
Extremes.--Maximum discharge during period October 1948 to October 1949, 1,340 second-feet May 16 (gage height, 5.79 feet); minimum recorded, 9.9 second-feet Sept. 8-10 (gage height, 1.81 feet), but may have been less during period of ice effect.
1942-49: Maximum discharge, 1,510 second-feet May 27, 1948 (gage height, 5.95 feet); minimum observed, 7.8 second-feet Feb. 6, 1943 (discharge measurement), but may have been less some winters; minimum gage height recorded, 1.79 feet Nov. 25, 1943, Nov. 16, 1944.
Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. During late fall of 1936, the Bureau of Reclamation cut a trans-mountain canal to divert a small flow from a tributary of Johnson Creek to Deadwood River Basin to supplement storage in Deadwood Reservoir. Discharge measurement of July 20 indicated flow in this canal of 3.12 second-feet.
Revisions (water years).--W 1063: 1943, 1945(M).

Discharge, in second-feet, 1948-49

1948-49

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 15 | 16 | | | | | 13 | 196 | 446 | 64 | 18 | 10 |
| 2 | 14 | 20 | | | | (*) | 14 | 244 | 372 | 60 | 17 | 10 |
| 3 | 14 | 21 | | | | | 14 | 244 | 323 | 57 | 16 | 10 |
| 4 | 22 | 19 | | | | | 15 | 216 | 320 | 53 | 15 | 10 |
| 5 | 33 | 17 | | | | | 16 | 218 | 339 | 52 | 14 | 11 |
| 6 | 24 | 18 | | | | | *17 | 249 | 366 | 49 | 14 | 12 |
| 7 | 23 | 13 | | | | | 19 | 298 | 369 | 45 | 14 | 11 |
| 8 | 25 | 13 | 15 | | | 12 | 20 | 379 | 349 | 44 | 14 | 10 |
| 9 | 22 | 14 | | | | | 20 | 468 | 333 | 43 | 14 | 9.9 |
| 10 | 20 | 17 | | | | | 23 | 592 | 323 | 42 | 14 | 10 |
| 11 | 18 | | | | | | 28 | 752 | 314 | 45 | 18 | 15 |
| 12 | 18 | | | (*) | | | 36 | 813 | 274 | 38 | 15 | 15 |
| 13 | 17 | | | | | | 35 | 802 | 233 | 36 | 14 | 13 |
| 14 | 17 | | | | | | 34 | 938 | 208 | 34 | 14 | 12 |
| 15 | 18 | | | | | | 40 | 1,100 | 190 | 32 | 14 | 12 |
| | | | | 12 | 12 | | | | | | | |
| 16 | 16 | | | | | | 46 | 1,180 | 170 | 30 | 13 | 15 |
| 17 | 15 | | | | | | 60 | 871 | 157 | 29 | 12 | 14 |
| 18 | 14 | | | | | | 70 | 731 | 144 | 28 | 13 | 13 |
| 19 | 14 | | | | | | 80 | 642 | 159 | 27 | 12 | 12 |
| 20 | 14 | | | (*) | | | 76 | 623 | 155 | 26 | 12 | 12 |
| | | 16 | | | | | | | | | | |
| 21 | 14 | | | | | | 71 | 614 | 129 | 25 | 12 | 11 |
| 22 | 14 | | | | | | 72 | 578 | 119 | 24 | 11 | 11 |
| 23 | 14 | | | | | | 95 | 529 | 112 | 23 | 12 | 11 |
| 24 | 14 | | 13 | | | 13 | 129 | 514 | 103 | 22 | 12 | 11 |
| 25 | 17 | | | | | | 161 | 514 | 96 | 22 | 12 | 11 |
| 26 | 15 | | | | | | 181 | 554 | 93 | 21 | 12 | 10 |
| 27 | 14 | | | | | | 208 | 605 | 90 | 21 | 11 | 10 |
| 28 | 16 | | | | | | 238 | 627 | 80 | 19 | 11 | 11 |
| 29 | 14 | | | | - | | 257 | 614 | 77 | 18 | 11 | 15 |
| 30 | 14 | | | | - | | 223 | 545 | 70 | 18 | 11 | 14 |
| 31 | 14 | - | | | - | | - | 506 | - | 18 | 11 | - |

Peak discharge (base, 600 sec.-ft.).--May 16 (3 a.m.) 1,340 sec.-ft.; May 28 (4 a.m.) 710 sec.-ft.
* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 3 to Apr. 21 (no gage-height record Dec. 29 to Jan. 11, Jan. 23 to Mar. 1; discharge computed on basis of weather records and records for station at Yellow Pine and other stations on nearby streams.

1949

| Day | Discharge | Day | Discharge |
|---|---|---|---|
| Oct. 1 | 15 | Oct. 4 | 12 |
| 2 | 13 | 5 | 24 |
| 3 | 12 | 6 | 23 |

Monthly discharge, in second-feet, 1948-49

| Month | Second-feet-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October 1948 | 533 | 33 | 14 | 17.2 | 0.314 | 0.36 | 1,060 |
| November | 488 | 21 | - | 16.3 | .298 | .33 | 968 |
| December | 433 | - | - | 14.0 | .256 | .29 | 859 |
| Calendar year 1948 | 37,144 | 1,240 | - | 102 | 1.86 | 25.24 | 73,670 |
| January 1949 | 372 | - | - | 12.0 | .219 | .25 | 738 |
| February | 336 | - | - | 12.0 | .219 | .23 | 666 |
| March | 388 | - | - | 12.5 | .229 | .26 | 770 |
| April | 2,311 | 257 | 13 | 77.0 | 1.41 | 1.57 | 4,580 |
| May | 17,756 | 1,180 | 196 | 573 | 10.5 | 12.07 | 35,220 |
| June | 6,513 | 446 | 70 | 217 | 3.97 | 4.43 | 12,920 |
| July | 1,065 | 64 | 18 | 34.4 | .629 | .72 | 2,110 |
| August | 413 | 18 | 11 | 13.3 | .243 | .28 | 819 |
| September | 351.9 | 15 | 9.9 | 11.7 | .214 | .24 | 698 |
| Water year 1948-49 | 30,959.9 | 1,180 | - | 84.8 | 1.55 | 21.05 | 61,410 |
| October 1-6, 1949 | 99 | 24 | 12 | 16.5 | .302 | .07 | 196 |

## Johnson Creek at Yellow Pine, Idaho

Location.--Water-stage recorder, lat. 44°58', long. 115°30', in NE¼ sec. 29, T. 19 N., R. 8 E., 700 feet upstream from mouth and a quarter of a mile southwest of Yellow Pine post office.

Drainage area.--213 square miles.

Records available.--August 1928 to September 1949.

Average discharge.--21 years, 314 second-feet.

Extremes.--Maximum discharge during year, 4,610 second-feet May 16 (gage height, 7.00 feet); minimum, 51 second-feet Feb. 12, Mar. 29 (gage height, 1.01 feet).
1928-49: Maximum discharge, 5,150 second-feet June 9, 1933 (gage height, 7.62 feet), from rating curve extended above 2,800 second-feet; minimum, 22 second-feet Nov. 30, 1933; minimum gage height, 0.70 foot Nov. 30, 1937.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Small diversion from Johnson Creek Basin to Deadwood River Basin (see Remarks for station near Landmark ranger station).

Rating table, water year 1948-49 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 8 to Sept. 30)

| | | | | | |
|---|---|---|---|---|---|
| 1.0 | 50 | 1.9 | 260 | 4.0 | 1,420 |
| 1.1 | 64 | 2.3 | 418 | 4.5 | 1,830 |
| 1.2 | 80 | 2.6 | 560 | 5.0 | 2,300 |
| 1.4 | 118 | 3.0 | 770 | 5.7 | 3,050 |
| 1.6 | 167 | 3.5 | 1,070 | 6.5 | 3,990 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 94 | 98 | 87 | 74 | 75 | 72 | 75 | 759 | 1,910 | 401 | 125 | 74 |
| 2 | 89 | 118 | 94 | 70 | 74 | 72 | 80 | 975 | 1,610 | 379 | 120 | 74 |
| 3 | 89 | 120 | 93 | a68 | 74 | 74 | 78 | 975 | 1,450 | 359 | 116 | 72 |
| 4 | 98 | 104 | 87 | a66 | 75 | 74 | 85 | 820 | 1,510 | 346 | 112 | 72 |
| 5 | 149 | 91 | 85 | a70 | 72 | 74 | 94 | 776 | 1,720 | 330 | 108 | 75 |
| 6 | 118 | 98 | 87 | 74 | 72 | 75 | 104 | 837 | 1,840 | 319 | 106 | 75 |
| 7 | 110 | 72 | 85 | 75 | 72 | 75 | 116 | 981 | 1,960 | 300 | 102 | 74 |
| 8 | 123 | 72 | 85 | 72 | 72 | 74 | 123 | 1,200 | 1,780 | 282 | 102 | 72 |
| 9 | 114 | 75 | 87 | a68 | 74 | 74 | 127 | 1,500 | 1,690 | 271 | 102 | 70 |
| 10 | 106 | 94 | 89 | a64 | 67 | 74 | 149 | 1,830 | 1,700 | 260 | 102 | 70 |
| 11 | 102 | 94 | 89 | a65 | 61 | 74 | 187 | 2,300 | 1,680 | 250 | 108 | 80 |
| 12 | 96 | 94 | 87 | a66 | 61 | 75 | 237 | 2,640 | 1,460 | 240 | 106 | 89 |
| 13 | 93 | 93 | 78 | a68 | 67 | 74 | 218 | 2,750 | 1,250 | 227 | 104 | 82 |
| 14 | 93 | 93 | 82 | a70 | 77 | 75 | 208 | 2,350 | 1,120 | 215 | 100 | 77 |
| 15 | 96 | 100 | 84 | a72 | 75 | 75 | 224 | 3,350 | 1,040 | 205 | 96 | 74 |
| 16 | 93 | 94 | 69 | a70 | 75 | 78 | 260 | 3,950 | 951 | 193 | 94 | 87 |
| 17 | 89 | 93 | 64 | a76 | 74 | 77 | 323 | 3,070 | 843 | 184 | 94 | 89 |
| 18 | 87 | 80 | 64 | a80 | 74 | 80 | 405 | 2,630 | 770 | 182 | 96 | 80 |
| 19 | 87 | 94 | 69 | a80 | 75 | 82 | 458 | 2,350 | 792 | 176 | 93 | 77 |
| 20 | 85 | 94 | 75 | 77 | 70 | 82 | 445 | 2,340 | 776 | 170 | 89 | 74 |
| 21 | 87 | 93 | 69 | 77 | 72 | 78 | 418 | 2,290 | 693 | 170 | 87 | 72 |
| 22 | 85 | 93 | 63 | a68 | 74 | 78 | 427 | 2,130 | 666 | 164 | 85 | 72 |
| 23 | 85 | 91 | a60 | a68 | 75 | 78 | 501 | 2,010 | 630 | 157 | 85 | 70 |
| 24 | 85 | 93 | a60 | a68 | 72 | 77 | 630 | 1,990 | 595 | 154 | 87 | 69 |
| 25 | 94 | 89 | a60 | a66 | 72 | 75 | 693 | 2,060 | 565 | 151 | 82 | 67 |
| 26 | 91 | 87 | 66 | a70 | 72 | 77 | 742 | 2,300 | 550 | 146 | 82 | 67 |
| 27 | 87 | 80 | 69 | a74 | 72 | 77 | 837 | 2,650 | 515 | 141 | 80 | 66 |
| 28 | 84 | 89 | 70 | a72 | 72 | 72 | 945 | 2,740 | 477 | 139 | 78 | 70 |
| 29 | 89 | 80 | 74 | a72 | - | 72 | 957 | 2,810 | 458 | 134 | 78 | 91 |
| 30 | 85 | 74 | 72 | 77 | - | 80 | 843 | 2,360 | 427 | 130 | 77 | 84 |
| 31 | 87 | - | 72 | 78 | - | 77 | - | 2,190 | - | 127 | 75 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 2,970 | 149 | 84 | 95.8 | 0.450 | 0.52 | 5,890 |
| November | 2,740 | 120 | 72 | 91.3 | .429 | .48 | 5,430 |
| December | 2,375 | 94 | 60 | 76.6 | .360 | .41 | 4,710 |
| Calendar year 1948 | 147,162 | 4,070 | 60 | 402 | 1.89 | 25.69 | 291,900 |
| January | 2,215 | 80 | 64 | 71.5 | .336 | .39 | 4,390 |
| February | 2,017 | 77 | 61 | 72.0 | .338 | .35 | 4,000 |
| March | 2,351 | 82 | 72 | 75.8 | .356 | .41 | 4,660 |
| April | 10,989 | 957 | 75 | 366 | 1.72 | 1.92 | 21,800 |
| May | 63,913 | 3,950 | 759 | 2,062 | 9.68 | 11.16 | 126,800 |
| June | 33,428 | 1,960 | 427 | 1,114 | 5.23 | 5.84 | 66,300 |
| July | 6,902 | 401 | 127 | 223 | 1.05 | 1.21 | 13,690 |
| August | 2,971 | 125 | 75 | 95.8 | .450 | .52 | 5,890 |
| September | 2,265 | 91 | 66 | 75.5 | .354 | .40 | 4,490 |
| Water year 1948-49 | 135,136 | 3,950 | 60 | 370 | 1.74 | 23.61 | 268,000 |

Peak discharge (base, 1,800 sec.-ft.).--May 16 (5:30 a.m.) 4,610 sec.-ft.; May 27 (10:30 p.m.) 3,160 sec.-ft.; June 7 (1:30 a.m.) 2,170 sec.-ft.

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

## Secesh River near Burgdorf, Idaho

Location.--Water-stage recorder, lat. 45°14', long. 115°49', in SW¼ sec. 23, T. 22 N., R. 5 E., 760 feet upstream from Long Gulch Creek and 5⅔ miles southeast of Burgdorf. Prior to Oct. 1, 1948, water-stage recorder at site 1 mile upstream at different datum.

Drainage area.--104 square miles; 102 square miles at former site.

Records available.--October 1948 to September 1949, April 1943 to September 1948 at site 1 mile upstream.

Extremes.--Maximum discharge during year, 1,420 second-feet May 16 (gage height, 5.57 feet); minimum not determined, occurred during winter period.

1943-49: Maximum discharge, 2,500 second-feet June 3, 1948 (gage height, 8.24 feet, site and datum then in use), by slope-area method; minimum observed, 29 second-feet (discharge measurement) Jan. 30, 1945, but may have been less during periods of ice effect.

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

Rating table, water year 1948-49, except period of ice effect
(gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 1.8 | 32 | 2.9 | 229 | 4.5 | 795 |
| 1.9 | 44 | 3.3 | 333 | 4.9 | 1,020 |
| 2.2 | 89 | 3.7 | 456 | 5.5 | 1,380 |
| 2.5 | 143 | 4.1 | 608 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 70 | 67 | | | | | 37 | 417 | 910 | 202 | 68 | 39 |
| 2 | 68 | 73 | | | | | 40 | 839 | 790 | 193 | 66 | 39 |
| 3 | 68 | 78 | | | | | 40 | 650 | 700 | 182 | 62 | 39 |
| 4 | 80 | 73 | | (*) | | (*) | 45 | 506 | 682 | 171 | 61 | 42 |
| 5 | 115 | | | | | | 50 | 463 | 769 | 171 | 58 | 43 |
| 6 | 79 | | | | | | 64 | 470 | 828 | 176 | 55 | 51 |
| 7 | 87 | | | | | | 76 | 532 | 844 | 161 | 55 | 45 |
| 8 | 103 | | 60 | 45 | | | 78 | 629 | 795 | 151 | 55 | 43 |
| 9 | 87 | | | | | | 82 | 738 | 729 | 145 | 54 | 42 |
| 10 | 78 | | | | | | 98 | 905 | 700 | 139 | 54 | 43 |
| 11 | 72 | | | | | | 120 | 1,070 | 677 | 134 | 52 | 75 |
| 12 | 68 | | | | | | 150 | 1,150 | 592 | 130 | 52 | 66 |
| 13 | 64 | | | | | | 132 | 1,180 | 521 | 122 | 58 | 52 |
| 14 | 64 | | | | | | 120 | 1,250 | 474 | 117 | 54 | 48 |
| 15 | 76 | 65 | | | 35 | 35 | 130 | 1,290 | 440 | 113 | 51 | 45 |
| 16 | 67 | | | | | | 159 | 1,360 | 408 | 110 | 48 | 55 |
| 17 | 62 | | | | | | 208 | 1,260 | 383 | 104 | 47 | 54 |
| 18 | 62 | | | | | | 258 | 1,080 | 359 | 101 | 51 | 48 |
| 19 | 61 | | | | | | 283 | 1,060 | 362 | 96 | 55 | 44 |
| 20 | 60 | | | | | | 273 | 1,210 | 342 | 96 | 51 | 44 |
| 21 | 60 | | | | | | 246 | 1,060 | 311 | 96 | 47 | 44 |
| 22 | 58 | | | | | | 246 | 1,010 | 311 | 87 | 45 | 43 |
| 23 | 58 | | 45 | 40 | | | 322 | 966 | 305 | 84 | 45 | 43 |
| 24 | 60 | | | | | | 417 | 927 | 278 | 83 | 47 | 47 |
| 25 | 62 | | | | | | 404 | 672 | 260 | 81 | 45 | 40 |
| 26 | 61 | | | | | | 420 | 990 | 305 | 79 | 44 | 40 |
| 27 | 61 | | | | | | 477 | 1,070 | 273 | 78 | 43 | 40 |
| 28 | 61 | 60 | | | | | 551 | 1,150 | 239 | 78 | 42 | 43 |
| 29 | 62 | | | | - | | 555 | 1,190 | 231 | 73 | 42 | 87 |
| 30 | 60 | | | | - | | 449 | 1,120 | 213 | 70 | 40 | 67 |
| 31 | 62 | - | | | - | (*) | - | 1,000 | - | 68 | 40 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 2,156 | 115 | 58 | 69.5 | 0.668 | 0.77 | 4,280 |
| November | 1,956 | - | - | 65.2 | .627 | .70 | 3,880 |
| December | 1,620 | - | - | 52.3 | .503 | .58 | 3,210 |
| Calendar year 1948 | 88,673 | 2,080 | - | 242 | 2.33 | 32.27 | 175,900 |
| January | 1,315 | - | - | 42.4 | .408 | .47 | 2,610 |
| February | 980 | - | - | 35.0 | .337 | .35 | 1,940 |
| March | 1,085 | - | - | 35.0 | .337 | .39 | 2,150 |
| April | 6,530 | 555 | 37 | 218 | 2.10 | 2.34 | 12,950 |
| May | 29,214 | 1,360 | 417 | 942 | 9.06 | 10.45 | 57,950 |
| June | 15,031 | 910 | 213 | 501 | 4.82 | 5.38 | 29,810 |
| July | 3,691 | 202 | 68 | 119 | 1.14 | 1.32 | 7,320 |
| August | 1,587 | 68 | 40 | 51.2 | .492 | .57 | 3,150 |
| Ssptsmber | 1,446 | 87 | 39 | 48.2 | .465 | .52 | 2,870 |
| Watsr year 1948-49 | 66,611 | 1,360 | - | 182 | 1.75 | 23.84 | 132,100 |

Peak discharge (base, 900 sec.-ft.).--May 2 (5 p.m.) 1,030 sec.-ft.; May 16 (6 a.m.) 1,420 sec. ft.; May 29 (1 to 4 a.m.) 1,240 sec.-ft.

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Nov. 5 to Apr. 12. No gage-height record Oct. 1-5, Dec. 22 to Jan. 3, Jan. 5 to Mar. 3; discharge computed on basis of weather records and records for Warren Creek near Warren and other nearby streams.

## Warren Creek near Warren, Idaho

Location.--Water-stage recorder, lat. 45°17', long. 115°42', in sec. 3, T. 22 N., R. 6 E., 100 feet downstream from bridge on Warren-McCall road, a tenth of a mile downstream from Steamboat Creek, and 1.3 miles northwest of Warren.
Drainage area.--37 square miles.
Records available.--February 1943 to December 1949 (discontinued).
Extremes.--1948-49: Maximum discharge during water year, 521 second-feet May 16 (gage height, 3.72 feet); minimum, 7.7 second-feet Sept. 2, 3.
1949: Maximum discharge during period October to December, 40 second-feet Nov. 27 (gage height, 1.93 feet); minimum, 4.2 second-feet Dec. 3.
1943-49: Maximum discharge observed, 1,100 second-feet June 3, 1948 (gage height, 5.3 feet, site then in use, from floodmarks), by slope-area method; minimum, 4.2 second-feet Dec. 27, 1943, Dec. 3, 1949.
Remarks.--Records good except those for periods of no gage-height record and those for May and June, which are fair. No diversion or regulation above station. Small amount of flow bypasses station through debris from dredging operations.

Discharge, in second-feet, 1948-49

1948-49

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 14 | 17 | 14 | | | | 10 | 112 | 240 | 44 | 15 | 8.0 |
| 2 | 14 | 20 | 15 | 12 | | 10 | 11 | 174 | 212 | 42 | 14 | 7.7 |
| 3 | 13 | 23 | 15 | | | | 10 | 170 | 198 | 40 | 14 | 7.7 |
| 4 | 17 | 18 | 14 | 12 | | 10 | 12 | 151 | 190 | 38 | 13 | 7.7 |
| 5 | 22 | 16 | 14 | | | | 14 | 139 | 190 | 37 | 12 | 8.4 |
| 6 | 18 | 15 | 14 | | | | 17 | 139 | 198 | 37 | 12 | 9.4 |
| 7 | 20 | 11 | 14 | | | | 20 | 153 | 192 | 35 | 12 | 8.9 |
| 8 | 23 | 14 | 14 | | | | 20 | 180 | 180 | 32 | 12 | 8.0 |
| 9 | 20 | 14 | 14 | | | | 21 | 226 | 170 | 31 | 12 | 8.0 |
| 10 | 18 | 17 | 14 | 12 | | | 25 | 268 | 158 | 30 | 11 | 8.9 |
| 11 | 17 | 16 | 14 | | | | 34 | 349 | 149 | 29 | 11 | 16 |
| 12 | 16 | 16 | 12 | | | | 39 | 435 | 134 | 28 | 12 | 12 |
| 13 | 16 | 15 | 12 | | | | 31 | 444 | 122 | 25 | 12 | 11 |
| 14 | 17 | 16 | 14 | | | | 28 | 441 | 110 | 25 | 12 | 10 |
| 15 | 20 | 17 | 14 | | | | 29 | 435 | 104 | 23 | 11 | 9.4 |
| 16 | 18 | 16 | 13 | | 11 | | 37 | 493 | 96 | 22 | 10 | 11 |
| 17 | 16 | 16 | 13 | | | 10 | 50 | 438 | 89 | 22 | 11 | 11 |
| 18 | 16 | 14 | | | | | 62 | 378 | 83 | 21 | 11 | 10 |
| 19 | 16 | 16 | | | | | 68 | 349 | 83 | 20 | 11 | 9.8 |
| 20 | 16 | 13 | | | | | 62 | 343 | 77 | 20 | 11 | 9.4 |
| 21 | 15 | 13 | | | | | 54 | 318 | 70 | 20 | 9.8 | 9.4 |
| 22 | 15 | 13 | | | | | 54 | 310 | 71 | 19 | 9.4 | 9.4 |
| 23 | 14 | 14 | | | | | 70 | 299 | 65 | 19 | 10 | 8.9 |
| 24 | 16 | 15 | | 11 | | | 97 | 291 | 61 | 19 | 10 | 8.9 |
| 25 | 16 | 15 | 12 | | | | 98 | 291 | 58 | 18 | 9.4 | 8.4 |
| 26 | 13 | 14 | | | | | 101 | 302 | 62 | 17 | 9.4 | 8.4 |
| 27 | 14 | 14 | | | | | 117 | 329 | 59 | 17 | 9.4 | 8.4 |
| 28 | 14 | 14 | | | | | 136 | 352 | 53 | 17 | 8.9 | 9.4 |
| 29 | 15 | 12 | | | - | | 141 | 369 | 51 | 16 | 8.4 | 17 |
| 30 | 15 | 14 | | | - | | 120 | 315 | 48 | 16 | 8.4 | 16 |
| 31 | 16 | - | | | - | 10 | - | 281 | - | 15 | 8.0 | - |

Note.--No gage-height record Dec. 18 to Mar. 30 except staff-gage readings Jan. 4, Mar. 4; discharge computed on basis of 2 discharge measurements, weather records, and records for nearby streams.

1949

| Day | Oct. | Nov. | Dec. | Day | Oct. | Nov. | Dec. | Day | Oct. | Nov. | Dec. | Day | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19 | 10 | 15 | 9 | 12 | 10 | - | 17 | 10 | 9.8 | - | 25 | 11 | 22 | - |
| 2 | 13 | 9.8 | 14 | 10 | 12 | 10 | - | 18 | 11 | 9.4 | - | 26 | 11 | 19 | - |
| 3 | 12 | 10 | 6.3 | 11 | 12 | 11 | - | 19 | 8.9 | 8.4 | - | 27 | 11 | 27 | - |
| 4 | 11 | 10 | 12 | 12 | 14 | 11 | - | 20 | 9.8 | 8.0 | - | 28 | 11 | 27 | - |
| 5 | 16 | 9.8 | 14 | 13 | 13 | 10 | - | 21 | 11 | 8.4 | - | 29 | 12 | 18 | - |
| 6 | 15 | 9.4 | 13 | 14 | 12 | 11 | - | 22 | 11 | 9.4 | - | 30 | 11 | 17 | - |
| 7 | 14 | 9.8 | 12 | 15 | 12 | 8.4 | - | 23 | 11 | 12 | - | 31 | 9.8 | - | - |
| 8 | 12 | 11 | | 16 | 12 | 11 | - | 24 | 11 | 18 | - | | | | |

Monthly discharge, in second-feet, 1948-49

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October 1948 | 510 | 23 | 13 | 16.5 | 0.446 | 0.51 | 1,010 |
| November | 458 | 23 | 11 | 15.3 | .414 | .46 | 908 |
| December | 402 | 15 | - | 13.0 | .351 | .40 | 797 |
| Calendar year 1948 | 26,078.2 | 750 | 9.3 | 71.3 | 1.93 | 26.21 | 51,710 |
| January 1949 | 356 | - | - | 11.5 | .311 | .36 | 706 |
| February | 308 | - | - | 11.0 | .297 | .31 | 611 |
| March | 310 | - | - | 10.0 | .270 | .31 | 615 |
| April | 1,588 | 141 | 10 | 52.9 | 1.43 | 1.60 | 3,150 |
| May | 9,274 | 493 | 112 | 299 | 8.08 | 9.32 | 18,390 |
| June | 3,573 | 240 | 48 | 119 | 3.22 | 3.59 | 7,090 |
| July | 794 | 44 | 15 | 25.6 | .692 | .80 | 1,570 |
| August | 340.1 | 15 | 8.0 | 11.0 | .297 | .34 | 675 |
| September | 296.5 | 17 | 7.7 | 9.88 | .267 | .30 | 588 |
| Water year 1948-49 | 18,209.6 | 493 | 7.7 | 49.9 | 1.35 | 18.30 | 36,110 |
| October 1949 | 371.5 | 19 | 8.9 | 12.0 | .324 | .37 | 737 |
| November | 375.6 | 27 | 8.0 | 12.5 | .338 | .38 | 745 |
| December 1-7 | 86.3 | 15 | 6.3 | 12.3 | .332 | .09 | 171 |

## Mud Creek near Tamarack, Idaho

Location.--Water-stage recorder, lat. 45°00', long. 116°21', in sec. 9, T. 19 N., R. 1 E., 0.5 mile upstream from Little Mud Creek, 3¼ miles northeast of Tamarack, and 5 miles upstream from mouth.

Drainage area.--15.8 square miles.

Records available.--April 1937 to September 1940 (incomplete), September 1945 to September 1949.

Extremes.--Maximum discharge during year, 155 second-feet Apr. 19; maximum gage height, 4.33 feet Mar. 18 (ice jam); minimum discharge, 0.9 second-foot Oct. 19 (gage height, 2.18 feet).

1937-38, 1945-49: Maximum discharge observed, about 300 second-feet probably on May 1, 1938 (gage height, 3.34 feet, from floodmark, site and datum then in use); minimum, probably less than half a second-foot during late summer of 1937.

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

Correction.--Runoff in inches for April 1948 and runoff in inches for water year 1947-48 have been corrected to 6.96 inches and 20.89 inches, respectively, superseding figures published in Water-Supply Paper 1123.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.3 | 4.7 | 2.0 | | | | 29 | 76 | 13 | 3.1 | 1.9 | 1.4 |
| 2 | 2.2 | 11 | 2.3 | | | | 38 | 100 | 11 | 3.1 | 1.9 | 1.4 |
| 3 | 2.2 | 8.2 | 2.5 | | | 2.0 | 45 | 110 | 10 | 2.9 | 1.8 | 1.5 |
| 4 | 3.6 | 4.4 | 2.2 | | | | 58 | 95 | 9.4 | 2.9 | 1.6 | 1.5 |
| 5 | 4.0 | 3.4 | 2.4 | 2.4 | | | 74 | 81 | 8.5 | 2.9 | 1.6 | 1.5 |
| 6 | 2.7 | 2.7 | 2.5 | | | | 82 | 74 | 8.5 | 2.9 | 1.5 | 1.6 |
| 7 | 2.5 | 2.6 | 2.3 | | | | 92 | 71 | 10 | 2.7 | 1.5 | 1.6 |
| 8 | 2.0 | 2.3 | 2.4 | | | 3.0 | 93 | 72 | 7.9 | 2.5 | 1.5 | 1.5 |
| 9 | 1.5 | 2.3 | 2.6 | | | | 100 | 72 | 7.3 | 2.7 | 1.6 | 1.5 |
| 10 | 1.5 | 2.8 | 2.6 | | | | 101 | 74 | 7.0 | 2.7 | 1.8 | 1.6 |
| 11 | 1.5 | 2.6 | 2.6 | | | 3.5 | 117 | 74 | 6.5 | 2.7 | 1.8 | 1.9 |
| 12 | 1.4 | 2.5 | 2.6 | | 1.4 | 4.0 | 130 | 66 | 6.0 | 2.5 | 1.8 | 1.8 |
| 13 | 1.4 | 2.4 | 2.6 | | | 5.0 | 112 | 58 | 6.0 | 2.5 | 1.8 | 1.6 |
| 14 | 1.4 | 2.3 | 2.6 | | | 6.5 | 95 | 48 | 5.7 | 2.3 | 1.8 | 1.6 |
| 15 | 1.6 | 2.3 | 2.6 | | | 9.5 | 92 | 42 | 5.4 | 2.3 | 1.6 | 1.6 |
| 16 | 1.4 | 2.3 | 2.2 | | | 12 | 98 | 36 | 5.1 | 2.3 | 1.6 | 1.5 |
| 17 | 1.3 | 2.5 | 1.7 | | | 15 | 112 | 32 | 4.8 | 2.3 | 1.6 | 1.6 |
| 18 | 1.3 | 2.2 | 1.6 | * 2.2 | | 20 | 125 | 28 | 4.8 | 2.5 | 1.6 | 1.6 |
| 19 | 1.4 | *2.8 | 1.8 | | | 25 | 134 | 25 | 4.8 | 2.3 | 1.6 | 1.6 |
| 20 | 1.3 | 2.9 | 2.4 | | | 30 | 146 | 25 | 4.9 | 2.3 | 1.6 | 1.5 |
| 21 | 1.4 | 2.6 | 2.3 | | | 28 | 123 | 22 | 4.4 | 2.3 | 1.5 | 1.5 |
| 22 | 1.4 | 2.3 | 2.2 | | | 28 | 107 | 21 | 4.2 | 2.3 | 1.5 | 1.5 |
| 23 | 1.4 | 2.3 | 2.1 | | (*) | 29 | 110 | 18 | 3.8 | 2.2 | 1.6 | 1.5 |
| 24 | 1.4 | 2.5 | 2.2 | | | 31 | 119 | 17 | 3.8 | 2.3 | 1.8 | 1.5 |
| 25 | 1.4 | 2.4 | 2.3 | | | 31 | 110 | 16 | 3.6 | 2.2 | 1.6 | 1.5 |
| 26 | 1.5 | 2.2 | 2.5 | | 1.8 | *28 | 100 | 15 | 4.0 | 2.2 | 1.6 | 1.5 |
| 27 | 1.5 | 2.0 | 2.7 | | | 24 | 93 | 14 | 3.8 | 2.2 | 1.5 | 1.5 |
| 28 | 1.5 | 2.2 | 2.7 | 1.8 | | 22 | 93 | 14 | 3.6 | 2.0 | 1.5 | 1.6 |
| 29 | 1.6 | 2.0 | 2.7 | | - | 20 | 95 | 14 | 3.8 | 2.0 | 1.5 | 2.0 |
| 30 | 1.8 | 1.6 | 2.7 | | - | 20 | 84 | 14 | 3.4 | 2.0 | 1.4 | 2.0 |
| 31 | 2.2 | - | 2.7 | | - | 22 | - | 14 | - | 1.9 | 1.4 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 55.6 | 4.0 | 1.3 | 1.79 | 0.113 | 0.13 | 110 |
| November | 91.3 | 11 | 1.6 | 3.04 | .192 | .21 | 181 |
| December | 73.6 | 2.7 | 1.6 | 2.37 | .150 | .17 | 146 |
| Calendar year 1948 | 8,719.9 | 246 | 1.3 | 23.8 | 1.51 | 20.51 | 17,300 |
| January | 67.8 | - | - | 2.19 | .139 | .16 | 134 |
| February | 41.2 | - | - | 1.47 | .093 | .10 | 82 |
| March | 438.5 | 31 | - | 14.1 | .892 | 1.03 | 870 |
| April | 2,907 | 146 | 29 | 96.9 | 6.13 | 6.84 | 5,770 |
| May | 1,438 | 110 | 14 | 46.4 | 2.94 | 3.38 | 2,850 |
| June | 185.0 | 13 | 3.4 | 6.17 | .391 | .44 | 367 |
| July | 760 | 3.1 | 1.9 | 2.45 | .155 | .18 | 151 |
| August | 50.4 | 1.9 | 1.4 | 1.63 | .103 | .12 | 100 |
| September | 47.5 | 20 | 1.4 | 1.58 | .100 | .11 | 94 |
| Water year 1948-49 | 5,471.9 | 146 | - | 15.0 | .949 | 12.87 | 10,860 |

Peak discharge (base, 100 sec.-ft.).--Apr. 11 (8 p.m.) 136 sec.-ft.; Apr. 19 (12 p.m.) 155 sec.-ft.; May 2 (6 p.m.) 117 sec.-ft.

* Winter discharge measurement made on this day.

Note.-- Stage-discharge relation affected by ice Nov. 7-14, 17-19, 21, Nov. 24 to Mar. 20. No gage-height record Dec. 19 to Jan. 17, Jan. 20 to Feb. 9, Feb. 13-15, Mar. 6-9, June 15-19, discharge computed on basis of weather records and records for Weiser River at Starkey and at Tamarack.

## Grande Ronde River near Hilgard, Oreg.

Location.--Water-stage recorder, lat. 45°19', long. 118°16', near center of sec. 11, T. 3 S., R. 36 E., half a mile upstream from lower reservoir site of Bureau of Reclamation, three-quarters of a mile upstream from Spring Creek, and 3 miles southwest of Hilgard.
Drainage area.--489 square miles.
Records available.--October 1945 to September 1949 in reports of Geological Survey. March 1937 to Spetmeber 1941 in reports of State engineer; October 1941 to September 1945 in files of State engineer.
Average discharge.--12 years, 264 second-feet.
Extremes.--Maximum discharge during year, 2,220 second-feet Mar. 19; maximum gage height, 4.55 feet Feb. 23 (ice jam); minimum discharge, 13 second feet Nov. 8 (gage height, 0.82 foot).
1937-49: Maximum discharge, 3,300 second-feet May 28, 1948 (gage height, 5.26 feet); minimum, 6 second-feet Aug. 10, 12-29, Sept. 1-4, 1940.
Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No regulation. Several small diversions above station for irrigation.

**Rating tables, water year 1948-49, except periods of ice effect**
**(gage height, in feet, and discharge, in second-feet)**
**(Backwater from debris Apr. 12, Sept. 9-30)**

| Oct. 1 to Apr. 6 | | | | | | Apr. 7 to Sept. 30 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.9 | 19 | 1.4 | 116 | 2.6 | 600 | 1.0 | 13 | 1.5 | 62 | 2.4 | 410 |
| 1.0 | 29 | 1.5 | 149 | 3.0 | 800 | 1.1 | 17 | 1.6 | 84 | 2.8 | 610 |
| 1.1 | 43 | 1.7 | 221 | 3.5 | 1,110 | 1.2 | 24 | 1.7 | 112 | 3.3 | 890 |
| 1.2 | 63 | 1.9 | 300 | 4.0 | 1,560 | 1.3 | 33 | 1.9 | 184 | 3.8 | 1,260 |
| 1.3 | 87 | 2.2 | 420 | 4.4 | 2,050 | 1.4 | 46 | 2.1 | 270 | 4.3 | 1,750 |

**Discharge, in second-feet, water year October 1948 to September 1949**

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 36 | 43 | b40 | | b37 | b400 | 396 | 1,010 | 410 | 75 | 23 | 16 |
| 2 | 35 | 47 | b45 | | b40 | b450 | 470 | 1,280 | 370 | 69 | 23 | 16 |
| 3 | 33 | 68 | b50 | | b41 | b500 | 488 | 1,380 | 338 | 64 | 22 | 16 |
| 4 | 37 | 61 | b45 | | b43 | *532 | 586 | 1,180 | 315 | 60 | 20 | 16 |
| 5 | 70 | 49 | b40 | | b40 | 586 | 816 | 981 | 310 | 59 | 20 | 16 |
| 6 | 59 | 47 | b45 | | b40 | 685 | 1,240 | 872 | 306 | 59 | 19 | 17 |
| 7 | 53 | 32 | b50 | | b41 | 645 | 1,270 | 842 | 297 | 57 | 19 | 18 |
| 8 | 53 | b25 | *b54 | | b42 | 578 | 1,180 | 925 | 284 | 52 | 19 | 18 |
| 9 | 45 | b30 | 63 | | *b45 | 465 | 1,140 | 1,100 | 266 | 49 | 20 | 18 |
| 10 | 42 | 49 | 65 | | b46 | 434 | 1,230 | 1,240 | 261 | 46 | 19 | 22 |
| 11 | 40 | 55 | 63 | | b45 | 488 | 1,480 | 1,400 | 243 | 49 | 19 | 22 |
| 12 | 39 | 51 | b77 | | b43 | 532 | 1,460 | 1,420 | 225 | 46 | 20 | 25 |
| 13 | 37 | 47 | b63 | | b42 | 550 | 1,120 | 1,320 | 204 | 42 | 22 | 22 |
| 14 | 37 | 47 | 63 | | b43 | 630 | 918 | 1,240 | 192 | 38 | 21 | 20 |
| 15 | 37 | 51 | b65 | | b45 | 750 | 890 | 1,240 | 176 | 37 | 19 | 20 |
| 16 | 37 | *45 | b55 | b40 | b60 | 934 | 1,000 | 1,100 | 169 | 36 | 18 | 26 |
| 17 | 35 | 51 | b50 | | b90 | 984 | 1,160 | 960 | 173 | 33 | 18 | 30 |
| 18 | 33 | *b30 | b45 | | b125 | 1,380 | 1,320 | 794 | 161 | 32 | 18 | 26 |
| 19 | 35 | 53 | b50 | | b175 | 1,960 | 1,680 | 710 | 139 | 31 | 24 | 22 |
| 20 | 35 | 57 | b52 | | b250 | 1,570 | 1,520 | 812 | 126 | 31 | 23 | 20 |
| 21 | 35 | 42 | b48 | | b350 | 1,230 | 1,300 | 732 | 122 | 31 | 20 | 19 |
| 22 | 33 | 57 | b45 | | b500 | 946 | 1,210 | 710 | 129 | 31 | 19 | 19 |
| 23 | 33 | 53 | a40 | | b450 | 816 | 1,270 | 655 | 115 | 30 | 18 | 18 |
| 24 | 35 | 87 | a40 | | b425 | 735 | 1,330 | 600 | 104 | 29 | 18 | 18 |
| 25 | 35 | 75 | a42 | | b400 | 685 | 1,150 | 575 | 95 | 29 | 18 | 18 |
| 26 | 35 | b50 | a44 | | b375 | 600 | 1,000 | 560 | 95 | 29 | 17 | 17 |
| 27 | *30 | b55 | a45 | | *b350 | 537 | 974 | 545 | 104 | 28 | 17 | 17 |
| 28 | 27 | b50 | a47 | | b350 | 470 | 1,120 | 515 | 90 | 28 | 17 | 17 |
| 29 | 30 | b45 | b45 | | - | 429 | 1,250 | 480 | 87 | 27 | 17 | 19 |
| 30 | 30 | b35 | b48 | | - | 424 | 1,070 | 460 | 82 | 26 | 16 | 25 |
| 31 | 37 | - | b50 | | - | 392 | - | 440 | - | 23 | 16 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,188 | 70 | 27 | 38.3 | 2,360 |
| November | 1,487 | 87 | 25 | 49.6 | 2,950 |
| December | 1,574 | 77 | 40 | 50.8 | 3,120 |
| Calendar year 1948 | 164,503 | 2,990 | 25 | 449 | 326,300 |
| January | 1,240 | - | - | 40 | 2,460 |
| February | 4,533 | 500 | 37 | 162 | 8,990 |
| March | 22,317 | 1,960 | 392 | 720 | 44,270 |
| April | 33,038 | 1,680 | 396 | 1,101 | 65,530 |
| May | 28,078 | 1,420 | 440 | 906 | 55,690 |
| June | 5,988 | 410 | 82 | 200 | 11,880 |
| July | 1,276 | 75 | 23 | 41.2 | 2,530 |
| August | 599 | 24 | 16 | 19.3 | 1,190 |
| September | 593 | 30 | 16 | 19.8 | 1,180 |
| Water year 1948-49 | 101,911 | 1,960 | 16 | 279 | 202,200 |

Peak discharge (base, 1,500 sec.-ft.).--Mar. 19 (8 to 9 p.m.) 2,220 sec.-ft.; Apr. 12 (2:30 a.m.) 1,660 sec.-ft.; Apr. 19 (12 p.m.) 1,720 sec.-ft.; May 12 (3 a.m.) 1,500 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for Grande Ronde River at La Grande and at Rondowa and Catherine Creek near Union.
b Stage-discharge relation affected by ice,

## Grande Ronde River at La Grande, Oreg.

Location.--Water-stage recorder, lat. 45°21', long. 118°08', in sec. 36, T. 2 S., R. 37 E., 2 miles northwest of La Grande and 4 miles downstream from Fivepoint Creek. Datum of gage is 2,831.25 feet above mean sea level, datum of 1929.
Drainage area.--678 square miles.
Records available.--February 1918 to June 1923, October 1925 to September 1949. November 1903 to September 1915 at Hilgard, 4 miles upstream.
Average discharge.--35 years (1905-9, 1910-11, 1912-15, 1918-20, 1921-22, 1925-49), 357 second-feet.
Extremes.--Maximum discharge during year, 3,140 second-feet Mar. 19 (gage height, 5.89 feet); minimum, 17 second-feet Sept. 1-5.
1903-15, 1918-23, 1925-49: Maximum discharge, 8,880 second-feet Mar. 18, 1932 (gage height, 8.90 feet); minimum, 3.9 second-feet Aug. 26, 1940 (gage height, 1.23 feet).
Remarks.--Records good except those for periods of ice effect, which are poor. Some discharge measurements made at cable 3 miles above station. Small diversions above station for irrigation.
Revisions (water years).--W 768: 1933.

Rating tables, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| Oct. 1 to Mar. 19 | | | | | | Mar. 20 to Sept. 30 | |
|---|---|---|---|---|---|---|---|
| 1.7 | 34 | 2.4 | 210 | 4.4 | 1,470 | 1.5 | 14 |
| 1.8 | 49 | 2.6 | 290 | 5.0 | 2,080 | 1.6 | 21 |
| 1.9 | 68 | 2.9 | 435 | 5.7 | 2,910 | 1.7 | 31 |
| 2.0 | 91 | 3.3 | 650 | | | 1.8 | 47 |
| 2.2 | 143 | 3.8 | 980 | | | 1.9 | 68 |

Note.--Same as preceding table above 1.9 feet.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 38 | 53 | b45 | | | 656 | 568 | 1,450 | 529 | 91 | 26 | 18 |
| 2 | 37 | 55 | b50 | | | 692 | 736 | 1,750 | 470 | 84 | 24 | 17 |
| 3 | 38 | 73 | b55 | | | 788 | 762 | 1,870 | 420 | 80 | 23 | 17 |
| 4 | 42 | 75 | b50 | | | 882 | 945 | 1,590 | 390 | 73 | 21 | 17 |
| 5 | 66 | 60 | b45 | | | 994 | 1,380 | 1,350 | 380 | 68 | 21 | 18 |
| 6 | 70 | 57 | b50 | | | 1,150 | 1,850 | 1,200 | 380 | 68 | 20 | 18 |
| 7 | 62 | 46 | b55 | | | 1,080 | 1,980 | 1,160 | 365 | 66 | 20 | 18 |
| 8 | 58 | b35 | *b60 | | b50 | 973 | 1,840 | 1,260 | 335 | 62 | 20 | 18 |
| 9 | 53 | b45 | b70 | | | 756 | 1,750 | 1,500 | 312 | 58 | 20 | 19 |
| 10 | 46 | 82 | b75 | | (*) | 692 | 1,790 | 1,700 | 299 | 53 | 20 | 23 |
| 11 | 44 | 82 | b70 | | | 827 | 2,160 | 1,860 | 278 | 53 | 20 | 24 |
| 12 | 43 | 70 | b85 | | | 938 | 2,120 | 1,900 | 254 | 55 | 20 | 28 |
| 13 | 42 | 55 | b75 | | | 931 | 1,670 | 1,770 | 230 | 49 | 21 | 26 |
| 14 | 40 | 53 | b70 | | | 1,070 | 1,400 | 1,650 | 214 | 45 | 21 | 24 |
| 15 | 42 | 58 | b70 | | | 1,290 | 1,350 | 1,630 | 200 | 44 | 20 | 23 |
| 16 | 42 | *53 | | b45 | b70 | 1,550 | 1,520 | 1,430 | 189 | 42 | 20 | 26 |
| 17 | 40 | 55 | | | b100 | 1,670 | 1,740 | 1,260 | 196 | 39 | 19 | 30 |
| 18 | 38 | *42 | | | b150 | 2,090 | 1,950 | 1,040 | 182 | 37 | 19 | 29 |
| 19 | 38 | 49 | | | b200 | 2,900 | 2,380 | 931 | 162 | 36 | 20 | 26 |
| 20 | 40 | 62 | | | b300 | 2,330 | 2,180 | 1,050 | 146 | 36 | 25 | 24 |
| 21 | 40 | 53 | | | b450 | 1,780 | 1,890 | 966 | 138 | 36 | 22 | 23 |
| 22 | 40 | 55 | | | b650 | 1,410 | 1,800 | 924 | 140 | 34 | 20 | 23 |
| 23 | 38 | 60 | | | b600 | 1,200 | 1,860 | 854 | 132 | 33 | 20 | 22 |
| 24 | 40 | 82 | b50 | | b550 | 1,110 | 1,950 | 775 | 121 | 33 | 20 | 22 |
| 25 | 40 | 91 | | | b520 | 1,050 | 1,700 | 742 | 114 | 34 | 20 | 21 |
| 26 | 42 | 89 | | | b500 | 882 | 1,470 | 723 | 111 | 34 | 20 | 21 |
| 27 | *37 | 57 | | | *b500 | 742 | 1,420 | 704 | 116 | 34 | 20 | 21 |
| 28 | 34 | b60 | | | b500 | 612 | 1,630 | 668 | 106 | 33 | 19 | 21 |
| 29 | 37 | b50 | | | - | 556 | 1,800 | 617 | 104 | 31 | 19 | 23 |
| 30 | 38 | b45 | | | - | 578 | 1,550 | 595 | 98 | 29 | 18 | 25 |
| 31 | 44 | - | | | - | 534 | - | 562 | - | 27 | 18 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,349 | 70 | 34 | 43.5 | 2,680 |
| November | 1,802 | 91 | 35 | 60.1 | 3,570 |
| December | 1,725 | 85 | - | 55.6 | 3,420 |
| Calendar year 1948 | 230,445 | 4,350 | 26 | 630 | 457,100 |
| January | 1,395 | - | - | 45 | 2,770 |
| February | 5,840 | 650 | - | 209 | 11,580 |
| March | 34,713 | 2,900 | 534 | 1,120 | 68,850 |
| April | 49,141 | 2,380 | 568 | 1,638 | 97,470 |
| May | 37,481 | 1,900 | 562 | 1,209 | 74,340 |
| June | 7,111 | 529 | 98 | 237 | 14,100 |
| July | 1,497 | 91 | 27 | 48.3 | 2,970 |
| August | 636 | 26 | 18 | 20.5 | 1,260 |
| September | 665 | 30 | 17 | 22.2 | 1,320 |
| Water year 1948-49 | 143,355 | 2,900 | 17 | 393 | 284,300 |

Peak discharge (base, 1,900 sec.-ft.).--Mar. 19 (2 a.m.) 3,140 sec.-ft.; Apr. 7 (3 a.m.) 2,180 sec.-ft.; Apr. 12 (3 a.m.) 2,370 sec.-ft.; Apr. 19 (5 a.m.) 2,430 sec.-ft.; Apr. 24 (4 a.m.) 2,020 sec.-ft.; May 3 (2 a.m.) 1,940 sec.-ft.; May 12 (5 a.m.) 1,980 sec.-ft.
* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.

## Grande Ronde River at Rondowa, Oreg.

Location.--Water-stage recorder, lat. 45°44', long. 117°47', in NW¼ sec. 23, T. 3 N., R. 40 E., at Rondowa, 500 feet downstream from Wallowa River. Datum of gage is 2,281.87 feet above mean sea level, datum of 1929.
Drainage area.--2,555 square miles.
Records available.--October 1926 to September 1949.
Average discharge.--23 years, 1,987 second-feet.
Extremes.--Maximum discharge during year, 12,800 second-feet May 15 (gage height, 7.52 feet); minimum, 368 second-feet Sept. 4 (gage height, 0.93 foot).
1926-49: Maximum discharge, 19,900 second-feet May 28, 1948 (gage height, 9.76 feet); minimum, 225 second-feet Dec. 19, 1935.
Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Many diversions above station for irrigation. Flow slightly regulated by Wallowa Lake Reservoir.
Revisions (water years).--W 1093: 1927-29, 1932-33, 1936, 1938, 1939(M), 1943.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| | | | |
|---|---|---|---|
| 0.9 | 350 | 3.0 | 2,550 |
| 1.1 | 475 | 3.5 | 3,440 |
| 1.3 | 620 | 4.5 | 5,500 |
| 1.6 | 865 | 5.5 | 7,720 |
| 2.0 | 1,250 | 6.5 | 10,100 |
| 2.5 | 1,840 | 7.5 | 12,700 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 605 | a680 | a750 | b680 | a600 | 3,060 | 2,930 | 7,060 | 5,920 | 1,590 | 598 | 423 |
| 2 | 605 | a720 | a750 | b650 | a650 | 3,120 | 3,170 | 8,200 | 5,270 | 1,640 | 590 | 404 |
| 3 | 598 | a850 | a750 | b620 | a700 | 3,210 | 3,290 | 8,710 | 4,740 | 1,710 | 552 | 392 |
| 4 | 684 | a800 | a750 | b580 | b750 | 3,660 | 3,560 | 7,860 | 4,700 | 1,740 | 538 | 374 |
| 5 | 814 | a750 | a700 | b550 | b750 | 4,160 | 4,180 | 7,170 | 5,270 | 1,740 | 524 | 380 |
| 6 | 764 | a730 | a750 | b600 | b700 | 4,100 | 4,910 | 6,750 | 6,290 | 1,780 | 503 | 392 |
| 7 | 788 | a700 | a800 | b650 | b750 | 4,060 | 5,500 | 6,640 | 6,780 | 1,650 | 496 | 404 |
| 8 | 788 | a680 | a800 | b600 | b800 | 3,960 | 5,650 | 6,970 | 6,470 | 1,520 | 475 | 404 |
| 9 | 764 | a650 | a800 | b550 | b850 | 3,460 | 5,680 | 7,790 | 5,920 | 1,420 | 468 | 404 |
| 10 | 748 | a660 | a800 | b500 | b900 | 3,120 | 5,740 | 8,850 | 5,790 | 1,380 | 462 | 430 |
| 11 | 732 | a670 | a850 | b450 | b850 | 3,010 | 6,310 | 10,300 | 5,830 | 1,380 | 456 | 462 |
| 12 | 723 | a680 | a900 | b450 | b800 | 3,290 | 6,710 | 11,300 | 5,160 | 1,300 | 475 | 462 |
| 13 | 708 | a680 | a950 | b450 | b750 | 3,600 | 6,160 | 11,500 | 4,490 | 1,230 | 503 | 456 |
| 14 | 692 | a670 | a850 | b450 | b850 | 3,960 | 5,720 | 11,700 | 4,060 | 1,140 | 510 | 449 |
| 15 | 684 | a690 | a750 | b500 | b1,000 | 4,600 | 5,520 | 12,400 | 3,740 | 1,100 | 503 | 456 |
| 16 | 668 | a750 | *660 | b550 | 1,390 | 5,120 | 5,680 | 12,000 | 3,460 | 1,070 | 496 | 552 |
| 17 | 652 | a700 | 620 | b550 | 2,420 | 5,060 | 6,140 | 11,300 | 2,830 | 1,010 | 489 | 524 |
| 18 | 652 | a700 | b620 | b550 | 2,260 | 5,680 | 6,730 | 9,590 | 2,490 | 946 | 531 | 503 |
| 19 | 660 | a700 | b650 | b500 | 1,660 | 7,440 | 7,440 | 8,690 | 2,280 | 901 | 560 | 482 |
| 20 | 652 | a680 | b700 | b450 | 1,660 | 6,890 | 7,560 | 8,710 | 2,190 | 883 | 545 | 468 |
| 21 | 636 | a650 | b650 | b500 | 1,700 | 6,640 | 7,280 | 8,020 | 2,170 | 814 | 531 | 475 |
| 22 | 628 | a700 | b600 | b550 | 2,340 | 6,180 | 7,040 | 7,540 | 2,550 | 772 | 517 | 468 |
| 23 | 628 | a800 | b530 | b600 | 3,680 | 5,760 | 7,220 | 7,190 | 2,460 | 756 | 503 | 462 |
| 24 | 636 | a1,100 | b530 | b550 | 3,400 | 5,350 | 7,440 | 7,180 | 2,430 | 740 | 489 | 456 |
| 25 | 668 | a1,000 | b530 | b550 | 3,120 | 4,910 | 7,170 | 7,420 | 2,370 | 716 | 475 | 449 |
| 26 | 652 | a950 | b560 | b600 | 3,060 | 4,340 | 6,910 | 7,810 | 2,250 | 692 | 475 | 436 |
| 27 | 636 | a900 | b590 | *b670 | 3,040 | 3,840 | 6,860 | 8,200 | 2,010 | 676 | 468 | 430 |
| 28 | 636 | a850 | b620 | b700 | 3,040 | 3,380 | 7,510 | 8,300 | 1,870 | 668 | 462 | 436 |
| 29 | a650 | a800 | b640 | a700 | - | 3,120 | 8,060 | 7,700 | 1,890 | 668 | 456 | 442 |
| 30 | a650 | a750 | b600 | a700 | - | 2,950 | 7,420 | 7,040 | 1,720 | 644 | 449 | 449 |
| 31 | a660 | - | b650 | a650 | - | 2,850 | - | 6,470 | - | 612 | 430 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 21,062 | 814 | 598 | 679 | 41,780 |
| November | 22,640 | 1,100 | 650 | 755 | 44,910 |
| December | 21,700 | 950 | 530 | 700 | 43,040 |
| Calendar year 1948 | 1,118,288 | 18,500 | 524 | 3,055 | 2,218,000 |
| January | 17,650 | 700 | 450 | 569 | 35,010 |
| February | 44,470 | 3,680 | 600 | 1,588 | 88,200 |
| March | 133,880 | 7,440 | 2,850 | 4,319 | 265,500 |
| April | 181,490 | 8,060 | 2,930 | 6,050 | 360,000 |
| May | 266,370 | 12,400 | 6,470 | 8,593 | 528,300 |
| June | 115,400 | 6,780 | 1,720 | 3,847 | 228,900 |
| July | 34,888 | 1,780 | 612 | 1,125 | 69,200 |
| August | 15,529 | 598 | 430 | 501 | 30,800 |
| September | 13,324 | 552 | 374 | 444 | 26,430 |
| Water year 1948-49 | 888,403 | 12,400 | 374 | 2,434 | 1,762,000 |

Peak discharge (base, 5,000 sec.-ft.).--Mar. 19 (6:30 a.m.) 7,670 sec.-ft.; May 2 (11 p.m.) 9,060 sec.-ft.; May 15 (9 a.m.) 12,800 sec.-ft.; June 7 (6 a.m.) 7,060 sec.-ft.
* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for station at Troy.
b Stage-discharge relation affected by ice.

## Grande Ronde River at Troy, Oreg.

Location.--Wire-weight gage, lat. 45°57', long. 117°27', in NW¼ sec. 4, T. 5 N., R. 43 E., at bridge at Troy, 100 feet downstream from Wenaha River.

Drainage area.--3,275 square miles.

Records available.--August 1944 to September 1949.

Extremes.--Maximum discharge observed during year, 17,400 second-feet May 15 (gage height, 21.00 feet); minimum observed, 662 second-feet Sept. 6.
1944-49: Maximum discharge observed, 30,000 second-feet Dec. 15, 1946 (gage height, 23.20 feet); minimum observed, 470 second-feet Sept. 11, 1944.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Flow slightly regulated by Wallowa Lake and Minam Lake Reservoirs. Many diversions for irrigation near La Grande, Enterprise, and Wallowa; no diversion around station.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used May 19 to Aug. 31, Sept. 16-30)

| | | | | | |
|---|---|---|---|---|---|
| 14.1 | 635 | 15.9 | 2,260 | 19.0 | 9,260 |
| 14.2 | 690 | 16.5 | 3,190 | 20.0 | 13,000 |
| 14.8 | 1,110 | 17.0 | 4,100 | 21.0 | 17,400 |
| 15.3 | 1,540 | 18.0 | 6,310 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | a850 | 1,000 | 1,110 | 1,300 | b900 | 4,840 | 4,420 | 10,400 | 8,160 | 2,070 | 953 | 696 |
| 2 | a850 | 1,050 | 1,130 | 1,190 | b950 | 4,860 | 5,180 | 12,500 | 7,180 | 2,040 | 932 | 679 |
| 3 | a850 | 1,280 | 1,110 | 1,030 | b1,000 | 4,750 | 5,430 | 13,300 | 6,470 | 2,120 | 911 | 679 |
| 4 | a950 | 1,190 | 1,130 | 738 | b1,100 | 5,180 | 6,140 | 11,200 | 6,360 | 2,120 | 883 | 680 |
| 5 | a1,100 | 1,090 | 1,030 | b800 | b1,100 | 5,920 | 7,380 | 10,500 | 6,670 | 2,110 | 862 | 679 |
| 6 | a1,050 | 1,050 | 1,090 | a850 | b1,000 | 6,210 | 9,060 | 9,480 | 7,790 | 2,270 | 848 | 668 |
| 7 | a1,050 | 1,020 | 1,140 | a900 | b1,100 | 5,870 | 10,200 | 9,360 | 8,120 | 2,080 | 813 | 679 |
| 8 | a1,050 | 988 | 1,210 | a900 | a1,150 | 6,110 | 10,100 | 9,400 | 8,030 | 1,990 | 792 | 668 |
| 9 | 1,060 | 918 | a1,220 | a850 | a1,200 | 5,360 | 9,810 | 9,400 | 7,670 | 1,870 | 792 | 679 |
| 10 | 1,050 | 960 | 1,240 | a800 | a1,300 | 4,770 | 10,500 | 10,900 | 7,380 | 1,790 | 778 | 690 |
| 11 | 1,050 | 967 | 1,270 | a750 | b1,250 | 4,630 | 11,400 | 15,500 | 7,350 | 1,720 | 764 | 679 |
| 12 | 1,010 | 974 | 1,500 | b750 | b1,200 | 4,960 | 12,000 | 16,600 | 6,470 | 1,640 | 792 | a670 |
| 13 | 1,000 | 1,000 | 1,460 | b750 | a1,100 | 5,340 | 10,100 | 16,700 | 5,680 | 1,550 | 792 | 679 |
| 14 | 1,010 | 988 | 1,350 | b750 | a1,200 | 5,920 | 9,060 | 16,500 | 5,070 | 1,480 | 792 | 738 |
| 15 | 988 | 1,040 | b1,150 | b800 | b1,500 | 6,780 | 8,930 | 17,300 | 4,750 | 1,400 | 778 | 757 |
| 16 | 960 | 1,060 | b1,000 | b800 | a2,000 | 8,090 | 9,530 | 16,700 | 4,420 | 1,370 | 764 | 806 |
| 17 | 960 | 1,020 | b900 | b800 | 2,730 | 8,280 | 10,900 | 16,300 | 3,950 | 1,290 | 771 | 848 |
| 18 | 960 | 1,020 | *b750 | b800 | 5,140 | 8,860 | 11,800 | 16,400 | 3,700 | 1,250 | 792 | 806 |
| 19 | 960 | 1,020 | b750 | b750 | 3,090 | 11,800 | 12,800 | 14,500 | 3,330 | 1,270 | 820 | 792 |
| 20 | 960 | 967 | b900 | b750 | 2,610 | 10,900 | 12,700 | 11,300 | 2,890 | 1,270 | 813 | 764 |
| 21 | 946 | 946 | b850 | b750 | 2,400 | 9,810 | 11,600 | 10,700 | 2,940 | 1,210 | 792 | 738 |
| 22 | 946 | 1,000 | b800 | b800 | 2,760 | 8,670 | 11,000 | 10,100 | 3,120 | 1,170 | 778 | 764 |
| 23 | 932 | 1,090 | a800 | b850 | 5,340 | 8,120 | 11,100 | 9,230 | 3,220 | 1,140 | 778 | 750 |
| 24 | 932 | 1,820 | a850 | b800 | 5,210 | 7,910 | 11,700 | 8,190 | 3,100 | 1,130 | 778 | 764 |
| 25 | 939 | 1,540 | 953 | b800 | 4,690 | 7,270 | 10,900 | 9,430 | 3,020 | 1,110 | 750 | 757 |
| 26 | 974 | 1,390 | 1,050 | b850 | 4,600 | 6,410 | 10,600 | 10,200 | 2,960 | 1,080 | 750 | 738 |
| 27 | 939 | 1,290 | 1,020 | b900 | 4,630 | 5,500 | 10,400 | 10,400 | 2,830 | 1,050 | 750 | 726 |
| 28 | 946 | 1,220 | 1,240 | b950 | 4,650 | 4,960 | 11,800 | 10,100 | 2,520 | 1,020 | 738 | 726 |
| 29 | 932 | 1,190 | 1,360 | b950 | - | 4,580 | 13,000 | 9,570 | 2,440 | 1,020 | 738 | 744 |
| 30 | 932 | 1,130 | 1,330 | b950 | - | 4,540 | 11,200 | 9,570 | 2,320 | 1,000 | 726 | 764 |
| 31 | 974 | - | 1,280 | *b900 | - | 4,380 | - | 8,860 | - | 988 | 714 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 30,110 | 1,100 | 850 | 971 | 59,720 |
| November | 33,218 | 1,820 | 918 | 1,107 | 65,890 |
| December | 33,973 | 1,500 | 750 | 1,096 | 67,380 |
| Calendar year 1948 | 1,551,891 | 22,800 | 680 | 4,240 | 3,078,000 |
| January | 26,558 | 1,300 | 750 | 857 | 52,680 |
| February | 66,900 | 5,340 | 900 | 2,389 | 132,700 |
| March | 201,580 | 11,800 | 4,380 | 6,503 | 399,800 |
| April | 300,740 | 13,000 | 4,420 | 10,020 | 596,500 |
| May | 371,570 | 17,300 | 8,860 | 11,990 | 737,000 |
| June | 149,910 | 8,160 | 2,320 | 4,997 | 297,300 |
| July | 46,618 | 2,270 | 988 | 1,504 | 92,470 |
| August | 24,734 | 953 | 714 | 798 | 49,060 |
| September | 21,817 | 848 | 668 | 727 | 43,270 |
| Water year 1948-49 | 1,307,728 | 17,300 | 668 | 3,583 | 2,594,000 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records and records for station at Rondowa.
b Stage-discharge relation affected by ice.

## Catherine Creek near Union, Oreg.

Location.--Water stage recorder, lat 45°09', long. 117°47', in SE¼ sec. 2, T., 5 S., R. 40 E., 3 miles downstream from Little Catherine Creek and 6 miles southeast of Union. Datum of gage is 3,082.11 feet above mean sea level, datum of 1929.

Drainage area.--105 square miles.

Records available.--May 1906 to May 1907 (gage heights only), August 1911 to December 1912, March to September 1915, February 1918 to August 1919, October 1925 to September 1949.

Average discharge.--25 years (1911-12, 1918-12, 1925-44, 1945-49), 120 second-feet.

Extremes.--Maximum discharge during year, 974 second-feet May 15 (gage height, 3.49 feet); minimum not determined, probable occurred during periods of ice effect or no gage-height record Nov. 8 to Feb. 24; minimum daily, 24 seecond-feet Feb. 11-13, Sept. 23-30.
1906-7, 1911-12, 1915, 1918-19, 1925-49: Maximum discharge, 1,740 second-feet May 27, 1948 (gage height, 4.57 feet); minimum recorded, 4 second-feet Nov. 26, 27, 1930.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. A few small diversions above station for irrigation and some water diverted into Big Creek, in Powder River Basin.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 31 | 32 | 30 | | 25 | 68 | 77 | 382 | 356 | 90 | 39 | 28 |
| 2 | 30 | 36 | 30 | | 25 | 78 | 88 | 414 | 314 | 86 | 38 | 28 |
| 3 | 30 | 39 | 35 | | 25 | 82 | 97 | 414 | 290 | 85 | 37 | 28 |
| 4 | 35 | 33 | 38 | | 25 | 90 | 117 | 370 | 286 | 82 | 35 | 28 |
| 5 | 45 | 33 | 35 | | 25 | 100 | 157 | 342 | 324 | 81 | 34 | 28 |
| 6 | 40 | 32 | 32 | | 25 | 110 | 190 | 346 | 363 | 82 | 34 | 28 |
| 7 | 37 | 28 | 30 | | 25 | 107 | 224 | 386 | 374 | 74 | 33 | 27 |
| 8 | 39 | 26 | *28 | | 25 | 100 | 237 | 470 | 342 | 71 | 34 | 27 |
| 9 | 35 | 25 | 30 | | 25 | 88 | 244 | 558 | 321 | 71 | 34 | 27 |
| 10 | 33 | 30 | 30 | | 25 | 81 | 258 | 665 | 307 | 70 | 33 | 27 |
| 11 | 32 | 35 | 35 | | *24 | 77 | 318 | 825 | 399 | 68 | 33 | 27 |
| 12 | 32 | 36 | 40 | | 24 | 86 | 342 | 914 | 265 | 62 | 32 | 27 |
| 13 | 30 | 34 | 40 | | 24 | 91 | 258 | 890 | 230 | 61 | 33 | 26 |
| 14 | 30 | 34 | 40 | | 25 | 97 | 212 | 890 | 215 | 59 | 32 | 26 |
| 15 | 30 | 35 | 39 | | 25 | 105 | 215 | 932 | 200 | 56 | 32 | 25 |
| 16 | 30 | *34 | 35 | 25 | 27 | 115 | 265 | 878 | 192 | 56 | 30 | 28 |
| 17 | 30 | 34 | 30 | | 30 | 128 | 349 | 795 | 173 | 53 | 30 | 28 |
| 18 | 30 | 31 | 29 | | 35 | 141 | 402 | 656 | 157 | 51 | 30 | 27 |
| 19 | 30 | 35 | 28 | | 40 | 171 | 490 | 579 | 147 | 50 | 30 | 26 |
| 20 | 30 | 35 | 30 | | 45 | 169 | 462 | 570 | 141 | 50 | 30 | 26 |
| 21 | 30 | 33 | 33 | | 50 | 151 | 386 | 510 | 141 | 49 | 29 | 26 |
| 22 | 30 | 35 | 33 | | 60 | 128 | 346 | 470 | 141 | 47 | 29 | 26 |
| 23 | 30 | 36 | 30 | | 70 | 119 | 390 | 442 | 131 | 46 | 29 | 24 |
| 24 | 31 | 37 | 28 | | 65 | 114 | 418 | 442 | 128 | 46 | 29 | 24 |
| 25 | 32 | 35 | 27 | | 63 | 112 | 398 | 458 | 122 | 45 | 29 | 24 |
| 26 | 30 | 34 | 25 | | 61 | 107 | 390 | 494 | 119 | 45 | 29 | 24 |
| 27 | *30 | 33 | 25 | | *62 | 97 | 422 | 530 | 110 | 44 | 29 | 24 |
| 28 | 30 | 32 | 25 | | 66 | 88 | 502 | 542 | 103 | 43 | 28 | 24 |
| 29 | 30 | 30 | 25 | | - | 72 | 522 | 498 | 102 | 42 | 28 | 24 |
| 30 | 30 | 30 | 26 | | - | 71 | 442 | 442 | 96 | 41 | 28 | 24 |
| 31 | 31 | - | 27 | | - | 71 | - | 410 | - | 39 | 28 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 993 | 45 | 30 | 32.0 | 1,970 |
| November | 992 | 39 | 25 | 33.1 | 1,970 |
| December | 968 | 40 | 25 | 31.2 | 1,920 |
| Calendar year 1948 | 63,748 | 1,500 | 25 | 174 | 126,400 |
| January | 775 | - | - | 25 | 1,540 |
| February | 1,046 | 70 | 24 | 37.4 | 2,070 |
| March | 3,214 | 171 | 68 | 104 | 6,370 |
| April | 9,218 | 522 | 77 | 307 | 18,280 |
| May | 17,514 | 932 | 342 | 565 | 34,740 |
| June | 6,490 | 374 | 96 | 216 | 12,870 |
| July | 1,845 | 90 | 39 | 59.5 | 3,660 |
| August | 978 | 39 | 28 | 31.5 | 1,940 |
| September | 786 | 28 | 24 | 26.2 | 1,560 |
| Water year 1948-49 | 44,819 | 932 | - | 123 | 88,890 |

Peak discharge (base, 500 sec.-ft.).--Apr. 19 (7 p.m. to 11 p.m.) 510 sec.-ft.; Apr. 28 (11 p.m.) 558 sec.-ft.; May 15 (5 a.m.) 974 sec.-ft.; May 28 (4 a.m.) 579 sec.-ft.
* Winter discharge measurement made on this day.

Note.--No gage-height record Oct. 3-6, Jan. 3 to Feb. 9; discharge computed on baais of recorded range in stage, weather records, and records for other stations in Grande Ronde River Basin. Stage-discharge relation affected by ice Nov. 8-11, Nov. 27 to Dec. 3, Dec. 5-11, Dec. 13 to Jan. 2, Feb. 10-24 and during most, if not all, of period of no gage-height record in January and February.

## Indian Creek near Imbler, Oreg.

Location.--Water-stage recorder, lat. 45°26', long. 117°49', in S½ sec. 33, T. 1 S., R. 40 E., 200 yards upstream from North Fork and 7 miles southeast of Imbler.

Drainage area.--22 square miles.

Records available.--October 1945 to September 1949 in reports of Geological Survey. March 1938 to September 1945 (incomplete) in files of Oregon State engineer.

Extremes.--Maximum discharge during year, 406 second-feet May 15; maximum gage height, 2.92 feet Feb. 23 (ice jam); minimum discharge, 1.8* second-feet Oct. 28 (gage height, 0.47 foot).

1938-49: Maximum discharge, 818 second-feet May 27, 1948, from rating curve extended above 270 second-feet; maximum gage height, 4.09 feet sometime during period Jan. 4-7, 1947 (ice jam); minimum discharge, 0.1 second-foot Nov. 15, 1939 (gage height, 0.05 foot).

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

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4.4 | 5.2 | | | | 4.4 | 9.0 | 130 | 211 | 33 | 8.6 | 2.8 |
| 2 | 4.2 | 7.9 | | | | 4.2 | 10 | 152 | 181 | 31 | 8.6 | 2.8 |
| 3 | 4.0 | 7.4 | | | | 4.0 | 11 | 175 | 162 | 30 | 8.2 | 2.8 |
| 4 | 9.3 | 5.4 | | | | 4.2 | 14 | 166 | 165 | 28 | 7.9 | 2.8 |
| 5 | 8.2 | 4.8 | | | | 4.8 | 18 | 144 | 193 | 27 | 7.9 | 2.8 |
| 6 | 6.8 | 4.4 | | | | 4.8 | 22 | 132 | 229 | 26 | 7.4 | 2.8 |
| 7 | 8.2 | 4.0 | | | | 5.0 | 27 | 134 | 235 | 24 | 7.1 | 2.7 |
| 8 | 6.8 | 3.5 | | | | 4.8 | 29 | 158 | 211 | 23 | 7.1 | 2.7 |
| 9 | 6.0 | 3.0 | | | | 4.4 | 30 | 214 | 193 | 22 | 7.1 | 2.6 |
| 10 | 5.7 | 3.5 | | | | 4.4 | 35 | 259 | 187 | 20 | 6.5 | 2.7 |
| 11 | 5.2 | 4.0 | | | 4.0 | 4.4 | 44 | 298 | 175 | 20 | 6.2 | 3.6 |
| 12 | 5.0 | 4.6 | | | | 5.0 | 51 | 340 | 170 | 19 | 6.2 | 3.0 |
| 13 | 4.8 | 4.6 | | 3.5 | | 5.5 | 41 | 382 | 150 | 18 | 6.2 | 2.7 |
| 14 | 4.6 | 4.8 | | | | 6.0 | 35 | 400 | 130 | 16 | 5.7 | 2.6 |
| 15 | 4.6 | 5.0 | | | | 7.0 | 36 | 400 | 120 | 16 | 5.4 | 2.6 |
| 16 | 4.4 | 4.8 | 4.0 | | | 9.0 | 43 | 394 | 100 | 15 | 5.2 | 5.4 |
| 17 | 4.4 | *4.8 | | | | 12 | 57 | 376 | 90 | 15 | 4.8 | 3.4 |
| 18 | 4.4 | 5.0 | | | | 15 | 70 | 355 | 80 | 14 | 4.6 | 3.0 |
| 19 | 4.4 | 5.0 | | | | 20 | 86 | 320 | 70 | 14 | 4.6 | 2.8 |
| 20 | 4.2 | 5.0 | | | | 20 | 89 | 311 | 65 | 14 | 4.4 | 2.7 |
| 21 | 4.2 | 5.2 | | | | 18 | 80 | 298 | 65 | 13 | 4.2 | 2.7 |
| 22 | 4.2 | 5.0 | | | 5.0 | 15 | 80 | 271 | 65 | 12 | 4.0 | 2.7 |
| 23 | 4.0 | 5.0 | | | 6.0 | 14 | 90 | 255 | 61 | 12 | 4.0 | 2.6 |
| 24 | 5.7 | 5.0 | | | 6.0 | 13 | 97 | 243 | 57 | 12 | 3.8 | 2.4 |
| 25 | 5.7 | 4.5 | | | 5.5 | 12 | 95 | 251 | 53 | 11 | 3.6 | 2.4 |
| 26 | 4.8 | 4.5 | | *3.6 | 5.2 | 12 | 95 | 263 | 50 | 11 | 3.6 | 2.3 |
| 27 | 4.2 | 4.5 | | 3.4 | 5.0 | 11 | 101 | 284 | 43 | 11 | 3.4 | 2.3 |
| 28 | 3.3 | 4.5 | | 3.5 | 4.8 | 10 | 126 | 288 | 40 | 11 | 3.4 | 2.3 |
| 29 | 4.4 | 4.5 | | 3.5 | - | 9.0 | 150 | 275 | 40 | 10 | 3.3 | 2.8 |
| 30 | 4.0 | 4.5 | | 3.5 | - | 8.0 | 144 | 243 | 36 | 9.7 | 3.1 | 2.8 |
| 31 | 5.7 | - | | 3.5 | - | 8.0 | - | 239 | - | 9.3 | 3.1 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 159.8 | 9.3 | 3.3 | 5.15 | 0.234 | 0.27 | 317 |
| November | 143.9 | 7.9 | 3.0 | 4.80 | .218 | .24 | 285 |
| December | 124.0 | - | - | 4.00 | .182 | .21 | 246 |
| Calendar year 1948 | 19,062.8 | 665 | 3.0 | 52.1 | 2.37 | 32.22 | 37,810 |
| January | 108.5 | - | - | 3.50 | .159 | .18 | 215 |
| February | 121.5 | - | - | 4.34 | .197 | .21 | 241 |
| March | 278.9 | 20 | 4.0 | 9.00 | .409 | .47 | 553 |
| April | 1,815.0 | 150 | 9.0 | 60.5 | 2.75 | 3.07 | 3,600 |
| May | 8,150 | 400 | 130 | 263 | 12.0 | 13.78 | 16,170 |
| June | 3,627 | 235 | 36 | 121 | 5.50 | 6.13 | 7,190 |
| July | 547.0 | 33 | 9.3 | 17.6 | .800 | .92 | 1,080 |
| August | 169.2 | 8.6 | 3.1 | 5.46 | .248 | .29 | 336 |
| September | 84.6 | 5.4 | 2.3 | 2.82 | .128 | .14 | 168 |
| Water year 1948-49 | 15,329.4 | 400 | 2.3 | 42.0 | 1.91 | 25.91 | 30,400 |

Peak discharge (base, 250 sec.-ft.).--May 15 (11 a.m. to 6 p.m.) 406 sec.-ft.; May 29 (1 to 3 a.m.) 293 sec.-ft.; June 6 (10 to 12 p.m.) 259 sec.-ft.

* Winter discharge measurement made on this day.

Note.--No gage-height record Dec. 23 to Jan. 25, Jan. 28 to Feb. 21, Mar. 12 to Apr. 1, June 13-20; discharge computed on basis of records for Catherine Creek near Union. Stage-discharge relation affected by ice Nov. 7-11, 18, 19, Nov. 23 to Dec. 22, Feb. 22-25.

## East Fork Wallowa River near Joseph, Oreg.

Location.--Staff gage, lat. 45°16', long. 117°13', in SE¼ sec. 29, T. 3 S., R. 45 E., a quarter of a mile above confluence with West Fork, 1 mile upstream from Wallowa Lake, and 6 miles south of Joseph. Datum of gage is 4,517.69 feet above mean sea level, datum of 1929.

Drainage area.--9.6 square miles.

Records available.--July 1924 to September 1949.

Average discharge.--25 years, 12.1 second-feet.

Extremes.--Maximum discharge observed during year, 76 second-feet May 24; maximum gage height observed, 2.26 feet Feb. 22 (ice jam); minimum discharge observed, 0.2 second-foot Sept. 22-23.

1924-49: Maximum discharge, 300 second-feet July 25, 1937 (gage height, 3.63 feet, from floodmark), computed on basis of rating curve extended above 80 second-feet and unpublished records of storage in Wallowa Lake Reservoir; minimum observed, 0.1 second-foot Dec. 7, 1929, Nov. 1, 6, 1935.

Remarks.--Records poor. Gage read twice daily. Wallowa Falls power plant of Pacific Power & Light Co. diverts water 1 mile above station.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5.3 | b2.5 | | | 1.5 | 2.0 | 1.5 | 3.8 | 44 | 20 | 2.3 | a1.0 |
| 2 | 5.3 | b2.5 | | a1.5 | 1.6 | 1.4 | 2.0 | 13 | 41 | 19 | 2.5 | .6 |
| 3 | 6.0 | b2.5 | | | 2.0 | 1.6 | 1.8 | 7.1 | 40 | a20 | 2.5 | 1.0 |
| 4 | 7.1 | 2.5 | | | 1.6 | a1.6 | 2.0 | 6.4 | 41 | a20 | a2.2 | 1.4 |
| 5 | 4.5 | b2.5 | | 1.3 | 2.3 | 1.6 | 2.0 | 6.8 | 44 | 20 | 1.8 | 1.0 |
| 6 | 5.3 | b2.5 | | 1.5 | 2.0 | 1.3 | 1.8 | 6.0 | 47 | 18 | 1.4 | .9 |
| 7 | 4.9 | b2.5 | a2.5 | 2.0 | 1.8 | 1.5 | 2.0 | 6.8 | 38 | 17 | 1.4 | .7 |
| 8 | 4.9 | b3.0 | | 1.4 | 2.0 | 1.6 | 2.0 | 8.0 | 63 | 16 | a1.3 | .7 |
| 9 | 6.0 | a3.0 | | 1.3 | a2.0 | 1.4 | 2.3 | 13 | 54 | 16 | 1.3 | 1.2 |
| 10 | 6.4 | a3.0 | | 1.4 | a2.0 | 1.3 | 2.3 | 13 | 58 | 16 | 1.3 | .8 |
| 11 | 4.5 | a3.0 | | 1.3 | a2.0 | 1.4 | 2.0 | 21 | 61 | 14 | 1.3 | .7 |
| 12 | 4.5 | a3.0 | | 1.3 | a2.0 | 1.6 | 2.0 | 32 | 61 | 14 | 1.2 | .7 |
| 13 | 4.2 | a3.0 | | 1.3 | 1.8 | a1.5 | 2.0 | 35 | 61 | 14 | 1.2 | .5 |
| 14 | 3.6 | a3.0 | 2.3 | 1.5 | 1.6 | 1.5 | 2.0 | 41 | 54 | a12 | .9 | .5 |
| 15 | 3.8 | b3.0 | 2.0 | 1.5 | 1.6 | a1.5 | a2.2 | 46 | 54 | 11 | .9 | .6 |
| 16 | 3.6 | b3.0 | a1.5 | 1.4 | 1.8 | 1.5 | 2.5 | 52 | 49 | 11 | .5 | 1.5 |
| 17 | 4.5 | b3.0 | b1.5 | 1.5 | 1.8 | 1.5 | 4.2 | 56 | 47 | 11 | 1.3 | .6 |
| 18 | 3.8 | b2.5 | *b1.5 | 1.5 | 1.8 | 1.8 | 3.8 | 52 | 47 | 7.5 | 1.0 | .9 |
| 19 | 3.4 | a3.0 | a1.5 | a1.5 | 2.0 | *2.0 | 5.3 | 70 | 41 | 8.0 | .7 | 1.0 |
| 20 | 3.4 | 3.1 | 2.0 | a1.5 | a2.0 | 2.7 | 3.6 | 58 | 41 | 9.2 | .6 | .6 |
| 21 | 2.9 | 3.8 | 1.6 | 1.3 | 1.8 | 1.3 | 3.1 | 47 | 38 | 6.8 | .7 | .4 |
| 22 | 4.2 | 3.8 | 1.6 | 1.5 | b3.0 | 1.2 | 2.9 | 54 | 42 | 5.6 | .8 | .4 |
| 23 | 3.8 | 3.6 | 2.0 | 1.4 | 2.0 | 1.4 | 6.0 | 54 | 41 | 6.0 | 1.0 | .2 |
| 24 | 5.3 | 2.5 | 1.6 | 1.2 | 1.6 | 1.4 | 4.9 | 65 | 41 | 6.0 | 1.3 | .5 |
| 25 | 3.4 | 2.7 | 1.6 | 1.0 | 1.6 | 1.4 | 3.8 | 56 | 41 | 5.6 | 1.0 | a1.0 |
| 26 | 3.8 | 2.5 | b1.5 | 1.6 | 1.4 | 2.7 | 3.6 | 65 | 40 | 5.3 | 1.3 | 1.5 |
| 27 | 3.1 | a2.5 | b1.5 | 1.5 | 1.4 | 1.4 | 4.2 | 47 | 36 | 5.3 | 1.3 | 1.0 |
| 28 | 2.9 | a2.5 | a1.5 | 1.4 | 7.5 | 1.4 | 9.7 | 52 | 27 | 4.5 | 1.3 | .9 |
| 29 | 3.1 | a2.5 | a1.5 | 1.4 | - | b1.4 | 7.5 | 58 | 27 | 4.5 | 1.3 | 1.3 |
| 30 | 2.9 | a2.5 | a2.0 | *1.8 | - | 1.4 | 5.6 | 47 | 27 | a4.0 | 1.0 | .9 |
| 31 | 2.5 | - | 2.0 | 1.5 | - | 1.4 | - | 52 | - | 3.4 | 1.0 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 132.9 | 7.1 | 2.5 | 4.29 | 264 |
| November | 85.0 | 3.8 | 2.5 | 2.83 | 169 |
| December | 63.2 | 2.5 | 1.5 | 2.04 | 125 |
| Calendar year 1948 | 6,022.1 | 154 | .6 | 16.5 | 11,950 |
| January | 44.8 | 2.0 | 1.0 | 1.45 | 89 |
| February | 57.5 | 7.5 | 1.4 | 2.05 | 114 |
| March | 48.7 | 2.7 | 1.2 | 1.57 | 97 |
| April | 100.6 | 9.7 | 1.5 | 3.35 | 200 |
| May | 1,143.9 | 70 | 3.8 | 36.9 | 2,270 |
| June | 1,346 | 63 | 27 | 44.9 | 2,670 |
| July | 350.7 | 20 | 3.4 | 11.3 | 696 |
| August | 39.6 | 2.5 | .5 | 1.28 | 79 |
| September | 25.0 | 1.5 | .2 | .83 | 50 |
| Water year 1948-49 | 3,437.9 | 70 | .2 | 9.42 | 6,820 |

* Winter discharge measurement made on this day.
a No gage-height record; discharge computed on basis of weather records.
b Stage-discharge relation affected by ice.

## Wallowa Falls power-plant tailrace near Joseph, Oreg.

Location.--Staff gage and sharp-crested weir, lat. 45°16', long. 117°13', in SE¼ sec. 29, T. 3 S., R. 45 E., a quarter of a mile upstream from mouth and 6 miles south of Joseph. Datum of gage is 4,624.79 feet above mean sea level, datum of 1929.

Records available.--August 1924 to September 1949.

Average discharge.--25 years, 8.09 second-feet.

Extremes.--Maximum daily discharge during year, 17 second-feet Aug. 19, 20; minimum daily, 6.2 second-feet Oct. 3.
1924-49: Maximum daily discharge, that of Aug. 19, 20, 1949; no flow at times.

Remarks.--Records poor. Gage read hourly. Flow regulated for impulse wheel in power-house. Water diverted at dam on East Fork Wallowa River into conduit 1 mile above powerhouse and discharged into West Fork a quarter of a mile below station.

Rating table, water year 1948-49 (gage height, in feet, and discharge, in second-feet)

| | |
|---|---|
| 0.5 | 5.4 |
| .6 | 8.1 |
| .7 | 11 |
| .8 | 14 |
| .9 | 18 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8.1 | 9.3 | 11 | 10 | 13 | 12 | 12 | 16 | 14 | 14 | 14 | 14 |
| 2 | 8.1 | 9.0 | 11 | 9.9 | 13 | 12 | 12 | 16 | 15 | 14 | 11 | 15 |
| 3 | 6.2 | 9.0 | 11 | 9.9 | 13 | 12 | 11 | 16 | 16 | 14 | 14 | 14 |
| 4 | 8.7 | 9.0 | 11 | 10 | 13 | 11 | 12 | 16 | 15 | 14 | 14 | 14 |
| 5 | 8.7 | 9.6 | 10 | 10 | 13 | 12 | 12 | 16 | 15 | 14 | 14 | 15 |
| 6 | 8.7 | 9.3 | 11 | 10 | 12 | 12 | 13 | 16 | 15 | 14 | 14 | 16 |
| 7 | 8.7 | 9.6 | 9.9 | 10 | 13 | 12 | 13 | 16 | 16 | 14 | 14 | 15 |
| 8 | 8.7 | 9.6 | 10 | 9.9 | 13 | 12 | 13 | 16 | 16 | 14 | 14 | 14 |
| 9 | 8.4 | 9.9 | 11 | 9.6 | 13 | 12 | 13 | 16 | 16 | 14 | 14 | 15 |
| 10 | 7.0 | 9.6 | 11 | 9.3 | 12 | 12 | 13 | 16 | 16 | 14 | 14 | 16 |
| 11 | 8.7 | 9.6 | 11 | 9.6 | 12 | 11 | 13 | 16 | 16 | 14 | 14 | 16 |
| 12 | 8.7 | 9.6 | 11 | 9.9 | 14 | 11 | 14 | 16 | 16 | 14 | 14 | 15 |
| 13 | 9.0 | 9.9 | 11 | 9.6 | 13 | 11 | 13 | 16 | 16 | 14 | 14 | 14 |
| 14 | 9.0 | 9.9 | 11 | 9.6 | 14 | 12 | 13 | 15 | 16 | 14 | 14 | 15 |
| 15 | 8.7 | 9.9 | 11 | 9.6 | 13 | 11 | 13 | 16 | 16 | 14 | 14 | 15 |
| 16 | 8.7 | 9.6 | 11 | 9.3 | 13 | 11 | 14 | 15 | 16 | 14 | 14 | 16 |
| 17 | 8.1 | 9.0 | 10 | 9.3 | 13 | 11 | 14 | 16 | 16 | 14 | 14 | 14 |
| 18 | 8.4 | 9.9 | 10 | 9.3 | 13 | 12 | 15 | 16 | 16 | 14 | 15 | 14 |
| 19 | 8.7 | 9.9 | 10 | 9.3 | 13 | 12 | 15 | 15 | 16 | 14 | 17 | 14 |
| 20 | 8.7 | 10 | 9.3 | 9.0 | 12 | 12 | 15 | 16 | 15 | 14 | 17 | 14 |
| 21 | 8.7 | 10 | 10 | 9.3 | 12 | 11 | 15 | 16 | 14 | 14 | 15 | 14 |
| 22 | 8.4 | 10 | 10 | 9.0 | 11 | 12 | 14 | 16 | 14 | 14 | 15 | 14 |
| 23 | 8.7 | 11 | 10 | 9.0 | 12 | 12 | 15 | 16 | 14 | 14 | 15 | 14 |
| 24 | 8.1 | 11 | 11 | 9.0 | 13 | 12 | 15 | 16 | 14 | 14 | 15 | 15 |
| 25 | 8.4 | 11 | 9.3 | 8.7 | 13 | 12 | 16 | 16 | 14 | 14 | 16 | 14 |
| 26 | 7.7 | 9.9 | 9.9 | 8.7 | 13 | 11 | 16 | 14 | 14 | 14 | 16 | 12 |
| 27 | 8.7 | 10 | 10 | 8.7 | 12 | 11 | 16 | 15 | 14 | 14 | 16 | 15 |
| 28 | 8.7 | 10 | 10 | 8.7 | 14 | 12 | 16 | 15 | 14 | 14 | 15 | 15 |
| 29 | 8.7 | 10 | 10 | 8.7 | - | 12 | 16 | 14 | 14 | 14 | 14 | 16 |
| 30 | 9.0 | 11 | 10 | 9.0 | - | 12 | 16 | 16 | 14 | 14 | 15 | 15 |
| 31 | 8.1 | - | 10 | 13 | - | 12 | - | 15 | - | 14 | 15 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 261.2 | 9.0 | 6.2 | 8.42 | 518 |
| November | 295.1 | 11 | 9.0 | 9.84 | 585 |
| December | 322.4 | 11 | 9.3 | 10.4 | 639 |
| Calendar year 1948 | 4,167.2 | 15 | 4.0 | 11.4 | 8,260 |
| January | 294.9 | 13 | 8.7 | 9.51 | 585 |
| February | 358 | 14 | 11 | 12.8 | 710 |
| March | 362 | 12 | 11 | 11.7 | 718 |
| April | 418 | 16 | 11 | 13.9 | 829 |
| May | 486 | 16 | 14 | 15.7 | 964 |
| June | 453 | 16 | 14 | 15.1 | 899 |
| July | 434 | 14 | 14 | 14.0 | 861 |
| August | 451 | 17 | 11 | 14.5 | 895 |
| September | 439 | 16 | 12 | 14.6 | 871 |
| Water year 1948-49 | 4,574.6 | 17 | 6.2 | 12.5 | 9,070 |

## Hurricane Creek near Joseph, Oreg.

Location.--Water-stage recorder, lat. 45°20', long. 117°18', in NE¼ sec. 3, T. 3 S., R. 44 E., upstream from intake of Moonshine ditch and 3½ miles southwest of Joseph.

Drainage area.--31 square miles.

Records available.--April to September 1915, April 1924 to September 1949.

Average discharge.--22 years (1927-49), 68.7 second-feet.

Extremes.--Maximum discharge during year, 562 second-feet June 10; maximum gage height, 3.35 feet May 10, 15; minimum discharge, 5 second-feet Feb. 17, caused by ice jam upstream (gage height, 1.38 feet).
1915, 1924-49: Maximum discharge, 1,110 second-feet June 9, 1948 (gage height, 3.55 feet); minimum recorded, 3.4 second-feet Feb. 10, 1938, Feb. 6, 1946, probably caused by ice jam upstream.

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

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 24 | 21 | 16 | 17 | 14 | 14 | 16 | 131 | 210 | 148 | 79 | 32 |
| 2 | 23 | 23 | 17 | 16 | 14 | 14 | 16 | 218 | 183 | 174 | 80 | 32 |
| 3 | 23 | 24 | 17 | 15 | 14 | 14 | 16 | 176 | 169 | 192 | 80 | 32 |
| 4 | 31 | 21 | 15 | 14 | 14 | 14 | 16 | 140 | 194 | 188 | 77 | 32 |
| 5 | 28 | 21 | 14 | 15 | 14 | 14 | 17 | 120 | 275 | 195 | 72 | 32 |
| 6 | 26 | 20 | 14 | 15 | 14 | 14 | 19 | 118 | 350 | 184 | 70 | 32 |
| 7 | 29 | 19 | 14 | 15 | 14 | 14 | 22 | 140 | 392 | 170 | 67 | 31 |
| 8 | 29 | 16 | 13 | 14 | 14 | 14 | 23 | 206 | 404 | 160 | 62 | 30 |
| 9 | 27 | 16 | 14 | 14 | 14 | 14 | 26 | 275 | 384 | 157 | 60 | 31 |
| 10 | 26 | 18 | 15 | 14 | 12 | 14 | 31 | 326 | 418 | 170 | 59 | 33 |
| 11 | 25 | 19 | 14 | 14 | 12 | 14 | 44 | 338 | 397 | 170 | 60 | 33 |
| 12 | 24 | 19 | 12 | 14 | 12 | 14 | 51 | 374 | 330 | 167 | 59 | 30 |
| 13 | 24 | 18 | 12 | 14 | 14 | 14 | 56 | 362 | 310 | 151 | 56 | 30 |
| 14 | 24 | 18 | 13 | 14 | 15 | 14 | 40 | 386 | 295 | 145 | 53 | 29 |
| 15 | 24 | 18 | 13 | 14 | 15 | 14 | 42 | 447 | 295 | 139 | 50 | 29 |
| 16 | 23 | 18 | 13 | 14 | 15 | 15 | 52 | 392 | 262 | 130 | 49 | 33 |
| 17 | 23 | 17 | 12 | 14 | 15 | 15 | 66 | 338 | 211 | 116 | 62 | 30 |
| 18 | 22 | 14 | 13 | 14 | 15 | 16 | 80 | 250 | 192 | 111 | 54 | 29 |
| 19 | 21 | 16 | 14 | 14 | 15 | 17 | 100 | 254 | 192 | 103 | 48 | 29 |
| 20 | 21 | 17 | 15 | 14 | 15 | 16 | 96 | 246 | 199 | 95 | 46 | 28 |
| 21 | 21 | 18 | 15 | 14 | 16 | 16 | 79 | 214 | 227 | 92 | 44 | 27 |
| 22 | 20 | 18 | 14 | 14 | 16 | 16 | 72 | 206 | 253 | 92 | 41 | 27 |
| 23 | 19 | 19 | 13 | 14 | 15 | 16 | 86 | 206 | 235 | 92 | 40 | 27 |
| 24 | 22 | 22 | 13 | 14 | 15 | 16 | 105 | 226 | 235 | 92 | 40 | 26 |
| 25 | 22 | 19 | 14 | 14 | 14 | 16 | 105 | 254 | 223 | 86 | 39 | 26 |
| 26 | 21 | 17 | 16 | 14 | 14 | 16 | 110 | 320 | 195 | 86 | 38 | 26 |
| 27 | 21 | 16 | 16 | 14 | 14 | 16 | 131 | 380 | 187 | 84 | 37 | 26 |
| 28 | 20 | 17 | 16 | 14 | 14 | 16 | 194 | 380 | 187 | 80 | 37 | 27 |
| 29 | 20 | 16 | 16 | 14 | - | 16 | 186 | 315 | 160 | 77 | 37 | 27 |
| 30 | 20 | 16 | 16 | 14 | - | 16 | 146 | 254 | 142 | 77 | 36 | 27 |
| 31 | 20 | - | 16 | 14 | - | 16 | - | 234 | - | 79 | 34 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 723 | 31 | 19 | 23.3 | 1,430 |
| November | 551 | 24 | 14 | 18.4 | 1,090 |
| December | 445 | 17 | 12 | 14.4 | 883 |
| Calendar year 1948 | 33,428 | 783 | 11 | 91.3 | 66,290 |
| January | 443 | 17 | 14 | 14.3 | 879 |
| February | 399 | 16 | 12 | 14.2 | 791 |
| March | 465 | 17 | 14 | 15.0 | 922 |
| April | 2,043 | 194 | 16 | 68.1 | 4,050 |
| May | 8,226 | 447 | 118 | 265 | 16,320 |
| June | 7,666 | 418 | 142 | 256 | 15,210 |
| July | 4,002 | 195 | 77 | 129 | 7,940 |
| August | 1,666 | 80 | 34 | 53.7 | 3,300 |
| September | 883 | 33 | 26 | 29.4 | 1,750 |
| Water year 1948-49 | 27,512 | 447 | 12 | 75.4 | 54,560 |

Peak discharge (base, 350 sec.-ft.).--May 10 (6 p.m.) 545 sec.-ft.; May 15 (2 a.m.) 545 sec.-ft.; May 27 (8 to 9 p.m.) 482 sec.-ft.; June 7 (7 p.m.) 482 sec.-ft.; June 10 (8 p.m.) 562 sec.-ft.

## Lostine River near Lostine, Oreg.

Location.--Water-stage recorder, lat. 45°26', long. 117°26', in NW¼ sec. 34, T. 1 S., R. 43 E., 3½ miles south of Lostine and 10 miles upstream from mouth.

Drainage area.--70 square miles.

Records available.--August 1912 to March 1914, April to September 1915, July 1925 to September 1949.

Average discharge.--22 years (1912-13, 1928-49), 184 second-feet.

Extremes.--Maximum discharge during year, 1,480 second-feet June 8; maximum gage height, *6.13 feet May 15; minimum discharge not determined, probably occurred during period of ice effect or no gage-height record Dec. 16 to Feb. 15; minimum daily discharge, 30 second-feet Jan. 21 to Feb. 14.
1912-14, 1915, 1925-49: Maximum discharge, 2,540 second-feet May 27, 1913; minimum recorded, 10 second-feet Nov. 28-30, 1936.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. No large diversions above station. Flow slightly regulated by Minam Lake Reservoir.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Backwater from debris Feb. 23 to May 29)

| | | | | | |
|---|---|---|---|---|---|
| 0.7 | 30 | 1.5 | 106 | 3.3 | 485 |
| .8 | 37 | 1.8 | 148 | 4.0 | 700 |
| 1.0 | 53 | 2.2 | 220 | 5.0 | 1,050 |
| 1.2 | 73 | 2.7 | 325 | 5.8 | 1,360 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 39 | 40 | 40 | 46 | 30 | 36 | 40 | 355 | 656 | a370 | 112 | 40 |
| 2 | 38 | 48 | 43 | 43 | 30 | 37 | 41 | 491 | 554 | a400 | 111 | 40 |
| 3 | 38 | 54 | 44 | 40 | 30 | 36 | 41 | 449 | 497 | a450 | 111 | 40 |
| 4 | 50 | 43 | 40 | 37 | 30 | 37 | 44 | 372 | 572 | a450 | 107 | 40 |
| 5 | 62 | 42 | 40 | 35 | 30 | 37 | 57 | 323 | 854 | a450 | 96 | 40 |
| 6 | 49 | 40 | 40 | 35 | 30 | 38 | 63 | 302 | 1,140 | a430 | 92 | 41 |
| 7 | 54 | 38 | 40 | 35 | 30 | 38 | 78 | 316 | 1,350 | 405 | 87 | 41 |
| 8 | 55 | 35 | 40 | 35 | 30 | 38 | 83 | 398 | 1,260 | 385 | 83 | 41 |
| 9 | 53 | 38 | 41 | 35 | 30 | 38 | 92 | 566 | 1,150 | 375 | 81 | 42 |
| 10 | 49 | 41 | 44 | 35 | 30 | 37 | 111 | 777 | 1,200 | 400 | 75 | 42 |
| 11 | 48 | 37 | 44 | 35 | 30 | 38 | 162 | 994 | 1,240 | 400 | 77 | 43 |
| 12 | 47 | 37 | 48 | 35 | 30 | 37 | 193 | 1,110 | 1,050 | 372 | 75 | 41 |
| 13 | 46 | 36 | 40 | 35 | 30 | 37 | 159 | 1,120 | 938 | 335 | 73 | 38 |
| 14 | 45 | 36 | 42 | 35 | 30 | 37 | 140 | 1,180 | 889 | 314 | 66 | 37 |
| 15 | 45 | 37 | 40 | 35 | 35 | 38 | 142 | 1,360 | 868 | 300 | 62 | 37 |
| 16 | 43 | 37 | 38 | 35 | 40 | 39 | 175 | 1,290 | 760 | 277 | 60 | 54 |
| 17 | 41 | 37 | 38 | 35 | 44 | 38 | 240 | 1,220 | 557 | 236 | 59 | 47 |
| 18 | 41 | 34 | 40 | 35 | 46 | 41 | 300 | 886 | 479 | 212 | 69 | 43 |
| 19 | 40 | 38 | 42 | 35 | 43 | 48 | 352 | 826 | 461 | 201 | 69 | 40 |
| 20 | 39 | 38 | 43 | 35 | 43 | 48 | 330 | 830 | 485 | 173 | 58 | 39 |
| 21 | 38 | 36 | 42 | 30 | 43 | 46 | 275 | 710 | 563 | 156 | 54 | 38 |
| 22 | 38 | 37 | 40 | 30 | 58 | 43 | 256 | 668 | 690 | 158 | 51 | 38 |
| 23 | 37 | 40 | 40 | 30 | 55 | 42 | 289 | 656 | 650 | 156 | 49 | 37 |
| 24 | 39 | 55 | 40 | 30 | 44 | 42 | 335 | 746 | 644 | 153 | 47 | 36 |
| 25 | 40 | 44 | 45 | 30 | 41 | 41 | 311 | 872 | 614 | 145 | 46 | 36 |
| 26 | 39 | 40 | 45 | 30 | 38 | 39 | 316 | 1,060 | 524 | 136 | 44 | 35 |
| 27 | 38 | 40 | 45 | 30 | 37 | 39 | 365 | 1,280 | a450 | 134 | 43 | 34 |
| 28 | 37 | 42 | 45 | 30 | 37 | 39 | 479 | 1,290 | a400 | 123 | 42 | 34 |
| 29 | 38 | 38 | 45 | *30 | - | 40 | 494 | 1,160 | a350 | 116 | 41 | 37 |
| 30 | 37 | 38 | 45 | 30 | - | 39 | 400 | 910 | a350 | 114 | 40 | 36 |
| 31 | 38 | - | 46 | 30 | - | 40 | - | 805 | - | 115 | 40 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,341 | 62 | 37 | 43.3 | 2,660 |
| November | 1,196 | 55 | 34 | 39.9 | 2,370 |
| December | 1,305 | 48 | 38 | 42.1 | 2,590 |
| Calendar year 1948 | 86,916 | 1,750 | 34 | 237 | 172,400 |
| January | 1,056 | 46 | 30 | 34.1 | 2,090 |
| February | 1,024 | 58 | 30 | 36.6 | 2,030 |
| March | 1,223 | 48 | 36 | 39.5 | 2,430 |
| April | 6,363 | 494 | 40 | 212 | 12,620 |
| May | 25,322 | 1,360 | 302 | 817 | 50,230 |
| June | 22,195 | 1,350 | 350 | 740 | 44,020 |
| July | 8,441 | 450 | 114 | 272 | 16,740 |
| August | 2,120 | 112 | 40 | 68.4 | 4,200 |
| September | 1,187 | 54 | 34 | 39.6 | 2,350 |
| Water year 1948-49 | 72,773 | 1,360 | 30 | 199 | 144,300 |

Peak discharge (base, 1,100 sec.-ft.).--May 15 (7 a.m.) 1,440 sec.-ft.; May 28 (2:30 a.m.) 1,460 sec.-ft.; June 8 (1 a.m.) 1,480 sec.-ft.; June 11 (1 a.m.) 1,450 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record; discharge computed on basis of records for Hurricane Creek near Joseph, Bear Creek near Wallowa, and Catherine Creek near Union.

Note.--Stage-discharge relation affected by ice Dec. 16-18, 21-30, Jan. 1 to Feb. 15 (no gage-height record Jan. 3-17, 20-28, Jan. 30 to Feb. 1; discharge computed as explained in footnote a).

## Bear Creek near Wallowa, Oreg.

Location.--Water-stage recorder, lat. 45°32', long. 117°33', in NE¼ sec. 34, T. 1 N., R. 42 E., at bridge 3 miles southwest of Wallowa.

Drainage area.--68 square miles.

Records available.--April to September 1915, November 1931 to September 1949. April 1924 to November 1931 (incomplete) at site 1 mile upstream above intakes of two irrigation ditches with a combined capacity of about 3 second-feet.

Average discharge.--20 years (1929-49), 107 second-feet.

Extremes.--Maximum discharge during year, 1,080 second-feet May 11, 15 (gage height, 3.16 feet); minimum, 7 second-feet Feb. 10.
1915,1924-49: Maximum discharge, 1,620 second-feet Apr. 22, 1936 (gage height, 3.82 feet, from floodmarks), from rating curve extended above 950 second-feet; minimum, 3 second-feet Jan. 20, Feb. 1, 1937.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Small diversions above station for irrigation.

Rating tables, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 15

| | | | | | |
|---|---|---|---|---|---|
| 0.7 | 5 | 1.4 | 62 | 2.6 | 560 |
| .8 | 9 | 1.6 | 95 | 2.9 | 820 |
| .9 | 15 | 1.8 | 140 | 3.1 | 1,020 |
| 1.0 | 22 | 2.0 | 200 | | |
| 1.2 | 40 | 2.3 | 350 | | |

May 16 to Sept. 30

| | | | | | |
|---|---|---|---|---|---|
| 1.0 | 8 | 1.5 | 58 | 2.5 | 390 |
| 1.1 | 14 | 1.7 | 94 | 2.7 | 540 |
| 1.2 | 22 | 1.9 | 140 | 3.0 | 830 |
| 1.3 | 31 | 2.1 | 200 | | |
| 1.4 | 43 | 2.3 | 280 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10 | 16 | b24 | | 11 | 54 | 45 | 290 | 354 | 130 | 23 | 10 |
| 2 | 10 | 21 | b24 | | 11 | 54 | 46 | 431 | 310 | 146 | 22 | 10 |
| 3 | 10 | 26 | 24 | | 11 | 52 | 48 | 445 | 272 | 155 | 21 | 10 |
| 4 | 18 | 18 | 26 | | 11 | 52 | 55 | 380 | 320 | 155 | 20 | 10 |
| 5 | 17 | 18 | b25 | | 10 | 54 | 76 | 308 | 492 | 152 | 20 | 10 |
| 6 | 14 | 18 | b24 | | 9 | 57 | 111 | 270 | 690 | 152 | 19 | 10 |
| 7 | 16 | 16 | b23 | | 9 | 58 | 155 | 290 | 720 | 130 | 18 | 10 |
| 8 | 16 | b13 | b22 | a15 | 9 | 57 | 170 | 374 | 640 | 113 | 18 | 10 |
| 9 | 16 | b12 | b25 | | 9 | 54 | 182 | 520 | 567 | 104 | 17 | 10 |
| 10 | 16 | b15 | 25 | | b8 | 49 | 197 | 676 | 594 | 102 | 16 | 10 |
| 11 | 16 | 17 | 24 | | b8 | 47 | 255 | 890 | 558 | 94 | 17 | 12 |
| 12 | 16 | 17 | 31 | | b8 | 47 | 275 | 860 | 468 | 90 | 17 | 10 |
| 13 | 16 | 17 | b30 | | 9 | 49 | 208 | 830 | 411 | 61 | 17 | 9 |
| 14 | 15 | 17 | b30 | | 9 | 51 | 176 | 890 | 390 | 73 | 16 | 9 |
| 15 | 15 | 18 | b30 | | 10 | 56 | 173 | 1,000 | 378 | 68 | 15 | 9 |
| 16 | 15 | 18 | b28 | | 13 | 62 | 194 | 820 | 320 | 63 | 15 | 19 |
| 17 | 14 | 18 | b27 | | 28 | 68 | 245 | 720 | 240 | 56 | 14 | 13 |
| 18 | 15 | 17 | b26 | | 60 | 82 | 308 | 508 | 208 | 50 | 16 | 11 |
| 19 | 14 | 18 | b25 | | 38 | 118 | 338 | 453 | 200 | 48 | 15 | 10 |
| 20 | 14 | 18 | b27 | | 32 | 138 | 314 | 453 | 204 | 44 | 13 | 9 |
| 21 | 14 | 17 | a28 | | 31 | 118 | 260 | 390 | 232 | 41 | 13 | 9 |
| 22 | 14 | 18 | a28 | a12 | 42 | 101 | 232 | 366 | 272 | 39 | 12 | 8 |
| 23 | *14 | 21 | a26 | | 63 | 87 | 270 | 360 | 248 | 37 | 12 | 8 |
| 24 | 17 | 33 | a24 | | 58 | 78 | 320 | 411 | 240 | 36 | 12 | 8 |
| 25 | 16 | 27 | a23 | | 55 | 73 | 298 | 492 | 220 | 33 | 12 | 8 |
| 26 | 14 | 27 | a22 | | 52 | 68 | 290 | 603 | 191 | 31 | 11 | 8 |
| 27 | 14 | b26 | a22 | | 52 | 61 | 314 | 710 | 164 | 30 | 11 | 8 |
| 28 | 13 | b25 | a22 | | 52 | 56 | 404 | 710 | 161 | 28 | 10 | 8 |
| 29 | 14 | b24 | a20 | *12 | - | 51 | 424 | 585 | 155 | 26 | 10 | 12 |
| 30 | 14 | b24 | a20 | 11 | - | 48 | 344 | 460 | 130 | 25 | 10 | 10 |
| 31 | 16 | - | a20 | 11 | - | 46 | - | 418 | - | 23 | 10 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 453 | 18 | 10 | 14.6 | 899 |
| November | 590 | 33 | 12 | 19.7 | 1,170 |
| December | 775 | 31 | 20 | 25.0 | 1,540 |
| Calendar year 1948 | 53,973 | 1,190 | 10 | 147 | 107,100 |
| January | 415 | - | - | 13.4 | 823 |
| February | 718 | 63 | 8 | 25.6 | 1,420 |
| March | 2,046 | 138 | 46 | 66.0 | 4,060 |
| April | 6,725 | 424 | 45 | 224 | 13,340 |
| May | 16,913 | 1,000 | 270 | 546 | 33,550 |
| June | 10,349 | 720 | 130 | 345 | 20,530 |
| July | 2,355 | 155 | 23 | 76.0 | 4,670 |
| August | 472 | 23 | 10 | 15.2 | 936 |
| September | 298 | 19 | 8 | 9.9 | 591 |
| Water year 1948-49 | 42,109 | 1,000 | 8 | 115 | 83,530 |

Peak discharge (base, 600 sec.-ft.).--May 11 (12 p.m.) 1,080 sec.-ft.; May 15 (2 a.m.) 1,080 sec.-ft.; May 26 (10 p.m.) 830 sec.-ft.; June 7 (9 p.m.) 800 sec.-ft.; June 10 (9 p.m.) 740 sec.-ft.

* Winter discharge measurement made on this day.

a No gage-height record (stage-discharge relation affected by ice during most of period); discharge computed on basis of records for Hurricane Creek near Joseph, Lostine River near Lostine, and Catherine Creek near Union.

b Stage-discharge relation affected by ice.

## Asotin Creek near Asotin, Wash.

Location.--Staff gage, lat. 46°20', long. 117°12', in sec. 20, T. 10 N., R. 45 E., half a mile upstream from Washington Water Power Co.'s diversion for water supply and irrigation, 4 miles upstream from George Creek, and 8 miles west of Asotin.

Drainage area.--171 square miles.

Records available.--August 1928 to September 1949. March 1904 to November 1906 and August 1910 to October 1911 at practically same site.

Average discharge.--21 years (1928-49), 61.6 second-feet.

Extremes.--Maximum discharge observed during year, 378 second-feet May 15 (gage height, 2.70 feet); minimum not determined, probably occurred sometime during period of ice effect.

1904-6, 1910-11, 1928-49: Maximum discharge observed, 1,180 second-feet Apr. 15, 1904 (gage height, 4.3 feet, datum then in use); minimum observed, 16 second-feet Jan. 5, 1937.

Remarks.- Records good except those for periods of rapidly changing stage, which are fair, and those for periods of ice effect, which are poor. Gage read twice daily. Large part of low flow diverted for irrigation.

Cooperation.--Gage-height record furnished by Washington Water Power Co.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 34 | 36 | 40 | 35 | 25 | 132 | 78 | 206 | 194 | 52 | 34 | 31 |
| 2 | 33 | 38 | 40 | 33 | 25 | 142 | 77 | 253 | 172 | 49 | 33 | 31 |
| 3 | 33 | 51 | 38 | 31 | 25 | 142 | 89 | 253 | 152 | 49 | 33 | 33 |
| 4 | 36 | 38 | 36 | 30 | 25 | 152 | 98 | 229 | 142 | 48 | 33 | 33 |
| 5 | 35 | 37 | 36 | 30 | 25 | 152 | 119 | 194 | 142 | 48 | 33 | 34 |
| 6 | 36 | 36 | 38 | 31 | 25 | 142 | 162 | 172 | 142 | 49 | 34 | 34 |
| 7 | 36 | 35 | 39 | 36 | 25 | 142 | 183 | 183 | 142 | 47 | 34 | 33 |
| 8 | 34 | 33 | 39 | 35 | 25 | 132 | 206 | 206 | 132 | 44 | 34 | 33 |
| 9 | 35 | 34 | 39 | 34 | 30 | 119 | 194 | 253 | 123 | 42 | 33 | 34 |
| 10 | 34 | 35 | 30 | 32 | 150 | 107 | 183 | 302 | 116 | 42 | 33 | 33 |
| 11 | 34 | 35 | 40 | 31 | 70 | 94 | 218 | 352 | 109 | 41 | 33 | 34 |
| 12 | 34 | 35 | 39 | *28 | 40 | 96 | 241 | 352 | 105 | 40 | 34 | 35 |
| 13 | 34 | 36 | 38 | 27 | 40 | 91 | 206 | 352 | 96 | 39 | 34 | 33 |
| 14 | 34 | 36 | 38 | 26 | 40 | 94 | 172 | 352 | 91 | 39 | 34 | 33 |
| 15 | 34 | 36 | 38 | 26 | 42 | 100 | 162 | 378 | 84 | 37 | 33 | 35 |
| 16 | 34 | 35 | 34 | 26 | 152 | 116 | 172 | 352 | 84 | 37 | 34 | 40 |
| 17 | 34 | 36 | 33 | 26 | 142 | 132 | 206 | 302 | 78 | 39 | 34 | 37 |
| 18 | 34 | 34 | 33 | 26 | 89 | 152 | 241 | 253 | 75 | 39 | 34 | 35 |
| 19 | 34 | 36 | 37 | 26 | 68 | 206 | 265 | 218 | 72 | 39 | 33 | 35 |
| 20 | 34 | 34 | 43 | 26 | 68 | 218 | 253 | 206 | 67 | 39 | 33 | 35 |
| 21 | 34 | 34 | 40 | 25 | *56 | 194 | 218 | 206 | 67 | 39 | 33 | 34 |
| 22 | 34 | 35 | 41 | 25 | 277 | 172 | 194 | 206 | 64 | 36 | 33 | 34 |
| 23 | 34 | 36 | 38 | 25 | 142 | 152 | 183 | 194 | 61 | 39 | 35 | 34 |
| 24 | 36 | 54 | 36 | 25 | 152 | 132 | 218 | 183 | 61 | 41 | 35 | 33 |
| 25 | 34 | 46 | 34 | 25 | 132 | 132 | 194 | 183 | 58 | 39 | 34 | 33 |
| 26 | 34 | *44 | 32 | 25 | 132 | 118 | 172 | 183 | 61 | 37 | 33 | 31 |
| 27 | 34 | 40 | 31 | 25 | 132 | 110 | 172 | 194 | 58 | 37 | 33 | 31 |
| 28 | 34 | 42 | 30 | 25 | 132 | 96 | 218 | 194 | 55 | 37 | 33 | 33 |
| 29 | 35 | 40 | 30 | 25 | - | 89 | 277 | 183 | 58 | 35 | 33 | 37 |
| 30 | 35 | 40 | 30 | 25 | - | 87 | 229 | 183 | 55 | 35 | 31 | 39 |
| 31 | 36 | - | 33 | 25 | - | 78 | - | 194 | - | 35 | 31 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Runoff in acre-feet |
|---|---|---|---|---|---|
| October | 1,066 | 36 | 33 | 34.4 | 2,110 |
| November | 1,137 | 54 | 33 | 37.9 | 2,260 |
| December | 1,133 | 43 | 30 | 36.5 | 2,250 |
| Calendar year 1948 | 35,327 | 636 | 30 | 96.5 | 70,070 |
| January | 870 | 36 | 25 | 29.1 | 1,730 |
| February | 2,286 | 277 | 25 | 81.6 | 4,530 |
| March | 4,021 | 218 | 78 | 130 | 7,980 |
| April | 5,600 | 277 | 77 | 187 | 11,110 |
| May | 7,471 | 378 | 172 | 241 | 14,820 |
| June | 2,916 | 194 | 55 | 97.2 | 5,780 |
| July | 1,269 | 52 | 35 | 40.9 | 2,520 |
| August | 1,034 | 35 | 31 | 33.4 | 2,050 |
| September | 1,020 | 40 | 31 | 34.0 | 2,020 |
| Water year 1948-49 | 29,823 | 378 | 25 | 81.7 | 59,160 |

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 17-19, Dec. 23-31, Jan. 3-7, Jan. 9 to Feb. 14.

209003 O - 52 - 17

## Selway River above Meadow Creek, near Lowell, Idaho

Location.--Water-stage recorder, lat. 46°03', long. 115°18', in sec. 11, T. 31 N., R. 9 E., a quarter of a mile upstream from Meadow Creek, 1½ miles upstream from Selway Falls, 13 miles upstream from gaging station on Selway River near Lowell, and 16.5 miles southeast of Lowell post office.
Drainage area.--1,550 square miles.
Records available.--October 1944 to October 1949 (discontinued).
Extremes.--Maximum discharge during period October 1948 to October 1949, 30,000 second-feet May 16, computed on basis of records for station near Lowell; minimum, 253 second-feet Feb. 11 (gage height, 2.32 feet), result of snowslide upstream.
1944-49: Maximum discharge, 42,000 second-feet May 29, 1948 (gage height, 22.4 feet, from floodmark), by slope-area method; minimum daily, 175 second-feet Dec. 12, 1944.
Remarks.--Records excellent except those for periods of no gage-height record in summer, which are good, and those for period of ice effect, which are fair. Small diversions to Bitterroot River Basin from headwaters are reported and are shown on maps in T. 32 N., R. 16 E.

Discharge, in second-feet, 1948-49

1948-49

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 490 | 620 | 658 | 560 | 460 | 1,100 | 1,700 | 9,400 | 14,500 | 3,510 | 860 | 388 |
| 2 | 480 | 788 | 824 | 540 | 460 | 1,150 | 1,930 | f11,100 | 12,500 | 3,520 | 842 | 384 |
| 3 | 465 | 958 | 794 | 470 | 460 | 1,200 | 2,020 | f11,600 | 11,000 | 3,550 | 818 | 374 |
| 4 | 515 | 892 | 746 | 370 | 460 | 1,250 | 2,310 | 9,890 | 10,500 | 3,510 | 776 | 374 |
| 5 | 764 | 734 | 674 | 450 | 460 | 1,350 | 2,970 | 8,760 | 11,500 | 3,430 | 746 | 406 |
| 6 | 770 | 674 | 686 | 540 | 460 | 1,400 | 4,080 | 8,440 | 14,000 | 3,340 | 716 | 450 |
| 7 | 734 | 647 | 722 | 550 | 470 | 1,600 | 5,120 | 8,960 | 15,000 | 3,140 | 680 | 475 |
| 8 | 800 | 598 | 686 | 480 | 470 | 1,600 | 5,580 | 10,700 | 14,500 | 2,910 | 664 | 415 |
| 9 | 782 | 532 | 686 | 440 | 490 | 1,500 | 5,350 | 14,500 | 13,500 | f2,720 | 652 | 388 |
| 10 | 716 | 505 | 704 | 410 | 500 | 1,350 | 5,310 | 18,900 | 13,500 | 2,550 | 642 | 388 |
| 11 | 658 | 658 | 746 | 410 | 470 | 1,280 | 6,110 | 22,000 | 13,000 | 2,350 | 664 | 510 |
| 12 | 625 | 625 | 746 | 420 | 430 | 1,340 | 7,100 | 25,000 | 11,500 | 2,250 | 658 | 625 |
| 13 | 598 | 652 | 700 | 460 | 430 | 1,480 | f6,250 | h26,300 | f9,580 | 2,100 | 710 | 542 |
| 14 | 576 | 652 | 570 | 490 | 460 | 1,670 | f5,570 | 27,000 | 8,960 | 1,950 | 740 | 475 |
| 15 | 570 | 746 | 620 | 490 | 500 | 1,680 | 5,250 | 27,500 | 8,290 | 1,850 | 647 | 440 |
| 16 | 564 | 752 | 650 | 490 | 560 | 1,940 | 5,740 | 28,500 | 7,740 | 1,750 | 620 | 642 |
| 17 | 542 | 728 | 470 | 470 | 680 | 2,150 | 7,010 | 26,000 | 7,170 | 1,650 | 592 | 734 |
| 18 | 537 | 674 | 375 | 470 | 740 | 2,440 | 8,400 | 22,000 | 6,360 | 1,550 | 592 | 570 |
| 19 | 526 | 647 | 410 | 470 | 680 | 2,930 | 9,640 | 19,000 | 5,960 | 1,450 | 620 | 490 |
| 20 | 520 | 674 | 700 | 470 | 620 | 3,270 | 8,980 | 20,000 | 5,620 | 1,400 | 576 | 450 |
| 21 | 515 | 669 | 750 | 470 | 600 | 3,120 | 7,890 | 19,000 | 5,430 | 1,400 | 532 | 420 |
| 22 | 510 | 740 | 625 | 430 | 900 | 2,780 | 7,060 | h16,000 | 6,110 | 1,300 | 505 | 406 |
| 23 | 505 | 880 | 500 | 430 | 1,050 | 2,630 | 7,170 | 16,000 | 5,840 | 1,250 | 500 | 402 |
| 24 | 505 | 1,160 | 380 | 430 | 1,200 | 2,510 | 9,640 | 15,000 | 5,190 | 1,200 | 537 | 388 |
| 25 | 532 | 1,060 | 380 | *440 | 1,150 | 2,380 | 9,480 | 15,500 | 4,930 | 1,150 | 510 | 384 |
| 26 | 532 | 938 | 420 | 440 | 1,100 | 2,180 | 9,160 | 17,000 | 5,420 | 1,110 | 480 | 379 |
| 27 | 520 | 818 | 430 | 440 | 1,100 | 2,000 | 9,740 | 19,500 | 4,740 | 1,100 | 455 | 370 |
| 28 | 505 | 776 | 500 | 430 | 1,100 | 1,790 | 11,400 | 20,000 | 4,180 | 1,100 | 445 | 356 |
| 29 | 495 | 776 | 630 | 430 | - | 1,660 | 12,400 | 19,500 | 4,120 | 1,020 | 430 | 384 |
| 30 | 500 | 636 | 600 | 450 | - | 1,650 | 10,900 | 18,500 | 3,830 | 951 | 406 | 450 |
| 31 | 542 | - | 550 | 450 | - | 1,620 | - | 15,500 | - | 899 | 397 | - |

* Winter discharge measurement made on this day.
f Computed from partly estimated gage-height record.
h Computed from staff-gage reading.
Note.--Stage-discharge relation affected by ice, Dec. 13 to Mar. 10. No gage-height record Dec. 26-30, Jan. 4-24, Jan. 31 to Feb. 2, May 11, 12, 14-21, May 23 to June 12, July 10-25; discharge computed on basis of weather records and records for station near Lowell.

1949

| Day | Discharge | Day | Discharge |
|---|---|---|---|
| Oct. 1 | 505 | Oct. 4 | 425 |
| 2 | 505 | 5 | 581 |
| 3 | 455 | 6 | 740 |

Monthly discharge, in second-feet, 1948-49

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| Ootober 1948 | 17,893 | 800 | 465 | 577 | 0.372 | 0.43 | 35,490 |
| November | 22,209 | 1,160 | 505 | 740 | .477 | .53 | 44,050 |
| Decomber | 18,932 | 824 | 375 | 611 | .394 | .45 | 37,550 |
| Calendar year 1948 | 1,352,911 | 36,500 | 375 | 3,696 | 2.38 | 32.47 | 2,683,000 |
| January 1949 | 14,290 | 560 | 370 | 461 | .297 | .34 | 28,340 |
| February | 18,460 | 1,200 | 430 | 659 | .425 | .44 | 36,610 |
| March | 58,000 | 3,270 | 1,100 | 1,871 | 1.21 | 1.39 | 115,000 |
| April | 201,260 | 12,400 | 1,700 | 6,709 | 4.33 | 4.83 | 399,200 |
| May | 547,050 | 28,500 | 8,440 | 17,650 | 11.4 | 13.13 | 1,085,000 |
| June | 264,470 | 15,000 | 3,830 | 8,816 | 5.69 | 6.35 | 524,600 |
| July | 62,960 | 3,550 | 899 | 2,031 | 1.31 | 1.51 | 124,900 |
| August | 19,012 | 860 | 397 | 613 | .395 | .46 | 37,710 |
| September | 13,459 | 734 | 356 | 449 | .290 | .32 | 26,700 |
| Water year 1948-49 | 1,257,995 | 28,500 | 356 | 3,447 | 2.22 | 30.18 | 2,495,000 |
| Ootober 1-6, 1949 | 3,211 | 740 | 425 | 535 | .345 | .08 | 6,370 |

## Selway River near Lowell, Idaho

Location.--Water-stage recorder, lat. 46°05', long. 115°31', in sec. 25, T. 32 N., R. 7 E., a quarter of a mile upstream from O'Hara Creek and 7 miles upstream from Lowell post office.

Drainage area.--1,910 square miles.

Records available.--April 1911 to September 1912 (gage heights or fragmentary discharge records only), October 1929 to September 1949.

Average discharge.--20 years (1929-49), 3,454 second-feet.

Extremes.--Maximum discharge during year, 38,600 second-feet May 16 (gage height, 13.95 feet); minimum, 457 second-feet Sept. 28, 29 (gage height, 2.71 feet), but may have been less Feb. 11 as a result of snowslide upstream.
1929-49: Maximum discharge, 48,900 second-feet May 29, 1948 (gage height, 16.04 feet); minimum, probably less than 100 second-feet Jan. 8, 1937, during period of ice effect.

Remarks.--Records excellent except those for period of ice effect or no gage-height record, which are fair. Small diversions from headwaters.

Revisions.--W 1043: Drainage area.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 715 | 870 | 889 | 760 | 660 | 1,600 | 2,190 | 12,700 | 18,500 | 4,060 | 1,070 | 517 |
| 2 | 699 | 1,070 | 1,080 | 720 | 660 | 1,700 | 2,490 | 14,900 | 15,900 | 4,040 | 1,040 | 504 |
| 3 | 682 | 1,290 | 1,070 | 650 | 660 | 1,700 | 2,600 | 15,600 | 13,800 | 4,040 | 1,020 | 490 |
| 4 | 740 | 1,220 | 1,000 | 500 | 660 | 1,800 | 2,840 | 13,200 | 13,300 | 3,980 | 963 | 490 |
| 5 | 1,050 | 1,000 | 925 | 600 | 660 | 1,900 | 3,770 | 11,700 | 14,900 | 3,860 | 898 | 517 |
| 6 | 1,060 | 934 | 916 | 720 | 660 | 2,000 | 5,100 | 11,200 | 17,700 | 3,770 | 870 | 582 |
| 7 | 1,020 | 889 | 963 | 730 | 680 | 2,300 | 6,550 | 11,900 | 18,900 | 3,500 | 834 | 597 |
| 8 | 1,070 | 825 | 944 | 670 | 680 | 2,300 | 7,390 | 14,200 | 18,200 | 3,250 | 825 | 546 |
| 9 | 1,040 | 757 | 944 | 620 | 680 | 2,200 | 7,140 | 18,400 | 17,000 | 2,920 | 808 | 504 |
| 10 | 963 | 732 | 963 | 570 | 700 | 2,000 | 6,950 | 23,300 | 16,900 | 2,790 | 800 | 510 |
| 11 | 880 | 870 | 982 | 570 | 680 | 1,800 | 7,850 | 28,100 | 16,700 | 2,680 | 843 | 723 |
| 12 | 843 | 870 | 1,000 | 580 | 600 | 1,800 | 9,450 | 31,200 | 14,500 | 2,550 | 852 | 817 |
| 13 | 808 | 898 | 898 | 620 | 600 | 2,100 | 8,440 | 32,800 | 12,200 | 2,400 | 898 | 699 |
| 14 | 782 | 907 | *720 | 660 | 640 | 2,300 | 7,170 | 33,700 | 11,100 | 2,250 | 925 | 604 |
| 15 | 774 | 992 | 780 | 660 | 700 | 2,400 | 6,820 | 34,400 | 10,100 | 2,150 | 834 | 582 |
| 16 | 765 | 1,020 | 820 | 660 | 760 | 2,900 | 7,530 | 36,800 | 9,320 | 2,050 | 791 | 861 |
| 17 | 740 | 992 | 620 | 640 | 920 | 3,100 | 9,260 | 32,700 | 8,570 | 1,940 | 748 | 916 |
| 18 | 740 | 934 | 500 | 640 | 1,000 | 3,300 | 11,300 | 27,400 | 7,620 | 1,840 | 748 | 715 |
| 19 | 732 | 898 | 550 | 640 | 920 | 4,000 | 13,000 | 23,800 | 7,060 | 1,740 | 800 | 628 |
| 20 | 723 | 816 | 900 | 640 | 860 | 4,500 | 12,100 | 25,300 | 6,600 | 1,710 | 740 | 582 |
| 21 | 707 | 934 | 1,000 | 640 | 800 | 4,100 | 10,500 | 23,400 | 6,370 | 1,690 | 674 | 546 |
| 22 | 699 | 992 | 900 | 600 | 1,200 | 3,800 | 9,260 | 21,000 | 7,190 | 1,610 | 658 | 531 |
| 23 | 691 | 1,210 | 580 | 600 | 1,800 | 3,450 | 9,390 | 20,000 | 6,920 | 1,520 | 659 | 517 |
| 24 | 699 | 1,570 | 500 | 600 | 1,700 | *3,310 | 12,800 | 19,100 | 6,070 | 1,490 | 707 | 504 |
| 25 | 740 | 1,480 | 500 | 640 | 1,600 | 3,110 | 12,900 | 19,800 | 5,750 | 1,440 | 658 | 497 |
| 26 | 740 | 1,260 | 550 | *640 | 1,550 | 2,860 | 12,300 | 21,700 | 6,420 | 1,420 | 620 | 490 |
| 27 | 732 | 1,130 | 580 | 640 | 1,550 | 2,620 | 13,200 | 24,700 | 5,630 | 1,410 | 597 | 484 |
| 28 | 715 | 1,060 | 660 | 600 | 1,550 | 2,360 | 15,400 | 25,000 | 4,910 | 1,370 | 582 | 470 |
| 29 | 699 | 1,040 | 820 | 600 | - | 2,180 | 16,900 | 24,200 | 4,830 | 1,310 | 567 | 497 |
| 30 | 699 | 925 | 800 | 620 | - | 2,120 | 14,900 | 23,300 | 4,480 | 1,210 | 539 | 604 |
| 31 | 757 | - | 720 | 660 | - | 2,090 | - | 19,800 | - | 1,140 | 524 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff | |
|---|---|---|---|---|---|---|---|
| | | | | | | Inches | Acre-feet |
| October | 24,704 | 1,070 | 682 | 797 | 0.417 | 0.48 | 49,000 |
| November | 30,485 | 1,570 | 732 | 1,016 | .532 | .59 | 60,470 |
| December | 25,074 | 1,080 | 500 | 809 | .424 | .49 | 49,730 |
| Calendar year 1948 | 1,713,654 | 45,300 | 500 | 4,682 | 2.45 | 33.36 | 3,398,000 |
| January | 19,690 | 760 | 500 | 635 | .332 | .38 | 39,050 |
| February | 26,130 | 1,800 | 600 | 933 | .488 | .51 | 51,830 |
| March | 79,700 | 4,500 | 1,600 | 2,570 | 1.35 | 1.55 | 158,100 |
| April | 267,590 | 16,900 | 2,190 | 8,920 | 4.67 | 5.21 | 530,800 |
| May | 695,300 | 36,800 | 11,200 | 22,430 | 11.7 | 13.54 | 1,379,000 |
| June | 327,440 | 18,900 | 4,480 | 10,910 | 5.71 | 6.38 | 649,500 |
| July | 73,130 | 4,060 | 1,140 | 2,359 | 1.24 | 1.42 | 145,100 |
| August | 24,091 | 1,070 | 524 | 777 | .407 | .47 | 47,780 |
| September | 17,524 | 916 | 470 | 584 | .306 | .34 | 34,760 |
| Water year 1948-49 | 1,610,858 | 36,800 | 470 | 4,413 | 2.31 | 31.36 | 3,195,000 |

Peak discharge (base, 18,000 sec.-ft.).--May 16 (8 a.m.) 38,600 sec.-ft.; May 28 (2 a.m.) 27,100 sec.-ft.; June 7 (2:30 a.m.) 20,200 sec.-ft.

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 14 to about Mar. 10. No gage-height record Dec. 26-28, 30, 31, Jan. 4, 5, 11-24, Feb. 20-26, Mar. 6-22; discharge computed on basis of weather records and records for Clearwater River at Kamiah and South Fork Clearwater River near Grangeville.

## Clearwater River at Kamiah, Idaho

Location.--Water-stage recorder, lat. 46°14', long. 116°01', in sec. 1, T. 33 N., R. 3 E., a quarter of a mile downstream from highway bridge at Kamiah, three-quarters of a mile downstream from Lawyer Creek, and 6 miles downstream from South Fork. Datum of gage is 1,162.52 feet above mean sea level, datum of 1929, supplementary adjustment of 1947.

Drainage area.--4,850 square miles.

Records available.--August 1910 to September 1949.

Average discharge.--39 years, 8,004 second-feet.

Extremes.--Maximum discharge during year, 76,200 second-feet May 16 (gage height, 16.31 feet); minimum, 902 second-feet Dec. 24; minimum gage height, 3.33 feet Sept. 4.
1910-49: Maximum discharge, 99,000 second-feet May 29, 1948 (gage height, 19.22 feet); minimum, probably less than 200 second-feet Jan. 8, 1937, during period of ice effect.

Remarks.--Records excellent except those below 4,000 second-feet, which are good, or those for period of ice effect, which are fair. Some diurnal regulation at low stages caused by power plant on South Fork.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,520 | 1,870 | 1,920 | 1,840 | 1,550 | 4,450 | 5,650 | 27,000 | 35,700 | 8,050 | 2,240 | 1,040 |
| 2 | 1,470 | 2,080 | 2,130 | 1,750 | 1,550 | 4,570 | 6,310 | 31,400 | 30,900 | 7,650 | 2,170 | 1,010 |
| 3 | 1,440 | 2,760 | 2,350 | 1,570 | 1,550 | 4,800 | 6,570 | 38,100 | 26,300 | 7,620 | 2,120 | 1,000 |
| 4 | 1,500 | 3,000 | 2,190 | 1,200 | 1,550 | 5,100 | 7,120 | 31,100 | 24,600 | 7,470 | 2,030 | 990 |
| 5 | 2,160 | 2,380 | 2,020 | 1,450 | 1,550 | 5,400 | 8,700 | 28,500 | 26,500 | 7,290 | 1,930 | 1,000 |
| 6 | 2,450 | 2,080 | 1,940 | 1,750 | 1,550 | 5,700 | 11,300 | 24,800 | 30,700 | 7,290 | 1,850 | 1,110 |
| 7 | 2,110 | 1,960 | 2,000 | 1,800 | 1,600 | 6,440 | 14,200 | 25,600 | 34,500 | 6,920 | 1,780 | 1,170 |
| 8 | 2,140 | 1,810 | 1,980 | 1,600 | 1,600 | 6,440 | 16,300 | 29,300 | 33,600 | 6,390 | 1,700 | 1,150 |
| 9 | 2,130 | 1,670 | 1,960 | 1,450 | 1,650 | 6,130 | 16,300 | 37,500 | 30,600 | 5,920 | 1,690 | 1,050 |
| 10 | 2,000 | 1,590 | 1,940 | 1,350 | 1,650 | 5,500 | 15,600 | 46,300 | 29,900 | 5,600 | 1,640 | 1,040 |
| 11 | 1,850 | 1,710 | 2,020 | 1,350 | 1,600 | 5,130 | 17,300 | 54,800 | 29,600 | 5,350 | 1,630 | 1,250 |
| 12 | 1,740 | 1,850 | 2,140 | 1,400 | 1,450 | 5,250 | 20,200 | 62,200 | 26,200 | 5,180 | 1,700 | 1,850 |
| 13 | 1,670 | 1,850 | 1,980 | 1,500 | 1,450 | 5,580 | 18,800 | 64,900 | 22,100 | 4,920 | 1,730 | 1,670 |
| 14 | 1,630 | 1,940 | 1,600 | 1,600 | 1,550 | 6,650 | 16,000 | 66,300 | 20,200 | 4,580 | 1,840 | 1,430 |
| 15 | 1,570 | 2,060 | 1,780 | 1,600 | 1,700 | 6,730 | 15,100 | 67,400 | 18,400 | 4,350 | 1,720 | 1,290 |
| 16 | 1,560 | 2,240 | *1,850 | 1,600 | 1,900 | 7,740 | 16,100 | 72,300 | 17,100 | 4,140 | 1,560 | 1,670 |
| 17 | 1,540 | 2,140 | 1,320 | 1,550 | 2,300 | 8,210 | 19,500 | 66,000 | 16,000 | 3,900 | 1,500 | 2,530 |
| 18 | 1,510 | 2,060 | 1,040 | 1,550 | 2,500 | 8,600 | 23,600 | 57,400 | 14,800 | 3,660 | 1,440 | 1,990 |
| 19 | 1,510 | 1,940 | 1,170 | 1,550 | 2,300 | 10,300 | 27,200 | 49,600 | 13,600 | 3,470 | 1,470 | 1,550 |
| 20 | 1,500 | 1,980 | 1,980 | 1,550 | 2,100 | 11,600 | 26,400 | 51,500 | 12,700 | 3,390 | 1,550 | 1,390 |
| 21 | 1,500 | 2,080 | 2,210 | 1,550 | 2,000 | 11,200 | 23,500 | 49,500 | 12,000 | 3,470 | 1,430 | 1,290 |
| 22 | 1,450 | 2,030 | 1,880 | 1,450 | 3,000 | 10,100 | 21,400 | 43,700 | 12,700 | 3,290 | 1,330 | 1,240 |
| 23 | 1,450 | 2,620 | 1,370 | 1,450 | 5,500 | 9,210 | 21,200 | 40,800 | 12,800 | 3,070 | 1,290 | 1,200 |
| 24 | 1,500 | 3,570 | 1,090 | 1,450 | 5,200 | *8,670 | 27,500 | 38,200 | 11,500 | 2,940 | 1,340 | 1,150 |
| 25 | 1,670 | 3,510 | 1,090 | 1,500 | *4,700 | 8,150 | 27,900 | 38,600 | 10,800 | 2,880 | 1,400 | 1,150 |
| 26 | 1,630 | 2,940 | 1,230 | 1,500 | 4,500 | 7,410 | 26,200 | 41,800 | 11,400 | 2,780 | 1,310 | 1,120 |
| 27 | 1,630 | 2,570 | 1,300 | *1,500 | 4,450 | 6,790 | 27,000 | 47,700 | 11,500 | 2,800 | 1,240 | 1,110 |
| 28 | 1,570 | 2,290 | 1,470 | 1,450 | 4,400 | 6,210 | 31,000 | 49,100 | 9,660 | 2,820 | 1,200 | 1,090 |
| 29 | 1,540 | 2,240 | 1,900 | 1,450 | - | 5,720 | 35,400 | 46,500 | 9,210 | 2,730 | 1,150 | 1,100 |
| 30 | 1,470 | 2,050 | 1,850 | 1,500 | - | 5,620 | 32,000 | 45,200 | 9,080 | 2,510 | 1,120 | 1,360 |
| 31 | 1,560 | - | 1,770 | 1,550 | - | 5,500 | - | 38,200 | - | 2,370 | 1,070 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 51,970 | 2,450 | 1,440 | 1,676 | 0.346 | 0.40 | 103,100 |
| November | 66,870 | 3,570 | 1,590 | 2,229 | .460 | .51 | 132,600 |
| December | 54,470 | 2,350 | 1,040 | 1,757 | .362 | .42 | 108,000 |
| Calendar year 1948 | 3,903,600 | 94,000 | 1,040 | 10,670 | 2.20 | 29.94 | 7,742,000 |
| January | 47,360 | 1,840 | 1,200 | 1,528 | .315 | .36 | 93,940 |
| February | 68,400 | 5,500 | 1,450 | 2,443 | .504 | .52 | 135,700 |
| March | 214,900 | 11,600 | 4,450 | 6,932 | 1.43 | 1.65 | 426,200 |
| April | 581,350 | 35,400 | 5,650 | 19,380 | 4.00 | 4.46 | 1,153,000 |
| May | 1,409,300 | 72,300 | 24,800 | 45,460 | 9.37 | 10.81 | 2,795,000 |
| June | 604,650 | 35,700 | 9,080 | 20,160 | 4.16 | 4.64 | 1,199,000 |
| July | 144,800 | 8,050 | 2,370 | 4,671 | .963 | 1.11 | 287,200 |
| August | 49,170 | 2,240 | 1,070 | 1,586 | .327 | .38 | 97,530 |
| September | 38,990 | 2,530 | 990 | 1,300 | .268 | .30 | 77,340 |
| Water year 1948-49 | 3,332,230 | 72,300 | 990 | 9,129 | 1.88 | 25.56 | 6,609,000 |

Peak discharge (base, 28,200 sec.-ft.).--Apr. 29 (1 p.m.) 36,500 sec.-ft.; May 3 (2:30 a.m.) 41,100 sec.-ft.; May 16 (12 m.) 76,200 sec.-ft.; May 28 (6:30 a.m.) 51,900 sec.-ft.; June 7 (8:30 a.m.) 36,800 sec.-ft.

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Jan. 4 to Mar. 6. No gage-height record Oct. 21-24, Jan. 11-26; discharge computed on basis of weather records and records for other stations in Clearwater River Basin and nearby streams.

## Clearwater River at Spalding, Idaho

Location.--Water-stage recorder, lat. 46°25', long. 116°51', in lot 22, sec. 22, T. 36 N., R. 4 W., a quarter of a mile downstream from Lapwai Creek and three-eighths of a mile northwest of Spalding post office.

Drainage area.--9,570 square miles.

Records available.--March 1926 to September 1949.

Average discharge.--23 years, 14,510 second-feet.

Extremes.--Maximum discharge during year, 123,000 second-feet May 16 (gage height, 19.81 feet); minimum, 2,070 second-feet Sept. 5 (gage height, 2.70 feet).
1926-49: Maximum discharge, 177,000 second-feet May 29, 1948; maximum gage height, 25.6 feet Jan. 5, 1928 (present site and datum), from floodmark (ice jam); minimum discharge, probably less than 500 second-feet Jan. 9, 1937, during period of ice effect.

Remarks.--Records excellent except those for periods of ice effect, which are fair. Small diversions from tributaries; slight diurnal fluctuation at times caused by power plant on South Fork.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3,230 | 3,640 | 4,700 | 4,400 | 3,800 | 13,300 | 14,100 | 53,600 | 54,800 | 14,100 | 4,560 | 2,310 |
| 2 | 3,130 | 4,310 | 4,820 | 4,100 | 3,800 | 13,600 | 15,800 | 59,100 | 50,100 | 13,100 | 4,400 | 2,250 |
| 3 | 3,050 | 5,140 | 5,370 | 3,700 | 3,800 | 14,100 | 16,400 | 79,400 | 42,400 | 12,800 | 4,310 | 2,200 |
| 4 | 3,010 | 6,790 | 5,370 | 3,100 | 3,800 | 15,200 | 17,700 | 63,000 | 39,400 | 12,500 | 4,130 | 2,170 |
| 5 | 3,470 | 6,040 | 4,990 | 3,300 | 3,800 | 16,000 | 21,600 | 52,400 | 40,500 | 12,200 | 3,960 | 2,150 |
| 6 | 5,290 | 4,920 | 4,730 | 4,300 | 3,800 | 16,800 | 26,500 | 47,200 | 45,700 | 12,100 | 3,810 | 2,200 |
| 7 | 5,090 | 4,440 | 4,750 | 4,400 | 3,900 | 17,900 | 33,300 | 46,900 | 51,200 | 12,100 | 3,660 | 2,330 |
| 8 | 4,380 | 4,200 | 4,800 | 3,800 | 4,000 | 18,400 | 38,600 | 52,200 | 51,200 | 11,100 | 3,550 | 2,340 |
| 9 | 4,200 | 3,870 | 4,730 | 3,500 | 4,000 | 16,700 | 38,900 | 63,800 | 46,500 | 10,300 | 3,490 | 2,260 |
| 10 | 4,130 | 3,530 | 4,540 | 3,200 | 4,200 | 15,500 | 36,600 | 78,300 | 44,400 | 9,750 | 3,430 | 2,180 |
| 11 | 3,870 | 3,600 | 4,490 | 3,300 | 4,000 | 14,900 | 39,400 | 92,100 | 43,900 | 9,360 | 3,350 | 2,230 |
| 12 | 3,620 | 3,850 | 5,040 | 3,400 | 3,700 | 15,600 | 45,400 | 103,000 | 40,200 | 9,020 | 3,350 | 2,920 |
| 13 | 3,430 | 3,870 | 5,020 | 3,600 | 3,500 | 16,000 | 42,700 | 110,000 | 34,800 | 8,680 | 3,330 | 3,550 |
| 14 | 3,370 | 4,070 | 4,420 | 3,900 | 4,300 | 18,600 | 36,200 | 112,000 | 31,400 | 8,190 | 3,410 | 2,980 |
| 15 | 3,270 | 4,240 | *4,090 | 4,000 | 4,800 | 18,800 | 33,000 | 113,000 | 29,000 | 7,780 | 3,450 | 2,670 |
| 16 | 3,210 | 4,850 | 4,290 | 4,000 | 5,500 | 22,000 | 34,500 | 117,000 | 26,900 | 7,440 | 3,210 | 3,010 |
| 17 | 3,130 | 4,900 | 3,530 | 3,800 | 6,500 | 23,200 | 40,500 | 110,000 | 25,400 | 7,080 | 3,030 | 5,450 |
| 18 | 3,050 | 4,680 | 2,600 | 3,700 | 8,000 | g25,100 | 48,800 | 96,100 | 24,200 | 6,790 | 2,940 | 4,540 |
| 19 | 3,030 | 4,470 | 2,800 | 3,700 | 7,000 | g33,100 | 56,300 | 81,100 | 21,800 | 6,470 | 2,840 | 3,350 |
| 20 | 3,050 | 4,380 | 3,740 | 3,700 | 6,000 | g35,800 | 58,000 | 78,000 | 20,600 | 6,270 | 2,900 | 2,810 |
| 21 | 3,030 | 4,440 | 5,220 | 3,700 | 5,000 | g35,000 | 50,900 | 77,900 | 19,400 | 6,320 | 2,920 | 2,580 |
| 22 | 2,980 | 4,470 | 4,940 | 3,500 | 8,000 | g31,000 | 45,100 | 69,900 | 19,300 | 6,320 | 2,740 | 2,440 |
| 23 | 2,940 | 4,940 | 3,850 | 3,500 | 12,000 | g27,400 | 43,200 | 65,900 | 19,800 | 5,900 | 2,620 | 2,380 |
| 24 | 2,920 | 7,750 | 3,150 | 3,500 | 17,000 | g24,800 | 52,500 | 61,900 | 18,600 | 5,630 | 2,580 | 2,330 |
| 25 | 3,130 | 9,780 | 2,600 | 3,600 | 16,000 | *g22,800 | 54,500 | 61,100 | 17,400 | 5,550 | 2,680 | 2,260 |
| 26 | 3,510 | 7,970 | 2,900 | 3,600 | *13,500 | 19,800 | 50,200 | 64,100 | 17,000 | 5,420 | 2,680 | 2,250 |
| 27 | 3,490 | 6,520 | 3,200 | 3,600 | 13,600 | 17,600 | 50,400 | 71,800 | 18,600 | 5,370 | 2,530 | 2,230 |
| 28 | 3,450 | 5,710 | 3,500 | 3,500 | 13,300 | 15,700 | 56,000 | 74,800 | 16,300 | 5,390 | 2,500 | 2,180 |
| 29 | 3,330 | 5,370 | 4,600 | 3,500 | - | 14,200 | 67,600 | 71,400 | 15,100 | 5,420 | 2,480 | 2,150 |
| 30 | 3,230 | 5,090 | 4,500 | 3,600 | - | 13,900 | 64,600 | 68,000 | 15,800 | 5,120 | 2,450 | 2,220 |
| 31 | 3,210 | - | 4,400 | 3,800 | - | 13,700 | - | 59,900 | - | 4,820 | 2,340 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 107,230 | 5,290 | 2,920 | 3,459 | 0.361 | 0.42 | 212,700 |
| November | 151,830 | 9,780 | 3,530 | 5,061 | .529 | .59 | 301,200 |
| December | 131,680 | 5,370 | 2,600 | 4,248 | .444 | .51 | 261,200 |
| Calendar year 1948 | 7,799,010 | 166,000 | 2,600 | 21,310 | 2.23 | 30.33 | 15,470,000 |
| January | 114,300 | 4,400 | 3,100 | 3,687 | .385 | .44 | 226,700 |
| February | 190,600 | 17,000 | 3,500 | 6,807 | .711 | .74 | 378,000 |
| March | 616,500 | 35,800 | 13,300 | 19,890 | 2.08 | 2.40 | 1,225,000 |
| April | 1,223,300 | 67,600 | 14,100 | 40,980 | 4.28 | 4.78 | 2,438,000 |
| May | 2,354,900 | 117,000 | 46,900 | 75,960 | 7.94 | 9.15 | 4,671,000 |
| June | 941,700 | 54,800 | 15,100 | 31,390 | 3.28 | 3.66 | 1,868,000 |
| July | 258,390 | 14,100 | 4,820 | 8,335 | .871 | 1.00 | 512,500 |
| August | 99,610 | 4,560 | 2,340 | 3,212 | .336 | .39 | 197,600 |
| September | 78,920 | 5,450 | 2,150 | 2,631 | .275 | .31 | 156,500 |
| Water year 1948-49 | 6,274,960 | 117,000 | 2,150 | 17,190 | 1.90 | 24.39 | 12,450,000 |

Peak discharge (base, 51,000 sec.-ft.).--Apr. 20 (2:30 a.m.) 59,800 sec.-ft.; Apr. 29 (4 p.m.) 71,800 sec.-ft.; May 3 (4:30 p.m.) 84,700 sec.-ft.; May 16 (4 p.m.) 123,000 sec.-ft.; May 28 (1 p.m.) 78,900 sec.-ft.; June 7 (2:30 p.m.) 54,400 sec.-ft.

* Winter discharge measurement made on this day.

g Computed from graph based on gage readings and shape of recorder graph for stations upstream.

Note.--Stage-discharge relation affected by ice Dec. 18, 19, Dec. 25 to Feb. 26.

## Lochsa River near Lowell, Idaho

Location.--Water-stage recorder, lat. 46°09', long. 115°35', in SW¼SE¼ sec. 33, T. 33 N., R. 7 E., three-quarters of a mile upstream from Lowell post office, seven-eighths of a mile upstream from mouth, and 1¼ miles downstream from Pete King Creek.

Drainage area.--1,180 square miles

Records available.--November 1910 to August 1912, October 1929 to September 1949.

Average discharge.--20 years (1929-49), 2,596 second-feet.

Extremes.--Maximum discharge during year, 29,600 second-feet May 16 (gage height, 12.27 feet); minimum, 326 second-feet Sept. 10 (gage height, 1.68 feet).
1929-49: Maximum discharge, 34,800 second-feet June 10, 1933 (gage height, 13.44 feet), from rating curve extended above 25,000 second-feet; minimum, probably less than 100 second-feet Jan. 8, 1937, during period of ice effect.

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

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)

| | | | | | |
|---|---|---|---|---|---|
| 1.6 | 270 | 4.2 | 3,360 | 9.0 | 15,800 |
| 2.0 | 560 | 5.0 | 4,790 | 10.0 | 19,700 |
| 2.4 | 900 | 6.0 | 6,990 | 11.9 | 27,900 |
| 2.9 | 1,440 | 7.0 | 9,590 | | |
| 3.5 | 2,250 | 8.0 | 12,500 | | |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 466 | 624 | 696 | 640 | 540 | 1,100 | 1,690 | 9,000 | 12,900 | 2,900 | 801 | 361 |
| 2 | 452 | 756 | 747 | 600 | 540 | 1,140 | 1,920 | 11,600 | 10,900 | 2,770 | 783 | 354 |
| 3 | 445 | 1,010 | 747 | 540 | 540 | 1,200 | 1,970 | f12,600 | 9,430 | 2,740 | 756 | 347 |
| 4 | 576 | 970 | 704 | 410 | 540 | 1,280 | 2,260 | 11,000 | 9,130 | 2,680 | 720 | 354 |
| 5 | 891 | 747 | 656 | 500 | 540 | 1,340 | 2,840 | 9,500 | 10,100 | 2,610 | 688 | 368 |
| 6 | 837 | 664 | 672 | 600 | 540 | 1,450 | 3,550 | 9,000 | 11,800 | 2,660 | 672 | 368 |
| 7 | 720 | 632 | 680 | 620 | 560 | 1,670 | 4,450 | 9,400 | 12,900 | 2,480 | 640 | 361 |
| 8 | 729 | 584 | 656 | 560 | 560 | 1,700 | 5,030 | 11,000 | 12,200 | 2,250 | 624 | 347 |
| 9 | 738 | 520 | 656 | 500 | 580 | 1,540 | 5,010 | 14,000 | 11,200 | 2,090 | 616 | 333 |
| 10 | 680 | 560 | 664 | 460 | 580 | 1,290 | 4,930 | 17,000 | 10,900 | 1,970 | 600 | 340 |
| 11 | 624 | 576 | 688 | 470 | 560 | 1,210 | 5,500 | 20,000 | 10,700 | 1,880 | 584 | 504 |
| 12 | 592 | 592 | 696 | 490 | 500 | 1,280 | 6,140 | 23,700 | 9,370 | 1,780 | 592 | 608 |
| 13 | 560 | 656 | 648 | 540 | 500 | 1,420 | 5,530 | 24,200 | 7,950 | 1,700 | 608 | 512 |
| 14 | 544 | 664 | *560 | 560 | 540 | 1,680 | 4,870 | 24,700 | 7,290 | 1,600 | 608 | 438 |
| 15 | 528 | 774 | 620 | 560 | 600 | 1,560 | 4,830 | 25,500 | 6,630 | 1,510 | 568 | 410 |
| 16 | 504 | 765 | 640 | 560 | 660 | 1,730 | 5,400 | 27,600 | 6,120 | 1,440 | 536 | 846 |
| 17 | 496 | 729 | 460 | 540 | 800 | 1,810 | 6,580 | 24,700 | 5,760 | 1,360 | 512 | 990 |
| 18 | 488 | 672 | 370 | 540 | 860 | 2,080 | 7,790 | 20,700 | 5,230 | 1,290 | 496 | 688 |
| 19 | 480 | 648 | 430 | 540 | 800 | 2,760 | 8,750 | 18,000 | 4,930 | 1,220 | 528 | 552 |
| 20 | 480 | 672 | 680 | 540 | 740 | 3,220 | 8,230 | 18,800 | 4,660 | 1,230 | 536 | 496 |
| 21 | 473 | 680 | 770 | 540 | 740 | 3,090 | 7,340 | 17,200 | 4,360 | 1,260 | 504 | 459 |
| 22 | 459 | 738 | 670 | 500 | 1,000 | 2,810 | 6,730 | 15,400 | 4,520 | 1,170 | 473 | 438 |
| 23 | 445 | 1,000 | 480 | 500 | 1,200 | 2,610 | 7,090 | 14,500 | 4,410 | 1,070 | 459 | 424 |
| 24 | 466 | 1,460 | 380 | 500 | 1,200 | *2,490 | 9,100 | 13,800 | 4,050 | 1,020 | 504 | 403 |
| 25 | 536 | 1,180 | 380 | 520 | 1,150 | 2,320 | 8,890 | 14,200 | 3,780 | 1,010 | 504 | 389 |
| 26 | 504 | 970 | 430 | *520 | 1,100 | 2,100 | 8,620 | 15,700 | 4,090 | 980 | 459 | 382 |
| 27 | 504 | 837 | 450 | 520 | *1,100 | 1,920 | 9,270 | 17,700 | 4,000 | 1,000 | 438 | 375 |
| 28 | 480 | 783 | 500 | 500 | 1,100 | 1,730 | 10,800 | 18,100 | 3,430 | 1,020 | 424 | 361 |
| 29 | 459 | 765 | 650 | 500 | - | 1,600 | 12,200 | 16,600 | 3,340 | 960 | 403 | 389 |
| 30 | 452 | 688 | 640 | 520 | - | 1,570 | 10,700 | 16,400 | 3,210 | 891 | 389 | 452 |
| 31 | 528 | - | 620 | 540 | - | 1,550 | - | 13,800 | - | 846 | 375 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff: Inches | Runoff: Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 17,136 | 891 | 445 | 553 | 0.469 | 0.54 | 33,990 |
| November | 22,916 | 1,460 | 520 | 764 | .647 | .72 | 45,450 |
| December | 18,640 | 770 | 370 | 601 | .509 | .59 | 36,970 |
| Calendar year 1948 | 1,303,714 | 31,900 | 370 | 3,562 | 3.02 | 41.08 | 2,586,000 |
| January | 16,430 | 640 | 410 | 530 | .449 | .52 | 32,590 |
| February | 20,670 | 1,200 | 500 | 738 | .625 | .65 | 41,000 |
| March | 56,230 | 3,220 | 1,100 | 1,814 | 1.54 | 1.77 | 111,500 |
| April | 188,010 | 12,200 | 1,690 | 6,267 | 5.31 | 5.93 | 372,900 |
| May | 515,400 | 27,600 | 9,000 | 16,630 | 14.1 | 16.24 | 1,022,000 |
| June | 219,290 | 12,900 | 3,210 | 7,310 | 6.19 | 6.91 | 435,000 |
| July | 51,387 | 2,900 | 846 | 1,658 | 1.41 | 1.62 | 101,900 |
| August | 17,400 | 801 | 375 | 561 | .475 | .55 | 34,510 |
| September | 13,649 | 990 | 333 | 455 | .386 | .43 | 27,070 |
| Water year 1948-49 | 1,157,158 | 27,900 | 333 | 3,170 | 2.69 | 36.47 | 2,295,000 |

Peak discharge (base, 12,000 sec.-ft.).--Apr. 29 (6:30 a.m.) 12,600 sec.-ft.; May 2 (9 p.m.) 14,100 sec.-ft.; May 16 (8:30 a.m.) 29,600 sec.-ft.; May 28 (4 a.m.) 19,400 sec.-ft.; June 7 (5 a.m.) 13,600 sec.-ft.

* Winter discharge measurement made on this day.

f Computed from partly estimated gage-height record.

Note.--Stage-discharge relation affected by ice Dec. 14, 15, Dec. 17 to Mar. 7. No gage-height record Dec. 25-27, Jan. 8-16, Feb. 1, May 4-11; discharge computed on basis of weather records and records for Selway River near Lowell and other stations in Clearwater River Basin.

## South Fork Clearwater River near Elk City, Idaho

Location.--Water-stage recorder, lat. 45°49', long. 115°32', in NE¼ sec. 25, T. 29 N., R. 7 E., just upstream from bridge on road to Orogrande, 0.2 mile upstream from Crooked River and 4½ miles west of Elk City. Prior to June 23, 1949, wire-weight gage 24 feet downstream at datum 6.14 feet lower.

Drainage area.--261 square miles.

Records available.--September 1944 to September 1949.

Extremes.--Maximum discharge observed during year, 2,200 second-feet May 16 (gage height, 11.70 feet, site and datum then in use); minimum, 29 second-feet Sept. 1-4 (gage height, 1.41 feet, present site and datum).

1944-49: Maximum discharge observed, 3,700 second-feet May 29, 1948 (gage height, 13.06 feet, site and datum then in use); minimum daily, 17 second-feet Dec. 11, 1944.

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

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 50 | 78 | 78 | a65 | a45 | 75 | 190 | a1,050 | 845 | 155 | 47 | 30 |
| 2 | 48 | 92 | 78 | a60 | a45 | 80 | 209 | 1,300 | 795 | 150 | 47 | 29 |
| 3 | a48 | 45 | 78 | a55 | a45 | 85 | a210 | 1,300 | 660 | 139 | 45 | 29 |
| 4 | 53 | 124 | 78 | a45 | a45 | 90 | 258 | 1,220 | 620 | 132 | 43 | 29 |
| 5 | 88 | 112 | a80 | a50 | a46 | 100 | 451 | 1,100 | a660 | 126 | 41 | 32 |
| 6 | 97 | 97 | 81 | a58 | a46 | a105 | 620 | 1,060 | 535 | 137 | 40 | 40 |
| 7 | 90 | a90 | 86 | a60 | a44 | 110 | 690 | 1,050 | 520 | 124 | 38 | 42 |
| 8 | 76 | 86 | 83 | a58 | a44 | 105 | 755 | a1,200 | 495 | 112 | 38 | 35 |
| 9 | 74 | 62 | 81 | a50 | a44 | 100 | 710 | 1,330 | 422 | 106 | 38 | 33 |
| 10 | a70 | 44 | 81 | a45 | a45 | 90 | a760 | 1,460 | 385 | 99 | 38 | 34 |
| 11 | 68 | 45 | 85 | a45 | a46 | 95 | 1,000 | 1,700 | 367 | 99 | 42 | 58 |
| 12 | 63 | 58 | a85 | a46 | a45 | 90 | 1,050 | 1,840 | a330 | 114 | 46 | 80 |
| 13 | 59 | 68 | 65 | a48 | a48 | a95 | 898 | 1,920 | 304 | 95 | 54 | 54 |
| 14 | 54 | a80 | 62 | a50 | a47 | 105 | 750 | 1,820 | 273 | 88 | 50 | 42 |
| 15 | 45 | 90 | 80 | a50 | a49 | 115 | 765 | a1,900 | 258 | 84 | 43 | 38 |
| 16 | 43 | 90 | a75 | a50 | a49 | 140 | 969 | 1,990 | 233 | 82 | 40 | 53 |
| 17 | a40 | 85 | *55 | a49 | a49 | 160 | a1,080 | 1,810 | 236 | 76 | 38 | 68 |
| 18 | 38 | 81 | a45 | a49 | a52 | 180 | 1,190 | 1,550 | 265 | 73 | 38 | 44 |
| 19 | 38 | 80 | a70 | a49 | a54 | 210 | 1,210 | 1,460 | a240 | 68 | 43 | 40 |
| 20 | 42 | 81 | a75 | *45 | a47 | a300 | 1,170 | 1,800 | 226 | 70 | 42 | 38 |
| 21 | 41 | a85 | a70 | a45 | a52 | 296 | 1,080 | 1,480 | 200 | 74 | 38 | 36 |
| 22 | 41 | 88 | a60 | a45 | a56 | 254 | 1,040 | a1,400 | 209 | 68 | 35 | 35 |
| 23 | 38 | 95 | a45 | a45 | a70 | *260 | 1,190 | 1,340 | 222 | 64 | 35 | 35 |
| 24 | a50 | 133 | a45 | a42 | *70 | 250 | a1,450 | 1,220 | 201 | 63 | 40 | 34 |
| 25 | 70 | 127 | a45 | a50 | 70 | 226 | 1,330 | 1,150 | 186 | 61 | 38 | 33 |
| 26 | 60 | 114 | a45 | a52 | 70 | 216 | 1,250 | 1,080 | 259 | 59 | 35 | 35 |
| 27 | 59 | 108 | a50 | a50 | a70 | a185 | 1,260 | 1,060 | 228 | 60 | 33 | 34 |
| 28 | 56 | a100 | a60 | a46 | 70 | 162 | 1,330 | 1,010 | 188 | 60 | 32 | 32 |
| 29 | 49 | 81 | a60 | a46 | - | 149 | 1,450 | a1,030 | 188 | 57 | 33 | 36 |
| 30 | 47 | 81 | a60 | a45 | - | 176 | 1,270 | 1,050 | 183 | 53 | 32 | 56 |
| 31 | a50 | - | a60 | a45 | - | 167 | - | 886 | - | 49 | 30 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 1,745 | 97 | 38 | 56.3 | 0.216 | 0.25 | 3,460 |
| November | 2,700 | 145 | 44 | 90.0 | .345 | .38 | 5,360 |
| December | 2,101 | 86 | 45 | 67.8 | .260 | .30 | 4,170 |
| Calendar year 1948 | 136,527 | 3,700 | 38 | 373 | 1.43 | 19.45 | 270,800 |
| January | 1,538 | 65 | 42 | 49.6 | .190 | .22 | 3,050 |
| February | 1,463 | 70 | 44 | 52.2 | .200 | .21 | 2,900 |
| March | 4,761 | 300 | 75 | 154 | .590 | .68 | 9,440 |
| April | 27,585 | 1,450 | 190 | 920 | 3.52 | 3.93 | 54,710 |
| May | 42,566 | 1,990 | 886 | 1,373 | 5.26 | 6.07 | 84,430 |
| June | 10,733 | 845 | 183 | 358 | 1.37 | 1.53 | 21,290 |
| July | 2,797 | 155 | 49 | 90.2 | .346 | .40 | 5,550 |
| August | 1,232 | 54 | 30 | 39.7 | .152 | .18 | 2,440 |
| September | 1,214 | 80 | 29 | 40.5 | .155 | .17 | 2,410 |
| Water year 1948-49 | 100,435 | 1,990 | 29 | 275 | 1.05 | 14.32 | 199,200 |

* Winter discharge measurement made on this day.

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

Note.--Stage-discharge relation affected by ice Dec. 13 to Mar. 24.

## South Fork Clearwater River near Grangeville, Idaho

Location.--Water-stage recorder, lat. 45°55', long. 116°01', in SE¼NW¼ sec. 30, T. 30 N., R. 4 E., just downstream from powerhouse of Washington Water Power Co. and 6 miles southeast of Grangeville.
Drainage area.--865 square miles.
Records available.--November 1910 to September 1916, April 1923 to September 1949.
Average discharge.--30 years (1912-16, 1923-49), 834 second-feet.
Extremes.--Maximum discharge during year, 6,170 second-feet May 16 (gage height, 9.06 feet); minimum, 10 second-feet Oct. 15 (gage height, 1.96 feet); minimum daily, 111 second-feet Sept. 28.
1910-16, 1923-49: Maximum discharge observed, 12,600 second-feet May 29, 1948 (gage height, 12.50 feet); no flow part of day Aug. 27, 1947; minimum daily, 41 second-feet Nov. 22, 1931.
Remarks.--Records excellent except those for periods computed on basis of staff-gage readings and those for periods of ice effect, which are fair. Considerable diurnal fluctuation at low stages caused by power plant just above station. No diversion for irrigation.
Cooperation.--Water-stage recorder inspected by Washington Water Power Co. in connection with a Federal Power Commission project.
Revisions.--W 633: Drainage area.

Rating table, water year 1948-49, except periods of ice effect
(gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-13)

| | | | | | |
|---|---|---|---|---|---|
| 2.7 | 105 | 3.6 | 393 | 6.0 | 2,200 |
| 2.8 | 125 | 4.0 | 603 | 7.0 | 3,390 |
| 3.0 | 173 | 4.5 | 903 | 8.0 | 4,740 |
| 3.3 | 267 | 5.0 | 1,270 | 9.0 | 6,090 |

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 216 | 294 | 238 | 253 | 204 | b350 | 548 | 3,430 | 3,060 | 771 | 226 | 126 |
| 2 | 210 | 349 | 282 | 223 | 204 | 375 | 659 | 4,260 | 2,810 | 711 | 220 | 128 |
| 3 | 198 | 489 | 278 | 216 | 204 | 375 | 659 | 4,660 | 2,490 | 676 | 213 | 123 |
| 4 | 207 | 437 | 260 | 166 | 204 | 379 | 783 | 3,970 | 2,340 | 648 | 201 | 120 |
| 5 | 234 | 326 | h213 | 187 | 207 | 418 | 1,020 | 3,490 | 2,390 | 625 | 193 | 145 |
| 6 | 301 | 282 | h256 | 242 | 204 | 447 | 1,420 | 3,260 | 2,490 | 688 | 187 | 158 |
| 7 | 267 | h264 | h260 | 250 | 198 | 458 | 1,790 | 3,310 | 2,550 | 614 | 170 | 164 |
| 8 | 278 | h204 | h229 | 232 | 198 | 442 | 2,030 | 3,620 | 2,370 | 559 | 181 | 139 |
| 9 | 239 | h201 | h239 | 198 | 201 | 413 | 1,940 | 4,160 | 2,160 | 532 | 176 | 141 |
| 10 | 223 | h216 | h246 | 184 | 207 | 375 | 2,020 | 4,740 | 2,090 | 499 | 173 | 141 |
| 11 | 220 | h278 | h253 | 187 | 210 | 356 | 2,370 | 5,390 | 1,990 | 478 | 193 | 195 |
| 12 | 204 | h242 | h256 | 198 | 198 | 370 | 2,700 | 5,820 | 1,800 | 516 | 195 | 290 |
| 13 | 213 | h256 | h201 | 213 | 216 | 398 | 2,330 | 5,880 | 1,640 | 452 | 220 | 223 |
| 14 | 204 | h275 | h190 | 223 | 207 | 437 | 2,010 | 5,920 | 1,510 | 427 | 226 | 158 |
| 15 | f199 | h290 | h253 | 223 | 216 | 489 | 2,010 | 5,860 | 1,410 | 398 | 190 | 166 |
| 16 | h213 | h297 | h226 | 223 | 216 | 609 | 2,190 | 6,000 | 1,310 | 388 | 173 | 269 |
| 17 | h190 | h305 | 166 | 220 | 213 | 688 | 2,670 | 5,720 | 1,360 | 352 | 173 | 275 |
| 18 | h213 | h260 | 146 | 220 | 226 | 759 | 3,210 | 4,920 | 1,370 | 347 | 168 | 193 |
| 19 | 213 | 275 | 229 | 213 | 239 | 916 | 3,610 | 4,700 | 1,250 | 334 | 168 | 160 |
| 20 | 204 | 278 | 256 | *220 | 210 | 1,020 | 3,560 | 5,620 | 1,110 | 330 | 179 | 148 |
| 21 | h195 | 271 | 246 | 204 | 226 | 962 | 3,300 | 5,110 | 1,040 | 339 | 166 | 136 |
| 22 | h181 | 267 | 210 | 198 | 246 | 884 | 3,220 | 4,710 | 1,090 | 318 | 148 | 151 |
| 23 | h176 | 347 | 160 | 207 | 330 | *820 | 3,470 | 4,500 | 1,070 | 305 | 153 | 118 |
| 24 | h193 | 370 | 166 | 184 | 339 | 796 | 4,350 | 4,170 | 956 | 286 | 160 | 119 |
| 25 | h236 | 347 | 166 | b210 | *322 | 753 | 4,030 | 4,010 | 890 | 294 | 166 | 130 |
| 26 | 232 | h271 | 168 | b210 | b310 | 688 | 3,670 | 4,000 | 1,170 | 282 | 150 | 135 |
| 27 | 220 | h250 | 190 | b210 | b320 | 625 | 3,770 | 3,970 | 1,080 | 290 | 150 | 146 |
| 28 | 216 | h271 | 232 | b210 | b330 | 581 | 4,140 | 3,880 | 890 | 275 | 135 | 111 |
| 29 | 213 | h256 | 236 | 210 | - | 521 | 4,400 | 3,730 | 903 | 275 | 133 | 172 |
| 30 | 207 | 226 | 236 | 207 | - | 559 | 3,930 | 3,490 | 890 | 246 | 138 | 196 |
| 31 | 221 | - | 232 | 207 | - | 548 | - | 3,200 | - | 226 | 131 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 6,736 | 301 | 176 | 217 | 0.251 | 0.29 | 13,360 |
| November | 8,694 | 489 | 201 | 290 | .335 | .37 | 17,240 |
| December | 6,919 | 282 | 146 | 223 | .258 | .30 | 13,720 |
| Calendar year 1948 | 525,462 | 11,300 | 146 | 1,440 | 1.66 | 22.58 | 1,042,000 |
| January | 6,548 | 253 | 166 | 211 | .244 | .28 | 12,990 |
| February | 6,605 | 339 | 198 | 236 | .273 | .28 | 13,100 |
| March | 17,811 | 1,020 | 350 | 575 | .665 | .77 | 35,330 |
| April | 77,809 | 4,400 | 548 | 2,594 | 3.00 | 3.35 | 154,300 |
| May | 139,500 | 6,000 | 3,200 | 4,500 | 5.20 | 6.00 | 276,700 |
| June | 49,479 | 3,060 | 890 | 1,649 | 1.91 | 2.13 | 98,140 |
| July | 13,481 | 771 | 226 | 435 | .503 | .58 | 26,740 |
| August | 5,455 | 226 | 131 | 176 | .203 | .23 | 10,820 |
| September | 4,876 | 290 | 111 | 163 | .188 | .21 | 9,670 |
| Water year 1948-49 | 343,913 | 6,000 | 111 | 942 | 1.09 | 14.79 | 682,100 |

Peak discharge (base, 3,200 sec.-ft.).--Apr. 29 (8 a.m.) 4,510 sec.-ft.; May 2 (10 p.m.) 5,190 sec.-ft.; May 16 (9 to 10 p.m.) 6,170 sec.-ft.
* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
f Computed on basis of partly estimated gage-height record.
h Computed on basis of twice-daily staff-gage readings.

## North Fork Clearwater River at Bungalow ranger station, Idaho

Location.--Water-stage recorder, lat. 46°38', long. 115°30', in sec. 18, T. 38 N., R. 8 E., at Bungalow ranger station, 300 feet downstream from mouth of Orogrande Creek, 1,000 feet downstream from steel highway bridge, and 17 miles northeast of Pierce.

Drainage area.--996 square miles.

Records available.--September 1944 to September 1949.

Extremes.--Maximum discharge during year, 23,500 second-feet May 16 (gage height, 9.62 feet); minimum daily, 360 second-feet Jan. 4, 10; minimum gage height, 2.50 feet Dec. 10.
1944-49: Maximum discharge, 27,400 second-feet May 29, 1948 (gage height, 11.13 feet); minimum daily, 350 second-feet Dec. 12, 1944.

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

Cooperation.--Water-stage recorder inspected by U. S. Forest Service ranger at Bungalow ranger station.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 720 | 815 | 903 | 570 | 410 | 1,150 | 1,550 | 8,660 | 10,400 | 2,450 | 936 | 570 |
| 2 | 710 | 947 | 947 | 500 | 410 | 1,200 | 1,830 | 10,900 | 9,080 | 2,320 | 936 | 562 |
| 3 | 700 | 1,420 | 925 | 430 | 410 | 1,250 | 1,830 | 10,800 | 8,220 | 2,240 | 903 | 562 |
| 4 | 947 | 1,110 | 837 | 360 | 410 | 1,300 | 2,140 | 9,260 | 8,080 | 2,160 | 870 | 562 |
| 5 | 1,310 | 903 | 782 | 380 | 410 | 1,350 | 2,820 | 8,250 | 8,650 | 2,110 | 848 | 588 |
| 6 | 1,000 | 848 | 826 | 500 | 410 | 1,400 | 3,600 | 8,050 | 9,370 | 2,180 | 837 | 588 |
| 7 | 958 | 793 | 804 | 520 | 420 | 1,450 | 4,750 | 8,630 | 9,660 | 1,980 | 815 | 570 |
| 8 | 947 | 760 | 804 | 450 | 420 | 1,450 | 5,190 | 10,200 | 9,160 | 1,830 | 815 | 554 |
| 9 | 859 | 651 | 730 | 390 | 440 | 1,400 | 5,040 | 12,600 | 8,420 | 1,760 | 804 | 546 |
| 10 | 815 | 771 | 740 | 360 | 440 | 1,300 | 5,190 | 14,800 | 8,050 | 1,700 | 782 | 554 |
| 11 | 782 | 771 | 848 | 370 | 410 | 1,250 | 5,990 | 17,400 | 7,720 | 1,650 | 771 | 740 |
| 12 | 826 | 740 | 859 | 390 | 380 | 1,300 | 6,580 | 19,000 | 6,960 | 1,620 | 771 | 750 |
| 13 | 750 | 826 | 859 | 410 | 380 | 1,300 | 5,660 | 20,100 | 6,240 | 1,520 | 804 | 615 |
| 14 | 730 | 804 | 740 | 440 | 410 | 1,350 | 4,920 | 20,700 | 5,750 | 1,460 | 771 | 588 |
| 15 | 730 | 958 | 700 | 450 | 500 | 1,310 | 5,010 | 21,800 | 5,300 | 1,420 | 740 | 579 |
| 16 | 700 | 870 | 730 | 450 | 650 | 1,480 | 5,810 | 21,400 | 4,900 | 1,370 | 720 | 1,400 |
| 17 | 700 | 859 | 500 | 430 | 700 | 1,520 | 7,090 | 19,900 | 4,780 | 1,310 | 700 | 925 |
| 18 | 700 | 782 | 400 | 420 | 750 | 1,800 | 8,150 | 17,100 | 4,200 | 1,270 | 700 | 710 |
| 19 | 690 | 771 | 420 | 420 | 700 | 2,450 | 8,740 | 15,500 | 3,900 | 1,230 | 740 | 642 |
| 20 | 690 | 815 | 680 | 420 | 650 | 3,050 | 7,950 | 14,900 | 3,650 | 1,310 | 710 | 606 |
| 21 | 680 | 771 | 780 | 420 | 600 | 2,840 | 7,060 | 14,000 | 3,500 | 1,300 | 670 | 588 |
| 22 | 680 | 903 | 670 | *390 | 850 | 2,470 | 6,580 | 13,100 | 3,430 | 1,190 | 651 | 579 |
| 23 | 660 | 1,100 | 470 | 390 | 1,400 | 2,330 | 7,090 | 12,800 | 3,300 | 1,150 | 660 | 570 |
| 24 | 670 | 1,460 | 380 | 390 | 1,300 | 2,240 | 8,980 | 12,400 | 3,160 | 1,150 | 710 | 570 |
| 25 | 760 | 1,150 | 370 | 400 | 1,250 | 2,090 | 8,490 | 12,700 | 3,010 | 1,140 | 670 | 562 |
| 26 | 690 | 992 | 410 | 400 | 1,200 | 1,870 | 8,320 | 13,500 | 3,100 | 1,110 | 651 | 562 |
| 27 | 700 | 903 | 430 | 400 | 1,150 | 1,710 | 9,020 | 14,500 | 2,900 | 1,130 | 633 | 546 |
| 28 | 670 | 881 | 480 | 380 | 1,150 | 1,540 | 10,300 | 14,200 | 2,670 | 1,140 | 606 | 530 |
| 29 | 660 | 848 | 600 | 380 | - | 1,420 | 11,600 | 13,100 | 2,950 | 1,040 | 597 | 530 |
| 30 | 651 | 782 | 580 | 400 | - | 1,430 | 10,100 | 12,000 | 2,720 | 992 | 588 | 579 |
| 31 | 760 | - | 550 | 410 | - | 1,380 | - | 10,800 | - | 958 | 579 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 23,845 | 1,310 | 651 | 769 | 0.772 | 0.89 | 47,300 |
| November | 27,004 | 1,460 | 651 | 900 | .904 | 1.01 | 53,560 |
| December | 20,754 | 947 | 370 | 669 | .672 | .77 | 41,160 |
| Calendar year 1948 | 1,223,421 | 25,200 | 370 | 3,343 | 3.36 | 45.67 | 2,427,000 |
| January | 13,020 | 570 | 360 | 420 | .422 | .49 | 25,820 |
| February | 18,610 | 1,400 | 380 | 665 | .668 | .69 | 36,910 |
| March | 51,380 | 3,050 | 1,150 | 1,657 | 1.66 | 1.92 | 101,900 |
| April | 187,380 | 11,600 | 1,550 | 6,246 | 6.27 | 7.00 | 371,700 |
| May | 433,050 | 21,800 | 8,050 | 13,970 | 14.0 | 16.17 | 858,900 |
| June | 173,230 | 10,400 | 2,670 | 5,774 | 5.80 | 6.47 | 343,600 |
| July | 47,190 | 2,450 | 958 | 1,522 | 1.53 | 1.76 | 93,600 |
| August | 22,988 | 936 | 579 | 742 | .745 | .86 | 45,600 |
| September | 18,827 | 1,400 | 530 | 628 | .631 | .70 | 37,340 |
| Water year 1948-49 | 1,037,278 | 21,800 | 360 | 2,842 | 2.85 | 38.73 | 2,057,000 |

Peak discharge (base, 9,000 sec.-ft.).--Apr. 19 (1 a.m.) 9,190 sec.-ft.; Apr. 29 (4 a.m.) 12,000 sec.-ft.; May 2 (4:30 a.m.) 12,200 sec.-ft.; May 16 (12:30 a.m.) 23,500 sec.-ft.

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 14 to Mar. 14 (no gage-height record Jan. 8-21, Feb. 7-10; discharge computed on basis of weather records and records for station near Ahsahka and nearby streams).

## North Fork Clearwater River near Ahsahka, Idaho

Location.--Water-stage recorder, lat. 46°31', long. 116°18', in SE¼ sec. 26, T. 37 N., R. 1 E., at Bruce's Eddy, 1½ miles northeast of Ahsahka and 2 miles upstream from mouth.

Drainage area.--2,440 square miles.

Records available.--August 1926 to September 1949.

Average discharge.--23 years, 5,400 second-feet.

Extremes.--Maximum discharge during year, 42,900 second-feet May 15 (gage height, 22.14 feet); minimum daily, 950 second-feet Dec. 18, 24, 25; minimum gage height, 2.69 feet Sept. 9, 10, 30.

1926-49: Maximum discharge, 100,000 second-feet Dec. 23, 1933 (gage height, 35.5 feet, from floodmarks), from rating curve extended above 24,000 second-feet by logarithmic plotting; minimum, probably less than 250 second-feet Jan. 8, 1937, during period of ice effect.

Remarks.--Records excellent except those for period of ice effect, which are fair. No diversion or regulation above station.

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1,440 | 1,720 | 1,890 | 1,700 | 1,400 | 4,220 | 5,320 | 20,500 | 18,000 | 5,000 | 1,930 | 1,140 |
| 2 | 1,420 | 1,890 | 2,020 | 1,550 | 1,400 | 4,300 | 6,090 | 25,300 | 16,400 | 4,690 | 1,890 | 1,120 |
| 3 | 1,400 | 2,660 | 2,150 | 1,300 | 1,400 | 4,450 | 6,230 | 27,800 | 14,400 | 4,500 | 1,850 | 1,110 |
| 4 | 1,480 | 3,020 | 2,050 | 1,100 | 1,400 | 4,650 | 6,940 | 22,600 | 13,900 | 4,360 | 1,790 | 1,100 |
| 5 | 2,510 | 2,200 | 1,890 | 1,200 | 1,400 | 4,900 | 8,730 | 19,200 | 14,500 | 4,270 | 1,730 | 1,100 |
| 6 | 2,370 | 1,910 | 1,810 | 1,600 | 1,400 | 5,100 | 10,900 | 17,900 | 15,700 | 4,300 | 1,680 | 1,120 |
| 7 | 1,930 | 1,800 | 1,870 | 1,650 | 1,450 | 5,250 | 14,000 | 18,600 | 16,800 | 4,190 | 1,650 | 1,120 |
| 8 | 1,890 | 1,710 | 1,840 | 1,450 | 1,450 | 5,150 | 16,000 | 21,400 | 16,300 | 3,860 | 1,610 | 1,110 |
| 9 | 1,780 | 1,580 | 1,800 | 1,300 | 1,500 | 4,980 | 15,600 | 26,400 | 14,900 | 3,670 | 1,590 | 1,070 |
| 10 | 1,650 | 1,470 | 1,660 | 1,200 | 1,500 | 4,600 | 15,100 | 31,400 | 14,100 | 3,530 | 1,580 | 1,070 |
| 11 | 1,560 | 1,610 | 1,740 | 1,250 | 1,400 | 4,380 | 17,100 | 35,500 | 13,800 | 3,440 | 1,550 | 1,180 |
| 12 | 1,510 | 1,640 | 1,930 | 1,300 | 1,300 | 4,510 | 19,200 | 38,400 | 12,700 | 3,340 | 1,520 | 1,510 |
| 13 | 1,480 | 1,610 | 1,960 | 1,350 | 1,300 | 4,680 | 17,000 | 40,200 | 11,400 | 3,220 | 1,520 | 1,440 |
| 14 | 1,450 | 1,730 | 1,760 | 1,450 | 1,400 | 5,280 | 14,600 | 40,700 | 10,500 | 3,060 | 1,550 | 1,240 |
| 15 | 1,440 | 1,870 | 1,660 | 1,500 | 1,700 | 5,150 | 13,800 | 41,300 | 9,760 | 2,920 | 1,500 | 1,180 |
| 16 | 1,400 | 2,090 | *1,760 | 1,500 | 2,000 | 5,620 | 15,100 | 41,300 | 9,120 | 2,860 | 1,460 | 2,100 |
| 17 | 1,380 | 1,970 | 1,200 | 1,450 | 2,400 | 6,440 | 18,000 | 37,700 | 8,700 | 2,710 | 1,410 | 2,770 |
| 18 | 1,380 | 1,850 | 950 | 1,400 | 2,700 | 7,310 | 21,300 | 32,900 | 8,040 | 2,640 | 1,390 | 1,750 |
| 19 | 1,380 | 1,770 | 1,050 | 1,400 | 2,500 | 10,300 | 24,600 | 28,800 | 7,400 | 2,560 | 1,380 | 1,390 |
| 20 | 1,370 | 1,780 | 1,700 | 1,400 | 2,300 | 12,600 | 23,700 | 26,900 | 7,010 | 2,500 | 1,390 | 1,260 |
| 21 | 1,360 | 1,800 | 2,000 | 1,400 | 2,000 | 12,600 | 19,900 | 25,300 | 6,730 | 2,640 | 1,360 | 1,200 |
| 22 | 1,350 | 1,800 | 1,700 | 1,300 | 3,000 | 10,900 | 17,800 | 23,400 | 6,620 | 2,500 | 1,310 | 1,150 |
| 23 | 1,350 | 2,370 | 1,200 | 1,300 | 4,900 | 9,640 | 17,900 | 22,700 | 6,380 | 2,360 | 1,280 | 1,150 |
| 24 | 1,360 | 3,790 | 950 | *1,300 | 4,650 | 8,830 | 21,700 | 21,600 | 6,160 | 2,320 | 1,300 | 1,130 |
| 25 | 1,560 | 3,690 | 950 | 1,350 | 4,400 | *8,150 | 20,900 | 21,700 | 5,910 | 2,360 | 1,350 | 1,120 |
| 26 | 1,560 | 2,890 | 1,100 | 1,350 | *4,260 | 7,250 | 19,200 | 22,900 | 5,890 | 2,280 | 1,280 | 1,120 |
| 27 | 1,510 | 2,390 | 1,150 | 1,350 | 4,200 | 6,620 | 19,900 | 25,200 | 5,890 | 2,300 | 1,240 | 1,110 |
| 28 | 1,470 | 2,180 | 1,300 | 1,300 | 4,200 | 5,910 | 23,000 | 25,500 | 5,380 | 2,360 | 1,230 | 1,080 |
| 29 | 1,420 | 2,150 | 1,700 | 1,300 | - | 5,330 | 27,600 | 23,700 | 5,410 | 2,270 | 1,200 | 1,070 |
| 30 | 1,390 | 1,990 | 1,650 | 1,350 | - | 5,200 | 25,100 | 21,300 | 5,760 | 2,100 | 1,180 | 1,070 |
| 31 | 1,440 | - | 1,600 | 1,400 | - | 5,070 | - | 19,000 | - | 2,000 | 1,170 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 47,990 | 2,510 | 1,350 | 1,548 | 0.634 | 0.73 | 95,190 |
| November | 62,930 | 3,790 | 1,470 | 2,098 | .860 | .96 | 124,800 |
| December | 49,990 | 2,150 | 950 | 1,613 | .661 | .76 | 99,150 |
| Calendar year 1948 | 2,674,070 | 52,000 | 950 | 7,306 | 2.99 | 40.76 | 5,304,000 |
| January | 42,750 | 1,700 | 1,100 | 1,379 | .565 | .65 | 84,790 |
| February | 64,910 | 4,900 | 1,300 | 2,318 | .950 | .99 | 128,700 |
| March | 199,370 | 12,600 | 4,220 | 6,431 | 2.64 | 3.04 | 395,400 |
| April | 502,310 | 27,600 | 5,320 | 16,740 | 6.86 | 7.66 | 996,300 |
| May | 847,100 | 41,300 | 17,900 | 27,330 | 11.2 | 12.91 | 1,680,000 |
| June | 313,560 | 18,000 | 5,380 | 10,450 | 4.28 | 4.78 | 621,900 |
| July | 97,110 | 5,000 | 2,000 | 3,133 | 1.28 | 1.48 | 192,600 |
| August | 45,870 | 1,930 | 1,170 | 1,480 | .607 | .70 | 90,980 |
| September | 38,080 | 2,770 | 1,070 | 1,269 | .520 | .58 | 75,530 |
| Water year 1948-49 | 2,311,970 | 41,300 | 950 | 6,334 | 2.60 | 35.24 | 4,585,000 |

Peak discharge (base, 18,000 sec.-ft.).--Apr. 12 (12 m.) 19,600 sec.-ft.; Apr. 19 (11 p.m.) 25,300 sec.-ft.; Apr. 29 (11:30 a.m.) 29,100 sec.-ft.; May 2 (11 p.m.) 39,900 sec.-ft.; May 15 (10 a.m.) 42,900 sec.-ft.

* Winter discharge measurement made on this day.

Note.--Stage-discharge relation affected by ice Dec. 17 to Mar. 6 (no gage-height record Jan. 2-5, 7, 10-14; discharge computed on basis of weather records and records for Clearwater River at Kamiah and at Spalding and other nearby streams.

## Potlatch Creek at Kendrick, Idaho

Location.--Wire-weight gage, lat. 46°37', long. 116°39', in NW¼ sec. 25, T. 38 N., R. 3 W., at Mill Street Bridge in Kendrick, 0.9 mile downstream from Bear Creek and 3.2 miles upstream from Middle Potlatch Creek.

Drainage area.--460 square miles.

Records available.--October 1945 to September 1949.

Extremes.--Maximum discharge observed during year, 5,480 second-feet Mar. 19 (gage height, 9.57 feet); minimum observed, 6.1 second-feet Aug. 23; minimum gage height observed, 3.49 feet Sept. 28.
1945-49: Maximum discharge observed, 13,000 second-feet Feb. 26, 1948 (gage height, 12.6 feet, from floodmarks), by slope-area method; minimum observed, 4.3 second-feet Aug. 25; minimum gage height observed, 3.28 feet Oct. 12-16, 1945.

Remarks.--Records fair except those for periods of ice effect, which are poor. Gage read once or twice daily. No diversion or regulation.

Revisions (water years).--W 1093: 1946(M).

Discharge, in second-feet, water year October 1948 to September 1949

| Day | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 29 | 28 | 86 | 85 | 45 | 1,540 | 1,320 | 962 | 128 | 48 | 15 | 7.2 |
| 2 | 27 | 33 | 93 | 80 | 45 | 1,520 | 1,800 | 2,340 | 135 | 39 | 17 | 7.7 |
| 3 | 26 | 77 | 108 | 70 | 45 | 1,610 | 1,370 | 2,590 | 104 | 31 | 12 | 6.5 |
| 4 | 29 | 88 | 104 | 65 | 45 | 1,860 | 1,800 | 1,480 | 97 | 30 | 10 | 7.7 |
| 5 | 32 | 64 | 77 | 70 | 45 | 2,030 | 2,360 | 1,060 | 92 | 30 | 10 | 7.7 |
| 6 | 35 | 48 | 88 | 80 | 45 | 2,300 | 2,820 | 808 | 77 | 27 | 10 | 34 |
| 7 | 39 | 43 | 88 | 70 | 45 | 2,280 | 3,080 | 725 | 75 | 24 | 10 | 20 |
| 8 | 36 | 42 | 75 | 60 | 45 | 2,770 | 2,870 | 677 | 72 | 23 | 10 | 12 |
| 9 | 34 | 57 | 83 | 55 | 45 | 2,140 | 2,300 | 636 | 65 | 23 | 9.6 | 9.1 |
| 10 | 31 | 47 | 88 | 45 | 45 | 1,490 | 2,150 | 689 | 58 | 21 | 9.6 | 8.1 |
| 11 | 28 | 34 | 99 | 45 | 45 | 1,650 | 2,430 | 636 | 58 | 21 | 10 | 12 |
| 12 | 27 | 33 | 118 | 45 | 45 | 2,180 | 2,530 | 576 | 58 | 20 | 10 | 10 |
| 13 | 25 | 33 | 104 | 48 | 45 | 1,990 | 1,970 | 521 | 54 | 18 | 10 | 13 |
| 14 | 26 | 37 | 110 | 50 | 80 | 2,510 | 1,490 | 497 | 49 | 16 | 10 | 17 |
| 15 | 26 | 43 | *114 | 50 | 170 | 1,880 | 1,360 | 427 | 48 | 14 | 11 | 13 |
| 16 | 24 | 57 | 112 | 55 | 400 | 3,500 | 1,370 | 377 | 46 | 15 | 11 | 37 |
| 17 | 22 | 54 | 90 | 55 | 1,090 | 2,590 | 1,460 | 373 | 43 | 13 | 9.1 | 85 |
| 18 | 21 | 52 | 70 | 55 | 1,460 | 3,240 | 1,680 | 327 | 46 | 13 | 9.1 | 41 |
| 19 | 21 | 56 | 90 | 50 | 1,520 | 5,480 | 2,010 | 259 | 44 | 14 | 8.6 | 29 |
| 20 | 21 | 58 | 100 | 50 | 955 | 4,810 | 2,480 | 240 | 42 | 13 | 8.1 | 23 |
| 21 | 21 | 57 | 100 | 45 | 763 | 3,990 | 1,980 | 224 | 39 | 15 | 6.5 | 22 |
| 22 | 21 | 53 | 90 | 45 | 1,140 | 3,480 | 1,420 | 214 | 39 | 14 | 7.2 | 22 |
| 23 | 20 | 77 | 75 | 45 | 1,940 | 2,870 | 1,200 | 174 | 34 | 12 | 6.1 | 20 |
| 24 | 22 | 373 | 55 | 45 | 1,980 | 2,430 | 1,380 | 169 | 31 | 14 | 8.1 | 20 |
| 25 | 20 | 414 | 55 | 45 | 1,590 | 2,190 | 1,200 | 154 | 31 | 14 | 8.1 | 21 |
| 26 | 22 | 246 | 60 | 45 | *1,460 | 1,590 | 932 | 138 | 32 | 16 | 10 | 21 |
| 27 | 25 | 135 | 65 | *45 | 1,760 | 1,220 | 828 | 135 | 28 | 17 | 10 | 21 |
| 28 | 24 | 126 | 70 | 45 | 1,550 | 978 | 842 | 131 | 36 | 15 | 8.6 | 19 |
| 29 | 26 | 104 | 90 | 45 | - | 828 | 1,420 | 120 | 37 | 17 | 10 | 21 |
| 30 | 24 | 80 | 85 | 45 | - | 985 | 1,370 | 131 | 39 | 17 | 8.1 | 20 |
| 31 | 24 | - | 85 | 45 | - | 962 | - | 135 | - | 13 | 7.7 | - |

| Month | Second-foot-days | Maximum | Minimum | Mean | Per square mile | Runoff Inches | Runoff Acre-feet |
|---|---|---|---|---|---|---|---|
| October | 808 | 39 | 20 | 26.1 | 0.057 | 0.07 | 1,600 |
| November | 2,649 | 414 | 28 | 88.3 | .192 | .21 | 5,250 |
| December | 2,727 | 118 | 55 | 88.0 | .191 | .22 | 5,410 |
| Calendar year 1948 | 225,088 | 7,930 | 19 | 615 | 1.34 | 18.21 | 446,500 |
| January | 1,678 | 85 | 45 | 54.1 | .118 | .14 | 3,330 |
| February | 18,443 | 1,980 | 45 | 659 | 1.43 | 1.49 | 36,580 |
| March | 70,893 | 5,480 | 828 | 2,287 | 4.97 | 5.73 | 140,600 |
| April | 53,222 | 3,080 | 828 | 1,774 | 3.86 | 4.30 | 105,600 |
| May | 17,925 | 2,590 | 120 | 578 | 1.27 | 1.45 | 35,550 |
| June | 1,737 | 135 | 28 | 57.9 | .126 | .14 | 3,450 |
| July | 617 | 48 | 12 | 19.9 | .043 | .05 | 1,220 |
| August | 300.5 | 17 | 6.1 | 9.69 | .021 | .02 | 596 |
| September | 607 | 85 | 6.5 | 20.2 | .044 | .05 | 1,200 |
| Water year 1948-49 | 171,606.5 | 5,480 | 6.1 | 470 | 1.02 | 13.87 | 340,400 |

* Winter discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Dec. 17 to Feb. 16.

Measurements of stream flow in the Snake River Basin made at points other than gaging stations are given in the following table.

**Miscellaneous discharge measurements in Snake River Basin during water year October 1948 to September 1949**

| Date | Stream | Tributary to or diverting from-- | Locality | Discharge (sec.-ft.) |
|---|---|---|---|---|
| **Snake River main stem** | | | | |
| Sept. 1 | Snake River..... | Columbia River..... | SW¼ sec. 5, T. 3 S., R. 35 E., 1 mile southwest of Blackfoot, Idaho. | 45.6 |
| Oct. 15 | ....do..... | ....do..... | At highway bridge in SE¼ sec. 35, T. 9 N., R. 30 E., 2½ miles east of Pasco, Wash. | 22,800 |
| Nov. 19 | ....do..... | ....do..... | ....do..... | 24,400 |
| July 25 | ....do..... | ....do..... | ....do..... | 22,800 |
| Sept. 1 | ....do..... | ....do..... | ....do..... | 16,900 |
| **Antelope Creek Basin, Idaho** | | | | |
| Aug. 2 | Antelope Creek.... | Snake River..... | Sec. 19, T. 2 N., R. 42 E., just below forks and about 11 miles northwest of Irwin. | 1.7 |
| 2 | ....do..... | ....do..... | Sec. 5, T. 2 N., R. 42 E., at Summers' farmhouse near south line of section and about 11 miles northwest of Irwin. | 2.2 |
| **Henrys Fork Basin, Idaho** | | | | |
| July 21 | Big Springs Creek. | Henrys Fork..... | Sec. 32, T. 14 N., R. 44 E., at site of former gaging station ½ mile southeast of Big Springs railroad station and ¼ mile below road bridge. | 182 |
| **Salmon Falls Creek Basin** | | | | |
| Oct. 1 | Salmon Falls Creek | Snake River..... | Sec. 30, T. 45 N., R. 64 E., at U. S. Highway 93 bridge, 1.4 miles south of Contact, Nev. | 25.3 |
| Sept. 6 | Salmon River Canal Co. canal. | Salmon Falls Creek. | Near line between secs. 7 and 18, T. 14 S., R. 15 E., just below outlet from Salmon River Canal Co. reservoir, 3/8 mile above gaging station, and 7 miles west of Rogerson, Idaho. | 247 |
| **Canyon Creek Basin, Idaho** | | | | |
| Nov. 17 | Ake lateral No. 2. | Mountain Home feeder canal. | Sec. 36, T. 2 S., R. 6 E., at head, 5 miles north of Mountain Home. | 0.60 |
| Mar. 22 | ....do..... | ....do..... | ....do..... | .36 |
| July 20 | ....do..... | ....do..... | ....do..... | 2.41 |
| **Owyhee Creek Basin, Oreg.** | | | | |
| Aug. 17 | Owyhee River..... | Snake River..... | Sec. 13, T. 31 S., R. 41 E., ½ mile below Jordan Creek, near Rome. | 88.1 |
| 17 | Crooked Creek..... | Owyhee River..... | Sec. 6, T. 32 S., R. 41 E., at highway bridge on route 95, 5 miles above mouth and 6 miles southwest of Rome. | 22.7 |
| **Malheur River Basin, Oreg.** | | | | |
| Dec. 11 | Warmsprings Creek. | North Fork Malheur River. | Sec. 1 or 2, T. 19 S., R. 37 E., 3 miles northeast of Beulah. | 4.78 |
| **Weiser River Basin, Idaho** | | | | |
| Oct. 8 | Johnson Creek..... | Weiser River..... | SE¼ sec. 36, T. 17 N., R. 3 W., above Johnson Park Creek and 10 miles northwest of Council. | 1.28 |
| Nov. 21 | Johnson Park Creek | Johnson Creek..... | SE¼ sec. 36, T. 17 N., R. 3 W., at mouth, 10 miles northwest of Council. | .32 |
| July 25 | ....do..... | ....do..... | ....do..... | *.25 |
| **Powder River Basin, Oreg.** | | | | |
| Sept.23 | Eagle Creek..... | Powder River..... | Above Skull Creek, near New Bridge.... | 82.2 |
| **Clearwater River Basin, Idaho** | | | | |
| Feb. 26 | Clearwater River.. | Snake River..... | Sec. 7, T. 36 N., R. 2 E., at Highway 95 bridge at Orofino. | 5,280 |
| **Tucannon River Basin** | | | | |
| (‡) | Pataha Creek..... | Tucannon River..... | NE¼ sec. 4, T. 11 N., R. 41 E., 0.6 mile above Zumwalt siding, near Pomeroy, Wash. | †1,620 |

* Estimated.

† Flow at crest stage; computed by slope-area method.

‡ Sometime in February.

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