

MINUTES OF THE TRI-STATE COMPACT MEETING HELD AT THE CITY
HALL IN MONTPELIER, IDAHO, APRIL 12, 1946
WITH ED. H. WATSON AS CHAIRMAN

The following water users and representatives of U. S. Government and state officials were present:

| | | |
|--------------------|----------------------|---------------------------------|
| David Miller | Rock Springs, Wyo. | Supt. of Water Div. #4 Wyo. |
| W. J. Hunter | Dingle, Idaho | Water Commissioner Idaho |
| M. T. Wilson | Salt Lake City, Utah | U. S. Geological Survey |
| Thomas P. Newell | Boise, Idaho | U. S. Geological Survey |
| J. G. Kennard | Montpelier, Idaho | U. S. Soil Conservation Service |
| Lennon G. Bell | Pocatello, Idaho | U. S. Soil Conservation Service |
| Ivan K. Rigby | Pegram, Idaho | Water User |
| Harley Cochran | Pegram, Idaho | Water User |
| Melvin Lauridsen | Montepellier, Idaho | Water User |
| Reid Jerman | Salt Lake City, Utah | U. S. Bureau of Reclamation |
| E. J. Skeen | Salt Lake City, Utah | U. S. Bureau of Reclamation |
| E. K. Thomas | Logan, Utah | U. S. Bureau of Reclamation |
| Chas. L. Whitney | Cokeville, Wyo. | Water User |
| H. D. Walter | Cokeville, Wyo. | Water User |
| Eldon J. Cook | Cokeville, Wyo. | Water User |
| James R. Bothwell | Twin Falls, Idaho | |
| Parley T. Anderson | Cokeville, Wyoming | Water User |
| Keston Francis | Cokeville, Wyoming | Commissioner County District #2 |
| Bud Robison | Cokeville, Wyoming | U. S. Geological Survey |
| Chas. C. Nate | | |
| Robert Follansbee | Denver, Colorado | U. S. Geological Survey |
| Wm. H. Lindsay | Dingle, Idaho | Dingle Irrigation Co. |
| John E. Lowham | Evanston, Wyoming | Water User |
| Raymond Rees | Woodruff, Utah | Water Commissioner |
| Wesley Dodge | Dingle, Idaho | Dingle Irrigation Co. |

| | | |
|---------------------|----------------------|---------------------------------|
| T. H. Jackson | Randolph, Utah | Water User |
| Wm. Cook, Sr. | Evanston, Wyo. | Water User |
| M. S. Petersen | Logan, Utah | U. S. Geological Survey |
| Albert B. Harris | Logan, Utah | U. S. Geological Survey |
| Leslie Quayle | Montpelier, Idaho | |
| E. G. Thorum | Salt Lake City, Utah | Utah Power & Light Co. |
| M. P. Thain | Smithfield, Utah | Pumps |
| M. Christoffersen | Cornish, Utah | West Cache Canal |
| Emil G. Gradert | Fort Bridger, Wyo. | Compact Committee, Wyo. |
| Ernest B. Hitchcock | Rock Springs, Wyo. | Compact Committee, Wyo. |
| L. K. Olson | Cokeville, Wyo. | Compact Committee, Wyo. |
| Wm. F. Man | Cokeville, Wyo. | Compact Committee, Wyo. |
| Dick Smith | Grace, Idaho | |
| Andrew Adams | Grace, Idaho | |
| Ashby D. Boyle | Salt Lake City, Utah | Utah-Idaho Sugar Co. |
| A. L. Merrill | Pocatello, Idaho | Attorney |
| L. C. Bishop | Cheyenne, Wyoming | State Engineer, Wyoming |
| Mark R. Kulp | Boise, Idaho | Commissioner of Reclamation |
| Ed. H. Watson | Salt Lake City, Utah | Utah State Engineer |
| F. W. Cottrell | Salt Lake City, Utah | State Engineer's Office |
| L. C. Monson | Salt Lake City, Utah | State Engineer's Office |
| J. W. Serrine | Dingle, Idaho | Water User |
| Leslie Nate | Dingle, Idaho | Water User |
| A. O. Sparks | Dingle, Idaho | |
| Laurence B. Caine | Richmond, Utah | Cache County Water Users' Assn. |
| J. W. Biggane | Kennerer, Wyo. | |
| L. B. Johnson | Randolph, Utah | Water Users' Committee |
| W. V. Iorns | Logan, Utah | Project Engineer, U. S. G. S. |

Mr. Ed. H. Watson, Chairman, called the group to order and stated the purpose of the meeting was to present to the water users a report of the work accomplished to date on the investigations for the Tri-State Compact and to discuss and agree on a program to be followed during the coming season in gathering the data needed as a basis for arriving at a compact; also to hear a report from the Bureau of Reclamation on its plan of development of Bear River.

Mr. W. V. Iorns, Project Engineer, was introduced and read the report he had previously submitted to the State Engineers and to Mr. Leshar S. Wing of the Federal Power Commission, which in brief was as follows:

During the water years 1944-45 stream flow data were secured on Bear River at 17 points and a complete coverage of diversion and tributaries was also made. Daily records were kept during the irrigation season at 39 points at reservoir sites and at other points upstream or downstream from diversions on tributaries. Daily records were made on 136 canals diverting from the river channel and 302 canals diverting from 48 tributary streams in the river basin. Also daily records were kept of contents in acre feet of five storage and regulating reservoirs.

Mr. Iorns reported that Mr. Bishop of Wyoming and Mr. Kulp of Idaho had furnished detailed listings of water adjudications and decrees and listings of irrigated areas. Mr. Watson has furnished copies of water users' claims in Rich County and the claims in Summit County will be available at an early date.

Mr. Iorns stated that at the Evanston meeting of the State Engineers in February, the question of continuation of diversion records from the tributaries was to be decided at this meeting, following a study of flows available at the tributaries and rights in the tributaries as compared to the main river. This study was contained in Mr. Iorns' report to Mr. Wing which was read. Mr. Iorns' conclusions from his study of the records of 1944 were as follows: "It is apparent that little or no regulation would be necessary on the tributaries to supply older rights on the river, except for Smith's Fork. However, the

distribution of available supplies in the river as compared to the tributaries for the years of extreme drought similar to 1934 and 1940 might present a considerably different picture". Consequently, it was Mr. Iorns' opinion that little or no value would be derived from collecting stream flow records of any tributaries above Stuart Dam, except Smith's Fork, during the 1946 season.

Mr. Wing's letter, in answer to Mr. Iorns', concurred with the above recommendations except that he urged that readings be taken above diversions on Mill Creek, Sulphur Creek, Yellow Creek and Thomas Fork and on all tributaries below diversions.

Following Mr. Iorns, Mr. E. K. Thomas of the Bureau of Reclamation, outlined the plans of the Bureau in developing power and storage reservoirs on Bear River. He stated their whole plan was contingent upon the enlargement of Cutler Reservoir as the first step. By increasing the storage in this reservoir to 200,000 acre-feet for use in Box Elder County, water would be available by exchange to build other reservoirs upstream and on tributaries. The proposed reservoirs are as follows:

| <u>Reservoir</u> | <u>Capacity Acre Ft.</u> | <u>New Land Irrigated</u> | <u>Supplemental Irrigation (Acres)</u> |
|--|------------------------------|-------------------------------|--|
| Sulphur Creek | 10,000 | 2,000 | 9,630 |
| Woodruff Narrows | 100,000 | 12,000 | 48,000 |
| Thomas Fork | 45,000 | 12,000 | 26,000 |
| Bloomington Creek | 10,000 | 1,700 | 5,000 |
| Cottonwood Creek | 6,500 | 2,700 | 1,800 |
| Gentile Valley | 210,000 | 57,000 | 40,000 |
| Warm Creek) Mink Creek) | 25,000) 23,000) | 10,000 | 51,000 |
| Blacksmith Fork) Little Bear River) | 20,000) 9,000) | 9,000 | 3,000 |
| Cutler | 200,000 | 20,000 | |

A general discussion then followed Mr. Thomas' report and in conclusion Mr. Thomas stated that the Bureau program was contingent on a compact between the three states and the final adjudication of water rights. He urged that action be taken as soon as possible.

A discussion of Mr. Iorns' report was taken up again and the question of keeping records on the diversion from tributary streams followed. Mr. Cottrell of the Utah State Engineer's Office held that inasmuch as Mr. Wing desired certain information on the tributaries, it was advisable to get the information requested. Mr. Kulp of Idaho expressed himself as being in favor of having stations above and below diversions on the tributaries particularly above Bear Lake and any others that Mr. Wing might desire. Mr. Bishop, State Engineer of Wyoming, concurred in Mr. Kulp's remarks and stated that the Wyoming users desired that records on diversions from tributaries be secured. Mr. Kulp made a motion that the matter of securing records on the tributaries be left to Mr. Wing's discretion after consultation with Mr. Iorns. The motion was seconded and passed.

A further discussion of Mr. Iorns' report followed relating to the duty of water and how it must be made uniform as between the three states.

Mr. Reid Jerman of the Bureau of Reclamation stated that, in his opinion, the time had now arrived for the appointment of a River Commissioner to supervise and study the diversion of water without regard to state lines. Mr. Iorns discussed Mr. Jerman's suggestion for an overall River Commissioner, taking the position that this action could not be carried out until an agreement or a tentative compact was set up. Mr. Cottrell argued that by an agreement between the three states a commissioner could be appointed to operate under the various decrees and, after a year's service, he would be in a position, from the experience gained in operating the river, to give extremely valuable information to the compact committee in drawing it up in the final form. A general discussion followed.

At this point Mr. Robert Follansbee of the U. S. Geological Survey at Denver, Mr. M. F. Wilson of the U. S. Geological Survey at Salt Lake City, and Mr. Thomas R. Newell of the U. S. Geological Survey at Boise were introduced. Mr. Wilson supported the suggestion of an overall River Water Commissioner.

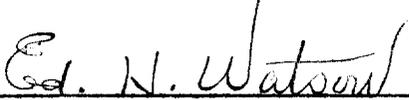
Mr. Bishop moved that the meeting recess for luncheon.

Meeting reconvened at 2:00 P.M. and discussion continued on the advisability of hiring an overall Water Commissioner in order that he might draft a tentative compact. Mr. L. B. Johnson moved that Mr. W. V. Iorns be employed to work co-operatively with Mr. Wing in writing a tentative compact that would be presented at a meeting to be called in the fall of this year. Mr. Iorns stated, after Mr. Johnson's motion, that the Chief of the Geological Survey had by letter consented to his working in co-operation with Mr. Wing in outlining the form of compact and felt that this authorization granted him permission to work as proposed by Mr. Johnson. The motion was seconded by Mr. Gradert and passed unanimously.

The question of whether or not willow lands along river banks should be included was discussed by Mr. Bishop who was in favor of such procedure. Mr. Cottrell stated that in Utah those making hydrographic surveys were specifically instructed not to include such lands, and if they were included in Wyoming and Idaho it was only fair that Utah adjust its surveys and count such lands. After some discussion, it was decided to include the willow lands in each state.

A motion by Mr. Bishop that the fall meeting be called at the discretion of the chairman when a tentative compact will have been completed and submitted to interested parties, was seconded and carried.

Meeting adjourned subject to call by the chairman.



Chairman

L. C. Monson
Acting Secretary

~~These~~ Copies presented to State Engineer Bureau of Rec. and presented
to meeting by sending parts and condensing some sections ^{analytically} ~~W.V.~~

REPORT OF W. V. IORNS TO MONTPELIER MEETING - April 12, 1946

- ① It is regretted that Mr. Wing is unable to attend this meeting and to assist in the summarization of data collected and make his recommendations. I have presented to the State Engineers, however, copies of my report to Mr. Wing and they too have received his recommendations. For the information of the others on this Committee who have not received this information direct from Mr. Wing, I will briefly summarize the status of the base data collected on the River Basin under the cooperative effort of the States, the Geological Survey, and the Bureau of Reclamation, and give a brief summary of my report to Mr. Wing.
Let us now summarize the data now hand or soon to be completed.
- ③ → A complete coverage of diversions from tributaries of Bear River and from the main stream of the river, have been collected for the years 1944 and 1945. Records are available for a few gaging stations since as far back as 1913. These, together with the complete coverage for 1944 and 1945, should present a fairly complete picture of water supplies. → At the outset of this investigation there were many questions as to the distribution of the waters of the basin and the uses of these waters. It was deemed at that time to be necessary to obtain a full coverage of all streams and all diversions ⁱⁿ of the basin. From the data collected for the years 1944 and 1945, many of the questions which seemed paramount and were stumbling blocks at the beginning have been answered. Also through discussions at the various Tri-State meetings which have been held in the past, there has emerged an understanding, I believe, as to the basic principles which would govern in the distribution of the waters of the river in a Compact.
- ④ → Records of all base or major stream-flow stations are published in Water Supply Papers of the Geological Survey. For special studies of water supply and diversions, a Hydrometric Report for 1944 was prepared, showing daily discharges for the water year ending Sept. 30, 1944, of all the gaging stations in operation in the basin, daily discharges of all canals diverting from Bear River, and daily /

discharges of all canals diverting from tributaries. A similar report to that published for 1944 is now being prepared for the year 1945. These reports show daily discharges in the main stem of the river at 17 points. Daily contents in acre-feet of 5 storage and regulating reservoirs. Daily discharges ^{at} of 39 points at reservoir sites and at other points above or below diversions on the tributaries. Daily records during the irrigation season of 136 canals diverting from the main stem of the river and of 302 canals diverting from 48 tributary streams in the river basin.

Mr. Bishop, of Wyoming, and Mr. Kulp, of Idaho, have furnished detailed listings of water adjudications and decrees in their states, listings of irrigated acreages and they also have platted on Bureau of Reclamation Land Use Maps, the lands described in their adjudications and have measured the acreages, classifying them as to cultivated lands and brush lands. Mr. Watson, of Utah, has furnished copies of Water Users Claims in Rich County, which describe lands irrigated, flow claimed, and date of priority claimed. Claims in Summit County are now being prepared by ~~this~~ ^{his} office and lands in Cache and Box Elder Counties are described in the Kimball decree. The man who ^{he} had engaged to plat the acreages on the Land Use Maps has not as yet reported for work.

Thus we have records of water supply listings " Diversion's " Water rights irrigated acreages Maps " " "

At the meeting at Evanston, in February, the question of continuation of diversion records from the tributaries was left to be decided at this meeting, following a study of flows available at the tributaries and rights in the tributaries as compared to the main river. This study was made in an assembled report in a letter to Mr. Wing. Mr. Wing studied the report and returned his answer. ~~The two letters are as follows:~~

My report to Mr. Wing will probably be of interest to you because it included a preliminary compilation of water rights on the river, ~~was~~ diverted flows in 1944 and flows which available supplies would have been.

UNITED STATES
DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

P. O. Box 413
Logan, Utah
April 2, 1946



Mr. Leshar S. Wing
Regional Engineer
Federal Power Commission
San Francisco, California

*Those of you who have
copies of this report may refer
to the print marked Plate A.*

Dear Mr. Wing:

As agreed at the Evanston meeting and outlined in your letter of March 5, 1946, I am transmitting the information you desired. It is regretted this is so late in being sent, but the final compilation could not be made until receipt of the Utah rights, which were not received in this office until March 29. I would liked to have had time enough to have made a more thorough study and a more comprehensive report to you, but since time does not permit, I have made this rather brief.

Total rights were grouped

On Plate A are shown the water rights data for the section of the basin above Stewart Dam. Rights for sections are grouped in downstream order as the course of the river passes through each state. The Utah and Wyoming rights from the river are on the basis of one cu. ft. of flow for each 70 acres of land served. The next to the last column titled "5/7 Idaho after July 1" is the Idaho rights from the main river adjusted so that the duty will be the same as those shown for Utah and Wyoming, which is one cu. ft. per sec., for each 70 acres. This places the rights for all three states on the same plane and will provide practically the same results as if irrigated acreages were used.

It must be borne in mind that some of the data shown on Plate A is based on unadjudicated claims and there may be some minor errors in the listings. However, it is believed that the data is sufficiently correct to supply a picture of the distribution of rights on the river needed for the current studies. Final determinations will, of course, require more detailed work most likely based on irrigated acreages and dates of priority.

Also shown on Plate A are rights on the various tributaries entering the river system above Stewart Dam. These have not been adjusted on the basis of one cu. ft. of flow for each 70 acres, but are listed as they are recorded in the adjudications or water users claims. While these probably are not on the same plane in regards to duty of water, they will serve to demonstrate the relative priorities on the tributaries and the main stem.

The following schedules show the adjudications in Idaho between Stewart Dam and the State line below Preston, and in Utah between the State line below Preston and the Cutler Dam. These have not been adjusted for any duty of water.

SCHEDULE OF RIGHTS - IDAHO

| Stewart Dam to Preston | | |
|------------------------|----------------|--------|
| Name | Date | Amount |
| A. W. Harris | May 1, 1879 | 2.2 |
| Nelson Ditch | May 1, 1880 | 6.5 |
| A. C. Bosen | May 1, 1882 | 5.5 |
| Riverdale Irrig. | May 1, 1882 | 13 |
| Riverdale-Preston | June 10, 1883 | 3 |
| Battle Creek | July 10, 1883 | 5 |
| Budge L. & L. Co. | May 1, 1889 | 28.5 |
| Gentile Valley Irr. | June 1, 1889 | 33 |
| Johnson Bros. | Aug. 30, 1889 | 4 |
| E. T. Williams | Mar. 21, 1895 | 2.4 |
| Last Chance | Mar. 1, 1897 | 200 |
| E. H. Ellsmore | Aug. 31, 1898 | .9 |
| F. W. Harris | Aug. 31, 1898 | 1.0 |
| West Cache | Sept. 12, 1899 | 186 |
| Johnson Bros. | May 1, 1900 | 1.5 |
| Thatcher Irrig. | Feb. 2, 1923 | 35 |
| Last Chance | May 14, 1901 | 240 |
| Riverdale-Preston | June 10, 1902 | 6.5 |
| Pond Bros. | Apr. 18, 1904 | 12 |
| Bench Canal | Aug. 9, 1909 | 138 |
| Bench Canal | Dec. 31, 1909 | 26 |
| Tanner Canal | July 29, 1910 | 54 |
| Cub River Irrig. | Dec. 11, 1914 | 100 |

Power Rights in Idaho

| | | |
|----------------------|---------------|-------|
| U.P. & L. Co. -Grace | Dec. 28, 1905 | 500 |
| do Grace | July 6, 1908 | 500 |
| do Oneida | June 7, 1917 | 1,000 |
| do Oneida | Jan. 18, 1911 | 1,500 |
| do Cove | Mar. 9, 1916 | 1,500 |
| do Cove | Mar. 28, 1916 | 4,000 |

The Gentile Valley Irrigation, Thatcher Irrigation, and Pond Brothers, all divert through the Gentile Valley Canal heading.

The Battle Creek right is diverted in the West Cache Canal.

SCHEDULE OF RIGHTS - UTAH

| Preston to Cutler Dam | | |
|-----------------------|---------------|--------|
| Name | Date | Amount |
| West Side Canal | Mar. 1, 1889 | 333 |
| W. D. Goodwin | May 1, 1894 | 0.5 |
| West Side Canal | May 14, 1901 | 133 |
| Hammond Canal | June 1, 1904 | 95 |
| West Side Canal | May 1, 1914 | 43 |
| J. Q. Adams | May 4, 1915 | 2.0 |
| Benson - Bear Lake | May 1, 1917 | 7.0 |
| Ballard & Munk | May 1, 1917 | 4.0 |
| Jonathan Smith | May 1, 1917 | 3.0 |
| Milton Bullen | July 5, 1917 | 4.88 |
| Olaf Cronquist | May 1, 1918 | 6 |
| D. C. Van Dyke et al | May 1, 1918 | 3.0 |
| W. D. Goodwin | May 1, 1919 | 1.5 |
| Smithfield West Bench | June 1, 1919 | 5.0 |
| Hill Irrig. Co. | May 15, 1920 | 4.0 |
| C. G. Wood et al | June 1, 1920 | 2.5 |
| Wood Irr. Co. | June 12, 1920 | 2.0 |
| Lloyd Wheeler | June 17, 1920 | 2.5 |

Power Rights in Utah

| | | |
|------------------------|-----------------|-----|
| U.P. & L. Co. -Wheelen | Dec. 1, 1903 | 270 |
| do | do Dec. 1, 1906 | 135 |
| do | do Dec. 1, 1908 | 135 |
| do | do Dec. 2, 1912 | 500 |

On Plates B-1 and B-2 are shown daily total diversions during the 1944 irrigation season for each section corresponding to the states and sections as set forth in Plate A, which lists the water rights applicable in the respective sections. While the actual diversions within each section may not correspond exactly with a priority of right distribution in the section, the net figure of diversions and resultant return flow would be practically the same as if the diversions within each respective section had been distributed according to priority of rights.

In order to make a brief study of the 1944 irrigation season as to available flows and rights filled in the various sections of the river, I have selected the flows on days at ten day intervals beginning June 1, as a basis of comparison. In Table I are shown the accumulated priorities filled for the 1st, 10th, and 20th of each month for the period June 1 to September 30. Diverted flows shown on Plates B-1 and B-2 were used and these were applied to the table of water rights on Plate A for determining year of priority filled.

The columns noted as "approximate percent filled" refer only to the total right for the year shown with all rights of earlier priority being filled one hundred percent.

TABLE I

| Day | UTAH | | WYOMING | | UTAH | | WYOMING | | IDAHO | |
|----------|------------------|------------------|------------------------|------------------|----------------------|------------------|--------------------|------------------|-----------------------|------------------|
| | Above State Line | | State Line to Woodruff | | Woodruff to Randolph | | Randolph to Border | | Border to Stewart Dam | |
| | Year | Approx. % Filled | Year | Approx. % Filled | Year | Approx. % Filled | Year | Approx. % Filled | Year | Approx. % Filled |
| June 1 | 1891 | 30 | 1940 | 110 | 1940 | 150 | 1940 | 200 | 1911 | 40 |
| June 10 | 1891 | 30 | 1940 | 100 | 1940 | 130 | 1940 | 250 | 1911 | 70 |
| June 20 | 1891 | 60 | 1940 | 150 | 1940 | 110 | 1940 | 170 | 1911 | 100 |
| July 1 | 1898 | 70 | 1940 | 120 | 1940 | 120 | 1940 | 270 | 1911 | 80 |
| July 10 | 1898 | 70 | 1900 | 100 | 1885 | 90 | 1883 | 20 | 1911 | 40 |
| July 20 | 1922 | 20 | 1886 | 100 | 1881 | 75 | 1883 | 30 | 1911 | 20 |
| Aug. 1 | 1898 | 80 | 1880 | 100 | 1875 | 20 | 1878 | 70 | 1911 | 10 |
| Aug. 10 | 1896 | 100 | 1875 | 40 | 1862 | 20 | 1878 | 30 | 1897 | 100 |
| Aug. 20 | 1891 | 30 | 1874 | 90 | 1862 | 70 | 1878 | 40 | 1883 | 100 |
| Sept. 1 | 1891 | 30 | 1874 | 50 | 1862 | 100 | 1880 | 10 | 1882 | 100 |
| Sept. 10 | 1891 | 30 | 1874 | 70 | 1862 | 100 | 1880 | 30 | 1879 | 100 |
| Sept. 20 | 1891 | 40 | 1874 | 70 | 1862 | 100 | 1879 | 50 | 1880 | 100 |
| Sept. 30 | 1891 | 30 | 1874 | 100 | 1862 | 100 | 1878 | 100 | 1882 | 100 |

Note: Figures used for the Border to Stewart section include flows measured at the Rainbow Canal and Stewart Dam gaging stations part of which may include some gain below the last diversion dam upstream.

If the deliveries in the various sections of the river were readjusted on the basis of priority, the following adjustments would need be made:

After July 10, all diversions above the Utah Wyoming State line would be shut off, resulting in the following additional amounts passing the State line for diversion in the State line to Woodruff section.

| | | |
|----------|----|-------------|
| July 20 | 55 | second feet |
| Aug. 1 | 47 | do |
| Aug. 10 | 38 | do |
| Aug. 20 | 11 | do |
| Sept. 1 | 11 | do |
| Sept. 10 | 10 | do |
| Sept. 20 | 12 | do |
| Sept. 30 | 10 | do |

After July 1, diversions in the State line to Woodruff section would need be adjusted to deliver the following additional amounts to the Randolph Woodruff section.

| | |
|---------|----------------|
| July 10 | 42 second feet |
| July 20 | 233 do |
| Aug. 1 | 58 do |
| Aug. 10 | 40 do |

As indicated by the flows for every tenth day, no further regulation, so far as upstream diversions on the main river are concerned, would be necessary in the Randolph to Border and Border to Stewart Dam sections. There was sufficient supply available in the downstream sections to fill equivalent or later rights.

If the flows were redistributed as noted in the foregoing, the rights filled in the various sections of the river would result in a schedule as noted in the following table:

TABLE II

| Day | UTAH | WYOMING | UTAH | WYOMING | IDAHO |
|----------|------------------|------------------------|----------------------|--------------------|-----------------------|
| | Above State Line | State line to Woodruff | Woodruff to Randolph | Randolph to Border | Border to Stewart Dam |
| June 1 | 1891* | 1940 | 1940 | 1940 | 1911 |
| June 10 | 1891* | 1940 | 1940 | 1940 | 1911 |
| June 20 | 1891* | 1940 | 1940 | 1940 | 1911 |
| July 1 | 1898* | 1940 | 1940 | 1940 | 1911 |
| July 10 | 1898* | 1890 | 1890 | 1883* | 1911 |
| July 20 | off | 1885 | 1885 | 1883* | 1911 |
| Aug. 1 | " | 1879 | 1879 | 1878 | 1911 |
| Aug. 10 | " | 1875 | 1875 | 1878 | 1897 |
| Aug. 20 | " | 1874 | 1874 | 1878 | 1883 |
| Sept. 1 | " | 1874 | 1874 4 | 1880 | 1882 |
| Sept. 10 | " | 1874 | 1874 4 | 1880 | 1879 |
| Sept. 20 | " | 1874 | 1874 4 | 1879 | 1880 |
| Sept. 30 | " | 1874 | 1874 4 | 1879 | 1882 |

* Water available for filling additional rights but not used.

From the foregoing, it appears that for a reasonably normal year, that a strict priority of right schedule could be followed with only a few minor adjustments. In no case would it require the shutting off of a right to deliver water to an earlier priority located an excessive distance downstream.

COMPARISON OF TRIBUTARY AND MAIN STEM RIGHTS

Tributaries in State Line to Woodruff Section:

In Table III are shown rights filled in the State line to Woodruff section of the river and rights that would be filled on the tributaries as indicated by the total divertable flow in the tributaries. It is to be noted that Sulphur Creek would be the only stream in this group which should have been regulated for the benefit of the main stem. However, any regulation would have delivered only very minor flows to the river.

TABLE III

| Day | Rights in Main Stem of River | MILL CREEK | SULPHUR CREEK | YELLOW CREEK |
|----------|------------------------------------|----------------------------------|---------------|-----------------|
| | | Right filled on Mill Creek | | |
| June 1 | 1940 | 1872* | 1908* | 1940 |
| June 10 | 1940 | 1940 | 1908* | 1940 |
| June 20 | 1940 | 1940 | 1908* | 1940 |
| July 1 | 1940 | 1940 | 1885 | 1940 |
| July 10 | 1900 | 1921 | 1885 | 1894 |
| July 20 | 1886 | 1921 | 1885 | 1893 |
| Aug. 1 | 1880 | 1877 | 1885 (a) | 1880 |
| Aug. 10 | 1875 | 1871** | 1885 (b) | Practically Dry |
| Aug. 20 | 1874 | 1871** | 1882 (c) | Dry |
| Sept. 1 | 1874 | 1871** | 1882 (d) | do |
| Sept. 10 | 1874 | 1871** | 1880 (e) | do |
| Sept. 20 | 1874 | 1871** | - (f) | do |
| Sept. 30 | 1874 | 1871** | off | do |

* Water available for filling additional rights but not used.

** Supply less than enough to fill 1871 rights.

(a) 5 sec. ft. should be delivered to river.

(b) 7 do

(c) 3 do

(d) 3 do

(e) 2 do

(f) 1 do

Tributaries in Woodruff to Randolph Section:

In Table IV are shown rights filled in the Woodruff to Randolph section of the river and rights that would be filled on the tributaries as indicated by the total divertable flow in the tributaries.

TABLE IV

| Day | Schedule of rights filled in Main Stem | WOODRUFF CREEK | BIG CREEK | OTTER CREEK |
|----------|--|----------------|-----------|-------------|
| | | | | |
| June 1 | 1940 | 1884* | (a) | (b) |
| June 10 | 1940 | 1884* | (a) | (b) |
| June 20 | 1940 | 1884* | (a) | (c) |
| July 1 | 1940 | 1884* | (a) | (c) |
| July 10 | 1890 | 1884* | (a) | (c) |
| July 20 | 1885 | 1884* | (a) | (c) |
| Aug. 1 | 1879 | ** | (a) | (c) |
| Aug. 10 | 1875 | ** | (a) | (c) |
| Aug. 20 | 1874 | ** | (a) | (c) |
| Sept. 1 | 1875 | ** | (a) | (c) |
| Sept. 10 | 1875 | ** | (a) | (c) |
| Sept. 20 | 1875 | ** | (a) | (c) |
| Sept. 30 | 1875 | ** | (a) | (c) |

* Supply not sufficient to fill 1884 right of 143 sec. ft. and only right prior to this is 1880 for 0.55 sec. ft.

** Diversions totaling the following amounts should have been shut off and delivered to river. Aug. 1, 9 sec. ft.; Aug. 10, 8 sec. ft.; Aug. 20, 7 sec. ft.; Sept. 1, 6 sec. ft.; Sept. 10, 5 sec. ft.; Sept. 20, 6 sec. ft.; Sept. 30, 6 sec. ft.

- (a) Supply at no time sufficient to fill 1870 right.
- (b) Supply not sufficient to fill 1875 right.
- (c) Supply only slightly more than 1870 right.

It is noted that Woodruff Creek would be the only tributary in this section which should have been regulated for the benefit of the main river. However, delivery would only have been required after about August 1 and would have only averaged about six cu. ft., per second.

Salteratus Creek has been eliminated from this grouping, as measured supplies available in this creek in the later part of the season as shown on page 22, of the 1944 Hydrometric Data Report indicates very minor supplies available and which could not have been delivered to the main stem, because of the many sinks along the stream channel.

9

Tributaries in Randolph to Border Section:

TWIN CREEK

There are numerous adjudicated rights from Twin Creek and its tributaries. A reconnaissance of this area about July 1, 1945, showed that supplies available for diversion were practically null, except for Rock Creek and Twin Creek below Sage. Local regulation limits the oldest Rock Creek Right (1887) to supply deficiencies in the Twin Creek Canal (1878) right. The gaging station, Twin Creek at Sage, shows that there was not enough water to supply the 1878 right of 16.5 sec. ft., for the Twin Creek Canal after July 1.

SMITHS FORK

There has been much contention concerning diversions on this stream, because of late priority users on Smiths Fork using water which formerly supplied rights in Idaho between Border and Stewart Dam and also possibly the Last Chance Canal in Idaho. A study has not been made of the segregation of the flows below Stewart Dam to determine whether or not the Last Chance Canal was deprived of any normal flow during the 1944 irrigation season. However, Mr. E. J. Baird, Watermaster District No. 5, Idaho, should be able to furnish a schedule of rights filled below Stewart Dam for 1944. Therefore, this analysis is limited to the rights in the main stem above Stewart Dam as compared to those being filled on Smiths Fork, which are tabulated in Table V.

TABLE V

| Day | WYOMING | IDAHO | |
|----------|--------------------|-----------------------|-------------|
| | Randolph to Border | Border to Stewart Dam | Smiths Fork |
| June 1 | 1940 | 1911 | 1910 |
| June 10 | 1940 | 1911 | 1940* |
| June 20 | 1940 | 1911 | 1940* |
| July 1 | 1940 | 1911 | 1940* |
| July 10 | 1883 | 1911 | 1940* |
| July 20 | 1883 | 1911 | 1940* |
| Aug. 1 | 1878 | 1911 | 1940* |
| Aug. 10 | 1878 | 1897 | 1916 |
| Aug. 20 | 1878 | 1883 | 1910 |
| Sept. 1 | 1880 | 1882 | 1911 |
| Sept. 10 | 1880 | 1879 | 1908 |
| Sept. 20 | 1879 | 1880 | 1904 |
| Sept. 30 | 1879 | 1882 | 1904 |

* Diversions considerably in excess of adjudicated rights of 183 sec. ft.

It is to be noted that rights having much later priorities were filled on Smiths Fork during the 1944 irrigation season than on the main river. Some regulation on Smiths Fork for the benefit of downstream users on the main river holding older rights will probably be necessary. However, the extent to which this is necessary will not be considered in this analysis.

10

Tributaries in Border to Stewart Dam Section:

In Table VI are shown rights filled on the main river in the Border to Stewart Dam section and rights filled on Thomas Fork as indicated by the divertable flow.

TABLE VI

THOMAS FORK

| Day | <u>IDAHO</u> Border to Stewart | Thomas Fork |
|----------|-----------------------------------|-------------|
| June 1 | 1911 | 1885 |
| June 10 | 1911 | 1885 |
| June 20 | 1911 | 1885 |
| July 1 | 1911 | 1885 |
| July 10 | 1911 | 1884 |
| July 20 | 1911 | 1883 |
| Aug. 1 | 1911 | 1883 |
| Aug. 10 | 1897 | 1880 |
| Aug. 20 | 1883 | 1880 |
| Sept. 1 | 1882 | * |
| Sept. 10 | 1879 | * |
| Sept. 20 | 1880 | * |
| Sept. 30 | 1882 | * |

* Not sufficient supply to fill 1880 right.

From the foregoing analysis as indicated by the 1944 records of stream flow collected in the basin above Stewart Dam, it is apparent that little or no regulation would be necessary on the tributaries to supply older rights in the main stem of the river except for Smiths Fork. However, the distribution of available supplies in the main stem as compared to the tributaries for years of extreme drouth similar to 1934 and 1940, might present a considerably different picture. Consequently, it is my opinion that little or no value would be derived from collecting stream flow records of any of the tributaries above Stewart Dam except for Smiths Fork during the 1946 irrigation season, which, from present indications, has all of the ear marks of being a very similar year to 1944.

A casual examination of the rights for the tributary streams around Bear Lake and below Stewart Dam, show that the tributary rights are many years earlier in priority than downstream rights on the main stem. It is therefore my opinion that collection of diversion records on tributaries in the lower reaches of the river would be of little value in so far as basic data for a Compact is concerned.

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While additional stream flow records on the tributaries above and below diversions would be of some value in studies of water supplies in the basin, I do not believe them to be essential for Compact purposes.

It is hoped that this data which I am sending you will be of value to you and that I have made the explanation of the derivations sufficiently clear. I will look forward to discussing this further with you at Montpelier.

Sincerely yours,

W. V. Iorns
Project Engineer

It will be noted that Mr. Wing concurs with my conclusions that the collection of records on diversions from tributaries is not of sufficient value to warrant the expense for the 1946 irrigation season except those diversions from Smiths Fork. However, Mr. Wing recommended that readings be taken above diversions on Mill Creek, Sulphur Creek, Yellow Creek, and Thomas Fork and on all tributaries below all diversions. I might point out that in practically all cases for years in which there is a larger demand for water than the main stream and the tributaries will supply, that the only contribution from the tributaries would be return flow rising in the bed of the tributary between the last diversion dam and the main stream. Consequently, records/below diversions on the tributaries would only show flow during the higher water season when the main river would be plentifully supplied with water and no flow during the periods of time that the main river is short of water, and I rather doubt

~~that these records would be of much value.~~ *The records below diversions, however, are useful in computing return flow in the river from canals diverting from the main river.*

In general, I believe that the data collected as related to stream flow records present a good picture of the distribution of the waters of the river as to supplies and uses and while records of stream flow and uses during extreme drouth years would shed additional light on the complex problem of the river, it is my opinion that at the present time, sufficient data is available for the interested parties to begin formulating a Compact. *That is when the work is completed on compiling water rights and irrigated acreages.*

In conclusion, I might state that this office was created to collect base data on stream flow records only. Because of the many problems related to collecting data for the Compact, it has acted in addition, as a collection agency for much miscellaneous data necessary for the Compact, principally records of water rights and maps of irrigated acreages. *It* This office will also assist in special studies of the stream flow data necessary in the study to affect a Compact. This office was created as a temporary organization to obtain base data for a Compact and was not intended

This should have been stated "disposition" as Mr. Wing has been told by Logan after in collection. Mr. Jensen call by attention to this and I received from it was a misstatement - W.D. James 4/20/46

to become a permanent fixture in the Basin. In whatever form the Compact might take, there will undoubtedly be provisions for the continuation of collecting records at certain gaging stations in the Basin and possibly for the collection of records on canals diverting from the main stem of the river. Since the area is partly distributed in three states and the work is now financed by the cooperation of the three states and two federal agencies, some thought should be given as to how much longer this work is to continue and to the manner in which very necessary records will be carried on.

W. V. IORNS