

Surface Water Division
P. O. Box 413
Logan, Utah
December 31, 1948

Mr. Mark R. Kulp, State Reclamation Engineer,
Boise, Idaho

Mr. E. H. Watson, State Engineer,
Salt Lake City, Utah

Mr. L. C. Bishop, State Engineer,
Cheyenne, Wyoming

*Added to Bureau minutes
of 1948 Reclamation Committee
meeting together, Utah
December 28, 29, 1948*

Gentlemen:

The Bear River Compact Engineering Committee met in Logan, Utah on December 28, 29, 1948 to review the stream gaging program in the basin and make recommendations for the next biennium. Present at the meeting were W. V. Iorns, Chairman; R. D. Goodrich, representing Wyoming; C. O. Roskelly, representing Utah; and E. K. Thomas, representing the Bureau of Reclamation. Mr. Lynn Crandall, representative for Idaho, was unable to attend.

The Committee recommended the continuation of the 27 State-Survey cooperative gaging stations, the continuation of the 13 State-Bureau of Reclamation-Survey cooperative stations, and the installation and operation of 7 additional gaging stations in the basin. In addition, the Committee recommended that \$10,000 be made available each year during the biennium for such special investigations and stream flow analysis work as the Commission may need in the drafting of a Compact. The division of costs to the states of the stream gaging program and analysis work would be divided equally between the three states in accordance with the agreement between the State Engineers and Survey District Engineers at their conference following the recent Compact meeting at Preston, Idaho.

The Committee also discussed the several assignments given it by the Compact Commission. A letter from Mr. Leshar S. Wing was read regarding the organization and division of work and suggesting the Committee meet beginning Tuesday, January 18, 1949. Prior to the January meeting, Mr. Thomas and Mr. Iorns were to review and catalogue sources of information needed. They were also to have ready, proposed methods and procedures for accomplishing the task. In the meantime, the State representatives would be studying State needs and considering on what basis the supplemental storage requirements should be predicated.

The following is a tabulation of the gaging stations, estimates and division of costs for operation of the Logan Project Office during the two years beginning July 1, 1949 and ending June 30, 1951.

A. Continuation of 27 State-Geological Survey gaging stations

Main Stem Stations

1. Bear River near Utah-Wyoming State line
2. Bear River above Sulphur Creek near Evanston, Wyoming
3. Bear River near Evanston, Wyoming
4. Bear River near Woodruff, Utah
5. Bear River near Randolph, Utah
6. Bear River above Sublette Creek near Cokeville, Wyoming
7. Bear River at Border, Wyoming
8. Bear River near Preston, Idaho
9. Bear River near Collinston, Utah

Tributary Streams

10. Sulphur Creek near Evanston, Wyoming
11. Twin Creek near Sage, Wyoming
12. Smiths Fork at Cokeville, Wyoming
13. Smiths Fork near Border, Wyoming
14. Salt Creek near Geneva, Idaho
15. Thomas Fork near Geneva, Idaho
16. Thomas Fork near Raymond, Idaho
17. Montpelier Creek at irrigators weir near Montpelier, Idaho
18. Georgetown Creek near Georgetown, Idaho
19. Cottonwood Creek near Cleveland, Idaho
20. Little Bear River near Paradise, Utah
21. Little Bear River near Hyrum, Utah
22. Blacksmith Fork above U.P. & L. Co. Dam near Hyrum, Utah

Canals

23. Chapman Canal at State Line near Evanston, Wyoming
24. Logan, Hyde Park and Smithfield Canal near Logan, Utah

Reservoirs

25. West Side Canal near Collinston, Utah
26. Hammond (East Side) Canal near Collinston, Utah
27. Hyrum Reservoir near Hyrum, Utah

Total: 27 State-Survey stations at \$500 each per year \$13,500

Division of cost: 1/6 Idaho, 1/6 Wyoming, 1/6 Utah, 1/2 U.S.G.S.

B. Continuation of 13 State-Bureau of Reclamation-Geological Survey gaging stations

1. Mink Creek below Dry Fork near Mink Creek, Idaho
2. Mink Creek near Mink Creek, Idaho
3. Twin Lakes Canal near Mink Creek, Idaho

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4. Preston-Riverdale & Mink Creek Canal near Mink Creek, Idaho
5. Cub River near Preston, Idaho
6. Cub River above Maple Creek near Franklin, Idaho
7. Cub River-Worm Creek Canal near Preston, Idaho
8. Preston-Whitney Canal near Preston, Idaho
9. Cub River Canal near Preston, Idaho
10. Maple Creek near Franklin, Idaho
11. High Creek near Richmond, Utah
12. East Fork Little Bear River near Avon, Utah
13. Blacksmith Fork at Hardware Ranch near Hyrum, Utah

Total: 13 development stations at \$500 each per year \$ 6,500

Division of Cost: 1/9 Idaho, 1/9 Wyoming, 1/9 Utah, 1/3 Bureau of Reclamation, 1/3 U.S.G.S.

C. Recommended new State-Geological Survey stations

1. Hilliard East Fork Canal near Evanston, Wyoming. Installation of a continuous recording gaging station on this canal, the records of which are needed in conjunction with the gaging station Bear River near Utah-Wyoming State line to show total supply available above diversions. ✓
2. Mill Creek near Wyoming-Idaho State line. Installation of continuous recording gaging station to record flow at State line crossing. ✓
3. South Fork Woodruff Creek near Woodruff, Utah. Installation of a continuous recording gaging station above diversions in vicinity of proposed reservoir site. ✓
4. Thomas Fork near Wyoming-Idaho State line. Installation of a continuous recording gaging station. The two upstream gaging stations on Thomas Fork and Salt Creek should be operated for a sufficient period to correlate the records and then these two upper stations should be abandoned. ✓
5. Montpelier Creek at Montpelier, Idaho. Installation of a continuous recorder station below diversions on Montpelier Creek. ✓
6. Cutler Reservoir near Cache Junction, Utah. Installation of a continuous recorder station above drawdown in outlet channel. ✓
7. Bear River in vicinity of Corinne, Utah. Installation of cableway on main river or on main river and Readers Slough and temporary recorder station. The extreme fluctuations in the river, due to power plant regulation upstream, in this reach of flat slope make it impossible to obtain a stage-discharge relation. Also it is not felt that a slope station would give the necessary accuracy. However, at times during the year, the power plant is

shut down or operates with a steady flow. If during these times measurements can be obtained with the river in a settled condition the gain between Cutler Dam and the Bird Refuge can be determined. The determination of this gain is the desired objective. The selection of the site will be studied with the Fish and Wildlife Service and it may be possible to work out a better solution.

Total: 7 stations at \$1,000 each, installation and operation for first year \$7,000

Division of Cost: 1/6 Idaho, 1/6 Utah, 1/6 Wyoming, 1/2 U.S.G.S.

Total: 7 stations at \$500 each for operation in second year 3,500

Division of cost: 1/6 Idaho, 1/6 Utah, 1/6 Wyoming, 1/2 U.S.G.S.

Stations operated by Utah Power & Light Co., under F.P.C. License. Records of which will be available.

Main Stem Stations

1. Bear River at Harer, Idaho
2. Bear River below Stewart Dam near Montpelier, Idaho
3. Bear River at Pescadero, Idaho
4. Bear River at Alexander, Idaho
5. Bear River below Grace Dam near Grace, Idaho
6. Bear River at Oneida, Idaho

Tributaries

7. Logan River above State Dam near Logan, Utah
8. Utah Power & Light Co. tailrace near Logan, Utah

Reservoirs

9. Bear Lake at Lifton near St. Charles, Idaho
10. Soda Reservoir at Alexander, Idaho
11. Oneida Reservoir at Oneida, Idaho
12. Cutler Reservoir near Collinston, Utah (This station affected by drawdown in outlet)
13. Rainbow Inlet Canal near Dingle, Idaho
14. Dingle Inlet Canal near Dingle, Idaho
15. Outlet Canal at Dike near Paris, Idaho

Total: 15 F.P.C. stations financed by U. P. & L. Co.

No charge

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SUMMARY OF RECOMMENDED COOPERATIVE PROGRAM

<u>1950 Fiscal Year</u>	<u>Idaho</u>	<u>Utah</u>	<u>Wyoming</u>	<u>Geol. Survey</u>	<u>Bureau of Reclamation</u>	<u>Total</u>
Continued operation of 27 State-G.S. Stations	\$2,250	\$2,250	\$2,250	6,750	0	\$13,500
Installation and operation of 7 State-G.S. Stations	1,166.67	1,166.67	1,166.67	3,500	0	7,000
Continued operation of 13 State-Bureau of Rec.- G. S. Stations	722.22	722.22	722.22	2,166.67	2,166.67	6,500
Stream flow and Compact Analysis	1,666.67	1,666.67	1,666.67	5,000	0	10,000
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Totals - 1950 fiscal year.	5,805.56	5,805.56	5,805.56	17,416.67	2,166.67	37,000

<u>1951 Fiscal Year</u>	<u>Idaho</u>	<u>Utah</u>	<u>Wyoming</u>	<u>Geol. Survey</u>	<u>Bureau of Reclamation</u>	<u>Total</u>
Continued operation of 34 State-G.S. Stations	\$2,833.34	2,833.34	2,833.34	8,500	0	17,000
Continued operation of 13 State-Bureau of Rec.- G.S. Stations	722.22	722.22	722.22	2,166.67	2,166.67	6,500
Stream flow & Compact Analysis	1,666.67	1,666.67	1,666.67	5,000	0	10,000
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Totals - 1951 fiscal year	5,222.23	5,222.23	5,222.23	15,666.67	2,166.67	33,500
Totals for biennium (July 1, 1949 to June 30, 1951)	11,027.79	11,027.79	11,027.79	33,083.34	4,333.34	70,500

Since the Idaho representative was not present at the meeting, it is requested that he inform the chairman of the Engineering Committee of any changes which he may desire in the cooperative program as stated herein.

Sincerely yours,

W. V. Iorns

cc: E. O. Larsen
T. R. Newell
F. M. Bell
Chief Hydraulic Engineer

W. V. Iorns
Project Engineer
Chairman, Bear River Compact
Engineering Committee

Memorandum of Conference with E. O. Larson, July 22, 1947
at Salt Lake City Relative to Stream Gaging for Bureau
of Reclamation during 1948 Fiscal Year

Present: E. O. Larson
Reed Jerman
M. T. Wilson
W. V. Iorns

Copy of memorandum of meeting held yesterday in Logan was given Mr. Jerman. Material in this memorandum was read and discussed and following conclusions made. The eight stations shown to be noted in previous memorandum to be discontinued will be operated until September 30, 1947, and abandoned on that date except for Chapman Canal at State line near Evanston, Wyoming, which would be continued as a compact station. Cost for operating these stations through the balance of the 1947 water year and computation of records would be furnished from the State and Geological two-third annual cost charge as set forth in letter to State Engineers dated October 17, 1946.

The thirteen stations noted in the previous memorandum to be continued would be maintained throughout 1948 fiscal year for which the Bureau of Reclamation would request an assignment of \$1,767 from the Geological Survey-Bureau appropriated funds.

Mr. Larson was agreeable to entering a request for analysis work in connection with compact studies of \$3,000 from the Survey-Bureau appropriation.

Establishment of gaging stations on Bear River near Corinne was discussed at length. It was concluded that the record at this site would be required for a considerable number of years and that the station would be of major importance. Any installation should be of a rather permanent character. It was also felt necessary to establish stations on Sulphur Creek and Mill Creek as they would be a part of the return flow supply to fill the Bird Refuge right. Location of these stations should be as near the Bird Refuge diversions and system as possible. Possibly on a line with the highway and railroad west of Corinne. As the stations would also be of major importance to the Bird Refuge, it was felt that the organization should be contacted regarding location of the stations and participation on costs. W. V. Iorns would contact Mr. Van Wilson at the Bird Refuge during the reconnaissance of the sites in regard to the participation. As a study was being made on the same date of Bureau of Reclamation requirements in all of Region 4, which should be charged against the moneys appropriated to the Geological Survey for work to be performed for the Bureau, Mr. Jerman was to include the Bear River program with the rest of Region 4 listing of requirements to be requested. In the order of priority on the listing, Bear River stream gaging was listed first, compact analysis about fourth, and Bear River Corinne stations about fifth. This places the Logan office request high on the list of priority.

The following amounts were noted to be requested:

Bear River Stream Gaging program	\$ 1,767
Analysis for Compact studies	3,000
Bear River near Corinne	3,500
Mill Creek near Corinne	1,000
Sulphur Creek near Corinne	1,000

W. V. IORNS