DEPARTMENT OF THE INTERIOR
FRANKLIN K. LANE, Secretary

UNITED STATES GEOLOGICAL SURVEY
GEORGE OTIS SMITH, Director

WATER-SUPPLY PAPER 360

SURFACE WATER SUPPLY OF THE UNITED STATES

1913

PART X. THE GREAT BASIN

NATHAN C. GROVER, Chief Hydraulic Engineer

E. A. PORTER, H. D. McGLASHAN, F. F. HENSHAW, and G. C. BALDWIN,
District Engineers

Prepared in cooperation with the States of Utah, Nevada, California, Oregon, and Idaho

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SURFACE WATER SUPPLY OF THE GREAT BASIN, 1913.

AUTHORIZATION AND SCOPE OF WORK.

This volume is one of a series of 12 reports presenting results of measurements of flow made on streams in the United States during 1913. Six of the reports for 1913 contain data for the year ending September 30, and the other six for the calendar year, as indicated in the table on page 10.

The data presented in these reports were collected by the United States Geological Survey under authority implied in the organic law (20 Stat. L., p. 394), which contains the following paragraph:

> *Provided*, That this officer [the Director] shall have the direction of the geological survey and the classification of public lands and examination of the geological structure, mineral resources, and products of the national domain.

The work was begun in 1888 in connection with special studies of water supply for irrigation. Since the fiscal year ending June 30, 1895, successive sundry civil bills passed by Congress have carried the following item and appropriations:

> For gaging the streams and determining the water supply of the United States, and for the investigation of underground currents and artesian wells, and for the preparation of reports upon the best methods of utilizing the water resources.

Annual appropriations for the fiscal years ending June 30, 1895–1914.

1895	$12,500
1896	20,000
1897 to 1900, inclusive	50,000
1901 to 1902, inclusive	100,000
1903 to 1906, inclusive	200,000
1907	150,000
1908 to 1910, inclusive	100,000
1911 to 1914, inclusive	150,000

In the execution of the work many private and State organizations have cooperated, either by furnishing data or by assisting financially in collecting the data. Acknowledgements for cooperation of the first kind are made in connection with the description of each station affected and of the second kind on pages 19–20.

Measurements of stream flow have been made at about 3,000 points in the United States and also at many points in small areas

in Seward Peninsula and the Yukon-Tanana region, and in the Hawaiian Islands. On July 1, 1913, 1,388 gaging stations were being maintained by the Survey and the cooperating organizations and during the year many miscellaneous discharge measurements were made at other points. In connection with this work data were also collected in regard to precipitation, evaporation, storage reservoirs, river profiles, and water power in many sections of the country and will be made available in the regular water-supply papers from tine to time.

PUBLICATIONS.

A report for each year has been prepared embodying the stream-flow data collected during that year. An index to the reports containing stream-flow measurements prior to 1904 has been published as Water-Supply Paper 119. Circulars are also available giving complete lists of the gaging stations maintained by the Survey to date, and a list of the reports relating to the water supply of the country.

Prior to 1901 gage heights and discharge measurements were published in water-supply papers or bulletins and estimates of monthly discharge in annual reports; since 1901 both classes of data have been published in water-supply papers, and they are now being published in 12 parts, as shown in the following table:

Papers on surface water supply of the United States, 1913.

Part.	No.	Title.	Year used.
I	351	North Atlantic basins	Calendar year.
II	352	South Atlantic and eastern Gulf of Mexico basins	Do.
III	353	Ohio River basin	Year ending Sept. 30.
IV	354	St. Lawrence River basin	Calendar year.
V	355	Upper Mississippi River and Hudson Bay basins	Year ending Sept. 30.
VI	356	Missouri River basin	Calendar year.
VII	357	Lower Mississippi River basins	Do.
VIII	358	Western Gulf of Mexico basin	Year ending Sept. 30.
IX	359	Colorado River basin	Calendar year.
X	360	Great Basin	Year ending Sept. 30.
XI	361	Pacific basins in California	Do.
XII	362	North Pacific basins	Do.

A list of reports containing stream-flow data is presented in the following table:

Stream-flow data in reports of the United States Geological Survey.

[A=Annual Report; B=Bulletins; WS=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 Sept., 1890.
12th A, pt. 2	....do	1884 to June 30, 1891.
13th A, pt. 3	Mean discharge in second-feet	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871 to 1893)	1888 to Dec. 31, 1893.

Stream-flow data in reports of the United States Geological Survey—Continued.

Report.	Character of data.	Year.
B 131	Descriptions, measurements, gage heights, and ratings	1893 and 1894.
16th A, pt. 2	Descriptive information only	
B 140	Descriptions, measurements, gage heights, ratings, and monthly discharge (also many data covering earlier years).	1895.
WS 11	Gage heights (also gage heights for earlier years)	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years).	1895 and 1896.
WS 15	Descriptions, measurements, and gage heights, eastern United States, eastern Mississippi River, and Missouri River above junction with Kansas.	1897.
WS 16	Descriptions, measurements, and gage heights, western Mississippi River below junction of Missouri and Platte, and western United States.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records).	1897.
WS 27	Measurements, ratings, and gage heights, eastern United States, eastern Mississippi River, and Missouri River.	1898.
WS 28	Measurements, ratings, and gage heights, Arkansas River and western United States.	1898.
20th A, pt. 4	Monthly discharge (also for many earlier years)	1898.
WS 35 to 39	Descriptions, measurements, gage heights, and ratings	1899.
21st A, pt. 4	Monthly discharge	1899.
WS 47 to 52	Descriptions, measurements, gage heights, and ratings	1900.
22d A, pt. 4	Monthly discharge	1900.
WS 65, 66	Descriptions, measurements, gage heights, and ratings	1901.
WS 75	Monthly discharge	1901.
WS 82 to 85	Complete data	1902.
WS 97 to 100	do	1903.
WS 124 to 135	do	1904.
WS 165 to 178	do	1905.
WS 201 to 214	do	1906.
WS 241 to 252	do	1907–8.
WS 261 to 272	do	1909.
WS 281 to 292	do	1910.
WS 301 to 312	do	1911.
WS 321 to 332	do	1912.
WS 351 to 362	do	1913.

NOTE.—No data regarding stream flow are given in the 15th and 17th annual reports.

The following table gives, by years and drainage basins, the numbers of the papers on surface-water supply published from 1899 to 1913. The data for any particular station will be found in the reports covering the years during which the station was maintained. For example, data for Machias River at Whitneyville, Me., 1903 to 1913, are published in Water-Supply Papers 97, 124, 165, 201, 241, 261, 281, 301, 321, and 351, which contain records for the New England streams from 1903 to 1913. Results of miscellaneous measurements are published by drainage basins.

Numbers of water-supply papers containing results of stream measurements, 1899–1913.

	1899 [a]	1900 [b]	1901	1902	1903	1904	1905	1906	1907–8	1909	1910	1911	1912	1913
North Atlantic	35	47, [c] 48	65, 75	82	97	[d] 124, [e] 125, [f] 126	[d] 165, [e] 166, [f] 167	[d] 201, [e] 202, [f] 203	241	261	281	301	321	351
South Atlantic and eastern Gulf of Mexico	[g] 35, 36	48	65, 75	[g] 82, 83	[g] 97, 98	[f] 126, 127	[f] 167, 168	[f] 203, 204	242	262	282	302	322	352
Ohio River basin	36	48, [h] 49	65, 75	83	98	128	169	205	243	263	283	303	233	353
St. Lawrence River and Great Lakes	36	49	65, 75	[i] 82, 83	97	129	170	206	244	264	284	304	324	354
Hudson Bay and Upper Mississippi River	36	49	[j] 65, 66, 75	[j] 83, 85	[j] 98, 99, [k] 100	[j] 128, 130	171	207	245	265	285	305	325	355
Missouri River	[l] 36, 37	49, [m] 50	66, 75	84	99	130, [n] 131	172	208	246	266	286	306	326	356
Lower Mississippi River	37	50	[j] 65, 66, 75	[j] 83, 84	[j] 98, 99	[j] 128, 131	[j] 169, 173	[j] 205, 209	247	267	287	307	327	357
Western Gulf of Mexico	37	50	66, 75	84	99	132	174	210	248	268	288	308	328	358
Colorado River	[o] 37, 38	50	66, 75	85	100	133	175, [p] 177	211	249	269	289	309	329	359
Great Basin	38, [q] 39	51	66, 75	85	100	133, [r] 134	176, [r] 177	212, [r] 213	250, [r] 251	270, [r] 271	290, [r] 291	310	330	360
California	38, [s] 39	51	66, 75	85	100	134	177	213	251	271	291	311	331	361
North Pacific	38	51	66, 75	85	100	135	[t] 177, 178	214	252	272	292	312	[u] 332	[u] 362

[a] Rating tables and index to Water-Supply Papers 35–39 contained in Water-Supply Paper 39.
[b] Rating tables and index to Water-Supply Papers 47–52 and data on precipitation, wells, and irrigation in California and Utah contained in Water-Supply Paper 52.
[c] Wissahickon and Schuylkill Rivers to James River.
[d] New England rivers only.
[e] Hudson River to Delaware River, inclusive.
[f] Susquehanna River to Yadkin River, inclusive.
[g] James River only.
[h] Scioto River.
[i] Lake Ontario and tributaries to St. Lawrence River proper.
[j] Tributaries of Mississippi from east.
[k] Hudson Bay only.
[l] Gallatin River.
[m] Loup and Platte Rivers near Columbus, Nebr., and all tributaries below junction with Platte.
[n] Platte and Kansas Rivers.
[o] Green and Gunnison Rivers and Grand River above junction with Gunnison.
[p] Below junction with Gila.
[q] Mohave River only.
[r] Great Basin in California, excepting Truckee and Carson drainage basins.
[s] Kings and Kern Rivers only.
[t] Rogue, Umpqua, and Siletz Rivers only.
[u] In three parts: *A*, Pacific drainage in Washington and upper Columbia River basin; *B*, Snake River basin; *C*, Lower Columbia River and Rogue, Umpqua, and Siletz River basins.

Water-supply papers and other publications of the United States Geological Survey containing data in regard to the water resources of the United States may be obtained or consulted as indicated below.

1. Copies may be obtained free of charge by applying to the Director of the Geological Survey, Washington, D. C. The edition printed for free distribution is, however, small and is soon exhausted.

2. 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.

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

4. Complete sets are available for consultation in the local offices of the water-resources branch of the Geological Survey, as follows:

Boston, Mass., Customhouse Building.
Albany, N. Y., Room 18, Federal Building.
Atlanta, Ga., Post Office Building.
Madison, Wis., Capitol Building.
St. Paul, Minn., Old Capitol Building.
Helena, Mont., Montana National Bank Building.
Denver, Colo., 403 New Post Office Building.
Salt Lake City, Utah, Federal Building.
Phoenix, Ariz., Fleming Building.
Boise, Idaho, 615 Idaho Building.
Portland, Oreg., 416 Couch Building.
Tacoma, Wash., Federal Building.
San Francisco, Cal., 328 Customhouse.
Los Angeles, Cal., Federal Building.
Austin, Tex., Old Post Office Building.
Honolulu, Hawaii, Kapiolani Building.

A list of the Geological Survey's publications will be sent on application to the Director of the United States Geological Survey, Washington, D. C.

DEFINITION OF TERMS.

The volume of water flowing in a stream—the "run-off" or "discharge"—is expressed in various terms, each of which has become associated with a certain class of work. These terms may be divided into two groups: (1) Those which represent a rate of flow, as second-feet, gallons per minute, miner's inches, and discharge in second-feet per square mile; and (2) those which represent the actual quantity of water, as run-off in depth in inches, acre-feet, and millions of cubic-feet. The principal terms used in this series of reports are second-foot, second-feet per square mile, run-off in inches, acre-foot, and millions of cubic-feet. They may be defined as follows:

"Second-foot" is an abbreviation for "cubic foot per second." A second-foot is the rate of discharge of water flowing in a channel of rectangular cross-section, 1 foot wide and 1 foot deep, at an average velocity of 1 foot per second. It is generally used as a fundamental

unit from which others are computed by the use of the factors given in the tables of convenient equivalents (pp. 14–16).

"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 run-off is distributed uniformly both as regards time and area.

"Run-off, depth in inches," is the depth to which the drainage area would be covered if all the water flowing from it in a given period were conserved and uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in depth in inches.

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

"Millions of cubic-feet" is used to express quantities of water stored in reservoirs, most frequently in connection with studies of flood control.

The following terms used in these reports are not in common use and may be defined as follows:

"Discharge relation" is an abbreviation for the term "relation of gage height to discharge."

"Control," "controlling section," and "point of control" are terms used to designate the section or sections of the stream below the gage which determine the discharge relation at the gage. It should be noted that the control may not be the same section or sections at all stages.

The "point of zero flow" for a given gaging station is that point on the gage—the gage height—to which the surface of the river would fall if there were no flow.

CONVENIENT EQUIVALENTS.

The following is a list of convenient equivalents for use in hydraulic computations:

Table for converting discharge in second-feet per square mile into run-off in depth in inches over the area.

Discharge, in second-feet per square mile.	Run-off in inches.				
	1 day.	28 days.	29 days.	30 days.	31 days.
1	0.03719	1.041	1.079	1.116	1.153
2	.07438	2.083	2.157	2.231	2.306
3	.11157	3.124	3.236	3.347	3.459
4	.14876	4.165	4.314	4.463	4.612
5	.18595	5.207	5.393	5.578	5.764
6	.22314	6.248	6.471	6.694	6.917
7	.26033	7.289	7.550	7.810	8.070
8	.29752	8.331	8.628	8.926	9.223
9	.33471	9.372	9.707	10.041	10.376

NOTE.—For part of a month multiply the figure for one day by the number of days.

Table for converting discharge in second-feet into run-off in acre-feet.

Discharge in second-feet.	Run-off in acre-feet.				
	1 day.	28 days.	29 days.	30 days.	31 days.
1.....	1.983	55.54	57.52	59.50	61.49
2.....	3.967	111.1	115.0	119.0	123.0
3.....	5.950	166.6	172.6	178.5	184.5
4.....	7.934	222.1	230.1	238.0	246.0
5.....	9.917	277.7	287.6	297.5	307.4
6.....	11.90	333.2	345.1	357.0	368.9
7.....	13.88	388.8	402.6	416.5	430.4
8.....	15.87	444.3	460.2	476.0	491.9
9.....	17.85	499.8	517.7	535.5	553.4

NOTE.—For part of a month multiply the figure for one day by the number of days.

Table for converting discharge in second-feet into run-off in millions of cubic feet.

Discharge in second-feet.	Run-off in millions of cubic feet.				
	1 day.	28 days.	29 days.	30 days.	31 days.
1.....	0.0864	2.419	2.506	2.592	2.678
2.....	.1728	4.838	5.012	5.184	5.356
3.....	.2592	7.257	7.518	7.776	8.034
4.....	.3456	9.676	10.024	10.368	10.712
5.....	.4320	12.095	12.530	12.960	13.390
6.....	.5184	14.514	15.036	15.552	16.068
7.....	.6048	16.933	17.542	18.144	18.746
8.....	.6912	19.352	20.048	20.736	21.424
9.....	.7776	21.771	22.554	23.328	24.102

NOTE.—For part of a month multiply the figure for one day by the number of days.

1 second-foot equals 40 California miner's inches (law of Mar. 23, 1901).

1 second-foot equals 38.4 Colorado miner's inches.

1 second-foot equals 40 Arizona miner's inches.

1 second-foot equals 7.48 United States gallons per second; equals 448.8 gallons per minute; equals 646,317 gallons for one day.

1 second-foot for one year (365 days) covers 1 square mile 1.131 feet or 13.572 inches deep.

1 second-foot for one year (365 days) equals 31,536,000 cubic feet.

1 second-foot for one year (365 days) equals 724 acre-feet.

1 second-foot equals about 1 acre-inch per hour.

1 second-foot for one day equals 86,400 cubic feet.

1,000,000,000 (1 United States billion) cubic feet equals 11,570 second-feet for one day.

1,000,000,000 cubic feet equals 414 second-feet for one 28-day month.

1,000,000,000 cubic feet equals 399 second-feet for one 29-day month.

1,000,000,000 cubic feet equals 386 second-feet for one 30-day month.

1,000,000,000 cubic feet equals 373 second-feet for one 31-day month.

100 California miner's inches equals 18.7 United States gallons per second.

100 California miner's inches for one day equals 4.96 acre-feet.

100 Colorado miner's inches equals 2.60 second-feet.

100 Colorado miner's inches equals 19.5 United States gallons per second.

100 Colorado miner's inches for one day equals 5.17 acre-feet.

100 United States gallons per minute equals 0.223 second-foot.

100 United States gallons per minute for one day equals 0.442 acre-foot.

1,000,000 United States gallons per day equals 1.55 second-feet.

1,000,000 United States gallons equals 3.07 acre-feet.
1,000,000 cubic feet equals 22.95 acre-feet.
1 acre-foot equals 325.850 gallons.
1 inch deep on 1 square mile equals 2,323,200 cubic feet.
1 inch deep on 1 square mile equals 0.0737 second-foot per year.
1 foot equals 0.3048 meter.
1 mile equals 1.60935 kilometers.
1 mile equals 5,280 feet.
1 acre equals 0.4047 hectare.
1 acre equals 43,560 square feet.
1 acre equals 209 feet square, nearly.
1 square mile equals 2.59 square kilometers.
1 cubic foot equals 0.0283 cubic meter.
1 cubic foot of water weighs 62.5 pounds.
1 cubic meter per minute equals 0.5886 second-foot.
1 horsepower equals 550 foot-pounds per second.
1 horsepower equals 76.0 kilogram-meters per second.
1 horsepower equals 746 watts.
1 horsepower equals 1 second-foot falling 8.80 feet.
1⅓ horsepower equals about 1 kilowatt.

To calculate water power quickly: $\frac{\text{Sec.-ft.} \times \text{fall in feet}}{11} = \text{net horsepower on water wheel realizing 80 per cent of theoretical power.}$

EXPLANATION OF DATA.

For each regular current-meter gaging station the following data, so far as available, are given: Description of the station, list of discharge measurements, table of daily gage height, table of daily discharge, table of monthly and yearly discharge and run-off. For stations located at weirs or dams the gage-height table is usually omitted.

In addition to statements regarding the location and installation of current-meter stations the descriptions give information in regard to any condition which may affect the constancy of the relation of gage height to discharge relation, covering such points as ice, logging, shifting channels, and backwater; also information regarding diversions which decrease the total flow at the measuring section. Statements are also made regarding the accuracy of the data.

The table of daily gage height shows the daily fluctuations of the surface of the river as found from the mean of the gage readings taken each day, usually in the morning and in the evening, though at many stations only one reading is made each day. At a comparatively few stations automatic gages are used, some of which give a continuous record of river stage in the form of a hydrograph, and others a record printed at regular intervals from which the mean daily gage height can be computed. The gage height given in the table represents the elevation of the surface of the water above the zero of the gage. When the discharge relation is affected by the presence of ice in the streams or by backwater from obstructions all

gage heights are published as recorded, with suitable footnotes. The rating table is not applicable for such periods unless the proper corrections to the gage heights are known and applied. Attention is called to the fact that the zero of the gage is placed at an arbitrary datum and has no relation to zero flow or the bottom of the river. In general the zero is located somewhat below the lowest known flow to avoid negative readings.

In the tables of daily gage heights the use of zeros in the hundredths place indicates the degree of refinement to which the gage was read and to which the mean daily gage height was computed. If a gage is read to tenths or half-tenths once a day or to tenths twice a day no zeros appear in the hundredths place for any stage. If the gage is read to half-tenths twice a day or to quarter-tenths or hundredths, regardless of the number of readings a day, the gage heights are published to hundredths, and zeros appear in the hundredths place, below a certain limiting stage. This limiting stage is so selected that the average error in the mean daily discharge, resulting from not using the mean daily gage height to hundredths above the stage, shall not be greater than 2 per cent. For automatic gages the allowable average error of the daily discharge has been taken as 1 per cent. The selection of the percentage is arbitrary, but it should be noted that the maximum error will in all cases be twice the average error. In like manner half-tenths are used from the hundredths limit to another higher limit, above which only tenths are used. It is the aim to have the gage height observations at each gaging station recorded to the degree of refinement required by the above-described method of use, but in practice it is found necessary, in order to avoid confusion in the gage observer's record, to have the observations for all stages recorded to the degree of refinement required for low stages, which usually necessitates readings to hundredths of a foot.

The discharge measurements and gage heights are the base data from which rating tables, daily discharge tables, and monthly discharge tables are computed.

The rating table gives, either directly or by interpolation, the discharge in second-feet corresponding to every stage of the river recorded during the period for which it is applicable. It is not published in this report but can be determined from the tables of daily gage height and daily discharge by plotting gage heights in feet as ordinates and discharge in second-feet as abscissas.

The table of daily discharge determined from the rating table and daily gage-height table gives the discharge in second-feet corresponding to the mean of the gage readings observed each day.

The base data for the tables presented in this report, unless otherwise stated in description of station, have been collected by the

methods commonly used at current-meter gaging stations and described in standard textbooks. Plates I and II show typical gaging stations and current meters and gages used in the work.

In the table of monthly discharge the column headed "Maximum" gives the mean flow, as determined from the rating table, for the day when the mean gage height was highest. As the gage height is the mean for the day, it does not indicate correctly the stage when the water surface was at crest height, and the corresponding discharge was consequently larger than given in the maximum column. Likewise, in the column of "Minimum" the quantity given is the mean flow for the day when the mean gage height was lowest. The column headed "Mean" is the average flow in cubic feet for each second during the month. On this the computations for the remaining columns, which are defined on pages 13 and 14, are based.

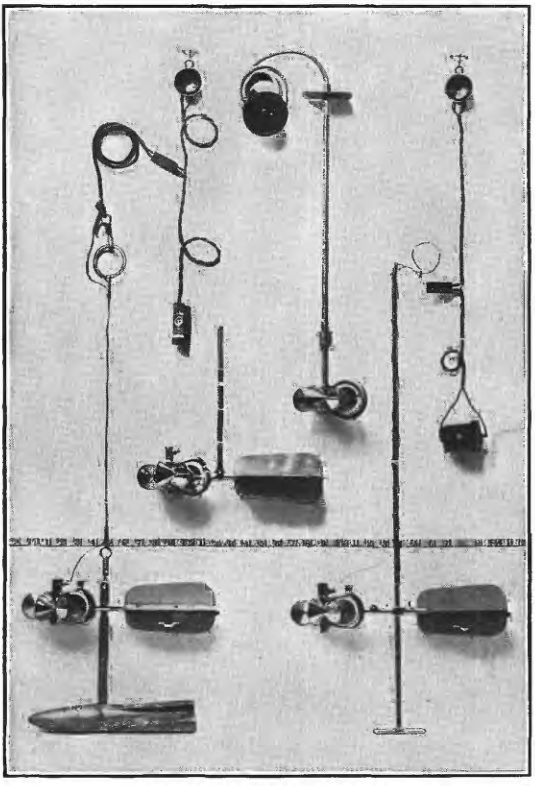
ACCURACY OF FIELD DATA AND COMPUTED RESULTS.

The accuracy of stream flow data depends on (1) the permanence of channel and of the relation between discharge and stage, and (2) on the accuracy of observation of stage, measurements of discharge, and interpretation of data.

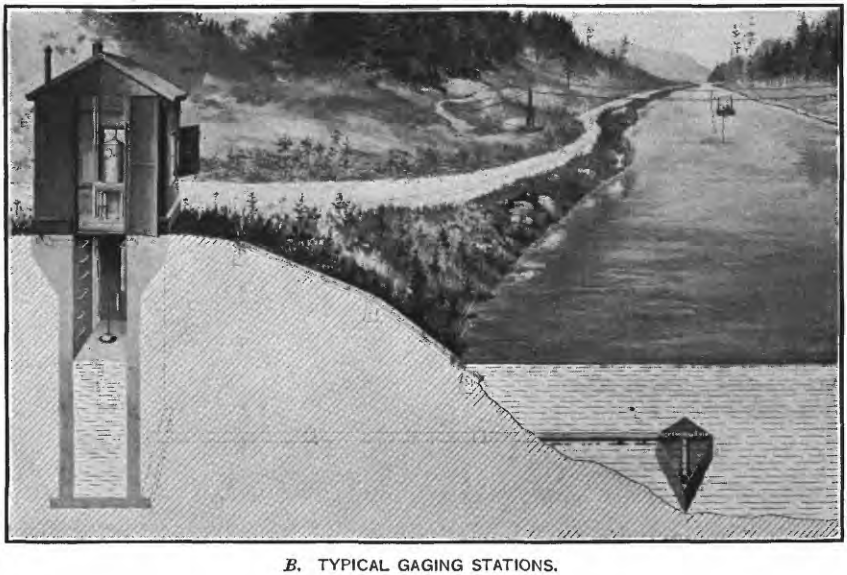
In order to give engineers and others information regarding the probable accuracy of the computed results, footnotes are added to the daily discharge tables stating the probable accuracy of the rating curves used, and an accuracy column is inserted in the monthly discharge table. For the rating curves "well-defined" indicates, in general, that the rating is probably accurate within 5 per cent; "fairly well defined," within 10 per cent; "poorly defined" or "approximate," within 15 to 25 per cent. These notes are very general and are based on the plotting of the individual measurements with reference to the mean rating curve.

The accuracy column in the monthly discharge table does not apply to the estimate of maximum or minimum discharge nor to that for any one day, but to the monthly mean. It is based on the accuracy of the rating curve, the probable reliability of the observer, the number of gage readings per day, the range of the fluctuation in stage, and knowledge of local conditions. In this column A indicates that the mean monthly flow is probably accurate within 5 per cent; B, within 10 per cent; C, within 15 per cent; D, within 25 per cent. Special conditions are covered by footnotes.

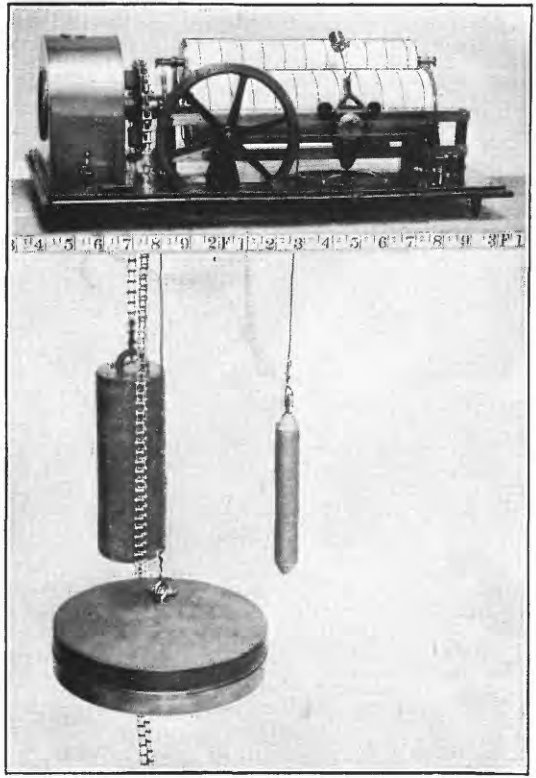
Even though the monthly means for any station may represent with a high degree of accuracy the quantity of water flowing past the gage, the figures showing discharge per square mile and depth of run-off in inches may be subject to gross errors which result from including in the measured drainage area large noncontributing districts or omitting estimates of water diverted for irrigation or other



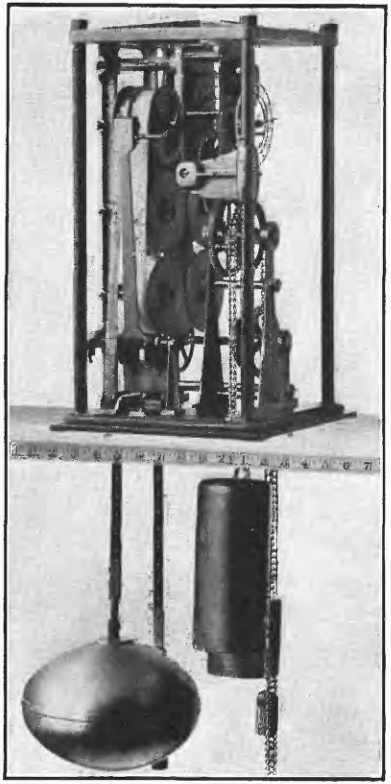
A. PRICE CURRENT METERS.



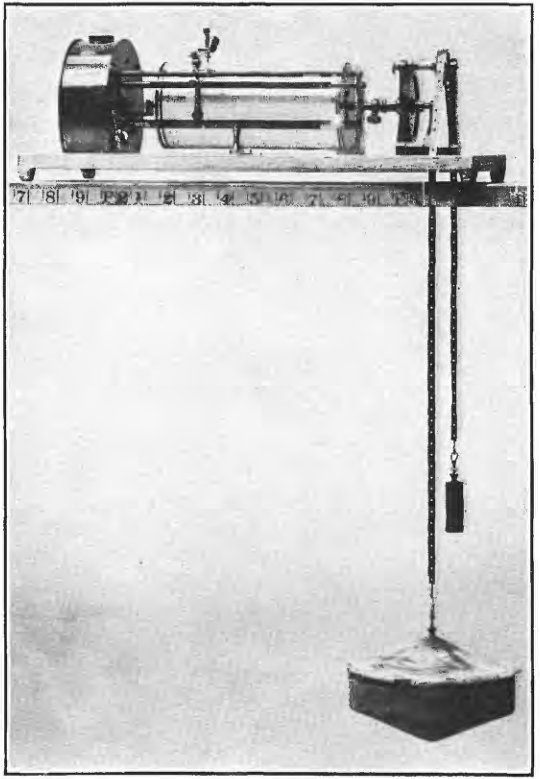
B. TYPICAL GAGING STATIONS.



A. STEVENS.



B. GURLEY.



C. FRIEZ.

AUTOMATIC GAGES.

use. "Second-feet per square mile" and "run-off, depth in inches" have therefore not been computed for streams draining areas in which the annual rainfall is less than 20 inches, nor for streams draining areas in which the precipitation exceeds 20 inches if such computations might be uncertain and misleading because of the presence of large noncontributing districts in the measured drainage area, of omitting estimates of water diverted for irrigation or other use, or of artificial control or unusual natural control of the flow of the river above the gaging station. All values of "second-feet per square mile" and "run-off, depth in inches" previously published by the Survey should be used with extreme caution, and such values in this report should be used with care because of possible inherent sources of error not known to the Survey.

In general, the base data collected each year by the Survey engineers are published, not only to comply with the law, but also to afford any engineer the means of examining and adjusting to his own needs the results of the computations. The table of monthly discharge is so arranged as to give only a general idea of the flow at the station and should not be used for other than preliminary estimates. The tables of daily discharge allow more detailed studies of the variation in flow. It should be borne in mind, however, that the observations in each succeeding year may be expected to throw new light on data already collected and published.

COOPERATION.

During the year ending September 30, 1913, the work in Utah, Nevada, California, Oregon, and Idaho has been done under cooperative agreements between the United States Geological Survey and the respective States.

Cooperation with the States is effected under contracts which are made between the Director of the Federal Survey and the State engineers or other officials and are authorized by legislative acts appropriating moneys. The State contracts are essentially of the same order, the principal provisions being substantially as follows:

1. The United States Geological Survey retains direct supervision of the field work and the preparation of the data for publication.

2. The Federal Survey retains possession of all material collected—field notes, maps, etc., but this material is open at all times to inspection by the State officials, and if not satisfactory the agreements can be terminated at any time.

3. The salaries of gage observers and the salaries and traveling and field expenses of the engineers are divided between the two parties in some manner agreed upon, the accounts being rendered monthly in accordance with the regulations of the Federal Survey.

4. The streams and localities in which investigations shall be made are determined by conference between the State officials and the representatives of the United States Geological Survey.

5. The cost of publication is borne entirely by the Federal Survey.

In general, the cooperative agreements specify that the United States Geological Survey shall allot from its appropriation a sum equal to that appropriated from State funds.

Special acknowledgments are due to W. D. Beers, State engineer, of Utah, W. M. Kearney, State engineer, of Nevada, W. F. McClure, State engineer, of California, George C. Pardee, chairman California Conservation Commission, Prof. Charles D. Marx, chairman California State Water Commission, John H. Lewis, State engineer, of Oregon, and A. E. Robinson and Frank P. King, State engineers, of Idaho, for the very efficient manner in which they have represented their States in the cooperative investigations.

Acknowledgments are also due to the officials and employees of the United States Reclamation Service, the United States Office of Indian Affairs, and the United States Weather Bureau for free use of data collected by them.

Financial assistance has been rendered by Logan River Water Users' Association; Utah Agricultural College; Logan, Hyde Park and Smithfield Canal Co.; Logan Northern Canal Co.; Delta Land & Water Co.; Deseret and Melville Irrigation Co.; Abraham Irrigation Co.; Marys River Carey Act Reclamation Association; and Warner Lake Irrigation Co.

DIVISION OF WORK.

The data for stations in Idaho were collected and prepared for publication under the direction of G. C. Baldwin, district engineer, assisted by A. B. Purton, Lynn Crandall, R. C. Pierce, and L. W. Jordan.

The data for stations in Utah and Nevada were collected and prepared for publication under the direction of E. A. Porter, district engineer, assisted by Lynn Crandall, J. J. Sanford, W. R. King, Frank Weber, H. L. Stoner, Leonard Tanner, B. E. Jones, H. D. Padgett, M. I. Walters, A. W. Harrington, and M. D. Anderson.

The data for stations in California were collected and prepared for publication under the direction of H. D. McGlashan, district engineer, assisted by R. C. Rice, Charles Leidl, Lasley Lee, H. J. Tompkins, F. B. Clark, and M. B. Trelease.

The data for stations in Oregon were collected and prepared for publication under the direction of F. F. Henshaw, district engineer, assisted by E. S. Fuller, James E. Stewart, Howard Kimble, C. G. Paulsen, P. V. Hodges, and C. L. Batchelder.

The manuscript was assembled by H. W. Fear and reviewed by G. C. Stevens.

GAGING-STATION RECORDS.

GREAT SALT LAKE BASIN.

GREAT SALT LAKE.

Location.—Records are obtained from two gages, one located at Saltair on the southern shore of the lake, 15 miles west of Salt Lake City; the other at Midlake on the Lucin cut-off of the Southern Pacific Railroad, west of Ogden, Utah.

Gages.—The zero of the Midlake gage is 4,201.39 above sea level, Southern Pacific Railroad Co. datum. The zero of the Saltair gage is 4,212.89 feet above sea level, United States Geological Survey datum.

Records available.—March to July, 1904; October 1, 1912, to September 30, 1913. A chart showing variation in level of Great Salt Lake and in monthly and annual precipitation in Great Salt Lake basin from chart prepared in office of the chief engineer of the Oregon Short Line Railroad, Salt Lake City, Utah, is published in United States Geological Survey Water-Supply Paper 330.

Cooperation.—Readings on the Midlake gage are furnished by the Oregon Short Line Railroad Co., and on the Saltair gage by the United States Weather Bureau.

Gage height, in feet, of Great Salt Lake, Utah, for the year ending Sept. 30, 1913.

Day.	Gage height.		Day.	Gage height.	
	Saltair gage.	Midlake gage.		Saltair gage.	Midlake gage.
	Feet.	*Feet.*		*Feet.*	*Feet.*
Oct. 1	4.9	3.8	Apr. 1	5.7	4.4
15	4.9	3.8	15	5.8	4.6
Nov. 1	5.0	3.8	May 1	5.9	4.8
15	5.1	3.8	15	6.0	4.8
Dec. 1	5.2	3.9	June 1	6.0	4.8
15	5.2	3.9	15	5.9	4.8
Jan. 1	5.2	4.0	July 1	5.9	4.8
15	5.2	4.0	15	5.8	4.8
Feb. 1	5.2	4.1	Aug. 1	5.6	4.6
15	5.3	4.1	15	5.4	4.4
Mar. 1	5.4	4.1	Sept. 1	5.1	4.2
15	5.5	4.2	15	5.1	3.9

BEAR RIVER BASIN.

BEAR RIVER NEAR HARER, IDAHO.

Location.—In sec. 22, T. 14 S., R. 45 E., at Martin Phelps's ranch, about three-fourths mile north of Harer Siding on the Oregon Short Line Railroad, about 7 miles by road above Dingle, and about 14 miles southeast of Montpelier.

Records available.—June 21, 1913, to September 30, 1913.

Drainage area.—2,780 square miles. (Value furnished by Utah Power & Light Co.)

Gage.—Inclined staff on right bank, near Martin Phelps's house.

Channel and control.—Hard material of permanent character.

Discharge measurements.—Made from a cable 1,500 feet above gage or by wading.

Winter flow.—Discharge relation seriously affected by ice.

Diversions.—No large diversions above the station.

Accuracy.—Results good.

Cooperation.—Station established and maintained by Utah Power & Light Co.

Discharge measurements of Bear River near Harer, Idaho, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
June 21	Stoner and Gilgen	5.09	629	Aug. 18	Karl Gilgen	4.54	322
26	L. W. Jordan	4.95	552	25	do	4.39	256
30	Karl Gilgen	5.66	934	Sept. 1	do	4.46	282
July 7	do	6.34	1,200	8	do	4.51	310
14	do	5.20	689	15	do	4.59	332
21	do	4.78	477	22	do	4.58	330
28	do	5.08	637	29	do	4.59	327
Aug. 4	do	4.80	458	29	L. W. Jordan	4.59	315
11	do	4.72	426	29	do	4.59	329

Daily gage height, in feet, of Bear River near Harer, Idaho, for the year ending Sept. 30, 1913.

[M. H. Phelps, observer.]

Day.	June.	July.	Aug.	Sept.	Day.	June.	July.	Aug.	Sept.
1		7.3	4.85	4.45	16		5.0	4.6	4.6
2		7.8	4.8	4.5	17		4.95	4.65	4.6
3		7.9	4.8	4.5	18		4.95	4.55	4.6
4		7.5	4.8	4.5	19		4.85	4.5	4.6
5		7.0	4.8	4.55	20		4.8	4.45	4.6
6		6.5	4.85	4.5	21	5.0	4.75	4.4	4.55
7		6.4	4.85	4.5	22	5.0	4.9	4.4	4.6
8		6.0	4.8	4.5	23	5.0	4.9	4.4	4.6
9		5.8	4.8	4.5	24	4.95	5.0	4.4	4.6
10		5.7	4.8	4.55	25	4.95		4.4	4.6
11		5.5	4.7	4.55	26	4.95		4.4	4.6
12		5.4	4.7	4.55	27	5.0		4.4	4.6
13		5.3	4.65	4.5	28	5.2	5.1	4.4	4.6
14		5.2	4.6	4.6	29	5.5	5.0	4.4	4.6
15		5.1	4.6	4.6	30	5.6	4.9	4.4	4.6
					31		4.9	4.45	

Daily discharge, in second-feet, of Bear River near Harer, Idaho, for the year ending Sept. 30, 1913.

Day.	June.	July.	Aug.	Sept.	Day.	June.	July.	Aug.	Sept.
1		1,580	486	279	16		581	347	347
2		1,800	456	300	17		549	373	347
3		1,850	456	300	18		549	324	347
4		1,660	456	300	19		486	300	347
5		1,450	456	324	20		456	279	347
6		1,260	486	300	21	581	428	258	324
7		1,220	486	300	22	581	517	258	347
8		1,080	456	300	23	581	517	258	347
9		1,000	456	300	24	549	581	258	347
10		960	456	324	25	549	597	258	347
11		873	399	324	26	549	613	258	347
12		823	399	324	27	581	629	258	347
13		767	373	300	28	707	645	258	347
14		707	347	347	29	873	581	258	347
15		645	347	347	30	918	517	258	347
					31		517	279	

NOTE.—Discharge determined from a well-defined rating curve. Discharge interpolated July 25-27.

Monthly discharge of Bear River near Harer, Idaho, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
June	918	549	647	12,800	A.
July	1,850	428	853	52,400	A.
August	486	258	355	21,800	A.
September	347	279	328	19,500	A.
The period				106,000	

BEAR RIVER AT DINGLE, IDAHO.

Location.—In sec. 7, T. 14 S., R. 45 E., about half a mile southeast of Dingle railway station and 100 yards south of the Oregon Short Line Railroad; about 10 miles above the outlet of Bear Lake.

Records available.—May 9, 1903, to September 30, 1913.

Drainage area.—2,890 square miles.

Gage.—Inclined staff on right bank.

Channel and control.—Gravel; shifting; both banks fairly high and not subject to overflow.

Discharge measurements.—Made from the cable about 30 feet below the gage.

Winter flow.—River usually frozen over from about December to March, and ice reaches a thickness of about 15 inches; ice smooth.

Diversions.—Several canals divert water above the station for irrigation. During the spring of 1911 the Telluride Power Co. began to divert water from a point about 2 miles above the station for storage in a branch of Bear Lake known as Mud or North Lake. This water when released returns to the river above the Alexander station.

Accuracy.—Open-water records good; estimates of flow under ice fairly accurate.

Cooperation.—Most of the discharge measurements furnished by the Utah Power & Light Co.

Discharge measurements of Bear River at Dingle, Idaho, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Oct. 9	Karl Gilgen	4.84	436	May 26	Karl Gilgen	5.62	909
22	do	4.76	408	June 10	do	5.28	699
28	do	4.81	423	26	L. W. Jordan	4.54	357
Nov. 9	do	4.84	433	30	Karl Gilgen	4.81	510
21	do	4.88	467	July 7	do	5.33	790
Dec. 2	do	4.79	282	14	do	5.01	610
13	R. C. Pierce	4.26	255	21	do	4.58	398
18	Karl Gilgen	4.38	273	28	do	4.90	505
30	do	4.88	230	Aug. 4	do	4.47	352
Jan. 9	do	4.86	241	11	do	4.36	327
23	do	4.89	259	13	J. P. Martin	4.29	264
Feb. 6	do	5.11	244	18	Karl Gilgen	4.24	252
20	do	5.16	256	25	do	4.07	203
Mar. 6	do	5.18	264	Sept. 1	do	4.13	224
20	do	5.48	456	8	do	4.21	249
Apr. 16	A. B. Purton	5.79	1,020	15	do	4.27	254
17	Karl Gilgen	5.79	999	22	do	4.31	263
28	do	6.10	1,210	29	do	4.30	272
May 12	G. C. Baldwin	6.48	1,500	30	L. W. Jordan	4.33	269
12	Karl Gilgen	6.49	1,530				

NOTE.—Discharge relation for measurements from Dec. 2, 1912, to Mar. 20, 1913, affected by ice.

Daily gage height, in feet, of Bear River at Dingle, Idaho, for the year ending Sept. 30, 1913.

[M. K. Hopkins, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	4.7	.....	.....	.....	5.05	5.1	6.1	6.4	6.2	5.8	4.6	4.15
2	.....	.....	4.7	.....	.....	.....	7.1	.....	.....	.....	.....	4.2
3	4.7	4.85	.....	5.25	5.1	5.1	8.5	6.5	6.2	6.1	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.45	4.2
5	4.7	.....	4.5	5.2	.....	.....	.....	.....	5.4	5.8	.....	.....
6	.....	4.8	.....	.....	5.1	5.2	8.1	6.2	.....	.....	4.5	.....
7	4.75	.....	.....	.....	.....	.....	.....	.....	5.4	5.4	.....	4.25
8	.....	.....	4.25	4.7	5.1	5.2	.....	.....	.....	.....	4.5	4.2
9	4.8	4.85	.....	4.85	.....	.....	7.8	6.2	.....	5.6	.....	4.25
10	.....	4.85	4.3	4.85	5.0	5.25	.....	6.2	5.25	.....	4.4	.....
11	.....	.....	.....	.....	.....	.....	6.1	.....	5.2	5.4	4.35	4.25
12	4.85	4.85	4.3	4.9	5.1	.....	.....	6.5	.....	.....	4.4	.....
13	4.85	.....	4.25	.....	.....	5.5	5.5	.....	5.1	5.1	4.3	.....
14	.....	4.85	.....	.....	.....	.....	.....	6.6	.....	5.0	4.35	4.25
15	.....	.....	4.3	4.95	5.1	6.0	5.6	.....	4.95	.....	.....	4.25
16	4.8	.....	.....	.....	.....	.....	5.8	6.5	.....	4.95	4.35	4.3
17	.....	4.8	4.3	4.95	.....	5.8	5.8	.....	4.9	.....	.....	.....
18	4.8	.....	4.4	.....	5.2	.....	.....	6.3	.....	4.7	4.25	.....
19	.....	.....	.....	5.0	.....	.....	.....	.....	4.9	.....	4.25	4.3
20	.....	4.8	.....	.....	5.2	5.5	6.5	.....	4.6	.....	.....	.....
21	4.75	4.9	4.3	.....	.....	.....	6.5	6.2	.....	4.85	4.25	4.3
22	4.75	5.3	.....	4.85	5.0	5.6	.....	.....	.....	.....	.....	4.3
23	4.75	.....	4.7	4.9	.....	.....	6.4	.....	4.4	4.55	4.2	4.3
24	.....	4.9	.....	4.95	4.95	.....	.....	5.7	4.4	.....	.....	.....
25	.....	.....	.....	.....	.....	5.0	6.2	5.6	.....	4.6	4.05	4.35
26	4.75	.....	4.6	4.95	5.1	.....	.....	5.6	4.55	4.7	4.15	.....
27	4.8	5.1	.....	.....	.....	4.6	6.0	5.7	.....	4.85	.....	.....
28	4.8	.....	.....	.....	.....	.....	6.1	.....	4.65	4.9	4.15	4.3
29	.....	4.7	5.6	.....	.....	3.85	.....	5.8	4.65	4.7	.....	4.3
30	4.85	.....	4.9	5.0	.....	.....	.....	.....	4.8	.....	4.15	4.35
31	.....	.....	5.3	.....	.....	5.4	.....	6.2	.....	.....	4.2	.....

NOTE.—Discharge relation affected by ice Nov. 21, 1912, to Apr. 12, 1913.

Daily discharge, in second-feet, of Bear River at Dingle, Idaho, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Apr.	May.	June.	July.	Aug.	Sept.
1	394	458	.....	1,440	1,290	1,080	401	222
2	394	458	.....	1,480	1,290	1,180	381	237
3	394	458	.....	1,520	1,290	1,290	361	237
4	394	451	.....	1,440	1,030	1,180	341	237
5	394	444	.....	1,360	772	1,080	350	242
6	404	436	.....	1,290	772	955	360	248
7	415	444	.....	1,290	772	830	360	253
8	426	451	.....	1,290	743	891	360	237
9	436	458	.....	1,290	716	952	341	253
10	444	458	.....	1,290	689	891	322	253
11	451	458	.....	1,400	662	830	304	253
12	458	458	.....	1,520	636	746	304	253
13	458	458	830	1,560	610	662	269	253
14	451	458	860	1,610	573	610	286	253
15	444	451	890	1,560	536	595	286	253
16	436	444	1,020	1,520	524	580	286	269
17	436	436	1,020	1,440	512	516	270	269
18	436	436	1,180	1,370	512	453	253	269
19	429	436	1,350	1,340	512	429	253	269
20	422	436	1,520	1,310	380	404	253	269
21	415	.....	1,520	1,290	354	380	253	269
22	415	.....	1,480	1,180	329	380	245	269
23	415	.....	1,440	1,060	304	380	237	269
24	415	.....	1,360	952	304	390	216	278
25	415	.....	1,290	890	332	401	194	286
26	415	.....	1,220	890	360	444	222	280
27	436	.....	1,150	952	380	512	222	275
28	436	.....	1,220	986	401	536	222	269
29	447	.....	1,290	1,020	401	444	222	269
30	458	.....	1,370	1,160	512	430	222	286
31	458	.....	.....	1,290	.....	415	237	.....

NOTE.—Discharge determined from two fairly well defined rating curves applicable as follows: Oct. 1 to Nov. 20, 1912, Apr. 13 to June 29, and Aug. 12 to Sept. 30, 1913. From Nov. 21, 1912, to Apr. 12, 1913, discharge was estimated from frequent measurements, as follows: Nov. 21, 460 second-feet; Nov. 22-30, 370 second-feet; Dec. 1-31, 260 second-feet; Jan. 1 to Feb. 28, 250 second-feet; Mar. 1-31, 370 second-feet; Apr. 1-12, 1,000 second-feet; indirect method for shifting channels used for other periods. Discharge interpolated between gage-height observations.

Monthly discharge of Bear River at Dingle, Idaho, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	458	394	427	26,300	A.
November			426	25,300	B.
December			*a* 260	16,000	C.
January			*a* 250	15,400	D.
February			*a* 250	13,900	D.
March			*a* 370	22,800	D.
April	1,520	830	1,130	67,200	C.
May	1,610	890	1,290	79,300	B.
June	1,290	304	617	36,700	B.
July	1,290	380	673	41,400	B.
August	401	194	285	17,500	B.
September	286	222	259	15,400	B.
The year	1,610	194	521	377,000	

a Estimated.

BEAR LAKE INLET CANAL NEAR DINGLE, IDAHO.

Location.—In sec. 13, T. 14 S., R. 44 E., about three-fourths mile south of Dingle, and about 2½ miles below intake of canal.

Records available.—June 21, 1911, to September 30, 1913. Measurements only during 1913.

Gage.—Schaub water-stage recorder installed about one-half mile above point where canal crosses road leading south from Dingle. Zero of staff gage used in 1911, to which all measurements in 1913 have been reduced, corresponds to 5,952.18 feet on the automatic gage.

Channel and control.—Gravel; shifts almost continuously. Both banks high.

Discharge measurements.—Made by wading at different sections or from flumes or bridges across the canal.

Cooperation.—All gage heights and discharge measurements, except that of April 16, 1913, were furnished by the Utah Power & Light Co.

Records show water diverted from Bear River into the branch of Bear Lake known as Mud Lake. The quantity thus diverted should be added to the discharge of Bear River at Dingle to make the records for that station comparable with those obtained prior to 1911.

Discharge measurements of Bear Lake Inlet canal near Dingle, Idaho, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Mar. 13	Karl Gilgen	1.87	32	Apr. 17	Karl Gilgen	3.21	522
20	do	2.01	161	May 5	do	3.14	421
22	do	2.05	153	7	do	3.04	393
25	do	2.56	230	14	do	2.62	280
27	do	2.77	223	June 12	do	2.37	184
29	do	2.56	285	24	do	2.29	116
31	do	3.20	493	28	do	2.34	146
Apr. 4	do	1.61	89.2	30	do	3.10	359
5	do	1.50	31.0	July 5	do	3.22	399
8	do	3.11	447	7	do	3.01	326
10	do	3.35	543	12	do	1.63	34.0
12	do	3.39	549	Aug. 2	do	1.76	38.6
15	do	3.33	585	15	do	1.78	33.5
16	A. B. Purton	3.64	508				

Note.—Discharge relation for measurements, Mar. 13–27, affected by ice.

BEAR RIVER AT ALEXANDER, IDAHO.

Location.—In the NW. ¼ sec. 18, T. 9 S., R. 41 E., about half a mile upstream from the post office at Alexander, 6 miles above the plant of the Utah Power & Light Co. near Grace, and 4 miles above the intake of the Last Chance canal; 30 miles below the point at which the outlet of Bear Lake flows into Bear River.

Records available.—March 27, 1911, to September 30, 1913.

Drainage area.—Not measured.

Gages.—Inclined staff on right bank about 1,000 feet downstream from original gage which was used during 1911 and which was near the house of C. B. Wilson.

Channel and control.—Bed composed of fine gravel and sand; moss grows at the measuring section during the summer and fall and causes backwater at the old gage.

Discharge measurements.—Made from a cable and car near old gage.

Winter flow.—Discharge relation badly affected by ice during winter months.

Accuracy.—Open-channel records good. Winter estimates fairly reliable.

Cooperation.—Gage heights and some discharge measurements furnished by the Utah Power & Light Co.

Discharge measurements of Bear River at Alexander, Idaho, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Oct. 9	R. C. Pierce	3.90	1,010	July 30	R. C. Pierce	6.21	992
Jan. 9	do	[a] 11.05	564	31	Karl Gilgen	5.94	893
Mar. 4	Lynn Crandall	5.70	741	Aug. 7	do	6.00	936
Apr. 17	A. B. Purton	7.59	2,030	14	do	5.84	784
May 13	G. C. Baldwin	7.69	2,090	21	do	5.81	787
June 26	Stoner and Gilgen	5.82	740	28	do	5.86	804
27	L. W. Jordan	6.04	915	Sept. 4	do	6.00	888
July 3	Karl Gilgen	6.94	1,580	11	do	6.07	937
10	do	7.08	1,730	18	do	6.14	988
17	do	6.26	1,100	25	do	6.04	894
23	do	5.92	849	27	L. W. Jordan	5.94	851
25	do	6.22	1,050	27	do	5.94	838

[a] Discharge relation affected by ice.

Daily gage height, in feet, of Bear River at Alexander, Idaho, for the year ending Sept. 30, 1913.

[Chas. B. Wilson, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	5.8	5.95	5.7	7.1	9.1	6.0	6.8	7.6	7.3	6.2	5.85	5.9
2	5.8	6.0	5.7	7.2	8.7	5.95	7.3	7.6	7.3	6.6	5.9	5.9
3	5.8	6.1	5.7	11.5	8.7	5.8	7.8	7.6	7.1	7.0	5.9	5.9
4	5.8	6.1	5.7	11.5	8.7	5.7	8.3	7.7	7.0	7.2	5.9	6.0
5	5.9	6.1	5.7	11.5	7.4	5.7	10.2	7.7	6.8	7.2	6.0	6.0
6	6.0	6.1	5.7	11.5	6.6	5.7	10.8	7.6	6.8	7.3	6.0	5.95
7	6.0	6.1	6.0	11.5	6.4	5.7	10.2	7.6	6.7	7.3	6.0	5.95
8	6.1	6.1	6.0	11.4	6.4	5.7	10.1	7.6	6.6	7.2	6.0	6.0
9	6.1	6.1	6.0	10.8	6.4	5.7	10.1	7.6	6.4	7.1	6.0	6.1
10	6.1	6.1	5.7	10.8	6.4	5.7	10.1	7.6	6.4	7.0	6.0	6.1
11	6.1	6.1	5.7	10.8	6.3	5.7	10.0	7.7	6.4	7.0	6.0	6.1
12	6.1	6.1	5.7	10.7	6.2	5.65	9.3	7.7	6.4	6.9	5.95	6.2
13	6.1	6.1	5.6	10.7	6.2	5.65	8.8	7.7	6.4	6.7	5.9	6.1
14	6.1	6.1	5.6	10.7	6.2	5.65	8.5	7.8	6.3	6.5	5.8	6.1
15	6.1	6.1	5.65	10.6	6.2	5.7	7.8	7.9	6.2	6.3	5.8	6.0
16	6.1	6.1	5.65	10.6	6.1	5.7	7.7	7.9	6.1	6.2	5.85	6.1
17	6.1	6.1	5.7	10.6	6.0	5.7	7.6	7.9	6.0	6.1	5.9	6.1
18	6.0	6.1	5.7	10.6	5.9	5.75	7.6	7.9	6.0	6.0	5.9	6.1
19	6.05	6.0	5.7	10.6	5.9	5.8	7.7	7.9	5.9	5.95	5.9	6.1
20	6.0	6.0	5.7	10.5	5.9	5.8	7.7	7.7	5.85	5.95	5.9	6.1
21	6.0	6.0	5.7	10.5	5.95	5.8	7.7	7.6	5.8	5.95	5.9	6.1
22	6.0	6.0	5.7	10.5	5.95	5.8	7.9	7.5	5.8	5.9	5.9	6.1
23	5.95	6.0	5.7	10.5	5.9	5.8	7.8	7.5	5.75	5.9	5.9	6.1
24	5.9	6.0	5.7	10.5	5.9	5.8	7.8	7.4	5.8	6.1	5.9	6.0
25	5.9	5.9	5.7	10.4	5.9	5.75	7.8	7.3	5.85	6.2	5.85	6.0
26	5.9	5.8	7.1	10.5	5.9	5.7	7.7	7.1	5.9	6.2	5.85	6.0
27	5.9	5.8	7.1	10.5	5.95	5.65	7.6	7.1	6.0	6.2	5.85	6.0
28	5.95	5.75	7.1	9.4	6.0	5.6	7.6	7.2	6.2	6.2	5.85	5.95
29	5.95	5.7	7.1	9.4	.....	5.6	7.6	7.2	6.3	6.2	5.85	5.95
30	5.95	5.7	7.1	9.2	.....	6.5	7.6	7.2	6.2	6.2	5.85	5.9
31	5.95	.....	7.1	9.2	.....	6.0	.....	7.2	.....	5.95	5.85	.....

NOTE.—Discharge relation affected by ice Dec. 7-9, Dec. 26 to Feb. 17, and Mar. 30 to Apr. 14.

Daily discharge, in second-feet, of Bear River at Alexander, Idaho, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	801	895	741	.....	927	.....	2,020	1,760	985	770	800
2	801	927	741	.....	895	.....	2,020	1,760	1,240	800	800
3	801	993	741	.....	801	.....	2,020	1,600	1,530	800	800
4	801	993	741	.....	741	.....	2,110	1,530	1,680	800	860
5	863	993	741	.....	741	.....	2,110	1,380	1,680	860	860
6	927	993	741	.....	741	.....	2,020	1,380	1,760	860	830
7	927	993	.....	.....	741	.....	2,020	1,320	1,760	860	830
8	993	993	.....	.....	741	.....	2,020	1,240	1,680	860	860
9	993	993	.....	.....	741	.....	2,020	1,120	1,600	860	922
10	993	993	741	.....	741	.....	2,020	1,120	1,530	860	922
11	993	993	741	.....	741	.....	2,110	1,120	1,530	860	922
12	993	993	741	.....	712	.....	2,110	1,120	1,460	830	985
13	993	993	683	.....	712	.....	2,110	1,120	1,320	800	922
14	993	993	683	.....	712	.....	2,200	1,050	1,180	741	922
15	993	993	712	.....	741	2,200	2,300	985	1,050	741	860
16	993	993	712	.....	741	2,110	2,300	922	985	770	922
17	993	993	741	.....	741	2,020	2,300	860	922	800	922
18	927	993	741	863	771	2,020	2,300	860	860	800	922
19	960	927	741	863	801	2,110	2,300	800	830	800	922
20	927	927	741	863	801	2,110	2,110	770	830	800	922
21	927	927	741	895	801	2,110	2,020	741	830	800	922
22	927	927	741	895	801	2,300	1,940	741	800	800	922
23	895	927	741	863	801	2,200	1,940	712	800	800	922
24	863	927	741	863	801	2,200	1,850	741	922	800	860
25	863	863	741	863	771	2,200	1,760	770	985	770	860
26	863	801	.....	863	741	2,110	1,600	800	985	770	860
27	863	801	.....	895	712	2,020	1,600	860	985	770	860
28	895	771	.....	927	683	2,020	1,680	985	985	770	830
29	895	741	.....	.....	683	2,020	1,680	1,050	985	770	830
30	895	741	.....	.....	750	2,020	1,680	985	985	770	800
31	895	.....	.....	.....	800	.....	1,680	.....	830	770	.....

NOTE.—Discharge determined from two fairly well defined rating curves, applicable Oct. 1, 1912, to Mar. 29, 1913, except for periods when discharge relation was affected by ice, and Apr. 15 to Sept. 30, 1913. Discharge estimated as follows: Dec. 7–9, 741 second-feet; Dec. 26–31, 740 second-feet; Jan. 1–31, 565 second-feet; Feb. 1–17, 585 second-feet, and Apr. 1–14, 3,380 second-feet.

Monthly discharge of Bear River at Alexander, Idaho, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	993	801	918	56,400	A.
November	993	741	933	55,500	A.
December	741	683	735	45,200	B.
January	.....	.....	[a]565	34,700	D.
February	927	.....	[a]700	38,900	D.
March	927	683	762	46,900	B.
April	.....	.....	2,700	161,000	C.
May	2,300	1,600	2,000	123,000	A.
June	1,760	712	1,070	63,700	A.
July	1,760	800	1,180	72,600	A.
August	860	741	802	49,300	A.
September	985	800	879	52,300	A.
The year	.....	.....	1,100	800,000	

[a] Estimated.

BEAR RIVER NEAR PRESTON, IDAHO.

Location.—In sec. 9, T. 15 S., R. 39 E., 100 yards below Battle Creek Bridge, about half a mile above the mouth of Battle Creek, and about 4½ miles northwest of Preston.

Records available.—October 11, 1889, to September 30, 1913.

Drainage area.—4,500 square miles.

Gage.—Inclined staff on right bank at O. M. Seamon's barn installed April 3, 1909, to replace gage 200 feet above, on the left bank. Both gages read the same on that date, 3.3 feet.

Channel and control.—Bed of stream composed of clay and gravel; fairly permanent except during flood stages; does not overflow banks at any stage.

Discharge measurements.—Made from a cable and car about 300 feet below the bridge.

Winter flow.—The river seldom freezes over at the station, but the discharge relation is at times slightly affected by slush ice.

Diversions.—Numerous ditches divert water for irrigation above the station. Water to be used in power development only is diverted by the Utah Power & Light Co. near Grace, Idaho, at a point about 6 miles below the Alexander station; this water is returned to the river.

Records derived from observations at this station show practically the quantity of water passing from Idaho into Utah.

Discharge measurements of Bear River near Preston, Idaho, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Oct. 3	H. L. Stoner	2.26	907	May 24	R. C. Pierce	3.18	2,000
Apr. 13	A. B. Purton	4.62	4,410	July 29	H. L. Stoner	2.07	731
13	do	4.52	4,460	Aug. 5	R. C. Pierce	1.94	624

Daily gage height, in feet, of Bear River near Preston, Idaho, for the year ending Sept. 30, 1913.

[O. M. Seamons, observer.]

Date.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.3	2.45	2.3	2.25	2.25	2.2	3.2	3.6	2.85	2.1	2.0	2.05
2	2.3	2.4	2.3	2.2	2.25	2.25	3.7	3.5	2.85	2.25	2.0	2.1
3	2.3	2.45	2.35	2.2	2.35	2.25	3.8	3.5	2.75	2.5	2.0	2.1
4	2.3	2.55	2.35	2.25	2.35	2.25	3.7	3.5	2.7	2.75	1.95	2.2
5	2.4	2.55	2.25	2.05	2.35	2.35	4.1	3.5	2.65	2.85	1.95	2.2
6	2.45	2.55	2.05	4.4	2.3	2.35	4.7	3.5	2.5	2.9	1.95	2.2
7	2.45	2.6	2.25	4.5	2.2	2.4	5.2	3.5	2.4	2.9	2.0	2.25
8	2.45	2.55	2.1	4.4	2.15	2.35	5.0	3.5	2.3	2.85	2.1	2.25
9	2.5	2.5	2.15	3.8	2.15	2.35	4.8	3.6	2.3	2.8	2.05	2.3
10	2.5	2.55	2.2	3.6	2.25	2.35	4.8	3.6	2.3	2.8	2.0	2.3
11	2.5	2.6	2.2	3.5	2.2	2.4	4.8	3.5	2.35	2.75	2.0	2.3
12	2.5	2.55	2.2	3.4	2.2	2.45	4.7	3.5	2.3	2.7	2.0	2.3
13	2.45	2.55	2.3	3.4	2.25	2.3	4.6	3.5	2.3	2.6	2.05	2.3
14	2.45	2.5	2.3	3.6	2.25	2.25	4.3	3.5	2.2	2.5	2.0	2.3
15	2.45	2.5	2.3	3.5	2.25	2.3	4.0	3.5	2.2	2.35	1.95	2.3
16	2.45	2.5	2.3	3.5	2.25	2.25	3.7	3.5	2.1	2.2	1.95	2.2
17	2.4	2.5	2.3	3.1	2.35	2.25	3.6	3.5	2.0	2.1	1.95	2.3
18	2.45	2.5	2.3	2.5	2.35	2.45	3.5	3.5	2.0	2.15	1.95	2.3
19	2.4	2.45	2.3	2.1	2.3	2.5	3.6	3.5	1.95	2.1	2.0	2.3
20	2.4	2.5	2.3	1.95	2.25	2.45	3.6	3.5	1.85	2.1	2.0	2.3
21	2.4	2.45	2.3	2.15	2.25	2.35	3.6	3.4	1.85	2.1	2.0	2.35
22	2.4	2.4	2.2	2.45	2.15	2.4	3.6	3.4	1.85	2.1	2.0	2.4
23	2.4	2.4	2.15	2.35	2.25	2.4	3.6	3.3	1.8	2.05	2.0	2.4
24	2.4	2.3	2.2	2.25	2.3	2.35	3.6	3.2	1.85	2.05	2.0	2.4
25	2.4	2.35	2.35	2.2	2.3	2.35	3.6	3.2	1.9	2.1	2.0	2.4
26	2.4	2.35	2.2	2.2	2.25	2.3	3.6	3.1	2.0	2.1	1.95	2.35
27	2.45	2.3	2.3	2.15	2.25	2.2	3.6	3.0	2.1	2.1	2.0	2.3
28	2.45	2.25	2.4	2.25	2.2	2.25	3.6	2.95	2.1	2.05	2.0	2.35
29	2.5	2.2	2.4	2.3	.....	2.25	3.6	2.9	2.15	2.05	2.0	2.35
30	2.5	2.25	2.3	2.25	.....	2.45	3.6	2.9	2.15	2.1	2.05	2.3
31	2.5	.....	2.3	2.25	.....	2.9	.....	2.9	.....	2.05	2.05	.....

NOTE.—Discharge relation affected by ice, Dec. 27, 1912, to Jan. 19, 1913.

Daily discharge, in second-feet, of Bear River near Preston, Idaho, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	940	1,100	940	.....	892	845	2,040	2,660	1,560	755	670	712
2	940	1,040	940	.....	892	892	2,830	2,500	1,560	892	670	755
3	940	1,100	990	.....	990	892	3,000	2,500	1,440	1,150	670	755
4	940	1,200	990	.....	990	892	2,830	2,500	1,380	1,440	630	845
5	1,040	1,200	892	.....	990	990	3,540	2,500	1,320	1,560	630	845
6	1,100	1,200	712	.....	940	990	4,650	2,500	1,150	1,630	630	845
7	1,100	1,200	892	.....	845	1,040	5,600	2,500	1,040	1,630	670	892
8	1,100	1,200	755	.....	800	990	5,220	2,500	940	1,560	755	892
9	1,150	1,150	800	.....	800	990	4,840	2,660	940	1,500	712	940
10	1,150	1,200	845	.....	892	990	4,840	2,660	940	1,500	670	940
11	1,150	1,260	845	.....	845	1,040	4,840	2,500	990	1,440	670	940
12	1,150	1,200	845	.....	845	1,100	4,650	2,500	940	1,380	670	940
13	1,100	1,200	940	.....	892	940	4,460	2,500	940	1,260	712	940
14	1,100	1,150	940	.....	892	892	3,900	2,500	845	1,150	670	940
15	1,100	1,150	940	.....	892	940	3,360	2,500	845	990	630	940
16	1,100	1,150	940	.....	892	892	2,830	2,500	755	845	630	845
17	1,040	1,150	940	.....	990	892	2,660	2,500	670	755	630	940
18	1,100	1,150	940	.....	990	1,100	2,500	2,500	670	800	630	940
19	1,040	1,100	940	.....	940	1,150	2,660	2,500	630	755	670	940
20	1,040	1,150	940	630	892	1,100	2,660	2,500	555	755	670	940
21	1,040	1,100	940	800	892	990	2,660	2,340	555	755	670	990
22	1,040	1,040	845	1,100	800	1,040	2,660	2,340	555	755	670	1,040
23	1,040	1,040	800	990	892	1,040	2,660	2,190	520	712	670	1,040
24	1,040	940	845	892	940	990	2,660	2,040	555	712	670	1,040
25	1,040	990	990	845	940	990	2,660	2,040	590	755	670	1,040
26	1,040	990	845	845	892	940	2,660	1,900	670	755	630	990
27	1,100	940	.....	800	892	845	2,660	1,760	755	755	670	940
28	1,100	892	.....	892	845	892	2,660	1,700	755	712	670	990
29	1,150	845	.....	940	.....	892	2,660	1,630	800	712	670	990
30	1,150	892	.....	892	.....	1,100	2,660	1,630	800	755	712	940
31	1,150	.....	.....	892	.....	1,630	.....	1,630	.....	712	712	.....

NOTE.—Discharge determined from a well-defined rating curve. Mean discharge estimated because of ice as follows: Dec. 27–31, 845 second-feet; Jan. 1–5, 800 second-feet; Jan. 6–19, 600 second-feet.

Monthly discharge of Bear River near Preston, Idaho, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	1,150	940	1,070	65,800	A.
November	1,260	845	1,100	65,500	A.
December	990	712	886	54,500	B.
January	1,100	.....	739	45,400	D.
February	990	800	900	50,000	C.
March	1,630	845	997	61,300	B.
April	5,600	2,040	3,350	199,000	B.
May	2,660	1,630	2,310	142,000	A.
June	1,560	520	889	52,900	A.
July	1,630	712	1,030	63,300	A.
August	755	630	668	41,100	A.
September	1,040	712	924	55,000	A.
The year	5,600	.....	1,240	896,000	

BEAR RIVER NEAR COLLINSTON, UTAH.

Location.—In the W. ½ sec. 34, T. 13 N., R. 2 W., about one-fourth mile below the power plant of the Utah Power & Light Co., at the railroad siding called Wheelon, about 4 miles north of the town of Collinston. Little Malad River, the only important tributary below, enters about 20 miles from the station. Station is below all diversions.

Records available.—July 1, 1889, to September 30, 1913. (See fig. 1.)

Drainage area.—6,000 square miles.

Gage.—An inclined gage established in February, 1905, at the same datum as the original gage, which was a vertical iron bar driven into the river bed and supported at the top by timbers projecting from the bank.

Channel and control.—Fairly permanent; shifting occasionally during high water.

Discharge measurements.—Made from cable and car.

Floods.—The highest recorded stage of the river occurred June 7 to 10, 1909, when the gage height was 7.7, corresponding to a discharge of 11,600 second-feet.

Winter flow.—Some ice forms along the banks near the station, so that at times the open-channel rating curve is not applicable.

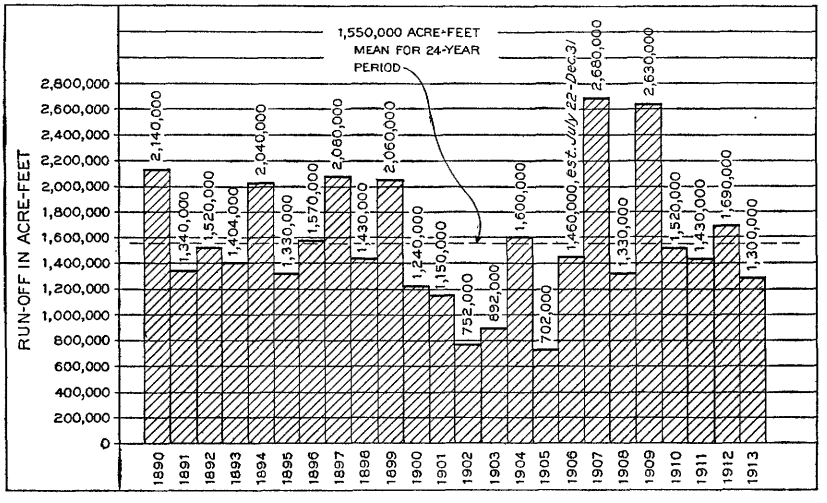


FIGURE 1.—Diagram showing run-off of Bear River at Collinston, Utah, 1890-1913.

Diversions.—The West Side canal and Hammond ditch (East Side canal) divert from the west and east sides of the river about 2 miles above the station. Either canal can be used to furnish water to the power plant at Wheelon siding, below which the water is carried south and west for irrigation.

Regulation.—Some variation in daily flow is occasionally caused by operation of the power plant just above the station.

Accuracy.—The measurements made at this station plot very consistently and the discharge record has a high accuracy rating.

Cooperation.—Gage heights and some discharge measurements furnished by Utah Power & Light Co.

Discharge measurements of Bear River near Collinston, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec. ft.*			*Feet.*	*Sec. ft.*
Nov. 24	Mihills and Porter	2.67	1,800	June 4	E. A. Porter	2.70	1,830
Apr. 12	Porter and Sanford	5.28	6,620	July 31	H. L. Stoner	1.70	750
19	W. R. King	4.40	4,580	Sept. 11	Frank Weber	2.17	1,230
May 1	Lynn Crandall	4.38	4,630				

Daily gage height, in feet, of Bear River near Collinston, Utah, for the year ending Sept. 30, 1913.

[H. G. Stone, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.32	2.70	2.5	2.3	2.45	2.4	3.8	4.3	3.0	2.6	1.50	1.47
2	2.30	2.70	2.5	2.3	2.45	2.6	4 4	4.4	2.9	2.6	1.50	1.6
3	2.28	2.70	2.5	2.4	2.45	2.4	4.7	4.3	2.8	2.45	1.38	1.65
4	2.28	2.78	2.5	2.5	2.45	2.45	4.8	4.3	2.7	2.6	1.22	1.8
5	2.35	2.92	2.6	2.6	2.45	2.5	4.6	4.2	2.6	2.8	1.08	1.85
6	2.65	2.95	2.3	2.15	2.45	2.6	4.5	4.0	2.5	2.8	.90	1.85
7	2.70	2.95	2.1	1.9	2.45	3.0	4.8	4.0	2.25	2.9	1.05	1.8
8	2.68	2.92	2.1	1.9	2.4	3.0	5.0	4.0	2.0	2.8	1.00	1.7
9	2.70	2.85	2.3	2.1	2.35	2.9	5.2	4.0	1.9	2.8	1.05	1.75
10	2.75	3.10	2.3	2.3	2.4	2.8	5.4	4.1	1.85	2.6	1.20	2.0
11	2.74	3.10	2.42	2.45	2.4	2.8	5.3	4.1	1.9	2.4	.90	2.1
12	2.70	3.10	2.5	2.45	2.4	2.9	5.3	4.1	2.25	2.25	1.10	2.05
13	2.68	4.45	2.5	2.35	2.4	2.8	5.3	4.1	2.3	2.15	1.02	2.0
14	2.65	4.45	2.5	2.3	2.4	2.8	5.3	4.1	2.3	2.0	1.02	2.1
15	2.64	4.15	2.5	2.4	2.4	2.6	5.2	4.0	2.2	2.0	1.21	2.15
16	2.65	4.45	2.5	2.5	2.45	2.5	5.0	3.8	2.1	1.85	1.10	2.1
17	2.62	2.80	2.56	2.5	2.45	2.6	4.6	3.7	2.1	1.7	1.08	2.0
18	2.60	2.78	2.5	2.5	2.6	2.8	4.5	3.6	2.0	1.5	1.10	2.0
19	2.60	2.75	2.45	2.4	2.6	2.9	4.4	3.7	1.9	1.36	.95	2.05
20	2.60	2.78	2.35	2.4	2.5	2.9	4.4	3.9	1.85	1.2	.92	2.15
21	2.60	2.74	2.3	2.35	2.3	2.8	4.4	3.9	1.7	1.36	1.05	2.15
22	2.58	2.72	2.1	2.3	2.25	2.7	4.4	3.8	1.6	.95	1.16	2.15
23	2.58	2.70	2.1	2.35	2.25	2.8	4.4	3.7	1.38	1.22	1.18	2.2
24	2.56	2.70	2.2	2.35	2.5	2.7	4.4	3.5	1.29	1.2	1.12	2.25
25	2.56	2.68	2.3	2.3	2.45	2.7	4.3	3.4	1.33	1.22	1.12	2.3
26	2.55	2.62	2.4	2.4	2.6	2.6	4.2	3.4	1.6	1.2	1.15	2.3
27	2.35	2.60	2.4	2.4	2.45	2.6	4.1	3.4	1.9	1.2	1.10	2.3
28	2.35	2.60	2.35	2.35	2.4	2.6	4.2	3.2	2.1	2.3	1.18	2.3
29	2.36	2.55	2.4	2.3	.....	2.6	4.2	3.2	2.35	2.05	1.22	2.2
30	2.35	2.50	2.4	2.3	.....	3.0	4.3	3.0	2.55	1.95	1.25	2.2
31	2.36	.....	2.3	2.4	.....	3.5	.....	3.0	.....	1.7	1.40	.....

NOTE.—Discharge relation apparently affected by ice Dec. 9 to Jan. 5, Jan. 11–12 and 16–18.

Daily discharge, in second-feet, of Bear River near Collinston, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1,410	1,840	1,610	1,000	1,560	1,490	3,590	4,410	2,350	1,760	604	582
2	1,390	1,840	1,610	1,000	1,560	1,760	4,570	4,570	2,200	1,760	604	682
3	1,370	1,840	1,610	1,000	1,560	1,490	5,070	4,410	2,050	1,560	516	724
4	1,370	1,940	1,610	1,000	1,560	1,560	5,230	4,410	1,900	1,760	406	860
5	1,440	2,100	1,720	1,000	1,560	1,620	4,900	4,240	1,760	2,050	322	910
6	1,780	2,140	1,390	1,220	1,560	1,760	4,730	3,910	1,620	2,050	228	910
7	1,840	2,140	1,190	960	1,560	2,350	5,230	3,910	1,320	2,200	306	860
8	1,820	2,100	1,190	960	1,490	2,350	5,570	3,910	1,060	2,050	280	766
9	1,840	2,020	.....	1,160	1,440	2,200	5,910	3,910	960	2,050	306	813
10	1,900	2,320	.....	1,380	1,490	2,050	6,250	4,070	910	1,760	392	1,060
11	1,890	2,380	.....	1,380	1,490	2,050	6,080	4,070	960	1,490	228	1,160
12	1,840	2,450	.....	1,380	1,490	2,200	6,080	4,070	1,320	1,320	332	1,110
13	1,820	4,400	.....	1,440	1,490	2,050	6,080	4,070	1,360	1,220	290	1,060
14	1,780	4,560	.....	1,380	1,490	2,050	6,080	4,070	1,380	1,060	290	1,160
15	1,770	4,080	.....	1,490	1,490	1,760	5,910	3,910	1,270	1,060	399	1,220
16	1,780	4,560	.....	1,490	1,560	1,620	5,570	3,590	1,160	910	332	1,160
17	1,740	2,100	.....	1,490	1,560	1,760	4,900	3,430	1,160	766	322	1,060
18	1,720	2,000	.....	1,490	1,760	2,050	4,730	3,270	1,060	604	332	1,060
19	1,720	1,940	.....	1,490	1,760	2,200	4,570	3,430	960	502	254	1,110
20	1,720	1,960	.....	1,490	1,620	2,200	4,570	3,750	910	392	238	1,220
21	1,720	1,890	.....	1,440	1,380	2,050	4,570	3,750	766	502	306	1,220
22	1,700	1,860	.....	1,380	1,320	1,900	4,570	3,590	682	254	368	1,220
23	1,700	1,840	.....	1,440	1,320	2,050	4,570	3,430	516	406	380	1,270
24	1,680	1,840	.....	1,440	1,620	1,900	4,570	3,110	453	392	344	1,320
25	1,680	1,820	.....	1,380	1,560	1,900	4,410	2,950	481	406	344	1,380
26	1,660	1,740	.....	1,490	1,760	1,760	4,240	2,950	682	392	362	1,380
27	1,440	1,720	.....	1,490	1,560	1,760	4,070	2,950	960	392	332	1,380
28	1,440	1,720	.....	1,440	1,490	1,760	4,240	2,650	1,160	1,380	380	1,380
29	1,460	1,660	.....	1,380	.....	1,760	4,240	2,650	1,440	1,110	406	1,270
30	1,440	1,610	.....	1,380	.....	2,350	4,410	2,350	1,690	1,010	426	1,270
31	1,460	.....	.....	1,490	.....	3,110	.....	2,350	.....	766	530	.....

NOTE.—Discharge determined from three well-defined curves, the first applicable Oct. 1 to Dec. 31, 1912, except for periods Nov. 10–13 and 17–20, when the second applies; and the third applicable Jan. 1 to Sept. 30, 1913. Discharge estimated, because of ice, as follows: Dec. 9–31, 1,000 second-feet; Jan. 1–5, 11–12, and 16–18 as in table.

Monthly discharge of Bear River near Collinston, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	1,900	1,370	1,660	102,000	A.
November	4,560	1,610	2,280	136,000	B.
December	1,720	.....	1,130	69,500	B.
January	1,490	960	1,320	81,200	B.
February	1,760	1,320	1,540	85,500	B.
March	3,110	1,490	1,960	121,000	A.
April	6,250	3,590	4,980	296,000	B.
May	4,570	2,350	3,620	223,000	A.
June	2,350	453	1,220	72,600	A.
July	2,200	254	1,140	70,100	A.
August	604	228	360	22,100	A.
September	1,380	582	1,090	64,900	A.
The year	6,250	228	1,860	1,340,000	

WEST SIDE CANAL NEAR COLLINSTON, UTAH.

Location.—In the NW. ¼ sec. 26, T. 13 N., R. 2 W., about 600 feet below the penstock to the plant of the Utah Power & Light Co. at Wheelon siding, on the Oregon Short Line Railroad, and about 1,000 feet northwest of the gaging station on Bear River near Collinston.

Records available.—June 1, 1912, to September 30, 1913.

Gage.—Sloping staff on the left bank.

Channel and control.—Permanent. Point of zero flow determined on April 12, 1912, was at gage height 0.65 foot.

Discharge measurements.—Made from a footbridge at gage.

Diversions.—Considerable water is diverted above the station by the penstock of the power plant. The water passing the gage is available for the water users in and around the town of Garland.

Accuracy.—Records good.

Cooperation.—Gage heights and some discharge measurements furnished by the Utah Power & Light Co.

Discharge measurements of West Side canal near Collinston, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Mar. 20	H. L. Stoner	1.85	18.4	May 27	H. L. Stoner	6.85	451
May 1	Lynn Crandall	1.42	10.0	June 3	.....do	7.65	535
20	H. L. Stoner	5.57	271	4	E. A. Porter	7.18	480
22	.....do	5.78	300	Sept. 11	Frank Weber	5.13	226

Daily gage height, in feet, of West Side canal near Collinston, Utah, for the year ending Sept. 30, 1913.

[H. G. Stone, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	5.06	2.70	2.98	3.0	3.30	1.62	1.86	1.4	7.62	5.38	6.90	6.53
2	5.10	2.70	2.98	3.1	3.30	1.80	1.90	1.7	7.63	5.16	6.85	6.35
3	5.12	2.70	2.98	3.1	3.30	1.80	1.90	1.8	7.64	5.15	6.85	6.10
4	4.60	2.78	2.98	3.05	3.00	1.82	1.90	1.9	7.41	5.25	7.00	5.53
5	4.55	2 92	2.55	3.0	2.75	1.82	1.86	2.5	7.30	5.28	7.00	5.73
6	4.55	2.95	2.55	3.0	2.50	1.82	1.86	4.0	7.20	5.52	7.28	5.75
7	4.55	2.95	2.70	3.0	2.30	1.82	1.86	3.9	7.30	5.70	7.21	5.90
8	4.36	2.92	2.82	3.3	2.26	1.82	.....	3.85	7.57	6.22	7.21	5.98
9	4.25	2.85	2.80	3.4	2.22	1.80	.....	4.1	7.54	6.15	7.26	5.60
10	4.45	3.35	2.80	3.3	2.20	1.76	.....	4.4	7.35	6.49	7.28	5.45
11	4.25	3.37	2.90	3.3	2.20	1.78	.....	4.5	7.27	6.80	7.00	5.30
12	4.30	3.38	2.80	3.3	2.22	1.78	.....	4.5	6.70	6.98	7.17	5.10
13	4.50	3.28	2.80	3.3	2.20	1.78	.....	4.35	6.10	7.18	7.17	4.95
14	4.36	3.30	2.80	3.3	2.22	1.78	.....	4.5	6.03	7.22	7.26	4.80
15	4.36	3.28	2.80	3.4	2.15	1.78	.....	5.75	6.75	7.32	7.03	4.82
16	4.35	3.30	2.80	3.4	2.00	1.78	.....	6.2	6.25	7.26	6.93	4.82
17	4.42	3.30	2.80	3.4	.....	1.74	.....	6.6	5.95	7.12	7.00	4.80
18	4.38	3.30	2.80	3.4	.....	1.82	.....	6.85	5.95	7.05	7.03	4.80
19	4.42	3.30	2.80	3.4	.....	1.82	.....	6.4	6.35	7.30	7.09	4.77
20	4.40	3.30	2.80	3.4	.....	1.85	.....	5.95	6.60	7.45	7.20	4.53
21	4.35	3.30	2.80	3.6	.....	1.85	.....	5.7	6.58	7.20	7.16	4.53
22	4.35	3.05	3.05	3.6	.....	1.85	.....	4.6	6.45	7.20	7.17	4.65
23	4.32	3.05	3.15	3.4	.....	1.85	.....	5.7	6.98	7.17	7.12	4.40
24	4.32	3.05	3.10	3.5	.....	1.88	.....	6.7	7.12	7.17	7.16	4.18
25	4.30	2.72	3.10	3.6	2.46	1 86	.....	6.45	6.76	7.11	7.33	4.15
26	4.30	2.72	3.10	3.5	2.32	1.85	.....	6.65	6.18	7.80	7.30	4.18
27	4.32	2.78	3.10	3.55	1.62	1.86	.....	6.8	5.60	.....	7.33	4.25
28	4.20	2.90	3.10	3.5	1.60	1.86	.....	7.1	5.58	.....	7.15	4.38
29	4.20	2.95	3.10	3.5	.....	1.80	.....	7.3	5.55	.....	6.94	4.45
30	3.85	2.95	3.10	3.45	.....	1.85	1.0	7.6	5.58	4.80	6.91	4.35
31	3.88	.....	3.18	3.3	.....	1.86	.....	7.6	.....	7.07	6.70	.....

NOTE.—All water out of canal during repairs, Feb. 17-24 and July 27-29; cleaning canal, Apr. 8-29.

Daily discharge, in second-feet, of West Side canal near Collinston, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	221	53	67	68	86	13	19	9	532	255	438	390
2	225	53	67	74	86	17	20	15	533	231	432	367
3	227	53	67	74	86	17	20	17	534	230	432	337
4	180	57	67	71	86	18	20	20	504	240	451	271
5	176	64	46	68	56	18	19	43	490	244	451	293
6	176	66	46	68	43	18	19	132	477	270	487	296
7	176	66	53	68	35	18	19	125	490	290	478	313
8	161	64	59	86	33	18	.....	122	525	351	478	323
9	152	60	58	92	32	17	.....	140	521	343	485	279
10	168	89	58	86	31	16	.....	164	496	385	487	262
11	152	90	63	86	31	17	.....	172	486	425	451	246
12	156	91	58	86	32	17	.....	172	412	448	473	225
13	172	85	58	86	31	17	.....	160	337	474	473	210
14	161	86	58	86	32	17	.....	172	329	480	485	197
15	161	85	58	92	29	17	.....	296	418	493	455	199
16	160	86	58	92	23	17	.....	349	355	485	442	199
17	166	86	58	92	.....	16	.....	399	319	467	451	197
18	162	86	58	92	.....	18	.....	432	319	458	455	197
19	166	86	58	92	.....	18	.....	373	367	490	463	194
20	164	86	58	92	.....	18	.....	319	399	510	477	174
21	160	86	58	104	.....	18	.....	290	396	477	472	174
22	160	71	71	104	.....	18	.....	180	380	477	473	184
23	158	71	77	92	.....	18	.....	290	448	473	467	164
24	158	71	74	98	.....	19	.....	412	467	473	472	146
25	156	54	74	104	41	19	.....	380	420	465	494	144
26	156	54	74	98	36	18	.....	406	347	555	490	146
27	158	57	74	101	13	19	.....	425	279	.....	494	152
28	148	63	74	98	13	19	.....	464	277	.....	470	162
29	148	66	74	98	.....	17	.....	490	274	.....	443	168
30	122	66	74	95	.....	18	3	529	277	197	439	160
31	124	.....	79	86	.....	19	.....	529	.....	460	412	.....

NOTE.—Discharge determined from a fairly well defined rating curve.

Monthly discharge of West Side canal near Collinston, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	227	122	165	10,100	A
November	91	53	71.7	4,270	B
December	79	46	63.7	3,920	B
January	104	68	88.0	5,410	C
February	86	0	30.5	1,690	C
March	19	13	17.5	1,080	B
April	20	0	4.6	274	B
May	529	9	259	15,900	A
June	534	274	414	24,600	A
July	555	0	360	22,100	A
August	494	412	464	28,500	A
September	390	144	226	13,400	A
The year	555	0	182	131,000	

HAMMOND DITCH (EAST SIDE CANAL) NEAR COLLINSTON, UTAH.

Location.—In sec. 34, T. 13 N., R. 2 W., about 400 feet below the penstock which diverts water for the Utah Power & Light Co.'s plant at Wheelon siding, and about 4 miles north of Collinston, Utah.

Records available.—June 1, 1912, to November 17, 1913.

Gage.—Sloping staff on right bank.

Channel and control.—Earth and rock section.

Discharge measurements.—Made from footbridge at the gage.

Winter flow.—Canal usually dry from about October 31 until the beginning of the next irrigation season.

Diversions.—The Utah Power & Light Co. diverts water from the canal about 400 feet above the gage and the water returns to the river just above Bear River gaging station at this point.

Regulation.—Considerable diurnal fluctuation is caused by the operation of the power plant.

Accuracy.—Records fair. Discharge relation affected by growth of moss and possibly also by the operation of the power plant.

Cooperation.—Gage heights and some discharge measurements furnished by the Utah Power & Light Co.

Discharge measurements of Hammond ditch near Collinston, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
May 25	H. L. Stoner	3.15	52.8	July 31	H. L. Stoner	1.50	6.3
June 3	do	3.55	66.7	Sept. 11	Frank Weber	2.74	37.5

Daily gage height, in feet, of Hammond ditch near Collinston, Utah, for 1913.

[H. G. Stone, observer.]

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1	.....	3.62	3.54	3.68	2.14	2.10	1.55
2	.....	3.58	3.68	4.00	2.83	2.10	1.53
3	.....	3.51	3.38	4.00	2.90	2.10	1.52
4	.....	3.73	3.44	3.93	2.88	2.07	1.50
5	.....	4.36	2.88	4.01	2.89	2.10	1.50
6	.....	4.14	2.80	3.96	3.95	1.79	1.50
7	.....	4.01	2.80	4.00	3.98	1.80	1.50
8	.....	4.14	2.20	4.00	3.45	1.75	1.50
9	.....	4.11	2.32	3.93	2.75	1.75	1.50
10	.....	4.21	2.58	3.82	2.80	1.45	1.50
11	.....	4.50	3.35	4.22	2.75	1.45	1.50
12	.....	.....	4.06	3.93	2.92	.....	1.50
13	.....	.....	3.98	3.95	3.00	.....	1.50
14	.....	.....	4.10	3.85	2.90	.....	1.50
15	.....	.....	3.78	3.75	2.76	.....	1.50
16	.....	.....	3.62	3.95	3.04	.....	1.50
17	.....	.....	3.95	4.00	3.08	.....	1.50
18	.....	.....	4.01	3.92	3.33	.....	.....
19	.....	.....	3.22	4.01	3.11	.....	.....
20	.....	3.74	2.12	4.00	3.00	.....	.....
21	.....	4.08	3.75	3.93	3.00	.....	.....
22	.....	4.14	3.78	3.90	3.03	.....	.....
23	.....	4.10	3.78	3.93	2.99	.....	.....
24	.....	4.10	3.90	3.95	2.06	1.60	.....
25	3.00	3.65	3.87	3.98	2.00	1.55	.....
26	3.00	3.52	3.81	4.00	2.07	1.58	.....
27	2.90	3.50	3.89	3.99	2.11	1.55	.....
28	3.20	3.45	3.65	3.93	2.10	1.53	.....
29	3.40	2.88	3.65	3.87	2.10	1.55	.....
30	3.60	3.12	.....	3.68	2.10	1.55	.....
31	3.55	.....	3.90	1.45	.....	1.55	.....

Daily discharge, in second-feet, of Hammond ditch near Collinston, Utah, for 1913.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1	.....	70	67	73	20	19	7.2
2	.....	68	73	88	40	19	6.8
3	.....	65	60	88	42	19	6.6
4	.....	75	63	84	41	18	6.3
5	.....	106	41	88	42	19	6.3
6	.....	95	38	86	86	12	6.3
7	.....	88	38	88	87	12	6.3
8	.....	95	22	88	63	11	6.3
9	.....	94	24	84	37	11	6.3
10	.....	98	31	79	38	5.6	6.3
11	.....	113	59	99	37	5.6	6.3
12	.....	0	91	84	43	0	6.3
13	.....	0	87	86	46	0	6.3
14	.....	0	93	80	42	0	6.3
15	.....	0	77	76	37	0	6.3
16	.....	0	70	86	47	0	6.3
17	.....	0	86	88	48	0	6.3
18	.....	0	88	84	58	0	.....
19	.....	0	54	88	49	0	.....
20	.....	75	20	88	46	0	.....
21	.....	92	76	84	46	0	.....
22	.....	95	77	83	47	0	.....
23	.....	93	77	84	45	0	.....
24	46	93	83	86	18	8	.....
25	46	71	82	87	16	7.2	.....
26	46	66	78	88	18	7.7	.....
27	42	65	82	88	19	7.2	.....
28	53	63	71	84	19	6.8	.....
29	61	41	71	82	19	7.2	.....
30	69	50	6.3	73	19	7.2	.....
31	67	.....	83	5.6	.....	7.2	.....

NOTE.—Canal dry previous to May 24, from June 12–19, Oct. 12–23, and after Nov. 17. Discharge determined from a fairly well defined rating curve. Discharge estimated May 24 and July 30.

Monthly discharge of Hammond ditch near Collinston, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 24–31	69	42	53.8	853	B.
June	113	0	59.0	3,510	B.
July	93	6.3	63.5	3,900	B.
August	99	5.6	82.3	5,060	B.
September	87	16	40.5	2,410	B.
October	19	0	6.76	416	C.
November 1–17	7.2	6.3	6.40	216	C.
The period				16,400	

GEORGETOWN CREEK NEAR GEORGETOWN, IDAHO.

Location.—In sec. 4, T. 11 S., R. 44 E., 50 feet below the power plant of the Bear Lake Power Co., 3 miles northeast of Georgetown, which is 1 mile from Georgetown station on the Oregon Short Line Railroad.

Records available.—October 23, 1911, to September 30, 1913.

Drainage area.—22 square miles (Forest Service records).

Gage.—Staff nailed to alder stumps on right bank.

Channel and control.—Rocky and clean; shifts occasionally.

Discharge measurements.—Made by wading at all except extremely high stages.

Winter flow.—Stream is spring-fed and discharge relation is not appreciably affected by ice.

Diversions.—Water is probably diverted above the station at certain times of the year.

Accuracy.—Rating curves fairly well defined. Determination of daily discharge subject to errors on account of small amount of pondage possible at company's dam and also on account of infrequent gage readings. Monthly summaries believed to be fairly reliable on account of uniformity in stream flow.

Cooperation.—Gage heights and some discharge measurements furnished by the United States Forest Service.

Discharge measurements of Georgetown Creek near Georgetown, Idaho, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Jan. 13	J. P. Martin	1.02	31.2	June 27	L. W. Jordan	1.15	42.4
June 27	L. W. Jordan	1.15	38.7	Aug. 15	George Bentz	1.05	31.3

Daily gage height, in feet, of Georgetown Creek near Georgetown, Idaho, for the year ending Sept. 30, 1913.

[J. A. Ferguson, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1												
2		1.1										
3				1.02								
4							1.00					
5												
6												1.04
7												
8												
9												
10		1.1	1.05									
11			1.05	1.02								
12	1.1		1.05						1.30			
13			1.05	1.02								
14			1.05									
15					1.05						1.05	
16			1.05				.98					
17			1.05									
18			1.05									
19			1.05									
20			1.05	1.02								
21	1.1		1.05									
22					1.00							
23		1.08	1.05									
24			1.05									
25				1.03		1.03						
26						1.01						
27									1.15			1.04
28			1.05									
29										1.10	1.05	
30		1.08					1.24					
31												

Monthly discharge of Georgetown Creek near Georgetown, Idaho, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	36	36	36	2,210	C.
November	36	34	35	2,090	C.
December	34	30	32	1,980	C.
January			30	1,840	D.
February			30	1,670	D.
March			28	1,720	D.
August			32	1,970	D.
September			31	1,840	D.

NOTE.—Monthly means estimated from occasional gage-height observations.

SODA CREEK NEAR SODA SPRINGS, IDAHO.

Location.—In sec. 24, T. 8 S., R. 41 E., about 4 miles north of Soda Springs and below the junction of the branches of the creek.

Records available.—March 5 to September 30, 1913.

Gage.—Vertical staff on left bank; prior to July 31 a vertical staff on left bank, 30 feet upstream, at datum 0.1 foot below that of present gage.

Channel and control.—Clean; control is lava-rock reef below the gage. Moss growth on control frequently affects discharge relation.

Discharge measurements.—Made by wading.

Winter flow.—Discharge relation not affected by ice.

Regulation.—Swamps above the station regulate the flow to a large extent.

Diversions.—There are few diversions, as the water is highly mineralized. A small ditch heads on the control.

Accuracy.—Records good.

Discharge measurements of Soda Creek near Soda Springs, Idaho, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Mar. 5	Lynn Crandall	4.13	85.8	June 21	L. W. Jordan	4.44	95.1
Apr. 17	A. B. Purton	4.59	154	25	....do	4.51	118
May 11	G. C. Baldwin	4.42	98.4	July 31	R. C. Pierce	[a] 4.48	91.1
11	....do	4.41	98.6	Sept. 26	L. W. Jordan	4.37	77.7

[a] Reading on new gage; old gage read 4.35 feet.

Daily gage height, in feet, of Soda Creek near Soda Springs, Idaho, for the year ending Sept. 30, 1913.

[George Schmidt, observer.]

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	4.30	4.52	4.45	4.60	4.46	4.45
2	.....	4.82	4.52	4.42	4.55	4.48	4.45
3	.....	4.74	4.52	4.42	4.50	4.48	4.48
4	.....	4.81	4.50	4.42	4.50	4.48	4.45
5	4.12	4.88	4.50	4.42	4.48	4.45	4.42
6	4.18	5.30	4.48	4.42	4.48	4.45	4.42
7	4.15	5.10	4.48	4.42	4.45	4.42	4.42
8	4.15	4.90	4.48	4.42	4.45	4.42	4.42
9	4.15	4.70	4.48	4.42	4.45	4.42	4.42
10	4.12	4.75	4.48	4.48	4.45	4.42	4.42
11	4.12	4.78	4.42	4.52	4.45	4.42	4.40
12	4.18	4.80	4.42	4.55	4.45	4.42	4.40
13	4.18	4.78	4.42	4.52	4.45	4.42	4.40
14	4.20	4.75	4.45	4.48	4.45	4.42	4.40
15	4.20	4.75	4.45	4.45	4.45	4.42	4.40
16	4.20	4.72	4.45	4.45	4.45	4.42	4.40
17	4.15	4.60	4.45	4.45	4.45	4.42	4.40
18	4.18	4.65	4.49	4.45	4.45	4.42	4.38
19	4.20	4.68	4.50	4.45	4.45	4.42	4.38
20	4.20	4.65	4.52	4.45	4.45	4.42	4.38
21	4.20	4.65	4.50	4.42	4.45	4.42	4.38
22	4.20	4.62	4.48	4.42	4.45	4.42	4.38
23	4.20	4.60	4.45	4.42	4.48	4.42	4.38
24	4.18	4.60	4.45	4.45	4.48	4.42	4.35
25	4.18	4.58	4.45	4.50	4.50	4.40	4.35
26	4.20	4.58	4.45	4.52	4.52	4.40	4.35
27	4.20	4.55	4.45	4.58	4.52	4.40	4.35
28	4.18	4.55	4.45	4.60	4.50	4.42	4.35
29	4.18	4.55	4.45	4.70	4.50	4.42	4.35
30	4.20	4.52	4.45	4.70	4.50	4.42	4.35
31	4.25	.....	4.45	.....	4.50	4.42	.....

NOTE.—Discharge relation somewhat affected by growth of moss from May 11 to June 25.

Daily discharge, in second-feet, of Soda Creek near Soda Springs, Idaho, for the year ending Sept. 30, 1913.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	103	126	104	128	94	88
2	.....	212	124	99	119	94	88
3	.....	193	124	99	108	94	94
4	.....	209	118	99	108	94	88
5	83	223	118	99	104	88	84
6	94	324	114	99	102	88	84
7	88	275	112	99	97	84	84
8	87	228	112	99	97	84	84
9	87	180	112	99	97	84	84
10	82	191	110	109	95	84	84
11	82	198	99	117	95	84	80
12	90	202	99	122	95	84	80
13	90	196	99	117	93	84	80
14	94	189	104	109	93	84	80
15	94	189	104	104	93	84	80
16	92	182	104	104	93	84	80
17	83	157	104	104	92	84	80
18	88	165	111	104	92	84	77
19	92	172	113	104	92	84	77
20	90	163	117	104	90	84	77
21	90	163	113	99	90	84	77
22	90	155	109	99	90	84	77
23	90	151	104	99	95	84	77
24	85	149	104	104	93	84	73
25	85	144	104	113	97	80	73
26	88	142	104	115	100	80	73
27	88	140	104	126	100	80	73
28	83	134	104	130	95	84	73
29	83	134	104	149	95	84	73
30	87	126	104	149	95	84	73
31	95	.....	104	.....	95	84	.....

NOTE.—Discharge determined from three fairly well-defined rating curves, applicable Mar. 5, May 11 to June 25, and Aug. 1 to Sept. 30. Indirect methods for shifting channels used Mar. 6 to May 10, and June 26 to July 31.

Monthly discharge of Soda Creek near Soda Springs, Idaho, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet.)	Accuracy.
	Maximum.	Minimum.	Mean.		
March 5–31	95	82	88.1	4,720	C.
April	324	103	180	10,700	B.
May	126	99	109	6,700	B.
June	149	99	109	6,490	A.
July	128	90	97.7	6,010	B.
August	94	80	85.2	5,240	A.
September	94	73	79.8	4,750	A.
The period	.....	.....	.....	44,600	

LOGAN RIVER NEAR LOGAN, UTAH.

Location.—In the center of the NW. ¼ sec. 36, T. 12 N., R. 1 E., 2½ miles east of Logan, 50 feet below bridge over river at mouth of canyon, and about 800 feet below plant of the Utah Power & Light Co.; below all tributaries except Blacksmith Fork and Cache River which enter about 5 and 10 miles, respectively, below the station.

Records available.—June 1, 1896, to December 31, 1912, when station was discontinued.

Drainage area.—218 square miles.

Gage.—Sloping staff gage on right bank.

Channel and control.—More or less shifting, especially during high water.

Discharge measurements.—Made from car and cable.

Floods.—During May and June, 1907, the river reached a discharge of 2,450 second-feet, the maximum flow since the station was established.

Winter flow.—Ice does not usually form at this station.

Diversions.—The Logan, Hyde Park, and Smithfield canal diverts water above the Utah Power & Light Co.'s plant. The maximum capacity of the canal is a little over 100 second-feet, but the average discharge during the irrigation season is about 75 second-feet. Water is also diverted and used for power development, but is returned to the river above the station.

Regulation.—None.

Accuracy.—Poor, owing to a poorly defined rating curve and unreliable gage heights at certain periods.

Cooperation.—Gage heights furnished by the Utah Power & Light Co.

The following discharge measurement was made by G. H. Russell:

December 12, 1912: Gage height, 1.90 feet; discharge, 158 second-feet.

Daily gage height, in feet, and discharge, in second-feet, of Logan River near Logan, Utah, for the period Oct. 1 to Dec. 31, 1912.

Day.	October.		November.		December.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	2.10	164	2.00	194	1.20	.....
2	2.50	394	2.00	194	1.20	.....
3	2.00	194	2.00	194	1.18	.....
4	2.00	194	1.90	158	1.18	.....
5	2.00	194	1.95	176	1.05	.....
6	2.10	232	2.00	194	.60	.....
7	2.30	320	1.95	176	1.00	.....
8	2.18	267	1.92	165	1.09	.....
9	2.20	276	1.93	169	1.10	.....
10	2.10	232	1.92	165	1.10	.....
11	2.10	232	1.90	158	1.10	.....
12	2.20	276	1.90	158	1.09	.....
13	2.00	194	1.90	158	1.09	.....
14	2.00	194	1.85	141	1.07	.....
15	2.00	194	1.80	124	1.08	.....
16	1.95	176	1.80	124	1.08	.....
17	1.90	158	1.75	.....	1.09	.....
18	1.90	158	1.75	.....	1.09	.....
19	1.90	158	1.70	.....	1.14	.....
20	1.80	124	1.70	.....	1.18	.....
21	1.85	141	1.65	.....	1.25	.....
22	1.83	134	1.65	.....	1.25	.....
23	1.75	109	1.60	.....	1.40	.....
24	1.74	106	1.63	.....	1.50	.....
25	1.72	100	1.60	.....	1.55	.....
26	1.70	94	1.60	.....	1.70	.....
27	1.70	94	1.60	.....	1.70	.....
28	1.65	82	1.50	.....	1.83	.....
29	1.60	70	1.50	.....	1.90	.....
30	1.60	70	1.50	.....	1.90	.....
31	1.60	70	.....	.....	1.90	.....

NOTE.—Discharge determined from a poorly defined curve. Discharge Nov. 17–30, estimated at 140 second-feet; Dec. 1–31, estimated at 135 second-feet, on account of unreliable gage heights.

Monthly discharge of Logan River near Logan, Utah, for the period Oct. 1 to Dec. 31, 1912.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	394	70	174	10,700	C.
November	194	.....	154	9,160	D.
December	.....	.....	135	8,300	D.
The period	.....	.....	.....	28,200	

LOGAN RIVER ABOVE STATE DAM, NEAR LOGAN, UTAH.

Location.—In sec. 36, T. 12 N., R. 1 E., about 2½ miles above Logan and about 150 feet above the confluence of the tailrace of the Utah Power & Light Co. with the main river.

Records available.—May 7 to September 30, 1913. Records when added to the flow of the power plant tailrace should be comparable with those obtained at the old station, one-fourth mile downstream. Records at old station, June 1, 1896, to December 31, 1912.

Drainage area.—Not measured.

Gage.—Stevens water-stage recorder, with outside staff gage on right bank, and inside hook gage.

Channel and control.—Gravel and bowlders; shifting previous to September 26, 1913, when concrete cut-off wall extending entirely across the stream was installed.

Discharge measurements.—Made by wading or from cable 100 feet upstream from gage.

Winter flow.—No ice forms. Records represent water from seepage and springs, as the power plant takes practically the entire stream flow at the canal heading.

Diversions.—The Logan, Hyde Park & Smithfield canal and that of the Utah Power & Light Co. divert from the river above the station. The municipal power plant of Logan also diverts water but returns it above the diversion of the Utah Power & Light Co.

Accuracy.—Excellent after installation of artificial control.

Cooperation.—Gage inspected by the Utah Power & Light Co.

Discharge measurements of Logan River above State dam, near Logan, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
May 7	Lynn Crandall	1.98	444	July 30	Frank Weber	0.72	47.3
21	....do	2.01	336	30	....do	.74	48
June 5	E. A. Porter	2.01	338	Aug. 19	E. A. Porter	.51	20.8
18	....do	1.55	217	Sept. 3	Lynn Crandall	.39	15.3
July 12	Lynn Crandall	.97	58.1	7	.....do	.36	14.1
22	E. A. Porter	.86	54.1	28	.....do	.78	11.4
29	Frank Weber	.70	39.6				

Daily gage height, in feet, and discharge, in second-feet, of Logan River above State dam, near Logan, Utah, for the year ending Sept. 30, 1913.

Day.	May.		June.		July.		August.		September.	
	Gage height	Discharge.	Gage height	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	2.30	430	1.59	178	0.60	31	0.40	18
2	.....	.....	2.16	385	1.54	164	.62	33	.40	18
3	.....	.....	2.12	372	1.52	158	.63	34	.39	17
4	.....	.....	2.06	353	1.61	172	.58	30	.40	18
5	.....	.....	2.02	340	1.50	147	.58	30	.39	17
6	.....	.....	1.98	328	1.43	131	.58	30	.39	17
7	1.98	442	1.93	314	1.38	121	.54	27	.39	17
8	2.18	509	1.87	298	1.30	107	.54	27	.45	21
9	2.29	548	1.88	301	.90	58	.52	25	.39	17
10	2.32	559	1.89	303	1.00	68	.51	25	.40	18
11	2.29	548	1.83	288	.....	67	.52	25	.40	18
12	2.31	556	1.85	293	.98	66	.48	23	.39	17
13	2.24	515	1.79	277	.87	55	.56	28	.40	18
14	2.04	433	1.65	241	.89	59	.53	26	.42	19
15	1.99	408	1.61	231	1.12	80	.44	20	.39	17
16	2.01	401	1.60	228	.83	52	.48	23	.39	17
17	2.01	388	1.59	226	.88	56	.44	20	.39	17
18	2.24	450	1.53	211	.82	51	.51	25	.39	17
19	2.38	484	1.61	222	.84	53	.54	27	.39	17
20	2.21	414	1.58	214	.95	63	.44	20	.38	17
21	2.02	340	1.44	182	.88	56	.42	19	.42	19
22	1.96	323	1.38	168	.84	53	.49	23	.42	19
23	2.00	334	1.37	162	.87	55	.58	30	.42	19
24	2.09	363	1.35	154	.92	60	.53	26	.....	17
25	2.16	385	1.32	145	.82	51	.47	22	.....	16
26	2.31	433	1.34	145	.83	52	.52	25	.....	14
27	2.43	474	1.42	156	.78	47	.50	24	.80	13
28	2.53	508	1.54	178	.78	47	.49	23	.80	13
29	2.48	491	1.60	186	.72	42	.43	20	.80	13
30	2.49	495	1.63	190	.69	39	.45	21	.81	14
31	2.40	464	.....	.....	.65	36	.47	22	.....	.....

NOTE.—Discharge determined from four fairly well defined curves applicable May 7–12, May 21 to June 18, July 9 to Sept. 24, and Sept. 28–30. Discharge May 13–20, June 19 to July 8, and Sept. 25–27, determined by indirect methods for shifting channels.

Monthly discharge of Logan River above State dam, near Logan, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 7–31	559	323	451	22,400	B.
June	430	145	251	14,900	B.
July	178	36	78.8	4,850	A.
August	34	19	25.3	1,560	A.
September	21	13	17.0	1,010	A.
The period	.....	.....	.....	44,700	

LOGAN RIVER BELOW STATE DAM, NEAR LOGAN, UTAH.

Location.—In sec. 35, T. 12 N., R. 1 E., about 2 miles above Logan and 200 feet below State dam.

Records available.—April 29 to September 30, 1913.

Drainage area.—Not measured.

Gage.—Stevens water-stage recorder, with outside staff gage on left bank, and inside hook gage.

Channel and control.—Gravel and bowlders; shifting previous to September 28, 1913, when concrete cut-off wall extending across the river was installed.

Discharge measurements.—Made by wading or from cable.
Winter flow.—No ice forms.
Regulation.—During low-water periods the flow is somewhat affected by the operation of the Utah Power & Light Co. plant above the State dam.
Accuracy.—Records excellent after installation of concrete cut-off wall.
Cooperation.—Gage inspected by the Utah State Agricultural College.

Discharge measurements of Logan River below State dam, near Logan, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Apr. 29	Lynn Crandall	4.06	496	July 29	Frank Weber	3.23	166
30	do	4.12	522	30	do	3.23	168
May 7	do	4.15	522	Aug. 13	E. A. Porter	3.12	144
21	do	4.02	471	19	Porter and Stoner	3.15	152
June 5	E. A. Porter	4.00	506	27	E. A. Porter	3.35	218
18	do	3.70	284	Sept. 3	Lynn Crandall	3.17	141
July 10	Lynn Crandall	3.34	186	7	do	3.17	143
12	do	3.35	186	16	Porter and Crandall	3.18	144
22	E. A. Porter	3.25	174				

Daily gage height, in feet, and discharge, in second-feet, of Logan River below State dam, near Logan, Utah, for the year ending Sept. 30, 1913.

Day.	Apr.		May.		June.		July.		Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	4.04	476	4.25	652	3.72	298	3.15	151	3.16	141
2	.....	.....	3.91	396	4.18	607	3.68	280	3.14	149	3.17	143
3	.....	.....	3.84	358	4.11	563	3.67	277	3.12	146	3.17	143
4	.....	.....	3.81	341	4.06	535	3.65	269	3.12	146	3.17	143
5	.....	.....	3.82	347	4.00	508	3.66	273	3.12	146	3.17	143
6	.....	.....	3.92	402	3.98	488	3.63	261	3.12	146	3.17	143
7	.....	.....	4.15	549	3.93	450	3.55	235	3.12	146	3.17	143
8	.....	.....	4.32	676	3.89	420	3.54	232	3.11	145	3.18	144
9	.....	.....	4.38	724	3.87	396	3.48	215	3.10	143	3.18	144
10	.....	.....	4.42	757	3.85	379	3.36	188	3.10	143	3.17	143
11	.....	.....	4.37	716	3.83	363	3.30	176	3.11	145	3.16	141
12	.....	.....	4.36	708	3.79	336	3.32	180	3.11	145	3.16	141
13	.....	.....	4.29	652	3.71	293	3.33	182	3.12	146	3.15	139
14	.....	.....	4.12	528	3.71	293	3.32	180	3.11	145	3.18	144
15	.....	.....	4.06	488	3.71	293	3.38	192	3.10	143	3.18	144
16	.....	.....	4.06	488	3.71	293	3.28	173	3.11	145	3.18	144
17	.....	.....	4.08	501	3.71	293	3.30	176	3.12	146	3.17	143
18	.....	.....	4.25	622	3.69	284	3.32	180	3.14	149	3.17	143
19	.....	.....	4.32	676	3.69	284	3.29	174	3.14	149	3.16	141
20	.....	.....	4.20	584	3.68	280	3.25	168	3.13	148	3.15	139
21	.....	.....	4.04	476	3.64	265	3.28	173	3.12	146	3.15	139
22	.....	.....	3.95	420	3.61	254	3.24	166	3.12	146	3.16	141
23	.....	.....	3.94	414	3.58	244	3.26	169	3.12	146	3.17	143
24	.....	.....	4.06	488	3.59	247	3.27	171	3.12	146	3.18	144
25	.....	.....	4.16	556	3.58	244	3.25	168	3.15	151	3.18	144
26	.....	.....	4.24	614	3.60	250	3.23	164	3.21	159	3.17	143
27	.....	.....	4.32	676	3.62	258	3.25	168	3.20	154	3.17	143
28	.....	.....	4.40	740	3.67	277	3.24	166	3.20	153	2.85	95
29	4.06	488	4.38	732	3.72	298	3.22	162	3.17	145	3.60	127
30	4.10	514	4.37	732	3.76	317	3.22	162	3.17	143	3.58	122
31	.....	.....	4.32	700	.....	.....	3.20	159	3.16	141	.....	.....

NOTE.—Discharge determined from two fairly well defined rating curves, one applicable Apr. 29 to May 28 and June 14 to Aug. 25, and the other Aug. 30 to Sept. 28. Discharge May 29 to June 13 and Aug. 26–29 determined by indirect methods for shifting channels.

Monthly discharge of Logan River below State dam near Logan, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May	757	341	566	34,800	A.
June	652	244	355	21,100	B.
July	298	159	198	12,200	A.
August	159	141	147	9,040	A.
September	144	95	140	8,330	A.
The period				85,500	

UTAH POWER & LIGHT CO.'S TAILRACE NEAR LOGAN, UTAH.

Location.—In sec. 36, T. 12 N., R. 1 E., at the plant of the Utah Power & Light Co., 2½ miles above Logan.

Records available.—May 7 to September 30, 1913.

Gage.—Friez water-stage recorder with inside hook gage.

Discharge measurements.—Made from footbridge just above gage.

Channel and control.—Canal section paved with rock. A standard rectangular weir just below the gage acts as a permanent control.

Accuracy.—Records excellent.

Cooperation.—Gage heights furnished by Utah Power & Light Co.

Discharge measurements of Utah Power & Light Co.'s tailrace near Logan, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
July 22	E. A. Porter	1.68	165	Aug. 19	Porter and Stoner	1.42	115
29	Frank Weber	1.70	155	Sept. 3	Lynn Crandall	1.61	138
Aug. 18	Porter and Stoner	1.65	146	7	do	1.61	137
19	do	1.16	84.4	7	do	1.61	138

Daily gage height, in feet, and discharge, in second-feet, of Utah Power & Light Co.'s tailrace near Logan, Utah, for the year ending Sept. 30, 1913.

Day.	May.		June.		July.		Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	1.67	146	1.70	151	1.67	146	1.60	137
2	.....	.....	1.68	148	1.69	150	1.64	142	1.60	137
3	.....	.....	1.67	146	1.70	151	1.64	142	1.60	137
4	.....	.....	1.66	145	1.58	135	1.66	145	1.60	137
5	.....	.....	1.66	145	1.71	152	1.66	145	1.61	138
6	.....	.....	1.67	146	1.70	151	1.66	145	1.62	140
7	1.67	146	1.68	148	1.70	151	1.67	146	1.60	137
8	1.67	146	1.71	152	1.70	151	1.66	145	1.60	137
9	1.67	146	1.70	151	1.68	148	1.65	144	1.61	138
10	1.66	145	1.69	150	1.67	146	1.65	144	1.60	137
11	1.67	146	1.69	150	1.70	151	1.65	144	1.59	136
12	1.68	148	1.72	154	1.68	148	1.66	145	1.60	137
13	1.65	144	1.72	154	1.70	151	1.60	137	1.60	137
14	1.66	145	1.71	152	1.68	148	1.62	140	1.62	140
15	1.66	145	1.70	151	1.70	151	1.66	145	1.63	141
16	1.66	145	1.70	151	1.70	151	1.65	144	1.63	141
17	1.67	146	1.69	150	1.69	150	1.65	144	1.63	141
18	1.68	148	1.70	151	1.69	150	1.64	142	1.62	140
19	1.68	148	1.52	127	1.69	150	1.62	140	1.62	140
20	1.68	148	1.60	137	1.68	148	1.64	142	1.62	140
21	1.68	148	1.70	151	1.68	148	1.65	144	1.62	140
22	1.68	148	1.70	151	1.68	148	1.64	142	1.64	142
23	1.69	150	1.67	146	1.68	148	1.54	130	1.66	145
24	1.68	148	1.70	151	1.68	148	1.55	131	1.65	144
25	1.68	148	1.71	152	1.68	148	1.58	135	1.65	144
26	1.67	146	1.72	154	1.67	146	1.59	136	1.63	141
27	1.61	148	1.70	151	1.70	151	1.62	140	1.60	137
28	1.68	148	1.70	151	1.69	150	1.58	135	1.58	135
29	1.68	148	1.70	151	1.69	150	1.62	140	1.58	135
30	1.20	89	1.69	150	1.68	148	1.62	140	1.61	138
31	1.65	144	.....	.....	1.68	148	1.59	136	.....	.....

Monthly discharge of Utah Power & Light Co.'s tailrace near Logan, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet.)	Accuracy.
	Maximum.	Minimum.	Mean.		
May 7–31	150	89	144	7,140	A.
June	154	127	149	8,870	A.
July	152	135	149	9,160	A.
August	146	130	141	8,670	A.
September	145	135	139	8,270	A.
The period	.....	.....	.....	42,100	

LOGAN, HYDE PARK, AND SMITHFIELD CANAL NEAR LOGAN, UTAH.

Location.—In sec. 30, T. 12 N., R. 2 E., about 1 mile above old station and 3½ miles above Logan.

Records available.—Intermittent from 1904 to 1913.

Gage.—Stevens water-stage recorder installed June 6, 1913, with outside and inside staff gages; to replace vertical staff located in the NW. ¼ sec. 36, T. 12 N., R. 1 E., used previous to March 31.

Channel and control.—Fairly permanent.

Discharge measurements.—Made from foot plank or by wading.

Winter flow.—Canal carries water throughout the year, as it furnishes the domestic water supply for the city of Logan. Ice rarely forms to such an extent as to affect the discharge relation.

Diversions.—The canal spills water into the river through two wasteways between the old and new stations, the amount probably averaging 2 second-feet. Discharge added to that at the river station above the State dam, and to that of the tailrace of the Utah Power & Light Co. plant will show practically the total flow of Logan River.

Accuracy.—At new station, excellent; at old station, rather poor on account of lack of measurements.

Cooperation.—Inspection of automatic gage furnished by the Logan, Hyde Park & Smithfield Canal Co.; gage-height record at old station furnished by the Utah Power & Light Co.

Discharge measurements of Logan, Hyde Park, and Smithfield canal near Logan, Utah, during the period Oct. 1, 1912, to Nov. 24, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Dec. 12	G. H. Russell	1.71	4.0	Aug. 19	Porter and Stoner	1.31	41.8
June 6	E. A. Porter	2.20	95.2	19	do	1.31	46.6
18	do	1.81	73.3	Sept. 3	Lynn Crandall	1.32	42.2
July 10	Lynn Crandall	2.27	102	17	Porter and Crandall	1.00	25.4
22	E. A. Porter	1.77	67.0	Oct. 15	Lynn Crandall	.75	17.4
31	Frank Weber	1.72	65.4	Nov. 24	Porter and Sanford	.52	12.2

Daily gage height, in feet, of Logan, Hyde Park, and Smithfield canal near Logan, Utah, for the period Oct. 1, 1912, to Oct. 31, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	June.	July.	Aug.	Sept.	Oct.
1	.....	1.82	1.65	1.90	1.90	1.90	.....	0.90	1.78	.....	0.77
2	.....	1.82	1.70	1.90	1.90	1.90	.....	.89	1.77	.....	.76
3	.....	1.82	1.65	1.85	1.85	1.85	.....	.92	1.77	1.32	.76
4	.....	1.80	1.72	1.85	1.85	1.85	.....	.95	1.76	1.25	.77
5	.....	1.80	1.75	1.83	1.84	1.82	.....	.95	1.72	1.21	.82
6	.....	1.75	1.80	1.83	1.86	1.84	2.20	1.12	1.70	1.20	.87
7	.....	1.75	1.82	1.83	1.90	1.90	2.22	1.35	1.67	1.20	.83
8	.....	1.75	1.82	1.83	1.90	1.93	2.20	1.60	1.67	1.21	.84
9	.....	1.74	1.82	1.86	1.90	1.93	2.19	2.07	1.64	1.21	.87
10	.....	1.76	1.80	1.90	1.90	1.94	2.18	2.26	1.61	1.20	.84
11	.....	1.78	1.82	1.90	1.92	1.95	2.17	2.25	1.60	1.18	.81
12	.....	1.82	1.81	1.95	1.94	1.95	2.09	2.30	1.58	1.12	.78
13	.....	1.85	1.83	1.95	1.93	1.95	2.02	2.34	1.51	1.12	.76
14	.....	1.85	1.85	1.95	1.93	1.94	2.01	2.19	1.49	1.12	.75
15	.....	1.85	1.85	1.93	1.94	1.94	2.00	1.49	1.48	1.04	.74
16	.....	1.85	1.85	1.90	1.95	1.94	1.89	2.22	1.42	1.00	.73
17	.....	1.90	1.86	1.90	1.95	1.95	1.82	1.97	1.34	1.00	.72
18	.....	1.90	1.87	1.90	2.00	1.95	1.81	2.08	1.34	1.02	.71
19	.....	1.89	1.87	1.85	2.00	1.96	1.82	2.04	1.17	1.01	.71
20	2.00	1.85	1.89	1.85	2.00	1.96	1.79	1.64	1.35	1.00	.72
21	2.00	1.90	1.90	1.90	1.96	1.98	1.84	1.78	1.31	.98	.71
22	2.00	1.90	1.85	1.95	1.94	1.98	1.96	1.76	1.27	.99	.70
23	1.90	1.90	1.85	2.00	1.90	2.00	2.04	1.76	1.27	.99	.69
24	1.85	1.80	1.85	2.00	1.90	2.00	2.08	1.77	1.28	.96	.70
25	1.85	1.80	1.80	2.10	1.92	2.00	2.00	1.75	1.26	.94	.69
26	1.85	1.75	1.80	2.00	1.85	2.00	1.88	1.75	1.25	.94	.68
27	1.85	1.65	1.90	1.95	1.93	1.97	1.60	1.75	1.26	.92	.68
28	1.85	1.65	1.95	1.90	1.90	2.00	1.36	1.75	1.28	.92	.79
29	1.83	1.60	.....	1.90	.....	2.00	1.15	1.73	.....	.91	.80
30	1.82	1.60	.....	1.90	.....	2.00	.91	1.73	1.31	.86	.93
31	1.82	.....	.....	1.90	.....	2.00	.....	1.74	1.31	.....	.67

Daily discharge, in second-feet, of Logan, Hyde Park, and Smithfield canal near Logan, Utah, for the period Oct. 1, 1912, to Oct. 31, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	June.	July.	Aug.	Sept.	Oct.
1	.....	6.4	3	8	8	8	.....	22	70	42	18
2	.....	6.4	4	8	8	8	.....	21	69	43	18
3	.....	6.4	3	7	7	7	.....	22	69	43	18
4	.....	6	4.4	7	7	7	.....	24	69	39	18
5	.....	6	5	6.6	6.8	6.4	.....	24	66	37	19
6	.....	5	6	6.6	7.2	6.8	96	32	65	36	21
7	.....	5	6.4	6.6	8	8	97	44	63	36	19
8	.....	5	6.4	6.6	8	8.9	96	59	63	37	20
9	.....	4.8	6.4	7.2	8	8.9	95	87	61	37	21
10	.....	5.2	6	8	8	9.2	95	100	60	36	20
11	.....	5.6	6.4	8	8.6	9.5	94	99	59	35	19
12	.....	6.4	6.2	9.5	9.2	9.5	88	102	58	32	18
13	.....	7	6.6	9.5	8.9	9.5	84	105	54	32	18
14	.....	7	7	9.5	8.9	9.2	84	95	52	32	17
15	.....	7	7	8.9	9.2	9.2	83	52	52	28	17
16	.....	7	7	8	9.5	9.2	76	97	48	26	17
17	.....	8	7.2	8	9.5	9.5	72	81	44	26	16
18	.....	8	7.4	8	11	9.5	72	88	44	26	16
19	.....	7.8	7.4	7	11	9.8	72	85	34	26	16
20	11	7	7.8	7	11	9.8	70	61	44	26	16
21	11	8	8	8	9.8	10.4	73	70	42	25	16
22	11	8	7	9.5	9.2	10.4	81	69	40	25	16
23	8	8	7	11	8	11	85	69	40	25	16
24	7	8	7	11	8	11	88	69	40	24	16
25	7	8	6	14	8.6	11	83	68	39	23	16
26	7	5	6	11	7	11	76	68	39	23	16
27	7	3	8	9.5	8.9	10.1	59	68	39	22	16
28	7	3	9.5	8	8	11	45	68	40	22	18
29	6.6	2	9	8	.....	11	33	67	41	22	18
30	6.4	2	9	8	.....	11	22	67	42	20	23
31	6.4	.....	9	8	.....	11	.....	67	42	.....	15

NOTE.—Discharge determined from two rating curves, one poorly defined, Oct. 20, 1912, to Mar. 31, 1913; the other well defined, June 6 to Oct. 31, 1913. Discharge estimated for periods for which gage heights were missing, except Oct. 1–19, 1912, and Apr. 1 to June 5, 1913.

Monthly discharge of Logan, Hyde Park, and Smithfield canal near Logan, Utah, for the period Oct. 1, 1912, to Oct. 31, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October 20–31	11	6.4	7.95	189	C.
November	8	2	6.07	361	C.
December	9.5	3	6.65	409	B.
January	14	6.6	8.4	516	B.
February	11	6.8	8.6	478	B.
March	11	6.4	9.4	578	B.
June 6–30	97	22	76.8	3,810	A
July	105	21	66.1	4,060	A.
August	70	39	51.2	3,150	A.
September	43	20	30.2	1,800	A.
October	23	15	17.7	1,090	A.

LOGAN NORTHERN CANAL NEAR LOGAN, UTAH.

Location.—In sec. 35, T. 12 N., R. 1 E., about 2 miles above Logan and about 300 yards below the head of the canal.

Records available.—June 6 to October 31, 1913.

Gage.—Stevens water-stage recorder with outside and inside staff gages.

Discharge measurements.—Made by wading or from foot plank.

Accuracy.—Records excellent.

Cooperation.—Gage inspected by employees of the Logan Northern Canal Co.

Discharge measurements of Logan Northern canal near Logan, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
June 5	E. A. Porter	2.40	93.3	Sept. 3	Lynn Crandall	1.48	48.0
6	do	1.16	40.9	7	do	1.47	48.2
18	do	2.00	74.3	10	Hoyt and Porter	1.50	50.5
July 10	Lynn Crandall	2.02	79.6	16	Porter and Crandall	1.20	39.9
22	E. A. Porter	2.05	77.1	28	Lynn Crandall	.52	6.6
29	Frank Weber	1.77	62.4				
Aug. 13	E. A. Porter	1.68	59.7				
19	Stoner and Porter	1.49	53.9				

Daily gage height, in feet, and discharge, in second-feet, of Logan Northern canal near Logan, Utah, for the period June 6 to Oct. 31, 1913.

Day.	June.		July.		Aug.		Sept.		Oct.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1			1.47	50	1.79	65	1.47	50	0.50	6
2			1.46	50	1.80	66	1.48	50	.50	6
3			1.46	50	1.81	66	1.49	51	.50	6
4			1.47	50	1.81	66	1.50	51	.48	5.4
5			1.46	50	1.84	67	1.50	51	.48	5.4
6	2.00	75	1.43	48	1.87	69	1.48	50	.42	3.6
7	2.35	92	1.41	47	1.86	68	1.47	50	.32	1.4
8	2.30	89	1.62	57	1.72	62	1.48	50	.31	1.2
9	2.35	92	2.04	77	1.70	61	1.49	51	.30	1.0
10	2.35	92	2.00	75	1.70	61	1.50	51	.28	.7
11	2.35	92	2.00	75	1.69	60	1.32	43	.26	.4
12	2.30	89	2.00	75	1.68	60	1.18	37	.24	.2
13	2.20	85	2.10	80	1.68	60	.88	23	.24	.2
14	2.10	80	2.20	85	1.68	60	.85	22	.24	.2
15	2.00	75	2.40	94	1.68	60	1.22	38	.24	.2
16	2.00	75	2.20	85	1.69	60	1.20	38	.25	.3
17	2.00	75	2.20	85	1.70	61	1.20	38	.25	.3
18	1.99	75	2.10	80	1.61	57	1.20	38	.25	.3
19	1.96	73	2.30	89	1.48	50	1.20	38	.25	.3
20	1.95	73	2.20	85	1.46	50	1.20	38	.25	.3
21	1.93	72	2.05	77	1.44	49	1.20	38	.25	.3
22	1.91	71	2.05	77	1.38	46	1.08	32	.25	.3
23	2.05	77	1.95	73	1.40	47	1.00	28	.25	.3
24	2.10	80	1.78	65	1.40	47	1.00	28	.25	.3
25	2.00	75	1.77	64	1.52	52	1.00	28	.25	.3
26	2.00	75	1.77	64	1.71	61	1.00	28	.25	.3
27	1.73	62	1.79	65	1.70	61	1.01	29	.25	.3
28	1.46	50	1.80	66	1.68	60	.52	6.9	.25	.3
29	1.47	50	1.76	64	1.65	58	.50	6	.25	.3
30	1.48	50	1.82	66	1.58	55	.50	6	.25	.3
31			1.81	66	1.48	50			.25	.3

NOTE.—Discharge determined from a well-defined rating curve.

Monthly discharge of Logan Northern canal near Logan, Utah, for 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
June 6–30	92	50	75.8	3,760	A.
July	94	47	68.8	4,230	A.
August	69	46	58.5	3,600	A.
September	51	6	36.3	2,160	A.
October	5.4	.2	1.38	84.8	B.
The period				13,800	

LITTLE MALAD RIVER NEAR MALAD, IDAHO.

Location.—In sec. 36, T. 12 S., R. 34 E., at Schwartz ranch, about three-fourths mile below the Kerns & Tovey reservoir site, about 2½ miles above the Elkhorn reservoir site, and about 14 miles northwest of Malad.

Records available.—August 2, 1911, to August 16, 1913, when station was discontinued.

Drainage area.—Not measured.

Gage.—Inclined staff about 175 feet above a 3-foot fall in the river.

Channel and control.—Small bowlders embedded in clay and hardpan; shifts occasionally; right bank may overflow at extremely high stages.

Discharge measurements.—Made by wading about 150 feet above the gage.

Winter flow.—Discharge relation affected by ice for short periods during the coldest part of the winter.

Accuracy.—Records good.

Discharge measurements of Little Malad River near Malad, Idaho, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Oct. 4	H. L. Stoner	3.16	17.3	Aug. 4	R. C. Pierce	2.98	15.6
Apr. 12	A. B. Purton	3.18	24.4	4	....do	2.98	15.8

Daily gage height, in feet, of Little Malad River near Malad, Idaho, for the year ending Sept. 30, 1913.

[N. W. Lewis, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
1	3.15	3.15	.....	3.05	3.05	3.05	3.72	3.13	.....	3.13	3.03
2	3.15	3.15	3.05	3.05	.....	.....	3.62	3.13	3.13	3.13	3.03
3	3.15	.....	3.05	3.05	3.05	3.05	3.52	3.13	3.13	3.13	.....
4	3.15	3.15	3.05	3.05	3.05	3.05	3.23	.....	3.13	3.13	3.03
5	3.15	3.15	3.05	.....	3.05	3.05	3.23	3.13	3.13	3.08	3.03
6	.....	3.15	3.05	3.05	3.05	3.05	.....	3.13	3.13	.....	3.03
7	3.15	3.15	3.05	3.05	3.05	3.05	3.23	3.13	3.08	3.03	3.03
8	3.15	3.15	.....	3.05	3.05	3.10	3.23	3.13	.....	3.03	3.03
9	3.15	3.15	3.05	3.05	.....	.....	3.13	3.13	3.03	3.03	3.03
10	3.15	.....	3.05	3.05	3.05	3.15	3.13	3.13	3.03	3.03	.....
11	3.15	3.15	3.05	3.05	3.05	3.15	3.13	.....	3.13	3.03	3.03
12	3.15	3.15	3.05	.....	3.05	3.15	3.13	3.13	3.03	3.03	3.03
13	.....	3.15	3.05	3.05	3.05	3.15	.....	3.13	3.03	.....	3.03
14	3.15	3.15	3.05	3.05	3.05	3.15	3.13	3.13	3.03	3.03	3.03
15	3.15	3.15	.....	3.05	3.05	3.15	3.23	3.13	.....	3.03	3.03
16	3.15	3.15	3.15	3.05	.....	.....	3.13	3.13	3.03	3.03	3.03
17	3.15	.....	3.15	3.05	3.05	3.15	3.13	3.13	3.03	3.03	.....
18	3.15	3.15	3.05	3.05	3.05	3.15	3.13	.....	3.03	3.03	.....
19	3.15	3.15	3.05	.....	3.05	3.15	3.18	3.23	3.03	3.03	.....
20	.....	3.15	3.05	3.05	3.05	3.15	.....	3.13	3.03	.....	.....
21	3.15	3.15	3.05	3.05	3.05	3.05	3.18	3.13	3.03	3.03	.....
22	3.15	3.15	.....	3.05	3.05	3.05	3.18	3.13	.....	3.03	.....
23	3.15	3.15	3.05	3.05	.....	.....	3.18	3.13	3.03	3.03	.....
24	3.15	.....	3.05	3.05	3.05	3.05	3.13	3.13	3.03	3.03	.....
25	3.15	3.15	3.05	3.05	3.05	3.15	3.13	.....	3.13	3.03	.....
26	3.15	3.15	3.05	.....	3.05	3.15	3.13	3.13	3.13	3.03	.....
27	.....	3.15	3.05	3.05	3.05	3.15	.....	3.13	3.13	.....	.....
28	3.15	3.15	3.05	3.05	3.05	3.15	3.13	3.13	3.13	3.03	.....
29	3.15	3.15	.....	3.05	.....	3.45	3.13	3.13	.....	2.98	.....
30	3.15	3.15	3.05	3.05	.....	.....	3.13	3.13	3.13	3.03	.....
31	3.15	.....	3.05	3.05	.....	3.52	.....	3.13	.....	2.98	.....

Daily discharge, in second-feet, of Little Malad River near Malad, Idaho, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
1	17.5	17.5	15.5	13.5	13.5	13.5	61	22	22	22	17.5
2	17.5	17.5	13.5	13.5	13.5	13.5	53	22	22	22	17.5
3	17.5	17.5	13.5	13.5	13.5	13.5	45	22	22	22	17.5
4	17.5	17.5	13.5	13.5	13.5	13.5	27	22	22	22	17.5
5	17.5	17.5	13.5	13.5	13.5	13.5	27	22	22	20	17.5
6	17.5	17.5	13.5	13.5	13.5	13.5	27	22	22	19	17.5
7	17.5	17.5	13.5	13.5	13.5	13.5	27	22	20	17.5	17.5
8	17.5	17.5	13.5	13.5	13.5	15.5	27	22	19	17.5	17.5
9	17.5	17.5	13.5	13.5	13.5	16.5	22	22	17.5	17.5	17.5
10	17.5	17.5	13.5	13.5	13.5	17.5	22	22	17.5	17.5	17.5
11	17.5	17.5	13.5	13.5	13.5	17.5	22	22	22	17.5	17.5
12	17.5	17.5	13.5	13.5	13.5	17.5	22	22	17.5	17.5	17.5
13	17.5	17.5	13.5	13.5	13.5	17.5	22	22	17.5	17.5	17.5
14	17.5	17.5	13.5	13.5	13.5	17.5	22	22	17.5	17.5	17.5
15	17.5	17.5	15.5	13.5	13.5	17.5	27	22	17.5	17.5	17.5
16	17.5	17.5	17.5	13.5	13.5	17.5	22	22	17.5	17.5	17.5
17	17.5	17.5	17.5	13.5	13.5	17.5	22	22	17.5	17.5	.....
18	17.5	17.5	13.5	13.5	13.5	17.5	22	24	17.5	17.5	.....
19	17.5	17.5	13.5	13.5	13.5	17.5	24	27	17.5	17.5	.....
20	17.5	17.5	13.5	13.5	13.5	17.5	24	22	17.5	17.5	.....
21	17.5	17.5	13.5	13.5	13.5	13.5	24	22	17.5	17.5	.....
22	17.5	17.5	13.5	13.5	13.5	13.5	24	22	17.5	17.5	.....
23	17.5	17.5	13.5	13.5	13.5	13.5	24	22	17.5	17.5	.....
24	17.5	17.5	13.5	13.5	13.5	13.5	22	22	17.5	17.5	.....
25	17.5	17.5	13.5	13.5	13.5	17.5	22	22	22	17.5	.....
26	17.5	17.5	13.5	13.5	13.5	17.5	22	22	22	17.5	.....
27	17.5	17.5	13.5	13.5	13.5	17.5	22	22	22	17.5	.....
28	17.5	17.5	13.5	13.5	13.5	17.5	22	22	22	17.5	.....
29	17.5	17.5	13.5	13.5	.....	32	22	22	22	15.5	.....
30	17.5	17.5	13.5	13.5	.....	38	22	22	22	17.5	.....
31	17.5	.....	13.5	13.5	.....	45	.....	22	.....	15.5	.....

NOTE.—Discharge determined from two fairly well-defined rating curves, applicable Oct. 1, 1912, to Mar. 29, 1913, and Mar. 31 to Aug. 16, 1913. Indirect methods for shifting channels used Mar. 30.

Monthly discharge of Little Malad River near Malad, Idaho, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	17.5	17.5	17.5	1,080	A.
November	17.5	17.5	17.5	1,040	A.
December	17.5	13.5	13.9	855	B.
January	13.5	13.5	13.5	830	B.
February	13.5	13.5	13.5	750	B.
March	45	13.5	18.0	1,110	B.
April	61	22	26.4	1,570	B.
May	27	22	22.2	1,360	B.
June	22	17.5	19.6	1,170	B.
July	22	15.5	18.1	1,110	B.
August 1–16	17.5	17.5	17.5	555	B.
The period	.....	.....	.....	11,400	

NOTE.—Owing to low range of stage monthly estimates are believed to be very reliable.

BOX ELDER CREEK AT BRIGHAM, UTAH.

Location.—In sec. 13, T. 9 N., R. 2 W., at highway bridge 3 blocks west and 5½ blocks north of the courthouse at Brigham.

Records available.—May 20, 1909, to December 31, 1912, when station was discontinued.

Drainage area.—Not measured.

Gage.—Vertical staff; datum was lowered 2 feet February 24, 1910.

Channel and control.—Shifting.

Discharge measurements.—Made by wading or from bridge at the gage.

Floods.—On February 1, 1911, the creek reached a gage height of 4.9 feet, the corresponding discharge being 159 second-feet.

Winter flow.—Discharge relation at times affected by ice.

Diversions.—During the summer months the entire flow of the creek is used for irrigation above the station.

Regulation.—The flow at the station is affected by irrigation diversions above.

Accuracy.—Record poor on account of constantly shifting stream bed and unreliable gage heights.

Discharge measurements of Box Elder Creek at Brigham, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Oct. 25	E. A. Porter	4.45	7.23
Apr. 18	W. R. King	5.10	142

Daily gage height, in feet, and discharge, in second-feet, of Box Elder Creek at Brigham, Utah, for the period Oct. 1 to Dec. 31, 1912.

[Woodruff Nelson, observer.]

Day.	Oct.		Nov.		Dec.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	3.9	0.5	4.6	13	4.5	9
2	4.0	1	4.6	13	4.5	9
3	4.1	2	4.6	13	4.5	9
4	4.2	3	4.6	13	4.5	9
5	4.3	5	4.6	13	4.5	9
6	4.4	7	4.7	17	4.5	9
7	4.5	9	4.6	13	4.5	9
8	4.5	9	4.6	13	4.5	9
9	4.5	9	4.6	13	4.5	9
10	4.5	9	4.6	13	4.5	9
11	4.5	9	4.6	13	4.5	9
12	4.5	9	4.6	13	4.5	9
13	4.5	9	4.6	13	4.5	9
14	4.5	9	4.6	13	4.5	9
15	4.5	9	4.6	13	4.5	9
16	4.5	9	4.6	13	4.5	9
17	4.5	9	4.6	13	4.5	9
18	4.5	9	4.6	13	4.5	9
19	4.5	9	4.6	13	4.5	9
20	4.5	9	4.6	13	4.5	9
21	4.5	9	4.5	9	4.5	9
22	4.5	9	4.5	9	4.5	9
23	4.5	9	4.5	9	4.5	9
24	4.5	9	4.5	9	4.5	9
25	4.5	9	4.5	9	4.5	9
26	4.6	13	4.5	9	4.5	9
27	4.5	9	4.5	9	4.5	9
28	4.5	9	4.5	9	4.5	9
29	4.5	9	4.5	9	4.5	9
30	4.5	9	4.5	9	4.5	9
31	4.6	13	.....	.....	4.5	9

NOTE.—Discharge determined from a poorly-defined rating curve.

Monthly discharge of Box Elder Creek at Brigham, Utah, for the period Oct. 1 to Dec. 31, 1912.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	13	0.5	8.11	499	C.
November	17	9	11.8	702	C.
December	9	9	9	553	D.
The period				1,750	

WEBER RIVER BASIN.

WEBER RIVER NEAR OAKLEY, UTAH.

Location.—In the SW. ¼ NE. ¼ sec. 15, T. 1 S., R. 6 E., near the mouth of the canyon, 3 miles above Oakley post office, below the South Fork of Weber River, and above Kamas Creek.

Records available.—October 22, 1904, to September 30, 1913.

Drainage area.—163 square miles.

Gage.—An inclined iron rod firmly bolted to a limestone ridge at the left end of the cable; datum unchanged since installation.

Channel and control.—One channel at all stages; fairly permanent, but may shift during extreme high water.

Discharge measurements.—Made from cable or by wading.

Winter flow.—River freezes across at the station. Discharge relation also affected by needle and anchor ice. Fairly reliable estimates can be made by interpolation between days of open water.

Diversions.—No water is diverted above the station, but several canals heading just below divert water for the Kamas prairie region.

Accuracy.—Results fairly reliable, though the measurements plot rather scattering owing to poor conditions.

Discharge measurements of Weber River near Oakley, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Nov. 12	G. H. Russell	4.28	124
Apr. 23	Leonard Tanner	4.80	312

Daily gage height, in feet, of Weber River near Oakley, Utah, for the year ending Sept. 30, 1913.

[John Franson, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	4.15	4.3	4.2	.....	.....	.....	4.25	5.1	6.3	5.2	4.3	4.15
2	4.15	4.3	4.2	5.5	.....	.....	4.3	5.0	6.3	5.1	4.3	4.3
3	4.15	4.25	4.3	.....	.....	.....	4.25	4.9	6.1	5.0	4.3	4.35
4	4.15	4.25	4.4	.....	.....	.....	4.2	4.9	6.0	.....	4.4	4.3
5	4.2	4.25	4.4	.....	4.5	4.0	4.2	5.0	5.9	4.9	4.5	4.3
6	4.2	4.25	4.5	.....	.....	.....	4.2	5.2	5.85	4.8	4.4	4.3
7	4.2	4.25	.....	.....	.....	.....	4.25	5.4	5.8	4.75	4.35	4.3
8	4.2	4.25	4.9	5.0	.....	.....	4.25	5.5	5.7	4.7	4.3	4.3
9	4.2	4.25	4.6	.....	.....	.....	4.25	5.6	.....	4.65	4.3	4.4
10	4.2	4.25	4.6	.....	.....	.....	4.3	5.7	5.6	4.6	4.25	4.35
11	4.2	4.25	4.7	.....	.....	.....	4.3	5.8	5.4	4.55	4.25	4.3
12	4.2	4.25	4.8	.....	4.7	.....	4.35	5.9	5.3	4.5	4.2	.....
13	4.2	4.25	4.8	.....	.....	4.05	4.35	5.8	5.1	4.5	4.2	4.3
14	4.2	4.2	4.7	.....	.....	.....	4.4	5.6	5.2	4.45	4.2	4.3
15	4.2	4.2	4.7	4.5	.....	.....	4.5	5.5	5.2	4.4	4.2	4.3
16	4.2	4.2	4.8	.....	.....	.....	4.6	5.4	5.2	4.4	4.2	4.3
17	4.15	4.15	4.8	.....	.....	.....	4.7	5.5	.....	4.4	4.2	4.3
18	4.15	4.15	4.9	.....	.....	.....	4.7	5.7	5.2	4.5	4.15	4.25
19	4.15	4.15	4.9	.....	4.1	.....	4.7	5.6	5.1	4.5	4.15	4.2
20	4.3	4.15	4.9	.....	.....	4.0	4.7	5.5	5.1	4.5	4.15	4.2
21	4.3	4.15	5.0	.....	.....	.....	4.8	5.5	5.0	4.4	4.1	4.15
22	4.25	4.15	5.1	4.6	.....	.....	4.9	5.4	4.9	4.5	4.1	4.2
23	4.25	4.15	5.3	.....	.....	.....	4.8	5.6	4.8	4.45	4.1	4.2
24	4.2	4.15	5.4	.....	.....	.....	4.75	6.0	4.9	4.4	4.3	.....
25	4.2	4.15	5.5	.....	.....	.....	4.7	6.5	5.0	4.4	4.2	4.2
26	.....	4.15	5.8	.....	4.2	.....	4.8	6.8	5.4	4.4	4.15	4.2
27	4.5	4.2	5.9	.....	.....	4.2	4.9	6.4	5.9	4.4	4.15	4.2
28	4.5	4.2	6.0	.....	.....	.....	5.0	6.3	5.9	4.4	.....	4.2
29	4.45	.....	6.0	5.0	.....	.....	5.05	6.4	5.7	4.35	4.15	4.2
30	4.4	4.2	5.9	.....	.....	.....	5.1	6.5	5.4	4.35	4.15	4.2
31	4.4	.....	5.8	.....	.....	.....	.....	6.4	.....	4.35	4.15	.....

NOTE.—Discharge relation somewhat affected by ice from about Dec. 3, 1912, to Mar. 5, 1913.

Daily discharge, in second-feet, of Weber River near Oakley, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	108	146	120	.....	.....	.....	127	454	1,250	508	140	103
2	108	146	120	.....	.....	.....	140	404	1,110	454	140	140
3	108	133	.....	.....	.....	.....	127	354	1,090	404	140	154
4	108	133	.....	.....	.....	.....	114	354	1,020	379	168	140
5	120	133	.....	.....	.....	72	114	404	942	354	198	140
6	120	133	.....	.....	.....	.....	114	508	907	308	168	140
7	120	133	.....	.....	.....	.....	127	618	872	288	154	140
8	120	133	.....	.....	.....	.....	127	678	804	268	140	140
9	120	133	.....	.....	.....	.....	127	740	772	250	140	168
10	120	133	.....	.....	.....	.....	140	804	740	232	127	154
11	120	133	.....	.....	.....	.....	140	872	618	215	127	140
12	120	133	.....	.....	.....	.....	154	942	562	198	114	140
13	120	133	.....	.....	.....	82	154	872	454	198	114	140
14	120	120	.....	.....	.....	.....	168	740	508	183	114	140
15	120	120	.....	.....	.....	.....	198	678	508	168	114	140
16	120	120	.....	.....	.....	.....	232	618	508	168	114	140
17	108	108	.....	.....	.....	.....	268	678	508	168	114	140
18	108	108	.....	.....	.....	.....	268	804	508	198	103	127
19	108	108	.....	.....	.....	.....	268	740	454	198	103	114
20	146	108	.....	.....	.....	72	268	678	454	198	103	114
21	146	108	.....	.....	.....	.....	308	678	404	168	92	103
22	133	108	.....	.....	.....	.....	354	618	354	198	92	114
23	133	108	.....	.....	.....	.....	308	740	308	183	92	114
24	120	108	.....	.....	.....	.....	288	1,020	354	168	140	114
25	120	108	.....	.....	.....	.....	268	1,420	404	168	114	114
26	160	108	.....	.....	.....	.....	308	1,690	618	168	103	114
27	205	120	.....	.....	.....	114	354	1,330	942	168	103	114
28	205	120	.....	.....	.....	.....	404	1,250	942	168	103	114
29	190	120	.....	.....	.....	.....	429	1,330	804	154	103	114
30	174	120	.....	.....	.....	.....	454	1,420	618	154	103	114
31	174	.....	.....	.....	.....	.....	.....	1,330	.....	154	103	.....

NOTE.—Discharge determined from a rating curve only fairly well defined below 250 second-feet, owing to erratic plotting of low-water measurements. Discharge estimated as follows: Dec. 3–31, 75 second-feet; Jan. 1–31, 70 second-feet; Feb. 1–28, 70 second-feet; for other periods for which gage heights are missing, estimated or interpolated.

Monthly discharge of Weber River near Oakley, Utah, for the year ending Sept, 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	205	108	132	8,120	A.
November	146	108	122	7,260	A.
December	.....	.....	a 77.9	4,790	D.
January	.....	.....	a 70.0	4,300	C.
February	.....	.....	a 70.0	3,890	C.
March	.....	.....	a 84.1	5,170	C.
April	454	114	228	13,600	B.
May	1,690	354	831	51,100	A.
June	1,250	308	680	40,500	A.
July	508	154	232	14,300	B.
August	198	92	122	7,500	B.
September	168	103	129	7,680	B.
The year	1,690	.....	232	168,000	

a Estimated.

WEBER RIVER AT DEVILS SLIDE, UTAH.

Location.—In the center of the SW. ¼ sec. 19, T. 4 N., R. 4 E., about half a mile east of the railroad station at Devils Slide, and about 2,000 feet upstream from the Union Pacific Railroad bridge. Lost Creek enters one-fourth mile above the station and Chalk Creek about 15 miles above.

Records available.—February 1, 1905, to September 30, 1913.

Drainage area.—1,090 square miles.

Gage.—Inclined staff gage on right bank.

Channel and control.—Gravel; shifts at various periods.

Discharge measurements.—Made from car and cable.

Winter flow.—The river does not usually freeze over at this station, but a little ice often forms along the banks.

Diversions.—Some water is diverted from Weber River for the Kamas Prairie Valley above.

Accuracy.—Records good.

Discharge measurements of Weber River at Devils Slide, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 12	G. H. Russell	2.65	340	June 16	W. R. King	2.85	450
Apr. 24	Leonard Tanner	3.54	881	Sept. 13	Frank Weber	2.40	216
June 16	W. R. King	2.85	442				

Daily gage height, in feet, of Weber River at Devils Slide, Utah, for the year ending Sept. 30, 1913.

(A. E. Lucas, observer.)

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.35	2.58	2.32	2.25	2.22	2.25	4.6	3.9	4.1	3.5	2.50	2.32
2	2.35	2.58	2.25	2.20	2.22	2.25	5.1	3.75	4.0	3.35	2.45	2.30
3	2.35	2.60	2.35	2.20	2.20	2.22	3.5	3.6	3.8	3.2	2.42	2.30
4	2.38	2.60	2.40	2.32	2.25	2.25	3.15	3.6	3.75	3.15	2.60	2.35
5	2.48	2.58	2.25	2.20	2.25	2.28	3.4	3.55	3.6	3.1	3.0	2.38
6	2.48	2.58	2.18	2.10	2.22	2.35	3.6	3.7	3.5	2.95	2.68	2.32
7	2.48	2.52	2.10	2.20	2.20	2.45	3.1	3.8	3.4	2.90	2.60	2.38
8	2.48	2.60	2.15	2.05	2.20	2.50	3.1	3.9	3.4	2.75	2.55	2.48
9	2.50	2.55	2.12	2.18	2.25	2.60	3.1	3.95	3.3	2.62	2.52	2.42
10	2.65	2.52	2.20	2.18	2.25	2.65	3.1	4.0	3.2	2.80	2.50	2.42
11	2.65	2.68	2.22	2.18	2.22	2.65	3.2	4.0	3.15	2.60	2.48	2.42
12	2.55	2.62	2.30	2.22	2.18	2.62	3.35	4.2	3.1	2.48	2.45	2.42
13	2.50	2.58	2.25	2.20	2.25	2.58	3.45	4.1	3.1	2.40	2.40	2.40
14	2.45	2.55	2.35	2.25	2.22	2.35	3.6	3.95	3.0	2.35	2.35	2.42
15	2.45	2.55	2.32	2.25	2.22	2.18	3.65	3.75	2.92	2.30	2.32	2.42
16	2.42	2.55	2.30	2.25	2.22	2.28	3.45	3.6	2.85	2.25	2.30	2.45
17	2.42	2.52	2.28	2.20	2.25	2.28	3.6	3.45	2.80	2.20	2.28	2.45
18	2.42	2.48	2.30	2.22	2.28	2.52	3.8	3.5	2.90	2.18	2.25	2.45
19	2.42	2.48	2.30	2.25	2.22	2.52	3.8	3.6	2.80	2.38	2.22	2.42
20	2.48	2.55	2.15	2.25	2.18	2.40	3.6	.....	2.72	2.50	2.18	2.40
21	2.58	2.45	2.15	2.22	2.10	2.28	3.65	.....	2.62	2.50	2.18	2.40
22	2.50	2.40	2.15	2.18	2.08	2.38	3.75	3.3	2.55	2.55	2.15	2.42
23	2.48	2.40	2.12	2.22	2.15	2.32	3.7	3.5	2.52	2.78	2.20	2.50
24	2.45	2.45	2.18	2.20	2.22	2.25	3.5	3.8	2.60	3.1	2.32	2.50
25	2.45	2.40	2.28	2.22	2.22	2.22	3.45	4.1	2.75	2.80	2.25	2.48
26	2.45	2.35	2.20	2.28	2.20	2.22	3.5	4.4	3.35	2.70	2.20	2.48
27	2.68	2.32	2.18	2.25	2.20	2.25	3.75	4.2	4.0	2.70	2.25	2.45
28	3.0	2.32	2.20	2.28	2.18	2.30	3.95	4.1	4.4	2.70	2.20	2.45
29	2.80	2.40	2.22	2.22	.....	2.42	4.0	4.3	4.4	2.62	2.20	2.45
30	2.75	2.42	2.30	2.20	.....	2.95	4.5	4.2	4.3	2.58	2.25	2.45
31	2.70	.....	2.18	2.22	.....	3.7	.....	4.1	.....	2.58	2.25	.....

Daily discharge, in second-feet, of Weber River at Devils Slide, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	211	300	201	168	157	168	1,850	1,180	1,360	855	265	193
2	211	300	176	150	157	168	2,460	1,050	1,270	758	245	185
3	211	308	211	150	150	157	855	930	1,090	660	233	185
4	221	308	228	193	168	168	628	930	1,050	628	310	205
5	260	300	176	150	168	178	790	892	930	595	535	217
6	260	300	152	120	157	205	930	1,010	855	505	350	193
7	260	276	128	150	150	245	595	1,090	790	475	310	217
8	260	308	143	105	150	265	595	1,180	790	388	288	257
9	268	288	134	144	168	310	595	1,220	725	320	274	233
10	330	276	158	144	168	335	595	1,270	660	415	265	233
11	330	344	165	144	157	335	660	1,270	628	310	257	233
12	288	317	194	157	144	320	758	1,450	595	257	245	233
13	268	300	166	150	168	301	822	1,360	595	225	225	225
14	248	288	211	168	157	205	930	1,220	535	205	205	233
15	248	288	201	168	157	144	970	1,050	487	185	193	233
16	236	288	194	168	157	178	822	930	445	168	185	245
17	236	276	187	150	168	178	930	822	415	150	178	245
18	236	260	194	157	178	274	1,090	855	475	144	168	245
19	236	260	194	168	157	274	1,090	930	415	217	157	233
20	260	288	143	168	144	225	930	860	371	265	144	225
21	300	248	143	157	120	178	970	790	320	265	144	225
22	268	228	128	144	114	217	1,050	725	288	288	135	233
23	260	228	134	157	135	193	1,010	855	274	404	150	265
24	248	248	152	150	157	168	855	1,090	310	595	193	265
25	248	228	187	157	157	157	822	1,360	388	415	168	257
26	248	211	158	178	150	157	855	1,650	758	360	150	257
27	344	201	152	168	150	168	1,050	1,450	1,270	360	168	245
28	500	201	158	178	144	185	1,220	1,360	1,650	360	150	245
29	398	228	165	157	.....	233	1,270	1,550	1,650	320	150	245
30	376	236	194	150	.....	505	1,750	1,450	1,550	301	168	245
31	353	.....	152	157	.....	1,010	.....	1,360	.....	301	168	.....

NOTE.—Discharge determined from a well-defined rating curve.

Monthly discharge of Weber River at Devils Slide, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	500	211	278	17,100	B.
November	344	201	271	16,100	B.
December	288	128	170	10,500	B.
January	193	105	156	9,590	B.
February	178	114	154	8,550	B.
March	1,010	144	252	15,500	A.
April	2,460	595	992	59,000	A.
May	1,650	725	1,130	69,500	A.
June	1,650	274	765	45,500	A.
July	855	144	377	23,200	A.
August	535	135	219	13,500	A.
September	265	185	232	13,800	A.
The year	2,460	105	417	302,000	

WEBER RIVER NEAR PLAIN CITY, UTAH.

Location.—In the SW. ¼ SE. ¼ sec. 5, T. 6 N., R. 2 W., at the county highway bridge, about 6 miles above the mouth of Weber River, on the road from Ogden to Plain City and West Weber, about 6 miles below the mouth of Ogden River, 2 miles below the mouth of Mill Creek, and 1 mile below Fourmile Creek.

Records available.—January 1, 1904, to September 30, 1913.

Drainage area.—2,060 square miles.

Gage.—Vertical staff painted on upstream side of center pier of bridge.

Channel and control.—Channel shifts occasionally during extreme floods.

Discharge measurements.—Made from bridge or by wading.

Winter flow.—Very little ice forms at this station but the river has occasionally frozen over the latter part of December or early part of January.

Diversions.—Practically the entire flow of Weber River above the station is used for irrigation during the summer months.

Regulation.—The operation of the power plants in Weber Canyon above the city of Ogden probably has no effect in controlling the natural flow of the stream at the station.

Accuracy.—Records excellent except for low-water periods.

Discharge measurements of Weber River near Plain City, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 20	G. H. Russell	5.58	606	June 17	W. R. King	4.0	204
Apr. 17	W. R. King	10.9	2,400	Sept. 1	Frank Weber	2.22	9.9
25	Leonard Tanner	10.9	2,400	12	do	3.42	129

Daily gage height, in feet, of Weber River near Plain City, Utah, for the year ending Sept. 30, 1913.

[Irvin Davis, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	4.1	5.9	5.2	5.6	5.3	4.9	13.0	12.2	7.0	8.0	2.7	2.2
2	4.0	5.8	5.1	5.9	5.3	4.9	15.8	11.6	6.8	7.5	2.6	2.7
3	4.0	5.7	5.3	5.4	5.1	4.9	16.2	11.2	6.6	7.1	2.6	3.5
4	4.0	5.8	5.6	5.0	5.0	4.9	11.6	10.9	6.2	6.7	2.6	3.4
5	4.5	5.9	5.4	5.0	4.9	5.1	10.5	10.4	5.8	6.6	2.7	3.4
6	4.6	5.7	5.1	4.9	4.8	5.4	11.6	10.4	5.5	6.0	2.5	3.3
7	4.8	5.7	4.9	4.9	4.7	5.6	10.5	10.4	5.3	5.6	2.5	3.3
8	4.8	5.9	4.8	4.9	4.6	5.8	9.6	10.5	5.2	5.0	2.6	3.4
9	4.8	5.9	4.8	5.3	4.5	5.8	9.4	10.4	5.1	4.3	2.7	3.5
10	5.0	6.0	5.0	5.2	4.9	5.8	9.2	10.5	5.1	4.1	2.7	3.5
11	5.2	6.3	4.7	5.2	4.6	6.6	9.2	10.3	5.0	3.7	2.7	3.4
12	5.2	6.4	5.1	5.2	4.9	6.8	9.5	9.8	4.9	3.1	3.4	3.4
13	5.2	6.0	5.3	5.2	4.9	6.1	9.6	9.6	5.3	2.9	.....	3.4
14	5.1	6.0	5.0	5.2	4.7	5.9	11.2	9.5	4.8	2.7	.....	3.5
15	5.0	5.8	5.1	5.2	4.7	5.6	11.2	8.6	4.4	2.7	3.0	3.5
16	5.1	5.8	5.3	5.2	4.7	5.6	11.1	8.0	4.1	2.7	.....	3.5
17	5.0	5.8	4.9	5.3	4.9	5.6	10.9	7.8	3.9	2.7	4.0	3.9
18	5.0	5.8	4.8	5.5	5.5	6.1	11.2	7.7	3.7	2.8	3.0	3.8
19	5.1	5.7	4.8	5.7	6.0	6.3	12.6	8.9	3.4	2.9	5.0	3.8
20	5.0	5.6	4.7	5.7	4.9	6.2	12.0	8.7	3.3	2.7	.....	3.8
21	5.2	5.6	4.9	5.7	4.9	5.7	11.6	8.5	3.2	2.6	4.0	3.8
22	5.3	5.5	4.6	5.7	4.8	5.7	11.9	7.9	3.0	2.5	.....	3.9
23	5.3	5.4	4.7	5.7	4.9	5.7	11.7	7.3	2.9	3.7	.....	4.0
24	5.2	5.3	6.0	5.7	4.9	5.7	11.6	7.9	2.8	3.7	.....	4.0
25	5.1	5.2	6.1	5.5	4.9	5.7	11.0	8.4	3.5	3.8	.....	4.0
26	5.1	5.2	6.1	5.5	4.8	5.7	10.6	8.7	4.2	3.5	.....	4.0
27	5.4	5.3	6.1	5.5	5.0	5.4	11.0	8.4	7.3	3.3	4.0	4.2
28	6.1	5.3	6.1	5.6	4.9	5.5	12.9	8.0	9.2	3.0	5.0	4.1
29	6.3	5.3	5.9	5.7	.....	5.7	13.0	7.9	11.0	2.9	.....	.....
30	6.1	5.3	5.4	5.7	.....	7.3	13.3	7.8	10.6	2.8	.....	4.0
31	5.9	.....	5.6	5.8	.....	11.0	.....	7.6	.....	2.7	2.0	.....

NOTE.—Water below the gage on days for which gage height is not recorded.

Daily discharge, in second-feet, of Weber River near Plain City, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	268	698	514	.....	.....	442	3,380	2,940	958	1,280	42	9
2	250	670	490	.....	.....	442	4,650	2,700	894	1,120	32	42
3	250	642	538	.....	.....	442	4,900	2,530	830	990	32	136
4	250	670	614	.....	.....	442	2,780	2,410	714	862	32	122
5	350	698	562	.....	.....	490	2,310	2,210	606	830	42	122
6	372	642	490	.....	.....	562	2,750	2,210	528	658	24	110
7	418	642	442	.....	.....	614	2,280	2,210	478	554	24	110
8	418	698	418	.....	.....	670	1,910	2,250	454	406	32	122
9	418	698	418	.....	.....	670	1,810	2,210	430	260	42	136
10	466	726	466	.....	.....	670	1,730	2,250	430	222	42	136
11	514	816	394	.....	.....	906	1,730	2,170	406	164	42	122
12	514	846	490	.....	.....	970	1,850	1,970	382	86	122	122
13	514	726	538	.....	.....	756	1,890	1,890	478	62	9	122
14	490	726	466	.....	.....	698	2,530	1,850	360	42	9	136
15	466	670	490	.....	.....	614	2,530	1,490	280	42	74	136
16	490	670	538	.....	.....	614	2,490	1,280	222	42	9	136
17	466	670	442	.....	.....	614	2,410	1,210	192	42	206	192
18	466	670	418	.....	.....	756	2,530	1,180	164	52	74	178
19	490	642	418	.....	.....	816	3,110	1,610	122	62	406	178
20	466	614	394	.....	.....	786	2,860	1,530	110	42	10	178
21	514	614	442	.....	.....	642	2,700	1,460	98	32	206	178
22	538	588	372	.....	.....	642	2,820	1,250	74	24	10	192
23	538	562	394	.....	.....	642	2,740	1,050	62	164	10	206
24	514	538	350	.....	.....	642	2,700	1,250	52	164	10	206
25	490	514	350	.....	.....	642	2,450	1,420	136	178	10	206
26	490	514	350	.....	.....	642	2,290	1,530	240	136	10	206
27	562	538	350	.....	.....	562	2,450	1,420	1,050	110	206	240
28	756	538	350	.....	.....	588	3,240	1,280	1,730	74	406	222
29	816	538	350	.....	.....	642	3,280	1,250	2,450	62	10	215
30	756	538	350	.....	.....	1,130	3,410	1,210	2,290	52	8	206
31	698	.....	350	.....	.....	2,540	.....	1,150	.....	42	5	.....

NOTE.—Discharge determined from a very well-defined rating curve. Discharge probably affected by ice Dec. 24, 1912, to Feb. 28, 1913. Estimated discharge Jan. 1–31, 340 second-feet; Feb. 1–28, 360 second-feet. Discharge on days in August for which gage height is lacking estimated from measurement made Sept. 1.

Monthly discharge of Weber River near Plain City, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	816	250	484	29,800	A.
November	846	514	644	38,300	A.
December	614	350	437	26,900	B.
January	.....	.....	[a] 340	20,900	C.
February	.....	.....	[a] 360	20,000	C.
March	2,540	442	719	44,200	B.
April	4,900	1,730	2,680	159,000	A.
May	2,940	1,050	1,750	108,000	A.
June	2,450	52	574	34,200	A.
July	1,280	24	286	17,600	A.
August	406	5	70.8	4,350	B.
September	240	9	154	9,160	A.
The year	4,900	5	708	512,000	

[a] Estimated.

JORDAN RIVER BASIN.

JORDAN RIVER NEAR LEHI, UTAH.

Location.—In sec. 25, T. 5 S., R. 1 W., just below the outlet of Utah Lake, 4 miles southwest of Lehi.

Records available.—May 30 to December 31, 1904, and July 22 to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff nailed to bridge abutment.

Channel and control.—River has a very light grade and channel is probably permanent, being composed of hardpan and clay.

Discharge measurements.—Made from bridge.

Winter flow.—Slight shore ice forms at times, but has no effect on the discharge relation.

Regulation.—As the natural flow from Utah Lake is insufficient during the irrigation season, the various canal companies interested in the stream have established a pumping plant at the outlet of the lake 500 feet above the gage to pump water from the lake into the river during such periods.

Accuracy.—Records excellent.

Cooperation.—Gage-height records furnished by the city engineer of Salt Lake City.

The following discharge measurement was made by Lynn Crandall:

July 22, 1913: Gage height, 4.98 feet; discharge, 645 second-feet.

Daily gage height, in feet, and discharge, in second-feet, of Jordan River near Lehi, Utah, for the year ending Sept. 30, 1913.

[W. A. Knight, observer.]

Day.	July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1			4.90	624	4.99	647
2			4.72	579	4.98	645
3			4.68	569	4.98	645
4			4.73	582	4.78	594
5			4.75	586	4.40	506
6			4.75	586	4.12	448
7			4.79	596	4.65	562
8			4.76	589	4.67	567
9			4.77	592	4.66	564
10			4.68	569	4.65	562
11			4.70	574	4.54	537
12			4.68	569	4.38	502
13			4.69	572	4.57	543
14			4.68	569	4.56	541
15			4.69	572		542
16			4.79	596	4.57	543
17			4.80	599	4.56	541
18			4.79	596		544
19			4.79	596	4.58	546
20			4.85	612	4.57	543
21			4.90	624	4.56	541
22	4.98	645	4.96	640	4.10	444
23	4.97	642	4.99	647	3.90	407
24	3.31	306	4.99	647	3.68	369
25		306	4.97	642	3.65	364
26	4.99	647	4.99	647	2.91	239
27	5.01	653	4.98	645	2.90	237
28	4.99	647	4.99	647		111
29	4.98	645	4.98	645	1.97	111
30	4.98	645	4.99	647		111
31	4.97	642	4.99	647		

NOTE.—Discharge determined from a very well-defined rating curve.

Monthly discharge of Jordan River near Lehi, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
July 22-31	647	306	578	11,500	A.
August	647	569	607	37,300	A.
September	647	111	469	27,900	A.
The period				76,700	

SUMMIT CREEK NEAR SANTAQUIN, UTAH.

Location.—At the power plant of the Knight Development Co., about one mile from Santaquin.

Records available.—March 8, 1910, to September 30, 1913.

Drainage area.—27.5 square miles.

Gage.—Steel rod gage at a weir in the creek and a standard hook gage at a weir in the power-plant tail-race.

Discharge measurements.—Made by wading.

Cooperation.—Since December 31, 1910, records have been furnished by the United States Reclamation Service.

Discharge measurements of Summit Creek near Santaquin, Utah, during the years ending Sept. 30, 1912–1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
1912.		*Feet.*	*Sec.-ft.*	1913.		*Feet.*	*Sec.-ft.*
June 8	W. J. Lamon	1.77	74.50	May 15	E. Borgquist	1.15	30.63
18	do	1.03	20.90	24	do	1.26	33.34
18	do	.81	9.60				

Daily discharge, in second-feet, of Summit Creek near Santaquin, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	9.0	8.9	6.4	6.6	6.1	6.5	10.6	27.2	48.4	14.2	9.7	14.2
2	8.7	8.8	7.5	6.7	6.0	6.1	10.7	27.3	47.8	14.1	9.4	15.9
3	8.7	8.8	7.5	6.8	5.7	5.9	10.7	26.1	42.6	13.8	9.3	14.2
4	9.6	8.9	6.9	7.2	6.2	5.7	10.7	25.1	38.0	13.3	9.8	11.6
5	9.6	8.4	6.4	6.7	6.2	5.4	20.9	33.4	35.5	12.9	9.5	11.6
6	9.2	8.1	7.1	6.5	5.8	5.5	10.7	39.0	32.6	12.4	9.5	13.7
7	8.9	8.1	8.7	6.7	6.1	5.4	9.7	47.5	30.4	12.5	9.2	15.6
8	8.9	8.2	8.7	7.8	6.1	5.6	9.8	67.4	28.5	12.6	9.0	12.1
9	9.6	8.5	8.7	6.7	6.1	6.0	9.8	69.6	27.2	12.6	9.8	10.9
10	9.6	8.0	8.6	6.6	6.1	6.0	9.8	59.2	26.3	12.1	9.2	11.4
11	8.9	8.6	6.8	6.6	6.0	6.4	20.7	70.9	21.4	12.1	9.1	11.8
12	8.8	8.0	8.5	6.5	3.5	6.4	13.3	76.1	24.6	12.3	9.5	11.4
13	8.4	8.2	8.6	6.5	6.3	5.9	14.2	52.6	22.2	12.0	8.7	11.3
14	8.9	8.3	6.8	6.3	6.0	6.1	17.5	48.6	21.8	11.9	8.7	12.7
15	8.7	8.3	7.0	6.2	6.0	6.0	18.0	51.3	21.2	11.7	8.8	11.8
16	8.7	8.2	6.9	5.5	6.1	5.8	19.5	49.5	19.6	11.6	6.8	11.6
17	8.7	8.0	6.4	5.5	6.1	5.8	21.8	56.1	21.1	11.7	8.6	11.6
18	8.6	7.2	6.8	5.5	6.1	6.1	21.7	64.7	20.2	12.1	8.6	11.4
19	8.0	7.4	7.0	6.2	6.0	7.0	25.3	49.1	19.3	11.3	8.5	11.3
20	8.7	7.3	7.2	5.8	4.5	6.4	23.3	48.0	18.4	10.7	8.7	11.1
21	7.6	7.3	6.4	6.2	4.5	6.4	25.3	39.8	18.0	13.9	7.8	11.4
22	7.7	8.2	5.6	5.7	6.1	6.4	25.5	39.8	17.3	12.0	9.9	25.7
23	7.6	7.3	6.0	5.7	6.1	6.1	24.7	52.6	17.2	11.7	9.0	14.4
24	7.7	7.2	8.6	6.2	6.4	5.5	22.5	57.9	16.8	11.0	8.5	13.3
25	7.7	7.1	6.4	6.0	6.2	6.1	22.1	54.9	16.8	10.6	8.3	12.9
26	8.4	7.0	6.4	6.0	6.2	5.4	30.1	68.2	17.8	10.6	8.2	11.8
27	9.8	7.0	6.5	5.9	5.8	6.1	34.7	61.3	17.8	10.6	8.3	11.9
28	8.8	7.1	6.5	6.0	5.8	6.1	35.2	61.5	16.8	10.2	8.2	12.4
29	8.9	7.1	6.5	6.1	.....	6.3	39.3	64.1	16.0	10.1	8.3	11.9
30	8.9	7.1	6.5	6.1	.....	7.2	37.3	53.9	15.1	10.0	8.0	11.2
31	8.9	.....	6.4	6.1	.....	8.7	.....	50.9	.....	9.7	8.6	.....

NOTE.—Observations at the weir in the creek were discontinued from May 7 to June 4, but were made on a gage at the power plant.

Monthly discharge of Summit Creek near Santaquin, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
October	9.8	7.6	8.7	535.9
November	8.9	7.0	7.9	469.3
December	8.7	5.6	7.1	437.0
January	7.8	5.5	6.3	387
February	6.4	3.5	5.9	328
March	8.7	5.4	6.1	375
April	39.3	9.7	20.2	1,202
May	76.1	25.1	51.4	3,160
June	48.4	15.1	24.6	1,464
July	14.2	9.7	11.9	732
August	9.9	6.8	8.8	541
September	25.7	10.9	12.8	762
The year	76.1	3.5	14.4	10,400

NOTE.—Yearly values computed by engineers of the United States Geological Survey.

PETEETNEET CREEK NEAR PAYSON, UTAH.

Location.—In the SE. ¼ SW. ¼ sec. 29, T. 9 S., R. 2 E., about 3 miles from Payson, and half a mile above the power canal intake.

Records available.—August 1, 1910, to September 30, 1913. Miscellaneous measurements 1909–10.

Drainage area.—28 square miles.

Gage.—Inclined staff on left bank.

Discharge measurements.—Made by wading or from footbridge.

Winter flow.—Discharge relation affected by ice for short periods.

Regulation.—The town of Payson has constructed several small storage reservoirs above the station to increase the low-water flow for power and irrigation.

Cooperation.—All records since December 31, 1910, furnished by the United States Reclamation Service.

Discharge measurements of Peteetneet Creek near Payson, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Oct. 2	W. J. Lamon	1.76	6.2	Apr. 16	K. W. Robarts	2.44	35.20
Nov. 16	do	1.74	5.7	16	E. Borgquist	2.45	34.88
Dec. 18	do	1.70	5.3	27	do	2.75	57.01
Jan. 23	do	1.71	5.60	May 8	A. B. Larson	2.91	74.87
Feb. 21	do	1.75	6.32	July 29	do	2.02	12.59
Mar. 11	K. W. Robarts	1.69	7.62	Aug. 29	do	2.00	11.46
Apr. 5	do	1.96	11.96				

Daily gage height, in feet, of Peteetneet Creek near Payson, Utah, for the year ending Sept. 30, 1913.

[Edwin Cushing, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.73			1.48			1.90	3.20			2.00	
2		1.76	1,68		1.75	1.68			2.38	2.07		2.04
3	1.75			1.49			1.92	2.76			2.00	
4		1.77	1.63		1.82	1.70			2.41	2.05		2.02
5	1.74			1.50			1.96	3.53			1.98	
6		1.75	1.60		1.80	1.72			2.37	2.03		2.00
7	1.73			1.49			1.97	2.92			1.98	
8		1.73	1.56		1.74	1.75			2.35	2.00		1.98
9	1.72			1.51			1.95	3.42			2.00	
10		1.71	1.54		1.73	1.73			2.30	2.00		1.97
11	1.70			1.50			1.95	3.36			1.98	
12		1.69	1.52		1.71	1.70			2.26	2.03		1.98
13	1.71			1.54			2.00	3.00			1.98	
14		1.70	1.50		1.70	1.70			2.20	2.02	1.97	1.99
15	1.70			1.58			2.30	2.98				
16		1.68	1.52		1.70	1.70			2.20	2.04		1.97
17	1.72			1.60			2.60	3.00			1.99	
18		1.69	1.60		1.68	1.72			2.19	2.06		1.96
19	1.70			1.64			2.63	2.84			2.00	
20		1.71	1.48		1.67	1.72			2.13	2.10		1.96
21	1.69			1.66			2.61	2.75			2.00	
22		1.70	1.47		1.65	1.73			2.12	2.12		1.97
23	1.70			1.67			2.65	2.68			1.98	
24		1.70	1.45		1.64	1.75			2.11	2.10		1.99
25	1.71			1.68			2.66	2.56			2.00	
26		1.68	1.46		1.65	1.75			2.11	2.07		2.00
27	1.73			1.70			3.20	2.50			2.02	
28		1.70	1.44		1.68	1.77			2.09	2.05		1.97
29	1.75			1.71			3.60	2.42			2.03	
30		1.70	1.45			1.80			2.07	2.03		1.95
31	1.74			1.70				2.40			2.01	

Daily discharge, in second-feet, of Peteetneet Creek near Payson, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	5.0	5.6	4.4	2.6	5.6	4.8	10.3	102.3	31.9	16.3	12.3	12.4
2	5.3	5.9	4.2	2.6	6.1	4.9	10.6	80.5	31.4	16.3	12.3	12.9
3	5.6	6.0	3.8	2.7	7.1	5.0	11.0	58.6	32.2	16.0	12.3	12.5
4	5.4	6.2	3.4	2.8	8.0	5.2	11.7	101.4	33.1	15.6	11.9	12.0
5	5.3	5.9	3.2	2.8	7.7	5.4	12.3	144.2	31.9	15.0	11.6	11.7
6	5.2	5.6	2.9	2.7	7.4	5.6	12.4	108.6	30.8	14.4	11.4	11.3
7	5.0	5.3	2.7	2.7	6.7	5.9	12.6	73.0	30.2	12.2	11.3	10.9
8	5.0	5.0	2.5	2.8	5.9	6.1	12.3	101.4	29.7	10.0	11.7	10.6
9	4.8	4.8	2.4	2.9	5.8	5.9	12.0	129.8	27.8	10.0	12.0	10.4
10	4.6	4.6	2.3	2.9	5.7	5.7	11.7	126.0	26.9	10.0	11.6	10.3
11	4.4	4.4	2.2	2.8	5.5	5.5	11.3	122.2	25.9	12.0	11.3	10.3
12	4.5	4.2	2.1	3.0	5.4	5.2	11.4	101.6	24.9	14.0	11.3	10.3
13	4.6	4.3	2.0	3.2	5.3	5.2	13.6	81.0	23.3	13.8	11.3	10.5
14	4.5	4.4	2.0	3.4	5.2	5.2	20.3	80.0	21.8	13.6	11.1	10.6
15	4.4	4.2	2.1	3.6	5.2	5.2	26.9	79.0	21.8	14.0	11.0	10.3
16	4.6	4.0	2.2	3.7	5.2	5.2	36.8	80.0	21.8	14.4	11.3	10.0
17	4.8	4.1	2.6	3.8	5.1	5.4	45.6	81.0	21.6	14.8	11.6	9.9
18	4.6	4.2	3.0	4.1	4.9	5.6	46.6	73.3	21.4	15.2	11.8	9.7
19	4.4	4.5	2.4	4.4	4.8	5.6	47.7	65.6	20.1	15.8	12.0	9.7
20	4.3	4.8	1.9	4.5	4.8	5.6	47.1	61.7	18.8	16.3	12.0	9.7
21	4.2	4.7	1.8	4.6	4.6	5.7	46.4	57.7	18.6	16.7	12.0	9.7
22	4.3	4.6	1.8	4.7	4.5	5.7	48.0	54.8	18.4	17.1	11.5	9.7
23	4.4	4.6	1.8	4.8	4.5	5.9	49.6	51.9	18.2	16.7	11.0	10.0
24	4.5	4.6	1.8	4.8	4.4	6.1	50.0	47.3	17.9	16.3	11.3	10.3
25	4.6	4.4	1.8	4.9	4.4	6.1	50.5	42.8	17.9	15.5	11.6	10.4
26	4.8	4.2	1.8	5.1	4.5	6.1	76.3	40.7	17.9	14.8	11.9	10.6
27	5.0	4.4	1.8	5.2	4.7	6.5	102.3	38.6	17.5	14.4	12.3	9.9
28	5.3	4.6	1.7	5.3	4.9	6.9	127.9	36.2	17.1	14.0	12.5	9.1
29	5.6	4.6	1.8	5.4	.....	7.2	153.5	33.7	16.7	13.7	12.6	9.0
30	5.4	4.6	1.8	5.3	.....	7.4	127.9	33.1	16.3	13.3	12.3	8.9
31	5.3	.....	1.8	5.2	.....	8.8	.....	32.5	.....	12.8	12.0	.....

NOTE.—Discharge interpolated for days for which gage height is missing.

Monthly discharge of Peteetneet River near Payson, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
October	5.6	4.2	4.8	296.9
November	6.2	4.0	4.8	284.2
December	4.4	1.7	2.4	146.8
January	5.4	2.6	3.8	234
February	8.0	4.4	5.5	306
March	8.8	4.8	5.8	357
April	153.5	10.3	41.9	2,493
May	144.2	32.5	74.9	4,605
June	31.9	16.3	23.4	1,392
July	17.1	10.0	14.4	885
August	12.6	11.0	11.7	719
September	12.9	8.9	10.5	625
The year	153.5	1.7	17.1	12,300

NOTE.—Yearly values computed by engineers of the United States Geological Survey.

SPANISH FORK AT THISTLE, UTAH.

Location.—In sec. 29, T. 9 S., R. 4 E., in town of Thistle, about 800 feet below junction of Soldier Fork and Thistle Creek, which unite to form Spanish Fork, and about 3 miles above Diamond Fork.

Records available.—December 3, 1907, to September 30, 1913.

Drainage area.—490 square miles.

Gage.—Vertical staff on right bank, about 800 feet below junction of Soldier Fork and Thistle Creek, installed November 21, 1912. Prior to this date a vertical staff on left bank about 1 mile below present gage was used.

Channel and control.—Gravel; fairly permanent.

Discharge measurements.—Made from footbridge, 400 feet above gage, or by wading; at old station, made from cable.

Winter flow.—Discharge relation affected by ice for periods during winter.

Diversions.—No important diversions above station.

Cooperation.—Since December 31, 1910, records have been furnished by the United States Reclamation Service.

Discharge measurements of Spanish Fork at Thistle, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Oct. 8	W. J. Lamon	2.61	41.3	May 6	E. Borgquist	3.40	291.07
Nov. 18	.....do	2.62	41.6	13	.....do	3.90	421.06
21	.....do	2.38	38.8	21	.....do	3.40	264.58
Dec. 10	.....do	[a] 2.50	34.4	June 6	.....do	2.82	119.09
19	.....do	2.40	41.6	July 9	A. J. Gerner	2.45	61.51
Mar. 17	K. W. Roberts	2.50	59.57	13	.....do	2.41	54.67
22	.....do	2.53	60.14	Aug. 6	.....do	2.33	50.34
Apr. 12	.....do	2.85	159.79	19	.....do	2.16	34.85
23	E. Borgquist	3.15	243.42	Sept. 6	.....do	2.34	50.14

[a] Discharge relation affected by ice.

NOTE.—Measurements before Nov. 21, 1912, refer to old gage.

Daily gage height, in feet, of Spanish Fork at Thistle, Utah, for the year ending Sept. 30, 1913.

[E. T. Cluff, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	2.70	.....	.....	.....	2.30	3.50	3.40	.....	.....	2.30	2.30
2	2.60	2.70	2.35	.....	2.34	.....	.....	.....	3.15	2.55	2.30	.....
3	.....	.....	.....	.....	.....	.....	3.30	3.30	.....	.....	.....	3.00
4	2.60	2.70	2.35	.....	.....	.....	.....	.....	3.05	2.55	2.30	.....
5	2.60	.....	.....	.....	.....	2.40	3.30	3.50	.....	.....	.....	.....
6	.....	2.65	2.35	.....	.....	2.40	.....	.....	2.95	2.50	2.32	2.34
7	2.62	.....	2.35	.....	.....	2.45	3.00	3.60	2.94	2.48	.....	.....
8	2.61	2.65	.....	.....	2.40	.....	2.70	.....	.....	.....	2.30	2.30
9	2.62	2.65	.....	.....	.....	.....	2.70	3.75	2.85	2.45	2.30	.....
10	.....	.....	2.50	.....	.....	2.50	2.70	3.90	.....	.....	.....	.....
11	2.62	2.65	.....	.....	.....	.....	2.70	.....	2.85	2.43	.....	2.25
12	2.62	.....	.....	.....	2.35	2.60	2.90	3.90	.....	2.43	2.30	.....
13	.....	2.65	.....	.....	.....	.....	.....	.....	2.75	.....	2.30	.....
14	2.62	.....	.....	.....	.....	2.45	3.00	3.90	2.75	2.40	.....	.....
15	.....	2.65	.....	.....	2.35	2.45	.....	.....	.....	.....	2.27	2.30
16	2.62	2.65	.....	.....	.....	.....	3.00	3.90	2.65	2.40	2.26	.....
17	.....	.....	.....	.....	.....	2.55	.....	3.85	.....	.....	.....	2.30
18	2.62	2.64	.....	.....	2.35	2.55	3.05	.....	2.70	2.40	2.20	.....
19	2.62	.....	2.40	.....	.....	2.55	3.10	3.65	.....	2.42	.....	2.30
20	.....	2.65	.....	2.60	.....	2.55	3.10	.....	2.65	.....	2.16	2.30
21	2.62	2.38	.....	.....	.....	2.55	.....	3.50	2.55	2.40	.....	.....
22	.....	2.35	.....	.....	2.30	2.55	3.10	.....	.....	2.39	2.20	3.00
23	2.62	2.35	.....	.....	.....	.....	.....	3.38	2.60	.....	2.20	.....
24	.....	.....	.....	2.60	2.30	2.45	3.10	3.38	.....	.....	.....	2.35
25	2.62	2.35	.....	.....	.....	.....	.....	.....	2.60	2.38	2.30	.....
26	2.62	.....	.....	.....	.....	2.55	3.05	3.35	2.70	2.35	.....	.....
27	.....	2.30	.....	2.70	.....	2.60	.....	.....	.....	.....	.....	2.30
28	2.65	.....	.....	.....	.....	2.70	3.05	3.35	2.70	2.35	.....	.....
29	.....	2.30	.....	.....	.....	2.75	3.50	.....	.....	.....	2.25	.....
30	2.70	2.30	.....	.....	.....	3.30	3.50	3.25	.....	2.30	2.38	2.30
31	.....	.....	.....	2.30	.....	3.00	.....	3.25	.....	.....	.....	.....

NOTE.—Before Nov. 21, 1912, gage heights refer to old gage. Ice affected discharge relation through parts of December and January.

Daily discharge, in second-feet, of Spanish Fork at Thistle, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	38.3	49.0	31.0	41.0	43.4	41.0	301.3	301.3	209.0	80.0	44.6	45.8
2	38.3	49.0	34.5	41.0	45.8	44.0	250.0	285.0	195.5	74.5	44.6	50.0
3	38.3	49.0	34.5	41.0	46.8	47.0	250.0	269.6	180.5	74.5	44.6	123.0
4	38.3	49.0	34.5	41.0	47.8	50.0	250.0	269.6	170.5	74.5	44.6	50.0
5	38.3	46.5	34.5	41.0	49.8	53.0	258.4	323.0	159.0	70.7	46.4	49.0
6	39.2	44.0	34.5	41.0	51.8	53.0	182.0	335.0	147.5	67.0	48.2	49.4
7	40.1	44.0	34.5	41.0	52.9	60.0	182.0	347.8	145.2	64.2	47.0	47.0
8	40.1	44.0	34.5	41.0	53.0	62.3	118.0	369.0	135.5	62.1	45.8	44.6
9	40 1	44.0	34.4	41.0	51.5	64.6	120.0	390.3	126.0	60.0	47.0	41.5
10	40.1	44.0	34.4	41.0	50.0	67.0	122.0	433.6	126.0	58.6	47.4	40.9
11	40.1	44.0	31.0	41.0	48.5	73.7	126.0	428.0	126.0	57.2	47.8	39.0
12	40.1	44.0	32.0	41.0	47.0	80.5	170.5	423.4	116.5	57.2	48.2	40.1
13	40.1	44.0	33.0	41.0	47.0	68.8	170.5	421.7	107.0	55.1	48.2	41.2
14	40.1	44.0	38.0	41.0	47.0	57.2	198.2	420.0	107.0	53.0	46.4	42.3
15	40.1	44.0	40.0	41.0	47.0	55.8	198.2	420.0	98.5	53.7	44.6	43.4
16	40.1	44.0	41.0	41.0	47.0	61.4	198.2	420.0	90.0	54.4	43.4	43.4
17	40.1	43.5	41.0	41.0	47.0	67.0	198.2	403.5	94.0	54.4	40.7	43.4
18	40.1	43.0	41.0	41.0	47.0	65.6	214.4	371.0	98.0	54.4	38.0	43.4
19	40.1	43.5	41.6	41.0	45.5	65.6	227.9	338.5	94.0	57.2	36.0	43.4
20	40.1	44.0	39.0	41.0	44.0	64.2	230.6	292.0	90.0	55.8	34.0	43.4
21	40.1	38.8	35.0	41.0	42.5	64.2	230.6	292.0	74.5	54.4	36.0	44.0
22	40.1	34.5	32.0	41.0	41.0	62.8	230.6	258.4	78.2	54.4	38.0	163.6
23	40.1	34.5	34.0	41.0	41.0	57.9	230.6	258.4	82.0	54.0	37.0	50.0
24	40.1	34.5	34.0	41.0	41.0	53.0	230.6	258.4	82.0	53.5	42.6	49.4
25	40.1	34.5	25.0	41.0	41.0	61.5	214.4	254.2	82.0	53.0	48.2	47.4
26	40.1	31.0	33.0	41.0	41.0	70.0	214.4	250.0	98.0	49.4	46.4	45.4
27	41.6	27.5	31.0	41.0	41.0	79.0	213.0	250.0	98.0	49.4	44.6	43.4
28	43.0	27.5	30.0	41.0	41.0	96.4	211.7	250.0	98.0	49.4	42.8	43.4
29	45.5	27.5	28.0	41.0	.....	107.0	235.4	236.5	92.0	46.4	41.0	43.4
30	48.0	27.5	33.0	41.0	.....	238.8	232.3	222.5	86.0	43.4	57.2	43.4
31	48.5	.....	34.0	41.0	.....	163.6	.....	222.5	.....	44.0	51.5	.....

NOTE.—Estimate of discharge for the last 25 days in December is based on two current-meter measurements and comparison with records of Spanish Fork at the mouth of the canyon. For other days for which gage heights are missing, discharge estimated by interpolation or comparison with other records.

Monthly discharge of Spanish Fork at Thistle, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
October	48.5	38.3	40.6	2,497.8
November	49.0	27.5	40.6	2,416.5
December	41.6	25.0	34.5	2,118.2
January	41.0	41.0	41.0	2,521
February	53.0	41.0	46.0	2,555
March	238.8	41.0	72.8	4,476
April	335.4	118.0	213.7	12,716
May	433.6	222.5	323.1	19,866
June	209.0	74.8	116.2	6,914
July	80.0	43.4	57.7	3,548
August	57.2	34.0	44.3	2,724
September	163.6	39.0	51.3	3,053
The year	433.6	25.0	90.4	65,400

NOTE.—Yearly values computed by engineers of the United States Geological Survey.

SPANISH FORK NEAR SPANISH FORK, UTAH.

Location.—In sec. 2, T. 9 S., R. 3 E., about ½ mile below United States Reclamation Service diversion dam, about ½ mile above intake of East Bench canal and about 5 miles southeast of Spanish Fork.

Records available.—May 23, 1900, to November 30, 1901; March 26, 1903, to September 30, 1913.

Drainage area.—670 square miles.

Gage.—Inclined staff on right bank, one-half mile below United States Reclamation Service diversion dam, January 1 to September 30, 1913. Original staff gage about 600 feet above East Bench canal heading, May 23, 1900, to November 30, 1901, and March 26, 1903, to July 31, 1912; a temporary gage one-fourth mile above original gage, August 1 to December 31, 1912.

Channel and control.—Sand and gravel; shifting.

Discharge measurements.—Made from a cable or by wading.

Winter flow.—Very little ice forms at this station.

Diversions.—Above all diversions except the United States Reclamation Service power canal, which diverts about half a mile above the station. Part of the water diverted by this canal is returned to the river after passing the power house, the remainder is turned into the Salem canal and used for irrigation.

Cooperation.—Since December 31, 1910, records have been furnished by the United States Reclamation Service.

Discharge measurements of Spanish Fork near Spanish Fork, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Oct. 8	W. J. Lamon	a 1.03	13.6	May 21	E. Borgquist	6.45	319.50
28	do	a 1.47	41.0	31	do	5.65	225.54
Dec. 2	do	a .81	6.2	June 7	A. J. Gerner	5.01	133.29
Feb. 1	do	3.10	10.40	15	do	4.52	97.51
Mar. 21	K. W. Robarts	a 3.67	29.21	18	A. B. Larson	4.55	102.69
29	do	a 3.46	22.35	July 5	A. J. Gerner	4.07	65.58
Apr. 21	E. Borgquist	6.03	254.91	25	A. B. Larson	a 3.69	34.47
29	do	7.04	397.00	Aug. 18	A. J. Gerner	a 3.06	6.51
May 8	do	7.04	398.48	28	do	a 3.57	24.69
11	do	7.30	467.72				

a Low-water gage.

Daily gage height, in feet, of Spanish Fork near Spanish Fork, Utah, for the year ending Sept. 30, 1913.

[George H. Lewis, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.09	1.12	1.02	.....	3.08	.....	6.35	6.86	5.47	4.42	3.55	3.72
2	1.04	1.12	.92	.....	3.05	3.18	6.05	6.68	5.39	4.36	3.41	3.81
3	1.00	1.12	.72	.....	.....	3.30	5.40	6.44	5.30	4.18	3.57	4.48
4	1.03	1.16	.86	.....	3.08	3.38	4.98	6.40	5.23	4.10	3.56	3.80
5	1.14	1.16	.61	.....	3.13	3.56	5.39	6.35	5.04	4.04	3.79	3.63
6	1.07	1.12	.....	.....	3.23	3.78	5.10	6.48	4.96	4.02	3.55	3.57
7	1.03	1.12	.....	.....	3.42	3.74	4.76	6.73	4.90	4.01	3.46	3.79
8	1.02	1.12	.....	.....	3.30	3.83	4.77	6.92	4.75	3.97	3.50	3.91
9	1.04	1.12	.....	.....	3.26	3.85	4.83	7.01	4.77	3.91	3.43	3.60
10	1.10	1.14	.....	.....	3.26	3.99	5.02	7.14	4.70	3.82	3.55	3.62
11	1.05	1.40	.....	.....	3.23	4.15	5.11	7.31	4.72	3.82	3.47	3.59
12	1.04	1.17	.....	.....	.....	4.26	5.61	7.38	4.75	3.82	3.52	3.64
13	1.02	1.06	.....	.....	.....	3.95	5.74	7.38	4.67	3.80	3.46	3.56
14	1.00	1.06	.....	.....	.....	3.72	5.95	7.22	4.52	3.76	3.34	4.06
15	.98	1.04	.....	.....	3.16	.....	6.06	6.94	4.53	3.71	3.22	3.56
16	1.00	1.06	.....	.....	3.21	.....	5.89	6.79	4.48	3.68	3.20	3.50
17	1.00	1.08	.....	.....	3.36	3.62	6.10	6.72	4.49	3.64	3.06	3.62
18	1.00	.97	.....	.....	3.40	3.95	6.60	6.79	4.57	3.74	3.02	3.61
19	.96	.94	.....	.....	3.33	4.15	6.32	6.80	4.61	3.93	3.30	3.55
20	1.04	1.09	.....	.....	3.17	3.98	5.99	6.64	4.47	4.22	3.25	3.56
21	1.02	.92	.....	.....	.....	3.72	6.06	6.39	4 40	3.80	3.33	3.62
22	1.00	.83	.....	.....	.....	3.70	6.36	6.34	4.30	3.72	3.30	4.78
23	1.01	.98	.....	.....	3.14	3.74	6.33	6.26	4.22	4.73	3.35	3.90
24	1.00	.97	.....	.....	3.25	3.72	6.11	6.30	4.20	3.97	3.72	3.67
25	1.00	.82	.....	.....	3.27	3.44	5.96	6.35	4.23	3.71	3.90	3.62
26	1.02	1.06	.....	.....	3.29	3.33	6.09	6.25	4.51	3.59	3.75	3.61
27	1.45	1.28	.....	.....	3.20	3.36	6.49	6.26	4.60	3.57	3.62	3.84
28	1.45	1.32	.....	.....	3.15	3.65	6.78	6.12	4.56	3.58	3.54	3.74
29	1.19	1.00	.....	.....	.....	4.08	6.95	5.92	4.55	3.50	3.53	3.56
30	1.28	1.09	.....	.....	.....	5.38	6.93	5.73	4.45	3.55	3.83	3.70
31	1.16	.....	.....	.....	.....	3.93	.....	5.65	.....	3.58	3.77	.....

Daily discharge, in second-feet, of Spanish Fork near Spanish Fork, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	13.3	17.4	12.9	.....	9.2	8.4	302.3	377.3	189.7	86.7	30.3	39.6
2	13.7	17.4	9.3	.....	8.0	13.2	262.5	349.4	180.9	82.0	22.6	44.6
3	12.0	17.4	4.2	.....	7.4	18.0	182.0	314.6	171.0	68.6	31.4	91.8
4	13.3	19.5	7.5	.....	9.2	21.2	137.0	309.0	163.3	63.0	30.8	44.0
5	18.4	19.5	a2.4	.....	11.2	30.8	180.9	302.3	143.2	58.8	43.4	34.7
6	15.0	17.4	0	.....	15.2	42.9	149.5	320.2	135.0	57.4	30.3	31.4
7	13.3	17.4	0	.....	23.2	40.7	115.6	357.2	134.0	56.7	25.3	43.4
8	12.9	17.4	0	.....	18.0	45.8	116.5	386.6	114.8	54.2	27.5	50.6
9	13.7	17.4	0	.....	16.4	47.0	122.0	400.6	116.5	50.6	23.7	33.0
10	16.3	18.4	0	.....	16.4	55.4	141.1	320.7	110.5	45.2	30.3	34.2
11	14.2	37.2	0	.....	15.2	66.5	150.6	447.6	112.2	45.2	25.9	32.4
12	13.7	20.0	0	.....	5.0	74.5	205.3	458.8	114.8	45.2	28.6	35.2
13	12.9	14.6	0	.....	3.6	53.0	222.2	458.8	107.9	44.0	25.3	30.8
14	12.0	14.6	5.0	.....	4.6	39.6	249.5	433.2	95.2	41.8	19.6	60.2
15	11.3	13.7	a5.0	.....	12.4	29.8	263.8	389.7	96.1	39.1	14.8	30.8
16	12.0	14.6	a5.0	.....	14.4	12.4	241.7	366.4	91.8	37.4	14.0	27.5
17	12.0	15.4	5.0	.....	20.4	34.1	269.0	355.6	92.6	35.2	8.4	34.2
18	12.0	11.0	5.0	.....	22.0	53.0	337.0	366.4	99.4	40.7	6.8	33.6
19	10.6	10.0	0	.....	19.2	66.5	298.2	368.0	102.9	51.8	18.0	30.3
20	13.7	15.9	0	.....	12.8	54.8	254.7	343.4	91.0	71.5	16.0	30.8
21	12.9	9.3	0	.....	4.0	39.6	263.8	307.6	85.0	44.0	19.2	34.1
22	12.0	6.6	0	.....	4.0	38.5	303.6	300.9	77.5	39.6	18.0	117.3
23	12.4	11.3	0	.....	11.6	40.7	299.6	290.1	71.5	113.0	20.0	50.0
24	12.0	11.0	0	.....	16.0	39.6	270.3	295.5	70.0	54.2	39.6	36.9
25	12.0	6.4	0	.....	16.8	24.2	250.8	302.3	72.3	39.1	50.0	34.2
26	12.9	14.6	0	.....	17.6	19.2	267.7	288.8	94.4	32.4	41.3	33.6
27	39.3	26.6	0	.....	14.0	20.4	321.6	290.1	102.0	31.4	34.2	46.4
28	39.3	29.4	0	.....	12.0	35.8	364.9	271.6	98.6	31.9	29.7	40.7
29	21.1	12.0	0	.....	.....	61.6	391.3	245.6	97.8	27.5	29.2	32.4
30	26.6	15.9	0	.....	.....	179.8	388.2	220.9	89.3	30.3	45.8	38.5
31	19.5	.....	0	.....	.....	51.8	.....	210.5	.....	31.9	42.4	.....

a Only for one-half day.

NOTE.—Discharge Dec. 14-18, estimated from current meter measurement. All water diverted to power canal during January. To obtain total flow from drainage area, add above discharge to discharge of the United States Reclamation Service power canal.

Monthly discharge of Spanish Fork near Spanish Fork, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet.)
	Maximum.	Minimum.	Mean.	
October	39.3	10.6	15.7	964.6
November	35.2	6.4	16.2	966.6
December	12.9	.0	1.7	104.3
January	.0	.0	.0	0.0
February	23.2	3.6	12.9	716
March	179.8	8.4	43.8	2,693
April	391.3	115.6	244.1	14,525
May	458.8	210.5	337.1	20,727
June	189.7	70.0	110.7	6,587
July	113.0	27.5	50.0	3,074
August	50.0	6.8	27.2	1,672
September	117.3	27.5	41.9	2,493
The year	458.8	0.0	75.3	54,500

NOTE.—Yearly values computed by engineers of the United States Geological Survey.

SPANISH FORK AT LAKE SHORE, UTAH.

Location.—About one-fourth mile downstream from the wagon bridge on the road from Spanish Fork to Lake Shore, 3 miles west of Spanish Fork, 1 mile east of Lake Shore, and 3 miles above the mouth. Below all tributaries or diversions.

Records available.—December 10, 1903, to July 10, 1907; March 10, 1909, to September 30, 1913.

Drainage area.—700 square miles.

Gage.—Vertical staff; datum unchanged since March 10, 1909. The gage used from 1903 to 1907 was located half a mile farther upstream.

Channel and control.—Gravel; fairly permanent.

Discharge measurements.—Made from cable or by wading.

Diversions.—During the irrigation season practically the entire flow of the stream is diverted above the station; during such periods only the waste and return waters pass the gage.

Winter flow.—Ice forms at the station for short periods during very cold weather.

Cooperation.—Records since December 31, 1910, have been furnished by the United States Reclamation Service.

Discharge measurements of Spanish Fork at Lake Shore, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 11	W. J. Lamon	3.95	123.0	Apr. 14	E. Borgquist	6.71	303.31
Dec. 12	do	2.82	56.4	30	do	8.29	413.99
Jan. 24	do	3.66	103.15	May 26	do	2.02	19.97
Feb. 22	do	3.06	68.47	June 10	A. J. Gerner	1.54	2.27
Mar. 10	K. W. Robarts	4.12	132.34	Aug. 11	do	1.42	1.07
Apr. 4	do	5.61	218.89				

Daily gage height, in feet, of Spanish Fork at Lake Shore, Utah, for the year ending Sept. 30, 1913.

[George J. Hansen, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	3.30	.....	3.70	.....	.....	12.15	7.85	1.60	.....	1.42	1.40
2	1.28	.....	3.00	.....	.....	.....	12.60	7.30	1.60	1.53	.....	.....
3	.....	.....	.....	3.60	3.20	3.60	8.25	6.55	.....	.....	.....	1.40
4	1.30	3.50	2.95	.....	.....	.....	6.10	6.00	1.60	1.53	1.42	.....
5	.....	.....	.....	.....	3.30	3.90	7.05	5.95	.....	.....	.....	1.40
6	.....	3.40	2.40	3.90	.....	.....	6.40	6.01	1.55	.....	1.50	.....
7	1.30	.....	.....	.....	3.45	4.00	5.65	6.50	.....	1.52	.....	.....
8	.....	3.40	.....	4.25	.....	.....	5.50	5.65	.....	.....	1.45	1.40
9	1.30	.....	2.55	.....	.....	.....	5.60	6.30	1.53	1.52	.....	.....
10	.....	.....	.....	4.25	3.50	4.50	5.80	5.75	.....	.....	.....	1.40
11	1.30	3.90	2.70	.....	.....	.....	5.30	5.75	1.53	1.50	1.42	.....
12	.....	.....	.....	.....	3.15	4.52	6.35	5.95	.....	.....	.....	1.40
13	.....	3.40	2.90	3.90	.....	.....	7.25	5.90	1.53	.....	1.42	.....
14	1.30	.....	.....	.....	3.50	4.05	8.00	5.85	.....	1.50	.....	.....
15	.....	3.30	.....	3.75	.....	.....	8.15	4.95	.....	.....	1.42	1.40
16	1.30	.....	3.05	.....	.....	.....	7.60	4.60	1.53	1.50	.....	.....
17	.....	.....	.....	3.60	3.65	4.15	7.80	4.00	.....	.....	.....	1.40
18	1.30	3.25	3.10	.....	.....	.....	8.10	3.60	1.53	2.10	1.42	.....
19	.....	.....	.....	.....	3.50	4.45	8.40	3.55	.....	.....	.....	1.40
20	.....	3.30	3.05	3.65	.....	.....	7.35	3.50	1.53	.....	1.42	.....
21	1.30	.....	.....	.....	3.35	4.10	7.60	3.50	.....	1.60	.....	.....
22	.....	3.10	.....	3.70	.....	.....	7.95	3.20	.....	.....	1.42	1.40
23	1.30	.....	3.15	.....	.....	.....	8.05	2.80	1.53	1.48	.....	.....
24	.....	.....	.....	3.70	3.30	4.40	7.35	2.10	.....	.....	.....	1.40
25	1.65	3.15	3.30	.....	.....	.....	7.10	2.10	1.53	1.48	1.42	.....
26	.....	.....	.....	.....	3.40	4.25	7.25	2.05	.....	.....	.....	1.40
27	.....	3.10	3.40	3.35	.....	.....	7.80	1.85	1.53	.....	1.40	.....
28	1.70	.....	.....	.....	3.35	4.05	8.50	2.25	.....	1.45	.....	.....
29	.....	3.10	.....	3.30	.....	.....	8.90	1.70	.....	.....	1.40	1.45
30	3.60	.....	3.75	.....	.....	7.50	8.35	1.65	1.53	1.45	.....	.....
31	.....	.....	.....	3.25	.....	12.00	.....	1.60	.....	.....	.....	.....

Daily discharge, in second-feet, of Spanish Fork at Lake Shore, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.5	81.0	67.6	104.0	78.6	89.3	885.0	380.3	6.0	3.9	1.4	1.0
2	2.6	84.3	66.0	101.3	77.8	93.9	945.0	341.0	6.0	3.9	1.4	1.0
3	2.8	87.6	64.7	98.5	77.0	98.5	410.4	288.5	6.0	3.9	1.4	1.0
4	2.9	91.0	63.5	104.0	79.5	106.8	257.0	250.0	6.0	3.9	1.4	1.0
5	2.9	88.5	51.8	109.5	82.0	115.0	323.5	246.8	5.2	3.8	2.2	1.0
6	2.9	86.0	40.0	115.0	96.1	118.0	278.0	250.7	4.5	3.7	3.0	1.0
7	2.9	86.0	42.0	125.6	90.3	121.0	227.3	285.0	4.3	3.6	2.5	1.0
8	2.9	86.0	44.0	136.2	91.2	131.5	217.5	227.3	4.1	3.6	2.0	1.0
9	2.9	95.3	46.0	136.2	92.1	142.0	224.0	271.0	3.9	3.6	1.8	1.0
10	2.9	104.6	49.0	136.2	93.0	152.5	237.0	233.8	3.9	3.3	1.6	1.0
11	2.9	114.0	52.0	129.1	83.7	153.1	204.5	233.8	3.9	3.0	1.4	1.0
12	2.9	100.0	56.5	122.0	74.5	153.8	274.5	246.8	3.9	3.0	1.4	1.0
13	2.9	86.0	61.0	115.0	83.8	138.9	337.5	243.5	3.9	3.0	1.4	1.0
14	2.9	83.5	63.5	110.9	93.0	124.0	391.5	240.3	3.9	3.0	1.4	1.0
15	2.9	81.0	66.0	106.7	95.8	126.0	402.7	181.8	3.9	3.0	1.4	1.0
16	2.9	80.1	68.5	102.6	98.6	128.0	362.0	159.0	3.9	3.0	1.4	1.0
17	2.9	79.3	69.8	98.5	101.3	130.0	376.5	121.0	3.9	14.5	1.4	1.0
18	2.9	78.5	71.0	99.4	97.1	139.7	399.0	98.5	3.9	26.0	1.4	1.0
19	2.9	79.7	69.7	100.3	93.0	149.3	421.5	95.8	3.9	19.3	1.4	1.0
20	2.9	81.0	68.5	101.3	88.9	138.1	344.5	93.0	3.9	12.7	1.4	1.0
21	2.9	76.0	70.1	102.7	84.7	127.0	362.0	93.0	3.9	6.0	1.4	1.0
22	2.9	71.0	71.8	104.0	83.8	133.3	387.8	77.0	3.9	4.3	1.4	1.0
23	2.9	71.8	73.5	104.0	82.9	139.6	395.3	57.0	3.9	2.6	1.4	1.0
24	7.2	72.6	77.2	104.0	82.0	146.0	344.5	26.0	3.9	2.6	1.4	1.0
25	11.6	73.5	81.0	97.5	84.8	141.1	327.0	26.0	3.9	2.6	1.4	1.0
26	12.1	72.2	83.5	91.1	87.5	136.2	337.5	24.0	3.9	2.4	1.2	1.0
27	12.6	71.0	86.0	84.7	86.1	130.1	376.5	16.0	3.9	2.2	1.0	1.3
28	13.2	71.0	92.3	83.3	84.7	124.0	429.0	32.0	3.9	2.0	1.0	1.6
29	54.6	71.0	98.6	82.0	.....	239.5	535.0	10.0	3.9	2.0	1.0	2.0
30	96.0	69.3	105.0	80.7	.....	355.0	417.8	8.0	3.9	2.0	1.0	1.5
31	88.5	.....	105.0	79.5	.....	875.0	.....	6.0	.....	1.7	1.0	.....

NOTE.—Discharge for periods of no gage heights interpolated or estimated by comparison with records of other stations.

Monthly discharge of Spanish Fork at Lake Shore, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
October	96.0	2.5	11.7	717.4
November	114.0	69.3	82.4	4,904.9
December	105.0	40.0	68.6	4,215.1
January	136.2	79.5	105.3	6,475
February	101.3	77.0	87.3	4,848
March	875.0	89.3	164.4	10,109
April	945.0	204.5	381.0	22,671
May	341.0	8.0	156.8	9,642
June	6.0	3.9	4.3	256
July	26.0	1.7	5.1	314
August	3.0	1.0	1.5	92
September	2.0	1.0	1.1	65
The year	945.0	1.0	88.8	64,300

NOTE.—Yearly values computed by engineers of the United States Geological Survey.

DIAMOND FORK NEAR THISTLE, UTAH.

Location.—About 2½ miles below Thistle and 200 yards above mouth.

Records available.—December 2, 1907, to September 30, 1913.

Drainage area.—157 square miles.

Gage.—Inclined staff at footbridge; datum unchanged.

Channel and control.—Banks high and not liable to overflow except in extreme floods; bed, gravel, and shifts frequently.

Discharge measurements.—Made from bridge or by wading.

Winter flow.—Discharge relation affected by ice during winter months but as the discharge is fairly uniform reliable estimates can be made.

Diversions.—No important diversions; records show practically total run-off from the Diamond Fork drainage area.

Cooperation.—Since December 31, 1910, records have been furnished by United States Reclamation Service.

Discharge measurements of Diamond Fork near Thistle, Utah, during the years ending Sept. 30, 1911–1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
1911.		*Feet.*	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Feb. 13	A. B. Purton	2.10	24.2	July 16	W. J. Lamon	2.15	30.6
Apr. 2	J. C. Dort	2.27	53.2	Aug. 7	.....do	2.12	28.6
18	G. H. Canfield	2.22	38.6	Sept. 4	.....do	2.00	19.7
June 11	W. J. Lamon	2.17	30.2				
25	.....do	2.13	31.1	1912–13.			
Aug. 2	.....do	1.95	13.3	Oct. 8	.....do	2.01	20.5
17	.....do	1.98	16.2	Nov. 18	.....do	2.05	24.0
29	.....do	1.93	12.4	Dec. 10	.....do	a 2.06	12.9
Sept. 28	.....do	1.98	15.6	19	.....do	1.90	15.0
				Mar. 17	K. W. Robarts	1.94	24.93
1911–12.				22	.....do	1.92	23.03
Oct. 28	.....do	2.00	15.6	Apr. 12	A. B. Larson	2.52	92.23
Dec. 18	.....do	1.84	9.05	12	K. W. Robarts	2.49	86.34
Jan. 12	.....do	1.88	10.9	23	E. Borgquist	2.87	159.52
19	.....do	2.01	18.4	May 6	.....do	2.80	146.03
30	.....do	2.05	22.2	13	.....do	2.95	171.47
Mar. 1	.....do	1.98	18.9	21	.....do	2.63	125.04
Apr. 8	.....do	2.18	33.3	June 6	.....do	2.28	64.24
May 10	.....do	2.60	80.8	July 11	A. J. Gerner	1.99	33.19
25	.....do	3.07	164	Aug. 6	.....do	1.91	31.06
June 12	.....do	2.54	72.2	21	.....do	1.83	23.23
22	.....do	2.34	48.8	Sept. 6	.....do	1.83	24.84

a Discharge relation affected by ice.

Daily gage height, in feet, of Diamond Fork near Thistle, Utah, for the years ending Sept. 30, 1911–1913.

[E. T. Cluff, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	2.05		2.05		2.10		2.20	2.30		2.00		1.90
2		2.05		1.80		2.20			2.00		2.03	
3	2.05		2.05		1.95		2.20	2.30	2.00	2.05	2.03	
4		2.05		1.90	1.95	2.10	2.30				2.03	1.90
5	2.05	2.05	2.05					2.35	2.00	2.05	2.03	
6				1.90	1.90	2.10	2.30	2.40				1.90
7	2.05	2.05	2.05	1.90				2.40	2.00	2.05	2.01	
8	2.05				1.90	2.30	2.20	2.45		2.05		
9		2.05	2.05			2.40			2.00		2.00	1.90
10	2.05		2.05		1.90	2.40	2.30	2.35	1.95	2.05		
11	2.05	2.05			2.00	2.30			2.17		1.95	1.90
12		2.05	2.05			2.10	2.30	2.40	2.10	2.00	1.98	2.00
13	2.05				2.10			2.50				
14	2.05	2.05	2.05				2.30		2.20	2.00	1.95	2.00
15	2.05			1.90	2.10	2.10	2.30	2.50		2.03		
16		2.05	2.05						2.20		1.95	1.90
17	2.1		2.05	2.00	2.10	2.10	2.35	2.40	2.10	2.00	1.95	
18		2.05			2.10	2.15	2.22			2.00	1.95	1.90
19	2.05	2.05	2.05	2.10			2.35	2.35	2.20	2.05	1.95	
20				2.10	2.10	2.15		2.35				1.90
21	2.05	2.1	2.05	2.10		2.20	2.20		2.10	2.05	1.97	
22					2.00		2.20	2.30		2.05		
23	2.05	2.1	2.05	2.30	2.00	2.20			2.10		1.95	1.95
24			2.05	2.30	2.00	2.30	2.25	2.30	2.10	2.05		
25		2.05		2.40	2.00	2.20			2.13		1.95	1.90
26	2.05	2.05	2.05	2.20			2.30	2.30	2.00	2.04		
27				2.10	2.10	2.10		2.30				2.00
28	2.05	2.05	2.0	2.10	2.10		2.30		2.00	2.04	1.95	2.10
29	2.05			2.00		2.10	2.40	2.20		2.04		2.00
30		2.05	2.0	2.00					2.00		1.90	2.00
31	2.05		1.95	2.10		2.10		2.10		2.03		
1911–12.												
1		2.02				1.99	2.05	2.30	2.85	2.25		
2	2.00				1.83						2.15	2.00
3		2.02			1.88		2.10	2.35	2.90	2.25	2.15	
4	2.00							2.35				2.00
5					1.89	2.00	2.15		2.85	2.25	2.15	
6	1.97	2.10					2.10	2.35		2.20		2.00
7	1.95				1.89	2.19			2.75		2.11	2.00
8		2.10					2.19	2.40	2.70	2.20		
9	2.00				1.90	2.10					2.10	2.00
10					1.90		2.15	2.65	2.20	2.20	2.10	
11	1.98	2.15				2.15		2.60				2.10
12				1.81	2.00		2.20		2.54	2.20	2.05	
13	1.97					2.10	2.20	2.70		2.20		2.05
14	1.95				2.05				2.50		2.05	2.05
15						2.10	2.15	2.70	2.50	2.15		
16	1.96				2.05					2.14	2.07	2.03
17				1.84	2.00	2.05	2.15	2.90	2.50		2.07	
18	2.02		1.84					3.10				2.03
19				1.90	2.00	2.05	2.15		2.40	2.20	2.02	
20	2.02						2.15	3.10		2.20		2.00
21				1.85	2.10				2.40		2.00	2.00
22						2.00	2.20	3.10	2.32	2.20		
23	2.02			1.86	2.05	2.05					2.00	2.00
24					2.05		2.20	3.00	2.30	2.20		
25	2.02			1.86		2.05		3.06				2.00
26					2.10		2.20		2.30	2.20	2.00	
27	2.01			1.87		2.10	2.20	3.00		2.20		2.00
28	2.00				2.05				2.30		2.00	2.00
29				1.87		2.10	2.25	3.00		2.15		
30	2.02			2.03		2.10			2.25		2.00	2.00
31				1.88				2.90		2.25	2.00	

Daily gage height, in feet, of Diamond Fork, near Thistle, Utah, for the years ending Sept. 30, 1911–1913.—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1912–13.												
1		2.01			1.80	1.80	2.70	2.80			1.90	1.90
2	2.00	2.01	2.01		1.80				2.40	2.10	1.90	
3							2.70	2.60				1.86
4	2.00	2.01	2.01						2.35	2.08	1.90	
5	2.00						2.50	2.70		2.08		1.82
6		2.01	2.01			1.90			2.30		1.91	1.83
7	2.02		2.01			1.95	2.50	2.80	2.30	2.03		
8		2.01			2.00						1.90	1.81
9	2.02	2.01				2.00	2.50	2.90	2.28	2.00	1.90	
10							2.30					1.80
11	2.02	2.01				2.00	2.50		2.28	2.00	1.90	
12	2.02				2.00	2.00	2.50	2.95		2.00		1.80
13		2.01							2.28		1.90	1.80
14	2.01					1.95	2.60	2.95	2.28	1.98		
15		2.01			1.90	1.95					1.90	1.80
16	2.01	2.01					2.70	2.95	2.25	2.00	1.90	
17						1.95		2.90				1.80
18	2.01	2.03			1.85	1.95	2.75		2.20	2.00	1.85	
19	2.01		1.90			1.95		2.80		2.00		1.81
20		2.01					2.75		2.20		1.85	1.81
21	2.01					1.95		2.75	2.15			
22		2.01			1.80	1.95	2.75			1.98	1.83	2.15
23	2.01	2.01						2.70	2.10		1.81	
24					1.80	1.95	2.79	2.65		1.97		1.85
25	2.01	2.01							2.10		1.85	
26	2.01					1.95	2.75	2.50		1.97		1.85
27		2.01							2.18	1.96	1.85	1.95
28	2.10					1.98	2.75	2.55	2.15	1.95	1.85	
29		2.01				2.00		2.50			1.85	
30	2.10	2.01					2.75		2.10	1.92	1.85	1.85
31						2.50		2.50				

NOTE.—Gage not read during January, 1913.

Daily discharge, in second-feet, of Diamond Fork, near Thistle, Utah, for the years ending Sept. 30, 1911–1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910–11.												
1	24	24	24	7.8	25.7	31.0	36.2	48.3	21.4	17.0	19.4	11.2
2	24	24	24	7.8	19.6	36.2	36.2	48.3	17.0	19.1	19.4	11.2
3	24	24	24	9.5	13.6	31.0	36.2	48.3	17.0	21.2	19.4	11.2
4	24	24	24	11.2	13.6	25.7	48.3	51.6	17.0	21.2	19.4	11.2
5	24	24	24	11.2	12.4	25.7	48.3	54.8	17.0	21.2	19.4	11.2
6	24	24	24	11.2	11.2	25.7	48.3	61.7	17.0	21.2	18.6	11.2
7	24	24	24	11.2	11.2	37.0	42.2	61.7	17.0	21.2	17.8	11.2
8	24	24	24	11.2	11.2	48.3	36.2	68.7	17.0	21.2	17.4	11.2
9	24	24	24	11.2	11.2	61.7	42.2	61.8	17.0	21.2	17.0	11.2
10	24	24	24	11.2	11.2	61.7	48.3	54.8	13.6	21.2	15.3	11.2
11	24	24	24	11.2	17.0	48.3	48.3	58.2	32.8	19.1	13.6	11.2
12	24	24	24	11.2	21.4	25.7	48.3	61.7	25.7	17.0	15.5	17.0
13	24	24	24	11.2	25.7	25.7	48.3	75.8	31.0	17.0	14.6	17.0
14	24	24	24	11.2	25.7	25.7	48.3	75.8	36.2	17.0	13.6	17.0
15	24	24	24	11.2	25.7	25.7	48.3	75.8	36.2	19.4	13.6	14.1
16	26	24	24	14.1	25.7	25.7	51.6	68.8	36.2	18.2	13.6	11.2
17	28	24	24	17.0	25.7	25.7	54.8	61.7	25.7	17.0	13.6	11.2
18	26	24	24	21.4	25.7	30.6	38.5	58.2	31.0	17.0	13.6	11.2
19	24	24	24	25.7	25.7	30.6	54.8	54.8	36.2	21.2	13.6	11.2
20	24	26	24	25.7	25.7	30.6	45.5	54.8	31.0	21.2	14.2	11.2
21	24	28	24	25.7	21.4	36.2	36.2	51.6	25.7	21.2	14.8	12.0
22	24	28	24	37.0	17.0	36.2	36.2	48.3	25.7	21.2	14.2	12.8
23	24	28	24	48.3	17.0	36.2	39.1	48.3	25.7	21.2	13.6	13.6
24	24	26	24	48.3	17.0	48.3	42.0	48.3	25.7	21.2	13.6	12.4
25	24	24	24	61.7	17.0	36.2	45.2	48.3	28.6	20.8	13.6	11.2
26	24	24	24	36.2	21.4	31.0	48.3	48.3	17.0	20.3	13.6	14.1
27	24	24	22	25.7	25.7	25.7	48.3	48.3	17.0	20.3	13.6	17.0
28	24	24	20	25.7	25.7	25.7	48.3	42.2	17.0	20.3	13.6	25.7
29	24	24	20	90.5		25.7	61.7	36.2	17.0	20.3	12.4	17.0
30	24	24	20	90.5		25.7	55.0	31.0	17.0	19.8	11.2	17.0
31	24		16	25.7		25.7		25.7		19.4	11.2	

Daily discharge, in second-feet, of Diamond Fork, near Thistle, Utah, for the years ending Sept. 30, 1911–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911–12.												
1	17.0	18.6	.....	11.4	13.2	20.4	24.0	44.0	122.0	39.5	35.2	21.0
2	17.0	18.6	.....	11.4	12.2	20.5	25.5	46.7	126.5	39.5	31.0	21.0
3	17.0	18.6	.....	11.4	14.2	20.6	27.0	49.5	131.0	39.5	31.0	21.0
4	17.0	21.0	.....	11.4	14.4	20.8	29.0	49.5	126.5	39.5	31.0	21.0
5	15.9	23.3	.....	11.4	14.6	21.0	31.0	49.5	122.0	39.5	31.0	21.0
6	14.8	25.7	.....	11.4	14.6	27.6	27.0	49.5	113.2	35.0	29.4	21.0
7	13.6	25.7	.....	11.4	14.6	34.2	30.6	52.2	104.5	35.0	27.8	21.0
8	15.3	25.7	.....	11.4	14.8	30.6	34.2	55.0	96.0	35.0	27.4	21.0
9	17.0	27.3	.....	11.4	15.0	27.0	32.6	71.7	65.5	35.0	27.0	21.0
10	16.2	28.9	.....	11.4	15.0	29.0	31.0	88.5	35.0	35.0	27.0	24.0
11	15.5	30.6	.....	11.4	18.0	31.0	33.0	81.0	53.8	35.0	25.5	27.0
12	15.1	.....	.....	11.4	21.0	29.0	35.0	88.5	72.6	35.0	24.0	25.5
13	14.8	.....	.....	11.6	22.5	27.0	35.0	96.0	69.8	35.0	24.0	24.0
14	13.6	.....	.....	11.8	24.0	27.0	33.0	96.0	67.0	33.0	24.0	24.0
15	13.9	.....	.....	12.0	24.0	27.0	31.0	96.0	67.0	31.0	24.6	23.4
16	14.2	.....	.....	12.3	24.0	25.5	31.0	113.5	67.0	30.2	25.2	22.8
17	16.4	.....	.....	12.6	21.0	24.0	31.0	131.0	67.0	31.8	25.2	22.8
18	18.6	.....	12.6	13.8	21.0	24.0	31.0	170.0	61.0	33.4	23.7	22.8
19	18.6	.....	.....	15.0	21.0	24.0	31.0	170.0	55.0	35.0	22.2	21.9
20	18.6	.....	.....	14.0	24.0	23.0	31.0	170.0	55.0	35.0	21.6	21.0
21	18.6	.....	.....	13.0	27.0	22.0	33.0	170.0	55.0	35.0	21.0	21.0
22	18.6	.....	.....	13.2	25.5	21.0	35.0	170.0	46.2	35.0	21.0	21.0
23	18.6	.....	.....	13.4	24.0	24.0	35.0	160.0	45.1	35.0	21.0	21.0
24	18.6	.....	.....	13.4	24.0	24.0	35.0	150.0	44.0	35.0	21.0	21.0
25	18.6	.....	.....	13.4	25.5	24.0	35.0	162.0	44.0	35.0	21.0	21.0
26	18.2	.....	.....	13.6	27.0	25.5	35.0	156.0	44.0	35.0	21.0	21.0
27	17.8	.....	.....	13.8	25.5	27.0	35.0	150.0	44.0	35.0	21.0	21.0
28	17.0	.....	.....	13.8	24.0	27.0	37.2	150.0	44.0	33.0	21.0	21.0
29	17.8	.....	.....	13.8	22.2	27.0	39.5	150.0	41.7	31.0	21.0	21.0
30	18.6	.....	.....	22.8	.....	27.0	41.7	140.5	39.5	35.2	21.0	21.0
31	18.6	.....	.....	14.2	.....	25.5	.....	131.0	.....	39.5	21.0	.....
1912–13.												
1	21.0	21.6	21.6	15.5	16.6	16.6	124.0	144.5	92.0	43.0	29.8	29.8
2	21.0	21.6	21.6	15.5	16.6	17.7	124.0	125.0	83.9	43.0	29.8	28.4
3	21.0	21.6	21.6	15.5	18.7	18.8	124.0	105.5	79.1	42.0	29.8	26.9
4	21.0	21.6	21.6	15.5	20.8	19.9	106.0	105.5	74.4	41.0	29.8	25.5
5	21.0	21.6	21.6	15.5	22.9	21.0	88.6	124.0	70.8	41.0	30.2	24.1
6	21.6	21.6	21.6	15.5	24.9	22.0	88.6	134.0	67.3	38.6	30.6	24.8
7	22.2	21.6	21.6	15.5	26.9	25.5	88.6	144.5	67.3	36.2	30.2	24.1
8	22.2	21.6	18.7	15.5	29.0	27.3	88.6	155.2	65.9	35.0	29.8	23.4
9	22.2	21.6	15.8	15.5	29.0	29.0	88.6	165.0	64.5	33.8	29.8	23.0
10	22.2	21.6	12.9	15.5	29.0	29.0	59.0	134.0	64.5	33.8	29.8	22.7
11	22.2	21.6	12.0	16.0	29.0	29.0	88.6	172.2	64.5	33.8	29.8	22.7
12	22.2	21.6	13.0	16.0	27.3	29.0	88.6	175.8	64.5	33.8	29.4	22.7
13	21.9	21.6	13.0	16.0	25.5	27.3	88.6	175.8	64.5	33.4	29.0	22.0
14	21.6	21.6	15.0	16.0	23.7	25.5	105.5	175.8	64.5	33.0	29.0	22.0
15	21.6	21.6	16.0	16.0	22.0	25.5	105.5	176.8	62.4	34.2	29.0	22.0
16	21.6	21.6	16.0	16.0	21.1	25.5	124.0	177.9	60.4	35.4	29.0	22.0
17	21.6	22.2	16.0	16.0	20.2	25.5	124.0	171.5	57.3	35.4	27.7	22.0
18	21.6	22.8	16.0	16.0	19.3	25.5	134.3	163.3	54.2	35.4	25.5	22.3
19	21.6	22.2	15.0	16.0	18.6	25.5	134.3	154.8	54.2	35.4	25.2	22.7
20	21.6	21.6	15.0	10.0	17.9	25.5	134.3	148.6	54.2	35.1	24.8	22.7
21	21.6	21.6	14.0	29.0	17.2	25.5	134.3	148.6	48.2	34.8	24.1	37.2
22	21.6	21.6	13.0	22.0	16.6	25.5	134.3	143.6	45.6	34.6	23.4	51.8
23	21.6	21.6	13.0	16.0	16.6	25.5	134.3	128.2	43.0	34.2	22.0	38.3
24	21.6	21.6	13.0	16.0	16.6	25.5	142.5	128.2	43.0	33.8	23.4	24.8
25	21.6	21.6	10.0	16.0	16.6	25.5	134.3	114.3	43.0	34.2	24.8	24.8
26	21.6	21.6	13.0	16.0	16.6	25.5	134.3	100.4	47.4	34.6	25.1	24.8
27	24.3	21.6	13.0	16.0	16.6	26.6	134.3	104.8	51.8	33.8	25.5	32.2
28	27.0	21.6	12.0	16.0	16.6	27.6	134.3	109.2	48.2	33.0	25.5	29.5
29	27.0	21.6	11.0	16.0	.....	29.0	134.3	100.4	45.6	31.8	25.5	26.8
30	27.0	21.6	13.0	16.0	.....	58.8	134.3	100.4	43.0	30.6	25.5	24.1
31	24.3	.....	13.0	16.0	.....	88.6	.....	100.4	.....	30.2	27.7	.....

NOTE.—Discharge determined from three fairly well-defined rating curves and by indirect methods for shifting channels. Estimates of discharge for days of no gage heights were made by interpolation or comparison with records of Spanish Fork at the mouth of the canyon.

Monthly discharge of Diamond Fork near Thistle, Utah, for the years ending Sept. 30, 1911–1913.

[Drainage area, 157 square miles.]

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1910–11.				
October	28	24	24.3	1,490
November	28	24	24.5	1,460
December	24	16	23.3	1,430
January	90.5	7.8	25.1	1,540
February	25.7	11.2	19.5	1,080
March	61.7	25.7	33.3	2,050
April	61.7	36.2	45.6	2,710
May	75.8	25.7	54.3	3,340
June	36.2	13.6	23.6	1,400
July	21.2	17.0	19.9	1,220
August	19.4	11.2	15.1	928
September	25.7	11.2	13.2	786
The year	90.5	7.8	26.9	19,400
1911–12.				
October	18.6	13.6	16.8	1,030
November 1–11	30.6	18.6	24.0	524
December				
January	22.8	11.4	12.8	787
February	27.0	12.2	20.3	1,170
March	34.2	20.4	25.4	1,560
April	41.7	24.0	32.5	1,930
May	170	44.0	112	6,890
June	131	39.5	70.8	4,210
July	39.5	30.2	35.2	2,160
August	35.2	21.0	24.8	1,520
September	27.0	21.0	21.9	1,300
1912–13.				
October	27.0	21.0	22.3	1,370
November	22.8	21.6	21.7	1,290
December	21.6	10.0	15.6	959
January	29.0	15.5	16.3	1,002
February	29.0	16.6	21.2	1,177
March	88.6	16.6	28.2	1,734
April	142.5	59.0	115.3	6,861
May	177.9	100.4	139.0	8,547
June	92.0	43.0	59.6	3,546
July	43.0	30.2	35.4	2,177
August	30.6	22.0	27.4	1,685
September	51.8	22.0	26.3	1,565
The year	177.9	10.0	44.1	31,900

NOTE.—Yearly values computed by engineers of the United States Geological Survey.

UNITED STATES RECLAMATION SERVICE POWER CANAL NEAR SPANISH FORK, UTAH.

Location.—At mouth of canyon about half a mile below canal headgates and 5 miles southeast of Spanish Fork.

Records available.—January 1, 1909, to September 30, 1913.

Channel and control.—Concrete-lined canal section.

Winter flow.—Discharge relation at times affected by ice.

Regulation.—Flow controlled by the canal headgates half a mile above.

Cooperation.—All records since December 31, 1910, have been furnished by the United States Reclamation Service.

Discharge measurements of United States Reclamation Service power canal near Spanish Fork, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Oct. 8	W. J. Lamon	2.50	65.1	May 5	E. Borgquist	3.48	92.23
Nov. 7	....do	2.55	68.3	9	....do	3.76	95.10
Dec. 11	....do	2.41	60.6	16	....do	3.55	82.00
Feb. 1	....do	2.48	63.10	27	....do	3.41	79.58
Mar. 12	K. W. Robarts	2.52	66.24	June 7	A. J. Gerner	3.15	68.85
Apr. 3	....do	2.88	89.26	20	....do	3.00	63.48
3	....do	2.89	88.80	July 3	....do	3.11	71.37
17	....do	3.03	82.63	25	....do	3.18	80.20
21	E. Borgquist	3.38	101.23	Aug. 13	....do	2.97	71.78
22	....do	3.29	89.55	28	....do	2.73	59.56
29	....do	3.51	99.61	Sept. 15	....do	2.82	63.78
29	....do	3.53	102.06				

Daily gage height, in feet, of United States Reclamation Service power canal near Spanish Fork, Utah, for the year ending Sept. 30, 1913.

[George H. Lewis, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.44	2.54	2.40	2.32	2.47	2.41	2.95	3.40	3.53	3.09	2.99	2.74
2	2.44	2.53	2.45	2.32	2.44	2.46	2.84	3.38	3.39	3.05	3.03	2.82
3	2.50	2.54	2.42	2.34	2.38	2.56	2.89	3.48	3.26	3.15	2.97	2.99
4	2.51	2.56	2.46	2.46	2.47	2.59	2.80	3.41	3.14	3.08	3.22	2.77
5	2.56	2.56	2.26	2.38	2.40	2.54	3.08	3.46	3.28	3.10	3.14	2.77
6	2.52	2.54	1.84	3.51	2.42	2.54	2.80	3.68	3.20	3.10	3.10	2.78
7	2.51	2.54	2.10	3.40	2.44	2.54	3.05	3.68	3.06	3.07	3.09	2.82
8	2.50	2.54	2.10	3.17	2.46	2.58	3.00	3.71	3.33	3.00	2.97	2.99
9	2.52	2.52	2.22	2.85	2.47	2.53	3.10	3.72	3.17	3.07	2.94	2.85
10	2.54	2.53	2.26	2.54	2.50	2.56	3.05	3.71	3.19	3.18	3.10	2.78
11	2.50	2.68	2.28	2.41	2.47	2.58	3.02	3.76	3.20	3.06	2.95	2.75
12	2.48	2.54	2.32	2.43	2.37	2.58	3.24	3.64	3.22	3.05	2.98	2.68
13	2.50	2.52	2.34	2.38	2.37	2.56	3.08	3.59	3.16	3.07	2.97	2.70
14	2.50	2.52	2.36	2.42	2.38	2.54	3.17	3.60	3.11	3.04	3.00	2.84
15	2.48	2.52	2.42	2.44	2.50	2.65	3.14	3.63	3.10	3.02	3.02	2.81
16	2.48	2.52	2.43	2.47	2.51	2.40	3.06	3.51	3.04	3.00	3.01	2.80
17	2.48	2.52	2.44	2.46	2.53	2.75	3.00	3.72	3.06	3.00	2.96	2.70
18	2.50	2.49	2.44	2.47	2.60	2.73	3.20	3.75	3.16	3.04	2.94	2.69
19	2.48	2.48	2.52	2.48	2.50	2.65	3.07	3.76	3.16	3.03	2.76	2.69
20	2.52	2.60	2.46	2.10	2.47	2.63	3.19	3.57	3.02	3.07	2.77	2.69
21	2.50	2.50	2.38	3.17	2.40	2.65	3.39	3.60	3.00	3.05	2.80	2.66
22	2.50	2.44	2.30	2.85	2.37	2.57	3.34	3.51	3.02	3.14	2.80	3.07
23	2.48	2.44	2.35	2.40	2.47	2.66	3.35	3.71	3.05	3.22	2.80	2.72
24	2.48	2.50	2.35	2.37	2.55	2.66	3.25	3.60	3.10	3.16	2.87	2.85
25	2.48	2.45	2.10	2.45	2.55	2.56	3.23	3.61	3.11	3.15	2.65	2.84
26	2.49	2.37	2.32	2.49	2.56	2.55	3.32	3.54	3.37	3.19	2.65	2.82
27	2.54	2.37	.....	2.40	2.50	2.57	3.51	3.47	3.21	3.18	2.72	2.82
28	2.54	2.42	.....	2.37	2.49	2.59	3.51	3.44	3.19	3.13	2.70	2.74
29	2.55	2.42	2.19	2.40	.....	2.66	3.49	3.22	3.22	3.06	2.70	2.83
30	2.66	2.46	2.32	2.50	.....	2.57	3.52	3.28	3.12	3.04	2.80	2.75
31	2.60	.....	2.34	2.47	.....	2.65	.....	3.32	.....	3.03	2.76	.....

Daily discharge, in second-feet, of United States Reclamation Service power canal near Spanish Fork, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	61.9	67.1	59.7	55.9	64.2	60.8	94.3	90.6	91.3	69.6	69.6	60.8
2	61.9	66.5	62.5	55.9	62.5	63.6	86.2	87.6	82.0	67.1	72.1	65.4
3	65.4	67.1	60.8	57.0	59.1	69.6	89.9	94.3	74.0	73.3	69.0	75.9
4	65.9	68.3	63.0	63.6	64.2	71.4	82.7	88.4	67.1	69.6	85.5	62.5
5	69.0	68.3	52.3	59.1	60.2	68.3	102.9	91.3	76.6	71.4	80.6	62.5
6	66.5	67.1	33.5	66.5	61.3	68.3	79.9	102.9	71.4	71.4	78.6	63.0
7	65.9	67.1	44.6	60.2	62.5	68.3	95.9	98.2	63.6	69.6	77.9	65.4
8	65.4	67.1	44.6	114.2	63.6	70.8	91.3	97.4	80.6	65.4	70.8	75.9
9	66.5	65.9	50.3	89.1	64.2	67.7	98.2	92.1	70.2	69.6	69.6	67.1
10	67.7	66.5	52.3	68.3	65.9	69.6	92.8	91.3	72.1	76.6	79.9	63.0
11	65.4	75.9	53.3	60.8	64.2	70.8	88.4	95.1	72.7	69.6	70.8	61.3
12	64.2	67.1	55.4	61.9	58.6	70.8	103.7	86.2	74.6	69.0	72.7	57.5
13	65.4	65.9	56.4	59.1	58.6	69.6	89.9	83.4	70.8	70.2	72.7	58.6
14	65.4	65.9	57.5	61.3	59.1	68.3	95.9	85.5	67.7	68.3	74.6	66.3
15	63.6	65.9	60.8	62.5	65.9	75.3	92.1	87.6	67.1	67.7	75.9	64.8
16	63.6	66.5	61.9	64.2	66.5	60.2	84.8	79.9	63.6	66.5	75.9	63.6
17	63.6	66.5	62.5	63.6	67.7	82.0	79.9	94.3	65.4	67.1	72.7	58.1
18	64.8	64.8	62.5	64.2	72.1	79.9	92.1	99.0	72.1	69.6	71.4	57.5
19	63.6	64.2	67.1	64.8	65.9	74.6	81.3	101.3	72.1	69.0	60.8	57.5
20	65.9	71.4	63.6	45.1	64.2	72.7	88.4	87.6	63.6	71.4	61.9	57.5
21	64.8	65.4	59.1	114.2	60.2	74.0	102.9	90.6	63.0	70.2	63.6	55.9
22	64.8	61.9	54.9	89.1	58.6	69.0	92.1	84.1	64.8	76.6	63.6	80.6
23	63.6	61.9	57.5	60.2	64.2	74.6	92.1	99.8	66.5	82.7	64.2	59.1
24	63.6	65.4	57.5	58.6	69.0	74.6	84.1	92.1	69.6	78.6	68.3	66.5
25	63.6	62.5	45.1	63.0	69.0	68.3	82.0	93.6	70.2	77.9	55.9	65.9
26	64.2	58.1	55.9	65.4	69.6	67.1	88.4	88.4	88.4	81.3	55.9	64.8
27	67.1	58.1	53.7	60.2	65.9	68.3	102.1	84.1	77.3	80.6	59.7	64.8
28	67.1	60.8	51.6	58.6	65.4	69.6	100.5	82.7	75.9	77.3	58.6	60.2
29	67.7	60.8	49.4	60.2	.....	74.0	98.2	69.0	77.9	72.7	58.6	65.4
30	74.6	63.0	55.9	65.9	.....	68.3	99.8	73.3	71.4	72.1	64.2	60.8
31	70.8	.....	57.0	64.2	.....	73.3	.....	76.6	.....	72.1	61.9	.....

NOTE.—Discharge estimated for days of no gage heights.

Monthly discharge of United States Reclamation Service power canal near Spanish Fork, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
October	74.6	61.9	65.6	4,033.4
November	75.9	58.1	65.4	3,893.6
December	67.1	33.5	55.6	3,416.0
January	114.2	45.1	66.4	4,083
February	72.1	58.6	64.0	3,554
March	82.0	60.2	70.4	4,329
April	103.7	79.9	91.8	5,463
May	102.9	69.0	89.3	5,491
June	91.3	63.0	72.1	4,290
July	82.7	65.4	72.1	4,433
August	85.5	55.9	69.0	4,243
September	80.6	55.9	63.6	3,785
The year	114.2	33.5	70.5	51,000

NOTE.—Yearly values computed by engineers of the United States Geological Survey.

HOBBLE CREEK NEAR SPRINGVILLE, UTAH.

Location.—Four miles southeast of Springville, 1 mile above mouth of canyon, and just below the Springville power plant.

Records available.—March 23, 1904, to September 30, 1913.

Drainage area.—120 square miles.

Gage.—Vertical staff; location and datum unchanged since June 1, 1909.

Discharge measurements.—Made from cable or by wading.

Winter flow.—Practically no ice forms at the station; the winter flow is largely from springs.

Diversions.—Above all irrigation diversions.

Cooperation.—Records since December 31, 1910, are furnished by the United States Reclamation Service.

Discharge measurements of Hobble Creek near Springville, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Dec. 13	W. J. Lamon	3.34	23.0	May 23	E. Borgquist	3.85	58.29
Feb. 7	do	3.30	22.34	28	do	4.10	85.57
Mar. 15	K. W. Robarts	3.36	20.55	June 13	do	3.70	42.76
Apr. 8	do	4.06	76.01	July 19	A. B. Larson	3.40	30.14
18	E. Borgquist	5.55	266.79	Aug. 14	do	3.26	20.02
May 17	do	4.20	98.71	Sept. 4	A. J. Gerner	3.36	24.94

Daily gage height, in feet, of Hobble Creek near Springville, Utah, for the year ending Sept. 30, 1913.

[John S. Groesbeck, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.28						3.45	5.00				3.38
2			3.30	3.30				4.90	4.00	3.45		
3	3.28					3.28	3.80					3.40
4		3.45	3.32	3.28	3.28				3.90		3.30	3.36
5						3.30	4.20	4.35		3.40		
6		3.40	3.30					4.60				
7	3.28			3.20	3.29		4.10		3.80	3.40	3.30	
8						3.32	4.06	4.70				3.30
9	3.30	3.35	3.30	3.30				4.80			3.30	
10					3.29	3.36	4.15	4.75	3.80	3.40		3.30
11	3.30	3.40	3.30	3.30			4.40				3.30	
12						3.38	4.75		3.75	3.35		
13		3.35	3.30	3.30	3.28			4.60				3.28
14						3.32	5.10		3.70		3.27	
15	3.30	3.35		3.30			5.30	4.40				3.27
16				3.30			5.20		3.65		3.27	
17	3.30		3.30		3.30			4.20				3.27
18		3.35				3.36	5.55		3.60	3.40	3.25	
19	3.32						5.40					
20		3.35	3.28	3.30	3.28	3.36		4.10	3.60		3.27	3.30
21	3.33						5.15			3.35		
22						3.38	5.25	4.00			3.27	3.38
23	3.30	3.33	3.28					3.85	3.60	3.55		
24				3.30			5.00	3.80				3.35
25	3.30	3.33			3.27	3.35	4.85				3.28	
26			3.28				4.90	4.00	3.65			3.35
27		3.32		3.28		3.38					3.27	
28	3.52				3.27		5.30		3.80	3.35		
29		3.33				3.40	5.30	4.15				3.38
30	3.55		3.30	3.28						3.30	3.27	
31	3.45							4.20				

Daily discharge, in second-feet, of Hobble Creek near Springville, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	20.0	29.0	21.5	23.0	22.0	21.7	31.0	190.0	83.0	37.5	23.0	27.0
2	20.0	29.0	21.0	23.0	22.0	21.9	43.2	176.5	73.0	31.0	23.0	27.5
3	20.0	29.0	21.5	22.5	22.0	22.0	55.5	154.0	69.0	30.0	23.0	28.0
4	20.0	29.0	22.0	22.0	22.0	22.5	73.8	131.0	64.0	29.0	23.0	26.0
5	20.0	27.5	21.5	20.7	22.1	23.0	92.0	108.5	61.0	28.0	23.0	25.3
6	20.0	26.0	21.0	19.3	22.3	23.5	87.0	138.0	58.0	28.0	23.0	24.6
7	20.0	25.1	21.0	18.0	22.5	24.0	82.0	144.0	55.5	28.0	23.0	23.8
8	20.5	24.3	21.0	20.5	22.5	24.6	78.4	150.5	55.5	28.0	23.0	23.0
9	21.0	23.5	21.0	23.0	22.5	25.3	82.7	163.0	55.5	28.0	23.0	23.0
10	21.0	24.7	21.0	23.0	22.5	26.0	87.0	156.8	55.5	28.0	23.0	23.0
11	21.0	26.0	21.0	23.0	22.3	26.5	114.0	151.0	53.5	26.7	23.0	22.7
12	21.0	24.7	21.0	23.0	22.1	27.0	156.8	144.0	51.5	25.5	22.5	22.3
13	21.0	23.5	21.0	23.0	22.0	25.5	180.1	138.0	49.5	25.9	22.0	22.0
14	21.0	23.5	21.0	23.0	22.2	24.0	203.5	126.0	47.5	26.3	21.5	21.8
15	21.0	23.5	21.0	23.0	22.5	24.5	231.0	114.0	46.0	26.7	21.5	21.5
16	21.0	23.5	21.0	23.0	22.7	25.0	217.0	103.0	44.0	27.1	21.5	21.5
17	21.0	23.5	21.0	23.0	23.0	25.5	242.2	92.0	42.5	27.6	21.0	21.5
18	21.5	23.5	20.6	23.0	22.7	26.0	267.5	89.0	40.5	28.0	20.5	22.0
19	22.0	23.5	20.3	23.0	22.3	26.0	245.0	85.0	40.5	27.2	21.0	22.5
20	22.2	23.5	20.0	23.0	22.0	26.0	237.0	82.0	40.5	26.3	21.5	23.0
21	22.5	23.1	20.0	23.0	21.9	26.5	210.3	77.5	40.5	25.5	21.5	25.0
22	21.8	22.8	20.0	23.0	21.8	27.0	224.0	73.0	40.5	31.4	21.5	27.0
23	21.0	22.5	20.0	23.0	21.7	26.5	207.0	59.8	40.5	37.3	21.6	26.3
24	21.0	22.5	20.0	23.0	21.6	26.0	190.0	55.5	41.7	34.9	21.7	25.5
25	21.0	22.5	20.0	22.7	21.5	25.5	169.8	64.0	42.9	32.5	21.9	25.5
26	21.7	22.2	20.0	22.3	21.5	26.2	176.5	73.0	44.0	30.1	22.0	25.5
27	22.4	22.0	20.2	22.0	21.5	27.0	204.0	78.0	50.0	27.8	21.7	26.0
28	33.2	22.2	20.4	22.0	21.5	27.5	231.0	82.0	55.5	25.5	21.5	26.5
29	34.1	22.5	20.7	22.0	.....	28.0	231.0	87.0	49.5	24.7	21.5	27.0
30	35.0	22.0	21.0	22.0	.....	29.0	211.0	89.5	43.5	23.0	21.5	27.0
31	29.0	.....	21.0	22.0	.....	30.0	.....	92.0	.....	23.0	24.3	.....

NOTE.—Discharge interpolated or estimated for periods of no gage heights.

Monthly discharge of Hobble Creek near Springville, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
October	35.0	20.0	22.5	1,384.3
November	29.0	22.0	24.3	1,448.2
December	22.0	20.0	20.8	1,276.8
January	23.0	18.0	22.3	1,371
February	23.0	21.5	22.1	1,227
March	30.0	21.7	25.5	1,568
April	231.0	31.0	162.0	9,640
May	190.0	55.5	111.8	6,874
June	83.0	40.5	51.2	3,047
July	37.5	23.0	28.3	1,740
August	24.3	20.5	22.2	1,365
September	28.0	21.5	24.4	1,452
The year	231.0	18.0	44.7	32,400

NOTE.—Yearly values computed by engineers of the United States Geological Survey.

MAPLE CREEK NEAR SPRINGVILLE, UTAH.

Location.—In the NW. ¼ sec. 13, T. 8 S., R. 3 E., about half a mile above mouth of Maple Creek Canyon and 4 miles southeast of Springville post office.

Records available.—November 10, 1910, to September 30, 1913.

Drainage area.—Approximately 6,880 acres.

Gage.—Gage marked on inside of rating flume.

Channel and control.—Rectangular wooden rating flume with free fall of 1 foot at downstream end.

Discharge measurements.—By wading or from board across top of flume.

Winter flow.—Creek freezes nearly to bottom at times. Ice does not affect discharge relation.

Diversions.—Above all diversions.

Regulation.—None.

Accuracy.—Records considered fair.

Cooperation.—Gage-height records furnished by the United States Weather Bureau.

The following discharge measurement was made by Lynn Crandall:
July 23, 1913: Gage height, 0.27 foot; discharge, 1.08 second-feet.

Daily gage height, in feet, of Maple Creek near Springville, Utah, for the year ending Sept. 30, 1913.

[Lewis W. Gillilan, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.24	0.23	0.23	0.09	0.09	0.09	0.33	0.66	0.59	0.25	0.23	0.25
2	.24	.23	.23	.09	.09	.09	.35	.62	.54	.23	.22	.25
3	.24	.23	.23	.09	.09	.09	.40	.55	.53	.22	.22	.26
4	.24	.24	.22	.06	.09	.10	.29	.50	.53	.21	.25	.24
5	.30	.24	.16	.06	.09	.10	.29	.44	.64	.20	.24	.24
6	.25	.24	.04	.04	.09	.10	.28	.50	.60	.20	.22	.24
7	.23	.23	.04	.02	.09	.10	.25	.62	.55	.15	.22	.22
8	.23	.26	.04	.02	.09	.10	.25	.78	.54	.20	.22	.22
9	.33	.24	.21	.04	.09	.10	.22	.80	.41	.20	.24	.23
10	.24	.24	.21	.04	.09	.10	.22	.90	.41	.23	.24	.24
11	.22	.25	.21	.06	.09	.10	.24	1.00	.36	.20	.24	.22
12	.22	.24	.21	.07	.09	.10	.24	1.00	.34	.20	.24	.22
13	.22	.24	.21	.07	.09	.10	.28	1.00	.32	.21	.21	.24
14	.21	.24	.21	.08	.12	.10	.30	.80	.29	.25	.24	.27
15	.21	.24	.21	.08	.12	.10	.35	.76	.25	.24	.24	.25
16	.21	.23	.22	.09	.12	.10	.38	.70	.25	.24	.23	.25
17	.21	.23	.03	.09	.12	.10	.44	.68	.23	.24	.23	.24
18	.21	.23	.09	.09	.10	.10	.55	.68	.15	.24	.25	.24
19	.20	.23	.12	.09	.09	.10	.50	.68	.00	.24	.24	.23
20	.30	.23	.02	.09	.09	.12	.50	.68	.12	.22	.24	.24
21	.21	.23	.00	.09	.09	.12	.50	.68	.12	.22	.25	.24
22	.20	.23	.00	.08	.09	.14	.51	.64	.12	.20	.25	.29
23	.21	.23	.02	.08	.09	.14	.52	.68	.18	.27	.25	.29
24	.20	.23	.02	.08	.09	.10	.52	.70	.18	.24	.25	.28
25	.20	.23	.10	.09	.07	.10	.56	.74	.21	.22	.25	.26
26	.20	.23	.12	.09	.07	.10	.60	.80	.28	.22	.25	.24
27	.25	.22	.20	.09	.09	.12	.60	.90	.24	.22	.24	.25
28	.24	.22	.22	.09	.09	.14	.66	.85	.16	.22	.23	.25
29	.24	.22	.22	.09	.....	.14	.66	.72	.31	.22	.23	.25
30	.24	.22	.22	.09	.....	.20	.68	.66	.28	.22	.23	.25
31	.23	.....	.22	.09	.....	.25	.....	.66	.....	.23	.25	.....

Daily discharge, in second-feet, of Maple Creek near Springville, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.8	0.7	0.7	0.1	0.1	0.1	1.6	7.2	5.6	0.9	0.7	0.9
2	.8	.7	.7	.1	.1	.1	1.8	6.3	4.6	.7	.7	.9
3	.8	.7	.7	.1	.1	.1	2.3	4.8	4.4	.7	.7	1.0
4	.8	.8	.7	.06	.1	.1	1.2	3.8	4.4	.6	.9	.8
5	1.3	.8	.3	.06	.1	.1	1.2	2.9	6.8	.5	.8	.8
6	.9	.8	.04	.04	.1	.1	1.1	3.8	5.8	.5	.7	.8
7	.7	.7	.04	.02	.1	.1	.9	6.3	4.8	.3	.7	.7
8	.7	1.0	.04	.02	.1	.1	.9	10	4.6	.5	.7	.7
9	1.6	.8	.6	.04	.1	.1	.7	11	2.4	.5	.8	.7
10	.8	.8	.6	.04	.1	.1	.7	14	2.4	.7	.8	.8
11	.7	.9	.6	.06	.1	.1	.8	17	1.9	.5	.8	.7
12	.7	.8	.6	.07	.1	.1	.8	17	1.7	.5	.8	.7
13	.7	.8	.6	.07	.1	.1	1.1	17	1.5	.6	.6	.8
14	.6	.8	.6	.08	.2	.1	1.3	11	1.2	.9	.8	1.1
15	.6	.8	.6	.08	.2	.1	1.8	9.8	.9	.8	.8	.9
16	.6	.7	.7	.1	.2	.1	2.1	8.2	.9	.8	.7	.9
17	.6	.7	.03	.1	.2	.1	2.9	7.7	.7	.8	.7	.8
18	.6	.7	.1	.1	.1	.1	4.8	7.7	.3	.8	.9	.8
19	.5	.7	.2	.1	.1	.1	3.8	7.7	0	.8	.8	.7
20	1.3	.7	.02	.1	.1	.2	3.8	7.7	.2	.7	.8	.8
21	.6	.7	0	.1	.1	.2	3.8	7.7	.2	.7	.9	.8
22	.5	.7	0	.08	.1	.3	4.0	6.8	.2	.5	.9	1.2
23	.6	.7	.02	.08	.1	.3	4.2	7.7	.4	1.1	.9	1.2
24	.5	.7	.02	.08	.1	.1	4.2	8.2	.4	.8	.9	1.1
25	.5	.7	.1	.1	.07	.1	5.0	9.2	.6	.7	.9	1.0
26	.5	.7	.2	.1	.07	.1	5.8	11	1.1	.7	.9	.8
27	.9	.7	.5	.1	.1	.2	5.8	14	.8	.7	.8	.9
28	.8	.7	.7	.1	.1	.3	7.2	12	.3	.7	.7	.9
29	.8	.7	.7	.1	.....	.3	7.2	8.7	1.4	.7	.7	.9
30	.8	.7	.7	.1	.....	.5	7.7	7.2	1.1	.7	.7	.9
31	.7	.....	.7	.1	.....	.9	.....	7.2	.....	.7	.9	.....

NOTE.—Discharge determined from a fairly well defined rating curve. Zero discharge on June 19 due to an attempt to divert water around several sinks in the creek bed.

Monthly discharge of Maple Creek near Springville, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	1.6	0.5	0.75	46.1	B.
November	1.0	.7	.75	44.6	B.
December	.7	.00	.39	24.0	B.
January	.1	.02	.08	4.9	C.
February	.2	.07	.11	6.1	C.
March	.9	.1	.17	10.5	C.
April	7.7	.7	3.02	180	B.
May	17	2.9	9.05	556	B.
June	6.8	.00	2.05	122	C.
July	1.1	.3	.68	41.8	C.
August	.9	.6	.79	48.6	C.
September	1.2	.7	.87	51.8	C.
The year	17	0.00	1.57	1,140	

PROVO RIVER AT FORKS, UTAH.

Location.—In the SW. ¼ NE. ¼ sec. 26, T. 5 S., R. 3 E., at Forks, 12 miles up Provo Canyon from Provo, on the highway and railroad from Provo to Heber, and about 1½ miles above the dam of the Utah Power & Light Co. About 600 feet above the mouth of South Fork of Provo River, which enters on the left, and about 1 mile below the mouth of North Fork, entering on the right.

Records available.—November 16, 1911, to September 30, 1913. Records have been maintained on the Provo River since 1890. By adding the discharge of the South Fork to that obtained at this station, the total flow of Provo River will be obtained.

Drainage area.—600 square miles.

Gage.—Sloping gage on the left bank, 10 feet upstream from the cable.

Channel and control.—Velocity moderate and uniformly distributed across the section; bed of stream composed of small gravel and likely to shift during medium or high stages. One channel at all stages. Both banks are fairly high and not liable to overflow. The maximum depth of the water at gage height 1 foot is 1.7 feet.

Discharge measurements.—Made from cable and car.

Winter flow.—Ice forms at this station, but ordinarily has no effect on discharge relation.

Diversions.—Some water is used for irrigation in Heber Valley above the station. Station is above all diversions in the vicinity of Provo.

Regulation.—None.

Accuracy.—Records good. Drift that lodges on the bents of the wagon bridge below the gage may at times cause backwater.

Cooperation.—Gage heights and some discharge measurements furnished by the Utah Power & Light Co.

Discharge measurements of Provo River at Forks, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 21	G. H. Russell	1.17	343	June 23	W. R. King	0.96	256
Apr. 1	Leonard Tanner	2.18	738	23	do	.94	247
21	do	2.04	682	July 5	H. L. Stoner	1.10	292
May 29	W. R. King	2.64	933	Aug. 7	do	.88	218
June 3	Lynn Crandall	1.96	645	20	Lynn Crandall	.87	204
19	W. R. King	1.01	292				

Daily gage height, in feet, of Provo River at Forks, Utah, for the year ending Sept. 30, 1913.

[Frank Dusenbery, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.94	1.38	1.14	1.00	0.89	0.89	2.50	2.5	2.00	1.40	0.84	0.92
2	.94	1.30	1.11	.97	.91	.87	2.90	2.4	1.95	1.20	.85	1.00
3	.94	1.35	1.05	.89	.89	.85	2.10	2.2	1.90	1.15	.83	.96
4	.98	1.34	1.15	1.01	.89	1.00	1.75	2.0	1.80	1.10	.89	.96
5	1.08	1.34	1.07	.8	.93	.89	1.85	2.0	1.60	1.10	.90	.98
6	1.08	1.35	.98	.81	.89	.94	1.80	1.95	1.45	1.00	.89	.94
7	1.04	1.32	.93	1.45	.89	.96	1.55	2.1	1.40	.98	.89	.95
8	1.02	1.3	.97	1.0	.94	.98	1.50	2.3	1.30	.95	.89	1.00
9	1.06	1.28	.95	1.1	.89	1.00	1.50	2.5	1.25	.90	.89	.99
10	1.08	1.26	1.05	1.0	.89	1.00	1.50	2.4	1.15	.90	.90	.96
11	1.06	1.40	1.02	1.0	.90	1.00	1.55	2.5	1.10	.89	.89	.98
12	.....	1.30	1.02	.96	.85	1.15	1.70	2.6	1.10	.89	.92	.97
13	1.06	1.24	1.06	.96	.83	1.25	1.80	2.5	1.15	.90	.90	.99
14	1.05	1.23	1.07	1.0	.85	1.10	2.00	2.4	1.05	.89	.86	1.05
15	1.05	1.21	1.09	1.0	.85	.99	2.10	2.1	.99	.89	.86	1.00
16	1.04	1.22	1.13	1.0	.87	.98	1.95	1.9	1.00	.85	.85	1.00
17	1.04	1.18	1.11	.97	.87	1.10	2.00	1.8	.97	.84	.85	1.00
18	1.04	1.18	1.03	.97	.84	1.10	2.30	1.75	1.05	.90	.85	.99
19	1.03	1.18	1.13	.97	.8	1.15	2.40	2.0	1.00	.95	.86	.96
20	1.04	1.18	1.06	1.0	.85	1.10	2.10	2.0	.99	.93	.87	.95
21	1.18	1.18	.97	.98	.85	1.10	2.00	1.8	.96	.93	.87	.94
22	1.10	1.18	.86	1.0	.86	1.05	2.10	1.65	.95	.98	.87	.98
23	1.08	1.15	.84	1.0	.81	1.15	2.10	1.75	.95	1.00	.88	1.00
24	1.08	1.15	.84	1.0	.84	1.05	2.00	2.1	.98	.99	.95	.98
25	1.08	1.15	.94	.88	.86	1.00	1.90	2.4	.98	.99	.91	.97
26	1.10	1.10	.84	.93	.96	1.05	1.90	2.7	1.10	.90	.90	.97
27	1.50	1.12	1.04	.91	.95	1.00	2.00	2.7	1.40	.95	.90	.98
28	1.70	1.12	.96	.93	.92	1.05	2.30	2.6	2.0	.92	.90	.95
29	1.45	1.11	.94	.95	.....	1.15	2.70	2.6	2.1	.90	.90	.94
30	1.43	1.14	1.00	.92	.....	1.60	3.00	2.4	1.6	.89	.90	.91
31	1.48	.....	.97	.88	.....	2.20	.....	2.3	.....	.85	.93	.....

Daily discharge, in second-feet, of Provo River at Forks, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	278	423	342	296	263	263	874	874	660	394	203	222
2	278	396	331	287	269	258	1,090	828	640	324	205	242
3	278	413	312	263	263	252	700	740	620	307	200	232
4	290	410	345	299	263	296	560	660	580	290	215	232
5	322	410	318	238	275	263	600	660	500	290	217	237
6	322	413	290	241	263	278	580	640	447	260	215	227
7	309	403	275	268	263	284	482	700	430	255	215	229
8	302	396	287	296	278	290	464	784	296	247	215	242
9	315	389	281	328	263	296	464	874	379	234	215	239
10	322	382	312	296	263	296	464	828	345	234	217	232
11	315	430	302	296	266	296	482	874	328	232	215	237
12	315	396	302	284	252	345	540	922	328	232	222	234
13	315	376	315	284	246	379	580	874	345	234	217	239
14	312	372	318	296	252	328	660	828	312	232	208	255
15	312	365	325	296	252	293	700	700	293	232	208	242
16	309	269	338	296	258	290	640	620	296	222	205	242
17	309	355	331	287	258	328	660	580	287	217	205	242
18	309	355	306	287	249	328	784	560	312	232	205	239
19	306	355	338	287	238	345	828	660	296	242	208	232
20	309	355	315	296	252	328	700	660	284	237	210	229
21	355	355	287	290	252	328	660	580	266	234	210	227
22	328	355	255	296	255	312	700	520	255	247	210	237
23	322	345	249	296	241	345	700	560	247	250	212	242
24	322	345	249	296	249	312	660	700	255	247	229	237
25	322	345	278	260	255	296	620	828	255	244	220	234
26	328	328	249	275	284	312	620	974	290	222	217	234
27	464	335	309	269	281	296	660	974	394	234	217	237
28	540	335	284	275	272	312	784	922	624	224	217	229
29	447	331	278	281	.....	345	974	922	666	220	217	227
30	440	342	296	272	.....	500	1,160	828	466	217	217	220
31	457	.....	287	260	.....	740	.....	784	.....	295	224	.....

NOTE.—Discharge determined from three fairly well defined rating curves applicable respectively, Oct. 1, 1912, to June 19, 1913, June 23 to July 15, and Aug. 1 to Sept. 30. Indirect methods for shifting channels used June 20–22, July 16–31.

Monthly discharge of Provo River at Forks, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	540	278	337	20,700	A.
November	430	328	373	22,200	A.
December	345	249	300	18,400	B.
January	328	238	284	17,500	B.
February	284	238	260	14,400	B.
March	740	252	327	20,100	A.
April	1,160	464	680	40,500	A.
May	974	520	757	46,500	A.
June	666	247	393	23,400	A.
July	394	205	248	15,200	B.
August	224	200	213	13,100	A.
September	242	220	235	14,000	B.
The year	1,160	200	368	266,000	

SOUTH FORK OF PROVO RIVER AT FORKS, UTAH.

Location.—In the SE. ¼ sec. 26, T. 5 S., R. 3 E., at Forks, and about 12 miles northeast of Provo.

Records available.—October 22, 1911, to September 30, 1913.

Drainage area.—30 square miles.

Gage.—Vertical staff nailed to cottonwood tree about one-fourth mile above confluence with Provo River. Previous to June 15, 1913, a vertical staff on right bank about 1,000 feet below present gage.

Channel and control.—One channel at all stages. Left bank likely to overflow in extreme floods; shifts frequently.

Discharge measurements.—Made by wading.

Winter flow.—Discharge relation not affected by ice.

Accuracy.—Records only fair owing to shifting channel. Effect of backwater, which was noticeable at former gage, has been eliminated at new gage.

Cooperation.—Gage-height records and some discharge measurements furnished by Utah Power & Light Co.

Discharge measurements of South Fork of Provo River at Forks, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 21	G. H. Russell	2.21	33.7	June 23	W. R. King	[a] 2.50	30.6
Apr. 1	Leonard Tanner	2.18	33.5	23	do	[b] 2.10	30.1
21	do	2.30	38.0	July 5	H. L. Stoner	2.53	28.9
May 29	W. R. King	2.35	35.2	Aug. 7	do	2.49	27.6
June 3	Lynn Crandall	[c] 2.53	44.1	20	Lynn Crandall	2.50	27.9

[a] Refers to new gage.
[b] Refers to old gage.
[c] Refers to new gage established June 3; old gage read 2.25 feet.

Daily gage height, in feet, of South Fork of Provo River at Forks, Utah, for the year ending Sept. 30, 1913.

[Frank Dusenberry, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.29	2.28	2.2	2.17	2.15	2.12	2.14	2.35	2.30	2.50	2.55	2.57
2	2.3	2.25	2.2	2.17	2.15	2.10	2.35	2.32	2.30	2.50	2.55	2.57
3	2.3	2.3	2.2	2.17	2.15	2.10	2.20	2.30	2.28	2.49	2.55	2.56
4	2.3	2.28	2.2	2.17	2.15	2.10	2.15	2.24	2.23	2.49	2.50	2.55
5	2.35	2.27	2.2	2.17	2.15	2.10	2.15	2.20	2.32	2.49	2.49	2.58
6	2.3	2.27	2.2	2.22	2.15	2.10	2.16	2.21	2.20	2.50	2.49	2.55
7	2.4	2.27	2.2	2.75	2.15	2.10	2.15	2.22	2.20	2.50	2.49	2.51
8	2.3	2.27	2.2	2.17	2.15	2.10	2.15	2.23	2.20	2.50	2.50	2.51
9	2.32	2.27	2.2	2.17	2.14	2.10	2.15	2.20	2.20	2.50	2.50	2.53
10	2.3	2.25	2.2	2.17	2.13	2.10	2.15	2.20	2.20	2.51	2.50	2.52
11	2.3	2.3	2.2	2.17	2.13	2.10	2.15	2.27	2.20	2.51	2.50	2.52
12	2.3	2.28	2.2	2.17	2.13	2.10	2.18	2.30	2.20	2.51	2.52	2.52
13	2.3	2.25	2.18	2.17	2.14	2.12	2.20	2.32	2.20	2.51	2.52	2.52
14	2.3	2.25	2.2	2.17	2.15	2.10	2.22	2.30	2.15	2.50	2.51	2.54
15	2.3	2.24	2.2	2.17	2.15	2.10	2.24	2.32	2.50	2.50	2.51	2.53
16	2.3	2.23	2.2	2.17	2.14	2.10	2.25	2.25	2.48	2.53	2.51	2.52
17	2.3	2.2	2.2	2.17	2.14	2.10	2.28	2.22	2.50	2.52	2.52	2.51
18	2.3	2.22	2.18	2.17	2.14	2.10	2.35	2.22	2.50	2.51	2.51	2.51
19	2.29	2.22	2.2	2.15	2.14	2.10	2.38	2.30	2.50	2.59	2.51	2.51
20	2.36	2.22	2.18	2.15	2.14	2.10	2.32	2.25	2.50	2.55	2.50	2.51
21	2.35	2.22	2.17	2.15	2.14	2.10	2.30	2.22	2.50	2.55	2.50	2.50
22	2.3	2.22	2.18	2.17	2.14	2.10	2.32	2.20	2.50	2.55	2.50	2.52
23	2.3	2.21	2.17	2.15	2.14	2.10	2.35	2.21	2.50	2.60	2.50	2.51
24	2.3	2.2	2.17	2.15	2.14	2.10	2.34	2.23	2.50	2.56	2.50	2.51
25	2.29	2.2	2.17	2.15	2.14	2.10	2.30	2.27	2.50	2.55	2.50	2.51
26	2.3	2.2	2.17	2.15	2.14	2.10	2.30	2.35	2.50	2.55	2.50	2.51
27	2.35	2.21	2.17	2.15	2.14	2.10	2.30	2.39	2.51	2.55	2.50	2.51
28	2.35	2.2	2.17	2.15	2.10	2.10	2.32	2.40	2.51	2.55	2.50	2.50
29	2.3	2.2	2.17	2.15	.....	2.10	2.35	2.32	2.51	2.55	2.50	2.50
30	2.3	2.22	2.17	2.15	.....	2.10	2.37	2.32	2.50	2.55	2.50	2.50
31	2.3	.....	2.17	2.15	.....	2.12	.....	2.31	.....	2.55	2.50	.....

NOTE.—Gage heights before June 15 refer to old gage.

Daily discharge, in second-feet, of South Fork of Provo River at Forks, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	38	37	34	33	32	31	32	39	40	29	30	31
2	38	36	34	33	32	30	40	37	42	28	30	31
3	38	38	34	33	32	30	34	36	43	28	30	30
4	38	37	34	33	32	30	32	34	43	28	28	30
5	40	37	34	33	32	30	32	32	47	28	28	31
6	38	37	34	35	32	30	33	33	41	28	28	30
7	42	37	34	34	32	30	32	33	40	28	28	28
8	38	37	34	33	32	30	32	33	40	28	28	28
9	39	37	34	33	32	30	32	32	40	28	28	29
10	38	36	34	33	32	30	32	32	39	28	28	29
11	38	38	34	33	32	30	32	34	39	28	28	29
12	38	37	34	33	32	30	33	35	38	28	29	29
13	38	36	33	33	32	31	34	36	38	28	29	29
14	38	36	34	33	32	30	35	35	36	28	28	30
15	38	36	34	33	32	30	36	36	32	28	28	29
16	38	35	34	33	32	30	36	33	31	29	28	29
17	38	34	34	33	32	30	37	32	32	29	29	28
18	38	35	33	33	32	30	40	32	31	28	28	28
19	38	35	34	32	32	30	41	34	31	32	28	28
20	40	35	33	32	32	30	39	32	31	30	28	28
21	40	35	33	32	32	30	38	31	31	30	28	28
22	38	35	33	33	32	30	39	30	31	30	28	29
23	38	34	33	32	32	30	40	30	31	32	28	28
24	38	34	33	32	32	30	39	31	30	30	28	28
25	38	34	33	32	32	30	38	33	30	30	28	28
26	38	34	33	32	32	30	37	35	30	30	28	28
27	40	34	33	32	32	30	37	37	30	30	28	28
28	40	34	33	32	30	30	38	37	30	30	28	28
29	38	34	33	32	.....	30	39	34	30	30	28	28
30	38	35	33	32	.....	30	40	36	29	30	28	28
31	38	.....	33	32	.....	31	.....	38	.....	30	28	.....

NOTE.—Discharge determined from two rating curves, one applicable Oct. 1, 1912, to April 21, 1913, and the other July 5 to Sept. 30, 1913. Methods devised for shifting channels used for April 22 to July 4, 1913.

Monthly discharge of South Fork of Provo River at Forks, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	42	38	38.5	2,370	A.
November	38	34	35.6	2,120	A.
December	34	33	33.5	2,060	B.
January	35	32	32.7	2,010	B.
February	32	30	31.9	1,770	B.
March	31	30	30.1	1,850	B.
April	41	32	36.0	2,140	C.
May	39	30	33.9	2,080	C.
June	47	29	35.2	2,090	C.
July	32	28	29.1	1,790	B.
August	30	28	28.3	1,740	B.
September	31	28	28.8	1,710	B.
The year	47	28	32.8	23,700	

AMERICAN FORK NEAR AMERICAN FORK, UTAH.

Location.—In the NW. ¼ NW. ¼ sec. 30, T. 4 S., R. 3 E., at the ranger station, about 50 feet above mouth of the South Fork, 3 miles above the Utah Power & Light Co.'s American Fork Plant No. 2, 4½ miles above plant No. 1 at mouth of canyon, and 11½ miles from the town of American Fork.

Records available.—February 15, 1912, to September 30, 1913.

Drainage area.—Approximately 43 square miles.

Gage.—Inclined staff on left bank.

Channel and control.—Rocky; permanent except during high floods.

Discharge measurements.—Made by wading.

Winter flow.—Shore ice exists for periods during the winter months, but does not ordinarily affect the discharge relation.

Diversions.—Above all diversions.

Regulation.—None.

Accuracy.—Records rather poor owing to infrequent discharge measurements and fragmentary gage heights during certain periods.

Cooperation.—Gage heights furnished by the United States Forest Service.

The following discharge measurement was made by W. R. King.

June 20, 1913: Gage height, 2.52 feet; discharge, 104 second-feet.

Daily gage height, in feet, of American Fork near American Fork, Utah, for the year ending Sept. 30, 1913.

[John V. Manville, observer.]

Day.	Oct.	Nov.	Dec.	Feb.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.92								2.10	1.90
2	1.94		1.92				2.90		2.10	3.30
3			1.92				2.94		2.08	
4	2.10			1.84		2.6	2.90		2.06	1.94
5				1.84		2.62	2.88		2.06	
6						2.7	2.86		2.04	1.89
7							2.80		2.02	
8									2.02	1.98
9	2.0				2.0		2.76		2.00	
10	2.0						2.70		2.00	1.96
11	1.98							2.28		1.90
12	1.98	1.98								1.88
13		1.98				2.8	2.46	2.26	1.98	
14	1.98	1.98					2.46			
15		1.96					2.70			
16	1.98					2.64				
17	1.98								1.96	
18	1.96									
19							2.50			
20							2.52		1.94	
21										
22	1.96							2.60		
23	1.96							2.20		
24						2.86	2.44		1.92	
25	1.96						2.50			
26	2.00								1.92	
27						3.1				
28					2.58	3.0	2.64	2.14		
29						3.1		2.12		1.84
30						2.92		2.12	1.90	1.84
31								2.10		

Daily discharge, in second-feet, of American Fork near American Fork, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Feb.	Apr.	May.	June.	July.	Aug.	Sept.
1	21								40	19
2	23		21				184		40	274
3			21				193		38	
4	40			15		120	184		36	29
5				15		124	180		36	
6						140	175		33	24
7							162		31	
8									31	33
9	29				29		153		29	
10	29						140		29	31
11	27							64		25
12	27	27								23
13		27				162	93	61	27	
14	27	27					93			
15		25					140			
16	27					128				
17	27								25	
18	25									
19							100			
20							104		23	
21										
22	25							120		
23	25							52		
24						175	90		21	
25	25						100			
26	29								21	
27						228				
28					116	206	128	45		
29						228		42		20
30						188		42	19	20
31								40		

NOTE.—Discharge determined from a fairly well defined rating curve. Data insufficient for monthly estimates.

SOUTH FORK OF AMERICAN FORK NEAR AMERICAN FORK, UTAH.

Location.—In the NW. ¼ NW. ¼ sec. 30, T. 4 S., R. 3 E., about 150 feet above the confluence of the South Fork with American Fork; 3 miles above the Utah Power & Light Co.'s American Fork plant No. 2, 4½ miles above plant No. 1 at mouth of canyon, and 11½ miles from the town of American Fork.

Records available.—February 15, 1912, to September 30, 1913.

Drainage area.—Approximately 5.8 square miles.

Gage.—Vertical staff.

Channel and control.—Fairly permanent.

Discharge measurements.—Made by wading near gage.

Winter flow.—Shore ice forms at times but probably has very little effect on discharge relation. Winter flow is very low at times owing to the stream freezing near the headwaters.

Diversions.—Above all diversions.

Regulation.—None.

Accuracy.—Records rather poor owing to infrequent discharge measurements and fragmentary gage heights for parts of the year.

Cooperation.—Gage-height records furnished by the United States Forest Service.

The following measurement was made by W. R. King:

June 20, 1913: Gage height, 0.98 foot; discharge, 37.1 second-feet.

Daily gage height, in feet, of South Fork of American Fork near American Fork, Utah, for the year ending Sept. 30, 1913.

[John V. Manville, observer.]

Day.	Oct.	Nov.	Dec.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.42							0.60	0.50
2	.42		0.32			1.08		.60	.52
3			.30			1.10		.58	
4	.52				0.76	1.10		.56	.50
5					.78	1.10		.56	
6					.76	1.08		.56	.50
7						1.06		.54	
8								.54	.50
9	.44			0.40		1.04		.54	
10	.44					1.00		.54	.48
11	.44						0.76		.48
12	.44	0.38							.48
13		.36			.86	.80	.70	.54	
14	.44	.38				.78			
15		.36				1.00			
16	.44				.80				
17	.44							.52	
18	.42								
19						.90			
20						.98		.52	
21									
22	.42						.90		
23	.40						.62		
24					.90	.86		.50	
25	.42					.86			
26	.60							.50	
27					1.14				
28				.78	1.10		.60		
29					1.10	.90	.60		.46
30					1.08		.60	.50	.46
31							.60		

Daily discharge, in second-feet, of South Fork of American Fork near American Fork, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Apr.	May.	June.	July.	Aug.	Sept.
1	7.2							15	10
2	7.2		4.1			45		15	11
3			3.5			46		14	
4	11				23	46		13	10
5					24	46		13	
6					23	45		13	10
7						43		12	
8								12	10
9	7.9			6.5		42		12	
10	7.9					39		12	9.3
11	7.9						23		9.3
12	7.9	5.9							9.3
13		5.3			29	25	20	12	
14	7.9	5.9				24			
15		5.3				39			
16	7.9				25				
17	7.9							11	
18	7.2								
19						32			
20						38		11	
21									
22	7.2						32		
23	6.5						16		
24					32	29		10	
25	7.2					29			
26	15							10	
27					49				
28				24	46		15		
29					46	32	15		8.6
30					45		15	10	8.6
31							15		

NOTE.—Discharge determined from a fairly well-defined rating curve. Data insufficient for monthly estimates.

LITTLE COTTONWOOD CREEK NEAR SALT LAKE CITY, UTAH.

Location.—About one-fourth mile west of the SE. ¼ sec. 2, T. 3 S., R. 1 E., and about 14 miles southeast of Salt Lake City, at the mouth of the canyon, about one-fourth mile below the county bridge, half a mile below Flagstaff smelting works, and 1½ miles above Armstrong Creek.

Records available.—Fall of 1898 to September 30, 1913.

Drainage area.—27.7 square miles.

Gage.—Hub set level with weir crest; depth of water measured with carpenter's rule.

Discharge measurements.—Flow measured by two 15-foot Cippoletti weirs.

Winter flow.—No ice at the weir.

Diversions.—The Despain ditches, one on each side of the stream, divert water about 1½ miles above the weir. These ditches irrigate one small farm and their flow is not included in the record. Nearly all the water is used below the station during the irrigating season.

Regulation.—None.

Cooperation.—Records are furnished by the city engineer of Salt Lake City.

Daily gage height, in feet, of Little Cottonwood Creek near Salt Lake City, Utah, for the year ending Sept. 30, 1913.

Day.	Apr.	May.	June.	July.	Aug.
1	.....	1.3	1.8	1.7	1.2
2	.....	1.3	1.8	1.7	1.1
3	.....	1.3	1.7	1.6	1.1
4	.....	1.35	1.8	1.6	1.1
5	.....	1.35	1.7	1.6	1.1
6	.....	1.4	1.7	1.6	1.1
7	.....	1.5	1.8	1.6	1.1
8	.....	1.6	1.8	1.5	1.1
9	.....	1.6	1.7	1.5	1.0
10	.....	1.6	1.6	1.5	.....
11	.....	1.6	1.5	1.5	.....
12	.....	1.6	1.5	1.4	.....
13	.....	1.6	1.6	1.4	.....
14	.....	1.5	1.6	1.4	.....
15	.....	1.5	1.7	1.3	.....
16	.....	1.5	1.7	1.4	.....
17	.....	1.6	1.7	1.6	.....
18	1.2	1.6	1.7	1.6	.....
19	1.2	1.5	1.7	1.5	.....
20	1.2	1.5	1.6	1.5	.....
21	1.25	1.5	1.6	1.4	.....
22	1.2	1.5	1.6	1.3	.....
23	1.2	1.6	1.5	1.3	.....
24	1.25	1.7	1.5	1.3	.....
25	1.25	2.4	1.6	1.25	.....
26	1.2	2.4	1.7	1.25	.....
27	1.3	2.3	1.8	1.2	.....
28	1.3	2.2	1.7	1.2	.....
29	1.35	1.7	1.7	1.2	.....
30	1.35	1.7	1.6	1.1	.....
31	.....	1.7	.....	1.1	.....

NOTE.—Weirs raised; observations made on staff gage from Apr. 18 to Aug. 9.

Daily discharge, in second-feet, of Little Cottonwood Creek near Salt Lake City, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	21	39	21	.....	15	13.4	16.6	94	238	210	71	23.7
2	19	36	21	.....	14.2	13.4	18.3	94	238	210	39	25.6
3	19	36	19	.....	14.2	12.6	22.7	94	210	189	39	27.5
4	21	36	19	.....	13.4	13.4	22.7	105	238	189	39	29.5
5	21	34	19	.....	15	12.6	24.6	105	210	189	39	30.5
6	23	31	19	.....	14.2	11.9	27.5	143	210	189	39	29.5
7	23	28	20	.....	13.4	13.4	27.5	166	238	189	39	29.5
8	26	29	21	.....	13.4	13.4	28	189	238	166	39	29.5
9	24	31	19	.....	13.4	13.4	28.5	189	210	166	35	29.5
10	26	31	19	.....	13.4	14.2	29.5	189	189	166	33.1	28.5
11	26	31	19	.....	13.4	14.2	30.5	189	166	166	31.5	27.5
12	24	29	18	.....	13.4	14.2	39	189	166	144	31.5	25.5
13	23	29	18	.....	12.6	12.6	54	189	189	144	29.5	22.7
14	24	29	17	.....	13.4	14.2	53	166	189	144	29.5	22.7
15	26	27	17	14.2	12.6	13.4	47	166	210	94	27.5	20.9
16	23	27	17	14.2	12.6	12.6	48	166	210	144	27.5	20.9
17	24	26	17	14.2	13.4	13.4	59	189	210	189	26.5	20.9
18	23	21	16	12.6	14.2	14.2	62	189	210	189	25.6	19.1
19	21	21	16	12.6	15	15	72	166	210	166	23.7	19.1
20	21	23	16	14.2	15	15	77	166	189	166	25.6	20.9
21	19	23	16	14.2	15.8	15	67	166	189	144	23.7	20.9
22	19	23	16	15.0	15.8	15	77	166	189	94	24.7	22.7
23	19	23	16	14.2	14.2	15	71	189	166	94	24.6	25.5
24	19	21	16	14.2	16.6	15	83	210	166	94	27.5	27.5
25	21	21	16	13.4	15.8	15	83	369	189	83	27.5	27.5
26	26	21	16	15.8	15.8	15	71	369	210	83	26.5	35.7
27	55	21	16	16.6	14.2	15	94	346	238	71	20.9	33.6
28	49	21	16	17.4	14.2	15	94	323	210	71	23.7	22.7
29	42	19	16	13.4	.....	15	105	210	210	71	23.7	22.7
30	40	19	16	14.2	.....	14.2	105	210	189	39	23.7	22.7
31	40	.....	16	13.4	.....	16.6	.....	210	.....	39	21.8	.....

NOTE.—Records are results of weir measurements except from Apr. 18 to Aug. 9, when discharge estimates were determined from a rating table and staff-gage heights. Discharge estimated, 14 second-feet, Jan. 1–14, leaking under weirs.

Monthly discharge of Little Cottonwood Creek near Salt Lake City, Utah, for the year ending Sept. 30, 1913.

[Drainage area, 27.7 square miles.]

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
October	55	19	26.0	1,600
November	39	19	26.9	1,600
December	21	16	17.6	1,080
January	.....	.....	14.2	873
February	16.6	12.6	14.2	789
March	16.6	11.9	14.1	867
April	105	16.6	54.6	3,250
May	369	94	191	11,700
June	238	166	204	12,100
July	210	39	138	8,480
August	71	20.9	30.9	1,900
September	35.7	19.1	25.5	1,520
The year	369	11.9	63.3	45,800

NOTE.—Table computed by engineers of the United States Geological Survey. Flow of the Despain ditches should be added to obtain total run-off from the drainage area.

BIG COTTONWOOD CREEK NEAR SALT LAKE CITY, UTAH.

Location.—In the SW. ¼ NE. ¼ sec. 25, T. 2 S., R. 1 E., at the mouth of the canyon, just below the county bridge, about 12 miles southeast of Salt Lake City.

Records available.—Fall of 1898 to September 30, 1913.

Drainage area.—48.5 square miles.

Gage.—Vertical graduated glass tube set on lower side of dam.

Discharge measurements.—Made with two 15-foot Cippoletti weirs.

Floods.—The maximum discharge record, 835 second-feet, was obtained June 6, 1909,

Winter flow.—No ice forms at the weir.

Diversions.—The Butler ditch, entitled to about 2 second-feet during irrigating season, diverts from the left bank about three-fourths mile above the weir. Its flow is not included in discharge record.

Regulation.—The Utah Light & Railway Co. plant one-fourth mile above regulates the flow during low water.

Cooperation.—Records furnished by the city engineer of Salt Lake City.

The water of the stream is used for irrigation and for municipal supply in Salt Lake City.

Daily discharge, in second-feet, of Big Cottonwood Creek near Salt Lake City, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	42	48	35	28	28	28	84	158	270	160	59	39
2	45	46	36	27	28	26	120	141	275	145	59	47
3	44	48	35	28	28	33	90	126	270	135	56	46
4	49	46	36	29	28	35	84	116	265	130	53	45
5	61	45	35	29	28	27	77	129	251	121	54	42
6	54	45	32	29	38	28	76	145	239	120	51	39
7	54	44	32	12.6	28	28	70	200	229	117	47	40
8	51	47	32	14.2	28	28	68	219	220	118	47	41
9	56	48	33	20	28	30	62	229	219	112	46	40
10	53	48	33	28	28	31	59	244	200	103	46	38
11	52	48	32	28	28	32	64	265	177	100	46	38
12	51	49	33	28	27	34	83	265	164	90	46	37
13	51	47	33	28	28	32	101	249	129	83	44	37
14	50	46	32	28	28	32	113	207	140	83	43	39
15	49	43	33	31	29	22	118	186	150	76	46	37
16	47	44	33	32	28	27	117	186	158	74	45	37
17	48	40	34	31	35	31	122	186	161	74	45	37
18	47	41	33	30	29	35	154	224	154	76	44	36
19	45	40	32	32	30	34	137	224	150	79	44	36
20	51	40	30	30	27	34	124	205	152	83	44	35
21	47	38	28	28	28	33	123	186	145	79	45	35
22	48	38	28	29	26	34	113	186	139	79	42	50
23	47	38	28	30	28	35	133	214	153	78	43	46
24	46	38	28	28	28	32	117	254	150	79	42	44
25	46	37	27	28	30	32	91	319	148	72	41	42
26	50	36	27	28	30	33	101	376	232	66	40	41
27	67	37	27	28	30	31	125	358	201	68	38	40
28	61	36	27	28	30	30	158	330	209	68	38	38
29	55	35	28	28	.....	31	196	318	200	64	39	38
30	49	35	28	28	.....	48	196	280	183	59	39	40
31	49	.....	28	30	.....	62	.....	280	.....	62	42	.....

Monthly discharge of Big Cottonwood Creek near Salt Lake City, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
October	67	42	50.5	3,110
November	49	35	42.4	2,520
December	36	27	31.4	1,930
January	32	12.6	27.6	1,700
February	35	26	28.5	1,580
March	62	22	32.5	2,000
April	196	59	109	6,490
May	376	116	226	13,900
June	275	129	191	11,400
July	160	59	92.0	5,660
August	59	38	45.6	2,800
September	50	35	40.0	2,380
The year	376	12.6	76.6	55,500

NOTE.—Monthly values computed by engineers of the United States Geological Survey.

MILL CREEK NEAR SALT LAKE CITY, UTAH.

Location.—Near the mouth of canyon, at a weir in the creek in the SW. ¼ NW. ¼ sec. 31, T. 1 S., R. 2 E., and at a weir in the power plant tailrace in the SE. ¼ NE. ¼ sec. 36, T. 1 S., R. 1 E., about 8 miles southeast of Salt Lake City.

Records available.—Fall of 1898 to September 30, 1913.

Drainage area.—21.3 square miles.

Gage.—Depth of water measured with a carpenter's rule from a hub set level with crest in creek and by a hook gage in tailrace.

Discharge measurements.—Computed flow over a 12.5-foot Cippoletti weir in the main stream and a 5-foot rectangular weir in the tailrace of the power plant.

Floods.—On June 17 and 18, 1909, the discharge of the creek was 112 second-feet.

Winter flow.—No ice forms at the weir.

Diversions.—Most of the water is used for irrigation below the station during the summer season. Records include flow in the power plant tailrace, thus giving total run-off from the drainage area.

Regulation.—None.

Cooperation.—Records furnished by the city engineer of Salt Lake City.

Daily discharge, in second-feet, of Mill Creek near Salt Lake City, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	17.4	18.1	15.6	15.7	12.8	12.6	35	45	80	30	17.7	15.3
2	17.4	18.8	14.8	17.7	12.8	12.6	36	43	70	29	18.2	16.8
3	17.4	18.8	14.8	17.9	12.8	12.8	29	43	58	29	18.2	15.9
4	23.6	18.8	14.8	14.4	13	12.8	31	41	54	29	20	15.6
5	23.6	18.8	16.3	7.0	12.8	12.8	32	40	55	28	18.4	15.5
6	22.2	16.2	16.3	6.9	12.8	12.9	33	42	52	29	17.9	15.3
7	22.2	16.2	18.4	12.8	12.8	12.9	34	44	50	26	18.4	15.3
8	22.2	15.8	18.6	13	12.8	13	33	56	49	23	17.3	15.3
9	22.2	15.8	18.6	15.3	13	13.1	33	76	41	24	17.6	14.9
10	19.5	15.8	17.2	13.2	13	13.1	32	79	40	22	17.3	14.8
11	19.5	17.1	17.2	13.2	13	13.1	37	84	39	23	17.3	14.5
12	19.1	17.1	15.9	13.2	12	13.5	40	81	40	22	17.3	14.5
13	19.1	17.1	15.9	13.2	12	11.3	48	86	36	23	16.6	14.5
14	19.1	17.1	15.9	13.2	12.6	12.9	53	70	35	21	16.3	14.5
15	19.1	20.1	15.9	12.9	12.6	13	59	62	35	22	16.5	14.2
16	18.8	19.8	15.7	12.9	12.6	13.3	61	63	34	22	16.5	14.2
17	18.5	18.4	15.7	12.9	12.6	13.5	63	74	31	22	16.3	14.2
18	18.5	21.3	17.0	12.9	12.8	13.7	70	70	30	22	16	14.2
19	18.5	21.3	17.0	12.9	13	13.6	65	68	30	21	15.8	13.9
20	18.5	15.6	17.0	12.9	11.6	13.6	65	63	28	21	15.6	13.6
21	25.0	15.6	13.4	12.8	11.6	13.6	42	64	27	20	15.8	13.6
22	25.0	16.4	13.4	14.9	12.6	13.1	46	61	26	20	16.1	13.9
23	18.5	16.4	11.4	12.8	12.6	13.1	44	66	26	26	15.8	13.9
24	18.4	16.5	13.4	12.8	12.8	12.7	43	84	26	21	15.6	14.2
25	18.4	16.5	14.4	12.8	13	13.6	41	.....	28	20	15.4	14.2
26	19.0	16.5	14.4	16.5	13.0	13.9	45	.....	31	19.5	15.8	14.3
27	19.0	15.8	14.7	12.6	13.0	13.4	41	.....	29	20	15.8	13.8
28	19.0	15.0	15.0	12.6	12.8	13.3	43	.....	34	19.5	15.1	13.8
29	18.3	15.8	15.0	12.9	.....	15.3	49	.....	28	18.8	15.1	13.8
30	18.3	15.7	15.0	12.8	.....	18.3	54	.....	30	18.5	15.4	13.8
31	18.3	.....	15.0	12.8	.....	32	.....	.....	.....	17.9	15.3	.....

NOTE.—Daily discharge includes both flow in creek and tailrace. Discharge for Apr. 14 interpolated. May 25 to 30 estimated as 90 second-feet; June 1–2 as in table.

Monthly discharge of Mill Creek near Salt Lake City, Utah, for the year ending Sept. 30, 1913.

[Drainage area, 21.3 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
October	25.0	17.4	19.8	0.930	1.07	1,220
November	21.3	15.6	17.3	.812	.91	1,030
December	18.6	11.4	15.6	.732	.84	959
January	17.9	6.9	13.2	.620	.72	812
February	13.0	11.6	12.7	.596	.62	705
March	32	11.3	13.9	.653	.75	855
April	70	29	44.6	2.09	2.33	2,650
May	.....	40	68.9	3.23	3.72	4,240
June	80	26	39.1	1.84	2.05	2,330
July	30	17.9	22.6	1.06	1.22	1,390
August	20	15.1	16.7	.784	.90	1,030
September	16.8	13.6	14.5	.680	.76	863
The year	.....	6.9	25.0	1.17	15.89	18,100

NOTE.—Monthly values computed by engineers of the United States Geological Survey.

PARLEYS CREEK NEAR SALT LAKE CITY, UTAH.

Location.—In the northwest corner of sec. 25, T. 1 S., R. 1 E., at mouth of canyon just above the intakes of the city water works, about 6 miles southeast of Salt Lake City.

Records available.—Fall of 1898 to September 30, 1913.

Drainage area.—50.1 square miles.

Gage.—Hook.

Discharge measurements.—Determined by means of two 10-foot Cippoletti weirs.

Floods.—On June 6 and 7, 1909, there was a maximum flow of 274 second-feet.

Winter flow.—No ice forms at the weir.

Diversions.—Part of the city water supply is taken from this creek and surplus water is used for irrigation during the summer season. The Parley's surplus ditch diverts from the left bank about 1 mile above the weir, and its flow is included in the records of daily discharge.

Regulation.—None.

Cooperation.—Records furnished by the city engineer of Salt Lake City.

Daily discharge, in second-feet, of Parleys Creek near Salt Lake City, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	15.2	15.8	13.4	12.2	11.1	8.5	52	104	54	33	22	15.2
2	15.2	15.8	12.8	12.8	11.1	9.4	104	94	53	31	21	17
3	14.5	16.4	12.2	12.8	7.9	10.4	67	89	45	30	20	16.4
4	14.5	17.7	12.8	12.8	11.1	10.4	59	84	43	30	23	15.0
5	17.0	15.8	9.4	4.7	10.5	9.9	64	84	40	27	22	14.8
6	15.8	15.8	5.6	4.3	11.1	10.4	67	88	39	27	22	14.7
7	15.8	18.3	5.6	4.7	9.4	10.4	62	95	39	31	21	14.5
8	15.2	17.0	7.0	12.2	8.9	10.4	58	101	39	30	21	14.5
9	18.3	17.0	8.4	12.8	8.9	12.8	57	104	37	22	20	14.5
10	17.0	17.7	8.9	13.4	11.1	13.4	60	108	35	22	20	14.2
11	16.4	19.6	9.4	12.2	7.9	14.5	66	106	34	22	19	13.6
12	16.4	17.7	9.4	12.2	5.1	14.5	81	105	39	22	18	13.6
13	15.8	17.0	12.8	12.8	6.5	12.2	96	108	32	22	17.7	13.4
14	15.8	15.2	12.8	12.8	10.0	12.8	106	96	33	21	17	13.6
15	15.8	15.2	12.8	12.2	10.5	4.7	115	89	31	21	14.5	13.6
16	15.2	14.5	13.4	12.2	11.1	7.9	124	79	31	21	15.8	13.4
17	15.2	14.5	13.4	11.6	11.1	14.5	103	75	31	21	15.2	13.4
18	15.2	14.5	13.4	12.2	11.6	15.8	125	77	30	22	15.2	13.4
19	15.2	13.9	12.8	12.2	11.6	15.8	119	87	29	22	15.2	13.0
20	15.2	14.5	5.6	5.1	5.1	13.4	112	67	28	22	15.2	13.0
21	14.5	13.4	6.0	7.4	9.7	13.9	120	75	28	22	15.8	13.0
22	15.2	13.4	5.6	12.8	7.4	14.5	125	71	27	22	15.8	14.5
23	15.2	13.4	5.6	12.8	10	14.5	119	68	33	36	15.8	14.5
24	14.5	13.4	10.5	7.4	12.8	13.9	113	68	32	25	15.8	14.5
25	14.5	12.8	11.6	11.6	12.8	12.8	95	68	38	25	15.8	14.2
26	16.4	15.2	10.0	11.6	11.6	13.4	97	74	44	23	15.8	14.5
27	18.3	11.1	7.4	7.4	11.1	8.9	96	65	39	22	15.2	14.5
28	18.3	13.9	8.9	7.0	12.8	14.5	128	62	39	22	14.5	14.2
29	16.4	12.8	10.0	7.0	.....	18.3	139	59	35	22	14.5	14.0
30	17.0	13.9	12.2	11.1	.....	20	129	58	31	22	14.5	14.2
31	15.8	.....	12.2	10	.....	34	.....	56	.....	22	15.2	.....

Monthly discharge of Parleys Creek near Salt Lake City, Utah, for the year ending Sept. 30, 1913.

[Drainage area, 50.1 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
October	18.3	14.5	15.8	0.315	0.36	972
November	19.6	11.1	15.2	.303	.34	904
December	13.4	5.6	10.1	.202	.23	621
January	13.4	4.3	10.5	.209	.24	646
February	12.8	5.1	9.99	.199	.20	555
March	34	4.7	13.2	.263	.30	812
April	139	52	95.3	1.90	2.12	5,670
May	108	56	82.7	1.65	1.90	5,080
June	54	27	36.2	.723	.80	2,150
July	36	21	24.6	.491	.57	1,510
August	23	14.5	17.5	.349	.40	1,080
September	17	13	14.2	.283	.31	845
The year	139	4.3	28.8	.575	7.77	20,800

NOTE.—Monthly values computed by engineers of the United States Geological Survey.

EMIGRATION CREEK NEAR SALT LAKE CITY, UTAH.

Location.—In the SW. ¼ NW. ¼ sec. 11, T. 1 S., R. 1 E., about half a mile below mouth of canyon and below Wagener's brewery, and about 4 miles southeast of Salt Lake City. The weir in the pipe line is about half a mile east of Wagener's brewery, in a tank house.

Records available.—Fall of 1898 to September 30, 1913.

Drainage area.—29 square miles.

Gage.—Graduated copper plates used as staff gages in pipe line and in creek.

Discharge measurements.—Computed from flow over two Cippoletti weirs, 2.5 and 5 feet long, in creek, and a 2-foot rectangular weir in pipe line from spring just inside mouth of canyon.

Floods.—There was a maximum discharge of probably 45 second-feet in April, 1913.

Diversions.—The city has obtained a small part of its water supply by developing a spring a short distance up the canyon and keeping the water out of the creek by means of a pipe line. This water is included in the total run-off record.

Regulation.—None.

Cooperation.—Records furnished by the city engineer of Salt Lake City.

Daily discharge, in second-feet, of Emigration Creek near Salt Lake City, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	5.4	4.7	4.0	3.0	3.0	4.1	26	27	15.9	13.7	8.8	5.7
2	5.4	4.7	4.0	3.0	3.0	4.1	32	26	15.9	13.7	8.8	8.5
3	5.4	5.4	4.0	3.0	3.0	4.7	26	26	15.9	13.7	8.8	7.6
4	5.4	5.4	4.0	2.5	3.0	4.7	17	24	15	13.1	8.3	7.8
5	6.5	5.4	4.0	3.0	3.0	4.7	17	22	15	11.7	8.3	7.8
6	6.1	4.9	4.0	3.0	3.0	4.7	24	22	14.4	10.4	7.6	6.7
7	5.4	4.9	4.0	3.0	3.0	4.7	18	22	14.4	10.4	7.2	6.3
8	5.4	4.9	4.0	3.0	3.0	4.3	18	22	14.4	9.7	7.0	6.3
9	6.1	4.9	4.1	3.0	3.0	4.3	18	23	14.4	9.7	6.6	6.7
10	6.1	5.4	4.3	3.0	3.0	4.7	20	22	15.9	9.2	6.6	6.3
11	5.4	5.4	4.3	3.2	5.7	4.7	26	22	15.9	9.2	6.6	6.1
12	5.4	5.4	4.3	3.2	5.7	5.2	33	22	17.5	9.2	6.4	6.1
13	5.1	5.4	4.3	3.2	4.2	4.7	33	27	13.6	9.2	6.4	6.1
14	5.1	5.4	4.3	3.2	4.2	4.7	35	26	13.6	9.2	5.9	6.1
15	5.1	5.4	4.3	2.9	4.2	4.3	35	25	13.6	9.2	5.9	5.7
16	5.1	5.4	4.2	3.5	4.7	4.7	35	18	13	9.2	5.9	5.7
17	5.1	4.8	3.9	3.8	4.7	4.7	35	21	13	9.2	5.9	5.1
18	5.1	4.8	3.9	3.8	4.7	4.7	35	20	11.7	9.2	5.9	5.1
19	5.1	4.8	3.9	3.8	4.7	5.8	36	18	11.7	10.4	5.7	5.1
20	5.0	4.8	3.8	3.0	4.1	7.3	.....	19	10.9	9.7	5.7	5.5
21	4.8	4.5	3.8	3.0	4.1	8.2	.....	17	10.8	9.2	5.4	5.7
22	4.8	4.3	3.1	3.0	4.1	7.0	.....	16.1	10.3	9.8	5.8	6.7
23	4.8	4.1	3.1	3.0	4.1	7.0	.....	14.9	10.3	10.4	5.6	6.7
24	4.8	4.1	3.1	3.0	4.1	7.0	.....	14.9	11.6	10.4	5.6	7.8
25	4.8	4.1	3.1	3.0	4.1	4.7	.....	14.9	11.5	9.2	5.2	8.0
26	4.8	4.1	3.1	3.0	4.1	7.0	.....	14.9	14.3	9.2	4.9	8.0
27	5.8	4.1	3.1	3.0	4.1	7.0	.....	19	14.3	9.2	4.8	8.0
28	5.8	4.1	3.1	3.0	4.1	7.0	.....	19	15.8	9.2	4.8	7.3
29	5.8	4.1	3.1	3.0	.....	4.7	.....	16.4	15.8	9.2	4.8	7.3
30	5.8	4.1	3.1	3.0	.....	9.5	.....	16.4	14.3	9.2	4.8	7.2
31	5.8	.....	3.1	3.0	.....	16.7	.....	16.4	.....	9.2	4.9	.....

NOTE.—The record includes flow in both creek and city pipe line. Discharge estimated Apr. 20–30 at 40 second-feet; also estimated July 22, 28–31.

Monthly discharge of Emigration Creek near Salt Lake City, Utah, for the year ending Sept. 30, 1913.

[Drainage area, 29 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
October	6.5	4.8	5.37	0.185	0.21	330
November	5.4	4.1	4.79	.165	.18	285
December	4.3	3.1	3.75	.129	.15	231
January	3.2	2.5	3.00	.103	.12	184
February	5.7	3.0	3.92	.135	.14	218
March	16.7	4.1	5.86	.202	.23	360
April	.....	17	32.0	1.10	1.23	1,900
May	27	14.9	20.4	.703	.81	1,250
June	17.5	10.3	13.8	.476	.53	821
July	13.7	9.2	10.1	.348	.40	621
August	8.8	4.8	6.29	.217	.25	387
September	8.5	5.1	6.63	.229	.26	395
The year	.....	2.5	9.66	.333	4.51	6,980

NOTE.—Monthly values computed by engineers of the United States Geological Survey.

CITY CREEK NEAR SALT LAKE CITY, UTAH.

Location.—In the southeast corner SE. ¼ sec. 16, T. 1 N., R. 1 E., about 4 miles northeast of Salt Lake City, about 4 miles above the mouth of canyon and just above the highest point of diversion into the city water system.

Records available.—Fall of 1898 to September 30, 1913.

Drainage area.—19.2 square miles.

Gage.—Hook.

Discharge measurements.—Computed by means of two 5-foot Cippoletti weirs.

Floods.—There was a maximum discharge of 132 second-feet in May, 1907.

Winter flow.—No ice forms at the weirs.

Diversions.—All the water is diverted below the weirs for city water supply except during the spring floods, when the surplus water wastes through the streets of Salt Lake City to Jordan River.

Regulation.—None.

Cooperation.—Records are furnished by the city engineer of Salt Lake City.

Daily discharge, in second-feet, of City Creek near Salt Lake City, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	8.8	7.9	7.0	6.4	5.8	5.8	18.9	39	37	17.6	11.9	9.0
2	8.8	7.9	7.0	6.1	5.8	5.8	23	39	35	17.6	11.7	9.2
3	8.8	7.9	7.0	6.4	5.8	5.8	18.7	36	33	17.2	11.6	9.0
4	8.8	7.9	7.0	6.4	5.8	5.8	16.6	34	32	16.6	11.4	8.7
5	9.2	7.9	7.0	4.6	5.8	5.8	17.4	33	30	16.2	11.2	8.7
6	8.8	7.9	7.0	5.3	5.8	5.8	17.6	35	29	16	11	8.5
7	8.8	7.9	7.0	6.2	5.8	6.0	16.6	37	28	16	10.8	8.5
8	8.8	7.9	7.0	6.0	6.1	6.4	15.4	42	26	15.6	10.8	8.5
9	9.2	7.9	7.0	6.1	6.1	6.7	14.9	45	26	15.5	10.8	8.5
10	8.8	7.9	7.0	6.1	6.1	7.0	14.9	52	25	15.1	10.7	8.5
11	8.8	7.9	6.7	6.1	6.1	7.3	16	55	25	14.9	10.5	8.4
12	8.5	7.9	6.7	6.1	6.1	7.6	18.7	56	25	14.7	10.5	8.2
13	8.5	7.9	6.7	6.1	6.1	7.7	21.9	54	23	14.5	10.3	8.2
14	8.5	7.6	6.7	6.1	6.1	7.3	25	50	22	14.3	10.2	8.2
15	8.5	7.6	6.7	6.1	6.1	7.0	26	47	21	13.7	10.0	8.2
16	8.5	7.6	6.7	6.1	6.1	6.8	25	44	21	13.7	9.8	8.0
17	8.2	7.3	6.7	6.1	6.1	7.0	27	41	21	13.7	9.8	7.7
18	8.2	7.3	6.7	6.1	6.1	7.3	30	41	20	13.7	9.5	7.6
19	8.2	7.3	6.7	6.1	6.1	7.3	28	41	20	13.7	9.5	7.6
20	8.2	7.6	6.7	6.1	6.1	7.3	26	39	19.5	13.4	9.5	7.6
21	8.2	7.3	6.7	6.0	6.1	7.1	26	37	19.1	13.4	9.5	7.6
22	8.2	7.3	6.4	6.1	6.1	7.0	28	36	18.7	13.4	9.5	8.8
23	8.0	7.3	6.4	5.8	6.1	7.3	27	36	18.5	13.7	9.5	8.4
24	7.9	7.3	6.4	6.1	6.1	7.1	26	38	18.5	13.2	9.5	8.2
25	7.9	7.3	6.4	6.1	6.1	7.0	25	38	18.5	12.8	9.5	8.2
26	7.9	7.3	6.4	6.1	5.8	6.7	26	40	18.7	12.6	9.3	7.6
27	8.2	7.0	6.4	5.8	5.8	6.7	29	42	18.5	12.3	9.0	7.6
28	8.4	7.0	6.4	5.8	5.8	6.7	33	43	20	12.3	8.8	7.6
29	8.2	7.0	6.4	5.8	.....	7.0	36	42	18.5	12.3	8.8	7.6
30	8.2	7.0	6.5	5.8	.....	8.2	38	41	18.2	12.1	8.8	7.6
31	7.9	.....	6.4	5.8	.....	10.4	.....	39	.....	11.9	8.8	.....

Monthly discharge of City Creek near Salt Lake City, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
October	9.2	7.9	8.45	0.440	0.51	520
November	7.9	7.0	7.56	.394	.44	450
December	7.0	6.4	6.70	.349	.40	412
January	6.4	4.6	5.99	.312	.36	368
February	6.1	5.8	5.99	.312	.32	333
March	10.4	5.8	6.93	.361	.42	426
April	38	14.9	23.7	1.23	1.37	1,410
May	56	33	41.7	2.18	2.51	2,560
June	37	18.2	23.5	1.22	1.36	1,400
July	17.6	11.9	14.3	.745	.86	879
August	11.9	8.8	10.1	.526	.61	621
September	9.2	7.6	8.20	.427	.48	488
The year	56	4.6	13.6	.708	9.64	9,870

NOTE.—Monthly values computed by engineers of the United States Geological Survey.

SEVIER LAKE BASIN.

SEVIER RIVER AT HATCH, UTAH.

Location.—In the SE. ¼ sec. 28 T. 36 S., R. 5 W., at county bridge below Hatchtown reservoir, about one-fourth mile east of J. C. Barnhurst's house at Hatch.

Records available.—June 3 to November 4, 1911, and December 10, 1911, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff on middle pier of bridge has been used since May 8, 1912, before which time the gage was located just below the outlet of the reservoir, one-eighth mile above.

Channel and control.—Fairly permanent except at sudden high water.

Discharge measurements.—Made from car and cable or bridge at high water and by wading at low stages.

Winter flow.—Ice forms at this station during extreme cold weather.

Diversions.—Station above all diversions except Hatch Bench ditch and Panguitch Lake ditch. The Hillsdale ditch diverts 4 miles downstream and various other canals for the irrigation of Panguitch Valley divert about 7 miles below.

Regulation.—Flow controlled by the gates in the Hatchtown reservoir above the station.

Accuracy.—Records fair.

Discharge measurements of Sevier River at Hatch, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 28	Leonard Tanner	2.80	255	June 24	J. J. Sanford	2.48	150
30	do	1.91	65.6	Aug. 7	do	2.95	309
Apr. 24	Porter and Sanford	2.80	277	8	do	3.03	321
May 16	J. J. Sanford	3 15	373				

Daily gage height, in feet, of Sevier River at Hatch, Utah, for the year ending Sept. 30, 1913.

[J. C. Barnhurst, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.3	1.45	1.9	2.7	2.3	1.4	1.4	2.8	2.7	2.4	2.2	2.1
2	2.3	1.45	1.9	2.7	2.3	1.4	1.4	2.8	2.7	2.4	2.2	2.1
3	2.3	1.45	1.9	2.65	2.3	1.4	1.4	2.8	2.5	2.4	2.2	2.1
4	2.3	1.45	1.9	2.65	2.3	1.4	1.4	2.8	2.5	2.4	2.2	2.1
5	2.3	1.45	1.9	2.65	2.3	1.4	1.4	2.8	2.5	2.4	2.2	2.1
6	2.3	1.45	2.0	2.65	2.3	1.4	1.45	2.8	2.5	2.4	2.9	2.1
7	2.3	1.45	2.0	2.65	2.3	1.4	1.45	2.8	2.5	2.4	2.9	2.1
8	2.3	1.45	2.0	2.65	2.3	1.4	1.45	2.8	2.5	2.4	3.0	2.1
9	2.3	1.45	2.0	2.65	2.3	1.4	1.45	2.9	2.5	2.4	2.95	2.1
10	2.3	1.45	2.0	2.65	2.3	1.4	1.45	3.2	2.5	2.4	2.95	2.1
11	2.3	1.45	2.8	2.65	2.3	1.4	1.45	3.2	2.5	2.35	2.15	2.1
12	2.3	1.45	2.8	2.6	2.3	1.4	1.45	3.25	2.5	2.3	3.0	2.1
13	2.3	1.45	2.8	2.6	2.3	1.4	1.45	3.25	2.5	2.3	3.0	2.05
14	2.3	1.45	2.8	2.6	2.3	1.4	1.45	3.25	2.5	2.3	2.2	2.05
15	2.3	1.45	2.8	2.6	2.3	1.4	1.45	3.2	2.5	2.3	2.2	2.05
16	2.3	1.45	2.8	2.6	2.3	1.4	1.45	3.2	2.5	2.3	2.3	2.05
17	2.3	1.45	2.8	2.6	2.0	1.4	1.5	3.2	2.5	2.3	2.3	2.0
18	2.3	1.45	2.8	2.6	2.0	1.4	1.9	3.45	2.5	2.3	2.3	2.0
19	2.3	1.45	2.8	2.5	2.0	1.4	1.9	3.45	2.5	2.3	2.3	2.0
20	2.3	1.45	2.8	2.5	2.0	1.4	2.5	3.4	2.5	2.3	2.3	2.0
21	1.45	1.45	2.8	2.5	2.0	1.4	2.5	3.35	2.5	2.3	2.3	2.0
22	1.45	1.45	2.75	2.5	2.0	1.4	2.9	3.35	2.5	2.3	2.3	2.0
23	1.45	1.45	2.75	2.5	2.0	1.4	2.8	3.1	2.4	2.25	2.3	2.0
24	1.45	1.45	2.75	2.5	1.4	1.4	2.8	2.7	2.4	2.25	2.9	2.0
25	1.45	1.45	2.75	2.4	1.4	1.4	2.8	2.65	2.4	2.25	2.9	2.0
26	1.45	1.45	2.75	2.4	1.4	1.4	2.8	2.8	2.4	2.25	2.9	2.0
27	1.45	1.45	2.75	2.4	1.4	1.4	2.8	2.8	2.4	2.25	2.9	2.0
28	1.45	2.30	2.75	2.35	1.4	1.4	2.8	2.8	2.4	2.2	2.9	2.0
29	1.45	1.90	2.7	2.35	.....	1.4	2.8	2.85	2.4	2.2	2.8	2.0
30	1.45	1.90	2.7	2.35	.....	1.4	2.8	2.85	2.4	2.2	2.8	2.0
31	1.45	.....	2.7	2.3	.....	1.4	.....	2.8	.....	2.2	2.1	.....

NOTE.—Discharge relation affected by ice Dec. 25 to Jan. 11.

Daily discharge, in second-feet, of Sevier River at Hatch, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	116	14	60	190	116	17	17	275	212	134	100	95
2	116	14	60	190	116	17	17	275	212	134	100	95
3	116	14	60	190	116	17	17	275	156	134	100	95
4	116	14	60	190	116	17	17	275	156	134	100	95
5	116	14	60	190	116	17	17	275	156	134	100	95
6	116	14	72	190	116	17	20	275	156	134	282	95
7	116	14	72	185	116	17	20	275	156	134	282	95
8	116	14	72	185	116	17	20	275	156	134	318	95
9	116	14	72	185	116	17	20	282	156	134	300	95
10	116	14	72	185	116	17	20	396	156	134	300	95
11	116	14	246	185	116	17	20	396	156	125	93	95
12	116	14	246	182	116	17	20	417	156	116	318	95
13	116	14	246	182	116	17	20	417	156	116	318	88
14	116	14	246	182	116	17	20	417	156	116	100	88
15	116	14	246	182	116	17	20	396	156	116	100	88
16	116	14	246	182	116	17	20	396	156	116	116	88
17	116	14	246	182	72	17	23	396	156	116	116	81
18	116	14	246	182	72	17	60	502	156	116	116	81
19	116	14	246	156	72	17	60	502	156	116	116	81
20	116	14	246	156	72	17	156	480	156	116	116	81
21	14	14	246	156	72	17	156	459	156	116	116	81
22	14	14	229	156	72	17	282	459	156	116	116	81
23	14	14	229	156	72	17	275	356	134	108	116	81
24	14	14	229	156	17	17	275	212	134	108	282	81
25	14	14	220	134	17	17	275	197	134	108	282	81
26	14	14	220	134	17	17	275	246	134	108	282	81
27	14	14	200	134	17	17	275	246	134	108	282	81
28	14	116	200	125	17	17	275	246	134	100	282	81
29	14	60	200	125	.....	17	275	264	134	100	246	81
30	14	60	190	125	.....	17	275	264	134	100	246	81
31	14	.....	190	116	.....	17	.....	246	.....	100	95	.....

NOTE.—Discharge determined from three fairly well defined rating curves, applicable as follows: Oct. 1 to Nov. 27, 1912, Nov. 28, 1912 to Aug. 30, 1913, and Aug. 31 to Sept. 30. Discharge estimated Dec. 25 to Jan. 11 on account of ice.

Monthly discharge of Sevier River at Hatch, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	116	14	79.8	4,910	C.
November	116	14	20.5	1,220	C.
December	246	60	177	10,900	C.
January	190	116	167	10,300	C.
February	116	17	87.3	4,850	B.
March	17	17	17.0	1,050	C.
April	282	17	108	6,430	B.
May	502	197	335	20,600	B.
June	212	134	154	9,160	B.
July	134	100	119	7,320	B.
August	318	86	188	11,600	B.
September	95	81	87.5	5,210	B.
The year	502	14	129	93,500	

SEVIER RIVER NEAR JUNCTION, UTAH.

Location.—In the SE. ¼ sec. 34, T. 29 S., R. 3 W., at Harris's ranch, about 1,000 feet below the junction of East Fork and South Fork of Sevier River, and about 1½ miles east of the town of Junction; just above the backwater from the Piute reservoir.

Records available.—June 1 to September 2, 1911; May 1, 1912, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Friez water-stage recorder on right bank at same datum as sloping staff used until May 1, 1912.

Channel and control.—Shifts during sudden high stages.

Discharge measurements.—Made from car and cable at high water; by wading at low water.

Winter flow.—Discharge relation affected by ice.

Diversions.—Considerable water is stored and diverted from the main river for the Hatchtown project, about 50 miles above, and from canals during the irrigation season on the East Fork of the Sevier, a few miles above the station.

Regulation.—The flow is controlled to a large degree by the Otter Creek reservoir on the East Fork and the Hatchtown reservoir on the South Fork or main river.

Accuracy.—Records good.

Discharge measurements of Sevier River near Junction, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Oct. 7	G. H. Russell	0.14	145	June 23	J. J. Sanford	0.78	242
Nov. 26	Leonard Tanner	−.02	115	28	Porter and Sanford	.80	245
Dec. 19	do	1.25	335	July 8	J. J. Sanford	.77	227
Mar. 25	do	.34	154	29	do	1.30	355
Apr. 22	Beers, Porter, and Sanford	1.91	591	29	do	1.29	353
				30	do	1.26	349
May 15	J. J. Sanford	.40	169	Aug. 5	do	1.29	375
27	do	−.15	49.0	14	do	1.17	335
June 3	do	−.25	34.0	28	do	1.67	465

Daily gage height, in feet, of Sevier River near Junction, Utah, for the year ending Sept. 30, 1913.

[Martin Neilsen and Reed Harris, observers.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.21	0.13	.....	2.5	.....	0.29	3.40	1.28	.....	0.78	1.04	1.70
2	.20	.10	.....	2.3	.....	.30	3.14	.95	.....	.76	1.01	1.80
3	.19	.10	.....	2.4	.....	.30	2.10	.78	−0.25	.78	1.14	1.44
4	.15	.08	.....	2.4	.....	.32	1.53	.71	− .25	.78	1.33	1.36
5	.20	.07	.....	.....	.....	.35	1.56	.68	− .25	.81	1.26	1.20
6	.25	.04	.....	.....	.....	.45	1.57	.74	.30	.80	1.29	1.22
7	.17	.00	.....	.....	.....	.47	1.50	1.05	.79	.80	1.67	1.24
8	.19	−.01	0.10	.....	.....	.43	1.41	.94	.79	.77	1.75	1.80
9	.21	−.03	.....	.....	.....	.78	1.23	.81	.80	.77	1.75	1.60
10	.34	.....	.....	.....	.....	.90	1.06	.63	.80	.76	1.80	1.40
11	.31	.....	.....	.....	.....	.60	1.01	.52	.80	.75	1.70	1.12
12	.21	.....	.40	.....	.....	.43	1.00	.51	.86	.70	1.70	.94
13	.26	.10	.....	.....	.....	.35	1.18	.48	.85	.71	1.60	.74
14	.25	.11	1.25	.....	.....	.33	1.47	.....	.87	.70	1.13	.64
15	.25	.11	1.32	.....	0.60	.28	1.54	.38	.88	.75	.78	.62
16	.24	.10	1.30	.....	.60	.32	.....	.20	.88	.83	.68	.55
17	.23	.....	1.32	.....	.60	.66	.....	.10	.88	.88	.67	.49
18	.23	.....	1.30	.....	.50	.57	.....	.....	.88	.90	.64	.47
19	.22	.....	1.25	.....	.40	.40	1.53	.....	.86	.90	.60	.36
20	.22	.....	1.20	.....	.35	.33	1.45	.....	.86	.96	.60	.28
21	.21	.....	1.16	.....	.37	.45	1.55	.....	.83	1.00	.62	.27
22	.06	.....	.....	.....	.30	.43	1.84	.....	.80	1.12	.69	.27
23	−.01	.....	.....	.....	.36	.....	1.98	.....	.77	1.25	.93	.28
24	−.04	.....	.....	.....	.33	.40	1.96	.00	.78	1.41	1.65	.28
25	−.04	.....	2.35	.....	.32	.36	1.82	.....	.77	1.43	1.75	.27
26	.00	−.02	.....	.....	.32	.27	1.88	.....	.....	1.42	2.10	.28
27	1.50	.....	2.38	.....	.32	.31	2.13	−.15	.80	1.39	1.75	.28
28	2.10	.....	2.4	.....	.29	.40	2.22	.....	.80	1.36	1.70	.28
29	.90	.....	2.4	.....	.....	.97	2.06	.....	.78	1.30	1.65	.28
30	.40	.....	2.85	.....	.....	1.85	1.60	.....	.77	1.24	1.75	.27
31	.20	.....	2.7	.....	.....	2.90	.....	−.09	.....	1.15	1.65	.....

Daily discharge, in second-feet, of Sevier River near Junction, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	154	139	130	.....	.....	140	1,140	399	54	238	296	468
2	152	134	130	.....	.....	142	1,030	312	43	234	288	496
3	150	134	130	.....	.....	142	646	268	33	238	320	396
4	143	131	130	.....	.....	146	480	251	33	238	368	376
5	152	129	130	.....	.....	152	489	240	33	244	350	334
6	161	124	130	.....	.....	172	492	249	142	242	357	339
7	147	118	130	.....	.....	176	472	315	240	242	460	344
8	150	116	134	.....	.....	168	449	284	240	236	482	496
9	154	113	160	.....	.....	238	402	253	242	236	482	440
10	177	120	160	.....	.....	264	358	212	242	234	496	386
11	172	120	160	.....	.....	202	345	186	242	232	468	315
12	154	120	188	.....	.....	168	342	184	255	222	468	273
13	163	134	200	.....	.....	152	389	178	253	224	440	230
14	161	136	347	.....	.....	148	464	168	257	222	317	210
15	161	136	365	.....	202	138	483	158	260	232	238	206
16	159	134	360	.....	202	146	480	122	260	249	218	192
17	157	125	365	.....	202	214	480	102	260	260	216	180
18	157	125	360	.....	182	196	480	99	260	264	210	176
19	156	125	347	.....	162	162	480	97	255	264	202	154
20	156	125	334	.....	152	148	459	95	255	277	202	138
21	154	125	324	.....	156	172	486	93	249	286	206	136
22	128	125	.....	.....	142	168	568	90	242	315	220	136
23	116	125	.....	.....	154	165	610	86	236	347	271	138
24	112	125	.....	.....	148	162	604	82	238	389	454	138
25	112	125	.....	.....	146	154	562	72	236	394	482	136
26	118	115	.....	.....	146	136	580	62	239	391	582	138
27	440	120	.....	.....	146	144	655	52	242	383	482	138
28	610	120	.....	.....	140	162	682	55	242	376	468	138
29	292	120	.....	.....	.....	295	627	58	238	360	454	138
30	188	120	.....	.....	.....	542	490	61	236	344	482	136
31	152	.....	.....	.....	.....	914	.....	64	.....	322	454	.....

NOTE.—Discharge determined from several rating curves applicable as follows: Oct. 1 to Dec. 12, 1912; Dec. 14, 1912, to Mar. 28, 1913; Apr. 1–28, May 11 to Sept. 30. Indirect methods for shifting channels used Mar. 29–31 and Apr. 29 to May 10. Discharge estimated for periods for which gage heights are missing. Discharge relation affected by ice Dec. 22 to Feb. 14, and discharge estimated as follows: Dec. 22–24, 300 second-feet; Dec. 25–31, 250 second-feet; Jan. 1–31, 220 second-feet; Feb. 1–14, 200 second-feet.

Monthly discharge of Sevier River near Junction, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	610	112	179	11,000	A.
November	139	113	125	7,440	B.
December	.....	130	238	14,600	B.
January	.....	.....	[a] 220	13,500	D.
February	.....	.....	181	10,100	C.
March	914	136	207	12,700	A.
April	1,140	342	541	32,200	B.
May	399	52	160	9,840	B.
June	260	33	209	12,400	A.
July	394	222	282	17,300	A.
August	582	202	369	22,700	A.
September	496	136	251	14,900	A.
The year	1,140	33	247	179,000	

[a] Estimated.

SEVIER RIVER BELOW PIUTE DAM, NEAR MARYSVALE, UTAH.

Location.—In the NE. ¼ SW. ¼ sec. 34, T. 28 S., R. 3 W., about 700 yards below the dam of the Piute reservoir and 11 miles south of Marysvale.

Records available.—May 17 to August 31, 1911, and May 1, 1912, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Friez water-stage recorder installed May 4, 1912, about 500 feet below site of sloping gage on right bank previously used, and at new datum.

Channel and control.—Gravel; fairly permanent.

Discharge measurements.—Made from car and cable at high water and by wading at low water.

Winter flow.—No ice forms on the control at this station.

Diversions.—No water is diverted between this station and the one near Junction.

Regulation.—The flow past the station is controlled by the gates in the dam.

Accuracy.—Records excellent.

Discharge measurements of Sevier River below Piute dam, near Marysvale, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Oct. 7	G. H. Russell	1.09	183	Mar. 23	Leonard Tanner	0.56	95.1
Nov. 22	Leonard Tanner	.19	49.0	Apr. 22	Porter and Sanford	1.65	377
22	....do	.82	138	May 14	J. J. Sanford	2.00	582
23	....do	−.59	2.0	27	....do	1.02	172
24	....do	.50	85.5	June 23	....do	1.58	353
24	....do	−.01	29.5	Aug. 4	....do	1.66	387
Dec. 19	....do	1.25	246				

Daily gage height, in feet, of Sevier River below Piute dam, near Marysvale, Utah, for the year ending Sept. 30, 1913.

[Joseph Jensen, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.10	0.00	0.18	1.01	1.25	0.97	1.50	2.10	1.14	1.25	1.65	1.78
2	1.08	.00	.19	1.01	1.25	.97	2.10	2.09	1.39	1.25	1.65	1.78
3	1.10	.01	.19	1.01	1.25	.80	2.40	2.09	1.38	1.42	1.64	1.78
4	1.07	.00	.19	1.01	1.25	.54	2.40	2.07	1.38	1.53	1.64	1.78
5	1.05	.02	.19	.99	1.25	.54	2.05	2.07	1.38	1.52	1.65	1.78
6	1.12	.01	.10	.99	1.25	.54	1.85	2.06	1.38	1.52	1.65	1.78
7	1.09	.01	.54	.99	1.25	.54	1.48	2.07	1.38	1.51	1.65	1.78
8	1.10	.01	.77	.98	1.25	.54	1.29	2.06	1.37	1.50	1.78	1.79
9	1.10	.01	.78	.97	1.25	.54	1.29	2.06	1.37	1.50	2.01	1.80
10	1.18	.00	.78	1.09	1.25	.54	1.29	2.05	1.37	1.49	2.06	1.80
11	1.20	.05	.78	1.25	1.25	.54	1.04	2.03	1.37	1.49	2.06	1.80
12	1.18	.....	.78	1.26	1.25	.55	.82	2.02	1.37	1.49	2.05	1.78
13	1.18	.....	.78	1.27	1.25	.56	.83	2.00	1.37	1.49	2.04	1.73
14	1.18	.....	.77	1.28	1.25	.56	.84	1.98	1.37	1.49	2.02	1.63
15	1.17	.....	.78	1.28	1.25	.56	.84	1.98	1.36	1.48	1.68	1.60
16	1.18	.....	.78	1.28	1.25	.57	1.16	1.97	1.45	1.54	1.56	1.60
17	1.05	.....	.79	1.28	1.25	.56	1.34	1.85	1.51	1.58	1.58	1.58
18	.90	.....	1.06	1.25	1.10	.55	1.52	1.54	1.51	1.59	1.57	1.57
19	.90	.....	1.26	1.25	.97	.54	1.65	1.39	1.50	1.60	1.52	1.56
20	.66	.....	1.26	1.25	.97	.54	1.65	1.48	1.50	1.59	1.46	1.54
21	.52	.09	1.37	1.25	.97	.55	1.65	1.50	1.54	1.59	1.46	1.52
22	.53	.20	1.56	1.25	.98	.55	1.65	1.50	1.59	1.60	1.45	1.51
23	.56	.00	1.56	1.25	.98	.56	1.65	1.49	1.58	1.60	1.45	1.50
24	.36	.27	1.55	1.25	.98	.56	1.80	1.49	1.59	1.60	1.45	1.48
25	.08	.17	1.55	1.25	.98	.57	1.92	1.50	1.58	1.60	1.47	1.47
26	.03	.17	1.54	1.25	.98	.56	2.07	1.44	1.58	1.60	1.62	1.44
27	.03	.17	1.53	1.25	.98	.54	2.14	1.15	1.57	1.60	1.72	1.42
28	.03	.17	1.52	1.25	.97	.54	2.13	.95	1.57	1.61	1.73	1.40
29	.03	.17	1.52	1.25	.....	.54	2.12	.94	1.57	1.61	1.74	1.38
30	.02	.18	1.52	1.25	.....	.56	2.11	.94	1.37	1.63	1.75	1.36
31	.00	.....	1.40	1.25	.....	.57	.....	.94	.....	1.65	1.77	.....

NOTE.—Gates closed Nov. 12–20.

Daily discharge, in second-feet, of Sevier River below Piute dam, near Marysvale, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	194	30	46	172	242	164	318	650	203	232	380	447
2	189	30	47	172	242	164	650	643	277	232	380	447
3	194	31	47	172	242	133	860	643	273	288	376	447
4	187	30	47	172	242	91	860	629	273	330	376	447
5	182	32	47	168	242	91	615	629	273	326	380	447
6	200	31	38	168	242	91	488	622	273	326	380	447
7	192	31	91	168	242	91	310	629	273	322	380	447
8	194	31	128	166	242	91	243	622	270	318	447	452
9	194	31	130	164	242	91	243	622	270	318	587	458
10	218	30	130	192	242	91	243	615	270	314	622	458
11	224	34	130	242	242	91	179	601	270	314	622	458
12	218	4	130	246	242	92	136	594	270	314	615	447
13	218	4	130	249	242	94	138	580	270	314	608	420
14	218	4	128	253	242	94	140	568	270	314	594	372
15	215	4	130	253	242	94	140	568	266	310	394	358
16	218	4	130	253	242	96	208	561	299	334	342	358
17	182	4	131	253	242	94	260	488	322	350	350	350
18	150	4	184	242	194	92	326	334	322	354	346	346
19	150	4	246	242	164	91	380	277	318	358	326	342
20	110	4	246	242	164	91	380	310	318	354	303	334
21	88	37	287	242	164	92	380	318	334	354	303	326
22	90	48	369	242	166	92	380	318	354	358	299	322
23	94	30	369	242	166	94	380	314	350	358	299	318
24	67	56	364	242	166	94	458	314	354	358	299	310
25	36	45	364	242	166	96	530	318	350	358	307	307
26	32	45	359	242	166	94	629	295	350	358	367	295
27	32	45	354	242	166	91	678	206	346	358	414	288
28	32	45	350	242	164	91	671	160	346	362	420	280
29	32	45	350	242	.....	91	664	158	346	362	425	273
30	32	46	350	242	.....	94	657	158	270	372	430	266
31	30	.....	298	242	.....	96	.....	158	.....	380	442	.....

NOTE.—Discharge determined from two fairly well defined rating curves, one applicable Oct. 1, 1912, to Mar. 2, 1913, and the other Mar. 5 to Sept. 30. Indirect methods for shifting channels used Mar. 3–4. Discharge estimated Nov. 12–20.

Monthly discharge of Sevier River below Piute dam, near Marysvale, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	224	30	142	8,730	A.
November	56	4	27.3	1,620	B.
December	369	38	198	12,200	A.
January	253	164	221	13,600	A.
February	242	164	213	11,800	A.
March	164	91	98.5	6,060	A.
April	860	136	418	24,900	A.
May	650	158	448	27,500	A.
June	354	203	299	17,800	A.
July	380	232	332	20,400	A.
August	622	299	413	25,400	A.
September	458	266	376	22,400	A.
The year	860	4	266	192,000	

SEVIER RIVER AT MARYSVALE, UTAH.

Location.—In the SE. ¼ sec. 20, T. 27 S., R. 3 W., at county bridge on road from Marysvale to Monroe, about 300 feet east of Denver & Rio Grande Railroad depot, at Marysvale. Tenmile and Cottonwood creeks enter Sevier River above the station; Pine or Bullion Creek enters 150 feet below the gage.

Records available.—May 21 to September 20, 1912; April 25 to September 30, 1913; also February 18, 1906, to December 31, 1911, at station about 6 miles above Marysvale, at Pitts ranch.

Drainage area.—Not measured.

Gage.—Vertical staff on lower face of east concrete pier.

Channel and control.—Practically permanent except at high stages.

Discharge measurements.—Made from bridge at high water; by wading at low stages.

Winter flow.—No data.

Diversions.—No water diverted between the Piute dam and the station.

Regulation.—Since the construction of the Piute reservoir, about 9½ miles above, the river is controlled by the outlet gates.

Accuracy.—Records good.

Discharge measurements of Sevier River at Marysvale, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
May 14	J. J. Sanford	3.40	635	June 11	J. J. Sanford	1.62	275
26	do	2.08	331	11	do	1.60	263
June 1	F. A. Strain	1.00	178	July 29	do	2.08	380

Daily gage height, in feet, and discharge in second-feet, of Sevier River at Marysvale, Utah, for the year ending Sept. 30, 1913.

[T. E. Knaus, observer.]

Day.	Apr.		May.		June.		July.		Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1			3.6	673	1.2	198	1.5	250	2.2	400	2.5	468
2			3.5	650	1.85	323	1.45	240	2.2	400	2.4	445
3			3.5	650	1.9	334	1.6	270	2.2	400	2.4	445
4			3.5	650	1.5	250	1.95	345	2.2	400	2.4	445
5			3.5	650	1.8	312	1.95	345	2.2	400	2.4	445
6			3.5	650	1.65	280	1.9	334	2.2	400	2.4	445
7			3.5	650	1.7	290	1.9	334	2.2	400	2.4	445
8			3.5	650	1.7	290	1.9	334	2.2	400	2.4	445
9			3.6	673	1.65	280	1.9	334	3.2	629	2.4	445
10			3.6	673	1.6	270	1.9	334	3.4	675	2.4	445
11			3.6	673	1.65	280	1.9	334	3.4	675	2.4	445
12			3.5	650	1.65	280	1.9	334	3.4	675	2.4	445
13			3.5	650	1.65	280	1.85	323	3.3	652	2.4	445
14			3.4	627	1.65	280	1.85	323	3.3	652	2.2	400
15			3.4	627	1.65	280	1.85	323	2.8	537	2.0	356
16			3.4	627	1.7	290	1.95	345	2.0	356	2.0	356
17			3.1	558	1.9	334	2.1	378	2.0	356	2.0	356
18			2.5	420	1.9	334	2.1	378	2.0	356	1.95	345
19			1.9	288	1.9	334	2.1	378	1.9	334	1.9	334
20			1.9	288	1.9	334	2.1	378	1.8	312	1.85	323
21			2.0	310	1.95	345	2.1	378	1.8	312	1.85	323
22			2.0	310	2.1	378	2.1	378	1.75	301	1.8	312
23			2.0	310	2.0	356	2.1	378	1.8	312	1.8	312
24			2.0	310	2.0	356	2.1	378	1.75	301	1.75	301
25	3.0	535	2.0	310	2.0	356	2.1	378	1.8	312	1.7	290
26	3.2	581	2.0	310	2.0	356	2.1	378	1.9	334	1.7	290
27	3.7	696	1.7	262	2.0	356	2.1	378	2.3	422	1.7	290
28	3.7	696	1.3	202	2.0	356	2.1	378	2.3	422	1.65	280
29	3.6	673	1.1	186	2.0	356	2.1	378	2.4	445	1.6	270
30	3.6	673	1.0	178	1.8	312	2.1	378	2.4	445	1.6	270
31			1.0	178			2.2	400	2.4	445		

NOTE.—Discharge determined from two fairly well defined curves, one applicable Apr. 25 to May 26, the other May 29 to Sept. 30. Discharge interpolated May 27–28.

Monthly discharge of Sevier River at Marysvale, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
April 25–30	696	535	642	7,640	B.
May	673	178	479	29,500	B.
June	378	198	313	18,600	A.
July	400	240	348	21,400	A.
August	675	301	434	26,700	A.
September	468	270	374	22,300	A.
The period				126,000	

SEVIER RIVER AT SEVIER, UTAH.

Location.—In the NE. ¼ SE. ¼ sec. 32, T. 25 S., R. 4 W., at the town of Sevier, about 100 yards above the railroad bridge on the Y spur, 50 yards west of the Denver & Rio Grande Railroad Co.'s main-line track, and about 45 yards above mouth of Clear Creek.

Records available.—May 20, 1911, to September 30, 1913.

Drainage area.—2,700 square miles.

Gage.—Friez water-stage recorder installed May 16, 1912, and referred to same datum as the original vertical-staff gage, which was driven into the stream bed and nailed to an overhanging cottonwood tree and was replaced the latter part of February, 1912, by a sloping gage with the same datum. Inside hook gage lowered 1 foot November 20, 1912.

Channel and control.—Practically permanent except at sudden high stages.

Discharge measurements.—Made from car and cable or by wading.

Winter flow.—Discharge relation affected by ice for short periods.

Diversions.—No water is diverted between this station and that at Marysvale, but a number of canals head 2 or 3 miles downstream. These canals irrigate the lands in Sevier Valley as far north as Gunnison.

Regulation.—The natural flow past the station is affected by the operation of the gates of the Piute reservoir, approximately 27 miles above.

Accuracy.—Records good.

Discharge measurements of Sevier River at Sevier, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Automatic gage height.	Staff gage height.	Discharge.	Date.	Made by—	Automatic gage height.	Staff gage height.	Discharge.
			Feet.	*Sec.-ft.*				*Feet.*	*Sec.-ft.*
Oct. 8	G. H. Russell...	.....	1.32	210	June 25	E. A. Porter ...	2.78	1.90	423
Nov. 20	Leonard Tanner	.....	.40	27.8	26	.....do.....	2.78	1.90	412
Dec. 21	.....do.....	.....	1.30	234	30	Porter and Sanford.....	2.72	1.85	382
Mar. 23	.....do.....	.....	.88	112					
May 5	J. J. Sanford....	3.30	2.37	640	July 18	J. J. Sanford....	2.68	1.83	380
6	.....do.....	3.32	2.39	652	Aug. 11	.....do.....	2.98	2.30	628
20	.....do.....	2.73	1.77	352	11	.....do.....	2.98	2.30	627
24	.....do.....	2.87	1.90	405	21	.....do.....	2.48	1.65	323

Daily gage height, in feet, of Sevier River at Sevier, Utah, for the year ending Sept. 30, 1913.

[O. A. Anderson, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.36	.....	0.65	1.25	1.4	1.3	2.12	3.43	2.33	2.47	2.62	2.63
2	1.35	.....	.67	1.4	1.4	1.3	3.06	3.40	2.67	2.43	2.60	2.66
3	1.33	.....	.70	1.4	1.4	.95	3.42	3.35	2.70	2.43	2.60	2.67
4	1.34	.....	.65	1.4	1.4	.95	3.55	3.31	2.72	2.65	2.60	2.68
5	1.32	.....	.58	1.4	1.4	.95	3.50	3.31	2.72	2.67	2.56	2.69
6	1.33	.....	.....	1.4	1.4	.95	3.12	3.30	2.69	2.58	2.52	2.70
7	1.38	.....	.65	1.4	1.4	.95	2.91	3.31	2.72	2.58	2.53	2.70
8	1.33	.....	1.18	1.4	1.4	.95	2.56	3.32	2.70	2.59	2.55	2.71
9	1.35	.....	1.19	1.4	1.4	.95	2.47	3.33	2.70	2.59	2.68	2.71
10	1.36	.....	1.20	1.4	1.4	.95	2.46	3.34	2.65	2.55	2.82	2.72
11	1.41	.....	1.20	1.4	1.4	.95	2.36	3.35	2.63	2.52	2.92	2.73
12	1.42	.....	1.20	1.4	1.4	.95	2.09	3.34	2.63	2.52	2.98	2.72
13	1.43	.....	1.20	1.4	1.4	.95	2.07	3.32	2.62	2.55	3.00	2.77
14	1.41	.....	1.10	1.4	1.4	.95	2.09	3.29	2.62	2.57	3.00	2.70
15	1.40	.....	.....	1.4	1.4	.95	2.08	3.27	2.64	2.60	3.01	2.66
16	1.39	.....	.....	1.4	1.4	.95	2.06	3.25	2.65	2.63	2.70	2.64
17	1.40	.....	.....	1.4	1.4	.95	2.42	3.26	2.80	2.66	2.60	2.63
18	1.06	.....	.....	1.4	1.4	.95	2.50	3.14	2.81	2.68	2.58	2.62
19	.97	.....	.....	1.4	1.4	.95	2.73	2.81	2.81	2.73	2.55	2.59
20	.96	0.40	.....	1.4	1.4	.95	2.79	2.75	2.78	2.74	2.48	2.57
21	.98	.39	1.30	1.4	1.4	.95	2.81	2.82	2.77	2.71	2.46	2.56
22	.99	.50	1.55	1.4	1.4	.95	2.82	2.83	2.82	2.72	2.47	2.55
23	1.00	.70	1.7	1.4	1.4	.89	2.84	2.83	2.81	2.68	2.44	2.55
24	1.01	.74	1.7	1.4	1.4	.88	2.86	2.83	2.81	2.62	2.42	2.55
25	.81	.72	1.7	1.4	1.4	.86	3.02	2.82	2.80	2.58	2.38	2.53
26	.73	.70	1.7	1.4	1.4	.76	3.15	2.87	2.77	2.58	2.15	2.52
27	.....	.70	1.85	1.4	1.3	.90	3.44	2.76	2.75	2.60	2.37	2.50
28	.....	.70	1.85	1.4	1.3	.89	3.47	2.50	2.74	2.66	.....	2.48
29	.....	.70	1.85	1.4	.....	.90	3.48	2.42	2.72	2.61	.....	2.47
30	.73	.65	1.85	1.4	.....	.....	3.46	2.37	2.70	2.59	2.55	2.44
31	.....	.....	1.25	1.4	.....	2.10	.....	2.35	.....	2.62	2.58	.....

NOTE.—Inlet pipe to gage well partly clogged July 21 to Sept. 20, and gage heights affected. Before Mar. 31 all gage heights refer to staff gage; thereafter to automatic gage.

Daily discharge, in second-feet, of Sevier River at Sevier, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	225	50	65	216	260	230	192	703	221	310	410	440
2	222	50	69	260	260	230	530	688	351	296	408	462
3	216	50	74	260	260	133	698	664	374	296	408	464
4	219	50	65	260	260	133	763	645	395	371	408	464
5	214	50	53	260	260	133	738	645	395	378	408	466
6	216	50	59	260	260	133	557	640	385	347	408	438
7	230	50	65	260	260	133	466	645	395	347	408	458
8	216	50	196	260	260	133	340	650	388	351	408	458
9	222	50	199	260	260	133	310	654	388	351	527	458
10	225	50	202	260	260	133	300	659	371	337	610	460
11	239	50	202	260	260	133	272	664	364	327	628	460
12	242	28	202	260	260	133	183	659	364	327	625	460
13	245	28	202	260	260	133	178	640	361	337	625	455
14	239	28	174	260	260	133	183	622	361	344	610	408
15	236	28	174	260	260	133	180	603	368	354	590	365
16	233	28	174	260	260	133	175	589	371	364	362	365
17	236	28	174	260	260	133	293	585	424	374	362	365
18	143	28	188	260	260	133	320	526	428	381	362	365
19	120	28	202	260	260	133	399	388	428	399	345	358
20	118	28	216	260	260	133	420	360	417	402	320	350
21	122	27	230	260	260	133	428	385	413	388	318	340
22	125	40	309	260	260	133	432	389	432	390	315	337
23	127	74	362	260	260	118	439	389	428	390	307	337
24	130	83	362	260	260	115	447	389	428	390	310	337
25	83	78	362	260	260	110	513	385	424	390	320	330
26	65	74	362	260	260	87	571	403	413	390	338	327
27	65	74	362	260	230	120	708	364	406	390	400	320
28	65	74	362	260	230	118	723	274	402	390	430	313
29	65	74	362	260	.....	120	728	248	395	390	430	310
30	65	65	362	260	.....	140	718	233	388	390	429	300
31	65	.....	216	260	.....	186	.....	227	.....	405	430	.....

NOTE.—Discharge determined from four fairly well defined rating curves applicable as follows: (1) Oct. 1 to Nov. 19, 1912; (2) Nov. 20, 1912, to Mar. 29, 1913; (3) Mar. 31 to May 12, June 4 to July 28, and Aug. 16 to Sept. 30; and (4) May 20 to June 1. Discharge estimated Oct. 27 to Nov. 19, Dec. 6, 15–20, 27–30, Mar. 30, May 13–19, and June 2–3. Discharge July 21 to Sept. 20 determined by comparison with staff-gage observations and records at station below Piute dam near Marysvale.

Monthly discharge of Sevier River at Sevier, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	245	65	169	10,400	A.
November	83	27	48.8	2,900	C.
December	362	53	213	13,100	B.
January	260	216	259	15,900	A.
February	260	230	258	14,300	A.
March	230	87	137	8,420	A.
April	763	175	440	26,200	A.
May	703	227	513	31,500	A.
June	432	221	389	23,100	A.
July	405	296	364	22,400	A.
August	628	307	428	26,300	B.
September	466	300	392	23,300	B.
The year	763	27	301	218,000	

SEVIER RIVER NEAR GUNNISON, UTAH.

Location.—About 60 rods west of the southeast corner of sec. 14, T. 19 S., R. 1 W., at the bridge on the county road leading from Gunnison to West View precinct, about 3 miles west of Gunnison post office. San Pitch River enters from the east about half a mile below the station.

Records available.—June 29, 1900, to September 30, 1913.
Drainage area.—3,990 square miles.
Gage.—Vertical staff on right abutment of bridge; datum of gage was lowered 1 foot in September, 1910.
Channel and control.—Sand and gravel; shifting.
Discharge measurements.—Made from downstream side of bridge during high water and by wading at the riffle about 50 yards below bridge during low water.
Winter flow.—The river freezes from bank to bank for short periods during December and January.
Regulation.—There are three storage reservoirs on the headwaters of Sevier River which during certain seasons of the year hold a large part of the stream flow. Numerous diversions for irrigation are also made above the station.
Accuracy.—Records fair except during winter months.
Cooperation.—Some discharge measurements furnished by the Delta Land & Water Co. and F. A. Strain, water commissioner.

Discharge measurements of Sevier River near Gunnison, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Mar. 21	Leonard Tanner	2.14	329	Aug. 11	F. A. Strain	1.52	137
28	do	2.41	309	14	do	2.49	402
May 8	J. J. Sanford	1.70	204	16	do	2.22	302
30	F. A. Strain	1.40	138	22	do	1.42	117
June 12	J. J. Sanford	1.04	44.9	25	J. J. Sanford	1.32	86.5
12	do	1.04	48.1	27	F. A. Strain	1.05	60.3
15	F. A. Strain	1.00	50.8	Sept. 15	do	1.75	188
21	do	1.12	63.4	20	Porter and Strain	1.79	209

Daily gage height, in feet, of Sevier River near Gunnison, Utah, for the year ending Sept. 30, 1913.

[Leroy H. Lund, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.45	3.57	3.18	4.8	2.65	2.35	2.75	1.53	1.32	1.12	1.05	1.52
2	3.45	3.56	3.17	4.8	2.65	2.35	3.15	1.51	1.33	1.13	1.04	1.52
3	3.43	3.55	3.19	4.8	2.55	2.3	3.25	1.51	1.41	1.14	1.10	1.25
4	3.43	3.55	3.19	4.9	2.55	2.3	3.45	1.51	1.40	1.13	1.10	1.55
5	3.41	3.55	3.20	4.9	2.55	2.3	3.6	1.50	1.43	1.02	1.61	1.57
6	3.41	3.49	3.20	4.9	2.6	2.3	3.6	1.51	1.13	1.07	1.22	1.11
7	3.43	3.47	3.21	5.0	2.6	2.3	3.6	1.81	1.15	1.03	1.25	1.11
8	3.45	3.47	3.21	5.0	2.6	2.3	3.55	1.76	1.13	1.01	.....	2.05
9	3.45	3.47	3.33	5.0	2.6	2.25	3.5	1.78	.94	.99	1.11	2.05
10	3.47	3.45	3.35	5.0	2.6	2.25	3.0	1.82	.97	.99	1.40	2.00
11	3.51	3.45	3.41	5.0	2.6	2.2	2.8	1.91	.98	.99	1.54	1.91
12	3.53	3.44	3.45	5.0	2.6	2.2	2.75	1.81	1.05	1.01	2.23	1.93
13	3.52	3.52	3.40	5.0	2.6	2.15	2.75	1.91	1.02	.97	2.55	1.91
14	3.47	3.37	3.37	5.0	2.6	2.15	2.55	1.76	1.07	.97	2.49	1.85
15	3.47	3.45	3.35	5.1	2.6	2.15	2.5	1.75	1.02	.98	2.45	1.81
16	3.43	3.35	3.27	5.1	2.6	2.15	2.45	1.71	1.02	.99	2.12	1.83
17	3.40	3.37	3.25	5.2	2.55	2.15	2.35	1.73	1.03	.99	2.23	1.83
18	3.41	3.36	3.21	5.2	2.55	2.1	2.25	1.78	1.02	.99	1.96	1.97
19	3.37	3.35	3.20	5.3	2.5	2.1	2.25	1.88	1.02	1.02	1.97	1.89
20	3.35	3.31	3.27	5.3	2.5	2.1	2.1	1.91	1.03	1.03	1.50	1.84
21	3.37	3.31	3.27	5.3	2.45	2.1	1.91	1.68	1.09	1.00	1.44	1.87
22	3.37	3.25	5.40	5.3	2.45	2.15	1.85	1.68	1.07	1.10	1.47	1.90
23	3.41	3.25	5.60	5.1	2.45	2.2	1.83	1.71	1.07	1.31	1.51	1.97
24	3.41	3.25	6.20	5.1	2.4	2.3	1.75	1.73	1.27	1.61	1.38	1.97
25	3.51	3.20	6.20	5.1	2.4	2.6	1.73	1.73	1.26	1.33	1.43	1.97
26	3.50	3.23	6.12	5.1	2.4	2.65	1.70	1.75	1.22	1.17	1.25	1.97
27	3.51	3.25	6.10	5.2	2.35	2.45	1.70	1.86	1.23	.97	1.12	1.97
28	3.50	3.20	6.11	5.2	2.35	2.45	1.63	1.85	1.12	.98	1.21	1.95
29	3.53	3.17	6.01	2.75	.....	2.65	1.61	1.93	1.13	.99	1.25	2.00
30	3.55	3.17	6.00	2.75	.....	2.7	1.55	1.44	1.12	.99	1.11	1.99
31	3.56	.....	6.00	2.7	.....	2.8	.....	1.46	.....	1.01	1.11	.....

NOTE.—Discharge relation affected by ice Dec. 22, 1912, to Jan. 28, 1913.

Daily discharge, in second-feet, of Sevier River near Gunnison, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	324	362	241	.....	498	394	418	167	116	64	56	137
2	324	359	238	.....	498	394	574	162	114	66	54	137
3	318	356	243	.....	462	378	614	162	129	67	61	85
4	318	356	243	.....	462	378	694	162	123	66	61	144
5	311	356	246	.....	462	378	754	160	125	52	158	149
6	311	337	246	.....	480	378	754	162	66	58	80	62
7	318	330	249	.....	480	378	754	235	68	53	85	62
8	324	330	249	.....	480	378	742	222	66	51	74	272
9	324	330	286	.....	480	362	730	227	44	49	62	272
10	330	324	292	.....	480	362	538	238	47	49	112	258
11	343	324	311	.....	480	346	470	263	48	49	142	235
12	350	321	324	.....	480	346	459	235	56	51	325	240
13	346	346	308	.....	480	331	470	263	52	47	425	235
14	330	298	298	.....	480	331	404	222	58	47	405	219
15	330	324	292	.....	480	331	393	219	52	48	892	209
16	318	292	267	.....	480	331	386	209	52	49	292	219
17	308	298	261	.....	462	331	360	214	53	49	325	214
18	311	295	249	.....	462	316	337	227	52	49	248	250
19	298	292	246	.....	444	316	344	254	52	52	250	229
20	292	279	267	.....	444	316	306	263	53	53	132	216
21	298	279	267	.....	427	316	263	201	60	50	120	224
22	298	261	.....	.....	427	331	246	201	58	61	126	232
23	311	261	.....	.....	427	346	240	209	58	96	134	250
24	311	261	.....	.....	410	378	219	214	89	158	108	250
25	343	246	.....	.....	410	444	214	214	87	99	118	250
26	340	255	.....	.....	410	427	206	219	80	72	85	250
27	343	261	.....	.....	394	320	206	249	81	47	64	250
28	340	246	.....	.....	394	320	189	246	64	48	78	245
29	350	238	.....	535	.....	383	184	268	66	49	85	258
30	356	238	.....	535	.....	400	171	147	64	49	62	255
31	359	.....	.....	516	.....	436	.....	149	.....	51	62	.....

NOTE.—Discharge determined from several poorly-defined rating curves. Discharge estimated because of ice Dec. 22-31, 400 second-feet; Jan. 1-28, 450 second-feet, by comparison with records at station below Piute dam near Marysvale. Indirect method for shifting channels used Mar. 25-26, Apr. 8-20, June 1-5, and Aug. 8.

Monthly discharge of Sevier River near Gunnison, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	359	292	325	20,000	A.
November	362	238	302	18,000	B.
December	.....	.....	310	19,100	B.
January	.....	.....	458	28,200	C.
February	498	394	456	25,300	B.
March	444	316	361	22,200	B.
April	754	171	421	25,100	B.
May	268	147	212	13,000	A.
June	129	44	71.1	4,230	B.
July	158	47	59.6	3,660	C.
August	425	54	154	9,470	B.
September	272	62	210	12,500	B.
The year	754	44	277	201,000	

SEVIER RIVER NEAR JUAB, UTAH.

Location.—In the NE. ¼ sec. 2, T. 17 S., R. 2 W., about 1,000 feet downstream from the Sevier bridge dam, and about 14 miles southwest of Juab, Utah.

Record available.—September 23, 1911, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Sloping staff on right bank.

Channel and control.—Practically permanent except at sudden high stages.
Discharge measurements.—Made from car and cable during high water and by wading at low stages.
Winter flow.—Discharge relation probably not affected by ice.
Diversions.—No water diverted between this station and the station near Gunnison.
Regulation.—The flow in the river is controlled by the gates in the dam just above the station.
Accuracy.—Records good.
Cooperation.—Some discharge measurements furnished by the Delta Land & Water Co. and F. A. Strain, water commissioner.

Discharge measurements of Sevier River near Juab, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Dec. 4	F. W. Cottrell	3.47	314	June 14	F. A. Strain	4.10	545
4	do	3.48	322	28	do	3.84	475
14	do	3.52	336	Aug. 2	do	2.14	88.4
30	do	1.62	8.17	3	do	2.13	88.0
Mar. 29	do	[a] 4.12	595	6	do	2.27	115
30	do	4.53	708	28	do	2.68	202
May 30	F. A. Strain	4.55	668	29	do	2.67	195
30	do	4.55	677	Sept. 21	Porter and Strain	2.94	270

[a] Gage read 4.25 feet under normal conditions.

Daily gage height, in feet, of Sevier River near Juab, Utah, for the year ending Sept. 30, 1913.

[F. M. Fisher, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.85	3.85	3.4	1.56	1.46	1.57	5.0	3.8	4.5	3.8	2.16	2.6
2	3.8	3.8	3.4	1.55	1.46	1.57	5.0	3.9	4.5	3.8	2.16	2.8
3	3.78	3.75	3.45	1.55	1.46	1.57	5.0	3.9	4.5	3.8	2.12	2.6
4	3.75	3.7	3.45	1.55	1.46	1.58	5.1	3.9	4.5	3.8	2.18	2.6
5	3.2	3.7	3.45	1.55	1.46	1.60	5.2	4.0	4.5	3.8	2.2	2.6
6	3.6	3.6	3.55	1.55	1.46	1.60	5.4	4.0	4.3	3.8	2.21	2.7
7	3.6	3.6	3.55	1.55	1.46	1.56	6.0	4.0	4.3	3.7	2.35	2.7
8	3.6	3.6	3.0	1.55	1.47	1.57	6.4	4.0	4.8	3.7	2.22	2.75
9	3.8	3.6	3.0	1.53	1.48	1.60	7.0	4.2	4.3	3.7	2.19	2.85
10	3.8	3.6	3.0	1.53	1.48	1.65	6.9	4.2	4.3	3.7	2.22	3.0
11	3.86	3.55	3.0	1.50	1.48	1.65	6.3	4.2	4.2	3.7	2.25	3.05
12	3.9	3.55	3.0	1.50	1.48	1.57	5.3	4.2	4.2	3.7	2.7	3.0
13	3.9	3.5	3.0	1.50	1.48	1.52	4.9	4.4	4.1	3.7	2.9	3.0
14	3.93	3.5	3.5	1.50	1.48	1.52	4.2	4.4	4.1	3.7	3.3	3.0
15	3.98	3.5	3.55	1.50	1.48	1.60	4.2	4.4	4.0	3.7	3.45	3.0
16	3.99	3.5	3.6	1.50	1.48	1.52	4.2	4.4	4.0	3.7	3.6	2.95
17	3.95	3.5	3.6	1.50	1.50	1.61	3.35	4.5	3.8	3.7	3.5	2.95
18	3.9	3.5	3.63	1.50	1.50	1.60	3.35	4.7	4.0	3.7	3.35	3.05
19	3.9	3.5	2.0	1.50	1.50	1.62	3.7	4.7	4.0	3.7	3.15	3.0
20	3.88	3.45	1.5	1.50	1.50	1.62	3.8	4.7	4.0	3.7	2.8	2.95
21	3.88	3.4	1.5	1.50	1.53	1.61	3.8	4.7	3.8	4.0	2.5	2.9
22	3.8	3.4	1.5	1.50	1.54	1.61	3.8	4.7	3.8	3.7	2.55	3.0
23	3.73	3.4	1.5	1.47	1.57	1.61	3.8	4.7	3.8	3.6	2.5	3.0
24	3.63	3.4	1.55	1.47	1.57	1.62	3.8	4.6	3.8	2.5	2.45	3.1
25	3.6	3.4	1.6	1.47	1.58	1.62	3.8	4.6	3.8	2.75	2.65	3.1
26	3.6	3.4	1.6	1.48	1.60	1.62	3.8	4.6	3.8	2.6	2.5	3.1
27	3.75	3.4	1.6	1.48	1.60	1.62	3.8	4.6	3.8	2.4	2.35	3.1
28	3.8	3.4	1.6	1.48	1.56	2.7	3.8	4.6	3.8	2.25	2.3	3.1
29	3.9	3.4	1.6	1.48	.....	3.4	3.8	4.6	3.8	2.20	2.75	3.15
30	3.9	3.4	1.62	1.47	.....	4.2	3.8	4.6	3.8	2.20	2.3	3.15
31	3.9	.....	1.6	1.46	.....	4.9	.....	4.5	.....	2.18	2.4	.....

Daily discharge, in second-feet, of Sevier River near Juab, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	406	406	295	5.4	2.2	5.8	790	478	660	478	95	186
2	393	393	295	5	2.2	5.8	790	504	660	478	95	230
3	388	380	307	5	2.2	5.8	790	504	660	478	88	186
4	380	367	307	5	2.2	6.2	816	504	660	478	98	186
5	247	367	307	5	2.2	7	842	530	660	478	102	186
6	343	343	331	5	2.2	7	894	530	608	478	104	208
7	343	343	331	5	2.2	5.4	1,050	530	608	452	132	208
8	343	343	199	5	2.4	5.8	1,150	530	738	452	106	219
9	393	343	199	4.2	2.6	7	1,310	582	608	452	100	242
10	393	343	199	4.2	2.6	10	1,280	582	608	452	106	278
11	409	331	199	3	2.6	10	1,130	582	582	452	112	290
12	419	331	199	3	2.6	5.8	868	582	582	452	208	278
13	419	319	199	3	2.6	3.8	764	634	556	452	254	278
14	427	319	319	3	2.6	3.8	582	634	556	452	350	278
15	440	319	331	3	2.6	7	582	634	530	452	387	278
16	442	319	343	3	2.6	3.8	582	634	530	452	426	266
17	432	319	343	3	3	7.6	362	660	478	452	400	266
18	419	319	350	3	3	7	362	712	530	452	362	290
19	419	319	36	3	3	8.2	452	712	530	452	314	278
20	414	307	3	3	3	8.2	478	712	530	452	230	266
21	414	295	3	3	4.2	7.6	478	712	478	530	164	254
22	393	295	3	3	4.6	7.6	478	712	478	452	175	278
23	375	295	3	2.4	5.3	7.6	478	712	478	426	164	278
24	350	295	5	2.4	5.8	8.2	478	686	478	164	153	302
25	343	295	7	2.4	6.2	8.2	478	686	478	219	197	302
26	343	295	7	2.6	7	8.2	478	686	478	186	164	302
27	380	295	7	2.6	7	8.2	478	686	478	142	132	302
28	393	295	7	2.6	5.4	172	478	686	478	112	122	302
29	419	295	7	2.6	.....	374	478	686	478	102	219	314
30	419	295	7	2.4	.....	582	478	686	478	102	122	314
31	419	.....	7	2.2	.....	764	.....	660	.....	98	142	.....

NOTE.—Discharge determined from two fairly well-defined rating curves applicable Oct. 1, 1912, to Mar. 27, 1913, and Mar. 29 to Sept. 30, 1913. Discharge Mar. 28 estimated.

Monthly discharge of Sevier River near Juab, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	442	247	391	24,000	A.
November	406	295	326	19,400	A.
December	350	3	166	10,200	B.
January	5.4	2.2	3.45	212	C.
February	7	2.2	3.45	192	C.
March	764	3.8	67.1	4,130	C.
April	1,310	362	688	40,900	B.
May	712	478	625	38,400	A.
June	738	478	555	33,000	A.
July	530	98	378	23,200	A.
August	426	88	188	11,600	A.
September	314	186	262	15,600	A.
The year	1,310	2.2	305	221,000	

SEVIER RIVER AT LEAMINGTON, UTAH.

Location.—In the NE. ¼ sec. 10, T. 15 S., R. 4 W., on the county bridge about one block north of the town hotel at Leamington, and about 400 feet north of the San Pedro, Los Angeles & Salt Lake Railroad tracks.

Records available.—August 23, 1889, to December 31, 1893; May 18, 1912, to September 30, 1913.

Drainage area.—5,600 square miles.

Gage.—Vertical staff on upper side of south pier of bridge, and an auxiliary sloping gage at cable above bridge. Observations made on lower gage.

Channel and control.—Fairly permanent except at sudden extreme high stages of stream.

Discharge measurements.—Made by wading or from car and cable 3,000 feet above gage.

Winter flow.—Discharge relation affected by ice during short periods.

Diversions.—A number of canals which head below the Sevier bridge dam divert water above the station during the irrigation season. The water passing the station represents the amount available for the lands in and around Delta and Oasis, Utah.

Accuracy.—Records fair.

Cooperation.—Some discharge measurements furnished by the Delta Land & Water Co. and F. A. Strain, water commissioner.

Discharge measurements of Sevier River at Leamington, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height at bridge.	Gage height at cable.	Discharge.	Date.	Made by—	Gage height at bridge.	Gage height at cable.	Discharge.
		Feet.		*Sec.-ft.*				*Feet.*	*Sec.-ft.*
Nov. 11	J. W. Thurston	3.8	2.94	351	June 30	F. A. Strain...	4.2	2.98	436
Feb. 17	.....do.....	2.3	1.2	47.9	July 11	.....do.....	4.1	2.74	379
18	.....do.....	2.3	1.2	47.6	Aug. 4	.....do.....	2.65	1.52	93.8
May 16	Lynn Crandall.	4.50	3.26	519	5	.....do.....	2.62	1.48	81.0
18	F. W. Cottrell.	4.8	3.38	577	29	.....do.....	2.80	1.68	126
29	F. A. Strain....	5.0	3.57	651	30	.....do.....	3.02	1.88	170
June 13	.....do.....	4.52	3.25	516	Sept. 22	Porter and Strain.	3.42	2.10	226
19	.....do.....	4.2	3.01	443					

Daily gage height, in feet, of Sevier River at Leamington, Utah, for the year ending Sept. 30, 1913.

[Walter Stout, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.9	4.1	3.7	2.3	2.3	2.3.	5.4	4.0	4.9	4.2	2.7	3.2
2	3.9	4.1	3.7	2.3	2.3	2.3	5.5	4.1	4.6	4.2	2.7	3.2
3	3.9	4.0	3.7	2.3	2.3	2.3	5.6	4.1	4.6	4.2	2.7	3.3
4	4.1	4.0	3.7	2.3	2.3	2.3	5.6	4.0	4.7	4.2	2.65	3.4
5	3.9	3.9	3.7	2.3	2.3	2.3	5.6	4.0	4.6	4.2	2.65	3.4
6	3.8	3.9	3.9	2.3	2.3	2.5	5.8	4.0	4.4	4.1	2.45	3.4
7	3.8	3.9	3.9	2.3	2.3	2.85	6.0	4.0	4.4	4.1	2.45	3.45
8	3.8	3.9	3.0	2.3	2.3	2.6	6.7	4.1	4.4	4.0	2.55	3.45
9	3.8	3.9	3.0	2.3	2.3	2.85	7.4	4.1	4.5	4.0	2.6	3.45
10	4.0	3.9	2.7	2.3	2.3	2.85	7.7	4.2	4.7	4.1	2.55	3.4
11	4.0	3.8	3.0	2.3	2.3	2.85	7.3	4.2	4.7	4.1	2.75	3.4
12	4.0	3.8	3.0	2.3	2.3	2.7	6.2	4.2	4.3	4.0	2.9	3.5
13	4.0	3.8	3.0	2.3	2.3	2.6	5.6	4.2	4.3	4.0	3.1	3.5
14	4.0	3.8	4.0	2.3	2.3	2.4	4.8	4.5	4.3	4.0	3.5	3.6
15	4.0	3.8	4.0	2.3	2.3	.....	4.6	4.5	4.2	4.0	3.6	3.6
16	4.1	3.7	4.0	2.3	2.3	2.35	4.6	4.5	4.2	4.0	3.8	3.6
17	4.1	3.8	4.2	2.3	2.3	2.35	3.9	4.6	4.1	4.0	3.8	3.6
18	4.0	3.8	4.2	2.3	2.3	2.75	3.9	4.8	4.2	4.0	3.8	3.6
19	4.0	3.7	4.4	2.3	2.3	2.5	4.0	4.7	4.2	4.0	3.6	3.6
20	4.0	3.8	3.2	2.3	2.3	2.35	4.2	4.9	4.2	4.0	3.5	3.5
21	4.0	3.7	2.6	2.3	2.3	2.3	4.2	4.9	4.2	4.0	3.0	3.7
22	4.0	3.7	2.6	2.3	2.3	2.3	4.1	4.9	4.2	4.2	2.95	3.4
23	3.9	3.7	2.6	2.3	2.3	2.3	4.0	4.9	4.2	4.0	2.95	3.5
24	3.8	3.7	2.6	2.3	2.3	2.3	4.0	4.9	4.2	3.0	3.3	3.6
25	3.8	3.6	2.6	2.3	2.3	2.3	4.0	4.9	4.2	2.8	3.3	3.6
26	3.9	3.6	2.6	2.3	2.3	2.3	4.0	4.9	4.2	3.0	3.3	3.7
27	4.0	3.6	2.5	2.3	2.3	2.25	4.0	4.9	4.3	3.0	3.1	3.8
28	4.0	3.6	2.5	2.3	2.3	2.2	3.9	5.0	4.3	3.0	3.2	3.8
29	4.0	3.7	2.5	2.3	.....	2.3	3.9	5.0	4.2	3.0	3.2	3.7
30	4.2	3.7	2.5	2.3	.....	5.0	3.9	5.0	4.2	2.9	3.1	3.7
31	4.2	.....	2.5	2.3	.....	4.8	.....	5.0	.....	2.7	3.2	.....

NOTE.—Gage heights from gage at the county bridge.

Daily discharge, in second-feet, of Sevier River at Leamington, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	407	455	360	46	46	46	764	386	616	434	106	206
2	407	455	360	46	46	46	794	410	536	434	106	206
3	407	431	360	46	46	46	824	410	536	434	106	228
4	455	431	360	46	46	46	824	386	562	434	97	250
5	407	407	360	46	46	46	824	386	536	434	97	250
6	383	407	407	46	46	72	888	386	484	410	65	250
7	383	407	407	46	46	134	952	386	484	410	65	261
8	383	407	204	46	46	88	1,180	410	484	386	80	261
9	383	407	204	46	46	134	1,420	410	510	386	88	261
10	431	407	144	46	46	134	1,520	434	562	410	80	250
11	431	383	204	46	46	134	1,380	434	562	410	115	250
12	431	383	204	46	46	106	1,020	434	459	386	144	272
13	431	383	204	46	46	88	824	434	459	386	185	272
14	431	383	431	46	46	58	588	510	459	386	272	266
15	431	383	431	46	46	55	536	510	434	386	294	266
16	455	360	431	46	46	52	536	510	434	386	340	266
17	455	383	480	46	46	52	363	536	410	386	340	266
18	431	383	480	46	46	115	363	588	434	386	340	266
19	431	360	530	46	46	72	386	562	434	386	294	266
20	431	383	227	46	46	52	434	616	434	386	272	244
21	431	360	88	46	46	46	434	616	434	386	164	288
22	431	360	88	46	46	46	410	616	434	434	154	222
23	407	360	88	46	46	46	386	616	434	386	154	244
24	383	360	88	46	46	46	386	616	434	164	228	266
25	383	337	88	46	46	46	386	616	434	124	228	266
26	407	337	88	46	46	46	386	616	434	164	228	288
27	431	337	72	46	46	40	386	616	459	164	185	311
28	431	337	72	46	46	34	363	644	459	164	206	311
29	431	360	72	46	.....	46	363	644	434	164	206	288
30	480	360	72	46	.....	644	363	644	434	144	185	288
31	480	.....	72	46	.....	588	.....	644	.....	106	206	.....

NOTE.—Discharge determined from three fairly well defined rating curves applicable Oct. 1 to Dec. 19, Dec. 21 to Sept. 13, and Sept. 14–30.

Monthly discharge of Sevier River at Leamington, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	480	383	423	26,000	A.
November	455	337	384	22,800	B.
December	530	72	248	15,200	B.
January	46	46	46	2,830	B.
February	46	46	46	2,550	B.
March	644	34	103	6,330	B.
April	1,520	363	676	40,200	A.
May	644	386	517	31,800	A.
June	616	410	474	28,200	A.
July	434	106	337	20,700	A.
August	340	65	182	11,200	A.
September	311	206	261	15,500	A.
The year	1,520	34	309	223,000	

SEVIER RIVER NEAR DELTA, UTAH.

Location.—In the NW. ¼ sec. 27, T. 16 S., R. 6 W., 1½ miles below Delta spillway, and 6½ miles northeast of Delta.

Records available.—May 16 to September 24, 1912; March 1 to September 30, 1913.

Drainage area.—7,380 square miles.

Gage.—Gurley water-stage recorder. Previous to March 1, 1913, inclined staff.

Channel and control.—One channel. Stream bed of firm clay and hardpan. Right bank may overflow at extremely high stages.

Discharge measurements.—Made from cable or by wading.

Winter flow.—Shore ice forms during very cold weather but does not last long enough to affect the discharge relation.

Diversions.—Canal A of the Delta project takes out water 1½ miles above the station.

Regulation.—The flow at the station is controlled by regulation of the Delta spillway and Sevier bridge reservoir.

Accuracy.—Records fair.

Cooperation.—Some discharge measurements furnished by the Delta Land & Water Co. and F. A. Strain, water commissioner.

Discharge measurements of Sevier River near Delta, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Apr. 2	R. H. Becknell	4.48	722	Sept. 22	Porter and Strain	1.47	98
July 3	F. A. Strain	1.72	136	29	F. W. Cottrell	1.81	167
Aug. 28	F. W. Cottrell	1.43	105	29	do	1.81	165
Sept. 20	do	1.40	101				

Daily gage height, in feet, of Sevier River near Delta, Utah, for the year ending Sept. 30, 1913.

[E. F. Bishop, observer.]

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.36	3.85	1.78	2.32	1.76	1.50	1.50
2	1.36	4.4	1.81	2.30	1.76	1.43	1.50
3	1.36	4.7	1.91	2.28	1.75	1.40	.....
4	1.36	4.7	1.89	2.31	1.71	1.37	.....
5	1.37	4.7	1.86	2.30	1.71	1.37	.....
6	1.41	4.8	1.74	2.24	1.70	.95	.....
7	1.56	4.9	1.69	2.08	1.69	.....	.....
8	1.73	5.0	1.56	2.09	1.70	.....	.....
9	1.84	5.2	1.48	2.16	1.63	.....	.....
10	1.94	5.6	1.42	2.08	1.60	.....	.....
11	2.20	5.9	1.50	2.06	1.55	.....	.....
12	2.34	6.1	1.61	2.08	1.51	.....	.....
13	2.20	6.0	1.70	2.05	1.49	1.10	.....
14	1.98	5.4	2.12	2.01	1.49	1.22	.....
15	1.65	5.0	2.26	1.90	1.48	1.33	1.33
16	1.53	3.6	2.20	.....	1.47	1.41	1.38
17	1.40	3.1	2.16	1.70	1.47	1.54	1.40
18	1.31	2.6	2.18	1.66	1.55	1.57	1.39
19	1.63	2.24	2.29	1.80	2.05	1.70	1.39
20	1.75	2.08	2.38	1.84	2.00	1.65	1.40
21	1.64	2.17	2.40	1.79	1.97	1.57	1.42
22	1.48	2.38	2.37	1.76	2.04	1.53	1.45
23	1.40	2.48	2.36	1.72	2.04	1.41	1.43
24	1.38	2.44	2.38	1.55	1.88	1.44	1.46
25	1.35	2.31	2.37	1.30	1.72	1.46	1.50
26	1.31	2.19	2.38	1.65	1.75	1.45	1.54
27	1.30	1.95	2.35	1.65	1.80	1.48	1.70
28	1.30	1.84	2.34	1.66	1.74	1.43	1.96
29	1.30	1.85	2.34	1.72	1.71	1.34	1.82
30	2.15	1.78	2.30	1.75	1.65	1.34	1.83
31	3.0	.....	2.28	.....	1.58	1.45	.....

Daily discharge, in second-feet, of Sevier River near Delta, Utah, for the year ending Sept. 30, 1913.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	83	551	145	231	142	102	102
2	83	700	150	228	142	92	102
3	83	790	166	225	140	88	.....
4	83	790	162	230	134	84	.....
5	84	790	158	228	134	84	.....
6	89	820	138	218	132	32	.....
7	111	850	130	193	130	.....	.....
8	137	880	111	194	132	.....	.....
9	154	940	99	206	122	.....	.....
10	170	1,060	91	193	117	.....	.....
11	212	1,150	102	190	110	.....	.....
12	235	1,210	118	193	104	.....	.....
13	212	1,180	132	188	101	50	.....
14	177	1,000	199	182	101	65	.....
15	124	880	222	164	99	79	79
16	106	490	212	148	98	89	85
17	88	376	206	132	98	108	88
18	76	279	209	126	110	112	87
19	122	218	226	148	188	132	87
20	140	193	242	154	180	124	88
21	123	207	245	146	175	112	91
22	99	242	240	142	186	106	95
23	88	259	238	135	186	89	92
24	85	252	242	110	161	94	96
25	82	230	240	75	135	96	102
26	76	210	242	124	140	95	108
27	75	172	236	124	148	99	132
28	75	154	235	126	138	92	174
29	75	156	235	135	134	80	151
30	204	145	228	140	124	80	153
31	354	.....	225	.....	114	95	.....

NOTE.—Discharge determined from a rating curve fairly well defined below and approximate above gage height 4 feet. Discharge estimated by comparison with records at Leamington and Oasis, Aug. 7–12, 45 second-feet; Sept. 3–14, 30 second-feet.

Monthly discharge of Sevier River near Delta, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
March	354	75	126	7,750	B.
April	1,210	145	572	34,000	A.
May	245	91	188	11,600	A.
June	231	75	168	10,000	A.
July	188	98	134	8,240	B.
August	132	.....	82.2	5,050	B.
September	174	.....	99.7	5,930	B.
The period	.....	.....	.....	82,600	

SEVIER RIVER NEAR OASIS, UTAH.

Location.—In the SW. ¼ sec. 22, T. 17 S., R. 7 W., on the county bridge about 2 miles northeast of Oasis and about 400 yards below flour mill on right bank of Sevier River.

Records available.—April 13, 1912, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff gage on southwest wooden pile of bridge; sloping gage on right bank used for high water.

Channel and control.—Shifting.

Discharge measurements.—Made by wading at low and medium stages; at extremely high stages can be made from the bridge.

Winter flow.—Discharge relation probably not affected by ice.

Diversions.—During the irrigation season all the water in the river is diverted above station. Records during such periods represent seepage and return waters.

Regulation.—Storage reservoirs and diversion dams above station control flow of river at station.

Accuracy.—Records only fair, owing to shifting of control and the fact that one or two gage readings a day are probably not sufficient to give mean for the day.

Cooperation.—Some discharge measurements furnished by Delta Land & Water Co.

Discharge measurements of Sevier River near Oasis, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Oct. 7	F. W. Cottrell	4.74	306	May 15	Lynn Crandall	2.78	17.9
Nov. 7	do	5.42	449	June 27	do	2.74	10.9
26	do	4.98	362	Aug. 8	do	2.68	7.23
Dec. 12	do	4.31	241	Sept. 23	Porter and Cottrell	2.82	24.2

Daily gage height, in feet, of Sevier River near Oasis, Utah, for the year ending Sept. 30, 1913.

[W. W. Warnick and Don T. Bishop, observers.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	4.1	5.5	4.9	3.3	2.7	2.85	3.65	2.84	2.70	2.70	2.70	2.68
2	4.0	5.6	4.95	3.4	2.75	2.80	5.32	2.81	2.70	2.70	2.69	2.68
3	4.1	5.5	4.9	3.3	2.75	2.80	7.00	2.80	2.72	2.68	2.69	2.70
4	4.4	5.52	5.0	3.2	2.85	2.79	7.25	2.80	2.71	2.70	2.69	2.72
5	4.4	5.52	4.9	3.2	3.0	2.80	7.10	2.78	2.74	2.68	2.68	2.74
6	4.5	5.5	4.9	3.2	2.9	2.84	7.48	2.78	2.74	2.68	2.70	2.74
7	4.8	5.4	4.6	3.1	2.85	2.84	7.56	2.78	2.72	2.70	2.68	2.76
8	4.65	5.4	4.55	3.1	2.8	2.96	8.00	2.78	2.70	2.70	2.68	2.77
9	4.65	5.4	4.5	3.15	2.9	3.07	8.03	2.78	2.70	2.70	2.66	2.79
10	4.35	5.35	4.3	3.1	3.0	2.99	8.41	2.80	2.71	2.72	2.66	2.80
11	4.35	5.4	4.25	3.1	2.9	3.25	8.56	2.80	2.70	2.71	2.66	2.80
12	4.85	5.3	4.3	3.15	2.85	3.79	8.66	2.80	2.68	2.68	2.68	2.81
13	5.05	5.3	4.6	3.2	2.8	3.98	8.34	2.82	2.68	2.70	2.70	2.80
14	5.05	5.25	4.8	3.1	2.8	3.99	7.42	2.80	2.70	2.70	2.66	2.79
15	4.95	5.2	4.95	3.5	3.1	3.78	5.92	2.78	2.68	2.70	2.66	2.83
16	5.0	5.15	5.0	3.4	3.05	3.40	4.70	2.78	2.70	2.72	2.66	2.86
17	4.95	5.1	5.1	3.1	3.1	3.14	4.35	2.80	2.69	2.70	2.68	2.84
18	5.2	5.1	5.05	3.1	3.15	3.11	3.76	2.80	2.68	2.72	2.69	2.86
19	5.55	5.0	5.0	3.05	3.1	3.06	3.12	2.78	2.70	2.71	2.70	2.88
20	5.25	5.0	4.9	3.05	3.05	3.08	3.04	2.75	2.70	2.72	2.70	2.90
21	6.15	5.1	5.1	3.1	3.15	3.21	2.92	2.74	2.68	2.70	2.68	2.92
22	6.0	5.05	4.65	3.0	3.1	3.24	2.91	2.73	2.69	2.70	2.66	2.90
23	6.1	5.0	4.2	2.9	3.1	3.19	2.99	2.70	2.68	2.84	2.66	2.88
24	6.2	5.05	3.95	2.8	3.2	3.11	2.92	2.70	2.68	2.79	2.65	2.91
25	6.0	5.0	3.6	2.85	3.1	3.19	3.01	2.71	2.70	2.72	2.68	2.90
26	5.55	5.0	3.4	2.7	3.2	3.14	2.94	2.72	2.73	2.70	2.70	2.72
27	5.5	5.0	3.4	2.7	3.0	3.08	2.99	2.70	2.75	2.70	2.67	2.72
28	5.35	4.95	3.3	2.75	2.9	3.04	2.96	2.73	2.71	2.68	2.66	2.74
29	5.35	4.95	3.3	2.7	.....	2.92	2.90	2.72	2.71	2.68	2.71	2.75
30	5.5	4.75	3.3	2.8	.....	2.91	2.88	2.72	2.71	2.68	2.70	2.74
31	5.5	.....	3.3	2.8	.....	2.96	.....	2.74	.....	2.70	2.68	.....

Daily discharge, in second-feet, of Sevier River near Oasis, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	184	470	340	66	13	22	113	22	13	8	8	7
2	166	492	350	78	16	19	430	20	13	8	8	7
3	184	470	340	66	16	19	828	19	14	7	8	8
4	240	474	360	55	22	18	893	19	14	8	8	10
5	240	474	340	55	34	19	854	18	15	7	7	12
6	260	470	340	55	26	22	953	18	14	7	8	13
7	320	448	280	44	22	22	974	18	12	8	7	16
8	290	448	270	44	19	31	1,090	18	11	8	7	18
9	290	448	260	50	26	41	1,100	18	10	8	6	21
10	230	437	220	44	34	33	1,210	19	9	9	6	23
11	230	448	211	44	26	60	1,250	19	8	8	6	23
12	330	426	220	50	22	133	1,280	19	7	7	7	24
13	371	426	280	55	19	163	1,190	20	7	8	8	23
14	371	415	320	44	19	164	937	19	8	8	6	22
15	350	404	350	92	44	131	569	18	7	8	6	25
16	360	393	360	78	39	78	300	18	8	9	6	28
17	350	382	382	44	44	48	230	19	8	8	7	26
18	404	382	371	44	50	45	128	19	7	9	8	28
19	481	360	360	39	44	40	46	18	8	8	8	29
20	415	360	340	39	39	42	38	16	8	9	8	31
21	624	382	382	44	50	56	28	15	7	8	7	33
22	588	371	290	34	44	59	27	15	8	8	6	31
23	612	360	202	26	44	54	33	13	7	16	6	29
24	636	371	158	19	55	45	28	13	7	12	6	32
25	588	360	106	22	44	54	35	14	8	9	7	31
26	481	360	78	13	55	48	29	14	10	8	8	18
27	470	360	78	13	34	42	33	13	10	8	7	18
28	437	350	66	16	26	38	31	15	8	7	6	19
29	437	350	66	13	.....	28	26	14	8	7	8	20
30	470	310	66	19	.....	27	25	14	8	7	8	19
31	470	.....	66	19	.....	31	.....	15	.....	8	7	.....

NOTE.—Discharge determined from three fairly well defined rating curves applicable as follows: Oct. 1, 1912, to June 5, 1913; June 11 to Sept. 3; and Sept. 10–30, 1913. Indirect methods for shifting channels used June 6–10 and Sept. 4–9.

Monthly discharge of Sevier River near Oasis, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	636	166	383	23,600	A.
November	492	310	407	24,200	A.
December	382	66	253	15,600	A.
January	92	13	42.7	2,630	B.
February	55	13	33.1	1,840	B.
March	164	18	52.6	3,230	A.
April	1,280	25	490	29,200	B.
May	22	13	17.1	1,050	B.
June	15	7	9.40	559	C.
July	16	7	8.32	512	C.
August	8	6	7.06	434	C.
September	33	7	21.5	1,280	C.
The year	1,280	6	144	104,000	

ASAY CREEK NEAR HATCH, UTAH.

Location.—Approximately in the SW. ¼ sec. 18, T. 37 S., R. 5 W., about one-fourth mile above the backwater of the Hatchtown reservoir on the road from Hatch to Kanab.

Records available.—July 16 to September 20, 1912; May 17 to September 30, 1913. Also several miscellaneous measurements during 1911 and spring of 1912.

Drainage area.—Not measured.

Gage.—Stevens water-stage recorder installed July 12, 1913, with outside vertical staff on right bank 30 feet below cable at same location and datum as staff gage previously used.

Channel and control.—Gravel and rocks; more or less shifting.
Discharge measurements.—Made by wading or from cable.
Winter flow.—Discharge relation at times affected by ice.
Diversions.—Above all diversions.
Regulation.—None.
Accuracy.—Records fair.

Records show the run-off from this stream available for storage in the Hatchtown reservoir.

Discharge measurements of Asay Creek near Hatch, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 30	Leonard Tanner	1.26	71.6	July 11	J. J. Sanford	1.03	57.9
May 17	J. J. Sanford	1.40	127	Aug. 7	do	1.17	58.9
June 24	do	1.11	69.7	Sept. 11	do	1.12	57.5
24	do	1.11	63.7				

Daily gage height, in feet, and discharge, in second-feet, of Asay Creek near Hatch, Utah, for the year ending Sept. 30, 1913.

[A. W. Huntington, observer.]

Day.	May.		June.		July.		Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	1.3	102	1.1	66	.....	120	1.20	64
2	.....	.....	1.2	82	1.1	66	.....	62	1.22	66
3	.....	.....	1.2	82	1.1	66	1.17	61	1.24	68
4	.....	.....	1.2	82	1.1	66	.....	61	1.19	63
5	.....	.....	1.2	82	1.05	60	.....	61	1.19	63
6	.....	.....	1.2	82	1.05	60	.....	61	1.18	62
7	.....	.....	1.2	82	1.05	60	1.17	61	.....	61
8	.....	.....	1.2	82	1.05	60	1.18	62	.....	60
9	.....	.....	1.2	82	1.05	60	1.18	62	.....	59
10	.....	.....	1.15	74	1.05	60	1.18	62	.....	58
11	.....	.....	1.15	74	1.05	60	1.18	62	1.12	57
12	.....	.....	1.15	74	1.02	56	1.18	62	1.14	59
13	.....	.....	1.15	74	1.00	54	1.17	61	1.15	60
14	.....	.....	1.1	66	.99	53	1.17	61	1.15	60
15	.....	.....	1.1	66	1.01	55	1.18	62	1.15	60
16	.....	.....	1.1	66	1.01	55	1.20	64	1.15	60
17	1.40	127	1.1	66	1.03	58	1.18	62	1.16	60
18	.....	127	1.1	66	1.15	74	1.18	62	1.16	60
19	.....	127	1.1	66	1.28	98	1.18	62	1.16	60
20	.....	127	1.1	66	1.05	60	1.18	62	1.17	61
21	.....	127	1.1	66	.99	53	1.18	62	1.18	62
22	.....	127	1.1	66	2.8	334	1.22	66	1.14	59
23	.....	127	1.1	66	.....	120	1.23	67	1.13	58
24	.....	127	1.1	66	.....	80	1.55	108	1.14	59
25	1.4	127	1.1	66	.....	62	1.25	69	1.14	59
26	1.4	127	1.1	66	.....	62	1.22	66	1.14	59
27	1.4	127	1.1	66	.....	62	1.20	64	1.13	58
28	1.4	127	1.1	66	1.18	62	1.20	64	1.13	58
29	1.35	114	1.1	66	.....	62	1.20	64	1.13	58
30	1.3	102	1.1	66	.....	62	1.20	64	1.13	58
31	1.3	102	.....	.....	.....	62	1.20	64	.....	.....

NOTE.—Discharge determined from two rather poorly defined rating curves, one applicable May 17 to July 21, the other, July 22 to Sept. 30. Discharge estimated May 18–24, July 23 to Aug. 2, Aug. 4–6, Sept. 7–10, and Sept. 12–13. Peak flood of approximately 1,600 second-feet, lasting for a few hours, occurred on July 22.

Monthly discharge of Asay Creek near Hatch, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 17-31	127	102	123	3,660	B.
June	102	66	72.5	4,310	B.
July	334	53	73.2	4,500	B.
August	120	61	66.2	4,070	B.
September	68	57	60.3	3,590	B.
The period				20,100	

MAMMOTH CREEK NEAR HATCH, UTAH.

Location.—Approximately in sec. 3, T. 37 S., R. 6 W., about 4 miles by road above Hatch, 2½ miles above the high-water line of the Hatchtown reservoir. No surface tributaries between the station and the reservoir, but several small springs discharge into the creek.

Records available.—July 15 to September 20, 1912; May 17 to September 30, 1913; also miscellaneous measurements during 1911 and the spring of 1912.

Drainage area.—Not measured.

Gage.—Stevens water-stage recorder installed July 12, 1913, at same site and datum as vertical staff on left bank, which was previously used.

Channel and control.—Fairly permanent. Current is very swift; left bank overflows at high stages.

Discharge measurements.—Made by wading or from cable just below gage.

Winter flow.—No data.

Diversions.—The Hatch Bench ditch diverts water about half a mile above the gage. No diversions between the station and reservoir.

Regulation.—None.

Accuracy.—Records fair.

Discharge measurements of Mammoth Creek near Hatch, Utah, during the year ending Sept. 30, 1913.

[Made by J. J. Sanford.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
May 17	4.05	216	June 24	1.30	27.0	Aug. 8	1.12	20.7
June 24	1.30	25.2	July 12	1.17	18.8	Sept. 11	1.28	28.4

Daily gage height, in feet, and discharge, in second-feet, of Mammoth Creek near Hatch, Utah, for the year ending Sept. 30, 1913.

[A. W. Huntington, observer.]

Day.	May.		June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	2.0	69	1.25	24	1.3	28	1.35	33
2	.....	.....	1.9	62	1.25	24	1.4	35	1.20	25
3	.....	.....	1.85	59	1.25	24	1.14	22	1.18	24
4	.....	.....	1.8	56	1.25	24	1.12	21	1.18	24
5	.....	.....	1.8	56	1.25	24	1.12	21	1.18	24
6	.....	.....	1.75	52	1.25	24	1.14	22	1.20	25
7	.....	.....	1.75	52	1.25	24	1.12	21	1.20	25
8	.....	.....	1.7	49	1.20	21	1.13	22	.....	27
9	.....	.....	1.7	49	1.20	21	1.26	29	.....	27
10	.....	.....	1.7	49	1.20	21	1.20	25	.....	27
11	.....	.....	1.65	46	1.20	21	1.34	33	1.28	29
12	.....	.....	1.65	46	1.17	20	1.20	25	1.28	29
13	.....	.....	1.7	49	1.18	20	1.17	24	1.26	28
14	.....	.....	1.7	49	1.18	20	1.15	22	1.25	28
15	.....	.....	1.65	46	1.17	20	1.14	22	1.27	28
16	.....	.....	1.55	40	1.16	19	1.13	22	1.27	28
17	4.05	216	1.5	37	1.16	19	1.13	22	1.27	28
18	.....	.....	1.5	37	1.17	20	1.12	21	1.25	28
19	.....	.....	1.5	37	1.20	21	1.12	21	1.23	26
20	.....	.....	1.45	34	1.22	22	1.10	20	1.22	26
21	.....	.....	1.35	28	1.21	22	1.11	20	1.21	26
22	.....	.....	1.35	28	1.23	22	1.07	18	1.28	29
23	.....	.....	1.35	28	1.23	22	1.08	19	1.27	28
24	.....	.....	1.35	28	1.20	21	1.18	24	1.23	26
25	2.4	96	1.35	28	1.18	20	1.20	25	1.22	26
26	2.4	96	1.3	26	1.16	19	.....	25	1.20	25
27	2.35	92	1.3	26	1.12	17	1.20	25	1.20	25
28	2.3	89	1.3	26	1.09	16	.....	25	1.20	25
29	2.2	82	1.3	26	1.03	12	1.20	25	1.20	25
30	2.1	75	1.3	26	1.00	11	1.23	26	1.20	25
31	2.1	75	.....	.....	.98	10	1.24	27	.....	.....

NOTE.—Discharge determined from two fairly well defined rating curves, one applicable May 17 to July 31; the other Aug. 3 to Sept. 30. Discharge estimated Aug. 1–2, 26 and 28, and Sept. 8–10.

Monthly discharge of Mammoth Creek near Hatch, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 25–31	96	75	86.4	1,200	A.
June	69	26	41.5	2,470	A.
July	24	10	20.2	1,240	A.
August	35	18	23.8	1,460	B.
September	33	24	26.6	1,580	B.
The period	.....	.....	.....	7,950	

EAST FORK OF SEVIER RIVER NEAR KINGSTON, UTAH.

Location.—In the SW. ¼ sec. 16, T. 30 S., R. 2½ W., about 3 miles east of Kingston, 1½ miles above the Rocky Ford bridge.

Records available.—March 27 to September 30, 1913, and May 11 to September 20, 1912, on old gage three-fourths of a mile north of Kingston.

Drainage area.—Not measured.

Gage.—Vertical staff nailed to tree on right bank.

Channel and control.—One channel at medium stages. Stream bed of gravel. Right bank may overflow during high water.

Discharge measurements.—Made by wading.

Diversions.—Above all irrigation diversions.

Regulation.—The flow at the station is affected by the operation of the gates at the Otter Creek Reservoir, 8 miles above.

Accuracy.—Records fair, as gage was read only once a day.

Discharge measurements of East Fork of Sevier River near Kingston, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Oct. 6	G. H. Russell	[a] 2.02	15.2	May 26	J. J. Sanford	1.55	37.0
Nov. 25	Leonard Tanner	[a] 2.11	19.8	June 4	do	1.50	40.1
Mar. 27	do	1.31	21.9	27	Porter and Sanford	2.91	250

[a] Gage heights refer to gage used during 1912.

Daily gage height, in feet, of East Fork of Sevier River near Kingston, Utah, for the year ending Sept. 30, 1913.

[O. P. Jessen, observer.]

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1		4.1	2.45		2.9	3.0	2.5
2		4.0	1.75	1.6	2.9	3.0	2.5
3		3.45	1.80	1.4	2.9		2.5
4		2.6		1.5	2.9	3.0	2.5
5		2.7	1.95	1.5	2.9	3.1	2.5
6			2.45	3.0		3.1	2.5
7		2.7	3.8	3.0	2.9	3.0	
8		2.4	2.65		2.9	3.0	2.5
9		2.25	2.40	3.0	2.9	3.0	2.25
10		1.88	2.10	3.0	2.9		1.90
11		1.88		3.0	2.9	2.6	1.90
12		1.98	1.90	3.0	2.9	2.6	1.90
13			1.80	3.0		2.6	1.75
14		1.98	1.60	3.0	2.9	2.65	
15		2.95	1.50		2.9	2.65	1.45
16		3.05	1.40	3.0	2.9	2.65	1.35
17		3.3	1.40	3.0	2.9		1.08
18		3.6		3.0	3.2	2.5	1.02
19		3.1	1.40	3.0	3.2	2.5	1.00
20			1.38	3.0		2.7	1.00
21		2.95	1.38	3.0	3.3	2.7	1.00
22		3.15	1.40	3.0	3.3	2.65	1.20
23		3.2	1.80	3.0	3.35	2.7	1.20
24		3.3	1.62	3.0	3.3		1.20
25		2.85		3.0	3.3	2.5	1.30
26		3.05	1.62	3.0	3.3	2.5	1.30
27	1.32		1.55	3.0		2.5	1.30
28	1.40	4.0	1.55	3.0	3.3	2.5	
29	1.65	3.7	1.60		3.3	2.5	1.30
30		3.0	1.68	3.0	3.2	2.5	1.30
31					3.1		

Daily discharge, in second-feet, of East Fork of Sevier River near Kingston, Utah, for year ending Sept. 30, 1913.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1		496	172	56	254	273	181
2		475	69	51	254	273	181
3		360	75	30	254	273	181
4		198	85	40	254	273	181
5		216	95	40	254	292	181
6		216	172	273	254	292	181
7		216	433	273	254	273	181
8		164	207	273	254	273	181
9		139	164	273	254	273	139
10		85	116	273	254	236	88
11		85	102	273	254	198	88
12		99	88	273	254	198	88
13		99	75	273	254	198	69
14		99	51	273	254	207	52
15		264	40	273	254	207	35
16		283	30	273	254	207	26
17		330	30	273	254	194	11
18		391	30	273	311	181	9
19		292	30	273	311	181	8
20		278	28	273	320	216	8
21		264	28	273	330	216	8
22		301	30	273	330	207	17
23		311	75	273	340	216	17
24		330	53	273	330	198	17
25		245	53	273	330	181	22
26		283	53	273	330	181	22
27	24	379	46	273	330	181	22
28	30	475	46	273	330	181	22
29	57	412	51	273	330	181	22
30		273	61	273	311	181	22
31			58		292	181	

NOTE.—Discharge determined from a fairly well-defined rating curve. Discharge estimated for days for which gage heights are missing.

Monthly discharge of East Fork of Sevier River near Kingston, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
April	496	85	269	16,100	B.
May	433	28	85.4	5,250	B.
June	273	30	235	14,000	B.
July	340	254	285	17,500	B.
August	292	181	220	13,500	B.
September	181	8	75.3	4,480	B.
The period				70,800	

EAST FORK OF SEVIER RIVER NEAR JUNCTION, UTAH.

Location.—In the N. ½ sec. 3, T. 30 S., R. 3 W., at the Harris ranch, about 1,000 feet above the mouth of the stream and about 1½ miles southeast of Junction.

Records available.—June 22 to September 14, 1913.

Drainage area.—Not measured.

Gage.—Stevens water-stage recorder.

Channel and control.—Sand and gravel; fairly permanent.

Discharge measurements.—Made by wading.

Diversions.—Station is below all diversions from the East Fork and shows the flow into the South Fork or main Sevier River.

Regulation.—The flow is partly controlled by the operation of the gates at the Otter Creek reservoir.

Accuracy.—Records good.

Discharge measurements of East Fork of Sevier River near Junction, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
June 3	J. J. Sanford	[a] 0.62	4.7	July 8	J. J. Sanford	3.83	[b] 266
23	do	4.00	[b] 224	30	do	4.41	[b] 277
28	Porter and Sanford	3.94	[b] 222	Sept. 12	do	2.28	34.4

[a] Gage height refers to a temporary gage, with no reference to permanent gage.
[b] Discharges obtained by subtracting flow of the main river above the mouth of the East Fork from the flow below it.

Daily gage height, in feet, and discharge, in second-feet, of East Fork of Sevier River near Junction, Utah, for the year ending Sept. 30, 1913.

[Reed Harris, observer.]

	June.		July.		August.		September.	
1			3.85	208	4.3	265	3.7	190
2			3.85	208	4.25	258	3.7	190
3			2.85	208	4.2	252	3.7	190
4			3.85	208	4.2	252	3.65	184
5			3.9	215	4.2	252	3.6	178
6			3.95	221	4.25	258	3.55	172
7			3.9	215	4.3	265	3.55	172
8			3.85	208	4.25	258	3.85	208
9			3.8	202	4.25	258	3.7	190
10			3.75	196	4.15	246	3.5	166
11			3.75	196	3.9	215	3.47	162
12				196	3.8	202	3.14	125
13				196	3.7	190	1.91	13
14			3.75	196	3.6	178	1.57	4
15			3.9	215	3.5	166		
16			4.05	233	3.4	154		
17			4.15	246	3.4	154		
18			4.15	246	3.35	148		
19			4.15	246	3.35	148		
20			4.2	252	3.4	154		
21			4.25	258	3.45	160		
22	3.95	221	4.4	277	3.5	166		
23	3.95	221	4.45	283	3.7	190		
24	3.95	221	4.5	290	3.8	202		
25	3.9	215	4.5	290	3.65	184		
26	3.9	215	4.5	290	3.75	196		
27	3.9	215	4.45	283	3.65	184		
28	3.9	215	4.45	283	3.7	190		
29	3.85	208	4.4	277	3.7	190		
30	3.85	208	4.4	277	3.7	190		
31			4.4	277	3.7	190		

NOTE.—Discharge determined from a rating curve well defined above 150 second-feet and fairly well defined below. July 12–13 interpolated. Gates at Otter Creek reservoir closed on Sept. 12.

Monthly discharge of East Fork of Sevier River near Junction, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
June 22–30	221	208	215	3,840	A.
July	290	196	239	14,700	A.
August	265	148	204	12,500	A.
September 1–14	190	4	153	4,250	A.
The period				35,300	

OTTER CREEK NEAR COYOTE, UTAH.

Location.—In the W. ½ sec. 28, T. 30 S., R. 2 W., just below the outlet of the Otter Creek reservoir, 5 miles northwest of Coyote and about 12 miles east of Kingston.

Records available.—June 21 to September 12, 1913.

Drainage area.—Not measured.

Gage.—Stevens water-stage recorder installed June 21, 1913, on left bank of stream.

Channel and control.—Gravel. A concrete weir is installed just below the gage.

Discharge measurements.—Made by wading at the gage.

Winter flow.—The gates at the reservoir are usually closed during the winter allowing only a small amount of seepage to pass the station.

Regulation.—The flow past the station is controlled by the operation of the outlet gates of the reservoir just above.

Accuracy.—Records good.

Discharge measurements of Otter Creek near Coyote, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
June 4	J. J. Sanford	0.15	9.71	July 30	J. J. Sanford	2.10	230
20	do	1.90	227	Aug. 15	do	1.62	150
20	do	1.90	229	29	do	1.57	143
27	Porter and Sanford	1.90	186	Sept. 9	do	1.40	116
July 9	J. J. Sanford	1.88	186				

NOTE.—All measurements except those of June 20 were made under poor conditions and discarded on basis of later data.

Daily gage height, in feet, and discharge, in second-feet, of Otter Creek near Coyote, Utah, for the year ending Sept. 30, 1913.

Day.	June.		July.		Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1			1.89	224	2.10	268	1.55	156
2			1.92	230	2.09	266	1.54	154
3			1.91	228	2.09	266	1.54	154
4			1.91	288	2.09	266	1.51	148
5			1.91	228	2.08	264	1.49	144
6			1.89	224	2.07	262	1.45	137
7			1.89	224	2.06	260	1.42	132
8			1.88	222	2.06	260	1.41	130
9			1.86	218	1.94	234	1.40	128
10			1.89	224	1.78	202	1.32	114
11			1.89	224	1.69	184	.92	58
12			1.91	228	1.66	178	.39	16
13			1.90	226	1.64	174		
14			2.00	247	1.62	170		
15			2.15	279	1.62	170		
16			2.16	281	1.63	172		
17			2.15	279	1.63	172		
18			2.15	279	1.62	170		
19			2.15	279	1.62	170		
20			2.15	279	1.62	170		
21	1.90	226	2.15	279	1.61	168		
22	1.90	226	2.15	279	1.62	170		
23	1.90	226	2.15	279	1.64	174		
24	1.90	226	2.14	277	1.64	174		
25	1.90	226	2.12	272	1.62	170		
26	1.90	226	2.11	270	1.60	166		
27	1.90	226	2.12	272	1.60	166		
28	1.89	224	2.12	272	1.59	164		
29	1.89	224	2.11	270	1.58	162		
30	1.89	224	2.10	268	1.58	162		
31			2.11	270	1.57	160		

NOTE.—Discharge determined from a well-defined rating curve based on discharge measurements made during 1914. After Sept. 12, when gates of dam were closed, flow, which was estimated at about 2 second-feet, was from seepage.

Monthly discharge of Otter Creek near Coyote, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
June 21–30	226	224	225	4,460	A.
July	281	218	254	15,600	A.
August	268	160	197	12,100	A.
September 1–12	156	16	123	2,920	A.
The period				35,100	

CLEAR CREEK AT SEVIER, UTAH.

Location.—In sec. 32, T. 25 S., R. 4 W., at the town of Sevier, about 100 yards above confluence of the stream with Sevier River. Dry Creek enters from the right about 2½ miles above, and Mill Creek about 8 miles above the station.

Records available.—February 23, 1912, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff.

Channel and control.—Fairly permanent.

Discharge measurements.—Made by wading or from log bridge just above the gage.

Winter flow.—Discharge relation not affected by ice except for short periods during very cold weather.

Diversions.—Cove canal heads about three-fourths mile above the station.

Regulation.—None.

Accuracy.—Records fair.

Discharge measurements of Clear Creek at Sevier, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Oct. 8	G. H. Russell	0.12	5.34	May 24	J. J. Sanford	1.70	132
Nov. 21	Leonard Tanner	.38	11.8	24	do	1.70	126
Dec. 21	do	.42	13.4	June 26	E. A. Porter	.77	39.7
Mar. 23	do	.49	16.4	30	Porter and Sanford	.62	27.4
May 5	J. J. Sanford	.90	40.0	July 18	J. J. Sanford	−.10	1.36
6	do	1.00	49.1	Aug. 11	do	−.15	2.12
20	do	1.33	86.5	21	do	−.18	1.46

Daily gage height, in feet, of Clear Creek at Sevier, Utah, for the year ending Sept. 30, 1913.

[O. A. Anderson, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.2	0.50	0.35	0.5	0.55	0.55	1.1	1.2	1.4	0.55	—0.20	0.3
2	.2	.50	.35	.4	.55	.5	1.1	1.15	1.35	.55	— .15	.3
3	.2	.50	.35	.5	.55	.5	1.1	1.05	1.3	.53	— .15	.35
4	.15	.50	.30	.5	.60	.5	1.1	1.05	1.25	.53	.35	.4
5	.15	.50	.25	.5	.60	.5	1.1	1.10	1.2	.53	.35	.4
6	.15	.50	.25	.5	.55	.5	1.1	1.10	1.1	.43	.25	.45
7	.15	.50	.25	.5	.55	.5	1.05	1.10	1.05	.37	.23	.45
8	.15	.55	.25	.5	.50	.5	1.05	1.15	1.05	.35	.15	.45
9	.15	.50	.25	.5	.50	.6	.9	1.2	1.05	.70	— .15	.5
10	.20	.50	.30	.5	.50	.7	.95	1.35	1.0	.35	— .20	.5
11	.20	.50	.55	.5	.50	.7	1.0	1.35	.95	.25	— .20	.4
12	.20	.48	.30	.5	.50	.7	1.0	1.4	.95	.05	— .25	.4
13	.20	.50	.35	.5	.50	.7	1.1	1.35	.9	.10	— .25	.4
14	.20	.50	.50	.5	.50	.7	1.1	1.3	.85	.10	— .30	.4
15	.60	.50	.50	.5	.50	.45	1.25	1.3	.85	— .10	— .30	.4
16	.60	.50	.50	.5	.50	.7	1.35	1.25	.85	— .05	— .30	.4
17	.60	.50	.50	.5	.60	.6	1.35	1.2	.82	— .10	— .30	.4
18	.50	.50	.50	.5	.60	.6	1.4	1.25	.82	— .10	— .25	.4
19	.50	.45	.50	.5	.60	.6	1.4	1.3	.82	— .07	— .25	.4
20	.50	.45	.50	.5	.60	.55	1.3	1.4	.82	— .07	— .30	.4
21	.50	.35	.50	.5	.60	.55	1.25	1.4	.82	.20	— .28	.4
22	.50	.35	.40	.5	.60	.6	1.1	1.4	.8	.35	— .35	.4
23	.50	.35	.40	.5	.65	.5	1.15	1.5	.8	.65	— .35	.35
24	.50	.35	.40	.55	.65	.49	1.1	1.7	.8	.62	— .35	.35
25	.50	.35	.40	.55	.60	.41	1.05	1.8	.75	.60	— .35	.35
26	.50	.35	.40	.55	.50	.4	1.05	1.9	.75	.50	— .40	.35
27	.70	.30	.40	.55	.50	.75	1.1	1.95	.72	.50	1.60	.35
28	.55	.30	.50	.55	.55	1.1	1.3	1.95	.7	.30	.10	.35
29	.55	.30	.50	.55	.....	1.1	1.3	1.7	.7	.20	.10	.3
30	.50	.25	.50	.55	.....	1.2	1.35	1.55	.63	.20	.10	.3
31	.50	.....	.50	.55	.....	1.1	.....	1.5	.....	.20	.30	.....

Daily discharge, in second-feet, of Clear Creek at Sevier, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	7	17	11	11	20	20	58	66	96	25	1.0	13
2	7	17	11	13	20	17	58	62	91	25	1.5	13
3	7	17	11	17	20	17	58	54	86	24	1.5	15
4	6	17	9	17	22	17	58	54	81	24	15	17
5	6	17	8	17	22	17	58	58	76	24	15	17
6	6	17	8	17	20	17	58	58	67	18	12	20
7	6	17	8	17	20	17	54	59	62	16	12	20
8	6	20	8	17	17	17	54	64	62	15	8.5	20
9	6	17	8	17	17	22	42	68	62	35	1.5	22
10	7	17	9	17	17	28	46	81	58	15	1.0	22
11	7	17	20	17	17	28	50	82	54	11	1.0	17
12	7	16	9	17	17	28	50	87	54	5.8	.8	17
13	7	17	11	17	17	28	58	84	50	7	.8	17
14	7	17	17	17	17	28	58	80	46	7	.5	17
15	22	17	17	17	17	15	70	80	46	2	.5	17
16	22	17	17	17	17	28	78	77	46	3.2	.5	17
17	22	17	17	17	22	22	78	74	44	2	.5	17
18	17	17	17	17	22	22	82	79	44	2	.8	17
19	17	15	17	17	22	22	82	83	44	2.8	.8	17
20	17	15	17	17	22	20	74	92	44	2.8	.5	17
21	17	11	17	17	22	20	70	94	44	10	.6	17
22	17	11	13	17	22	22	58	97	42	15	.2	17
23	17	11	13	17	25	17	62	109	42	32	.2	15
24	17	11	13	20	25	17	58	129	42	29	.2	15
25	17	11	13	20	22	13	54	140	38	28	.2	15
26	17	11	13	20	17	13	54	152	38	22	0	15
27	28	9	13	20	17	32	58	158	36	22	118	15
28	20	9	17	20	20	58	74	158	35	13	7	15
29	20	9	17	20	.....	58	74	129	35	10	7	13
30	17	8	17	20	.....	66	78	112	30	10	7	13
31	17	.....	17	20	.....	58	.....	107	.....	10	13	.....

NOTE.—Discharge determined from two fairly well defined rating curves, one applicable Oct. 1, 1912, to May 6, 1913, the other May 24 to Sept. 30. Indirect methods for shifting channels used May 7-23.

Monthly discharge of Clear Creek at Sevier, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	28	6	13.3	818	B.
November	20	8	14.6	869	B.
December	20	8	13.3	818	C.
January	20	13	17.6	1,080	B.
February	25	17	19.8	1,100	A.
March	66	13	25.9	1,590	A.
April	82	42	62.1	3,700	A.
May	158	54	91.2	5,610	B.
June	96	30	53.2	3,170	A.
July	35	2	15.1	928	B.
August	118	0	7.39	454	B.
September	22	13	16.6	988	B.
The year	158	0	29.2	21,100	

SAN PITCH RIVER NEAR GUNNISON, UTAH.

Location.—In the NW. ¼ SW. ¼ sec. 13, T. 19 S., R. 2 W., about 3 miles west of Gunnison post office, half a mile above confluence of San Pitch and Sevier rivers and one-fourth mile below a small earth and rock diversion dam.

Records available.—February 21, 1912, to September 30, 1913. Also from June 30, 1900, to December 31, 1905, at a point on the stream about 4 miles northeast of Gunnison.

Drainage area.—886 square miles.

Gage.—Vertical staff; datum raised 0.32 foot January 1, 1913.

Channel and control.—Gravel; fairly permanent.

Discharge measurements.—Made by wading.

Winter flow.—Ice affects the discharge relation.

Diversions.—Practically all the run-off of the stream is stored in the Gunnison reservoir, 7 miles northeast of Gunnison. Part of the water flowing past the gage at times is waste from the Kearns-Robbins canal.

Accuracy.—Records poor during certain periods owing to unreliable gage heights.

Discharge measurements of San Pitch River near Gunnison, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Mar. 22	Leonard Tanner	2.22	108	Aug. 25	J. J. Sanford	1.70	17.6
28	do	2.79	257	Sept. 20	Porter and Sanford	1.58	12.6
June 12	J. J. Sanford	1.40	4.24				

Daily gage height, in feet, of San Pitch River near Gunnison, Utah, for the year ending Sept. 30, 1913.

[Leroy H. Lund, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.73	1.63	1.75	1.45	1.50	1.65	2.7	1.33	1.22	1.26	1.26	1.69
2	1.75	1.63	1.75	1.45	1.50	1.65	2.85	1.31	1.21	1.25	1.23	1.73
3	1.61	1.59	1.83	1.45	1.50	1.65	3.1	1.31	1.23	1.26	1.22	1.90
4	1.60	1.61	1.85	1.45	1.50	1.67	3.0	1.31	1.21	1.26	1.19	1.93
5	1.59	1.63	1.93	1.45	1.51	1.63	3.0	1.32	1.27	1.23	1.31	1.67
6	1.45	1.63	1.93	1.45	1.51	1.62	2.95	1.31	1.28	1.22	1.21	1.65
7	1.61	1.63	1.99	1.45	1.51	1.57	2.9	1.30	1.26	1.22	1.27	1.67
8	1.60	1.63	2.10	1.43	1.51	1.55	2.55	1.31	1.27	1.22	.....	1.67
9	1.44	1.63	2.10	1.43	1.51	1.55	2.55	1.30	1.24	1.22	1.43	1.67
10	1.45	1.60	2.05	1.43	1.54	1.55	2.35	1.27	1.23	1.22	1.65	1.61
11	1.45	1.60	1.93	1.45	1.54	1.55	2.33	1.22	1.22	1.22	1.45	1.59
12	1.51	1.60	1.81	1.45	1.55	1.78	2.31	1.31	1.33	1.22	1.47	1.57
13	1.47	1.65	1.73	1.45	1.55	1.78	2.25	1.36	1.22	1.21	2.13	1.50
14	1.63	1.63	1.70	1.45	1.55	1.79	2.11	1.29	1.25	1.21	1.41	1.53
15	1.51	1.63	1.70	1.45	1.55	1.81	1.98	1.35	1.25	1.20	1.40	1.57
16	1.51	1.65	1.90	1.45	1.61	1.85	1.93	1.33	1.24	1.20	1.40	1.53
17	1.50	1.65	1.95	1.46	1.61	1.91	1.90	1.33	1.24	1.20	1.29	1.51
18	1.40	1.65	1.95	1.46	1.62	1.99	1.45	1.31	1.33	1.22	1.26	1.53
19	1.43	1.67	1.93	1.46	1.62	2.10	1.45	1.35	1.31	1.22	1.27	1.47
20	1.44	1.67	2.10	1.46	1.63	2.23	1.45	1.33	1.29	1.22	1.23	1.60
21	1.45	1.70	2.10	1.47	1.63	2.40	1.45	1.35	1.28	1.22	1.25	1.63
22	1.50	1.70	2.10	1.45	1.63	2.23	1.44	1.26	1.28	1.22	1.25	1.69
23	1.50	1.70	2.05	1.46	1.63	2.7	1.44	1.25	1.28	1.24	1.27	1.65
24	1.53	1.70	2.03	1.46	1.63	2.8	1.44	1.25	1.29	1.18	2.33	1.63
25	1.55	1.72	2.00	1.46	1.63	3.45	1.42	1.23	1.29	1.19	1.78	1.65
26	1.55	1.72	2.00	1.47	1.65	3.2	1.42	1.28	1.28	1.18	1.45	1.64
27	1.62	1.73	1.97	1.47	1.65	3.0	1.42	1.29	1.29	1.17	1.45	1.67
28	1.60	1.73	1.99	1.47	1.65	2.8	1.39	1.27	1.27	1.17	1.60	1.65
29	1.63	1.73	1.90	1.49	.....	2.45	1.37	1.28	1.26	1.18	1.65	1.57
30	1.63	1.73	1.45	1.49	.....	2.45	1.36	1.23	1.26	1.19	1.54	1.60
31	1.62	.....	1.45	1.49	.....	2.45	.....	1.22	.....	1.19	1.61	.....

NOTE.—All gage heights for 1913 at datum 0.32 foot higher than those in 1912.

Daily discharge, in second-feet, of San Pitch River near Gunnison, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	7.8	3.2	.....	7	9	18	232	2.9	1.2	1.6	1.6	17
2	9	3.2	.....	7	9	18	274	2.3	1.1	1.5	1.3	20
3	2.4	1.8	.....	7	9	18	348	2.3	1.3	1.6	1.2	39
4	2.0	2.4	.....	7	9	20	318	2.3	1.1	1.6	.9	45
5	1.8	3.2	.....	7	10	16	318	2.6	1.7	1.3	2.3	18
6	.3	3.2	.....	7	10	16	303	2.3	1.8	1.2	1.1	18
7	2.4	3.2	.....	7	10	12	288	2.0	1.6	1.2	1.7	20
8	2.0	3.2	.....	6	10	12	191	2.3	1.7	1.2	4.0	20
9	.3	3.2	.....	6	10	12	191	2.0	1.4	1.2	6.2	20
10	.3	2.0	.....	6	11	12	140	1.7	1.3	1.2	18	15
11	.3	2.0	.....	7	11	12	135	1.2	1.2	1.2	7	14
12	.6	2.0	.....	7	12	30	130	2.3	2.9	1.2	7.8	12
13	.4	4.0	.....	7	12	30	116	3.8	1.2	1.1	88	12
14	3.2	3.2	.....	7	12	31	83	1.9	1.5	1.1	5.4	10
15	.6	3.2	.....	7	12	33	59	3.5	1.5	1.0	5	12
16	.6	4.0	.....	7	15	39	51	2.9	1.4	1.0	5	10
17	.5	4.0	.....	7	15	48	46	2.9	1.4	1.0	1.9	10
18	.1	4.0	.....	7	16	60	7	2.3	2.9	1.2	1.6	10
19	.2	4.8	.....	7	16	81	7	3.5	2.3	1.2	1.7	8
20	.3	4.8	.....	7	16	111	7	2.9	1.9	1.2	1.3	14
21	.3	6.0	.....	8	16	152	7	3.5	1.8	1.2	1.5	16
22	.5	6.0	.....	7	16	111	7	1.6	1.8	1.2	1.5	21
23	.5	6.0	.....	7	16	232	7	1.5	1.8	1.4	1.7	18
24	1.0	6.0	.....	7	16	260	7	1.5	1.9	.8	130.	16
25	1.2	7.2	.....	7	16	456	6	1.3	1.9	.9	26	18
26	1.2	7.2	.....	8	18	378	6	1.8	1.8	.8	5	17
27	2.8	7.8	.....	8	18	318	6	1.9	1.9	.8	5	20
28	2.0	7.8	.....	8	18	260	5	1.7	1.7	.8	12	18
29	3.2	7.8	.....	9	.....	165	4	1.8	1.6	.8	14	12
30	3.2	7.8	.....	9	.....	165	4	1.3	1.6	.9	9	14
31	2.8	.....	.....	9	.....	165	.....	1.2	.....	.9	12	.....

NOTE.—Discharge determined from several fairly well defined rating curves applicable as follows: Oct. 1 to Dec. 31, 1912; Jan. 1 to Aug. 24; Aug. 26 to Sept. 3; and Sept. 5–30. Estimated Dec. 1–31, Aug. 25 and Sept. 4.

Monthly discharge of San Pitch River near Gunnison, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	9	0.1	1.74	107	B.
November	7.8	1.8	4.47	266	B.
December			[a] 5.0	307	C.
January	9	6	7.23	445	B
February	18	9	13.1	728	B
March	456	12	106	6,520	B.
April	348	4	110	6,550	B.
May	3.8	1.2	2.23	137	C.
June	2.9	1.1	1.67	99	C.
July	1.6	.8	1.14	70	C.
August	130	.9	12.3	756	B.
September	45	8	17.1	1,020	B.
The year	456	.1	23.5	17,000	

[a] Estimated.

BEAVER RIVER AT MINERSVILLE, UTAH.

Location.—About 80 rods northeast of the southwest corner of sec. 1, T. 30 S., R. 10 W., half a mile northwest of the business district of Minersville, and about 2 miles below the head of the Minersville canal; below all tributaries, Indian Creek, North Creek, and South Creek entering 10, 12, and 15 miles, respectively, above the station.

Records available.—April 13, 1909, to September 30, 1913.

Drainage area.—549 square miles.

Gage.—Inclined staff.

Channel and control.—Gravel; shifts during high stages.

Discharge measurements.—Made from a footbridge near gage.

Winter flow.—Discharge relation at times affected by ice.

Floods.—On January 2, 1910, the stream rose to a gage height of 4.7 feet, corresponding to a discharge of 608 second-feet.

Diversions.—Practically all the water is diverted above the station during the irrigation season.

Regulation.—A storage reservoir just above Minersville impounds a large part of the flow; only the excess water passes the station.

Accuracy.—Rating curves well defined by measurements; record good.

Discharge measurements of Beaver River at Minersville, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Apr. 8	Leonard Tanner	2.18	37.6	May 14	Lynn Crandall	2.10	26.2
19	do	2.23	39.2	14	do	1.99	14.3
May 3	do	.60	.1				

Daily gage height, in feet, of Beaver River at Minersville, Utah, for the year ending Sept. 30, 1913.

[Tus Gillins, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Aug.	Sept.
1	.....	2.3	2.3	2.3	2.3	2.3	3.2	1.60	.....	1.85
2	.....	2.15	2.3	2.3	2.3	2.3	3.0	1.60	.....	3.30
3	.....	2.1	2.3	2.3	2.3	2.3	2.7	1.58	2.0	1.80
4	.....	2.1	2.3	2.3	2.3	2.4	2.55	1.42	.....	1.40
5	.....	2.1	2.3	2.3	2.3	2.4	2.35	1.30	.....	1.30
6	.....	2.1	2.3	2.3	2.3	2.4	2.4	.....	.....	.....
7	.....	2.2	2.25	2.4	2.3	2.45	2.3	.....	.....	.....
8	.....	2.2	2.2	2.4	2.3	2.5	2.2	1.70	.....	1.65
9	.....	2.2	2.2	2.5	2.3	2.5	2.2	1.75	.....	1.95
10	.....	2.2	2.2	2.5	2.3	2.5	2.2	1.95	.....	2.00
11	0.6	2.2	2.2	2.5	2.3	2.95	2.2	2.12	.....	1.70
12	.6	2.2	2.2	2.4	2.3	2.65	2.1	2.30	.....	1.68
13	1.8	2.1	2.4	2.4	2.3	2.4	2.25	2.52	.....	1.68
14	1.8	2.1	2.4	2.4	2.3	2.3	2.3	1.95	.....	1.85
15	1.9	2.2	2.3	2.3	2.3	2.3	2.3	1.48	.....	1.60
16	1.9	2.2	2.3	2.3	2.3	2.15	2.3	1.58	.....	1.62
17	1.8	2.1	2.3	2.4	2.3	2.0	2.3	1.50	.....	1.65
18	1.8	2.1	2.4	2.4	2.3	2.0	2.25	1.60	.....	1.65
19	1.8	2.1	2.4	2.3	2.3	2.0	2.25	1.58	.....	1.65
20	1.8	2.15	2.4	2.4	2.2	2.0	2.1	1.40	.....	1.60
21	1.85	2.2	2.4	2.4	2.2	2.1	2.05	.....	.....	1.65
22	1.9	2.2	2.4	2.4	2.3	2.2	1.9	.....	.....	1.68
23	1.9	2.2	2.3	2.4	2.3	2.2	1.9	.....	.....	1.70
24	1.9	2.2	2.2	2.4	2.3	2.2	1.9	.....	.....	2.00
25	1.9	2.2	2.2	2.4	2.3	2.2	1.8	.....	.....	1.90
26	2.55	2.2	2.3	2.35	2.3	2.2	.9	.....	.....	1.80
27	2.55	2.2	2.3	2.3	2.3	2.2	.....	.....	.....	1.85
28	2.5	2.2	2.3	2.3	2.3	2.2	.....	.....	.....	1.82
29	2.5	2.2	2.3	2.3	.....	2.2	.....	.....	.....	1.88
30	2.5	2.2	2.3	2.3	.....	2.5	1.1	.....	.....	1.80
31	2.5	.....	2.3	2.3	.....	3.3	.....	.....	.....	.....

NOTE.—Channel dry Oct. 1–10, May 21 to Aug. 2, Aug. 4–31; water standing in pools Apr. 26–30, May 6–7, 20.

Daily discharge, in second-feet, of Beaver River at Minersville, Utah, for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Aug.	Sept.
1	.....	46	46	46	46	46	166	5	.....	9
2	.....	32	46	46	46	46	132	5	.....	174
3	.....	28	46	46	46	46	89	5	17	7
4	.....	28	46	46	46	56	72	3	.....	2
5	.....	28	46	46	46	56	51	2	.....	1
6	.....	28	46	46	46	56	56	0	.....	0
7	.....	37	42	56	46	61	46	0	.....	0
8	.....	37	37	50	46	66	37	8	.....	4
9	.....	37	37	50	46	66	37	10	.....	14
10	.....	37	37	50	46	66	37	18	.....	17
11	0	37	37	50	46	124	37	30	.....	5
12	0	37	37	50	46	83	28	46	.....	5
13	11	28	56	56	46	56	42	48	.....	5
14	11	28	56	56	46	46	46	18	.....	9
15	15	37	46	46	46	46	46	3	.....	4
16	15	37	46	46	46	32	46	4	.....	4
17	11	28	46	56	46	20	46	3	.....	4
18	11	28	56	56	46	20	42	4	.....	4
19	11	28	56	46	46	20	42	4	.....	4
20	11	32	56	56	37	20	28	2	.....	4
21	13	37	56	56	37	28	24	0	.....	4
22	15	37	56	56	46	37	15	0	.....	5
23	15	37	46	56	46	37	15	0	.....	5
24	15	37	37	56	46	37	15	0	.....	17
25	15	37	37	56	46	37	11	0	.....	11
26	72	37	46	51	46	37	0	0	.....	7
27	72	37	46	46	46	37	0	0	.....	9
28	66	37	46	46	46	37	0	0	.....	8
29	66	37	46	46	.....	37	0	0	.....	10
30	66	37	46	46	.....	66	0	0	.....	7
31	66	.....	46	46	.....	188	.....	0	.....	.....

NOTE.—Discharge determined from two well-defined rating curves, one applicable Oct. 1, 1912, to May 14, 1913, the other May 15 to Sept. 30. Discharge Aug. 3 caused by sudden rain.

Monthly discharge of Beaver River at Minersville, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October 11–31	72	0	18.6	1,140	B.
November	46	28	34.3	2,040	A.
December	56	37	46.1	2,830	B.
January	56	46	50.4	3,100	B.
February	46	37	45.4	2,520	A.
March	188	20	51.9	3,190	A.
April	166	0	40.2	2,390	B.
May	48	0	7.0	430	B.
June	0	0	.0	0	
July	0	0	.0	0	
August	17	0	.5	31	
September	174	0	12.0	714	C.
The year	188	0	25.4	18,400	

CANALS IN SEVIER VALLEY.

STATE CANAL NEAR PANGUITCH, UTAH.

Location.—In the NW. ¼ sec. 2, T. 35 S., R. 5 W., at flume over dry wash about three-fourths of a mile below heading and about 3½ miles southeast of Panguitch.

Records available.—May 3 to September 30, 1913.

Gage.—Vertical staff on right side of flume, about 15 feet from north or lower end Zero of gage is grade of flume.

Channel and control.—Wooden flume; grade of flume is about 0.4 foot below that of canal.

Discharge measurements.—Made by wading in flume.

Accuracy.—Records fair.

Records indicate the quantity of water diverted from Sevier River for the Hatchtown project of the Utah State Land Board.

Discharge measurements of State canal near Panguitch, Utah, during the year ending Sept. 30, 1913.

[Made by J. J. Sanford.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
June 24	1.74	33.8	June 24	1.26	18.6
24	1.64	31.8	24	[a] 1.06	16.1

[a] Gage height estimated by comparison of depths.

Daily gage height, in feet, and discharge, in second-feet, of State canal near Panguitch, Utah, for the year ending Sept. 30, 1913.

[W. A. Lee, observer.]

Day.	May.		June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	1.9	43	1.8	38	1.7	33	0.9	13
2	.....	.....	1.85	40	1.8	38	1.9	43	.9	13
3	1.31	20	1.8	38	1.8	38	1.8	38	.9	13
4	.....	24	1.9	43	1.8	38	1.8	38	.9	13
5	1.61	29	1.9	43	1.8	38	1.7	33	.9	13
6	1.61	29	1.9	43	1.8	38	1.7	33	.9	13
7	1.6	29	1.9	43	1.8	38	1.7	33	.9	13
8	1.6	29	1.9	43	1.8	38	1.7	33	.9	13
9	1.6	29	1.9	43	1.8	38	1.9	43	.9	13
10	.....	21	1.9	43	1.8	38	1.7	33	.9	13
11	1.0	14	1.9	43	1.8	38	1.7	33	.9	13
12	1.7	33	1.9	43	1.9	43	1.7	33	.9	13
13	1.7	33	1.9	43	1.9	43	1.8	38	.9	13
14	1.7	33	1.9	43	1.9	43	1.8	38	.9	13
15	1.7	33	1.9	43	1.9	43	1.8	38	1.2	18
16	1.7	33	1.9	43	1.9	43	1.8	38	1.2	18
17	1.7	33	1.95	46	2.0	48	1.8	38	1.2	18
18	1.85	40	1.7	33	1.9	43	1.8	38	1.2	18
19	2.0	48	1.7	33	1.8	38	1.8	38	1.2	18
20	2.0	48	1.7	33	1.8	38	1.8	38	1.2	18
21	2.0	48	1.7	33	1.7	33	1.8	38	1.2	18
22	1.9	43	1.8	38	1.7	33	1.8	38	1.2	18
23	1.9	43	1.8	38	1.7	33	2.5	78	1.2	18
24	1.8	38	1.8	38	1.7	33	1.7	33	1.2	18
25	1.8	38	1.8	38	1.7	33	.....	0	1.2	18
26	1.9	43	1.8	38	1.7	33	.....	0	1.2	18
27	1.9	43	1.8	38	1.7	33	.....	0	1.2	18
28	1.9	43	1.8	38	1.7	33	.....	0	1.2	18
29	1.9	43	2.0	48	1.7	33	.....	0	1.2	18
30	1.9	43	1.8	38	1.7	33	.....	0	1.2	18
31	1.9	43	.....	.....	1.7	33	.....	0	.....	.....

NOTE.—Discharge determined from a fairly well defined rating curve. Discharge interpolated May 4 and 10. Canal dry Aug. 25–31.

Monthly discharge of State canal near Panguitch, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 3–31	48	14	35.4	2,040	B.
June	48	33	40.3	2,400	B.
July	38	33	37.5	2,310	B.
August	78	0	29.6	1,820	B.
September	18	13	15.7	934	B.
The period	.....	.....	.....	9,500	

SEVIER VALLEY CANAL NEAR JOSEPH, UTAH.

Location.—In the NE. ¼ sec. 27, T. 25 S., R. 4 W., about 1½ miles south of Joseph.

Records available.—April 28 to September 22, 1913; also at old station, discontinued September 30, 1912, in SE. ¼ SE. ¼ sec. 15, T. 25 S., R. 4 W., May 18 to September 21, 1912.

Gage.—Stevens water-stage recorder installed May 13, 1913, on left bank about 20 feet above weir and vertical staff on left bank near weir.

Channel and control.—Clean; one at all stages; concrete weir.
Discharge measurements.—Made by wading or from bridge about 600 feet downstream.
Diversions.—None above station.
Regulation.—Flow controlled by canal head gates.
Accuracy.—Records good.

Discharge measurements of Sevier Valley canal near Joseph, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Apr. 28	J. J. Sanford	3.45	218	June 26	E. A. Porter	2.70	157
May 6	do	3.46	220	30	Porter and Sanford	1.98	95.4
20	do	3.00	185	July 18	J. J. Sanford	2.51	140
20	do	2.50	141	Aug. 11	do	2.15	115
June 6	do	2.56	146	20	do	2.20	114

Daily gage height, in feet, and discharge, in second-feet, of Sevier Valley canal near Joseph, Utah, for the year ending Sept. 30, 1913.

[O. E Howard, observer.]

Day.	April.		May.		June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1			3.6	232	2.3	123	2.21	116	2.46	137	2.8	165
2			3.6	232	2.55	144	2.15	111	2.48	138	2.8	165
3			3.5	224	2.65	152	2.13	109	2.5	140	2.85	169
4			3.4	216	2.6	148	2.27	121	2.55	144	2.9	174
5			3.4	216	2.6	148	2.5	140	2.6	148	2.8	165
6			3.5	224	2.55	144	2.6	148	2.55	144	3.0	182
7			3.5	224	2.6	148	2.48	138	2.5	140	3.0	182
8			3.8	249	2.6	148	2.6	148	2.5	140	3.0	182
9			3.8	249	2.6	148	2.65	153	2.47	137	3.0	182
10			4.1	274	2.55	144	2.6	148	2.18	113	3.0	182
11			4.2	283	2.5	140	2.55	144	2.16	111	3.0	182
12			4.1	274	2.5	140	2.55	144	2.18	113	3.0	182
13			4.1	274	2.44	135	2.41	132	2.22	116	3.0	182
14			4.1	274	2.4	132	2.42	133	2.21	116	2.95	178
15			4.0	266	2.43	134	2.39	131	2.18	113	2.8	165
16			4.0	266	2.48	138	2.39	131	2.14	110	2.7	157
17			4.0	266	2.75	161	2.5	140	2.37	129	2.7	157
18			3.8	249	2.6	148	2.5	140	2.34	127	2.6	148
19			2.25	119	2.6	148	2.5	140	2.32	125	2.6	148
20			3.2	199	2.65	153	2.55	144	2.25	119	2.5	140
21			3.6	232	2.6	148	2.5	140	2.45	136	2.5	140
22			3.6	232	2.7	157	2.6	148	2.42	133	2.5	140
23			3.6	232	2.7	157	2.65	153	2.21	116		
24			3.7	241	2.75	161	2.6	148	2.01	99		
25			3.7	241	2.7	157	2.55	144	2.15	111		
26			3.8	249	2.7	157	2.5	140	2.15	111		
27			3.7	241	2.65	153	2.48	138	2.49	139		
28	3.5	224	3.5	224	2.65	153	2.47	137	2.6	148		
29	3.6	232	2.65	152	2.65	153	2.45	136	2.6	148		
30	3.6	232	2.4	132	2.4	132	2.43	134	2.6	148		
31			2.3	123			2.45	136	2.7	157		

NOTE.—Discharge determined from a rating curve, well defined above 80 second-feet. Inlet pipe to gage well clogged May 28 to June 5 and gage heights observed on staff gage.

Monthly discharge of Sevier Valley canal near Joseph, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
April 28–30	232	224	229	1,360	A.
May	283	123	229	14,100	A.
June	161	123	147	8,750	A.
July	153	109	138	8,480	A.
August	157	99	129	7,930	A.
September 1–22	182	140	167	7,290	B.
The period				47,900	

SEVIER VALLEY CANAL AT ELSINORE, UTAH.

Location.—In the SW. ¼ sec. 21, T. 24 S., R. 3 W., about 1 mile north of Elsinore, and at station 517 along the canal.

Records available.—May 12 to September 13, 1913.

Gage.—Vertical staff on left bank.

Channel and control.—Clean gravel and clay. Concrete drop acts as control.

Discharge measurements.—Made by wading or from bridge 300 feet upstream.

Accuracy.—Record excellent.

Discharge measurements of Sevier Valley canal at Elsinore, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Apr. 29	J. J. Sanford	3.50	168	June 30	Porter and Sanford	1.65	49.1
May 7	do	3.84	189	July 18	J. J. Sanford	2.88	121
June 6	do	2.90	123	Aug. 12	do	2.70	112
10	do	2.82	120	20	do	2.50	99.6

Daily gage height, in feet, and discharge, in second-feet, of Sevier Valley canal at Elsinore, Utah, for the year ending Sept. 30, 1913.

[C. W. Hawley, observer.]

Day.	May.		June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	2.7	112	.....	0	2.9	125	3.2	146
2	.....	.....	3.0	132	.....	0	2.9	125	3.2	146
3	.....	.....	3.1	139	.....	0	3.0	132	3.3	153
4	.....	.....	3.0	132	.....	0	3.0	132	3.3	153
5	.....	.....	3.0	132	3.0	132	3.0	132	3.3	153
6	.....	.....	2.9	125	2.8	119	3.0	132	3.4	160
7	.....	.....	2.9	125	2.8	119	3.0	132	3.4	160
8	.....	.....	2.9	125	3.0	132	2.9	125	3.4	160
9	.....	.....	2.9	125	3.0	132	2.9	125	3.4	160
10	.....	.....	2.8	119	3.0	132	2.7	112	3.3	153
11	.....	.....	2.8	119	2.9	125	2.7	112	3.4	160
12	4.3	224	2.9	125	3.0	132	2.8	119	3.4	160
13	4.3	224	2.8	119	2.8	119	2.6	106	3.4	160
14	4.4	231	2.8	119	2.8	119	2.6	106	.....	.....
15	4.3	224	2.8	119	2.8	119	2.5	99	.....	.....
16	4.2	216	2.9	125	2.8	119	.....	100	.....	.....
17	4.3	224	3.2	146	2.9	125	2.8	119	.....	.....
18	4.1	209	3.0	132	2.9	125	2.8	119	.....	.....
19	3.6	174	3.0	132	2.8	119	2.8	119	.....	.....
20	3.6	174	3.0	132	2.8	119	2.6	106	.....	.....
21	3.8	188	3.0	132	2.9	125	2.9	125	.....	.....
22	4.0	202	3.0	132	3.0	132	2.8	119	.....	.....
23	4.0	202	3.1	139	3.0	132	2.6	106	.....	.....
24	4.0	202	3.1	139	3.0	132	2.4	93	.....	.....
25	4.2	216	3.2	146	2.8	119	2.5	99	.....	.....
26	4.2	216	3.2	146	2.8	119	2.6	106	.....	.....
27	4.2	216	3.2	146	2.9	125	2.8	119	.....	.....
28	3.6	174	3.2	146	2.8	119	3.0	132	.....	.....
29	3.1	139	3.1	139	2.8	119	3.0	132	.....	.....
30	2.8	119	1.6	47	2.8	119	3.0	132	.....	.....
31	2.8	119	.....	.....	2.9	125	3.1	139	.....	.....

NOTE.—Discharge determined from a well-defined rating curve. Canal broke July 1–4. Discharge interpolated Aug. 16. Canal closed for season on Sept. 14.

Monthly discharge of Sevier Valley canal at Elsinore, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 12–31	231	119	195	7,740	A.
June	146	47	128	7,620	A.
July	132	0	108	6,640	A.
August	139	93	119	7,320	A.
September 1–13	160	146	156	4,020	A.
The period	.....	.....	.....	33,300	

SEVIER VALLEY CANAL AT STATION 812 AT RICHFIELD, UTAH.

Location.—In the NW. ¼ sec. 35, T. 23 S., R. 3 W., near the bridge over the canal on Richfield Street, Richfield.

Records available.—April 29 to September 16, 1913.

Gage.—Vertical staff on right bank. Zero of gage set at crest of concrete drop.

Channel and control.—Sand; concrete drop is permanent control.

Discharge measurements.—Made by wading or from bridge 500 feet below gage.

Accuracy.—Records fair.

Discharge measurements of Sevier Valley canal at Station 812 at Richfield, Utah, during the year ending Sept. 30, 1913.

[Made by J. J. Sanford.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
Apr. 29	2.03	129	June 10	1.57	94.2	Aug. 19	1.40	81.0
May 7	2.22	147	July 19	1.58	94.1	26	1.53	93.2
June 6	1.50	91.7	Aug. 13	1.45	85.8			

Daily gage height, in feet, and discharge, in second-feet, of Sevier Valley canal at Station 812 at Richfield, Utah, for the year ending Sept. 30, 1913.

[T. B. Parker, observer.]

Day.	May.		June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1				90	1.75	0	1.55	92	1.8	112
2				110	1.65	0	1.6	96	1.8	112
3			1.8	112	1.8	0	1.8	112	1.8	112
4				106	1.7	10	1.8	112	1.8	112
5				96	1.6	96	1.8	112	1.8	112
6			1.5	89	1.5	89	1.8	112	2.0	128
7	2.22	146	1.5	89	1.4	82	1.8	112		124
8			1.55	92	1.65	100	1.7	104	1.9	120
9			1.65	100	1.7	104	1.75	108	1.9	120
10			1.55	92	1.7	104	1.3	75	1.9	120
11			1.6	96	1.7	104	1.4	82	1.9	120
12				92	1.6	96	1.5	89	1.8	112
13			1.5	89	1.4	82	1.5	89	2.2	144
14			1.5	89	1.6	96	1.5	89	2.2	144
15	2.7	187	1.45	86	1.55	92	1.5	89	1.6	96
16	2.6	178	1.5	89	1.65	100	1.2	69	1.95	124
17			1.8	112	1.65	100	1.6	96		
18			1.7	104	1.6	96	1.5	89		
19			1.7	104	1.6	96	1.5	89		
20			1.6	96	1.45	86	1.3	75		
21	2.3	152	1.55	92	1.5	89	1.52	90		
22	2.4	160	1.6	96	1.5	89	1.6	96		
23			1.6	96	1.6	96	1.5	89		
24	2.6	178	1.65	100	1.5	89	1.2	69		
25	2.7	187	1.75	108	1.5	89	1.4	82		
26			1.7	104	1.5	89	1.55	92		
27	2.6	178	1.7	104	1.6	96	1.5	89		
28			1.7	104	1.65	100	1.7	104		
29	1.7	104	1.7	104	1.6	96	1.62	98		
30				10	1.6	96	1.65	100		
31					1.6	96	1.7	104		

NOTE.—Discharge determined from a rating curve well defined above 70 second-feet. Canal broke June 30 to July 4 and discharge estimated from record at State weir station; also estimated June 1–2, 4–5, and 12. Discharge for May estimated as 40 second-feet more than at State weir station.

Monthly discharge of Sevier Valley canal at Station 812 at Richfield, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May	.....	.....	[a] 155	9,530	B.
June	112	10	95.0	5,650	A.
July	104	.....	82.5	5,070	A.
August	112	69	93.7	5,760	A.
September 1–16	144	96	120	3,810	A.
The period	.....	.....	.....	29,800	

[a] Estimated.

SEVIER VALLEY CANAL AT STATE WEIR NEAR RICHFIELD, UTAH.

Location.—In the SW. ¼ sec. 8, T. 23 S., R. 2 W., at the State weir or head of State extension canal, about 100 feet below bridge on county road from Richfield to Aurora, and about 3½ miles northeast of Richfield.

Records available.—May 21 to September 20, 1912, and April 26 to September 13, 1913.

Gage.—Friez water-stage recorder on left bank.

Channel and control.—Gravel and sandy loam; weir is permanent control.

Discharge measurements.—Made from a bridge about 100 feet above gage or by wading about 200 feet below gage.

Diversions.—Many laterals divert water above the station. The water passing the station is available for the State Piute project.

Accuracy.—Records good.

Discharge measurements of Sevier Valley canal at State weir near Richfield, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Apr. 30	J. J. Sanford	1.53	82.5	July 21	J. J. Sanford	1.34	70.7
June 5	.....do	1.25	64.2	Aug. 19	.....do	1.34	67.3
5	.....do	1.23	62.4	23	.....do	1.33	69.4
25	E. A. Porter	1.47	85.0	27	.....do	1.37	76.8
July 19	J. J. Sanford	1.49	82.8	27	.....do	1.37	73.7
19	.....do	1.50	81.2				

Daily gage height, in feet, and discharge, in second-feet, of Sevier Valley canal at State weir near Richfield, Utah, for the year ending Sept. 30, 1913.

Day.	Apr.		May.		June.		July.		Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	1.58	88	1.30	67	−0.08	.....	1.39	73	1.50	82
2	.....	.....	1.72	100	1.49	81	— .08	.....	1.41	75	1.53	84
3	.....	.....	.....	96	1.48	80	— .08	.....	1.50	82	1.61	91
4	.....	.....	1.63	92	1.46	79	.16	6	1.48	80	1.64	93
5	.....	.....	1.65	94	1.30	67	1.26	64	1.46	79	1.62	92
6	.....	.....	1.67	96	1.30	67	1.34	70	1.50	82	1.68	96
7	.....	.....	1.78	104	1.38	73	1.19	59	1.49	81	1.70	98
8	.....	.....	1.86	111	1.40	74	1.40	74	1.47	80	1.68	96
9	.....	.....	1.93	117	1.38	73	1.46	79	1.74	101	1.62	92
10	.....	.....	1.92	116	1.35	70	1.39	73	1.20	60	1.63	92
11	.....	.....	1.82	108	1.36	71	1.36	71	1.25	64	1.61	91
12	.....	.....	1.95	118	1.39	73	1.39	73	1.38	73	1.79	105
13	.....	.....	2.05	128	1.36	71	1.24	63	1.42	76	1.92	116
14	.....	.....	2.15	136	1.33	69	1.30	67	1.40	74	.....	.....
15	.....	.....	2.10	132	1.32	68	1.31	68	1.39	73	.....	.....
16	.....	.....	2.10	132	1.32	68	1.35	70	1.25	64	.....	.....
17	.....	.....	2.20	141	1.50	82	1.36	71	1.50	82	.....	.....
18	.....	.....	2.10	132	1.45	78	1.44	77	1.46	79		
19	.....	.....	2.20	141	1.45	78	1.50	82	1.32	68	.....	.....
20	.....	.....	2.40	159	1.46	79	1.41	75	1.17	58	.....	.....
21	.....	.....	2.25	146	1.40	74	1.36	71	1.31	68	.....	.....
22	.....	.....	2.15	136	1.44	77	1.38	73	1.32	68	.....	.....
23	.....	.....	2.10	132	1.41	75	1.38	73	1.28	66	.....	.....
24	.....	.....	2.15	136	1.46	79	1.34	70	1.00	46	.....	.....
25	.....	.....	2.20	141	1.45	78	1.37	72	1.05	50	.....	.....
26	1.03	48	2.20	141	1.38	73	1.38	73	1.08	52	.....	.....
27	1.23	62	2.20	141	1.42	76	1.41	75	1.19	59	.....	.....
28	1.57	88	1.91	115	1.19	81	1.45	78	1.45	78	.....	.....
29	1.58	88	1.38	73	1.54	85	1.40	74	1.41	75	.....	.....
30	1.50	82	1.15	56	.16	6	1.40	74	1.44	77	.....	.....
31	.....	.....	1.26	64	.....	.....	1.38	73	1.49	81	.....	.....

NOTE.—Discharge determined from a fairly well defined rating curve. Canal dry July 1–3. Discharge interpolated May 3. Canal closed Sept. 13.

Monthly discharge of Sevier Valley canal at State weir near Richfield, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
April 26–30	88	48	73.6	730	B.
May	159	56	117	7,190	B.
June	85	6	72.4	4,310	B.
July	82	.....	62.8	3,860	B.
August	101	46	71.7	4,410	B.
September 1–13	116	82	94.5	2,440	B.
The period	.....	.....	.....	22,900	

STATE CANAL NEAR VERMILION, UTAH.

Location.—In the NE. ¼ sec. 26, T. 22 S., R. 2 W., about 1 mile west of Vermilion.
Records available.—May 7 to September 15, 1913.
Gage.—Vertical staff nailed to abutment of highway bridge.
Channel and control.—Canal section.
Discharge measurements.—Made from highway bridge or by wading.
Accuracy.—Records fair.

Discharge measurements of State canal near Vermilion, Utah, during the year ending Sept. 30, 1913.

[Made by J. J. Sanford.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
May 7	3.00	90.7	July 21	2.66	69.0
July 21	2.64	67.4			

Daily gage height, in feet, and discharge, in second-feet, of State canal near Vermilion, Utah, for the year ending Sept. 30, 1913.

[John Thalman, observer.]

Day.	May.		June.		July.		Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	2.0	32	.....	0	2.6	65	2.9	84
2	.....	.....	2.1	38	.....	0	2.75	75	.....	0
3	.....	.....	2.25	45	.....	0	2.9	84	.....	0
4	.....	.....	2.45	56	.....	0	2.9	84	.....	0
5	.....	.....	2.6	65	2.15	40	2.8	78	.....	0
6	.....	.....	2.45	56	2.45	56	2.85	81	.....	0
7	3.0	91	2.55	62	2.35	51	2.8	78	3.1	98
8	.....	91	2.6	65	2.4	54	2.8	78	3.1	98
9	.....	94	2.6	65	.....	0	2.9	84	2.8	78
10	.....	97	2.6	65	.....	0	2.5	59	2.8	78
11	.....	97	2.6	65	2.55	62	2.7	72	2.9	84
12	3.1	98	2.6	65	2.7	72	2.8	78	3.2	104
13	3.1	98	2.6	65	2.4	54	2.8	78	3.45	120
14	3.08	96	2.6	65	2.4	54	.....	0	3.5	124
15	3.1	98	.....	65	2.5	59	.....	0	3.3	110
16	3.0	91	.....	65	2.7	72	.....	0	.....	.....
17	3.1	98	.....	65	2.6	65	2.9	84	.....	.....
18	2.9	84	2.7	72	2.7	72	2.9	84	.....	.....
19	2.8	78	2.6	65	.....	0	2.7	72	.....	.....
20	2.7	72	2.6	65	.....	0	2.6	65	.....	.....
21	3.25	107	2.6	65	2.6	65	2.65	68	.....	.....
22	3.35	114	2.6	65	2.7	72	2.7	72	.....	.....
23	3.5	124	2.55	62	2.6	65	2.7	72	.....	.....
24	3.5	124	2.6	65	2.5	59	2.5	59	.....	.....
25	3.4	117	2.65	68	2.5	59	2.4	54	.....	.....
26	3.15	101	2.6	65	2.6	65	2.5	59	.....	.....
27	3.1	98	2.65	68	.....	0	2.3	48	.....	.....
28	3.1	98	2.7	72	.....	0	2.8	78	.....	.....
29	2.05	35	.....	70	.....	0	2.9	84	.....	.....
30	1.75	22	.....	0	2.65	68	2.8	78	.....	.....
31	1.9	28	.....	.....	2.6	65	2.8	78	.....	.....

NOTE.—Discharge determined from a rating curve well defined between 60 and 100 second-feet and rather poorly defined for other stages. Discharge estimated June 15–17, 29–30. July 1 to Sept. 15 canal dry on days for which gage heights are not recorded.

Monthly discharge of State canal near Vermilion, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 7–31	124	22	90.0	4,460	A.
June	72	0	60.2	3,580	A.
July	72	0	39.6	2,430	B.
August	84	0	66.1	4,060	B.
September 1–15	124	0	65.2	1,940	B.
The period	.....	.....	.....	16,500	

STATE CANAL NEAR AURORA, UTAH.

Location.—In the SW. ¼ SW. ¼ sec. 6, T. 22 S., R. 1 W., about 1 mile west of Aurora, at weir known as 24-foot drop.
Records available.—April 30 to September 14, 1913.
Gage.—Vertical staff on right bank. Zero of gage is crest of weir.
Channel and control.—Clay; 24-foot drop in the canal is permanent control.
Discharge measurements.—Made by wading about 300 feet above gage.
Accuracy.—Records fair.

Discharge measurements of State canal near Aurora, Utah, during the year ending Sept. 30, 1913.

[Made by J. J. Sanford.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
Apr. 30	1.40	37.5	May 23	2.80	104	July 21	2.06	67.7
May 7	2.30	63.7	June 9	2.10	67.2	21	2.10	68.9

Daily gage height, in feet, and discharge, in second-feet, of State canal near Aurora, Utah, for the year ending Sept. 30, 1913.

[John Thalman, observer.]

Day.	May.		June.		July.		Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1			1.5	42		0	2.0	64		0
2			1.65	48		0	2.1	68		0
3			1.5	42		0	2.1	68		0
4			1.6	46		0	2.3	78		0
5			1.9	59		0	2.1	68		0
6			1.65	48		0	2.1	68		0
7	2.3	64	1.9	59		0	2.3	78	2.4	84
8		66	1.9	59		0	2.3	78	2.4	84
9		66	2.0	64		0	2.2	74	2.1	68
10		68	2.1	68		0	1.9	59	2.1	68
11		70	2.1	68	2.0	64		0	2.1	68
12	2.2	74	1.2	30	2.1	68		0	2.5	88
13	2.1	68	1.4	38	2.0	64		0	2.7	98
14	2.4	84		38	2.1	68		0	2.5	88
15	2.2	74		36	2.1	68		0		
16	2.1	68		36	2.0	64		0		
17	2.3	78		36	2.0	64	2.2	74		
18	2.2	74		38	2.0	64	2.2	74		
19		66		75		0	2.0	64		
20	1.9	59		74		0	1.9	59		
21	2.3	78		74	2.1	68	1.9	59		
22	2.2	74	2.2	74	2.0	64	2.0	64		
23	2.8	104	2.0	64	.9	19	2.0	64		
24	2.5	88		66	.95	21	1.7	50		
25		78		68	1.1	26	1.6	46		
26		68	2.1	68		0	1.8	54		
27		58	2.1	68		0	1.5	42		
28		48	2.2	74		0	2.1	68		
29	1.4	38		74		0	2.1	68		
30	1.4	38		0	2.0	64		0		
31		40			2.0	64		0		

NOTE.—Discharge determined from a fairly well defined rating curve. Discharge for days for which gage heights are missing during May and June estimated by comparison with Salina record. Observer reports canal dry on days for which gage heights are not recorded, from June 30 to Sept. 14.

Monthly discharge of State canal near Aurora, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 7–31	104	38	67.7	3,360	C.
June	74	0	54.5	3,240	C.
July	68	0	27.4	1,680	C.
August	78	0	48.0	2,950	B.
September 1–14	98	0	46.1	1,280	C.
The period				12,500	

STATE CANAL NEAR SALINA, UTAH.

Location.—In the SE. ¼ SE. ¼ sec. 20, T. 21 S., R. 1 W., about 2½ miles west of Salina, where the canal crosses the Denmark Wash in a flume.

Records available.—May 10 to September 16, 1913.

Gage.—Vertical staff on right side of flume about 15 feet from lower end. Zero of gage is bottom of flume.

Channel and control.—Section of flume.

Discharge measurements.—Made by wading in vicinity of gage.

Accuracy.—Records fair.

Discharge measurements of State canal near Salina, Utah, during the year ending Sept. 30, 1913.

[Made by J. J. Sanford.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
May 10	2.40	59.8	July 22	2.00	31.5	Aug. 1	2.75	63.2
May 23	2.00	28.4	22	2.00	[a] 34.8	27	1.59	18.0
23	2.88	81.8	Aug. 1	2.75	63.7			

[a] Results affected by backwater and eddies.

Daily gage height, in feet, and discharge, in second-feet, of State canal near Salina, Utah, for the year ending Sept. 30, 1913.

[Martin Jensen, observer.]

Day.	May.		June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	2.3	53	.....	0	2.75	64	.....	0
2	.....	.....	2.4	57	.....	0	2.9	70	.....	0
3	.....	.....	2.3	52	.....	0	3.0	75	.....	0
4	.....	.....	2.4	57	.....	0	3.0	75	.....	0
5	.....	.....	2.55	63	.....	0	2.9	70	.....	0
6	.....	.....	2.7	70	.....	0	2.9	70	1.8	24
7	.....	.....	2.7	69	.....	0	3.0	75	3.2	85
8	.....	.....	2.85	76	.....	0	3.0	75	3.1	80
9	.....	.....	2.3	50	.....	0	.....	0	2.6	57
10	2.45	62	2.3	50	.....	0	.....	0	2.75	64
11	2.4	60	2.2	45	.....	0	.....	0	2.95	73
12	2.5	64	1.78	28	2.75	64	.....	0	3.2	85
13	2.3	56	1.82	29	2.7	62	.....	0	3.2	85
14	2.8	78	1.82	29	2.75	64	.....	0	3.0	75
15	2.65	71	1.85	30	2.7	62	.....	0	2.95	73
16	2.45	62	1.92	32	2.6	57	.....	0	2.9	70
17	2.75	76	1.78	26	2.7	62	.....	0	.....	.....
18	2.6	69	1.9	31	2.8	66	3.0	75	.....	.....
19	2.55	67	2.85	72	2.95	73	2.9	70	.....	.....
20	2.25	53	2.9	74	.....	0	2.75	64	.....	.....
21	2.45	62	2.9	73	.....	32	2.75	64	.....	.....
22	2.65	71	2.8	69	2.0	32	2.8	66	.....	.....
23	2.85	80	2.8	68	.....	16	2.75	64	.....	.....
24	2.85	81	2.9	72	.....	15	2.4	48	.....	.....
25	3.0	88	2.9	72	.....	18	2.4	48	.....	.....
26	3.2	98	2.85	70	.....	0	2.4	48	.....	.....
27	3.1	92	2.0	32	.....	0	1.58	17	.....	.....
28	2.8	77	2.0	32	.....	0	.....	0	.....	.....
29	1.95	39	2.0	32	.....	0	.....	0	.....	.....
30	1.5	22	.....	0	.....	0	.....	0	.....	.....
31	1.45	20	.....	.....	2.8	66	.....	0	.....	.....

NOTE.—Discharge determined from two fairly well defined curves, one applicable May 10–23, the other July 12 to Sept. 16, and by the indirect method for shifting channels May 24 to June 29. From June 30 to Sept. 5 observer reports canal dry on days for which gage heights are not recorded, except July 21, 23–25, when discharge was estimated by comparison with record at Aurora.

Monthly discharge of State canal near Salina, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 10–31	98	20	65.8	2,870	B.
June	76	0	50.4	3,000	C.
July	73	0	22.2	1,360	C.
August	75	0	36.7	2,260	C.
September 1–16	85	0	48.2	1,530	C.
The period	.....	.....	.....	11,000	

STATE CANAL NEAR REDMOND, UTAH.

Location.—In W. ½ sec. 14, T. 20 S., R. 1 W., at station 1304 along the State canal, and about 5 miles north of Redmond.

Records available.—May 10 to September 12, 1913.

Gage.—Vertical staff on right bank.

Channel and control.—Sand and clay; fairly permanent.

Discharge measurements.—Made by wading near the gage.

Accuracy.—Records fair.

Discharge measurements of State canal near Redmond, Utah, during the year ending Sept. 30, 1913.

[Made by J. J. Sanford.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
May 9	1.10	24.7	Aug. 25	0.10	0.64
Aug. 1	1.95	55.6			

Daily gage height, in feet, and discharge, in second-feet, of State canal near Redmond, Utah, for the year ending Sept. 30, 1913.

[Martin Jensen, observer.]

Day.	May.		June.		July.		Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	1.05	23	.....	0	1.95	56	.....	0
2	.....	.....	1.4	35	.....	0	2.0	58	.....	0
3	.....	.....	1.3	32	.....	0	2.0	58	.....	0
4	.....	.....	1.7	46	.....	0	2.2	66	.....	0
5	.....	.....	1.45	37	.....	0	2.1	62	.....	0
6	.....	.....	1.25	30	.....	0	2.0	58	.....	0
7	.....	.....	1.1	24	.....	0	.....	0	2.4	74
8	.....	.....	1.4	35	.....	0	.....	0	1.7	46
9	.....	.....	.95	20	.....	0	.....	0	1.7	46
10	1.1	24	1.15	26	.....	0	.....	0	1.8	50
11	1.1	24	1.05	23	.....	0	.....	0	1.8	50
12	1.3	32	.9	18	1.7	46	.....	0	1.6	42
13	1.3	32	1.05	23	1.9	54	.....	0	.....	.....
14	1.45	37	1.0	21	1.7	46	.....	0	.....	.....
15	1.2	28	1.05	23	1.8	50	.....	0	.....	.....
16	1.2	28	1.1	24	1.9	54	.....	0	.....	.....
17	1.4	35	.9	18	1.9	54	.....	0	.....	.....
18	1.3	32	1.4	35	.....	0	2.1	62	.....	.....
19	1.1	24	2.0	58	.....	0	1.9	54	.....	.....
20	1.2	28	2.0	58	.....	0	1.8	50	.....	.....
21	1.55	40	2.0	58	.....	16	1.8	50	.....	.....
22	1.45	37	2.0	58	.....	16	2.0	58	.....	.....
23	1.5	38	2.0	58	.....	16	2.0	58	.....	.....
24	1.55	40	.85	16	.....	0	.....	0	.....	.....
25	1.6	42	.55	9	.....	0	.10	0.6	.....	.....
26	1.55	40	.68	12	.....	0	.....	0	.....	.....
27	1.5	38	.....	0	.....	0	.....	0	.....	.....
28	1.6	42	.....	0	.....	0	.....	0	.....	.....
29	1.3	32	.....	0	.....	0	.....	0	.....	.....
30	.78	14	.....	0	.....	0	.....	0	.....	.....
31	.75	14	.....	.....	1.8	50	.....	0	.....	.....

NOTE.—Discharge determined from a fairly well defined rating curve. Observer reports canal dry on days for which gage heights are missing from June 27 to Sept. 12, except July 21–23, when discharge was estimated by comparison with records at Salina station.

Monthly discharge of State canal near Redmond, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 10–31	42	14	31.9	1,390	B.
June	58	0	27.3	1,620	B.
July	54	0	13.0	799	C.
August	66	0	22.3	1,370	C.
September 1–12	74	0	25.7	612	C.
The period	.....	.....	.....	5,790	

CANAL A NEAR DELTA, UTAH.

Location.—In sec. 25, T. 16 S., R. 6 W., about one-fourth mile below headgates of the canal, and 8 miles northeast of Delta.

Records available.—April 14 to October 11, 1912; March 14 to September 24, 1913.

Gage.—Gurley water-stage recorder used since March 14, 1913, at same datum as sloping gage on right bank used during 1912.

Channel and control.—Earth section.

Discharge measurements.—Made from cable 80 feet below gage.

Diversions.—Above all diversions from canal.

Accuracy.—Records excellent.

Cooperation.—Some discharge measurements furnished by the Delta Land & Water Co. and F. A. Strain, water commissioner.

Records show water diverted from Sevier River for use on the Delta and Melville projects.

Discharge measurements of canal A near Delta, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
May 26	Strain and Cottrell	4.55	400	July 21	F. W. Cottrell	3.52	235
June 5	F. A. Strain	4.36	362	Aug. 26	do	2.57	112
17	F. W. Cottrell	4.06	318	28	do	2.40	97.5
July 3	F. A. Strain	3.96	295	Sept. 22	Porter and Strain	2.86	142

Daily gage height, in feet, of canal A near Delta, Utah, for the year ending Sept. 30, 1913.

[E. F. Bishop, observer.]

Day.	Mar.	Apr.	May.	June.	July	Aug.	Sept.
1	.....	1.84	3.85	4.45	4.0	.....	1.64
2	.....	1.72	3.9	4.35	4.0	.....	1.65
3	.....	1.50	4.0	4.35	3.95	.....	1.67
4	.....	1.57	4.1	4.35	3.95	.....	1.78
5	.....	1.64	4.1	4.35	3.6	.....	1.88
6	.....	1.65	4.2	4.35	3.85	.....	2.16
7	.....	1.72	4.2	4.35	3.85	.....	1.98
8	.....	1.89	4.4	4.3	3.85	.....	1.99
9	.....	1.94	4.4	4.2	3.9	.....	2.14
10	.....	2.11	4.4	4.1	4.0	.....	2.21
11	.....	2.21	4.5	4.1	4.05	.....	2.25
12	.....	2.28	4.6	4.05	4.0	.....	2.38
13	.....	2.10	4.6	3.95	3.5	1.82	2.64
14	1.59	1.96	4.5	4.0	3.95	2.00	2.67
15	1.61	2.15	4.35	4.0	3.9	2.22	2.70
16	1.65	2.40	4.35	4.0	3.9	2.64	2.76
17	1.73	3.02	4.3	4.0	3.9	2.84	2.83
18	1.90	3.11	4.35	4.05	3.9	2.82	2.82
19	1.58	3.16	4.5	4.0	3.85	2.79	2.82
20	1.26	3.17	4.5	4.0	3.6	2.80	2.82
21	1.31	3.22	4.6	4.0	3.55	2.83	2.84
22	1.36	3.30	4.6	4.05	3.6	2.92	2.85
23	1.41	3.35	4.6	4.05	3.6	2.89	2.83
24	1.45	3.40	4.5	4.05	3.42	2.85	2.82
25	1.45	3.50	4.5	4.05	3.22	2.75	.....
26	1.40	3.55	4.6	4.0	2.82	2.54	.....
27	1.44	3.55	4.5	4.05	.....	2.45	.....
28	1.52	3.60	4.6	4.05	.....	2.35	.....
29	1.60	3.70	4.5	4.0	.....	1.70	.....
30	1.68	3.85	4.5	4.0	.....	1.55	.....
31	1.76	.....	4.5	.....	.....	1.63	.....

NOTE.—No records July 27 to Aug. 12.

Daily discharge, in second-feet, of canal A near Delta, Utah, for the year ending Sept. 30, 1913.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	50	284	380	307	.....	36
2	.....	41	292	364	307	.....	36
3	.....	26	307	364	300	.....	38
4	.....	31	323	364	300	.....	46
5	.....	36	323	364	247	.....	53
6	.....	36	339	364	284	.....	75
7	.....	41	339	364	284	.....	60
8	.....	53	372	355	284	.....	61
9	.....	57	372	339	292	.....	74
10	.....	71	372	323	307	.....	80
11	.....	80	389	323	315	.....	84
12	.....	86	406	315	307	.....	95
13	.....	70	406	300	232	48	120
14	32	59	389	307	300	62	123
15	34	74	364	307	292	81	126
16	36	97	364	307	292	120	133
17	42	163	355	307	292	141	140
18	54	175	364	315	292	139	139
19	32	182	389	307	284	136	139
20	13	184	389	307	247	137	139
21	16	191	406	307	240	140	141
22	18	202	406	315	247	150	142
23	21	210	406	315	247	147	140
24	23	217	389	315	220	142	139
25	23	232	389	315	191	132	.....
26	20	240	406	307	139	110	.....
27	22	240	389	315	.....	102	.....
28	27	247	406	315	.....	92	.....
29	33	262	389	307	.....	40	.....
30	39	284	389	307	.....	30	.....
31	44	.....	389	.....	.....	35	.....

NOTE.—Discharge determined from a fairly well defined rating curve.

Monthly discharge of canal A near Delta, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
March 14–31	54	13	29.4	1,050	B.
April	284	26	131	7,800	A.
May	406	284	371	22,800	A.
June	380	300	326	19,400	A.
July 1–26	315	139	271	14,000	A.
August 13–31	150	30	104	3,920	A.
September 1–24	142	36	98.3	4,670	A.

ABRAHAM CANAL NEAR DELTA, UTAH.

Location.—In sec. 10, T. 17 S., R. 7 W., about 600 feet below head of canal which diverts from Sevier River about 3½ miles west of Delta.

Records available.—May 15 to September 23, 1913.

Gage.—Stevens water-stage recorder on left bank installed July 5, 1913, at same datum as vertical staff previously used.

Channel and control.—Earth section.

Discharge measurements.—Made from footbridge at gage.

Diversions.—Above all diversions from the canal.

Regulation.—Flow is controlled by the headgates a short distance above the station.

Accuracy.—Records only fair, owing to backwater caused at times by operation of gates below the gage.

Discharge measurements of Abraham canal near Delta, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec. ft.*			*Feet.*	*Sec. ft.*
June 7	F. A. Strain	3.78	84.4	July 5	Lynn Crandall	3.48	62.9
9	do	3.78	83.7	Aug. 8	do	2.75	24.0
26	Lynn Crandall	3.51	60.7	Sept. 23	Porter and Cottrell	2.85	[a]7.00

[a] Estimated.

NOTE.—Gage heights of measurements on Aug. 8 and Sept. 23 when corrected for backwater, are, respectively, 2.58 feet and 1.65 feet.

Daily gage height, in feet, of Abraham canal near Delta, Utah, for the year ending Sept. 30, 1913.

[R. A. Crupper, jr., observer.]

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1	.....	3.72	3.50	3.17	3.30	16	2.7	2.95	2.96	2.65	1.57
2	.....	3.72	3.50	2.86	3.28	17	2.6	2.90	2.97	2.65	1.61
3	.....	3.74	3.50	2.63	3.29	18	2.5	2.80	2.97	2.66	1.63
4	.....	3.73	3.50	2.62	3.28	19	2.5	2.20	2.90	2.80	1.66
5	.....	3.65	3.48	2.59	3.27	20	2.5	2.00	2.88	3.25	1.68
6	.....	3.72	3.49	2.60	3.27	21	2.53	2.80	2.94	3.40	1.91
7	.....	3.73	3.37	2.68	3.28	22	2.45	2.80	2.98	3.43	2.67
8	.....	3.82	3.43	2.75	3.28	23	2.1	2.90	3.07	3.43	2.85
9	.....	3.80	3.43	2.73	2.80	24	.....	3.30	3.14	3.47	.....
10	.....	3.92	3.40	2.72	2.05	25	2.6	3.50	3.17	3.50	.....
11	.....	3.96	3.34	2.72	1.77	26	2.6	3.50	3.22	3.51	.....
12	.....	3.50	3.30	2.71	1.67	27	2.85	3.50	3.28	3.53	.....
13	.....	3.40	3.18	2.70	1.62	28	.....	3.50	3.28	3.33	.....
14	.....	3.42	3.12	2.68	1.58	29	3.68	3.45	3.33	3.33	.....
15	2.6	2.98	3.00	2.67	1.57	30	3.68	3.45	3.28	3.33	.....
						31	3.78	.....	3.16	3.32	.....

NOTE.—Discharge relation affected by backwater from a diversion dam several miles below the gage July 20 to Aug. 1, Aug. 7 to Sept. 11, and Sept. 21–23.

Daily discharge, in second-feet, of Abraham canal near Delta, Utah, for the year ending Sept. 30, 1913.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1	.....	79	64	42	24	16	28	36	37	24	5.7
2	.....	79	64	33	24	17	24	34	37	24	6.1
3	.....	81	64	25	24	18	22	31	37	24	6.4
4	.....	80	64	25	24	19	22	15	34	24	6.9
5	.....	74	63	24	24	20	22	12	33	24	7.2
6	.....	79	63	24	24	21	23	31	33	24	7.2
7	.....	80	56	24	24	22	21	31	34	24	7.2
8	.....	87	60	24	24	23	14	34	34	24	7.2
9	.....	85	60	24	6.8	24	0	52	36	24	.....
10	.....	95	58	24	6.8	25	24	64	38	24	.....
11	.....	98	54	24	6.8	26	24	64	38	24	.....
12	.....	64	52	24	7	27	33	64	42	24	.....
13	.....	58	46	24	6.3	28	0	64	42	24	.....
14	.....	59	43	24	5.8	29	77	61	42	24	.....
15	24	38	38	24	5.7	30	77	61	42	24	.....
						31	84	.....	42	24	.....

NOTE.—Discharge determined from a fairly well defined rating curve. July 20 to Aug. 1, Aug. 7 to Sept. 11, and Sept. 21–23 discharge determined by indirect methods for shifting channels, necessitated by the effect of a variable diversion dam several miles below the station.

Monthly discharge of Abraham canal near Delta, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 15–31	84	0	30.5	1,030	B.
June	98	12	59.7	3,550	A.
July	64	33	46.8	2,880	B.
August	42	24	24.9	1,530	B.
September 1–23	24	5.7	12.7	580	C.
The period				9,570	

DESERET HIGH-LINE CANAL NEAR DELTA, UTAH.

Location.—In sec. 15, T. 17 S., R. 7 W., about 3 miles west of Delta, and 400 feet below head of canal.

Records available.—May 15 to September 23, 1913.

Channel and control.—Earth section.

Discharge measurements.—Made from footbridge or by wading.

Gage.—Stevens water-stage recorder on right bank installed June 27, 1913. Previous to that date a vertical staff was used.

Diversions.—Above all diversions from the canal.

Accuracy.—Records fair only, as discharge relation is affected by growth of aquatic plants.

Cooperation.—Some discharge measurements furnished by F. A. Strain, water commissioner.

Discharge measurements of Deseret High-Line canal near Delta, Utah, during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
May 15	Lynn Crandall	3.52	49.1	July 5	Lynn Crandall	3.91	48.0
28	F. A. Strain	4.27	66.3	Aug. 8	do	3.28	12.7
June 7	do	4.16	51.4	Sept. 23	E. A. Porter	3.93	17.1
27	Lynn Crandall	2.21	7.54				

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Daily gage height, in feet, and discharge, in second-feet, of Deseret High-Line canal near Delta, Utah, for the year ending Sept. 30, 1913.

[R. A. Crupper, jr., observer.]

Day.	May.		June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	4.28	61	3.7	42	4.17	34	3.58	13
2	.....	.....	4.29	62	4.34	58	4.05	31	3.57	12
3	.....	.....	4.28	61	2.35	10	3.96	28	3.62	13
4	.....	.....	4.29	60	3.33	32	3.86	26	3.62	12
5	.....	.....	4.26	58	3.82	44	3.79	24	3.72	14
6	.....	.....	4.17	54	4.19	54	3.72	22	3.5	9.2
7	.....	.....	4.16	53	4.21	54	3.51	18	3.27	5.2
8	.....	.....	4.13	52	4.26	56	3.27	13	3.60	10
9	.....	.....	3.91	47	4.25	55	3.10	10	3.80	14
10	.....	.....	3.87	46	4.17	53	3.05	9	3.86	16
11	.....	.....	3.84	45	3.96	48	2.98	7.7	3.85	16
12	.....	.....	3.92	47	3.77	43	2.96	7.4	3.80	14
13	.....	.....	3.96	48	3.53	37	2.88	6.2	3.77	14
14	.....	.....	4.17	53	3.42	34	2.78	4.8	3.77	14
15	3.52	48	4.21	54	3.27	31	2.78	4.8	3.77	14
16	3.52	48	4.17	53	3.17	28	2.78	4.8	3.85	16
17	3.53	49	3.76	43	3.05	25	2.83	5.4	3.94	17
18	3.40	46	3.67	41	2.93	22	2.96	7.1	3.93	17
19	3.35	45	3.76	43	2.96	20	3.12	9.6	3.80	14
20	3.37	45	3.87	46	3.23	24	3.33	13	3.72	13
21	3.47	47	3.91	47	3.53	30	3.47	16	3.93	17
22	3.56	50	3.97	48	3.76	32	3.56	17	3.93	17
23	3.62	52	3.96	48	3.99	36	3.65	18	3.93	17
24	3.76	54	.....	0	4.2	38	3.67	18	.....	.....
25	3.97	60	.....	0	4.3	38	3.72	19	.....	.....
26	4.02	62	.....	0	4.29	38	3.76	19	.....	.....
27	4.11	63	2.30	9	4.31	38	3.78	19	.....	.....
28	4.26	68	2.35	10	4.31	38	3.80	19	.....	.....
29	4.32	68	2.34	10	4.30	38	3.74	17	.....	.....
30	4.32	67	2.35	10	4.29	38	3.62	15	.....	.....
31	4.34	66	.....	.....	4.29	38	3.56	13	.....	.....

NOTE.—Discharge relation frequently affected by growth of aquatic plants. Discharge determined from four poorly defined rating curves applicable as follows: May 15–28, June 7 to July 18, July 25 to Aug. 17, and Sept. 9–23. Indirect methods for shifting channels used for other periods.

Monthly discharge of Deseret High-Line canal near Delta, Utah, for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 15–31	68	45	55.2	1,860	A.
June	62	0	40.3	2,400	B.
July	58	10	37.8	2,320	B.
August	34	4.8	15.3	941	B.
September 1–23	17	5.2	13.8	630	C.
The period	.....	.....	.....	8,150	

DESERET CANAL NEAR DELTA, UTAH.

Location.—In sec. 15, T. 17 S., R. 7 W., about 3 miles west of Delta, and about 300 feet below the head of the canal diverting from the same reservoir as the Deseret High Line and Abraham canals.

Records available.—May 15 to November 3, 1913.

Gage.—Stevens water-stage recorder.

Channel and control.—Dirt and hardpan.

Discharge measurements.—Made from footbridge at the gage.

Diversions.—Above all diversions from the canal.

Accuracy.—Records fair. Discharge relation affected at times by the operation of a mill about a mile below.

Cooperation.—Some discharge measurements were furnished by F. A. Strain, water commissioner.

Discharge measurements of Deseret canal near Delta, Utah, during 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
May 15	Lynn Crandall	2.87	115	July 5	Lynn Crandall	2.50	55.7
28	F. A. Strain	2.78	109	Aug. 8	do	2.37	47.8
June 7	do	2.76	105	Sept. 23	Porter and Cottrell	2.72	44.3
26	Lynn Crandall	2.63	67.1				

Daily gage height, in feet, of Deseret canal near Delta, Utah, for 1913.

[R. A. Crupper, observer.]

Day.	May.	June.	July,	Aug.	Sept.	Oct.	Nov.
1	.....	2.80	2.43	2.57	2.24	2.71	2.90
2	.....	2.80	2.46	2.58	2.32	2.68	2.70
3	.....	2.82	2.43	2.58	2.38	2.68	2.65
4	.....	2.85	2.44	2.57	2.43	2.70	.....
5	.....	2.84	2.48	2.50	2.44	2.71	.....
6	.....	2.82	2.51	2.44	2.48	2.64	.....
7	.....	2.81	2.56	2.39	2.67	2.66	.....
8	.....	2.81	2.58	2.34	2.72	2.68	.....
9	.....	2.80	2.66	2.32	2.75	2.65	.....
10	.....	2.70	2.74	2.30	2.82	2.56	.....
11	.....	2.70	2.72	2.31	2.72	2.65	.....
12	.....	2.40	2.75	2.32	2.70	2.67	.....
13	.....	2.50	2.79	2.31	2.65	2.70	.....
14	.....	2.50	2.75	2.29	2.68	2.64	.....
15	2.88	2.50	2.76	2.28	2.67	2.66	.....
16	2.90	2.50	2.74	2.30	2.73	2.70	.....
17	2.90	2.50	2.69	2.33	2.73	2.75	.....
18	2.94	2.50	2.69	2.33	2.73	2.82	.....
19	2.92	2.50	2.59	2.32	2.75	2.80	.....
20	2.85	2.50	2.59	2.33	2.77	2.80	.....
21	2.80	2.55	2.56	2.34	2.73	2.83	.....
22	2.80	2.60	2.52	2.33	2.72	2.82	.....
23	2.76	2.60	2.52	2.31	2.73	2.83	.....
24	2.76	2.60	2.54	2.24	2.70	2.84	.....
25	2.76	2.60	2.54	2.21	2.69	2.85	.....
26	2.76	2.66	2.54	2.24	2.71	2.85	.....
27	2.76	2.62	2.57	2.23	2.73	2.85	.....
28	2.78	2.49	2.57	2.29	2.69	2.77	.....
29	2.83	2.49	2.54	2.42	2.70	2.80	.....
30	2.72	2.47	2.54	2.48	2.72	2.75	.....
31	2.82	.....	2.56	2.30	.....	2.85	.....

Daily discharge, in second-feet, of Deseret canal near Delta, Utah, for 1913.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1	.....	109	52	64	40	45	57
2	.....	109	55	64	45	43	44
3	.....	111	52	64	49	43	41
4	.....	114	53	64	46	44	.....
5	.....	113	56	58	40	45	.....
6	.....	111	59	53	37	40	.....
7	.....	110	63	49	42	42	.....
8	.....	110	64	46	45	43	.....
9	.....	109	71	45	47	41	.....
10	.....	98	78	44	51	36	.....
11	.....	98	76	45	45	41	.....
12	.....	70	78	45	44	42	.....
13	.....	77	82	45	41	44	.....
14	.....	75	78	43	43	40	.....
15	118	74	79	43	42	42	.....
16	120	73	78	44	46	44	.....
17	120	71	73	46	46	47	.....
18	125	69	73	46	46	51	.....
19	122	68	65	45	47	50	.....
20	114	67	65	46	48	50	.....
21	109	69	63	46	46	52	.....
22	109	72	60	46	45	51	.....
23	105	70	60	45	46	52	.....
24	105	69	61	40	44	53	.....
25	105	68	61	39	43	54	.....
26	105	71	61	40	45	54	.....
27	105	68	64	40	46	54	.....
28	107	57	64	43	43	48	.....
29	112	57	61	52	44	50	.....
30	100	56	61	56	45	47	.....
31	111	.....	63	44	.....	54	.....

NOTE.—Discharge determined from three poorly defined rating curves applicable May 15 to June 12, June 26 to Sept. 3, and Sept. 7 to Nov. 3. Indirect methods for shifting channels used June 13–25 and Sept. 4–6.

Monthly discharge of Deseret canal near Delta, Utah, for 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 15–31	125	100	111	3,740	B.
June	114	56	83.1	4,940	B.
July	82	52	65.5	4,030	B.
August	64	39	48.1	2,960	B.
September	51	37	44.6	2,650	B.
October	54	36	46.5	2,860	C.
November 1–3	57	41	47.3	282	C.
The period	.....	.....	.....	21,500	

MINOR BASINS IN NEVADA.

THOUSAND SPRINGS CREEK NEAR TECOMA, NEV.

Location.—In the SE. ¼ sec. 31, T. 43 N., R. 67 E., about three-fourths mile below junction of Rock Springs and Thousand Springs creeks, one-fourth mile below mouth of canyon, and about 1½ miles from the lower H. D. ranch, which is 30 miles from Tecoma.

Records available.—November 1, 1910, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Friez water-stage recorder installed November 20, 1911, at datum 0.03 foot above zero of inclined gage which was used previous to that date.

Channel and control.—Likely to shift at high stages.

Discharge measurements.—Made by wading just below gage at low stages and from a car and cable at high stages.

Winter flow.—Gage records not obtained during winter, as the water in the gage well freezes and the discharge relation is affected by ice. The winter flow is ordinarily low and during very cold weather the stream freezes nearly to the bottom.

Diversions.—Thousand Springs Creek is used more or less for irrigation, but most of this water finds its way back to the main channel. During the summer the creek sinks at a point several miles above the lower H. D. ranch.

Accuracy.—Records fair.

Cooperation.—Station maintained in cooperation with the Vineyard Land & Stock Co., of Ogden, Utah.

Discharge measurements of Thousand Springs Creek near Tecoma, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
July 18	Frank Weber	0.47	0.79
Sept. 26	.....do	.62	2.24

Daily gage height, in feet, of Thousand Springs Creek near Tecoma, Nev., for the year ending Sept. 30, 1913.

[Iver Albretsen.]

Day.	Oct.	Nov.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.52	0.84	.....	1.27	0.93	0.92	.....	0.61
2	.53	.83	.....	1.22	.91	.88	0.52	.64
3	.54	.81	.....	1.18	.90	.84	.52	.70
4	.85	.81	.....	1.17	.90	.80	.50	.67
5	.96	.79	.....	1.17	.90	.77	1.07	.64
6	1.06	.92	1.47	1.16	.90	.75	.85	.63
7	.84	.92	1.45	1.12	.88	.71	.67	.63
8	.78	.90	1.45	1.08	.89	.70	.63	.62
9	.81	.89	1.43	1.04	.89	.68	.61	.65
10	.77	.87	1.42	1.00	.89	.66	.70	.60
11	.72	.86	1.42	.97	1.40	.63	.58	.65
12	.70	.82	1.42	.95	1.60	.60	.57	.71
13	.69	.88	1.42	.94	1.22	.....	.56	.70
14	.68	.82	1.43	.92	1.12	.....	.55	.....
15	.68	.84	1.41	.91	1.05	.....	.55	.69
16	.68	.88	1.38	.90	1.02	.....	.54	.69
17	.68	1.04	1.32	.90	.98	.....	.54	.69
18	.68	.88	1.38	.92	.97	.47	.53	.68
19	.68	.91	1.42	.95	.94	.....	.53	.67
20	.68	.88	1.43	.94	.92	.....	.53	.68
21	.79	.....	1.47	.92	.89	.....	.53	.....
22	.69	.....	1.47	.92	.88	.....	.53	.....
23	.69	.....	1.48	.90	.87	.....	.53	.....
24	.75	.....	1.47	.90	.85	.....	.53	.....
25	.69	.....	1.45	.94	.84	.....	.53	.....
26	.72	.....	1.42	.94	1.02	.....	.53	.63
27	.98	.....	1.37	.94	1.72	.....	.53	.64
28	1.18	.....	1.33	.94	1.32	.....	.53	.64
29	.90	.....	1.30	.93	1.09	.....	.75	.63
30	.85	.....	1.28	.93	1.00	.....	.68	.63
31	.82	.....	.....	.93	.....	.....	.62	.....

Daily discharge, in second-feet, of Thousand Springs Creek near Tecoma, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.5	9.5	25	24	12	12	1.5	2.8
2	1.6	9.2	25	22	12	11	1.5	3.6
3	1.8	8.5	25	21	12	9.5	1.5	5
4	9.8	8.5	25	20	12	8.2	1.2	4.3
5	13	7.9	25	20	12	7.2	17	3.6
6	17	12	31	20	12	6.6	10	3.3
7	9.5	12	30	19	11	5.3	4.3	3.3
8	7.6	12	30	17	11	5.0	3.3	3.1
9	8.5	11	30	16	11	4.5	2.8	3.8
10	7.2	10	29	15	11	4.0	5.0	2.6
11	5.6	10	29	14	28	3.3	2.3	3.8
12	5.0	8.9	29	13	36	2.6	2.2	5.3
13	4.8	11	29	13	22	2.4	2.0	5.0
14	4.5	8.9	30	12	19	1.8	1.9	4.9
15	4.5	9.5	29	12	16	1.4	1.9	4.8
16	4.5	11	28	12	15	1.2	1.8	4.8
17	4.5	16	26	12	14	1.0	1.8	4.8
18	4.5	11	28	12	14	1.0	1.6	4.5
19	4.5	12	29	13	13	.....	1.6	4.3
20	4.5	11	30	13	12	.....	1.6	4.5
21	7.9	.....	31	12	11	.....	1.6	4.0
22	4.8	.....	31	12	11	.....	1.6	3.6
23	4.8	.....	31	12	10	.....	1.6	3.2
24	6.6	.....	31	12	10	.....	1.6	2.6
25	4.8	.....	30	13	9.5	.....	1.6	2.2
26	5.6	.....	29	13	15	.....	1.6	3.3
27	14	.....	27	13	40	.....	1.6	3.6
28	21	.....	26	13	26	.....	1.6	3.6
29	12	.....	25	12	18	.....	6.6	3.3
30	10	.....	24	12	15	.....	4.5	3.3
31	9	.....	.....	12	.....	.....	3.1	.....

NOTE.—Discharge determined from a fairly well defined rating curve. Discharge estimated as follows: April 1–5, July 13–17 as in table; Nov. 21–30, 5 second-feet; July 19–31, 1 second-foot; Sept. 14 and 21–25 interpolated.

Monthly discharge of Thousand Springs Creek near Tecoma, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	21	1.5	7.25	446	C.
November	.....	.....	8.66	515	C.
April	31	24	28.2	1,680	C.
May	24	12	14.7	904	B.
June	40	9.5	15.7	934	C.
July	12	1.0	3.26	200	D.
August	17	1.2	3.03	186	D.
September	5.3	2.2	3.83	228	C.

SNAKE CREEK NEAR BAKER, NEV.

Location.—In the N. ½ sec. 15, T. 12 N., R. 69 E., about 2½ miles below junction of North and South Forks, at the Tilford tungsten mine, 70 miles southeast of Ely, about 16 miles from Baker, and 9 miles west of Garrison, Utah.

Records available.—August 13 to September 30, 1913.

Gage.—Vertical staff nailed to tree 60 feet upstream from a point opposite the observer's residence.

Channel and control.—Rocky; probably permanent.

Discharge measurements.—Made by wading.

Winter flow.—Discharge relation affected at times by ice.

Accuracy.—Records fair except during winter periods.

The following discharge measurement was made by Frank Weber:

August 13, 1913: Gage height, 1.66 feet; discharge, 3.28 second-feet.

Daily gage height, in feet, and discharge, in second-feet, of Snake Creek near Baker, Nev., for the year ending Sept. 30, 1913.

[J. D. Tilford, observer.]

Day.	Aug.		Sept.		Day.	Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.		Gage height.	Discharge.	Gage height.	Discharge.
1			1.65	3.2	16	1.65	3.2	1.62	2.6
2			1.65	3.2	17	1.65	3.2	1.62	2.6
3			1.65	3.2	18	1.65	3.2	1.62	2.6
4			1.65	3.2	19	1.65	3.2	1.62	2.6
5			1.65	3.2	20	1.64	3.0	1.62	2.6
6			1.65	3.2	21	1.64	3.0	1.62	2.6
7			1.65	3.2	22	1.65	3.2	1.62	2.6
8			1.65	3.2	23	1.66	3.3	1.62	2.6
9			1.65	3.2	24	1.68	3.7	1.62	2.6
10			1.65	3.2	25	1.67	3.5	1.62	2.6
11			1.65	3.2	26	1.65	3.2	1.62	2.6
12			1.65	3.2	27	1.65	3.2	1.62	2.6
13	1.65	3.2	1.65	3.2	28	1.68	3.7	1.62	2.6
14	1.65	3.2	1.65	3.2	29	1.68	3.7	1.62	2.6
15	1.65	3.2	1.64	3.0	30	1.68	3.7	1.63	2.6
					31	1.68	3.7		

NOTE.—Discharge determined from a rating curve, based on two discharge measurements. Mean discharge Aug. 13–31, 3.33 second-feet or 126 acre-feet; Sept. 1–30, 2.90 second-feet or 173 acre-feet.

BAKER CREEK NEAR BAKER, NEV.

Location.—In sec. 14, T. 13 N., R. 69 E., 4 miles west of Baker, 1¼ miles below Pole Creek, and 1½ miles north of W. H. Kious's ranch, 1½ miles below a dam site for a proposed power plant.

Records available.—August 12 to September 30, 1913.

Drainage area.—Not measured.

Gage.—Two sections, one inclined and one vertical.

Channel and control.—Gravel, with clay banks; slope of stream very steep.

Discharge measurements.—Made by wading.

Accuracy.—Records fair.

The following discharge measurement was made by Frank Weber:

August 12, 1913: Gage height, 1.68 feet; discharge, 8.2 second-feet.

Daily gage height, in feet, and discharge, in second-feet, of Baker Creek near Baker, Nev., for the year ending Sept. 30, 1913.

[Wm. H. Kious, observer.]

Day.	Aug.		Sept.		Day.	Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.		Gage height.	Discharge.	Gage height.	Discharge.
1			1.7	9	16		5.5	1.6	5.5
2				7.8	17		5.5		5.5
3				6.6	18	1.6	5.5	1.6	5.5
4			1.6	5.5	19		8.8		5.5
5				5.5	20	1.75	11	1.6	5.5
6			1.6	5.5	21		7.8		5.5
7				5.5	22	1.55	4.5	1.6	5.5
8			1.6	5.5	23		5.8	1.5	3.5
9				5.5	24	1.65	8		3.5
10			1.6	5.5	25		8	1.5	3.5
11				5.5	26	1.65	8		3.5
12	1.7	9	1.6	5.5	27		7.2	1.5	3.5
13	1.7	9		5.5	28		6.4		3.5
14		7.2	1.6	5.5	29	1.6	5.5		3.5
15	1.6	5.5		5.5	30		9.5	1.5	3.5
					31	1.8	14		

NOTE.—Discharge determined from a fairly well defined rating curve, based on two discharge measurements. Discharge interpolated for days for which gage heights were not recorded. Mean discharge Aug. 12-31, 7.59 second-feet (301 acre-feet); Sept. 1–30, 5.20 second-feet (309 acre-feet).

CURRANT CREEK AT RANGER STATION NEAR CURRANT, NEV.

Location.—About 4½ miles from Currant post office and about 1 mile above the ranger station.

Records available.—May 6 to August 31, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff in two sections nailed to a willow tree.

Channel and control.—Gravel. Control, a sharp-crested weir just below gage.

Discharge measurements.—Made by wading.

Regulation.—Flow is affected by Cazier's reservoir, a short distance above the station.

Accuracy.—Records fair, as only two measurements were made.

Cooperation.—Gage heights furnished by W. L. Farmer.

Discharge measurements of Currant Creek at ranger station near Currant, Nev., for the the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
May 6	Frank Weber	1.59	2.16
Aug. 17	.....do	1.39	.34

Daily gage height, in feet, and discharge, in second-feet, of Currant Creek at ranger station near Currant, Nev., for the year ending Sept. 30, 1913.

[Wm. L. Farmer, observer.]

Day.	May.		June.		July.		Aug.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	1.85	6.5	1.7	3.6	1.4	0.4
2	.....	.....	1.9	7.6	.....	3.4	1.4	.4
3	.....	.....	1.85	6.5	.....	3.0	1.4	.4
4	.....	.....	1.85	6.5	.....	2.6	.....	.4
5	.....	.....	1.85	6.5	.....	2.2	.....	.4
6	1.59	2.1	1.8	5.4	1.55	1.7	.....	.4
7	.....	2.5	1.75	4.5	1.6	2.2	.....	.4
8	1.65	2.9	1.8	5.4	1.55	1.7	.....	.4
9	1.7	3.6	1.75	4.5	1.55	1.7	.....	.4
10	1.7	3.6	.....	4.5	1.55	1.7	1.4	.4
11	1.75	4.5	.....	4.5	1.55	1.7	1.4	.4
12	1.7	3.6	1.75	4.5	1.5	1.2	1.35	.2
13	.....	4.0	1.8	5.4	1.5	1.2	1.4	.4
14	1.75	4.5	1.8	5.4	1.5	1.2	1.4	.4
15	1.8	5.4	1.75	4.5	1.45	.8	1.4	.4
16	1.75	4.5	1.8	5.4	1.45	.8	1.4	.4
17	1.75	4.5	1.8	5.4	1.45	.8	1.39	.4
18	1.8	5.4	1.8	5.4	1.4	.4	1.4	.4
19	1.85	6.5	1.75	4.5	1.4	.4	1.4	.4
20	1.85	6.5	1.8	5.4	1.45	.8	1.35	.2
21	1.8	5.4	1.8	5.4	1.4	.4	1.35	.2
22	1.8	5.4	1.75	4.5	1.4	.4	1.35	.2
23	1.85	6.5	1.8	5.4	1.45	.8	1.4	.4
24	1.9	7.6	1.85	6.5	1.45	.8	1.4	.4
25	1.95	9.0	1.8	5.4	1.45	.8	1.45	.8
26	1.95	9.0	1.75	4.5	1.5	1.2	1.4	.4
27	1.9	7.6	1.75	4.5	1.4	.4	1.55	1.7
28	.....	8.8	1.7	3.6	1.45	.8	1.5	1.2
29	2.0	10	1.7	3.6	1.45	.8	1.5	1.2
30	1.9	7.6	1.7	3.6	1.45	.8	1.45	.8
31	1.85	6.5	.....	.....	1.4	.4	.....	.8

NOTE.—Discharge determined from a poorly defined rating curve, based on two discharge measurements. Discharge estimated for days for which gage heights are missing. Control washed out about Sept. 1, and observations discontinued.

Monthly discharge of Currant Creek at ranger station near Currant, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 6–31	10	2.1	5.67	291	C.
June	7.6	3.6	5.18	308	C.
July	3.6	.4	1.31	81	C.
August	1.7	.2	.51	31	C.
The period				711	

CURRANT CREEK AT CAZIER'S RANCH, NEAR CURRANT, NEV.

Location.—In sec. 25, T. 11 N., R. 58 E., at Cazier's ranch on the road from Preston to Currant, about 2½ miles below inflow from Cazier's reservoir and 2 miles above Currant post office.

Records available.—May 5 to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff nailed to bridge abutment.

Channel and control.—Bowlders; probably permanent.

Discharge measurements.—Made by wading or from bridge.

Diversions.—Several ditches divert from the stream above the gage.

Regulation.—Flow is somewhat affected by Cazier's reservoir.

Accuracy.—Records rather poor owing to lack of measurements at the higher stages.

Cooperation.—Gage heights furnished by Edmund Cazier.

Discharge measurements of Currant Creek at Cazier's ranch, near Currant, Nev., during the year ending Sept. 30, 1913.

[Made by Frank Weber.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
May 5	1.84	4.39	Aug. 18	1.69	2.64
Aug. 18	1.24	1.16	18	1.61	2.53

Daily gage height, in feet, and discharge, in second-feet, of Currant Creek at Cazier's ranch, near Currant, Nev., for the year ending Sept. 30, 1913.

[Edmund Cazier, observer.]

Day.	May.		June.		July.		Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Dis. charge.
1	.....	.....	2.10	8.8	1.95	6.0	1.80	3.7	1.95	6.0
2	.....	.....	2.10	8.8	1.98	6.5	1.85	4.4	2.20	11
3	.....	.....	2.25	12	1.96	6.1	1.88	4.8	1.65	2.6
4	.....	.....	2.30	14	1.90	5.1	1.90	5.1	1.70	2.9
5	1.82	4.0	2.20	11	1.94	5.8	1.88	4.8	1.72	3.1
6	1.74	3.2	2.25	12	1.94	5.8	1.78	3.5	1.72	3.1
7	1.78	3.5	2.20	11	1.94	5.8	1.75	3.3	1.72	3.1
8	1.75	3.3	2.15	10	1.90	5.1	1.78	3.5	1.78	3.5
9	1.75	3.3	2.15	10	1.94	5.8	1.75	3.3	1.80	3.7
10	1.82	4.0	2.15	10	1.87	4.7	1.78	3.5	1.75	3.3
11	1.90	5.1	2.25	12	1.85	4.4	1.75	3.3	1.78	3.5
12	1.90	5.1	2.20	11	1.82	4.0	1.75	3.3	1.72	3.1
13	1.86	4.5	2.20	11	1.90	5.1	1.78	3.5	1.75	3.3
14	1.92	5.4	2.20	11	1.88	4.8	1.82	4.0	1.75	3.3
15	1.90	5.1	2.20	11	1.89	5.0	.....	3.5	1.75	3.3
16	1.90	5.1	2.12	9.3	1.82	4.0	.....	3.5	1.75	3.3
17	1.93	5.6	2.08	8.4	1.88	4.8	.....	3.5	1.78	3.5
18	2.00	6.8	2.05	7.8	1.88	4.8	1.25	1.1	1.78	3.5
19	1.95	6.0	2.05	7.8	1.88	4.8	1.50	1.9	1.75	3.3
20	1.92	5.4	2.00	6.8	1.92	5.4	1.58	2.2	1.78	3.5
21	1.95	6.0	1.98	6.5	1.92	5.4	1.65	2.6	1.72	3.1
22	1.96	6.1	2.00	6.8	1.92	5.4	1.62	2.4	1.72	3.1
23	2.00	6.8	2.00	6.8	1.92	5.4	.....	5.0	1.72	3.1
24	2.05	7.8	1.98	6.5	1.88	4.8	.....	5.0	1.78	3.5
25	2.08	8.4	2.00	6.8	1.88	4.8	.....	5.0	1.78	3.5
26	2.08	8.4	1.96	6.1	1.88	4.8	1.88	4.8	1.75	3.3
27	2.08	8.4	1.96	6.1	1.88	4.8	1.80	3.7	1.75	3.3
28	2.15	10	1.95	6.0	1.85	4.4	1.80	3.7	1.78	3.5
29	2.15	10	1.95	6.0	1.82	4.0	1.70	2.9	1.75	3.3
30	2.05	7.8	1.98	6.5	1.85	4.4	1.70	2.9	1.80	3.7
31	2.00	6.8	.....	.....	1.82	4.0	1.90	5.1	.....	.....

NOTE.—Discharge determined from a poorly defined rating curve. Discharge estimated for periods for which gage was not read.

Monthly discharge of Currant Creek at Cazier's ranch, near Currant, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 5–31	10	3.2	6.00	321	B.
June	14	6.0	8.93	531	D.
July	6.5	4.0	5.03	309	C.
August	.....	1.1	3.64	224	C.
September	11	2.6	3.64	217	C.
The period	.....	.....	.....	1,600	

SALTON SINK BASIN.

SALTON SEA NEAR SALTON, CAL.

Location.—At a trestle bent of the Southern Pacific Co. across the mouth of Salt Creek, about 2½ miles east of Salton, Cal., about 7 miles east of Mecca, and 1 mile west of Durmid.

Records available.—November, 1904, to September 30, 1913.

Gage.—Vertical staff (low-water section) fastened to a pile about 300 feet south of trestle, June 10, 1913; vertical staff in two sections fastened to piling in trestle used during high water; datum of gage 280.3 feet below sea level, Southern Pacific Co.'s datum, or 273.5 feet below sea level as determined from United States Geological Survey bench marks. The gage-height records kept by the New Liverpool Salt Co. from November, 1904, to February 26, 1906, show the depth of water above the lowest portion of the sink. On February 23, 1906, the Government installed a gage at the same datum as that of the Salt Co. gage about half a mile west of Salton railway station and 3 miles southeast of the old Salton station. This gage was destroyed by waves and the present gage has since been used. The figures in the following table show the depth of Salton Sea above the zero of the gage.

Practically all the water now received from Salton Sea enters through Alamo and New rivers; chiefly through the former. These rivers run through Imperial Valley and are drainage channels for excess and waste waters from the irrigation system and from the power plants.

Daily depth, in feet, of Salton Sea near Salton, Cal., for the year ending Sept. 30, 1913.

[J. K. English, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	50.85	50.5	50.25	50.0	49.85	49.95	49.8	49.3	49.0	48.45	.....	.....
2	50.85	50.45	50.25	50.0	49.9	49.9	49.8	49.3	.....	.....	47.9	47.45
3	50.85	50.4	50.2	50.0	49.9	49.9	49.8	49.3	49.0	.....	.....	47.3
4	50.8	50.35	50.2	50.0	49.95	49.9	49.7	49.3	.....	48.4	47.9	47.4
5	50.8	50.35	50.2	50.0	49.9	49.95	49.7	49.3	.....	.....	.....	.....
6	50.75	50.3	50.2	50.0	49.9	49.95	49.7	49.3	.....	.....	47.85	.....
7	50.7	50.3	50.2	49.95	49.95	49.9	49.7	49.3	48.95	48.4	47.8	47.3
8	50.7	50.3	50.2	49.9	49.9	49.9	49.7	49.3	.....	.....	.....	.....
9	50.65	50.3	50.1	49.9	49.9	49.9	49.7	49.3	.....	.....	47.8	47.2
10	50.65	50.35	50.1	49.95	49.95	49.9	49.65	49.3	48.9	48.4	47.75	.....
11	50.6	50.35	50.1	49.9	49.95	50.0	49.7	49.2	.....	48.4	.....	47.25
12	50.6	50.35	50.1	49.9	49.9	50.0	49.7	49.2	48.8	.....	47.7	.....
13	50.6	50.35	50.1	49.9	50.0	49.95	49.7	49.15	.....	48.3	.....	.....
14	50.6	50.3	50.1	49.9	50.0	49.9	49.65	49.0	.....	.....	47.7	47.3
15	50.6	50.3	50.1	49.95	49.95	49.9	49.65	48.5	48.75	48.2	.....	47.2
16	50.6	50.3	50.1	49.9	49.95	49.9	49.6	48.7	.....	.....	47.7	.....
17	50.6	50.3	50.1	49.9	50.0	49.9	49.55	48.4	.....	.....	.....	47.2
18	50.6	50.3	50.1	49.9	50.0	49.95	49.5	48.7	48.8	48.2	47.5	47.15
19	50.6	50.3	50.1	49.9	50.0	49.9	49.5	48.7	.....	48.15	.....	.....
20	50.6	50.35	50.1	49.95	50.05	49.9	49.3	48.65	48.8	.....	47.5	.....
21	50.55	50.3	50.1	49.9	50.05	49.9	49.5	49.0	.....	48.25	.....	47.1
22	50.55	50.3	50.1	49.9	50.0	49.85	49.1	49.1	48.65	.....	47.45	47.0
23	50.55	50.3	50.1	49.9	50.0	49.9	49.5	49.1	.....	48.15	.....	.....
24	50.5	50.3	50.05	49.9	50.0	49.85	49.5	49.1	.....	.....	.....	.....
25	50.5	50.25	50.0	49.9	50.0	49.85	49.3	49.05	48.55	48.1	47.6	46.95
26	50.5	50.25	50.05	49.9	49.95	49.85	49.5	49.05	.....	48.1	.....	.....
27	50.5	50.2	50.0	49.9	49.95	49.8	49.4	49.05	48.6	.....	.....	.....
28	50.4	50.25	50.0	49.9	49.95	49.8	49.35	49.0	48.5	48.05	47.5	.....
29	50.4	50.25	50.0	49.9	.....	49.8	49.5	49.0	48.5	.....	.....	46.8
30	50.4	50.25	50.0	49.9	.....	49.8	49.4	49.0	.....	.....	47.4	.....
31	50.4	.....	50.0	49.9	.....	49.8	.....	49.0	.....	47.95	.....	.....

OWENS LAKE BASIN.

OWENS RIVER NEAR ROUND VALLEY, CAL.

Location.—In SE. ¼ sec. 10, T. 6 S., R. 31 E., just below a sheep bridge, 700 feet above mouth of Rock Creek, and 2 miles north of Round Valley.

Records available.—August 4, 1903, to September 30, 1913.

Drainage area.—Approximately 450 square miles.

Gage.—Vertical staff on left bank 85 feet below bridge, in use since May 29, 1907. The datum differs from that of the previous gage, which was 100 feet above the present one.

Channel and control.—Rock and bowlders; fairly permanent.

Discharge measurements.—Made from car and cable at gage.

Winter flow.—Shore ice exists at times, but ordinarily does not affect the discharge relation.

Diversions.—No water is diverted above the station.

Accuracy.—Discharge measurements plot somewhat scattering and average rating curves have been used. Results good.

Cooperation.—Gage heights and discharge measurements furnished by the city of Los Angeles.

Discharge measurements of Owens River near Round Valley, Cal., during the year ending Sept. 30, 1913.

[Made by J. E. Jones.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
Oct. 15	1.95	163	Mar. 12	1.97	180	July 17	2.05	178
Nov. 12	1.90	166	Apr. 23	1.88	170	Aug. 19	1.90	157
Dec. 5	1.82	142	May 28	2.38	315	Sept. 11	2.00	193
Jan. 28	1.90	171	June 19	2.15	221			

Daily gage height, in feet, of Owens River near Round Valley, Cal., for the year ending Sept. 30, 1913.

[L. L. Roberts, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.25	.....	.....	1.83	.....	1.98	2.1	.....	2.3	2.45	2.15	.....
2	2.2	1.95	1.8	.....	1.8	.....	.....	1.9	.....	2.35	.....	2.2
3	.....	.....	.....	1.8	.....	1.99	2.1	1.9	2.3	2.45	2.1	.....
4	2.25	1.9	1.83	.....	1.85	1.98	2.15	.....	.....	2.4	.....	2.15
5	2.2	.....	1.82	1.83	1.85	1.95	.....	1.9	2.25	2.4	2.15	.....
6	.....	1.95	.....	.....	.....	.....	2.0	.....	2.3	2.3	.....	2.1
7	2.2	.....	1.8	1.8	1.85	1.93	.....	1.95	.....	2.25	2.1	.....
8	.....	1.9	.....	.....	1.9	.....	2.0	.....	2.3	2.4	.....	2.1
9	2.1	.....	1.85	1.75	.....	.....	.....	1.95	2.6	2.3	2.15	.....
10	2.15	1.93	.....	.....	1.85	2.0	2.05	.....	2.3	2.4	.....	2.1
11	.....	1.93	1.82	1.8	.....	2.1	2.0	1.9	2.5	2.35	2.1	1.98
12	2.15	1.9	.....	.....	1.83	1.97	.....	.....	2.7	2.4	2.0	.....
13	.....	.....	1.8	1.83	1.8	2.0	1.9	1.9	2.65	2.3	2.0	2.1
14	2.0	1.9	1.8	.....	.....	.....	.....	.....	2.5	2.35	1.95	.....
15	1.95	.....	.....	1.85	1.8	1.95	1.9	1.95	2.3	2.2	1.9	1.93
16	1.95	1.9	1.85	.....	.....	.....	.....	.....	2.5	2.4	.....	.....
17	1.9	.....	1.8	1.8	1.95	1.97	1.93	1.95	2.5	2.05	1.9	1.88
18	.....	1.93	.....	.....	.....	.....	1.9	.....	2.55	2.2	.....	.....
19	1.9	.....	1.8	1.83	2.0	2.0	1.9	2.0	2.15	2.3	1.9	1.85
20	.....	1.9	.....	1.85	.....	.....	.....	.....	2.2	.....	.....	1.75
21	1.9	.....	1.85	.....	2.05	2.0	.....	2.25	2.3	2.25	1.95	1.7
22	.....	1.9	.....	1.8	.....	.....	1.9	.....	2.1	2.4	2.1	.....
23	1.9	.....	1.8	1.85	2.0	2.1	1.88	2.4	1.95	2.45	.....	1.85
24	1.93	1.9	.....	1.8	.....	.....	.....	.....	2.2	.....	2.15	.....
25	.....	.....	1.85	1.85	2.05	2.15	1.9	2.5	2.0	2.35	.....	1.83
26	1.93	1.9	.....	.....	2.1	.....	.....	2.5	2.2	.....	2.2	.....
27	1.95	.....	1.83	1.9	.....	2.1	1.93	2.5	2.3	2.3	.....	1.9
28	.....	1.85	.....	1.9	1.99	.....	.....	2.4	2.35	2.3	2.2	.....
29	1.9	.....	1.83	1.9	.....	2.1	1.9	.....	2.3	.....	2.2	1.9
30	.....	1.8	.....	.....	.....	.....	1.9	2.4	2.4	2.25	.....	1.9
31	1.9	.....	1.85	1.85	.....	2.1	.....	.....	.....	.....	2.2	.....

Daily discharge, in second-feet, of Owens River near Round Valley, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	243	166	140	156	155	190	220	170	285	306	214	235
2	228	169	140	153	150	191	220	170	285	274	207	240
3	236	166	144	150	155	192	220	170	285	306	200	232
4	243	162	148	153	160	190	235	170	276	290	207	225
5	228	169	145	156	160	182	215	170	268	290	214	220
6	228	176	142	153	160	180	195	176	285	258	207	215
7	228	170	140	150	160	178	195	182	285	243	200	215
8	214	164	146	156	170	184	195	182	285	290	207	215
9	200	169	153	141	165	189	202	182	395	258	214	215
10	214	174	149	146	160	195	208	176	285	290	207	215
11	214	174	145	150	158	220	195	170	355	274	200	190
12	214	166	142	153	156	188	182	170	435	290	176	202
13	195	166	140	156	150	195	170	170	376	258	176	215
14	176	166	140	158	150	188	170	176	322	274	164	195
15	164	166	146	160	150	182	170	182	258	228	152	175
16	164	166	153	155	166	185	174	182	322	290	152	168
17	152	170	140	150	182	188	178	182	322	188	152	160
18	153	174	140	153	188	192	170	188	340	228	152	158
19	154	170	140	156	195	195	170	195	214	258	152	155
20	154	166	146	160	202	195	170	232	228	250	158	130
21	154	166	153	155	208	195	170	268	258	243	164	120
22	156	166	146	150	202	208	170	294	200	290	200	138
23	157	166	140	160	195	220	166	320	164	306	207	155
24	164	166	146	150	202	228	168	338	228	290	214	152
25	164	166	153	160	208	235	170	355	176	274	221	150
26	164	166	150	165	220	228	174	355	228	266	228	158
27	171	160	148	170	206	220	178	355	258	258	228	165
28	165	153	148	170	192	220	174	320	274	258	230	165
29	159	146	148	170	.....	220	170	320	258	250	230	165
30	160	140	150	165	.....	220	170	320	290	243	230	165
31	162	.....	153	160	.....	220	.....	302	.....	228	230	.....

NOTE.—Daily discharge determined from fairly well defined rating curves applicable for the following periods: Oct. 1 to 15, 1912, and June 13 to Aug. 26, 1913; Nov. 12 to Dec. 31, 1912; Jan. 1 to June 12, 1913. Indirect method for shifting channels used Oct. 16 to Nov. 11, 1912, and Aug. 27 to Sept. 30, 1913.
Discharge interpolated for days for which gage heights are not recorded.

Monthly discharge of Owens River near Round Valley, Cal., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	243	152	186	11,400	B.
November	176	140	165	9,820	A.
December	153	140	146	8,980	A.
January	170	141	156	9,590	A.
February	220	150	176	9,780	A.
March	235	178	200	12,300	A.
April	235	166	185	11,000	A.
May	355	170	230	14,100	A.
June	435	164	281	16,700	B.
July	306	188	266	16,400	B.
August	230	152	197	12,100	B.
September	240	120	184	10,900	B.
The year	435	120	198	143,000	

OWENS RIVER NEAR BIGPINE, CAL.

Location.—In sec. 2, T. 11 S., R. 34 E., at Charlies Butte, about 11 miles southeast of Bigpine.

Records available.—September 20, 1906, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff on left bank.

Channel and control.—Sand and gravel; shifts slightly.

Discharge measurements.—Made from car and cable at gage or by wading.

Diversions.—On account of diversions above the station the record does not indicate the total run-off from the drainage area.

Accuracy.—Rating curve well defined; results good.

Cooperation.—Gage heights and discharge measurements furnished by the city of Los Angeles.

Discharge measurements of Owens River near Bigpine, Cal., during the year ending Sept. 30, 1913.

[Made by J. E. Jones.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
Oct. 14	2.05	321	Apr. 12	1.10	120	June 18	.80	105
Nov. 11	2.58	409	22	.67	80	21	.63	81
Dec. 7	2.37	360	25	.58	70	July 18	.45	65
Jan. 24	2.71	424	May 8	.40	55	Aug. 12	.43	65
30	3.00	500	27	.50	66	21	.38	57
Mar. 10	2.79	414	30	1.05	138	Sept. 5	1.89	259
14	2.80	432	June 7	1.08	134	13	.88	112

Daily gage height, in feet, of Owens River near Bigpine, Cal., for the year ending Sept. 30, 1913.

[Roy Bowers, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.65	2.2	2.4	2.4	3.0	3.0	2.7	0.42	1.05	0.6	1.05	2.1
2	.7	2.2	2.4	2.4	3.0	3.0	2.6	.40	.95	.55	.9	2.4
3	.75	2.2	2.5	2.4	2.8	3.2	2.6	.39	1.1	.5	.8	2.2
4	.8	2.2	2.5	2.4	2.7	3.1	2.3	.42	1.3	.45	.8	2.2
5	1.0	2.3	2.4	2.4	2.7	3.0	2.0	.42	1.2	.48	.85	1.9
6	1.35	2.4	2.4	2.3	2.7	3.0	1.9	.40	1.1	.5	.7	1.8
7	1.7	2.4	2.4	2.3	2.7	2.9	1.8	.40	1.1	.55	.6	1.6
8	1.8	2.4	2.4	2.4	2.8	2.9	1.6	.40	1.1	.6	.55	1.4
9	1.85	2.5	2.5	2.4	3.0	2.8	1.5	.41	1.15	.5	.45	1.2
10	1.9	2.5	2.6	2.3	3.0	2.8	1.4	.41	1.2	.5	.40	1.15
11	1.95	2.6	2.5	2.3	2.9	3.0	1.1	.40	1.2	.55	.45	1.05
12	2.0	2.6	2.5	2.4	2.9	3.0	1.1	.38	1.1	.6	.43	.95
13	2.0	2.6	2.5	2.4	2.7	2.9	1.1	.38	1.0	.6	.40	.9
14	2.0	2.6	2.5	2.4	2.7	2.8	1.0	.39	.95	.55	.40	.7
15	2.0	2.6	2.5	2.4	2.6	2.8	1.0	.38	.85	.5	.40	.65
16	2.1	2.6	2.5	2.5	2.6	2.8	.95	.38	.8	.40	.40	.6
17	2.2	2.5	2.5	2.6	2.6	2.7	.9	.39	.85	.40	.40	.5
18	2.2	2.6	2.6	2.6	2.6	2.7	.8	.39	.8	.45	.38	.5
19	2.2	2.6	2.6	2.5	2.6	2.8	.75	.39	.8	.45	.40	.5
20	2.2	2.5	2.6	2.5	2.6	2.8	.7	.38	.75	.5	.40	.5
21	2.2	2.6	2.5	2.5	2.5	2.7	.7	.40	.65	.5	.35	.5
22	2.1	2.6	2.6	2.6	2.5	2.6	.65	.38	.5	.6	.40	.5
23	2.2	2.6	2.6	2.7	2.5	2.5	.6	.38	.5	.5	.40	.45
24	2.2	2.5	2.4	2.7	2.6	2.4	.6	.39	.5	.8	.40	.40
25	2.2	2.4	2.4	2.8	2.7	2.4	.6	.39	.5	1.15	.45	.40
26	2.2	2.5	2.4	3.0	2.9	2.3	.55	.45	.5	1.6	.55	.45
27	2.2	2.5	2.4	3.0	3.0	2.3	.40	.5	.55	1.45	.8	.48
28	2.2	2.5	2.4	3.0	3.2	2.6	.42	.75	.5	1.15	1.1	.5
29	2.2	2.4	2.4	3.0	.....	2.6	.42	.8	.6	1.15	1.6	.5
30	2.2	2.4	2.4	3.0	.....	2.6	.42	1.05	.65	1.1	1.6	.5
31	2.2	.....	2.4	3.0	.....	2.7	.....	1.05	.....	1.2	1.6	.....

Daily discharge, in second-feet, of Owens River near Bigpine, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	92	329	366	366	494	494	404	57	136	80	136	299
2	99	329	366	366	494	494	385	55	122	75	116	353
3	106	329	386	366	450	540	385	54	143	70	103	312
4	112	329	386	366	428	486	330	57	171	65	103	312
5	139	347	366	366	428	465	277	57	152	68	110	260
6	190	366	366	347	428	465	260	55	138	70	91	243
7	244	366	366	347	428	444	243	55	138	75	80	211
8	260	366	366	366	450	444	211	55	138	80	75	181
9	268	386	386	366	494	424	196	56	145	70	65	152
10	277	386	406	347	494	424	181	56	152	70	60	145
11	286	406	386	347	472	465	138	55	157	75	65	131
12	294	406	386	366	472	465	138	53	143	80	63	118
13	294	406	386	366	428	444	138	53	129	80	60	111
14	294	406	386	366	428	424	124	54	122	75	60	86
15	294	406	386	366	406	424	124	53	110	70	60	80
16	311	406	386	386	406	424	118	53	103	60	60	75
17	329	386	386	406	406	404	111	54	110	60	60	65
18	329	406	406	406	406	404	98	54	103	65	58	65
19	329	406	406	386	406	424	92	54	103	65	60	65
20	329	386	406	386	406	424	86	53	97	70	60	65
21	329	406	386	386	386	404	86	55	86	70	56	65
22	311	406	406	406	386	385	80	53	70	80	60	65
23	329	406	406	428	386	366	75	53	70	70	60	60
24	329	386	366	428	406	348	75	54	70	103	60	55
25	329	366	366	450	428	348	75	54	70	150	65	55
26	329	386	366	494	472	330	70	60	70	216	75	60
27	329	386	366	494	494	330	55	65	75	194	103	63
28	329	386	366	494	540	385	57	92	70	150	143	65
29	329	366	366	494	.....	385	57	98	80	150	216	65
30	329	366	366	494	.....	385	57	136	86	143	216	65
31	329	.....	366	494	.....	404	.....	136	.....	157	216	.....

NOTE.—Daily discharge determined from well-defined rating curves applicable as follows: Oct. 1, 1912, to Mar. 3, 1913; Mar. 4–May 29, June 5–10, and Sept. 3–30, 1913; May 30–June 4, and June 11–Sept. 2, 1913.

Monthly discharge of Owens River near Bigpine, Cal., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	329	92	273	16,800	A.
November	406	329	380	22,600	A.
December	406	366	381	23,400	A.
January	494	347	401	24,700	A.
February	540	386	440	24,400	A.
March	540	330	421	25,900	A.
April	404	55	158	9,400	A.
May	136	53	62.9	3,870	A.
June	171	70	112	6,660	B.
July	216	60	93.7	5,760	B.
August	216	56	90.8	5,580	B.
September	353	55	132	7,860	B.
The year	540	53	244	177,000	

OWENS RIVER NEAR LONE PINE, CAL.

Location.—In NW. ¼ sec. 23, T. 15 S., R. 36 E., at Mount Whitney highway bridge, about 2½ miles northeast of Lone Pine.

Records available.—January 1, 1909, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff fastened to a pile in channel at downstream side of bridge.

Channel and control.—Sandy; fairly permanent.

Discharge measurements.—Made from car and cable about 1,000 feet below bridge or by wading.

Winter flow.—Shore ice forms at station during very cold weather but probably does not affect the discharge relation.

Diversions.—Record does not show total run-off from drainage area on account of diversions above station. The Los Angeles aqueduct, which has its intake above the station, was formally opened February 13, 1913.

Accuracy.—Range of stage well covered, but measurements plot a little scattering. Results good.

Cooperation.—Gage heights and discharge measurements furnished by the city of Los Angeles.

Discharge measurements of Owens River near Lone Pine, Cal., during the year ending Sept. 30, 1913.

[Made by J. E. Jones.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
Oct. 23	5.18	318	Mar. 29	3.48	84	June 14	2.61	7.5
30	5.30	332	Apr. 15	3.02	29	July 21	2.75	7.9
Nov. 20	5.70	392	19	2.98	24	26	2.72	8.5
Dec. 11	5.73	415	May 9	2.81	13	31	2.68	5.8
Jan. 25	5.68	377	21	2.78	12	Aug. 11	3.48	53
Mar. 4	5.42	369	26	2.70	9.7	30	4.60	189
25	4.20	135	June 9	2.62	9.2	Sept. 22	3.52	67

Daily gage height, in feet, of Owens River near Lone Pine, Cal., for the year ending Sept. 30, 1913.

[G. F. Marsh, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.4	5.4	5.6	5.7	6.2	5.6	4.0	2.85	2.7	2.6	2.7	5.0
2	3.45	5.4	5.6	5.5	6.2	.....	4.0	2.85	2.7	2.6	2.7	5.2
3	3.45	5.4	5.6	5.3	6.1	.....	3.9	2.8	2.7	2.62	2.75	4.9
4	3.45	5.4	5.6	5.2	6.1	5.4	3.9	2.8	2.7	2.62	2.8	4.7
5	3.45	5.4	5.6	5.1	6.0	5.6	3.85	2.75	2.7	2.65	2.85	4.6
6	3.5	5.4	5.6	5.0	6.0	5.8	3.5	2.75	2.7	2.65	2.85	4.5
7	3.6	5.4	5.6	4.8	6.3	5.9	3.5	2.75	2.7	2.65	2.8	4.45
8	3.7	5.5	5.6	4.7	6.4	6.0	3.4	2.75	2.62	2.65	2.7	4.4
9	3.7	5.5	5.6	4.5	6.4	6.0	3.3	2.75	2.62	2.65	2.6	4.25
10	3.8	5.6	5.6	5.7	6.4	6.0	3.2	2.75	2.6	2.65	2.6	4.25
11	3.9	5.6	5.7	5.6	6.4	6.1	3.2	2.75	2.62	2.65	3.45	4.25
12	4.0	5.7	5.8	5.6	6.3	6.1	3.15	2.73	2.62	2.65	3.5	4.15
13	4.5	5.7	5.8	5.6	6.2	6.1	3.1	2.73	2.62	2.65	3.5	4.0
14	4.6	5.6	5.8	5.5	6.0	6.1	3.05	2.73	2.6	2.65	3.5	4.0
15	5.0	5.6	5.8	5.6	5.7	6.1	3.02	2.7	2.6	2.65	3.5	3.95
16	5.1	5.6	5.8	5.7	5.8	6.2	3.0	2.7	2.6	2.65	3.5	3.9
17	5.2	5.6	5.8	5.7	5.7	6.2	3.0	2.7	2.6	2.65	3.45	3.8
18	5.2	5.6	5.8	6.0	5.5	6.2	3.0	2.7	2.6	2.65	3.45	3.7
19	5.2	5.7	5.7	5.7	5.4	6.0	3.0	2.7	2.6	2.65	3.4	3.65
20	5 2	5.7	5.7	5.8	5.2	5.8	3.0	2.7	2.6	.....	3.35	3.6
21	5.2	5.7	5.7	5.8	5.1	5.6	2.95	2.78	2.6	2.75	3.3	3.5
22	5.2	5.6	5.7	6.0	5.0	5.4	2.95	2.7	2.6	.....	3.2	3.5
23	5.2	5.6	5.8	5.9	4.9	5.0	2.95	2.7	2.6	2.95	3.2	3.5
24	5.2	5.6	5.8	5.9	4.8	4.5	2.95	2.7	2.6	.....	3.2	3.5
25	5.2	5.6	5.6	5.8	5.0	4.2	2.95	2.7	2.6	2.85	3.25	3.5
26	5.2	5.6	5.6	5.8	5.1	3.8	2.95	2.7	2.6	2.72	3.3	3.5
27	5.2	5.6	5.6	6.0	5.4	3.8	2.9	2.7	2.6	.....	3.6	3.5
28	5.2	5.6	5.6	6.7	5.6	3.6	2.9	2.7	2.6	2.7	4.2	3.5
29	5.2	5.6	5.6	6.2	.....	3.5	2.9	2.7	2.6	.....	4.3	3.5
30	5.3	5.6	5.6	6.2	.....	3.5	2.9	2.7	2.6	.....	4.5	3.5
31	5.3	.....	5.6	6.3	.....	4.0	.....	2.7	.....	2.68	4.7	.....

NOTE.—Several short diversions were made at Los Angeles aqueduct intake Jan. 2-9, causing drop in gage heights. Water turned back at intake Aug. 7. Diversion at Lower East Side Canal caused delay in rise in gage height until Aug. 11.

Daily discharge, in second-feet, of Owens River near Lone Pine, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	68	351	385	402	470	395	149	16	9.5	6	6.5	260
2	73	351	385	368	470	385	144	15	9.5	6	6.5	293
3	73	351	385	334	460	375	128	13	9.5	6	8	244
4	73	351	385	317	460	365	126	13	9.5	6	9.5	212
5	73	351	385	300	440	395	118	12	9.5	6.5	11	197
6	78	351	385	284	440	430	75	11	9.5	6.5	12	181
7	88	351	385	252	500	445	74	11	9.5	6.5	11	175
8	98	368	385	236	520	460	63	11	9	6.5	8	168
9	98	368	385	204	520	460	53	11	9	6.5	7	146
10	110	385	385	400	520	460	44	11	8	6.5	7	146
11	122	385	402	382	525	470	44	11	8.5	6.5	51	146
12	134	402	419	382	505	470	39	10	8.5	6	55	135
13	204	402	419	382	485	470	35	10	8	6	55	115
14	220	385	419	360	450	465	31	10	7	6	55	115
15	284	385	419	375	400	465	29	9.5	7	6	55	112
16	300	385	419	393	420	485	27	9.5	7	6	55	108
17	317	385	419	393	400	475	26	9.5	7	6	51	96
18	317	385	419	440	370	475	26	9.5	7	6	51	83
19	317	402	402	390	355	440	25	9.5	7	6	46	78
20	317	402	402	405	320	400	25	9.5	7	7	42	74
21	317	402	402	405	305	370	22	12	7	8	38	65
22	317	385	402	435	285	335	22	9.5	6.5	12	32	65
23	317	385	419	420	275	265	22	9.5	6.5	15	32	65
24	317	385	419	420	260	185	22	9.5	6.5	14	32	65
25	317	385	385	395	290	135	22	9.5	6.5	12	35	65
26	317	385	385	400	310	95	21	9.5	6.5	8.5	38	65
27	317	385	385	435	360	105	19	9.5	6	8	65	65
28	317	385	385	560	395	90	19	9.5	6	7	135	65
29	317	385	385	470	.....	85	18	9.5	6	6.5	150	65
30	334	385	385	470	.....	85	18	9.5	6	6.5	181	65
31	334	.....	385	490	.....	131	.....	9.5	.....	6	212	.....

NOTE.—Discharge determined from a fairly well defined rating curve, Oct. 1. 1912, to Jan. 9, 1913. Indirect methods for shifting channels used Jan. 10, to Sept. 30, 1913. Extremely low discharge estimates Jan. 2–9, are due to several short diversions at the Los Angeles aqueduct intake. The water was returned to the river through several sloughs which froze during the low temperatures and retarded the normal flow. Discharge interpolated for days for which gage heights are missing.

Monthly discharge of Owens River near Lone Pine, Cal., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	334	68	222	13,600	A.
November	402	351	379	22,600	A.
December	419	385	398	24,500	A.
January	560	204	384	23,600	B.
February	525	260	411	22,800	B.
March	485	85	344	21,200	B.
April	149	18	49.5	2,950	B.
May	16	9.5	10.6	652	B.
June	9.5	6	7.67	456	C.
July	15	.6	7.35	452	C.
August	212	6.5	50.1	3,080	B.
September	293	65	124	7,380	B.
The year	560	6	198	143,000	

OWENS LAKE NEAR OLANCHA, CAL.

Location.—On the west shore of Owens Lake, 1 mile north of Brier, on California & Nevada Railroad (Southern Pacific Co.), and about 13 miles north of Olancha.

Records available.—March, 1908, to September 30, 1913.

Gage.—Vertical staff installed November 1, 1911, at a bowlder point east of railroad culvert No. 507B, 1 mile north of Brier station. Original gage, a vertical staff near the old Smith ranch, was submerged in July, 1911, and an upper section installed. Gage datum before July 29, 1913, 3564.90 feet above sea level, U. S. G. S. datum; after that date, 3561.90 feet.

Cooperation.—Gage-height record furnished by city of Los Angeles.

Add 3,570 feet to the following gage heights to reduce to mean sea level, United States Geological Survey datum:

Elevation of water surface of Owens Lake near Olancha, Cal., for the years ending Sept. 30, 1908–1913.

Date.	Gage height in feet.	Date.	Gage height in feet.	Date.	Gage height in feet.	Date.	Gage height in feet.
1908.		1911-12.		1912-13.		1912-13.	
Mar. 4	4.75	Feb. 13	8.58	Feb. 13	7.15	June 14	6.25
May 28	4.40	Mar. 16	8.75	17	7.20	17	6.50
June 4	4.20	Apr. 7	8.75	25	7.30	20	6.30
		May 12	8.72	28	7.30	24	6.30
1910.		June 18	8.30	Mar. 9	7.40	26	6.10
July 22	5.98	Aug. 14	7.30	16	7.45	28	5.85
Sept. 21	4.95	23	7.20	26	7.35	July 3	5.80
		Sept. 13	6.68	Apr. 2	7.35	6	5.80
1910-11.		26	6.58	16	7.20	9	5.70
Oct. 28	4.71			26	7.20	24	5.45
Dec. 1	4.89	1912-13.		30	7.00	29	5.32
Jan. 5	5.29	Oct. 25	6.33	May 6	6.90	Aug. 7	5.20
Feb. 8	6.11	30	6.25	8	6.90	11	5.20
July 12	7.35	Nov. 15	6.30	12	6.80	18	5.00
28	8.03	23	6.30	16	6.70	25	4.95
		Dec. 12	6.45	19	6.70	Sept. 4	4.90
1911-12.		Jan. 17	6.70	20	6.60	14	4.90
Nov. 1	7.35	24	6.80	22	6.60	22	4.70
5	7.50	31	6.80	June 10	6.25	23	4.70
Dec. 3	7.60	Feb. 2	6.90	12	6.50	29	4.70
Jan. 14	8.20	6	6.95				

NOTE.—Gage heights for 1908 supersede those published in Water Supply Paper 300, page 226, and Water Supply Paper 310, page 78, which were referred incorrectly to datum. Readings for Mar. 29, Apr. 19, and 26, 1908, probably unreliable, are not republished.

ROCK CREEK NEAR ROUND VALLEY, CAL.

Location.—In the SE. ¼ SE. ¼ sec. 9, T. 6 S., R. 31 E., below highway bridge, a short distance above mouth of Pine Creek, and 2 miles northwest of Round Valley.

Records available.—August 3, 1903, to September 30, 1913.

Drainage area.—Approximately 46 square miles.

Gage.—Vertical staff on left bank about 600 feet below bridge. Gage was located at highway bridge prior to July, 1906.

Channel and control.—Sand and cobblestone; somewhat shifting.

Discharge measurements.—Made from footbridge at gage or by wading.

Winter flow.—Shore ice forms at times. Discharge relation probably not affected.

Diversions.—Water for irrigation is diverted above the station.

Accuracy.—Results good.

Cooperation.—Gage heights and discharge measurements furnished by the city of Los Angeles.

Discharge measurements of Rock Creek near Round Valley, Cal., during the year ending Sept. 30, 1913.

[Made by J. E. Jones.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
Oct. 15	1.29	29	Mar. 11	1.19	25	July 17	1.05	20
Nov. 14	1.32	29	Apr. 23	.92	15	18	1.20	28
Dec. 16[a]	1.01	18	May 29	1.85	48	Aug. 19	.97	17
Jan. 28	1.51	35	June 19	1.40	30	Sept. 11	1.28	31
29	1.30	27	20	1.51	38			

[a] Some ice present.

Daily gage height, in feet, of Rock Creek near Round Valley, Cal., for the year ending Sept. 30, 1913.

[L. L. Roberts, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.23			1.03		1.38	1.2		1.85	1.65	1.8	
2		1.3	1.3		1.35			1.0		1.4		1.7
3	1.35			1.05		1.35	1.2	1.0	1.8	1.57	1.6	
4	1.33	1.3	1.3		1.33	1.33	1.23			1.6		1.65
5	1.40		1.2	1.0	1.33	1.33		1.0	1.85	1.65	1.53	
6		1.3	1.01				1.2		1.83	1.65		1.7
7	1.34		1.15	1.03	1.35	1.3		1.03		1.7	1.4	
8		1.3			1.65		1.23		1.83	1.75		1.65
9	1.30		1.05	1.0		1.2		1.05	1.8	1.6	1.33	
10	1.34	1.3			1.55		1.2		1.7	1.7		1.6
11		1.3	1.03	.9		1.19	1.2	1.1	1.9	1.55	1.35	1.44
12	1.30	1.33			1.43	1.2			1.9	1.75	1.25	
13			1.05	1.05	1.4	1.25	1.1	1.09	1.85	1.7	1.2	1.3
14	1.30	1.3	1.05						1.5	1.75	1.15	
15	1.29			1.1	1.4	1.2	.9	1.1	1.75	1.5		1.25
16	1.29	1.3	1.0						1.9	1.5	1.1	
17	1.20		1.0	1.15	1.45	1.17	.9	1.1	1.95	1.05	1.12	1.23
18		1.28					.9		1.95	1.3		
19	1.20		.9	1.23	1.43	1.15		1.38	1.4	1.45	1.06	1.25
20		1.3		1.3			.9		1.63			1.18
21	1.20		.93		1.43	1.18		1.53	1.85	1.6	1.35	1.15
22		1.29		1.35			.9		1.4	1.7	1.45	
23	1.25		.9	1.35	1.5	1.15	.92	1.7	1.55	1.65		1.2
24	1.23	1.29		1.4					1.8		1.63	
25			.95	1.38	1.5	1.2	.9	1.85	1.5	1.5		1.23
26	1.23	1.25			1.43			1.9	1.5		1.75	
27	1.30		.9	1.4		1.18	.9	1.9	1.6	1.7		1.23
28		1.2		1.47	1.4			1.8	1.6	1.75	1.55	
29	1.30		1.0	1.33		1.2	.9	1.85	1.55			1.2
30		1.3					.9	1.8	1.55	1.8	1.75	1.2
31	1.30		1.0	1.35		1.23					1.75	

NOTE.—Slight ice conditions during first part of January. On June 20 willow brush, which was accumulating débris, was out away from the control below the gage.

Daily discharge, in second-feet, of Rock Creek near Round Valley, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	26	28	28	19	30	31	24	16	48	49	61	56
2	28	28	28	20	30	30	24	18	47	35	55	55
3	30	28	28	20	30	30	24	18	46	44	49	54
4	29	28	28	19	29	29	26	18	47	46	47	52
5	32	28	24	18	29	29	25	18	48	50	45	54
6	31	28	18	18	30	28	24	18	47	50	41	55
7	30	28	23	19	30	28	25	19	47	54	37	54
8	29	28	22	18	41	26	26	20	47	57	36	52
9	28	28	20	18	39	24	25	20	46	49	34	50
10	30	28	20	16	37	24	24	20	42	55	34	49
11	29	28	19	15	35	24	24	21	50	46	34	39
12	28	28	20	18	33	24	22	21	50	58	30	36
13	28	28	20	20	32	26	21	21	48	55	27	32
14	28	28	20	20	32	25	18	21	34	58	24	31
15	28	28	19	21	32	24	15	21	44	43	23	30
16	28	28	18	22	32	24	15	21	50	43	22	29
17	24	28	18	23	33	23	15	21	52	20	23	28
18	24	27	16	24	33	23	15	26	52	32	22	29
19	24	28	15	26	33	23	15	31	30	40	20	30
20	24	28	16	28	33	24	15	34	44	44	27	26
21	24	28	16	29	33	24	15	36	59	49	34	24
22	25	28	16	30	34	24	15	40	34	55	40	26
23	26	28	15	30	35	23	16	43	41	52	46	27
24	26	28	16	32	35	24	16	46	55	48	51	28
25	26	27	16	31	35	24	15	49	39	43	54	28
26	26	26	16	32	33	24	15	52	39	49	58	28
27	28	25	15	32	32	24	15	50	45	55	52	28
28	28	24	16	34	32	24	15	46	45	58	46	28
29	28	26	18	29	.....	24	15	48	42	60	52	27
30	28	28	18	30	.....	25	15	46	44	61	58	27
31	28	.....	18	30	.....	26	.....	47	.....	61	58	.....

NOTE.—Daily discharge determined from well-defined rating curves used for short periods, as follows: Oct. 1, 1912, to May 26, 1913; May 27 to June 19, 1913; and July 9 to Sept. 30, 1913. Indirect method for shifting channels used June 20 to July 8, 1913. Discharge interpolated for days for which gage record is missing.

Monthly discharge of Rock Creek near Round Valley, Cal., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	32	24	27.5	1,690	A.
November	29	24	27.6	1,640	A.
December	28	15	19.4	1,190	B.
January	34	15	23.9	1,470	B.
February	41	29	32.9	1,830	B.
March	31	23	25.3	1,560	A.
April	26	15	19.1	1,140	A.
May	52	16	29.9	1,840	A.
June	59	30	45.4	2,700	B.
July	61	20	49.0	3,010	A.
August	61	20	40.0	2,460	A.
September	56	24	37.1	2,210	A.
The year	61	15	31.4	22,700	

PINE CREEK NEAR ROUND VALLEY, CAL.

Location.—In the NE. ¼ SE. ¼ sec. 9, T. 6 S., R. 31 E., 300 feet above highway bridge, about 600 feet above junction with Rock Creek, and 2 miles northwest of Round Valley.

Records available.—August 3, 1903, to September 30, 1913.

Drainage area.—Approximately 32 square miles above mouth of canyon.

Gage.—Vertical staff on left bank 300 feet above bridge. Prior to May 13, 1908, gage was located 150 feet below highway bridge.

Channel and control.—Lava rock and sand; fairly permanent.

Discharge measurements.—Made from footbridge at gage or by wading.

Diversions.—Water is diverted for irrigation above the station.

Winter flow.—Ice occasionally forms at station but it probably does not affect the discharge relation.

Accuracy.—Rating curves fairly well defined; results fair.

Cooperation.—Gage heights and discharge measurements furnished by the city of Los Angeles.

Discharge measurements of Pine Creek near Round Valley, Cal., during the year ending Sept. 30, 1913.

[Made by J. E. Jones.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
Oct. 15	3.48	4.1	Mar. 11	3.45	3.3	June 20	3.88	17
Nov. 14	3.49	3.8	Apr. 23	3.35	1.3	July 17	3.48	3.9
Dec. 6[a]	3.45	2.9	May 29	3.62	7.7	Aug. 19	3.45	2.1
Jan. 29	3.45	3.4	June 19	3.77	12	Sept. 12	3.50	4.3

[a] Some ice present.

Daily gage height, in feet, of Pine Creek near Round Valley, Cal., for the year ending Sept. 30, 1913.

[L. L. Roberts, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.25	.....	.....	3.3	.....	3.55	3.35	.....	3.9	3.7	4.0	.....
2	3.35	3.5	3.4	.....	3.35	.....	.....	3.3	.....	3.65	.....	4.0
3	.....	.....	.....	3.25	.....	3.6	3.4	3.35	3.85	3.75	3.85	.....
4	3.4	3.5	3.4	.....	3.4	3.6	3.4	.....	.....	3.7	.....	3.8
5	3.43	.....	3.45	3.3	3.4	3.6	.....	3.3	3.9	3.75	3.75	.....
6	.....	3.5	3.45	.....	.....	.....	3.37	.....	3.83	3.7	.....	3.73
7	3.35	.....	3.4	3.3	3.4	3.55	.....	3.35	.....	3.75	3.6	.....
8	.....	3.5	.....	.....	3.7	.....	3.35	.....	3.75	4.0	.....	3.6
9	3.35	.....	3.43	3.23	.....	.....	.....	3.3	4.1	3.9	3.63	.....
10	3.38	3.5	.....	.....	3.43	3.5	3.4	.....	4.15	3.95	.....	3.6
11	.....	3.45	3.45	3.2	.....	3.45	3.4	3.3	3.9	3.85	3.6	3.51
12	3.3	.....	.....	.....	3.48	3.45	.....	.....	4.8	3.9	3.6	3.5
13	.....	.....	3.4	3.32	3.5	3.5	3.3	3.25	4.6	3.9	3.6	3.58
14	3.4	3.4	3.4	.....	.....	.....	.....	.....	3.4	3.95	3.6	.....
15	3.48	.....	.....	3.32	3.4	3.48	3.35	3.2	3.2	3.8	.....	3.53
16	3.48	3.4	3.35	.....	.....	.....	.....	.....	3.5	3.85	3.6	.....
17	3.4	.....	3.35	3.35	3.45	3.45	3.3	3.2	3.45	3.52	3.55	3.5
18	.....	3.43	.....	.....	.....	.....	3.3	.....	3.5	3.4	.....	.....
19	3.4	.....	3.3	3.38	3.48	3.45	.....	3.34	3.77	3.45	3.45	3.53
20	.....	3.4	.....	3.4	.....	.....	3.3	.....	3.4	.....	.....	3.5
21	3.43	.....	3.35	.....	3.48	3.45	.....	3.68	3.4	5.3	3.55	3.5
22	.....	3.4	.....	3.4	.....	.....	3.3	.....	3.5	4.6	3.65	.....
23	3.4	.....	3.35	3.34	3.5	3.45	3.35	3.95	3.4	5.5	.....	3.5
24	3.4	3.4	.....	3.34	.....	.....	.....	.....	3.7	.....	3.75	.....
25	.....	.....	3.4	3.4	3.5	3.5	3.3	4.1	3.45	5.3	.....	3.5
26	3.45	3.4	.....	.....	3.48	.....	.....	4.15	3.4	.....	3.75	.....
27	3.45	.....	3.4	3.35	.....	3.5	3.3	4.18	3.7	3.89	.....	3.5
28	.....	3.4	.....	3.5	3.55	.....	.....	3.75	3.65	3.95	4.75	.....
29	3.5	.....	3.4	3.45	.....	3.48	3.3	3.62	3.6	.....	.....	3.55
30	.....	3.4	.....	.....	.....	.....	3.3	3.5	3.65	4.0	4.75	3.6
31	3.5	.....	3.38	3.5	.....	3.45	.....	.....	.....	.....	4.8	.....

NOTE.—Slight ice conditions during first part of January. On Jan. 7, 1913, a temperature of 10° F. below zero was reported, which is stated to be the lowest ever registered in Round Valley.

Daily discharge, in second-feet, of Pine Creek near Round Valley, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.7	4.2	2.2	1.0	2.9	5.6	1.6	1.0	19	9.0	24	58
2	1.6	4.2	2.2	.8	1.6	6.3	1.9	1.0	18	7.4	20	25
3	1.9	4.2	2.2	.7	1.9	7.0	2.2	1.6	17	11	16	20
4	2.2	4.2	2.2	.8	2.2	7.0	2.2	1.3	18	9.0	14	14
5	2.8	4.2	3.2	1.0	2.2	7.0	2.0	1.0	19	11	11	13
6	2.2	4.2	3.2	1.0	2.2	6.3	1.8	1.3	16	9.0	8.4	12
7	1.6	4.2	2.2	1.0	2.2	5.6	1.7	1.6	14	11	5.8	9.5
8	1.6	4.2	2.5	.8	10	5.1	1.6	1.3	12	24	6.3	7.0
9	1.6	4.2	2.8	.6	6.4	4.7	1.9	1.0	32	19	6.8	7.0
10	2.0	4.2	3.0	.5	2.8	4.2	2.2	1.0	36	22	6.3	7.0
11	1.5	3.2	3.2	.4	3.3	3.2	2.2	1.0	19	17	5.8	4.5
12	1.0	2.8	2.7	.8	3.8	3.2	1.6	.8	96	19	5.8	4.2
13	1.6	2.5	2.2	1.2	4.2	4.2	1.0	.7	71	19	5.8	6.4
14	2.2	2.2	2.2	1.2	3.2	4.0	1.3	.6	1.5	22	5.8	5.7
15	3.8	2.2	1.9	1.2	2.2	3.8	1.6	.4	.2	14	5.8	5.0
16	3.8	2.2	1.6	1.4	2.7	3.5	1.3	.4	3.2	17	5.8	4.6
17	2.2	2.5	1.6	1.6	3.2	3.2	1.0	.4	2.4	4.8	4.5	4.2
18	2.2	2.8	1.3	1.8	3.5	3.2	1.0	1.0	3.2	2.2	3.4	4.6
19	2.2	2.5	1.0	2.0	3.8	3.2	1.0	1.5	12	3.2	2.4	5.0
20	2.5	2.2	1.3	2.2	3.8	3.2	1.0	5.6	1.5	3.2	3.4	4.2
21	2.8	2.2	1.6	2.2	3.8	3.2	1.0	9.7	1.5	154	4.5	4.2
22	2.5	2.2	1.6	2.2	4.0	3.2	1.0	16	3.2	193	7.4	4.2
23	2.2	2.2	1.6	1.5	4.2	3.2	1.6	22	1.5	173	9.2	4.2
24	2.2	2.2	1.9	1.5	4.2	3.7	1.3	27	9.0	160	11	4.2
25	2.7	2.2	2.2	2.2	4.2	4.2	1.0	32	2.4	148	11	4.2
26	3.2	2.2	2.2	1.9	3.8	4.2	1.0	36	1.5	83	11	4.2
27	3.2	2.2	2.2	1.6	4.7	4.2	1.0	38	9.0	18	11	4.2
28	3.7	2.2	2.2	4.2	5.6	4.0	1.0	12	7.4	21	86	4.9
29	4.2	2.2	2.2	3.2	.....	3.8	1.0	7.7	5.8	22	86	5.6
30	4.2	2.2	2.1	3.7	.....	3.5	1.0	4.2	7.4	24	86	7.0
31	4.2	.....	2.0	4.2	.....	3.2	.....	12	.....	24	91	.....

NOTE.—Daily discharge determined from fairly well defined rating curves used for short periods, as follows: Oct. 1, 1912, to June 12, 1913, July 9 to 22, and Sept. 1 to 30, 1913; June 13 to July 8, 1913; and July 23 to Aug. 31, 1913. Discharge interpolated for days for which gage height is not recorded or is estimated by comparisons with Rock Creek and Owens River near Round Valley. The low discharges are due to use of water for irrigation.

Monthly discharge of Pine Creek near Round Valley, Cal., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	4.2	0.7	2.46	151	C.
November	4.2	2.2	2.97	177	C.
December	3.2	1.0	2.15	132	C.
January	4.2	.4	1.63	100	C.
February	10	1.6	3.66	203	C.
March	7	3.2	4.32	266	C.
April	2.2	1.0	1.43	85	C.
May	38	.4	7.78	478	C.
June	96	.2	15.3	910	C.
July	193	2.2	41.1	2,530	C.
August	91	2.4	18.7	1,150	C.
September	58	4.2	8.93	531	C.
The year	193	0.2	9.28	6,710	

MONO LAKE BASIN.

MONO LAKE NEAR MONO LAKE, CAL.

Location.—In lot 6, SE. ¼ NE. ¼ sec. 31, T. 2 N., R. 26 E., about 2 miles south of Mono Lake post office.

Records available.—June 15, 1912, to September 30, 1913.

Gage.—Vertical staff fastened to willow tree about 400 feet from Hammon's store.

Cooperation.—Gage-height record furnished by United States Forest Service.

Daily gage height, in feet, of Mono Lake near Mono Lake, Cal., for the year ending Sept. 30, 1913.

[F. B. Clark, observer.]

Day.	Oct.	Nov.	Dec.	Apr.	May.	June.	Aug.	Sept.
1								
2								
3			8.29					
4								
5		8.32						
6								
7								
8								
9								
10								
11	8.54							
12								
13								
14								8.52
15					8.32			
16		8.31		8.40				
17								
18								
19					8.40			
20								
21								
22								
23								
24								
25							8.56	
26								
27								
28	8.38							
29						8.70		
30								
31								

RUSH CREEK NEAR MONO LAKE, CAL.

Location.—In the NE. ¼ sec. 13, T. 1 N., R. 26 E., at highway bridge, one-fourth mile above mouth of creek, 3 miles below mouth of Walker Creek, and about 8 miles southeast of Mono Lake post office.

Records available.—November 16, 1910, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff installed September 15, 1911, at datum 0.9 foot higher than temporary installation on July 6, 1911. Original vertical staff, fastened to cottonwood tree on right bank, was washed out by flood June 24, 1911.

Channel and control.—Sand and fine gravel; will shift at high water.

Discharge measurements.—Made from highway bridge or by wading.

Winter flow.—Discharge relation somewhat affected by ice.

Accuracy.—Rating curves fairly well defined; results good for periods covered by gage heights.

Diversions.—Water is diverted for irrigation above the station.

Cooperation.—Some gage heights and discharge measurements furnished by United States Forest Service. Gage-height record May 18 to August 7, 1913, furnished by R. G. McDonald.

Discharge measurements of Rush Creek near Mono Lake, Cal., during the year ending Sept. 30, 1913.

[Made by F. B. Clark.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-feet.*		*Feet.*	*Sec.-feet.*
Apr. 18	2.80	46	May 28	4.90	403
May 16	3.60	137	Aug. 22	2.55	36

Daily gage height, in feet, of Rush Creek near Mono Lake, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Apr.	May.	June.	July.	Aug.	Sept.
1						4.1	3.5	3.6	
2						4.1	3.5	3.7	
3						4.0	3.6	3.7	
4						4.0	3.6	3.5	
5						4.0	3.6	3.5	
6		2.3	2.38			4.1	3.5	3.4	
7	2.43					4.3	3.6	3.4	
8						4.3	3.6		
9						4.3	3.6		
10						4.2	3.6		2.95
11						4.3	3.6		
12	2.42					3.7	3.5		
13						3.7	3.5	2.6	
14						4.0	3.6		
15						4.3	3.6		
16		2.38			3.6	4.15	3.5		
17						4.0	3.5		
18	2.36			2.8	4.35	3.9	3.5		
19					4.4	3.9	3.3		
20					4.1	3.5	3.6		
21					4.0	3.6	3.7		
22					4.1	3.7	3.8	2.55	
23					4.5	3.7	3.8		
24					4.8	3.7	3.8		
25					5.0	3.7	3.7		
26				2.82	5.1	3.7	3.8		2.52
27					5.1	3.6	3.9		
28		2.4			4.9	3.3	3.8		
29	2.3				4.9	3.4	3.8		
30					4.5	3.4	3.5	3.9	
31					4.1		3.7		

Daily discharge, in second-feet, of Rush Creek near Mono Lake, Cal., for the years ending Sept. 30, 1911–1913.

Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910-11.											
1	.....	47	39	105	109	102	690	750	820	269	66
2	.....	48	37	117	111	120	701	735	780	256	62
3	.....	48	35	130	112	135	712	719	740	244	60
4	.....	48	34	142	114	150	723	745	700	232	58
5	.....	49	35	128	108	165	734	770	660	221	56
6	.....	49	36	114	103	180	745	795	635	212	54
7	.....	49	37	100	97	195	741	820	630	203	52
8	.....	49	38	86	92	210	739	845	625	195	50
9	.....	46	40	72	86	250	735	870	620	187	48
10	.....	44	41	58	80	290	730	901	615	178	46
11	.....	48	42	43	74	330	726	930	610	169	44
12	.....	51	43	44	69	370	723	965	610	160	42
13	.....	52	45	45	63	410	719	1,000	605	154	39
14	.....	54	46	46	58	450	712	1,030	600	147	40
15	.....	56	48	47	52	494	704	1,060	590	141	41
16	42	58	50	48	47	505	696	1,090	585	134	41
17	42	58	51	49	41	515	689	1,120	580	127	42
18	43	54	52	50	36	525	682	1,280	575	121	43
19	43	49	54	57	42	535	674	1,240	570	114	43
20	43	52	56	65	49	545	667	1,210	565	108	44
21	44	56	58	72	55	555	680	1,170	560	102	45
22	44	48	58	80	62	567	700	1,140	530	99	45
23	44	40	58	87	69	580	725	1,100	495	96	46
24	45	38	58	95	75	595	750	1,070	465	93	47
25	45	36	57	102	82	610	775	1,030	430	89	48
26	45	36	57	104	85	625	800	1,000	400	86	47
27	46	36	57	105	88	640	823	960	370	83	46
28	46	36	57	107	91	655	810	930	335	79	45
29	46	36	69	.....	93	667	795	890	301	76	44
30	47	38	81	.....	96	678	780	860	290	72	43
31	.....	40	93	.....	99	.....	765	.....	278	69	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	June.	July.	Aug.	Sept.
1911-12.										
1	42	32	24	22	16	18	.....	84	62	26
2	41	32	24	22	16	19	.....	70	60	25
3	40	32	23	22	16	19	.....	76	58	25
4	38	32	23	22	16	19	.....	73	56	24
5	37	32	23	22	16	19	492	70	54	24
6	36	32	22	22	16	20	455	66	52	23
7	36	33	22	22	17	20	415	75	50	23
8	36	33	21	22	17	20	380	85	48	22
9	36	34	21	22	17	20	340	94	46	22
10	35	34	20	22	17	.....	306	99	45	22
11	35	34	20	22	17	.....	290	104	45	21
12	35	34	20	22	17	.....	275	109	45	20
13	34	33	20	22	17	.....	260	114	45	19
14	33	32	20	22	18	.....	244	119	44	18
15	32	31	20	22	18	.....	237	124	43	17
16	32	30	20	21	18	.....	230	129	42	16
17	32	29	20	21	18	.....	223	134	42	16
18	32	28	20	20	17	.....	215	140	40	16
19	32	28	21	20	16	.....	208	130	38	15
20	32	28	21	20	15	.....	191	121	36	15
21	32	27	22	20	15	.....	174	112	34	14
22	32	27	22	19	14	.....	157	103	32	14
23	32	27	22	18	13	.....	139	94	30	13
24	32	26	22	18	12	.....	122	85	29	13
25	32	26	22	17	13	.....	105	76	29	12
26	32	26	22	16	14	.....	88	74	28	12
27	32	25	22	16	15	.....	88	72	28	11
28	32	25	22	16	16	.....	88	70	27	11
29	32	25	22	16	17	.....	88	68	27	11
30	32	24	22	16	.....	.....	88	66	26	11
31	32	.....	22	16	.....	.....	.....	64	26	.....

Daily discharge, in second feet, of Rush Creek near Mono Lake, Cal., for the years ending Sept. 30, 1911–1913—Continued.

Day.	Oct.	Nov.	Dec.	Apr.	May.	June.	July.	Aug.	Sept.
1912–13.									
1	12	11	16	.....	.....	226	126	140	100
2	13	11	15	.....	.....	226	140	156	96
3	14	11	15	.....	.....	208	140	156	92
4	15	11	15	.....	.....	208	140	126	88
5	16	11	15	.....	.....	208	140	126	83
6	17	11	15	.....	.....	226	126	112	79
7	18	11	.....	.....	.....	264	140	112	74
8	18	12	.....	.....	.....	264	140	98	70
9	18	12	.....	.....	.....	264	140	84	65
10	17	13	.....	.....	.....	244	140	70	61
11	17	13	.....	.....	.....	264	140	57	59
12	17	13	.....	.....	.....	156	126	43	57
13	17	14	.....	.....	.....	156	126	30	54
14	16	14	.....	.....	.....	208	140	30	52
15	16	15	.....	.....	.....	264	140	29	50
16	15	15	.....	.....	140	235	126	29	47
17	14	15	.....	.....	207	208	126	28	45
18	14	15	.....	47	274	190	126	28	42
19	14	15	.....	.....	284	190	100	27	40
20	14	15	.....	.....	226	126	140	27	38
21	13	15	.....	.....	208	140	156	26	35
22	13	16	.....	.....	226	156	172	26	33
23	13	16	.....	.....	306	156	172	40	32
24	12	16	.....	.....	372	156	172	55	30
25	12	16	.....	.....	420	156	156	70	27
26	12	16	.....	49	444	156	172	85	24
27	11	16	.....	.....	444	140	190	100	23
28	11	16	.....	.....	396	100	172	115	22
29	11	16	.....	.....	396	112	172	130	22
30	11	16	.....	.....	306	112	126	190	21
31	11	.....	.....	.....	226	.....	156	190	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: Nov. 16, 1910, to June 17, 1911, July 6, 1911, to Mar. 9, 1912, poorly defined; June 5, 1912, to Sept. 30, 1913, fairly well defined. Discharge for days for which gage heights are not recorded estimated or interpolated from comparison with records of Leevining Creek.

Monthly discharge of Rush Creek near Mono Lake, Cal., for the years ending Sept. 30, 1911–1913.

Month.	Discharge in second-feet (mean).	Run-off (total in acre-feet).	Accuracy.
1910–11.			
November 16–30	44.3	1,320	
December	46.7	2,870	
January	50.4	3,100	
February	82.1	4,560	
March	78.6	4,830	
April	422	25,100	
May	730	44,900	
June	968	57,600	
July	554	34,100	
August	146	8,980	
September	47.6	2,830	
The period		190,000	
1911–12.			
October	34.1	2,100	
November	29.7	1,770	
December	21.5	1,320	
January	20.0	1,230	
February	16.0	920	
March 1–9	19.3	344	
June 5–30	227	11,700	
July	93.5	5,750	
August	40.9	2,510	
September	17.7	1,050	
1912–13.			
October	14.3	879	
November	13.9	827	
December 1–6	15.2	181	
May 16–31	305	9,680	A.
June	191	11,400	A.
July	144	8,850	A.
August	81.8	5,030	C.
September	52.0	3,090	C.

NOTE.—Mean monthly discharge for periods for which no gage heights are given are interpolated or estimated by comparison with records of Leevining Creek near Mono Lake. Mean discharge Dec. 21, 1911, to Jan. 12, 1912, estimated, on account of ice, at 22 second-feet.

LEEVINING CREEK NEAR MONO LAKE, CAL.

Location.—In the SE. ¼ SE. ¼ sec. 17, T. 1 N., R. 26 E., at ranger station in Mono National Forest, about 3¼ miles above the mouth, and 4 miles south of Mono Lade post office.

Records available.—November 17, 1910, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff fastened to cottonwood tree on left bank, 250 feet below ranger station.

Channel and control.—Gravel; practically permanent.

Discharge measurements.—Made by wading near gage.

Diversions.—Less than 100 acres of land is irrigated from this stream above the station.

Winter flow.—Discharge relation affected by ice.

Accuracy.—Rating curve well defined; results good.

Cooperation.—Gage heights and discharge measurements furnished by United States Forest Service.

Discharge measurements of Leevining Creek near Mono Lake, Cal., during the year ending Sept. 30, 1913.

[Made by F. B. Clark.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
Apr. 18	2.16	21	Aug. 22	2.58	65
May 16	2.98	115	26	2.78	86

Daily gage height, in feet, of Leevining Creek near Mono Lake, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.12	2.09	2.10	.....	2.30	3.1	2.82	2.88	3.0
2	2.20	2.09	2.10	.....	2.28	3.1	2.98	2.86	2.97
3	2.18	2.09	2.10	.....	2.28	3.1	2.90	2.85	2.87
4	2.18	2.09	2.10	.....	.....	3.3	2.95	2.82	2.82
5	2.19	2.09	.....	.....	.....	3.3	2.98	2.80	2.70
6	2.19	2.10	.....	.....	.....	3.2	3.0	.....	2.68
7	2.18	2.10	.....	.....	.....	.....	3.0	.....	2.66
8	2.18	2.10	.....	.....	.....	.....	2.95	.....	2.64
9	2.16	2.11	.....	.....	.....	3.1	3.1	.....	2.61
10	2.16	2.11	.....	.....	.....	3.0	3.1	2.66	2.58
11	2.16	2.11	.....	.....	.....	2.9	2.9	2.64	2.56
12	2.16	2.12	.....	.....	.....	.....	3.0	2.58	2.55
13	2.14	2.13	.....	.....	2.70	3.1	2.95	2.56	2.60
14	2.14	2.13	.....	.....	2.75	3.25	2.95	2.52	.....
15	2.12	2.13	.....	.....	2.78	3.3	2.9	.....	.....
16	2.12	2.13	.....	2.16	2.80	3.25	2.85	2.48	2.50
17	2.12	2.13	.....	2.16	3.05	3.2	2.78	2.48	2.48
18	2.11	2.12	.....	2.16	3.1	3.1	2.85	2.47	.....
19	2.11	2.12	.....	2.16	2.42	2.95	2.9	2.47	.....
20	2.10	2.13	.....	2.16	2.90	2.98	3.0	2.47	.....
21	2.10	2.13	.....	2.16	.....	2.95	3.05	2.50	2.45
22	2.10	2.12	.....	2.19	.....	2.97	3.1	2.51	2.47
23	.....	2.12	.....	2.20	3.4	2.95	3.05	2.80	2.44
24	.....	2.12	.....	2.21	3.5	2.95	3.0	2.80	2.40
25	2.08	2.11	.....	2.28	3.6	.....	2.98	2.85	2.38
26	2.08	2.11	.....	2.32	3.65	.....	2.95	2.84	2.36
27	2.09	2.11	.....	2.42	3.65	.....	2.9	2.95	2.34
28	2.09	2.10	.....	2.41	3.35	2.70	2.9	3.0	2.32
29	2.09	2.10	.....	2.35	3.3	2.70	2.9	2.92	2.30
30	2.09	2.10	.....	2.34	3.15	2.68	2.9	3.2	2.29
31	2.09	.....	.....	.....	3.1	.....	2.88	3.2	.....

NOTE.—Shore ice formed, Dec. 5, 1912. Creek nearly frozen over on morning of Dec. 6. No record obtained Dec. 5, 1912, to Apr. 15, 1913.

Daily discharge, in second-feet, of Leevining Creek near Mono Lake, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Apr.	May.	June.	July.	Aug.	Sept.
1	21	20	20	.....	29	140	93	102	122
2	26	20	20	.....	28	140	119	99	117
3	25	20	20	.....	28	140	105	98	100
4	25	20	20	.....	33	180	114	93	93
5	25	20	.....	.....	37	180	119	90	75
6	25	20	.....	.....	42	160	122	86	72
7	25	20	.....	.....	47	153	122	82	70
8	25	20	.....	.....	52	147	114	78	67
9	24	21	.....	.....	57	140	140	74	63
10	24	21	.....	.....	61	122	140	70	60
11	24	21	.....	.....	66	105	105	67	57
12	24	21	.....	.....	70	122	122	60	56
13	22	22	.....	.....	75	140	114	57	62
14	22	22	.....	.....	82	170	114	52	58
15	21	22	.....	.....	87	180	105	50	54
16	21	22	.....	20	90	170	98	48	50
17	21	22	.....	20	131	160	87	48	48
18	21	21	.....	20	140	140	98	47	47
19	21	21	.....	20	122	114	105	47	46
20	20	22	.....	20	105	119	122	47	45
21	20	22	.....	20	137	114	131	50	44
22	20	21	.....	22	168	117	140	51	47
23	20	21	.....	22	200	114	131	90	43
24	19	21	.....	23	220	114	122	90	39
25	19	21	.....	28	245	103	119	98	37
26	19	21	.....	31	258	94	114	96	35
27	20	21	.....	41	258	84	105	114	33
28	20	20	.....	40	190	75	105	122	31
29	20	20	.....	34	180	75	105	108	29
30	20	20	.....	33	150	72	105	160	28
31	20	.....	.....	.....	140	.....	102	160	.....

NOTE.—Daily discharge determined from well-defined rating curves applicable as follows: Oct. 1 to Dec. 4, 1912; and Apr. 16 to Sept. 30, 1913. Discharge Dec. 5–31 estimated, because of ice, at 17 second-feet. Discharge interpolated for other days for which gage heights are not recorded.

Monthly discharge of Leevining Creek near Mono Lake, Cal., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	26	19	21.9	1,350	B.
November	22	20	20.9	1,240	B.
December	.....	.....	17.4	1,070	D.
April 16–30	41	20	26.3	782	B.
May	258	28	114	7,010	B.
June	180	72	129	7,680	B.
July	140	87	114	7,010	B.
August	160	47	81.7	5,020	B.
September	122	28	57.6	3,430	B.

WALKER LAKE BASIN.

EAST WALKER RIVER NEAR BRIDGEPORT, CAL.

Location.—In the SW. ¼ SE. ¼ sec. 34, T. 6 N., R. 25 E., in the Mono National Forest, about 4½ miles north of Bridgeport.

Records available.—July 29, 1911, to September 30, 1913 (fragmentary).

Drainage area.—Not measured.

Gage.—Vertical staff in two sections on left bank.

Channel and control.—Gravel; fairly permanent.

Discharge measurements.—Made by wading near gage. At high stages measurements may be made from bridge about 2 miles below gage.

Winter flow.—Somewhat affected by ice.

Cooperation.—Gage heights and discharge measurements furnished by United States Forest Service.

Estimates withheld for additional measurements.

The following discharge measurement was made by F. B. Clark:

April 11, 1913: Gage height, 0.12 foot; discharge, 118 second-feet.

Daily gage height, in feet, of East Walker River near Bridgeport, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Apr.	May.	June.	July.	Aug.	Sept.
1					0.8			0.8
2				−0.5			0.2	
3								
4						−0.15		
5								
6	0.15					− .15		
7								
8					.85			
9		0.15						
10								
11			0.1					
12	.1							
13						− .1		− .15
14					.4			
15					.5			
16								
17								
18							− .1	
19								
20								− .2
21								− .2
22								
23				.2			.05	
24					.25		.1	
25								
26						.6		− .15
27								
28					.35			
29					.2			
30							.7	
31				.75				

EAST WALKER RIVER NEAR MASON, NEV.

Location.—In the S. ½ NE. ¼ sec. 26, T. 12 N., R. 25 E., at highway bridge, 2½ miles above junction with West Walker River, and 7 miles above Mason.

Records available.—November 21, 1910, to September 15, 1912; July 5 to September 30, 1913. From 1902 to 1908 a station was maintained at Ross ranch, a short distance above the present station and referred to Yerrington.

Drainage area.—Not measured.

Gage.—Vertical staff on the left bank 100 feet below the bridge.

Channel and control.—Sand; likely to shift at sudden high water.

Discharge measurements.—Made from highway bridge.

Winter flow.—Some ice forms along the banks, but does not usually affect discharge relation.

Diversions.—About 10,000 acres are irrigated above the station.

Accuracy.—Results only fair owing to shifting channel.

The records at this point show the amount of water contributed to Walker River.

The following discharge measurement was made by Frank Weber:

July 5, 1913: Gage height, 1.68 feet; discharge, 0.41 second-foot.

Daily gage height, in feet, and discharge, in second-feet, of East Walker River near Mason, Nev., for the year ending Sept. 30, 1913.

[Mrs. J. H. Hillburn, observer.]

Day.	July.		Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	2.65	54	3.95	200
2	.....	.....	2.55	46	3.9	193
3	.....	.....	2.3	27	3.8	180
4	.....	.....	2.1	14	3.8	180
5	1.68	0.4	1.9	6	3.75	174
6	1.7	.5	1.6	.0	3.65	160
7	1.7	.5	1.7	.5	3.4	130
8	1.7	.5	1.7	.5	3.2	107
9	1.7	.5	1.7	.5	3.0	86
10	1.7	.5	1.7	.5	2.95	81
11	1.7	.5	2.8	67	2.9	76
12	1.7	.5	2.5	42	2.8	67
13	1.7	.5	2.4	34	2.7	58
14	1.7	.5	2.35	30	2.6	50
15	1.7	.5	2.35	30	2.5	42
16	1.7	.5	2.3	27	2.4	34
17	1.7	.5	2.3	27	2.3	27
18	1.7	.5	2.2	20	2.2	20
19	1.7	.5	2.2	20	2.0	10
20	1.7	.5	2.2	20	1.85	4.5
21	2.05	12	3.1	96	1.8	3
22	1.9	6	2.0	10	1.75	1.8
23	2.25	24	4.8	326	1.75	1.8
24	2.95	81	4.0	207	1.75	1.8
25	3.1	96	3.5	142	1.75	1.8
26	2.75	62	3.3	118	1.7	.5
27	2.8	67	3.0	86	1.7	.5
28	2.65	54	3.1	96	1.7	.5
29	2.6	50	3.3	118	1.7	.5
30	3.3	118	4.1	221	1.7	.5
31	2.75	62	4.0	207	.....	.....

NOTE.—Discharge determined from a fairly well defined rating curve. Mean discharge computed as follows: July 5-31, 23.5 second-feet (1,260 acre-feet); August, 67.5 second-feet (4,150 acre-feet); September, 63.1 second-feet (3,750 acre-feet).

WALKER RIVER AT MASON, NEV.

Location.—In the SW. ¼ sec. 33, T. 13 N., R. 25 E., at the highway bridge at Mason, about 4½ miles below the junction of East and West Walker rivers.

Records available.—November 21, 1910, to September 15, 1912; July 3 to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff fastened to second pile bent from right end of bridge.

Channel and control.—Shifting sand.

Discharge measurements.—Made from highway bridge.

Winter flow.—Discharge relation at times slightly affected by ice.

Diversions.—A large part of the flow of both the East and West Walker rivers is diverted for irrigation.

Accuracy.—Results fair.

The following discharge measurement was made by Frank Weber:
July 3, 1913: Gage height, 3.90 feet; discharge, 104 second-feet.

Daily gage height, in feet, and discharge, in second-feet, of Walker River at Mason, Nev., for the year ending Sept. 30, 1913.

[H. C. Hansen, observer.]

Day.	July.		Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	4.85	211	5.60	422
2	.....	.....	4.68	176	5.55	405
3	3.90	104	4.60	160	5.30	326
4	.....	108	4.52	144	5.15	285
5	3.95	112	4.42	124	5.05	259
6	3.88	101	4.20	88	5.05	259
7	3.9	104	4.10	74	4.92	227
8	4.25	168	4.02	64	5.00	246
9	.....	.....	3.98	60	4.92	227
10	.....	.....	4.00	62	4.92	227
11	.....	.....	4.40	120	4.68	176
12	.....	.....	4.10	74	4.45	130
13	.....	.....	4.10	74	4.25	96
14	.....	.....	4.00	62	4.15	81
15	.....	.....	4.00	62	4.12	77
16	.....	.....	4.00	62	4.02	64
17	.....	.....	4.00	62	3.95	56
18	.....	.....	3.95	56	3.80	38
19	.....	.....	3.92	52	3.80	38
20	.....	.....	3.90	50	3.78	36
21	.....	.....	3.90	50	3.75	32
22	.....	.....	3.95	56	3.72	29
23	.....	.....	4.80	200	3.68	25
24	.....	.....	4.40	120	3.68	25
25	.....	.....	4.38	117	3.70	27
26	.....	.....	4.35	112	3.68	25
27	.....	.....	4.58	156	3.70	27
28	.....	.....	4.82	204	3.70	27
29	.....	.....	5.20	298	3.70	27
30	5.3	326	5.30	326	3.70	27
31	5.1	272	5.50	388	.....	.....

NOTE.—Discharge determined from two poorly defined rating curves applicable July 3–8 and July 30 to Sept. 30, 1913. Mean discharge computed as follows: August, 125 second-feet (7,690 acre-feet); September, 32 second-feet (7,860 acre-feet).

WALKER RIVER AT SCHURZ, NEV.

Location.—In sec. 36, T. 13 N., R. 28 E., one-fourth mile above highway bridge at town of Schurz, 3 miles above Walker Lake, and 6 miles below the diversion dam of the Walker River Indian Reservation.
Records available.—July 2 to September 30, 1913.
Drainage area.—Not measured.
Gage.—Vertical staff braced to tree on right bank.
Channel and control.—Fine sand; stream wide; one channel.
Discharge measurements.—Made by wading or from highway bridge.
Winter flow.—Discharge relation usually affected by ice.
Diversions.—Station is below all diversions and shows the run-off into Walker Lake.
Accuracy.—Records fair.

The following discharge measurement was made by Frank Weber:
July 2, 1913: Gage height, 2.49 feet; discharge, 39.4 second-feet.

Daily gage height, in feet, and discharge, in second-feet, of Walker River at Schurz, Nev., for the year ending Sept. 30, 1913.

[Joe Mencacci, observer.]

Day.	July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	45	2.30	27	2.55	44
2	2.50	40	2.24	23	2.74	57
3	2.18	20	2.40	33	3.60	156
4	2.22	22	2.28	26	3.85	195
5	2.25	24	2.27	25	3.90	204
6	2.05	14	2.10	16	3.93	209
7	2.00	11	2.02	12	3.90	204
8	2.00	11	2.00	11	3.82	190
9	2.04	13	1.85	5	3.68	167
10	2.00	11	1.80	3	3.56	150
11	1.95	9	1.72	.8	2.40	128
12	1.90	7	1.70	.3	3.25	110
13	1.80	3	1.70	.3	2.95	77
14	1.84	5	1.69	.3	2.80	62
15	1.70	.3	1.65	.2	2.72	56
16	1.70	.3	1.65	.2	2.56	44
17	1.70	.3	1.60	0	2.35	30
18	1.70	.3	1.60	0	2.27	25
19	1.70	.3	1.60	0	2.17	20
20	1.70	.3	1.60	0	2.00	11
21	1.70	.3	1.60	0	1.85	5
22	1.70	.3	1.60	0	1.70	.3
23	1.70	.3	1.60	0	1.60	0
24	2.05	14	1.60	0	1.60	0
25	2.34	29	1.60	0	1.60	0
26	2.54	43	1.60	0	1.60	0
27	2.30	27	1.60	0	1.60	0
28	2.54	43	1.60	0	1.60	0
29	2.65	50	1.60	0	1.60	0
30	2.45	36	1.60	0	1.60	0
31	2.44	36	1.94	8.6	.....	.....

NOTE.—Discharge determined from a fairly well defined rating curve. Mean monthly discharge computed as follows: July 2–31, 16.6 second-feet (1,020 acre-feet); August, 6.2 second-feet (381 acre-feet); September, 71.5 second-feet (4,250 acre-feet).

ROBINSON CREEK NEAR BRIDGEPORT, CAL.

Location.—In the SW. ¼ NW. ¼ sec. 15, T. 4 N., R. 24 E., at the mouth of the canyon in Mono National Forest, 5 miles above junction with Buckeye Creek, and 5½ miles southwest of Bridgeport.

Records available.—November 18, 1910, to September 30, 1913 (fragmentary).

Drainage area.—Not measured.

Gage.—Vertical staff fastened to pine tree on left bank.

Channel and control.—Gravel and small bowlders; fairly permanent.

Discharge measurements.—Made by wading near gage.

Winter flow.—Discharge relation affected by ice.

Regulation.—Dam at outlet of Twin Lakes partly regulates the flow at this station.

Accuracy.—Rating curves well defined; results good.

Cooperation.—Gage heights and discharge measurements furnished by United States Forest Service.

Discharge measurements of Robinson Creek near Bridgeport, Cal., during the year ending Sept. 30, 1913.

[Made by F. B. Clark.]

Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*
Apr. 12	2.55	15
June 7	3.65	122

Daily gage height, in feet, and discharge, in second-feet, of Robinson Creek near Bridgeport, Cal., for the year ending Sept. 30, 1913.

Day.	April.		May.		June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1									3.25	57		
2					3.50	132						
3			2.30	7								
4												
5												
6												
7					3.65	121	3.35	70				
8											2.35	4
9												
10												
11											2.52	8
12	2.55	17										
13									3.20	51		
14					3.50	93						
15												
16												
17					3.51	95						
18												
19	2.60	20									2.61	10
20												
21												
22												
23			3.30	98	3.50	93			3.18	49		
24												
25							3.35	70				
26	2.55	17									2.85	22
27												
28					3.49	91						
29									3.20	51		
30							3.20	51				
31			3.50	132								

NOTE.—Daily discharge determined from rating curves applicable as follows: Apr. 12 to June 2, 1913, well defined; June 3 to Sept. 30, 1913, fairly well defined above 50 second-feet.
Data insufficient for monthly estimates.
Gates at Twin Lake reported closed on Apr. 12 and July 27.

BUCKEYE CREEK NEAR BRIDGEPORT, CAL.

Location.—In the SE. ¼ NW. ¼ sec. 3, T. 4 N., R. 24 E., near the mouth of the canyon, in Mono National Forest, half a mile below Hot Springs, and 4½ miles southwest of Bridgeport.

Records available.—November 18, 1910, to September 30, 1913 (fragmentary).

Drainage area.—Not measured.

Gage.—Vertical staff fastened to large cottonwood tree on left bank about half a mile above mouth of canyon.

Channel and control.—Granite and bowlders; rough; fairly permanent.

Discharge measurements.—Made by wading or from foot log 20 feet above gage.

Winter flow.—Discharge relation somewhat affected by ice.

Accuracy.—Rating curve fairly well defined; results fair.

Cooperation.—Gage heights and discharge measurements furnished by United States Forest Service.

Discharge measurements of Buckeye Creek, near Bridgeport, Cal., during the year ending Sept. 30, 1913.

[Made by F. B. Clark.]

Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*
Apr. 12	3.00	41
June 7	3.65	155

Daily gage height, in feet, and discharge, in second-feet, of Buckeye Creek near Bridgeport, Cal., for the year ending Sept. 30, 1913.

Day.	April.		May.		June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1									3.10	50		
2					3.60	118						
3			2.90	35								
4												
5												
6												
7					3.65	129	3.31	73				
8											3.00	42
9												
10												
11												
12	3.00	42									2.90	35
13									2.95	38		
14					3.65	129						
15												
16												
17					3.60	118						
18												
19	2.95	38									2.87	33
20												
21												
22												
23			3.35	78					2.90	35		
24												
25												
26	3.00	42					3.25	66			2.80	29
27												
28					3.30	72						
29									3.10	50		
30												
31			3.60	118								

NOTE.—Daily discharge determined from a fairly well defined rating curve. Data insufficient for monthly estimates.

SWAGER CREEK NEAR BRIDGEPORT, CAL.

Location.—In the NW. ¼ NW. ¼ sec. 23, T. 5 N., R. 24 E., at highway bridge, three-fourths mile northwest of Mono ranger station, and 4¼ miles northwest of Bridgeport.

Records available.—June 1, 1911, to September 30, 1913 (fragmentary).

Drainage area.—Not measured.

Gage.—Vertical staff on right bank 20 feet above bridge.

Channel and control.—Gravel and bowlders; fairly permanent.

Discharge measurements.—Made from highway bridge or by wading

Winter flow.—Ice forms for short periods during the winter months, but does not usually affect the discharge relation.

Accuracy.—Results fair.

Cooperation.—Gage heights and discharge measurements furnished by United States Forest Service.

Discharge measurements of Swager Creek near Bridgeport, Cal., during the year ending Sept. 30, 1913.

[Made by F. B. Clark.]

Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*
Apr. 13	2.51	17
June 7	2.51	16

Daily gage height, in feet, and discharge, in second-feet, of Swager Creek near Bridgeport, Cal., for the year ending Sept. 30, 1913.

Day.	April.		May.		June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1									2.40	13		
2			1.80	1.5								
3												
4												
5	2.00	4			2.52	17						
6												
7					2.51	16						
8												
9											2.40	13
10												
11							2.02	4				
12												
13	2.51	16							2.35	11		
14												
15			1.90	2.5								
16					2.28	9			2.30	9.5		
17												
18											2.30	9.5
19	2.50	16										
20												
21												
22												
23			2.21	7.5					2.30	9.5		
24			2.25	8.5	2.15	6.5						
25	1.78	1.5										
26			2.32	10			2.40	13				
27			2.30	9.5	2.22	8						
28					2.21	7.5						
29												
30												
31			2.10	5.5								

NOTE.—Daily discharge determined from poorly defined rating curve. Data insufficient for monthly estimates.

HUMBOLDT-CARSON SINK BASIN.

CARSON RIVER BASIN.

EAST FORK OF CARSON RIVER NEAR MARKLEEVILLE, CAL.

Location.—In the NE. ¼ sec. 27, T. 10 N., R. 20 E., at Hangman's bridge, 2 miles east of Markleeville. Indian Creek enters 100 feet above gage and Markleeville Creek 1¼ miles below.

Records available.—November 13, 1910, to September 30, 1913 (not complete).

Drainage area.—Not measured.

Gage.—Vertical staff 75 feet below bridge, bolted to rock ledge on right bank.

Channel and control.—Gravel and small bowlders; appears permanent.

Discharge measurements.—At high water measurements have been made from car and cable at stamp mill 3 miles above station, where the Stone & Webster Engineering Corporation maintains a gaging station; at low and medium stages measurements are made by wading below gage.

Winter flow.—Discharge relation affected by ice.

Regulation.—Low-water flow augmented by storage on Silver Creek above the station.

Accuracy.—Results good.

Cooperation.—Gage heights and discharge measurements furnished by United States Forest Service.

Discharge measurements of East Fork of Carson River near Markleeville, Cal., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Feb. 20	F. B. Clark	2.66	52	Aug. 9	H. J. Tompkins	2.80	88
Mar. 14	do	2.77	77				

Daily gage height, in feet, of East Fork of Carson River near Markleeville, Cal., for the year ending Sept. 30, 1913.

Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1				3.10	2.85						
2											
3		2.5									
4				3.00	2.80						
5									3.50	3.05	
6											
7									3.45		
8				3.05	2.92					2.78	
9											
10		2.9									
11				2.95	2.83		3.50				
12											1.80
13								4.60			
14		2.8	3.10		2.77						
15											
16										2.60	
17		2.7				3.45					
18						3.40					
19							3.65				
20											1.45
21		2.6	3.05						3.05		
22				3.00				4.00			
23											
24											
25			3.10	2.93							
26									3.10		
27							5.20				
28			3.15								
29											
30											
31	2.8										

NOTE.—Gage heights Sept. 12 and 20, approximate; water surface below gage.

Daily discharge, in second-feet, of East Fork of Carson River near Markleeville, Cal., for the year ending Sept. 30, 1913.

Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1				129	92						
2											
3		49									
4				114	85						
5									204	122	
6											
7									194		
8				122	102					82	
9											
10		49									
11				106	89		204				
12											13
13								526			
14		49	129		81						
15											
16										60	
17		72				194					
18						184					
19							237				
20											6
21		60	122						122		
22				114				326			
23											
24											
25			129	104							
26									129		
27							794				
28			138								
29											
30											
31	85										

NOTE.—Daily discharge determined from a well-defined rating curve. Data insufficient for monthly estimates.

EAST FORK OF CARSON RIVER AT CALIFORNIA-NEVADA STATE LINE.

Location.—About 16 miles upstream from Gardnerville, Nev., about one-half mile west of the old Fritz Elges ranch house, and one-fourth mile upstream from California-Nevada State line.

Records available.—January 1, 1911, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Inclined staff bolted to a rock ledge.

Channel and control.—Gravel and cobblestones. Probably permanent.

Discharge measurements.—Made from cable and car at the gage.

Diversions.—Above all irrigation diversions.

Cooperation.—Records from 1911 to 1913 obtained by the Stone & Webster Engineering Corporation and furnished by them to the United States Reclamation Service. Daily discharge tables published as furnished by the Reclamation Service.

Discharge measurements of East Fork of Carson River at California-Nevada State line, during the years ending Sept. 30, 1911-12.[a]

[Made by L. O. Murphy.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1911.	*Feet.*	*Sec.-ft.*	1912.	*Feet.*	*Sec.-ft.*
Apr. 13	2.45	445	Feb. 24	1.00	71
June 9	4.45	2,160	June 5	3.50	1,264
July 22	2.96	829	Aug. 21	1.00	79
30	2.48	580			
Sept. 18	1.28	140			

[a] No discharge measurements made in 1913.

NOTE.—Record furnished by the Truckee River General Electric Co.

Daily gage height, in feet, of East Fork of Carson River at California–Nevada State line, for the years ending Sept. 30, 1912–13.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1912.									
1	1.1	1.2	1.1	1.3	1.5	3.5	2.2	1.1	0.8
2	1.1	1.1	1.1	1.4	1.6	3.6	2.2	1.1	.8
3	1.1	1.1	1.1	1.4	1.7	3.6	2.1	1.1	.8
4	1.1	1.1	1.1	1.4	1.7	3.6	1.9	1.1	.9
5	1.1	1.1	1.2	1.4	1.8	3.6	1.8	1.1	.9
6	1.1	1.1	1.2	1.4	1.9	3.6	1.8	1.0	.9
7	1.2	1.1	1.2	1.4	1.9	3.4	1.7	1.0	1.2
8	1.2	1.1	1.2	1.7	2.1	3.4	1.7	1.0	1.1
9	1.2	1.2	1.1	1.9	2.4	3.1	1.7	1.0	1.0
10	1.3	1.2	1.2	1.5	2.6	3.0	1.7	1.0	1.0
11	1.2	1.2	1.0	1.5	2.7	3.0	1.6	1.0	.9
12	1.2	1.2	1.1	1.4	2.7	3.0	1.6	1.1	.9
13	1.2	1.2	1.1	1.3	2.8	3.0	1.6	1.1	.9
14	1.2	1.1	1.1	1.3	2.8	2.8	1.8	1.1	.9
15	1.2	1.1	1.1	1.5	2.9	2.7	1.7	1.1	.9
16	1.2	1.1	1.1	1.7	2.9	2.6	1.6	1.0	.9
17	1.2	1.1	1.1	1.5	3.0	2.7	2.0	1.0	.9
18	1.2	1.2	1.0	1.5	2.8	2.7	1.7	1.0	.9
19	1.2	1.2	1.0	1.4	2.8	2.9	1.8	1.0	.9
20	1.2	1.2	1.0	1.3	2.9	2.1	1.6	1.0	.8
21	1.2	1.2	1.1	1.4	2.1	3.0	1.5	1.0	.8
22	1.2	1.2	1.1	1.5	3.0	2.7	1.4	1.0	.8
23	1.2	1.2	1.2	1.6	3.1	2.8	1.4	1.0	.8
24	1.2	1.0	1.2	1.4	4.0	2.7	1.3	1.0	.8
25	1.2	1.0	1.2	1.5	3.6	2.2	1.3	.9	.9
26	1.2	1.1	1.3	1.6	3.0	2.2	1.2	.9	.9
27	1.2	1.1	1.3	1.5	2.9	2.1	1.2	.9	.8
28	1.1	1.1	1.3	1.5	3.1	2.3	1.2	.9	.8
29	1.2	1.1	1.4	1.4	3.0	2.2	1.2	.8	.8
30	1.2	.....	1.3	1.6	3.0	2.2	1.2	.8	.8
31	1.2	.....	1.1	.....	3.5	.....	1.2	.8	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1912–13.												
1	0.8	0.9	0.8	1.0	1.0	1.1	2.3	2.1	2.9	1.7	1.4	1.2
2	1.0	.9	1.0	.9	1.0	1.1	2.0	2.1	2.8	1.7	1.3	1.2
3	.9	.9	1.1	.8	1.0	1.0	1.8	2.1	2.9	1.6	1.3	1.1
4	.9	.9	1.0	.9	1.0	1.0	1.7	2.4	2.9	1.6	1.2	1.1
5	1.0	.9	.9	.7	1.0	1.1	2.0	2.9	2.8	1.6	1.1	1.1
6	1.0	1.0	.8	1.1	1.0	1.1	1.7	3.1	2.9	1.6	1.1	1.1
7	1.0	1.3	1.0	1.1	1.0	1.1	1.6	3.0	2.8	1.5	1.0	.9
8	1.0	1.2	1.0	1.2	1.0	1.1	1.6	3.1	2.8	1.5	1.0	1.0
9	1.0	1.1	1.0	1.3	.9	1.2	1.7	3.0	2.7	1.5	1.0	1.0
10	.9	1.1	1.0	1.3	1.0	1.3	1.8	2.9	2.5	1.4	1.0	1.0
11	.9	1.0	1.0	1.3	1.0	1.3	2.0	2.8	2.3	1.3	1.0	1.0
12	.9	1.0	1.0	1.3	1.0	1.2	2.0	2.7	2.5	1.2	1.0	1.0
13	.9	1.0	1.0	1.0	1.1	1.2	2.2	2.6	2.4	1.2	1.0	.9
14	1.0	1.0	.9	1.0	1.0	1.1	2.0	2.5	2.4	1.2	1.0	.9
15	.9	1.0	.9	.9	1.0	1.1	1.8	2.6	2.3	1.3	1.0	.8
16	.9	1.0	1.0	1.0	1.0	1.2	1.8	2.7	2.3	1.3	1.0	.8
17	.9	1.0	.9	.9	1.1	1.2	1.8	2.9	2.3	1.2	1.0	.8
18	.9	1.0	1.0	.9	1.1	1.2	1.8	3.5	2.2	1.2	1.0	.8
19	.9	1.0	1.0	.9	1.0	1.2	1.7	2.9	2.1	1.3	1.0	.8
20	.9	1.0	.9	1.0	1.0	1.1	1.9	2.8	2.0	1.3	1.0	.8
21	.9	.8	.8	1.0	1.0	1.1	1.9	3.0	2.1	1.2	.9	.8
22	.8	1.0	.8	1.0	1.1	1.2	2.1	3.3	2.0	1.3	1.2	.8
23	.9	1.0	.9	1.0	1.1	1.1	2.2	3.3	2.1	1.4	1.1	.8
24	1.0	.9	1.0	1.0	1.1	1.1	2.3	3.5	2.2	1.4	1.2	.8
25	.9	1.0	1.0	1.0	1.1	1.1	2.5	3.2	2.0	1.6	1.2	.8
26	.9	1.1	.9	1.0	1.1	1.0	2.7	3.5	2.0	1.5	1.2	.8
27	.9	1.0	1.1	1.1	1.1	1.2	3.0	3.5	2.0	1.5	1.2	.8
28	.9	1.0	1.0	1.2	1.1	1.2	2.5	3.2	1.9	1.5	1.5	.8
29	1.0	1.0	1.0	1.0	.....	1.3	2.4	2.9	1.8	1.5	1.2	.8
30	.9	.8	1.0	1.0	.....	1.6	2.3	3.0	1.8	1.6	1.4	.8
31	1.0	.....	.9	1.0	.....	1.8	.....	3.1	.....	1.5	1.3	.....

Daily discharge, in second-feet, of East Fork of Carson River at California-Nevada State line, for the years ending Sept. 30, 1911–1913.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911.									
1	150	1,250	200	1,170	935	1,430	1,500	590	195
2	150	510	210	1,310	1,130	1,670	1,590	540	195
3	150	380	210	1,170	1,130	2,080	1,680	540	195
4	150	330	210	1,040	1,430	2,270	1,680	540	160
5	150	330	210	890	1,290	2,270	1,680	490	160
6	150	295	240	820	1,290	2,180	1,590	490	160
7	150	275	210	700	1,290	2,000	1,590	490	160
8	150	240	210	760	1,060	2,090	1,500	440	160
9	150	240	210	590	1,060	2,270	1,420	440	160
10	200	240	180	510	1,060	2,620	1,420	440	160
11	150	240	210	550	1,060	2,720	1,500	440	160
12	150	210	240	590	1,290	3,200	1,500	400	160
13	180	210	240	590	1,430	3,200	1,500	400	125
14	180	210	240	480	1,060	3,200	1,500	400	125
15	180	180	240	480	1,060	3,330	1,780	360	125
16	150	180	270	480	1,060	3,460	1,670	360	125
17	150	180	300	545	720	3,330	1,590	360	160
18	150	210	340	580	720	3,330	1,500	360	160
19	150	210	380	580	1,290	3,200	1,250	320	125
20	180	210	380	620	1,430	2,720	1,090	320	160
21	270	150	380	670	1,430	2,500	945	320	160
22	150	180	430	800	1,840	2,390	880	320	160
23	150	180	650	930	2,530	1,970	880	250	125
24	150	210	565	1,000	2,530	1,670	820	250	125
25	240	210	565	1,210	1,920	1,870	820	250	160
26	240	180	510	1,630	1,430	2,180	700	250	160
27	180	180	510	1,210	1,430	2,500	700	220	125
28	180	180	590	1,070	1,840	2,180	700	220	125
29	180	.....	700	1,000	1,920	1,970	645	220	125
30	240	.....	840	1,000	1,760	1,670	645	220	125
31	1,800	.....	1,000	.....	1,670	.....	645	220	.....

Day.	Oct.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1911-12.										
1	125	90	106	90	125	170	1,230	400	90	50
2	125	90	90	90	147	194	1,320	400	90	50
3	160	90	90	90	147	223	1,320	360	90	50
4	160	90	90	90	147	223	1,320	285	90	60
5	160	90	90	106	147	253	1,320	253	90	60
6	160	90	90	106	147	285	1,320	253	75	60
7	160	106	90	106	147	285	1,150	223	75	106
8	160	106	90	106	223	360	1,150	223	75	90
9	160	106	106	90	285	495	925	223	75	75
10	125	125	106	106	170	600	856	223	75	75
11	125	106	106	75	170	660	856	194	75	60
12	125	106	106	90	147	660	856	194	90	60
13	160	106	106	90	125	725	856	194	90	60
14	160	106	90	90	125	725	725	253	90	60
15	160	106	90	90	170	790	660	223	90	60
16	160	106	90	90	223	790	600	194	75	60
17	125	106	90	90	170	856	660	320	75	60
18	125	106	106	75	170	725	660	223	75	60
19	160	106	106	75	147	725	790	253	75	60
20	160	106	106	75	125	790	360	194	75	50
21	125	106	106	90	147	360	856	170	75	50
22	160	106	106	90	170	856	660	147	75	50
23	125	106	106	106	194	925	725	147	75	50
24	125	106	75	106	147	1,680	660	125	75	50
25	125	106	75	106	170	1,320	400	125	60	60
26	125	106	90	125	194	856	400	106	60	60
27	125	106	90	125	170	790	360	106	60	50
28	125	90	90	125	170	925	446	106	60	50
29	125	106	90	147	147	856	400	106	50	50
30	125	106	.....	125	194	856	400	106	50	50
31	125	106	.....	90	.....	1,230	.....	106	50	.....

Daily discharge, in second-feet, of East Fork of Garson River at California-Nevada State line, for the years ending Sept. 30, 1911–1913—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1912–13.												
1	50	60	50	75	75	90	446	360	790	223	147	106
2	75	60	75	60	75	90	320	360	725	223	125	106
3	60	60	90	50	75	75	253	360	790	194	125	90
4	60	60	75	60	75	75	223	495	790	194	106	90
5	75	60	60	40	75	90	320	790	725	194	90	90
6	75	75	50	90	75	90	223	925	790	194	90	90
7	75	125	75	90	75	90	194	856	725	170	75	60
8	75	106	75	106	75	90	194	925	725	170	75	75
9	75	90	75	125	60	106	223	856	660	170	75	75
10	60	90	75	125	75	125	253	790	545	147	75	75
11	60	75	75	125	75	125	320	725	446	125	75	75
12	60	75	75	125	75	106	320	660	545	106	75	75
13	60	75	75	75	90	106	400	600	495	106	75	60
14	75	75	60	75	75	90	320	545	495	106	75	60
15	60	75	60	60	75	90	253	600	446	125	75	50
16	60	75	75	75	75	106	253	660	446	125	75	50
17	60	75	60	60	90	106	253	790	446	106	75	50
18	60	75	75	60	90	106	253	1,230	400	106	75	50
19	60	75	75	60	75	106	223	790	360	125	75	50
20	60	75	60	75	75	90	285	725	320	125	75	50
21	60	50	50	75	75	90	285	856	360	106	60	50
22	50	75	50	75	90	106	360	1,070	320	125	106	50
23	60	75	60	75	90	90	400	1,070	360	147	90	50
24	75	60	75	75	90	90	446	1,230	400	147	106	50
25	60	75	75	75	90	90	545	995	320	194	106	50
26	60	90	60	75	90	75	660	1,230	320	170	106	50
27	60	75	90	90	90	106	856	1,230	320	170	106	50
28	60	75	75	106	90	106	545	995	285	170	170	50
29	75	75	75	75	.....	125	495	790	253	170	106	50
30	60	50	75	75	.....	194	446	856	253	194	147	50
31	75	.....	60	75	.....	253	.....	925	.....	170	125	.....

NOTE.—Discharge tables published as furnished by the United States Reclamation Service.

Monthly discharge of East Fork of Carson River at California-Nevada State line for the years ending Sept. 30, 1911–13.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1911.				
January	1,800	150	224	13,800
February	1,250	150	271	15,100
March	1,000	180	376	23,100
April	1,630	480	832	49,500
May	2,530	720	1,390	85,500
June	3,460	1,430	2,450	146,000
July	1,680	645	1,260	77,500
August	590	220	370	22,800
September	195	125	151	8,980
The period	.....	.....	.....	442,000
1911–12.				
October	160	125	141	8,670
November	.....	.....	[a]118	7,000
December	.....	.....	[a]73.2	4,500
January	125	90	103	6,330
February	106	75	95.6	5,500
March	147	75	98.5	6,060
April	285	125	165	9,820
May	1,680	170	683	42,000
June	1,320	360	808	48,100
July	400	106	208	12,800
August	90	50	75.0	4,610
September	106	50	59.5	3,540
The year	1,680	50	220	159,000

[a] Mean monthly discharge is estimated at 2.8 times the discharge at the station at "Hangman's Bridge" near Markleeville, Cal.

Monthly discharge of East Fork of Carson River at California-Nevada State line for the years ending Sept. 30, 1911–13—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1912-13.				
October	75	50	64.2	3,950
November	125	50	74.5	4,430
December	90	50	68.9	4,240
January	125	50	80.1	4,930
February	90	60	79.8	4,430
March	253	75	106	6,520
April	856	194	352	20,900
May	1,230	360	816	50,200
June	790	253	495	29,500
July	223	106	155	9,530
August	170	60	95.5	5,870
September	106	50	64.2	3,820
The year	1,230	50	205	148,000

NOTE.—Monthly discharge computed by engineers of the United States Geological Survey.

CARSON RIVER NEAR EMPIRE, NEV.

Location.—In sec. 12, T. 15 N., R. 20 E., 2 miles below Empire, just below the tailrace of the Brunswick mill power canal, and one-fourth mile below the bridge where the old gage was formerly located.

Records available.—June 25 to December 31, 1895; October 21, 1900, to September 30, 1913.

Drainage area.—988 square miles.

Gage.—Inclined staff below the tailrace has been used since February 24, 1911; from June 7, 1907, to Feb. 23, 1911, a gage at the bridge was used.

Channel and control.—Gravel and bowlders; fairly permanent.

Discharge measurements.—Made from cable about 50 feet above the bridge or by wading. When made from the cable the power canal is measured and the result added.

Winter flow.—Discharge relation not affected by ice in 1913.

Regulation.—Records include return water from irrigation in Carson Valley and show the amount available for use in Dayton Valley below.

Accuracy—Records good except for low-water periods for which the rating curve is not well defined.

Cooperation.—Gage heights and discharge measurements furnished by United States Reclamation Service.

Discharge measurements of Carson River near Empire, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Feb. 18	H. J. Tompkins	3.88	186
Apr. 9	United States Reclamation Service engineers	3.68	197
Aug. 5	.....do	3.24	68.4

Daily gage height, in feet, of Carson River near Empire, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.7	3.1	3.4	3.6	3.6	3.7	4.1	4.8	5.4	3.2	3.6	2.8
2	2.7	3.1	3.4	3.5	3.6	3.7	4.5	4.5	5.4	3.1	3.5	2.9
3	2.7	3.2	3.4	3.6	3.6	3.8	4.5	4.4	5.3	3.0	3.4	2.9
4	2.7	3.2	3.3	3.5	3.6	3.8	4.2	4.4	5.1	2.9	3.4	2.8
5	2.7	3.2	3.4	3.3	3.7	3.8	4.0	4.5	5.2	2.8	3.2	2.8
6	2.7	3.3	3.3	3.3	3.7	3.9	4.2	4.8	5.2	2.8	3.1	2.9
7	2.8	3.5	3.2	3.3	3.7	3.9	4.1	5.4	5.2	2.7	2.9	2.8
8	2.8	3.5	3.3	3.3	3.7	4.0	3.9	5.6	5.1	2.8	2.9	2.9
9	2.9	3.5	3.3	3.3	3.8	4.0	3.9	5.7	5.0	2.9	2.5	2.9
10	2.9	3.4	3.3	3.4	3.8	4.0	3.7	5.7	4.8	2.8	2.5	2.8
11	3.0	3.4	3.3	3.5	3.8	3.9	3.7	5.7	4.5	2.8	2.6	2.8
12	3.0	3.3	3.4	3.5	3.8	4.0	4.0	5.6	4.3	2.7	2.6	2.7
13	3.0	3.3	3.4	3.6	3.8	3.9	4.1	5.3	4.0	2.8	2.7	2.6
14	3.0	3.3	3.6	3.7	3.8	3.9	4.2	5.1	3.9	2.8	2.6	2.7
15	3.0	3.4	3.8	3.8	3.9	3.8	4.2	5.0	3.8	2.7	2.6	2.6
16	3.0	3.4	3.8	3.8	3.9	3.7	4.0	5.1	3.8	2.7	2.6	2.6
17	3.0	3.5	3.7	3.7	3.9	3.7	3.9	5.4	3.7	2.7	2.6	2.6
18	3.0	3.5	3.7	3.6	3.9	3.7	3.6	5.45	3.1	2.7	2.6	2.6
19	3.0	3.5	3.6	3.5	3.9	3.7	3.6	6.05	3.1	2.6	2.5	2.6
20	3.1	3.5	3.6	3.5	3.9	3.7	3.5	5.8	3.0	2.6	2.5	2.7
21	3.1	3.5	3.5	3.5	3.7	3.7	3.6	5.5	3.0	2.8	2.5	2.6
22	3.1	3.4	3.3	3.5	3.6	3.7	3.6	5.1	3.0	2.9	2.5	2.6
23	3.1	3.4	3.4	3.5	3.7	3.7	3.6	5.2	3.2	3.0	2.5	2.7
24	3.1	3.4	3.3	3.7	3.7	3.7	3.9	5.3	3.6	3.4	2.5	2.7
25	3.1	3.4	3.3	3.7	3.8	3.6	4.2	5.4	3.7	3.6	2.5	2.7
26	3.1	3.3	3.4	3.7	3.8	3.6	4.6	5.4	3.6	3.8	2.5	2.8
27	3.1	3.3	3.3	3.7	3.7	3.6	5.0	5.4	3.4	3.8	2.5	2.7
28	3.1	3.4	3.4	2.7	3.7	3.6	5.4	5.5	3.4	3.8	2.5	2.7
29	3.1	3.5	3.5	3.6	.....	3.6	5.1	5.7	3.4	3.9	2.7	2.7
30	3.1	3.5	3.6	3.6	.....	3.6	4.9	5.4	3.3	3.7	2.7	2.7
31	3.1	.....	3.6	3.6	.....	3.7	.....	5.4	.....	3.8	2.7	.....

Daily discharge, in second-feet, of Carson River near Empire, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	22	50	88	155	155	194	391	860	1,370	60	155	27
2	22	50	88	117	155	194	640	640	1,370	50	117	33
3	22	60	88	155	155	236	640	575	1,270	40	88	33
4	22	60	73	117	155	236	450	575	1,100	33	88	27
5	22	60	88	73	194	236	335	640	1,180	27	60	27
6	22	73	73	73	194	285	450	860	1,180	27	50	33
7	27	117	60	73	194	285	391	1,370	1,180	27	33	27
8	27	117	73	73	194	335	285	1,580	1,100	27	33	33
9	33	117	73	73	236	335	285	1,690	1,020	33	14	33
10	33	88	73	88	236	335	194	1,690	860	27	14	27
11	40	88	73	117	236	285	194	1,690	640	27	18	27
12	40	73	88	117	236	335	335	1,580	512	22	18	22
13	40	73	88	155	236	285	391	1,270	335	27	22	18
19	40	73	155	194	236	285	450	1,100	285	27	18	22
15	40	88	236	236	285	236	450	1,020	236	22	18	18
16	40	88	236	236	285	194	335	1,100	236	22	18	18
17	40	117	194	194	285	194	285	1,370	194	22	18	18
18	40	117	194	155	285	194	155	1,420	50	22	18	18
19	40	117	155	117	285	194	155	2,090	50	18	14	18
20	50	117	155	117	285	194	117	1,800	40	18	14	22
21	50	117	117	117	194	194	155	1,470	40	27	14	18
22	50	88	73	117	155	194	155	1,100	40	33	14	18
23	50	88	88	117	194	194	155	1,180	60	40	14	22
24	50	88	73	194	194	194	285	1,270	155	88	14	22
25	50	88	73	194	236	155	450	1,370	194	155	14	22
26	50	73	88	194	236	155	710	1,370	155	236	14	27
27	50	73	73	194	194	155	1,020	1,370	88	236	14	22
28	50	88	88	194	194	155	1,370	1,470	88	236	14	22
29	50	117	117	155	.....	155	1,100	1,690	88	285	22	22
30	50	117	155	155	.....	155	940	1,370	73	194	22	22
31	50	.....	155	155	.....	194	.....	1,370	.....	236	22	.....

NOTE.—Discharge determined from a rating curve fairly well defined except for very low stages.

Monthly discharge of Carson River near Empire, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	50	22	39.1	2,400	B.
November	117	50	89.3	5,310	B.
December	236	60	111	6,820	B.
January	236	73	143	8,790	B.
February	285	155	218	12,100	B.
March	335	155	225	13,800	B.
April	1,370	117	442	26,300	B.
May	2,090	575	1,290	79,300	B.
June	1,370	40	506	30,100	B.
July	285	18	75.5	4,640	C.
August	155	14	32.5	2,000	C.
September	33	18	23.9	1,420	C.
The year	2,090	14	267	193,000	

CARSON RIVER NEAR FORT CHURCHILL, NEV.

Location.—In sec. 5, T. 16 N., R. 23 E., 1 mile west of Clifton station on Mound House and Churchill branch of Southern Pacific Railroad, 10 miles below Dayton, and about 9 miles west of Fort Churchill.

Records available.—April 13, 1911, to August 9, 1913.

Drainage area.—Not measured.

Gage.—Inclined staff with vertical extension for high water.

Channel and control.—Sand and gravel; shifts occasionally.

Discharge measurements.—Made from suspension bridge 500 feet above gage.

Winter flow.—Discharge relation affected by ice for short periods.

Diversions.—Carson and Dayton valleys are irrigated above the station.

Accuracy.—Records fair.

Cooperation.—Gage heights and discharge measurements furnished by the United States Reclamation Service.

Discharge measurements of Carson River near Fort Churchill, Nev., during the year ending Sept. 30, 1913.

[Made by D. S. Stuver.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
Apr. 9	3.75	175	Aug. 6	[a] 3.25	55.6
June 14	4.60	387			

[a] Gage height may be slightly in error as water was below gage.

Daily gage height, in feet, of Carson River near Fort Churchill, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.8	3.28	3.53	3.68	3.70	3.80	3.70	4.55	6.2	3.60	3.77	.....
2	2.82	3.3	3.55	3.65	3.70	3.75	3.98	4.5	6.2	3.55	3.60	.....
3	2.83	3.3	3.48	3.68	3.72	3.75	4.40	4.3	6.1	3.47	3.40	.....
4	2.9	3.32	3.52	3.60	3.68	3.87	4.15	4.3	6.0	3.40	3.40	.....
5	2.9	3.37	3.48	4.3	3.72	3.88	3.90	4.3	6.0	3.30	3.28	.....
6	2.95	3.37	3.5	3.73	3.78	3.90	3.95	4.55	5.9	3.30	3.17	.....
7	2.97	3.38	3.48	3.75	3.78	3.92	4.0	5.0	5.9	3.23	3.15	.....
8	3.0	3.45	3.45	3.85	3.80	4.00	3.92	5.3	5.9	3.30	3.10	.....
9	3.0	3.58	3.35	3.88	3.80	3.98	3.77	5.6	5.8	3.28	3.02	.....
10	3.0	3.6	3.35	3.85	3.88	3.97	3.62	5.6	5.4	3.17	.....	.....
11	3.05	3.6	3.5	4.0	3.90	3.95	3.55	5.5	5.4	3.17	.....	.....
12	3.25	3.55	3.58	4.2	3.85	3.90	3.60	5.6	5.1	.....	.....	.....
13	3.2	3.58	3.43	3.60	3.87	3.95	3.90	5.4	4.9	.....	.....	.....
14	3.18	3.55	3.62	3.75	3.87	3.90	3.98	5.1	4.65	.....	.....	.....
15	3.2	3.53	3.68	3.60	3.87	3.85	4.10	4.95	4.45	.....	.....	.....
16	3.2	3.55	3.7	3.68	3.92	3.80	4.07	5.1	4.25	.....	.....	.....
17	3.2	3.58	3.73	3.60	3.95	3.78	3.88	5.3	4.2	.....	.....	.....
18	3.15	3.58	3.78	3.50	3.90	3.77	3.78	5.6	4.0	.....	.....	.....
19	3.2	3.62	3.73	3.60	3.93	3.78	3.63	5.9	3.65	.....	.....	.....
20	3.22	3.6	3.68	3.60	3.90	3.78	3.60	6.1	3.65	.....	.....	.....
21	3.22	3.6	3.62	3.60	3.88	3.77	3.60	5.9	3.63	.....	.....	.....
22	3.23	3.58	3.65	3.60	3.78	3.73	3.60	5.6	3.52	.....	.....	.....
23	3.18	3.55	4.0	3.73	3.77	3.70	3.55	5.9	3.68	3.13	.....	.....
24	3.25	3.55	5.5	3.70	3.78	3.72	3.60	6.1	3 65	3 30	.....	.....
25	3 28	3.52	3.52	3.62	3.87	3.68	3.85	6.1	3.88	3.52	.....	.....
26	3.23	3.53	3.52	3.60	3.90	3.70	4.0	6.3	3.95	3.57	.....	.....
27	3.29	3.52	4.35	3.60	3.87	3.68	4.65	6.2	3.83	3.87	.....	.....
28	3.3	3.53	3.6	3.62	3.80	3.65	5.08	6.5	3.75	4.15	.....	.....
29	3.28	3.53	3.58	3.63	.....	3.65	5.0	6.6	3.73	4.0	.....	.....
30	3.3	3.53	3.62	3.65	.....	3.58	4.65	6.3	3.72	3.90	.....	.....
31	3.28	.....	3.68	3.68	.....	3.57	.....	6.2	.....	3.77	.....	.....

NOTE.—No record July 12–22 and Aug. 10 to Sept. 30, as water was below gage.

Daily discharge, in second-feet, of Carson River near Fort Churchill, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	23	99	153	191	196	224	196	376	1,080	134	175	.....
2	26	103	158	183	196	210	274	362	1,080	123	134	.....
3	27	103	141	191	202	210	334	308	1,020	105	90	.....
4	37	107	151	170	191	244	269	308	966	90	90	.....
5	37	117	141	187	202	246	206	308	966	70	67	.....
6	44	117	146	204	218	252	218	376	912	70	50	.....
7	47	119	141	210	218	258	230	522	912	59	47	.....
8	51	134	134	238	224	280	211	636	912	70	40	.....
9	51	165	113	246	224	274	175	764	860	67	30	.....
10	51	170	113	238	246	272	139	764	678	50	.....	.....
11	58	170	146	216	252	266	123	720	678	50	.....	.....
12	93	158	165	193	238	252	134	764	558	.....	.....	.....
13	83	165	130	170	244	266	206	678	486	.....	.....	.....
14	80	158	175	210	244	252	225	558	405	.....	.....	.....
15	83	153	191	170	244	238	256	504	348	.....	.....	.....
16	83	158	196	191	258	224	248	558	295	.....	.....	.....
17	83	165	204	170	266	218	201	636	282	.....	.....	.....
18	74	165	218	146	252	216	177	764	230	.....	.....	.....
19	83	175	204	170	260	218	141	912	146	.....	.....	.....
20	87	170	191	170	252	218	134	1,020	146	.....	.....	.....
21	87	170	175	170	246	216	134	912	141	.....	.....	.....
22	89	165	183	170	218	204	134	764	116	.....	.....	.....
23	80	158	150	204	216	196	123	912	153	44	.....	.....
24	93	158	150	196	218	202	134	1,020	146	70	.....	.....
25	99	151	151	175	244	191	194	1,020	201	116	.....	.....
26	89	153	151	170	252	196	230	1,150	218	127	.....	.....
27	101	151	150	170	244	191	405	1,080	189	199	.....	.....
28	103	153	170	175	224	183	551	1,290	170	269	.....	.....
29	99	153	165	178	.....	183	522	1,360	165	230	.....	.....
30	103	153	175	183	.....	165	405	1,150	163	206	.....	.....
31	99	.....	191	191	.....	163	.....	1,080	.....	175	.....	.....

NOTE.—Discharge determined from two fairly well defined rating curves applicable Oct. 1, 1912, to Apr. 2, 1913, and Apr. 3 to Sept. 30, 1913. Discharge estimated Dec. 23, 24, 27, and Jan. 5, 11, 12, because of ice. Mean flow July 12–22 and Aug. 10 to Sept. 30 probably does not exceed 40 second-feet.

Monthly discharge of Carson River near Fort Churchill, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	103	23	72.4	4,450	A.
November	175	99	148	8,810	A.
December	218	113	162	9,960	B.
January	246	146	188	11,600	B.
February	266	191	232	12,900	B.
March	280	163	223	13,700	C.
April	551	123	231	13,700	B.
May	1,360	308	760	46,700	A.
June	1,080	116	487	29,000	A.
The period				143,000	

MARKLEEVILLE CREEK[1] ABOVE MARKLEEVILLE, CAL.

Location.—At highway bridge above mouth of Pleasant Valley Creek, three-fourths mile above Markleeville.

Records available.—November 7, 1911, to September 30, 1913 (fragmentary).

Drainage area.—Not measured.

Gage.—Vertical staff on left abutment of bridge.

Channel and control.—Gravel and small bowlders; fairly permanent.

Discharge measurements.—Made from bridge or by wading.

Winter flow.—Discharge relation occasionally affected by ice.

Diversions.—Town ditch, which heads above the gage, furnishes water for irrigation and domestic supply at Markleeville. In addition a small ditch diverts water for irrigation on Hot Springs ranch.

Accuracy.—Rating curve fairly well defined; results fair for periods covered by gage heights.

Cooperation.—Gage heights and discharge measurements furnished by United States Forest Service.

Discharge measurements of Markleeville Creek above Markleeville, Cal., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Mar. 14	F. B. Clark	5.91	11
Aug. 9	H. J. Tompkins	*a*.35	.5

[a] On temporary gage at an arbitrary datum. Not referenced to permanent gage.

Daily gage height, in feet, of Markleeville Creek above Markleeville, Cal., for the year ending Sept. 30, 1913.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.
1	.....	5.85	5.90	6.50	.....	.....	.....	16	.....	.....	.....	6.50	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	17	.....	.....	.....	6.48	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	18	.....	.....	.....	.....	.....	.....	.....
4	.....	5.90	5.86	.....	7.00	.....	.....	19	.....	.....	.....	.....	7.00	.....	.....
5	.....	.....	.....	.....	.....	.....	.....	20	.....	.....	.....	6.50	.....	.....	.....
6	.....	.....	.....	.....	.....	.....	.....	21	6.00	.....	.....	.....	6.70	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	22	.....	5.87	.....	.....	.....	.....	.....
8	.....	5.91	6.00	.....	.....	.....	.....	23	.....	.....	.....	.....	.....	.....	.....
9	.....	.....	.....	.....	.....	.....	.....	24	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	5.65	25	5.90	5.92	.....	.....	.....	.....	.....
11	.....	5.90	5.90	.....	.....	.....	.....	26	.....	.....	.....	.....	.....	6.10	.....
12	.....	.....	.....	.....	.....	.....	.....	27	.....	.....	.....	.....	.....	.....	.....
13	.....	.....	5.91	.....	.....	.....	.....	28	5.90	.....	.....	.....	.....	.....	.....
14	6.00	.....	.....	6.50	.....	.....	.....	29	.....	.....	.....	.....	.....	.....	.....
15	.....	.....	.....	6.55	.....	.....	.....	30	.....	.....	.....	.....	.....	.....	.....
								31	.....	.....	.....	.....	.....	.....	.....

NOTE.—Probable ice conditions, January, February, and part of March. Ice broken to secure January gage readings. June 26 observer reported that water was being diverted by town ditch at full capacity.

[1] Locally known as Hot Springs Creek.

Daily discharge, in second-feet, of Markleeville Creek above Markleeville, Cal., for the year ending Sept. 30, 1913.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1		54						16		54					
2								17		52					
3								18							
4			110					19			110				
5								20		54					
6								21			74				
7								22							
8								23							
9								24							
10					3.5			25							
11	11							26				20			
12								27							
13	11							28							
14		54						29							
15		59						30							
								31							

NOTE.—Daily discharge determined from a fairly well defined rating curve applicable for open water conditions. No estimates have been made prior to Mar. 11, 1913, owing to ice conditions. Data insufficient or monthly estimates.

MARKLEEVILLE CREEK AT MARKLEEVILLE, CAL.

Location.—In the SE. ¼ sec. 21, T. 10 N., R. 20 E., at the highway bridge at Markleeville, three-fourths mile below junction with Pleasant Valley Creek.

Records available.—November 11, 1910, to September 30, 1913 (fragmentary).

Drainage area.—Not measured.

Gage.—Vertical staff on left abutment of highway bridge near downstream end.

Channel and control.—Gravel and bowlders; both banks high and not subject to overflow; somewhat shifting at high stages.

Discharge measurements.—Made from bridge or by wading.

Winter flow.—Discharge relation occasionally affected by ice.

Diversions.—See Markleeville Creek near Markleeville. Water is also diverted from Pleasant Valley Creek for irrigation purposes.

Accuracy.—Rating curve fairly well defined; records fair for periods covered by gage heights.

Cooperation.—Gage heights and discharge measurements furnished by United States Forest Service.

Discharge measurements of Markleeville Creek at Markleeville, Cal., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Mar. 15	F. B. Clark	2.58	22
Aag. 9	H. J. Tompkins	1.00	6.7

Daily gage height, in feet, of Markleeville Creek at Markleeville, Cal., for the year ending Sept. 30, 1913.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1		2.10	2.40	2.20					
2								1.70	
3									
4		2.15	2.25		2.92			1.15	
5				2.30				1.10	
6									
7							1.30		
8		2.25	2.40					1.00	
9									
10							1.30	2.00	
11		2.20	2.38		3.00				
12									0.85
13									
14	2.20		2.48	2.20					
15				2.30				1.05	
16				2.05					
17									
18				2.04					
19									
20				2.08					.70
21	2.15				3.80				
22		2.10							
23									
24									
25	2.20	2.15			3.60	3.00			
26						3.10			
27				2.80	3.85				
28	2.30								
29									
30									
31									

NOTE.—Ice broken to obtain January readings; ice probably existed until last part of March. Gage heights Sept. 12 and 20 approximate, as the gage was out of water.

Daily discharge, in second-feet, of Markleeville Creek at Markleeville, Cal., for the year ending Sept. 30, 1913.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1	25						16	18					
2					38		17						
3							18	18					
4		85			10		19						
5	31				9		20	19					3
6							21		248				
7				14			22						
8					7		23						
9							24						
10				14	65		25		200	237			
11		95					26			263			
12						4	27	70	262				
13							28						
14	25						29						
15	31				8		30						
							31						

NOTE.—Daily discharge determined from rating curves applicable as follows: Apr. 1 to May 27, 1913, poorly defined; June 25 to Sept. 30, 1913, fairly well defined. Owing to presence of ice no estimates have been made for January, February, and March. Data insufficient for monthly estimates.

WEST FORK OF CARSON RIVER AT WOODFORDS, CAL.

Location.—In the SE. ¼ sec. 34, T. 11 N., R. 19 E., above highway bridge at Woodfords.

Records available.—April, 1890, to March, 1892; October 18, 1900, to September 30, 1913.

Drainage area.—70 square miles.

Gage.—Vertical staff on left bank just above highway bridge installed June 8, 1907; Oct. 18, 1900, to May 18, 1907, gage was located at the cable half a mile upstream.

Channel and control.—Fine gravel and bowlders; section rough but fairly permanent.

Discharge measurements.—Made from car and cable half a mile above gage or by wading.

Winter flow.—Somewhat affected by ice.

Diversions.—Three irrigation ditches head between cable and gage.

Accuracy.—Measurements plot rather scattering; results probably fairly reliable.

Cooperation.—Gage heights and discharge measurements furnished by United States Reclamation Service.

Discharge measurements of West Fork of Carson River at Woodfords, Cal., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height at bridge.	Gage height at cable.	Discharge.
		Feet.	*Feet.*	
Mar. 15	F. B. Clark	1.40	1.00	32
Aug. 10	H. J. Tompkins	.84	.91	28

Daily gage height, in feet, of West Fork of Carson River at Woodfords, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec	Jan	Feb	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.1	1.0	1.0	1.3	1.1	1.0	1.9	3.4	3.2	2.6	1.9	1.7
2	2.0	1.0	1.0	1.4	1.1	1.0	2.1	3.0	.....	2.5	.....	.....
3	1.4	.95	.....	1.5	1.3	1.0	.....	3.0	3.0	2.4	a1.6	a1.5
4	1.2	.....	.....	1.6	.....	1.0	2.1	3.1	2.9	.....	a1.4	a1.4
5	.....	.....	1.0	1.7	.....	.....	2.0	3.3	2.8	2.3	.....	a1.2
6	.....	.95	1.0	1.8	1.2	1.1	.....	3.6	.....	2.2	1.0	a1.0
7	1.0	1.0	1.0	1.8	1.2	1.1	1.9	.....	2.8	a2.0	a .9	.9
8	1.0	1.2	1.1	.....	.....	1.2	2.0	3.7	2.9	a1.9	a .9	1.0
9	.9	1.2	1.1	1.7	1.1	1.2	2.1	3.6	3.0	a1.7	.8	.9
10	.....	1.0	1.1	.....	1.1	1.1	2.2	3.4	.....	.....	.8	.9
11	.9	1.0	.....	1.6	.....	1.0	2.4	.....	2.8	a1.6	.8	1.0
12	.9	.....	1.1	1.5	1.1	.....	2.6	3.2	2.8	1.4	.8	1.0
13	.....	1.0	.....	.....	1.1	1.2	2.6	3.0	2.7	1.35	.....	.....
14	.....	.....	1.0	.....	1.1	1.3	2.5	2.9	.....	1.2	.....	1.0
15	.9	1.0	1.0	.....	1.1	1.4	.....	2.7	2.6	1.0	.9	1.0
16	.9	1.0	.....	1.5	1.1	.....	2.4	.....	3.0	1.0	.9	1.0
17	.95	1.0	.....	1.5	.....	1.4	2.8	3.2	3.2	.....	.9	.....
18	.95	1.0	1.3	.....	1.0	.....	.....	3.9	3.2	.9	a .9	.9
19	.95	.....	1.3	.....	.....	1.4	3.0	3.7	3.0	.....	a .9	.8
20	.....	1.1	.....	.....	1.0	1.4	3.0	.....	.....	.9	.....	.7
21	.....	1.1	1.3	.....	1.0	.....	3.2	3.5	2.9	1.2	a .85	.....
22	.95	1.1	1.3	.....	1.0	.....	.....	3.3	.....	1.5	a .85	.7
23	.95	1.1	1.3	.....	1.0	1.5	3.6	3.2	2.7	1.6	1.0	.8
24	.95	.....	.....	.....	.....	1.5	3.8	3.0	2.6	1.8	1.4	1.0
25	.95	1.0	.....	.....	1.0	1.6	4.0	3.0	2.6	2.0	2.0	1.0
26	.....	1.0	1.1	1.4	.....	1.6	4.3	3.3	.....	.....	1.8	1.0
27	.95	1.0	1.1	1.3	1.0	.....	.....	3.4	2.5	.....	1.8	1.0
28	.95	.....	1.1	1.3	1.0	1.7	4.0	3.2	.....	2.0	.....	.....
29	.95	1.0	1.2	1.2	.....	1.7	3.8	3.4	2.7	2.2	2.0	a1.2
30	.....	1.0	.....	1.2	.....	.....	3.6	3.6	2.7	2.0	1.9	.....
31	.....	.....	1.3	1.2	.....	1.8	.....	3.4	.....	.....	.....	.....

a Gage height observed on gage at cable.

Daily discharge, in second-feet, of West Fork of Carson River at Woodfords, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	34	31	31	42	34	31	86	361	309	182	86	68
2	96	31	31	47	34	31	108	261	285	165	84	70
3	47	30	31	53	42	31	108	261	261	149	83	73
4	38	30	31	60	41	31	108	285	239	142	64	64
5	36	30	31	68	39	32	96	335	219	134	48	47
6	33	31	31	77	38	34	91	417	219	120	31	33
7	31	38	31	77	38	34	86	432	219	125	27	28
8	31	38	34	72	36	38	96	447.	239	114	27	31
9	28	31	34	68	34	38	108	417	261	93	25	28
10	28	31	34	64	34	34	120	361	240	88	25	28
11	28	31	34	60	34	31	149	335	219	83	25	31
12	28	31	34	53	34	34	182	309	219	47	25	31
13	28	31	32	53	34	38	182	261	200	44	26	31
14	28	31	31	53	34	42	165	239	191	38	27	31
15	28	31	31	53	34	47	157	200	182	31	28	31
16	28	31	35	53	34	47	149	254	261	31	28	31
17	30	31	38	53	32	47	219	309	309	30	28	30
18	30	31	42	52	31	47	240	511	309	28	27	28
19	30	32	42	52	31	47	261	447	261	28	27	25
20	30	34	42	51	31	47	261	418	250	28	26	23
21	30	34	42	51	31	49	309	389	239	38	24	23
22	30	34	42	50	31	51	363	335	220	53	24	23
23	30	34	42	49	31	53	417	309	200	60	31	25
24	30	32	39	48	31	53	479	261	182	77	47	31
25	30	31	37	48	31	60	545	261	182	96	96	31
26	30	31	34	47	31	60	647	335	174	96	77	31
27	30	31	34	42	31	64	596	361	165	96	77	31
28	30	31	34	42	31	68	545	309	182	96	86	39
29	30	31	38	38	.....	68	479	361	200	120	96	47
30	30	31	40	38	.....	72	417	417	200	96	86	38
31	31	.....	42	38	.....	77	.....	361	.....	91	77	.....

NOTE.—Discharge determined from fairly well defined rating curves, for each gage.

Monthly discharge of West Fork of Carson River at Woodfords, Cal., for the year ending Sept. 30, 1913.

[Drainage area, 70 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
October	96	28	32.9	0.470	0.54	2,020	C
November	38	30	31.8	.454	.51	1,890	C.
December	42	31	35.6	.509	.59	2,190	C.
January	77	38	53.3	.761	.88	3,280	C.
February	42	31	33.8	.483	.50	1,880	C.
March	77	31	46.3	.661	.76	2,850	C.
April	647	86	259	3.70	4.13	15,400	B.
May	511	200	341	4.87	5.62	21,000	B.
June	309	165	228	3.26	3.64	13,600	B.
July	182	28	84.5	1.21	1.40	5,200	C.
August	96	24	48.0	.686	.79	2,950	C.
September	73	23	36.0	.514	.57	2,140	C.
The year	647	23	103	1.47	19.93	74,400	

HUMBOLDT RIVER BASIN.

HUMBOLDT RIVER AT PALISADE, NEV.

Location.—In sec. 36, T. 32 N., R. 51 E., at highway bridge at Palisade, about 1 mile above mouth of Pine Creek, and 100 feet below Southern Pacific Railroad bridge.

Records available.—November 27, 1902, to October 19, 1906; July 26, 1911, to September 30, 1913.

Drainage area.—5,010 square miles.

Gage.—Chain gage installed at highway bridge December 1, 1911. Original gage was a vertical staff on right abutment of highway bridge. The high water in 1910 destroyed this bridge, and on July 26, 1911, an inclined staff, at an independent datum, was installed on left bank near Southern Pacific Railroad bridge. Datum of chain gage same as that of inclined staff.

Channel and control.—Sand and gravel; fairly permanent.

Discharge measurements.—Made from car and cable about one-eighth mile above gage at high water, and by wading at low water.

Regulation.—Practically none by storage; slightly by irrigation above.

Winter flow.—Discharge relation little affected by ice.

Accuracy.—Records good.

Cooperation.—Gage heights and discharge measurements furnished by Office of Experiment Stations, United States Department of Agriculture, through F. L. Peterson, irrigation engineer.

Discharge measurements of Humboldt River at Palisade, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
June 27	F. L. Peterson	4.02	789	Sept. 29	J. J. Sanford	1.67	69.3
Aug. 7	do	2.26	164				

Daily gage height, in feet, of Humboldt River at Palisade, Nev., for the year ending Sept. 30, 1913.

[Albina Siri, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.8	2.5	.....	2.1	2.0	2.3	3.25	3.5	4.6	4.3	2.6	1.8
2	1.8	2.5	.....	2.1	2.0	2.3	3.55	3.4	4.6	4.2	2.5	1.9
3	1.8	2.5	.....	2.1	2.0	2.4	3.95	3.4	4.7	4.2	2.5	2.0
4	1.8	2.5	.....	.....	2.0	2.6	4.15	3.4	4.7	4.1	2.4	2.1
5	1.8	2.5	.....	.....	2.0	2.8	4.25	3.3	4.8	4.0	2.4	2.1
6	2.1	2.6	.....	.....	1.9	2.9	4.3	3.3	4.7	3.9	2.4	2.0
7	2.2	2.6	.....	.....	1.9	2.85	4.25	3.3	4.7	3.7	2.3	2.0
8	2.3	2.6	.....	.....	1.9	2.9	4.15	3.2	4.8	3.6	2.2	1.9
9	2.3	2.6	.....	.....	1.9	3.1	4.1	3.2	4.8	3.5	2.1	1.9
10	2.3	2.6	.....	.....	1.9	3.4	4.0	3.1	4.9	3.4	2.1	1.8
11	2.4	2.7	2.3	.....	1.9	3.4	3.95	3.1	5.0	3.3	2.0	1.8
12	2.4	2.7	2.3	.....	1.9	3.2	3.9	3.1	5.0	3.3	2.0	1.7
13	2.4	2.7	2.3	.....	1.9	3.2	3.9	3.0	5.1	3.2	1.9	1.7
14	2.4	2.7	2.3	.....	1.9	3.2	3.9	3.0	5.1	3.0	1.9	1.7
15	2.4	2.7	2.3	.....	1.9	3.2	3.9	3.0	5.1	2.8	1.8	1.7
16	2.4	2.7	2.3	.....	2.0	3.2	3.8	2.9	5.0	2.7	1.8	1.7
17	2.4	2.7	2.4	.....	2.0	3.2	3.8	2.9	4.9	2.6	1.7	1.7
18	2.4	2.7	2.4	.....	2.1	3.1	3.7	2.9	4.8	2.5	1.7	1.7
19	2.4	2.7	2.4	.....	2.2	3.1	3.7	3.0	4.6	2.4	1.7	1.7
20	2.4	2.6	.....	.....	2.3	3.1	3.7	3.2	4.5	2.3	1.6	1.7
21	2.4	2.6	.....	.....	2.3	3.1	3.7	3.2	4.3	2.2	1.6	1.7
22	2.4	2.6	.....	.....	2.2	3.1	3.7	3.2	4.2	2.4	1.6	1.7
23	2.4	2.6	.....	.....	2.2	3.1	3.7	3.2	4.1	2.5	1.6	1.7
24	2.4	2.5	.....	.....	2.2	3.05	3.8	3.2	4.0	2.7	1.6	1.7
25	2.3	2.5	.....	.....	2.2	3.0	3.8	3.4	3.9	2.7	1.7	1.7
26	2.3	2.5	.....	.....	2.3	2.9	3.8	3.5	4.0	2.7	1.7	1.7
27	2.3	2.5	.....	.....	2.3	2.8	3.7	3.6	4.3	2.7	1.7	1.7
28	2.4	2.5	.....	.....	2.3	2.8	3.7	3.8	.....	2.7	1.7	1.7
29	2.4	2.5	2.2	.....	.....	2.9	3.6	4.0	4.5	2.7	1.7	1.7
30	2.4	2.5	2.1	2.0	.....	2.95	3.5	4.3	4.4	2.7	1.7	1.7
31	2.4	.....	2.1	2.0	.....	3.1	.....	4.5	.....	2.6	1.7	.....

NOTE.—Discharge relation affected by ice Dec. 1-10, 20-28, and Jan. 4-31.

Daily discharge, in second-feet, of Humboldt River at Palisade, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	106	254	.....	155	120	190	502	610	1,070	910	240	86
2	106	254	.....	155	140	190	632	570	1,070	865	214	102
3	106	254	.....	155	140	210	808	570	1,110	865	214	118
4	106	254	.....	.....	140	270	892	570	1,110	820	190	134
5	106	254	.....	.....	140	330	938	525	1,150	775	190	134
6	158	283	.....	.....	125	360	960	525	1,100	730	190	118
7	179	283	.....	.....	125	345	938	525	1,100	640	110	118
8	202	283	.....	.....	125	360	892	480	1,140	600	150	102
9	202	283	.....	.....	125	440	870	480	1,140	560	134	102
10	202	283	.....	.....	125	570	830	440	1,180	520	134	86
11	227	313	202	.....	125	570	808	440	1,220	480	118	86
12	227	313	202	.....	125	480	785	440	1,220	480	118	72
13	227	313	202	.....	125	480	785	400	1,270	440	102	72
14	227	313	202	.....	125	480	785	400	1,270	365	102	72
15	227	313	202	.....	125	480	785	400	1,270	296	86	72
16	227	313	202	.....	140	480	740	360	1,220	266	86	72
17	227	313	227	.....	140	480	740	360	1,180	240	72	72
18	227	313	227	.....	155	440	700	360	1,140	214	72	72
19	227	313	227	.....	170	440	700	400	1,040	190	72	72
20	227	283	.....	.....	190	440	700	480	1,000	170	60	72
21	227	283	.....	.....	190	440	700	480	910	150	60	72
22	227	283	.....	.....	170	440	700	480	865	190	60	72
23	227	283	.....	.....	170	440	700	480	820	214	60	72
24	227	254	.....	.....	170	420	740	480	775	266	60	72
25	202	254	.....	.....	170	400	740	560	730	266	72	72
26	202	254	.....	.....	190	360	740	596	775	266	72	72
27	202	254	.....	.....	190	330	700	632	910	266	72	72
28	227	254	.....	.....	190	330	700	721	955	266	72	72
29	227	254	179	.....	.....	360	655	806	1,000	266	72	72
30	227	254	158	.....	.....	380	610	942	955	266	72	72
31	227	.....	158	.....	.....	440	.....	1,030	.....	240	72	.....

NOTE.—Discharge determined from fairly well defined rating curves applicable as follows: Oct. 1, 1912, to May 24, 1913, and June 11 to Sept. 30, 1913. Indirect methods for shifting channels used May 25 to June 10. Mean daily discharge Dec. 1–10, estimated, because of ice, at 190 second-feet; Dec. 20–28, at 170 second-feet; and Jan. 4–31, at 120 second-feet.

Monthly discharge of Humboldt River at Palisade, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	227	106	199	12,200	B.
November	313	254	280	16,700	B.
December	.....	.....	[a] 188	11,600	C.
January	.....	.....	[a] 123	7,560	D.
February	190	.....	149	8,280	C.
March	570	190	399	24,500	A.
April	960	502	759	45,200	A.
May	1,030	360	534	32,800	A.
June	1,270	730	1,060	63,100	A.
July	910	150	422	25,900	A.
August	240	60	112	6,890	B.
September	134	72	85.1	5,060	B.
The year	1,270	60	359	260,000	

[a] Estimated.

HUMBOLDT RIVER NEAR GOLCONDA, NEV.

Location.—In sec. 21, T. 36 N., R. 40 E., at lower end of central valley of the Humboldt, 1¼ miles north of Golconda, on highway steel bridge, about 12 miles above the mouth of Little Humboldt River.

Records available.—October 24, 1894, to December 31, 1909; September 8, 1910, to September 30, 1913.

Drainage area.—10,800 square miles.

Gage.—Chain gage installed at the highway bridge November 5, 1910. Severa lgages at various datums and in various locations used prior to this date.

Channel and control.—Sand and gravel; somewhat shifting at sudden high stages.

Discharge measurements.—Made from highway bridge at high water and by wading at low water.

Winter flow.—Discharge relation little affected by ice.

Diversions.—Several diversions for irrigation above the station.

Regulation.—The Taylor & Sheehan dam, about 2 miles above, and Pinson's dam, 5 miles above, regulate the flow at low stages.

Accuracy.—Records fair, as gage is read only once daily.

Cooperation.—Gage heights and some discharge measurements furnished by the Office of Experiment Stations, United States Department of Agriculture, through F. L. Peterson, irrigation engineer.

Discharge measurements of Humboldt River near Golconda, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
May 26	F. L. Peterson	4.98	106	Aug. 6	F. L. Peterson	5.00	239
June 14	Frank Weber	6.60	508	Sept. 30	J. J. Sanford	2.60	45.2
26	F. L. Peterson	7.35	691				

Daily gage height, in feet, of Humboldt River near Golconda, Nev., for the year ending Sept. 30, 1913.

[Florence Bernard, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.0	3.55	4.4	3.7	3.7	4.8	5.3	5.8	4.7	6.8	5.1	2.5
2	2.0	3.55	4.3	3.8	3.7	4.7	5.3	5.5	4.3	6.8	5.0	2.5
3	2.0	3.55	4.25	3.9	3.7	4.6	5.4	5.3	2.8	6.8	4.9	2.45
4	2.0	3.6	4.2	4.0	3.7	4.6	5.4	5.3	3.5	6.8	4.8	2.45
5	2.0	3.7	4.1	4.0	3.65	4.6	5.4	5.2	3.8	6.7	4.7	2.45
6	2.1	3.75	4.0	3.95	3.65	4.5	5.4	5.0	4.0	6.8	5.0	2.5
7	2.2	3.75	3.9	3.9	3.6	4.5	5.5	4.8	4.5	6.9	4.6	2.55
8	2.25	3.8	3.9	3.9	3.6	4.4	5.6	4.6	4.8	6.9	4.6	2.55
9	2.3	3.85	3.9	3.85	3.65	4.6	5.7	4.5	5.0	6.7	4.5	2.6
10	2.35	3.9	3.9	3.8	3.65	4.8	5.8	4.4	5.2	6.7	4.5	2.5
11	2.45	3.95	3.9	3.8	3.75	4.9	5.9	4.4	5.4	6.6	4.4	2.4
12	2.5	4.0	3.95	3.8	3.75	5.0	6.0	4.4	5.7	6.6	4.2	2.5
13	2.5	4.1	3.95	3.8	3.8	5.1	5.9	4.4	6.0	6.5	4.1	2.55
14	2.5	4.15	3.95	3.9	3.8	5.2	6.8	4.4	6.3	6.4	3.9	2.55
15	2.55	4.2	3.95	3.9	3.85	5.4	5.8	4.4	6.0	6.4	4.0	2.5
16	2.55	4.25	3.95	3.95	3.9	5.4	5.9	4.4	6.5	6.0	4.0	2.4
17	2.6	4.25	4.1	3.95	4.2	5.4	6.0	4.4	6.5	5.8	3.9	2.3
18	2.6	4.25	4.2	3.95	4.3	5.4	6.0	4.4	6.5	5.5	3.6	2.2
19	2.6	4.3	4.25	3.95	4.6	5.4	6.0	4.5	6.5	5.2	3.4	2.2
20	2.7	4.3	4.35	3.95	4.8	5.5	5.9	4.8	6.4	5.4	2.9	2.2
21	2 8	4.35	4.4	3.9	5.0	5.5	5.9	4.9	6.1	5.3	3.3	2.3
22	2.9	4.35	4.4	3.9	5.2	5.5	5.8	4.9	6.5	5.3	3.4	2.4
23	3.0	4.4	4.35	3.85	5.2	5.5	5.7	4.9	6.6	5.6	3.5	2.5
24	3.1	4.4	4.3	3.8	5.0	5.4	5.6	4.9	6.6	5.6	3.3	2.5
25	3.2	4.4	4.2	3.8	5.0	5.4	5.6	4.9	6.4	6.2	3.3	2.4
26	3.3	4.4	4.15	3.8	4.9	5.4	5.5	4.8	7.3	5.6	3.1	2.3
27	3.3	4.4	4.1	3.8	4.9	5.4	5.3	4.8	7.2	5.6	2.9	2.35
28	3.35	4.4	4.0	3.8	4.8	5.3	5.2	5.1	7.1	5.4	2.7	2.35
29	3.4	4.4	3.9	3.75	.....	5.3	5.0	4.7	6.9	5.2	2.7	2 5
30	3.45	4.4	3.85	3.75	.....	5.2	4.8	4.5	6.9	5.4	2.7	2.6
31	3.5	.....	3.75	3.7	.....	5.2	.....	5.0	.....	5.2	2.7	.....

NOTE.—Discharge relation affected by ice through January.

Daily discharge, in second-feet, of Humboldt River near Golconda, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	10	95	176	.....	102	212	290	184	125	560	256	38
2	10	95	164	.....	102	200	290	152	116	560	240	38
3	10	95	158	.....	102	188	310	134	40	560	224	36
4	10	99	153	.....	102	188	310	134	73	560	212	36
5	10	107	143	.....	98	188	310	125	93	536	200	36
6	13	111	133	.....	98	176	310	107	107	560	240	38
7	16	111	124	.....	94	176	330	93	152	584	188	40
8	18	115	124	.....	94	166	350	79	184	584	188	40
9	20	120	124	.....	98	188	370	73	210	536	176	42
10	22	124	124	.....	98	212	390	67	240	536	176	38
11	26	128	124	.....	106	224	410	67	276	512	166	34
12	29	133	128	.....	106	240	430	67	330	512	146	38
13	29	143	128	.....	110	256	410	67	386	490	136	40
14	29	148	128	.....	110	272	625	67	446	468	118	40
15	32	153	128	.....	114	310	390	67	386	468	126	38
16	32	158	128	.....	118	310	410	67	490	386	126	34
17	34	158	143	.....	146	310	430	67	490	348	118	30
18	34	158	153	.....	156	310	430	67	490	294	94	26
19	34	164	158	.....	188	310	430	73	490	240	82	26
20	39	164	170	.....	212	330	410	93	468	277	54	26
21	45	170	176	.....	240	330	410	100	406	266	76	30
22	51	170	176	.....	272	330	390	100	490	272	82	34
23	57	176	170	.....	272	330	370	100	512	336	88	38
24	63	176	164	.....	240	310	350	100	512	344	76	38
25	70	176	153	.....	240	310	350	100	468	476	76	34
26	77	176	148	.....	224	310	330	93	680	350	64	30
27	77	176	143	.....	224	310	290	93	656	350	54	32
28	80	176	133	.....	212	290	272	116	632	310	46	32
29	84	176	124	.....	.....	290	240	86	584	272	46	38
30	88	176	120	.....	.....	272	212	73	584	310	46	42
31	91	.....	111	.....	.....	272	.....	134	.....	272	46	.....

NOTE.—Discharge determined from several fairly well defined rating curves applicable as follows: Oct. 1, 1912, to Apr. 30, 1913; May 1–30, June 3 to July 19, and July 25 to Sept. 30, 1913. Indirect methods or shifting channels used May 31 to June 2 and July 20–24, 1913. Mean discharge Jan. 1–31, estimated, because of ice, at 90 second-feet.

Monthly discharge of Humboldt River near Golconda, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	91	10	40.0	2,460	C.
November	176	95	144	8,570	B.
December	176	111	143	8,790	B.
January	.....	.....	[a] 90	5,530	C.
February	272	94	153	8,500	B.
March	330	166	262	16,100	B.
April	625	212	362	21,500	C.
May	184	67	95.0	5,840	D.
June	680	40	371	22,100	A.
July	584	240	424	26,100	B.
August	256	46	128	7,870	A.
September	42	26	35.4	2,110	A.
The year	680	10	187	135,000	

[a] Estimated.

HUMBOLDT RIVER NEAR OREANA, NEV.

Location.—In sec. 10, T 28 N., R. 32 E., at highway bridge at head of Lovelock Valley, about 1½ miles southwest Oreana railroad station, about 25 miles northeast of mouth of river at Humboldt Lake, and 12 miles northeast of Lovelock, the nearest post office.

Records available.—January 27, 1896, to December 31, 1909; September 7, 1910, to September 30, 1913.

Drainage area.—13,800 square miles.

Gage.—Vertical staff fastened to center pile of bridge. Gage has been at same location and datum since Nov. 9, 1910, before which date several gages at various locations and datums were used.

Channel and control.—Shifting sand and gravel.

Discharge measurements.—Made from bridge at gage.

Winter flow.—Discharge relation affected by ice.

Diversions.—Water diverted for irrigation above the station.

Accuracy.—Discharge relation affected by shifting channel and, during winter, by ice; records only fair.

Cooperation.—Gage heights and discharge measurements furnished by the Office of Experiment Stations, United States Department of Agriculture, through F. L. Peterson, irrigation engineer.

Discharge measurements of Humboldt River near Oreana, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
May 10	F. L. Peterson	3.85	205	June 30	Frank Weber	[a] 4.90	368
June 16	do	2.80	50.5	Aug. 19	F. L. Peterson	3.51	186

[a] Gage at cable read 4.40.

Daily gage height, in feet, of Humboldt River near Oreana, Nev., for the year ending Sept. 30, 1913.

[J. J. McCarthy, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	3.05	3.3	4.4	3.15	3.0	2.6	4.35	3.85	3.5	4.9	3.6	4.0
2	3.05	3.35	4.25	3.0	3.0	2.55	4.35	3.8	3.4	4.65	3.6	3.9
3	3.0	3.35	4.15	2.8	3.0	2.55	4.3	3.9	3.3	4.65	3.8	3.75
4	3.0	3.35	4.0	2.65	3.0	2.6	4.25	4.0	3.15	4.5	4.35	3.6
5	3.0	3.4	3.85	2.4	2.95	2.65	4.2	4.05	3.1	4.4	4.3	3.5
6	3.0	3.4	3.7	2.5	2.95	2.75	4.2	4.0	3.0	4.2	4.2	3.5
7	3.0	3.45	3.5	2.6	3.0	2.75	4.15	3.95	2.85	4.1	4.1	3.45
8	3.0	3.45	3.3	2.65	3.0	2.85	4.25	4.0	2.7	3.8	4.05	3.4
9	3.0	3.5	3.25	2.75	3.0	3.0	4.25	4.0	2.6	3.75	4.0	3.25
10	3.0	3.4	3.2	2 75	3.0	3.15	4.3	3.95	3.1	3.9	4.15	3.25
11	3.0	3.4	3.1	2.8	3.0	3.25	4.3	3.8	2.55	4.15	4.2	3.2
12	3.0	3.4	3.05	2 85	3.0	3.4	4.25	3.75	2.5	4.4	4.45	3.1
13	3.0	3.45	3.2	2.9	2.95	3.55	4.3	3.7	2.4	5.0	4.1	3.0
14	3.0	3.55	3.25	2.95	2.9	3.75	4.15	3.7	2.4	5.15	4.0	3.0
15	3.0	3.6	3.1	3.0	2.9	3.8	3.8	3.65	2.5	5.05	4.0	3.0
16	2.95	3.65	3.05	3.0	2.9	3.95	3.95	3.65	2.75	5.2	3.85	3.0
17	2.95	3.7	3.05	3.0	2.8	4.0	4.0	3.75	2.75	5.1	3.95	3.0
18	2.9	3.7	3.0	3.5	2.75	4.5	4.1	3.8	2.7	5.1	3.95	3.0
19	2.85	3.65	3.0	3.0	2.6	4.0	4.1	3.85	2.75	5.05	4.0	3.0
20	2.85	3.6	2.95	3.0	2.5	4.0	4.25	3.7	2.8	5.0	4.0	3.0
21	2.8	3.6	2.8	3.0	2.5	4.1	4.45	3.5	2.85	5.0	4.0	3.0
22	2.8	3.55	2.95	3.0	2.45	4.15	4.35	3.35	2.95	4.85	3.9	3.05
23	2.9	3.5	3.1	3.0	2.45	4.25	4.2	3.35	3.75	6.5	3.85	3.05
24	2.95	3.55	3.3	3.0	2.45	4.35	4.0	3.3	4.4	5.4	3.9	3.1
25	3.0	3.85	3.45	3.5	2.5	4.4	3.95	3.3	4.5	5.3	3.75	3.15
26	3.05	4.2	3.6	3.1	2.55	4.3	3.75	3.3	4.6	5.0	3.6	3.2
27	3.05	4.45	3.65	3.1	2.65	4.15	3.8	3.35	4.75	4.8	3.5	3.2
28	3.05	4.7	3.8	3.5	2.6	4.0	3.95	3.45	4.8	4.65	3.75	3.2
29	3.1	4.4	3.6	3.5	.....	4.0	4.05	3.45	4.95	4.45	4.0	3.2
30	3.2	4.3	3.45	3.5	.....	4.2	4.0	3.5	5.0	4.35	4.5	3.2
31	3.25	.....	3.3	3.5	.....	4.3	.....	3.5	.....	4.0	4.3	.....

NOTE.—Discharge relation affected by ice Nov. 25, 1912, to Feb. 28, 1913.

Daily discharge, in second-feet, of Humboldt River near Oreana, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	98	130	.....	35	309	199	137	491	204	292
2	98	138	.....	31	309	190	121	423	204	268
3	92	138	.....	31	296	208	107	426	246	235
4	92	138	.....	35	284	228	89	386	381	204
5	92	146	.....	39	272	239	83	363	368	184
6	92	146	.....	48	272	228	73	314	342	184
7	92	154	.....	48	261	218	58	290	316	175
8	92	154	.....	58	284	228	43	224	304	166
9	92	162	.....	73	284	228	35	216	292	140
10	92	146	.....	89	296	218	83	248	329	140
11	92	146	.....	101	296	190	31	309	342	132
12	92	146	.....	121	284	181	27	376	407	116
13	92	154	.....	146	296	172	20	548	316	102
14	92	170	.....	181	261	172	20	599	292	102
15	92	178	.....	190	190	163	27	570	292	102
16	87	187	.....	218	218	163	48	618	257	102
17	87	196	.....	228	228	181	48	589	280	102
18	82	196	.....	348	250	190	43	592	280	102
19	77	187	.....	228	250	199	48	576	292	102
20	77	178	.....	228	284	172	53	564	292	102
21	72	178	.....	250	335	137	58	567	292	102
22	72	170	.....	261	309	114	68	519	268	109
23	82	162	.....	284	272	114	194	1,270	257	109
24	87	170	.....	309	228	107	345	704	268	116
25	92	150	.....	322	218	107	371	668	235	124
26	98	150	.....	296	181	107	399	570	204	132
27	98	150	.....	261	190	114	442	506	184	132
28	98	150	.....	228	218	129	456	462	235	132
29	104	150	.....	228	239	129	503	407	292	132
30	116	150	.....	272	228	137	522	381	420	132
31	123	.....	.....	296	.....	137	.....	292	368	.....

NOTE.—Discharge determined from two fairly well defined rating curves applicable as follows: Oct. 1 to Nov. 24, 1912, Mar. 1 to June 22, and July 24 to Sept. 30, 1913. Indirect methods for shifting channels used June 24 to July 23, 1913. Mean daily discharge estimated because of ice, as follows: Dec. 1–31, 70 second-feet; Jan. 1–31, 40 second-feet; Feb. 1–28, 30 second-feet.

Monthly discharge of Humboldt River near Oreana, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	123	72	91.7	5,640	C.
November	196	130	159	9,460	C.
December	.....	.....	[a]70	4,300	D.
January	.....	.....	[a]40	2,460	D.
February	.....	.....	[a]30	1,670	D.
March	348	31	177	10,900	C.
April	335	181	261	15,500	B.
May	239	107	171	10,500	B.
June	522	20	152	9,040	C.
July	1,270	216	486	29,900	C.
August	420	184	292	18,000	B.
September	292	102	142	8,450	D.
The year	1,270	.....	174	126,000	

[a] Estimated.

HUMBOLDT RIVER NEAR LOVELOCKS, NEV.

Location.—About 1,500 feet below the dam and reservoir on the Big 5 ranch, the lowest diversion for irrigation on Humboldt River, about 9 miles south of Lovelocks.

Records available.—February 7, 1912, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Temporary staff gage used and read from February 7 to June 17, 1912, when the present sloping staff gage was installed at same datum.

Channel and control.—Probably permanent.

Discharge measurements.—Made from car and cable at high stages and by wading at low stages.

Winter flow.—Discharge relation little affected by ice.

Diversions.—Water is stored and diverted for irrigation above the station.

Accuracy.—Records fair.

Cooperation.—Gage heights and discharge measurements furnished by the Office of Experiment Stations, United States Department of Agriculture, through F. L. Peterson, irrigation engineer.

Records represent the waste water entering the Humboldt Sink.

Discharge measurements of Humboldt River near Lovelocks, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
June 28	F. L. Peterson	0.59	56.5	July 8	W. H. Settelmeyer	0.39	25.8
29	Frank Weber	1.10	186	10	do	.25	8.9
July 1	W. H. Settelmeyer	1.34	238	27	do	.46	36.5
3	do	1.07	172				

Daily gage height, in feet, of Humboldt River near Lovelocks, Nev., for the year ending Sept. 30, 1913.

[F. B. Hauck, observer.]

Day.	Oct.	Nov.	Dec.	June.	July.	Aug.	Sept.	Day.	Oct.	Nov.	Dec.	June.	July.	Aug.	Sept.
1	0.4	0.5	0.8	.....	1.41	0.36	0.73	16	0.4	0.8	0.8	.....	0.12	0.26	0.28
2	.4	.5	.8	.....	1.24	.30	.56	17	.4	1.0	.8	.....	.11	.17	.30
3	.4	.5	.8	.....	1.12	.31	.45	18	.4	1.1	.8	.....	.27	.21	.30
4	.4	.6	.8	.....	1.18	.35	.38	19	.4	1.0	.8	.....	.28	.21	.29
5	.4	.7	.8	.....	1.14	.55	.37	20	.4	1.05	.8	.....	.11	.21	.23
6	.4	.7	.8	.....	.91	.41	.33	21	.4	.9	.8	.....	.11	.21	.22
7	.4	.7	.8	.....	.73	.35	.37	22	.4	.8	.8	.....	.....	.25	.21
8	.4	.6	.8	.....	.40	.33	.35	23	.4	.9	.8	.....	.12	.29	.20
9	.4	.5	.8	.....	.27	.31	.32	24	.4	.88	.8	.....	.36	.28	.21
10	.4	.6	.8	.....	.19	.30	.33	25	.4	.85	.8	.....	.56	.51	.22
11	.4	.6	.8	.....	.....	.30	.31	26	.4	.8	.8	.....	.48	.51	.24
12	.4	.7	.8	.....	.....	.30	.30	27	.4	.8	.8	0.15	.46	.33	.25
13	.4	.7	.8	.....	.....	.30	.30	28	.4	.8	.8	.77	.49	.32	.26
14	.4	.8	.8	.....	.....	.30	.30	29	.4	.8	.8	1.10	.76	.34	.24
15	.4	.8	.8	.....	.24	.30	.29	30	.4	.8	.8	1.61	.86	.44	.33
								31	.4	.....	.8	.....	.67	.78	.....

NOTE.—Channel dry Jan. 1 to June 26, 1913.

Daily discharge, in second-feet, of Humboldt River near Lovelocks, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	June.	July.	Aug.	Sept.	Day.	Oct.	Nov.	Dec.	June.	July.	Aug.	Sept.
1	3	8	41	.....	267	22	90	16	3	41	41	.....	1.0	10	12
2	3	8	41	.....	221	14	53	17	3	84	41	.....	.5	3.5	14
3	3	8	41	.....	189	15	35	18	3	109	41	.....	11	5.9	14
4	3	16	41	.....	205	21	25	19	3	84	41	.....	12	5.9	13
5	3	27	41	.....	194	51	24	20	3	96	41	.....	.5	5.9	7.7
6	3	27	41	.....	136	29	18	21	3	60	41	.....	.5	5.9	6.8
7	3	27	41	.....	90	21	24	22	3	41	41	.....		9.5	5.9
8	3	16	41	.....	28	18	21	23	3	60	41	.....	1.0	13	5
9	3	8	41	.....	11	15	17	24	3	56	41	.....	22	12	5.9
10	3	16	41	.....	4.5	14	18	25	3	50	41	.....	53	44	6.8
11	3	16	41	.....	0	14	15	26	3	41	41	2.5	39	44	8.6
12	3	27	41	.....	0	14	14	27	3	41	41	100	36	18	9.5
13	3	27	41	.....	0	14	14	28	3	41	41	184	41	17	10
14	3	41	41	.....	0	14	14	29	3	41	41	323	98	20	8.6
15	3	41	41	.....	8.6	14	13	30	3	41	41	.....	123	34	18
								31	3	.....	41	.....	76	103	.....

NOTE.—Discharge determined from two fairly well defined rating curves, one applicable Oct. 1 to Dec. 31, 1912, the other June 27 to Sept. 30, 1913.

Monthly discharge of Humboldt River near Lovelocks, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	3	3	3.0	184	B.
November	109	8	40.0	2,380	A.
December	41	41	41.0	2,520	A.
June	323	0	20.3	1,210	A.
July	267	0	60.3	3,710	A.
August	103	3.5	20.7	1,270	A.
September	90	5	18.0	1,070	A.

STARR CREEK NEAR DEETH, NEV.

Location.—In the NE. ¼ sec. 12, T. 36 N., R. 59 E., 2 miles above mouth, and about 3 miles southeast of Deeth; below all important tributaries except Bowlder Creek.

Records available.—June 4 to September 30, 1913.

Gage.—Vertical staff nailed to post on upstream side of highway bridge.

Channel and control.—One channel except at high stages; stream bed rocky; considerable moss growth.

Discharge measurements.—Made by wading.

Diversions.—A canal diverts water a short distance above the gage and at times causes some variation in daily flow.

Accuracy.—Records fair. Approximate during periods when observer did not read gage.

Discharge measurements of Starr Creek near Deeth, Nev., during the year ending Sept. 30, 1913.

[Made by Frank Weber.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
June 4	4.73	170	Aug. 29	2.90	4.67
July 1	3.65	39.1			

Daily gage height, in feet, and discharge, in second-feet, of Starr Creek near Deeth, Nev., for the year ending Sept. 30, 1913.

[G. E. Weathers, observer.]

Day.	June.		July.		August.		September.	
	Gage height	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	4.1	82	.....	16	.....	3.6
2	.....	.....	4.05	76	.....	11	2.85	3.6
3	.....	.....	4.05	76	2.95	6.1	2.85	3.6
4	4.8	184	4.0	71	2.9	4.7	3.2	15
5	4.75	175	4.0	71	2.9	4.7	3.15	13
6	4.8	184	4.0	71	2.9	4.7	3.15	13
7	4.8	184	3.9	61	2.9	4.7	.....	.....
8	4.75	175	3.8	51	2.85	3.6	.....	.....
9	4.8	184	3.85	56	2.8	2.5	.....	.....
10	4.85	194	3.85	56	.....	.....	.....	.....
11	5.25	273	3.7	43	.....	.....	.....	.....
12	4.9	202	3.65	40	.....	.....	.....	.....
13	4.85	193	3.65	40	.....	.....	.....	.....
14	4.55	142	3.4	24	.....	.....	.....	.....
15	4.4	120	3.4	24	.....	.....	.....	.....
16	4.45	127	3.35	22	.....	.....	.....	.....
17	4.5	134	3.25	17	.....	.....	.....	.....
18	4.45	127	3.15	13	.....	.....	.....	.....
19	4.4	120	3.1	11	.....	.....	.....	.....
20	4.35	113	3.2	15	.....	.....	.....	.....
21	4.2	94	3.2	15	.....	.....	.....	.....
22	4.15	88	3.15	13	.....	.....	.....	.....
23	4.45	127	3.3	19	.....	.....	.....	.....
24	4.2	94	3.35	22	.....	.....	.....	.....
25	4.2	94	3.3	19	.....	.....	.....	.....
26	4.4	120	3.5	30	.....	.....	.....	.....
27	4.45	127	3.35	22	.....	.....	.....	.....
28	4.35	113	3.4	24	.....	.....	.....	.....
29	4.25	100	3.35	22	2.9	4.7	.....	.....
30	4.2	94	3.35	22	.....	4.2	.....	.....
31	.....	.....	3.35	22	2.85	3.6	.....	.....

NOTE.—Discharge determined from a fairly well defined rating curve. Record lost by observer Aug. 10–28 and Sept. 7–30; mean daily discharge for those periods estimated at 3.6 second-feet and 5.5 second-feet, respectively.

Monthly discharge of Starr Creek near Deeth, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
June 4–30	273	94	144	7,710	B.
July	82	11	37.1	2,280	B.
August	.....	.....	4.48	275	D.
September	.....	.....	6.13	365	D.
The period	.....	.....	.....	10,600	

MARYS RIVER AT MARYS RIVER CABIN, NEAR DEETH, NEV.

Location.—In the NW. ¼ sec. 24, T. 42 N., R. 59 E., 36 miles above Deeth, and one-half mile above Deep Creek.

Records available.—March 22 to September 30, 1913.

Drainage area.—Not measured.

Gage.—Lietz water-stage recorder and outside vertical staff.

Channel and control.—Gravel; stream in one channel but overflows during high water.

Discharge measurements.—Made by wading.

Diversions.—Above all diversions.

Accuracy.—Records after June 1, fair; before that date, approximate only.

Cooperation.—Gage heights and some discharge measurements furnished by the Carey Act Reclamation Association.

Discharge measurements of Marys River at Marys River Cabin near Deeth, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Mar. 22	C. E. Gundlach [a]		46	May 3	C. E. Gundlach [a]		132
29	do		57	11	do		141
Apr. 5	do		84	June 1	Frank Weber	2.75	171
12	do		103	July 13	do	1.95	14.5
19	do		73	Aug. 26	do	1.67	2.25
26	do		108				

[a] Engineer for Carey Act Reclamation Association.

Daily gage height, in feet, of Marys River at Marys River Cabin near Deeth, Nev., for the year ending Sept. 30, 1913.

Day.	May.	June.	July.	Aug.	Sept.
1		2.75	2.35	2.1	2.00
2		2.75	2.35	2.0	2.00
3		2.75	2.35	2.0	1.98
4		2.65	2.35	2.0	2.00
5		2.55	2.35	2.0	1.90
6		2.45		2.0	1.95
7		2.45		1.95	1.92
8		2.45		1.9	1.85
9		2.45		1.9	1.85
10	2.60	2.45		1.9	1.80
11	2.60	2.55		1.9	1.80
12	2.55	2.85		1.9	1.80
13	2.55	2.65	1.95	1.9	1.85
14	2.65	2.55		1.85	1.85
15	2.75	2.45		1.85	1.85
16	2.75	2.35	1.9	1.8	1.85
17	2.75	2.35	1.9	1.8	1.85
18		2.25		1.8	1.85
19		2.25		1.8	1.80
20		2.15	2.1	1.8	1.80
21		2.25	2.1	1.75	1.80
22		2.25	2.15	1.75	1.85
23		2.25	2.2	1.7	1.90
24		2.25	2.25	1.7	1.90
25		2.35	2.3	1.7	1.90
26		2.35	2.2	1.7	1.90
27		2.35	2.2	2.3	1.90
28		2.35	2.25	2.0	1.90
29		2.35	2.2	1.9	1.90
30		2.35	2.25	2.1	1.90
31			2.2	2.0	

Daily discharge, in second-feet, of Marys River at Marys River Cabin near Deeth, Nev., for the year ending Sept. 30, 1913.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1			150	173	73	32	20
2			140	173	73	20	20
3			132	173	73	20	18
4			120	144	73	20	20
5		84	120	118	73	20	11
6			110	94	66	20	15
7			110	94	58	15	13
8			110	94	50	11	8
9			120	94	43	11	8
10			130	94	35	11	6
11			130	118	28	11	6
12		103	118	205	22	11	6
13			118	144	15	11	8
14			144	118	14	8	8
15			173	94	12	8	8
16			173	73	11	6	8
17			173	73	11	6	8
18			150	54	18	6	8
19		73	150	54	26	6	6
20			150	39	32	6	6
21			140	54	32	4	6
22	46		140	54	39	4	8
23			140	54	46	2.5	11
24			150	54	54	2.5	11
25			150	73	63	2.5	11
26		108	160	73	46	2.5	11
27			175	73	46	63	11
28			175	73	54	20	11
29	57		175	73	46	11	11
30			175	73	54	32	11
31			175		46	20	

NOTE.—Discharge determined from a fairly well defined rating curve. Discharge for periods for which gage heights are lacking, estimated by comparison with records of other stations on the river.

Monthly discharge of Marys River at Marys River Cabin near Deeth, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
March 22-31			[a] 50	992	D.
April			[a] 100	5,950	C.
May	175	110	144	8,850	C.
June	205	39	95.9	5,710	B
July	73	11	43.0	2,640	B.
August	63	2.5	13.6	836	B.
September	20	6	10.4	619	B.
The period				25,600	

[a] Estimated.

MARYS RIVER AT BUENA VISTA RANCH, NEAR DEETH, NEV.

Location.—In the SW. ¼ sec. 19, T. 41 N., R. 60 E., 30 miles north of Deeth, and 1½ miles north of Buena Vista ranch.

Records available.—March 29 to September 30, 1913.

Drainage area.—Not measured.

Gage.—Lietz water-stage recorder and outside vertical staff.

Channel and control.—Gravel; fairly permanent. One channel at all stages.

Discharge measurements.—Made by wading or from cable and car.

Diversions.—Just below the diversion dam for the Buena Vista ranch. A number of other ranch ditches divert above the station.

Accuracy.—Records after June 1 are fairly reliable except during periods when gage heights were not recorded.

Cooperation.—Gage heights and some discharge measurements furnished by Carey Act Reclamation Association.

Discharge measurements of Marys River at Buena Vista ranch, near Deeth, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Mar. 29	C. E. Gundlach [a]	.....	120	May 11	C. E. Gundlach	.....	177
Apr. 5	.....do.....	.....	107	June 2	Frank Weber	4.07	169
12	.....do.....	.....	131	July 13	.....do.....	2.33	21.5
19	.....do.....	.....	123	Aug. 26	.....do.....	1.93	4.65
May 3	.....do.....	.....	161				

[a] Engineer for Carey Act, Reclamation Service.

Daily gage height, in feet, and discharge, in second-feet, of Marys River at Buena Vista ranch, near Deeth, Nev., for the year ending Sept. 30, 1913.

Day.	April.		May.		June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	.....	.....	4.10	173	.....	60	2.66	39	2.50	29
2	.....	.....	.....	.....	4.00	162	.....	60	2.60	35	2.40	24
3	.....	.....	.....	161	3.95	156	.....	60	2.55	32	2.30	19
4	.....	.....	.....	.....	3.80	140	.....	60	.....	30	.....	16
5	.....	107	.....	.....	3.70	129	.....	60	.....	28	.....	14
6	.....	.....	.....	.....	3.64	122	.....	55	.....	26	.....	12
7	.....	.....	.....	.....	3.60	118	.....	50	.....	24	2.05	9
8	.....	.....	.....	.....	.....	120	.....	45	.....	22	2.00	7
9	.....	.....	.....	.....	.....	120	.....	40	.....	21	2.10	11
10	.....	.....	.....	.....	.....	120	.....	35	.....	20	2.10	11
11	.....	.....	.....	177	.....	120	.....	30	2.30	19	2.10	11
12	.....	131	.....	.....	.....	200	.....	25	2.30	19	2.05	9
13	.....	.....	.....	.....	3.10	71	2.32	20	2.25	17	2.00	7
14	.....	.....	.....	.....	.....	60	2.32	20	2.20	15	2.00	7
15	.....	.....	.....	.....	.....	50	2.30	19	2.20	15	2.05	9
16	.....	.....	.....	.....	2.65	38	2.29	19	2.20	15	2.05	9
17	.....	.....	.....	.....	2.65	38	2.22	16	.....	14	2.00	7
18	.....	.....	.....	.....	2.7	42	2.20	15	.....	12	.....	7
19	.....	123	.....	.....	2.8	49	2.20	15	2.10	11	.....	8
20	.....	.....	.....	.....	2.8	49	3.00	30	2.10	11	.....	9
21	.....	.....	.....	.....	2.8	49	3.00	30	2.10	11	2.05	9
22	.....	.....	.....	.....	3.0	63	3.00	30	2.10	11	2.10	11
23	.....	.....	.....	.....	3.0	63	2.90	45	2.10	11	2.10	11
24	.....	.....	.....	.....	3.0	63	3.00	60	2.00	7	2.15	13
25	.....	.....	.....	.....	3.0	63	3.20	60	1.95	5	2.15	13
26	.....	.....	.....	.....	3.0	63	3.10	50	1.95	5	2.20	15
27	.....	.....	.....	.....	3.0	63	2.80	49	2.60	35	2.20	15
28	.....	.....	.....	.....	3.0	63	2.68	41	2.46	27	2.20	15
29	.....	.....	.....	.....	.....	63	2.64	38	2.38	23	2.15	13
30	.....	.....	.....	.....	.....	63	2.60	35	2.37	22	2.10	11
31	.....	.....	.....	.....	.....	.....	2.76	46	2.5	29	.....	.....

NOTE.—Discharge determined from a fairly well defined rating curve. Estimates of discharge for April and May based on measurements made by C. E. Gundlach; for other periods for which gage heights are not recorded estimates are based on comparisons with records of other stations on the river.

Monthly discharge of Marys River at Buena Vista ranch, near Deeth, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
April			[a] 120	7,140	C.
May			[a] 170	10,500	D.
June	200	38	89.8	5,340	B.
July	60	15	39.3	2,420	C.
August	39	5	19.7	1,210	B.
September	29	7	12.0	714	B.
The period				27,300	

[a] Estimated.

MARYS RIVER NEAR DEETH, NEV.

Location.—In the NW. ¼ sec. 31, T. 40 N., R. 60 E., at bridge about 300 feet east of ranch house on the Malo Vista ranch of the Nevada Land & Livestock Co., about 20 miles north of Deeth.

Records available.—November 24, 1902, to July 14, 1903; January 17, 1912, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Chain gage used on north edge of bridge; the gage used in 1902 and 1903 was a vertical staff on middle pier of the bridge at different datum from that of the chain gage.

Channel and control.—Probably permanent except at sudden floods.

Discharge measurements.—Made from bridge or by wading above or below gage.

Diversions.—A number of small canals divert above the station during the irrigation period.

Winter flow.—Discharge relation affected by ice during cold periods.

Accuracy.—Records fair.

Discharge measurements of Marys River near Deeth, Nev., during the year ending Sept. 30, 1913.

[Made by Frank Weber.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
May 10	4.54	151	Aug. 27	2.55	4.6
July 17	2.95	15			

NOTE.—Staff-gage heights for measurements on May 10 and July 17 were respectively 5.95 feet and 4.38 feet.

Daily gage height, in feet, of Marys River near Deeth, Nev., for the year ending Sept. 30, 1913.

[J. A. Tucker, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.7	3.15	.....	.....	2.5	.....	4.8	4.8	4.5	3.3	3.2	3.3
2	2.75	3.1	.....	.....	2.5	3.1	4.8	4.6	4.4	3.3	3.2	3.2
3	2.8	3.1	.....	.....	2.6	3.1	4.4	4.4	4.3	3.3	3.2	3.0
4	2.85	3.1	.....	.....	2.5	3.1	4.5	4.2	4.2	3.3	3.1	3.0
5	2.95	3.1	.....	.....	3.5	3.1	4.4	4.0	4.1	3.2	3.1	2.9
6	3.0	3.15	.....	.....	3.7	3.3	4.3	4.1	4.1	3.2	3.2	2.8
7	3.1	3.15	.....	.....	2.7	4.0	4.2	4.1	4.0	3.2	3.1	2.8
8	3.1	3.2	.....	.....	2.6	4.0	4.1	4.2	3.9	3.1	3.0	2.8
9	3.1	3.2	.....	.....	2.6	4.1	4.0	4.3	3.8	3.1	3.0	2.8
10	3.05	3.25	.....	.....	2.5	4.2	4.0	4.5	4.0	3.1	2.9	2.9
11	3.05	3.25	.....	.....	2.5	4.3	3.9	4.4	3.9	3.1	2.9	2.8
12	3.05	3.3	.....	.....	2.7	4.1	3.8	4.3	4.0	3.1	2.9	2.7
13	3.0	3.3	.....	.....	2.8	4.0	4.3	4.4	4.1	3.05	2.9	2.7
14	3.0	3.3	.....	.....	3.1	3.8	4.6	4.5	4.2	3.0	2.8	2.7
15	3.0	3.3	.....	.....	2.9	3.5	4.6	4.4	4.0	3.0	2.8	2.7
16	3.0	3.25	.....	.....	3.1	3.4	4.4	4.3	3.8	3.0	2.8	2.6
17	3.05	3.25	.....	.....	3.4	3.2	4.6	4.3	4.0	3.0	3.8	2.6
18	3.05	3.2	.....	.....	3.3	3.0	4.5	4.2	3.9	3.05	2.8	2.6
19	3.05	3.2	.....	.....	3.1	2.8	4.6	4.1	3.7	3.05	2.8	2.6
20	3.1	3.3	.....	.....	3.7	2.9	4.7	4.1	3.5	2.9	2.7	2.7
21	3.1	3.5	.....	.....	3.1	3.0	4.85	4.1	3.4	3.1	2.7	2.7
22	3.1	3.5	.....	.....	2.9	3.2	4.8	4.0	3.2	3.1	2.6	2.7
23	3.1	3.6	.....	.....	3.0	3.3	4.7	4.0	3.3	3.1	2.6	2.7
24	3.1	3.6	.....	.....	3.1	3.2	4.6	4.2	3.3	3.2	2.6	2.7
25	3.1	3.6	.....	.....	3.1	3.5	4.6	4.5	3.4	3.5	2.5	2.6
26	3.1	.....	.....	3.5	3.2	3.6	4.5	4.5	3.4	3.5	2.5	2.7
27	3.15	.....	.....	3.15	3.3	3.5	4.7	4.6	3.5	3.4	2.5	2.7
28	3.15	.....	.....	2.5	3.3	3.6	4.7	4.5	3.5	3.3	3.5	2.8
29	3.15	.....	.....	2.5	.....	3.5	4.8	4.5	3.5	3.3	3.5	2.7
30	3.2	.....	.....	2.5	.....	.....	4.9	4.6	3.4	3.3	3.0	2.7
31	3.2	.....	.....	2.4	.....	.....	.....	4.6	.....	3.3	3.5	.....

NOTE.—Discharge relation affected by ice Nov. 21, 1912, to Jan. 27, 1913.

Daily discharge, in second-feet, of Marys River near Deeth, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	7	25	.....	.....	3	22	190	190	150	34	28	34
2	8.5	22	.....	.....	3	22	190	163	137	34	28	28
3	10	22	.....	.....	5	22	137	137	125	34	28	17
4	12	22	.....	.....	3	22	150	113	113	34	22	17
5	15	22	.....	.....	4	22	137	91	102	28	22	13
6	17	25	.....	.....	5	34	125	102	102	28	28	10
7	22	25	.....	.....	7	91	113	102	91	28	22	10
8	22	28	.....	.....	5	91	102	113	81	22	17	10
9	22	28	.....	.....	5	102	91	125	72	22	17	10
10	20	31	.....	.....	3	113	91	150	91	22	13	13
11	20	31	.....	.....	3	125	81	137	81	22	13	10
12	20	34	.....	.....	7	102	72	125	91	22	13	7
13	17	34	.....	.....	10	91	125	137	102	20	13	7
14	17	34	.....	.....	22	72	163	150	113	17	10	7
15	17	34	.....	.....	13	47	163	137	91	17	10	7
16	17	31	.....	.....	22	40	137	125	72	17	10	5
17	20	31	.....	.....	40	28	163	125	91	17	10	5
18	20	28	.....	.....	34	17	150	113	81	20	10	5
19	20	28	.....	.....	22	10	163	102	63	20	10	5
20	22	34	.....	.....	22	13	176	102	47	13	7	7
21	22	.....	.....	.....	22	17	198	102	40	22	7	7
22	22	.....	.....	.....	13	28	190	91	28	22	5	7
23	22	.....	.....	.....	17	34	176	91	34	22	5	7
24	22	.....	.....	.....	22	28	163	113	34	28	5	7
25	22	.....	.....	.....	22	47	163	150	40	47	3	5
26	22	.....	.....	.....	28	55	150	150	40	47	3	7
27	25	.....	.....	.....	34	47	176	163	47	40	3	7
28	25	.....	.....	3	34	55	176	150	47	34	47	10
29	25	.....	.....	3	.....	47	190	150	47	34	47	7
30	28	.....	.....	3	.....	100	205	163	40	34	17	7
31	28	.....	.....	2	.....	140	.....	163	.....	34	47	.....

NOTE.—Discharge determined from a fairly well defined rating curve. Discharge estimated because of ice: Nov. 21–25, 25 second-feet; Nov. 26–30, 15 second-feet; Dec. 1–31, 6.0 second-feet; Jan. 1–27, 3.0 second feet; and Feb. 5, 6, 20.

Monthly discharge of Marys River near Deeth, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	28	7	19.6	1,210	B.
November	34	15	25.6	1,520	C.
December	.....	.....	[a] 6.0	369	D.
January	.....	.....	[a] 3.0	184	D.
February	40	3	15.4	855	C.
March	140	10	54.3	3,340	A.
April	205	72	150	8,930	A.
May	190	91	130	7,990	A.
June	150	28	76.4	4,550	A.
July	47	13	26.9	1,650	B.
August	47	3	16.8	1,030	A.
September	34	5	9.9	589	B.
The year	205	.....	44.5	32,200	

[a] Estimated.

HANKS CREEK NEAR DEETH, NEV.

Location.—In W. ½ sec. 6, T. 41 N., R. 59 E., 600 feet above mouth of creek, 4 miles above Buena Vista ranch, and 32 miles north of Deeth.

Records available.—March 22 to September 30, 1913.

Drainage area.—Not measured.

Gage.—Lietz water-stage recorder with outside vertical staff. Gage was moved 300 feet downstream July 13, 1913.

Channel and control.—One channel at all stages; stream bed of clay. Control made of 2-inch planks stood on edge in a trench just below the gage.

Discharge measurements.—Made by wading.

Accuracy.—Fair after June 1, 1913; before that date, approximate.

Cooperation.—Gage heights furnished by the Carey Act Reclamation Association.

Discharge measurements of Hanks Creek near Deeth, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Dis. charge.	Date.	Made by—	Gage height.	Dis. charge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Mar. 22	C. E. Gundlach [a]	.....	13.5	May 3	C. E. Gundlach [a]	.....	9.9
29	.....do.....	.....	55.1	10	Frank Weber.....	0.90	9.46
Apr. 5	.....do.....	.....	18.4	11	C. E. Gundlach [a]	.....	8.8
12	.....do.....	.....	20.4	31	Frank Weber.....	.62	6.63
19	.....do.....	.....	14.1	July 13	.....do.....	[b] 1.30	1.89
26	.....do.....	.....	12.6	Aug. 26	.....do.....	[b] 1.35	2.70

[a] Engineer for Carey Act Reclamation Association.
[b] Refer to gage established July 13, 1913; old gage read 0.10 foot on July 13.

Daily gage height, in feet, of Hanks Creek near Deeth, Nev., for the year ending Sept. 30, 1913.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1	.....	0.50	0.14	1.7	1.40	16	0.77	0.22	1.30	1.3	1.25
2	.....	.40	.12	1.65	1.32	17	.78	.21	1.30	1.3	1.25
3	.....	.38	.10	1.5	1.30	18	.....	.21	1.30	1.3	1.25
4	.....	.38	.10	1.4	1.30	19	.....	.20	1.30	1.3	1.3
5	.....	.38	.10	1.4	1.26	20	.....	.18	1.40	1.3	1.3
6	.....	.40	.10	1.4	1.22	21	.....	.18	1.34	1.3	1.3
7	.....	.38	.10	1.4	1.22	22	.....	.16	1.30	1.3	1.3
8	.....	.32	.10	1.4	1.30	23	.....	.16	1.10	1.3	1.3
9	.....	.30	.10	1.4	1.35	24	.....	.20	1.20	1.3	1.25
10	0.85	.22	.10	1.4	1.25	25	.....	.25	1.45	1.3	1.25
11	.90	.18	.10	1.3	1.25	26	.....	.20	1.55	1.36	1.20
12	.85	.18	.10	1.3	1.2	27	.....	.20	1.70	1.42	1.20
13	.82	.18	.10	1.3	1.2	28	.....	.....	1.70	1.32	1.30
14	.80	.20	.10	1.3	1.2	29	.....	.20	1.70	1.6	1.30
15	.78	.20	.10	1.3	1.2	30	.....	.16	1.70	1.36	1.30
						31	.60	.....	1.70	1.43	.....

NOTE.—Beginning July 16 gage readings refer to new gage.

Daily discharge, in second-feet, of Hanks Creek near Deeth, Nev., for the year ending Sept. 30, 1913.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	.....	10	5.5	2.1	6	3
2	.....	.....	10	4.5	1.9	5.5	2.2
3	.....	.....	9.9	4.3	1.8	4	2
4	.....	.....	.....	4.3	1.8	3	2
5	.....	18	.....	4.3	1.8	3	1.6
6	.....	.....	.....	4.5	1.8	3	1.2
7	.....	.....	.....	4.3	1.8	3	1.2
8	.....	.....	.....	3.7	1.8	3	2.0
9	.....	.....	.....	3.5	1.8	3	2.5
10	.....	.....	9	2.7	1.8	3	1.5
11	.....	.....	9.5	2.4	1.8	2	1.5
12	.....	20	9	2.4	1.8	2	1
13	.....	.....	8.7	2.4	1.8	2	1
14	.....	.....	8.5	2.5	1.8	2	1
15	.....	.....	8.3	2.5	1.8	2	1
16	.....	.....	8.2	2.7	2.0	2	1.5
17	.....	.....	8.3	2.6	2.0	2	1.5
18	.....	.....	.....	2.6	2.0	2	1.5
19	.....	14	.....	2.5	2.0	2	2
20	.....	.....	.....	2.4	3.0	2	2
21	.....	.....	.....	2.7	2.4	2	2
22	14	.....	.....	2.2	2.0	2	2
23	.....	.....	.....	2.2	.2	2	2
24	.....	.....	.....	2.5	1.0	2	1.5
25	.....	.....	.....	3.0	3.5	2	1.5
26	.....	13	.....	2.5	4.5	2.6	1
27	.....	.....	.....	2.5	6	3.2	1
28	.....	.....	.....	2.5	6	2.2	2
29	55	.....	.....	2.5	6	5	2
30	.....	.....	.....	2.2	6	2.6	2
31	.....	.....	6.5	.....	6	3.3	.....

NOTE.—Discharge determined from two fairly well defined rating curves applicable May 10 to July 15 and July 16 to Sept. 30. Estimates of discharge for March and April are based on measurements by C. E. Gundlach. May 4–9 discharge estimated at 9 second-feet; May 13–30 at 7.4 second-feet.

Monthly discharge of Hanks Creek near Deeth, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
March 22-31			[a] 20.0	397	D.
April			[a] 16.0	952	D.
May			8.26	508	C.
June	5.5	2.2	3.04	181	B.
July	6.0	.2	2.65	163	B.
August	6.0	2.0	2.75	169	B.
September	3.0	1.0	1.67	99	B.
The period				2,470	

[a] Estimated.

LAMOILLE CREEK NEAR HALLECK, NEV.

Location.—In the NW. ¼ sec. 9, T. 35 N., R. 58 E., 1½ miles south of Halleck station on the Southern Pacific Railroad, 2 miles above confluence with Humboldt River, and one-half mile below mouth of Secret Creek, the largest tributary.
Records available.—May 12 to September 30, 1913.
Drainage area.—Not measured.
Gage.—Vertical staff braced to bank.
Channel and control.—Gravel; water overflows both banks during flood periods.
Discharge measurements.—Made by wading.
Winter flow.—Discharge relation affected by ice.
Diversions.—Below all diversions except one small ditch.
Accuracy.—Good.

Records indicate the run-off tributary to Humboldt River.

Discharge measurements of Lamoille Creek near Halleck, Nev., during the year ending Sept. 30, 1913.

[Made by Frank Weber.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
May 12	3.65	48.1	Aug. 28	3.29	20.4
July 12	4.04	90.1			

Daily gage height, in feet, and discharge, in second-feet, of Lamoille Creek near Halleck, Nev., for the year ending Sept. 30, 1913.

[G. L. Bachman, observer.]

Day.	May.		June.		July.		Aug.		Sept.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	5.5	314	5.1	241	3.7	53	3.2	17
2	.....	.....	5.3	277	4.75	184	3.6	44	3.2	17
3	.....	.....	5.4	295	4.65	168	3.55	40	3.4	28
4	.....	.....	5.4	295	4.5	147	3.55	40	3.5	36
5	.....	.....	5.3	277	4.3	120	3.5	36	3.35	25
6	.....	.....	5.3	277	4.3	120	3.45	32	3.2	17
7	.....	.....	5.4	295	4.25	114	3.4	28	3.2	17
8	.....	.....	5.4	295	4.5	147	3.4	28	3.2	17
9	.....	.....	5.4	295	4.45	140	3.35	25	3.15	16
10	.....	.....	5.5	314	4.3	120	3.3	22	3.15	16
11	.....	.....	5.6	333	4.2	108	3.25	20	3.1	14
12	3.65	48	5.9	392	4.15	102	3.25	20	3.1	14
13	3.6	44	6.2	452	3.9	74	3.2	17	3.1	14
14	3.65	48	5.5	314	3.8	63	3.2	17	3.1	14
15	3.55	40	5.2	259	3.75	58	3.15	16	3.15	16
16	3.5	36	5.2	259	3.05	48	3.1	14	3.1	14
17	3.5	36	5.1	241	3.6	44	3.1	14	3.1	14
18	3.5	36	5.1	241	3.55	40	3.1	14	3.1	14
19	3.9	74	4.9	207	3.5	36	3.05	12	3.05	12
20	3.85	68	4.8	191	3.6	44	3.0	11	3.1	14
21	3.7	53	4.65	168	3.7	53	3.0	11	3.1	14
22	3.6	44	4.5	147	3.6	44	2.95	9.5	3.1	14
23	3.6	44	4.3	120	3.7	53	2.9	8	3.1	14
24	3.55	40	4.3	120	4.0	85	.....	11	3.15	16
25	4.0	85	4.4	133	3.9	74	.....	14	3.15	16
26	4.4	133	4.9	207	3.75	58	.....	17	3.2	17
27	4.75	184	5.4	295	3.65	48	.....	20	3.2	17
28	4.9	207	5.5	314	3.85	68	3.3	22	3.2	17
29	5.2	259	5.6	333	3.8	63	3.15	16	3.25	20
30	5.75	362	5.6	333	3.75	58	3.25	20	3.25	20
31	5.8	372	.....	.....	3.75	58	3.25	20	.....	.....

NOTE.—Discharge determined from a well-defined rating curve. Discharge Aug. 24–27 estimated.

Monthly discharge of Lamoille Creek near Halleck, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
May 12–31	372	36	111	4,400	B
June	452	120	266	15,800	B
July	241	36	89.7	5,520	B
August	53	8	21.7	1,330	B
September	36	12	17.0	1,010	A
The period	.....	.....	.....	28,100	

NORTH FORK OF HUMBOLDT RIVER NEAR HALLECK, NEV.

Location.—About one-fourth mile above mouth, 2 miles west of Elburz station on Southern Pacific Railroad, and 6 miles west of Halleck, near mouth of railroad tunnel.

Records available.—October 10, 1902, to December 31, 1909; October 1, 1910, to September 30, 1913.

Drainage area.—1,020 square miles.

Gage.—Staff in two sections on left bank installed August 5, 1909, at same datum as original inclined staff.
Channel and control.—Sand and gravel; shifting.
Discharge measurements.—Made by wading.
Winter flow.—Discharge relation affected by ice.
Diversions.—Several canals divert for irrigation above the station.
Accuracy.—Records poor.

Discharge measurements of North Fork of Humboldt River near Halleck, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
July 12	E. A. Porter	3.12	22.5
Aug. 27	Frank Weber	2.73	5.6

Daily gage height, in feet, of North Fork of Humboldt River near Halleck, Nev., for the year ending Sept. 30, 1913.

[O. S. Mead, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar	Apr.	May.	June.	July.	Aug.	Sept.
1	2.9	3.0	2.8	3.2	3.8	3.8	4.9	3.6	4.3	4.1	3.5	3.5
2	2.9	3.0	3.1	3.3	3.85	3.8	5.0	3.6	4.3	4.0	3.5	3.5
3	2.9	3.1	3.1	3.3	3.85	3.8	5.4	3.6	4.3	3.95	3.5	3.4
4	3.0	3.1	3.0	3.3	3.85	4.0	5.2	3.5	4.5	3.9	3.4	3.3
5	3.05	3.1	3.1	3.4	3.8	4.0	5.1	3.5	4.3	3.9	3.4	3.3
6	3.1	3.1	2.9	3.4	3.9	4.1	4.9	3.5	4.4	3.8	3.3	3.2
7	3.1	3.1	3.1	3.5	3.9	4.2	4.8	3.5	4.4	3.7	3.2	3.2
8	3.1	3.1	3.0	3.6	3.85	4.3	4.8	3.5	4.5	3.55	3.1	3.1
9	3.1	3.1	3.1	3.6	3.9	4.4	4.7	3.5	4.5	3.4	3.0	3.0
10	3.1	3.1	3.1	3.6	3.9	4.5	4.6	3.5	4.5	3.3	2.9	3.0
11	3.1	3.1	3.0	3.6	3.8	4.7	4.6	3.5	4.6	3.2	2.8	2.9
12	3.1	3.1	2.9	3.6	3.85	4.7	4.4	3.4	4.7	3.1	2.7	2.8
13	3.1	3.1	2.9	3.6	3.85	4.7	4.3	3.4	4.8	3.0	2.7	2.7
14	3.1	3.1	3.0	3.6	3.8	4.5	4.3	3 4	4.8	2.9	2.7	2.7
15	3.1	3.1	3.2	3.65	3.8	4.2	4.2	3.45	4.9	2.85	2.65	2.7
16	3.1	3.1	3.2	3.65	3.8	4.1	4.2	3.45	5.0	2.8	2.65	2.7
17	3.1	3.1	3.3	3.7	3.85	4.05	4.1	3.45	4.5	2.7	2.65	2.7
18	3.1	3.0	3.3	3.7	3.85	3.9	4.0	3.5	4.2	2.6	2.65	2.7
19	3.1	3.0	3.3	3.72	3.85	3.9	4.0	3.5	4.0	2.55	2.65	2.7
20	3.1	3.0	3.3	3.7	3.9	3.8	4.0	3.6	3.9	2.7	2.5	2.7
21	3.1	3.0	3.3	3.75	3.85	3.7	3.9	3.6	3.9	2.7	2.5	2.68
22	3.1	3.0	3.3	3.75	3.9	3.7	3.9	3.6	3.8	2.9	2.5	2.68
23	3.1	3.0	3.2	3.8	3.8	3.7	3.8	3.6	3.8	3.05	2.5	2.65
24	3.1	2.9	3.2	3.8	3.75	3.65	3.8	3.6	3.7	3.2	2.5	2.65
25	3.1	2.8	3.2	3.8	3.8	3.6	3.8	3.8	3.7	3.6	2.5	2.65
26	3.1	2.8	3.2	3.7	3.8	3.6	3.7	3.8	3.7	3.9	2.5	2.62
27	3.0	2.9	3.2	3.8	3.8	3.6	3.7	3.8	3.7	4.2	2.5	2.6
28	3.0	2.8	3.2	3.8	3.75	3.5	3.7	4.0	4.0	4.0	2.5	2.6
29	3.0	2.8	3.2	3.85	.....	3.5	3.6	4.2	4.4	3.9	3.2	2.55
30	3.0	2.7	3.2	3.85	.....	3.5	3.6	4.3	4.2	3.7	3.3	2.5
31	3.0	.....	3.2	3.8	.....	4.4	.....	4.4	.....	3.6	3.5	.....

NOTE.—Discharge relation affected by ice Dec. 15, 1912, to Feb. 28, 1913.

Daily discharge, in second-feet, of North Fork of Humboldt River near Halleck, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	7	10	5	.....	.....	70	266	70	170	136	59	59
2	7	10	15	.....	.....	70	301	70	170	120	59	59
3	7	15	15	.....	.....	70	414	70	170	112	59	48
4	10	15	10	.....	.....	94	362	59	206	105	48	38
5	12	15	15	.....	.....	94	338	59	170	105	48	38
6	15	15	7	.....	.....	106	290	59	188	92	38	30
7	15	15	15	.....	.....	120	268	59	188	81	30	30
8	15	15	10	.....	.....	134	268	59	206	64	24	24
9	15	15	15	.....	.....	150	247	59	206	48	19	19
10	15	15	15	.....	.....	168	226	59	206	38	14	19
11	15	15	10	.....	.....	204	226	59	226	30	9	14
12	15	15	7	.....	.....	204	188	48	247	24	4	9
13	15	15	7	.....	.....	204	170	48	268	19	4	4
14	15	15	10	.....	.....	168	170	48	268	14	4	4
15	15	15	.....	.....	.....	120	152	54	290	12	3	4
16	15	15	.....	.....	.....	106	152	54	314	9	3	4
17	15	15	.....	.....	.....	100	136	54	206	4	3	4
18	15	10	.....	.....	.....	82	120	59	152	2	3	4
19	15	10	.....	.....	.....	82	120	59	120	1.5	3	4
20	15	10	.....	.....	.....	70	120	70	105	4	1	4
21	15	10	.....	.....	.....	60	105	70	105	4	1	4
22	15	10	.....	.....	.....	60	105	70	92	14	1	4
23	15	10	.....	.....	.....	60	92	70	92	22	1	3
24	15	7	.....	.....	.....	55	92	70	81	30	1	3
25	15	5	.....	.....	.....	50	92	92	81	70	1	3
26	15	5	.....	.....	.....	50	81	92	81	105	1	2
27	10	7	.....	.....	.....	50	81	92	81	152	1	2
28	10	5	.....	.....	.....	42	81	120	120	120	1	2
29	10	5	.....	.....	.....	42	70	152	188	105	30	1.5
30	10	4	.....	.....	.....	42	70	170	152	81	38	1
31	10	.....	.....	.....	.....	159	.....	188	.....	70	59	.....

NOTE.—Discharge determined from two rating curves, as follows: Oct. 1, 1912, to Mar. 30, 1913, very poorly defined below gage height 2.9 feec; Apr. 4 to Sept. 30, 1913, fairly well defined between gage heights 2.5 feet and 4 feet. Discharge estimated, Dec. 15–31, 7.0 second-feet; Jan. 1–31, 10 second-feet; Feb. 1–28, 20 second-feet. Indirect methods for shifting channels used Mar. 31–Apr. 3.

Monthly discharge of North Fork of Humboldt River near Halleck, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	15	7	13.2	812	C.
November	15	4	11.4	678	C.
December	.....	.....	8.87	545	D.
January	.....	.....	*a* 10	615	D.
February	.....	.....	*a* 20	1,110	D.
March	204	42	99.5	6,120	C.
April	414	70	180	10,700	C.
May	188	48	76.2	4,690	B.
June	314	81	172	10,200	B
July	152	1.5	57.9	3,560	B.
August	59	1	18.4	1,130	B.
September	59	1	14.8	881	B.
The year	414	1	56.7	41,000	

a Estimated.

SOUTH FORK OF HUMBOLDT RIVER NEAR ELKO, NEV.

Location.—About 12 miles southwest of Elko, below all tributaries, and 6 miles above the mouth.

Records available.—August 29, 1896, to December 31, 1909; September 9, 1910, to September 30, 1913.

Drainage area.—1,150 square miles.

Gage.—Inclined staff gage on left bank near the cable, about one-fourth mile above highway bridge, has been used since February 26, 1907. Previous to that date several gages at various datums were used.

Channel and control.—Sand; somewhat shifting.

Discharge measurements.—Made from car and cable just below gage.

Winter flow.—Discharge relation affected by ice.

Accuracy.—Records poor owing to shifting character of stream bed and in 1911 to lack of discharge measurements.

Cooperation.—Gage heights furnished by the Office of Experiment Stations, United States Department of Agriculture, through F. L. Peterson, irrigation engineer.

Discharge measurements of South Fork of Humboldt River near Elko, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
May 9	Frank Weber	1.75	142	Sept. 28	J. J. Sanford	0.48	13.9
July 11	Porter and Weber	1.71	131				

Daily gage height, in feet, of South Fork of Humboldt River near Elko, Nev., for the year ending Sept. 30, 1913.

[James Cowling, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.7	1.0	1.2	1.6	2.0	2.7	2.05	1.4	3.4	2.5	1.0	0.2
2	.7	1.0	1.2	1.6	2.0	2.7	2.15	1.4	3.4	2.4	1.0	1.15
3	.7	1.0	1.2	1.6	2.1	2.7	2.0	1.4	3.4	2.35	1.0	.9
4	.8	1.1	1.2	1.6	2.2	2.7	1.9	1.4	3.2	2.3	.85	.2
5	1.2	1.1	1.2	1.6	2.2	2.8	1.8	1.45	3.2	2.3	.75	.2
6	1.25	1.1	1.2	1.6	2.3	2.8	1.7	1.5	3.2	2.25	.7	.2
7	1.1	1.1	1.2	1.6	2.3	2.7	1.7	1.55	3.2	2.15	.65	.2
8	1.1	1.2	1.2	1.6	2.3	2.7	1.7	1.65	3.1	2.1	.55	.2
9	1.1	1.2	1.3	1.6	2.3	2.6	1.7	1 75	3.1	2.0	.45	.2
10	1.1	1.2	1.3	1.6	2.3	2.35	1.7	1.85	3.0	1.75	.4	.2
11	1.1	1.2	1.3	1.6	2.3	2.1	1.7	1.9	3.2	1.7	.3	.2
12	1.1	1.2	1.3	1.6	2.3	1.85	1.7	1.8	3.4	1.6	.4	.2
13	1.1	1.2	1.3	1.8	2.3	1.65	1.7	1.8	3.25	1.6	.35	.2
14	1.0	1.2	1.3	1.8	2.3	1.35	1.7	1.7	3.1	1.55	.3	.2
15	1.0	1.2	1.3	1.8	2.4	1.05	1.7	1.6	3.0	1.5	.3	.3
16	1.0	1.2	1.3	1.8	2.6	1.0	1.7	1.6	2.9	1.45	.3	.3
17	1.0	1.2	1.5	1.9	2.7	1.0	1.85	1.6	2.8	1.4	.2	.35
18	1.0	1.2	1.5	2.0	2.7	1.0	1.95	1.75	2.8	1.4	.2	.4
19	1.0	1.2	1.6	2.0	2.7	1.0	2.05	2.0	2.6	1.3	.2	.4
20	1.0	1.2	1.6	2.0	2.7	1.0	2.0	2.1	2.4	1.3	.2	.4
21	.9	1.2	1.6	2.0	2.7	1.0	1.9	1.95	2.3	1.5	.2	.4
22	.9	1.2	1.6	2.0	2.7	1.0	1.8	1.9	2.3	1.65	.2	.4
23	.9	1.2	1.6	2.0	2.7	1.0	1.8	2.05	2.5	1.45	.2	.4
24	.9	1.2	1.6	2.0	2.7	1.0	1.8	2.6	2.8	1.7	.2	.4
25	.9	1.2	1.6	2.0	2.7	1.0	1.8	3.2	2.8	1.55	.2	.4
26	.9	1.2	1.6	2.0	2.7	1.0	1.8	3.6	2.8	1.4	.2	.4
27	1.0	1.2	1.6	2.0	2.7	1.05	1.8	3.6	2.8	1.4	.2	.5
28	1.0	1.2	1.6	2.0	2.7	1.15	1.65	3.6	2.9	1.3	.2	.5
29	1.0	1.25	1.6	2.0	.....	1.3	1.45	3.6	2.9	1.2	.2	.5
30	1.0	1.25	1.6	2.0	.....	1.4	1.4	3.6	2.9	1.3	.2	.5
31	1.0	.....	.....	2.0	.....	1.55	.....	3.4	.....	1.15	.2	.....

NOTE.—Discharge relation affected by ice Nov. 24, 1912, to Mar. 10, 1913.

Daily discharge, in second-feet, of South Fork of Humboldt River near Elko, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	20	40	.....	.....	.....	60	201	86	568	308	40	6
2	20	40	.....	.....	.....	60	223	86	568	282	40	56
3	20	40	.....	.....	.....	60	190	86	568	270	40	32
4	25	50	.....	.....	.....	60	170	86	508	258	28	6
5	62	50	.....	.....	.....	60	150	93	508	258	22	6
6	68	50	.....	.....	.....	60	132	100	508	246	20	6
7	50	50	.....	.....	.....	60	132	108	508	223	18	6
8	50	62	.....	.....	.....	60	132	124	478	212	14	6
9	50	62	.....	.....	.....	60	132	141	478	190	11	6
10	50	62	.....	.....	.....	60	132	160	448	141	10	6
11	50	62	.....	.....	.....	212	132	170	508	132	8	6
12	50	62	.....	.....	.....	160	132	150	568	116	10	6
13	50	62	.....	.....	.....	124	132	150	523	116	9	6
14	40	62	.....	.....	.....	80	132	132	478	108	8	6
15	40	62	.....	.....	.....	45	132	116	448	100	8	8
16	40	62	.....	.....	.....	40	132	116	418	93	8	8
17	40	62	.....	.....	.....	40	160	116	388	86	6	9
18	40	62	.....	.....	.....	40	180	141	388	86	6	10
19	40	62	.....	.....	.....	40	201	190	334	74	6	10
20	40	62	.....	.....	.....	40	190	212	282	74	6	10
21	32	62	.....	.....	.....	40	170	180	258	100	6	10
22	32	62	.....	.....	.....	40	150	170	258	124	6	10
23	32	62	.....	.....	.....	40	150	201	308	93	6	10
24	32	50	.....	.....	.....	40	150	334	388	132	6	10
25	32	50	.....	.....	.....	40	150	508	388	108	6	10
26	32	50	.....	.....	.....	40	150	632	388	86	6	10
27	40	50	.....	.....	.....	45	150	632	388	86	6	12
28	40	50	.....	.....	.....	56	124	632	418	74	6	12
29	40	50	.....	.....	.....	74	93	632	418	62	6	12
30	40	50	.....	.....	.....	86	86	632	418	74	6	12
31	40	.....	.....	.....	.....	108	.....	568	.....	56	6	.....

NOTE.—Discharge determined from a rating curve fairly well defined below gage height 3.5 feet. Discharge estimated during period in which discharge relation was affected by ice.

Monthly discharge of South Fork of Humboldt River near Elko, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	68	20	39.9	2,450	B.
November	.....	.....	55.4	3,300	C.
December	.....	.....	[a] 30	1,840	D.
January	.....	.....	[a] 25	1,540	D.
February	.....	.....	[a] 35	1,940	D.
March	.....	.....	65.5	4,030	C.
April	223	86	150	8,930	B.
May	632	86	248	15,200	A.
June	568	258	437	26,000	A.
July	308	56	141	8,670	A.
August	40	6	12.4	762	C.
September	56	6	10.8	643	B.
The year	632	6	104	75,300	

[a] Estimated.

MAGGIE CREEK AT CARLIN, NEV.

Location.—In sec. 26, T. 33 N., R. 52 E., one-half mile east of Carlin; one-half mile above mouth of creek, and 100 feet above the dam of the Pacific Fruit Express Co.'s ice pond.

Records available.—June 6 to September 30, 1913.

Drainage area.—Not measured.

Gage.—Staff gage nailed to pile on downstream side of bridge abutment.

Channel and control.—Sand; shifts more or less.

Discharge measurements.—Made from bridge or by wading.

Accuracy.—Records good.

Discharge measurements of Maggie Creek at Carlin, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
June 6	Frank Weber	1.85	7.79
Sept. 28	J. J. Sanford	1.75	6.72

Daily gage height, in feet, and discharge, in second-feet, of Maggie Creek at Carlin, Nev., for the year ending Sept. 30, 1913.

[W. O. Blinn, observer.]

Day.	June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1			1.8	7.3	1.65	5.6	1.5	4.4
2			1.8	7.3	1.65	5.6	1.5	4.4
3			1.78	7.1	1.65	5.6	1.6	5.2
4			1.75	6.7	1.65	5.6	1.6	5.2
5			1.75	6.7	1.65	5.6	1.6	5.2
6	1.85	8.0	1.75	6.7	1.6	5.2	1.6	5.2
7	1.85	8.0	1.8	7.3	1.6	5.2	1.6	5.2
8	1.85	8.0	1.8	7.3	1.6	5.2	1.6	5.2
9	1.85	8.0	1.75	6.7	1.6	5.2	1.6	5.2
10	1.85	8.0	1.72	6.3	1.6	5.2	1.6	5.2
11	1.90	8.6	1.7	6.1	1.6	5.2	1.6	5.2
12	1.90	8.6	1.7	6.1	1.6	5.2	1.6	5.2
13	1.88	8.3	1.65	5.6	1.6	5.2	1.6	5.2
14	1.85	8.0	1.65	5.6	1.6	5.2	1.6	5.2
15	1.85	8.0	1.65	5.6	1.6	5.2	1.6	5.2
16	1.85	8.0	1.65	5.6	1.6	5.2	1.6	5.2
17	1.85	8.0	1.65	5.6	1.6	5.2	1.6	5.2
18	1.85	8.0	1.65	5.6	1.6	5.2	1.6	5.2
19	1.85	8.0	1.65	5.6	1.6	5.2	1.6	5.2
20	1.80	7.3	1.65	5.6	1.6	5.2	1.6	5.2
21	1.75	6.7	1.65	5.6	1.6	5.2	1.6	5.2
22	1.75	6.7	1.6	5.2	1.55	4.8	1.6	5.2
23	1.78	7.1	1.6	5.2	1.55	4.8	1.6	5.2
24	1.90	8.6	1.6	5.2	1.55	4.8	1.6	5.2
25	1.85	8.0	1.6	5.2	1.55	4.8	1.6	5.2
26	1.82	7.6	1.65	5.6	1.55	4.8	1.7	6.1
27	1.85	8.0	1.65	5.6	1.6	5.2	1.75	6.7
28	1.90	8.6	1.65	5.6	1.6	5.2	1.75	6.7
29	1.90	8.6	1.65	5.6	1.55	4.8	1.75	6.7
30	1.82	7.6	1.65	5.6	1.55	4.8	1.75	6.7
31			1.65	5.6	1.55	4.8		

NOTE.—Discharge determined from a well-defined rating curve.

Monthly discharge of Maggie Creek at Carlin, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
June 6-30	8.6	6.7	7.93	393	A.
July	7.3	5.2	6.01	370	A.
August	5.6	4.8	5.16	317	A.
September	6.7	4.4	5.38	320	A.
The period				1,400	

PINE CREEK NEAR PALISADE, NEV.

Location.—At the Eureka & Palisade Railroad bridge, about 1 mile southwest of the town of Palisade.

Records available.—November 27, 1902, to December 31, 1904; January 18, 1912, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff nailed to middle pier on upstream side of bridge, installed January 18, 1912, at a different gage datum from that of vertical staff gage used 1902 to 1904, which was destroyed by flood during 1910.

Channel and control.—Sand and gravel; shifts at sudden floods.

Discharge measurements.—Made by wading.

Regulation.—None above gage.

Winter flow.—Ice forms at the station for short periods.

Accuracy.—Records fair.

Cooperation.—Gage heights and some discharge measurements furnished by the Office of Experiment Stations, United States Department of Agriculture, through F. L. Peterson, irrigation engineer.

Discharge measurements of Pine Creek near Palisade, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
Aug. 7	F. L. Peterson	0.2	2.01
Sept. 28	J. J. Sanford	.48	9.24

Daily gage height, in feet, of Pine Creek near Palisade, Nev., for the year ending Sept. 30, 1913.

[H. F. Ebert, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.5	0.9	0.9	.....	0.7	0.6	0.9	0.3	0.5	0.6	0.6	0.8
2	.5	.9	.8	.....	.7	.8	1.0	.3	.2	.6	.5	.7
3	.5	.9	1.1	.....	.8	.6	1.0	.3	.2	.6	.2	.8
4	.5	.9	.9	.....	.7	.9	1.0	.3	.2	.5	.2	.7
5	.7	.9	.9	.....	.8	1.0	1.0	.2	.1	.5	.2	.8
6	.7	.9	.8	.....	.8	1.0	.9	.2	.1	.4	.2	.7
7	.6	.9	.....	.....	.8	1.0	.9	.2	.1	.4	.2	.7
8	.6	.9	.....	.....	.8	1.0	.8	.2	.1	.4	.2	.4
9	.8	.9	.....	.....	.8	.9	.7	.2	.2	.3	.2	.6
10	.8	.9	.....	.....	.8	.9	.7	.2	.2	.3	.2	.5
11	.8	.9	.....	.....	.8	.9	.6	.2	.3	.2	.2	.5
12	.8	.9	.....	.....	.8	1.0	.6	.2	.2	.2	.2	.5
13	.8	.9	.9	.....	.8	.9	.5	.1	.2	.2	.2	.4
14	.8	.9	.9	.....	.9	.8	.5	.1	.2	.2	.2	.5
15	.8	.9	.9	.....	.9	.7	.4	.1	.2	.2	.2	.5
16	.8	.9	.9	.....	.9	.7	.4	.1	2	.2	.2	.5
17	.8	.8	.9	.....	1.0	.7	.4	.1	.2	.2	.2	.5
18	.8	.8	.9	.....	.9	.9	.4	.2	.2	.2	.2	.5
19	.8	.9	.9	.....	.8	.9	.4	.2	.2	.2	.2	.5
20	.8	.9	.9	.....	.8	.8	.5	.2	.2	.2	.2	.5
21	.8	.9	.....	.....	.8	.8	.4	.2	.2	.2	.2	.5
22	.8	.9	.....	.....	.6	.8	.4	.2	.2	.2	.2	.5
23	.8	.9	.....	.....	.7	.8	.4	.2	.3	.2	.2	.5
24	.9	.9	.....	.....	.7	.7	.3	.2	.3	.3	.2	.4
25	.9	.8	.....	.....	.7	.9	.3	.2	.3	.3	.2	.4
26	.9	.8	.....	.....	.7	1.0	.3	.1	.3	.4	.2	.5
27	.8	.8	.....	.....	.7	.8	.3	.1	.6	.5	.2	.5
28	.8	.8	.....	.....	.7	.8	.3	.1	.6	.5	.9	.5
29	.9	.8	.....	.....	.....	.8	.3	.1	.6	.6	.6	.5
30	.9	.9	.....	.....	.....	.9	.3	.1	.6	.6	.8	.5
31	.9	.....	.....	0.7	.....	1.0	.....	.1	.....	.6	.8	.....

NOTE.—Discharge relation affected by ice Dec. 7–12, 1912, and Dec. 21, 1912, to Jan. 31, 1913.

Daily discharge, in second-feet, of Pine Creek near Palisade, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	4.2	18	18	.....	10	7	18	4	10	13	13	22
2	4.2	18	14	.....	10	14	23	4	2	13	10	17
3	4.2	18	28	.....	14	7	23	4	2	13	2	22
4	4.2	18	18	.....	10	18	23	4	2	10	2	17
5	10	18	18	.....	14	23	23	2	1	10	2	22
6	10	18	14	.....	14	23	19	2	1	7	2	17
7	7	18	14	.....	14	23	20	2	1	7	2	17
8	7	18	14	.....	14	23	16	2	1	7	2	7
9	14	18	16	.....	14	18	13	2	2	4	2	13
10	14	18	16	.....	14	18	15	2	2	4	2	10
11	14	18	18	.....	14	18	11	2	4	2	2	10
12	14	18	18	.....	14	23	12	2	2	2	2	10
13	14	18	18	.....	14	18	9	1	2	2	2	7
14	14	18	18	.....	18	14	9	1	2	2	2	10
15	14	18	18	.....	18	10	7	1	2	2	2	10
16	14	18	18	.....	18	10	7	1	2	2	2	10
17	14	14	18	.....	23	10	7	1	2	2	2	10
18	14	14	18	.....	18	18	7	2	2	2	2	10
19	14	18	18	.....	14	18	7	2	2	2	2	10
20	14	18	18	.....	14	14	10	2	2	2	2	10
21	14	18	18	.....	14	14	7	2	2	2	2	10
22	14	18	18	.....	7	14	7	2	2	2	2	10
23	14	18	18	.....	10	14	7	2	4	2	2	10
24	18	18	18	.....	10	10	4	2	4	4	2	7
25	18	14	18	.....	10	18	4	2	4	4	2	7
26	18	14	18	.....	10	23	4	1	4	7	2	10
27	14	14	18	.....	10	14	4	1	13	10	2	10
28	14	14	18	.....	10	14	4	1	13	10	27	10
29	18	14	18	.....	.....	14	4	1	13	13	13	10
30	18	18	18	.....	.....	18	4	1	13	13	22	10
31	18	.....	18	.....	.....	23	.....	1	.....	13	22	.....

NOTE.—Discharge determined from two fairly well defined rating curves, applicable Oct. 1, 1912, to April 5, 1913, and April 15 to Sept. 30, 1913. Indirect methods for shifting channels used April 6–14. Discharge estimated for periods for which gage heights are not recorded.

Monthly discharge of Pine Creek near Palisade, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	18	4.2	12.8	787	B.
November	18	14	17.1	1,020	C.
December	28	14	17.7	1,090	C.
January	.....	.....	[a] 7.0	430	D.
February	23	7	13.4	744	C.
March	23	7	16.2	996	C.
April	23	4	10.9	649	D.
May	4	1	1.9	117	D.
June	13	1	3.9	232	D.
July	13	2	6.1	375	C.
August	27	2	5.1	314	C.
September	22	7	11.8	702	C.
The year	28	1	10.3	7,460	

[a] Estimated.

REESE RIVER NEAR BERLIN, NEV.

Location.—In the SW. ¼ sec. 16, T. 12 N., R. 40 E., one-fourth mile north of the south boundary of the Toiyabe National Forest, one-fourth mile below Illinois Creek, 4 miles above Stewart Creek, and 52 miles south of Austin; 2 miles above Bell's ranch house and about 7 miles east of Berlin.

Records available.—June 10 to September 30, 1913.

Gage.—Vertical staff nailed to post and securely braced to shore.
Channel and control.—Gravel and small bowlders.
Discharge measurements.—Made by wading.
Diversions.—Bell's ranch ditch heads 300 feet below. Gage is above all diversions except one.
Accuracy.—Fair, owing to lack of discharge measurements.

The following discharge measurement was made by Frank Weber:
June 10, 1913: Gage height, 2.77 feet; discharge, 17.9 second-feet.

Daily gage height, in feet, and discharge, in second-feet, of Reese River near Berlin, Nev., for the year ending Sept. 30, 1913.

[Roy Bell, observer.]

Day.	June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1			2.3	6	2.2	4	4.2	84
2			2.3	6	2.2	4	5.5	173
3			2.3	6	2.2	4	3.5	45
4			2.3	6	2.2	4	2.2	4
5			2.25	5	2.2	4	2.2	4
6			2.25	5	2.2	4	2.2	4
7			2.25	5	2.2	4	2.2	4
8			2.25	5	2.2	4	2.2	4
9			2.33	6.7	2.2	4	2.2	4
10	2.8	19	2.3	6	2.2	4	2.2	4
11	2.8	19	2.2	4	2.2	4	2.2	4
12	2.6	13	2.2	4	2.2	4	2.2	4
13	2.6	13	2.2	4	2.2	4	2.3	6
14	2.65	14	2.2	4	2.2	4	2.3	6
15	2.55	12	2.2	4	2.2	4	2.2	4
16	2.45	9.4	2.2	4	2.2	4	2.1	2.5
17	2.35	7.1	2.2	4	2.2	4	2.4	8.2
18	2.4	8.2	2.2	4	2.2	4	2.2	4
19	2.4	8.2	2.2	4	2.2	4	2.5	10
20	2.4	8.2	2.5	10.5	2.2	4	2.2	4
21	2.3	6	2.4	8.2	2.2	4	2.1	2.5
22	2.3	6	2.2	4	2.4	8.2	2.4	8.2
23	2.35	7.1	2.2	4	2.2	4	2.3	6
24	2.3	6	2.2	4	2.2	4	2.2	4
25	2.3	6	2.2	4	3.3	6	2.2	4
26	2.4	8.2	2.2	4	2.4	8.2	2.2	4
27	2.85	20	2.2	4	2.3	6	2.1	2.5
28	2.8	19	2.2	4	2.4	8.2	2.2	4
29	2.65	14	2.2	4	2.5	10	2.2	4
30	2.55	12	2.2	4	2.3	6	2.2	4
31			2.2	4	2.2	4		

NOTE.—Discharge determined from a fairly well defined rating curve.

Monthly discharge of Reese River near Berlin, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
June 10-30	20	7.1	11.2	467	B
July	10.5	4.0	4.89	301	B
August	10	4.0	4.80	295	B
September	173	2.5	14.2	845	B
The period				1,910	

BIRCH CREEK NEAR AUSTIN, NEV.

Location.—In the SW. ¼ sec. 34, T. 18 N., R. 44 E., about 1½ miles above the old stage station at Spencer's ranch, 17 miles southeast of Austin.

Records available.—June 13 to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff nailed to a birch tree.

Channel and control.—Sand and gravel; rock ledge just below gage forms a permanent control. Banks are low but do not overflow.

Discharge measurements.—Made by wading.

Diversions.—Above all diversions from the stream.

Accuracy.—Records fair.

Cooperation.—Gage heights furnished by John H. Spencer.

The following discharge measurement was made by Frank Weber:

June 13, 1913: Gage height, 2.00 feet; discharge, 4.06 second-feet.

Daily gage height, in feet, and discharge, in second-feet, of Birch Creek near Austin, Nev., for the year ending Sept. 30, 1913.

[John H. Spencer, observer.]

Day.	June.		July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	1.98	3.8	1.85	1.9	1.95	3.3
2	.....	.....	1.98	3.8	1.82	1.5	1.95	3.3
3	.....	.....	1.95	3.3	1.82	1.5	1.95	3.3
4	.....	.....	.....	3.3	1.82	1.5	2.25	11
5	.....	.....	1.95	3.3	1.82	1.5	2.25	11
6	.....	.....	1.95	3.3	1.90	2.5	2.00	4.1
7	.....	.....	1.95	3.3	1.95	3.3	2.00	4.1
8	.....	.....	1.92	2.8	2.00	4.1	1.98	3.8
9	.....	.....	1.92	2.8	1.98	3.8	1.98	3.8
10	.....	.....	1.92	2.8	1.95	3.3	1.98	3.8
11	.....	.....	1.92	2.8	1.95	3.3	1.98	3.8
12	.....	.....	1.92	2.8	1.92	2.8	1.98	3.8
13	1.98	3.8	1.90	2.5	1.90	2.5	1.98	3.8
14	1.98	3.8	1.90	2.5	1.88	2.3	1.95	3.3
15	1.98	3.8	1.98	3.8	1.88	2.3	1.95	3.3
16	1.98	3.8	1.95	3.3	1.90	2.5	1.95	3.3
17	1.98	3.8	1.95	3.3	1.90	2.5	1.95	3.3
18	2.00	4.1	1.92	2.8	1.90	2.5	1.95	3.3
19	1.98	3.8	1.95	3.3	1.92	2.8	1.95	3.3
20	1.95	3.3	2.00	4.1	1.92	2.8	1.95	3.3
21	1.95	3.3	1.98	3.8	1.92	2.8	.....	3.3
22	1.98	3.8	1.98	3.8	1.98	3.8	.....	3.3
23	1.98	3.8	1.98	3.8	1.98	3.8	.....	3.3
24	1.98	3.8	1.92	2.8	1.98	3.8	1.95	3.3
25	1.98	3.8	1.92	2.8	1.98	3.8	1.95	3.3
26	2.02	4.5	1.90	2.5	1.98	3.8	1.95	3.3
27	2.22	9.7	1.90	2.5	1.95	3.3	1.95	3.3
28	2.28	12	1.90	2.5	1.95	3.3	1.95	3.3
29	2.18	8.5	1.88	2.3	1.95	3.3	1.95	3.3
30	2.08	5.9	1.88	2.3	1.95	3.3	1.95	3.3
31	.....	.....	1.88	2.3	1.95	3.3	.....	.....

NOTE.—Discharge determined from a poorly defined rating curve.

Monthly discharge of Birch Creek near Austin, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (in acre-feet).	Accuracy.
	Maxmum.	Minimum.	Mean.		
June 13–30	12.0	3.3	4.96	177	C.
July	4.1	2.3	3.07	189	C.
August	4.1	1.5	2.89	178	C.
September	11.0	3.3	3.97	236	C.
The period	.....	.....	.....	780	

PYRAMID AND WINNEMUCCA LAKES BASINS.

LAKE TAHOE AT TAHOE, CAL.

Location.—In the SE. ¼ sec. 6, T. 15 N., R. 17 E., near the outlet of the lake, at Tahoe.

Records available.—1900 to September 30, 1913.

Drainage area.—519 square miles (including water surface of lake).

Gage.—Vertical staff fastened to piling of boat landing near outlet. Datum is 6,220 feet above sea level. Mean low-water elevation of lake, 6,226 feet.

Cooperation.—Record furnished by United States Reclamation Service.

Daily gage height, in feet, of Lake Tahoe at Tahoe, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	6.20	.....	5.78	.....	5.68	.....	.....	6.50	.....	6.68	.....
2	.....	.....	.....	5.75	.....	.....	.....	.....	6.52	.....	6.71	.....
3	6.71	.....	6.05	5.74	.....	5.69	5.67	5.88	6.55	.....	6.70	.....
4	.....	6.18	6.04	.....	5.85	5.69	.....	5.90	6.57	.....	6.67	6.28
5	.....	.....	.....	.....	5.84	5.70	.....	5.90	6.59	6.68	6.65	6.28
6	.....	.....	.....	.....	5.80	5.70	5.70	5.91	6.62	6.68	.....	6.24
7	.....	.....	.....	.....	.....	5.71	5.73	.....	.....	6.67	6.63	6.21
8	6.58	6.20	.....	.....	.....	.....	5.76	.....	6.67	6.65	6.62	6.21
9	.....	.....	6.00	.....	5.80	.....	.....	.....	.....	6.65	6.61	.....
10	.....	.....	5.95	.....	5.80	.....	5.76	.....	.....	6.65	6.60	6.18
11	6.52	6.25	5.95	5.65	5.79	.....	.....	6.00	6.70	6.65	6.60	.....
12	.....	6.25	5.94	5.60	.....	5.65	.....	.....	6.70	6.63	6.59	6.16
13	6.50	6.25	.....	.....	.....	5.64	.....	.....	.....	.....	.....	.....
14	6.48	6.25	5.90	.....	.....	5.63	.....	6.03	.....	.....	.....	6.10
15	6.48	6.23	5.90	5.85	5.80	.....	.....	.....	6.70	.....	6.52	6.06
16	6.48	6.21	5.90	.....	5.80	.....	5.76	6.04	.....	6.60	6.50	.....
17	6.45	6.20	5.98	.....	.....	5.58	5.78	.....	.....	6.59	6.48	6.05
18	6.44	6.18	6.05	.....	.....	.....	.....	6.10	6.70	6.58	6.46	6.05
19	.....	.....	6.08	6.00	.....	.....	.....	6.12	.....	6.58	6.44	6.04
20	.....	.....	6.00	.....	.....	.....	.....	6.15	6.72	6.58	6.42	.....
21	6.36	.....	.....	6.00	.....	.....	5.82	6.20	6.72	6.60	6.41	.....
22	.....	6.12	5.90	.....	.....	.....	5.84	6.22	.....	6.59	6.40	6.00
23	.....	6.15	5.87	.....	.....	.....	.....	6.25	.....	6.61	6.39	.....
24	.....	6.14	5.90	5.96	.....	5.65	5.86	6.27	.....	.....	6.39	.....
25	.....	6.13	5.88	5.95	.....	.....	5.87	6.27	.....	6.65	6.40	.....
26	.....	6.12	.....	5.93	5.70	.....	5.88	6.30	.....	6.65	6.39	5.85
27	6.28	6.11	5.87	5.90	.....	5.62	.....	.....	.....	.....	.....	5.85
28	6.25	.....	5.82	.....	5.70	.....	.....	.....	6.67	6.66	6.39	.....
29	.....	.....	.....	5.90	.....	5.64	.....	.....	6.65	6.66	6.39	.....
30	6.22	.....	.....	5.90	.....	5.65	.....	.....	6.65	6.69	6.39	.....
31	6.20	.....	.....	.....	.....	5.66	.....	6.47	.....	6.66	6.39	.....

NOTE.—Lake was too rough for accurate reading on days for which gage heights are not recorded.

TRUCKEE RIVER AT TAHOE, CAL.

Location.—In the NW. ¼ sec. 7, T. 15 N., R. 17 E., at Tahoe, a short distance below dam at outlet of Lake Tahoe.

Records available.—July 3, 1895, to February 29, 1896; June 17, 1900, to September 30, 1913.

Drainage area.—519 square miles.

Gage.—Vertical staff fastened to a large cottonwood tree on left bank, 300 feet below dam at outlet of Lake Tahoe. Original gage was destroyed by dredging operations July 15, 1912.

Channel and control.—Gravel; practically permanent.

Discharge measurements.—Made from car and cable 140 feet below gage or by wading.

Winter flow.—Discharge relation little affected by ice.

Regulation.—Flow regulated by operation of gates in dam at Lake Tahoe.

Accuracy.—Records excellent.

Cooperation.—Complete record furnished by Stone & Webster Engineering Corporation through United States Reclamation Service.

Discharge measurements of Truckee River at Tahoe, Cal., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
June 7	Lasley Lee	−0.03	9.1
Aug. 13	H. J. Tompkins	3.42	376

NOTE.—Discharge measurements made by engineers of the United States Geological Survey and agree with the record furnished the United States Reclamation Service by Stone & Webster Engineering Corporation.

Daily discharge, in second-feet, of Truckee River at Tahoe, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	330	365	215	324	295	246	10	7	8	43	167	350
2	330	355	270	324	295	246	10	7	8	82	176	350
3	330	350	275	324	295	246	10	7	8	130	196	350
4	307	340	295	324	295	246	10	7	8	160	196	340
5	275	350	260	334	295	246	10	7	8	165	225	320
6	275	360	295	386	295	246	10	7	8	165	253	320
7	275	310	280	386	295	225	10	7	8	165	253	320
8	294	285	280	386	295	225	10	7	8	186	324	320
9	305	265	280	352	295	191	10	7	8	210	395	355
10	305	245	280	386	295	145	10	6	8	250	395	430
11	305	235	280	386	295	145	10	6	8	275	395	430
12	388	240	280	367	295	200	10	6	8	275	395	430
13	333	245	280	352	295	200	9	6	8	275	395	430
14	358	220	280	352	282	168	9	6	8	305	403	430
15	333	250	280	375	270	150	9	6	8	320	410	430
16	343	250	280	400	258	175	9	6	8	345	430	430
17	358	250	280	422	246	175	7	6	8	350	430	445
18	338	250	280	442	246	175	7	6	8	350	430	465
19	375	250	280	460	258	160	7	6	9	360	415	465
20	320	250	280	423	258	145	7	6	15	365	415	465
21	320	250	280	422	252	160	7	6	29	365	415	465
22	340	250	280	400	246	175	7	6	14	365	430	465
23	340	250	295	422	246	225	7	6	23	190	430	465
24	340	250	325	392	246	245	7	6	26	185	464	465
25	340	250	340	352	246	225	8	6	30	207	520	465
26	390	250	350	352	246	225	8	6	33	207	520	465
27	420	255	350	325	246	225	7	6	33	207	494	465
28	355	255	350	310	246	215	5	6	30	207	450	465
29	365	255	350	315	.....	190	5	6	38	207	430	465
30	350	255	350	310	.....	175	5	6	58	207	418	465
31	355	.....	350	295	.....	75	.....	6	.....	185	360	.....

Monthly discharge of Truckee River at Tahoe, Cal., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
October	420	275	335	20,600
November	365	220	273	16,200
December	350	215	295	18,100
January	460	295	368	22,600
February	295	246	272	15,100
March	246	75	196	12,100
April	10	5	8.3	494
May	7	6	6.3	387
June	58	8	16.1	958
July	365	43	236	14,500
August	520	167	375	23,100
September	465	320	418	24,900
The year	520	5	234	169,000

NOTE.—Monthly discharge computed by engineers of the United States Geological Survey.

TRUCKEE RIVER AT ICELAND, CAL.

Location.—Above dam of ice company, 400 feet northeast of Southern Pacific Co.'s railroad station at Iceland, and about 23 miles west of Reno, Nev.

Records available.—August 1, 1912, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Barrett & Lawrence water-stage recorder on right bank above dam.

Channel and control.—Small bowlders; fairly smooth and permanent.

Discharge measurements.—Made from car and cable 130 feet above gage.

Winter flow.—Discharge relation probably somewhat affected by ice.

Cooperation.—Complete record furnished by Stone & Webster Engineering Corporation through the United States Reclamation Service.

Discharge measurements of Truckee River at Iceland, Cal., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Feb. 16	H. J. Tompkins	1.48	383
June 6	Lasley Lee	2.38	1,030

NOTE.—Discharge measurements made by engineers of the United States Geological Survey and agree with the record furnished the United States Reclamation Service by Stone & Webster Engineering Corporation.

Daily discharge, in second-feet, of Truckee River at Iceland, Cal., for the year ending Sept. 30, 1912.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1	405	585	11	590	525	21	605	370
2	400	585	12	600	545	22	600	435
3	400	600	13	590	370	23	600	365
4	400	600	14	620	370	24	590	365
5	390	590	15	630	370	25	590	365
6	375	620	16	620	375	26	590	355
7	360	755	17	610	400	27	590	365
8	360	645	18	605	370	28	585	355
9	520	525	19	605	365	29	580	360
10	560	515	20	605	365	30	575	360
						31	550	.....

Daily discharge, in second-feet, of Truckee River at Iceland, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	420	475	340	410	400	415	970	920	1,210	370	355	450
2	405	430	405	415	395	415	835	790	1,180	380	370	450
3	400	465	350	410	400	425	600	825	1,115	350	370	480
4	420	460	340	400	400	430	715	910	1,075	445	350	480
5	445	445	335	408	400	415	1,010	1,075	1,015	445	350	460
6	405	685	415	457	400	440	755	1,300	1,055	445	370	400
7	345	765	360	455	400	465	675	1,405	1,135	440	400	425
8	340	570	350	452	405	460	715	1,490	980	420	500	425
9	350	575	350	416	400	460	755	1,530	895	415	495	420
10	355	535	345	447	405	450	865	1,530	745	415	495	515
11	360	420	385	445	410	450	1,060	1,330	610	470	495	530
12	360	405	385	423	405	530	1,200	1,195	620	475	495	525
13	385	400	360	414	410	480	1,200	1,095	675	470	495	520
14	410	385	415	421	400	450	950	1,075	690	465	500	495
15	385	420	405	450	410	425	755	1,130	635	475	585	480
16	395	405	420	482	420	425	705	1,250	610	490	585	480
17	410	390	420	510	430	450	755	1,425	580	520	560	480
18	390	390	415	537	430	460	845	1,875	560	530	580	520
19	370	390	405	561	420	445	755	1,630	540	535	550	520
20	425	410	385	531	430	430	795	1,480	490	555	550	520
21	370	390	405	536	415	400	950	1,425	415	610	645	520
22	365	405	405	521	390	460	1,200	1,560	420	760	550	520
23	385	390	420	549	390	460	1,150	1,595	410	900	550	500
24	385	380	425	526	380	460	1,150	1,595	460	440	610	480
25	380	370	420	490	380	470	1,270	1,595	440	460	620	480
26	440	360	445	485	385	440	1,570	1,550	420	530	615	480
27	520	365	440	490	385	435	1,585	1,595	410	520	620	500
28	470	360	435	455	395	490	1,355	1,490	390	545	630	490
29	490	360	490	410	.....	515	1,270	1,275	395	480	550	490
30	485	350	505	440	.....	625	1,130	1,280	375	475	550	480
31	485	.....	505	440	.....	810	.....	1,280	.....	470	515	.....

NOTE.—A diversion of 30 second-feet carried around the gage during April has been added into the monthly total.

Monthly discharge of Truckee River at Iceland, Cal., for the years ending Sept. 30, 1912–1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1912.				
August	630	360	539	33,100
September	755	355	459	27,300
1912–13.				
October	520	340	405	24,900
November	765	350	438	26,100
December	505	335	403	24,800
January	561	400	464	28,500
February	430	380	403	22,400
March	810	415	467	28,700
April	1,585	600	[a]1,010	60,100
May	1,875	790	1,340	82,400
June	1,210	375	685	40,800
July	900	350	494	30,400
August	645	350	513	31,500
September	530	400	484	28,800
The year	1,875	335	593	429,000

[a] Includes 30 second-feet diverted around gage.

NOTE.—Monthly discharge computed by engineers of United States Geological Survey.

TRUCKEE RIVER AT RENO, NEV.

Location.—At Virginia Street Bridge in Reno, 6 miles above mouth of Steamboat Creek, and 12 miles below Nevada-California line.

Records available.—July 1, 1906, to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff fastened to retaining wall on left bank about 30 feet below Virginia Street Bridge. Datum 4,481.60 feet above sea level.

Channel and control.—Gravel and bowlders; fairly permanent.

Discharge measurements.—Made from Rock Street Bridge, about 1,000 feet below gage, or by wading.

Winter flow.—Discharge relation little affected by ice.

Regulation.—Several power plants and storage dams above the station affect the flow.

Diversions.—Water is diverted above and below the station for irrigation in the Truckee Valley.

Accuracy.—Results good.

Cooperation.—Gage heights furnished by the United States Weather Bureau.

Discharge measurements of Truckee River at Reno, Nev., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Feb. 17	H. J. Tompkins	1.40	342	July 10	Frank Weber	0.00	21.2
July 9	Frank Weber	.06	25.2				

Daily gage height, in feet, of Truckee River at Reno, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.2	1.4	1.5	1.4	1.3	1.3	2.5	1.9	2.5	—0.1	1.0	1.2
2	.7	1.4	1.3	1.4	1.4	1.3	2.3	1.6	2.4	— .1	.9	1.1
3	.6	1.6	1.3	1.4	1.4	1.3	1.9	1.6	2.3	.2	1.0	1.0
4	1.1	1.4	1.2	1.4	1.3	1.3	1.7	1.7	2.3	.6	.7	1.1
5	1.0	1.4	1.2	1.6	1.4	1.3	2.3	2.0	2.1	.6	.4	1.0
6	1.0	1.4	1.2	1.6	1.3	1.3	2.1	2.3	2.2	.5	.0	.8
7	.8	2.5	1.2	1.6	1.3	1.4	1.9	2.5	2.3	.5	.0	.7
8	.8	1.7	1.3	2.0	1.3	1.4	1.9	2.6	2.2	.3	.2	.7
9	.9	1.7	1.2	1.7	1.3	1.4	2.1	2.5	2.0	.1	.5	.6
10	.8	1.7	1.2	1.7	1.4	1.5	2.1	2.7	2.0	.0	.6	.5
11	.7	1.7	1.2	1.7	1.4	1.4	2.4	2.5	1.5	.6	.7	1.0
12	.8	1.4	1.3	1.7	1.4	1.3	2.6	2.2	1.2	.7	.7	1.0
13	.9	1.3	1.3	1.7	1.4	1.4	2.5	2.1	1.2	.6	.7	1.0
14	1.1	1.2	1.3	1.6	1.4	1.3	2.2	2.0	1.2	.7	1.0	1.0
15	.9	1.4	1.4	1.6	1.4	1.3	1.9	2.0	1.3	.2	.7	.9
16	1.0	1.4	1.3	1.6	1.4	1.4	1.8	2.2	1.2	.5	1.2	.8
17	.9	1.4	1.3	1.6	1.4	1.4	1.8	2.4	1.1	.5	1.5	.9
18	.9	1.2	1.3	1.5	1.4	1.4	1.9	2.9	1.0	.7	1.3	.8
19	.8	1.1	1.2	1.6	1.4	1.3	1.8	2.8	1.0	.7	1.0	.9
20	.8	1.2	1.2	1.6	1.4	1.4	1.8	2.6	.9	1.4	1.0	.9
21	.8	1.2	1.2	1.6	1.4	1.4	1.9	2.6	.6	.9	.9	1.0
22	.9	1.2	1.2	1.6	1.3	1.3	2.4	2.7	.6	1.3	.9	.9
23	1.0	1.2	1.4	1.5	1.3	1.3	2.6	2.8	.6	2.2	1.2	.9
24	1.0	1.1	1.3	1.5	1.3	1.3	2.4	2.7	.3	1.7	1.4	.8
25	1.1	1.2	1.3	1.6	1.3	1.4	2.4	2.8	.3	.9	1.1	.8
26	1.2	1.2	1.7	1.5	1.3	1.4	2.5	2.6	.2	1.0	1.1	.9
27	1.5	1.2	1.7	1.5	1.3	1.4	2.9	2.7	.1	1.6	1.1	.9
28	1.3	1.2	1.5	1.5	1.2	1.4	2.5	2.6	.1	1.5	1.5	1.0
29	1.4	1.1	1.5	1.4	.....	1.5	2.2	2.4	.1	1.5	1.5	1.0
30	1.4	1.2	1.5	1.3	.....	1.9	2.0	2.5	.0	1.2	1.5	1.1
31	1.4	.....	1.5	1.4	.....	2.1	.....	2.4	.....	1.1	1.5	.....

Daily discharge, in second-feet, of Truckee River at Reno, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	32	312	388	338	293	293	1,120	630	1,120	19	185	250
2	104	312	293	338	338	293	940	441	1,030	19	158	215
3	87	412	293	338	338	293	630	441	940	37	185	185
4	198	312	250	338	293	293	500	500	940	96	114	215
5	168	312	250	441	338	293	940	700	780	96	63	185
6	168	312	250	441	293	293	780	940	860	79	21	133
7	124	1,100	250	441	293	338	630	1,120	940	79	21	114
8	124	500	293	700	293	338	630	1,220	860	49	37	114
9	144	500	250	500	293	338	780	1,120	700	27	79	96
10	124	500	250	500	338	388	780	1,320	700	21	96	79
11	104	500	250	500	338	338	1,030	1,120	388	96	114	185
12	124	338	293	500	338	293	1,220	860	250	114	114	185
13	144	293	293	500	338	338	1,120	780	250	96	114	185
14	198	250	293	441	338	293	860	700	250	114	185	185
15	144	338	338	441	338	293	630	700	293	37	114	158
16	168	338	293	441	338	338	562	860	250	79	250	133
17	144	338	293	441	338	338	562	1,030	215	79	388	158
18	144	250	293	388	338	338	630	1,520	185	114	293	133
19	124	215	250	441	338	293	562	1,420	185	114	185	158
20	124	250	250	441	338	338	562	1,220	158	338	185	158
21	124	250	250	441	338	338	630	1,220	96	158	158	185
22	144	250	250	441	293	293	1,030	1,320	96	293	158	158
23	168	250	338	388	293	293	1,220	1,420	96	860	250	158
24	168	215	293	388	293	293	1,030	1,320	49	500	338	133
25	198	250	293	441	293	338	1,030	1,420	49	158	215	133
26	232	250	500	388	293	338	1,120	1,220	37	185	215	158
27	360	250	500	388	293	338	1,520	1,320	27	441	215	158
28	270	250	388	388	250	338	1,120	1,220	27	388	388	185
29	312	215	388	338	.....	388	860	1,030	27	388	388	185
30	312	250	388	293	.....	630	700	1,120	21	250	388	215
31	312	.....	388	338	.....	780	.....	1,030	.....	215	388	.....

NOTE.—Discharge determined from two well-defined rating curves, applicable Oct. 1, to Nov. 7, 1912, and Nov. 8, 1912, to Sept. 30, 1913.

Monthly discharge of Truckee River at Reno, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	360	32	171	10,500	B.
November	1,100	215	337	20,100	B.
December	500	250	309	19,000	B.
January	700	293	424	26,100	A.
February	338	250	316	17,600	A.
March	780	293	346	21,300	A.
April	1,520	500	858	51,100	A.
May	1,520	441	1,040	64,000	A.
June	1,120	21	394	23,400	A.
July	860	19	179	11,000	B.
August	388	21	194	11,900	B.
September	250	79	163	9,700	B.
The year	1,520	19	394	286,000	

TRUCKEE RIVER AT CLARK, NEV.

Location.—In the SE. ¼ sec. 26, T. 20 N., R. 22 E., at highway bridge, about 600 feet from the Southern Pacific Railroad station at Clark.

Records available.—July 1, 1907, to June 6, 1910;[1] August 1, 1910, to September 30, 1913.

Drainage area.—1,740 square miles.

Gage.—Vertical staff on south abutment of bridge.

Channel and control.—Rock and gravel; probably permanent.

Discharge measurements.—Made from highway bridge.

Winter flow.—Ice does not affect discharge relation.

Regulation.—Several power plants above the station; flow also subject to manipulation of outlet gates at Lake Tahoe.

Diversions.—Water is used for irrigation in Truckee Valley above the station.

Accuracy.—No measurements were made during 1913, but the old rating curve is believed to be applicable.

Cooperation.—Gage heights and discharge measurements furnished by the United States Reclamation Service.

Daily gage height, in feet, of Truckee River at Clark, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.1	3.2	2.6	3.1	2.9	2.8	4.2	3.3	4.4	1.9	2.4	3.5
2	2.1	3.2	2.7	3.0	2.9	2.8	4.1	3.3	4.4	1.8	2.35	2.45
3	2.8	3.2	2.7	2.9	2.9	2.8	3.6	3.2	4.2	1.8	2.25	2.6
4	2.7	3.2	2.7	2.9	2.9	2.8	3.1	3.1	4.0	1.8	2.0	2.35
5	2.6	3.2	2.7	2.8	2.9	2.8	3.1	3.0	4.0	1.8	1.4	3.2
6	2.6	3.3	2.6	2.6	2.9	2.8	3.2	3.2	4.6	1.9	1.35	2.75
7	2.6	4.4	2.6	2.6	2.9	2.8	3.2	3.2	4.2	1.9	1.2	2.5
8	2.6	3.6	2.6	2.6	2.9	2.8	3.2	3.7	4.2	1.85	1.5	2.0
9	2.6	3.3	2.6	2.6	2.9	2.8	3.3	4.0	4.0	1.9	1.15	2.1
10	2.6	3.0	2.6	2.6	2.9	2.8	3.4	4.2	3.7	1.85	1.4	2.0
11	2.5	3.0	2.6	2.6	2.9	2.7	3.5	4.5	3.3	1.9	1.8	2.5
12	2.5	2.9	2.6	2.7	2.9	2.7	4.2	3.9	2.9	1.9	1.75	2.15
13	2.7	2.8	2.6	2.7	2.9	2.7	4.7	3.9	2.8	2.0	1.8	2.1
14	2.7	2.8	2.6	2.7	2.9	2.7	4.6	3.9	2.8	2.0	2.0	2.5
15	2.7	2.7	2.9	2.7	2.9	2.7	3.8	3.7	2.6	1.9	2.0	2.0
16	2.7	2.7	2.8	2.7	2.9	2.7	3.2	3.7	2.3	1.85	1.95	2.4
17	2.7	2.7	2.8	2.8	2.9	2.7	3.1	3.7	2.2	1.85	2.95	2.45
18	2.7	2.7	2.8	3.1	2.9	2.7	3.2	4.0	2.1	1.8	1.95	2.5
19	2.5	2.7	2.7	3.0	2.9	2.7	3.3	4.6	2.1	2.0	2.0	2.9
20	2.7	2.7	2.7	3.0	2.9	2.7	3.2	4.2	2.0	3.5	1.9	2.9
21	2.7	2.7	2.7	2.8	2.9	2.6	3.4	4.2	2.0	2.3	1.95	2.4
22	2.7	2.7	2.6	3.1	2.9	2.6	3.8	4.4	2.0	2.2	1.85	2.4
23	2.7	2.7	2.6	3.3	2.9	2.6	3.5	4.5	1.9	3.8	3.0	2.4
24	2.7	2.7	2.6	3.1	2.9	2.7	3.5	4.4	1.8	4.0	3.0	2.5
25	2.7	2.7	2.6	3.0	2.9	2.8	3.7	4.4	1.8	3.3	2.9	2.5
26	2.9	2.7	2.6	3.0	2.9	2.8	3.8	4.3	1.9	3.4	2.9	2.2
27	3.0	2.7	2.7	2.9	2.8	2.7	4.6	4.3	1.9	3.4	2.65	2.4
28	3.0	2.7	2.7	2.9	2.8	2.7	4.1	4.4	1.9	3.2	2.0	2.55
29	3.1	2.7	2.8	2.8	.....	2.8	3.9	4.9	1.9	3.4	3.4	2.5
30	3.0	2.6	2.9	2.7	.....	3.1	3.7	4.4	1.9	3.0	4.0	2.4
31	3.0	.....	3.0	2.7	.....	3.6	.....	4.4	.....	2.4	4.0	.....

[1] At Derby dam, where the discharge is practically the same as at Clark.

Daily discharge, in second-feet, of Truckee River at Clark, Nev., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	230	630	380	580	500	460	1,210	680	1,350	180	320	780
2	230	630	420	540	500	460	1,140	680	1,350	160	305	335
3	460	630	420	500	500	460	840	630	1,210	160	275	380
4	420	630	420	500	500	460	580	580	1,080	160	205	305
5	380	630	420	460	500	460	580	540	1,080	160	90	630
6	380	680	380	380	500	460	630	630	1,510	180	85	440
7	380	1,350	380	380	500	460	630	630	1,210	180	70	350
8	380	840	380	380	500	460	630	900	1,210	170	105	205
9	380	680	380	380	500	460	680	1,080	1,080	180	65	230
10	380	540	380	380	500	460	730	1,210	900	170	90	205
11	350	540	380	380	500	420	780	1,430	680	180	160	350
12	350	500	380	420	500	420	1,210	1,020	500	180	150	245
13	420	460	380	420	500	420	1,590	1,020	460	205	160	230
14	420	460	380	420	500	420	1,510	1,020	460	205	205	350
15	420	420	500	420	500	420	960	900	380	180	205	205
16	420	420	460	420	500	420	630	900	290	170	192	320
17	420	420	460	460	500	420	580	900	260	170	520	335
18	420	420	460	580	500	420	630	1,080	230	160	192	350
19	350	420	420	540	500	420	680	1,510	230	205	205	500
20	420	420	420	540	500	420	630	1,210	205	780	180	500
21	420	420	420	460	500	380	730	1,210	205	290	192	320
22	420	420	380	580	500	380	960	1,350	205	260	170	320
23	420	420	380	680	500	380	780	1,430	180	960	540	320
24	420	420	380	580	500	420	780	1,350	160	1,080	540	350
25	420	420	380	540	500	460	900	1,350	160	680	500	350
26	500	420	380	540	500	460	960	1,280	180	730	500	260
27	540	420	420	500	460	420	1,510	1,280	180	730	400	320
28	540	420	420	500	460	420	1,140	1,350	180	630	205	365
29	580	420	460	460	.....	460	1,020	1,750	180	730	730	350
30	540	380	500	420	.....	580	900	1,350	180	540	1,080	320
31	540	.....	540	420	.....	840	.....	1,350	.....	320	1,080	.....

Monthly discharge of Truckee River at Clark, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
October	580	230	418	25,700
November	1,350	380	529	31,500
December	540	380	415	25,500
January	680	380	476	29,300
February	500	460	497	27,600
March	840	380	452	27,800
April	1,590	580	884	52,600
May	1,750	540	1,080	66,400
June	1,510	160	583	34,700
July	1,080	160	358	22,000
August	1,080	65	313	19,200
September	780	205	351	20,900
The year	1,750	65	530	383,000

NOTE.—Daily and monthly discharge computed by engineers of the United States Geological Survey.

DONNER CREEK NEAR TRUCKEE, CAL.

Location.—In the NE. ¼ sec. 17, T. 17 N., R. 16 E., below dam of the Donner Creek Ice Co., below mouth of Cold Creek, and 1½ miles west of Truckee.
Records availale.—October 23, 1902, to September 30, 1913.
Drainage area.—30 square miles.
Gage.—Inclined staff on left bank 375 feet below dam; prior to June 1, 1909, several gages were used.
Channel and control.—Gravel; somewhat shifting at high stages.
Discharge measurements.—Made from car and cable at gage, or by wading.
Winter flow.—Discharge relation affected at times by ice.
Regulation.—Flow is controlled by operation of outlet gates at dam.
Accuracy.—Rating curve fairly well defined; results good.
Cooperation.—Gage heights furnished by United States Reclamation Service.

Discharge measurements of Donner Creek near Truckee, Cal., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
June 9	Lasley Lee	0.70	78
Aug. 15	H. J. Tompkins	.68	82

Daily gage height, in feet, of Donner Creek near Truckee, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	−0.4	−0.3	−0.32	−0.28	−0.29	−0.29	0.18	0.56	0.52	−0.13	−0.42	−0.41
2	− .4	− .4	− .32	− .32	− .29	− .50	.15	.53	.40	− .12	− .40	− .40
3	− .4	− .4	− .34	− .34	− .19	− .50	.10	.53	.31	− .10	− .41	− .43
4	− .4	− .4	− .34	− .44	− .28	− .44	.16	.56	.33	− .07	− .40	− .40
5	− .4	− .4	− .34	− .28	− .46	− .46	.23	.56	.32	− .04	− .40	− .36
6	− .4	.2	− .35	− .58	− .38	− .48	.18	.56	.35	− .09	− .41	− .41
7	− .4	.1	− .37	− .45	− .34	− .47	.17	.58	.32	− .10	− .37	− .43
8	− .4	.1	− .38	− .45	− .44	− .44	.18	1.14	.20	− .18	− .31	− .42
9	− .4	.1	− .38	− .45	− .54	− .41	.22	1.4	.27	− .26	− .03	− .42
10	− .4	.1	− .42	− .45	− .43	− .34	.24	.9	.32	− .18	.47	− .47
11	− .4	.1	− .43	− .45	− .38	− .30	.26	.67	.40	− .28	1.32	− .44
12	− .4	.1	− .44	− .45	− .34	− .31	.28	.58	.34	− .29	1.5	− .42
13	− .4	.1	− .44	− .10	− .35	− .25	.28	.54	.28	− .33	1.32	− .40
14	− .4	− .15	− .44	− .10	− .50	− .22	.30	.46	.27	− .30	.92	− .41
15	− .4	− .2	− .17	− .10	− .48	− .16	.30	.27	.26	− .28	.60	− .46
16	− .4	− .2	− .32	− .10	− .48	− .18	.32	.26	.21	− .32	.52	− .48
17	− .4	− .2	− .35	− .10	− .51	− .20	.33	.34	.17	− .30	.07	− .47
18	− .4	− .2	− .35	1.5	− .31	− .17	.36	.33	.13	− .38	.02	− .42
19	− .4	− .2	− .14	1.85	− .26	− .15	.40	.24	.11	− .41	− .13	− .40
20	− .4	− .2	− .19	1.85	− .16	− .14	.43	.26	.02	− .39	− .23	− .44
21	− .4	− .2	− .06	1.85	− .26	− .14	.50	.34	− .06	− .39	− .26	− .43
22	− .4	− .2	− .05	1.85	− .31	− .14	.52	.44	− .08	− .37	− .33	− .46
23	− .4	− .2	− .05	1.85	− .46	− .12	.55	.52	− .18	.17	− .36	− .53
24	− .3	− .2	− .22	1.85	− .47	− .12	.58	.57	− .10	.57	− .36	− .68
25	− .3	− .2	− .22	1.85	− .45	− .14	.54	.61	− .16	− .08	− .40	− .63
26	− .3	− .2	− .16	1.85	− .50	− .01	.74	.62	− .06	− .28	− .45	− .76
27	− .3	− .15	− .19	1.85	− .40	− .11	.72	.54	− .10	− .34	− .43	− .78
28	− .3	− .15	− .49	.70	− .28	− .12	.67	.57	− .19	− .30	− .42	− .68
29	− .3	− .15	− .60	− .16	.....	− .11	.52	.57	− .16	− .33	− .38	− .60
30	− .3	− .15	− .59	− .14	.....	− .05	.54	.55	− .18	− .39	− .42	− .60
31	− .3	.....	− .55	− .25	.....	+ .05	.....	.54	.....	− .42	− .43	.....

NOTE.—Stream blocked with ice and snow Jan. 18-28.

Daily discharge, in second-feet, of Donner Creek near Truckee, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2	3.5	3.2	4.1	3.2	3.2	30	68	63	9.6	1.8	1.9
2	2	2	3.2	3.2	3.2	.8	28	64	49	10	2.0	2.0
3	2	2	2.9	2.9	6.1	.8	24	64	40	11	1.9	1.6
4	2	2	2.9	1.5	4.1	1.5	28	66	42	13	2.0	2.0
5	2	2	2.9	4.1	1.3	1.3	33	68	41	15	2.0	2.6
6	2	31	2.8	.2	2.3	1.0	30	68	44	10	1.9	1.9
7	2	24	2.4	1.4	2.9	1.2	29	70	41	11	2.4	1.6
8	2	24	2.3	1.4	1.5	1.5	30	175	31	7.4	3.4	1.8
9	2	24	2.3	1.4	.5	1.9	33	246	37	4.7	15	1.8
10	2	24	1.8	1.4	1.6	2.9	34	121	41	7.4	57	1.2
11	2	24	1.6	1.4	2.3	3.5	36	83	49	4.1	223	1.5
12	2	24	1.5	1.4	2.9	3.4	37	70	43	3.2	278	1.8
13	2	24	1.5	11	2.8	5.0	37	65	37	3.0	223	2.0
14	2	9	1.5	11	.8	5.9	39	56	37	3.5	125	1.9
15	2	6.5	7.8	11	1.0	8.3	39	37	36	4.1	73	1.3
16	2	6.5	3.2	11	1.0	7.4	41	36	32	3.2	63	1.0
17	2	6.5	2.8	11	.7	6.5	42	43	29	3.5	22	1.2
18	2	6.5	2.8	11	3.4	7.8	45	42	26	2.3	18	1.8
19	2	6.5	9.2	11	4.7	8.8	49	34	25	1.9	9.6	2.0
20	2	6.5	6.1	10	8.3	9.2	52	36	18	2.2	5.6	1.5
21	2	6.5	13	10	4.7	9.2	60	43	13	2.2	4.7	1.6
22	2	6.5	14	10	3.4	9.2	63	53	12	2.4	3.0	1.3
23	2	6.5	14	10	1.3	10	66	63	7.4	29	2.6	.6
24	3.5	6.5	5.9	9	1.2	10	70	69	11	69	2.6	.0
25	3.5	6.5	5.9	9	1.4	9.2	65	74	8.3	12	2.0	.0
26	3.5	6.5	8.3	9	.8	16	93	76	13	4.1	1.4	.0
27	3.5	9	6.1	9	2.0	11	90	65	11	2.9	1.6	.0
28	3.5	9	.7	9	4.1	10	83	69	6.1	3.5	1.8	.0
29	3.5	9	.0	8.3	.....	11	63	69	8.3	3.0	2.3	.0
30	3.5	9	.1	9.2	.....	14	65	66	7.4	2.2	1.8	.0
31	3.5	.....	.4	5.0	.....	20	.....	65	.....	1.8	1.6	.....

NOTE.—Daily discharge determined from a rating curve fairly well defined above 4 second-feet. Discharge estimated because of ice conditions January 18–28, 1913.

Monthly discharge of Donner Creek near Truckee, Cal., for the year ending Sept. 30, 1913.

[Discharge area, 30 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
October	3.5	2	2.39	0.080	0.09	147	D.
November	31	2	11.1	.370	.41	660	C.
December	14	0	4.29	.143	.16	264	C.
January	11	.2	6.74	.225	.26	414	C.
February	8.3	.5	2.62	.087	.09	146	D.
March	20	.8	6.82	.227	.26	419	C.
April	93	24	47.8	1.59	1.77	2,840	B.
May	246	34	71.7	2.39	2.76	4,410	B.
June	63	6.1	28.6	.953	1.06	1,700	C.
July	69	1.8	8.46	.282	.33	520	C.
August	278	1.4	37.3	1.24	1.43	2,290	C.
September	2.6	0	1.26	.042	.05	75	D.
The year	278	0	19.2	.64	8.67	13,900	

LITTLE TRUCKEE RIVER AT BOCA, CAL.

Location.—At Boca, 500 feet below ice-pond dam, and 150 feet above mouth of stream.

Records available.—January 1, 1911, to September 30, 1913; at Pine Station and Starr, 1903 to 1910.

Drainage area.—Not measured.

Gage.—Inclined staff on left bank 100 feet above railroad bridge.

Channel and control.—Gravel; fairly permanent.

Discharge measurements.—Made from car and cable at gage or by wading.

Winter flow.—Somewhat affected by ice.

Regulation.—Flow regulated by dam. Water that passes through small power plant, which is operated only during the night, does not pass gage.

Accuracy.—On account of the regulation at the dam and the operation of the power plant the record is not very satisfactory. Rating curve is fairly well defined.

Cooperation.—Gage heights furnished by the United States Reclamation Service.

Discharge measurements of Little Truckee River at Boca, Cal., during 1910 and 1911 and during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
1910.		*Feet.*	*Sec.-ft.*	1913.		*Feet.*	*Sec.-ft.*
Sept. 22	T. W. Norcross	0.75	24	Feb. 15	H. J. Tompkins	0.60	26
Dec. 16	D. S. Stuver	1.05	43	Aug. 14	do	.62	26
1911.							
Jan. 31	L. O. Murphy	1.73	174				
Apr. 4	do	3.20	999				

Daily gage height, in feet, of Little Truckee River at Boca, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.6	0.65	0.55	0.4	0.65	0.55	2.0	1.8	2.1	0.95	0.95	1.1
2	.6	.75	.75	.6	.6	.65	1.75	1.8	2.0	.9	.95	1.1
3	.6	.8	.75	.5	.6	.65	1.6	1.8	2.0	.9	.9	1.0
4	.6	.7	.75	.5	.55	.70	1.95	1.8	1.9	.85	.85	1.1
5	.6	.7	.8	.4	.55	.75	2.1	1.95	1.95	.85	.8	.....
6	.....	1.25	.5	.25	.6	.75	1.95	2.1	2.1	.8	.8	.....
7	.....	1.55	.8	.2	.6	.8	1.8	2.2	2.2	.75	.7	.....
8	.....	1.2	.7	.35	.6	.8	1.9	2.25	2.05	.75	.7	.5
9	.....	1.3	.8	.3	.6	.9	1.9	2.4	2.0	.75	.6	.5
10	.....	1.2	.5	.3	.6	.95	1.95	2.35	1.8	.7	.6	.45
11	.....	1.1	.7	.3	.6	1.0	2.15	2.25	1.6	.7	.7	.45
12	.....	1.0	.75	.4	.6	.9	2.15	2.15	1.55	.65	.65	.5
13	.....	1.0	.75	.55	.6	.9	2.1	2.0	1.6	.6	.8	.45
14	.7	1.0	.8	.5	.55	.9	1.95	2.05	1.65	.6	.65	.45
15	.7	.95	.8	.6	.6	.9	1.7	2.1	1.6	.6	.6	.4
16	.75	.95	.8	.45	.70	.95	1.7	2.1	1.55	.6	.6	.4
17	.7	.85	.8	.35	.8	1.1	1.75	2.25	1.55	.6	.6	.35
18	.65	.85	.5	.35	.9	1.05	1.85	2.6	1.5	.65	.55	.35
19	.6	.75	.65	.4	.8	1.05	1.8	2.55	1.55	.65	.5	.4
20	.6	1.1	.75	.4	.65	1.0	1.8	2.4	1.3	.8	.5	.35
21	.6	.8	.65	.5	.65	1.0	1.85	2.3	1.15	1.1	.45	.35
22	.55	.75	.5	.6	.7	.95	2.1	2.3	1.1	1.2	.45	.3
23	.55	.8	.4	.55	.65	.95	2.0	2.3	1.15	1.5	.45	.3
24	.6	.7	.45	.55	.65	1.0	2.0	2.4	1.15	1.2	.5	.35
25	.55	.75	.4	.65	.7	.95	2.1	2.4	1.2	1.1	.45	.35
26	.6	1.0	.35	.7	.65	.9	2.45	2.35	1.15	1.2	.4	.3
27	.55	.75	.35	.65	.65	.95	2.4	2.45	1.2	1.15	.4	.35
28	.6	.7	.4	.65	.7	1.2	2.35	2.4	1.2	1.25	.4	.35
29	.6	.85	.4	.6	.....	1.45	2.25	2.25	1.1	1.2	.35	.35
30	.7	.9	.45	.6	.....	1.6	2.0	2.15	1.0	1.2	.4	.35
31	.65	.....	.4	.6	.....	1.75	.....	2.1	.....	1.05	.4	.....

NOTE.—Gates in dam closed Oct. 6–13, 1912, and Sept. 5–7, 1913.

Daily discharge, in second-feet, of Little Truckee River at Boca, Cal., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	26	30	24	16	30	24	362	273	412	56	56	75
2	26	37	37	26	26	30	254	273	362	50	56	75
3	26	41	37	21	26	30	200	273	362	50	50	61
4	26	33	37	21	24	33	338	273	315	46	46	75
5	26	33	41	16	24	37	412	338	338	46	41	.....
6	.....	104	21	12	26	37	338	412	412	41	41	.....
7	.....	184	41	10	26	41	273	464	464	37	33	.....
8	.....	93	33	14	26	41	315	491	387	37	33	21
9	.....	114	41	13	26	50	315	573	362	37	26	21
10	.....	93	21	13	26	56	338	546	273	33	26	18
11	.....	75	33	13	26	61	438	491	200	33	33	18
12	.....	61	37	16	26	50	438	438	184	30	30	21
13	.....	61	37	24	26	50	412	362	200	26	41	18
14	33	61	41	21	24	50	338	387	217	26	30	18
15	33	56	41	26	26	50	234	412	200	26	26	16
16	37	56	41	18	33	56	234	412	184	26	26	16
17	33	46	41	14	41	75	254	491	184	26	26	14
18	30	46	21	14	50	68	294	688	168	30	24	14
19	26	37	30	16	41	68	273	659	184	30	21	16
20	26	75	37	16	30	61	273	573	114	41	21	14
21	26	41	30	21	30	61	294	518	84	75	18	14
22	24	37	21	26	33	56	412	518	75	93	18	13
23	24	41	16	24	30	56	362	518	84	168	18	13
24	26	33	18	24	30	61	362	573	84	93	21	14
25	24	37	16	30	33	56	412	573	93	75	18	14
26	26	61	14	33	30	50	602	546	84	93	16	13
27	24	37	14	30	30	56	573	602	93	84	16	14
28	26	33	16	30	33	93	546	573	93	104	16	14
29	26	46	16	26	.....	154	491	491	75	93	14	14
30	33	50	18	26	.....	200	362	438	61	93	16	14
31	30	.....	16	26	.....	254	.....	412	.....	68	16	.....

NOTE.—Daily discharge determined from a fairly well defined rating curve. No discharge Oct. 6–13, 1912, and Sept. 5–7, 1913.

Monthly discharge of Little Truckee River at Boca, Cal., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	37	0	20.5	1,260	B.
November	184	30	58.4	3,480	B.
December	41	14	28.6	1,760	B.
January	33	10	20.5	1,260	B.
February	50	24	29.7	1,650	B.
March	254	24	66.6	4,100	B.
April	602	200	358	21,300	B.
May	688	273	471	29,000	B.
June	464	61	212	12,600	B.
July	168	26	57.0	3,500	B.
August	56	14	28.2	1,730	B.
September	75	0	21.6	1,290	B.
The year	688	0	114	82,900	

GALENA CREEK NEAR WASHOE, NEV.

Location.—300 feet above Galena station on the Virginia & Truckee Railroad, about 3 miles northeast of Washoe, and about 14 miles south of Reno.

Records available.—July 9 to September 30, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff spiked to a tree on left bank.

Channel and control.—Ledge rock and bowlders; probably permanent. One channel at all stages.

Discharge measurements.—Made by wading.

Diversions.—Above all diversions except that into Washoe Lake.

Regulation.—Operation of an air-compressor plant 200 feet above gage affects flow somewhat.

Accuracy.—Records good.

Cooperation.—Gage heights furnished by L. A. Armstrong.

The following discharge measurement was made by Frank Weber:
July 9, 1913: Gage height, 1.91 feet; discharge, 4.48 second-feet.

Daily gage height, in feet, and discharge, in second-feet, of Galena Creek near Washoe, Nev., for the year ending Sept. 30, 1913.

[L. A. Armstrong, observer.]

Day.	July.		August.		September.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1			2.00	5.8	1.85	3.5
2			1.98	5.5	1.86	3.6
3			2.02	6.2	1.86	3.6
4			1.98	5.5	1.89	4.1
5			1.98	5.5	1.89	4.1
6			1.99	5.6	1.86	3.6
7			1.99	5.6	1.86	3.6
8			1.98	5.5	1.86	3.6
9	1.90	4.2	1.98	5.5	1.88	3.9
10	1.90	4.2	1.95	5.0	1.88	3.9
11	1.90	4.2	1.91	4.4	1.86	3.6
12	1.88	3.9	1.88	3.9	1.85	3.5
13	1.90	4.2	1.89	4.1	1.85	3.5
14	1.89	4.1	1.89	4.1	1.85	3.5
15	1.91	4.4	1.89	4.1	1.85	3.5
16	1.88	3.9	1.90	4.2	1.85	3.5
17	1.90	4.2	1.90	4.2	1.86	3.6
18	1.92	4.5	1.88	3.9	1.85	3.5
19	1.94	4.8	1.88	3.9	1.85	3.5
20	1.99	5.6	1.88	3.9	1.85	3.5
21	1.96	5.2	1.88	3.9	1.85	3.5
22	2.28	13	1.88	3.9	1.86	3.6
23	2.20	10	1.88	3.9	1.88	3.9
24	2.08	7.4	1.86	3.6	1.89	4.1
25	2.15	9	1.88	3.9	1.88	3.9
26	2.10	7.8	1.84	3.4	1.89	4.1
27	2.22	11	1.85	3.5	1.88	3.9
28	2.08	7.4	1.90	4.2	1.88	3.9
29	2.08	7.4	1.90	4.2	1.89	4.1
30	2.08	7.4	1.88	3.9	1.89	4.1
31	2.02	6.2	1.85	3.5		

NOTE.—Discharge determined from a rating curve well defined below gage height 2.2 feet.

Monthly discharge of Galena Creek near Washoe, Nev., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
July 9–31	13	3.9	6.26	285	B.
August	6.2	3.5	4.46	274	B.
September	4.1	3.5	3.73	222	B.
The period				781	

HONEY LAKE BASIN.

SUSAN RIVER AT SUSANVILLE, CAL.

Location.—At the electric-light plant about three-fourths mile southwest of Susanville.
Records available.—June 4, 1900, to September 26, 1905; March 10 to May 31, 1913.
Drainage area.—256 square miles.
Gage.—Staff gage; same datum as used December 20, 1903, to 1905.
Channel and control.—Gravel and bowlders.
Discharge measurements.—Made by wading or from cable and car.
Cooperation.—Records furnished by the Delta Land & Water Co., of Delta, Utah.

Discharge measurements of Susan River at Susanville, Cal., during the year ending Sept. 30, 1913.

[Made by Thomas S. Marlor.]

Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*
Mar. 15	3.8	32
Apr. 5	5.3	181

Daily gage height, in feet, of Susan River at Susanville, Cal., for the year ending Sept. 30, 1913.

Day.	Mar.	Apr.	May.	Day.	Mar.	Apr.	May.	Day.	Mar.	Apr.	May.
1	.....	5.6	.....	11	4.2	5.5	4.75	21	3.8	.....	4.8
2	.....	5.5	5.15	12	3.8	5.3	4.6	22	3.8	.....	4.85
3	.....	5.5	5.05	13	3.7	.....	4.55	23	3.8	.....	5.8
4	.....	5.5	4.75	14	3.6	.....	4.55	24	3.6	.....	6.6
5	.....	5.4	4.55	15	3.6	.....	4.45	25	3.6	.....	6.6
6	.....	5.3	4.6	16	3.6	.....	4.4	26	3.6	.....	6.4
7	.....	5.3	4.7	17	3.7	.....	4.8	27	3.7	.....	6.55
8	.....	5.4	4.75	18	3.7	.....	4.85	28	3.8	.....	6.5
9	.....	5.3	5.2	19	3.9	.....	4.85	29	4.0	.....	6.35
10	4.1	5.7	5.1	20	3.8	.....	4.75	30	5.5	.....	6.15
								31	5.5	.....	6.1

NOTE.—After May 22 discharge relation probably affected by the dumping of material into the river by Southern Pacific Railroad.

GOLD RUN CREEK NEAR SUSANVILLE, CAL.

Location.—At the bridge on the county road at Ridenour & Sons' ranch, about 2½ miles southeast of Susanville, Cal.
Records available.—February 24 to March 31, 1913.
Drainage area.—Not measured.
Gage.—Vertical staff nailed to bridge abutment.
Channel and control.—Gravel and small bowlders.
Discharge measurements.—Made by wading or from bridge.
Cooperation.—Records furnished by the Delta Land & Water Co., of Delta, Utah.

Discharge measurements of Gold Run Creek near Susanville, Cal., during the year ending Sept. 30, 1913.

[Made by Thomas S. Marlor.]

Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*
Feb. 25	0.5	5.0
Mar. 11	.8	13.6

Daily gage height, in feet, of Gold Run Creek near Susanville, Cal., for the year ending Sept. 30, 1913.

Day.	Feb.	Mar.	Day.	Feb.	Mar.	Day.	Feb.	Mar.
1		0.70	11		0.85	21		0.70
2		.55	12		.80	22		.70
3		.60	13		.70	23		.90
4		.60	14		.65	24	0.45	.65
5		.70	15		.80	25	.55	.70
6		.75	16		.80	26	.65	.70
7		.75	17		.90	27	.55	.80
8		.80	18		.80	28	.70	.90
9		.80	19		.80	29		1.00
10		.94	20		.75	30		.90
						31		.90

LASSEN CREEK NEAR SUSANVILLE, CAL.

Location.—Five miles southeast of Susanville, where the county road crosses the creek three-fourths mile west of the Thomas Sharp ranch.

Records available.—March 13 to April 14, 1913.

Drainage area.—Not measured.

Gage.—Staff gage nailed to bent of highway bridge.

Channel and control.—Gravel.

Discharge measurements.—Made by wading.

Cooperation.—Records furnished by the Delta Land & Water Co., of Delta, Utah.

The following discharge measurement was made by Thos. S. Marlor:
March 13, 1913: Gage height, 0.5 foot; discharge, 3.8 second-feet.

Daily gage height, in feet, of Lassen Creek near Susanville, Cal., for the year ending Sept. 30, 1913.

Day.	Mar.	Apr.	Day.	Mar.	Apr.	Day.	Mar.	Apr.
1		0.6	11			21	0.65	
2		.6	12			22	.45	
3		.45	13	0.5	.65	23	.5	
4		.6	14	.55	.65	24	.45	
5		.75	15	.5		25	.5	
6		.6	16	.5		26	.65	
7			17	.5		27	.65	
8			18	.55		28	.75	
9			19	.85		29	.7	
10			20	.75		30	.65	
						31	.65	

BAXTER CREEK NEAR JANESVILLE, CAL.

Location.—Two and one-half miles northwest of Janesville, 200 feet west of the bridge on the county road at the ranch of D. J. Sweeny.

Records available.—February 17 to September 30, 1913.

Drainage area.—Not measured.

Gage.—Inclined staff on left bank.

Channel and control.—Fairly permanent, shifting only during high stages.

Discharge measurements.—Made from footbridge or by wading.

Accuracy.—Records fair.

Cooperation.—Gage heights furnished by D. J. Sweeney, of Janesville, and discharge measurements by Delta Land & Water Co., of Delta, Utah.

Discharge measurements of Baxter Creek near Janesville, Cal., during the year ending Sept. 30, 1913.

[Made by Thos. S. Marlor.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*		*Feet.*	*Sec.-ft.*		*Feet.*	*Sec.-ft.*
Feb. 26	0.5	4.6	Mar. 11	1.9	21.9	Mar. 31	1.2	9.3
Mar. 10	3.0	53.2	13	.9	8.5	Apr. 1	1.5	15.8

Daily gage height, in feet, of Baxter Creek near Janesville, Cal., for the year ending Sept. 30, 1913.

[D. J. Sweeney, observer.]

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	0.55	1.50	1.02	1.7	1.05	0.75	0.4
2	.....	.60	1.42	.92	1.65	.95	.75	.4
3	.....	.98	1.25	.95	1.55	.85	.75	.4
4	.....	1.15	1.42	.88	1.5	.85	.7	.4
5	.....	1.50	1.98	.95	1.4	.75	.7	.3
6	.....	1.78	1.15	1.00	1.35	.75	.6	.3
7	.....	1.85	1.08	1.25	1.25	.65	.6	.3
8	.....	1.90	1.00	1.45	1.25	.65	.55	.3
9	.....	1.95	1.00	1.52	1.25	.55	.55	.3
10	.....	2.10	1.00	1.50	1.2	.55	.55	.3
11	.....	1.80	1.10	1.35	1.05	.45	.55	.3
12	.....	1.12	1.18	1.40	.98	.45	.45	.3
13	.....	1.20	1.23	1.35	.9	.4	.45	.3
14	.....	1.00	1.20	1.35	.85	.4	.45	.3
15	.....	1.05	1.05	1.30	.75	.4	.45	.3
16	.....	1.25	1.02	1.50	.75	.4	.45	.3
17	0.75	1.35	1.10	2.10	.7	.4	.45	.3
18	.70	1.40	1.25	2.40	.65	.4	.45	.3
19	.70	1.20	1.10	2.18	.65	.4	.4	.3
20	.60	1.00	1.08	1.95	.65	.4	.4	.3
21	.55	.90	1.05	1.90	.55	.4	.4	.3
22	.55	1.00	.98	1.95	.45	.4	.4	.3
23	.55	.95	.98	1.95	3.45	.95	.4	.3
24	.55	.90	.90	1.95	2.45	.9	.4	.3
25	.55	.90	.90	1.95	1.9	.75	.4	.3
26	.55	.80	1.02	1.88	1.5	.8	.55	.3
27	.55	.85	1.06	1.82	1.5	.85	.45	.3
28	.55	.90	1.05	2.28	1.3	.85	.4	.4
29	.....	1.15	1.15	1.96	1.15	.85	.4	.45
30	.....	1.20	1.02	1.75	1.15	.8	.4	.35
31	.....	1.15	.....	1.70	.....	.75	.4	.....

Daily discharge, in second-feet, of Baxter Creek near Janesville, Cal., for the year ending Sept. 30, 1913.

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	5.0	16	10	19	10	6.9	4.0
2	.....	5.4	15	8.7	18	9.0	6.9	4.0
3	.....	9.4	12	9.0	16	8.0	6.9	4.0
4	.....	11	15	8.3	16	8.0	6.4	4.0
5	.....	16	23	9.0	14	6.9	6.4	3.5
6	.....	20	11	9.6	14	6.9	5.4	3.5
7	.....	21	10	12	12	5.9	5.4	3.5
8	.....	22	9.6	15	12	5.9	5.0	3.5
9	.....	23	9.6	16	12	5.0	5.0	3.5
10	.....	26	9.6	16	12	5.0	5.0	3.5
11	.....	20	10.7	14	10	4.3	5.0	3.5
12	.....	11	12	14	9.4	4.3	4.3	3.5
13	.....	12	12	14	8.5	4.0	4.3	3.5
14	.....	9.6	12	14	8.0	4.0	4.3	3.5
15	.....	10	10	13	6.9	4.0	4.3	3.5
16	.....	12	10	16	6.9	4.0	4.3	3.5
17	6.9	14	11	26	6.4	4.0	4.3	3.5
18	6.4	14	12	34	5.9	4.0	4.3	3.5
19	6.4	12	11	28	5.9	4.0	4.0	3.5
20	5.4	9.6	10	23	5.9	4.0	4.0	3.5
21	5.0	8.5	10	22	5.0	4.0	4.0	3.5
22	5.0	9.6	9.4	23	4.3	4.0	4.0	3.5
23	5.0	9.0	9.4	23	70	9.0	4.0	3.5
24	5.0	8.5	8.5	23	36	8.5	4.0	3.5
25	5.0	8.5	8.5	23	22	6.9	4.0	3.5
26	5.0	7.4	9.8	22	16	7.4	5.0	3.5
27	5.0	8.0	10	21	16	8.0	4.3	3.5
28	5.0	8.5	10	30	13	8.0	4.0	4.0
29	.....	11	11	23	11	8.0	4.0	4.3
30	.....	12	10	19	11	7.4	4.0	3.8
31	.....	11	.....	19	.....	6.9	4.0	.....

NOTE.—Discharge determined from a well-defined rating curve.

Monthly discharge of Baxter Creek near Janesville, Cal., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
February 17-28	6.9	5.0	5.42	129
March	26	5.0	12.4	762
April	23	8.5	11.3	672
May	34	8.7	18.0	1,110
June	70	4.3	14.1	839
July	10	4.0	6.11	376
August	6.9	4.0	4.76	293
September	4.3	3.5	3.62	215
The period	.....	.....	.....	4,400

JANESVILLE CREEK AT JANESVILLE, CAL.

Location.—At the town of Janesville, about 50 feet from the old Masonic Building.
Records available.—March 3 to June 7, 1913.
Gage.—Staff gage nailed to cottonwood tree on left bank.
Channel and control.—Gravel and sand; probably shifting.
Discharge measurements.—Made by wading.
Cooperation.—Records furnished by the Delta Land & Water Co., of Delta, Utah.

The following discharge measurement was made by Thos. S. Marlor:
March 6, 1913: Gage height, 0.6 foot; discharge, 0.96 second-foot.

Daily gage height, in feet, of Janesville Creek near Janesville, Cal., for the year ending Sept. 30, 1913.

Day.	Mar.	Apr.	May.	June.	Day.	Mar.	Apr.	May.	June.
1	.....	0.78	0.71	0.85	16	0.60	0.72	0.80	.....
2	.....	.72	.71	.85	17	.60	.72	.82	.....
3	0.60	.70	.74	.85	18	.60	.72	.88	.....
4	.60	.70	.78	.84	19	.65	.72	.90	.....
5	.60	.82	.78	.80	20	.65	.72	.90	.....
6	.60	.72	.82	.80	21	.65	.78	.90	.....
7	.65	.70	.90	.78	22	.60	.80	.90	.....
8	.65	.70	.88	.....	23	.60	.80	.90	.....
9	.65	.70	.86	.....	24	.60	.80	.90	.....
10	.65	.70	.82	.....	25	.60	.82	.90	.....
11	.60	.78	.82	.....	26	.60	.85	.90	.....
12	.60	.75	.78	.....	27	.60	.85	.90	.....
13	.60	.72	.75	.....	28	.60	.78	.90	.....
14	.60	.72	.72	.....	29	.75	.72	.90	.....
15	.60	.72	.72	.....	30	.75	.72	.85	.....
					31	.75	.....	.85	.....

SURPRISE VALLEY.

BIDWELL CREEK NEAR FORT BIDWELL, CAL.

Location.—About 1 mile northwest of Fort Bidwell, at Martain's Hot Springs, at mouth of canyon, 2 miles above mouth of stream.

Records available.—November 3, 1911, to June 30, 1912.

Drainage area.—27 square miles.

Gage.—Vertical staff spiked to cottonwood tree.

Channel and control.—Gravel; fairly permanent.

Discharge measurements.—From footbridge or by wading.

Winter flow.—Discharge relation affected by ice.

Diversions.—Station probably above all diversions.

Diurnal fluctuation.—Considerable, but fairly uniform.

Accuracy.—Results fair; accuracy for record as a whole considered "C."

Cooperation.—Data furnished by Modoc County Irrigation Co., Chas. Kirby Fox, chief engineer.

Discharge measurements of Bidwell Creek near Fort Bidwell, Cal., during the year ending Sept. 30, 1912.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 3	Stokes and Eaton	0.28	4.02	May 12	Fox and Stokes	1.25	115
Apr. 10	C. M. Stokes	.70	42.2	18	....do	1.80	161
30	....do	.50	24.2	29	....do	1.90	166
May 8	Stokes and Crower	.92	60.9				

Daily gage height, in feet, of Bidwell Creek near Fort Bidwell, Cal., for the year ending Sept. 30, 1912.

Day.	Nov.	Jan.	Feb.	Mar.	Apr.	May.	June.
1	0.3	.....	0.3	.....	0.40	1.3	2.0
2	.3	.....	.3	.....	.45	1.0	2.0
3	.3	.....	.3	.....	.45	.9	2.0
4	.3	.....	.3	.....	.50	1.0	2.0
5	.3	.....	.3	.....	.50	1.0	2.0
6	.3	.....	.3	.....	.50	1.3	2.0
7	.3	.....	.3	.....	.50	1.3	1.8
8	.3	.....	.3	.....	.50	1.3	1.7
9	.3	.....	.3	.....	.50	1.4	1.7
10	.3	.....	.3	.....	.60	1.4	1.7
11	.3	.....	.3	.....	.60	1.4	1.6
12	.3	.....	.3	.....	.60	1.5	1.6
13	.3	.....	.3	.....	.70	1.5	1.5
14	.3	.....	.3	.....	.70	1.5	1.4
15	.3	.....	.3	.....	.70	1.5	1.4
16	.3	.3	.3	.....	.80	1.5	1.4
17	.3	.3	.4	.....	1.00	1.5	1.3
18	.3	.3	.6	.....	1.00	1.5	1.3
19	.3	.3	.5	.....	1.10	1.5	1.3
20	.3	.3	.4	.....	1.10	1.6	1.2
21	.3	.3	.35	.....	1.20	1.6	1.1
22	.3	.3	.35	.....	.90	1.6	1.1
23	.3	.3	.35	.....	.8	1.6	1.0
24	.3	.3	.35	.....	.8	1.7	1.0
25	.3	.4	.3	.35	.8	1.7	1.0
26	.3	.4	.3	.35	.8	1.7	.9
27	.3	.3	.3	.35	1.0	1.7	.9
28	.3	.3	.3	.40	1.2	1.8	.9
29	.3	.3	.3	.40	1.9	1.8	.9
30	.....	.3	.....	.40	1.9	1.9	.9
31	.....	.3	.....	.40	.....	1.9	.....

NOTE.—Gage readings made about 6 p. m. during high water. The stage at this time was usually above the average for the day. Creek frozen December and Jan. 1–15.

Daily discharge of Bidwell Creek near Fort Bidwell, Cal., for the year ending Sept. 30, 1912.

Day.	Nov.	Jan.	Feb.	Mar.	Apr.	May.	June.
1	4	.....	4	.....	16	118	172
2	4	.....	4	.....	20	74	172
3	4	.....	4	.....	20	60	172
4	4	.....	4	.....	25	74	172
5	4	.....	4	.....	25	74	172
6	4	.....	4	.....	25	118	172
7	4	.....	4	.....	25	118	161
8	4	.....	4	.....	25	118	154
9	4	.....	4	.....	25	128	154
10	4	.....	4	.....	32	128	154
11	4	.....	4	.....	32	128	146
12	4	.....	4	.....	32	137	146
13	4	.....	4	.....	43	137	137
14	4	.....	4	.....	43	137	128
15	4	.....	4	.....	43	137	128
16	4	4	4	.....	51	137	128
17	4	4	16	.....	74	137	118
18	4	4	32	.....	74	137	118
19	4	4	25	.....	88	137	118
20	4	4	16	.....	88	146	105
21	4	4	11	.....	105	146	88
22	4	4	11	.....	60	146	88
23	4	4	11	.....	51	146	74
24	4	4	11	.....	51	154	74
25	4	16	4	11	51	154	74
26	4	16	4	11	51	154	60
27	4	4	4	11	74	154	60
28	4	4	4	16	105	161	60
29	4	4	4	16	166	161	60
30	4	4	.....	16	166	166	60
31	.....	4	.....	16	.....	166	.....

NOTE.—Daily discharge computed by Modoc County Irrigation Co. engineer from fairly well-defined curve, and represents the discharge at time gage was read. Daily discharge estimated as 4 second-feet Jan. 1–15 and Mar. 1–24.

Monthly discharge of Bidwell Creek near Fort Bidwell, Cal., for the year ending Sept. 30, 1912.

[Drainage area, 27 square miles.]

Month.	Discharge in second-feet.				Run-off.	
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.
November	4	4	4.0	0.148	0.17	238
December	.....	.....	4.0	.148	.17	246
January	16	4	4.8	.178	.27	295
February	32	4	7.5	.278	.30	431
March	16	4	6.2	.230	.27	381
April	166	16	47.1	1.74	1.94	2,800
May	166	60	111	4.19	4.83	6,800
June	172	60	108	4.00	4.46	6,400
The period	.....	.....	.....	.....	.....	17,600

NOTE.—Estimates of monthly means for April and May have been reduced 16 per cent, and for June 12 per cent, to give the probable daily mean. These corrections were made by the company engineer on the basis of studies of records on Twelvemile Creek. Discharge estimated for December because of ice.

WARNER LAKES BASIN.

COWHEAD LAKE NEAR FORT BIDWELL, CAL.

Location.—In the S. ½ T. 47 N., R. 16 E., about 8 miles northeast of Fort Bidwell.

Records available.—Occasional readings June, 1911, to July, 1913.

Drainage area.—43 square miles tributary to lake.

Gage.—Not described; readings as given below refer to a datum 5,400 feet above sea level. Bottom of lake at elevation 5,416 feet.

Overflow.—Cowhead Lake overflows northward into Twentymile Creek when it reaches an elevation of 5,423 feet; it has not overflowed since about June 1, 1911.

Lake area.—2,640.5 acres, according to land survey which was made at low water; about 3, 400 acres at level of overflow.

Cooperation.—Records furnished by Modoc County Irrigation Co.

Gage height, in feet, of Cowhead Lake, 1911–1913.

1911.		1912.	
June 6	22.84	Aug. 24	19.92
Aug. 14	21.66	Oct. 22	19.22
Nov. 4	20.74	Nov. 6	19.42
1912.		**1913.**	
Mar. 19	21.38	Mar. 9	20.02
Apr. 13	21.46	Mar. 30	20.42
May 11	21.54	Apr. 17	21.02
July 2	20.89	May 19	20.67
July 28	20.44	July 5	20.58

TWENTYMILE CREEK NEAR WARNER LAKE, OREG.

Location.—In sec. 24, T. 40 S., R. 23 E., about one-fourth mile above bridge at mouth of canyon; below all tributaries, and about 2 miles south of Warner Lake post office.

Records available.—March 1, 1910, to September 30, 1913.

Drainage area.—126 square miles. Total drainage area, 169 square miles, but area of 43 square miles tributary to Cowhead Lake has contributed no water to Twentymile Creek since about June 1, 1911, and has been deducted.

Gage.—Staff established at present location June 3, 1910; previously at bridge. Gage heights in 1912 and 1913 referred to datum 0.32 foot lower than that used in 1910 and 1911.

Channel and control.—Bowlders and gravel; probably shifts slightly.

Discharge measurements.—Made from highway bridge or by wading.

Winter flow.—Ice forms in stream but seldom on the control.

Diversions.—Two small ditches divert just above gage.

Accuracy.—Marked diurnal fluctuations which occur at times during the spring cause considerable inaccuracy in gage-height record.

Discharge measurements of Twentymile Creek near Warner Lake, Oreg., during the year ending Sept. 30, 1913.

Date.	Made by—	Gaga height.	Dis-charge.	Date.	Made by—	Gage height.	Dis-charge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Feb. 16	Howard Kimble.....	1.26	20.0	June 19	C. M. Stokes.....	1.31	20.8
Mar. 8	.....do.....	1.91	54.7	Aug. 26	.....do.....	*a*.71	3.30
Apr. 10	.....do.....	2.32	97.2				

a Temporary gage read 0.46 foot.

Daily gage height, in feet, of Twentymile Creek near Warner Lake, Oreg., for the year ending Sept. 30, 1913.

[Emily Houston, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.50	0.60	.....	.....	.....	.....	4.0	1.50	2.20	1.15	.....	0.42
2	.....	.....	.....	.....	.....	.....	2.60	1.50	2.15	1.18	.....	.....
3	.....	.....	0.60	0.65	0.75	1.20	1.60	1.35	2.20	1.10	.....	.....
4	.50	.....	.....	.....	.....	2.00	2.75	1.50	2.10	1.38	0.45	.....
5	.....	.70	.....	.....	.....	2.30	2.20	1.50	2.10	1.18	.....	.....
6	.....	.....	.80	.....	.70	2.40	2.00	1.75	2.10	1.08	.....	.....
7	.....	.....	.....	.70	.....	2.05	1.70	1.90	2.55	1.00	.....	.....
8	.55	.78	.....	.....	.....	2.15	2.20	2.10	2.00	.90	.....	.45
9	.....	.....	.....	.....	.....	2.20	1.80	2.00	2.00	.80	.....	.....
10	.....	.....	.80	.65	.70	2.30	1.80	1.95	1.80	.80	.....	.....
11	.55	.....	.....	.....	.....	2.40	2.10	1.85	1.75	.90	.40	.....
12	.....	.70	.....	.....	.....	2.00	3.00	1.95	1.62	.80	.....	.....
13	.....	.....	.65	.68	.90	1.70	2.00	1.80	1.65	.70	.....	.....
14	.....	.....	.....	.....	.....	.....	2.10	1.85	1.50	.70	.....	.....
15	.55	.72	.....	.....	.....	1.00	1.80	1.85	1.50	.70	.....	.48
16	.....	.....	.....	.65	1.26	.....	2.15	2.50	1.45	.65	.....	.....
17	.....	.....	.70	.....	1.50	1.50	1.90	2.00	1.38	.62	.....	.....
18	.60	.....	.....	.....	.....	.....	2.25	2.25	1.32	.50	.40	.....
19	.....	.70	.....	.....	.....	1.40	1.80	2.00	1.30	.50	.....	.....
20	.....	.....	.75	.62	.98	.....	1.80	2.10	1.25	.78	.....	.....
21	.....	.....	.....	.....	.....	.90	1.80	2.00	1.22	.78	.....	.....
22	.60	.65	.....	.....	.....	.....	1.80	2.20	1.25	.78	.....	.50
23	.....	.....	.....	.70	.....	.....	1.50	2.20	1.60	.88	.....	.....
24	.....	.....	.60	.....	.70	.70	1.65	2.40	1.40	1.65	.....	.....
25	.60	.....	.....	.....	.....	.....	1.70	2.30	1.50	.....	.45	.....
26	.....	.62	.....	.....	.....	.60	1.90	2.50	1.70	.....	.46	.....
27	.....	.....	.65	.70	.68	.....	1.80	2.40	1.90	.....	.....	.....
28	.....	.....	.....	.....	.....	.90	1.80	2.50	1.45	.85	.....	.....
29	.65	.65	.....	.....	.....	3.5	1.60	2.20	1.35	.....	.....	.45
30	.....	.....	.....	.75	.....	4.8	1.60	2.20	1.25	.....	.....	.....
31	.....	.....	.70	.....	.....	3.6	.....	2.30	.....	.50	.....	.....

NOTE.—Discharge relation affected by backwater from a diversion dam below gage July 11–17 and 20–30. After July 30 gage heights refer to temporary gage installed July 31 about 300 feet above permanent gage and above the effect of backwater.

Daily discharge, in second-feet, of Twentymile Creek near Warner Lake, Oreg., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	4.7	5.6	5.8	6.6	7.4	12	406	30	77	16	.....	3.0
2	4.7	5.9	5.7	6.4	7.4	16	127	30	72	17	.....	.....
3	4.7	6.2	5.6	6.2	7.4	18	35	24	77	15	.....	.....
4	4.7	6.5	6.4	6.4	7.2	60	151	30	68	25	3.2	.....
5	4.9	6.7	7.3	6.5	7.0	88	77	30	68	17	.....	.....
6	5.0	7.1	8.2	6.6	6.7	100	60	43	68	14	.....	.....
7	5.1	7.5	8.2	6.7	6.7	64	40	53	120	12	.....	.....
8	5.2	7.9	8.2	6.6	6.7	72	77	68	60	10	.....	3.2
9	5.2	7.6	8.2	6.4	6.7	77	46	60	60	8.2	.....	.....
10	5.2	7.3	8.2	6.2	6.7	88	46	56	46	8.2	.....	.....
11	5.2	7.0	7.6	6.3	7.8	100	68	50	43	7.8	2.9	.....
12	5.2	6.7	6.9	6.4	8.9	60	194	56	36	7.4	.....	.....
13	5.2	6.8	6.2	6.5	10	40	60	46	38	6.9	.....	.....
14	5.2	6.9	6.3	6.4	13	26	68	50	30	6.5	.....	.....
15	5.2	7.0	6.4	6.3	16	12	46	50	30	6.1	.....	3.5
16	5.3	6.9	6.6	6.2	20	21	72	113	28	5.6	.....	.....
17	5.5	6.8	6.7	6.1	30	30	53	60	25	5.2	.....	.....
18	5.6	6.8	6.9	6.0	24	28	82	82	23	4.7	2.9	.....
19	5.6	6.7	7.1	5.9	18	26	46	60	22	4.7	.....	.....
20	5.6	6.6	7.4	5.8	12	18	46	68	20	4.1	.....	.....
21	5.6	6.4	6.9	6.1	10	10	46	60	19	4.1	.....	.....
22	5.6	6.2	6.5	6.4	8.5	8.9	46	77	20	4.1	.....	3.6
23	5.6	6.1	6.1	6.7	7.6	7.8	30	77	35	5.0	.....	.....
24	5.6	6.0	5.6	6.7	6.7	6.7	38	100	26	22	.....	.....
25	5.6	5.9	5.8	6.7	6.6	6.2	40	88	30	18	3.2	.....
26	5.7	5.8	6.0	6.7	6.6	5.6	53	113	40	13	3.3	.....
27	5.8	6.0	6.2	6.7	6.5	7.8	46	100	53	8.9	.....	.....
28	6.0	6.1	6.3	7.0	9.5	10	46	113	28	4.7	.....	.....
29	6.2	6.2	6.5	7.2	.....	292	35	77	24	4.4	.....	3.2
30	6.0	6.0	6.6	7.4	.....	620	35	77	20	4.0	.....	.....
31	5.8	.....	6.7	7.4	.....	314	.....	88	.....	3.6	.....	.....

NOTE.—Daily discharge determined as follows: Oct. 1, 1912, to July 10, 1913, July 18 and 19, from a well-defined rating curve; July 11–17, interpolated; July 20–30, estimated; July 31 to Sept. 29, from a fairly well defined rating curve for temporary gage.

Monthly discharge of Twentymile Creek near Warner Lake, Oreg., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	6.2	4.7	5.37	330	B.
November	7.9	5.6	6.57	391	B.
December	8.2	5.6	6.75	415	B.
January	7.4	5.8	6.50	400	B.
February	30	6.5	10.4	578	B.
March	620	5.6	72.4	4,450	C.
April	406	30	73.8	4,390	C.
May	113	24	65.4	4,020	B.
June	120	19	43.5	2,590	B.
July	25	3.6	9.46	582	C.
August	3.3	2.9	3.10	191	B.
September	3.6	3.0	3.30	196	B.
The year	620	2.9	25.6	18,500	

FIFTEENMILE CREEK NEAR FORT BIDWELL, CAL.

Location.—In sec. 21, T. 41 S., R. 23 E., about 1 mile above mouth of Twelvemile Creek, one-half mile north of Oregon-California line, and about 15 miles northeast of Fort Bidwell.

Records available.—March 10 to May 15, 1913.

Drainage area.—About 6.25 square miles.

Diversions.—Some water is diverted for irrigation above the station, but quantity was probably very small during period covered by records.

Cooperation.—Records furnished by Modoc County Irrigation Co.

Discharge measurements of Fifteenmile Creek near Fort Bidwell, Cal., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Apr. 3	Croover and Stokes	0.22	2.78
17	C. M. Stokes	.40	6.68

Daily gage height, in feet, and discharge, in second-feet, of Fifteenmile Creek near Fort Bidwell, Cal., for the year ending Sept. 30, 1913.

Day.	March.		April.		May.		Day.	March.		April.		May.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.		Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	0.80	24	0.45	8.8	16	.20	2.5	.50	10.5	.....	.....
2	.....	.....	.50	10.5	.40	7.0	17	.20	2.5	.55	12.5	.....	.....
3	.....	.....	.20	2.5	.40	7.0	18	.20	2.5	.45	8.8	.....	.....
4	.....	.....	.25	3.5	.40	7.0	19	.20	2.5	.37	6.2	.....	.....
5	.....	.....	.27	3.9	.38	6.5	20	.20	2.5	.45	8.8	.....	.....
6	.....	.....	.27	3.9	.46	9.1	21	.20	2.5	.55	12.5	.....	.....
7	.....	.....	.25	3.5	.44	8.4	22	.20	2.5	.50	10.5	.....	.....
8	.....	.....	.38	6.5	.38	6.5	23	.20	2.5	.44	8.4	.....	.....
9	.....	.....	.60	14.5	.46	9.1	24	.20	2.5	.44	8.4	.....	.....
10	0.20	2.5	.70	19.5	.39	6.8	25	.20	2.5	.50	10.5	.....	.....
11	.30	4.5	.68	18.5	.37	6.2	26	.20	2.5	.60	14.5	.....	.....
12	.30	4.5	.60	14.5	.35	5.8	27	.20	2.5	.52	11.3	.....	.....
13	.30	4.5	.55	12.5	.30	4.5	28	.40	7.0	.36	6.0	.....	.....
14	.50	10.5	.47	9.4	.30	4.5	29	.60	14.5	.30	4.5	.....	.....
15	.20	2.5	.42	7.7	.30	4.5	30	1.00	35	.48	9.8	.....	.....
							31	1.20	43	.....	.....	.....	.....

NOTE.—Daily discharge determined from rating curve well defined below 10 second-feet; above that it is based on Kutter's formula and is uncertain. Published as furnished by Modoc County Irrigation Co.

Monthly discharge of Fifteenmile Creek near Fort Bidwell, Cal., for the year ending Sept. 30, 1913.

[Drainage area, 6.25 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
March 10–31	43	2.5	7.20	1.15	0.94	314	C.
April	24	2.5	9.94	1.59	1.77	591	C.
May 1–15	9.1	4.5	6.78	1.08	.60	202	B.
The period	.....	.....	.....	.....	.....	1,110	

FIFTEENMILE CREEK BELOW ROCK CREEK, NEAR FORT BIDWELL, CAL.

Location.—In sec. 16, T. 47 N., R. 18 E., Nevada, 1 mile east of corner between Oregon, California, and Nevada; about 15 miles northeast of Fort Bidwell; just below Rock Creek, and about 2 miles above mouth of Home Creek.

Records available.—March 7 to May 12, 1913.

Drainage area.—Not measured.

Cooperation.—Records furnished by Modoc County Irrigation Co.

Discharge measurements of Fifteenmile Creek below Rock Creek near Fort Bidwell, Cal., during the year ending Sept. 30, 1913.

[Made by Stokes and Croover.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
Apr. 3	0.47	24.5	Apr. 9	0.65	33.3	Apr. 11	2.15	229
9	1.40	91.4	9	2.00	209	12	.69	37.6

Daily gage height, in feet, and discharge, in second-feet, of Fifteenmile Creek below Rock Creek near Fort Bidwell, Cal., for the year ending Sept. 30, 1913.

Day.	March.		April.		May.		Day.	March.		April.		May.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.		Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1			2.87	368	0.50	26	16	0.20	13	1.38	90		
2			1.20	72	.45	24	17	.25	15	1.50	107		
3			.75	39	.45	24	18	.20	13	1.17	69		
4			1.10	63	.45	24	19	.20	13	.60	31		
5			1.10	63	.60	31	20	.20	13	.50	26		
6			.65	34	.76	40	21	.20	13	.57	30		
7	0.80	42	1.10	63	.90	48	22	.20	13	.55	28		
8	1.10	63	1.32	84	.90	48	23	.20	13	.55	28		
9	1.60	122	1.32	84	.85	45	24	.20	13	.60	31		
10	1.82	162	1.80	158	.90	48	25	.20	13	.72	38		
11	1.40	92	1.75	149	.82	44	26	.20	13	1.07	61		
12	1.00	55	1.50	107	.75	39	27	.20	13	.90	48		
13	.60	31	1.18	70			28	.50	26	.55	28		
14	.25	15	.95	52			29	2.20	233	.50	26		
15	.20	13	1.12	65			30	3.85	598	.50	26		
							31	4.00	635				

NOTE.—Daily discharge determined from a rating curve well defined below 250 second-feet; above that it is based on Kutter's formula and is uncertain. Published as furnished by Modoc County Irrigation Co.

Monthly discharge of Fifteenmile Creek below Rock Creek, near Fort Bidwell, Cal., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
March 7–31	635	13	89.8	4,450	C.
April	368	26	71.3	4,240	B.
May 1–12	48	24	36.8	876	B.
The period				9,570	

TWELVEMILE CREEK NEAR FORT BIDWELL, CAL.

Location.—In the NE. ¼ sec. 31, T. 48 N., R. 16 E., at Conlan's ranch about 2 miles above Cowhead Lake outlet, and 2½ miles above the mouth, just above point from which water could be diverted into Cowhead Lake, 12 miles north of Fort Bidwell.

Records available.—May 14 to June 30, 1912; April 1 to June 17, 1913.

Drainage area.—21.7 square miles.

Channel and control.—Somewhat shifting.

Diversions.—Station is in a small irrigated valley. Some water is also diverted out of the drainage area onto lands along Eightmile Creek near Cowhead Lake.

Accuracy.—Results fairly good.

Cooperation.—Field data furnished by Modoc County Irrigation Co.; results worked up by engineers of the United States Geological Survey.

Discharge measurements of Twelvemile Creek near Fort Bidwell, Cal., during the years ending Sept. 30, 1912–13.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
1911–12		*Feet.*	*Sec.-ft.*	1912–13		*Feet.*	*Sec.-ft.*
Nov. 17	Stokes and Croover	0.39	2.20	Apr. 7	Stokes and Croover	.40	7.46
May 15	Stokes and Eaton	.95	44.3	25	C. M. Stokes	.70	19.7
16	do	1.05	74.0	May 6	Stokes and Croover	1.00	48.9
24	Fox and Stokes	.5	28.5	8	C. M. Stokes	.88	42.7
30	Stokes and Croover	1.50	166	21	Stokes and Croover	1.35	97.9
June 2	Fox and Stokes	2.20	215	21	do	1.46	109
July 3	C. M. Stokes	.10	25.2	25	do	1.72	132
28	Stokes and Eaton		5.5	June 17	C. M. Stokes	.38	12.5
				Aug. 26	do	−.03	1.44

Daily gage height, in feet, and discharge, in second-feet, of Twelvemile Creek near Fort Bidwell, Cal., for 1912–13.

Day.	1912				1913					
	May.		June.		April.		May.		June.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1			1.6	165	0.45	12	0.45	9	1.25	87
2			1.7	176	.40	8	.45	9	1.15	78
3			1.5	154	.35	5	.55	14	1.18	80
4			1.4	144	.40	8	.65	22	1.15	78
5			1.4	144	.35	5	.75	29	1.07	70
6			1.3	134	.35	5	.85	37	.92	57
7			1.3	134	.35	5	1.20	68	1.07	70
8			1.4	144	.35	5	1.00	52	.95	60
9			1.3	134	.40	8	.95	48	.80	46
10			1.2	123	.40	7	.87	42	.70	37
11			1.1	113	.45	8	.82	38	.60	29
12			1.1	113	.50	11	.80	40	.60	29
13			1.1	113	.55	15	.85	44	.60	29
14	1.2	67	.8	84	.50	11	.90	48	.60	29
15	1.2	67	.7	75	.35	4	1.20	74	.56	26
16	1.2	88	.7	75	.50	11	1.10	65	.45	18
17	1.3	98	.6	66	.50	11	1.25	79	.40	14
18	1.3	98	.6	66	.50	11	1.20	82		
19	1.1	80	.6	66	.40	8	1.05	68		
20	.9	62	.6	66	.40	7	1.15	78		
21	.8	53	.5	57	.45	8	1.20	82		
22	.7	44	.4	48	.45	7	1.30	92		
23	.6	36	.4	48	.55	11	1.42	104		
24	.7	44	.4	48	.60	14	1.45	107		
25	1.0	82	.3	40	.75	23	1.50	112		
26	1.2	106	.3	40	.90	34	1.60	122		
27	1.2	106	.3	40	.85	30	1.67	129		
28	1.5	145	.4	48	.65	18	1.30	92		
29	1.6	159	.4	48	.60	16	1.18	80		
30	1.9	200	.3	40	.55	14	1.18	80		
31	1.4	144					1.20	82		

NOTE.—Daily discharge obtained by indirect method for shifting channels up to May 15, 1913. Well-defined rating curve used May 17 to June 17.

Monthly discharge of Twelvemile Creek near Fort Bidwell, Cal., for 1912–13.

[Drainage area, 21.7 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1912.							
May 14–31	200	36	93.3	4.30	2.88	3,330	B.
June	176	40	91.5	4.22	4.71	5,440	B.
1913.							
April	34	4	11.3	.521	.58	672	C.
May	129	9	65.4	3.01	3.47	4,020	B.
June 1–17	87	14	49.2	2.27	1.44	1,660	B.

ROCK CREEK NEAR FORT BIDWELL, CAL.

Location.—On line between sections 21 and 28, T. 47 N., R. 18 E., Nevada, 1½ miles above mouth, near point from which water could be diverted into Cowhead Lake, about 15 miles northeast of Fort Bidwell.

Records available.—March 7 to May 5, 1913.

Drainage area.—33 square miles.

Cooperation.—Records furnished by Modoc County Irrigation Co.

Discharge measurements of Rock Creek near Fort Bidwell, Cal., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Apr. 2	C. M. Stokes	2.55	38.9	Apr. 13	Stokes and Croover	2.20	10.2
10	Stokes and Croover	3.45	220	24	C. M. Stokes	1.85	2.04

Daily gage height, in feet, and discharge, in second-feet, of Rock Creek near Fort Bidwell, Cal., for the year ending Sept. 30, 1913.

Day.	March.		April.		May.		Day.	March.		April.		May.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.		Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1	.....	.....	3.15	138	1.80	1.5	16	2.00	5.0	2.76	68	.....	.....
2	.....	.....	2.70	58	1.75	1.0	17	2.10	7.5	2.85	84	.....	.....
3	.....	.....	2.30	16	1.70	.5	18	2.10	7.5	2.63	49	.....	.....
4	.....	.....	2.40	22	1.65	.2	19	2.13	8.4	2.22	11.6	.....	.....
5	.....	.....	2.60	45	.....	.....	20	1.90	3.0	2.15	9.0	.....	.....
6	.....	.....	2.20	10.5	.....	.....	21	1.80	1.5	2.10	7.5	.....	.....
7	2.30	16	2.55	38	.....	.....	22	1.80	1.5	2.05	6.2	.....	.....
8	2.60	45	2.76	68	.....	.....	23	1.80	1.5	1.95	4.0	.....	.....
9	3.00	110	2.72	61	.....	.....	24	1.80	1.5	1.90	3.0	.....	.....
10	3.10	128	3.00	110	.....	.....	25	1.80	1.5	1.90	3.0	.....	.....
11	2.80	75	3.01	112	.....	.....	26	1.80	1.5	1.90	3.0	.....	.....
12	2.60	45	2.82	78	.....	.....	27	1.80	1.5	1.90	3.0	.....	.....
13	2.40	22	2.56	40	.....	.....	28	2.30	16	1.85	2.2	.....	.....
14	2.00	5.0	2.45	27	.....	.....	29	3.10	128	1.85	2.2	.....	.....
15	2.00	5.0	2.62	48	.....	.....	30	3.60	240	1.85	2.2	.....	.....
							31	3.60	240	.....	.....	.....	.....

NOTE.—Daily discharge determined from well-defined rating curve. Published as furnished by Modoc County Irrigation Co.

Monthly discharge of Rock Creek near Fort Bidwell, Cal., for the year ending Sept. 30, 1913.

[Drainage area, 33 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
March 7-31	240	1.5	44.7	1.36	1.02	2,220	C.
April	138	2.2	37.5	1.14	1.27	2,230	C.
May 1-5	1.5	.0	.64	.03	.01	6	C.
The period						4,460	

DISMAL CREEK NEAR FORT BIDWELL, CAL.

Location.—In sec. 16, T. 41 S., R. 22 E., unsurveyed, about 1 mile north of Oregon-California line, opposite the head of Twelvemile Creek, near a point where the water of Dismal Creek could be diverted into head of Twelvemile Creek, 12 miles north of Fort Bidwell.

Records available.—April 11 to June 17, 1913.

Drainage area.—About 12.5 square miles.

Cooperation.—Records furnished by Modoc County Irrigation Co.

Discharge measurements of Dismal Creek near Fort Bidwell, Cal., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Apr. 21	C. M. Stokes	0.15	7.65
May 7	Stokes and Croover	1.10	85.5
14	....do	.51	34.2
23	....do	1.75	151
24	....do	1.40	113

Daily gage height, in feet, and discharge, in second-feet, of Dismal Creek near Fort Bidwell, Cal., for the year ending Sept. 30, 1913.

Day.	April.		May.		June.		Day.	April.		May.		June.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Dis. charge.		Gage height.	Dis. charge.	Gage height.	Dis. charge.	Gage height.	Discharge.
1	.....	.....	0.30	18	1.10	85	16	.....	5	1.00	74	0.37	24
2	.....	.....	.40	25	1.20	94	17	.....	6	1.27	100	.35	22
3	.....	.....	.50	33	1.20	94	18	0.15	7.5	1.20	94	.....	.....
4	.....	.....	.50	33	1.15	88	19	.15	7.5	1.06	80	.....	.....
5	.....	.....	.55	37	.98	72	20	.15	7.5	1.00	74	.....	.....
6	.....	.....	.75	53	.95	70	21	.15	7.5	1.16	90	.....	.....
7	.....	.....	1.00	74	.90	66	22	.20	11	1.27	100	.....	.....
8	.....	.....	.90	66	1.20	94	23	.30	18	1.50	123	.....	.....
9	.....	.....	.90	66	.85	61	24	.35	22	1.65	140	.....	.....
10	.....	.....	.80	57	.72	51	25	.50	33	1.75	151	.....	.....
11	.....	3	.70	50	.61	42	26	.60	42	1.50	123	.....	.....
12	.....	3	.60	42	.55	37	27	.50	33	1.38	110	.....	.....
13	.....	3	.50	33	.51	34	28	.40	25	1.25	98	.....	.....
14	.....	3	.75	53	.48	32	29	.40	25	1.10	85	.....	.....
15	.....	4	1.00	74	.42	26	30	.35	22	1.18	92	.....	.....
							31	.....	.....	1.14	88	.....	.....

NOTE.—Daily discharge determined from well-defined rating curve, Apr. 11-17, estimated from comparison with records of Deep Creek.

Monthly discharge of Dismal Creek near Fort Bidwell, Cal., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
April 11–30	42	3	14.4	571	B.
May	151	18	75.4	4,640	C.
June 1–17	94	22	58.4	1,970	B.
The period				7,180	

DEEP CREEK ABOVE BIG VALLEY, NEAR FORT BIDWELL, CAL.

Location.—In the SE. ¼ sec. 29, T. 40 S., R. 22 E., above head of Big Valley, near point from which water could be diverted into head of Fifteenmile Creek, about 20 miles north of Fort Bidwell.

Records available.—May 1 to June 17, 1913.

Drainage area.—34.4 square miles.

Cooperation.—Records furnished by Modoc County Irrigation Co.

Discharge measurements of Deep Creek above Big Valley, near Fort Bidwell, Cal., during the years ending Sept. 30, 1912–13.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
1912.		*Feet.*	*Sec.-ft.*	1913.		*Feet.*	*Sec.-ft.*
May 23	C. M. Stokes		44.4	May 5	Stokes and Croover	1.30	68.7
30	Stokes and Croover		133	15	do	1.75	127
June 5	Fox and Stokes		136	16	do	2.30	234
July 3	C. M. Stokes		22.6	22	do	2.55	294
				22	do	2.70	320
				24	do	3.00	454

Daily gage height, in feet, and discharge, in second-feet, of Deep Creek above Big Valley, near Fort Bidwell, Cal., for the year ending Sept. 30, 1913.

Day.	May.		June.		Day.	May.		June.	
	Gage height.	Discharge.	Gage height.	Discharge.		Gage height.	Discharge.	Gage height.	Discharge.
1		30	2.30	227	16	2.20	207	1.40	81
2	1.00	40	2.35	242	17	2.30	227	1.35	75
3	1.08	48	2.32	232	18	2.38	250		
4	1.25	64	2.20	207	19	2.20	207		
5	1.40	81	2.10	187	20	2.10	187		
6	1.70	117	2.07	180	21	2.30	227		
7	2.00	168	2.00	168	22	2.35	242		
8	2.10	182	1.85	141	23	2.63	310		
9	2.00	168	1.80	133	24	2.78	365		
10	1.95	160	1.70	117	25	2.78	365		
11	1.85	141	1.60	104	26	2.80	370		
12	1.75	127	1.70	117	27	2.72	340		
12	1.70	117	1.58	101	28	2.55	293		
14	1.85	141	1.48	90	29	2.30	227		
15	2.00	168	1.45	87	30	2.32	232		
					31	2.38	247		

NOTE.—Daily discharge determined from well-defined rating curve. Mean discharge for May, 195 second-feet (1,200 acre-feet); June 1–17, 148 second-feet (4,990 acre-feet).

DEEP CREEK AT BIG VALLEY, NEAR LAKEVIEW, OREG.

Location.—In sec. 4, T. 40 S., R. 22 E., near the Big Valley dam site, about 9 miles from Mud Creek stage station and about 12 miles east of Lakeview.

Records available.—May 3, 1911, to September 30, 1913.

Drainage area.—71 square miles.

Gage.—Barrett & Lawrence water-stage recorder installed in December, 1911, about 100 feet above the cable. Readings during 1911 made on a staff gage about one-fourth mile below, which was also used as a reference gage for the present gage until May 28, 1912. From May 28 to August 21, 1912, a staff gage at the cable was used as the reference gage. After August 22, 1912, a staff gage at the site of the water-stage recorder was used as a reference gage. By means of comparative readings the gage heights for 1912 previous to August 22 have been referred to the staff gage at cable and a rating curve derived by the same method. Data for 1913 are referred to datum of water-stage recorder.

Channel and control.—Composed of gravel and stone; not likely to shift.

Discharge measurements.—Made from the cable or by wading.

Winter flow.—Stream freezes occasionally, but discharge relation is not affected by ice.

Storage.—The dam site at Big Valley can probably be developed to any storage capacity warranted by the available water supply.

Cooperation.—Maintained in cooperation with the Warner Lake Irrigation Co.

Discharge measurements of Deep Creek at Big Valley, near Lakeview, Oreg., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Feb. 11	Howard Kimble	0.61	9.3	Apr. 13	Howard Kimble	2.60	158
Mar. 10	do	.78	18.3	June 13	do	2.12	113
Apr. 7	do	2.00	98.1	Aug. 23	C. M. Stokes	.57	7.46

Daily gage height, in feet, of Deep Creek at Big Valley, near Lakeview, Oreg., for the year ending Sept. 30, 1913.

[Nick Barry, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.54	0.56	.....	.....	.....	.....	.....	.....	3.48	1.57	0.82	.....
2	.55	.54	.....	.....	.....	.....	.....	.....	3.45	1.52	.83	.....
3	.57	.52	.....	.....	.....	0.67	.....	.....	3.33	2.00	.83	.....
4	.58	.52	.....	.....	.....	.64	1.80	.....	3.27	.....	.81	0.52
5	.52	.56	.....	.....	.....	.64	1.80	.....	3.18	.....	.76	.52
6	.57	.82	.....	.....	.....	.65	2.03	3.08	3.03	1.50	.74	.50
7	.58	.76	.....	.....	.....	.66	1.83	3.51	3.27	.....	.70	.50
8	.58	.71	.....	.....	.....	.69	1.84	3.62	2.91	.....	.66	.53
9	.58	.69	.....	.....	.....	.72	1.97	3.36	2.72	.....	.63	.52
10	.57	.64	.....	.....	.....	.79	2.47	3.27	2.59	.....	.62	.52
11	.58	.60	.....	.....	0.60	.84	2.79	.....	2.38	.....	.61	.52
12	.58	.56	.....	.....	.60	.83	2.92	3.20	2.26	.....	.63	.52
13	.58	.56	.....	.....	.60	.83	2.70	.....	.....	.....	.60	.52
14	.57	.56	.....	.....	.60	.83	2.55	.....	.....	1.10	.60	.50
15	.58	.56	.....	.....	.61	.83	2.44	.....	1.98	.....	.60	.43
16	.60	.56	.....	.....	.63	.83	2.27	.....	1.83	.....	.60	.43
17	.57	.56	.....	.....	.67	.85	2.52	3.42	1.74	.....	.60	.40
18	.58	.....	.....	.....	.66	.86	2.58	4.25	1.70	.....	.60	.40
19	.58	.....	.....	.....	.64	.84	2.48	3.74	1.80	.....	.60	.45
20	.56	.....	.....	.....	.63	.84	2.66	3.58	.....	.90	.57	.47
21	.55	.....	.....	.....	.62	.83	2.80	3.60	1.60	.92	.55	.49
22	.56	.....	.....	.....	.....	.84	2.80	3.70	.....	1.16	.56	.50
23	.....	.....	.....	.....	.62	.82	2.72	3.88	.....	1.63	.57	.50
24	.....	.....	.....	.....	.....	.82	2.88	4.08	.....	2.42	.56	.50
25	.....	.....	.....	.....	.....	.82	3.13	4.12	.....	1.56	.57	.50
26	.56	.....	.....	.....	.....	.82	3.38	4.20	.....	1.37	.57	.50
27	.54	.....	.....	.....	.....	.81	3.32	4.20	.....	1.23	.58	.49
28	.52	.....	.....	.....	.....	.81	3.07	4.03	.....	1.13	.68	.48
29	.52	.....	.....	.....	.....	1.03	.....	3.60	1.90	.....	.60	.51
30	.50	.....	.....	.....	.....	3.00	.....	.....	1.75	.....	.....	.50
31	.52	.....	.....	.....	.....	3.90	.....	.....	.....	.....	.....	.....

Daily discharge, in second-feet, of Deep Creek at Big Valley, near Lakeview, Oreg., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	9	9	.....	.....	.....	12	326	228	305	62	18	8.3
2	9	9	.....	.....	.....	12	244	228	298	58	18	7.9
3	9	8	.....	.....	.....	12	162	229	273	98	18	7.5
4	10	8	.....	.....	.....	11	80	229	262	84	18	7.1
5	8	9	.....	.....	.....	11	80	229	246	70	15	7.1
6	9	17	.....	.....	.....	11	101	229	221	57	15	6.5
7	10	15	.....	.....	.....	12	83	311	262	54	13	6.5
8	10	13	.....	.....	.....	13	84	337	202	51	12	7.4
9	10	13	.....	.....	.....	14	95	279	177	48	11	7.1
10	9	11	.....	.....	.....	17	146	262	160	45	10	7.1
11	10	10	.....	.....	9.5	19	186	256	136	42	10	7.1
12	10	9	.....	.....	9.5	18	204	249	123	38	11	7.1
13	10	9	.....	.....	9.5	18	174	257	114	35	9.5	7.1
14	9	9	.....	.....	9.5	18	155	265	105	32	9.5	6.5
15	10	9	.....	.....	9.8	18	142	274	96	30	9.5	5.4
16	10	9	.....	.....	11	18	124	283	83	28	9.5	5.4
17	9	9	.....	.....	12	20	151	291	75	26	9.5	4.9
18	10	.....	.....	.....	12	20	159	506	72	25	9.5	4.9
19	10	.....	.....	.....	11	19	147	366	80	24	9.5	5.7
20	9	.....	.....	.....	11	19	169	327	72	22	8.6	6.0
21	9	.....	.....	.....	10	18	187	332	64	23	8.0	6.3
22	9	.....	.....	.....	10	19	187	356	140	35	8.3	6.5
23	9	.....	.....	.....	10	18	177	402	133	66	8.6	6.5
24	9	.....	.....	.....	10	18	198	457	126	140	8.3	6.5
25	9	.....	.....	.....	10	18	237	469	119	61	8.6	6.5
26	9	.....	.....	.....	11	18	283	491	112	48	8.6	6.5
27	9	.....	.....	.....	11	18	271	491	105	39	8.9	6.3
28	8	.....	.....	.....	11	18	227	443	97	34	12	6.2
29	8	.....	.....	.....	.....	28	228	332	89	30	9.5	6.8
30	8	.....	.....	.....	.....	216	228	323	76	26	9.1	6.5
31	8	.....	.....	.....	.....	407	.....	314	.....	22	8.7	.....

NOTE.—Daily discharge determined from a fairly well defined rating curve. Mean discharge estimated Nov. 18 to Jan. 31, 8 second-feet; Feb. 1–10, 9 second-feet; June 22–28, from comparison with records at Adel. Discharge interpolated for other days for which gage heights are not recorded.

Monthly discharge of Deep Creek at Big Valley, near Lakeview, Oreg., for the year ending Sept. 30, 1913.

[Drainage area, 71 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
October	10	8	9.2	0.130	0.15	566	B.
November	.....	.....	a9.3	.131	.15	553	C.
December	.....	.....	a8.0	.113	.13	492	D.
January	.....	.....	a8.0	.113	.13	492	D.
February	.....	.....	9.92	.140	.15	551	B.
March	407	11	35.7	.503	.58	2,200	B.
April	326	80	174	2.45	2.73	10,400	B.
May	506	228	324	4.56	5.26	19,900	B.
June	305	64	147	2.07	2.31	8,750	C.
July	140	22	46.9	.661	.76	2,880	C.
August	18	8.0	11.1	.156	.18	682	B.
September	8.3	4.9	6.57	.093	.10	391	B.
The year	506	.....	66.1	.931	12.63	47,900	

a Estimated.

DEEP CREEK AT ADEL, OREG.

Location.—In the SE. ¼ sec. 21, T. 39 S., R. 24 E., about one-eighth mile above the wagon bridge crossing the creek at Adel; below all tributaries.

Records available.—May 11, 1909, to September 30, 1913.

Drainage area.—260 square miles.

Gage.—A vertical staff in two sections about 500 feet above the bridge and above a series of rapids; datum unchanged.

Channel and control.—Probably permanent; bed of stream composed of gravel and stone.

Discharge measurements.—Made from the wagon bridge.

Diversions.—Several small ditches divert water for irrigation near the headwaters of the stream and five ditches with a combined capacity of about 30 second-feet take out within 6 or 8 miles above the station and carry water around it to irrigate several hundred acres of land; 2,000 or 3,000 acres of land are watered by natural flooding near Big Valley and Crane Lake, but much of the water is probably returned to the stream. Below the bridge the grade of the stream is very flat, and water is diverted into the M. C. ditch by means of a temporary dam, which is repaired at the beginning of each irrigating season.

Winter flow.—Discharge relation occasionally affected by ice jams, but control generally remains open.

Accuracy.—Determination of mean gage height is rendered rather difficult during the spring by diurnal fluctuations.

Cooperation.—Station maintained in cooperation with the Warner Lake Irrigation Co.

Discharge measurements of Deep Creek at Adel, Oreg., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Feb. 16	Howard Kimble	2.95	29.8	Apr. 10	Howard Kimble	4.15	327
17	do	2.95	31.3	12	do	4.68	521
Mar. 9	do	3.06	42.9	Aug. 24	C. M. Stokes	2.67	a7.28
Apr. 4	do	3.75	209				

a Includes 0.68 second-foot in ditches between measuring point and gage.

Daily gage height, in feet, of Deep Creek at Adel, Oreg., for the year ending Sept. 30, 1913.

[Myrtle Wible, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2.65	2.95	.....	2.90	3.02	3.05	5.8	4.90	4.70	3.60	3.00	2.82
2	2.65	2.95	.....	2.90	3.02	3.05	5.7	4.90	4.50	3.90	2.92	2.80
3	2.70	3.32	.....	2.90	3.02	3.05	4.50	4.15	4.40	3.90	2.90	2.75
4	2.70	3.35	.....	2.95	3.02	3.08	3.98	4.65	4.40	3.20	2.90	2.72
5	2.70	3.32	.....	2.95	3.02	3.22	4.05	4.90	4.40	3.20	2.90	2.72
6	2.70	3.30	.....	3.00	3.02	3.10	3.70	5.05	4.40	3.12	2.90	2.72
7	2.70	3.25	.....	3.00	3.02	3.00	3.68	5.00	4.40	3.12	2.85	2.75
8	2.72	3.25	.....	3.00	3.02	3.00	3.98	5.05	4.30	3.10	2.85	2.75
9	2.78	3.22	.....	3.00	2.98	3.00	3.95	5.05	4.30	3.10	2.85	2.75
10	2.80	3.20	.....	3.00	2.91	3.15	4.25	5.00	4.20	3.10	2.85	2.75
11	2.81	3.20	.....	3.00	2.91	3.26	5.5	5.00	4.15	3.08	2.83	2.80
12	2.82	3.20	.....	2.90	2.91	3.25	5.7	5.00	3.92	3.00	2.80	2.80
13	2.84	3.20	.....	2.90	2.91	3.25	5.6	5.00	3.70	3.00	2.80	2.80
14	2.82	3.18	.....	2.90	2.92	3.25	4.9	4.80	3.58	3.04	2.80	2.80
15	2.85	3.20	.....	2.90	2.91	3.31	4.4	4.65	3.38	3.00	2.80	2.80
16	2.85	3.20	.....	2.90	2.90	3.31	4.30	4.70	3.22	3.00	2.80	2.80
17	2.85	3.20	.....	2.90	2.90	3.30	4.40	4.50	3.20	3.00	2.70	2.82
18	2.85	3.20	.....	2.90	2.90	3.30	4.40	4.60	3.20	2.90	2.74	2.80
19	2.85	3.20	.....	2.90	2.90	3.22	4.60	4.75	3.20	2.90	2.70	2.80
20	2.85	3.18	.....	2.90	2.90	3.02	4.65	4.70	3.20	2.90	2.70	2.80
21	2.84	3.00	2.90	2.90	2.90	2.92	4.55	4.40	4.00	2.90	2.70	2.80
22	2.85	2.90	2.90	2.90	2.90	2.92	4.40	5.20	4.10	3.44	2.70	2.80
23	2.85	2.90	2.90	2.90	2.90	2.92	4.40	5.05	3.91	4.28	2.70	2.80
24	2.85	2.90	2.90	2.90	2.92	3.00	4.60	4.80	3.60	4.40	2.70	2.80
25	2.85	2.82	2.90	2.95	2.98	3.00	4.60	4.70	4.02	4.20	2.65	2.80
26	2.85	.....	2.90	2.95	3.04	3.00	4.90	4.60	3.95	4.30	2.70	2.80
27	2.85	.....	2.90	2.95	3.04	3.00	4.90	4.60	3.72	4.00	2.70	2.80
28	2.85	.....	2.90	2.95	3.05	3.00	5.00	4.40	3.60	3.68	2.70	2.80
29	2.85	.....	2.90	2.95	.....	3.38	4.90	4.40	3.60	3.10	2.70	.....
30	2.88	.....	2.90	2.95	.....	4.90	4.90	4.40	3.60	3.08	2.80	.....
31	2.90	.....	2.90	2.95	.....	5.9	.....	4.40	.....	3.00	2.82	.....

NOTE.—Creek frozen over at gage from about Jan. 4 to Feb. 14, and Feb. 22. Control remained open and ice apparently had little or no effect on discharge relation. Gage readings Nov. 26 to Dec. 20, are uncertain and have been discarded.

Daily discharge, in second-feet, of Deep Creek at Adel, Oreg., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	6	30	20	24	39	44	1,260	650	552	153	36	17
2	6	30	20	24	39	44	1,180	650	461	233	26	15
3	8	91	21	24	39	44	461	319	417	233	24	12
4	8	98	23	30	39	48	259	528	417	69	24	9
5	8	91	25	30	39	73	283	650	417	69	24	9
6	8	87	28	36	39	51	177	730	417	55	24	9
7	8	78	30	36	39	36	172	700	417	55	20	12
8	9	78	30	36	39	36	259	730	377	51	20	12
9	14	73	28	36	34	36	249	730	377	51	20	12
10	15	69	26	36	25	60	357	700	337	51	20	12
11	16	69	24	36	25	80	1,020	700	319	48	18	15
12	17	69	22	24	25	78	1,180	700	239	36	15	15
13	19	69	20	24	25	78	1,100	700	177	36	15	15
14	17	65	20	24	26	78	650	600	148	42	15	15
15	20	69	20	24	25	89	417	528	104	36	15	15
16	20	69	21	24	24	89	377	552	73	36	15	15
17	20	69	22	24	24	87	417	461	69	36	8	17
18	20	69	22	24	24	87	417	505	69	24	11	15
19	20	69	23	24	24	73	505	576	69	24	8	15
20	20	65	23	24	24	39	528	552	69	24	8	15
21	19	36	24	24	24	26	483	417	265	24	8	15
22	20	24	24	24	24	26	417	820	301	116	8	15
23	20	24	24	24	24	26	417	730	236	369	8	15
24	20	24	24	24	26	36	505	600	153	417	8	15
25	20	17	24	30	34	36	505	552	272	337	6	15
26	20	18	24	30	42	36	650	505	249	377	8	15
27	20	20	24	30	42	36	650	505	183	265	8	15
28	20	22	24	30	44	36	700	417	153	172	8	15
29	20	24	24	30	.....	104	650	417	153	51	8	16
30	22	22	24	30	.....	650	650	417	153	48	15	18
31	24	.....	24	30	.....	1,340	.....	417	.....	36	17	.....

NOTE.—Daily discharge determined from well-defined rating curve. Discharge estimated by comparison with records of Twentymile Creek Nov. 26 to Dec. 20.

Monthly discharge of Deep Creek at Adel, Oreg., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	24	6	16.3	1,000	A.
November	98	17	54.6	3,250	B.
December	30	20	23.6	1,450	C.
January	36	24	28.1	1,730	B.
February	44	24	31.3	1,740	B.
March	1,340	26	116	7,130	B.
April	1,260	172	563	33,500	A.
May	730	319	583	35,800	A.
June	552	69	255	15,200	A.
July	417	24	115	7,070	A.
August	36	6	15.1	928	B.
September	18	9	14.2	845	B.
The year	1,340	6	151	110,000	

CAMAS CREEK NEAR LAKEVIEW, OREG.

Location.—In the NE. ¼ sec. 3, T. 39 S., R. 22 E., 500 feet below mouth of Blue Creek, and about 20 miles from Lakeview.

Records available.—September 11, 1912, to September 30, 1913.

Drainage area.—About 87 square miles.

Gage.—Fuller water-stage recorder, with vertical staff reference gage.

Channel and control.—Gravel and bowlders; fairly permanent.

Discharge measurements.—Made from foot log or by wading.

Winter flow.—Considerable ice obstruction affects discharge relation.

Diversions.—Some irrigation is practiced in Camas Prairie, near the head of the stream.

Accuracy.—Results good.

Cooperation.—Station maintained in cooperation with Warner Lake Irrigation Co.

Discharge measurements of Camas Creek near Lakeview, Oreg., during the period Sept. 11, 1912 to Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Sept. 11	John Dubuis	0.60	5.70	Apr. 13	Howard Kimble	3.04	211
Feb. 12	Howard Kimble	*a*.85	7.9	June 13	do	1.23	28.7
Mar. 9	do	.92	14.8	Aug. 24	C. M. Stokes	.53	4.14
Apr. 7	do	1.70	60.4				

a Creek frozen over.

Daily gage height, in feet, of Camas Creek near Lakeview, Oreg., for the period Sept. 11, 1912 to Sept. 30, 1913.

[Nick Barry, observer.]

Day.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	0.60	0.70	1.00	.....	.....	.....	.....	.....	.....	.....	.....	0.50
2	.....	.60	.70	1.00	.....	.....	.....	.....	.....	.....	1.40	0.80	.....
3	.....	.60	.....	1.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.60	.....	1.00	0.80	.....	0.80	2.10	2.30	1.60	1.60	.....	.50
5	.....	.60	.....	1.00	.....	.....	.....	.....	.....	.....	.....	.70	.....
6	.....	.60	.....	1.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	.....	.60	.....	1.00	.....	.....	.....	1.80	3.00	1.60	1.30	.....	.50
8	.....	.60	.....	1.00	.....	.....	.....	1.90	.....	.....	.....	.70	.....
9	.....	.60	1.30	1.00	.....	.....	.92	1.93	.....	.....	.....	.....	.....
10	.....	.60	1.36	1.00	.....	.....	.....	2.27	.....	.....	1.00	.....	.....
11	0.60	.60	1.38	1.00	.....	.....	.....	2.68	2.90	1.50	.....	.....	.50
12	.60	.60	1.32	1.00	.....	0.85	.90	3.00	.....	.....	.....	.60	.....
13	.60	.60	1.20	1.00	.....	.....	.....	3.02	.....	1.23	.80	.....	.....
14	.60	.60	1.15	1.00	.....	.....	.....	2.98	2.50	1.20	.....	.....	.50
15	.60	.60	1.12	.....	.....	.....	.....	2.78	.....	.....	.....	.60	.....
16	.60	.60	1.00	.....	.....	.....	1.00	2.60	.....	.....	.80	.....	.....
17	.60	.61	1.00	.....	.....	.....	.....	.....	.....	1.00	.....	.....	.40
18	.60	.62	1.00	.....	.....	.80	.....	.....	3.20	.....	.....	.60	.....
19	.60	.64	.96	.....	.....	.....	.90	.....	.....	.....	.....	.....	.....
20	.60	.64	1.03	.....	.....	.....	.....	2.90	.....	1.10	.70	.....	.40
21	.60	.67	1.02	.....	.....	.....	.....	3.30	.....	.....	.....	.60	.....
22	.60	.68	1.01	.....	.....	.....	.....	3.34	.....	.....	.....	.....	.....
23	.60	.69	1.00	.....	.....	.....	.....	.....	2.40	1.40	.90	.60	.40
24	.60	.70	1.00	.....	.....	.....	.90	.....	.....	.....	.....	.....	.....
25	.60	.71	1.00	.....	.....	.90	.....	.....	2.30	.....	.....	.....	.....
26	.60	.74	1.00	.....	.....	.....	.....	.....	.....	1.60	.....	.50	.....
27	.60	.70	1.00	.....	.....	.....	1.20	3.20	.....	.....	1.20	.....	.05
28	.60	.70	1.00	.....	.....	.....	.....	.....	2.20	.....	.....	.....	.....
29	.60	.70	1.00	.....	.....	.....	.....	.....	.....	1.40	.....	.50	.....
30	.60	.70	1.00	.....	.....	.....	.....	2.40	.....	.....	1.00	.....	.50
31	.....	.70	.....	.....	.....	.....	2.50	.....	1.80	.....	.....	.....	.....

NOTE.—Creek frozen Nov. 23 to about Feb. 15. Gage did not record properly during this time, nor after about Apr. 22; readings on staff gage have been used through these periods.

Daily discharge, in second-feet, of Camas Creek near Lakeview, Oreg., for the period Sept. 11, 1912 to Sept. 30, 1913.

Day.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	6	8	.....	.....	.....	12	127	125	64	37	13	4
2	.....	6	8	.....	.....	.....	12	117	122	60	37	11	4
3	.....	6	12	.....	.....	.....	11	107	120	55	44	10	4
4	.....	6	15	.....	.....	.....	11	97	117	51	51	9	4
5	.....	6	18	.....	.....	.....	12	88	146	51	44	8	4
6	.....	6	21	.....	.....	.....	12	78	175	51	38	8	4
7	.....	6	24	.....	.....	.....	13	68	204	51	31	8	4
8	.....	6	27	.....	.....	.....	14	77	200	50	26	8	4
9	.....	6	31	.....	.....	.....	15	80	196	48	22	8	4
10	.....	6	35	.....	.....	.....	15	114	192	46	18	7	4
11	6	6	36	.....	.....	.....	14	159	189	44	15	6	4
12	6	6	32	.....	.....	8	14	204	172	36	13	6	4
13	6	6	26	.....	.....	8	15	207	155	28	11	6	4
14	6	6	24	.....	.....	9	16	201	137	26	11	6	4
15	6	6	23	.....	.....	10	17	172	160	23	11	6	3
16	6	6	18	.....	.....	10	18	149	185	20	11	6	2
17	6	6	18	.....	.....	11	16	159	210	18	10	6	2
18	6	6	18	.....	.....	11	16	169	234	19	10	6	2
19	6	7	16	.....	.....	11	14	179	212	20	9	6	2
20	6	7	.....	.....	.....	12	14	189	191	22	8	6	2
21	6	7	.....	.....	.....	12	14	249	170	27	10	6	2
22	6	8	.....	.....	.....	13	14	255	148	32	12	6	2
23	6	8	.....	.....	.....	13	14	251	127	37	14	6	2
24	6	8	.....	.....	.....	14	14	247	122	42	17	6	2
25	6	8	.....	.....	.....	14	18	242	117	47	20	5	3
26	6	9	.....	.....	.....	14	22	238	114	51	23	4	4
27	6	8	.....	.....	.....	14	26	234	110	47	26	4	4
28	6	8	.....	.....	.....	13	50	198	107	42	23	4	4
29	6	8	.....	.....	.....	.....	81	162	94	37	20	4	4
30	6	8	.....	.....	.....	.....	112	127	81	37	18	4	4
31	.....	8	.....	.....	.....	.....	137	.....	68	.....	16	4	.....

NOTE.—Daily discharge determined from well-defined rating curve. Mean discharge estimated as follows: Nov. 20–30, 10 second-feet; Dec. 1 to Jan. 31, 6 second-feet; Feb. 1–11, 7 second-feet.

Monthly discharge of Camas Creek near Lakeview, Oreg., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	9	6	6.8	418	A.
November			17.3	1,030	B.
December			[a] 6.0	369	D.
January			[a] 6.0	369	D.
February			9.8	544	C.
March	137	11	25.3	1,560	C.
April	255	68	165	9,820	B.
May	234	68	152	9,350	C.
June	64	18	39.4	2,340	B.
July	51	8	21.2	1,300	B.
August	13	4	6.5	400	B.
September	4	2	3.3	196	B.
The year	255		38.2	27,700	

[a] Estimated.

NOTE.—Run-off, Sept. 11-30, 1912, 238 acre-feet.

HONEY CREEK NEAR PLUSH, OREG.

Location.—In the NW. ¼ sec. 29, T. 36 S., R. 24 E., half a mile above the mouth of the canyon, 1½ miles northwest of Plush, and 1 mile above the wagon bridge near Plush; below all tributaries.

Records available.—May 13, 1909, to September 30, 1913.

Drainage area.—185 square miles.

Gages.—Barrett and Lawrence water-stage recorder. The first gage was a vertical staff fastened to the wagon bridge, but as the gage heights were affected by backwater from a temporary diversion dam below the station a vertical staff gage in two sections was installed by the Warner Lake Irrigation Co. February 24, 1910, half a mile above the mouth of the canyon and 1 mile above the bridge. On March 10, 1911, the gage was reset on the opposite side of the river and the datum was lowered 1 foot. All 1910 and 1911 readings at this location were reduced to the new datum. The recording gage was installed January 13, 1912, near the gage set March 10, 1911. On March 29, 1912, the recording gage was reinstalled at a point about 50 feet below the staff gage. On February 13, 1913, the datum was lowered one foot, and readings January 8 to February 1, 1913, were reduced to the new datum.

Channel and control.—Bed composed of gravel; shifts slightly.

Discharge measurements.—Made from cable near the gage or by wading; at original site, made from the bridge.

Winter flow.—Discharge relation affected by ice.

Diversions.—A small amount of water is diverted near the head of the stream and used to irrigate a few hundred acres; with this exception the total run-off from the basin above the station is shown by the records.

Accuracy.—Conditions during 1913 have been fairly favorable for accurate results.

Cooperation.—Station maintained in cooperation with the Warner Lake Irrigation Co.

Discharge measurements of Honey Creek near Plush, Oreg., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Feb. 13	Howard Kimble	[a] 0.79	6.7	Apr. 11	Howard Kimble	2.62	75.0
Mar. 7	do	1.31	18.3	12	do	3.30	143
Apr. 3	do	1.88	39.1	Aug. 25	C. M. Stokes	.55	2.04

[a] Complete ice cover at gage and control.

Daily gage height, in feet, of Honey Creek near Plush, Oreg., for the year ending Sept. 30, 1913.

[E. A. Friday, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	.....	.....	.....	.....	.....	2.73	2.64	2.72	1.50	.....	.....
2	.....	.....	.....	.....	0.70	0.75	2.20	2.50	2.70	.....	.....	.....
3	.....	.....	.....	.....	.....	.77	1.91	2.52	2.70	.....	.....	.....
4	.....	.....	.....	.....	.....	.92	1.97	2.67	2.67	1.70	.....	.....
5	.....	.....	.....	.....	.....	1.06	2.22	2.95	2.54	.....	.....	.....
6	−0.35	−0.25	.....	.....	.....	1.17	1.87	3.30	2.36	.....	.....	.....
7	.....	.....	.....	.....	.....	1.17	1.78	3.62	2.80	.....	.....	.....
8	.....	.....	.....	0.85	.....	1.09	1.78	3.67	2.52	.....	.....	.....
9	.....	.....	.....	.....	.....	1.19	1.71	3.70	2.32	1.00	.....	.....
10	.....	.....	.....	.....	.....	1.30	1.99	3.54	2.40	.....	.....	.....
11	.....	.....	.....	.....	.....	1.31	2.50	3.40	2.25	.....	.....	.....
12	.....	.....	.....	.....	.....	1.18	3.07	3.29	2.23	.....	.....	.....
13	− .35	− .25	.....	.....	.79	.....	3.01	3.21	.....	.....	.....	.....
14	.....	.....	.....	.....	.82	.....	2.79	2.99	.....	.....	.....	.....
15	.....	.....	.....	.....	.86	1.25	2.70	2.99	.....	.....	.....	.....
16	.....	.....	.....	.....	.91	1.25	2.43	3.04	.....	.....	.....	.....
17	.....	.....	.....	.....	.93	1.23	2.53	3.01	.....	.....	.....	.....
18	.....	.....	.....	.....	1.08	1.24	2.82	3.50	.....	.....	.....	.....
19	.....	.....	.....	.70	1.06	1.16	2.74	3.60	.....	.....	.....	.....
20	− .30	− .20	.....	.....	.....	1.11	2.70	3.30	1.57	.....	.....	.....
21	.....	.....	.....	.....	.....	1.06	2.93	3.16	1.51	.....	.....	.....
22	.....	.....	.....	.....	1.20	1.06	2.99	3.12	1.52	.....	.....	.....
23	.....	.....	.....	.....	.....	1.03	2.79	3.15	1.65	.....	.....	.....
24	.....	− .10	.....	.80	.....	1.17	2.84	3.25	1.62	1.57	.....	.....
25	.....	− .07	.....	.....	.....	.....	3.18	3.23	2.07	1.54	0.55	.....
26	.....	+ .08	.....	.....	.....	.....	3.57	3.25	2.20	1.65	.....	.....
27	− .30	+ .18	.....	.....	.....	.....	3.72	3.22	2.23	1.20	.....	.....
28	.....	.....	.....	.....	.....	.....	3.25	3.34	2.37	1.08	.66	.....
29	.....	.....	.....	.....	.....	1.83	2.95	3.17	1.80	.99	.....	.....
30	− .30	.....	.....	.....	.....	2.80	2.80	2.87	.....	.86	.....	.....
31	.....	.....	.....	.....	.....	3.28	.....	2.75	.....	.....	.....	.....

NOTE.—Creek frozen from some time in December until about Feb. 13. On Mar. 31 a dam on Snyder Creek broke and released a considerable volume of water. The peak of the flood reached a gage height of 6.2 feet, or 950 second-feet.

Daily discharge, in second-feet, of Honey Creek near Plush, Oreg., for the year ending Sept. 30. 1913.

[E. A. Friday, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	6	7	.....	.....	.....	6.2	84	78	84	24	.....	.....
2	6	7	.....	.....	.....	5.6	52	68	82	26	.....	.....
3	6	8	.....	.....	.....	5.9	39	69	82	29	.....	.....
4	6	8	.....	.....	.....	8.6	42	80	80	31	.....	.....
5	6	8	.....	.....	.....	11	53	102	71	27	.....	.....
6	6	8	.....	.....	.....	14	38	140	60	23	.....	.....
7	6	8	.....	.....	.....	14	34	187	90	19	.....	.....
8	6	8	.....	.....	.....	12	34	195	69	14	.....	.....
9	6	8	.....	.....	.....	15	31	200	58	10	.....	.....
10	6	8	.....	.....	.....	18	43	174	62	11	.....	.....
11	6	8	.....	.....	.....	18	68	154	54	12	.....	.....
12	6	8	.....	.....	.....	14	114	139	54	13	.....	.....
13	6	8	.....	.....	6.2	15	108	129	50	14	.....	.....
14	6	8	.....	.....	6.8	16	89	106	47	15	.....	.....
15	6	8	.....	.....	7.5	16	82	106	43	16	.....	.....
16	6	9	.....	.....	8.4	16	64	111	40	18	.....	.....
17	6	9	.....	.....	8.7	16	70	108	36	19	.....	.....
18	7	9	.....	.....	12	16	92	168	33	20	.....	.....
19	7	10	.....	.....	11	14	85	184	29	21	.....	.....
20	7	10	.....	.....	12	12	82	140	26	22	.....	.....
21	7	10	.....	.....	14	11	101	124	24	23	.....	.....
22	7	11	.....	.....	15	11	106	119	25	24	.....	.....
23	7	12	.....	.....	14	11	89	122	29	25	.....	.....
24	7	13	.....	.....	13	14	93	134	28	26	.....	.....
25	7	14	.....	.....	11	18	126	132	46	25	2.4	.....
26	7	18	.....	.....	10	23	179	134	52	29	.....	.....
27	7	21	.....	.....	9	27	203	130	54	15	.....	.....
28	7	21	.....	.....	6.8	32	134	146	60	12	4.1	.....
29	7	21	.....	.....	.....	36	102	125	35	9.8	.....	.....
30	7	21	.....	.....	.....	90	90	96	30	7.5	.....	.....
31	7	.....	.....	.....	.....	138	.....	86	.....	5.2	.....	.....

NOTE.—Daily discharge determined from a rating curve well defined between 10 and 150 second-feet. Discharge interpolated or estimated for days for which gage heights are missing. Mean discharge estimated as follows: Dec. 1–31, 16 second-feet; Jan. 1–31, 5 second-feet; Feb. 1–12, 6 second-feet; Aug. 1–31, 3.0 second-feet; Sept. 1–30, 2.0 second-feet.

Monthly discharge of Honey Creek near Plush, Oreg., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	7	6	6.5	400	D.
November	21	7	10.9	649	D.
December	.....	.....	[a]16.0	984	D.
January	.....	.....	[a]5.00	307	D.
February	15	6.0	8.48	471	C.
March	138	5.6	21.8	1,340	B.
April	203	31	84.2	5,010	B.
May	200	68	129	7,930	B.
June	90	24	51.1	3,040	B.
July	31	5.2	18.9	1,160	C.
August	.....	.....	[a]3.00	184	C.
September	.....	.....	[a]2.00	119	D.
The year	203	.....	29.8	21,600	

[a] Estimated.

PELICAN LAKE NEAR ADEL, OREG.

Location.—In the NW. ¼ sec. 10, T. 39 S., R. 24 E., on west shore of lake about 2 miles north of Adel.

Records available.—February 17 to April 10, 1913, occasional readings.

Gage.—Vertical staff.

Gage readings, in feet, during the year ending Sept. 30, 1913.

February 17	6.12	April 4	6.90
March 8	6.19	April 10	6.60

CRUMP LAKE NEAR ADEL, OREG.

Location.—In sec. 22, T. 38 S., R. 24 E., unsurveyed, on the west shore of the lake, 8 miles north of Adel.

Records available.—May 21, 1910, to January 15, 1912; occasional readings in 1913.

Gage.—Vertical staff fastened to a large bowlder 50 feet east of the county road. Datum of gage used during 1913 is 0.29 foot higher than that previously used.

Gage readings, in feet, during the year ending Sept. 30, 1913.

February 15	1.69	April 4	2.24
March 8	1.75	April 10	2.34

HART LAKE NEAR PLUSH, OREG.

Location.—On line between secs. 23 and 26, T. 36 S., R. 24 E., 2 miles northeast of Plush, and just north of the mouth of Honey Creek.

Records available.—June 8, 1910, to September 30, 1913.

Gage.—Vertical staff nailed to a post.

Gage readings, in feet, during the year ending Sept. 30, 1913.

October 6	2.90	March 6	2.42
October 20	2.85	April 3	2.68
January 19	2.30	April 11	2.65
February 2	2.30	August 26	2.64
February 15	2.40	August 27	2.63

NOTE.—Lake frozen at gage Jan. 19 and Feb. 2; ice about 8 inches thick.

FLAGSTAFF LAKE NEAR PLUSH, OREG.

Location.—In sec. 5, T. 35 S., R. 25 E., in a slough at the south end of the lake, 15 miles north of Plush.

Records available.—May 31 to June 30, 1910; April 30, 1911, to September 30, 1913.

Gage.—Vertical staff.

Gage readings, in feet, during the year ending Sept. 30, 1913.

October 1	1.30	February 1	1.10
October 16	1.25	February 16	1.10
November 1	1.15	March 1	1.10
November 16	1.10	March 7	.81
December 2	1.15	March 14	1.05
December 17	1.10	May 12	.89
January 2	1.10	August 26	.85
January 15	1.10	August 27	.83

Gage heights during winter are of doubtful accuracy, as observer may have read top of ice.

BLUEJOINT LAKE NEAR PLUSH, OREG.

Location.—In sec. 15, T. 33 S., R. 26 E., 30 miles north of Plush, and about 2 miles south of Warren Laird's ranch house.

Records available.—March 21, 1911, to December 31, 1913, occasional readings.

Gage.—Vertical staff was read in 1911; since then water has fallen below it and water surface has been obtained by level. The datum of gage is slightly below lowest point of lake bed.

Gage readings, in feet, 1911–1913.

March 21, 1911	5.21	March 6, 1913	1.92
September 14, 1911	4.71	May 2, 1913	1.52
April 16, 1912	4.12	August 26, 1913	[1] Dry.
May 31, 1912	3.92		

ABERT LAKE BASIN.

CHEWAUCAN RIVER AT DAM SITE NEAR PAISLEY, OREG.

Location.—In the NW. ¼ sec. 10, T. 36 S., R. 18 E., at camp of Northwest Townsite Co., about one-fourth mile below reservoir dam site, and about 20 miles above Paisley.

Records available.—June 25 to October 31, 1912; April 24 to October 31, 1913, fragmentary.

Drainage area.—Not measured.

Gage.—Vertical staff on right bank.

Channel and control.—Permanent; rock riffle below gage.

Discharge measurements.—Made by wading.

Winter flow.—No data; discharge relation probably affected by ice.

Cooperation.—Gage heights furnished by Northwest Townsite Co.

Discharge measurements of Chewaucan River at dam site near Paisley, Oreg., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 7	Howard Kimble	2.59	51.2	July 24	R. A. Harrower	3.20	117
June 6	R. A. Harrower	4.16	331	Sept. 16	do	2.40	33.8
13	do	3.58	186				

[1] Dry except for a little water from recent rain. Gage height not determined.

Daily gage height, in feet, and discharge, in second-feet, of Chewaucan River at dam site near Paisley, Oreg., 1913.

[R. A. Harrower, observer.]

Day.	April.		May.		June.		August.		September.		October.	
	Gage height.	Dis. charge.	Gage height.	Dis. charge.	Gage height.	Dis. charge.	Gage height.	Dis. charge.	Gage height.	Dis. charge.	Gage height.	Dis. charge.
1			3.85	246	4.50	441			2.44	38	2.42	37
2						432			2.44	38	2.42	37
3					4.44	422			2.42	37	2.40	35
4					4.36	396			2.46	40	2.40	35
5					4.29	374			2.44	38	2.44	38
6					4.19	342			2.44	38	2.42	37
7					4.17	335			2.42	37	2.64	55
8					4.00	285			2.41	36	2.84	74
9					3.98	280			2.41	36	2.64	55
10					3.83	242			2.41	36	2.52	45
11					3.67	203			2.41	36	2.50	43
12					3.58	184			2.41	36	2.48	41
13					3.58	184			2.40	35	2.46	40
14					3.48	164	2.58	49	2.40	35	2.48	41
15						154	2.56	48	2.40	35	2.46	40
16					3.36	144	2.52	45	2.41	36		
17					3.29	132	2.54	46	2.41	36		
18					3.29	132	2.52	45		36		
19					3.31	136	2.50	43	2.40	35		
20							2.49	42	2.38	34		
21							2.47	41	2.38	34		
22							2.45	39	2.40	35		
23							2.46	40	2.40	35		
24	4.05	299					2.46	40	2.40	35		
25	4.28	371					2.46	40	2.40	35		
26	4.48	435					2.54	46	2.40	35	2.42	37
27	4.50	441					2.48	41	2.40	35	2.42	37
28							2.48	41	2.38	34	2.42	37
29							2.48	41	2.42	37	2.42	37
30			4.50	441			2.46	40	2.44	38	2.42	37
31			4.50	441			2.50	43			2.42	37

NOTE.—Daily discharge determined from well defined rating curve. Data insufficient for monthly estimates.

CHEWAUCAN RIVER ABOVE MILL CREEK, NEAR PAISLEY, OREG.

Location.—In the SW. ¼ sec. 27, T. 33 S., R. 18 E., just above the mouth of Mill Creek, one-half mile above intake of Portland Irrigation Co. canal, formerly Conn's ditch, and about 2½ miles upstream from Paisley.

Records available.—November 6, 1912, to September 30, 1913. Records were obtained at former station one-half mile above Paisley January 4, 1905, to December 31, 1907, and January 18, 1909, to April 15, 1912, and at a station above Conn's ditch and below Mill Creek April 3 to July 13, 1912.

Drainage area.—272 square miles at original location; not measured at present location.

Gage.—Vertical staff on left bank.

Channel and control.—Rocks and gravel with rock riffle control.

Discharge measurements.—Made from cable near the gage or by wading.

Winter flow.—Discharge relation materially affected by ice during the frozen season.

Diversions.—Not over two or three hundred acres are irrigated above the station.

Accuracy.—Results good.

Cooperation.—Most of the measurements have been made by engineers of Northwest Townsite Co.

Discharge measurements of Chewaucan River above Mill Creek, near Paisley, Oreg., during the years ending Sept. 30, 1912–1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
1912		*Feet.*	*Sec. ft.*	1912–1913		*Feet.*	*Sec. ft.*
July 15	Thos. Hawthorne	1.15	71.2	Apr. 22	Howard Kimble	2.56	411
Aug. 3	do	1.47	95.9	May 6	Northwest Townsite Co	2.78	551
1912–1913				May 7	do	2.99	678
Nov. 6	Howard Kimble	1.48	95.6	24	do	3.09	790
Feb. 6	do	[a] 1.48	59.5	28	do	3.18	830
Mar. 5	do	[a] 1.45	79.1	June 15	do	1.92	197
18	do	1.48	104	July 21	do	1.26	85.5

[a] River entirely frozen over at gage but open at control

Daily gage height, in feet, of Chewaucan River above Mill Creek, near Paisley, Oreg., for the year ending Sept. 30, 1913.

[Jas. M. Bevel, observer.]

Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1			1.10			3.20		2.80	1.90		1.00
2		1.10	1.10	1.30		1.80	2.30			1.20	
3			1.20		1.50		2.30	2.80	1.70		.90
4		1.10	1.20	1.30		1.90	2.40			1.20	
5			1.20		1.60			2.70	1.60		.90
6	1.50	1.10	1.20	1.30			2.70		1.50	1.10	.90
7					1.60	1.80	3.00	2.60			
8			1.30	1.30	1.70	1.80			1.50	1.00	.90
9		1.10			1.90		3.10	2.40			
10			1.30	1.40	2.20	2.00			1.40		.90
11		1.10					2.90	2.20		1.20	
12			1.00	1.40	1.80	2.30			1.30		.80
13		1.10					2.80	2.00		1.00	.80
14		1.10	1.00	1.50	1.50	2.00		2.00	1.30		
15							2.80	1.92		1.00	.80
16		1.10	1.00	1.60		2.20		1.90	1.30	1.00	.80
17										1.00	.80
18		1.20	1.00	1.50	1.50	2.40		1.80	1.20		
19									1.20	1.00	.80
20		1.20	.90	1.50	1.70	2.45	2.90		1.20		
21						2.40		1.70		1.00	
22			.90	1.50	1.60	2.55	3.00		1.20		.80
23		1.40			1.30	2.50		1.70		1.10	
24			.90	1.60			3.10		1.30		.90
25		1.40			1.20	2.90		1.70			
26				1.50		3.00	3.20		1.60		.90
27		1.40	1.50		1.90	2.90		1.70		1.00	
28				1.50	2.20		3.19	1.90		1.00	.90
29		1.20	1.50		2.60	2.80		1.70	1.30		1.00
30	.90	1.20				2.70	2.90		1.20	1.00	1.00
31		1.20	1.50						1.20		

NOTE.—Slush ice began running Dec. 11; river frozen over from about Dec. 23, 1912, to Mar. 7, 1913. Beginning about Dec. 18, 1912, discharge relation was affected.

Daily discharge, in second-feet, of Chewaucan River above Mill Creek, near Paisley, Oreg., for the year ending Sept. 30, 1913.

Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1		64			75	855	401	558	194	76	52
2		64			75	172	308	558	173	76	48
3		64			75	183	308	558	152	76	44
4		64			75	194	345	526	143	76	44
5		64			79	187	460	494	134	70	44
6	102	64		60	80	179	494	416	118	63	44
7		64			80	172	696	437	118	58	44
8		64			132	172	720	391	118	52	44
9		64			175	195	772	345	110	60	44
10		64			263	218	745	310	103	68	44
11		64			208	263	626	275	96	76	40
12		64			152	308	592	262	89	64	36
13		64			127	263	558	218	89	52	36
14		64			102	218	558	218	89	52	36
15		64			102	246	558	199	89	52	36
16		64			102	275	610	194	89	52	36
17		63			102	330	646	183	82	52	36
18		62			102	345	682	172	76	52	36
19		61			117	330	654	165	76	52	36
20		60			132	366	626	159	76	52	36
21		59			124	345	587	152	76	52	36
22		58			116	412	696	152	76	58	36
23		57			80	387	732	152	82	63	40
24		56			76	506	772	152	89	60	44
25		55			72	626	822	152	112	58	44
26		54			124	696	855	152	134	55	44
27		53			175	626	832	152	119	52	44
28		52			263	495	847	194	104	52	44
29		51			437	558	682	152	89	52	52
30	50	50			576	494	626	173	76	52	52
31		50			716		592		76	52	

NOTE.—Daily discharge determined from two well-defined rating curves applicable Nov. 6, 1912, to Mar. 31, 1913, and Apr. 1, to Sept. 30, 1913. Daily discharge estimated on account of ice Dec. 17–31 and Mar. 1–7, as in table; Jan. 1–31, 50 second-feet; Feb. 1–28, 70 second-feet. For days when gage was read at Paisley but not at this station discharge estimates at former station have been used, and 12 second-feet added beginning May 16, for diversion in canal.

Monthly discharge of Chewaucan River above Mill Creek, near Paisley, Oreg., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October			[a] 58.0	3,570	D.
November			[a] 76.0	4,520	D.
December	64	50	60.5	3,720	C.
January			50	3,070	C.
February			70	3,890	C.
March	716	72	165	10,100	B.
April	855	172	354	21,100	B.
May	855	308	626	38,500	B.
June	558	152	274	16,300	B.
July	194	76	105	6,460	B.
August	76	52	59.3	3,650	B.
September	52	36.	41.7	2,480	B.
The year	855		162	117,000	

[a] Estimated by comparison with records for station at dam site.

CHEWAUCAN RIVER AT PAISLEY, OREG.

Location.—In the SE. ¼ sec. 23, T. 33 S., R. 18 E., half a mile above the town of Paisley.

Records available.—January 4, 1905, to December 31, 1907; January 17, 1909, to April 15, 1912, when station was discontinued. April 17 to June 23, 1913, occasional readings.

Drainage area.—272 square miles.

Gage.—Vertical staff.

Channel and control.—Probably permanent, but gage readings may be affected by manipulation of flashboards on diversion dam below. Bed composed of clean gravel; banks subject to some overflow at stages above gage height 8 feet.

Discharge measurements.—Made from cable at station above Mill Creek.

Diversions.—The canal of Portland Irrigation Co. (Conn's ditch) diverted about 12 second-feet between this station and the one above Mill Creek after May 16.

Cooperation.—Records furnished by Northwest Townsite Co.

Discharge measurements of Chewaucan River at Paisley, Oreg., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 6	Howard Kimble	4.81	95.6	May 24	Northwest Townsite Co.	6.52	777
Apr. 22	do	5.60	411	28	do	6.68	818
May 6	Northwest Townsite Co.	6.05	551	July 21	do	4.13	73.5
7	do	6.32	678				

Daily gage height, in feet, and discharge, in second-feet, of Chewaucan River at Paisley, Oreg., for the year ending Sept. 30, 1913.

Day.	April.		May.		June.		Day.	April.		May.		June.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.		Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1					6.05	555	16			6.15	598		
2			5.3	300			17	5.4	330				
3			5.3	300			18	5.5	360	6.3	670		
4							19	5.4	330				
5			5.8	460			20	5.5	360	6.2	620		
6			6.1	575	5.64	404	21	5.75	442	6.1	575		
7			6.35	695			22	5.7	425	6.28	660		
8			6.4	720			23	5.55	375	6.4	720	4.82	184
9			6.4	720			24			6.52	780		
10			6.45	745			25	5.95	515	6.58	810		
11			6.3	670			26	6.25	645	6.62	832		
12					5.1	250	27	6.3	670	6.60	820		
13			6.1	575	4.95	214	28	5.9	495	6.68	868		
14							29	5.5	360	6.3	670		
15							30			6.09	571		
							31						

NOTE.—Daily discharge determined from a fairly well defined rating curve. Data insufficient for monthly estimates.

CROOKED CREEK NEAR VALLEY FALLS, OREG.

Location.—In sec. 30, T. 36 S., R. 21 E., just above highway bridge over Crooked Creek on road from Lakeview to Valley Falls, about 7 miles south of Valley Falls.

Records available.—April 2, 1912, to April 21, 1913.

Drainage area.—Not measured.

Gage.—Vertical staff on right bank, 50 feet above wagon bridge.

Channel and control.—Probably permanent; rocky riffle below gage.

Discharge measurements.—Made from bridge or by wading.

Winter flow.—Stream freezes almost solid in extremely cold weather and discharge becomes very small.

Diversions.—Probably none above station.

Storage.—There is a feasible reservoir site a few miles above the station in Antelope Valley.

Cooperation.—Station maintained in cooperation with Lakeview Irrigation & Power Co.

Estimates of discharge withheld for additional data.

Discharge measurements of Crooked Creek near Valley Falls, Oreg., during the year ending Sept. 30, 1913.

[Made by Howard Kimble.]

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	Feet.	*Sec.-feet.*		*Feet.*	*Sec.-feet.*
Mar. 3	[a]1.50	11.4	Apr. 21	1.01	36.3
Mar. 17	.93	32.7			

[a] Creek frozen almost solid.

Daily gage height, in feet, of Crooked Creek near Valley Falls, Oreg., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Mar.	Apr.	Day.	Oct.	Nov.	Dec.	Mar.	Apr.
1	0.35	.....	.....	.....	2.90	16	0.38	0.48	.....	.....	2.40
2	.35	.....	0.45	.....	1.80	17	.38	.....	.....	0.93	2.80
3	.35	.....	.45	1.50	.90	18	.38	.48	.....	.....	1.90
4	.35	.....	.48	.....	.80	19	.40	.45	.....	.....	1.90
5	.35	0.50	.45	.....	.80	20	.....	.48	.....	.....	.....
6	.....	.75	.45	.....	.70	21	.38	.50	.....	.....	1.01
7	.35	.55	.45	.....	.60	22	.42	.48	.....	.....	.....
8	.35	.50	.....	.....	.70	23	.42	.50	.....	.....	.....
9	.35	.50	.45	.....	.80	24	.45	.....	.....	.....	.....
10	.35	.....	.45	.....	.60	25	.45	.52	.....	.....	.....
11	.35	.48	.48	.....	.80	26	.42	.50	.....	.....	.....
12	.38	.45	.50	.....	.....	27	.....	.55	.....	.....	.....
13	.....	.48	.50	.....	.....	28	.42	.50	.....	.....	.....
14	.38	.52	.60	.....	1.80	29	.42	.50	.....	.....	.....
15	.40	.50	.....	.....	1.70	30	.42	.50	.....	.....	.....
						31	.45	.....	.....	.....	.....

NOTE.—Creek probably frozen over from about Dec. 15, 1912, when gage readings were discontinued, to about Mar. 10, 1913.

SILVER LAKE BASIN.

SILVER CREEK NEAR SILVER LAKE, OREG.

Location.—In sec. 28, T. 28 S., R. 14 E., 1½ miles southwest of Silver Lake post office.

Records available.—December 29, 1904, to March 31, 1907; January 11, 1909, to September 30, 1913.

Drainage area.—221 square miles.

Gage.—Original gage, inclined staff on the right bank. In April, 1910, the gage was found to have been raised from the true position and some of the gage readings in 1909 are therefore subject to error. On April 5, 1912, the lower end of the inclined gage was replaced by a vertical staff at original datum.

Channel and control.—Fairly permanent; bed composed of rocks and gravel.

Discharge measurements.—Made from a cable near the gage or by wading.

Storage.—As the normal summer flow of nearly all the streams in this region is appropriated for present irrigation requirements, any additional development will require storage. Several fairly good sites are available on Silver Creek above areas of agricultural land that could easily be irrigated from stored waters.

Accuracy.—Conditions favorable for good results. Records reliable.

Discharge measurements of Silver Creek near Silver Lake, Oreg., during the year ending Sept. 30, 1913.

[Made by Howard Kimble.]

Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*
Nov. 12	0.74	16.1
Feb. 4	.60	11.4

Daily gage height, in feet, of Silver Creek near Silver Lake, Oreg., for the year ending Sept. 30, 1913.

[J. H. Gowdy, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.70	0.70	0.80	0.70	0.70	0.50	2.20	2.40	1.20	0.80	0.65	0.65
2	.70	.70	.80	.70	.65	.60	1.90	2.5	1.20	.80	.65	.65
3	.70	.70	.80	.60	.70	.70	1.50	2.6	1.20	.80	.62	.65
4	.65	.70	.80	.60	.60	.70	1.90	2.6	1.10	.75	.62	.65
5	.68	.70	.75	.60	.60	.70	2.35	3.4	1.10	.75	.62	.65
6	.70	.75	.70	.60	.60	.75	1.10	3.8	1.15	.80	.62	.65
7	.70	.80	.70	.60	.60	.90	1.60	3.0	1.05	.75	.62	.65
8	.68	.80	.70	.60	.60	.80	1.90	2.9	1.05	.70	.62	.65
9	.68	.85	.70	.60	.60	.80	2.20	2.8	1.00	.70	.62	.65
10	.68	.90	.70	.60	.60	.75	2.9	2.7	.95	.70	.62	.62
11	.70	.90	.70	.60	.60	.75	3.6	2.8	.90	.70	.62	.60
12	.70	.85	.70	.70	.60	.80	3.6	2.8	.90	.70	.62	.60
13	.70	.80	.65	.70	.60	.75	3.5	2.7	.90	.70	.60	.60
14	.70	.80	.65	.65	.70	.80	3.4	2.40	.85	.65	.60	.60
15	.68	.85	.65	.65	.90	1.00	3.4	2.30	.85	.65	.60	.60
16	.70	.80	.70	.70	.95	1.00	3.3	2.20	.90	.65	.60	.60
17	.68	.80	.70	.65	.80	.75	3.4	2.20	.90	.65	.62	.60
18	.70	.75	.70	.60	.70	.70	3.3	2.20	.90	.65	.62	.60
19	.68	.80	.65	.60	.70	.70	3.3	2.30	.90	.65	.62	.60
20	.68	.80	.60	.60	.60	.60	3.4	2.10	.85	.60	.62	.60
21	.65	.75	.60	.60	.50	.60	3.3	1.80	.90	.60	.62	.60
22	.68	.70	.60	.65	.60	.60	2.9	1.70	.90	.60	.62	.60
23	.70	.70	.65	.70	.50	.60	3.0	1.70	.90	.65	.65	.60
24	.70	.90	.65	.70	.50	.60	3.6	1.70	.85	.70	.65	.60
25	.70	.80	.65	.70	.50	.70	3.8	1.65	.80	.70	.65	.60
26	.70	.80	.70	.70	.50	.70	4.0	1.70	.80	.70	.62	.60
27	.70	.80	.70	.65	.50	.70	3.9	1.65	.80	.70	.65	.60
28	.70	.80	.70	.65	.50	.65	3.5	1.70	.80	.70	.65	.60
29	.70	.80	.70	.70	.....	.65	3.0	1.50	.80	.70	.65	.60
30	.70	.90	.80	.70	.....	1.90	3.0	1.30	.80	.65	.65	.60
31	.70	.....	.70	.70	.....	2.20	.....	1.20	.....	.65	.65	.....

NOTE.—Discharge relation not affected by ice; stream frozen over from about Dec. 26, 1912, to Mar. 4, 1913.

Daily discharge, in second-feet, of Silver Creek near Silver Lake, Oreg., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	15	15	19	15	15.	8.0	127	155	45	22	16	16
2	15	15	19	15	13.	11.	98	165	45	22	16	16
3	15	15	19	11	15.	15.	64	176	45	22	15	16
4	13	15	19	11	11.	15.	98	176	39	20	15	16
5	14	15	17	11	11.	15.	142	268	39	20	15	16
6	15	17	15	11	11.	17.	35	322	42	22	15	16
7	15	19	15	11	11.	24.	72	220	36	20	15	16
8	14	19	15	11	11.	19.	98	209	36	18	15	16
9	14	22	15	11	11.	19.	127	198	33	18	15	16
10	14	24	15	11	11.	17.	199	187	30	18	15	15
11	15	24	15	11	11.	17.	282	198	27	18	15	14
12	15	22	15	15	11.	19.	282	198	27	18	15	14
13	15	19	13	15	11.	17.	269	187	27	18	14	14
14	15	19	13	13	15.	19.	257	155	24	16	14	14
15	14	22	13	13	24.	29.	257	145	24	16	14	14
16	15	19	15	15	26.	29.	245	135	27	16	14	14
17	14	19	15	13	19.	17.	257	135	27	16	15	14
18	15	17	15	11	15.	15.	245	135	27	16	15	14
19	14	19	13	11	15.	15.	245	145	27	16	15	14
20	14	19	11	11	11.	11.	257	125	24	14	15	14
21	13	17	11	11	8.0	11.	245	96	27	14	15	14
22	14	15	11	13	11.	11.	199	87	27	14	15	14
23	15	15	13	15	8.0	11.	210	87	27	16	16	14
24	15	24	13	15	8.0	11.	282	87	24	18	16	14
25	15	19	13	15	8.0	15.	309	82	22	18	16	14
26	15	19	15	15	8.0	15.	337	87	22	18	15	14
27	15	19	15	13	8.0	15.	336	82	22	18	16	14
28	15	19	15	13	8,0	13.	280	87	22	18	16	14
29	15	19	15	15	.....	13.	220	69	22	18	16	14
30	15	24	19	15	.....	98.	220	52	22	16	16	14
31	15	.....	15	15	.....	127.	.....	45	.....	16	16	.....

NOTE.—Discharge determined from two fairly well defined rating curves, applicable Oct. 1, 1912, to Apr. 26, 1913, and Apr. 27 to Sept. 30, 1913.

Monthly discharge of Silver Creek near Silver Lake, Oreg., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	15	13	14.6	898	B.
November	24	15	18.8	1,120	B.
December	19	11	14.9	916	C.
January	15	11	12.9	793	C.
February	26	8	12.3	683	B.
March	127	8	22.2	1,360	B.
April	337	35	210	12,500	B.
May	322	45	145	8,920	B.
June	45	22	29.6	1,760	C.
July	22	14	17.8	1,090	C.
August	16	14	15.2	935	C.
September	16	14	14.6	869	C.
The year	337	8	44.0	31,800	

BRIDGE CREEK NEAR SILVER LAKE, OREG.

Location.—In the NE. ¼ sec. 30, T. 28 S., R. 14 E., 2½ miles west of Silver Lake, Oreg.

Records available.—June 3, 1912, to December 31, 1912, when station was discontinued; January 21, 1905, to July 21, 1906, and September 24, 1910, to September 2, 1911, records were obtained at the county bridge in the SW. ¼ sec. 20, about half a mile downstream.

Drainage area.—45 square miles at old site; not measured for new site.

Gage.—Vertical staff installed April 5, 1912. The gages used at the county bridge were referred to the same datum.

Channel and control.—Shifting at old site; not known at new site.

Discharge measurements.—Made by wading.

Diversions.—Practically the entire flow is diverted above the station during the summer months.

The following discharge measurement was made by Howard Kimble:

November 12, 1912: Gage height, 1.67 feet; discharge, 1.25 second-feet. New gage, installed April 5, 1912, read 0.81 foot.

Rating curve not developed.

Daily gage height, in feet, of Bridge Creek near Silver Lake, Oreg., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1	.....	0.70	.....	11	0.80	0.90	0.60	21	0.60	.....	.....
2	0.80	.....	0.80	12	.....	.....	.....	22	.....	0.60	.....
3	.....	.....	.....	13	.....	.90	.90	23	.70	.....	0.65
4	.80	.90	.80	14	.80	.....	.....	24	.....	.....	.....
5	.....	.....	.....	15	.....	.90	.....	25	.70	.60	.65
6	.....	.90	.60	16	.80	.....	.90	26	.....	.....	.....
7	.80	.....	.....	17	.....	.....	.....	27	.....	.60	.65
8	.....	.....	.....	18	.60	.70	.70	28	.70	.....	.....
9	.80	.....	.60	19	.....	.....	.....	29	.....	.80	.....
10	.....	.....	.....	20	.....	.70	.65	30	.70	.....	.65
								31	.....	.....	.....

SILVER LAKE NEAR SILVER LAKE, OREG.

Location.—In sec. 11, T. 29 S., R. 15 E., 9 miles from Silver Lake post office, on west shore of lake.

Records available.—Occasional readings 1905 to 1913.

Gage.—Vertical staff bolted to large bowlder. Elevation of datum is 4,425.46 feet above sea level, as determined by surveys of the United States Reclamation Service.

Gage readings, in feet, 1905–1913.

January 17, 1905	15.22	June 2, 1905	15.20
February 24, 1905	15.45	June 8, 1905	15.20
February 27, 1905	15.50	April 5, 1906	13.5
March 20, 1905	15.50	April 26, 1906	14.3
April 6, 1905	15.50	May 6, 1906	14.6
May 9, 1905	15.40	November 11, 1912	11.77
May 13, 1905	15.40	February 5, 1913	11.6

NOTE.—The lake is noted as being 1.5 feet below the high-water mark Sept. 17, 1904, and 7 feet below high-water mark in October, 1908. High-water mark is about 16.5 feet.

MALHEUR AND HARNEY LAKES BASIN.

MALHEUR LAKE AT NARROWS, OREG.

Location.—In sec. 26, T. 26 S., R. 31 E., at the highway bridge across the narrow channel connecting Malheur and Harney lakes, a few hundred feet from Narrows post office.

Records available.—March 14, 1903, to July 21, 1906; March 22 to September 9, 1911; April 13 to November 25, 1912; April 2 to August 28, 1913.

Gage.—Vertical staff on highway bridge; read about weekly. The datum of the gage used since 1911 is probably 0.94 foot higher than that used 1903 to 1906.

Channel and control.—Mud, supporting a dense growth of tules and other vegetation; goes dry nearly every summer.

The station was established to determine fluctuations of the water elevation in Malheur Lake, which is several feet above the level of Harney Lake, but the gage heights indicate the outflow from Malheur Lake rather than the elevation of its water surface, although the two factors are probably related. The connecting channel was dry during the last part of 1911 and early part of 1912, and at times there was no water within several miles of the gage. The relation between the gage readings at the Narrows and the elevation of Malheur and Harney lakes was determined in March, 1912, as published in Water-Supply Paper 330, page 246.

Gage readings, in feet, during the year ending Sept. 30, 1913.

1912.		1913.	
November 25	4.33	May 17	5.5
		May 24	5.6
1913.		May 31	5.6
April 2	4.8	June 7	5.5
April 5	4.8	June 14	5.5
April 12	4.9	June 21	5.6
April 19	5.1	June 28	5.7
April 26	5.2	August 17	5.3
May 3	5.2	August 23	5.25
May 10	5.3	August 28	5.2

NOTE.—Considerable ice still in channel on Apr. 5.

SILVIES RIVER NEAR BURNS, OREG.

Location.—In sec. 31, T. 21 S., R. 30 E., about 1 mile above Sylvester's ranch, and 12 miles northwest of Burns.

Records available.—May 10, 1903, to July 24, 1906; December 14, 1908, to May 26, 1913.

Drainage area.—940 square miles (revised).

Gage.—Gurley water-stage recorder on left bank, installed December, 1911. Previous to that time station was located about 1¼ miles downstream, at wagon bridge near Parker's house, in sec. 7, T. 22 S., R. 30 E.

Channel and control.—Control is a gravel riffle about 25 feet below gage; probably shifts in high water. Above gage height 13 feet river overflows a wide area.

Discharge measurements.—Made from a cable about one-fourth mile below gage, or by wading.

Winter flow.—Discharge relation not seriously affected by ice.

Utilization.—The waters of Silvies River are used largely for flood irrigation of hay lands in Harney Valley. Any irrigation project would require, therefore, the settlement of accrued water rights, as even the flood waters are so used.

Accuracy.—Accurate high-water measurements are difficult to obtain at the cable on account of the deep, crooked channel. During the irrigating season records are affected by backwater from irrigation dams.

Cooperation.—Gage-height record furnished by the Silver Valley Irrigation Co., of Burns.

Discharge measurements of Silvies River near Burns, Oreg., during the year ending Sept. 30, 1913.

[Made by Howard Kimble.]

Date.	Gage height.	Discharge.
	Feet.	*Sec.-ft.*
Nov. 23	3.88	63.6
May 5	9.71	661

Daily gage height, in feet, and discharge, in second-feet, of Silvies River near Burns, Oreg., for the year ending Sept. 30, 1913.

Day.	November.		December.		March.		April.		May.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1			3.55	43			11.6	857	12.0	908
2			3.55	43			9.4	612	11.4	833
3			3.46	38			8.0	468	10.7	752
4			3.54	42			9.0	570	10.2	697
5			3.62	47			9.9	664	9.6	633
6							9.7	643	9.4	612
7							9.5	622	9.4	612
8							9.6	633	9.5	622
9					4.37	105	9.8	654	9.6	633
10					4.46	114	10.4	719	9.7	643
11					4.70	138	11.1	797	9.6	633
12					4.88	156	12.4	964	9.6	633
13					4.89	157	13.3	1,110	9.5	622
14					4.74	142	13.9	1,220	9.3	601
15					4.68	136	14.1	1,270	8.9	559
16					4.65	133	14.0	1,250	8.5	518
17					4.25	94	13.8	1,200	8.1	478
18					4.40	108	14.2	1,290	7.9	458
19					4.95	163	14.1	1,270	7.8	448
20					5.05	173	14.2	1,290	7.6	428
21					4.70	138	14.4	1,340	7.2	388
22					4.45	113	14.6	1,390	7.1	378
23	3.88	65			4.30	99	14.0	1,250	6.7	338
24					4.20	90	13.4	1,120	6.3	298
25					4.10	81	13.0	1,050	6.1	278
26					4.00	73	12.8	1,020	6.0	268
27					4.05	77	12.7	1,010		
28					4.10	81	12.7	1,010		
29			3.65	49	5.05	173	12.5	978		
30					8.8	549	12.4	964		
31					11.5	845				

NOTE.—Daily discharge determined from well-defined rating curve.

Monthly discharge of Silvies River near Burns, Oreg., for the year ending Sept. 30, 1913.

[Drainage area, 940 square miles.] [a]

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
November			40	2,380	C.
March 9–31	845	73	171	7,800	A.
April	1,390	468	974	58,000	A.
May 1–26	908	268	549	28,300	A.

[a] Revised.

DONNER UND BLITZEN RIVER NEAR DIAMOND, OREG.

Location.—In SW. ¼ sec. 8, T. 32 S., R. 32½ E., at the mouth of the canyon, on the P ranch, 1½ miles above the ranch buildings, about 25 miles southwest of Diamond, and about 40 miles above Narrows.

Records available.—January 26, 1909, to July 31, 1910, and November 1–12, 1910, at old station below several diversion ditches; May 22, 1910, to September 30, 1913, at present station above all diversion ditches; records fragmentary part of the period.

Drainage area.—200 square miles (revised).

Gages.—Original gage, vertical staff on the right bank just below the wagon bridge near the ranch buildings; present gage, vertical staff installed May 22, 1910, at the mouth of the canyon. It was read occasionally during the summer of 1910 and throughout 1911 and 1912.

Channel and control.—Slightly shifting; bed composed of gravel and sand; one channel at all stages. Banks of the stream covered with a dense growth of willows and underbrush; subject to overflow at flood stages.

Discharge measurements.—At the lower site measurements were made from the wagon bridge; at the present site measurements are made by wading or from a cable.

Winter flow.—Discharge relation not seriously affected by ice; open-channel rating assumed applicable.

Diversions.—The present gage is above all irrigation ditches. Five ditches divert water above the wagon bridge near the ranch buildings, and about 300 feet below the bridge a brush and rock dam is used to divert water into a sixth ditch. When water is to be diverted the dams are repaired and raised by adding more rocks and brush. Two of the ditches carry water during the entire year and three during the irrigation season only. No record has been kept of the actual time of operation.

Accuracy.—Conditions at the upper station fairly good. During the spring river is subject to considerable diurnal fluctuations and much of the water from the melting snow may pass the station at night, when no record would be obtained.

Cooperation.—Gage height furnished by the William Hanley Co.

Discharge measurements of Donner und Blitzen River near Diamond, Oreg., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 27	Howard Kimble	2.75	53.3	June 26	A. H. Page	3.06	154
May 10	....do	3.68	351	Aug. 2	Garfield Stubblefield	2.64	65.0

Daily gage height, in feet, of Donner und Blitzen River near Diamond, Oreg., for the year ending Sept. 30, 1913.

[Jesus Achurra, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	.....	2.75	.....	.....	.....	3.35	3.40	3.95	3.15	2.65	.....
2	.....	.....	.....	.....	2.75	3.25	3.30	3.35	3.90	3.15	.....	.....
3	.....	2.75	.....	.....	.....	.....	3.25	3.35	3.85	3.15	.....	.....
4	.....	.....	.....	.....	.....	.....	3.30	3.30	3.75	3.40	.....	.....
5	.....	.....	.....	2.55	.....	.....	3.25	3.35	3.60	3.35	.....	2.55
6	2.70	.....	.....	.....	.....	.....	3.30	3.40	3.55	3.20	.....	.....
7	.....	.....	.....	.....	.....	.....	3.20	3.75	3.45	3.15	.....	.....
8	.....	.....	2.70	.....	.....	.....	3.55	3.70	3.40	3.10	2.65	.....
9	.....	.....	.....	.....	2.65	2.75	3.40	3.60	3.35	3.00	.....	.....
10	.....	2.85	.....	.....	.....	.....	3.70	3.60	3.30	2.95	.....	.....
11	.....	.....	.....	.....	.....	.....	3.70	3.55	3.25	2.90	.....	.....
12	.....	.....	.....	2.60	.....	.....	3.70	3.50	3.20	2.90	.....	2.55
13	2.70	.....	.....	.....	.....	.....	3.65	3.45	3.20	2.80	.....	.....
14	.....	.....	.....	.....	.....	.....	3.60	3.45	3.20	2.80	.....	.....
15	.....	.....	2.65	.....	.....	.....	3.60	3.60	3.20	2.80	2.65	.....
16	.....	.....	.....	.....	2.75	2.80	3.60	3.60	3.20	2.80	.....	.....
17	.....	2.80	.....	.....	.....	.....	3.60	3.65	3.20	2.80	.....	.....
18	.....	.....	.....	.....	.....	.....	3.55	3.60	3.20	2.80	.....	.....
19	.....	.....	.....	2.65	.....	.....	3.55	3.65	3.15	2.75	.....	2.50
20	2.75	.....	.....	.....	.....	.....	3.50	3.60	3.15	2.75	.....	.....
21	.....	.....	.....	.....	.....	.....	3.40	3.60	3.10	2.75	.....	.....
22	.....	.....	2.60	.....	.....	.....	3.45	3.60	3.20	2.75	3.25	.....
23	.....	.....	.....	.....	2.60	2.85	3.60	3.65	3.65	2.80	2.80	.....
24	.....	2.75	.....	.....	.....	.....	3.65	3.85	3.50	2.85	.....	.....
25	.....	.....	.....	.....	.....	.....	3.70	4.05	3.40	2.95	.....	.....
26	.....	.....	.....	2.60	.....	.....	4.05	4.15	3.35	2.90	.....	2.50
27	2.75	.....	.....	.....	.....	.....	3.85	4.20	3.20	2.85	.....	.....
28	.....	.....	.....	.....	.....	2.75	3.70	4.25	3.20	2.85	.....	.....
29	.....	.....	2.50	.....	.....	.....	3.60	4.15	3.15	2.80	2.60	.....
30	.....	.....	.....	.....	.....	6.15	3.40	4.05	3.15	2.75	.....	.....
31	.....	.....	.....	.....	.....	3.40	.....	4.05	.....	2.70	.....	.....

NOTE.—Gage heights from Mar. 30, when the gage was washed out, to May 10, when it was replaced, were estimated by the observer and are very uncertain. No ice reported.

Daily discharge, in second-feet, of Donner und Blitzen River near Diamond, Oreg., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	.....	54	.....	.....	150	246	262	456	185	66	.....
2	.....	.....	.....	.....	54	168	230	246	437	185	66	.....
3	.....	54	.....	.....	.....	152	215	246	418	185	66	.....
4	.....	.....	.....	.....	.....	136	230	230	382	262	66	.....
5	.....	.....	.....	28	.....	120	215	246	328	246	66	51
6	46	.....	.....	.....	.....	102	230	262	311	200	66	.....
7	.....	.....	.....	.....	.....	86	200	382	278	185	66	.....
8	.....	.....	46	.....	.....	70	311	364	262	170	66	.....
9	.....	.....	.....	.....	40	54	262	328	246	142	66	.....
10	.....	72	.....	.....	.....	55	364	328	230	130	66	.....
11	.....	.....	.....	.....	.....	56	364	311	215	117	66	.....
12	.....	.....	.....	33	.....	57	364	294	200	117	66	51
13	46	.....	.....	.....	.....	59	346	278	200	95	66	.....
14	.....	.....	.....	.....	.....	60	328	278	200	95	66	.....
15	.....	.....	40	.....	.....	61	328	328	200	95	66	.....
16	.....	.....	.....	.....	54	62	328	328	200	95	66	.....
17	.....	62	.....	.....	.....	64	328	346	200	95	66	.....
18	.....	.....	.....	.....	.....	65	311	328	200	95	66	.....
19	.....	.....	.....	40	.....	66	311	346	185	85	66	44
20	54	.....	.....	.....	.....	67	294	328	185	85	66	.....
21	.....	.....	.....	.....	.....	69	262	328	170	85	66	.....
22	.....	.....	33	.....	.....	70	278	328	200	85	215	.....
23	.....	.....	.....	.....	33	72	328	346	346	95	95	.....
24	.....	54	.....	.....	.....	69	346	418	294	106	89	.....
25	.....	.....	.....	.....	.....	65	364	494	262	130	83	.....
26	.....	.....	.....	33	.....	61	494	533	246	117	76	44
27	54	.....	.....	.....	.....	57	418	553	200	106	70	.....
28	.....	.....	.....	.....	.....	54	364	574	200	106	64	.....
29	.....	.....	23	.....	.....	60	328	533	185	95	58	.....
30	.....	.....	.....	.....	.....	1,380	262	494	185	85	57	.....
31	.....	.....	.....	.....	.....	262	.....	494	.....	75	56	.....

NOTE.—Daily discharge determined from two well-defined rating curves applicable Oct. 1, 1912, to Mar. 30, 1913, and Mar. 31 to Sept. 30, 1913. Discharge estimated from comparison with other streams Mar. 1 and 29 and Aug. 16–21.

Monthly discharge of Donner und Blitzen River near Diamond, Oreg., for the year ending Sept. 30, 1913.

[Drainage area, 200 square miles. a]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
October	.....	.....	50.0	0.250	0.29	3,070	B.
November	.....	.....	60.5	.302	.34	3,600	B.
December	.....	.....	39.2	.196	.23	2,410	C.
January	.....	.....	33.5	.168	.19	2,060	C.
February	.....	.....	45.2	.226	.24	2,510	C.
March	1,380	54	127	.635	.73	7,810	C.
April	494	200	308	1.54	1.72	18,300	C.
May	574	230	360	1.80	2.08	22,100	B.
June	456	170	254	1.27	1.42	15,100	B.
July	262	75	127	.635	.73	7,810	B.
August	215	56	72.5	.362	.42	4,460	B.
September	.....	.....	47.5	.238	.27	2,830	B.
The year	1,380	.....	127	.635	8.66	92,100	

a Revised.

MUD CREEK NEAR DIAMOND, OREG.

Location.—In sec. 4, T. 32 S., R. 32½ E., about 2 miles east of the P ranch buildings; about one-fourth mile east of the ranch field, and about 23 miles southwest from Diamond.

Records available.—March 18, 1911, to September 30, 1913.

Drainage area.—30 square miles.

Gage.—Vertical staff.

Channel and control.—Channel shifts somewhat; bed composed of clean sand.

Discharge measurements.—Made from footbridge near the gage or by wading.

Cooperation.—Gage heights furnished by the William Hanley Co.

Records show the total flow of the stream at the edge of the valley. As the stream is not spring fed, the channel is practically dry after the run-off from the melting snows on the steep slopes of Steins Mountain has passed.

Discharge measurements of Mud Creek near Diamond, Oreg., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Nov. 26	Howard Kimble	1.77	1.08
May 10	....do	3.60	45.5
Aug. 2	Garfield Stubblefield	1.81	1.56

Daily gage height, in feet, of Mud Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

[Jesus Achurra, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	.....	.....	1.75	1.90	1.80	3.30	2.65	2.75	2.20	1.80	.....
2	.....	.....	1.80	.....	.....	.....	3.30	2.65	2.75	2.20	.....	.....
3	.....	.....	.....	.....	1.80	1.80	3.20	2.70	2.65	2.25	.....	.....
4	.....	.....	.....	.....	.....	.....	3.10	2.75	2.60	2.45	.....	.....
5	.....	.....	.....	.....	1.80	1.80	3.10	2.75	2.55	2.40	.....	1.70
6	.....	.....	.....	.....	.....	.....	2.95	2.85	2.50	2.35	.....	.....
7	.....	.....	.....	.....	1.75	1.80	2.95	3.10	2.45	2.30	.....	.....
8	.....	.....	.....	1.75	.....	.....	2.90	3.25	2.40	2.25	1.75	.....
9	.....	.....	.....	.....	1.70	1.85	3.10	3.55	2.35	2.20	.....	.....
10	.....	1.90	1.80	.....	.....	.....	3.15	3.60	2.30	2.15	.....	.....
11	.....	.....	.....	.....	1.80	1.85	3.20	3.50	2.30	2.10	.....	.....
12	.....	.....	.....	.....	.....	.....	3.15	3.50	2.25	2.05	.....	1.70
13	.....	.....	.....	.....	1.75	1.90	3.10	3.45	2.20	2.00	.....	.....
14	.....	.....	.....	.....	.....	.....	3.00	3.30	2.20	2.00	.....	.....
15	1.80	.....	.....	1.80	1.80	.....	3.00	3.20	2.20	1.95	1.70	.....
16	.....	.....	.....	.....	.....	1.80	3.10	3.20	2.20	1.95	.....	.....
17	.....	.....	1.80	.....	1.80	.....	3.00	3.30	2.20	1.90	.....	.....
18	.....	1.80	.....	.....	1.90	1.95	2.95	3.30	2.15	1.85	.....	.....
19	.....	.....	.....	.....	1.75	.....	2.90	3.25	2.15	1.80	.....	.....
20	.....	.....	.....	.....	1.70	.....	2.95	3.25	2.15	1.80	.....	1.70
21	.....	.....	.....	.....	.....	1.80	2.90	3.25	2.10	1.85	.....	.....
22	.....	.....	.....	1.70	1.80	.....	2.90	3.25	2.20	1.85	1.70	.....
23	1.90	.....	1.75	.....	1.80	1.75	2.80	3.40	2.45	1.85	.....	.....
24	.....	.....	.....	.....	.....	.....	2.75	3.45	2.40	1.80	.....	.....
25	.....	.....	.....	.....	1.80	1.75	2.85	3.50	2.35	1.80	.....	.....
26	.....	1.80	.....	.....	1.80	.....	2.90	3.50	2.35	1.85	.....	1.70
27	.....	.....	.....	2.00	.....	1.80	2.90	3.55	2.30	1.85	.....	.....
28	.....	.....	.....	.....	1.80	1.80	2.80	3.40	2.25	1.85	.....	.....
29	1.90	.....	.....	.....	.....	.....	2.80	3.35	2.20	1.85	1.75	.....
30	.....	.....	.....	.....	.....	.....	2.75	3.10	2.20	1.80	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	3.05	.....	1.80	.....	.....

Daily discharge, in second-feet, of Mud Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	.....	.....	1.0	1.7	1.2	34	13	16	5.4	1.6	.....
2	.....	.....	1.2	.....	1.4	1.2	34	13	16	5.4	.....	.....
3	.....	.....	.....	.....	1.2	1.2	30	14	13	6.1	.....	.....
4	.....	.....	.....	.....	1.2	1.2	26	16	12	9.2	.....	.....
5	.....	.....	.....	.....	1.2	1.2	26	16	11	8.3	.....	1.0
6	.....	.....	.....	.....	1.1	1.2	22	18	10	7.6	.....	.....
7	.....	.....	.....	.....	1.0	1.2	22	26	9.2	6.8	.....	.....
8	.....	.....	.....	1.0	.9	1.3	20	32	8.3	6.1	1.3	.....
9	.....	.....	.....	.....	.8	1.4	26	44	7.6	5.4	.....	.....
10	.....	1.7	1.2	.....	1.0	1.4	28	46	6.8	4.8	.....	.....
11	.....	.....	.....	.....	1.2	1.4	30	42	6.8	4.2	.....	.....
12	.....	.....	.....	.....	1.7	1.6	28	42	6.1	3.7	.....	1.0
13	.....	.....	.....	.....	1.0	1.7	26	40	5.4	3.2	.....	.....
14	.....	.....	.....	.....	1.1	1.6	23	34	5.4	3.2	.....	.....
15	1.2	.....	.....	1.2	1.2	1.4	23	30	5.4	2.8	1.0	.....
16	.....	.....	.....	.....	1.2	1.2	26	30	5.4	2.8	.....	.....
17	.....	.....	1.2	.....	1.2	1.6	23	34	5.4	2.3	.....	.....
18	.....	1.2	.....	.....	1.7	2.0	22	34	4.8	2.0	.....	.....
19	.....	.....	.....	.....	1.0	1.8	20	32	4.8	1.6	.....	.....
20	.....	.....	.....	.....	.8	1.5	22	32	4.8	1.6	.....	1.0
21	.....	.....	.....	.....	1.0	1.2	20	32	4.2	2.0	.....	.....
22	.....	.....	.....	.8	1.2	1.1	20	32	5.4	2.0	1.0	.....
23	1.7	.....	1.0	.....	1.2	1.0	17	38	9.2	2.0	.....	.....
24	.....	.....	.....	.....	1.2	1.0	16	40	8.3	1.6	.....	.....
25	.....	.....	.....	.....	1.2	1.0	18	42	7.6	1.6	.....	.....
26	.....	1.2	.....	.....	1.2	1.1	20	42	7.6	2.0	.....	1.0
27	.....	.....	.....	2.3	1.2	1.2	20	44	6.8	2.0	.....	.....
28	.....	.....	.....	.....	1.2	1.2	17	38	6.1	2.0	.....	.....
29	1.7	.....	.....	.....	.....	2.0	17	36	5.4	2.0	1.3	.....
30	.....	.....	.....	.....	.....	50	16	26	5.4	1.6	.....	.....
31	.....	.....	.....	.....	.....	40	.....	24	.....	1.6	.....	.....

NOTE.—Daily discharge determined from two fairly well defined curves applicable Oct. 1, 1912, to Mar. 30, 1913, and Mar. 31 to Sept. 30, 1913. Discharge Mar. 29–31 estimated from records of other streams in vicinity and is roughly approximate. The maximum may be much higher.

Monthly discharge of Mud Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	.....	.....	1.38	85	D.
November	.....	.....	1.45	86	D.
December	.....	.....	1.13	69	D.
January	.....	.....	1.26	77.5	D.
February	1.7	0.8	1.18	65.5	D.
March	50	1.0	4.16	256	D.
April	34	16	23.1	1,370	C.
May	46	13	31.7	1,950	C.
June	16	4.2	7.67	456	C.
July	9.2	1.6	3.64	224	C.
August	.....	.....	1.24	76.2	D.
September	.....	.....	1.00	59.5	D.
The year	50	.....	6.58	4,770	

BRIDGE CREEK NEAR DIAMOND, OREG.

Location.—In sec. 34, T. 31 S., R. 32½ E., about 4 miles northeast of the P ranch buildings, one-fourth mile east of the ranch field, and about 20 miles southwest from Diamond.

Records available.—March 18 to August 31, 1911, and January 1, 1912, to September 30, 1913.

Drainage area.—35 square miles.

Gage.—Vertical staff.

Channel and control.—In alluvium and clay; shifts slightly.

Discharge measurements.—Made from footbridge near gage.

Accuracy.—Results obtained during the high-water stage in the spring are good; and the flow of the stream is so steady that the discharge can be estimated during remainder of the year.

Cooperation.—Station maintained in cooperation with the William Hanley Co.

Discharge measurements of Bridge Creek near Diamond, Oreg., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 26	Howard Kimble	1.92	13.4	Aug. 2	Garfield Stubblefield	1.77	13.2
May 10	.....do	2.52	42.2				

Daily gage height, in feet, of Bridge Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

[Jesus Achurra, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1				1.90	1.85	1.90	2.05	2.00	1.90	1.80	1.80	
2			1.90				2.05	2.05	1.85	1.80		
3							2.00	2.05	1.85	1.80		
4					1.85	1.85	1.95	2.10	1.85	1.85		
5							1.95	2.15	1.85	1.85		1.80
6							1.90	2.15	1.85	1.85		
7					1.85	1.85	1.95	2.15	1.80	1.80		
8				1.90			1.95	2.30	1.80	1.80	1.80	
9					1.85	1.95	1.95	2.45	1.80	1.80		
10		1.90	1.90				2.05	2.55	1.80	1.80		
11					1.85		2.05	2.40	1.80	1.80		
12							2.00	2.25	1.80	1.80		1.80
13					1.90	1.85	2.10	2.20	1.80	1.80		
14							2.05	2.20	1.80	1.80		
15	1.90			1.90	1.90		2.05	2.15	1.80	1.80	1.80	
16						1.85	2.10	2.20	1.80	1.80		
17			1.90		1.90		2.10	2.15	1.80	1.80		
18		1.90				1.90	2.00	2.20	1.80	1.80		
19					1.85		1.95	2.20	1.80	1.80		1.80
20							1.95	2.25	1.80	1.80		
21					1.85	1.85	1.95	2.25	1.85	1.80		
22				1.90			1.90	2.25	1.90	1.80	1.80	
23	1.95		1.90		1.85	1.85	1.90	2.30	2.05	1.80		
24							1.95	2.30	1.95	1.75		
25					1.85	1.85	2.00	2.30	1.90	1.75		
26		1.90					2.05	2.30	1.85	1.75		1.80
27				1.95		1.85	2.05	2.35	1.80	1.75		
28					1.85	1.85	2.00	2.25	1.80	1.75		
29	1.90						1.95	2.20	1.80	1.75	1.85	
30							1.95	2.10	1.80	1.75		
31			1.90					2.10		1.75		

Daily discharge, in second-feet, of Bridge Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1				13	12	13	22	20	17	14	14	
2			13		12	13	22	22	16	14		
3					12	12	20	22	16	14		
4					12	12	18	24	16	16		
5					12	12	18	26	16	16		14
6					12	12	17	26	16	16		
7					12	12	18	26	14	14		
8				13	12	12	18	32	14	14	14	
9					12	12	18	38	14	14		
10		13	13		12	12	22	44	14	14		
11					12	12	22	36	14	14		
12					12	12	20	30	14	14		14
13					13	12	24	28	14	14		
14					13	12	22	28	14	14		
15	13			13	13	12	22	26	14	14	14	
16					13	12	24	28	14	14		
17			13		13	12	24	26	14	14		
18		13			12	13	20	28	14	14		
19					12	13	18	28	14	14		14
20					12	12	18	30	14	14		
21					12	12	18	30	16	14		
22				13	12	12	17	30	17	14	14	
23	14		13		12	12	17	32	22	14		
24					12	12	18	32	18	12		
25					12	12	20	32	17	12		
26		13			12	12	22	32	16	12		14
27				14	12	12	22	34	14	12		
28					12	12	20	30	14	12		
29	13					15	18	28	14	12	16	
30						30	18	24	14	12		
31						25		24		12		

NOTE.—Daily discharge determined from fairly well defined rating curves, as follows: Oct. 1, 1912, to Mar. 30, 1913, Mar. 31 to Sept. 30, 1913. Daily discharge Mar. 29–31, estimated.

Monthly discharge of Bridge Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October			13.2	812	C.
November			13.0	774	C.
December			13.0	799	C.
January			13.2	812	C.
February	13	12	12.2	678	C.
March	30	12	13.2	812	C.
April	24	17	19.9	1,180	B.
May	44	20	28.9	1,780	B.
June	22	14	15.2	904	B.
July	16	12	13.7	842	B.
August			14.4	885	B.
September			14.0	833	B.
The year	44		15.3	11,100	

KRUMBO CREEK NEAR DIAMOND, OREG.

Location.—In sec. 19, T. 30 S., R. 32 E., near mouth of stream, about halfway between Diamond and the P ranch, half a mile west of the old Krumbo ranch house.

Records available.—March 17 to July 18, 1911; April 14 to September 2, 1913, fragmentary.

Drainage area.—20 square miles.

Gage.—Vertical staff.

Channel and control.—Clean sand and gravel; likely to shift.

Discharge measurements.—Made from footbridge.

Cooperation.—Station maintained in cooperation with William Hanley Co.

Estimates of discharge withheld for additional data.

Discharge measurements of Krumbo Creek near Diamond, Oreg., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*
Nov. 28	Howard Kimble	2.44	7.6
Aug. 5	Garfield Stubblefield	2.60	6.02

Daily gage height, in feet, of Krumbo Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

[Prim Ortego, observer.]

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1		2.8		2.6	2.6	2.5	16	3.0	2.5				
2		2.8			2.6	2.5	17	2.9			2.5		
3							18			2.6	2.6		
4					2.5		19				2.5		
5					2.5		20						
6		2.7	2.6		2.5		21		2.5		2.5		
7					2.5		22						
8		3.0					23		2.5	2.5	2.6		
9							24						
10							25				2.6		
11			2.5				26	3.2	2.5				
12		2.6		2.6			27						
13							28				2.6		
14	3.1						29				2.6		
15				2.6			30				2.6		
							31				2.6		

KEIGER CREEK NEAR DIAMOND, OREG.

Location.—In sec. 10, T. 30 S., R. 33 E., about 100 yards above the point where the creek forks, about 2½ miles southeast of Diamond, and above all present diversions.

Records available.—January 26, 1909, to May 31, 1910, for old stations; May 14 to August 31, 1911, and February 14, 1912, to September 5, 1913, for new station.

Drainage area.—75 square miles.

Gages.—Original gage, established January 26, 1909, was about 3 miles south of Diamond, in sec. 10, T. 30 S., R. 3 E.; the present gage, established May 14, 1911, is a vertical staff a short distance from the site of the old gage.

Channel and control.—One at all stages; bed of stream is composed of gravel and is probably permanent.

Discharge measurements.—Made from a footbridge or by wading.

Accuracy.—The results obtained at the original site were rendered somewhat inaccurate by flat grade of the stream and by obstruction of the flow by willows and underbrush in the water. Gage readings at the new site were rather fragmentary during 1911 and 1913, but as the stream is spring-fed and its flow very steady, records were, in general, good. During 1912 daily gage heights were secured and record is excellent.

Cooperation.—Station maintained in cooperation with the William Hanley Co.

Discharge measurements of Keiger Creek near Diamond, Oreg., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 28	Howard Kimble	1.32	14.6	Aug. 7	Garfield Stubblefield	1.28	14.8
May 9	do	2.98	139				

Daily gage height, in feet, of Keiger Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

[C. W. Frazier, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1			1.35					2.1		1.7	1.4	1.15
2										1.7	1.4	1.1
3		1.70						2.0				1.1
4									3.2		1.4	1.1
5								2.1	2.9		1.4	1.1
6	1.35				1.50						1.3	
7								2.5	2.6		1.3	
8			1.45					2.9			1.3	
9				1.90				3.0	2.4		1.25	
10							1.80	2.9	2.2	1.7	1.2	
11											1.2	
12							2.10				1.2	
13	1.60				1.60					1.5		
14										1.5		
15		1.50	1.50				2.10		1.95	1.5		
16				2.00			2.0			1.5		
17							2.0			1.5		
18								2.7		1.5		
19								2.5	1.9	1.5		
20	1.45				1.45			2.5				
21										1.5		
22			1.60					2.9		1.7		
23				1.70				3.0		1.6		
24		1.60						3.3		1.8		
25									2.0	1.8		
26								3.5		1.8		
27	1.70							4.0				
28										1.5	1.2	
29			1.70					3.4	1.9	1.5		
30				1.50				3.2	1.8	1.4		
31								3.1		1.4		

NOTE.—Creek frozen over from about Dec. 8 to the end of February.

Daily discharge, in second-feet, of Keiger Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	.....	.....	16	.....	.....	.....	.....	61	154	34	18	10
2	.....	.....	.....	.....	.....	.....	.....	58	157	34	18	9
3	.....	34	.....	.....	.....	.....	.....	54	160	34	18	9
4	.....	.....	.....	.....	.....	.....	.....	58	162	34	18	9
5	.....	.....	.....	.....	.....	.....	.....	61	132	34	18	9
6	16	.....	.....	.....	.....	.....	.....	78	118	34	14	.....
7	.....	.....	.....	.....	.....	.....	.....	94	103	34	14	.....
8	.....	.....	.....	.....	.....	.....	.....	132	94	34	14	.....
9	.....	.....	.....	.....	.....	.....	.....	142	85	34	12	.....
10	.....	.....	.....	.....	.....	.....	40	132	69	34	11	.....
11	.....	.....	.....	.....	.....	.....	.....	118	65	30	11	.....
12	.....	.....	.....	.....	.....	.....	61	104	61	27	11	.....
13	28	.....	.....	.....	.....	.....	.....	90	58	23	11	.....
14	.....	.....	.....	.....	.....	.....	.....	95	54	23	11	.....
15	.....	23	.....	.....	.....	.....	61	110	50	23	11	.....
16	.....	.....	.....	.....	.....	.....	54	110	50	23	11	.....
17	.....	.....	.....	.....	.....	.....	54	112	49	23	11	.....
18	.....	.....	.....	.....	.....	.....	.....	112	48	23	11	.....
19	.....	.....	.....	.....	.....	.....	.....	94	47	23	11	.....
20	20	.....	.....	.....	.....	.....	.....	94	53	23	11	.....
21	.....	.....	.....	.....	.....	.....	.....	113	58	23	11	.....
22	.....	.....	.....	.....	.....	.....	.....	132	64	34	11	.....
23	.....	.....	.....	.....	.....	.....	.....	142	70	28	11	.....
24	.....	28	.....	.....	.....	.....	.....	172	62	40	11	.....
25	.....	.....	.....	.....	.....	.....	.....	183	54	40	11	.....
26	.....	.....	.....	.....	.....	.....	.....	194	52	40	11	.....
27	34	.....	.....	.....	.....	.....	.....	249	50	32	11	.....
28	.....	.....	.....	.....	.....	.....	.....	250	49	23	11	.....
29	.....	.....	.....	.....	.....	.....	.....	183	47	23	11	.....
30	.....	.....	.....	.....	.....	.....	.....	162	40	18	11	.....
31	.....	.....	.....	.....	.....	.....	.....	152	.....	18	11	.....

NOTE.—Daily discharge determined from rating curve well defined below 180 second-feet.

Monthly discharge of Keiger Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
October	34	16	24.5	1,510	B.
November	34	23	28.3	1,680	C.
May	250	54	124	7,620	C.
June	162	40	77.2	4,590	C.
July	40	18	29.0	1,780	B.
August	18	11	12.5	744	B.

CUCAMONGA CREEK NEAR DIAMOND, OREG.

Location.—In sec. 8, T. 30 S., R. 33 E., about 2½ miles southwest of Diamond, and about 1 mile up the creek from the old Cummings place.

Records available.—March 14, 1911, to September 30, 1913 (fragmentary).

Drainage area.—15 square miles.

Gage.—Vertical staff.

Channel and control.—Sand; may shift.

Discharge measurements.—Made from footbridge.

Cooperation.—Station maintained in cooperation with the William Hanley Co.

It has been impossible to secure daily gage readings and no attempt has been made to estimate monthly discharge. Discharge is given only for days when gage was read in 1913.

Discharge measurements of Cucamonga Creek near Diamond, Oreg., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 28	Howard Kimble	0.88	2.53	Aug. 8	Garfield Stubblefield	0.30	0.53
May 9	do	2.04	15.1				

Daily gage height, in feet, and discharge, in second-feet, of Cucamonga Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

[Prim Ortego, observer.]

Day.	April.		May.		June.		July.		August.	
	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.	Gage height.	Discharge.
1			1.60	8.6						
2										
3			1.30	5.6						
4					1.70	9.8				
5			1.10	4.0	1.50	7.5				
6										
7			1.10	4.0	1.40	6.5				
8			2.00	14.6						
9			2.00	14.6	1.50	7.5			0.3	0.7
10	1.10	4.0	2.00	14.6	1.50	7.5				
11									.3	.7
12	1.90	12.8							.3	.7
13										.5
14			1.80	11.2						.3
15	2.20	18.5			1.00	3.3				0
16	1.80	11.2	1.70	9.8						
17	1.90	12.8								
18			1.90	12.8						
19			1.90	12.8						
20			1.50	7.5						
21										
22			1.60	8.6						
23			1.70	9.8						
24			1.90	12.8						
25					1.30	5.6	1.0	3.3		
26			1.95	13.7			1.0	3.3		
27			1.95	13.7						
28										
29			2.00	14.6						
30			1.90	12.8						
31			1.90	12.8						

NOTE.—Daily discharge determined from poorly defined rating curve. Data insufficient for monthly estimates.

M'COY CREEK NEAR DIAMOND, OREG.

Location.—In sec. 12, T. 30 S., R. 32 E., about 5 miles southwest of Diamond, and about 1,000 feet above Kesterson's ranch house.

Records available.—January 27, 1909, to May 22, 1910; May 23, 1910 (new site), to September 30, 1913.

Drainage area.—45 square miles.

Gages.—A vertical staff installed August 7, 1913, 250 feet below one installed May 23, 1910, 2½ miles above the original gage, which was 3 miles from Diamond post office.

Channel and control.—Clean gravel and sand; liable to shift.

Discharge measurements.—Made from a footbridge 100 yards above present gage, or by wading.

Winter flow.—Discharge relation affected by ice.

Diversions.—The present station is above all diversions except one unimportant ditch. Several irrigation ditches divert water above the original site for use of hay lands in Diamond Swamp. No attempt was made to estimate the quantity of water carried by these ditches.

Accuracy.—Conditions have been poor and no accurate determination of discharge was possible during 1913.

Discharge measurements of McCoy Creek near Diamond, Oreg., during the year ending Sept. 30, 1913.

Date.	Made by—	Gage height.	Discharge.	Date.	Made by—	Gage height.	Discharge.
		Feet.	*Sec.-ft.*			*Feet.*	*Sec.-ft.*
Nov. 29	Howard Kimble	1.70	10.6	Aug. 7	Garfield Stubblefield	1.29	9.16
May 9	do	3.08	108	7	do	1.29	10.0

Daily gage height, in feet, of McCoy Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

[C. L. Fisher, observer.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	1.20	1.60	1.40	1.60	1.35	.....	1.85	2.00	4.0	.....	.....	.....
2	1.20	1.60	1.60	1.50	1.35	1.30	1.70	1.95	3.6	.....	.....	.....
3	1.20	.....	1.60	1.50	1.30	1.32	1.60	1.85	3.40	.....	.....	1.15
4	.....	1.60	1.50	1.70	1.30	1.35	1.60	1.90	3.40	.....	.....	.....
5	1.30	1.60	.....	1.70	1.30	1.40	1.70	2.10	3.10	.....	.....	1.15
6	1.30	.....	1.40	1.75	1.30	1.30	1.60	2.40	3.20	.....	.....	.....
7	1.50	1.60	1.40	1.70	.....	1.30	1.60	2.90	3.30	.....	1.29	.....
8	1.50	1.60	1.40	2.70	1.30	1.30	1.60	3.10	3.20	.....	.....	.....
9	.....	1.60	.....	2.60	.....	1.30	1.60	3.20	3.10	.....	.....	.....
10	1.50	1.60	1.60	2.60	1.30	1.40	1.60	3.25	2.80	.....	.....	.....
11	1.55	1.60	1.60	.....	1.30	1.30	1.65	3.10	2.80	.....	.....	.....
12	1.55	1.60	1.70	2.10	.....	1.20	1.90	2.80	2.80	.....	.....	.....
13	1.50	1.60	.....	2.20	1.30	1.30	.....	2.50	2.70	.....	.....	.....
14	1.50	.....	1.35	2.05	1.35	1.30	1.70	2.40	2.70	.....	.....	.....
15	.....	.....	1.32	2.00	1.40	1.30	2.00	2.40	2.70	.....	1.20	.....
16	1.50	.....	1.35	1.80	1.40	1.30	1.90	2.40	2.50	.....	.....	.....
17	1.50	.....	1.38	2.05	1.60	1.36	1.95	2.50	2.50	.....	.....	.....
18	1.50	.....	.....	2.00	1.60	1.30	2.05	3.20	2.40	.....	.....	.....
19	1.50	.....	1.35	.....	.....	1.30	2.70	2.90	2.40	.....	.....	.....
20	1.50	.....	1.35	1.80	1.70	1.25	2.15	2.90	2.30	.....	.....	.....
21	.....	.....	1.32	1.90	1.72	1.30	2.20	3.40	2.40	.....	.....	.....
22	1.50	1.40	.....	1.90	1.75	1.30	2.15	3.6	2.40	.....	.....	.....
23	1.60	1.40	1.35	1.90	1.75	1.30	2.20	3.9	.....	.....	1.20	.....
24	1.65	1.40	1.70	1.85	1.75	1.30	2.20	4.0	.....	.....	.....	.....
25	1.65	.....	.....	1.60	.....	1.35	2.10	4.0	.....	.....	1.20	.....
26	1.65	1.40	1.35	1.50	1.8	1.30	2.60	4.3	.....	.....	.....	.....
27	1.65	1.40	.....	1.50	1.8	1.30	2.70	4.5	.....	.....	.....	.....
28	1.65	1.40	1.40	1.40	.....	1.30	2.40	4.6	.....	.....	.....	.....
29	1.60	1.40	1.60	1.30	.....	2.80	2.40	4.4	.....	.....	.....	.....
30	1.60	1.40	1.60	1.30	.....	2.2	2.10	3.9	.....	.....	.....	.....
31	1.60	.....	.....	1.35	.....	1.7	.....	4.0	.....	.....	.....	.....

NOTE.—Creek frozen from about Dec. 2–14, and from Dec. 24, 1912, until Jan. 29, 1913. Water was running over ice Jan. 8–10. Gage settled on account of caving bank about June 23, and readings thereafter are of no value. Readings beginning Aug. 7 are on new gage about 250 feet below old gage.

Daily discharge, in second-feet, of McCoy Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	2	8	4	.....	3.5	7	18	25	165	.....	.....	.....
2	2	8	4	.....	3.5	3	10	22	140	.....	.....	.....
3	2	8	4	.....	3	3.2	8	18	128	.....	.....	6
4	2	8	4	.....	3	3.5	8	20	128	.....	.....	.....
5	3	8	4	.....	3	4	10	30	110	.....	.....	6
6	3	8	4	.....	3	3	8	50	116	.....	.....	.....
7	6	8	4	.....	3	3	8	91	122	.....	10	.....
8	6	8	3.5	.....	3	3	8	109	116	.....	.....	.....
9	6	8	3.5	.....	3	3	8	116	110	.....	.....	.....
10	6	8	3.5	.....	3	4	8	119	92	.....	.....	.....
11	7	8	3.5	.....	3	3	9	110	92	.....	.....	.....
12	7	8	3.5	.....	3	2	20	92	92	.....	.....	.....
13	6	8	3.5	.....	3	3	15	74	86	.....	.....	.....
14	6	8	3.5	.....	3.5	3	10	68	86	.....	.....	.....
15	6	7	3.2	.....	4	3	25	68	86	.....	7	.....
16	6	7	3.5	.....	4	3	20	68	74	.....	.....	.....
17	6	6	3.8	.....	8	3.5	22	74	74	.....	.....	.....
18	6	6	3.6	.....	8	3	28	116	68	.....	.....	.....
19	6	5	3.5	.....	9	3	73	98	68	.....	.....	.....
20	6	5	3.5	.....	10	2.5	33	98	63	.....	.....	.....
21	6	4	3.2	.....	11	3	36	128	68	.....	.....	.....
22	6	4	3.4	.....	12	3	33	140	68	.....	.....	.....
23	8	4	3.5	.....	12	3	36	159	.....	.....	7	.....
24	9	4	3.5	.....	12	3	36	165	.....	.....	.....	.....
25	9	4	3.5	.....	12	3.5	30	165	.....	.....	7	.....
26	9	4	3.5	.....	13	3	64	186	.....	.....	.....	.....
27	9	4	3.8	.....	13	3	73	200	.....	.....	.....	.....
28	9	4	4	.....	10	3	50	207	.....	.....	.....	.....
29	8	4	4	3	.....	55	50	193	.....	.....	.....	.....
30	8	4	4	3	.....	28	30	158	.....	.....	.....	.....
31	8	.....	4	3.5	.....	10	.....	165	.....	.....	.....	.....

NOTE.—Discharge determined from a poorly defined rating curve. Discharge estimated because of ice as follows: Dec. 2–14, 24–25, 29–31; Jan. 1–7, 4 second-feet; Jan. 8–10, 20 second-feet; Jan. 11–28, 5 second-feet. Discharge interpolated for days on which gage heights are missing.

Monthly discharge of McCoy Creek near Diamond, Oreg., for the year ending Sept. 30, 1913.

[Drainage area, 45 square miles. a]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
October	9	2	6.1	0.136	0.16	375	D.
November	8	4	6.3	.140	.16	375	D.
December	4	3.2	3.68	.082	.09	226	D.
January	.....	.....	6.05	.134	.15	372	D.
February	13	3	6.48	.144	.15	360	D.
March	55	2	5.91	.131	.15	363	D.
April	73	8	26.2	.582	.65	1,560	D.
May	207	18	107	2.38	2.74	6,580	C.
June 1–22	165	63	97.8	2.17	1.77	4,270	C.
The period	.....	.....	.....	.....	.....	14,500	

a Drainage area computations for 1912, in Water-Supply Paper 330, page 261, are incorrect, having been based on erroneous area of 56 square miles.

SILVER CREEK BELOW RILEY, OREG.

Location.—In sec. 10, T. 24 S., R. 27 E., 2 miles downstream from original location which is in sec. 33, T. 23 S., R. 27 E., 2 miles southeast of Riley, near upper end of canyon below Silver Valley.

Records available.—May 1 to June 21, 1912, and May 6 to June 6, 1913, at present location; March 12 to April 30, 1912, at original location.

Drainage area.—Not measured.

Gage.—Vertical staff on left bank.

Channel and control.—Gravel; probably fairly permanent at both locations.

Discharge measurements.—Made by wading.

Diversions.—A large percentage of the total run-off—practically all except during a short period of flood run-off in the spring—is diverted for irrigation in the Silver Valley above the station.

Accuracy.—Results are approximate owing to the small number of measurements.

The following discharge measurement was made by Howard Kimble:

May 6, 1913: Gage height, 1.82 feet; discharge, 67.2 second-feet.

Daily gage height, in feet, and discharge, in second-feet, of Silver Creek below Riley, Oreg., for the year ending Sept. 30, 1913.

Day.	May.		June.		Day.	May.		June.	
	Gage height.	Discharge.	Gage height.	Discharge.		Gage height.	Discharge.	Gage height.	Discharge.
1			1.00	1	16	1.40	17		
2			1.00	1	17	1.50	27		
3			1.00	1	18	1.50	27		
4			1.00	1	19	1.45	22		
5			1.00	1	20	1.40	17		
6	1.82	68	1.00	1	21	1.40	17		
7		63	.90	0	22	1.30	9		
8		58			23	1.25	7		
9		53			24	1.20	5		
10		48			25	1.10	2		
11		43			26	1.00	1		
12	1.60	39			27	1.00	1		
13	1.50	27			28	1.00	1		
14	1.55	33			29	1.00	1		
15	1.55	33			30	1.00	1		
					31	1.00	1		

NOTE.—Daily discharge determined from fairly well defined rating curve. Water runs only a few weeks during spring of each year. Mean discharge for May, 23.9 second-feet (1,230 acre-feet); June, 0.2 second-feet (12 acre-feet).

MISCELLANEOUS MEASUREMENTS.

The following miscellaneous discharge measurements were made on streams and canals in the Great Basin during the year ending September 30, 1913:

Miscellaneous discharge measurements in Great Basin during the year ending Sept. 30, 1913.

Great Salt Lake basin.

Date.	Stream.	Tributary to or diverting from—	Locality.	Gage height.	Discharge.
July 29	Logan River	Bear River	Below head of Logan Northern canal above Logan, Utah.		92.4
May 23	City Canal	Jordan River	Sugar House, Salt Lake City.	0.99	9.2

Miscellaneous discharge measurements in Great Basin during the year ending Sept. 30, 1913—Continued.

Sevier Lake basin.

Date.	Stream.	Tributary to or diverting from—	Locality.	Gage height.	Discharge.
July 14	Sevier River	Sevier Lake	One-half mile above Hillsdale, Utah.		106
June 22	do	do	Above junction with East Fork of Sevier River near Kingston, Utah.		21.4
23	do	do	do		21.0
Oct. 7	do	do	Pitts' ranch, 3½ miles below Piute dam, 6 miles above Marysvale, Utah.	2.57	188
Nov. 21	do	do	do		34
21	do	do	do		39
Dec. 20	do	do	do	2.80	243
Mar. 23	do	do	do	1.60	96
Aug. 5	do	do	do	3.25	392
14	do	do	do	4.10	620
22	do	do	do	2.87	321
Oct. 8	do	do	4 miles below Marysvale, Utah.	2.22	200
May 30	do	do	Bridge near Fayette, Utah		173
June 14	do	do	do	.83	75
21	do	do	do	.87	81
30	do	do	do	1.00	93
Aug 2	do	do	do	.50	58
Dec. 3	do	do	Ruby Point, 10 miles above Leamington, Utah.	3.75	339
3	do	do	do	3.75	340
4	do	do	do	3.75	338
June 30	do	do	do	4.34	510
July 10	do	do	do	4.25	451
11	do	do	do	4.22	434
Aug. 3	do	do	do	2.84	126
May 15	East Fork of Sevier River.	do	One-fourth mile above mouth		11.0
27	do	do	do		13.4

Canals diverting from Sevier River.

June 25	Long Canal	Sevier River	Head near Panguitch, Utah		62.1
July 14	do	do	do	1.30	23.1
14	do	do	do	.60	5.2
14	do	do	do	1.00	15.9
14	East Bench Canal	Long Canal	Near Panguitch, Utah	2.50	8.3
14	do	do	do	1.88	2.1
14	East Panguitch Canal	Sevier River	do	1.50	24.6
14	do	do	do	1.25	17.8
14	Henry ditch		do	1.20	4.2
14	Riggs ditch		do	1.40	1.5
14	do		do	1.30	1.2
14	Wilson ditch	Sevier River	Head near Hillsdale, Utah		3.1
Aug. 13	Sevier Valley Canal	do	Station 631		87.7
26	do	do	do		99.3
May 20	Joseph Canal	do	Near Joseph, Utah	1.80	22.3
June 6	do	do	do	1.63	20.4
July 19	State Canal	do	Station 23, near Richfield, Utah		77.5
May 7	do	do	2 miles northwest of Aurora, Utah.	1.90	54.6
June 9	do	do	do	2.10	66.6
17	West View Canal	do	Head near Redmond, Utah		24.0
26	do	do	do	1.25	22.8
27	do	do	do	1.00	24.3
27	do	do	do	.86	11.5
July 9	do	do	do	1.05	16.7
16	do	do	do		4.5
20	do	do	do	1.27	20.0
21	do	do	do	1.52	27.4
24	do	do	do		23.2
27	do	do	do		17.7
27	do	do	do	1.12	20.6
May 31	Fayette Canal	do	Head near Centerfield, Utah	3.00	62.8
June 16	do	do	do	1.00	39.9
25	do	do	do	1.27	39.9
27	do	do	do	1.17	36.9
July 9	do	do	do		24.8
18	do	do	do		18.4
18	do	do	do	.95	26.7
28	do	do	do	1.21	39.1
28	do	do	do		37.1
Aug. 11	do	do	do	4.25	53.6

Miscellaneous discharge measurements in Great Basin during the year ending Sept. 30, 1913—Continued.

Canals diverting from Sevier River—Continued.

Date.	Stream.	Tributary to or diverting from—	Locality.	Gage height.	Discharge.
July 18	Anton Jensen ditch	Fayette Canal	Head near Gunnison, Utah		1.0
May 30	Dover Canal	Sevier River	do		43.0
June 15	do	do	do	1.00	38.2
25	do	do	do	.35	14.2
July 9	do	do	do	1.30	27.1
25	do	do	do	1.27	27.8
Aug. 1	Drain 1 of Spaulding and Livingston Co.	do	Near Gunnison, Utah		6.7
1	Drain 2 of Spaulding and Livingston Co.	do	do		2.5
1	Drain 3 of Spaulding and Livingston Co.	do	do		3.4
21	Warm Creek Spring	do	Near Fayette, Utah		3.9
3	Molen Spring	do	Near Mills, Utah		6.4
May 17	Wellington Canal	do	Head near Mills, Utah	6.90	22.7
June 29	do	do	do	7.33	14.0
Aug 3	do	do	do	6.49	3.8
June 30	Sevier River Land and Water Co. canal.	Sevier River	Head near Leamington, Utah		38.7
30	do	do	do		13.6
July 7	do	do	do		19.9
Aug. 29	do	do	3 miles below head		8.5
May 16	McIntyre canal	do	Head near Leamington, Utah	6.10	21.9
June 12	do	do	do	6.01	18.1
July 12	do	do	do	6.59	17.4
Aug. 14	do	do	do		13.6
29	do	do	do		16.5
May 16	Leamington canal	do	do	4.60	47.9
June 4	do	do	do	4.15	32.3
12	do	do	do	3.66	23.7
30	do	do	do	3.34	15.6
July 11	do	do	do	3.99	23.8
Aug. 29	do	do	do		28.3
June 9	Abraham canal	do	Below Wilson canal, near Delta, Utah.		43.3
9	Wilson canal	Abraham canal	Head near Delta, Utah		43.4
May 28	Walker canal	Deseret canal	Head near Oasis, Utah		4.4
June 7	do	do	do		4.2
June 26	Smith ditch	do	do		5.4
Aug. 8	do	do	do		1.2
May 15	South Side ditch	do	In flume above Hinckley bridge, near Oasis, Utah.		77.1

Pavant Valley.

May 2	Wild Goose Creek		Above diversions near Holden, Utah.		0.9
2	Pioneer Creek		do		17.0
1	Chalk Creek		Above diversions near Fillmore, Utah; just below junction with Dry Creek.		132
1	Pine Creek		Above diversions near Fillmore, Utah.		8.3
Apr. 30	Meadow Creek		Above diversions, and 2 miles above Meadow, Utah.		30.8
30	Corn Creek		Above diversions, and 3 miles above Kanosh, Utah.		73.0

Beaver River basin.

May 8	Beaver River		Milford, Utah		0.4
7	South Creek	Beaver River	8 miles southeast of Beaver, Utah.		18.0
7	Birch Creek	South Creek	5 miles southeast of Beaver, Utah.		1.4
7	North Fork of North Creek.	North Creek	7 miles northeast of Beaver, Utah,		17.3
7	South Fork of North Creek.	do	do		45.0
6	Indian Creek	Beaver River	Above diversions, near Manderfield, Utah.		20.0
6	Wildcat Creek	Indian Creek	Above diversions, near Beaver, Utah.		2.3
6	Pine Creek	Cove Creek	do		3.2
6	North Pine Creek	Pine Creek	do		1.9

Miscellaneous discharge measurements in Great Basin during the year ending Sept. 30, 1913—Continued.

Parowan Valley.

Date.	Stream.	Tributary to or diverting from—	Locality.	Gage height.	Discharge.
May 26	Little Creek		Above diversions, about 2 miles north of Paragonah, Utah.		3.3
26	Red Creek		Above diversions, ½ mile above Paragonah, Utah.		11.4
26	Center Creek		Above diversions, ½ mile above Parowan, Utah.		39.1
26	Summit Creek		Above diversions, ½ mile above Summit, Utah.		13.3

Rush Lake Valley.

May 27	Coal Creek		Half-mile above power plant, 2 miles above Cedar, Utah.		83.4
27	Cedar Power Canal	Coal Creek	50 feet below power house, near Cedar, Utah.		4.8

Escalante Desert.

May 20	Pinto Creek		Above diversions, near Pinto, Utah.		9.6
20	do		Just above Newcastle canal, 1 mile above Newcastle, Utah.		12.0
Apr. 9	Shoal Creek		Just above Enterprise canal, 3½ miles above Enterprise, Utah.		3.0
15	do		do		3.1
May 21	do		do		15.4

Minor basins in Nevada.

Aug. 10	McCoy Creek		Mouth of canyon near Taft, Nev.		4.7
10	do		2 miles below mouth of canyon near Taft, Nev.		1.5
9	Cleveland Creek		Just below junction of North and South Forks, near Cleveland, Nev.		9.3
8	do		1½ miles above Cleveland ranch, 45 miles east of Ely, Nev.		7.2
May 21	South Fork of Cleveland Creek.	Cleveland Creek	Mouth, 10 miles above Cleveland ranch.		2.6
Aug. 9	do	do	do		1.6
May 21	North Fork of Cleveland Creek.	do	do		17.2
Aug. 9	do	do	Proposed power plant site, 2 miles above junction with South Fork.		7.2
Apr. 30	Steptoe Creek		2 miles above Copper Mines ranch, 9 miles southeast of Ely, Nev.	1.72	10.3
Aug. 15	do		do	1.66	8.2
May 2	Duck Creek		Outlet of pond near McGill, Nev.	.78	[a] 25.0
Aug. 18	Duckwater Creek		One-fourth mile above weir on Mendes ranch, near Duckwater, Nev.		11.9
18	Mendes ditch	Duckwater Creek	Head near Duckwater, Nev.		2.8
May 5	Currant Creek		Above diversions to Cazier's reservoir near Currant, Nev.	1.48	3.22
Aug. 17	do		do	1.10	.45
16	Preston Big Spring		Above diversions near Preston, Nev.		7.6
16	Lund ditch	Preston Big Spring.	Head near Preston, Nev.		3.5
16	Spring No. 4	Lund ditch	700 feet northwest of Preston post office.		.9
16	Preston ditch	Preston Big Spring.	Head near Preston, Nev.		4.9
16	Spring No. 2		200 feet west and 150 feet north of Preston post office.		3.7
16	Spring No. 3		500 feet north of Preston post office.		2.8

[a] Total flow from pond, including waste water from city water works and the smelter.

Miscellaneous discharge measurements in Great Basin during the year ending Sept. 30, 1913—Continued.

Minor basins in Nevada—Continued.

Date.	Stream.	Tributary to or diverting from—	Locality.	Gage height.	Discharge.
May 7	White River		300 feet west of schoolhouse at Preston, Nev.	1.20	0.8
Aug. 16	Hat Creek		One-half mile below source near Sunnyside, Nev.		13.1
Owens River basin.					
Oct. 15	Rock Creek	Owens River	Sec. 10, T. 6 S., R. 31 E., below Pine Creek.		53
Nov. 14	do	do	do		54
Dec. 5	do	do	do		46
Carson River basin.					
Aug. 10	Ditch No. 1	West Fork of Carson River.	Woodfords, Cal		6.6
10	Ditch No. 2	do	do		3.2
10	Ditch No. 3	do	do		3.7
Humboldt River basin.					
June 2	Buena Vista ditch	Marys River	Head above Buena Vista Ranch.		18.6
19	Log Cabin Creek	King River	Minterberry ranch, 2 miles above mouth, near Amos, Nev.		[a] 9
Truckee River basin.					
Feb. 15	Donner Creek	Truckee River	120 feet below Stone & Webster's gage near outlet of Donner Lake.	1.40	9.1
Aug. 14	Power-house tailrace	Little Truckee River.	Boca, Cal		15
Warner Lake basin.					
June 18	Givan's ditch	Deep Creek	Intake near Adel, Oreg		1.31
18	Wible and Messner ditch.	do	do		1.90
18	Company ditch	do	do		10.8
18	Wible ditch	do	do		1.37
18	M. C. ditch	do	do		37.9
18	M. C. lower ditch	do	do		3.34
Abert Lake basin.					
May 22	Chewaucan River	Abert Lake	Bridge below all tributaries		280
Mar. 5	Mill Creek	Chewaucan River	Mouth, near Paisley, Oreg		[b] 2.0
Silver Lake basin.					
Nov. 12	Buck Creek [c]	Silver Lake	Former gaging station, sec. 17, T. 27 S., R. 14 E.		6.7
Feb. 4	do	do	do		3.6
Harney Lake basin.					
Aug. 23	Warm Springs	Harney Lake	Bridge at "OO" ranch main channel only.		20.9

[a] At mouth of creek, about twice as much water due to inflow from springs.
[b] Estimated.
[c] Formerly called Bear Creek.