

GEOLOGICAL SURVEY CIRCULAR 200



ANNOTATED BIBLIOGRAPHY OF  
U. S. GEOLOGICAL SURVEY REPORTS  
ON WATER-POWER RESOURCES  
INCLUDING FLOODS AND  
DROUGHTS

By Loyd L. Young and Benjamin E. Jones



UNITED STATES DEPARTMENT OF THE INTERIOR  
Douglas McKay, Secretary

GEOLOGICAL SURVEY  
W. E. Wrather, Director

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Washington, D. C., 1953

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# ANNOTATED BIBLIOGRAPHY OF U. S. GEOLOGICAL SURVEY REPORTS ON WATER-POWER RESOURCES, INCLUDING FLOODS AND DROUGHTS

By Loyd L. Young and Benjamin E. Jones

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## INTRODUCTION

This circular lists and describes water-supply papers, circulars, and manuscript reports prepared by the U. S. Geological Survey, dealing with water power, floods, and droughts. It brings up to date the mimeographed "Preliminary list of reports on water-power resources," prepared by B. E. Jones (1940).

Whether the diversion works of a water-power plan provide storage, development of head by raising the water level with a dam, or simply turn the water into a conduit, they must be capable of withstanding the flood flows to which they will be subjected. Floods must be controlled and passed without damage to the structures with a minimum of loss of generating capacity. Multiple-purpose developments often need to reserve considerable storage capacity for flood prevention. Likewise, information on the occurrence, severity, and duration of periods of drought are important to a thorough investigation of the water-power possibilities of a stream and the requirements for providing storage to minimize loss of capacity because of such dry periods. Reports in these two categories, therefore, are included in this listing, the primary purpose of which is to catalog and describe reports dealing specifically, or principally, with water-power potentialities.

All the reports referred to in the 1940 listing are included in this bibliography. Related reports, water-supply papers and circulars prepared since that date, and some which were omitted from the 1940 list, have been added.

## WATER-SUPPLY PAPERS

An asterisk (\*) indicates that the paper is out of print.

The term "water-supply paper," as here used, refers to published reports of the Geological Survey that relate to water resources. The papers are numbered consecutively according to date of publication.

Included in this list are reports dealing principally with water power, floods, or droughts. Some early water-supply papers consist only of maps of rivers and are not listed here but are included in Water-Supply Paper 995, "Index to river surveys made by the United States Geological Survey and other agencies, revised to July 1, 1947." This latter paper is a revised edition of Water-Supply Paper 558.

These papers can be consulted at repository libraries and at most public libraries. The more recently published ones can be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at the prices indicated.

The number of the report, the title, author, date of publication, and a brief description of the water-supply papers dealing with water power, floods, or droughts follow.

- \*40. The Austin Dam, by T. U. Taylor, 1900. 52 p., 16 pls.

Gives an interesting account of construction and failure of Austin Dam.

- \*58. Storage of water on Kings River, Calif., by J. B. Lippincott, 1902. 10 p., 32 pls.

Contains some information on power resources. For additional information see "Storage resources of the South and Middle Forks of Kings River," (R. R. Randall, Federal Power Commission, 1930).

- \*69. Water powers of the State of Maine, by H. A. Pressey, 1902. 124 p., 14 pls.

Describes power resources by drainage basins.

- \*88. The Passaic flood of 1902, by G. B. Hollister and M. O. Leighton, 1903. 56 p., 15 pls.

Outlines history of the disastrous flood of late February and early March, describes conditions under which it occurred, gives estimated volume of discharge, and indicates nature and extent of damage.

- \*92. The Passaic flood of 1903, by M. O. Leighton, 1904. 48 p., 7 pls.

Gives history of the disastrous flood which occurred October 8 to 19, 1903. Discusses damages and outlines preventive measures.

- \*96. Destructive floods in the United States in 1903, by E. C. Murphy, 1904. 81 p., 13 pls.

Discusses floods in Oregon, South Carolina, Mississippi, and Kansas; describes methods of obtaining data; and suggests preventive measures.

- \*105. The water powers of Texas, by T. U. Taylor, 1904. 116 p., 17 pls.

Consists principally of a description of constructed plants.

- \*107. Water powers of Alabama with an appendix on stream measurements in Mississippi, by B. M., Hall, 1904. 253 p., 9 pls.

Summarizes information. See also Alabama Geol. Survey Bull. 17 by the same author.

- \*147. Destructive floods in the United States in 1904, by E. C. Murphy and others, 1905. 206 p., 18 pls.

Describes floods of Sacramento, Susquehanna, Mohawk, Grand (Michigan), Wabash, Belle Fourche, Kansas, Neosha, Verdigris, Osage, Arkansas, Canadian, Pecos Rivers and the Rio Grande. Discusses floods in Pennsylvania, Arizona, and Colorado, and the drought in Ohio River drainage basin. Outlines methods for determining maximum discharge.

Water Supply Paper  
no.

- \*156. Water powers of northern Wisconsin, by L. S. Smith, 1906. 145 p., 5 pls.

Briefly describes constructed plants and some undeveloped power sites.

- \*162. Destructive floods in 1905, with a discussion of flood discharge and frequency and an index to flood literature, by E. C. Murphy and others, 1906. 105 p., 4 pls.

Discusses following floods: Pequonnock River, Conn., by T. W. Norcross; Sixmile Creek and Cayuga Inlet, N. Y.; Unadilla and Chenango Rivers, N. Y., by R. E. Horton and C. C. Covert; Allegheny River, Pa.-N. Y.; Ohio River; Grand River, Mich.; South Dakota; southeastern Minnesota; Devils Creek, Iowa, by E. C. Murphy and F. W. Hanna; Des Moines County, Iowa; and the Rio Grande and Colorado River basins.

- \*180. Turbine water-wheel tests and power tables, by R. E. Horton, 1906. 134 p., 2 pls.

Compiles data from tests and manufacturers' power tables of American stock sizes of turbines. Contains bibliography of selected references.

- \*197. Water resources of Georgia, by B. M. and M. R. Hall, 1907. 342 p., 1 pl.

Contains information on water power. See also Georgia Geol. Survey Bull. 38, 1921.

- \*198. Water resources of the Kennebec River basin, Maine, by H. K. Barrows, 1907. 235 p., 7 pls.

Contains chapters on developed and undeveloped water power.

- \*234. Papers on the conservation of water resources, 1909. 96 p., 2 pls.

Contains an estimate of developed and potential water power of the United States by drainage basins.

- \*253. Water powers of the Cascade Range, part 1, southern Washington, by J. C. Stevens, 1910. 94 p., 2 pls.

Contains descriptions of principal power sites and estimates of potential power of streams.

- \*279. Water resources of the Penobscot River basin, Maine, by H. K. Barrows and C. C. Babb, 1912. 285 p., 19 pls.

Contains chapters on water power and storage.

- \*313. Water powers of the Cascade Range, part 2: Cowlitz, Nisqually, Puyallup, White, Green, and Cedar drainage basins, by F. F. Henshaw and G. L. Parker, 1913. 170 p., 16 pls.

Describes power sites and gives estimates of potential power in basins listed.

- \*334. The Ohio Valley flood of March-April, 1913 including comparisons with some earlier floods, by A. H. Horton and H. J. Jackson, 1913. 96 p., 22 pls.

Shows what data should be collected for a report complete enough to indicate the proper means of preventing damage.

- \*344. Deschutes River, Oreg., and its utilization, by F. F. Henshaw, J. H. Lewis, and E. J. McCaustland, 1914. 200 p., 28 pls.

Describes important power sites and includes geology of dam sites.

- \*369. Water powers of the Cascade Range, part 3, Yakima River basin, by G. L. Parker and F. B. Storey, 1915. 169 p., 20 pls.

Contains descriptions of power sites and estimates of potential power.

- \*372. A water-power reconnaissance in south-central Alaska, by C. E. Ellsworth and R. W. Davenport, 1915. 173 p., 22 pls.

Contains general information on water power, based largely on results of measurements of discharge of streams.

- \*395. Colorado River and its utilization, by E. C. La Rue, 1916. 231 p., 95 pls.

Contains much information on potential power and storage possibilities. See also Water-Supply Paper 556.

Water Supply Paper  
no.

- \*400. Contributions to the hydrology of the United States, 1916. 108 p., 7 pls.
- \*(a) The people's interest in water-supply resources, by G. O. Smith, 1916. p. 1-8.
- \*426. Southern California floods of January 1916, by H. D. McGlashan and F. C. Ebert, 1918. 81 p., 17 pls.
- Contains a presentation of precipitation and flow measurements during critical period of the floods, a description of damage incurred, and a comparison with previous floods.
- \*486. Water powers of the Cascade Range, part 4, Wenatchee and Entiat basins, by G. L. Parker and Lasley Lee, 1922. 76 p., 3 pls.
- Discusses potential power and reservoir sites.
- \*487. The Arkansas River flood of June 3-5, 1921, by Robert Follansbee and E. E. Jones, 1922. 44 p., 6 pls.
- Describes a flood in Arkansas Valley, Colo., remarkable for the small area covered by the rainfall, for the swift rise, and equally rapid fall of the river.
- \*488. The floods in central Texas, September 1921, by C. E. Ellsworth, 1923. 56 p., 8 pls.
- Reports and discusses measurements of flood flows on the Brazos River, the Little River and its tributaries, the Colorado, Guadalupe, and San Antonio Rivers. Describes previous floods on these streams.
- \*493. Hydroelectric power systems of California and their extensions into Oregon and Nevada, by F. H. Fowler, 1923. 1276 p., 73 pls.
- Describes constructed plants and power systems.
- \*517. Water powers of the Great Salt Lake basin, by R. R. Woolley with introduction by N. C. Grover, 1924. 270 p., 13 pls.
- Describes undeveloped resources and constructed power plants in the basin.
- \*520. Contributions to the hydrology of the United States, 1923-24 [1925]. 129 p., 12 pls.
- \*(c) Power resources of Snake River between Huntington, Oreg., and Lewiston, Idaho, by W. G. Hoyt. p. 27-51.
- Describes undeveloped sites in this section of the river.
- \*(g) Some floods in the Rocky Mountain region, by Robert Follansbee and P. V. Hodges. p. 105-129.
- The results of investigations of cloudburst floods that occurred in Colorado and Wyoming in 1923.
- \*556. Water power and flood control of the Colorado River below Green River, Utah, by E. C. La Rue, 1925. 176 p., 79 pls.
- Describes undeveloped power and reservoir sites.
- \*558. Preliminary index to river surveys made by the United States Geological Survey and other agencies, by B. E. Jones and R. O. Helland, 1926. 108 p., 2 pls.
- Lists and describes many river surveys. Index revised to July 1, 1947, and published in 1948 as Water-Supply Paper 995.
- \*560. Contributions to the hydrology of the United States, 1925 [1926]. 134 p., 2 pls.
- \*(a) Water power and irrigation in the Madison River basin, Montana, by J. F. Deeds and W. N. White. p. 1-30.
- Describes developed and potential power sites in the basin.
- \*579. Power capacity and production in the United States, papers by C. R. Daugherty, A. H. Horton, and R. W. Davenport, 1928. 210 p., 4 pls.
- Describes growth of power production in the United States and gives many tables.



- \*580. Contributions to the hydrology of the United States, 1926 [1927]. 116 p., 3 pls.  
\*(b) Water power and irrigation in the Jefferson River basin, Montana, by J. F. Deeds and W. N. White. p. 41-116, pl. 3.  
Describes developed and potential power in the basin.
597. Contributions to the hydrology of the United States, 1928 [1929]. 250 p., 23 pls.  
\*(a) Geology of reservoir and dam sites with a report on the Owyhee irrigation project, Oregon, by Kirk Bryan. p. 1-72, pls. 1-10.  
Describes requirements of a geologic report on dam and reservoir sites.
- \*617. Upper Colorado River and its utilization, by Robert Follansbee, 1929. 394 p., 13 pls.  
Describes in general developed and undeveloped power and storage sites.
- \*618. The Green River and its utilization, by R. R. Woolley, 1930. 456 p., 35 pls.  
Describes developed and undeveloped power and reservoir sites.
- \*636. Contributions to the hydrology of the United States, 1929 [1930]. 330 p., 25 pls.  
\*(c) The New England flood of November 1927, by H. B. Kinnison. p. 45-100, pls. 2-14.  
This is a report on a severe flood caused by torrential rains of November 3 and 4, 1927, over extensive areas in Massachusetts, Connecticut, and Rhode Island.  
\*(f) Water-power resources of the Umpqua River and its tributaries, Oregon, by B. E. Jones and H. T. Stearns. p. 221-330, pls. 15-25.  
Describes power and reservoir sites.
- \*637. Contributions to the hydrology of the United States, 1930 [1931]. 220 p., 18 pls.  
\*(c) Water-power resources of the McKenzie River and its tributaries, Oregon, by B. E. Jones and H. T. Stearns. p. 91-124, pls. 2-9.  
Describes potential and developed water power and storage resources.
638. Contributions to the hydrology of the United States, 1931 [1932]. 162 p., 25 pls.  
\*(b) Water-power resources of the Rogue River drainage basin, Oregon, by B. E. Jones, Warren Oakey, and H. T. Stearns. p. 35-97, pls. 3-25.  
Describes power and reservoir sites and includes maps of numerous dam sites.
- \*657. Water utilization in the Snake River basin, by W. G. Hoyt, with a preface by Herman Stabler, 1935. 379 p., 26 pls.  
Describes potential and developed water-power and storage resources and gives a general survey of irrigation, present and future, in the basin.
680. Droughts of 1930-34, by J. C. Hoyt, 1936. 106 p., 1 pl. 20c.  
Discusses causes, effects, and scope of drought conditions, including consideration of stream flow and water-power production.
- \*771. Floods in the United States, magnitude and frequency, by C. S. Jarvis and others, 1936. 497 p., 3 pls.  
Compiles data on magnitude and frequency of floods in the United States and discusses methods for estimating floods.
772. Studies of relations of rainfall and runoff in the United States, by W. G. Hoyt and others, 1936. 301 p. 70c.  
Shows relations between annual and monthly precipitation, temperature, evaporation, transpiration, direct surface, runoff, ground-water runoff, and infiltration, as a basis for the quantitative analysis of the hydrologic cycle over broad areas and of trends and changes therein. Shows also relations between storm precipitation and direct surface runoff.

\*773. Contributions to the hydrology of the United States, 1936. (Issued in separate chapters only.)

\*(e) The New York State flood of July 1935, by Hollister Johnson. p. 233-268, pls. 22-38.

Includes study of causes, general features, and resulting damage of the New York State flood of July 1935, and tabulation of maximum discharges in streams of region as obtained from rating curves or by slope-area and other methods.

\*796. Contributions to the hydrology of the United States, 1937. (Issued in separate chapters only.)

\*(b) Flood on Republican and Kansas Rivers, May and June 1935, by Robert Follansbee and J. B. Spiegel. p. 21-52, pls. 10-15.

Includes study of causes, general features, and resulting damage of flood on the Republican and Kansas Rivers in May and June 1935, and tabulations of recorded discharge in streams of region for period of the flood.

\*(c) Flood in La Canada Valley, Calif., January 1, 1934, by H. C. Troxell and J. Q. Peterson. p. 53-98, pls. 16-34.

Presents study of causes, general features, and resulting damage of flood, with special attention given to movement of debris.

\*(g) Major Texas floods of 1935, by Tate Dalrymple and others, 1939. p. 223-290, pls. 54-62.

Includes study of causes, general features, and resulting damage of major Texas flood of 1935, and tabulations showing discharge at various stations at intervals during flood stages.

\*798. The floods of March 1936, part 1, New England rivers; N. C. Grover, 1937. 466 p., 12 pls.

Presents study of causes, general features, and resulting damage of floods of March 1936, with special attention given to facts of interest to engineers concerned with building of highways, bridges, and industrial plants; and to planners of river development. Contains records of stage and discharge for the period of the floods for about 150 measurement stations, peak discharges with comparative data for other floods at more than 400 measurement points, and tabulation of crest stages along an aggregate of 2,820 miles of stream channel.

\*799. The floods of March 1936, part 2, Hudson River to Susquehanna River region; N. C. Grover, 1937 [1938]. 380 p., 12 pls.

Includes records of stage and discharge for the period of the floods for about 180 measurement stations, peak discharges with comparative data for other floods at 243 measurement points, and crest stages along an aggregate of about 1,700 miles of stream channel.

\*800. The floods of March 1936, part 3, Potomac, James, and upper Ohio Rivers; N. C. Grover, 1937 [1938]. 351 p., 16 pls.

Contains records of stage and discharge for the period of the floods for about 140 measurement stations, peak discharges with comparative data for other floods at more than 200 measurement points, crest stages along an aggregate of 2,570 miles of stream channel, and a section by the U. S. Weather Bureau pertinent to the weather associated with the floods.

\*816. Major Texas floods of 1936, by Tate Dalrymple and others, 1937. 146 p., 12 pls.

Includes study of causes, general features, and resulting damage of major Texas floods of 1936, tabulations of discharge at measurement stations and other places during the period of the floods, and tabulation of earlier major floods in Texas showing discharge as obtained by slope-area and other methods.

\*820. Drought of 1936, with discussion on the significance of drought in relation to climate, by J. C. Hoyt, 1938. 62 p., 2 pls.

Water-Supply Paper 680 covered the droughts of 1930-34. In 1935 water-supply conditions were, in general, normal, but in 1936 droughts occurred in many localities. This report discusses 1936 drought areas with special attention given to area of the Great Plains.

- \*838. Floods of Ohio and Mississippi Rivers, January-February 1937, N. C. Grover; with a section on the flood deposits of the Ohio River, January-February 1937, by G. R. Mansfield, 1938 [1939]. 746 p., 25 pls.

Presents records of stage and discharge at about 250 stations, records of storage in reservoirs, summary of peak discharges, and tables showing crest stages. Includes also basic information regarding weather.

- \*842. Floods in the Canadian and Pecos River basins of New Mexico, May and June 1937, with summary of flood discharges in New Mexico, by Tate Dalrymple and others, 1939. 68 p., 9 pls.

Gives peak discharge determinations made at 14 miscellaneous places and observations and measurements at 23 regular river-measurement stations in basins. Includes records of past floods and discusses weather conditions during the flood periods.

- \*843. Floods of December 1937 in northern California, by H. D. McGlashan and R. C. Briggs, 1939 [1940]. 497 p., 13 pls.

Indicates floods exceeded previous records at 80 measurement stations, with flood stages prevailing from Kaweah River basin to Pit and Trinity basins and from the Pacific Ocean to the Sierras. Includes section on floods occurring before the inauguration of systematic flow records.

- \*844. Floods of March 1938 in southern California, by H. C. Troxell and others, 1942 [1943]. 399 p., 26 pls.

Describes a series of floods in southern part of the State. Contains sections on debris, artificial storage, and history of floods in southern California of special interest to persons concerned with river control and regulation.

- \*846. Natural water loss in selected drainage basins, by G. R. Williams and others, 1940. 62 p., 2 pls.

Contains primarily a statistical study of water loss, or rainfall minus runoff, for river basins east of the Rocky Mountains. Gives sample computations and discusses steps in the computations and their probable accuracy.

- \*847. Maximum discharge at stream-measurement stations through December 31, 1937, by G. R. Williams and L. C. Crawford, with a supplement including additions and changes through September 30, 1938, by W. S. Eisenlohr, Jr., 1940 [1941]. 272 p.

Compiles highest known discharges at most gaging stations in the United States and at several places on boundary streams, thus making available information on maximum stages, essential to proper design of a variety of engineering works, such as dams, spillways, dikes, and floodways.

- \*866. Geology of dam sites on the upper tributaries of the Columbia River in Idaho and Montana. (Issued in separate chapters.)

- \*(a) Part 1, Katka, tunnel No. 8, and Kootenai Falls dam sites, Kootenai River, Idaho and Mont., by C. E. Erdmann, 1941. p. 1-36, pls. 1-7.

Discusses geologic conditions and cultural development in the three dam-site areas.

- \*(b) Part 2, Hungry Horse dam and reservoir site, South Fork Flathead River, Flathead County, Mont., by C. E. Erdmann, with a section on geophysical investigations by B. E. Jones, 1944. p. 37-116, pls. 8-11.

Concludes that the dam site is suitable for a high concrete dam and that leakage is improbable.

- \*(c) Part 3, Miscellaneous dam sites on the Flathead River upstream from Columbia Falls, Mont., by C. E. Erdmann, 1947. p. 117-219, pls. 12-26.

Describes the limiting geologic conditions at a series of proposed dam sites. Based on geologic data from surface exposures and on geophysical investigation by electrical resistivity method.

- \*867. Hurricane floods of September 1938. Prepared under the direction of C. G. Paulson by B. L. Bigwood, A. W. Harrington, O. W. Hartwell, and H. B. Kinnison, 1940. 562 p., 20 pls.

Describes floods that occurred after an unusually heavy 4-day rainfall and during the West Indian hurricane that passed over Long Island and New England on September 21, 1938.

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- \*869. Flood of August 1935 in the Muskingum River basin, Ohio, by C. V. Youngquist and W. B. Langbein, with sections on the associated meteorology and hydrology, by W. E. Smith and A. N. Showalter, 1941. 118 p., 8 pls.

Discusses the largest general summer flood known in the basin.

- \*914. Texas floods of 1938 and 1939, by S. D. Breeding and Tate Dalrymple, 1944. 116 p., 8 pls.

Presents data on floods occurring in January, June, and July 1938, and in June 1939 that exceeded previous recorded stages at many places. Includes records of past floods in Red, Sabine, and Colorado River basins.

- \*915. Major winter and nonwinter floods in selected basins in New York and Pennsylvania, by W. B. Langbein and others, 1947. 139 p., 2 pls.

Discusses basic hydrologic conditions underlying floods of record in the areas. Explains methods of analyzing data considered.

- \*920. Utilization of surface-water resources of Sevier Lake basin, Utah, by R. R. Woolley, with a preface by N. C. Grover, 1947. 393 p., 33 pls.

Designed to serve as a handbook of information on surface waters of the basin, on their storage, diversion, and utility, and as a guide for future planning. Contains section on water power and discusses developments and future possibilities.

- \*966. Minor floods of 1938 in the North Atlantic States, by the Water Resources Division, 1947 [1948]. 422 p., 14 pls.

Reports on five floods. Presents records of stage and discharge at 123 stream-gaging stations, records of storage in many reservoirs, summaries of flood discharge with comparative data. Includes also basic information regarding general weather conditions associated with the floods.

- \*967. Notable local floods of 1939. (Issued in separate chapters only.)

- \*(a) Floods of September 1939 in Colorado River basin below Boulder Dam, by J. S. Gatewood, 1945. p. 1-39, pls. 1-6.

A report on the first general floods to occur below Boulder (Hoover) Dam since the dam was closed in February 1935. The data should be helpful in planning reservoir operation to minimize effects of future floods.

- \*(b) Flood of July 5, 1939, in eastern Kentucky, by F. F. Schrader, 1945. p. 41-59.

Rain of cloudburst proportions during the night of July 4-5, 1939, produced flood stages and discharges exceeding any previously known over a limited area in eastern Kentucky. The greatest intensity of runoff was in the Triplett and Frozen Creek area in Rowan and Breathitt Counties. These floods are the subject of this report.

- \*(c) Flood of August 21, 1939, in town of Baldwin, Maine, by M. R. Stackpole, 1946. p. 61-68.

Storms of cloudburst type, frequent in the West but rare in Maine, occurred on the afternoon of August 21, 1939. The resulting floods are discussed in the report.

- \*968. Contributions to the hydrology of the United States, 1944. (Issued in separate chapters only.)

- \*(a) Flood runoff in the Willamette Valley, Oreg., by M. D. Brands, 1947. p. 1-59.

Gives general information about flood characteristics of the basin. Makes study of runoff in the valley, using the principles of the unit-hydrograph, and of conditions affecting precipitation.

- \*(b) Floods of the Puyallup and Chehalis River basins, Washington, by I. E. Anderson, 1948. p. 61-124, pl. 1.

Shows that exposure of drainage areas in western Washington to the prevailing moisture-laden winds tends to cause greater precipitation and consequent runoff. Runoff characteristics of both basins compare favorably.

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no.

- \*(c) Topographic characteristics of drainage basins, by W. B. Langbein and others, 1947.  
p. 125-157, pl. 2.

Presents compilation of topographic data on drainage basins in the northeastern United States, intended to serve as a basis for similar studies, and studies of volume, yield, erosion, and deposition of sediment.

- \*994. Cloudburst floods in Utah, 1850-1938, by R. R. Woolley, with a chapter on physiographic features by R. E. Marsell and a foreword by N. C. Grover, 1946 [1947]. 128 p., 23 pls.

Describes floods of record since settlement of the State in 1847 and discusses the effects of man's activities upon the floods. Author believes that man's activities have had only minor effect upon magnitude of cloudburst floods.

- \*995. Index to river surveys made by the United States Geological Survey and other agencies revised to July 1, 1947, by B. E. Jones and R. O. Helland, 1948. 145 p., 2 pls.

Lists and describes surveys of rivers in the United States, substantially completing the record of river surveys made by the Geological Survey prior to July 1, 1947. Not a complete index of surveys by other agencies.

- \*997. Floods in Colorado, by Robert Follansbee and L. R. Sawyer, 1948. 151 p., 3 pls.

Floods have been recorded in Colorado since 1826, 30 yr. before settlement. Describes about 90 cloudbursts and traces effects of settlement and the livestock industry on flooding. Discusses also flood protection developments.

1046. Texas floods of 1940, by S. D. Breeding, 1948. 91 p., 7 pls. 65c.

Indicates floods occurring in Texas during June, July, and November 1940 exceeded known records on many small streams and at a few places on larger streams. Presents records of rainfall for the June-July storm at 206 places in central and south Texas, records for the November storm at 40 places adjacent to San Jacinto River basin, and other data pertinent to the floods.

1066. Floods of August 1940 in the Southeastern States, prepared by the Water Resources Division, 1949. 554 p., 22 pls. \$2.75.

Presents data on two major floods that took 30 to 40 lives and caused \$30,000,000 damage. Indicates these floods exceeded all known floods on Roanoke River since settlement in 1607 and all known floods in western North Carolina except on some small streams where the floods of July 1916 were greater. Combines peak discharges at about 100 points with a summary of peak discharges at gaging stations and reservoirs where previous maximum discharges are shown. Analyzes reservoir records to show effect of storage on flood flow and describes special studies of rainfall-runoff relations.

1080. Floods of May-June 1948 in Columbia River basin, prepared under the direction of C. G. Paulsen, chief hydraulic engineer, 1949. 476 p., 12 pls. \$1.25.

Presents data on floods gathered from selected gaging stations and other sources, with section entitled "Magnitude and frequency of floods in the Columbia River basin," by S. E. Rautz and H. C. Riggs. Indicates flood of May-June 1948 greatest in the basin since 1894 and most disastrous in respect to monetary loss in its entire history. Presents also records of stage and discharge for period and includes discussion of weather associated with flood.

1105. Hydrology of Massachusetts, part 1, Summary of stream flow and precipitation records, by C. E. Knox and R. M. Soule, 1949 [1950]. 240 p. \$1.

Brings together summaries of monthly discharge and precipitation for all available records in Massachusetts. Computes duration tables on basis of mean daily discharge records for most current stations and a few discontinued stations.

1134. Notable local floods in 1942-43, 1952.

- (a) Flood of August 4-5, 1943, in central West Virginia, by H. M. Erskine, 1951. 57 p., 1 pl. 40c.

Describes a flood which followed a violent thunderstorm in Kanawha River basin in which many streams reached highest stages known. Contains also summary of previous floods in West Virginia.

Water Supply Paper  
no.

1137. Floods of 1950, 1952.

- (a) Missouri River basin floods of April-May 1950 in North and South Dakota, by R. E. Oltman and others, 1951. 114 p., 8 pls. 30c.

Describes floods caused by sudden melting of accumulated snow. Flood stage at Sioux City, Iowa, was the highest ever recorded by the Geological Survey. Includes records of stage and discharge at 54 stations, summary of peak discharges, and table of crest stages, and discusses weather conditions associated with 1950 flood.

#### OPEN-FILE REPORTS

Engineering reports that have been prepared by the Geological Survey but not published as water-supply papers are included in this section. A few of these have been mimeographed in limited numbers and are free upon request to the Director of the Geological Survey until the stock is exhausted. Where copies are available it is indicated in the list.

The unpublished manuscript reports are available for consultation at the Washington, D. C., office of the Geological Survey and at the field offices specified in the description of the report.

#### File no.

- 6-H-14. Report on water-power resources of Big Horn Canyon, Wyo., by B. E. Jones and D. J. Guy, 1922. 49 p.  
Gives estimate of potential water power of Big Horn Canyon. Contains small-scale plan and profile of Big Horn River through Big Horn Canyon. 244 Federal Bldg., Tacoma, Wash.
- 7-A-15. Report on water-power resources of Arkansas River, west of Pueblo, Colo., by E. E. Jones, 1922. 46 p.  
Contains reconnaissance map of Arkansas River west of Canyon City, Colo. Presents results of investigation of power possibilities. Evaluates 6 storage sites. Federal Center, Denver, Colo.
- 8-B-9. Summary of investigations on the Red River and tributaries, New Mexico, by R. N. Doolittle, 1950. 9 p. [Mimeographed.] Supplemental report on water-power possibilities of the Red River, N. Mex., by R. N. Doolittle, 1951. 13 p.  
Reports, prepared as basis for land classification, discuss water-power possibilities of stream and present estimate of water-power potential and suggested development plans. Red River mapped from its mouth to a point 30 miles upstream in 1948.
- 8-F-13. Summary of certain investigations in Pecos River basin, New Mexico and Texas, with a selected bibliography by W. C. Senkpiel, 1942. 37 p. [Mimeographed.]  
Describes topographic and climatic characteristics of the basin, discusses water-power and water-conservation problems, and gives a bibliography of specialized and more detailed studies upon which the report is based.
- 9-6. Geologic features of certain dam sites in the Bear River, Colorado River, and Rio Grande basins, by A. M. Piper, 1937. 121 p.  
Outlines geologic conditions at 24 potential dam sites in Utah, Wyoming, Colorado, Arizona, and New Mexico. Federal Center, Denver, Colo.
- 9-A-2. Report on the water-power possibilities of upper Green River basin above Green River, Wyo., by R. R. Woolley, 1920. 108 p.  
Gives general report on the basin. 303 Federal Bldg., Salt Lake City, Utah; Federal Center, Denver, Colo.
- 9-B-14. Geology at several dam sites on Huntington Creek near Huntington, Utah, by P. J. Shenon, 1934. 13 p.  
303 Federal Bldg., Salt Lake City, Utah.
- 9-C-2. Report on the power and storage possibilities of the Yampa River between Craig, Colo., and the junction of the Yampa and Green Rivers, by Warren Oakey, 1924. 35 p.  
Outlines plan of development and describes potential power of river and tributaries. Contains published plan (3 sheets) and profile (2 sheets) of Yampa River, Colo., from Green River to head of Cross Mountain Canyon. 303 Federal Bldg., Salt Lake City, Utah.
- 9-D-15. Power resources of Blue River, Colo., by E. E. Jones, 1924. 37 p.  
Outlines a proposed plan of development and describes and estimates potential water-power resources of basin. Contains reconnaissance map of Blue River basin. Federal Center, Denver, Colo.
- 9-D-16. Power resources of Eagle River, Colo., by E. E. Jones, 1925. 38 p.  
Outlines proposed plan for developing water-power resources of basin. Contains reconnaissance map of Eagle River. Federal Center, Denver, Colo.

File no.

- 9-D-17. The power resources of Roaring Fork from Snowmass to mouth, not including tributaries, by E. E. Jones, 1925. 38 p.

Outlines a proposed plan for developing potential power resources of river. Contains reconnaissance map of Roaring Fork, Colo. Federal Center, Denver, Colo.

- 9-D-18. Power resources of San Miguel River, Colo., by E. E. Jones, 1925. 39 p.

Outlines proposed plans for developing water-power resources of river. Contains reconnaissance map of San Miguel River, Colo., from Sawpit to mouth. Federal Center, Denver, Colo.

- 9-D-19. Power resources of Dolores River, Colo., by E. E. Jones, 1925. 32 p.

Contains map of Dolores River in Colorado and Utah from Paradox Valley, Colo., to mouth, based on a reconnaissance survey and Paradox Valley topographic map. Federal Center, Denver, Colo.

- 9-E-10. Power resources of Taylor River, Colo., by E. E. Jones, 1925. 35 p.

Contains reconnaissance map of Taylor and Gunnison Rivers from Red Mountain Creek to Gunnison, Colo. Federal Center, Denver, Colo.

- 9-G-6. Water powers of San Juan River, Colo., by E. C. La Rue, 1928. 185 p.

Gives descriptions of irrigation projects and developments compiled from published and unpublished reports of the U. S. Bureau of Reclamation and other sources. Federal Center, Denver, Colo.

- 9-J-5. Power value of the Little Colorado River, by G. F. Holbrook, 1929. 50 p.

Contains plan (3 sheets) and profile (2 sheets) of Little Colorado River from mouth to Tolchico dam site, Arizona. On file only at main office of the Geological Survey, Washington, D. C.

- 9-J-6. Geology of some dam sites on Little Colorado River and its tributaries, Arizona, by E. B. Eckel, 1939. 50 p.

Contains descriptions of 10 dam and reservoir sites of potential value for silt and flood control. Federal Center, Denver, Colo.

- 9-J-7. Depth to bedrock indicated by geophysical measurements at dam sites in the Little Colorado River basin, Ariz., by H. C. Spicer, 1939. 25 p.

A preliminary report. Includes electrical resistivity measurements of depth to bedrock at 7 sites, one on Little Colorado River and 6 on its tributaries. The bedrock along the axis of proposed dams is described from surface exposures. The areas adjacent to the sites were mapped topographically. Dams at these sites would be constructed primarily for flood and silt control. Federal Center, Denver, Colo.

- 9-J-8. Water utilization in the Little Colorado River basin, Arizona and New Mexico, by R. O. Helland, 1948. 29 p.

Compiles information from existing sources as a basis for land classification. Federal Center, Denver, Colo.

- 9-L-15. Report on probable future stages of Salton Sea, by G. F. Holbrook, 1927. 42 p.

Includes topographic map of Salton Sea and vicinity, published separately. 2520 Marconi Ave., Sacramento, Calif.

- 9-L-16. Geology of dam sites on Williams River and Kirkland Creek, Ariz., by E. B. Eckel, 1940. 14 p.

Describes geology of one dam site on Williams River and four on Kirkland Creek. Includes topographic survey used during examination. Federal Center, Denver, Colo.

- 9-M-19. Water utilization in the Gila River basin, Arizona and New Mexico, by R. O. Helland, 1948. 134 p.

Compiles information obtained from agencies interested in the development of the basin; a byproduct of classification of lands as to their value for water-power and reservoir purposes. Considers water supply, developed and proposed storage, and power projects of the basin. Federal Center, Denver, Colo., 619 Post Office Bldg., Portland, Oreg.



File no.

- 10-A-11. Water utilization in the Chewaucan River basin, Oregon, by R. O. Helland, 1938. 31 p.

Describes two potential storage sites of primary value for irrigation and summarizes possibilities for power development at sites. Contains geologic report by J. C. Miller, 1939 and a map of Chewaucan River. 619 Post Office Bldg., Portland, Oreg.

- 10-A-13. Summary of investigations on Deep Creek, tributary to Warner Valley, Oreg., by R. O. Helland, 1940. 7 p. [Mimeographed.]

Describes topographic surveys made in the basin, gives potential storage capacities for reservoir sites, and measured and estimated runoff in the basin for the period 1909 to 1938.

- 10-C-1. Geology of Markleeville dam site, California, by E. B. Eckel, 1940. 7 p.

Outlines geology of Markleeville dam site on East Fork Carson River  $2\frac{1}{2}$  miles northeast of Markleeville, Calif. Describes geologic formations and their suitability for a dam site, outlines further explorations considered necessary, and gives conclusions regarding value of site. Geological Survey, San Francisco, Calif.; 2520 Marconi Ave., Sacramento, Calif.

- 10-D-4. Geology of several dam sites on tributaries of the Humboldt River, Nev., by E. B. Eckel, 1940. 21 p.

Outlines geology of dam sites on tributaries of Humboldt River. Two sites are along Little Humboldt River, about 40 miles northeast of Winnemucca; another is on Marys River, about 30 miles northeast of Elko. Two alternative sites, called the South Fork sites Nos. 1 and 2, are nearer the mouth of South Fork Humboldt River, about 12 miles southwest of Elko. Topographic maps of all the sites on a scale of 1 in. = 400 ft. are available. Describes geologic formations and their suitability for dam sites, outlines further exploration considered necessary, and gives conclusions regarding value of the sites. 2520 Marconi Ave., Sacramento, Calif.

- 10-D-5. Summary of investigations on Little Humboldt River and tributaries, Nevada, by L. L. Bryan, 1940. 9 p. [Mimeographed.]

Describes stream utilization surveys made in 1934-35 as basis for study of development of water resources of the basin. Includes brief summaries of stream-flow data and area capacity curves for six reservoir sites. 2520 Marconi Ave., Sacramento, Calif.; 619 Post Office Bldg., Portland, Oreg.

- 11-A-16. Klamath River and its utilization, by E. C. La Rue, 1922. 282 p.

Estimates potential power resources of Klamath and Trinity Rivers and gives descriptions of proposed power sites. 2520 Marconi Ave., Sacramento, Calif.

- 11-A-26. Summary of investigations on Trinity River and its tributaries, by L. L. Bryan, 1940. 11 p. [Mimeographed.]

Describes recent surveys and maps of Trinity River and gives capacity tables for five reservoir sites. 2520 Marconi Ave., Sacramento, Calif.

- 11-A-28. Report on water-power possibilities of North Fork Trinity River, Calif., by F. A. Johnson, 1948. 19 p.

Presents an estimate of power potential with suggested plan for utilization. Concludes that additional studies are necessary. 2520 Marconi Ave., Sacramento, Calif.

- 11-A-29. Report on the water-power possibilities of New River, Calif., by F. A. Johnson, 1948. 12 p.

Contains presentation of an estimate of potential power of this tributary of lower Trinity River, prepared as a basis for review of classifications of public lands in the area, and a suggested plan of development and estimated storage requirements. 2520 Marconi Ave., Sacramento, Calif.

- 11-A-30. New data on potential power of lower Trinity River, Calif., by F. A. Johnson, 1949. 64 p.

Discusses possibilities for storage regulation and power development of lower Trinity River, Calif., and summarizes results of previous investigations. Contains list of important maps, water-supply records, and climatological data. Tabulates estimates of water supplies for the parts of Trinity River basin that are tributary to the power and storage sites downstream from Lewiston. A survey of Trinity River from Douglas City to Hawkins Bar was used in determining potential capacities of reservoir sites. 2520 Marconi Ave., Sacramento, Calif.

File no.

- 11-A-31. Report on water-power possibilities of South Fork, Trinity River, Calif., by F. A. Johnson, 1948. 48 p.

Contains a description of South Fork area, brief review of previous proposals for development of storage and power sites, list of maps, stream-flow records, and climatological data. Estimates graphical distribution of runoff and corresponding potential power in parts of the basin. 2520 Marconi Ave., Sacramento, Calif.

- 11-A-32. Report on water-power possibilities of Stuart Fork of Trinity River, Calif., by F. A. Johnson, 1950. 20 p.

Reviews briefly previous proposals for water-power development of area and summarizes information relating to water possibilities. 2520 Marconi Ave., Sacramento, Calif.

- 11-B-17. Summary of investigations on Sacramento River and tributaries above Red Bluff, Calif., by L. L. Bryan, 1940. 18 p. [Mimeographed.]

Describes surveys for purpose of obtaining maps suitable for reconnaissance and for planning development of several dam and reservoir sites, lists recent and older surveys and geologic investigations, and discusses storage possibilities, water supply, and stream-flow measurements. 2520 Marconi Ave., Sacramento, Calif., and 619 Post Office Bldg., Portland, Oreg.

- 11-B-18. Water-power resources of Mill Creek and Deer Creek, Calif., by L. L. Bryan, 1941. 45 p. [Mimeographed.]

Presents study of potential water power of Mill Creek and Deer Creek, in Tehama County, Calif., and estimates potential power of the two basins. Indicates regulation of flow would aid present and proposed irrigation and would be of considerable value for control of floods. Contains inventory of water supply of the basins and maps showing location of several proposed reservoir sites and power sites. 2520 Marconi Ave., Sacramento, Calif.

- 11-C-31. Dam sites, North Fork Yuba River, Calif., by J. C. Miller, 1950. 19 p.

Presents results of preliminary examinations of following dam sites: Kelly Bar, alternate Kelly Bar, Indian Valley, Goodyear Bar, alternate Goodyear Bar, Shady Flat, Sierra City, Upper Sardine Lake, Lower Sardine Lake, Upper Salmon Lake, and Lower Salmon Lake. 520 Post Office and Court House Bldg., Los Angeles, Calif.; 2520 Marconi Ave., Sacramento, Calif.

- 11-D-20. Summary of investigations on Cache Creek and tributaries, California, by S. W. R. Thompson, 1940. 13 p. [Mimeographed.]

Gives special attention to study of Capay reservoir site (T. 10 N., R. 2 W., Mount Diablo meridian) and discusses plan to divert water for irrigation of lower valley and to use Clear Lake releases for irrigating lands in foothills along west side of Sacramento Valley. 2520 Marconi Ave., Sacramento, Calif.

- 11-E-10. Reconnaissance report of Mad River, Calif., by N. J. Tubbs, 1922. 20 p.

Gives a description of potential power sites, based on reconnaissance examination. 2520 Marconi Ave., Sacramento, Calif.

- 11-E-11. Geology of Mill Creek and Elk Creek dam sites and Round Valley reservoir site, Middle Fork of Eel River, Calif., by H. T. Stearns, 1927. 8 p.

2520 Marconi Ave., Sacramento, Calif.

- 11-F-27. Summary of investigations on Kern River and tributaries, California, by L. L. Bryan, 1941. 15 p. [Mimeographed.]

Discusses recent and older surveys made in the basin and includes summaries of stream-flow records, developed and potential storage sites, and water supplies. 2520 Marconi Ave., Sacramento, Calif.

- 11-F-28. Summary of investigations on Kings River and tributaries, California, by L. L. Bryan, 1941. 25 p. with supp., 9 p. [Mimeographed.]

Contains descriptions of recent and older surveys, summaries of hydrologic records, outlines of published reports, and brief discussions of present and proposed water resources developments. 2520 Marconi Ave., Sacramento, Calif.

File no.

- 11-F-31. Preliminary report on the water-power possibilities of the North Fork of Kaweah River, Calif., by F. A. Johnson, 1951. 181 p.

Gives a preliminary appraisal of water-power and storage possibilities of river, based on study of quadrangle maps, water-supply records, and complete reconnaissance. Concludes that power development is probably not feasible without storage regulations and discusses possible storage at an off-stream reservoir site on Eshom Creek. 2520 Marconi Ave., Sacramento, Calif.

- 12-7. Feasibility of dam sites in eastern Washington and Oregon as indicated by areal geology, by J. C. Miller, 1946. 13 p. Supplemental report on feasibility of dam sites in eastern Washington and Oregon, with estimates on drilling and cementing reservoir areas, by J. C. Miller, 1946. 19 p.

Discusses undesirable features of the sites that must be considered in construction of dams. Map showing lava flows in area was prepared as basis for discussion of reservoir possibilities within lava-covered area. Presents four methods of approach to problem of making Sheep Creek site on Grande Ronde River, near Rondowa, water-tight. Author suggests that these reports might have been designated, "Hypothetical considerations in selection of dam sites in eastern Washington and Oregon." 619 Post Office Bldg., Portland, Oreg., and 244 Federal Bldg., Tacoma, Wash.

- 12-A-4. Report on the geology of the Katka, tunnel No. 8, and Kootenai Falls dam sites on the Kootenai River in Idaho and Montana, by C. E. Erdmann, 1935. 84 p.

Presents geological conditions and cultural developments at these sites with descriptions. 244 Federal Bldg., Tacoma, Wash.; and 417 Electric Bldg., Great Falls, Mont.

- 12-B-7. Water utilization in the Blackfoot River basin, Montana, by R. O. Helland, 1946. 38 p.

Gives information pertinent to classification of public lands with regard to their water-power and storage values, based on topographic sheets, river, reservoir-site, and dam-site surveys in basin. 619 Post Office Bldg., Portland, Oreg.

- 12-C-11. Reconnaissance report on the South Fork of Flathead River, Mont., by E. E. Jones, 1924. 12 p.

Deals with Hungry Horse reservoir site near the mouth of South Fork of Flathead River. Contains topographic map of site on a scale of 1 in. = 2 miles; contour interval, 50 ft. 244 Federal Bldg., Tacoma, Wash.

- 12-C-14. Geology of dam sites on South Fork of Flathead River below Hungry Horse Creek, Mont., by J. T. Pardee, 1927. 11 p., geologic map.

Discusses surface features, bedrock series, and geologic history. 410 Federal Bldg., Tacoma, Wash.; and 619 Post Office Bldg., Portland, Oreg.

- 12-C-20. Summary of investigations on Flathead River and tributaries, Montana, by Arthur Johnson, 1940. 18 p. [Mimeographed.]

Describes topographic and geologic surveys that have been made as a basis for the evaluation of the water resources of the basin. 244 Federal Bldg., Tacoma, Wash.

- 12-C-21. Summary report on geology of Abbott Gorge, a buried preglacial valley bypassing Hungry Horse dam site, by C. E. Erdmann and A. F. Bateman, Jr., 1947. 34 p., illus.

Discusses origin of valley, character and arrangement of fill, effect of channel upon possible leakages from Hungry Horse reservoir, and also effect of fill on height of dam. 417 Electric Bldg., Great Falls, Mont.; 244 Federal Bldg., Tacoma, Wash.

- 12-D-11. Summary of investigations on Pend Oreille River, Pend Oreille Lake, and Priest River, Wash. and Idaho, by Arthur Johnson, 1941. 15 p. [Mimeographed.]

Describes special surveys made in area, including river surveys and special dam site surveys; summarizes available stream-flow data; lists other studies made; and outlines storage possibilities. 244 Federal Bldg., Tacoma, Wash.

- 12-D-14. Report of geologic reconnaissance of Clark Fork-Kootenai River development plan, Montana, by C. E. Erdmann, 1945. 164 p. [Mimeographed.]

Considers geologic feasibility of the project and includes geologic descriptions of dam sites and related areas. The project would regulate and integrate the flow of the two rivers by means of a dam on Clark Fork River near Smead, Mont., and a dam on Kootenai River near Troy, Mont. These dams would be built to a height at which water could be exchanged readily between the reservoirs through a 40-mile transverse valley, the Bull Lake Trench, across the Cabinet Mountains. 417 Electric Bldg. Great Falls, Mont.; 244 Federal Bldg., Tacoma, Wash.

File no.

- 12-D-15. Flood profiles and discharges of the Pend Oreille River, by F. A. Johnson, 1946. 15 p.  
Presents results of investigation to establish elevations of some previous floods on Pend Oreille River from Pend Oreille Lake to International Boundary, especially floods of 1894 and 1933. New data indicate that discharge of 1894 flood at Newport, Wash., was not 217,000 cfs but 195,000 cfs. 244 Federal Bldg., Tacoma, Wash.
- 12-E-18. Summary of investigations on Coeur d'Alene River, Idaho, from South Fork to Mile 59 and tributaries, by Arthur Johnson, 1940. 8 p. [Mimeographed.]  
Describes recent river surveys and gives capacity tables for six reservoir sites.
- 12-F-16. Geology of reservoir sites near Washtucna and Kahlotus, Wash., by J. T. Pardee, 1928. 13 p.  
Deals with the geology of two proposed reservoir sites for secondary storage of water for Columbia River basin irrigation project. 244 Federal Bldg., Tacoma, Wash.
- 12-F-18. Summary of investigations on Sheep Creek, Similkameen River, and Chewack Creek, Wash., by Arthur Johnson, 1942. 12 p. [Mimeographed.]  
Summarizes available stream-flow data, describes surveys of the streams, and contains items of general interest with respect to water-power and storage possibilities. 244 Federal Bldg., Tacoma, Wash.
- 12-G-70. Water-power resources of Snake River, Wyo., between Jackson Hole and Alpine, by L. L. Bryan, 1932. 46 p.  
Describes two power sites and one combination power and storage site. Contains plan (3 sheets) and profile (1 sheet) of Snake River from Pine Creek, Idaho, to Horse Creek, Wyo., and miscellaneous dam sites; contains also 1 sheet showing dam sites with cross sections. 429 Federal Bldg., Boise, Idaho; and 619 Post Office Bldg., Portland, Oreg.
- 12-G-82. Geologic notes on several dam sites in southern Idaho, by E. B. Eckel, 1939. 25 p.  
Describes dam sites on West Camas, Medicine Lodge, Fish, Silver, Warm Springs, Castle, and Mann Creeks, and on Little Wood River. Records conclusions reached after brief examinations made of select areas meriting further investigations. 619 Post Office Bldg., Portland, Oreg.
- 12-G-88. Summary of investigations on small streams in Idaho, by F. F. Lawrence, 1942. 16 p. [Mimeographed.]  
Describes surveys of West Camas, Medicine Lodge, Warm Springs, Bennett, and Mission Creeks, Big Lost River, North Fork Big Lost River, and Big Wood River. Summarizes available stream-flow data and discusses reservoir sites. 244 Federal Bldg., Tacoma, Wash.
- 12-G-90. Memorandum re power site reserves in Salmon Falls Creek basin, Idaho and Nevada, by R. O. Helland, 1947. 5 p.  
Gives description of the area and its potentialities, based on a brief reconnaissance of of the basin. 619 Post Office Bldg., Portland, Oreg.
- 12-H-36. Storage and power possibilities of Payette River basin, Idaho, by W. G. Hoyt, 1927. 162 p.  
A detailed report. Contains published plan (4 sheets) and profile (3 sheets) of Payette River above Horseshoe Bend, Idaho; North Fork to Cascade; South Fork to Mile 70; and tributaries. Proposed power and reservoir sites have been outlined on map. 429 Federal Bldg., Boise, Idaho; 504 Federal Bldg., Salt Lake City, Utah; 619 Post Office Bldg., Portland, Oreg.
- 12-H-39. Water utilization of Boise River, Idaho, by W. G. Hoyt and L. L. Bryan, 1930. 150 p.  
Discusses power, irrigation, and storage in the Boise River basin. Contains published plan (4 sheets) and profile (3 sheets) of Boise River and Middle Fork, Arrowrock reservoir to Atlanta, Idaho; North Fork from mouth to Mile 39; South Fork from Arrowrock reservoir to Mile 106; Smoky Creek from its mouth to Mile 5; Little Smoky Creek from its mouth to Mile 10. Proposed power and reservoir sites have been outlined on map in color. 429 Federal Bldg., Boise, Idaho; 619 Post Office Bldg., Portland, Oreg.
- 12-H-40. Water-power resources of Imnaha River, Oreg., by R. O. Helland, with geology of Coverdale dam site by J. T. Pardee, 1931. 26 p.  
Reports on potential power, possible regulation of flow at Coverdale reservoir site, and possible diversion into Snake River by tunnel. Contains map of Coverdale reservoir and dam site. 619 Post Office Bldg., Portland, Oreg.

File no.

- 12-H-42. Potential water power in the Grande Ronde River basin, Oregon and Washington, by R. O. Helland, with geology of dam sites by J. T. Pardee, 1932. 63 p.

Describes potential power and storage sites in the basin and contains map of Grande Ronde River from Snake River to Wallowa, Oreg. 619 Post Office Bldg., Portland, Oreg.

- 12-H-44. Preliminary report on Catherine Creek reservoir site near Union, Oreg., by R. O. Helland, and description of geology by P. J. Shenon, 1934. 20 p.

Describes a potential storage and power site. 619 Post Office Bldg., Portland, Oreg.

- 12-H-47. Summary of investigations in Weiser River basin, Idaho, by Arthur Johnson, 1941. 21 p. [Mimeographed.]

Describes topographic surveys of streams, reservoir and dam sites, and lists points where stream-flow measurements have been made within the basin giving mean flows at gaging sites. Considers also developed and potential storage sites. 244 Federal Bldg., Tacoma, Wash.; 619 Post Office Bldg., Portland, Oreg.

- 12-H-50. Water utilization in the Grande Ronde River, Oreg. and Wash., by R. O. Helland, 1947. 59 p.

Outlines four suggested plans for possible utilization of a storage site in the area of the confluence of Grande Ronde and the Wallowa Rivers. Studies probable future surplus of water in the Grande Ronde that would be available for diversion near Rondowa, and possibility of bringing this surplus water into the vicinity of Pendleton, Oreg., by gravity for irrigation of lands at an altitude of 1,000 to 2,000 ft. Contains topographic maps of Grande Ronde River and of Rondowa reservoir site. 619 Post Office Bldg., Portland, Oreg.

- 12-H-51. Memorandum re power site reserves in Malheur River basin, Oregon, by R. O. Helland, 1947. 20 p.

Gives description of the basin and its potentialities, preliminary to a discussion of the power-site reserves. 619 Post Office Bldg., Portland, Oreg.

- 12-H-52. Memorandum re power site reserves in the Owyhee River basin, Oregon, by R. O. Helland, 1947. 8 p.

Gives description of general conditions in the basin, preliminary to a discussion of the withdrawn lands. 619 Post Office Bldg., Portland, Oreg.

- 12-H-53. Report on water utilization possibilities in the upper Bruneau River basin, Idaho and Nevada, by F. A. Johnson, 1947. 47 p.

Describes, on basis of field investigation, general characteristics of upper part of the basin, estimates water supply, and indicates water-power and storage possibilities. 619 Post Office Bldg., Portland, Oreg.; 2520 Marconi Ave., Sacramento, Calif.

- 12-H-54. Water utilization in the Weiser River basin, Idaho, by R. O. Helland, 1949. 45 p.

Prepared for use in classification of public lands principally from plans of the Bureau of Reclamation for developing the basin. A general study of power potentialities but with no plan for development. 619 Post Office Bldg., Portland, Oreg.

- 12-H-55. Water utilization in the Payette River basin, Idaho, by R. O. Helland, 1949. 12 p.

Examines land withdrawal needs in light of present trend toward higher dams which may require more lands for reservoir purposes than were contemplated at the time the original withdrawals were made. The 1946 Columbia River basin report of the Bureau of Reclamation is the principal basis for report. 619 Post Office Bldg., Portland, Oreg.

- 12-J-5. Report on water-power resources of Salmon River, Idaho, between Salmon and mouth of Salmon River, by W. G. Hoyt, 1922. 72 p.

Presents discussion of power resources of river and contains maps of proposed dam sites. 429 Federal Bldg., Boise, Idaho; 619 Post Office Bldg., Portland, Oreg.

- 12-J-6. Power and storage possibilities, Salmon River, Stanley to Salmon, Idaho, by W. G. Hoyt, 1926. 76 p.

Contains published plan (4 sheets) and profile (3 sheets) of Salmon River, Salmon to Stanley, Idaho, on which is outlined proposed power sites. 429 Federal Bldg., Boise, Idaho; 619 Post Office Bldg., Portland, Oreg.

- 12-J-7. Storage possibilities in Bear Valley and Stanley basin, Idaho, by W. G. Hoyt, 1926. 59 p.

Proposes storage for irrigation supplies. Contains published map of Bear Valley and Stanley basin in 2 sheets and plan and cross section of two proposed dam sites in 1 sheet. 429 Federal Bldg., Boise, Idaho; 619 Post Office Bldg., Portland, Oreg.

File no.

- 12-J-11. Water utilization in the Salmon River basin, Idaho, by R. O. Helland, 1949. 27 p.

Reviews recent plans made by the Corps of Engineers and the Bureau of Reclamation for developing Salmon River and evaluates present water-power reserves as to their adequacy for effecting these plans. Recommends elimination from and additions to the reserves. 619 Post Office Bldg., Portland, Oreg.

- 12-K-5. Storage and power possibilities of Clearwater River basin, Idaho, by Warren Oakey, 1927. 101 p.

Discusses proposed sites at which potential power of Clearwater River and its tributaries could be developed. Contains published plan and profile (7 sheets each) of Clearwater River and tributaries on which proposed plans of development have been outlined. 429 Federal Bldg., Boise, Idaho; 504 Federal Bldg., Salt Lake City, Utah; 619 Post Office Bldg., Portland, Oreg.

- 12-K-6. Memorandum re water utilization in the Clearwater River basin, Idaho, by R. O. Helland, 1950. 8 p.

Summarizes recent planning for development of Clearwater basin. 619 Post Office Bldg., Portland, Oreg.

- 12-M-36. Geologic investigations of miscellaneous dam sites on the Walla Walla River and the South Fork of the Walla Walla River in the vicinity of Milton-Freewater, Oreg., by C. E. Erdmann, 1933. 65 p., geologic map.

Reports on one dam site on the Walla Walla and three on South Fork of Walla Walla River. 619 Post Office Bldg., Portland, Oreg.

- 12-M-43. Water-power resources of Sandy River, Oreg., by B. E. Jones, 1940. 37 p.

Presents information necessary to administration for use and disposal of public lands in the basin. Prepared to determine probable use of lands in development of water-power resources. 619 Post Office Bldg., Portland, Oreg.

- 12-M-47. Water utilization in the White River, Oreg., by R. O. Helland, 1944. 16 p.

Summarizes results of investigation of water-power resources of the basin and points out that utilization of water for power will probably be subordinated to irrigation uses. Estimates potential power both with and without allowance for irrigation diversions. 619 Post Office Bldg., Portland, Oreg.

- 12-M-48. Water utilization in streams on the Warms Springs Indian Reservation, Oreg., by R. O. Helland, 1944. 45 p.

Reviews previous study made by H. W. Hinks, of the Indian Service. Estimates potential water power for Warm Springs River, Badger Creek, Mill Creek, Beaver Creek, Shitike Creek, Whitewater River, and Jefferson Creek. 619 Post Office Bldg., Portland, Oreg.

- 12-M-49. Water utilization in the Crooked River basin, Oregon, by R. O. Helland, 1950. 17 p.

Compiles studies made in the basin, notably those of the Bureau of Reclamation, covering climate, water supply, storage possibilities, power sites, irrigation and flood control plans, and recommendations for land classification. 619 Post Office Bldg., Portland, Oreg.

- 12-N-19. Water-power resources of Molalla River basin, Oregon, by R. O. Helland, 1927. 19 p.

Based on a reconnaissance investigation of the river. Contains a map of one reservoir and dam site. 619 Post Office Bldg., Portland, Oreg.

- 12-N-20. Water powers of the Coast Fork of the Willamette River and tributaries, Oregon, by R. O. Helland, 1927. 27 p.

Describes potential power and storage sites. Includes map of two reservoir sites on Row River. 619 Post Office Bldg., Portland, Oreg.

- 12-N-21. Potential water power of Tualatin River, Oreg., by R. O. Helland, 1929. 8 p.

Presents statement of power possibilities, based on a reconnaissance examination. 619 Post Office Bldg., Portland, Oreg.

- 12-N-22. Potential water power of Pudding River, Oreg., by R. O. Helland, 1929. 12 p.

619 Post Office Bldg., Portland, Oreg.

File no.

- 12-N-23. Potential water power of Big Luckiamute River, Oreg., by R. O. Helland, 1929. 16 p.  
Presents statement of power possibilities, based on a reconnaissance examination. 619 Post Office Bldg., Portland, Oreg.
- 12-N-24. Potential water power of Rickreall Creek, Oreg., by R. O. Helland, 1929. 5 p.  
Presents statement of power possibilities, based on a reconnaissance examination. 619 Post Office Bldg., Portland, Oreg.
- 12-N-25. Potential water power of North Yamhill River and Mill Creek, Oreg., by R. O. Helland, 1929. 8 p.  
Reports on power possibilities based on a reconnaissance examination. 619 Post Office Bldg., Portland, Oreg.
- 12-N-33. Water-power resources of Santiam River and tributaries, Oregon, by B. E. Jones, with descriptions of geology of dam sites by A. M. Piper, 1933. 205 p.  
619 Post Office Bldg., Portland, Oreg.
- 12-N-35. Summary of investigations on Lewis River and tributaries, Washington, by Arthur Johnson, 1940. 8 p. [Mimeographed.]  
Contains descriptions of surveys of Lewis River, list of dam-site surveys, and area and capacity tables for eight reservoir sites. Geological Survey, Washington 25, D. C.; 244 Federal Bldg., Tacoma, Wash.
- 12-N-42. Summary of investigations on Toutle River and tributaries, Washington, by Arthur Johnson, 1940. 5 p. [Mimeographed.]  
Describes topographic surveys, gives potential storage capacities of reservoir sites, and discusses stream-flow data.
- 12-N-43. Summary of investigations on Cowlitz River and tributaries, Washington, by Arthur Johnson, 1940. 12 p. [Mimeographed.]  
Describes topographic and geologic surveys and water-supply records of the basin.
- 12-N-46. Geology of three dam sites on the Toutle River, Wash., by C. E. Erdmann and Walter Warren, 1938. 116 p.  
Describes location and geology of Silver Lake, Green River, and Spirit Lake dam sites and gives conclusions and recommendations regarding feasibility of these sites for storage of water for water power, flood control, and other purposes. 244 Federal Bldg., Tacoma, Wash.; 417 Electric Bldg., Great Falls, Mont.
- 12-N-48. Preliminary report on the geology of miscellaneous dam sites on the Cowlitz River above Castle Rock, Wash., by C. E. Erdmann and Walter Warren, 1943. 127 p.  
Reports on geologic conditions affecting the suitability of four proposed dam sites on Cowlitz River, prepared in connection with studies of potential water power, flood control, etc. Describes Mayfield, Mossyrock, Shut-In, and Cowlitz Falls dam sites and includes a geologic history of Cowlitz River. 244 Federal Bldg., Tacoma, Wash.; 417 Electric Bldg., Great Falls, Mont.
- 12-N-49. Geologic conditions in certain dam sites in the Willamette River basin, Oregon, by A. M. Piper, 1937. 185 p., maps, photographs.  
Presents study of geologic conditions at 30 dam sites in the basin made in connection with river-utilization investigations of the Corps of Engineers. Test pits and drill holes used at some sites; overburden tested by the resistivity method at others. 619 Post Office Bldg., Portland, Oreg.
- 12-N-50. Water utilization in the Clackamas River basin, Oregon, by R. O. Helland, 1945. 60 p.  
Considers potential power sites in the basin to ascertain adequacy of power-site reserves already in force as justification for additional withdrawals. Uses hypothetical power installations and operations to illustrate power potential. 619 Post Office Bldg., Portland, Oreg.
- 12-N-51. Water power in the Middle Fork of the Willamette River and tributaries, Oregon, by R. O. Helland, 1944. 45 p.  
Prepared for use in classification of public lands. Includes sample plans of development to aid in locating lands having prospective water-power value. Presents flow data in connection with potential power estimates. 619 Post Office Bldg., Portland, Oreg.

File no.

- 12-N-52. Geology of dam sites on Lewis River, Wash., a memorandum to the regional geologist, Great Falls, Mont., by A. F. Bateman, Jr., 1951. 11 p.

Presents results of preliminary field investigation of dam sites, as follows: Eddy Rock, Yale, Cougar, Devil's Backbone, Mile 52, Eagle Cliff, Cascade Gorge, Quartz Creek, and Island Camp. 244 Federal Bldg., Tacoma, Wash.; 417 Electric Bldg., Great Falls, Mont.

- 12-N-52. Progress report on the geology of Big Bottom dam site, Lewis River, Wash., by A. F. Batemen, Jr., (a) 1952. 5 p.

Reports on geologic conditions affecting suitability of site; recommends further geologic investigations. 244 Federal Bldg., Tacoma, Wash.; 417 Electric Bldg., Great Falls, Mont.

- 12-N-53. Miscellaneous dam sites on the Cowlitz River above Castle Rock and the Tilton River, Wash., by C. E. Erdmann and A. F. Bateman, Jr., 1951. 2 vol. 314 p.

Describes limiting geologic conditions at a series of dam sites. Surface exposures of the dam sites on the Cowlitz were mapped in detail, and, in some places, knowledge of subsurface conditions was supplemented by geophysical investigations and data from drill holes. Reconnaissance geologic maps were made of the dam sites on Tilton River. Description of factors common to all sites is followed by detailed descriptions of the individual sites. Author outlines geologic and engineering features, points out weaknesses, and lists reasons for rejection. 244 Federal Bldg., Tacoma, Wash.; 417 Electric Bldg., Great Falls, Mont.

- 12-O-3. Power resources of Wynooche River, Wash., by E. E. Jones, 1928. 30 p.

Contains reconnaissance map of Wynooche River. 244 Federal Bldg., Tacoma, Wash.

- 12-O-4. Power resources of the Quinault River, Wash., by E. E. Jones, 1930. 25 p.

Contains published plan and profile (2 sheets) of Quinault River from mouth to Rustler River and Quinault Lake dam site. 244 Federal Bldg., Tacoma, Wash.

- 12-O-5. Power resources of the Soleduck and Lyre Rivers, Wash., by E. E. Jones, 1930. 23 p.

Contains plan (4 sheets) and profile (3 sheets) of Soleduck River from mouth to Seven Lakes basin and Lyre River from mouth to Crescent Lake, Deer Lake reservoir, and Seven Lakes basin, Washington, on which proposed plan of development has been outlined. 244 Federal Bldg., Tacoma, Wash.

- 12-O-6. Power resources of the Bogachiel and Ozette Rivers, Wash., by E. E. Jones, 1930. 15 p.

Contains published plan (3 sheets) and profile (2 sheets) of Quillayute River; Bogachiel River to North Fork; Hoh River to Mile 51; and South Fork Hoh River, Wash. 244 Federal Bldg., Tacoma, Wash.

- 12-O-8. Water-power resources of Hoh River, Wash., by L. L. Bryan, 1931. 62 p.

Contains published plan (3 sheets) and profile (2 sheets) of Quillayute River, Bogachiel River to North Fork, Hoh River to Mile 51, and South Fork Hoh River, Wash., on which proposed plan of development has been outlined. 244 Federal Bldg., Tacoma, Wash.

- 12-O-10. Summary of investigations on Chehalis River and tributaries, Washington, by F. F. Lawrence, 1942. 7 p. [Mimeographed.]

Describes topographic surveys, presents studies of area capacity of various storage sites, and summarizes stream-flow data. 244 Federal Bldg., Tacoma, Wash.

- 12-O-11. Summary of investigations on Olympic Peninsula streams, Washington, by Arthur Johnson, 1940. 15 p. [Mimeographed.]

Describes topographic surveys made for water utilization studies on the following rivers: Quillayute, Bogachiel, Hoh, Queets, Quinault, Humptulips, Satsop, Hamma Hamma, Duckabush, and Dosewallips. 244 Federal Bldg., Tacoma, Wash.

- 12-P-12. Power resources of the North and South Forks of the Skokomish River, Wash., by E. E. Jones, 1926. 29 p.

Contains reconnaissance plan of North and South Forks Skokomish River, Wash. 244 Federal Bldg., Tacoma, Wash.

- 12-P-13. Power resources of Lilliwaup Creek, Hamma Hamma River, and Dosewallips River, Wash., by E. E. Jones, 1926. 38 p.

Contains 2 reconnaissance maps. 244 Federal Bldg., Tacoma, Wash.



File no.

- 12-P-15. The power resources of Duckabush, Quilcene, and Dungeness Rivers, Wash., by E. E. Jones, 1927. 45 p.  
Contains 3 reconnaissance topographic maps, profiles, mass diagrams, and estimates of potential power. 244 Federal Bldg., Tacoma, Wash.
- 12-P-17. A report on the power value of certain lands crossed by or in the vicinity of the Hartford Eastern Railway through T. 30 N., Rs. 8, 9, and 10 E., Willamette meridian, Washington, by D. J. F. Calkins, 1929. 24 p.  
Contains several mass curves and diagrams, and discusses power possibilities of South Fork Stilaquamish River between Blackjack Creek and Granite Falls. 244 Federal Bldg., Tacoma, Wash.
- 12-P-18. Water-power resources of the Elwha River, Wash., by E. E. Jones, 1927. 45 p.  
Contains reconnaissance plan and profile, estimates of potential power, and description of proposed power sites. 244 Federal Bldg., Tacoma, Wash.
- 12-P-24. Nisqually Glacier, Wash. (progress report), by Arthur Johnson, 1953. 17 p.  
Includes synopsis of observational work carried on during recent years and several cross sections and profiles, usually measured annually. The latest report covers field work done in 1952; issued in March 1953. 244 Federal Bldg., Tacoma, Wash.
- 12-P-25. Report of preliminary examinations of dam site on Carbon River, Pierre County, Wash., by J. T. Pardee, 1939. 6 p.  
Discusses limiting geologic conditions at the site. Concludes that the preliminary examination indicates weaknesses, which will require further investigation if geologic feasibility is to be determined. 244 Federal Bldg., Tacoma, Wash.
- 12-P-26. Summary of investigations in Sauk River reservoir site, Washington, by Arthur Johnson, 1939. 7 p. [Mimeographed.]  
Describes river surveys and contains area and capacity table for reservoir site. Mimeographed copies free on request to Geological Survey, Washington 25, D. C. 244 Federal Bldg., Tacoma, Wash.
- 12-P-27. Report on the geology of miscellaneous dam and tunnel sites, upper basin of the Nooksack River, Whatcom and Skagit Counties, Wash., by C. E. Erdmann and Walter Warren, 1942. 217 p.  
Describes limiting geologic conditions at a series of proposed dam sites in Nooksack River drainage basin and a tunnel site through the Nooksack-Skagit divide. Report based on examination of surface exposures, supplemented by some determinations of depth to bedrock by the electrical resistivity method. 244 Federal Bldg., Tacoma, Wash.; 417 Electric Bldg., Great Falls, Mont.
- 12-P-28. Water utilization in the Nooksack River, Wash., by R. O. Helland, 1941. 64 p. [Mimeographed.]  
Outlines plan of development, showing potential water power of Nooksack River and tributaries. Considers problems of flood control and irrigation within the basin. 619 Post Office Bldg., Portland, Oreg.; 244 Federal Bldg., Tacoma, Wash.
- 12-P-29. Mile 18 dam site and Maple Falls dam site, Nooksack River, Wash., by J. C. Miller, 1941. [2 repts., 3 p. and 2 p.]  
Describes surface conditions at sites, recommends more detailed topographic maps of river to include stretches above and below Mile 18, and advises use of geophysical methods or drilling to supplement geologic examinations. 244 Federal Bldg., Tacoma, Wash.; 619 Post Office Bldg., Portland, Oreg.; 529 Post Office and Court House, Los Angeles, Calif.
- 12-P-30. Flood problem on Nisqually River at Longmire, Wash., by C. E. Erdmann and Arthur Johnson, 1953. 8 p.  
Preliminary report of an investigation of the probability for the occurrence of a flood, or "mud flow," on the Nisqually River at Longmire similar to a flow down Kautz Creek in 1947. Concludes that conditions in the two streams are not comparable, that probability of such a flood on the Nisqually is not as great, and that the park headquarters at Longmire can be protected with reasonable expenditures. 244 Federal Bldg., Tacoma, Wash.; 417 Electric Bldg., Great Falls, Mont.

File no.

- 12-R-13. Report on power resources of Suislaw River basin, Oregon, by B. E. Jones, 1922. 62 p., appendix.

Contains general discussion of water-power resources of the basin. Elevations obtained by aneroid observations. 619 Federal Bldg., Portland, Oreg.

- 12-R-19. The potential water power of the Trask, Nestucca, and Smith River basins, Oregon, by B. E. Jones, 1924. 19 p.

Contains profiles of streams, based on aneroid observations. Report based on a reconnaissance investigation. 619 Post Office Bldg., Portland, Oreg.

- 12-R-20. Report on potential water power of Nehalem and Wilson River basins, Oregon, by B. E. Jones and Warren Oakley, 1924. 16 p.

Contains estimate of potential water-power resources of the basins, based on a reconnaissance investigation; and profiles of the two rivers, based on aneroid observations. 619 Post Office Bldg., Portland, Oregon.

- 12-R-25. Water supply and utilization, Coquille River basin, Oregon, and relation to timber resources, by W. G. Hoyt, 1926. 65 p.

Contains published plan and profile of South Fork Coquille River from Powers, Oreg. to Mile 32; and East Fork Coquille River from China Camp to Mile 2. Discusses potential power resources of the basin and possibilities of their development in connection with timber resources. 619 Post Office Bldg., Portland, Oreg.

- 12-R-26. Geologic examination of reservoir and dam sites in the drainage basins of the Rogue, Umpqua, Siletz, and McKenzie Rivers in western Oregon, by H. T. Stearns, 1926. 55 p.

Describes geology at many dam sites. 619 Post Office Bldg., Portland, Oreg.

- 12-R-29. Potential power of Yaquina River, Oreg., by R. O. Helland, 1929. 4 p.

Presents statement based on reconnaissance. 619 Post Office Bldg., Portland, Oreg.

- 12-R-30. Water-power resources of Siletz River basin, Oregon, by B. E. Jones, with a description of the geology at dam sites by H. T. Stearns and A. M. Piper, 1931. 30 p.

Contains published plan (2 sheets) and profile (1 sheet) of Siletz River, Oreg., and South Fork Siletz River from head of tide to Mile 57; North Fork Siletz River to Mile 3; and Gravel Creek to Mile 3. Proposed plan of development shown on map. Contains also estimate of potential power of the basin and detailed maps of two proposed dam sites. 619 Post Office Bldg., Portland, Oreg.

- 12-R-32. Preliminary report on the potential power of Smith River basin, Del Norte County, Calif., by N. J. Tubbs, 1934. 24 p.

Describes potential power and storage sites. 2520 Marconi Ave., Sacramento, Calif.

- 12-R-33. Geologic features of dam sites in the Nehalem, Rogue, and Willamette River basins, Oregon, by A. M. Piper, 1937. 111 p.

Outlines geologic conditions at 19 potential dam sites distributed as follows: Three on Nehalem River on west or Pacific slope of Oregon Coast Range; four on Little Butte Creek; and two on Evans Creek, tributary to Rogue River in eastern part of the Klamath Mountains; four on South and Middle Santiam Rivers, tributaries of Willamette River from the west slope of the Cascade Mountains; and six on tributaries of Willamette River from east slope of Coast Range. Gives estimates of load-bearing properties and impermeability of rocks at each site, and indicates general types of dam best suited. Except at three sites in the Santiam River basin, where test pits were dug or exploratory holes were drilled, interpretation of geologic features were made wholly from natural outcrops and from highway and railroad cuts. Recommends that all critical features of sites be thoroughly explored by test pits and drilled holes before any dam is designed. Includes topographic maps of dam sites, on which the geology is indicated. 619 Post Office Bldg., Portland, Oreg.

- 12-R-34. Water utilization within the Nehalem River basin, Oregon, by R. O. Helland, with geology of dam sites by A. M. Piper, 1937. 41 p., 6 p. supp.

Presents study of potential power and storage sites, based on a topographic survey of river valley from point near mouth to Timber. Considers especially the possibilities for major storage by construction of a dam near Elsie Post Office. 619 Post Office Bldg., Portland, Oreg.

File no.

- 12-R-35. Water utilization in the basins of South Umpqua River and Cow Creek, Oreg., by R. O. Helland, with a brief discussion of Tiller dam site by J. C. Miller, 1939. 33 p.

Presents study of potential power and storage sites, with special consideration of a storage site on South Umpqua River above Tiller. 619 Post Office Bldg., Portland, Oreg.

- 12-R-37. Water utilization in tributaries of the Rogue River, Oreg., by R. O. Helland, with geology of dam sites by A. M. Piper and J. C. Miller, 1940. 110 p., appendix.

Describes several reservoir sites in the basins of Applegate River and Little Butte, Evans, Jumpoff Joe, and Grave Creeks valuable chiefly for irrigation, some of which, however, could also be used for the regulation of flow at power sites downstream. 619 Post Office Bldg., Portland, Oreg.

- 12-R-39. Tidewater reservoir site, Alsea River, Oreg., by R. O. Helland, 1945. 6 p.

Describes alternative sites on lower Alsea River at which a moderately high dam would create a reservoir of large capacity. 619 Post Office Bldg., Portland, Oreg.

- 12-R-40. Water utilization in the Coos River basin, Oregon, by R. O. Helland, 1947. 24 p.

Report made while gathering information required for the classification of lands for water-power developments. Based on topographic map prepared by the Forest Service in cooperation with the Weyerhaeuser Timber Co. and on photographs. 619 Post Office Bldg., Portland, Oreg.

- 12-R-42. Mile 186.5 dam site on the Rogue River, Oreg., by J. C. Miller, 1951. 3 p.

Shows the necessity for a long expensive dam. The river, over a period of many centuries, has developed a broad flood plain and a large quantity of volcanic ash deposited at the proposed dam site necessitates a dam or cutoff wall of excessive length to prevent leakage through these soft beds. 619 Post Office Bldg., Portland, Oreg.

- 12-R-43. Water power of the coast streams of Oregon, by R. O. Helland, 1953. 46 p.

Based on individual studies of the Alsea, Coos, Coquille, Nestucca, Nehalem, Siletz, Siuslaw, Trask, and Wilson Rivers. These streams have a heavy winter flow but a negligible discharge in late summer and fall. Storage achieved through the construction of dams at recommended sites would enable use of nearly all their annual runoff from November to February, when water is low on the Columbia River and supplemental power is urgently needed in the Pacific Northwest. 619 Post Office Bldg., Portland, Oreg.

- 13-18. Reconnaissance report on geology of lower Eagle River valley, Alaska, by A. F. Bateman, Jr. 1948. 12 p.

Concludes principally that two areas on lower Eagle River merit further study as alternative potential sites for flexible-type dams. 244 Federal Bldg., Tacoma, Wash.; 417 Electric Bldg., Great Falls, Mont.

- 13-19. Water-power resources of Scenery Creek near Petersburg, Alaska, by F. F. Lawrence, 1950. 30 p.

Estimates potential water power and suggests possible development by creating additional storage at the lake and carrying water to a power house by tunnel. Prepared for use in classification of public lands along Scenery Creek. Field work done in 1949 and the resulting topographic maps of Scenery Creek from Scenery Cove to Scenery Lake, Scenery Lake reservoir site, including underwater contours, published in one sheet on a scale of 1:24,000, with a table showing the area and capacity of the reservoir site. 244 Federal Bldg., Tacoma, Wash.

- 13-21. An analysis of potential industrial sites in the upper Lynn Canal area, Alaska, by W. S. Twenhofel and Arthur Johnson, 1950. 32 p.

Considers potential industrial areas at Skagway, Taiya River, Terebee River, Lutak Inlet, Haines and vicinity, Klukwan and vicinity, Haynes to Klukwan along the Haines Cutoff, Berners Bay, and Juneau and vicinity. Evaluates these areas as to topography, geology, climate, water supply, transportation facilities, and power transmission from Yukon-Taiya proposed power project. 244 Federal Bldg., Tacoma, Wash.

- 14-2. Preliminary report on water-power resources of Eklutna Creek, Alaska, by Arthur Johnson, 1947. 23 p.  
(a)

Presents a plan for development by regulating the stream at Eklutna Lake and a tunnel or pipeline which would utilize all of the head to sea level. 244 Federal Bldg., Tacoma, Wash.

File no.

- 14-2. A preliminary report on the geology along the route of a proposed tunnel to develop hydroelectric power from Eklutna Lake, Alaska, by F. F. Barnes, 1947. 8 p.  
(b) Gives geological information bearing upon the feasibility of constructing a tunnel through the ridge northwest of lower end of Eklutna Lake as part of a hydroelectric development under consideration by the city of Anchorage. Discusses two tentative routes. 244 Federal Bldg., Tacoma, Wash.
- 14-2. Reconnaissance report on geology of Eklutna Lake dam site and conduit route near Anchorage, Alaska, by A. F. Bateman, Jr., 1947. 82 p., illus.  
(c) Gives geological information on the dam site at the outlet of Eklutna Lake, the geology of the reservoir area, and the conduit route from the lake to sea level. 244 Federal Bldg., Tacoma, Wash.; 417 Electric Bldg., Great Falls, Mont.
- 14-3. Water-power possibilities in the general vicinity of Anchorage and on Kenai Peninsula, Alaska, by Arthur Johnson, 1948. 20 p.  
Gives summary of information on streams in the areas based largely on map reconnaissance, made as an aid in planning future water-power investigations. 244 Federal Bldg., Tacoma, Wash.
- 14-4. Susitna River, Alaska--general information and mapping requirements relative to a study of the water-power resources, by Arthur Johnson, 1948. 10 p.  
Presents the need for extensive topographic surveys of the basin. 244 Federal Bldg., Tacoma, Wash.
- 14-5. Knik River flood of July and August 1948, by F. F. Lawrence, 1949. 4 p.  
During the winter months Knik Glacier blocks Knik River forming Lake George. With the arrival of warm weather the lake fills, tops the ice dam and cuts it away, emptying the lake in a short time, thereby causing the annual flood. Report summarizes observations and measurements of the 1948 flood, including water surface and discharge. 244 Federal Bldg., Tacoma, Wash.
- 14-6. Preliminary report on water-power resources of Power Creek near Cordova, Alaska, by Arthur Johnson, 1949. 37 p.  
Report based on a one-year record of stream flow and a survey made during the 1948 field season. 244 Federal Bldg., Tacoma, Wash.
- 14-8. Preliminary report on water-power resources of Little Susitna River and Cottonwood Creek, Alaska, by F. F. Lawrence, 1949. 24 p.  
Presents an estimate of potential water power and discusses possible development plans. 244 Federal Bldg., Tacoma, Wash.
- 14-9. Report on reconnaissance of Lake Chackachamma, Alaska, by Arthur Johnson, 1950. 8 p.  
Reports on brief investigation made in 1948 on water-power possibilities of lake. 244 Federal Bldg., Tacoma, Wash.
- 14-10. Report on water utilization, Ship Creek near Anchorage, Alaska, by J. L. Colbert, 1950. 21 p.  
Presents results of investigations concerning use of waters of Ship Creek as a municipal supply and as a potential source of power. Includes topographic survey of 7.3 miles of one section of creek. 244 Federal Bldg., Tacoma, Wash.
- 14-11. Reconnaissance report on Chickaloon River, Alaska, a tributary of the Matanuska River, by Arthur Johnson, 1950. 10 p.  
Presents results of a field examination of a possible dam site on Chickaloon River near Chickaloon, an abandoned mining town. Discusses general aspects of area and a probable plan of development. 244 Federal Bldg., Tacoma, Wash.
- D-100. Potential water power in the United States, by B. E. Jones (latest compilation is for 1949), 1950. 6 p. [Mimeographed.]  
Estimates potential power by divisions of the country and by states for power available 95 percent of the time, 50 percent of the time, and for mean flow.
- D-100. Developed and potential water power of the world, by B. E. Jones and L. L. Young (latest compilation is for 1950), 1951. 7 p. [Mimeographed.]  
Gives installed capacity by continent and country. Estimates potential power, based on ordinary minimum flow, and gives, where available, potential power based on mean flow.

## CIRCULARS

An asterisk (\*) indicates that the circular is out of print.

Results of certain investigations carried on by the various divisions of the U. S. Geological Survey are printed as "circulars" for free distribution.

The circulars listed on the following pages include only those that fall within the scope of this bibliography. The circular number, the title, the author, date of publication, and a brief description of the subject matter are given.

Free copies may be obtained upon request to the Director, U. S. Geological Survey, Washington 25, D. C.

### Circular no.

- \*23. Reservoirs in the United States, by G. E. Harbeck, Jr., 1948. 72 p., 6 pls.

An inventory of one of our most important national resources. Lists the reservoirs by states, gives the drainage-basin index number, location of drainage area, storage capacities, surface areas, storage ratios, date completed, use, owner, and source of storage records available.

32. Flood of September 1946 at San Antonio, Tex., by S. D. Breeding, 1948. 19 p.

Describes the flood of September 27, 1946, and shows its relation to the floods of September 10, 1921--the greatest in the area since 1819.

- \*36. Annual runoff in Columbia River basin in percent of the mean, 1928-45, by C. C. McDonald and H. C. Riggs, 1948 [1949]. 2 p., 20 pls.

Presents a method of making graphical comparisons between the annual discharge of one or more years and the average for 1928-45 in the basin. Includes a map for each year showing the runoff in the basin and one showing the average for the entire period.

- \*37. Discharge and runoff in the Missouri River basin, by B. R. Colby and R. E. Oltman, 1948. 11 p., 3 pls.

Shows average rates of discharge, distribution of average discharge by months for several gaging stations, representative annual runoff, and minimum annual runoff. Includes maps showing these data, with explanations and charts.

44. Large rivers of the United States, by Water Resources Division, 1949. 5 p.

Compares the important rivers of the nation as to discharge, drainage area, length, etc.

- \*52. Annual runoff in the United States, by W. B. Langbein and others, 1949. 14 p., 1 pl.

Contains a map showing lines of equal runoff for the entire country and discusses factors affecting runoff, such as precipitation, evaporation, transpiration, climate, geology, topography, size of drainage basin, and vegetation.

66. Average annual runoff in the Wind River Basin in Wyoming, by R. E. Oltman and H. J. Tracy, 1949. 9 p., 2 pls.

Based on limited, long-time data of gaging stations along the foot of the Wind River Range and a few recently established gaging stations in the arid section. The authors have supplied estimates for ungaged sections and developed a runoff map of the basin.

85. Some reservoir sites in the Sierra Nevada, Calif., by T. A. Johnson, 1950 [1951]. 28 p.

Gives summaries of a group of reservoir sites in the foothills and headwater areas of several streams from the Feather River to Cosumnes River, Calif. Includes information regarding potential storage capacities, power, and irrigation possibilities of sites in the basins of the American, Bear, Cosumnes, Feather, Rubican, and Yuba Rivers.

- \*99. Flood of August 1-6, 1950, at Wichita Falls, Tex., by I. D. Yost, 1951. 18 p.

Presents rainfall and runoff data in the flood area, a summary of peak discharges, and a detailed record of discharge during the flood period.

100. Floods in Georgia, frequency and magnitude, by R. W. Carter, 1951. 127 p., 1 pl.

Aims to make available existing data on floods in Georgia. Correlates characteristic floods with the location and size of drainage area. Gives results of studies and tabulates supporting data.

Circular no.

108. Monthly and annual discharge of Missouri River between Fort Benton, Mont., and Hermann, Mo., and principal tributaries, by G. C. Stevens and C. H. Hardison, 1951 1952. 37 p.

Contains summary of all published records of stations on the Missouri River below Fort Benton and on the principal tributaries, usually the lowest station, and a description of the methods used in computing the discharge for the earlier years.

109. Water-power resources of Hamma Hamma, Duckabush, and Dosewallips Rivers, Wash., by F. F. Lawrence, 1952. 24 p., 1 pl.

Prepared to assist in the classification of public domain with regard to its value for the production of hydroelectric power. Simulated development plans are discussed for each stream, and lands with potential power value are recommended for withdrawal.

115. Estimated use of water in the United States--1950, by K. A. MacKichan, 1951. 13 p.

Gives preliminary estimate of withdrawals from ground and surface sources in 1950 for rural, municipal, irrigational, and industrial uses, and for water power.

136. Geology at the site of a proposed dam and reservoir on Power Creek near Cordova, Alaska, by D. J. Miller, 1951. 8 p., 2 pls.

Describes the limiting geologic conditions at sites and recommends investigations considered necessary to determine feasibility of construction of dam at proposed sites.

147. Geology of proposed Blue Lake dam site and tunnel near Sitka, Alaska, by W. S. Twenhofel, 1951. 4 p.

Presents the general findings of an examination of the dam and tunnel sites.

- \*151. Kansas-Missouri floods of July 1951, by Water Resources Division, October 1951. 69 p.

Preliminary report contains records of discharge at 52 gaging stations and of contents in two reservoirs in flood area from May-July 1952, a summary of peak discharges, and other data pertinent to the flood. It was greatest in area since 1844. Caused by two months of about twice normal rainfall followed by intense rain July 9-12. Flooding on Kansas and Missouri Rivers below mouth of Kansas River resulted in damage of about \$900,000,000.

- \*155. New Year flood of 1949 in New York and New England, by Water Resources Division, 1952. 109 p., 1 pl.

Records of stage and discharge for 85 stations, and change in contents in 12 reservoirs are presented for the period of the flood which followed precipitation of from 5 to 12 in. on a 4,500-sq -mi area in eastern New York and southwestern New England between December 29, 1948, and January 1, 1949.

191. Floods in western Washington, frequency and magnitude in relation to drainage basin characteristics, by G. L. Bodhaine and W. H. Robinson, 1952.

Presents method of determining the magnitude and frequency of expected floods applicable for any area in western Washington.

204. Floods in Youghiogheny and Kiskiminetas River basins, Pennsylvania and Maryland, frequency and magnitude, by Water Resources Division, 1952.

Presents a method, based on actual flood data, for obtaining the magnitude and frequency of floods at any place in the Youghiogheny and Kiskiminetas River basins, on a 3,651-sq -mi area in the upper Ohio River basin.

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