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EIGHTH BIENNIAL REPORT

OF THE

STATE ENGINEER

TO THE

GOVERNOR OF COLORADO

FOR THE

Years 1895 and 1896

DENVER, COLORADO
THE SMITH-BROOKS PRINTING CO., STATE PRINTERS
1897

LETTER OF TRANSMITTAL.

Denver, Colo., December 1, 1896.

Sir—I have the honor to transmit herewith the report of the transactions of the department of the state engineer for the two fiscal years ending November 30, 1896, with such recommendations as experience has led me to believe will increase the efficiency of, and simplify the carrying into effect, the provisions of our irrigation laws.

Yours very respectfully,

H. A. SUMNER,
State Engineer.

TO HIS EXCELLENCY,
ALBERT W. McINTIRE,
GOVERNOR OF COLORADO.

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IN CHARGE OF

IRRIGATION IN COLORADO.

H. A. SUMNER, State Engineer.
Appointed March 31, 1895.
Qualified April 5, 1895.....Denver, Colo.

FILLMORE COGSWELL, Deputy State Engineer.
Appointed April 10, 1895.....Denver, Colo.

PORTER J. PRESTON, Deputy Gauger.
Appointed May 4, 1895.....Longmont, Colo.

WATER DIVISION NO. 1.

SOUTH PLATTE DIVISION.

Consisting of water districts Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 23, 46, 47, 48, 64 and 65.

A. L. EMIGH, Superintendent.
Appointed January 23, 1895.
Qualified March 6, 1895.....Denver, Colo.

WATER DIVISION NO. 2.

ARKANSAS DIVISION.

Consisting of water districts Nos. 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 49, 66 and 67.

GEO. J. RANKIN, Superintendent.
Appointed June 6, 1895.....Pueblo, Colo.

WATER DIVISION NO. 3.

RIO GRANDE DIVISION.

Consisting of water districts Nos. 20, 21, 22, 24, 25, 26, 27 and 35.

FRANCIS T. ANDERSON, Superintendent.
Appointed May 23, 1895.
Qualified June 12, 1895.....Del Norte, Colo.

WATER DIVISION NO. 4.

SAN JUAN DIVISION.

Consisting of water districts Nos. 29, 30, 31, 32, 33 and 34.

No superintendent appointed.

WATER DIVISION NO. 5.

GRAND RIVER DIVISION.

Consisting of water districts Nos. 28, 36, 37, 38, 39, 40, 41, 42, 45, 50, 51, 52, 53, 59, 60, 61, 62, 63 and 68.

DAVID R. CROSBY, Superintendent.
Appointed June 7, 1895.
Qualified June 17, 1895.....Grand Junction, Colo.

WATER DIVISION NO. 6.

GREEN RIVER DIVISION.

Consisting of water districts Nos. 43, 44, 54, 55, 56, 57 and 58.

H. E. TURNER, Superintendent.
Appointed May 28, 1895.....Steamboat Springs, Colo.

WATER COMMISSIONERS.

Div. No.	Dist. No.	Name	Appointed	Residence
1	1	James Hurley	Apr. 30, 1895	Orchard, Colo.
1	2	Joseph H. Hodgson	Mar. 13, 1895	Denver, Colo.
1	3	John L. Armstrong	Jan. 23, 1895	La Porte, Colo.
1	4	H. C. Havener	Apr. 16, 1895	Loveland, Colo.
1	5	Lewis H. Dickson	Feb. 11, 1895	Longmont, Colo.
1	6	A. C. Stilwell	Feb. 12, 1895	Boulder, Colo.
1	7	W. N. Palmer	Feb. 26, 1895	Golden, Colo.
1	8	Samuel F. Couch	Mar. 15, 1895	Littleton, Colo.
1	9	Frank Ewers	Apr. 15, 1895	Morrison, Colo.
2	10	Joseph W. Patton	Mar. 15, 1893	Colorado Springs, Colo.
2	11	Richard Devereux	June 18, 1894	Salida, Colo.
2	12	Edson S. Armstrong	July 18, 1895	Cripple Creek, Colo.
2	13	L. A. Heineman	May 10, 1893	Silver Cliff, Colo.
2	14	C. W. Reece	Mar. 21, 1895	Pueblo, Colo.
2	15	S. M. Davis	Mar. 21, 1895	Greenhorn, Colo.
2	16	Louis C. DeCamp	May 23, 1895	Gardner, Colo.
2	17	S. W. Cressy	Feb. 19, 1895	Rocky Ford, Colo.
2	18	No commissioner	----------	----------
2	19	John N. Turner	July 14, 1893	Trinidad, Colo.
2	19	C. C. Spragg	July 21, 1896	Trinidad, Colo.
3	20	Richard Blakey	May 23, 1895	Alamosa, Colo.
3	21	Hipolito Romero	April 3, 1895	Capulin, Colo.
3	22	John C. Dalton	May 11, 1893	Manassa, Colo.
1	23	Walter Singleton	June 26, 1895	Alma, Colo.
3	24	Jose Pablo Sanchez	May 3, 1893	San Pablo, Colo.
3	25	George Neidhardt	Apr. 25, 1895	Mirage, Colo.
3	26	C. A. Potts	July 11, 1894	Saguache, Colo.
3	27	Mark Biedell	Mar. 30, 1887	Del Norte, Colo.
5	28	Chas. E. McAllister	May 6, 1895	Doyleville, Colo.
4	29	No commissioner	----------	----------

WATER COMMISSIONERS—Continued.

Div. No.	Dist. No.	Name	Appointed	Residence
4	30	T. P. Sheretz	July 7, 1894	Durango, Colo.
4	31	No commissioner		
4	32	No commissioner		
4	33	No commissioner		
4	34	H. M. Barber	May 10, 1894	Mancos, Colo.
4	34	E. W. Broadhead	May 16, 1896	Mancos, Colo.
3	35	No commissioner		
5	36	No commissioner		
5	37	Andrew Kallquist	July 22, 1895	Gypsum, Colo.
5	38	Chas. S. Shadle	May 22, 1895 Resigned July 6, 1896	Catherine, Colo.
5	39	Daniel F. Webster	July 13, 1892	Rifle, Colo.
5	40	Jesse C. Hart	May 24, 1895	Eckert, Colo.
5	41	A. W. Hovey	July 25, 1894	Montrose, Colo.
5	41	E. B. Langston	Apr. 2, 1896	Delta, Colo.
5	42	Fred W. Cobb	May 6, 1895	Grand Junction, Colo.
6	43	J. D. Moog	Apr. 25, 1895	Meeker, Colo.
6	44	Wm. S. Taylor	May 28, 1895	Axial, Colo.
5	45	William Chadwick	Apr. 26, 1895	Rifle, Colo.
1	46	Frank Staples	May 11, 1889	Hebron, Colo.
1	47	W. D. Beckwith	July 19, 1895	Walden, Colo.
1	48	A. J. Hance	July 19, 1895	Woods, Wyo.
2	49	No commissioner		
5	50	No commissioner		
5	51	No commissioner		
5	52	No commissioner		
5	53	No commissioner		
6	54	No commissioner		
6	55	No commissioner		
6	56	No commissioner		
6	57	No commissioner		
6	58	No commissioner		
5	59	No commissioner		
5	60	No commissioner		
5	61	Geo. E. Blake	Mar. 15, 1893	Bedrock, Colo.
5	62	No commissioner		
5	63	No commissioner		

WATER COMMISSIONERS—Concluded.

Div. No.	Dist. No.	Name	Appointed	Residence
1	64	R. J. Patterson	Dec. 10, 1890	Sterling, Colo.
1	65	Peter Campbell	Sept. 10, 1895	Yuma, Colo.
2	66	No commissioner		
2	67	J. B. Traxler	June 22, 1895	Lamar, Colo.
5	63	P. H. Shue	Apr. 22, 1896	Ouray, Colo.

EXPENDITURES FROM THE STATE ENGINEER'S ASSISTANTS' FUND, FROM DECEMER 1, 1894, TO DECEMBER 1, 1896.

Appropriation for salaries for assistants for the fiscal years 1895-1896	.....	$ 5,400 00
PAID.		
C. B. Cramer's administration	$ 930 00	
R. A. Southworth, assistant in office	24 00	
F. Cogswell, deputy state engineer, salary and expenses gauging streams	3,260 45	
Porter J. Preston, assistant engineer, salary and expenses gauging streams	626 10	
R. S. Sumner, assistant in office	130 00	
H. J. L. Warren, assistant in office	74 00	
Edw. L. Jones, assistant in office	60 00	
Aulls, Hand and Patterson, office work	16 90	
Observers at gauging stations	224 51	
Claire Pogue, typewriting	36 50	
Lou Bergh, typewriting	16 45	5,398 91
Unexpended balance	.....	$ 1 09

INTRODUCTION.

This report will mainly be confined to a history of the operations of this department during the past two years, and to the presentation of the reports from officials directly connected with this office, and the submission of such information as has been obtained, which is of interest to the state at large.

At the beginning of my term of office, it was decided to gather all the information possible regarding the flow of our principal streams, and the tables here presented will show much new data in this particular.

The deputy state engineer has had immediate charge of this work in the field, and the compilation of the results in the office; a complete report of the investigations having been sent to Mr. F. H. Newell, hydrographer of the United States geological survey, Washington, D. C.

The office is under many obligations to Prof. L. G. Carpenter, of the state agricultural college, at Fort Collins, for data regarding the seepage measurements of the Cache la Poudre river.

Mr. P. J. Preston, deputy gauger, has had charge of the seepage measurements on the South Platte river each season, and has, under the direction of the deputy state engineer, made many of the measurements of the flow of the natural streams at the gauging stations. He has also had charge of all ratings of private ditches, which have been requested by the owners or managers, the expense of this work having been paid by the ditch owners, owing to a lack of money in the assistants' fund.

The filing and recording of all ditch and reservoir statements in this office have demanded a large part of the time of the deputy state engineer.

During the two years there have been filed in this office statements for 880 private ditches, of an aggregate length of 1,699 miles (length in many instances not reported), and with a total capacity claimed of 41,817 cubic feet per second of time.

Reservoir statements filed, 291 in number, with a total capacity of 45,156,460,830 cubic feet. These filings are divided among the several water divisions, as follows:

	Ditches			Reservoirs	
Division No.	No. of filings	Length, miles	Capacity claimed, second-feet	Filings	Capacity claimed, cubic feet
1	272	653.55	24,389	104	37,857,048,533
2	173	352.14	3,714	63	295,289,896
3	18	22.65	1,070	6	2,375,255,701
4	75	81.29	1,804	5	363,005,000
5	283	347.61	7,611	111	4,265,466,198
6	59	241.78	3,229	2	395,502
Total	880	1,699.02	41,817	291	45,156,460,830

The supervision of the work connected with the internal improvements authorized by the tenth general assembly has demanded much time and attention, and the work completed has been of a very satisfactory character.

There have been many questions submitted to this office by superintendents of irrigation, water commissioners, and others, regarding the proper construction to be placed upon our irrigation laws as applied to different conditions existing, many of which have been referred to the honorable attorney general for his able counsel, and in most instances, matters have been adjusted satisfactorily.

CHAPTER I.

RECOMMENDATIONS.

As the irrigation interests of the state develop in the older sections, and extend into new ones, there is a corresponding demand for enlarged duties of this department, which will serve the wants of the agricultural districts, and I will below touch on some points which in my opinion need attention, and I think will show that a larger fund is required, to accomplish the work necessary to be done.

SEEPAGE MEASUREMENTS.

During the past seven years this office has taken measurements on the South Platte river, from a point where it leaves the cañon to near the Nebraska state line, generally in the fall season, to ascertain to what extent the seepage, or return waters from the irrigated areas, flow back into the stream.

The records in the office, covering the time such measurements have been taken, show a gradual yearly increase in such back-flow, as the increase in irrigation more completely uses the supply of water.

The tables of seepage measurements on the Cache la Poudre river, one of the tributaries of the South Platte, were prepared under the direction of Prof. L. G. Carpenter, of the state agricultural college.

Measurements, to show the fluctuation of this back-flow, and to approximately establish the length of time required for the underflow to reach the river, should be taken oftener than once a year, or about three times a year, when the data obtained would be more reliable, and of greater assistance to the irrigation interests.

GAUGING OF STREAMS.

Under the above heading in this report, data is given regarding the flow of many of our principal streams. This work should be extended to other important streams, that reliable information may be at hand relative to the available water supply of the state.

DITCH MEASUREMENTS AND RATINGS.

This work, owing to a lack of funds, has during the past two years been discontinued, except where the owners of ditches have borne the expenses.

It is not advisable to leave this work, until the ditch owners demand it, and much injustice is done by so doing.

Water commissioners, in the absence of correct data to govern their actions, have often to resort to "rule of thumb" formulæ, supposed to be approximately correct, but often wide of the mark and hurtful to many water rights, which are deprived of the water justly due them.

All ditches should have properly constructed head-gates and rating flumes, or other approved devices, where correct measurements can be taken, and should be rated once a year, or oftener, if necessary, and permanent marks established, by which the water commissioner can properly divide the water.

RECORDS OF DITCH DECREES.

The law provides that after decrees are established, the clerk of the district court where such decrees are rendered, shall send to the superintendent of irrigation a copy of such decree, which shall be entered in a register and such register deposited in the office of the state engineer.

In fact, these registers are with the several superintendents of irrigation, and with the exception of the first division, are never in the office of the state engineer.

There should be a record of all these decrees copied into a register, properly indexed, and kept at all times in the state engineer's office for reference, which expense should be provided for.

MAP OF THE STATE.

This office receives many inquiries for information of one kind and another, which it is unable to give, and which could be properly shown on a reliable state map, prepared in sheets of about one county each, at a scale of about one mile to the inch. This could be made up largely from data already obtained by the local engineers in the several counties, and by the United States geological survey and from other sources, and if made under the direction of this office would be official and of incalculable value to the state. Among the matters to be shown on this map would be the principal streams, towns, railroads, and the general topography of the country; all irrigation ditches and reservoirs, and the lands irrigated therefrom; all state lands,

with the proper memoranda on such as have been sold or leased, and on such as have been laid out into town lots or mineral lots; all water districts and divisions; forest, Indian and private reservations; mining districts, coal, stone and other mineral deposits; and other information of general interest to the citizens of the state.

WATER DISTRICT BOUNDARIES.

In delineating the boundaries of the districts on the map of Colorado, according to the several acts defining them, I find that there are three considerable areas, which are not by law embraced within any water district.

The first is the drainage of the Chama river, and of the Los Pinos creek, joining it on the east, an area of about 150 square miles.

The second is the drainage of the north fork of the Gunnison river, above the east line of Delta county, an area of about 520 square miles.

The third is the drainage of the Roubideaux, Potter, Monitor and Cottonwood creeks, Dry Fork and Rio Escalante, lying south of the south line of Delta county and east of the east line of Mesa county, an area of about 230 square miles.

The proper legislation should be enacted to include these areas within the boundary of some existing district.

BIENNIAL REPORTS.

Frequent requests are received for back copies of the state engineers' reports from citizens of this state, and librarians and others in other states, which cannot be complied with, as the entire supply is exhausted, with the exception of the report for the years 1889-1890. Provision should be made for the publication hereafter of at least 1,000 copies for general distribution.

MODIFICATION OF OUR IRRIGATION LAWS.

To a person familiar with the irrigation system of Colorado, and the manner in which the public waters of the state are distributed, the fact is apparent that the department entrusted with such distribution is not organized according to business principles, nor has it the authority to enforce equitable and lawful regulations, which are so necessary to a perfect system.

The present system was originated years ago, when the demand upon the supply of water was much less, and when rights were less valuable than at present.

Our constitution, laws and the decrees of the courts all make the beneficial use the important consideration in establishing rights to the use of the public waters of the state, and

this being a fact, the inference is that the laws governing the supervision of the distribution should confer sufficient authority upon the officers in charge to enable them to ascertain to what extent under the decreed rights this water is actually required for the necessities of the land, and in times of scarcity be empowered to control and regulate the supply so that none is wasted or wrongfully used.

Our laws now in force are vague and indefinite, and often subject to erroneous construction, and should be revised and made specific, clearly and concisely setting forth the duties of the superintendents of irrigation and water commissioners, so that they may not be prevented, as at present, from acting in an impartial and fearless manner, and obstructed by threats of injunctions and personal suits, all of which tend to lower the efficiency of the service.

During the past season I was forced to the conclusion that a general discussion of our irrigation interests, by the people of the state, was desirable, and would lead to some good results, and accordingly the matter was brought to the attention of those interested, with the following results:

Denver, Colorado, August 29, 1896.

Superintendents of Irrigation and Water Commissioners:

Gentlemen—It has suggested itself to me to get the views of the people interested in irrigation in this state, regarding the advisability of holding a convention in this city during the week of the Mountain and Plain Carnival, at which time subjects connected with the use of water could be discussed, and a general interchange of ideas be had, with the view of formulating a petition to our next legislature for a change in some of our irrigation laws.

Will you please consult with the people in your community, who are interested in irrigation, and advise me at an early date what your views are? Yours truly,

H. A. SUMNER,
State Engineer.

Having received assurances from all parts of the state that a convention, to discuss irrigation matters, was desirable, I sent out notices calling a meeting to be held in Denver on October 6, 1896, at which meeting there was a very satisfactory attendance.

Mr. A. L. Emigh, superintendent of irrigation of division No. 1, was appointed chairman.

Mr. H. A. Sumner read a paper recommending several changes in the laws, which recommendations were freely discussed, and a committee of five was appointed by the chairman to formulate such recommendations for the modification of the irrigation laws, as it should think proper.

This committee consisted of:

H. A. Sumner, state engineer, chairman.

George J. Rankin, superintendent of irrigation division No. 2, Pueblo.

David R. Crosby, superintendent of irrigation division No. 5, Grand Junction.

John L. Armstrong, water commissioner, district No. 3, La Porte.

L. A. Heineman, water commissioner, district No. 13, Silver Cliff.

A meeting of this committee was held in Denver, on November 17, 1896, at which time the following was adopted.

Denver, Colorado, November 17, 1896.

The committee appointed by the irrigation convention which met at Denver on October 6, 1896, was delegated with the duty of formulating recommendations for a modification of our irrigation laws, and, after carefully considering the matters brought before the convention, make the following suggestions:

This committee realizes that the irrigation interests of the state demand modifications in the present laws, which will confer upon the officers appointed to supervise the distribution of water more power and broader jurisdiction, and compel the enforcement of proper rules and regulations, which are necessary to the service.

Under our present irrigation laws the state is divided into six water divisions, each in charge of a superintendent of irrigation, who is appointed by the governor and paid by the several counties in the division.

The water commissioners, in charge of the districts, are also appointed and paid in the same manner.

The duties required of these superintendents and commissioners, during the irrigation season, especially where there is a scarcity of water, are oftentimes exacting and require men of tact and executive ability in deciding the many questions that arise between the water commissioners and the owners of the various ditches and canals.

At present the state engineer occupies a somewhat anomalous position in the irrigation system. While it is true the laws place him at the head of the affairs, he does not in fact act in that capacity unless some ditch or canal owner, feeling aggrieved at some ruling of a water superintendent, appeals the case to the state engineer for his decision.

The state engineer should be at the head of the irrigation department in fact as well as in name, and be empowered to act through the superintendents of irrigation and water commissioners, as the official head, in regulating the affairs, so that all rights shall be justly protected.

The superintendents of irrigation and water commissioners should act as deputies of the state engineer, and be directly subject to his orders in all matters pertaining to or in connection with their duties, such as the gathering of statistics, the regulation of distribution of water to ditches, the enforcement of orders regarding construction and maintenance of proper head-gates, rating flumes, etc.; and the state engineer should be authorized to issue such orders and instructions as in his judgment are for the good of the service, and should also be empowered to see that the same are properly enforced.

As long as the superintendents of irrigation and water commissioners are recommended for appointment by the counties, and are obliged to collect their salaries from the same sources (oftentimes after a suit at law),

the service, on the whole, can not be satisfactory, because there is a tendency toward conflict of authority where salaries come from one source and instructions from another.

It is perhaps useless at this time to recommend any change in the manner of appointing or paying the water commissioners, but we do recommend that their fitness for such position be first ascertained by the state engineer.

We also recommend that the superintendents of irrigation be appointed by the governor, without the recommendation of the counties, after their qualifications have been examined into and passed upon by the state engineer. Their salaries to be paid by the state, on vouchers approved by the state engineer.

The decreed water rights grant a certain amount of water to each ditch, but do not state the length of time such water may be used during the irrigation season. Unquestionably the decreed amount is the maximum amount that may be used at any time. The length of time it may be legally used depends upon the condition of the soil, kind of crop, and other things which are constantly changing, and which are as much a matter for state regulation as the original decree, and the officers delegated with the distribution of water should have unqualified powers to ascertain what these needs are, and to regulate the supply accordingly, allowing no water turned to a ditch unless it can be beneficially used, as is contemplated in the court decrees. In no other way can all rights be properly protected, and the highest duty of water obtained.

All ditches, through their management, should be directly responsible for any violation of the laws regarding tampering with head-gates or interfering in any way with the orders of the water commissioners, and all suits brought against any parties for violation of the irrigation laws should be in the name of the people of the state of Colorado.

Emergencies arise, when the distribution of water in ditches for domestic use is necessary for the preservation of life, and the state engineer should by law be given discretionary power to furnish enough water for actual necessities, and no more, when in his opinion such emergencies exist.

Plats and statements of ditches and canals appropriating water, before being placed on file in the state engineer's office, should be examined by him, to ascertain if the filing conforms to the requirements of law. Each filing to state the particular lands on which the water is to be applied. All filings to be on blanks furnished by the state, and only one ditch or reservoir to be on each blank. One cubic foot of water per second of time to be considered sufficient for at least seventy acres of land. The decree granted later by the courts to confine the water rights to the same lands described in the first filing. A fee of $2 to be exacted for each filing in the state engineer's office, which fee is to go to the general fund of the state.

The owners of all ditches should be required by law to construct good and sufficient head-gates and rating flumes, in accordance with plans approved by the state engineer, before they are entitled to any water.

The general government should be petitioned to appropriate a fund to be applied for the location and construction of storage reservoirs for the conservation of water for use in times of scarcity on such streams as now lack a sufficient supply. The water to be under the control of the state, and to be distributed as the demands arise.

The streams recommended for immediate consideration are the South Platte, Arkansas, Rio Grande and Uncompahgre rivers.

The construction of storage reservoirs is attended with more responsibility than any other branch of the irrigation problem, and it is absolutely necessary that wise, sufficient and comprehensive laws should govern their construction and maintenance. Laws should be enacted making it the duty of any one contemplating the construction or repair of any reservoir dam exceeding ten feet in vertical height, to first present plans

and specifications to the state engineer for his examination. If such plan is approved, or if alterations are made in the same by the state engineer, the adopted plans must be followed in construction, and the entire work be under the general direction of the state engineer. Any work done which is not in accordance with such orders shall subject the owner to a heavy penalty, and the structure shall be condemned until such time as the faulty construction is remedied to the satisfaction of the state engineer.

SUBTERRANEAN WATERS OF THE PLAINS.

There is in the eastern portion of the state such a vast area of country blessed with every requisite for agricultural development, with the exception of one element alone—water—that I may perhaps be warranted in giving such facts as are at hand with reference to the conditions existing there, and in making some comments as to its future possibilities.

East of a meridian drawn through Pueblo, the state of Colorado has about 38,000 square miles, or, in excess of 24,000,000 acres of land. Of this the valleys and adjacent lands already irrigated, or capable of being cultivated from the flow of the natural streams, we may say 1,000,000 acres may be deducted, leaving 23,000,000 acres, or about one-third of the entire area of the state without any apparent prospect of ever becoming productive.

This subject is entitled to and should receive very careful consideration. Judicious experiments, to ascertain the localities where a sufficient supply of water at reasonable depths can be obtained, should be made.

The tenth general assembly very wisely contributed, in a small way, towards such experiments, to test the character and extent of the underflow in the northeastern portion of the state, and while these experiments have so far failed to accomplish the results anticipated, still sufficient information has been gained to more than justify the expenditures made.

The most important information of an official nature regarding this arid region is contained in the reports to the secretary of agriculture, entitled, "Artesian and Underflow Investigation," made in 1891, by E. S. Nettleton, chief engineer, and Prof. Robert Hay, chief geologist, extracts from the same appearing below.

In Chief Engineer Nettleton's report are plats and profiles, the result of surveys made in Eastern Colorado and Western Nebraska and Kansas, by W. W. Follet, assistant engineer, which show actual elevations above sea level on the lines extended across the country, as well as the depth of the wells and the distance to water in the same. On sheets accompanying the report are memoranda of the strata passed through in sinking the wells,

which were, with few exceptions, sunk by ranchmen for their private use, and in most cases only so far as was necessary to strike the first flow of water. Still, there is much information gained in regard to the geological structure of the upper strata and the relative elevations along the lines surveyed. It is interesting to note the configuration of the ground and the relative location of the water-bearing strata on the line surveyed from Sterling, east, over the divide, and down the Frenchman Creek valley, through Holyoke, to a point three miles east of the Colorado-Nebraska state line.

The South Platte river at Sterling has an elevation of about 3,900 feet above sea level; thence easterly to the divide between the South Platte and the Frenchman creek (a tributary of the Republican river), a distance of about eight miles, the country rises to an elevation of 4,475 feet. From here to a point three miles east of the state line, in the Frenchman valley, the surface falls quite regularly from sixteen to eighteen feet to the mile, being at the latter place at an elevation of about 3,450 feet above sea level. Measurements to the so-called "sheet water" were first made in a well about twenty-four miles west of Holyoke, where it is 151 feet to surface of water; from this point east to within three miles of Holyoke, or a distance of twenty-one miles, the top of the "sheet water" falls about nineteen feet to the mile, the water in a well at the latter place being 169 feet from the surface. From here to the point where this "sheet water" comes to the surface, in the bed of Frenchman creek, about three miles east of the state line, the fall of the water strata is about eight feet to the mile.

As to the quantity and permanency of this water when drawn upon, the report states that the Burlington & Missouri River Railroad Company, in 1887, drilled a well at the round house in Holyoke. The surface of the "sheet water" was encountered at 157 feet, but not getting a sufficient supply, the well was continued down through twenty-five feet of hard material to gravel and five feet into the gravel, making a total depth of 187 feet. The water rises in the bore fifty-seven feet, or to within 130 feet of the surface, proving that it is slightly under pressure and of an artesian nature. This well is cased with eight-inch gas pipe, and since it was constructed, up to the present time, has been continually drawn upon to supply the locomotives, hotel and other buildings of the railroad company, and the entire town of Holyoke, with water. I am informed that there has never been any appreciable diminution in the flow or loss of head in the pipe since the well was constructed.

According to the report of the master mechanic of the Burlington & Missouri River railroad, at Holyoke, this pump has raised from 100,000 to 110,000 gallons in twenty-four hours, or about 0.3 of an acre foot.

The experiments conducted by the state at Holyoke during the present season, reached a depth of 310 feet, and while not demonstrating the quantity of water which could be drawn from the well in a given time, were successful in penetrating the tertiary gravels and clays to a depth greater than ever before reached in the Frenchman valley, and have shown that there is below the top of the first "sheet water," alternating layers of gravel and clay, extending downward for at least 200 feet, and that the gravel is filled with water which rises to the top of the upper stratum of gravel.

For an estimate of the extent of this tertiary gravel, reference is made to page 20, of Prof. Hay's report. In speaking of the Frenchman creek, he says: "The bed of the Frenchman, or rather its valley altogether, from where it has its first water, a few miles above Champion (three miles east of state line), to near Palisade, Neb., is cut into, bounded by, and based on the tertiary grit, which in this region attains great thickness, probably reaching in places 200 feet. * * * The last fifteen or twenty miles of the river's course (Frenchman creek, below Palisade) is at or below the bottom of the grit. * * * Cutting down through the water-bearing grit, rivers of the plains reach in their easterly course what may be called bed-rock. Usually this bed-rock is of much softer material than most of the water-bearing grit. It is the shale, the chalk, or the limestone of the Cretaceous formations."

From a profile of a survey of the Burlington & Missouri River railroad, from Culbertson to Holyoke, kindly loaned me by Mr. McFarlane, division superintendent at Holyoke, I find that the distance between Palisade, Neb., and the point where the water first shows in the Frenchman creek, is fifty-seven miles, and the difference in elevation between the two places is 690 feet. Assuming that these two points represent the bottom and top, respectively, of this gravel formation, and that the slope of the strata is about eight feet per mile, as was found to be the case west of the latter point, the thickness of the gravel deposit will be, by calculation, 233 feet.

An examination of the profile and notes of Follet's line, running north from Frenchman creek, near the state line, and towards the South Platte river, discloses the fact that most of the wells on that survey, in the vicinity of the Frenchman valley,

have found this gravel formation, and that it is of an artesian nature, in that it rises in the well after being struck. This would indicate that anywhere in the vicinity of the Frenchman creek there are underneath the surface deep deposits of the Tertiary gravel or grit, which is filled with water, and which is of an artesian nature, because a heavy clay or marl deposit lies above it, but which has an outlet in the creek to the east that to a certain extent destroys its artesian force.

Many have supposed that this underflow, coming to the surface in the Frenchman, Republican and other plains streams heading in Colorado, originates in the mountains or comes from the South Platte river though the gravel strata, and Mr. Follet, assistant engineer, in the report of his survey, on page 23 of Nettleton's report, says: "Well 247 (twenty-four miles west of Holyoke) was the first one that the line struck which went to the "sheet water," as it is locally called. The bottom of this well is 100 feet above the Platte river at Sterling. The wells to the eastward show that the fall of this strata is about eighteen feet to the mile. This same gradient carried westward would throw the vein about 500 feet above the Platte at Sterling. As the fall of the Platte is but eight feet per mile, it is easily seen there is not much chance of this water coming from it. It is not an admissible assumption that this vein becomes nearly level west of where it has been topped, in which case the Platte might possibly catch up with it somewhere about Fort Morgan. As shown by the profile, its tendency is to increase its gradient toward the west, rather than decrease. * * * Careful study of this line gives almost absolute conviction that the source of this water is not the Platte, and as the river cuts down far below the westward projection of the water-bearing strata, it can not be from the mountains. The only inference is that the source is local and is the rainfall along near the crest of the divide."

Considering this supposition to be correct, we have approximately 960,000 acres in the Frenchman creek drainage in Colorado. Assuming a rainfall of thirteen inches annually, of which four inches enters the soil and sinks to the gravel beds, the run-off from the same through the Frenchman creek would discharge 440 cubic feet per second continuously.

The United States geological survey report for six months in 1895, from April to September, inclusive, records a discharge at the gauging station at Palisade, Neb., of 106 second-feet.

Another theory, perhaps more tenable than the other, is that this water does originate at the foothills and is taken up

by the Dakota sandstones and carried underneath the plains, until by reason of faults or breaks in the impervious formation above the Dakota formation, or on account of the absence of anything like an impervious strata over it, the water under pressure rises to the upper Tertiary gravels, where it escapes through the gravels where they are cut by the streams originating on the plains and flowing east.

Whether one of these theories, or a combination of the two, is correct, the fact still remains that in the valley of the Frenchman creek, and presumably in many other localities south of it, because apparently the same conditions exist, there are great subterranean bodies of water-filled gravel, the surface of which is inclined toward the east, and which possess artesian properties to a certain degree.

The principal streams between the Frenchman creek and the Arkansas river, which head in Colorado, are Red Willow creek, North Fork Republican river, Arickaree creek, South Fork Republican river, North Fork Smoky Hill river, Smoky Hill river and White Woman creek. Big Sandy creek also heads in Colorado, but enters the Arkansas river in Colorado.

Regarding the extent of the flow in these streams, we have very little data, but below is given such information as has been officially obtained:

From bulletin No. 140, of the United States geological survey, we have the following record of flow, taken from official gauging stations:

Frenchman creek, at Palisade, Neb., for a part of 1895:

April, mean for month, 137 second-feet.
May, mean for month, 129 second-feet.
June, mean for month, 117 second-feet.
July, mean for month, 99 second-feet.
August, mean for month, 78 second-feet.
September, mean for month, 74 second-feet.

North Fork of the Republican river, at Benkelman, Neb., about twenty-six miles east of Colorado-Nebraska state line, for 1895:

March, mean for month, 78 second-feet.
April, mean for month, 59 second-feet.
May, mean for month, 25 second-feet.
June, mean for month, 155 second-feet.
July, mean for month, 120 second-feet.
August, mean for month, 34 second-feet.
September, mean for month, dry.

South Fork Republican river, at Benkelman, 1895. Flow at time of gauging stream only:

March 23, 41 second-feet.
June 4, 348 second-feet.
June 24, 75 second-feet.
July 3, 278 second-feet.
August 7, 22 second-feet.

From records in the state engineer's office, of gaugings taken by L. R. Hope, we have:

Chief creek, five miles below Robb, Colo., March 23, 1891—19.65 second-feet.

North Fork Republican river, six miles below Robb, Colo., March 23, 1891—21.12 second-feet.

North Fork Republican river, head Laird ditch, three miles below Wray, Colo., April 24, 1891—50.86 second-feet.

North Fork Republican river, at state line—70.28 second-feet.

South Fork Republican river, two and one-half miles west of state line, April 26, 1891—48 second-feet.

Arickaree creek, thre miles west of state line, April 27, 1891—13.77 second-feet.

The underflow, where it comes to the surface, is now, to a certain extent, being used in favored localities by residents of Eastern Colorado, to irrigate small tracts of land, but pioneers are generally not blessed with abundant means, and cannot overcome the difficulties of testing the underflow in localities where there is a doubt as to the depth of it, and oftentimes as to its actual existence.

The state or general government should give this portion of the state aid, in the way of judicious and economically conducted experiments, which shall definitely determine where there are water-carrying gravels which could be utilized by the farmer at a cost sufficiently low to warrant the expense necessarily incurred.

One test should be made of the depth to the Dakota sandstone, so that it will be known whether we can expect to find an artesian flow from this source.

Mr. Peter Campbell, water commissioner of district No. 65, Wray, Colo., in his annual report to the superintendent of irrigation, speaks of the satisfactory development in his district with a small amount of water and crude and insufficient ditches. The duty of water, in his opinion, is much higher than formerly; where one cubic foot per second was only sufficient for thirty-five acres, the same amount is now sufficient for 150 acres. This

is probably due, in a great measure, to the knowledge gained regarding the manner of applying it and to the practice of economy in distribution.

The same "sheet water," according to Mr. Campbell, exists on the Republican, and streams in that vicinity, that is found near Holyoke, which would indicate that it might be continuous along the entire eastern border of the state, which is possible. It is found in wells on the high mesas south of Wray, in inexhaustible quantities.

The development of this country, if made possible by future experiments, should, I think, be in the way of a cultivation of comparatively small areas, as an assistance to the main industry, stock raising.

This would require the raising of this underground water from 50 to 150 feet, for the cultivation of crops, orchards and timber tracts.

The power to be used to accomplish the work must be cheaply employed to bring about results which would be adequate for the expense incurred, and which would be within the means of the ordinary farmer.

The almost continual winds blowing across these plains suggest the cheapest form of power which can be employed. The mechanical appliances would necessarily be windmills. At present the windmills employed are mainly used for raising water in small quantities and might be classed as useful mechanical toys, but there is a large field open for improvement in this direction and we may expect to see a much more practical wind-engine in use within a few years than is now in existence, and which will be specially adapted to raising larger amounts of water without a corresponding increase in cost.

Mr. F. H. Newell, hydrographer of the United States geological survey, has had experiments made during the past season to test the efficiency of the mills at present in use in the arid regions, and we may expect some valuable data and suggestions from this source.

From information at hand, I do not find that any twelve-foot windmill is capable of raising more water than is necessary to irrigate from five to ten acres, depending upon the lift.

With the windmill must be a provision for storage in reservoirs, large enough to hold a supply sufficient for one-half of the crop to be irrigated, the purpose being to fill them twice during the year and to apply water during the winter months. This, with the rainfall each year, will accomplish much in the way of developing this region, and an experimental plant should be

placed on the state well at Holyoke, which is cased with a ten-inch pipe for a depth of 224 feet. This, provided with a twenty-five-foot windmill and a storage reservoir, could be made the basis of an experiment which would be of much assistance to the entire eastern portion of the state, and the fund yet unexpended would be sufficient for the purpose.

THE UNDERGROUND WATERS OF THE ARKANSAS VALLEY, IN EASTERN COLORADO.

Under the above heading a bulletin was issued this year by the United States geological survey, which is an extract from the seventeenth annual report of the survey for 1895-1896, and is a description of the Arkansas valley, by Grove Karl Gilbert, geologist.

I will make brief abstracts from this valuable report to show the conclusions reached by Mr. Gilbert regarding the conditions existing in this important part of the state, for the purpose of giving the information to those who may not be in possession of the facts.

Mr. Gilbert was engaged for three summers, 1893, 1894 and 1895, in investigating the geology of parts of the Arkansas valley, with his attention particularly directed to the determination of the composition, texture, thickness, arrangement and distribution of the various formations, the subject of underground water in these formations being constantly in view as the leading economic purpose of the investigation.

From Canon City to the Kansas state line, the Arkansas River valley falls on an average of 9 feet to the mile; but considering the stream in three sections, the fall from Canon City to Pueblo is 15 feet to the mile; from Pueblo to La Junta, 8 feet; and from La Junta to state line, 7.3 feet.

In reference to the problem of water supply it is only necessary to speak of the Juratrias and Cretaceous rocks. The Juratrias is the older and underlies the other, is usually of a red color and of great thickness.

The sandstones of this series are, except in the immediate vicinity of the mountains, of such a fine texture as to prevent the circulation of water, and as there are no rocks below them which have yielded fresh water, any well bored into this formation of red rock will, we may safely conclude, prove unprofitable.

Above the Juratrias beds is a great system of formations called Cretaceous. There is reason to believe that in several portions of the Arkansas valley the deposition of sediment was interrupted after the Juratrias and before the Cretaceous periods. Changes in the bed of the sea raised the first mentioned forma-

tion in places, and made it land, and this land was in many points washed away, to a certain extent, and the shore line was continually shifting.

The deposits of the Cretaceous are classified under five heads, commencing at the top and numbering down.

1. Foxhills group.
2. Pierre group.
3. Niobrara group.
4. Benton group.
5. Dakota group.

The Dakota group contains so much sandstone that it is frequently called "Dakota sandstone." It differs from other members of the system in that it exhibits considerable variability from place to place, while the others are more nearly uniform in all parts of the district. The lower beds of this formation are open in texture, owing to the fact that but little cementing matter has been introduced. This would naturally occur when we consider that in the building up of this formation, when this was a part of the sea, the coarse particles naturally settled to the bottom.

These sandstones are the chief water-bearing rocks of the district, and all artesian flows are obtained from them. The total thickness of these strata vary, being greatest near the mountains, where it averages about 300 feet, and has a maximum near Beulah of over 500 feet. In the eastern part of the state it ranges from 200 to 250 feet thick. Considering the attitude of the strata in the broadest way, they incline toward the east and north. The eastward inclination being about the same as the plains, while the northward slope is a little more rapid, so that the direction of greatest inclination may be said to be somewhat north of northeast. At many places, however, the strata have been uplifted into domes, depressed into basins, or thrown into folds with alternate arches and hollows. To some extent the rocks have been fractured, being divided by vertical fissures along which motion has taken place, so that one part has gone up or down with reference to the opposed part. In some places, these "faults" are very numerous, although small, from twenty-five to fifty feet, but elsewhere they are measured by hundreds of feet.

In a general way, the folding and faulting have been the greatest in the western part of the district, but there were some disturbances of considerable importance near the eastern boundary of the state.

UPLAND SANDS AND GRAVELS.

There is one other formation of importance with reference to the water supply of the region. It overlies the Cretaceous formations, resting in different places upon each of them, and it differs from them conspicuously in that the particles of which it is composed are, as a rule, not cemented together, but lie loose, as sands, gravels and loams or marls.

The cause for these deposits can be more readily determined by considering their history. The bending and faulting of the Cretaceous rocks, and the general up-lift which inclined them towards the east and north, took place long ago. From the moment of the emergence of the rocks above the sea they were attacked by eroding agents, and the coherent particles were loosened near the surface of the water and washed out into the deeper water, the tendency being to level the former undulation, and this caused the formation of these beds of gravel, sand and marl.

The range of the observed thickness of these deposits is from 50 to 200 feet, the chief material being coarse gravel, and this is arranged in irregular beds with much oblique lamination, such as ordinarily results from the work of streams.

On the northern slope of the Arkansas valley the upland sands approach the river within from five to fifteen miles, their limit being marked by bluffs from Pueblo to the Kansas line.

The reports of other geologists indicate that the formation extends northward for many miles.

South of the Arkansas river the gravel formation lies much farther back from the river.

ARTESIAN WATER.

Underground water is of two general classes. It may flow through a porous bed which is parallel with the surface of the ground, in which case the position of the upper surface varies with the supply; or it may flow through a porous stratum, confined between impervious strata, in which case it usually occupies the entire stratum, and presses not only downward but upward against the impervious strata limiting it.

When water of the first class is reached it retains its natural level within the well. While, in the second case, it rises somewhat in the opening, depending on the pressure. If conditions are favorable, it may rise to the surface and become a flowing well.

It is considered in this article that waters which do rise, whether to the surface or partially so, are to be classed as artesian, and are either "flowing" or "pumping" wells, as the case may be.

In the district under consideration (Arkansas valley), the only artesian water of demonstrated value is that contained in the Dakota sandstones, and probably there is no other formation from which water can be profitably obtained.

The water is received by the Dakota sandstone, where it outcrops at the surface, along the "hog-backs" east of the mountains, and also in the region where it is covered only by the upland sands and gravels, in the broad outlying tracts on the plains. The "hog-backs" extend from Colorado Springs southward to Turkey Creek cañon; thence westward past Glendale, to a point just north of Canon City, and southward and southeastward to a point a few miles northeast of Beulah; thence south to the "Three R" ranch. There they are interrupted, but reappear again in a few miles, and continue along the base of the Greenhorn mountains, and beyond.

The beds of the Dakota formation of more open texture are able to absorb about 18 per cent. of their volume of water.

It is estimated that in all portions of the district under consideration, where this sandstone lies, it contains at least twelve cubic feet of artesian water to every square foot of surface.

The amount of water flowing from a well depends in part on the height of the point of discharge as compared to the head of the water, but the amount which may be obtained by pumping depends entirely upon the capacity of the rock as a conduit—that is, on its thickness and the resistance which its texture opposes to the free flow of water.

A well put down by the town of Rocky Ford gave a measured flow of sixty-eight gallons per minute, or 98,000 gallons per day. A second well in the same town is reported to yield 157, and a third sixty gallons per minute.

It is reported that the well of The Lamar Flouring Mill yields 35,000 gallons a day by pumping, the supply being unlimited, although the head has been reduced 150 feet.

The first well put down by The Atchison, Topeka & Santa Fe Railroad Company, at La Junta, gave a small flow at the surface, and yielded sixty gallons per minute by pumping.

These wells, however, like nearly all others in the region, end in the first water-bearing sandstone met by the drill.

There is reason to believe that in most localities deeper boring would discover a second and often a third sandstone, carrying artesian water.

The consideration of limitation of supply is important. The experience of many communities has been that every well from which artesian water is drawn diminishes the head or pressure in

others near it, so that eventually only wells occupying the lowest ground retain a head sufficient to discharge at the surface. Pumping then usually follows, with the result that all natural flow is stopped.

The line along which the depth to the water is about 1,000 feet is approximately as follows:

It passes through the southwestern part of Pueblo and runs a little west of north up Dry Creek, to the vicinity of Blue Hill Spring. In the opposite direction it runs southward, and then more easterly to Undercliff, crosses the Apishapa river not far from the mouth of Mustang creek, passes north of the Arkansas river a few miles above Rocky Ford, and continues north of the Arkansas river to the Kansas line. It is probably as much as fifteen miles north of Lamar, but is near the river at Granada.

The area in which artesian water is available at depths of less than 1,000 feet is nearly 4,000 square miles, and the corresponding area of depths between 1,000 and 2,000 feet is about 1,500 square miles.

The following data regarding artesian wells sunk in the Arkansas River valley by McVay & McVay, contractors, was furnished me by Senator G. W. Swink, of Rocky Ford:

No. of Well	Location	Top of sandstone	Bottom of well
1	Rocky Ford	690 feet	790 feet
2	Rocky Ford	640 feet	767 feet
3	Rocky Ford (Swink well)	680 feet	820 feet

All Rocky Ford wells passed through the first Dakota sandstone.

Lennox well, at Fairmont—Top of first sandstone, 475 feet; bottom of same, 587 feet. Top of second Dakota sandstone, 687 feet; bottom, 712 feet.

Atchison, Topeka & Santa Fe well, at La Junta—Top of sandstone, 340 feet; bottom, 460 feet. Top of second sandstone, 560 feet; bottom, 665 feet. Top of red sandstone, 1,000 feet, bottom of well, 1,153 feet.

Manzanola well—Top of sandstone, 1,033 feet; bottom of well, 1,113 feet.

Ordway well—Top of sandstone, 1,410 feet; bottom of well, 1,508 feet.

Lamar well—Top of sandstone, 198 feet; bottom of sandstone, 318 feet; top of sandstone, 460 feet; bottom of well, 560 feet.

Top of all sandstones are found 400 feet below gray limestone.

The Atchison, Topeka & Santa Fe well, at La Junta, commences below the limestone.

ENACTMENTS OF THE TENTH GENERAL ASSEMBLY REGARDING IRRIGATION.

The only laws enacted by the tenth general assembly with reference to irrigation, with the exception of the law regarding the reclamation of desert lands, were as follows:

AN ACT

TO PROVIDE FOR THE REGULATION OF THE USE OF THE WATERS OF THIS STATE.

Be it Enacted by the General Assembly of the State of Colorado:

Section 1. The water commissioners of the several water districts of this state are hereby empowered, and it is hereby made their duty, upon the application of the owners of one or more ditches in their district, to immediately make, or cause to be made, a thorough examination of all ditches within their district for the purpose of ascertaining what use is being made by the owners of, or consumers of water from said ditches; and if at any time he shall ascertain that the owner or owners of any ditch drawing water from the natural streams furnishing water to his district, shall be permitting any of the waters flowing in such ditch to go to waste, or be wastefully or extravagantly or wrongfully used by its water consumers, or put to any other use, than that to which it is entitled to be used, in the order of priority, at such times as the same is being needed by other appropriators, it shall be the duty of such water commissioner to immediately shut off the supply of water in such ditch, to such an extent as in his judgment was wasted, or extravagantly, wastefully or wrongfully used.

Sec. 2. The water commissioner is hereby authorized to appoint not to exceed two deputies to speedily make the examinations provided for in section 1 of this act, who shall be entitled to the same compensation, and to be paid in the same manner as is by law provided for the payment of other deputy water commissioners.

Sec. 3. Any water commissioner who fails to perform any of the duties imposed upon him by this act shall be deemed guilty of a misdemeanor, and upon conviction thereof by a court of competent jurisdiction, shall be fined in the sum of not less than fifty (50) dollars, nor more than five hundred (500) dollars.

Sec. 4. Whereas, In the opinion of the general assembly an emergency exists; therefore, this act shall take effect and be in force from and after its passage.

Approved April 13, 1895.

AN ACT

TO DEFINE WATER DISTRICTS TWELVE (12) AND THIRTEEN (13) AND TO REPEAL ALL ACTS AND PARTS OF ACTS IN CONFLICT HEREWITH.

Be it Enacted by the General Assembly of the State of Colorado:

Section 1. That district number twelve (12) shall consist of all lands irrigated from ditches or canals taking water from that part of the Arkansas river lying in Fremont county; also, lands irrigated from ditches or canals taking water from the tributaries of said portion of the Arkansas river, except Texas creek and its tributaries, and that part of Grape creek which lies above the south line of said Fremont county.

Sec. 2. That district number thirteen (13) shall consist of all lands irrigated from ditches or canals taking water from Texas creek and its tributaries and that part of Grape creek and its tributaries lying in Custer county.

Sec. 3. In the opinion of the general assembly an emergency exists; therefore, this act shall be in force and take effect from and after its passage.

Approved April 13, 1895.

SELECTION AND RECLAMATION OF DESERT LANDS.
(Carey Act.)

By an act of congress, approved August 18, 1894, the secretary of the interior, with the approval of the president, is empowered to contract and agree to patent to states having desert lands, not to exceed 1,000,000 acres of such lands, under certain conditions.

The tenth general assembly of Colorado, by an act approved March 15, 1895, accepted the conditions, and the grants of land to the state under the provisions of said act of congress, and provided for the manner in which the irrigation, reclamation, occupation and disposal of the same should be carried out.

The enactments of the state legislature, which are in conformity with the provisions of the congressional act, stipulate that the selection, management and disposal of said land shall be vested in the state board of land commissioners, and also provide, in detail, for the manner of procedure in selecting, reclaiming and disposing of this land, and specify the several steps to be taken, from the first request for the selection of the land to the final disposition of it to settlers, and it is therefore unnecessary to present here a repetition of the law.

The state engineer being designated as the official to pass upon the feasibility of all enterprises originated by persons taking advantage of this act, and being directed to grant a permit to appropriate water for the reclamation of lands, the following rules and regulations were adopted by this office to govern cases coming up under the provisions of this act:

Application for a permit to appropriate the unappropriated water of the state of Colorado, for the reclamation of desert lands therein, in conformity with the provisions of a law passed by the tenth general assembly of the state of Colorado, entitled "An act to provide for the acceptance by the state of Colorado from the United States of the benefits of the act of congress as to desert lands, approved August 18, 1894, and providing for the irrigation, reclamation, occupation and disposal of the same," approved March 15, 1895.

Water Division No..... District No.....

1. The name of applicant.
.....
2. The postoffice address of applicant.
.....
3. The name of the ditch or canal.
.....
4. The name or number of the storage reservoirs.
.....
5. The source of supply is
.....
the head-gate of said ditch or canal being situated on the .....
bank of ..... from which the ..... corner
of section ..... township ..... of range .....
bears ..... feet.
6. The said ditch or canal is to be ..... miles long, and is to pass through the following legal subdivisions of land, to-wit:
.....
7. The said storage reservoirs are located on the following legal subdivisions of land, to-wit:
.....
8. The lateral and feeder ditches are in each case, as numbered, ...
miles in length, and will pass through the following legal subdivisions of land:
.....
9. The dimensions of said ditch or canal will be as follows, commencing at the head-gate:

	Miles	Width on top, feet	Width on bottom, feet	Depth, feet	Grade per mile, feet	Capacity second-feet
(a.)						
(b.)						
(c.)						
(d.)						
(e.)						
(f.)						

10. The dimensions of said lateral and feeder ditches will be as follows:

No.	Width on top, feet	Width on bottom, feet	Depth, feet	Grade per mile, feet	Capacity, second-feet

11. The capacity of storage reservoirs will be as follows:
.....cubic feet.
..... "
..... "
..... "
..... "
..... "
..... "

12. The character of the construction work will be as follows:
Nature of material to be moved:
The number and length of tunnels will be:
The length and dimensions of flumes will be:

13. The estimated cost of the work is .....
divided as follows: Right of way expenses.....
Grading .....
Fluming .....
Total .....

14. The desert lands to be reclaimed now belonging to the government, and which the state board of land commissioners is asked to have segregated and set aside, for the purposes of reclamation by means of this improvement, are as follows:
.....
.....

15. Work was commenced on said reclamation enterprise, by the commencement of surveys for same, on the ..... day of ..... A. D. 189....

16. Two copies of the map of said improvement, made on tracing linen on a scale of two inches to one mile, accompany this application and show the following data:

The connection of the termini of said ditch or canal and each lateral and feeder ditch with a public survey corner. The connection with each section or township line which is crossed by the line of said proposed works. A full and complete set of field notes for the ditch or canal and the lateral and feeder ditches.

A complete set of field notes giving boundaries of each reservoir and the connections with each section of township line crossed.

Detail plans showing construction of head-gates, diverting dams, inlets and outlets from reservoirs, laterals and feeder ditches, tunnels, flumes, and in general all matters pertaining to the construction which will enable the state engineer to judge of the practicability of the enterprise.

STATE OF COLORADO, } ss.
County of ..... }

.....

being first duly sworn, on oath says, he is the engineer under whose supervision the survey and plan of the .....
was made. That the tracts of land shown thereon to be selected are each and every one desert land as contemplated by the act of congress, approved August 18, 1894 (28 Stat., 372-422); none being of the classes designated as timber or mineral lands; that the plan of irrigation herewith submitted is accurately and fully represented, in accordance with ascertained facts; that the system proposed is sufficient to thoroughly irrigate and reclaim said lands and prepare it to raise ordinary crops; that the survey of said system of irrigation is accurately represented upon the accompanying map and field notes.

..... (Seal)

Subscribed and sworn to before me, this ..... day of ..... 189..

..... Notary Public.

My commission expires .....

STATE OF COLORADO, } ss.
County of ..... }

.....

being duly sworn on oath say..: That ..he.., the .....
of the proposed .....
That ..... who subscribed to the foregoing affidavit, is the engineer under whose supervision the survey and plans hereto submitted were made; that the tracts of land shown hereon are each and every one vacant, unappropriated and desert in character, as contemplated by the said act of congress, none being of the class designated as timber or mineral lands.

..... (Seal)

Subscribed and sworn to before me, this ..... day of ..... 189..

..... Notary Public.

My commission expires .....

STATE OF COLORADO, } ss.
Engineer's Office, }

This is to certify that I have examined the foregoing application, and the accompanying maps, and have returned the same without my approval, for the following reasons:

.....
.....
.....
.....
.....
.....

Witness my hand and official seal, this ..... day of ..... A. D. ...

.....
State Engineer.

STATE OF COLORADO, } ss.
Engineer's Office, }

This is to certify that I have examined the foregoing application and accompanying maps, and do hereby grant the same.

Witness my hand and official seal, this ..... day of ..... A. D. 189..

.....
State Engineer.

STATE ENGINEER'S OFFICE.

RULES AND REGULATIONS REGARDING SURVEYS FOR CANALS AND RESERVOIRS, IN CONNECTION WITH THE SELECTION AND RECLAMATION OF DESERT LANDS.

Denver, Colorado, April 2, 1896.

Parties desiring to construct ditches, canals and reservoirs, for the purpose of reclaiming desert lands of this state, under the provisions of an act of congress, approved August 18, 1894, and in conformity with an act of the tenth general assembly of Colorado, approved March 15, 1895, shall be governed by the following rules and regulations regarding the surveys and the maps to be filed in this office.

The surveys and examinations shall be made by some competent engineer appointed by the state engineer, or who shall be considered by him qualified to make a reliable survey and estimate of the cost and feasibility of the proposed works.

The surveys for the proposed canals and reservoirs shall be made carefully; all angles measured by the vernier, and all courses calculated therefrom.

The lines of the canals to be run as nearly as practicable to show the actual length of the same, as they are to be constructed; that is, so that the profile of the ground will show the cuts and fills on the line, and the amount of material to be moved. Excessive angles to be avoided. Levels to be checked sufficiently to eliminate the possibility of large errors. Connections between line of canal and the section lines crossed to be made wherever existing section corners make this possible. Where corners can not be found, this fact must be established by actual measurement and search.

The termini of all canals and the initial points of the surveys for all reservoirs shall be accurately tied to section corners by angles and distances.

The surveys for reservoirs must show the highest water level, and shall be staked.

The lines must be run with care, so that the notes when calculated by traverse tables will close.

Sections across these reservoirs to be measured and leveled at such distances apart that the contents of the reservoirs may be calculated with reasonable accuracy. The lines of all lateral canals drawing water from the main canals, or reservoirs, to be run with the same care as main canals. The several sections of main canals and laterals to be shown, wherever a change in size is contemplated.

Sufficient detail of all structures necessary for the control of the water and its use, to enable this office to check the amount of the materials required, and a profile showing quantities of earth-work calculated and classification of same shall be furnished.

A detailed estimate of the quantities of material, and cost of same, which will be required for the entire work, shall be made up on sheets.

The map must be made on tracing linen, in duplicate, and be drawn to a scale not greater than 1,000 feet to one inch. A smaller scale is desirable if the necessary information can be clearly shown, which map must be in conformity to the requirements of the department of the interior, and which can be filed with the local land office.

Any further information, or additional data, which the interior department may request, shall be furnished without unnecessary delay.

H. A. SUMNER,
State Engineer.

Up to the present time but one enterprise has taken advantage of this act and made filings in this office, although there are others under way, which at present are not sufficiently advanced to make public their intentions.

On September 4, 1895, George H. West and Daniel A. Camfield, of Greeley, Colo., filed in this office two copies of a map and an application for a permit to appropriate water from the South Platte river, Wild Cat creek and Pawnee creek, for the reclamation of the vacant United States lands, as shown on the maps attached.

On November 8, this office granted a permit, conditioned upon further exhaustive surveys and examinations, to be made by this office, showing that the supply of water is sufficient and that the enterprise is feasible and practicable.

Upon proceeding with the work of making a careful survey to locate canals and reservoirs for the irrigation system proposed, I selected Mr. W. B. Lawson, C. E., to represent this office in the survey and in the making of the approximate estimate of cost of the work.

This survey has not as yet been completed, and no maps or estimates have been submitted to this office upon which to base a report as to its feasibility.

IRRIGATION DISTRICT LAW, OR THE WRIGHT LAW OF THE STATE OF CALIFORNIA.

This law, which has recently been declared constitutional by the supreme court of the United States, has been on the statutes of California since 1887, and many irrigation districts have been organized under its provisions, and bonds issued.

Other states in the arid and semi-arid regions have adopted modified forms of the same law, and as there has been some inquiry as to the advisability of our legislature passing a similar law for this state, I give briefly below an abstract of its main features.

By the terms of the act, as amended in 1889 and 1891, fifty, or a majority of the holders of title or evidence of title to lands susceptible of one mode of irrigation from a common source, and by the same system of works, desiring to provide for the irrigation of the same, may propose the organization of an irrigation district.

First, a petition must be presented to the board of supervisors of the county, signed by the required number of holders of title, as above, setting forth the boundaries of the district and praying that the same may be organized. The petition to be presented at a regular meeting of the board of supervisors, after having been published for at least two weeks previously.

The board may change the boundaries of the district by including irrigable land other than that mentioned in the petition, by request of the owner of the land, but cannot exclude any irrigable land. It may, however, exclude any land within the district which will not be benefited by irrigation by said system.

The board of supervisors shall make an order dividing the district into five divisions, one director to be elected by each division, or, if the petition for formation of district requests it, the board may order that there be either three or five directors, and they may be elected by the district at large.

Notice of election shall require electors to cast ballots, worded "Irrigation District, Yes," or "Irrigation District, No;" also containing the names of the persons to fill the various offices provided for in the act.

A biennial election is held on the first Wednesday in February, at which an assessor, collector, treasurer and board of directors are elected.

The officers are required to give bond.

The manner of voting, powers and duties of boards of election, manner of canvassing the vote, and other regulations, are conducted in the usual way.

A vacancy in the office of assessor, collector or treasurer is filled by appointment by board of directors.

A vacancy in the office of director is filled by the board of supervisors of the county.

The board of directors of the district meets on the first Tuesday in March following their election, to organize as a board, elect a president and appoint a secretary. This board manages and conducts the business of the irrigation district.

The water distributed for irrigation is apportioned ratably to each land owner upon the basis of the ratio which his last assessment for district purposes bears to the whole amount assessed for the district, but he may assign his right to others.

This board has the right to enter upon any land, to survey and locate the necessary irrigation works, acquire by purchase or condemnation lands, waters, water-rights and other necessary property, including canals and works constructed and being constructed by private owners, land for reservoirs or other necessary appurtenances.

In case of purchase, the bonds of the district may be used at par in payment.

The board may construct dams, reservoirs and works for the collection of water, and do all necessary lawful acts, that sufficient water may be furnished to each land-holder for irrigation purposes.

The use of the water for irrigation, with all right-of-way, and all other property required, is declared a public use, subject to control of the state, as provided by law.

The board is authorized to take conveyances, and to institute and maintain all actions and proceedings, suits at law or in equity necessary to carry out the provisions of the act.

For the purpose of constructing the necessary irrigation works, the board of directors must, as soon as practicable after the organization of the district and whenever the construction fund is exhausted and the board deems it necessary to raise additional money, make an estimate and determine the amount necessary to be raised, and shall immediately call a special election, and submit to the electors of the district the question of issuing bonds to the amount decided upon.

If a majority of votes oppose the issuance of bonds, the result shall be so declared, but the question can again be submitted to the electors, if the board so orders.

If a majority of the votes cast favor an issuance of bonds, the board shall cause the bonds to be issued.

The bonds shall be payable in gold coin, in ten series, as follows: 5 per cent. in eleven years, 6 per cent. in twelve years, 7 per cent. in thirteen years, 8 per cent. in fourteen years, 9 per cent. in fifteen years, 10 per cent. in sixteen years, 11 per cent. in seventeen years, 13 per cent. in eighteen years, 15 per cent. in nineteen years, 16 per cent. in twenty years, bearing 6 per cent. interest, payable semi-annually.

The bonds and interest are paid by revenue derived from an annual assessment on the real property of the district, and all real property is liable for such payments.

The board of directors is directed to levy an assessment sufficient to raise the annual interest, and at the expiration of ten years from the time of issuing the bonds, to increase the assessment to an amount sufficient to raise the sum necessary to pay the principal when it matures.

The assessment is a lien upon real property from and after the first Monday in March of any year, and the lien for the bonds of any issue is a preferred lien to that of any subsequent issue, and such lien is not removed until the assessments are paid or the property sold for the payment.

The law provides for the sale of property on which assessments are not paid, and provides that it may be redeemed at any time within twelve months.

The board of directors, after adopting plans for canals, reservoirs and other irrigation works, shall advertise for proposals

for the construction of the same, the contract to be let to the lowest responsible bidder.

The board may accept the lowest, or may reject all bids and re-advertise, or may construct the works under its own superintendence.

In apportioning the water to ditches when there is not a sufficient supply, it is the duty of the water commissioner (who is the chairman of the board of directors) to apportion in a just manner a certain amount of water upon certain alternate weekly days to different localities as in his judgment is for the best interests of all.

None of the provisions of this act are to be construed as repealing or modifying the provisions of any other act relating to irrigation or water commissioners, or to authorize any person or persons to divert the waters of any creek, river, stream, canal or ditch from its channel, to the detriment of any person having any interest in such river, creek, stream, canal or ditch, or the waters therein, unless previous compensation be ascertained and paid therefor, under the laws of the state authorizing the taking of private property for public uses.

SUBDIVISION OF STATE LANDS INTO MINERAL LOTS.

The state board of land commissioners, in 1893, became convinced that some change in the manner of disposing of state lands containing mineral was necessary, and decided to subdivide the sections into lots containing ten acres each, whenever discoveries of mineral on the sections would justify, and adopted a basis for leasing these lots to the discoverers of mineral deposits on the same, and provided for the payments under said leases.

On May 25, 1896, the land board directed the register to make use of the mineral survey fees on hand to pay for the division into mineral lots of certain sections, and requested the state engineer to take charge of the work; and in accordance therewith the following rules and regulations were prepared by this department:

RULES AND REGULATIONS GOVERNING THE SUBDIVISION OF STATE LANDS INTO MINERAL LOTS.

Field Work—The engineer shall first make an accurate survey of the boundary of the section to be lotted, taking vernier angles and measuring with a steel tape each side, to locate all the section and quarter section corners.

The notes of this boundary survey shall be calculated by latitude and departure, and the computed notes shall show it to close within five feet.

Solar observations shall be taken to ascertain the true course of all lines.

In case any of the government section or quarter section corners are missing, the proper survey shall be made to re-establish them according to law and the rules of the United States general land office.

A corner so re-established shall be marked by a large stone firmly set and properly marked with a chisel.

All the lot lines shall run parallel with the south and east boundary lines of the section, whether it makes the lot perfectly square or not, and whether said boundary lines are straight from one section corner to another, or describe an angle at the quarter section corner.

The lot corners first established shall be along the south and east boundary lines of the section, and shall be exactly six hundred and sixty (660) feet apart, measured from the southeast section corner, both towards the west and north sides of the section, throwing the excess or deficiency in size into the tier of lots bordering on the west and north sides of the section. Notes of such fractional lots shall show the sizes to the nearest tenth of a foot.

When there is an angle at the quarter section corner, and the lot corner does not coincide with the said quarter section corner, the position of the lot corner next beyond the quarter section corner shall be determined by measuring six hundred and sixty (660) feet in a straight line from the lot corner set before reaching the quarter section corner to a point on the section line beyond the quarter section corner, instead of measuring along the section line through the angle point at the quarter section corner, although the section line is to be the division line for the lot.

The interior lot lines shall be run with a vernier instrument and the measurements taken with a steel tape.

These lines shall be established by starting at the lot corners set along the east boundary of the section, and extending them west parallel with the south boundary line of the section. When there is an angle in the south boundary line of the section at the quarter section corner, all the lot lines shall extend from the eastern boundary of the section, the same distance as is given on the south boundary from the southeast section corner to the quarter section corner, setting monuments exactly six hundred and sixty (660) feet apart, and a hub at the point measured, which is the same distance as the east half of the south

boundary. Here the same angle is to be turned as is described at the south quarter section corner, and the line extended to the western boundary and the exact distance noted to the nearest tenth of a foot. From the western boundary a tie line is to be run south to the former line of the lots to check the work.

This will establish the position of the lot lines across the section, except that if there is an angle in the line corresponding to the angle made in the south boundary, and the lot corner does not coincide with said angle point, the lot division line shall not follow the lines to their intersection, but shall be a straight line from the last lot corner established east of the angle point, to a point on the line west of said angle point, a distance of six hundred and sixty (660) feet to the lot corner.

The true course of this lot line shall be given in the field notes.

Notes of the crossings of all defined channels of streams or gulches, points of hills, or other prominent topographical features are to be taken, and all shafts, tunnels, roads, buildings or other permanent objects are to be measured to and located on the map.

Wooden monuments, at least five inches square, and three and one-half feet long, well set two feet into the ground, with a nail in the top to mark the exact corner, are to be placed at all the lot corners, except at the section corners.

The monuments to set diagonally with the corners on the line of the lots, and on each side is to be scribed the lot number towards which it faces, in figures at least two and one-half inches long, which are to be painted with a durable black mineral paint.

In case the lot corners occur on an inaccessible point, where it is impossible to set a monument, a witness corner is to be set on the lot line, as near the true corner as possible, and properly marked to donate its position, relative to the true corner.

At least four of the lot corners on each line across the section shall be witnessed by trees or other natural objects, properly marked, and the field notes shall show their position in relation to the lot corner.

In case a portion of the section is not owned by the state, or it is not considered desirable to lay it out into lots, the necessary corners to establish the boundary between the lotted and the reserved portion shall be set, and the division of the state land shall proceed in the same manner as when the entire section is to be lotted, by starting at the southeast corner of the section and measuring the full lot distances, both west and north.

The lots bordering the reserved portions to be fractional the same as on the west sides of the section.

A diagram is hereto attached, which shows the manner of numbering the lots.

Map and Field Notes—The map shall be platted on tracing vellum, 16x20 inches, at a scale of 400 feet to one inch, showing accurately, both as to angles and measurements, the section boundaries and all the lot lines, with the acreage of each lot.

The field notes shall be made on sheets the same size of the map, and bound to it, and shall show in detail the full notes taken on the survey, including the surveys to establish the missing corners (both section corners and quarter section corners), the survey of the boundary of the section, and the latitude and departure notes to check the same, the order in which the lots were run, and all other notes taken, followed by a certificate of the engineer making the survey, as to its accuracy.

LIST OF SECTIONS SURVEYED IN 1896 UNDER DIRECTION OF STATE ENGINEER.

Sec.	Twp.	Range	County	Surveyor	Survey completed
					1896
36	15 S.	71 W.	El Paso	Dietrick & Mitchell	June 30
36	14 S.	70 W.	El Paso	C. A Trease	July 16
36	13 S.	70 W.	El Paso	Luckraft & Countryman	July 11
36	14 S	69 W.	El Paso	Luckraft & Countryman	June 9
36	12 S.	69 W.	El Paso	C. A. Trease	Oct. 1
16	14 S.	69 W.	El Paso	R. E. Cowden	Nov. 30
16	16 S.	71 W.	Fremont	Dietrick & Mitchell	June 30
36	10 S.	70 W.	Douglas	Koogle & Holbrook	June 18
36	9 S.	70 W.	Douglas	Koogle & Holbrook	June 30
16	10 N.	85 W.	Routt	J. C. Kennedy	Aug. 1
36	11 N.	86 W.	Routt	J. C. Kennedy	Oct. 22
16	2 S.	73 W.	Gilpin	E. E. Chase	Nov. 6

COUNTY BOUNDARIES.

On August 1, 1895, the honorable board of county commissioners of San Juan county petitioned this office to have the county boundary between San Juan and Hinsdale counties established definitely by surveys, and monuments placed to mark said line.

Upon referring the matter to the Hinsdale county officials, I was informed that they were not willing to incur any expense for that purpose at that time, as they considered it too late in the season to begin such work, on account of the rugged nature of the country to be traversed.

A request was made upon the county surveyors of the two counties to meet me in Denver, on September 27, to discuss the whole matter, and decide upon some line of action. Mr. J. J. Abbott, representing Hinsdale county, was here, and he represented that while his county was desirous of having the survey made, it had no fund available to apply on the work in 1895, and desired the work delayed until 1896 on that account, and for the further reason that it was too late in the season to begin.

Upon these representations the decision was made to postpone the work.

As no further petitions have been presented to take up the work since, there has been nothing done.

On July 9, 1896, the honorable board of county commissioners of Summit county petitioned this office for a survey to definitely define the boundary between Summit and Eagle counties, which, in the act creating Eagle county, was indefinite and ambiguous, and failed to specifically describe on which side of the Sheep Horn creek the county boundary lies, and by reason of this there was a dispute as to which county the Sheep Horn Creek valley belonged.

It was arranged to meet the two boards of county commissioners on the ground, on August 30, 1896, and examine the territory in dispute, which was done.

The honorable attorney general deciding that it was necessary for the state engineer to make an actual survey of the boundary line before making a legal report, the honorable board of Summit county requested that no survey be made until the county attorneys of both counties could meet and endeavor to devise some legal way of submitting the whole matter to the courts without a survey.

Upon notification that the board of Summit county was ready to have the survey made, I appointed November 3 as the day to start the said work, but the early snows made it impossible to make the survey, and there has been nothing further done.

COMPLAINTS AND APPEALS.

The extremely short supply of water the past season has been the source of much trouble to the farming community, and many complications have arisen, which happily have in most cases been adjusted by wise suggestions on the part of the super-

intendents of irrigations and water commissioners, and an inclination on the part of the water consumers to show a spirit of fairness and accept the results, which, although not always satisfactory, were unavoidable.

A complaint against Mr. E. B. Langston, water commissioner of district No. 41, Montrose county, was sent to the governor on July 18, 1896, alleging that he had shown partiality in the distribution of water. The matter being referred to me, I instructed Mr. D. R. Crosby, superintendent of irrigation of division No. 5, to make an investigation, and I also made a trip to Montrose county for the same purpose. The conclusions arrived at were that the grounds for complaint were not well founded.

On July 21, 1896, charges were preferred against Mr. C. W. Reece, water commissioner of district No. 14, Pueblo, and a petition sent to the governor for his removal, which was referred to me for examination and report. The persons bringing the charges, and Mr. Reece, were asked to present their case to me at Denver, on August 3, 1896, and the affidavits then presented were carefully considered, and a report made to the governor on August 26, which stated that the evidence presented did not constitute good grounds for the removal of the commissioner, and the governor, upon receiving such report from me, denied the petition for removal.

On June 11, 1896, The Consolidated Home Supply Ditch and Reservoir Company, in an appeal to this office from the decision and order of A. L. Emigh, superintendent of irrigation of division No. 1, represented that it was the owner of the Home Supply ditch, the George Rist ditch and two reservoirs, and was desirous of using the appropriations of the said ditches interchangeably, as their necessities might require, and as would best suit their needs and the convenience of the stockholders of the said company.

It was also represented that the said superintendent of irrigation had refused to allow any of the said appropriation of the George Rist ditch to flow in the Home Supply ditch, and for this reason appeal was taken to the state engineer.

On June 16, in a letter to The Consolidated Home Supply Ditch and Reservoir Company, I stated, among other things, that upon examining the contract between Charles and Priscilla Buckingham, parties of the first part, and The Consolidated Home Supply Ditch and Reservoir Company, parties of the second part, executed October 8, 1888, it was found that a portion of the George Rist ditch was conveyed to The Consolidated Home Sup-

ply Ditch and Reservoir Company with the reservation that the party of the second part was to furnish in perpetuam to a certain number of acres of land, in all 3,673 acres of land, "water for irrigation purposes from the said George Rist ditch to the extent of the appropriation of said ditch, as the same is now or may be hereafter established by the decree of the district court;" and as there was no evidence submitted to establish the fact that any of the owners of the lands which were specified in the contract as requiring water from this Rist ditch, have relinquished their claim to this water, or have consented to have any of it diverted from its original use and applied in other places, the petition would be denied until such time as The Consolidated Home Supply Ditch and Reservoir Company could show by proper evidence that such diversion was legal.

CHAPTER II.

INTERNAL IMPROVEMENTS.

The tenth general assembly, in appropriating funds for internal improvements in the several counties, was obliged to make a general reduction in the amounts requested in the bills which were introduced, and the result has been that in many instances the counties were obliged to contribute a portion towards construction. However, owing to close competition among contractors, all improvements under the supervision of this department have been contracted for, with the exception of two, and, although the prices generally have been unusually low, the results obtained are highly satisfactory.

SAGUACHE RESERVOIR.

This matter came over from the former administration. The reservoir was completed, and there was a balance due the contractor, but it was insufficient to pay the bills contracted by him for labor and material.

The board of construction met on April 18, 1895, and appointed F. Cogswell, trustee, vice R. A. Southworth, resigned, to attend to the settlement of all claims on a pro rata basis.

Amount of claims against W. E. Dodge, contractor, $2,772.33.

Funds remaining in state to apply on the work, $662.09.

Percentage payable to each creditor, 23.882 per cent.

The trustee was ordered to pay the claims on the above basis, which was done.

RIO BLANCO COUNTY BRIDGE.

House bill No. 34 appropriated $4,000 for the construction of a state bridge across the White river, near the town of Rangeley, Rio Blanco county.

Tho board of construction consisted of the governor, state engineer and the chairman of the board of county commissioners of Rio Blanco county (A. J. Yonker, 1895; Ezra Flemming, 1896).

A careful examination of the river was made by the board of construction on May 15 and 16, 1895, and a site selected on section 3, township 4 south, range 102 west, at a point where the river has a straight stretch for some distance each side of the location for the bridge, the prevalence of ice gorges in the bends of this river during the spring months demonstrating that it would be hazardous to locate a structure close to one of these bends.

Upon receipt of proposals it was found that the state's appropriation was insufficient to pay for the structure and the necessary contingent expenses, and Rio Blanco county therefore guaranteed to pay not to exceed $400 towards the construction, which amount was paid upon completion of the bridge.

A contract was awarded to The Wrought Iron Bridge Company, of Canton, Ohio, on September 16, 1895, for the construction of an iron span 128 feet in length, with roadway fourteen feet wide; the sub-structure, stone abutments thirteen feet high, with wing walls resting on sixty-four piles and grillage, for the sum of $3,825.

The work was completed and accepted in February, 1896, the severe winter weather and the long distance from the railroad having delayed the work considerably.

Mr. John F. Williamson was engineer in charge of construction.

STATEMENT OF EXPENDITURES.

Appropriation by state (H. B. No. 34)	----------	----------	$ 4,000 00
Appropriation by county of Rio Blanco	----------	----------	400 00
State engineer, expense trip to locate bridge	----------	$ 68 80	
Colorado Fuel and Iron Co., accepted plans	----------	100 00	
Aulls, Hand & Patterson, blue-prints, etc.	----------	36 85	
Advertising for plans and proposals	----------	23 48	
Typewriting contract and specifications	----------	15 60	
State engineer, telegrams	----------	2 80	
Jno. F. Williamson, engineer in charge construction	----------	325 00	
Wrought Iron Bridge Co., on contract—			
by state	$ 3,425 00		
by county	400 00		
		3,825 00	
Balance unexpended	----------	2 57	
Total	----------	$ 4,400 00	$ 4,400 00

SUMMIT COUNTY BRIDGE.

House bill No. 37 appropriated $4,500 for the construction of a state wagon bridge across the Blue river, about two miles from the town of Breckenridge, in Summit county.

The board of construction consisted of the governor, state engineer, and the chairman of the board of county commissioners of Summit county (D. B. Webster, 1895; R. C. McKillip, 1896).

On June 24, 1895, an examination of the river was made, and a suitable site selected just below the present condemned county bridge, about two miles north of Breckenridge.

An iron span eighty feet in length, with roadway fourteen feet in the clear, provided with iron floor beams and fence, was decided on; the substructure, stone abutments and wing walls resting on a solid gravel and boulder foundation about four feet below low water.

The contract for the construction of the bridge was awarded to The Kansas City Bridge Company, of Kansas City, Mo., on December 19, 1895, the contract price being $3,575.

The bridge was completed and accepted in June, 1896.

Mr. George B. Walker, deputy United States mineral surveyor, of Breckenridge, was engineer in charge of construction.

STATEMENT OF EXPENDITURES.

Appropriation		$ 4,500 00
State engineer, two trips to Breckenridge	$ 12 35	
Jno. F. Williamson, work on plans	35 00	
Typewriting contract and specifications	9 70	
Advertising for plans and proposals	22 01	
Denver Blueprint Co., for prints	65	
D. B. Webster, inspection	25 00	
G. B. Walker, inspection and engineering	200 00	
Kansas City Bridge Co., on contract	3,575 00	
Balance unexpended	620 29	
Total	$ 4,500 00	$ 4,500 00

GUNNISON COUNTY BRIDGE.

House bill No. 256 appropriated $5,000 for the construction of a state bridge across the Gunnison river, about one mile southwest of Gunnison, Gunnison county.

The governor, state engineer, and the chairman of the board of county commissioners of Gunnison county (D. A. McConnell, 1895; James Watt, 1896) being the board of construction.

Two sites were under consideration here, and the matter of location was canvassed thoroughly before deciding on either. One site was at the present old county bridge southwest of Gunnison, and the other was about three-quarters of a mile below it, where the section line between sections 3 and 10, township 49 north, range 1 west, New Mexico principal meridian, crosses the Gunnison river. The last mentioned site was finally adopted, as the approach to the structure was over comparatively level ground, while at the former site the approach from the west is down a steep hill along the river bluff, where the snow drifts badly in the winter and spring months.

The lowest proposal on the plans submitted was from The Kansas City Bridge Company, of Kansas City, Mo., $3,000, for an iron span 150 feet in length, sixteen feet clear width between trusses, with an approach span on each end of sixteen feet; the main span resting on tubular piers and the end spans on pile bents. This proposal was accepted and a contract awarded on January 3, 1896. It was afterwards decided to strengthen and enlarge the tubular piers, the approach spans and the floor of the main span, and the sum of $1,400 was expended in addition to the original contract, the price for said additional work being based on the figures placed upon the same items in the proposal submitted.

The tubular piers are five feet in diameter, fifteen feet long, built of three-eighths-inch metal, with six piles eighteen feet in length driven inside each tube and the space filled with concrete. The tubes extend to a depth of seven feet below the bed of the river.

This bridge was completed and accepted in June, 1896.

Mr. David M. White, C. E., of Grand Junction, was engineer in charge of construction.

STATEMENT OF EXPENDITURES.

Appropriation	----------	$ 5,000 00
State engineer, four trips to Gunnison	$ 33 86	
Colorado Fuel and Iron Co., plans and blue-prints	32 50	
Denver Blueprint Co., prints	2 95	
Typewriting	18 30	
Advertising for plans and proposals	21 13	
E. A. Sperry, surveys and map of location	22 50	
H. A. Sumner, telegrams, etc	4 05	
David M. White, inspection and surveys	220 70	
John F. Williamson, office work on plans	40 00	
Kansas City Bridge Co., on contract	4,400 00	
Balance unexpended	204 01	
Total	$ 5,000 00	$ 5,000 00

MESA COUNTY BRIDGE.

House bill No. 211 appropriated $7,500 for the construction of a bridge across the Grand river, in Mesa county, near a point called "The Narrows," above the town of Palisades.

The board of construction consisted of the governor, state engineer and B. J. Snyder, chairman of the board of county commissioners of Mesa county.

It was evident at the outset that the state fund was altogether too small to build such a structure as the location demanded, and careful examinations were made to determine on the most feasible site. The point selected for the bridge was near the foot of the rapids at the "Narrows," where the width across the stream was the least, and where the travel would be accommodated to the greatest extent.

Soundings in the bottom of the river showed an underlying bed of lava boulders.

In advertising for plans, as the law provided, it was specified that one main span across the channel was desired, and that the available fund for the work was $10,000—Mesa county having guaranteed the sum of not to exceed $3,000 towards the structure. Upon adopting the plans submitted by The Colorado Fuel and Iron Company, proposals for construction were received which resulted in The Wrought Iron Bridge Company, of Canton, Ohio, being awarded the contract, January 3, 1896, for the sum of $7,170. Afterwards the board considered it desirable to modify the plans as submitted, to the extent of building a heavier main

span, enlarging the size of the masonry piers and abutments and substituting a forty-foot plate girder for the same length of pile trestle. This extra work was paid for at the same price per pound of metal, cubic yard of masonry, and foot board measure of lumber, as the material in the first plan submitted, and cost the sum of $1,680, or a total of $8,850 for the entire structure as built.

The completed structure consists of one main span over the channel 220 feet in length, with roadway sixteen feet in width. The upstream truss being constructed heavier to allow for the carrying of an irrigation water pipe, as provided by the legislative act, the extra load provided for being 300 pounds per lineal foot. East of the main span extends a forty-foot plate girder, reaching to an abutment at the end of the bridge. West of the main span is a twenty-foot span of trestle also resting on an abutment. Under each end of the main span is a stone pier five feet wide and twenty-two feet long at the top, the west pier twenty feet and the east pier twenty-four feet in height, both being constructed with an ice-breaker nose.

The bridge was completed and accepted in August, 1896.

Mr. John F. Williamson very ably attended to the engineering and inspecting during the entire construction.

STATEMENT OF EXPENDITURES.

Appropriation by state (H. B. No. 211)			$ 7,500 00
Appropriation by county of Mesa			1,833 26
State engineer, four trips to bridge		$ 48 80	
Colorado Fuel and Iron Co., plans and blue-prints		33 00	
Advertising for plans and proposals		22 21	
Typewriting		24 20	
Denver Blueprint Co., prints		3 30	
H. A. Sumner, telegrams		65	
Jno. F. Williamson, assistant engineer		351 10	
Wrought Iron Bridge Co., on contract—			
by state	$ 7,016 74		
by county	1,833 26		
		8,850 00	
Total		$ 9,333 26	$ 9,333 26

PROWERS COUNTY BRIDGE.

Senate bill No. 235 appropriated $5,000 for the purpose of constructing a state bridge across the Arkansas river, in Prowers county, on the west line of range 44.

The board of construction consisted of the governor, state engineer and the chairman of the board of county commissioners of Prowers county (H. A. Pettee, 1895; S. J. Higbee, 1896).

The west line of range 44 crosses the river opposite the town of Carlton, at a favorable point to construct a bridge, and the board of construction, on October 3, 1896, decided on the range line as the location for the bridge.

The contract for construction was awarded to The Wrought Iron Bridge Company, of Canton, Ohio, on December 19, 1895, for $7,500, of which amount the county of Prowers guaranteed the board a sum not to exceed $3,000.

The structure consists of seven spans of combination truss. Each span ninety-eight feet six inches over all, roadway sixteen feet in the clear. Each pier is constructed of fourteen piles well driven into the river bottom and encased with three-inch plank, and the inside filled with broken stone and brush.

Mr. E. C. Hawkins, C. E., of Lamar, Colo., was engineer and inspector during the construction of the bridge.

STATEMENT OF EXPENDITURES.

Appropriation by state (S. B. 235)			$ 5,000 00
Appropriation by county of Prowers			2,810 56
State engineer, trip to Carlton to locate bridge		$ 20 85	
Advertising for plans and specifications		22 21	
Typewriting contract and specifications		13 30	
Blue-prints		4 20	
E. C. Hawkins, engineer and inspector		250 00	
Wrought Iron Bridge Co., on contract—			
by state	$ 4,689 44		
by county	2,810 56		
		7,500 00	
Total		$ 7,810 56	$ 7,810 56

MORGAN COUNTY BRIDGE.

House bill No. 277 appropriated $3,000 for the purpose of constructing a state bridge across the South Platte river, in Morgan county, at or near the town of Orchard.

The governor, state engineer and the chairman of the board of county commissioners of Morgan county (J. P. Currie, 1896) comprised the board of construction.

This bridge was located February 19 and 20, 1896, at a point nearly opposite the town of Orchard, and the contract for its construction was awarded to F. E. Baker, of Fort Morgan, on April 8, 1896, for the sum of $2,725.

The structure is a pile trestle 1,040 feet in length, with a roadway twelve feet wide, and a substantial railing on each side. Bents with three piles in each are driven every twenty feet and well sway-braced.

The board allowed Mr. Baker a bill of $75 for extra work done on the wings at each end of the bridge, and for extra sway-bracing of the channel bents.

Mr. Henry Igo inspected the work during construction.

STATEMENT OF EXPENDITURES.

Appropriation		$ 3,000 00
W. L. Holbrook, services locating bridge	$ 24 55	
R. S. Sumner, services locating bridge	15 00	
W. B. Burtis, adopted plans	25 00	
State engineer, trip to Orchard	3 50	
Advertising for plans and proposals	6 86	
Denver Blueprint Co., prints	3 00	
Typewriting	21 65	
Henry Igo, inspector of construction	100 00	
F. E. Baker, on contract	2,725 00	
F. E. Baker, extras	75 00	
Balance in fund unexpended	44	
Total	$ 3,000 00	$ 3,000 00

WILLOW CREEK CHANNEL AND LEVEE.

House bill No. 33 appropriated $6,000 for the purpose of straightening and changing the channel of Willow creek, to crib and construct a levee along the same, at and adjoining the city of Creede, Mineral county.

The governor, state engineer and chairman of the board of county commissioners of Mineral county (Frank E. Wheeler,

1895; Dan. W. Soward, 1896) were designated as the board of construction.

Surveys to locate this improvement were made in September, 1895, by Dietrick & Mitchell, civil engineers, of Creede.

The city of Creede was delayed in procuring rights-of-way across town lots, and active construction did not begin until 1896.

The city of Creede, being the lowest bidder, was awarded the contract on February 13, 1896, upon the following schedule of prices:

Earth excavation, 15 cents per cubic yard.
Loose rock, 25 cents per cubic yard.
Solid rock, $1 per cubic yard.
Crib logs, 6 cents per lineal foot.
Tie logs, 7 cents per lineal foot.
Piling driven, 10 cents per lineal foot.
Plank, $18 per 1,000 feet, board measure.

The work was completed in September, 1896, and was accepted by the board.

Edw. L. Jones, C. E., of Alamosa, was engineer and inspector during construction.

STATEMENT OF EXPENDITURES.

Appropriation		$ 6,000 00
State engineer, two trips to Creede	$ 29 55	
Dietrick & Mitchell, location surveys and map	189 00	
Typewriting	25 35	
Denver Blueprint Co., prints	8 35	
Advertising for proposals	11 58	
Edw. L. Jones and assistants, engineering and inspection	620 00	
City of Creede, on contract	5,116 17	
Total	$ 6,000 00	$ 6,000 00

JUANITA AND PAGOSA SPRINGS ROAD.

Senate bill No. 96 appropriated $5,000 for the purpose of constructing a wagon road from a point on The Denver & Rio Grande Railroad, known as Juanita, to Pagosa Springs, the county seat of Archuleta county.

The governor, state engineer and chairman of the board of county commissioners of Archuleta county (Mr. A. G. Boone, 1896) constituted the board of construction.

In April, 1896, Mr. R. A. Howe, C. E., of Pagosa Springs, was employed by the board to make a location of the road, with

instructions to limit the grade to 6 per cent., and to adopt a roadbed at least nine feet in width.

The distance from Pagosa Springs to Juanita was found to be 24.6 miles, but as 3.6 miles of this distance, at the north end, was over the present county road, but twenty-one miles remained to construct.

Proposals were received, and the contract awarded to Archuleta & Taylor, of Pagosa Springs, on June 1, 1896, for the sum of $4,200.

The road from Pagosa Springs south, for a distance of eleven miles, is over a rolling country, easy of construction. The remainder of the distance to Juanita is along the San Juan river, with one exception, where a detour is made to avoid a bad shale bluff on the river's edge. Several bluff points are encountered along the river, but the line is held to the west side until within one mile of Juanita, where it crosses the San Juan river on a combination span of seventy feet, and forty feet of pile trestle.

Immediately north of Juanita the Navajo creek is crossed with a combination span of sixty feet in length. Both truss spans rest on pile piers, encased with plank and filled with rock.

The road was completed in November, 1896.

Mr. R. A. Howe was inspector during construction.

STATEMENT OF EXPENDITURES.

Appropriation		$ 5,000 00
State engineer, three trips to inspect line	$ 92 88	
R. A. Howe and party, locating road	466 50	
H. G. Denniston, office work	15 00	
Typewriting	18 50	
Advertising for proposals	10 72	
Denver Blueprint Co., prints	4 50	
R. A. Howe, inspector of construction	191 10	
H. A. Sumner, telegrams	80	
Archuleta & Taylor, advances on contract	3,300 00	
*Balance unexpended	900 00	
Total	$ 5,000 00	$ 5,000 00

*This amount due contractors upon acceptance of road by board.

GRAND COUNTY ROAD.

House bill No. 16 appropriated $10,000 for the purpose of constructing a wagon road in Grand and Boulder counties, upon the following described route, as near as practicable, to-wit:

Commencing on the county road, in Grand county, which leads from Hot Sulphur Springs to Grand lake, near where the South Fork of the Grand river unites with Grand river; from thence up and along the South Fork of Grand river to the mouth of Arapahoe creek; thence by the most practicable route to the Buchanan Pass, and thence from Beaver Park and the most practicable route to the town of Ward, in Boulder county.

The board of construction consisted of the state engineer and the chairman of the board of county commissioners of the county of Grand (Thos. E. Pharo, 1895) and the county of Boulder (H. H. Burch, 1895).

Mr. W. B. Lawson, civil engineer, was employed in August, 1895, to make a location of the road and prepare an estimate of the cost of the same.

The line was found to be 35.1 miles in length, 13.7 miles being in Boulder, and 21.4 miles in Grand county.

The maximum grade decided upon by the board was 8 per cent., but it was found necessary in several places to increase this to 10 per cent. for short distances, and from the top of the main range east, for a distance of 4,100 feet, the grade adopted was slightly in excess of 11 per cent.

Proposals for construction were received on July 1, 1896, on three forms of construction, and the lowest bids were as follows:

For a roadbed eight feet wide, $27,221.67, Orman & Crook, Pueblo.

For a roadbed nine feet wide, $32,000, Hansen & Coffin, Longmont.

For a roadbed ten feet wide, $35,000, Hansen & Coffin, Longmont.

The counties of Boulder and Grand, not guaranteeing the amount required in excess of the available fund in state treasury, nothing further was done with this improvement.

STATEMENT OF EXPENDITURES.

Appropriation	.....	$ 10,000 00
W. B. Lawson and party, expense of survey	$ 1,302 66	
State engineer, two trips over line of road	26 10	
Advertising for proposals	3 90	
Typewriting	16 00	
Balance unexpended	8,651 34	
Total	$10,000 00	$ 10,000 00

SAN JUAN COUNTY ROAD.

Senate bill No. 101 appropriated $7,500 to construct a wagon road from Molus lake, San Juan county along the route of the old Baker trail to a point on the Rico-Rockwood wagon road, where the Baker trail intersects the same in La Plata county; or the most practicable route the survey may determine between the said points.

The governor, state engineer and the chairman of the board of county commissioners of San Juan county (Thos. A. Gifford, 1895; Jos. Bordeleau, 1896) and La Plata county (C. E. Hampton, 1895; H. R. Ricker, 1896) were the board of construction.

The country over which this road is built is in the highest places over 11,000 feet above sea level, and is a series of ridges and deep valleys. The total rise and fall for the 17.27 miles constructed being 5,130 feet. The grade is 8 per cent., with the exception of a short distance east of "Coal Bank Hill," where 10 per cent. was adopted to save heavy work.

The location of this road was in charge of L. R. Hope, C. E., and was commenced in July, 1895, and upon making up an approximate estimate of cost, based on a ten-foot roadbed, it amounted to $15,572, and the two counties of San Juan and La Plata not guaranteeing the amount over and above the fund in the state treasury, the matter was postponed until 1896.

Proposals were received on June 11, 1896, for the construction of the road, bidders having been requested to make their proposals for three forms of construction, viz.: for a roadbed eight feet, nine feet and ten feet in width.

The board accepted the bid of Grant & Martin, of Denver, for an eight-foot roadbed, at a price of $8,445 for the entire line. August 1, 1896, the contract was awarded to them, and permission having been granted, the work was sub-let to La Count & Hoover, of Durango.

W. L. Holbrook, assistant engineer, was in charge of the construction, and revised portions of the line, where it was deemed advisable, and remained on the work until it was all completed, with the exception of the finishing of the one and one-half miles at the north end.

The early snows have so far prevented an examination of the road by the board of construction, and the money guaranteed by the two counties has up to this time not been paid to the contractors, although very little, if any, work can remain to complete the road according to the contract.

STATEMENT OF EXPENDITURES.

Appropriation by state			$ 7,500 00
Appropriation by county of San Juan			1,222 50
Appropriation by county of La Plata			1,222 50
L. R. Hope and party, location of line		$ 991 17	
Office work on estimates		122 00	
State engineer, two trips to Silverton		23 25	
Typewriting		27 30	
Advertising for proposals		21 56	
Blue-prints		60	
H. A. Sumner, telegrams		2 95	
W. L. Holbrook, engineer and inspector		309 15	
Grant & Martin, on contract—			
by the state	$ 6,000 00		
Due from La Plata county	1,222 50		
Due from San Juan county	1,222 50	8,445 00	
Balance unexpended		2 02	
Total		$ 9,945 00	$ 9,945 00

GILPIN COUNTY ROAD.

House bill No. 291 appropriated $4,000 for the purpose of constructing a wagon road over the most practicable route, from a point near Miller's house, in Gilpin county (where the county road turns to Missorisi lake) by following the present trail through Miller's ranch; thence along Clear creek over the most feasible route to the junction of Clear creek with Pine creek; thence along said Pine creek over the most feasible route to the town of Apex or Pine City.

The governor, state engineer and chairman of the board of county commissioners of Gilpin county, Ed. C. Hughes, constituted the board of construction.

In April, 1896, Mr. H. G. Denniston, C. E., was employed to make a location of the road, and on June 4 proposals were received for its construction.

The lowest bid was from Grant & Martin, of Denver, for the sum of $3,145, and a contract was awarded to them on June 8, 1896. For changes in the line after the contract was awarded, whereby improvements were made, the board allowed the contractors extra bills to the amount of $380.

The road was completed and accepted in August, 1896.

The total length of road built was 4.79 miles.

The maximum grade, 8 per cent.

H. G. Denniston, C. E., of Denver, was engineer in charge of construction.

STATEMENT OF EXPENDITURES.

Appropriation by state			$ 4,000 00
Appropriation by county of Gilpin			155 25
State engineer, two trips to Pine Creek		$ 14 20	
Surveys in locating the road		169 75	
H. G. Denniston and assistants on construction		393 00	
Typewriting		15 60	
Advertising for proposals		4 50	
J. S. J. Lallie, steel tape		7 00	
Blue-prints		1 20	
E. C. Hughes, inspection		25 00	
Grant & Martin, on contract—			
by state	$ 3,369 75		
by Gilpin county	155 25		
		3,525 00	
Total		$ 4,155 25	$ 4,155 25

COSTILLA COUNTY ROAD.

House bill No. 158 appropriated $3,000 "for the purpose of constructing a wagon road in Costilla and Huerfano counties."

The route, as described in the legislative bill, starts in Costilla county, at the junction of Indian and Sangre de Cristo creeks and follows Indian creek to the summit of the Sangre de Cristo range, and thence down another Indian creek, in Huerfano county, to near the northeast quarter of the southeast quarter of section three, township thirty south, range sixty-nine west.

The governor, state engineer and chairman of the board of county commissioners of Huerfano county (E. A. Lewis, 1896) and Costilla county (Wm. H. Meyer, 1896) were the board of construction.

A survey was made in May, 1896, by H. G. Denniston, assistant engineer, and estimates of approximate cost prepared.

Proposals were received July 8, 1896, for the construction of the road. The lowest, from Grant & Martin, for $2,745, was accepted, conditioned upon the counties guaranteeing the payment of $250 each, to provide for a probable shortage in the funds after the necessary expenses were paid.

As the counties named refused to guarantee this sum, the contract was not awarded, and no further work was done.

STATEMENT OF EXPENDITURES.

Appropriation	----------	$ 3,000 00
H. G. Denniston and party, surveys to locate road	$ 459 95	
State engineer, expenses, telegrams and railroad fare	9 70	
Typewriting	15 70	
Advertising for proposals	5 95	
Blue-prints	3 00	
Balance unexpended	2,505 70	
Total	$ 3,000 00	$ 3,000 00

BELLVUE AND STEAMBOAT SPRINGS ROAD.

Senate bill No. 151 appropriated $15,000 for the purpose of constructing a wagon road from Bellvue, in the county of Larimer, to Steamboat Springs, in the county of Routt, upon the following described route, as near as practicable, to-wit:

Commencing at Bellvue, about eight miles west of Fort Collins; thence running in a westerly direction along and near the valley of the Cache la Poudre river, to the mouth of Roaring creek; thence in a northwesterly direction along and near the valley of Roaring creek to the Larimer river; thence in a westerly direction across the Medicine Bow range, by the most practicable route, until it connects with the first main traveled road running in a westerly direction in North Park; thence in a westerly direction to the summit of the Continental Divide and boundary line between Larimer and Routt counties; thence in a southwesterly direction along and near the valley of Soda creek to Steamboat Springs, Routt county.

While it was evidently the intention of the framers of the bill that the road would be built from Bellvue west up the cañon of the Cache la Poudre river to the mouth of Roaring creek, a careful examination of this portion of the contemplated route convinced the board that it was not a practicable route, with any reasonable expenditure of money, and as the bill provided that the line should be built "as near as practicable" to this valley, the board of construction considered itself empowered to select a practicable route outside of the cañon proper, if one could be found, which would meet the requirements of the act. Both sides of the river were thoroughly examined between Bellvue and the Roaring creek, and the line finally adopted follows the al-

ready constructed county road from Bellvue to Livermore, and thence west to Yockey's saw mill, where construction work was commenced. From this saw mill the line gradually ascends to the high divide between the Poudre and Larimer rivers and down Deadman gulch to the Larimie river. Crossing this stream, the line follows up McIntyre creek to Ute pass, and thence down the mountain side to North Park. Across the park no construction work was done. From the west side of the park the line follows up Grizzly creek, and its tributaries, to the Continental Divide, and down the western slope to Steamboat Springs.

W. B. Lawson, C. E., was employed to locate the line east of North Park, and J. C. Kennedy, C. E., the portion west of the park, the counties of Larimer and Routt each paying its proportion of the expense of this survey, as provided in the act appropriating the money for the improvement.

The total length of the line to construct was 50.23 miles, and the lowest proposal received was from S. E. Moore, of Fort Collins, for $16,000. The counties of Larimer and Routt having guaranteed the payment of $1,500 towards this work to insure sufficient money for its completion, the contract was awarded to Mr. Moore, on August 10, 1896.

Much of the work was sub-let to residents of the two counties, and construction was pushed to insure its completion before winter. Unusually early snows, however, prevented its completion, and work was stopped about December 1, when it was estimated that about $800 was required to complete the entire line.

At a meeting of the board of construction, on December 5, 1896, it was decided that owing to the advanced state of the work, the completed portions would be received, and the amount remaining in the state fund be paid to the contractor. It was also decided that a guarantee should be given by the counties that they would withhold an amount sufficient to insure the completion of the road in the spring from their appropriations for this purpose.

STATEMENT OF EXPENDITURES.

Appropriation by state	.....	.....	$ 15,000 00
Appropriation by counties	.....	.....	1,212 37
Typewriting	.....	$ 30 30	
Advertising	.....	16 37	
State engineer, trip of inspection	.....	54 50	
W. B. Lawson, trip of inspection	.....	60 50	
Office work, profiles, estimates, etc	.....	41 00	
Telegrams and blue-prints	.....	9 70	
S. E. Moore, on contract—			
by state	$14,787 63		
*by counties	1,212 37		
		$16,000 00	
Total	.....	$16,212 37	$ 16.212 37

*NOTE—A portion of the amount due from counties held until road is completed.

PHILLIPS COUNTY ARTESIAN WELL.

Senate bill No. 167 appropriated the sum of $5,000, or so much thereof as was necessary, for the purpose of sinking an artesian well at some point to be selected, as hereinafter provided, within the territory embraced in the counties of Phillips, Sedgwick, Logan, Washington and Yuma, for the purpose of testing the flow of artesian water for irrigating purposes, and to irrigate state lands.

The board of construction was composed of the state engineer and the chairmen of the boards of county commissioners of the following counties:

Phillips county—M. D. Copp, 1895; M. D. Copp, 1896.
Sedgwick county—C. M. Harris, 1895; P. B. Woodhams, 1896.
Logan county—Jos. Cramer, 1895; Wesley Desellem, 1896.
Washington county—Wm. Little, 1895; E. W. Clark, 1896.
Yuma county—M. M. Dickson, 1895; M. M. Dickson, 1896.

The board met first at Holyoke, Phillips county, on August 21, 1895, and canvassed the question of location, deciding on the east half of section 16, township 7 north, range 44 west, land belonging to the state and lying about one and one-half miles east of Holyoke.

The contract was awarded to J. C. Swan, of Greeley, on April 1, 1896, he agreeing to sink 1,300 feet, casing the well with

six-inch oil-well casing, for the sum of $4,500, and any further depth beyond 1,300 feet with same sized casing at $3.50 per lineal foot.

Work was prosecuted diligently from about May 1 until in August, without being able to get below a depth of 310 feet, on account of the beds of gravel, sand and clay, encountered below 115 feet, in which was found an abundant supply of water. All known expedients were tried to sink below this depth without success, and the contractor having notified this office that further work was useless at that place, the board of construction, at a meeting held at Holyoke, on November 28, 1896, concluded to abandon further experiments, and pay the contractor for the work already done, leaving a ten-inch casing in the well to a depth of 224 feet, instead of the six-inch, which was contracted for.

The settlement for work done, on a pro rata basis, with the larger casing, was estimated at $2,008, which amount was allowed the contractor.

The abundance of water and the gravel formations here, while preventing further work in sinking a well, prove that this section of the state has an abundant supply of underground water, which, if raised cheaply to the surface, will go far towards assisting in the settlement of the country.

FORMATIONS PENETRATED.

Thickness of Strata	Depth from Surface	Material
1 foot	1 foot	Soil
2 feet	3 feet	Decomposed magnesian limestone
5 feet	8 feet	Quicksand
107 feet	115 feet	Clay
15 feet	130 feet	Fine gravel, filled with water
20 feet	150 feet	Clay
15 feet	165 feet	Coarse gravel, filled with water, which raises to within 115 feet of surface.
10 feet	175 feet	Yellow clay
5 feet	180 feet	Quicksand
5 feet	185 feet	Sandy clay
39 feet	224 feet	Coarse gravel, filled with water; strong flow; raises to within 115 feet of surface
4 feet	228 feet	Boulder bed
52 feet	280 feet	Coarse gravel
8 inches	280 feet 8 inches	Cemented gravel or sandstone
21 feet	301 feet 8 inches	Clay
8 feet 4 inches	310 feet	Quicksand

STATEMENT OF EXPENDITURES.

Appropriation	----------	$ 5,000 00
State engineer, three trips to Holyoke	$ 21 70	
Advertising for proposals, twice	70 16	
Typewriting	31 85	
R. S. Sumner, office work	10 00	
M. D. Copp, inspection	52 00	
*Balance in fund	4,814 29	
Total	$ 5,000 00	$ 5,000 00

*Settlement made with contractor by board for work done; $2,008.00 will be paid him on a pro rata basis.

CONEJOS COUNTY ARTESIAN WELL.

House bill No. 5 appropriated $2,500, or as much thereof as was necessary, for the purpose of sinking an artesian well in section 29, township 33 north, range 9 east of the New Mexico principal meridian, in Conejos county.

The board of construction consisted of the governor, state engineer and the chairman of the board of county commissioners of Conejos county (M. B. Colt, 1895; J. B. Chapman, 1896).

This section is the one on which the town of Antonito is located, and in this part of the San Luis valley no wells with an artesian flow have ever been sunk. It was considered doubtful about being able to get a flow, and in order to take advantage of every condition, the place selected for the experiment was in the town well at Antonito, which had been dug to a depth of 127 feet some time before, but which had never reached any strata of water-bearing material.

Proposals for construction were advertised for and received December 16, 1895, but not being satisfactory to the board a readvertisement was ordered, and on January 21, 1896, another meeting of the board was held, at which time only one proposal was received, which was handed in by Grossmayer & Hobart. In this proposal they agreed to sink a well 600 feet below the bottom of the town well, and case the hole from the surface with four-inch casing for the sum of $2,300. Any additional depth, with same size of casing, to be sunk at the rate of $3.83 per foot.

The contract was awarded to them on February 8, 1896, and work was soon started.

Towards the latter part of May, after working continuously under very adverse conditions in a formation of sand, gravel and lava boulders, and reaching a depth of 315 feet from the surface, without striking any solid formation, the work was abandoned as impracticable.

There is very little hope of succeeding in any attempts at sinking a well to any great depth in this neighborhood, on account of the unfavorable material liable to be encountered.

STATEMENT OF EXPENDITURES.

Appropriation		$ 2,500 00
State engineer, trip to locate well	$ 5 50	
Advertising twice for proposals	52 03	
Typewriting	20 30	
Balance unexpended	2,422 17	
Total	$ 2,500 00	$ 2,500 00

MONTEZUMA COUNTY ARTESIAN WELL.

Senate bill No. 231 appropriated $3,000, or so much thereof as was necessary, for the purpose of sinking an artesian well, or wells, at some point to be determined upon in township 35 north, range 16 west, New Mexico principal meridian, upon lands belonging to the state of Colorado, for the purpose of irrigating state lands and prospecting the same for mineral oils.

It also provided that the most desirable location be chosen either upon said lands or upon any other state lands in said county.

The board of construction consisted of the governor, state engineer and the chairman of the board of county commissioners of Montezuma county (Wm. M. May, 1896).

A careful examination of the Montezuma valley was made in February, 1896, and the location finally made on the east half of section 18, township 35 north, range 16 west, New Mexico principal meridian, but before the contract was let, upon the petition of the people of Cortez, and the offer on their part to deed to the state lots 1 to 6 inclusive, in block 20, of the town of Cortez, and to pay for the sinking of 200 feet of the well, in addition to the portion paid for by the state, the board decided to locate the well on said lots, and in awarding the contract to The Colorado Drilling Company, they were required to sink in the town of Cortez.

A contract was awarded on the 29th of August, 1896, on the following conditions:

A well was to be sunk and cased with four-inch casing to a depth of 765 feet. The state to pay $2,700 for a depth of 565 feet, and the cost of the additional 200 feet to be paid by the citizens of Montezuma county. Any additional depth below 765 feet to be paid for at the rate of $5 per lineal foot.

Work on this well has progressed continuously since commencement, and was completed about December 1, 1896, when it had reached a depth of 765 feet.

No artesian flow was encountered, but there were strata of water-bearing material encountered, and the casing was perforated to admit it.

The formation passed through is as follows:

Thickness of strata, feet	Depth from surface, feet	Material
8	8	Soil
12	20	Sandstone
10	30	Shale
40	70	Sandstone and shale
2	72	Streak of coal
18	90	Shale
15	105	Sandstone (oil smell)
13	118	Shale, light colored
27	145	Dark shale
5	150	Sandstone
23	173	Shale
52	225	Very hard sandstone
10	235	Shale, soft and light green tint
15	250	Sandstone
9	259	Pebble conglomerate and sulphur water
86	345	Shale in thin alternating layers of green and red
9	354	Very hard sandstone
32	386	Streaks of very hard sandstone and shale, and good water
22	408	Shale
17	425	Sandstone and good water
77	502	Shale of various colors
18	520	Sandstone
4	524	Green shale
3	527	Almost black shale
8	535	Sandstone
1	536	Shale

Thickness of strata, feet	Depth from surface, feet	Material
35	571	Sandstone
26	597	Shale, with hard streaks
28	625	Sandstone
53	678	Red and green shale and sandstone
69	756	White sugary sandstone and good water
15	762	Red shale
33	795	Red shale and sandstone

While not succeeding in encountering any artesian flow, the water strata passed through will afford a good supply for domestic purposes for the town of Cortez.

The well, in all probability, was started in the Dakota sandstone formation and has passed into the Jurassic series.

STATEMENT OF EXPENDITURES.

Appropriation		$ 3,000 00
State engineer, trip to locate well	$ 27 75	
Advertising twice for proposals	45 96	
Typewriting	27 40	
W. M. May, inspection	33 75	
Colorado Drilling Company, on contract	2,700 00	
Colorado Drilling Company, 30 feet additional, at $5.00	150 00	
H. A. Sumner, telegrams	1 95	
Balance unexpended	13 19	
Total	$ 3,000 00	$ 3,000 00

SUMMARY OF EXPENDITURES BY STATE ON ACCOUNT OF INTERNAL IMPROVEMENTS.

Name of Improvement	Appropriation	Amount Expended	Balance in Fund
Rio Blanco county bridge	$ 4,000 00	$ 4,000 00	
Summit county bridge	4,500 00	3,879 71	$ 620 29
Gunnison county bridge	5,000 00	4,795 99	204 01
Mesa county bridge	7,500 00	7,500 00	
Prowers county bridge	5,000 00	5,000 00	
Morgan county bridge	3,000 00	2,999 56	44
Willow creek channel and levee	6,000 00	6,000 00	
Juanita and Pagosa Springs road	5,000 00	4,100 00	(a) 900 00
Grand county road	10,000 00	1,348 66	8,651 34
San Juan county road	7,500 00	7,497 98	2 02
Gilpin county road	4,000 00	4,000 00	
Costilla county road	3,000 00	494 30	2,505 70
Bellvue and Steamboat Springs road	15,000 00	15,000 00	
Phillips county artesian well	5,000 00	185 71	(b) 4,814 29
Conejos county artesian well	2,500 00	77 83	2,422 17
Montezuma county artesian well	3,000 00	2,986 81	13 19
Totals	$90,000 00	$69,866 55	$ 20,133 45

(a) This amount due contractor upon acceptance of road by board.

(b) Settlement made with contractor by board for work done. $2,008.00 will be paid on a pro rata basis.

CHAPTER III.

REPORTS OF SUPERINTENDENTS OF IRRIGATION AND WATER COMMISSIONERS.

In reviewing the work of the superintendents of irrigation and the water commissioners, during the present administration, I wish to thank these officials for the excellent manner in which they have at all times conducted the affairs entrusted to them, their prompt compliance with every request from this office and the good judgment displayed in the performance of the difficult and arduous duties devolving upon them.

I can realize that the duties of the state engineer's office have been materially lightened by the satisfactory management of the water distribution by these officials.

The reports subjoined contain much information of value to the state, and I shall, in the way of a general discussion of the important matters brought out in these reports for both years, draw some conclusions, which are suggested.

At the commencement of the season of 1895, the supply of snow in the mountains was very light, but from about June 1 to the close of that season we had abundant rains which furnished a sufficient supply of water for all needs.

In 1896, however, the lack of water in the spring was followed by a drouth during the summer, only broken by disastrous floods in certain localities, which did much damage, without assisting irrigation.

The year 1896 will be classed among the driest periods known to the state.

In the early part of this year, having reliable information regarding the amount of snow in the mountains, I issued the following circular:

Denver, Colorado, March 20, 1896.

Superintendents of Irrigation:

Gentlemen—As the irrigation season approaches, I wish to impress upon you the importance of notifying all water consumers, through the water commissioners and by other means, regarding the necessity of getting all ditches in good shape to carry the water to be distributed.

The scarcity of snow in the mountains indicates a short supply during the summer, and by making use of the water early, on such lands and crops as this is practicable, while the supply is ample, a greater service will be obtained from the water and more land irrigated.

I wish to draw your attention to the provisions of the law that forbid waste of water, or running an excess amount, and requiring ditch owners, when it can not be beneficially used, to turn the water back into the stream. This law should be scrupulously enforced, when necessary, according to section 2283 of Mills' Annotated Statutes and the act of the tenth general assembly, approved April 13, 1895.

The head-gates, rating flumes and other measuring devices should be put in excellent repair, and all ditches not rated should have the work attended to so that the water commissioners can make a just and equitable distribution as decreed.

I hope the water consumers will see the wisdom of complying with these suggestions, and will acquiesce willingly.

The usual annual reports of the water commissioners on blanks furnished by this office, giving a list of ditches, length, and amount of water used, and the acreage of each crop raised, should be sent to this office not later than the middle of August.

In order to enable the water commissioner to make an accurate and reliable report, he should provide himself with a memorandum book, in which, while in the discharge of his active duties, during the irrigation season, to make such memoranda as will assist him in making up his report later on. The data can be much more accurately obtained while at work over the district than by waiting until the end of the season and compiling the same from memory or from outside testimony.

Very respectfully,

H. A. SUMNER,
State Engineer.

This general scarcity of water has forced upon consumers the greatest economy, and has been the means of demonstrating what can be accomplished with much less than the usual supply of water.

The South Platte division (No. 1), which embraces the best developed portion of the state, furnishes an illustration. From the reports of the superintendent of irrigation we find that in 1895, with an average of 4,722 second-feet in all the ditches, about 628,000 acres were under cultivation. In 1896, with an average of 3,038 second-feet, there were about 652,000 acres, being 104 per cent. under cultivation, as compared with the previous year, with but 64 per cent. of the amount of water, the average being for 1896 about one cubic foot of water per second for 201 acres of land. I am advised, however, that about one-sixth of the grain crop was lost, and the hay crop, while better in quality, was short in quantity. As high as 300 acres cultivated from one second-foot of water is reported from districts in this division.

In the Rio Grande division (No. 3), with a very short supply of water in 1896, certain crops matured with but little loss.

The superintendent of the Grand River division (No. 5) states: It is a fact substantiated by experiment that one-third statute inch is sufficient to properly irrigate an acre of ground for five months." This would be at the rate of one cubic foot per second for 115 acres, which indicates that there is in ordinary seasons a large amount of water turned into ditches which is not beneficially used, in the sense that the law implies, depriving others of the use of it, and emphasizing the fact that a more complete and systematic control over the distribution is needed, and authority placed with the proper officials to examine into the requirements of the lands and regulate the supply accordingly.

Too many violations of the law are reported, in different parts of the state, which show the difficulties encountered by water commissioners in the discharge of their duties. These unlawful acts are an injury to the service and are to be deplored. The proper headgates and measuring devices, which should be in every ditch, are in too many instances entirely wanting or in bad repair.

The great scarcity of water during the past season should stimulate the construction of storage reservoirs, which would be of great assistance during dry periods. I am advised that an officer of the engineer corps of the United States army will in the spring make examinations for, and prepare estimates of cost, of one or more large storage reservoirs in Colorado. It is to be hoped that the state will derive some benefit from this work later on, and that such work as is authorized by congress may be conducted under the state's supervision.

A summary of the water commissioners' reports regarding crop statistics, shows an increase in the length of constructed ditches in use in 1896, of 1,129 miles, as compared with 1895, and an increase of acreage under cultivation of about 65,000 acres.

This increase, however, is more apparent than real, from the fact that more districts are reporting this year than last. From a summary given below of the entire crops reported, is estimated the acreage for all districts not reporting, which estimate is the same for each year for the same districts, and which makes the total acreage of the state a very little less in 1896 than in 1895:

SUMMARY OF COMMISSIONERS' REPORTS.

Summary of Commissioners' Reports	1895, Acres	1896, Acres
Alfalfa	328,339	325,799
Seeded grasses	73,919	72,879
Natural grasses	445,233	443,312
*Fruit	29,360	45,720
Other crops	544,439	597,715
Cultivated from seepage	21,454	22,355
	1,442,744	1,507,780
Add for districts not reporting—estimated	657,256	572,220
Total	2,100,000	2,080,000

*NOTE—The apparent large increase in fruit acreage of 1896 over 1895 is largely due to District No. 42, in Division 5, not reporting in 1895. This district in 1896 reports 8,189 acres in fruit, and in 1895 should have had probably as much as 6,000 acres, which would make the total fruit acreage in 1895 about 35,000 acres.

Denver, Colorado, December 24, 1895.

HON. H. A. SUMNER, State Engineer,
Denver, Colorado.

Dear Sir—I have the honor herewith to submit my report as superintendent of irrigation of water division No. 1, for the year 1895, accompanied by reports from water commissioners of eleven (11) out of fifteen (15) districts comprising this division. The districts from which these reports are received are 1, 2, 4, 5, 6, 7, 8, 9, 23, 64 and 65. There have been no water commissioners qualified in districts 46 and 48. There have been no ratings in districts 46, 47, 48 and 65, and no decrees entered or in force this year in districts 1, 46, 48 and 65.

Referees have taken testimony and submitted reports to the district court from districts 1 and 48, and decrees will undoubtedly soon be recorded from these districts.

I qualified as superintendent of irrigation March 6, 1895, but did not get possession of the office until May 15, 1895, at which time the streams in this division were extremely low. Little snow lay upon the mountains; the crops were parched, and the land dry. There was but a scant supply of water in any of the ditches, and those of the lower Platte were practically dry.

This condition continued up to June 1. The outlook during this time for a peaceful and successful season of agriculture by irrigation could not well have been worse.

With irrigation laws, which are far from perfect and not uniformly defined; with decrees for water, many of which are known to be inequitable; with ditches without proper headgates or ratings; with few facilities and little authority left to those charged with the control of irrigation, in times of scarcity many farmers are disposed to get what water they can and keep it, as they may, without much regard to the more or less vague and uncertain rights of record, ignoring or evading, as circumstances warrant, any legal distribution of water. This was the general prospect in this division (for the irrigation season of 1895) as viewed during the latter part of May. This situation was quickly changed by the great precipitation which occurred during the first three days of June, which soaked the ground, filled the streams, and left a coat of snow upon the mountains. Later rains in June, July and August supplied abundant water for crops, and a surplus ran from the state by the Platte river for sixty-five days, ranging in volume from 1,000 to 12,000 cubic feet per second, according to the opinion of those best qualified to judge correctly. A great quantity of water also passed from North Park unused into Wyoming by the North Platte river.

Crops which were suffering June 1 completely recovered, and irrigation has been the most uniformly perfect, and crops, generally, the finest in the history of the state. The hay crop was partly damaged by rains while making, but there was scarcely any loss from hail storms. Take it all together, the crops were secured in fair condition.

The water commissioners of this division are able and faithful men in this line of work. This office has not often been appealed to by dissatisfied irrigators during the year, and none of its rulings have been appealed from or made the occasion for litigation.

It is a matter of much regret that water commissioners have not the unquestioned right to gather full irrigation and crop statistics in their districts, with a certainty of pay for reasonable service, since such statistics are indispensable to a fair discharge of their duties, and for the further reason, among others, that the counties and the state have no reliable crop statistics, and have not had any. It is a hopeful feature that farmers are less disposed to hold onto the water, after they no longer need it, than formerly.

While there are many reservoirs for storing flood and surplus waters, there is yet much that can be done, by way of storing floods and developing seepage and underflow.

As no change in the irrigation laws is probable until this office shall have an opportunity to present a later report, which

may be tempered by later experience, no recommendation for changes are urged at this time. Attention is respectfully called to the following summary, which is only approximately correct:

The number of acres actually irrigated in this division, as reported, is 627,670. Full reports from all districts, including four from which we have no reports, would have made the number of acres irrigated about 900,000.

Of the acres reported, 168,004 are in alfalfa, 29,735 in seeded grasses, 153,629 in native grass, 11,683 in fruit, 256,969 in other crops, mostly grain and potatoes, and 7,650 acres from seepage. The cost of repairs and superintendence varies greatly, running from 9 cents to 40 cents per acre; average, about 24 cents. The duty of water also varies greatly, running from 44 to 300 acres per second-foot. It is probable that if all the floods and winter seepage were stored and used with the usual amount appropriated, 2,000,000 acres could be irrigated in this division most years, with no higher duty from the water than is obtained on Clear creek or Boulder creek. With land and water properly utilized, it is possible, so far as natural conditions are concerned, for Colorado in a few years to sell as much beet sugar as she now does gold and silver.

The monthly reports from this office and the annual and weekly reports from water commissioners will explain the work of irrigation in greater detail. All decrees that have been received have been duly recorded.

In conclusion, it is a pleasure to express my thanks to all who have had official or business relations with this office for friendly and prompt attention and assistance.

Very respectfully submitted,

A. L. EMIGH,
Superintendent of Irrigation Division No. 1

WATER DIVISION No. 1—SOUTH PLATTE DIVISION.

No. of District	Ditches—Length thereof in miles	Average amount of water carried during season of 1895 in second-feet	Number of acres that can be irrigated therefrom	Number of acres of alfalfa irrigated therefrom	Number of acres of seeded grasses other than alfalfa irrigated therefrom	Number of acres of natural grasses irrigated therefrom	Number of acres of fruits irrigated therefrom	Number of acres of other crops irrigated therefrom	Number of acres irrigated from seepage	Cost of superintendence	Cost of repairs for year
1	124.50	546.00	75,000	45,500	230	5,400	----------	28,245	685	----------	----------
2	239.25	1,092.00	100,783	21,585	500	7,606	627	27,179	----------	$ 5,015	$ 3,970
*3	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
4	214.00	393.83	87,122	12,838	1,120	2,564	1,826	45,151	1,150	6,715	4,295
5	245.50	288.00	78,190	9,020	2,550	21,745	200	56,765	----------	1,075	2,618
6	359.50	207.30	77,885	12,812	3,383	16,990	897	29,681	1,450	2,250	3,500
7	261.20	487.30	128,572	41,430	18,384	3,412	5,985	52,691	3,295	5,400	6,505
8	321.50	640.70	66,042	9,881	2,106	3,013	1,854	6,643	925	11,866	13,499
9	57.25	----------	11,762	4,563	1,462	911	226	3,569	----------	1,878	1,273
23	313.90	----------	70,673	----------	----------	69,328	----------	155	----------	----------	----------
*46	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
*47	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
*48	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------

* No report.

WATER COMMISSIONER'S ANNUAL REPORT, A. D. 1895.

WATER DIVISION NO. 1—SOUTH PLATTE DIVISION—Concluded.

No. of District	Length thereof in miles	Average amount of water carried during season of 1895 in second-feet	Number of acres that can be irrigated therefrom	Number of acres of alfalfa irrigated therefrom	Number of acres of seeded grasses other than alfalfa irrigated therefrom	Number of acres of natural grasses irrigated therefrom	Number of acres of fruits irrigated therefrom	Number of acres of other crops irrigated therefrom	Number of acres irrigated from seepage	Cost of superintendence	Cost of repairs for year
64	126.00	1,067.00	42,900	9,625	----- ----	22,660	68	4,770	145	$ 2,075	$ 7,870
65	64.46	----------	9,595	750	------ ---	----------	----------	2,120	----------	--------	1,067
Totals	2,327.06	4,722.13	748,524	168,004	29,735	153,629	11,683	256,969	7,650	--------	----------

Pueblo, Colorado, December 24, 1895.

HON. H. A. SUMNER, State Engineer,
Denver, Colorado.

Dear Sir—Herewith I hand you my report as water superintendent of water division No. 2 of the state of Colorado, for 1895. This report is as nearly full and correct as it has been possible for me to make it with what data I have been able to gather.

In performing my official duties it has been made very apparent to me that there is a great necessity for the establishment and building up of a reservoir system in Colorado; this is the only solution of the question of holding the water of Colorado for use by its citizens for agricultural and other purposes.

During a part of the irrigating season of each year, the flow of water in the natural streams is so low that there is not nearly enough to supply the actual necessities of those who already have lands under cultivation under the streams of my division.

The larger canals have adopted the plan of irrigating their lands when practicable during the winter months, and by so doing, less water is needed during the early spring months before the melting of the snow in the mountains, and the first crop of alfalfa can, in many cases, be grown and harvested without very much, if any, irrigation. The amount of water flowing in the Arkansas river during the winter months, however, is usually so low that but one or two of the large canals can be supplied at any one time, between, say, the first of December and the middle of March. The different canals are being thus supplied with water by alternating in the use of it.

This state of affairs shows the great necessity of a system of reservoirs, the most important of all being the Twin Lakes reservoir, and it should have been ready for use this coming year. There are quite a number of other locations in this division selected by the United States geological survey a few years ago, but the Twin Lakes reservoir should be first of all, and the sooner the better. This should, and undoubtedly will be, supplemented by systems of small reservoirs under the

various ditches and canals, for the purpose of storing any and all surplus waters, so as to provide against times of scarcity.

As above indicated, it should be the emphatic and vigorous policy of Colorado to store and preserve for beneficial use all water, both from rain fall and from the melting of the snow, within the boundaries of the state. If properly stored and used, the snow and rain fall of Colorado would be worth more to the state than a score of the best gold mines that have ever been discovered within its borders.

As a sample of what could be done by such a policy, permit me to state that the annual precipitation in the Arkansas valley basin in Colorado is amply sufficient to irrigate and place under cultivation fully one-half million acres more of land than are now being cultivated. That much uncultivated land, and far more, lies in this basin, and the fertility of its soil and adaptability for agricultural and horticultural purposes is well known.

Respectfully submitted,

GEO. J. RANKIN,
Superintendent Division No. 2.

WATER DIVISION No. 2—ARKANSAS DIVISION.

No. of District	Length thereof in miles	Average amount of water carried during season of 1895 in second-feet	Number of acres that can be irrigated therefrom	Number of acres of alfalfa irrigated therefrom	Number of acres of seeded grasses other than alfalfa irrigated therefrom	Number of acres of natural grasses irrigated therefrom	Number of acres of fruits irrigated therefrom	Number of acres of other crops irrigated therefrom	Number of acres irrigated from seepage	Cost of superintendence	Cost of repairs for year
10	82.00	100.00	26,500	4,000	370	4,100	230	2,420	----------	--------	----------
11	374.00	750.00	36,359	5,131	3,330	6,456	61	8,528	119	--------	$ 1,395
12	133.00	141.25	8,123	2,128	160	358	439	2,003	59	--------	----------
13	357.00	656.85	29,725	566	3,449	16,212	----------	10,102	129	--------	----------
14	290.00	1,458.85	232,407	21,665	93	23,276	2,662	21,003	1,000	$ 9,095	1,365
15	202.00	126.55	12,186	2,643	701	2,619	210	1,641	10	--------	4,308
16	246.20	464.52	42,365	6,710	1,166	6,145	231	11,067	10	--------	6,354
17	319.15	1,246.00	133,179	40,801	11	6,612	1,600	38,250	270	11,920	23 700
18	----------	50.00	2,746	511	7	569	----------	1,659	----------	120	----------
19	218.00	158.00	43,895	11,210	----------	2,870	35	7,490	50	1,700	6,380
*49	----------	----------	----------	----------	----------	----------	----------	----------	----------	--------	----------
*66	----------	----------	----------	----------	----------	----------	----------	----------	----------	--------	----------
67	223.00	485.00	137,966	16,633	----------	23,237	283	7,453	1,647	7,690	16,227
Totals	2,444.35	5,637.02	705,451	111,998	9,287	92,454	5,751	111,616	3,294	--------	----------

*No report.

Del Norte, Colorado, December 25, 1895.

HON. H. A. SUMNER, State Engineer,
Denver, Colorado.

Dear Sir—I have the honor to transmit the enclosed report of the water commissioners of the several districts comprised in water division No. 3, and to submit my report as superintendent of said division.

In district No. 20, comprising the Rio Grande river above the mouth of the Conejos river, and its tributaries, the accompanying table gives the data pertaining to the incorporated ditches only. There is still remaining 400 private decreed ditches, covering probably 100,000 acres of farming, hay and grazing lands. In this district is located the noted wheat and oat lands that have made the San Luis valley famous. This district contributes its share also in the production of the potato, the superior of which is found nowhere.

District No. 21 comprises lands irrigated from Hot creek and the La Jara and Alamosa rivers. The crops in this district this season were fine and the yield unusually large. Many fine ranches border these streams. Special mention is made of the La Jara creamery and the Harvey stud farm.

District No. 22 comprises lands irrigated from the Conejos river, and is with one exception the largest district in the division. The commissioner, in performing his duties, is required to patrol nearly sixty miles of river front. For variety of crops and fertility of soil, this district is unexcelled.

The study of the Mormon and Mexican modes of living and farming is one of the many attractive features of this district. The Conejos river affords an abundance of water; the crops raised this year were both fine and abundant.

District No. 24 comprises lands irrigated by water taken from the Rio Grande river, between the mouth of the Conejos river and the Colorado and New Mexico line, also Costilla creek. Crops in this district exceeded in quality and quantity those of several years past. There was an abundance of water for irrigation since May 15. The bean crop was damaged by frost on September 19. Wheat, oats, barley and peas gave an increased yield over any previous year. Hay and alfalfa were better than in former years, though somewhat damaged by rains.

District No. 25 comprises lands irrigated from the San Luis creek, Sand or Madeno creek, Big and Little Spring creeks, North and South Zapato creeks, Middle creek and Sierra Blanca creek and its tributaries. Live stock and hay are the principal productions of this district. The yield this year was most satisfactory, the northern portion of this district having at all times during the season an abundance of water, while the southern portion suffered considerably from a scarcity. In this district are located the Gilpin and part of the Baca grants.

District No. 26 comprises lands irrigated from the Saguache river. The yield of crops has been very large this season, although the superabundance of water, in the latter part of the season, interfered materially with the complete harvesting of the hay crop on the lower Saguache. In this district is located the state reservoir. This reservoir, when in good working order, will add considerably to the water supply, and be of much benefit to the farmer during a season of scarcity of water.

District No. 27 comprises land irrigated from the Carnero and La Garita creeks. The La Garita, in conjunction with the Biedell ditch from the Rio Grande river, supplies for irrigation the celebrated farm of Mark Biedell. The diversified products of this famous valley are preëminently exemplified on this noted ranch. Mr. Biedell's fine orchard is a surprise to visitors, as it is generally believed this high altitude precludes fruit raising. Taken altogether, the heavy rains in the mountains and the copious showers in the valley, insured an unusually heavy crop, even for this favored section.

Abundant as water is here usually, it is inadequate for the amount of land still remaining, and I would not consider this report complete were I to omit to call your attention to the advisability and practicability of the storage of the surplus waters of the streams comprised in this water division. The Santa Maria lakes, located near the head waters of the Rio Grande river, and a valley located in the foothills, about eight miles northwest from the town of Conejos, are natural reservoirs, and can be made, at a total expenditure of less than $40,000 to store over 1,500,000,000 cubic feet of water each. These two, with the Saguache reservoir, would be sufficient to supply ample water to every foot of tillable land, and when farmed would increase enormously the agricultural output of this already justly celebrated San Luis valley.

Respectfully submitted,

FRANCIS T. ANDERSON,

Superintendent of Irrigation, Division No. 3.

WATER DIVISION No. 3—RIO GRANDE DIVISION.

No. of District	Length thereof in miles	Average amount of water carried during season of 1895 in second-feet	Number of acres that can be irrigated therefrom	Number of acres of alfalfa irrigated therefrom	Number of acres of seeded grasses other than alfalfa irrigated therefrom	Number of acres of natural grasses irrigated therefrom	Number of acres of fruits irrigated therefrom	Number of acres of other crops irrigated therefrom	Number of acres irrigated from seepage	Cost of superintendence	Cost of repairs for year
20	600.00	2,545.00	589,400	3,538	520	102,383	----------	122,593	3,050	----------	----------
21	204.75	775.00	61,649	2,062	50	24,171	----------	10,557	4,800	----------	----------
*22	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
24	39.00	229.00	10,418	49	19	953	----------	7,331	----------	$ 493	$ 309
25	237.50	765.00	42,907	150	----------	41,322	----------	1,373	----------	----------	----------
26	40.00	200.00	----------	675	154	4,971	----------	2,548	----------	----------	----------
27	51.50	63.00	5,030	475	100	3,090	----------	302	----------	----------	----------
*35	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
Totals	1,172.75	4,577.00	709,404	6,949	843	176,890	----------	144,704	7,850	----------	----------

* No report.

Grand Junction, Colorado, December 6, 1895.

HON. H. A. SUMNER, State Engineer,
Denver, Colorado.

Dear Sir—Herewith I transmit to your office such annual reports as I have been able to have made by the several water commissioners of this division. Next year we shall endeavor to have the data for these reports obtained during the irrigation season, so that there will be very little expense at the end of the season, in making them up.

The scarcity of necessary funds to pay for making them, and the meagre interest taken in the matter by the several county commissioners of this division, are my reasons submitted for having so few reports made.

Owing to the fine rains which have occurred at intervals during the past irrigation season, there has been no scarcity of water for crops in this division, but in the coming years the husbandman may not have cause to be so grateful to the seasons, and I would suggest that, through the state engineer's office, information be disseminated among the people, and especially the county commissioners and water commissioners, to the end that they should understand the importance and usefulness of the data obtained by the annual report.

My observations have taught me that in most of the districts of this division there is much more water wasted than is legitimately used for irrigation of crops. When his crop cries for cultivation, the average ranchman quiets his conscience by lifting the headgate. The result is that in some sections much land is in process of being destroyed by drowning with seepage.

Five-eighths statutory inch in this division is, I think, too much water, and the question of necessity and utility, which is now being taken into consideration by the courts who make the decrees, should result in orders along this line to the water commissioners who distribute under their direction, and it should be, in a way, irrespective of the inches noted in the decree. The water commissioner, in his district during the irrigation season, would be an autocrat was it not for his superior, the court; but

as the court is hardly ever in session, the people generally ascribe to him that title any way, so that this being true, the water commissioner should be well equipped in the knowledge of the law and the beneficial use of water as applied to growing crops in order that he may do well his duty, to the end that the waters from our mountain areas shall be used economically and to the best interests of all the people. This question of duty of water, as applied to growing crops, is to my mind an important one, and in the near future must be solved. I suggest that a series of experiments be made upon the different soils of this division. It should be done under the direction of the state engineer, the head of this department. The appointment of responsible parties, who are practical irrigators, in different parts of the division, to test the matter would prove satisfactory, it seems to me. They should have furnished them carefully constructed weirs of the Cippolette or other known accurate device for measurement.

I herewith enclose reports from such districts as I have been able to get from the commissioners, namely: No. 38, Chas. A. Shadle; No. 39, D. F. Webster; No. 40, J. C. Hart; No. 41, A. W. Hovey; No. 45, Wh. Chadwick, and No. 61, Geo. E. Blake.

This office having been turned over to me so late as June 16, when the season was at its height, it was, or seemed, impossible to get the matters well in hand, especially as nothing whatever had been done by my predecessor up to that date.

If there is anything further wanted in your office in the way of reports from this division, please advise me.

Yours truly,

DAVID R. CROSBY,
Superintendent Irrigation Division No. 5.

WATER DIVISION No. 5—GRAND RIVER DIVISION.

No. of District	Length thereof in miles	Average amount of water carried during season of 1895 in second-feet	Number of acres that can be irrigated therefrom	Number of acres of alfalfa irrigated therefrom	Number of acres of seeded grasses other than alfalfa irrigated therefrom	Number of acres of natural grasses irrigated therefrom	Number of acres of fruits irrigated therefrom	Number of acres of other crops irrigated therefrom	Number of acres irrigated from seepage	Cost of superintendence	Cost of repairs for year
*28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
38	177.45	197.95	19,422	4,294	2,869	725	1,498	4,580	20	.....	$ 3,695
39	132.12	130.30	18,517	3,960	215	1,340	1,476	2,585	.....	.....	.....
40	191.37	213.35	37,445	8,920	1,295	332	1,540	3,664	15	$ 185	695
41	188.00	338.95	81,533	13,861	351	723	4,489	6,137	2,380	12,236	2,115
*42	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
45	119.50	116.40	14,062	2,820	9,267	644	2,819	2,026	.....	642	.....
*50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*51	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*53	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*59	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

*No report.

WATER DIVISION No. 5—GRAND RIVER DIVISION—Concluded.

No. of District	Length thereof in miles	Average amount of water carried during season of 1895 in second-feet	Number of acres that can be irrigated therefrom	Number of acres of alfalfa irrigated therefrom	Number of acres of seeded grasses other than alfalfa irrigated therefrom	Number of acres of natural grasses irrigated therefrom	Number of acres of fruits irrigated therefrom	Number of acres of other crops irrigated therefrom	Number of acres irrigated from seepage	Cost of superintendence	Cost of repairs for year
61	143.25	100.20	4,275	2,495	256	507	92	3,936	----------	$ 300	$ 1,500
*62	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
*63	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
*68	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
Totals	951.69	1,097.15	175,254	36,350	14,253	4,271	11,914	22,928	2,415	----------	----------

* No report.

H. E. Turner, superintendent of irrigation division No. 6, of Steamboat Springs, states, in regard to the reports of the commissioners, that the division embraces seven districts, reports being sent from all but one.

He reports that but few of the ditches are rated, and that generally the affairs are in a crude state, owing to its being a comparatively new country, and in most parts furnished with such an abundance of water that it is not necessary to practice that close economy in the distribution of water that is essential in other parts of the state. Still there are sections where the supply is limited, and the superintendent measured and arrived at the approximate flow himself, without any expert assistance.

The county commissioners of Routt county are reported as favoring the abolition of the office of superintendent of irrigation, on account of the expense incurred, which is probably a short-sighted policy.

The early part of the season in this division was a very wet period, and a bountiful supply of rain is reported in all sections; yet as summer advanced the conditions were quite the reverse, the streams and springs being very low.

WATER DIVISION No. 6—GREEN RIVER DIVISION.

No. of District	Length thereof in miles	Average amount of water carried during season of 1895 in second-feet	Number of acres that can be irrigated therefrom	Number of acres of alfalfa irrigated therefrom	Number of acres of seeded grasses other than alfalfa irrigated therefrom	Number of acres of natural grasses irrigated therefrom	Number of acres of fruits irrigated therefrom	Number of acres of other crops irrigated therefrom	Number of acres irrigated from seepage	Cost of superintendence	Cost of repairs for year
43	276.55	257.20	14,734	2,188	1,495	4,954	10	2,519	50	$ 141	$ 1,944
44	80.50	122.93	7,535	752	1,182	2,226	----------	440	105	15	1,034
54	24.83	18.81	1,440	107	850	1,495	----------	251	----------	--------	150
*55	----------	----------	----------	----------	----------	----------	----------	----------	----------	--------	----------
56	9.03	7.48	1,785	610	340	287	----------	127	----------	--------	75
57	106.12	181.63	19,440	1,350	7,175	2,731	1	2,430	----------	--------	690
58	144.12	256.87	28,988	31	8,759	6,296	1	2,455	90	--------	1,581
Totals	641.15	844.92	73,922	5,038	19,801	17,989	12	8,222	245	--------	----------

* No report.

Denver, Colorado, December 4, 1896.

HON. H. A. SUMNER, State Engineer,
Denver, Colorado.

Dear Sir—I have the honor to present the following report as superintendent of irrigation of water division No. 1, for the year 1896.

Reports from water commissioners are also submitted.

The irrigation season of this year—like that of 1895—opened with a very light supply of snow in the mountains, but unlike last year, the deficiency was not fully made up by rains, although local showers which visited the lower Platte country, and some points nearer the mountains, did much good.

Great damage to ditches on Clear and Bear creeks was caused by cloud bursts in July. Hail storms damaged crops in limited areas in Boulder, Larimer, Weld and Logan counties. The early season in the mountain parks was dry, but showers in July and August improved the hay crop, which is still lighter than usual.

In portions of this division, water that had been stored in reservoirs performed an important part in irrigating crops.

Owing to the unusual heat, scarcity of water, hail, and the ravages of grasshoppers, the yield of wheat and oats is light in parts of the division. Corn has done well. Potatoes were blighted in many places, and the hay crops are below the average in quantity, but fair in quality.

Considering the limited precipitation, it is a matter of surprise that more than four-fifths of the crops were irrigated. This result was attained by the diligence of farmers and superintendents of ditches, and greatly facilitated by the able and experienced corps of water commissioners in this division.

In years of scarcity, disputes usually arise between users of water, but serious trouble has been averted this year, greatly to the credit and satisfaction of all concerned. Disputes usually follow a lack of reliable rating of the streams and ditches, and funds should be provided to keep this work up to date. The law

requiring ditches to have rating flumes should be completed by adding a penalty for non-compliance.

The decision of the supreme court, rendered early in the year, in the case of The Farmers' Independent Ditch Company, Plaintiffs in Error vs. The Agricultural Ditch Company, Defendants in Error, confirmed the authority and jurisdiction of superintendents of irrigation as matters of law; but certain injunction proceedings in districts Nos. 4, 7 and 23, which have not yet been dissolved, have in these cases restrained this office from distributing water in the division without regard to district lines. It is thought that more complete crop statistics may be had, at little cost, if farmers applying for water shall be required by law to furnish ditch superintendents, or secretaries, with the kind and acreage of crops; these statements to be turned over to water commissioners, to be used in making crop reports. This requirement would permit a better distribution of water according to the necessities of crops, and insure a higher duty and more beneficial use of the same.

It is believed that the best interests of all will be conserved by placing a larger discretion in the hands of superintendents of irrigation, to be exercised carefully in cases of emergency, and to save valuable property.

Much uncertainty and annoyances to county officers and superintendents would be avoided, if superintendents of irrigation were paid directly by the state; and it would be well if the attorney general was made counsel for these officers.

In a number of cases, those having appropriations under one ditch have been allowed to use this water upon their own lands under another ditch, provided the use of water for the season was given up under the first ditch, and those asking for this change sustained any loss of water from seepage or otherwise occurring in the transfer.

The work of this office has required attention throughout the year; and during the time of greatest stress for water, its duties have at times been exacting and embarrassing, but they have been met with a success reasonably satisfactory to the incumbent, at least, considering the limited facilities and authority at his disposal.

For more complete information, reference is made to the various reports of water commissioners, and to the rulings, reports and correspondence of this office. The districts comprising this division are Nos. 1 to 9, inclusive; also, Nos. 23, 46, 47, 48, 64 and 65.

No crop or final reports have yet come from districts Nos. 3 and 46. I desire to commend those commissioners who have made reports. There have been difficulties in the way of others not easy to overcome, which the law should remedy.

Six hundred and fifty-two thousand and ninety eight acres of crop has been reported as irrigated, but the full acreage under irrigation in the division is nearly 900,000. Of those reported, 137,450 acres were in alfalfa. In other seeded grasses, 30,264 acres. In natural grasses, 170,264 acres. The number of acres in fruit is 15,025. In other crops, 290,407 acres. The duty of water has ranged from 75 to 300 acres per cubic foot, which is the highest duty, it is believed, ever attained in Colorado. This duty can be somewhat increased by greater precautions against waste and more assistance to some water commissioners. The duty of water is lowest probably in district number two (2), almost entirely owing to the open sandy soil and the flat surface of the lands.

During all of last winter there were more than 600 cubic feet per second of water ran to waste in the Platte river. In July and August of this year an amount of water ran to waste equal to 400 cubic feet per second, for thirty days, in the lower Platte. The welfare of the people of this division and the value of all the property is concerned in the question of storing this waste water. Who shall do it, and how shall it be done? is the problem.

The kind attention, sir, that I have received at your hands, and of those with whom I have had official relations, is gratefully acknowledged.

Very truly,

A. L. EMIGH,

Superintendent of Irrigation, Water Division No. 1.

WATER DISTRICT NO. 1.

JAMES HURLEY, WATER COMMISSIONER.

Mr. Hurley reports the number of miles of ditches in his district is 167.5. The number of acres that can be irrigated is 86,400. The number of acres in alfalfa is 9,725; in natural grasses, 13,615; in fruit, 127; in other crops, 27,250.

These figures do not include the acreage under some small ditches, which was not procured.

WATER DISTRICT NO. 2.

J. H. HODGSON, WATER COMMISSIONER.

Mr. Hodgson reports the average amount of water carried during the season was 752¼ cubic feet per second of time. The number of acres that can be irrigated is 104,528. The number of acres in alfalfa is 19,689; in seeded grasses, 494 acres; of natural grasses, 7,411; in fruits, 350 acres; in other crops, 26,441 acres. The cost of superintendence of ditches for the year was $5,355; repairs, $4,626. The cost of superintendence per acre has been about ten (10) cents, and the cost of repairs about eight (8) cents per acre in this district.

WATER DISTRICT NO. 3.

J. L. ARMSTRONG, WATER COMMISSIONER.

Mr. Armstrong has made no report for the reason that the board of county commissioners of Larimer county will not allow compensation for time employed in gathering statistics, and the district is too large to do the work gratis, as Mr. Armstrong has no deputies.

In 1894 there were 177,808 acres irrigated in this district; 29,183 acres in alfalfa; other grasses, 4,922 acres; other crops, 76,279 acres; pasture, 61,630 acres. There are probably 190,000 acres irrigated at this time in the Poudre valley, which comprises this district. A large number of finely and expensively constructed reservoirs store a large part of the summer surplus flows and the winter flow in the streams. These reservoirs were of great service this year, much of their storage having been carried over from last year. Owing to the close attention given to the water rights in this district, as well for storage as for direct irrigation, the water commissioner is employed at times both winter and summer. A telephone line connects the principal ditches.

WATER DISTRICT NO. 4.

H. C. HAVENER, WATER COMMISSIONER.

Mr. Havener reports that water for irrigation was scarce in 1896, and that about 94,129 acres were irrigated, 63,800 acres of which were under the ten ditches reported, out of twenty-

nine in the district. The average flow of water in the streams was only 267.75 cubic feet per second, so that the duty of water has been more than 300 acres per cubic foot for the season.

Mr. Havener recommends the appropriation of money by the county or state to pay for the labor of securing crop statistics. A telephone line would save the cost of a deputy in this district and would cost about $800. A telephone is badly needed.

With the exception of some misunderstanding with the Handy ditch people, there has been no trouble in the district. There has been some dissatisfaction on account of diverting water from one ditch to another. Mr. Havener thinks that water commissioners should be vested with more authority; he believes that the law should allow the owners of private reservoirs to store water whenever their ditch is entitled to water, giving them the right to decide whether they shall irrigate directly at the time or store the water for future use. The reservoirs in this district have been of great service in saving crops.

Mr. Havener began work March 25, and will likely finish November 30. Deputies have assisted 129 days.

Fall irrigation of alfalfa on sandy land is recommended.

WATER DISTRICT NO. 5.

L. H. DICKSON, WATER COMMISSIONER.

Mr. Dickson reports the number of acres irrigated in the district was 89,160. The average flow of water in the streams was 361 cubic feet per second.

Mr. Dickson was called out May 2. May 25 placed deputy at the head of the principal ditches. In June, a deputy was sent to the Bear Park reservoir to oversee the turning out of water stored for the highline and supply ditches. Deputies served twenty-nine days. The supply of water from snow was limited, but great service was rendered from water stored in reservoirs. Showers in August helped out late crops. Very little of the grain has suffered. The yield of wheat is good, some fields giving from forty to sixty-five bushels per acre. The average of all crops about the same as last year.

Mr. Dickson says that the law should require superintendents of ditches to give, under oath, a complete report of crops planted and raised under their ditches, to the water commissioner of the district. If this were done, water commissioners could make accurate reports; as it is, very little information can be obtained except in rare cases.

WATER DISTRICT NO. 6.

A. C. STILWELL, WATER COMMISSIONER.

Mr. Stilwell reports that 65,478 acres of crops were irrigated this year, 1,150 being irrigated from seepage. The average flow of water used from April 11 to September 30, 203.37 cubic feet per second of time. The amount of water coming into the district for the same time was 240.77 cubic feet per second. More than 4,600 cubic feet per second is decreed to the ditches of the district; 800 to 1,000 cubic feet will fill all the ditches; 400 to 500 cubic feet will save all the crops any year. This year, with an average flow of only 203.37 cubic feet, the crops are good and no serious complaint as to the shortage of water. The duty of water has been more than 300 acres to the cubic foot per second.

Attention is called to the great difference between the amount of water decreed and the amount necessary to save crops.

The discretion assumed by this water commissioner has been used wisely.

WATER DISTRICT NO. 7.

W. J. PALMER, WATER COMMISSIONER.

Mr. Palmer reports the number of acres that can be irrigated in this district to be 91,838. There are 49,238 acres in alfalfa; 18,534 acres in seeded grasses; 9,812 acres in natural grasses; 7,085 acres in fruits, and 37,406 in other crops; and 3,045 acres are irrigated from seepage. The average flow of the streams has been 404.25 cubic feet per second.

The cloud burst on Clear creek, in July, greatly damaged ditches. The work of the district has been arduous this year. Crops are generally good, where well watered.

Up to November 1, Mr. Palmer was on duty 205 days. A deputy served sixty-nine days.

WATER DISTRICT NO. 8.

S. F. COUCH, WATER COMMISSIONER.

Mr. Couch reports 24,822 acres in crop. The season was extremely dry and only a few ditches had a fair supply of water continuously. When properly irrigated, crops are good, but

under late ditches farmers and gardeners have suffered severely. Had it not been that a little water was spared at times by the older ditches the loss to the fruit interest would have been very great. As it was, small fruits have been greatly injured. Mr. Couch recommends that the owners of reservoirs should be prevented by penalty from storing water during the irrigating season, when it is needed for irrigation.

WATER DISTRICT NO. 9.

FRANK EWERS, WATER COMMISSIONER.

Mr. Ewers reports 5,298 acres irrigated from the streams direct, and about 5,000 acres were irrigated from reservoirs.

The season has been extremely dry and the amount of water less than usual, but no trouble has been experienced in dividing the water.

Several ditches were newly rated, which greatly assisted in a proper division.

Mr. Ewers was called out April 6, and up to September 1 he had put in 116 days. Irrigation in the district was not finished at that date. Ditches were greatly damaged by the great flood of July.

WATER DISTRICT NO. 23.

WALTER SINGLETON, WATER COMMISSIONER.

Mr. Singleton, whose district is in South Park, reports eighty acres in seeded grasses, 60,687 acres in native hay, and 131 acres in other crops.

The early season was extremely dry and the streams very low, but rain in July and August increased the supply of water and greatly improved the hay crop, which is still lighter than usual.

This water district is very large, and requires the help of deputies.

Mr. Singleton served 117 days.

A. W. Vincent served sixty days.

W. M. Craig served twenty-one days.

I. H. Flower served twenty-seven days.

John Drake served six days.

WATER DISTRICT NO. 47.

W. D. BECKWITH, WATER COMMISSIONER.

Mr. Beckwith served forty-two days, beginning work June 8 and closing July 24.

Eighteen thousand acres are irrigated in this district. About 500 acres are in timothy. There is a small acreage of barley, rye and oats. Native hay is the greatest crop, of which there were 16,266 tons put up. Most vegetables do well in this district in North Park.

WATER DISTRICT NO. 48.

A. I. HANCE, WATER COMMISSIONER.

Mr. Hance reports 5,435 acres can be irrigated; 3,995 acres were in natural grasses.

The cost of superintendence of ditches was $780. Cost of repairs, $2,505.

Decrees were entered for this district in the district court of Larimer county at the September term.

WATER DISTRICT NO. 64.

R. J. PATTERSON, WATER COMMISSIONER.

Mr. Patterson reports the number of acres of crop in his district at 32,357. Cost of superintendence of ditches, $725; repairs, $650.

A large part of the hay crop was irrigated early in the season. Most of the other crops were but partially irrigated, owing to the scarcity of water, but showers were so frequent that good crops have been raised, except where the hail and grasshoppers have injured limited areas. There has been no trouble or law suits.

During the latter part of July and in August the volume of water that ran away unused was equal to 400 cubic feet per second for thirty days' time.

WATER DISTRICT NO. 65.

PETER CAMPBELL, WATER COMMISSIONER.

Mr. Campbell reports the number of acres irrigated in 1896, in his district, at 6,250 acres. Alfalfa, 980 acres; grain, 4,050 acres; other grasses, 1,220. Increased acreage in cultivation, 2,775 acres. Number of miles of ditches, eighty-one.

The season for irrigation was favorable, except on the Arickaree. Reservoirs are needed to store waste water, which would greatly increase the amount of land that can be irrigated.

There are no decrees in this district and none wanted. There have been few disputes and conflicts concerning rights. Early and late irrigation is practiced. Water was turned into some ditches in February, and is still running in some ditches at the date of this report—December 1.

Several wells in this district have pumps, which raise water into small reservoirs, from which tracts of five (5) acres are irrigated with success.

A submerged lake or basin containing water underlies a large area in this district.

Mr. Campbell thinks wind and electrical power may raise much water for irrigation.

WATER DIVISION No. 1—SOUTH PLATTE DIVISION.

No. of District	Length thereof in miles	Average amount of water carried during season of 1896 in second-feet	Number of acres that can be irrigated therefrom	Number of acres of alfalfa irrigated therefrom	Number of acres of seeded grasses other than alfalfa irrigated therefrom	Number of acres of natural grasses irrigated therefrom	Number of acres of fruits irrigated therefrom	Number of acres of other crops irrigated therefrom	Number of acres irrigated from seepage	Cost of superintendence	Cost of repairs for year
1	167.50	266.00	86,400	9,725	----------	13,615	127	27,250	500	$ 2,055	$ 5,345
2	250.00	752.25	104,528	19,689	494	7,411	350	26,441	----------	5,355	4,626
*3	----------	----------	----------	----------	----------	----------	1,450	57,375	----------	3,652	4,776
4	223.00	267.74	63,800	12,609	2,350	1,544	1,395	34,730	2,515	6,525	2,635
5	246.00	361.00	89,160	7,525	2,600	20,210	1,450	57,375	----------	3,652	4,776
6	361.50	203.37	79,575	13,412	2,933	17,215	962	30,956	1,150	2,270	4,450
7	259.42	404.25	91,838	49,238	18,534	9,812	7,085	37,406	3,045	----------	----------
8	309.00	346.00	63,456	9,944	2,222	3,258	1,986	6,484	928	1,627	2,815
9	57.25	61.50	5,426	2,388	551	237	133	1,989	----------	1,164	1,159
23	317.41	----------	71,533	----------	80	60,687	----------	131	----------	----------	----------
*46	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
47	----------	----------	----------	----------	500	17,500	----------	----------	----------	----------	----------
48	54.50	375 50	5,435	----------	----------	3,995	----------	----------	----------	780	2,505

64	181.00	----------	59,400	11,940	----------	13,560	87	6,220	550	725	650
65	81.00	----------	----------	980	----------	1,220	----------	4,050	----------	----------	----------
Totals	2,507.58	3,037.61	720,551	137,450	30,264	170,264	15,025	290,407	8,688	----------	----------

* No report.

Pueblo, Colorado, December 19, 1896.

HON. H. A. SUMNER, State Engineer,
Denver, Colorado.

My Dear Sir—I desire to supplement my statistical report, heretofore handed you, by a brief statement concerning the distribution and use of water in the Arkansas valley during the past two years.

The official measurements of the Arkansas river show the flow of water in the river has been less than for many years past, and the same is true of the tributaries of the river.

Naturally, under such a condition, there has been more or less friction between the appropriators of water. But such friction has, in the whole, been much less than might reasonably be anticipated; indeed, there is reason for congratulation that the general harmony among users of water has been so seldom broken, in such an unusual year of scarcity.

This is partly owing to the organization of the Arkansas River Valley Irrigation Association, composed of representative irrigationists, all zealous in assisting the superintendent of irrigation in the performance of his duties, and in other ways encouraging the irrigation welfare of the valley.

In the administration of this department there has been some cases of delinquencies on the part of the water commissioners, occasioned largely by the failure of a few of the boards of county commissioners to allow the necessary bills of the water commissioners.

We recognize that the law providing for the payment of the superintendent and commissioners is far from just in the apportionment of such payments among the several counties of a water division, and affords often a reasonable, though not a legal, ground for refusal to pay the salaries of the officers engaged in the distribution of water, and in this particular it is necessary that a change should be made in our laws.

It is necessary to note, also, that although some of our decrees are in a high degree satisfactory, there are several districts

in which the decrees are so seriously defective as to preclude the tabulation of statistics, as required by law, and prevent the distribution of water in harmony with the letter, or even with the spirit, of our irrigation laws.

Very respectfully yours,

GEO. J. RANKIN,
Superintendent of Irrigation Division No. 2

WATER DIVISION No. 2—ARKANSAS DIVISION.

No. of District	Ditches—Length thereof in miles	Average amount of water carried during season of 1896 in second-feet	Number of acres that can be irrigated therefrom	Number of acres of alfalfa irrigated therefrom	Number of acres of seeded grasses other than alfalfa irrigated therefrom	Number of acres of natural grasses irrigated therefrom	Number of acres of fruits irrigated therefrom	Number of acres of other crops irrigated therefrom	Number of acres irrigated from seepage	Cost of superintendence	Cost of repairs for year
10	66.00	----------	17,993	5,303	170	5,243	222	3,005	--------	----------	$ 1,000 00
11	374.00	750.00	36,359	5,731	3,330	6,456	61	8,528	119	----------	1,500 00
12	133.00	141.25	8,123	2,128	160	1,178	517	2,003	1,315	$ 1,168 75	2,712 00
13	357.00	656.85	29,725	566	3,449	16,212	----------	10,102	129	----------	----------
14	304.00	809 86	133,797	24,946	226	16,670	4 313	48,804	1,175	9 366 50	25,948 00
15	202.00	126.65	12,286	2,695	2,709	711	221	1,607	10	3.292 00	----------
16	280.00	403.50	32,694	6.337	2,894	3,559	265	9,520	--------	3,110 00	----------
17	316.15	797.00	162,710	42,651	11	8,363	2,005	36,361	--------	3,700 00	9,300 00
18	----------	50.00	2,746	511	7	569	----------	1,659	--------	----------	----------
19	218.00	158.00	43,895	11,210	----------	7,870	35	7,490	50	----------	----------
*49	----------	----------	----------	----------	----------	----------	----------	----------	--------	----------	----------
*66	----------	----------	----------	----------	----------	----------	----------	----------	--------	----------	----------
67	246.00	546.00	138,015	17,734	----------	23,347	817	9,460	--------	8,610 00	13.900 00
Totals	2,496.15	4,439.11	618,343	119,812	12,956	90,178	8,456	138,539	2,798	----------	----------

* No report.

Del Norte, Colorado, November 28, 1896.

HON. H. A. SUMNER, State Engineer,
Denver, Colorado.

Dear Sir—I have the honor to submit the report of the water commissioners for the years 1895 and 1896, with mine for the latter year, my report for 1895 having been filed in December of that year.

Water district No. 20, Richard Blakey, commmissioner, Alamosa, Colo., reports that the decreased acreage for 1896 was due to the extreme scarcity of water, necessitating the abandonment of many acres of crops. Mr. Blakey was ably assisted by two deputies, Messrs. Jermy and Nightingale.

Water district No. 21, Hipolito Romero, commissioner, Capulin postoffice, reports that he served in 1895 forty-two days. There was an abundance of rain and a large yield of crops. In 1896 he served eighty days. On June 4, the entire flow of water in all the streams was appropriated by the ditches. By June 9 water became very scarce, and sufficient only for ditches having the earliest rights. Nearly all of the large ones were closed down at this time. June 19, all crops needing water badly, amount of water coming into the district, twenty-five second-feet. July 3, crops suffering badly from the drouth and water so low in the streams that it cannot be secured for domestic purposes; volume decreased to twenty second-feet. July 18, good showers ranging over a period of the last five days have somewhat relieved the bad effects of the drouth; increase in volume of water to forty second-feet. August 22, the streams reached low water mark, there being but eight second-feet of water coming into the district, which was consumed entirely for domestic purposes. The total amount of water appropriated in the district is 1,877.87 second-feet, distributed among ninety-one decreed ditches. In the discharge of his duty, Mr. Romero received invaluable aid from his deputy, Hon. David How.

Water district No. 22, John C. Dalton, commissioner, postoffice address, Manassa, Colo. Reports in 1895, from about the

10th of July to the end of the season, an abundance of rain and a fine and large yield of all crops. In 1896 he served fifty-eight days, and owing to scarcity of water was confronted by many knotty propositions. About June 10 there were 1,326.28 second-feet of water flowing into the district and the water was decreasing very rapidly, until the 22d inst., when it had fallen to about 972 second-feet. From that time it rapidly decreased until August 17, when it reached the lowest it has ever been known. There was not to exceed twenty-five second-feet, and it was decided by consent of all parties to use no more water for irrigation, but allow the same to be used for domestic purposes only. Mr. Dalton employed one deputy who did good service during the trying days of the season.

Water district No. 24, Pablo Sanchez, commissioner, post-office address, San Pablo, Colo. Reports that he was employed twenty days in 1895. Quantity and quality of crops exceeded those of several years past. He states that in 1896 he served eighty-two days, the season being the driest ever experienced in his district, rains on April 11 and 12 being the only substantial ones during the entire spring. Dry weather continued until July 22 and 23, when very light showers broke the drouth.

On June 10 he was called out to distribute water, and remained on duty until the end of the season. The supply of water proved to be insufficient for the wants of the people, there being, on June 10, in all of the streams in the district 135 second-feet, while the amount necessary to irrigate the lands under cultivation was 220 second-feet. After that time the volume of water kept decreasing gradually until it reached sixty-three second-feet on August 18. In that portion of the district where the water of Costilla creek is utilized, said water was all consumed in New Mexico. The ditches, six in number, received no water at any time during the irrigating season, yet owing to the fertility and natural moisture of the soil, the corn and bean crops sustained a loss of only about 25 per cent. The wheat, oat and pea crops showed a decrease of 75 per cent. In that portion where the waters of the Culebra creek and its tributaries are used, nine of the ditches were shut down the latter part of June, leaving the waters distributed in eight ditches averaging eight second-feet, while the average actually necessary was sixteen second-feet. Notwithstanding the deficiency of water, the bean and corn crops yielded far beyond all expectations. The crops of wheat, oats, barley and peas were less by 30 per cent. as compared with crops raised in ordinary rainy seasons; the yield of potatoes about 50 per cent.

only. The planting of fruit trees is in its infancy in this district, and those that were bearing fruit were so injured by drouth as to result in a total failure.

From June 10 until August 29, Mr. Sanchez was constantly employed along the streams in his district distributing the limited amount of water in the most judicious and economical manner possible. The able manner he performed his duties was fully attested by the fact that not a single appeal was taken from his rulings.

Water district No. 25, Geo. Neidhardt, commissioner, post-office address, Mirage, Colo. Reports that he was called out on May 4, 1895, the day after receiving his appointment, and was employed eighty-one days during the season, the last day being September 24.

In the northern part of his district and especially San Luis creek, water was very scarce, and there was not at any time over fourteen second-feet of water in the creek, and were it not for frequent rains, most of the crops would have burned out. From the middle to the southern part of the district there was an abundance of water. There was an average crop throughout the district.

Mr. Neidhardt was bothered considerably in the northern part of the district by the stealing of water. The absence of headgates and the poor character of those that were constructed prevented, in a large measure, the proper control of the water.

In 1896 he served ninety-seven days, closing the season on November 15. He reports there are 171 ditches (with a decreed water right to each). The present season opened very favorably, with large quantities of snow in both the Sangre de Christo and Main ranges, but the high winds of May and June carried the snows off very rapidly, and at about the middle of June the streams had fallen to from one-fifth to one-tenth of their usual volume, and some had failed entirely, so that the majority of the ditches did not have water to exceed sixty days during the season, while at ordinary times it runs from 100 to 120 days.

Water district No. 26, Charles A. Potts, commissioner, post-office address, Sagnache, Colo. Was called out by water users on the first day of March, 1895, and during the year rendered 143 days' services at the sum of $5 per day, or $715. Water was scarce until the first of July, after which time it was plenty during the balance of the season.

In 1896 he was called out by water users on the 19th day of March, and up to the 20th day of November had rendered 163 days' services at the sum of $5 per day, or $815. Water has been

scarce during the entire season. Have had more or less trouble during both seasons with the several water users over the distribution of the water according to the different priorities.

Water district No. 27, Mark Biedell, commissioner, post-office address, Del Norte, Colo. Reports for 1895 great amount of rains and a large yield of crops. In 1896 a great scarcity of water prevailed throughout the entire season, resulting in greatly diminished crops. From July 1 until the end of the season there was only water sufficient to supply ditches antedating 1874. Mr. Biedell employed the services of one assistant and states that the irrigating season closed on November 1.

Water district No. 35, no water commissioner has been appointed, and as the priorities have not been adjudicated, we had no occasion to visit the district.

As superintendent of irrigation of this division, I assumed the duties of my office on June 24, 1895, on which day my predecessor turned over to me what records belonged to his office. I was called upon to perform field duties and office work, which occupied my entire time, as a scarcity of water existed over the entire division.

On or about July 10 the rainy season set in, and as there was an abundance and continued amount of rain, the demand for my services was much lessened. From that time on until the close of the season, there was a superabundance of water, in fact, the precipitation was so great that the harvesting of crops, especially the hay, was materially interfered with. Many of the lowlands were so wet that the efforts to harvest the hay crop were, in some instances, totally abandoned.

In 1896 the contrary was the universal condition, in fact, as early as May the scarcity of water became apparent, until on June 6 two of the largest ditches on the Rio Grande river were closed down and remained so for the balance of the season.

From that time on, each day witnessed the closing of headgates throughout the entire division, until more than three-fourths of the entire number of ditches were closed down. The services of the water commissioners were in constant demand, and the manner in which each and all of them responded deserves special commendation. In some of the districts all of the streams were dry. The Rio Grande river was reduced to 240 second-feet, and the Conejos river to twenty-five second-feet, and on the latter stream the water was abandoned for irrigation purposes and given over to domestic use.

The excessive shortage of water this season has brought more forcibly to the minds of the farmers the necessity of the

future storage of water at the source of the different streams, and until this is done, there can be no certainty of the raising of crops in the valley. The increasing demand for water created by a constantly increasing cultivation of the soil, in the face of decreasing supply of water, has brought the settlers to a fuller realization of this fact, and I believe that it is a matter of a short time when all of the reservoir sites tributary to this valley will have been appropriated and utilized. In anticipation of this condition of affairs there have been already taken four reservoir sites, which when completed and utilized will obviate in a large measure the unfortunate existing conditions. I append herewith an estimate of the size and capacity of the aforesaid reservoirs, as given me by the respective engineers in charge, to-wit:

Shaw reservoir, owned by E. J. Shaw et al., situated in section 31, township 39 north, range 2 east, and section 6, township 38 north, range 2 east, New Mexico principal meridian; capacity, 3,630.45 acre feet; cost, estimated, $800.

Reservoir 2, owned by A. W. MacLeod, situated in southwest quarter of southeast quarter section 24, township 39 north, range 5 east, New Mexico principal meridian; capacity, 104.60 acre feet; cost, $524.

Regan reservoir, owned by John S. Regan, of Del Norte, Colo., situated in section 31, township 41 north, range 3 west, New Mexico principal meridian; capacity, about 307,971,100 cubic feet, or 7,070 acre feet; cost, $1,500.

Santa Maria Lake reservoir, Rio Grande Reservoir and Ditch Company, owners; situated in sections 16, 21, 22, 27 and 28, respectively; capacity, 15,971.20 acre feet; cost, lowest estimate, $130,000.

In former years, high water did not occur in the Rio Grande river and its tributaries until about the 20th of June, but it is a noteworthy fact that in the last four or five years the same has occurred in the middle of May.

The Saguache reservoir, property of the state, is located adjacent to the town of Saguache, and is now in my charge, under a special order from the state board of land commissioners, and while I have made every effort to derive from it a benefit to the settlers and a revenue to the state, I am compelled to admit that my efforts have been a failure. Aside from its inability to hold water, there are seldom any unappropriated waters to be turned into it. On December 5, 1895, owing to the unusual supply of water, we succeeded in storing water therein to the depth of twenty-seven feet, but before spring the entire amount had leaked out.

The reservoir is generally viewed by the citizens of Saguache county with disfavor and regarded as a failure. I am free to say that my own experience fully endorses the latter belief.

Though a large number of headgates have been constructed this past season, there are still many ditches in the division that have none. This is a source of annoyance and trouble, and materially lessens the effective and expeditious work expected of the water commissioners. I would recommend that the law be amended to include a penalty in default thereof.

On San Francisco creek, a stream about nine miles long, we have adopted a system of rotation of the water with gratifying results.

There is not a rating flume, to my knowledge, in the division, and the apportionment of water must of necessity be crude and unsatisfactory. I am satisfied that if ditch owners realized the benefit and satisfaction resulting therefrom they would unhesitatingly incur the trifling expense in securing them. I know if it were done it would be an improvement fully appreciated by every water commissioner.

I have rendered some fifty to sixty decisions, some of which involve the most perplexing and intricate points of irrigation law. To what extent I may have erred in my conclusions I am unable to state, as in no instance has an appeal been taken.

There has been considerable dispute between water users and myself relative to their rights in the water decreed them. I refer more particularly to the extent and character of use. It is contended that the decree for the amount of water appropriated gives the unqualified right to any further use and disposition that the owners see fit, regardless that such use may enure to the injury of other rights.

In conclusion, I desire to say that each commissioner and deputy deserves special mention for the impartial manner in which they discharged their duties. I desire also to express my appreciation of the many kindnesses and assistance extended to me officially by both yourself and Mr. Cogswell.

I remain, sir,

Very respectfully,

FRANCIS T. ANDERSON,

Superintendent of Irrigation, Division No. 3.

WATER DIVISION No. 3—RIO GRANDE DIVISION.

No. of District	Ditches—Length thereof in miles	Average amount of water carried during season of 1896 in second-feet	Number of acres that can be irrigated therefrom	Number of acres of alfalfa irrigated therefrom	Number of acres of seeded grasses other than alfalfa irrigated therefrom	Number of acres of natural grasses irrigated therefrom	Number of acres of fruits irrigated therefrom	Number of acres of other crops irrigated therefrom	Number of acres irrigated from seepage	Cost of superintendence	Cost of repairs for year
20	577.50	1,170.50	339,273	4,104	430	59.636	----------	65,153	1,450	--------	----------
21	171.75	176.00	71,293	1,594	606	21,669	----------	12,720	1,354	--------	----------
22	303.75	1,262.50	140,100	1,478	155	16,755	65	27,744	7,435	$ 530	$ 2,785
24	36.25	75.00	2,892	35	20	896	----------	2,261	----------	355	170
25	237 55	900.37	45,018	248	----------	43,476	----------	1,660	----------	----------	----------
26	96.50	417.20	21,220	1,211	----------	11,085	----------	8,700	----------	----------	----------
27	53.50	----------	5,760	400	160	2,270	----------	200	----------	----------	----------
*35	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------
Totals	1,476.80	4,001.57	625,556	9,070	1,371	155,787	65	118,438	10,239	--------	----------

* No report.

Grand Junction, Colorado, October 1, 1896.

HON. H. A. SUMNER, State Engineer,
Denver, Colorado.

Dear Sir—I herewith respectfully submit, for your inspection and approval, the following report of division No. 5, the Grand River division, for the year 1896.

On account of having received the books and papers belonging to this office so late in the irrigation season of 1895 (June 17), I thought it expedient to make but a partial report for that year.

There are in this division nineteen water districts, of which each one seems an empire in extent. Of these there are Nos. 36, 50, 51, 59, 60, 62, 63 and 68, in which there are yet no decretal orders, hence no commissioners appointed. Nos. 52 and 53 have adjudicated rights, but no commissioners appointed. Nos. 28, 37, 38, 39, 40, 41, 42, 45 and 61 have water commissioners in active service during the irrigating season, and herewith I hand you their several reports, dated September 15, 1896.

C. E. McAllister, water commissioner, No. 28, reports as follows: "The water from the streams have been, this season, turned into the ditches on the 'hour system.' We have no rating flumes and but few headgates. About half of the ditches in this district have no decrees. I enclose statistical report herewith."

A. Kallquist, commissioner of No. 37, under date of August 17, makes the following report: "Everything seems to have been satisfactory in this district to all concerned, at least since the latter part of May. The decrees being granted conditionally in district No. 37, I have followed conditions as near as possible. All improved ground has been allowed water according to number of priority for that land, without taking into consideration whether it has been under cultivation one or fifteen years; but I don't consider it just, if ground yet covered with sage brush in the future should count a priority to land that has for several years been taxed as improved. I think 'reasonable diligence' has not been exhibited in such a case.

Some people think they have a patent for a certain amount of water, and can use it where and how they please, even from another stream. Would it not be well to declare all decrees void where conditions have not been complied with in a certain number of years? Some decreed ditches are not yet constructed.

"I would recommend a law giving preference to tilled soil and seeded grass land, ahead of native grass land, for several reasons. In scarcity of water it is seldom used on native grass, if owners have cultivated ground to turn it on. It has been less labor and money expended in preparing the ground. A good stand of seeded grass might die out in one dry season; and last, but not least, assessment on cultivated ground is usually several times higher than on common grass land. If a law exists exempting water, or at least private ditches, from taxation, it should be enforced, if farmers are to have a premium for building up a state. Every assessor ought to know the value of farm land without water in the state of Colorado.

"I forward the report for 1896: The figures for ditches from Gypsum creek are as near correct as possible. The rest are approximate. The order of priority in this district is given for original constructions. Later appropriations are included in figures for whole ditch. Some ground, with decree under ditches from tributaries, is now irrigated by ditches out of Eagle river. For instance, about 250 acres under Chatfield & Bartholomew ditch, and some ground under Berry and Eby creek ditches. Berry creek had, July 10, only 1.8 cubic feet per second. Some land under Stratton ditch, and all under Phillips ditch, has been irrigated by H. O. R. ditch. Nelson ditch has not been found, and Groff ditch should probably belong to district 52. Many small streams have almost dried out in later part of the season (Muddy creek, Castle creek, Eby creek), but being used by only one party, no scarcity was reported. The largest tributaries to Eagle river are Lake creek, Brush creek and Gypsum creek. Lake creek has more than a sufficient amount of water for its valley. Brush creek has had enough for all its ditches, but very little to spare. Some owners of the oldest and largest ditches in Brush valley never applied for decrees, thinking it would be unnecessary. If more land is brought under cultivation, there is liable to be a shortage even there. Gypsum creek has, in average seasons, sufficient for improved lands surrounding it. Actual shortage lasted from May 18 to May 24 this season, and was made up for with 25 per cent. surplus until June 8. Since June 15, the supply in Gypsum creek has varied between sixty-five and sixty-one cubic feet per second; seldom above and

hardly ever below for full twenty-four hours. Heavy rains about the middle of July refreshed the range and kept up the supply in the creeks. The seepage has increased in lower part of Gypsum creek. Grundell Brothers' ditch has been shut down since July 12 (using seepage from Chatfield ditch). Balance of seepage is coming into the creek and turned into the lower ditches. No ground in district is altogether dependent on seepage for irrigation, but this season the creek water in lower part of creek has been nothing but seepage, and even if unfit for domestic use (water even for washing purposes has been hauled from Eagle river) does not show any bad effect on crops. It seems to work as a fertilizer, the Gypsum (sulphates of lime) changing the stronger alkali into sulphates of potash and soda. The crops seem to be average, or above, in the whole district, with but very few exceptions. Being of an altitude of above 6,000 feet, no fruits are raised in this district, with the exceptions of a few strawberries and gooseberries. Alfalfa gives two good crops below 7,000 feet; above, timothy yields well up to nine or ten thousand feet above sea level. Small grain does well up to 7,500 feet; winter grain probably higher up."

Under date of September 25, Chas. S. Shadle, commissioner for district No. 38, sends report, and says: "My duties ceased in this district on September 23."

There has been considerable shortage of irrigation water in this district, but crops were fair, and the people, with a few exceptions, were well satisfied with the service.

Water commissioner of No. 39, D. F. Webster, makes the following report: "Owing to the scarcity of water for irrigation purposes in the various creeks in my district, I was called out for duty on April 19, and my last services were rendered on September 10. I served 101 days. I had one assistant, who served 100 days; also one other assistant, who served eight days, and one who was employed five days. We had no rain in this district until July 15. After that we had frequent showers, which were of great benefit to the creeks. Water in the various creeks never was so low as it was this summer, or at least since the white man settled this country; and myself and assistants put in a very busy season this year, and as near as I can learn I gave as good satisfaction to the ranchmen, in my services, as a water commissioner could under our present system of regulating water. September 22, 23, 24, we had the heaviest rain ever experienced in the history of the Grand valley. This storm caused great damage to the railroads, county roads and irrigation ditches.

"I have some suggestions in regard to amending the irrigation laws in this state, but as the water commissioners are to meet next week in Denver to discuss the matter, I will wait until then and make them in person instead of writing them out at the present time."

Mr. J. C. Hart, commissioner of No. 40, has had considerable trouble in his district this season, much of it owing to ambiguity found in the decretal orders of the court. The language is so framed that in each order there are at least two interpretations to be placed upon it. Water commissioners up in the law are in the same condition as many of the attorneys of the state; don't know what it means. He says, under date of August 17: "I am in the saddle now almost night and day, with one assistant. The natural flow of Surface creek is down to 7.00 feet; Leroux creek, 6.00 feet; Forked Tongue, including all tributaries, 13.50 feet, with all reservoirs about exhausted. We turned into No. 1, on Forked Tongue creek, their additional amount of water for increase of acreage. This takes all the water there is in Dirty George creek for No. 2, in order to give them one foot for each forty acres. We had to close all ditches on Ward's and Kiser creeks, except Nos. 3 and 7. We have been trying for ten days to get 5.00 feet down to No. 2, but the most we have ever found there was 2.50 feet.

"No. 10 will not even let the 2.25 positively decreed No. 2 to pass No. 10 headgate, and things are warming up. Lake Fork and Sand Stone Bluffs are also raising their headgates. Yesterday we spiked all gates down with 40ds. I was told last night that No. 10 (Mr. Mower), Lake Fork and Sand Stone Bluffs had all chipped in, and were going to stop Nos. 1 and 2 from using any additional amount of water, and that the injunction would be served to-day. On Leroux creek it takes 4.00 feet to pass No. 2, to make the 1.00 feet good at No. 1 (Brown Bros.), and there is talk of an injunction there. All reservoir people are quarreling and filing complaints."

And again, under date of September 10, Mr. Hart says: "In the absence of iron headgates, and locks and keys, about the only thing that suggests itself to me would be an act that would put a ball and chain on the majority of ditch owners at the opening of the irrigation season. All law and custom have been indecently and repeatedly violated. Something will have to be done for No. 40. The thing is to get together, as the state engineer suggests, find out what it is we want, and petition the legislature to do it."

The commissioner of No. 41, E. B. Langston, on account of a scarcity of water, has had his hands full since his appointment,

together with several assistants. His district along the Uncompahgre river is about fifty miles long. To do the work properly takes night and day riding, and much skill in management of the supply of water in the Uncompahgre river, in order that all ditches may be supplied. Under date of September 15, he says: "In making our report of this year of unprecedented drouth one feels unable to do this section of the state justice. Although the late spring was a great factor in retarding the melting of the snow in the mountains, we found the water draining into the various tributaries of the Uncompahgre river inadequate to furnish the usual or necessary supply. In consequence, crops have suffered as never before. The cereal crops barely matured, being small in yield and light in weight. Grain sown late failed to mature. Of course, the winter wheat matured, and we will continue to advocate, as we have done in the past, that wheat be sown in the fall, as the fall rains and the increase in the amount of water in the river will be amply sufficient to sprout the grain; or if, by lack of moisture, the grain is not sprouted, the ground will be in fine condition for early seeding. In either event the crop will be matured before the river falls sufficient to interfere with its irrigation. Fruit trees have also suffered, the half-grown apples shriveling and falling off because of insufficient irrigation. All this could have been avoided by constant cultivation, for we noticed, in a great number of instances, orchards standing side by side, one grown up with weeds and grass, in which the trees were seemingly perishing, or were stunted, with scarcely a sign of growth, while the other adjoining, with only a fence to separate, where the same amount of water had been used, were vigorous and healthy trees, making a fine growth, the difference being caused wholly by constant cultivation. These constantly recurring examples conclusively show that constant cultivation is the antidote with which to overcome seasons of prolonged drought, as well as to overcome too much moisture in wet seasons. More cultivation and less irrigation has certainly proven to be more conducive to better crops. We believe there is great necessity for impressing these facts upon the minds of our fruit growers and ranchmen.

"In the matter of water service, I would respectfully suggest a few ideas for the improvement of the service, at least in this locality. In the first place, our system of irrigation laws are very crude, and we find it more than difficult to convict with evidence that in any other larceny case would be amply sufficient. We also find the water thief very shrewd, and it is almost impossible for the officers engaged in distributing the water to detect the average gate lifter. In watching the head-

gates we frequently found that in place of going directly to the gates, the would-be thief would search carefully through the undergrowth surrounding nearly every headgate for deputies, and be assured that no one was present before opening the headgates. It frequently happens that several will engage in this work, one or more watching for commissioners while the other or others open the gates. A commissioner should not be obliged to station a guard on every headgate in order to adequately guard the distribution of water. In almost every district in the state there are too many headgates to permit such an expense. A remedy could be provided by legislation being enacted which would impose an adequate penalty on every ditch receiving or allowing water to flow in the ditch after its gate had been duly closed as provided by law. This would be in the nature of a police regulation and not in the nature of a criminal action, and hence could be readily enforced.

"While there is at present the liability as a joint tort feasor upon every one who diminishes the water supply, however little, of one rightfully entitled thereto, yet in actual practice we find that those deprived of water to which they are entitled rarely resort to litigation as a means of recouping themselves against theft. The laws should be so framed that the state would be in a position where it could fully carry out the duty of the distribution of water, which imperative circumstances forced it to assume. As it is, we find very strong circumstantial evidence of companies employing men for the very purpose of unlawfully keeping the headgates opened, and who make it their exclusive occupation to watch the commissioners and deputies and steal as much water as possible.

"Locks and headgates as at present constructed are but feeble barriers against picks and crowbars, and few ditch companies care much for their headgates in case they can secure a few extra days' use of the water. It is also in the most needful cases impossible for the commissioner to secure good headgates in ditches. They are ordered placed in by a proper mandate, the owner neglects to do so. As often happens, he is 'judgment proof,' and the commissioner knows that any bill for lumber and work that he may lay before the board of county commissioners of the county will be allowed only at the end of litigation, if at all, for with us, the county commissioners do not recognize this as a part of their duties. While possibly ample at present, the law might be made clearer and secure better results. Locks and headgates are frequently smashed, presumably by their owners, in some instances carried off bodily or

floated down the river. A commissioner can not allow the water to run the 'statutory time' needed to replace the headgates by the notice provided by law, but must dam it up with dirt and rocks, which are very easily removed. The headgates should be made state property, and the cost of their construction should be made a lien on the ditch.

"A water commissioner should also be empowered to shut off the entire supply of water to which the owners of a ditch are entitled, until his orders in regard to the construction and repair of headgates are properly complied with.

"There is an amazing lack of public sentiment in regard to the crime of stealing water. The popular feeling is that water should be just as free as air. We find in trying cases for the larceny of water that the evidence must be so overwhelming that there is no excuse for a failure to convict, in other words, the jury are prone in cases of this nature to stretch a 'reasonable doubt' to a possible doubt.

"In this district I have found the most dilapidated set of gates imaginable. As in most districts of this state, the call for the commissioner to begin work was not made until the water supply became insufficient, and then it was too late to repair the gates for the season. The only remedy was to tear out the dams and fill in the heads of the ditches, which afforded very small protection. It seems that the principal object in the construction of gates on the Uncompahgre has been to shut out too much water in times of flood. A gate constructed in this manner ought to be declared a public nuisance, and the owner or owners subjected to adequate penalties instead of forcing the commissioner to advance money to repair the gates and trust to luck for reimbursement.

"If often happens that the waste water from lands under a certain ditch, drains into sloughs which stop its flow and prevent its return to the river. This often happens without the wasting of water, as in the legitimate use of water a certain amount must flow away at the lower end of fields. This water does not belong to the owner of the farm adjoining on the lower side, but should be returned to the river. In case it flows into these stagnant sloughs it is lost for all further beneficial use, and some means ought to be provided whereby the owners of the ditch allowing the water to flow into such sloughs would be obliged to drain the same, or to suffer a penalty for refusing to do so.

"Frequently these sloughs are fed by seepage springs, and their origin can not be traced. In these cases, where valuable

water is being allowed to evaporate, and it can practicably be done, the commissioners should be empowered to drain them when the increased flow into the stream would, in the commissioners' judgment, amply repay the outlay. If these sloughs occurred on high land, they would be drained by the farmers, but occurring almost invariably on the low lands near the river, where the earlier priorities furnish abundant water, they are useless as a supply of water to the ranchmen and become a public nuisance with their noxious odors and pestilential effects.

"The importance of the economical and just distribution of water and the conservation of every possible supply, can not be overestimated. The prosperity of our state depends upon it. Laws that tend to this end should be enacted as early as possible."

F. W. Cobb, commissioner of No. 42, under date of September 12, reports as follows: "I herewith hand you my statistical report for the season of 1896. I was called upon to act in my official capacity April 7, and with the exception of three or four days, have devoted my entire time to these duties, together with the assistance of four deputies. It is very doubtful if our services can be dispensed with for the season as yet, but up to this time I have charged the county with 133 days' time for myself and 211 for deputies. It has been an exceptionally dry season and there has been some loss for want of water, but just how much it would be very hard to state. The percentage of loss is very slight, however, as more than one-half of the land cultivated in the district is watered from the Grand river, which has at all times flowed an abundance of water, and at the lowest stage this season, after passing the last headgate, was still flowing something more than 1,000 cubic feet per second of time.

"The greatest loss was to the lands irrigated from Kannah and Big creeks, these creeks requiring more attention than any others, there being more land under cultivation in proportion to the amount of water available. There are reservoirs at the heads of both these streams, but neither filled, and consequently the results were disappointing.

"In my opinion, there should be a general revision of the irrigation laws, and would suggest that such a thing as the flowing of what is termed domestic water through ditches be legislated out of existence, on account of the great waste and abuse of the practice."

William Chadwick, commissioner of No. 45, under date of August 13, says: "I have approximated the amount of land, and

also the different crops and the length of the ditches; that is, I have taken it as it was given me by the owners. As you will see, I have made no separate report of enlargements. The ditches are scattered over much territory, and in many cases my attention has not been called to them until the streams ran down, so that the water supply was insufficient to reach all the ditches. A great part of the time it was impossible to keep up with my work. I have had one assistant part of the time. Have worked eighty-two days up to date."

George E. Blake, commissioner of No. 61, reports as follows: "In submitting table of statistics for district No. 61, I have the honor to say: At no time during the past season has there been a surplus of water, and it has only been by a constant and economical distribution that it has been made to reach all, and a second crop of hay secured. The two private ditches brought into Paradox valley from the La Sal mountains, of which mention was made in my last report, have continued to furnish water to those parties interested in the same, and in consequence the duty of the legitimate water of the valley has been greatly lessened; but as the title to the use of this water is still in litigation, a continuance of the benefits accruing therefrom can not be depended upon. Senator Galloway, having dammed the Dolores river at mouth of cañon, has also taken out a ditch calculated to cover several hundred acres. Most of the land so covered belongs to him; but little benefits, if any, will accrue to other priorities, as the ditch is below all others, and its waters only mingle with those of the valley at a point where both are drained into the river.

"Water was turned in for the first time the past season, but owing to the newness of the ditch and the extremely low stage of water in the river, it has proven only partially successful. The limited amount of water in this valley, and the great duty it has to perform, requires the constant attention of the commissioner or a deputy during the irrigation season.

"While the general crops have been good, the fruit has been a failure, for the first time since the settlement of the valley. Late spring and frost the cause.

"Lost cañon, at south end of district, in Montezuma county, is a tributary of the Dolores, having its source in the Mancos divide, but a short distance west from the La Plata mountains. It is blessed or cursed with two priorities; No. 1 being near the mouth of the creek, with a decree of one foot, while No. 2, with a decree of twenty-six cubic feet, is at the head and thirty-five miles distant from the former. As the water in the

creek will not average to exceed seven (7) cubic feet, it would require all to be turned down to reach and supply No. 1; but as the latter has been virtually abandoned for the past two years, No. 2 has been allowed to take all. Consequently, people living along the stream, between the two priorities, who neglected to secure decrees, have been left without at times; and, in consequence, dissatisfaction has arisen. And the further fact that No. 2 only appropriates a small portion to irrigation, selling the larger portion to several saw mills upon another drainage, has naturally called forth complaints and some threats to test the right of No. 2 to divert all of the water into another drainage.

"Montezuma valley's second crop was light. As Nos. 1 and 2 are last in priority on the river, and supply the valley, they have been kept on a short allowance for the past two months.

"The Dolores has furnished less water the past season than during any other since the settlement of the valley. In the past month, Montezuma valley, as well as farmers lower down the river, have suffered as never before. Recent rains have proven a blessing to all sections, so at this time all is well with No. 61."

In this division there has been used this season, for irrigation purposes, 2,455.14 second-foot, or 94,278 statute inches of water. There are, in the nine districts reported, 13,924 acres in cultivation. There has been used, per acre, sixty-six hundredths statute inches of water. It is a fact, substantiated by experiment, that one-third statute inch is sufficient to properly irrigate an acre of ground. One-third inch, as above, placed upon an acre of ground for five months, the usual irrigation season, will attain a depth of thirty-one inches, less evaporation, etc.

A table of summaries, embracing the entire district, having adjudicated water rights, I have prepared, and herewith submit for your inspection. It will be learned by this table that each district reporting has very much more water in use than above data, except No. 40. In this district, the duty of water falls to thirty-five hundredths; but the report of No. 40 does not show the fact, as there are in that district forty reservoirs in use. These have no adjudicated rights, and are not reported by the commissioners. There is but little doubt, if this supply was taken into account, the report would show in use not less than one statute inch per cultivated acre, which amount is sufficient for at least twice the cultivated area.

It is also seen from the summary that in No. 41, from which district most of the complaints of scarcity of water have come to this office, there has been used nearly one statute inch of water for each cultivated acre. The soils in No. 41 are much the same

as in other districts of the division, and the shortage of which there has been so much complaint can only be attributed to careless and heedless application. The Uncompahgre river does, and it is believed always will, supply ample water for domestic and irrigation purposes for all the lands (70,000 acres) which lie in the valley, if judiciously conserved and properly supplied.

The water rights in district No. 68, Ouray county, are now in process of adjudication by the courts, and it is to be hoped that when this much desired adjudication is accomplished, that the irrigation difficulties now existing between district No. 41 and Ouray county farmers will vanish. I desire to suggest to you that in the decretal orders of No. 41, the courts have omitted to declare what the duty of water shall be, and to my mind this is the source of much of the misunderstanding in that district, and for this reason also, very much more water is used for irrigation than is needed.

In No. 42, the Cippoletti weir is used in measuring water into the ditches. This method of measurement is used with general satisfaction among the farmers.

There has been received at this office no complaints from Nos. 28, 37, 39 or 61. From this fact we are led to believe that harmony prevails, and the irrigation system has been a success. There has been, however, many letters of inquiry received in regard to the law and legal rights of individuals under it, the more important of which was that in relation to domestic water. We have made answer promptly and according to the best light obtainable through the office of the state engineer and the medium of court decisions. There are many people in this division who feel that in this respect the courts are encroaching upon their rights as guaranteed by the constitution of the state.

There are reported seven second-feet of seepage water used in irrigation. The irrigated lands by means of seepage, upon which crops were raised, amount to 550 acres, not exceeding four-tenths of 1 per cent. of cultivated area.

In closing, I have the pleasure to report that throughout the division agricultural crops, generally, have been good and the people are reasonably prosperous. The partial loss of the fruit crops on this slope, of course, worked a hardship on some, these crops being their main dependence, but the season having been favorable, the trees have made a wonderful growth, and we are looking forward with an abiding hope to a new year, which shall bring the dawn of even greater prosperity to division No. 5.

Yours respectfully,

DAVID R. CROSBY,
Superintendent Division No. 5.

WATER DIVISION No. 5—GRAND RIVER DIVISION.

No. of District	Ditches—Length thereof in miles	Statute inches used per acre	Average amount of water carried during season of 1896 in second-feet	Number of acres that can be irrigated therefrom	Number of acres of alfalfa irrigated therefrom	Number of acres of seeded grasses other than alfalfa irrigated therefrom	Number of acres of natural grasses irrigated therefrom	Number of acres of fruits irrigated therefrom	Number of acres of other crops irrigated therefrom	Number of acres irrigated from seepage	Cost of superintendence	Cost of repairs for year
28	58.75	0.62	118.96	7,276	----------	590	6,686	----------	----------	--------	$ 295	$ 475
*36	----	----	--------	----------	----------	--------	----------	----------	----------	--------	--------	----------
37	57 90	1.32	134.90	7,970	2,185	1,145	715	----------	2,805	--------	80	770
38	189 63	0.65	223.95	20,290	4,331	3,195	605	245	4,739	80	1,240	6,950
39	150.00	0 45	102.20	28,133	3,923	170	983	1,563	1,973	----------	--------	----------
40	323 60	0.35	248.53	53,085	13,835	1,095	205	4,605	4,634	25	760	2,195
41	405 00	0.98	902.20	70,401	13,782	131	1,021	6,938	13,023	429	10,200	28,700
42	239 25	0.70	538.40	66,571	11,208	246	354	8,189	9,474	16	4,445	10,656
45	127 25	0 50	89 30	14,531	3,232	106	477	530	2,547	--------	--------	959
*50	----	----	--------	----------	----------	--------	----------	----------	----------	--------	--------	----------
*51	----	----	--------	----------	----------	--------	----------	----------	----------	--------	--------	----------
*52	----	----	--------	----------	----------	--------	----------	----------	----------	--------	--------	----------
*53	----	----	--------	----------	----------	--------	----------	----------	----------	--------	--------	----------
*59	----	----	--------	----------	----------	--------	----------	----------	----------	--------	--------	----------

* No report

WATER DIVISION No. 5—GRAND RIVER DIVISION—Concluded.

No. of District	Ditches— Length thereof in miles	Statute inches used per acre	Average amount of water carried during season of 1896 in second-feet	Number of acres that can be irrigated therefrom	Number of acres of alfalfa irrigated therefrom	Number of acres of seeded grasses other than alfalfa irrigated therefrom	Number of acres of natural grasses irrigated therefrom	Number of acres of fruits irrigated therefrom	Number of acres of other crops irrigated therefrom	Number of acres irrigated from seepage	Cost of superintendence	Cost of repairs for year
*60	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
61	146.25	0.47	96.70	4,415	2,526	256	537	92	4,478	.....	3,000	1,000
*62	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*63	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*68	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	1,697.63	....	2,455.14	272,672	55,022	6,934	11,583	22,162	43,673	550	.....	.....

*No report.

IRRIGATION DIVISION NO. 6 (GREEN RIVER DIVISION).

Mr. H. E. Turner, superintendent of irrigation, Steamboat Springs, reports a short supply of water throughout the division from about June 1, 1896.

There was a light supply of snow in the mountains and very little rain during the summer.

Fortification creek and the springs in that vicinity, which are used for irrigation, were dry in July; Piceance creek was also short of water; Elk and Snake rivers had an abundance of water, as well as the Yampa and White rivers.

Water commissioners in districts Nos. 43 and 44 were in service, but in districts Nos. 54, 55, 56, 57 and 58 the superintendent acted in the capacity of commissioner.

The county commissioners of Routt county do not feel disposed to pay for any work in gathering crop statistics.

WATER COMMISSIONER'S ANNUAL REPORT, A. D. 1896.

WATER DIVISION No. 6—GREEN RIVER DIVISION.

No. of District	Length thereof in miles	Average amount of water carried during season of 1896 in second-feet	Number of acres that can be irrigated therefrom	Number of acres of alfalfa irrigated therefrom	Number of acres of seeded grasses other than alfalfa irrigated therefrom	Number of acres of natural grasses irrigated therefrom	Number of acres of fruits irrigated therefrom	Number of acres of other crops irrigated therefrom	Number of acres irrigated from seepage	Cost of superintendence	Cost of repairs for year
43	147.22	----------	11,284	2,009	1,118	3,791	12	1,407	50	$ 241 00	$ 2,247 00
44	45.55	65.30	5,351	773	810	1,694	----------	257	30	--------	250 50
54	25.00	29.56	3,625	125	1,220	712	----------	248	----------	--------	199 00
*55	----------	----------	----------	----------	----------	----------	----------	----------	----------	--------	----------
56	14.70	12.82	1,780	227	247	405	----------	121	----------	--------	160 co
57	106.20	172.33	17,300	1,272	8,059	3.035	----------	2,902	-------- --	--------	1,088 00
58	149.00	241.60	28,180	39	9,900	5,863	----------	1,723	----------	--------	2,013 00
Totals	487.67	521.61	67,520	4,445	21,354	15,500	12	6,658	80	--------	----------

* No report.

CHAPTER IV.

TABLES RELATIVE TO FILINGS OF DITCHES AND RESERVOIRS.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 1, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Housh Ditch	Mary J. Housh	East Bijou creek	.....	.....	6.00	Dec. 12, 1894	Jan. 22, 1895
Walter W. Scherrer Ditch	Walter W. Scherrer	East Bijou creek	.....	.....	5.00	Dec. 6, 1894	Jan. 28, 1895
a Eric Larson Ditch	Eric Larson	Crow creek	5.00	.....	5.00	Mar. 5, 1895	Mar. 13, 1895
The Box Elder Flood, Waste and Seepage Ditch No. 2	Asa Sterling	Box Elder creek, seepage, etc., T. 5 N., R. 64-65 W	5.28	.....	21.00	Mar. 7, 1895	May 23, 1895
The Sterling Drain and Supply Ditch	Asa Sterling	Waste, seepage, etc., T. 5 N., R. 64 W	.....	.....	18.00	Mar. 7, 1895	May 23, 1895
b The Extension of the Camfield Supply and Storage Ditch	The Drury Land and Irrigation Co	Crow creek and seepage, etc., T. 8 N., R. 62 W	2.60	2.75	100.00	Apr. 12, 1895	July 10, 1895
The Weld and Morgan Canal and Reservoir System—							
Supply Ditch No. 1	Edwin E. Baker James W. McCreery	South Platte river	1.75	30.00	600.00	Apr. 24, 1895	July 22, 1895
Supply Ditch No. 2	Edwin E. Baker James W. McCreery	South Platte river	2.00	32.00	650.00	Apr. 24, 1895	July 22, 1895
Hardin Ditch, first enlargement	Edwin E. Baker James W. McCreery	South Platte river	2.00	6 50	650.00	Apr. 24, 1895	July 22, 1895
Supply Ditch No. 3	Edwin E. Baker James W. McCreery	Bijou creek	3.00	3.00	1500.00	Apr. 24, 1895	July 22, 1895

The Reservoir Canal	George H. West Daniel A. Camfield	South Platte river	1.056	------	1500.00	May 11, 1895	Aug. 9, 1895
c David Howard Ditch, first enlargement	David Howard	Box Elder creek and Cottonwood gulch	5.00	5.00	28.00	Aug. 2, 1895	Oct. 26, 1895
Desert Ditch	Henry Nordloh	Kiowa creek, Sec. 30, T. 6 N., R. 61 W	30.00	------	140.00	Oct. 23, 1895	Nov. 26, 1895
East Gulch Ditch	George A. Snow George B. Church	East gulch	5.00	.80	6.80	Nov. 14, 1895	Nov. 26, 1895
Ell Triangle Ditch	A. J. Nordloh	Comanche creek	4.00	------	52.00	Oct. 1895	Nov. 26, 1895
The Colorado Bijou Land and Irrigation Company Canal and Reservoir System—							
Ditch No. 1	James C. Bennett et al	Middle Bijou creek	4.00	------	80.00	Oct. 8, 1895	Dec. 6, 1895
Ditch No. 2	James C. Bennett et al	West Bijou creek	4.00	------	80.00	Oct. 8, 1895	Dec. 6, 1895
Ditch No. 3	James C. Bennett et al	Bijou creek	------	------	80.00	Oct. 8, 1895	Dec. 6, 1895
Ditch No. 4	James C. Bennett et al	Bijou creek	------	------	80.00	Oct. 8, 1895	Dec. 6, 1895
Walter W. Scherrer Ditch No. 2	Walter W. Scherrer	East Bijou creek	4.00	1.00	8.00	Dec. 6, 1894	Dec. 27, 1895
Reservoir Canal No. 1	George H. West Daniel A. Camfield	South Platte river	1.056	------	1500.00	May 11, 1895	Jan. 29, 1896
Reservoir Canal No. 2	George H. West Daniel A. Camfield	South Platte river	1.056	------	1500.00	May 11, 1895	Jan. 29, 1896
Canal No. 1	The Badger Creek Reservoir and Canal Co	Badger creek underflow, etc	7.00	------	450 00	Apr. 12, 1889	Feb. 29, 1896
Canal No. 2	The Badger Creek Reservoir and Canal Co	Badger creek underflow, etc	7.00	------	98.00	Apr. 12, 1889	Feb 29, 1896
Feeder No. 3	The Badger Creek Reservoir and Canal Co	Badger creek underflow, etc	------	------	20.00	Apr. 12, 1889	Feb. 29, 1896
Feeder No. 4	The Badger Creek Reservoir and Canal Co	Badger creek underflow, etc	------	------	20.00	Apr. 12, 1889	Feb. 29, 1896

a Statement shows this to be an extension of the Hans P. Thompson Ditch, the original priority of which is owned by Eric Larson

b Statement includes "Inlet Ditch" feeder to main ditch—crib and pipe line, to gather underflow, seepage, etc.

c Increased capacity claimed, due to this enlargement, 16 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 1, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Kuhn's Crossing Ditch	Charles E. Kuhn	East Bijou creek	4.00	4.00	12.00	Mar. 7, 1896	Apr. 1, 1896
Long Draw Irrigating Ditch	John E. Williams.. Edgar Painter	Long Draw gulch	10.50	20.00	1200.00	July 1886	Apr. 6, 1896
Martens Bros. & Co. Ditch	John Martens et al	Bijou creek	8.00	2.40	9.80	Apr. 11, 1896	May 19, 1896
Smeaton Seepage and Waste Ditch	George J. Smeaton	Seepage, etc., Sec. 32, T. 6 N., R. 64 W	3.00	1.00	10.00	May 19, 1896	May 27, 1896
Maguire Ditch	Thomas Maguire	Bijou creek	10.00	1.75	5.30	May 1, 1886	June 1, 1896
Reservoir Canal	George H. West Daniel A. Camfield	South Platte river	1.056		1500.00	Apr. 3, 1896	July 1, 1896
The Bijou Canal	George H. West Daniel A. Camfield	Bijou creek	2.11	3.67	2000.00	Apr. 14, 1896	July 11, 1896
Mathew Ditch	C. M. Mathews	Wilson creek		2.00	12.00	May 10, 1895	July 26, 1896
South Platte and Wild Cat Ditch	South Platte River and Wild Cat Ditch Co	South Platte and Wild Cat creek and waste waters	2.60	2.00	78.75	July 1, 1896	Oct. 16, 1896

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 1, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Walter W. Scherrer Reservoir	Walter W. Scherrer	East Bijou creek	Walter W. Scherrer ditch	1,950,300	Dec. 6, 1894	Jan. 28, 1895
The Weld and Morgan Canal and Reservoir System—						
Reservoir No. 1	Edwin E. Baker James W. McCreery	South Platte river	First supply ditch	60,000,000	Apr. 24, 1895	July 22, 1895
Reservoir No. 2	Edwin E. Baker James W. McCreery	South Platte river	First supply ditch	40,000,000	Apr. 24, 1895	July 22, 1895
Reservoir No. 3	Edwin E. Baker James W. McCreery	South Platte river	First supply ditch	20,000,000	Apr. 24, 1895	July 22, 1895
Reservoir No. 4	Edwin E. Baker James W. McCreery	South Platte river	First supply ditch	30,000,000	Apr. 24, 1895	July 22, 1895
Reservoir No. 5	Edwin E. Baker James W. McCreery	South Platte river	First supply ditch	80,000,000	Apr. 24, 1895	July 22, 1895
Reservoir No. 6	Edwin E. Baker James W. McCreery	South Platte river	First supply ditch	80,000,000	Apr. 24, 1895	July 22, 1895
Reservoir No. 1	Edwin E. Baker James W. McCreery	South Platte river	Second supply and Hardin ditches	400,000,000	Apr. 24, 1895	July 22, 1895
Reservoir No. 2	Edwin E. Baker James W. McCreery	South Platte river	Second supply and Hardin ditches	340,000,000	Apr. 24, 1895	July 22, 1895

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 1, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
The Weld and Morgan Canal and Reservoir System—Concluded.						
Reservoir No. 3	Edwin E. Baker James W. McCreery	South Platte river	Second supply and Hardin ditches	80,000,000	Apr. 24, 1895	July 22, 1895
Reservoir No. 1	Edwin E. Baker James W. McCreery	Bijou creek	Third supply ditch	10,000,000	Apr. 24, 1895	July 22, 1895
Reservoir No. 2	Edwin E. Baker James W. McCreery	Bijou creek	Third supply ditch	30,000,000	Apr. 24, 1895	July 22, 1895
Reservoir No. 3	Edwin E. Baker James W. McCreery	Bijou creek	Third supply ditch	1,200,000,000	Apr. 24, 1895	July 22, 1895
Reservoir No. 4	Edwin E. Baker James W. McCreery	Bijou creek	Third supply ditch	90,000,000	Apr. 24, 1895	July 22, 1895
The Pawnee Pass Reservoir	George H. West Daniel A. Camfield	South Platte river, Wild Cat creek, Pawnee creek, Dry creek, etc.	The reservoir canal	12,444,903,680	May 11, 1895	Aug. 9, 1895
a David Howard Reservoirs	David Howard	Box Elder creek and Cottonwood gulch	David Howard ditch	.....	.....	Oct. 26, 1895
The Colorado Bijou Land and Irrigation Co. Canal and Reservoir System—						
b Reservoir No. 1	J. C. Bennett, et al	Middle Bijou creek	Ditch No. 1	.....	Oct. 8, 1895	Dec. 6, 1895
Reservoir No. 2	J. C. Bennett, et al	West Bijou creek	Ditch No. 2	.....	Oct. 8, 1895	Dec. 6, 1895

Reservoir No. 3	J. C. Bennett, et al	Bijou Creek and East Antelope gulch	Ditch No. 4		Oct. 8, 1895	Dec. 6, 1895
Sanborn Draw Reservoir	George H. West Daniel A. Camfield	South Platte river and Sanborn draw	Reservoir canal No. 1	2,350,000,000	May 11, 1895	Jan. 29, 1896
Jackson Lake Reservoir	George H. West Daniel A. Camfield	South Platte river, Sanborn Draw reservoir and Greasewood draw	Reservoir canals Nos. 1 and 2	3,200,000,000	May 11, 1895	Jan. 29, 1896
Orchard Reservoir	George H. West Daniel A. Camfield	South Platte river, Sanborn Draw reservoir, Orchard reservoir, etc.		250,000,000	May 11, 1895	Jan. 29, 1896
Kuhn's Crossing Reservoir	Charles E. Kuhn	East Bijou creek	Kuhn's Crossing ditch	5,227,200	Mar. 7, 1896	Apr. 1, 1896
Sanborn Draw Reservoir	George H. West Daniel A. Camfield	South Platte river and Sanborn draw	Reservoir canal No. 1	3,060,535,600	Apr. 3, 1896	July 1, 1896
Jackson Lake Reservoir	George H. West Daniel A. Camfield	South Platte river		2,952,932,400	Apr 3, 1896	July 1, 1896
Wild Cat Reservoir No. 1	George H. West Daniel A. Camfield	South Platte river and Wild Cat creek	Reservoir canal	87,120,000	Apr. 3, 1896	July 1, 1896
Wild Cat Reservoir No. 2	George H. West Daniel A. Camfield	South Platte river and Wild Cat creek	Reservoir canal	392,040,000	Apr. 3, 1896	July 1, 1896
Wild Cat Reservoir No. 3	George H. West Daniel A. Camfield	South Platte river and Wild Cat creek	Reservoir canal	326,700,000	Apr. 3, 1896	July 1, 1896
Bijou Reservoir and Canal System—						
Reservoir No. 1	George H. West Daniel A. Camfield	Bijou creek		152,624,400	Apr. 14, 1896	July 11, 1896
Reservoir No. 2	George H. West Daniel A. Camfield	Bijou creek		46,391,400	Apr. 14, 1896	July 11, 1896
Reservoir No. 3	George H. West Daniel A. Camfield	Bijou creek		122,621,400	Apr. 14, 1896	July 11, 1896
Reservoir No. 4	George H. West Daniel A. Camfield	Bijou creek		691,515,000	Apr. 14, 1896	July 11, 1896

a Statement mentions three reservoirs, no particulars of which are supplied.

b Statement omits the capacity of this and the two following reservoirs.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 2, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a Big Island Drain and Seepage Ditch, first extension and enlargement	Thomas M. Warden	Springs, seepage, etc., T. 4 N., R. 66 W.			80.00	Nov. 30, 1894	Jan. 30, 1895
b Warden & Albee Ditch, first enlargement	Thomas M. Warden	South Platte river			80.00	Nov. 30, 1894	Jan. 30, 1895
Karich and Jones Ditch	Frank L. Karich, et al	Platteville ditch	21.00		7.50	May 14, 1894	Mar. 12, 1895
Seepage Ditch	F. H. C. Krueger Max Maul	First creek	5.28	2.94	12.00	May 1, 1895	May 7, 1895
Myrtle Ditch	Victor E. Adler	First creek	5.28	.55	2.85	Mar. 1, 1895	May 27, 1895
George R. Lee Ditch	George R. Lee	Seepage, etc., Sec. 3, T. 2 S., R. 67 W.	4.00		4.00	Apr 1, 1895	June 27, 1895
c McCanne Ditch, second extension and enlargement	The McCanne Ditch and Reservoir Co.	South Platte river		6.40	80.00	Apr. 2, 1895	June 29, 1895
d The Sand Hill Ditch and Reservoir Ditch Co.	James W. Owen, et al	South Platte river, via Brauter extension ditch	2.50	4.00		1895	July 23, 1895
e The Murphy and Hanscome Water Right	William R. Murphy Alfred M. Hanscome	Brewer and Oliver gulches, seepage, etc., T. 2 S., R. 67–68 W.		3.00			Aug. 19, 1895
f Brewer's Hollow Ditch	John I. Brewer	Seepage, etc., Sec. 7, T. 2 S., R. 67 W.	10.00	.16			Aug. 22, 1895

Fulton Extension Ditch	The Fulton Extension Ditch and Reservoir Co	South Platte river, via Fulton ditch	3.50	7.00	46.72	Aug. 6, 1895	Aug. 28, 1895
Extension of Buckers' Ditch	Buckers' Irrigating, Milling and General Improvement Co	None given	2.00	------	121.87	June 25, 1895	Sept 24, 1895
The Curtis Seepage Ditch	M. A. Curtis Rodney Curtis	Seepage, etc , Sec. 14, T. 1 S., R 66 W	2.64	4.55	12.33	Oct. 10, 1895	Oct. 16, 1895
Aurora Ditch	The Denver and Boston Land Co	Seepage, etc., Secs. 11 14, 10, 4, T. 4 S., R 67 W	15.00	2.93	34.00	Nov. 15, 1895	Dec. 17, 1895
Jones Ditch and Reservoir Co. Ditch	Hugh Jones et al	Fulton ditch	3.20	8.50	21.00	June 22, 1892	Dec. 18. 1895
Smith Brothers Seepage Ditch	H. A. Smith F. F. Smith	Seepage, etc , Sec. 18 T. 1 N., R. 66 W	5.28	.85	33.75	Sept 24, 1895	Dec. 24, 1895
Curtis Extension Ditch	F. D. Curtis	Curtis seepage ditch	2.64	2.80	12.33	Oct. 12, 1895	Jan 3, 1896
Good Hope Ditch	George Rittmayer Anna E. Rittmayer	First creek	7.92	1.50	25.00	Dec. 17, 1895	Jan. 18, 1896
Thomas Ditch	L. E. Thomas	Small creek, Sec. 28, T. 1 S., R. 67 W	5.28	.25	4.74	Mar. 16, 1896	Mar. 18, 1896
Section No. 3 Seepage Supply Ditch	The Section No. 3 Ditch Co.	Seepage, etc., Secs. 3, 4, T. 4 N., R. 66 W.	5.28	.80	74 00	Mar. 18, 1896	Mar. 24, 1896
Ball Seepage and Waste Ditch	William Ball John Haynes	Springs, seepage, etc. Secs. 16, 9, T. 1 N., R. 66 W	12.00	1.75	22.50	June 8, 1896	June 10, 1896
Reeves Seepage Ditch	Charles F. Reeves	Seepage, etc., Sec. 4, T. 4 N., R. 66 W	8.00	.83	6.00	June 29, 1896	July 7, 1896

a Capacity claimed prior to this enlargement not stated. Statement of the original ditch is not on file in this office.

b Capacity claimed prior to this enlargement not stated. Statement of the original ditch is not on file in this office

c Capacity claimed, due to this enlargement, 40 second-feet.

d Statement makes no capacity claim, though claims priority for same "at once."

e Appropriators use Brewer and Oliver gulches as ditches, claiming all waste and seepage waters in same.

f "Capacity of said ditch is about 165 statutory inches." Ditch was made by present claimant about 10 years prior to the summer of 1895.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 2, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Faber Ditch	F. W. Faber	Slough in Sec. 29, T. 3 S., R. 66 W	5.28	.10	14.17	May 1, 1896	July 16, 1896
Yoxall Ditch	E. Yoxall	Big Dry creek	5.28	1.30	16.80	July 27, 1896	July 29, 1896
Irons & Hill Seepage and Feeder Ditch	H. A. Irons H. P. Hill Elizabeth James	Seepage, etc., Secs. 32, 33, T. 5 N., R. 65 W	2.11	1.30	8.50	July 30, 1896	Aug. 5, 1896
Banning Ditch	S. M. Banning	Wheeler springs	2.20	.60	10.00	July 6, 1896	Aug. 14, 1896
g Lambrecht Seepage Ditch	C. Lambrecht W. A. Davis	Wallace slough, Secs. 6, 7, T. 1 N., R. 66 W.	2.62	4.60	46.00	Sept. 12, 1896	Sept. 17, 1896

g Appropriators use the Harnish, Osterbrook and Lambrecht sloughs as a part of the ditch system.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 2, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Warden Lake Reservoir	Thomas M. Warden	Seepage, etc., T. 4 N., R. 66 W	Warden and Albee ditch	3,000,000	Nov. 21, 1894	Jan. 30, 1895
H. A. Smith Reservoir	H. A. Smith	South Platte river	Burlington ditch	4,530,240	Feb. 28, 1895	Apr. 24, 1895
Loloff Reservoir	F. W. C. Loloff	South Platte river	Lower Latham ditch	6,300,000	June 20, 1895	June 24, 1895
King Reservoir No. 1	C. F. Corlew F. C. Overman	South Platte river	West Hudson lateral of Burlington ditch	5,753,840	July 17, 1895	July 25, 1895
King Reservoir No. 2	C. F. Corlew F. C. Overman	South Platte river	West Hudson lateral of Burlington ditch	1,588,365	July 17, 1895	July 25, 1895
King Reservoir No. 3	C. F. Corlew F. C. Overman	South Platte river	West Hudson lateral of Burlington ditch	5,019,704	July 17, 1895	July 25, 1895
The J. and S. Reservoir, natural	M. W. Slate et al	Seepage, etc., T. 2 S., R. 67-68 W	J. and S. irrigating ditch	11,726,038	July 25, 1895	July 30, 1895
The Jones Ditch and Reservoir Co—						
Tarpin Reservoir	Hugh Jones et al		Fulton ditch	6,561,000	June 22, 1892	Dec. 18, 1895
Reservoir No. 1	Hugh Jones et al		Fulton ditch	4,183,200	June 22, 1892	Dec. 18, 1895
Reservoir No. 2	Hugh Jones et al		Fulton ditch	4,274,200	June 22, 1892	Dec. 18, 1895
Reservoir No. 3	Hugh Jones et al		Fulton ditch	1,784,640	June 22, 1892	Dec 18, 1895
Curtis Reservoir	F. D. Curtis	Seepage, etc., Sec. 14, T. 1 S., R. 66 W		7,560,000	Jan. 6, 1896	Jan. 22, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO 3, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a B. B. Harris Drain and Irrigating Ditches	B. B. Harris	Seepage, etc., Sec. 22, T. 7 N., R. 69 W	6.00	------	31.00	Aug. 22, 1894	Nov. 14, 1894
Sheep Draw Ditch	Eugene M. Howard	Sheep draw, seepage, etc., T. 5 N., R. 66 W	5.28	.76	5.00	Jan. 23, 1895	Jan. 28, 1895
b The Consolidated Tombaugh Seepage Ditch	B. B. Harris et al	Seepage, etc, Secs 15, 16, 21, T. 7 N., R. 69 W	20.00	1.50	6.00	Mar. 1, 1895	Mar. 11, 1895
Number One and The B. B. Harris Irrigation Ditch	B. B. Harris et al	Seepage, etc., Secs. 15, 16, 21, T. 7 N., R 69 W	20.00	1.50	6.00	Mar. 1, 1895	Mar. 11, 1895
c The Sanborn and Strong Ditch, second enlargement	Burton D Sanborn Arthur Strong	Sheep draw, seepage, etc., T. 5 N., R. 66 W	5.00	------	5.00	Dec. 14, 1894	Mar. 14, 1895
The Gulch Seepage Ditch	A. M. McClenahan R. W. Comer	Seepage, etc., Secs. 2, 3, T. 5 N, R. 66 W	12.00	1.50	6.00	Jan. 12, 1895	Apr. 12, 1895
The Valley Seepage and Drainage Ditch	A. M. McClenahan	Seepage, etc, Secs. 11, 12 2, 1, T. 5 N., R. 66 W	10.00	2.50	9.00	Jan. 12, 1895	Apr. 12, 1895
The S. H. Birdsall Seepage and Drain Ditch	S. H. Birdsall	Seepage, etc., Secs. 14, 23, T. 8 N., R 69 W	6.00	.37	3.00	Apr. 13, 1895	May 16, 1895

The Butler Seepage and Drainage Ditch	Albert D. Butler	Seepage, etc., T. 6 N., R. 66-65 W	2.00	------	5.00	Mar. 1, 1895	May 28, 1895
The Van Hamm Ditch	John Van Hamm	Fossil creek and seepage, etc., T. 6 N., R. 69 W	5.20	.22	12.00	May 31, 1895	June 10, 1895
The Hall-Darnell Seepage Ditch	Edward H. Hall Thomas Darnell	Seepage, etc , Sec. 8, T. 6 N., R. 68 W	5.28	.80	3.00	July 22, 1895	Aug. 16, 1895
The Shaffer Seepage Ditch	J. M. Shaffer	Soldier Cañon creek and seepage, etc., Sec. 9, T. 7 N., R. 69 W	7.92	.46	3.48	Aug. 14, 1895	Sep. 9, 1895
The Pleasant Valley and Lake Canal	The Pleasant Valley and Lake Canal Co.	Cache La Poudre river	4.50	------	162.00	Oct. 10, 1889	Sep. 10, 1895
Morsman and Harris Seepage and Drain Ditch	Grant Morsman B. B. Harris	Seepage, etc., Sec. 15, T. 7 N., R. 67 W	3.50	.75	6.00	Aug. 20, 1895	Oct. 10, 1895
W. J. Strong Ditch	William J. Strong	Seepage, etc , Sec. 12, T. 5 N., R. 66 W	7.50	------	3.00	Sept 5, 1895	Oct. 21, 1895
d McKinley Slough	The New Mercer Ditch Co.	McKinley slough seepage, Sec. 9 T. 7 N., R. 69 W	------	3.00	10.00	Aug. 30, 1895	Nov. 5, 1895
The Warner Seepage Ditch	L. Warner	Sheep draw seepage, etc., Sec. 8, T. 5 N., R. 66 W	5.26	1.80	5.00	July 16, 1895	Nov. 27, 1895
The Kyger Ditch	J. W. Kyger	Seepage, Sec. 13, T. 6 N., R. 68 W	2.64	.38	2.56	Nov. 27, 1895	Dec. 6, 1895
David Davis Ditch	David Davis	Davis gulch seepage, Sec. 24, T. 6 N., R. 68 W	3.72	.45	3.58	July 20, 1895	Dec. 19, 1895

a Statement includes two ditches of same dimensions, used both for drainage and irrigation.

b Increased capacity claimed for Tombaugh Seepage Ditch No. 1. due to this improvement, 3 second-feet.

c Claimed capacity of original ditch, 1 second-foot. It is the outlet of the Sanborn and Strong reservoir.

d "The width, depth and grade of said slough varies so that it cannot be estimated;" it carries from 1 to 10 feet, "varying with the season," all of which claimant claims.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 3, RELATIVE TO WHICH, STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of ppropriation	Date of filing in office of State Engineer
Evans Seepage Ditch	James C. Evans	Seepage, Secs. 19, 30, T. 8 N., R. 68 W.	5.28	.20	11.70	Feb. 24, 1896	Mar. 13, 1896
Brown and Seaman Ditch	M. A. Brown W. T. Seaman	Fossil creek	4.16	1.375	12.50	Mar. 11, 1896	Apr. 2, 1896
e Jackson Ditch Extension	The Jackson Ditch Co						Apr. 17, 1896
Carlton Seepage Ditch No. 1	O. H. Carleton	Black Hollow draw	4.00	1.00	4.00	Mar. 30, 1896	June 24, 1896
Carlton Seepage Ditch No. 2	O. H. Carleton	Black Hollow draw	4.00	.625	4.00	Mar. 30, 1896	June 24, 1896
f Carlton Ditch, reservoir feeder	O. H. Carleton				10.00	Apr. 3, 1896	July 6, 1896
Carlton Reservoir Outlet Ditch	O. H. Carleton		4.00	.88	12.00	Apr. 3, 1896	July 6, 1896
Spring Cañon Extension Ditch	Spring Cañon Extension Ditch Co	Not stated			25.00	May 15, 1896	Aug. 7, 1896
Butler Seepage Ditch	A. D. Butler	Slough in N. W. ¼, 36 T. 6 N., R. 66 W. and waters collected on line of ditch			5.00	June 29, 1896	Aug. 18, 1896
Branson A, B, C and D Ditches	Charles C. Branson	Box Elder creek			Al'gether 8.00	1874	Oct. 14, 1896
Branson E, F Ditches	Charles C. Branson	Spring creek			Al'gether 2.00	1874	Oct. 14, 1896
Fossil Creek Ditch	Sherman C. Grable	Fosils creek ditch	2.11		34.02	June 27, 1896	Oct. 13, 1896

Reservoir No. 6, inlet ditch	The Water Supply and Storage Co	Box Elder creek	10.56	1.10	573.00	July 21, 1896	Oct. 19, 1896
Reservoir No. 7, inlet ditch	The Water Supply and Storage Co	Box Elder creek	4.00	------	1184.00	July 21, 1896	Oct. 19, 1896

e This filing records the construction of a lateral, neither the dimensions nor length of which are supplied.

f No particulars of feeder ditch supplied.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 3, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
The Warren Lake Reservoir	The Warren Lake Reservoir Co	Cache la Poudre	Pleasant valley and lake canal	29,304,990	Oct. 10, 1894	Jan. 10, 1895
a The Smith Reservoir	John Letford Smith	Box Elder ditch	Smith ditch	11,452,000	Feb. 3, 1892	Jan. 25, 1895
The Smith Reservoir No. 2	John Letford Smith	Box Elder ditch	Smith ditch	13,000,000	May 1, 1893	Jan. 25, 1895
b The Higley Reservoir and Pumping Plant	Jonas Cook Higley	Coal Bank draw		270.000	June 1, 1893	Feb. 28, 1895
The Sanborn and Strong Reservoir	Burton D. Sanborn Arthur Strong	Sheep draw		1,500,000	Dec. 14, 1894	Mar. 14, 1895
The Douglass Reservoir	John Douglass	Dry creek	Dry creek natural ditch	459.470,000	June 29, 1895	Aug. 19, 1895
The Steele, Neill-Beckley Reservoir	Robert Steele et al	Seepage, etc., Sec. 16, T. 5 N., R. 66 W.	Briggs draw natural ditch	500,000	Aug. 1, 1895	Aug. 27, 1895
c Sheep Draw Waste Reservoir	Eugene Howard Ludie Warner	Sheep draw, Sec. 8, T. 5 N., R. 66 W.	Sheep draw natural ditch	2,787,800	July 31, 1895	Aug. 29, 1895
d Faber Reservoir	The Farm Investment Co.	Cache la Poudre and seepage. etc., Sec. 14, T. 6 N., R. 66 W.	Natural ravine ditch and canal No. 2	10,800,000	Aug. 20, 1895	Sept. 7, 1895
Claymore Lake Reservoir	The Pleasant Valley and Lake Canal Co.	Cache la Poudre river	Pleasant valley and lake canal	39,000,000	Aug. 1884	Sept. 10, 1895
e Reservoir No. 1	The Reservoir Development Co	South fork Big Beaver creek		75,000,000	July 11, 1895	Oct. 14, 1895

The Boyd Lake Reservoir	The Boyd Lake Reservoir Co.	Big Thompson, Cache la Poudre, Fossil creek, and Dry creek		1,305,972,360	Sep. 13, 1895	Nov. 22, 1895
Carlton Reservoir	O. H. Carleton	Cache la Poudre river	Larimer county ditch	2,262,270	Apr. 3, 1896	July 6, 1896
Owl Creek Reservoir, enlargement	Owl Creek Ditch and Reservoir Co	Owl creek, floods, storm water, etc	Inlet ditch	76,230,000	July 13, 1896	Oct. 10, 1896
Fossil Creek Reservoir	Sherman C. Grable, agent	Fossil creek	Fossil creek	82,663,855	June 27, 1896	Oct. 13, 1896
Reservoir No. 6	The Water Supply and Storage Co	Box Elder creek	Reservoir No. 6 inlet ditch	55,000,000	July 21, 1896	Oct. 19, 1896
Reservoir No. 7	The Water Supply and Storage Co	Box Elder creek	Reservoir No. 7 inlet ditch	360,000,000	July 21, 1896	Oct. 19, 1896
Stonewall Creek Reservoir	J. C. Johnson	Stonewall creek	Dam across Stonewall creek	299,692,800	Aug. 17, 1896	Nov. 26, 1896
North Poudre River Reservoir	J. C. Johnson	North fork of Poudre river	Dam across N. Fork of Poudre river	658,000,000	Sep. 26, 1896	Nov. 26, 1896
Dale Creek Reservoir	J. C. Johnson	Dale creek	Dam across Dale creek	185,420,800	Aug. 22, 1896	Nov. 26, 1896

a Statement includes Box Elder ditch, 12 feet on bottom, 16 feet on top, 4 feet deep, grade 5.28, capacity claimed 202 second-feet, and Smith Lateral, 5 feet on bottom, 7 feet on top, 2 feet deep, grade 5.28 feet per mile, capacity claimed, 24 second-feet.

b "Water is drawn from said reservoir by means of a pump located in said reservoir."

c Statement includes outlet ditch, 2 feet on bottom, depth 1.5 feet, grade 5.28 feet per mile, capacity claimed, 5 second-feet.

d Statement includes short "inlet supply canal, or feeder" from lateral of canal number two, 5 feet wide on bottom, 3 feet deep, grade 50 feet per mile, capacity claimed, 40 second-feet; also "flood water feeder" via a ravine.

e Statement includes feeder ditch, width 12 feet, depth 3.5 feet, grade 5.28 per mile, length .56 mile, capacity claimed, 98 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 4, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Bouke Faber Seepage Ditch	Bouke Faber	Wolaver draw, seepage, etc., Tp. 4-5 N., R. 67 W	15.00	.60	6.00	Apr. 4, 1895	June 10, 1895
a The Walters and Roberts Seepage and Waste Water Ditches, enlarged	Elmer E. Walters	Ash-Craft draw, seepage, etc., Tp. 5 N., R. 66 W	5.28		21.00	Mar. 29, 1895	June 26, 1895
b T. J. Jones Seepage Ditches	Thomas J. Jones	Seepage, etc., Sec. 27, Tp. 5 N., R. 67 W	6.00		4.00	Dec. 12, 1895	Dec. 19, 1895
The Adams Delta Seepage Ditch	William R. Adams	Springs, seepage, etc. Secs 30, 32, Tp. 5 N., R. 67 W	5.25	4.00	13.50	Nov. 20, 1895	Dec. 24, 1895
Ash-Craft Draw Seepage Ditch	Charles F. Reeves	Ash-Craft draw, seepage, etc., Secs. 26, 35, Tp. 5 N., R. 66 W.	5.28	1.56	4.00	Jan. 27, 1896	Feb. 12, 1896
Eureka Ditch Co. Ditch	The Eureka Ditch Co.	Seepage, etc., Sec. 24, Tp. 5 N., R. 69 W	25.00		4.00	Feb. 1, 1896	Apr. 25, 1896
Big Thompson Drainage and Irrigation Co. Ditch	The Big Thompson Drainage and Irrigating Co.	Seepage and swamp, Sec. 22, Tp. 5 N., R. 69 W	10.00		126 00	Oct. 30, 1895	Oct. 15, 1896

a There are three ditches, total capacity now claimed for each, 7 second-feet. No filings of original ditches on record in this office.

b There are two ditches, capacity claimed for each, 2 second-feet.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 4, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a The Boyd Lake Reservoir.....	The Boyd Lake Reservoir Co.	Big Thompson, Cache la Poudre rivers, Fossil and Dry creeks	Barnes' ditch, New Mercer ditch and others	1,305,972,260	Sept 13, 1895	Nov. 22, 1895

a Statement includes feeders from the Big Thompson river, Barnes' ditch, Loveland and Greeley canal, each 32 feet on bottom, 44 feet on top, 6 feet deep, grade 2 112 feet per mile, capacity claimed, 761.5 second-feet; and Louden ditch, via Dry creek, dimensions not supplied; from Cache la Poudre river, New Mercer ditch and Larimer county canal No. 2, each 32 feet on bottom, 44 feet on top, 6 feet deep, grade 1.584 feet per mile; from Fossil creek there is a feeder, no particulars of which are supplied. There is also an outlet ditch, not named, 32 feet on bottom, 44 on top, 6 feet deep, grade 2.112 feet per mile, capacity claimed, 658.9 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 5, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Godding Hollow Ditch	T. F. Godding	Godding hollow c'k	13.00	1.50	15.00	May 1, 1880	Jan. 19, 1895
The Cole Seepage Ditch	Charles P. and Geo. W. Cole	Seepage, etc., Sec. 1, T. 2 N., R. 68 W	2.50	------	16.50	Dec. 12, 1894	Mar. 9, 1895
The Economy Ditch	J. O. V. Wise	Seepage, etc., Sec. 26, T. 1 N., R. 69 W	6.50	---	6.00	Mar. 4, 1895	May 13, 1895
The Cushing Ditch	Jasper Newton Bowles	Howlett gulch, Sec. 13, T. 3 N., R. 68 W	5.28	3.219	12.00	Nov. 16, 1895	Nov. 22, 1895
The Bruce Ditch	Benjamin Bowles	Bowles gulch, Sec. 6, T. 3 N., R. 67 W	6.00	.55	6.00	Nov. 15, 1895	Dec. 10, 1895
Miantenoma Ditch	Benjamin Bowles	Bowles gulch via Miantenoma reservoir, Sec. 6, T. 3 N., R. 67 W	5.28	.99	10.65	Nov. 14, 1895	Dec. 10, 1895
Silver Spruce Ditch	E. B. Snell	South St. Vrain creek	15.74	------	50.00	May 1, 1892	Jan. 30, 1896
Empson Ditch	John Empson	Spring creek	4.00	2.50	15.00	Oct. 27, 1894	Aug. 26, 1896
Silver Spruce No. 1 Ditch	Silver Spruce Ranche Co	South St. Vrain creek	10.56	------	42.24	May 1, 1895	Oct. 22, 1896
Silver Spruce No. 2 Ditch	Silver Spruce Ranche Co	Beaver creek	10.56	------	42.24	Apr. 1, 1896	Oct. 22, 1896

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO 5. RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Miantenoma Reservoir	Benjamin Bowles	Bowles gulch	Natural water course	2,189,000	Nov. 14, 1895	Dec. 10, 1895
Silver Spruce Reservoir	E B. Snell	South St. Vrain creek	Silver Spruce ditch	200,000	Oct. 1, 1893	Jan. 30, 1896
Silver Spruce Reservoir	Silver Spruce Ranche Co	South St. Vrain creek	Silver Spruce No. 1 ditch	3,000,000	June 1, 1896	Oct. 22, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 6, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
The High Line Ditch	The Boulder High Line Canal Co	Middle Boulder creek	5.28	------	150.55	---------- -----	Dec. 31, 1894
The Los Lagos Ditch	Hal Sayr	Beaver creek	11.00	1.40	12.60	Aug. 4, 1894	June 8, 1895
The Los Lagos Supplementary Ditch	Hal Sayr	South branch Beaver creek	11.00	.31	7.80	May 13, 1895	June 8, 1895
The McCormick & Mitchell Ditch	James McCormick, et al	Lower Boulder reservoir	3.64	3.00	12.50	Dec. 9, 1895	Feb. 7, 1896
The Scotch Ditch	William Laughlin	Seepage, etc., Sec. 22, T. 1 N., R. 69 W.	12.00	----	3.00	May, 1879	May 22, 1896
a The National Pipe Line	E. E. Bethell	Coon Trail creek	------	.25	50.00	Jan. 27, 1896	June 5, 1896
b The First National Ditch	E. E. Bethell	Hicks gulch	20.00	.71	16.00	Jan. 27, 1896	June 5, 1896
The Bass Feeder Ditch	Hiram Prince	Sp'gs, seepage, etc., Sec. 27, T. 1 N., R. 69 W.	53.00	------	2.00	1895	July 7, 1896
The Glencove Ditch	Nelson G., Clyde C. and Albert Robison	Coal creek	16.66	1.00	4.50	June 1, 1896	July 10, 1896
The National Ditch	E. E. Bethell	Coon Trail creek	50.00	------	30.00	Jan. 4, 1896	Aug. 26, 1896

a Appropriation is made to supply water for mining, milling and domestic purposes.

b To convey water for mining, milling and domestic purposes to the National group of mines.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 6, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a The Six-Mile Reservoir (amended filing)	The Six-Mile Ditch and Reservoir Co	Boulder creek, flood, seepage	Boulder and White Rock ditch			Dec. 6, 1894
Jenny Lind Reservoir	The Boulder High Line Canal Co	Jenny creek		3,192,948	May 13, 1891	Dec. 31, 1894
Jasper Reservoir	The Boulder High Line Canal Co	Jasper ceek		62,809.164	Nov. 6, 1890	Dec. 31, 1894
Diamond Reservoir	The Boulder High Line Canal Co	Diamond creek		22,629,420	Nov. 6, 1890	Dec. 31, 1894
Peterson Reservoir	The Boulder High Line Canal Co	Peterson creek		29,459,628	May 13, 1891	Dec. 31, 1894
Jenny Lind Reservoir	The Mountain Reservoir Ditch and Supply Co	Gulches, etc., Sec. 27, T. 1 S., R. 74 W		11,600,000	Feb. 4, 1895	Mar. 4, 1895
Peterson Reservoir	The Mountain Reservoir Ditch and Supply Co	Gulches, T. 1 S., R. 73 W		27,000,000	Feb. 4, 1895	Mar. 4, 1895
Los Lagos Reservoir No 1	Hal Sayr	Beaver creek and South branch	Los Lagos ditch	8,029,038	Aug. 4, 1894	June 8, 1895
Los Lagos Reservoir No. 2	Hal Sayr	Beaver creek and South branch	Los Lagos ditch	6,139,005	Aug. 4, 1894	June 8, 1895

a Boulder and White Rock ditch draws water from Boulder creek, capacity claimed, 235.20 second-feet; other particulars not supplied.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 6, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Los Lagos Reservoir No. 3	Hal Sayr	Beaver creek and South branch	Los Lagos ditch	3,584,507	Aug. 4, 1894	Jan. 8, 1895
b Marshall Reservoir No. 1	James Marshall	Spring brook run	Marshall ditch No. 2	191,600	May 15, 1895	July 16, 1895
c Jenny Lind Reservoir (amended)	The Mountain Reservoir Ditch and Supply Co					Aug. 10, 1895
Bass Reservoir	Hiram Prince	Springs, seepage, etc Sec. 27, T. 1 N., R. 69 W	Bass feeder ditch	7,000,000	1890	July 7, 1896
d Glencove Reservoir	Nelson G. Clyde, et al	Coal creek	Glencove ditch		June 1, 1896	July 10, 1896

b Marshall ditch No. 2, capacity claimed 5 second-feet, other particulars not supplied.

c Amended filing sets forth the route the water is taken from reservoir and appropriated by claimant.

d At high water line the reservoir covers an area of 600 by 300 feet, with an average depth of about 10 feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 7, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a Larson Ditch, left bank	Mary C. Larson	Little Beaver creek	10.00	1.50	5.00	Oct. 15, 1894	Feb. 7, 1895
a Larson Ditch, right bank	Mary C. Larson	Little Beaver creek	10.00	1.50	5.00	Oct. 15, 1894	Feb. 7, 1895
b All unappropriated water in Clear Creek	The Clear Creek Gold Mining and Water Power Co	Clear creek	------	------	------	Nov. 9, 1894	Feb. 6, 1895
c Clear Water Ditch No. 1	P. B. Jackson	Seepage, etc., Sec. 13, T. 3 S., R. 70 W	6.00	------	3.00	Jan. 10, 1895	Feb. 11, 1895
c Clear Water Ditch No. 2	P. B Jackson	Seepage, etc., Sec. 13, T. 3 S, R. 70 W	6.00	------	3.00	Jan. 10, 1895	Feb. 11, 1895
d Wadsworth Ditch	The Wadsworth Ditch Co	Clear Creek and seepage, etc., Secs. 14-15-16-17-20, T. 3 S., R. 69 W	------	------	------	------ ------	Mar. 27, 1895
e Farmers' High Line Canal, enlargement	The Farmers' High Line Canal and Reservoir Co	Clear creek	20.00	34.00	720.60	Dec. 1, 1892	Apr. 23, 1895
White Gulch Ditch	Charles Allen	Seepage, etc., T. 3 S., R. 69 W	42.00	.50	3.80	May 3, 1895	May 7, 1895

a These ditches are in Water district No. 6; outlets from Larson Reservoir.

b Appropriation is "for the beneficial use of the waters of said stream for mining and manufacturing purposes."

c Both ditches have a common headgate dam, drawing water from either bank of a natural gulch.

d This filing is for priority for seepage, etc.; the Clear creek priority is an old decree, to which reference is made for full description of ditch.

e Increased capacity claimed, due to this enlargement, 335.86 second-feet; it was originally known as the Arapahoe Ditch, or Golden Canal.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 7, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Randall Inlet Ditch	Laura E. Randall	Clear creek	20.00	.006	3.00	May 22, 1895	June 11, 1895
Randall Outlet Ditch No. 1	Laura E. Randall	Randall reservoir	20.00	.20	2.00	May 22, 1895	June 11, 1895
Randall Outlet Ditch No. 2	Laura E. Randall	Randall reservoir	20.00	.125	2.00	May 22, 1895	June 11, 1895
f E. J. Heatley Ditch No. 1	E. J. Heatley	Lyden creek	20.00	.50	2.00	Apr. 1, 1885	June 17, 1895
f E. J. Heatley Ditch No. 2	E. J. Heatley	Lyden creek	20.00	.50	2.00	Apr. 1, 1885	June 17, 1895
Evans Ditch	Oliver Evans	Dry creek—branch of Ralston creek	13.00	.50	3.00	Nov. 11, 1895	Nov. 19, 1895
g Roscoe Ditch	The Clear Creek Gold Mining and Water Power Co	South fork of Clear creek	10.00	6.00	.....	Apr. 8, 1896	Apr. 16, 1896

f Both ditches have a common headgate dam, drawing water from either bank of Lyden creek.

g Appropriation claim is "6,000 inches for mining, manufacturing and irrigation purposes."

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 7, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a Larson reservoir	Mary C. Larson	Beaver creek		6,528,000	Oct. 15, 1894	Feb. 7, 1895
b Burnett & Deisher Reservoir No. 2	J. A. Burnett, H. M. Deisher	Seepage, etc., Sec. 12, 13, T. 7 S., R. 68 W.		1,510,000	Dec. 10, 1894	Feb. 9, 1895
c Burnett & Deisher Reservoir No. 1	J. A. Burnett, H. M. Deisher	Clear creek	Farmers' high line canal and signal ditch	627,264	Dec. 10, 1894	Feb. 21, 1895
Hyatt Lake	Farmers' High Line Canal and Reservoir Co	Clear creek	Farmers' high line canal	52,416,000	Dec. 1, 1892	Apr. 23, 1895
Broad Lake	Farmers' High Line Canal and Reservoir Co	Clear creek	Farmers' high line canal	4,791,000	Dec. 1, 1892	Apr. 23, 1895
Laura E. Randall Reservoir	Laura E. Randall	A branch of Clear creek	Randall inlet ditch	86,800	May 22, 1895	June 11, 1895
d Swan Reservoir No. 2	Sarah L. Swan	Clear creek	Golden City and Ralston creek ditch	876,860	Sept. 24, 1890	May 18, 1896

a This reservoir is in Water District No. 6.

b Statement includes outlet ditch, not named, 3 feet on bottom, 1 foot deep, grade 5.28 per mile; capacity claimed, 6.1 second-feet.

c Statement gives Signal ditch as 2 feet wide, 1 foot deep, grade 50.1 feet per mile; capacity claimed, 8 second feet.

d Statement gives immediate feeder as Swan ditch, a lateral of Golden City and Ralston ditch; capacity claimed, 10 second-feet; no other particulars supplied.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 8, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Jenks Ditch	J. S. Jenks	Big Dry creek	5.28	------	.75	May 21, 1894	Mar. 26, 1895
Entressangle Ditch	A. F. Entressangle T. A. Van Cureu	Seepage, etc., T. 4 S., R. 69 W	13.00	------	5.00	Apr. 1, 1895	May 18, 1895
a Dry Creek Reservoir and Irrigation Co.'s Ditch	Cyrus M. Curtis et al	Spring gulch and Little Dry creek	5.00	3.00	10.00	June 11, 1895	June 17, 1895
b Schutz Ditch, first enlargement	Jacob Schutz	Russellville branch of Cherry creek	------	.75	20.00	Apr. 12, 1895	June 29, 1895
Hawkey-Dane & Girdy Ditch	Robert Hawkey George Dane	East branch of Cherry creek	5.28	.76	12.00	Oct. 8, 1895	Dec. 16, 1895
F. L. Greene, No. 1 Ditch	Frank L. Greene	Wier's gulch, Sec. 13, T. 4 S., R. 69 W	------	1.06	1.50	May 1, 1885	July 21, 1896
F. L. Greene, No. 2 Ditch	Frank L. Greene	Wier's gulch, Sec. 13, T. 4 S., R. 69 W	------	.10	1.00	June 1, 1885	July 21, 1896
Seepage Ditch	F. M. Oakley	Seepage in gulch, Sec. 4, T. 4 S, R. 69 W	6.00	.62	1.00	Sept. 2, 1896	Sept. 5, 1896
c Pickett Lateral Ditch	Frank L. Pickett Ralph V. Pickett	McIntire gulch, Sec. 4, T. 4 S, R. 69 W	6.60	1.40	3.00	Sept. 25, 1896	Oct. 2, 1896
The Little Dry Creek Ditch	Thomas Lockhart John F. Miller	Little Dry creek via Payne ditch No. 1	------	.68	9.34	Jan. 14, 1889	Nov. 14, 1896

a Organized as The Dry Creek Reservoir and Irrigation Co., though not so signed.
b Increased capacity claimed, due to this enlargement, 18 second-feet.
c Amended filing changing location of headgate, made October 24, 1896.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 8, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a Wakeman Reservoir	The Union Real Estate, Live Stock and Investment Co.	Willow creek		1,960,200	Nov. 15, 1894	Jan. 14, 1895
b Gustafson Reservoir	Joseph Gustafson	Big Dry creek		240,000	Dec. 19, 1894	Jan. 23 1895
c Platte Land Revervoir No. 1	The Platt Land Co., Limited	South Platte river	High Line canal	16,865,567	Oct. 3. 1893	Feb. 15, 1895
Schutz Reservoir	Jacob Schutz	Cherry creek, Russellville branch	Shutz ditch	1,045,440		June 29, 1895
d Mentzer Reservoir and Pumping Plant	Herbert C. Mentzer	Jefferson Garden brook, seepage, etc			April 20, 1895	July 9, 1895

a Statement includes outlets; Cottonwood ditch No. 2, 3 feet on bottom, 7.5 feet on top, 1.5 feet deep, grade 10 feet per mile, capacity claimed 34 second-feet; also Wakeman ditch No. 1, 3 feet on bottom, 7.5 feet on top, 1.5 feet deep, grade 15 feet per mile, capacity claimed 42 second-feet.

b Plat indicates supply to be waste, etc., from High Line canal, water is to be pumped from reservoir to higher ground.

c Statement includes feeder, lateral from High Line canal, 8 feet on bottom, 10 feet on top, 1.5 feet deep, grade 7.3 feet per mile, 6.4 miles long, capacity claimed 28.3 second-feet, work begun on same October 30, 1893; also outlet ditch, 8 feet on bottom, 10 feet on top, 1 foot deep, grade 5.3 feet per mile, capacity claimed 18 second-feet, .06 mile long, work begun on same October 9, 1893.

d Area of reservoir 1-6 acre; claims "80 inches per second of time" from Jefferson Garden brook and seepage.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 9, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Marston Gulch Ditch	Denver Transit and Warehouse Co	Marston Lake gulch	6.00	1.45	5.00	May 1, 1896	July 23, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 10, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Wright's Ditch No. 1	Francis Wright	Wright's reservoir No. 1	10.50	.25	5.12	Feb. 21, 1896	May 17, 1896
Wright's Ditch No. 2	Francis Wright	Wright's reservoir No. 1	10.50	.40	5.12	Feb. 21, 1896	May 17, 1896
Wright's Ditch No. 3	Francis Wright	Wright's reservoir No. 2	10.50	.34	5.12	Feb. 21, 1896	May 17, 1896
Empress Ditch and Pipe Line	The Lake George Irrigation Canal and Pipe Line Co	Empress reserv'r and Catamount creek	15.28	.72	100.00	Sept. 28, 1895	Apr. 20, 1896
Empress Ditch and Pipe Line No. 2	The Lake George Irrigation Canal and Pipe Line Co	Little Green Mountain Falls creek and Empress reservoir No. 2	15.84	.74	70.00	Oct. 5, 1895	Apr. 22, 1896
a Woodland Park Pipe Line	Town of Woodland Park	Loy Creek	88.00	------	1.16	1891	Aug. 31, 1896

a Capacity claimed, 2,000 cubic inches per second. Grade stated to be 20 inches in 100 feet.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 10, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a Wright's Reservoir No. 1	Francis Wright	Spring, Sec. 21, T. 14 S., R. 66 W			Feb. 21, 1896	May 17, 1896
a Wright's Reservoir No. 2	Francis Wright	Spring, Sec. 21, T. 14 S., R. 66 W			Feb. 21, 1896	May 17, 1896
b Empress Reservoir	The Lake George Irrigation Canal and Pipe Line Co	Catamount, or Green Mountain Falls creek		2,073,320	Sept. 28, 1895	Apr. 20, 1896
Empress Reservoir No. 2	The Lake George Irrigation Canal and Pipe Line Co	Little Green Mountain Falls creek		1,873,000	Oct. 6, 1895	Apr. 22, 1896

a Statement simply locates reservoirs, failing to give area or capacity of either.

b Water to be stored for the use of mills and manufactories, for generating power, for mining, irrigation, domestic and railroad uses.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 11, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second feet	Date of appropriation	Date of filing in office of State Engineer
Warden & Co. Ditch	J. C. Irving, et al	Chalk creek	7.00	2.00	20.00	July 15, 1887	Mar. 12 1895
Gem Ranch No 1 Ditch	L. L. Gale	Arkansas river	12.00	.10	2.00	Apr. 15, 1893	May 18, 1895
Gem Ranch No 2 Ditch	L. L. Gale	Branch of Arkansas river	12.00	.25	2.00	Apr. 15, 1894	May 18, 1895
Junction Ditch No 1	H S Garlinghouse	Arkansas river	15.80	.50	19.50	May 8, 1895	June 17, 1895
Junction Ditch No 2	H S Garlinghouse	Arkansas river	39 00	.44	25 00	July , 1890	June 17, 1895
Seepage No 1 Ditch	Wm. H Champ	Slough creek	1.30	.04	1.00	June 5, 1895	June 13, 1895
Lewis Ditch	Titus Lewis	Seepage, Sec. 4, T. 49 N., R 9 E	4.00	32	.50	July 15, 1891	June 19, 1895
a Donaldson Ditch	Calvin Donaldson Nancy J. Brown	Springs and seepage Sec. 5, T. 49 N., R. 8 E	15 00	1.70	5 00	July 17, 1895	July 29, 1895
Combination Ditch	James J. Dillon, et al	North Cottonwood creek	211.00	2.75	26.34	June 1, 1893	Aug 27, 1895
Dawson Ditch	W J. Dawson	Trout creek	17 60	009	2 77	Mar. 15, 1894	June 1, 1896
Delo Ditch	Reuben F. Delo	Spring gulch, Sec. 17 T. 49 N., R. 9 E	26.60	.81	2.50	June 12, 1896	June 18, 1896

a The original ditch was constructed in 1890, of which this is an enlargement and extension; increased capacity claimed, due to same, 2.50 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 11, RELATIVE TO WHICH SAATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
b Raenike Ditch	Carl E. E. Raenike	Springs, etc., Sec. 2, T. 15 S., R. 79 W.	------	------	3.00	Oct. 25, 1882	July 13, 1896
c Schade Ditch	Bernhardt Schade	Springs, etc., Sec. 2, T. 15 S., R. 79 W.	------	------	3.00	June 19, 1880	July 13, 1896
d Shavano Ditch	J. B. Sage J. C. Spence J. B Brown	Shavano lake	------	------	15.00	Sept. 25, 1895	Aug. 6, 1896
Salida Ditch (amended)	Salida Ditch Association per J. A. Phelon	Arkansas river	2 60	7.00	20.87	Spring, 1884 Comp. June, 1893.	Aug. 6, 1896
Albright Ditch	Mrs. D. E. Albright Wm. Lamprecht	Seepage, Spring gulch Sec. 9, T. 49 N., R 8 W., P. M.	26.70	1.25	3.00	Surv'd. Aug. 11, 1896, June 1888.	Sept. 2, 1896
Gable Ditch	Wm. Gable	Gable creek	185.00	1.25	4.40	May 1, 1886	Sept. 3, 1896
Scanga Ditch	Guiseppi Scanga	Springbrook and seepage in Sec. 8, 9, T. 49 N., R. 8 E.	79.80	.05	2.50	July 1, 1896	Sept. 28, 1896

b Only headgate located; no particulars supplied.

c Headgate simply located; no description given of ditch.

d Size of ditch not definitely given; headgate 3 feet wide and 6 feet deep.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 11, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Shavano Lake	J. B. Sage J. C. Spence J. B. Brown	Drainage from mountain gulches	----------	1,905,852	Sept. 25, 1895	Aug. 6, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 12, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
The DeWeese-Dye Main Ditch	Dall DeWeese W. H. H. Dye	Grape creek	5.28	6 50	40.00	Nov. 23, 1894	Feb. 20, 1895
The DeWeese-Dye Lateral No. 1	Dall DeWeese W. H. H Dye	The DeWeese-Dye reservoir No. 1	5.28	5.00	25.00	Nov. 23, 1894	Feb 20, 1895
The DeWeese-Dye Lateral No. 2	Dall DeWeese W. H. H. Dye	The DeWeese-Dye reservoir No. 2	5.28	*2.00	15.00	Nov. 23, 1894	Feb. 20. 1895
Gordon Ditch	Thomas Gordon	Boush Hollow creek	15.84	.95	20.50	Apr. 19, 1895	May 7, 1895
a Victor Supply Pipe Line	The Town of Victor	East branch of West Beaver creek	109 33	6.75	12.50	May 6, 1895	May 29, 1895
Cajon Ditch	Frank P. Blake	Dry, or Six-Mile creek	3.00	1.50	5.00	Mar 15 1894	Oct. 31, 1895
b The Lee Ditch or Pipe Line	Julian B. Downey	Beaver creek	.....	2.08	100.00	Aug. 21 1895	Nov. 18, 1895
c The Fruitland Ditch	Henry Earle Frederick A. Reynolds	Arkansas river via Mill ditch	3.18	4.33	19.00	Aug. 26, 1895	Nov. 22, 1895
d Cripple Creek and Cañon City Power Ditch	C. J. Richmond Page Lyman Robinson	Arkansas river	3.00	4.16	400.00	Dec. 30, 1895	Jan. 15, 1896
The Park Center Land and Water Co. Ditch	The Park Center Land and Water Co	Oil creek	5.28	12.45	24.00	Oct. 8, 1895	Jan. 28, 1896
Myers Ditch	Alfred F. Myers	Six-Mile creek	17.00	.....	3.00	Nov. 6, 1895	Feb. 5, 1896

The Six-Mile Irrigating Ditch	Clarence H., Nettie V., and Amasa W. Lucas	Six-Mile creek	17.00	2.68	5.00	Dec. 19, 1895	Mar 18, 1896
e La Bella Ditch and Pipe Line	The La Bella Mill and Water Co	La Bella reservoir	5.28	------	30.00	Jan. 10, 1896	Apr. 15, 1896
Ripley Ditch	John C. Grover I. A. Bondurant	Oil creek, or Four-Mile creek	2.64	1.93	1.50	Feb. 8, 1896	May 7, 1896
f Garden Park Ditch, enlargement	John C. Grover I. A. Bondurant	Oil creek or Four-Mile creek	------	------	1.50	April 1, 1896	May 7, 1896
g Gillett Pipe Line	Charles Edward Mackay Lucian D. Ross	Oil creek	145 00	2 44	4.41	May 4, 1896	June 5, 1896
The Wilson Creek Ditch	S. Henry Atwater	Wilson creek	5.28	.29	24 00	June 13, 1896	June 17, 1896
h Ophelia Ditch	The Gold Exploration and Tunnel Co	Ophelia tunnel Sec 24, T 15 S., R. 70 W	26.40	-----	12.00	April 1, 1896	June 20, 1896
i Cripple Creek, Victor and Gillett Pipe Line	E. Salisbury Smith	Cripple Creek, Victor and Gillett reservoir	----	------	25.00	April 10, 1896	July 7, 1896
Cedar Park Ditch	E. H and M. W. Burnett	Eight-Mile creek	47.50	1.59	75.48	Sept. 25, 1896	Nov. 2, 1896

a Appropriation is for the Victor town water works.

b Statement mentions a reservoir, though gives no particulars; appropriation is "for power, or manufacturing purposes."

c A pipe line, 16,700 feet long, capacity claimed 6,000 gallons per minute, conveys water to the head of ditch and Fruitland reservoir.

d Appropriation for power purposes; water to be returned to river at power station.

e Diameter of the Pipe Line pipe, 8 inches.

f This is extension of preceding ditch; capacity given is that due to this extension, not the total of the enlarged Ripley ditch.

g Appropriation is for the Gillett town water works.

h Statement claims all water from a mine tunnel for "ore treatment, domestic or irrigation uses."

i Statement claims "the priority of application of water for domestic, agricultural, mining and mechanical purposes."

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO 12, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
DeWeese-Dye Reservoir No. 1	Dall DeWeese W. H. H. Dye	Grape creek		4,356,000	Nov. 23, 1894	Feb. 20, 1895
DeWeese-Dye Reservoir No. 2	Dall DeWeese W. H. H. Dye	Grape creek		2,178,000	Nov. 23, 1894	Feb. 20, 1895
DeWeese-Dye Reservoir No. 3	Dall DeWeese W. H. H. Dye	Grape creek		261,360	Nov. 23, 1894	Feb. 20, 1895
DeWeese-Dye Reservoir No. 4	Dall DeWeese W. H. H. Dye	Grape creek		391,940	Nov. 23, 1894	Feb. 20, 1895
DeWeese-Dye Reservoir No. 5	Dall DeWeese W. H. H. Dye	Grape creek		658,400	Nov. 23, 1894	Feb. 20, 1895
DeWeese-Dye Reservoir No. 6	Dall DeWeese W. H. H. Dye	Grape creek		740,520	Nov. 23, 1894	Feb. 20, 1895
DeWeese-Dye Reservoir No. 7	Dall DeWeese W. H. H. Dye	Grape creek		261,360	Nov. 23, 1894	Feb. 20, 1895
DeWeese-Dye Reservoir No. 8	Dall DeWeese W. H. H Dye	Grape creek		348,480	Nov. 23, 1894	Feb. 20, 1895
DeWeese-Dye Reservoir No. 9	Dall DeWeese W. H. H Dye	Grape creek		1,829,520	Nov. 23, 1894	Feb. 20, 1895
DeWeese-Dye Reservoir No. 10	Dall DeWeese W. H. H. Dye	Grape creek		696,960	Nov. 23, 1894	Feb. 20, 1895

DeWeese-Dye Reservoir No. 11	Dall DeWeese W. H. H. Dye	Grape creek		87,120	Nov. 23, 1894	Feb. 20, 1895
DeWeese-Dye Reservoir No. 12	Dall DeWeese W. H. H. Dye	Grape creek		340,480	Nov. 23, 1894	Feb. 20, 1895
DeWeese-Dye Reservoir No. 13	Dall DeWeese W. H. H. Dye	Grape creek		174,240	Nov. 23, 1894	Feb. 20, 1895
Victor Supply Reservoir	The Town of Victor	East branch of West Beaver creek		466,666	May 6, 1895	May 29, 1895
Cajon Reservoirs Nos. 1 and 2	Frank P. Blake	Dry or Six-Mile creek		2,000,000	Mar. 15, 1894	Oct. 31, 1895
The Fruitland Reservoir	Henry Earle Frederic A. Raynolds	Arkansas river	The Fruitland pipe line	3,000,000	Aug. 26, 1895	Nov. 22, 1895
The Six-Mile Reservoir No. 1	Clarence H., Nettie V. and Amasa W. Lucas	Six-Mile creek	The Six-Mile irrigating ditch	112,000	Dec. 19, 1895	Mar. 19 1896
The Six-Mile Reservoir No. 2	Clarence H., Nettie V. and Amasa W. Lucas	Six-Mile creek	The Six-Mile irrigating ditch	120,000	Dec 19, 1895	Mar. 19, 1896
The Six-Mile Reservoir No. 3	Clarence H., Nettie V. and Amasa W. Lucas	Six-Mile creek	The Six-Mile irrigating ditch	300,000	Dec. 19. 1895	Mar. 18, 1896
La Bella Reservoir	The La Bella Mill and Water Co	La Bella springs, Sec. 28, T. 15 S., R. 69 W, Wilson creek, etc		2,000,000	Jan. 10, 1896	Apr. 15, 1896
Gillett Storage Reservoir	Chas. Edward Mackay Lucian D. Ross	Oil creek via pipe line		426,670	May 7, 1896	June 5, 1896
Cripple Creek, Victor and Gillett Reservoirs	E. Salisbury Smith	Oil creek		10,000,000	Feb. 14, 1896	July 7, 1896
Cedar Park Reservoir	E. H. and M. W. Burnett	Eight-Mile creek	Cedar Park ditch	9,325,000	Sept. 25, 1896	Nov. 2, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 13, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
A. Klotz Ditch No. 1	A. Klotz	Dry creek, springs; Sec 21, T. 22 S., R. 73 W	34.30	.78	2.00	Mar. 1, 1889	Dec 5, 1894
A. Klotz Ditch No. 2	A. Klotz	Springs, Sec. 15, T. 23 S., R 73 W	34.30	.55	1.00	Mar. 1, 1889	Dec. 5, 1894
Jesse Winn Spring Ditch	J. P. Winn	Springs, T. 22 S., R. 73 W	26 40	.75	1.60	Apr. 1, 1872	June 5, 1895
a Swift Creek Ditch, 1st enlargement	Richard Houle, et al	Swift creek	8 00	3.25	7.00	Apr. 30, 1895	July 30, 1895
Dieckmann's Springs and Ditch	Fritz Dieckmann	Dieckmann's spr'gs, Sec. 15, T. 23 S., R. 73 W	114.00	1.25	1 25	July 1, 1895	May 16, 1896
Pennycuick Ditch No. 1	Elliot Pennycuick	Willow creek	53.00	.50	1.00	1881	June 5, 1896
Pennycuick Ditch No 2	Elliot Pennycuick	Willow creek	21.00	.60	1.00	May 31, 1896	June 5, 1896
E. Houle's North Brush Creek Reservoir Discharge Ditch	Elizabeth Houle	North Brush creek	52.80	2.00	2.50	Aug. 9, 1896	Nov. 17 1896

a Appropriation claimed, due to this enlargement, 4.22 second-feet.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 13, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
The Swift Creek Reservoir No. 1—first enlargement	George B. Beardsley, et al	Swift creek		2,778,252	July 22, 1894	Feb. 27, 1895
The Swift Creek Reservoir No. 2—first enlargement	George B. Beardsley, et al	Swift creek		1,721,926	July 30, 1894	Feb. 27, 1895
The Swift Creek Reservoir No. 3—first enlargement	George B. Beardsley, et al	Swift creek		1,856,945	Aug. 20, 1894	Feb. 27, 1895
The Swift Creek Reservoir No. 4	George B. Beardsley, et al	Swift creek		811,087	Aug. 25, 1894	Feb. 27, 1895
The Reed and Houle Reservoir No. 1	Harry G. Reed Elizabeth Houle	North Brush creek		7,291,072	Sept. 20, 1895	Jan. 7, 1896
The Reed and Houle Reservoir No. 2	Harry G. Reed Elizabeth Houle	Tributary of Brush creek		12,833,175	Sept. 20, 1895	Jan. 7, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 14, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second feet	Date of appropriation	Date of filing in office of State Engineer
The Tolle Ditch and Reservoir System, Ditch No. 1	Emanuel C. Tolle	Chico basin branch of Chico creek	15.84	1.38	9.50	July 1, 1891	June 6, 1895
The Tolle Ditch and Reservoir System, Ditch No. 2, outlet	Emanuel C. Tolle	The Tolle ditch and reservoir system reservoir	21.12	.56	3.00	July 1, 1891	June 6, 1895
The Tolle Ditch and Reservoir System, Ditch No. 3, outlet	Emanuel C. Tolle	The Tolle ditch and reservoir system reservoir	10.50	.63	.86	July 1, 1891	June 6, 1895
The Peck Creek Ditch	James Livesey	Peck creek	15.33		2.00	Apr. 15, 1894	Dec. 6, 1895
a The Cawlfield No. 2 Ditch	James N. Carlile	Arkansas river via Collier ditch	3.00	2.00	20.00	Mar. 1882	Feb. 4, 1896
The Trustees of the Pueblo Water Works Ditch	Trustees of the Pueblo Water Works	Arkansas river	3.168	1.60	65.00	Feb. 20, 1889	Apr. 13, 1896
Bean Ditch	Fred. B. Bean	Turkey creek	10.56	1.80	1.30		July 28, 1896
Palmer Ditch	John C. Palmer	Turkey creek	8.00	.74	1.25	Feb. 10, 1886	Aug. 7, 1896
Cape Horn Ranch Ditch	Chas. C. Campion	Arkansas river	5.00	2.25	6.00	1873	Oct. 6, 1896
Wheel Ranch Ditch	Chas. C. Campion	Arkansas river	5.50	.50	2.30	Mar. 1890	Oct. 6, 1896

a Statement shows this to be an enlargement and extension of the Collier ditch; no increased appropriation due to enlargement, is claimed.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 14, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
The Tolle Ditch and Reservoir System Reservoir	Emanuel C. Tolle	Chico basin branch of Chico creek		1,375,420	July 1, 1891	June 6, 1895
Trustees of the Pueblo Water Works— Reservoir No. 1	Trustees of Pueblo Water Works	Arkansas river	Trustees of the Pueblo water works ditch	13,041,000	Feb. 20, 1889	Apr. 13, 1896
Trustees of the Pueblo Water Works— Reservoir No. 2	Trustees of Pueblo Water Works	Arkansas river	Trustees of the Pueblo water works ditch	13,190,000	Feb. 20, 1889	Apr. 13, 1896
Cape Horn Ranch Reservoir	Chas. C. Campion	Arkansas river	Cape Horn ranch ditch	1,100,000	Mar. 1880	Oct. 6, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 16, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Underflow Ditch No. 1	Louis B. Sporleder Clinton B. Sharp	Bear creek	12.00	2.72	2.50	Mar. 28, 1895	June 17, 1895
Tom Creek Ditch No. 2	Chas. S. Parker	Tom creek	.....	.75	1.00	Sept. 25, 1895	Dec. 23, 1895
Chitwood Ditch	Wilson H. Stickler	Chitwood creek	81.00	1.89	2.00	Oct. 9, 1895	Jan. 7, 1896
Pino Ditch	Juan W. Manuel, et al	Huerfano river	10.00	2.00	5.20	1861	Feb. 29, 1896
Lafore Ditch	Antonio A. Laforet, et al	Middle Turkey creek	75.00	2.32	5.61	Apr. 1, 1892	Apr. 15, 1896
Maldonado Ditch	Fred Walsen, et al	Cuchara creek	6.00	1.50	6.00	Apr. 1868	Apr. 15, 1896
Molla Ditch	C. Garcia, et al	Huerfano river	.....	3.00	10.70	1869	Apr. 22, 1896
Marino Ditch	J. A. J. Valdes J. Hartman	Turkey creek	18.00	.85	3.00	Mar. 1869	May 1, 1896
a Pacheco Ditch	J. B. and F. Pacheco	Cuchara river	.....	1.10	55.23	Nov. 1884	May 1, 1896
Ramos Ditch	J. Pacheco et al	Cuchara river	.....	1.25	5.00	Mar. 1869	May 1, 1896
b Maes Ditch	P. Maes, et al	Small branch of Turkey creek	30.00	3.00	4.00	Apr. 1872	May 2, 1896
Gordon Ditch	Henry Gordon	Springs, bank of N. Veta creek, Sec. 20, T. 28 S., R. 69 W	.....	.50	2.00	Mar. 3, 1896	May 4, 1896
Kerlee Ditch	R. S. Kerlee	Huerfano river	7.00	.34	1.00	Spring 1895	May 4, 1896

Miller Ditch	Wm. Miller Katie Kiger	Apache creek	------	------	1.50	Mar. 5, 1896	May 4, 1896
Stickler Apacha Ditch	Grant Stickler	Apache creek	------	1.70	2.00	Oct. 1, 1895	May 4, 1896
c Garcia and Mestas Ditch	M. A. Garcia Fand Q. Mestas	Pass creek	20.00	1.90	7.00	Spring, 1893	May 4, 1896
Sowers Ditch	Jesse H. Sowers	Santa Clara creek, branch of	12.00	.32	1.00	Apr. 29, 1896	May 4, 1896
Russell Ditch	Joseph Russell	Apache creek	------	.43	1.00	Feb. 19, 1896	May 4, 1896
Seepage Ditch	Rafael Garcia	Springs, etc., Secs. 31, 32, T. 26 S., R 70 W	12.00	.53	1.50	Feb. 1893	May 4, 1896
Frohlick Ditch	Paul Frohlick	Santa Clara creek	20.00	.53	1.00	------	May 4, 1896
Paul Ditch	Paul Frohlick	Santa Clara creek	20.00	.46	.20	------	May 4, 1896
Simons and Frohlick Underflow Ditch	A. D. Simons Paul Frohlick	Springs, etc., Sec. 21, T. 30 S., R. 67 W	25.00	2.51	3.00	Apr 29, 1896	May 4, 1896
Vigil Ditch	M. Trujillo, et al	Cuchara river	23.00	3.54	35.14	1874	May 7, 1896
Rocky Flat Ditch	R. A. Hayes, et al	Cuchara river	------	3.70	6.00	Mar. 10, 1873	May 28, 1896
Castro Ditch	W. L. Harmes	Turkey creek	------	.90	2.00	Spring, 1876	June 12, 1896
Teodoro Ditch	Benito Maes	North Abata creek	8.00	.41	3.00	Apr. 1, 1877	June 22, 1896
Butte Valley Ditch, original construction	Edwin A. Lewis J. J. Crippen, Trustee	Huerfano river	5.00	1.90	6.20	Jan. 1, 1862	Aug. 19, 1896
Butte Valley Ditch, first enlargement	Edwin A Lewis J. J. Crippen, Trustee	Huerfano river	------	------	Total 8.00	May 15, 1865	Aug. 19, 1896
Butte Valley Ditch, second enlargement	Edwin A. Lewis J J Crippen, Trustee	Huerfano river	------	------	Total 11.00	Feb. 15, 1886	Aug 19, 1896
Abeyta Ditch	Max Trujillo, et al	Abeyta creek	29.30	------	10.00	Mar. 18, 1870	Sept. 14, 1896
Madrid Ditch No. 2	J. A. J. Yoldes, attorney for Thomas Espinoza, et al	Cucharas river	15.00	3.75	20.90	Feb. 25, 1884	Sept. 25, 1896

a Capacity given as 55.23 second-feet, while appropriation claim is made for 2 second-feet only.
b Length of main ditch 1.8 miles, length of lateral 1.2 miles.
c Capacity given as 7 second-feet, while appropriation claim is made for 3 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 16, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Coan Spring Ditch	C. H. Coan N. B. Akers Joseph Akers	Springs, Sec 29, T. 27 S., R. 72 W	150.00	1.90	3.00	May 1, 1895	Oct. 7, 1896
Four Spring Ditch	John F. Hidell Henry Steele	Springs, Sec. 20, T. 27 S., R. 72 W	150.00	.25	3.00	Oct. 1, 1896	Oct. 8, 1896
Hemlock Ditch	John T. Hidell	North branch of Deer creek	40.00	.35	2.00	Sept. 14, 1896	Oct. 27, 1896
Goemmer Spring Ditch	Henry Goemmer	Kruger creek	10.56	1.00	2.00	Jan. 13. 1896	Oct. 27, 1896
Wahatoya (underflow) Ditch	Henry T. Dotson	Wahatoya creek	32.00	.11	2.00	Sept. 23, 1896	Oct. 27, 1896
Stephenson Ditch	John Dick, Sr Robert Dick	West fork of Hayes branch	75.00	1.50	2.00		Oct. 27, 1896
Eugenio Ditch	John Dick, Sr	West fork of Hayes branch	32.00	.75	1.00		Oct. 27, 1896
Kerby Ditch	John Dick, Sr	West fork of Hayes branch	50.00	.50	1.00		Oct. 27, 1896
Homestead Ditch	John Dick, Sr	Hayes branch	60.00	.50	1.00		Oct. 27, 1896
Erwin Irrigation Ditch	Juan P. Erwin Wm. N. Erwin	West fork of Hayes branch	50.00	1.25	1.00	July 10, 1889	Oct. 27, 1896
Lone Pine Irrigation and Domestic Supply Ditch	George W. Kitchen	Cuchara creek	89.76	1.00	2.00	Mar. 1873	Oct. 27, 1896

Landers Irrigation and Domestic Supply Ditch	Harriett Staplin	Staplin creek	50.00	.50	1.00	1878	Oct. 27, 1896
Frank Irrigation Ditch	Harriett Staplin	Staplin creek	32 00	1.00	1.00	Apr. 21, 1895	Oct. 27, 1896
Mathew Ditch	Geo. Mathew	South Abeyta creek	15.24	.78	10.00		Oct. 27, 1896
Krier (underflow) Ditch	William Krier	Springs, seepage, in Sec 29, T. 29 S., R. 68 W	10.60	.21	1.00	June 1894	Oct. 29, 1896
Owens Ditch	Robert H. Owen	Williams creek	20.00		3.00	Spring, 1871	Oct. 31. 1896
School Section Ditch	Jose R. Trujillo, et al	Huerfano river	15.00	.75	3.00	Mar 1866	Nov. 4, 1896
Echo Ditch	Alex. McDonald John Dick, Sr	Echo creek	10.00	2.02	5.00	May 17, 1891	Nov 17, 1896
Devine Ditch	John T. Hopkins	South Abeyta creek	16.00	1.00	1.50		Nov. 17, 1896
Goemmer Spring Ditch	Henry Goemmer	Krueger creek	10.56	1.00	2.00	Jan. 13, 1896	Nov 17. 1896
Freeland Ditch	William H. Freeland	Williams creek	15.00		3.00	Spring, 1884	Nov 19. 1896
Freeland and Turner Ditch	William H. Freeland	Williams creek	20.00	1.75	6.00	1888	Nov. 19, 1896

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 16, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a Aker Reservoir	Huerfano county	Huerfano river		56,628,000		Jan. 14, 1895
a Goose Ranch Reservoir	Huerfano county	Huerfano river		94,743,000		Jan. 14, 1895
Pope and Shoman Reservoir	Hamilton Pope	Huerfano river	Bo-Boyce ditch and Pope Bros. ditch	25,631,321	Oct. 15, 1893	Apr. 25, 1895
Sticklers Apache Reservoir No. 1	Grant Stickler	Apache creek	Stickler Apache ditch	555,000	Oct. 1, 1895	May 4, 1896
Stickler's Apache Reservoir No. 2	Grant Stickler	Apache creek	Stickler Apache ditch	480,000	Oct. 1, 1895	May 4, 1896
Mathews Ditch Reservoir	Geo. Mathews	So. Abeyta creek	Mathew ditch	371,280		Oct. 27, 1896
C. T. Richey Reservoir	C. T. Richey	So. Abeyta creek	John Harris ditch No. 2	1,200,000	Oct. 15, 1884	Nov. 17, 1896

a Reservoir sites filed by County Commissioners of Huerfano county for the benefit of Settlers on Huerfano river.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 17, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Cheyenne Ditch	George D. Phillips	Adobe creek	3.70		5.54	Dec. 8, 1894	Dec. 19, 1894
East La Junta Ditch	George M. Lauckton	King arroya	2.64		3.64	May 22, 1894	May 4, 1895
Headwater Ditch	The Holt Live Stock Co	South fork of Horse creek	4.00	.50	10.00	Apr. 1, 1895	June 3, 1895
Outlet Ditch	The Holt Live Stock Co	Headwater reservoir	4.00		10.00	Apr. 1, 1895	June 3, 1895
a Columbus Ditch, enlarged	The Holt Live Stock Co	Horse creek	4.00	1.00	10.00	Apr. 1, 1895	June 3, 1895
b Outlet Ditch, enlarged	The Holt Live Stock Co	Columbus reservoir	4.00		10.00	Apr. 1, 1895	June 3, 1895
c South Side Ditch, enlarged	The Holt Live Stock Co	Columbus reservoir		1.00	10.00	Apr. 1, 1895	June 3, 1895
d Ditch No. 1, feeder	The Holt Live Stock Co	Horse creek			10.00	Apr. 1, 1895	June 3, 1895
Outlet Ditch	The Holt Live Stock Co	Trout pond reservoir	4.00		10.00	Apr. 1, 1895	June 3, 1895
Outlet Ditch	The Holt Live Stock Co	Viaduct reservoir	4.00		10.00	May 15, 1895	June 3, 1895

a Appropriation claimed, due to this enlargement, 7 second-feet.

b Appropriation claimed, due to this enlargement, 4 second-feet.

c Appropriation claimed, due to this enlargement, 4 second-feet.

d No other particulars supplied.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 17, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Ditch No. 4, outlet	The Holt Live Stock Co	The Deadman reservoir	4.00		7.00		June 3, 1895
e Ditch No. 6, outlet	The Holt Live Stock Co	Horse creek reservoir					June 3, 1895
The John W. Ditch	John M. McCune	Springs, Sec. 4, T. 22 S., R. 59 W	3.00	.09	2.00	Mar. 11, 1895	June 5, 1895
Outlet Ditch	John M. McCune	J. W. reservoir	3.00		2.00	Mar. 11, 1895	June 5, 1895
Kelly Ditch	Frank Kelly	Horse creek	5.00	4.50	41.50	July 26, 1895	Sept. 25, 1895

e Reference made to records in County Clerk's office for particulars.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 17, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Headwater Reservoir, enlarged	The Holt Live Stock Co	Horse creek, south fork of		810,000	Apr. 1, 1895	June 3, 1895
The Columbus Reservoir, enlarged	The Holt Live Stock Co	Horse creek		1,742,400	Apr. 1, 1895	June 3, 1895
Trout Pond Reservoir	The Holt Live Stock Co	Springs, T. 13 S., R. 59 W., and Horse creek via Ditch No. 1		27,225	Apr. 1, 1895	June 3, 1895
Red Gate Reservoir, enlarged	The Holt Live Stock Co	Springs, T. 12 S., R. 59 W.		709,840	Apr. 1, 1895	June 3, 1895
Viaduct Reservoir	The Holt Live Stock Co	Horse creek, north fork of		1,568,160	May 15, 1895	June 3, 1895
The Deadman Reservoir, enlarged	The Holt Live Stock Co	Deadman's gulch and springs, T. 12 S., R. 59 W.		1,189,000	Apr. 1, 1895	June 3, 1895
The Horse Creek Reservoir	The Holt Live Stock Co	Horse creek		1,568,160		June 3, 1895
The John W. Reservoir	John M. McCune	Springs, Sec. 4, T. 22 S., R. 59 W.	John W. ditch	58,905	Mar. 11, 1895	June 5, 1895

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 18, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Spring Tide Ditch	Phillip E Sallee Albert S. Sallee	Apishapa creek	8.00	5.87	10.00	July 20, 1893	Dec. 4, 1894

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 18, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a Spring Tide Reservoir No. 1	Phillip E. Sallee Albert S. Sallee	Apishapa creek	Spring Tide ditch		July 20, 1893	Dec. 4, 1894
b Spring Tide Reservoir No. 2	Phillip E. Sallee Albert S. Sallee	Apishapa creek	Spring Tide ditch		July 20, 1893	Dec. 4, 1894

a Area, 22 acres.
b Area, 65.75 acres.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 19, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
The Barney Arroya Irrigating Ditch	Chas. D. Howard Wm. M. Hall	Barney arroya, seepage, springs, T. 32 S., R. 62 W	5.00	1.28	3.00	Nov. 1, 1889	June 10, 1895
The Bowen Irrigating Ditch	Geo. Bowen Christ Peterson	Road cañon arroya	5.28	.90	17.00	Oct. 26, 1896	Nov. 4, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 20, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a San Francisco Ditch	Arthur W. McLeod	San Francisco creek	.....	1.25	.....	Mar. 12, 1895	Apr. 3, 1895
The J. C. Dwyer Ditch	Johanna C. Dwyer	Willow creek	10.00	.625	20.00	Apr. 1, 1895	June 24, 1895
Mineral Park Ranch Ditch	Andy Cady	Willow creek	105.00	.50	7.00	July 5, 1895	July 13, 1895
Trout Dale Ditch	Charles H. Woodruff, et al	Clear creek	42.00	2.80	15.00	July 1, 1895	July 22, 1895
b Deep Creek Ditch, enlarged	Anton H. Frank Loui Weiss	Deep creek	52.80	.75	8.00	June 4, 1895	Aug. 8, 1895
c Juanita Valdez Ditch	John Poole	Francisco creek	10.00	.07	.....	Oct. 10, 1895	Oct. 23, 1895
d Rio Grande Ditch No. 4, enlargement	August J. Weiss	Rio Grande river	6.00	.....	13.00	Apr. 9, 1896	June 5, 1896
Santa Maria Ditch Feeder	Santa Maria Ditch and Reservoir Co	Clear creek	5.28	5.00	253.80	July 29, 1896	Aug. 29, 1896
Rio Grande Reservoir, inlet or feeder	Rio Grande Reservoir and Ditch Co	North Clear creek	2.64	.....	187.92	Aug. 7, 1896	Oct. 8, 1896

a This is a feeder to the San Francisco Reservoirs; the statement gives no particulars.

b The original and enlarged dimensions are given the same; the true capacity is about 45 second-feet.

c Capacity is given as "75 stat. inches."

d Appropriation claimed, due to this enlargement, 1 second-foot.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 20, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Rio Grande Reservoir Outlet	Rio Grande Reservoir and Ditch Co		5.28		264.42	Aug. 7, 1896	Oct. 8, 1896
Santa Maria Ditch or Feeder	Santa Maria Ditch and Reservoir Co	Clear creek	5.28	5.00	253.80	July 29, 1896	Oct. 22, 1896

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 20, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
San Francisco Creek Reservoir No. 1	Arthur W. McLeod	San Francisco creek	San Francisco ditch	729,194	Mar. 12, 1895	Apr. 3, 1895
San Francisco Creek Reservoir No. 2	Arthur W. McLeod	San Francisco creek	San Francisco ditch	1,156,518	Mar. 12, 1895	Apr. 3, 1895
Santa Maria Reservoir (lake)	Santa Maria Ditch and Reservoir Co	Clear creek	Santa Maria ditch	1,000,000,000	July 29, 1896	Aug. 29, 1896
Rio Grande Reservoir	Rio Grande Reservoir and Ditch Co., Frank Goudy, President	North Clear creek	R. G. reservoir inlet	695,705,472	Aug. 7, 1896	Oct. 8, 1896
Santa Maria Reservoir	Santa Maria Ditch and Reservoir Co	Clear creek	Santa Maria ditch	670,404,517	July 29, 1896	Oct. 22, 1896

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 21, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
The Norland Farm Reservoir	Martha Andersen M. A. Norland L. A. Norland	Alamosa river	Norland canal	7,260,000	Mar. 23, 1896	June 22, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 22, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a Salazar Ditch (additional statement)	Abe Howarth J. T. Flower	Conejos river	26.40	2.50	13.00	April, 1856	Jan. 10, 1895
b The First Enlargement of the El Serreto Irrigating Ditch	George J. Koch Lewis F. Koch	Conejos river	13.20	------	14.40	Oct. 1, 1893	Mar. 5, 1895
Sol Basham Irrigating Ditch	Manuel Sisneros Fred Corpe	Sol Basham spring, Sec. 4, T. 32 N., R. 7 E	------	.16	8.00	Jan. 25, 1895	Apr. 24, 1895
Massie Ditch	John C. Dalton	Massie creek	25.00	2.00	6.00	Sept. 15, 1888	May 31, 1895
Macdaniel Ditch	William Macdaniel	Conejos river, via an arroya	------	------	2.00	July 8, 1895	July 10, 1895

a Additional statement records moving headgate, necessitated by change in channel of Conejos river.

b Appropriation claimed, due to the enlargement and extension, 8.21 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 23, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Geneva Falls Reservoir Feeder	John D. Best, et al	Geneva and north branch of Geneva creeks	2.64	.95	395.38	Aug. 29, 1894	Apr. 26, 1895
Vallie Ditch	W. Vallie	Sessions ditch and waste, T. 8 S., R. 75 W	30.00	1.50	6.00	May, 1891	May 25, 1895
Ware Ditch	W. Vallie	Waste water, T. 8 S., R. 75 W	25.00	.60	4.00	May, 1891	May 25, 1895
Shaw Ditch	Angelico Pinello	Shaw creek	10.56	.35	8.55	Aug. 31, 1895	Sept. 26, 1895
West Creek No. 1 Ditch	West Creek Town Co	Little West creek	10.00	15.00	12.00	Nov. 13, 1895	Nov. 18, 1895
West Creek No. 2 Ditch	West Creek Town Co	West creek	5.00	.78	8.00	Nov. 13, 1895	Nov. 18, 1895
West Creek Ditch	West Creek Townsite, Mining and Improvement Co	West creek	5.28	.54	19.34	Dec. 14, 1895	Dec. 20, 1895
a Ditch and Pipe Line	Denver Power and Irrigation Co	North fork and South fork of South Platte river	7.00	.....	600.00	Nov. 4, 1895	June 27, 1896
b Ditch and Pipe Line (amended)	Denver Power and Irrigation Co	.....	.....	.....	.....	.....	Feb. 3, 1896
c Ditch, Flume and Pipe Line	The West Creek Water, Electric Light and Power Co	West creek, Little West creek and Trail creek	.....	.....	.....	Dec. 29, 1895	Feb. 13, 1896

Trumbull Ditch	C. Vote	Horse creek	4.00	1.875	16.00	Feb. 3, 1896	Feb. 15, 1896
d Horse Creek Ditch	B. F. Niesz, et al	Horse creek or Trout creek	4.00	2.88	2.50	June 1, 1886 Re-survey Feb 1, 1896	Feb. 28. 1896
Brush Creek Ditch	B. F. Niesz D. E. Rowe	Brush creek	4.50	.37	3.00	Feb. 7, 1896	Feb 28, 1896
Colorado Irrigation Canal and Pipe Line	The Colorado Irrigation Canal and Pipe Line Co	South Platte river	15.28	97.60	200.00	Feb. 1, 1896	Mar. 18, 1896
Lake George Canal and Pipe Line Ditch	The Lake George Irrigation Canal and Pipe Line Co	South Platte riv. and Lake George reservoir	15.28		200.00	Feb 1, 1896	Mar. 21, 1896
Cronkrite Ditch	Wm. Cronkrite	Four-Mile creek	12.00	.38	4.00	Feb. 18, 1896	Mar. 26, 1896
Stapp Ditch	B. F. Niesz D. E. Rowe	Stapp creek	22.00	.26	6.00	Mar. 4, 1896	Mar. 30. 1896
Puma Placer Ditch	Chas. W. Gilman, et al	Marshburg creek	16.00	2.00	7.50	Mar. 27, 1896	Mar. 31, 1896
Manitou Park Water System—							
Ditch No. 1	William A. Bell	Trout creek, seepage and springs	21.12	1.23	5.60	May, 1874	Apr. 16, 1896
Ditch No. 2	William A. Bell	Trout creek, seepage and springs	10.56	.42	2.90	1875	Apr. 16, 1896
Ditch No. 3	William A. Bell	Trout creek, seepage and springs	26.40	1.79	6.25	Apr., 1876	Apr. 16, 1896
Ditch No. 4	William A. Bell	Trout creek, seepage and springs	15.84	3.48	3.90	June, 1876	Apr. 16, 1896
Ditch No. 5	William A. Bell	Trout creek, seepage and springs	26.40	.76	6.25	Fall of 1876	Apr. 16, 1896
Ditch No. 6	William A. Bell	Trout creek, seepage and springs	21.12	.50	5.60	May, 1879	Apr. 16, 1896

a "The depth of ditch and pipe line" is given as 9 feet, width 9 feet; impossible dimensions for a ditch.

b Amended statement claims all unappropriated water in North Fork and South Fork of South Platte river for domestic purposes.

c Claims all water unappropriated "for domestic use, power and mechanical purposes and beneficial uses."

d Re-surveyed February 1, 1896, and thoroughly overhauled.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 23, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Manitou Park Water System—Concluded.							
e Pipe Line No. 1	William A. Bell	Trout creek, tributary of	176.88	.47	.747	May, 1889	Apr. 16, 1896
f Pipe Line No. 2	William A. Bell	Reservoir No. 1	------	------	23.40	June, 1890	Apr. 16, 1896
Lewin Ditch	The Lewin Townsite and Improvement Co	John's creek	15.00	.40	8.00	Mar. 25, 1896	Apr. 20, 1896
West Creek Ditch No. 1	Chas. M. Graff, et al	Springs, Sec 8, T. 11 S., R. 69 W	15.00	.90	8.00	Mar. 23, 1896	Apr. 29, 1896
West Creek Ditch No. 2	Chas. M. Graff, et al	Springs, Sec. 7, T. 11 S., R. 69 W	15.00	.40	8.00	Mar. 23, 1896	Apr. 29, 1896
Geneva Falls Feeder	John D. Best, et al	North branch Geneva creek	2.64	------	395.38	Aug. 8, 1894	Oct. 10, 1896

e Diameter of pipe, 3 inches in clear.

f Outlet of reservoir No. 1; diameter of pipe, 16 inches in clear.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 23, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a Geneva Falls Reservoir	John D. Best, et al	Geneva and north branch of Geneva creek	Geneva Falls feeder	1,642,212,000	Aug. 8, 1894	Apr. 26, 1895
Hermann Reservoir	Hermann Halthusen	South fork of Twin creek		295,900	Sept. 18, 1895	Nov. 8, 1895
Denver Power and Irrigation Company's Reservoir	The Denver Power and Irrigation Co	South fork of South Platte river		320,000,000	Nov. 4, 1895	June 27, 1896
Lake George Reservoir	The Lake George Irrigation, Canal and Pipe Line Co.	South Platte river		5,000,000	Feb. 1, 1896	Mar. 21, 1896
Manitou Park Water System—						
Reservoir No. 1	William A Bell	Trout creek		8,500,000	June, 1890	Apr. 16, 1896
Geneva Falls Reservoir (additional claim)	John D. Best, et al	Geneva creek and north branch of	Geneva Falls feeder	1,723,669,200	Aug. 8, 1894	Oct. 10, 1896

a Outlet through a tunnel 150 feet long; water conveyed thence via Geneva creek to South Platte river.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 24, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Cañon Ditch	Armand Choury	Jaroso creek	20.00	1.25	2.00	May 3, 1892	Apr. 29, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 28, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a The Enlarged Stevenson-Bennett Ditch	W. L. Bennett	Tomichi creek	5.26	1.38	10.16	May 8, 1895	May 25, 1895
Lockwood Irrigating Ditch	E. A. Huffnee Lockwood	Quartz creek	26.50	.753	15.10	May 1, 1880	July 18, 1895
Sorensen Irrigating Ditch	Soren Sorensen	Quartz creek	5.28	2.44	4.117	Apr. 10, 1889	Aug. 1, 1895
The Paradise Ditch	F. S. Harris	Cochetopa creek	16.00	.17	57.00	July 27, 1896	Aug. 5, 1896
The South Side Ditch	Herman Holloway	Tomichi creek	10.50	.41	4.00	June 1, 1896	Aug. 5, 1896

a Appropriation claimed, due to this enlargement, 5.03 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 29, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a The Mesa Irrigating Ditch, first enlargement	E. M. Taylor, et al	Four-Mile creek	6.66	------	144.00	Jan. 4, 1895	Jan. 17, 1895
The Park Ditch	J. E. Colton, et al	San Juan river	10.00	------	60.00	Sept. 15, 1893	Jan. 28, 1895
The Sturgill Ditch	William G. Sturgill	Coal creek	6.66	------	2.00	Nov. 1, 1894	Feb. 27, 1895
Candelaria Ditch	Santiago Candelaria	San Juan river	2.50	3.80	8.00	Nov. 15, 1893	May 13, 1895

a Appropriation claimed, due to this enlargement, 72 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 30, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a The J. P. Lamb Ditch	Martha Lamb M. C. Archdekin	Hermosa creek	6.66	4.85	2.00	Apr. 27, 1878	Mar. 11, 1895
b J. P. Lamb Ditch, first enlargement	Martha Lamb M. C. Archdekin	Hermosa creek	6.66	------	3.50	Apr., 1890	Mar. 11, 1895
Bishop Ditch	F. W. and H. W. Bishop	Elbert creek	10.56	------	15.00	June 18, 1875	May 15, 1895
c Fish Ditch, enlargement and extension	John H. Conley	Elbert creek	21.12	1.00	10.00	Sept. 10, 1893	May 15, 1895
Conley Ditch	John H. Conley	Elbert creek	21.12	------	6.00	Nov. 1, 1876	May 15, 1895
d L. Carson's Irrigating Ditch No. 1	John A. Porter, Trustee	Elbert creek	6.66	.72	18.00	May 11, 1895	May 18, 1895
d L. Carson's Irrigating Ditch No. 2	John A. Porter, Trustee	Tributary, Elbert c'k	6.66	------	2.00	May 11, 1895	May 18, 1895
d L. Carson's Irrigating Ditch No. 3	John A. Porter, Trustee	Tributary, Elbert c'k	6.66	------	2.00	May 11, 1895	May 18, 1895
Grubb Ditch	Frances Field Grubb	Wilson gulch, tributary, Animas river	13.33	1.20	2.50	Apr., 1890	July 11, 1895
Love Ditch	Gabe G. Love	Springs, Sec. 26, T. 38 N., R. 9 W.	13.33	------	1.00	July 8, 1895	Aug. 7, 1895

a Confusion of dates relative to original construction.

b Capacity given is appropriation claimed due to enlargement, not total capacity of enlarged ditch; "Manufacturing purpose herein alluded to is the slaughtering of beef, hogs, sheep, etc."

c Appropriation claimed, due to this enlargement, 8 second-feet.

d An amended filing states that work on these ditches was begun in spring of 1876, water used on ground in June, 1876.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 30, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
e Cascade Ditch	John H. Conley, et al	Tribut'y, Cascade c'k	21.12	1.05	5.00	July 25, 1894	Dec. 30, 1895
Home Supply Ditch	William Morrison	Natural drainage, T. 34 N., R. 8 W.	6.00	1.06	2.50	June 1, 1891	Apr. 22, 1896
High Line Ditch	George H. Tyner Thomas Barrows	Rio Florida	10.56	1.00	1.60	May 15, 1894	July 3, 1896
Fischer Ditch, second enlargement	Charles Fischer	Hermosa creek	.....	.33	5.50	Aug. 1, 1896	Sept. 14, 1896
Mill Ditch, second enlargement	Charles Fischer	Hermosa creek	.....	.71	12.00	Apr. 15, 1882	Sept. 14, 1896
F. Steineger's Irrigating Ditch	F. Steineger	Water Fall creek	6.86	.....	3.08	Mch., 1882	Oct. 19, 1896
Briggs' Extension of F. Steineger's Irrigating Ditch	Gilbert G. Briggs	F. Steineger's irrigating ditch	7.00	.75	1.54	Mar., 1882	Oct. 19, 1896
Carter Ditch	John Carter	Elbert creek	.....	.....	1.00	June 1, 1888	Nov. 30, 1896
Rockwood Ditch	J. W. Bowlen Jennie Whitaker	Elbert creek	21.12	.....	2.00	May 15, 1892	Nov. 30, 1896
Reservoir Ditch, extension and enlargement of the McPhee Ditch	J. W. Bowlen Jennie Whitaker	Elbert creek	15.84	.....	10.00	Mar. 20, 1895	Nov. 30, 1896
McPhee Ditch	J. W. Bowlen Jennie Whitaker	Elbert creek	21.12	.....	2.00	Mar. 30, 1880	Nov. 30, 1896
Bowlen's Upper Ditch	J. W. Bowlen	Elbert creek	21.12	.....	2.00	Apr. 25, 1883	Nov. 30, 1896
Bowlen's Lower Ditch	J. W. Bowlen	Elbert creek	21.12	.....	2.00	Apr. 16, 1883	Nov. 30, 1896

e Plat and field notes give two separate ditches, the "Upper ditch" is the feeder to Cascade reservoir; the "Lower ditch" is .54 of a mile long, other data not supplied.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 30, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a Ignacio Lake Reservoir	Lou Smith				June 20, 1877	May 15, 1895
b L. Carson's Reservoir	John A. Porter, Trustee	Elbert creek			May 11, 1895	May 18, 1895
Cascade Reservoir	John H. Conley, et al	Tributary of Cascade creek	Cascade ditch, upper	10,600,000	July 25, 1894	Dec. 30, 1895

a Statement filing fails to give source of appropriation and capacity. The water is to be raised two feet above the ordinary level of the lake for "purpose of sub-irrigation and overflow.

b Area of reservoir 12.5 acres; no other data supplied.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 31, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Ayres Irrigation Canal	Charles M. Ayres	Los Pinos river	5.28	11.09	58.00	Aug. 27, 1894	Dec. 28, 1894
a Bennett Irrigation Ditch	Anna Bennett	Los Pinos river, via Wommer ditch	------	.78	1.00	1884	Apr. 12, 1895
Bennett and Myers Irrigation Ditch	Anna Bennett Daniel Myers	Los Pinos river	5.28	1.26	4.00	1884	Apr. 12, 1895
Citizens' Irrigation Ditch	Estate of J. M. Dykes Walter Dunham, et al	Los Pinos river	6.00	1.63	10.00	1878	Apr. 20, 1895
Wommer Irrigation Ditch	Elizabeth Wommer, et al	Los Pinos river	5.28	2.87	20.00	Mar. 29, 1895	May 3, 1895
Dunham Irrigation Ditch	Walter Dunham	Los Pinos river	5.28	1.30	4.00	June 6, 1894	May 4, 1895
b The Ute Reservation Ditch Co.'s Ditch	The Ute Reservation Ditch Co	Los Pinos river	5.28	------	450.00	Feb. 28, 1895	May 23, 1895
c Thompson-Epperson Ditch	Jacob A. Epperson, et al	Los Pinos river	7.00	4.00	5.50	Spring of 1877	June 17, 1895
c Thompson-Epperson Ditch, enlarged	Jacob A. Epperson, et al	Los Pinos river	------	------	4.00	Oct., 1894	June 17, 1895
Buhman Irrigation Ditch	Henry Schutz	Los Pinos river	10.50	.50	2.00	1883	Aug. 22, 1895
Higbee Irrigation Ditch	The Pittsburgh and Conejos Cattle Co	Los Pinos river	7.00	.37	2.00	Spring, 1879	Sept. 5, 1895
d Higbee Irrigation Ditch, first enlargement	The Pittsburgh and Conejos Cattle Co	Los Pinos river	7.00	------	2.00	Oct., 1894	Sept. 5, 1895
Spring Valley Irrigation Canal	H. C. Schroder, et al	Los Pinos river	6.00	2.00	3.00	1880	Nov. 29, 1895

e Spring Valley Irrigation Canal, first enlargement	H. C. Schroder, et al	Los Pinos river	6.00	2.00	75.00		1892	Nov. 29, 1895
f West Side Ditch	United States of America, by David F. Day, Agent	Los Pinos river	2.64	7.51	81.00	Dec	9. 1895	Jan. 21, 1896
f Spring Creek Ditch	United States of America, by David F. Day, Agent	Los Pinos river	2.64	6.88	192.00	Dec.	4, 1895	Jan. 21, 1896

a The grade conforms to "the general fall of the country and following the apex of a small ridge."

b Average width is given as 15 feet.

c The ditch has been enlarged three times; present total capacity is given as 9.5 second-feet.

d Total capacity of enlarged ditch as claimed, is 4 second-feet.

e Total capacity of enlarged ditch, as claimed, is 78 second-feet.

f These ditches are on the Southern Ute Indian Reservation; they were contemplated for the benefit of the government's wards.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 31, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Emerald Lake Reservoir	W. T. Kirkpatrick	Lake fork of Pine river		308,405,000	Oct. 10, 1894	Aug. 29, 1895

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 32, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Lamb Bros.' Ditch	J. D. Lamb	McElmo creek	------	1.70	11.70	No. 4v, 1894	Mar. 26, 1895
a Luxton Ditch	William R. Luxton	West Naragonat creek and Colorado Consolidated Land and Water Co.'s ditch	------	------	3.00	June 1, 1889	June 17, 1895
Ausburn Ditch	Ella A. Ausburn	Hartman gulch, T. 36 N., R. 16 W.	2.50	.10	1.50	Mar. 15, 1888	Sept. 18, 1896

a Also claims priority appropriation for waste and seepage; T. 37 N., R. 17 W., N. M. P. M.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 33, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Interstate Ditch	John H. Sessions Wm. H. La Count	La Plata river	42.20	3.50	250.00	Nov. 29, 1894	Mar. 1, 1895
Spring Gulch Ditch	John M. Brown	Small Spring gulch, Sec. 24, T. 35 N., R. 11 W	.....	.....	.33	June 1, 1893	June 25, 1895
Brown Ditch	John M. Brown Anna H. Brown	La Plata river	13.30	.78	1.50	June, 1880	July 11, 1895
a Brown Ditch, Hughes' extension and enlargement	John W. Brown	La Plata river, via Brown ditch	13.30	.....	1.50	May, 1883	July 11, 1895
Spring Water Ditch	Andy M. Crawford	Springs, Sec. 29, T. 35 N., R. 11 W	5.00	1.17	1.50	Jan. 1, 1893	July 25, 1895
b Arrington Ditch, enlarged and extended	Thomas J. Arrington	La Plata river	7 90	2.00	12.00	Apr., 1887	Sept. 10, 1895
Hay Gulch Irrigating Ditch	Mary A., John M. and J. P. Brown, et al	La Plata river	13.30	.....	32.40	Sept. 20, 1881	Sept. 11, 1895
Brown Brothers' Water Ditch	O. F. Boyle Anna H. Brown	La Plata river	26.60	.65	25.00	Apr. 15, 1881	Oct. 23, 1895
c Little Kate Mill Flume and Pipe Line	The Allen Gold Mining Co.	Basin creek	.....	.....	2.50	June 9, 1895	Dec. 11, 1895
d Bent Ditch	David F. Day, United States Indian Agent, U. S. A.	La Plata river	2.64	6.95	40.00	June 2, 1896	June 19, 1896

d Rabbit Ditch	David F. Day, United States Indian Agent, U. S. A.	La Plata river	2.64	2.24	15.00	June 2, 1896	June 19, 1899
d Bean Ditch	David F. Day, United States Indian Agent, U. S. A.	La Plata river	2.64	3.56	25.00	June 9, 1896	June 19, 1896
Side Hill Ditch	Herman R. Sahr	Cherry creek	10.56	------	4.00	June 12, 1894	Nov. 30, 1896
Meadow Ditch	Herman R. Sahr	Cherry creek	------	------	1.50	June 10, 1887	Nov. 30, 1896
J. S. Ditch	Jos. Schatz, et al	Cherry creek	10.56	------	15.00	June 18, 1891	Nov. 30, 1896
Kent Lateral Ditch	Anna Kent	Cherry creek	7.00	------	1.50	Aug. 9, 1895	Nov. 30, 1896
Diviue Ditch	George Dick	La Plata river and Cherry creek ditch	7.00	------	1.50	July 8, 1895	Nov. 30, 1896
McCaleb Ditch	Robert E. McCaleb	Cherry creek	14.00	------	1.00	June 1, 1885	Nov. 30, 1896
Caviness Ditch	Gustav Olbert, et al	Cherry creek and Starvation creek	7.00	------	18.50	Juue 10, 1893	Nov. 30, 1896
Caviness Ditch	Geo. Dick James M. Caviness	Cherry creek and Starvation creek	14.00	------	8.00	June 15, 1881 July 1, 1885 June 20, 1887	Nov. 30, 1896
Sponsel Enlargement and Extension of Caviness Ditch	George Sponsel	Cherry creek	7.00	------	14.00	May 20, 1893	Nov. 30, 1896
Singer Upper Ditch	John L. Singer	Cherry creek	10.56	------	4.00	June 10, 1894	Nov. 30, 1896
Singer Lower Ditch	John L. Singer	Cherry creek	10.56	------	6.00	June 15, 1889	Nov. 30, 1896
Sponsel Ditch	George Sponsel	Cherry creek	10.56	------	2.50	July 3, 1888	Nov. 30, 1896
Meyer Extension and Enlarging of Meadow Ditch	Fred. H. Meyer	Cherry creek	10.56	------	4.00	Juue 17, 1890	Nov. 30, 1896
Dick Ditch	George Dick	Cherry creek	10.50	------	1.50	July 3, 1888	Nov. 30, 1896
Caviness Ditch	Phillip Olbert, et al	Cherry creek and Starvation creek	14.00	------	8.00	July 1. 1885	Nov. 30, 1896

a Total present capacity of enlarged ditch, as claimed, is 3 second-feet; capacity of extension is 1.50 second-feet.

b Average width is given as 4 feet. The plat and description show that this is the same as the Brown ditch, above.

c Ditch dimensions not given; diameter of pipe 12, 10 and 8 inches; water appropriated for ore milliug purposes.

d, d, d These ditches are on the Southern Ute Indian Reservation, to encourage and promote agriculture among the goverument's wards.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 33, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Dick Ditch	Phillip Olbert	Cherry creek	10.50	.....	1.50	July 3, 1888	Nov. 30, 1896
Hildenbrand Ditch	John Hildenbrand	Cherry creek	5.28	.....	1.50	June 30, 1894	Nov. 30, 1896

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 33, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Interstate Reservoir	John H. Sessions Wm. H. La Count	La Plata river	Interstate ditch	44,000,000	Nov. 29, 1894	Mar. 1, 1895

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 34, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Cottonwood No. 1 Ditch	Harrison Hill, et al	McElmo creek	.....	.57	24.00	Jan. 25, 1891	Dec. 20, 1894
Cottonwood No. 2 Ditch	Harrison Hill James A. Honakee	McElmo creek	.....	.45	24.00	Jan. 25, 1891	Dec. 20, 1894

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 35, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Juel Ditch	Hans P. Juel	Sangre de Cristo cr'k	4.00	.75	2.00	Apr. 20, 1895	July 19, 1895

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 36, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Cataract Creek Ditch No. 2	Emanuel Salizzoni	Cataract creek					Oct. 28, 1896
Cataract Creek Ditch No. 4	Emanuel Salizzoni	Cataract creek					Oct. 28, 1896
Cataract Creek Ditch No. 5	Emanuel Salizzoni Geo. W. Mumford	Cataract creek					Oct. 28, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 37, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Oleson Ditch	Hans Oleson	Brush creek	7.00		3.00	Nov., 1891	Dec. 26, 1894
Brush Creek Feeder Ditch	Frank Hand R. E. Chatfield	Brush creek, tributary of	13.00		9.00	Dec. 22, 1894	Mar. 20, 1895
Hawley Ditch	Hele A. Beck	Berry creek	20.00	26	1.50	May 10, 1893	June 24, 1896
The White Quail Ditch	H. M. Ennen Ed. T. Taylor	White Quail gulch	10.00	.77	6.00	Nov. 13, 1896	Nov. 23, 1896
The Nolan Ditch	H. M. Ennen Ed. T. Taylor	Nolan creek		.94	6.00	Nov. 13, 1896	Nov. 23, 1896

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 37, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
H. and C. Reservoir	Frank Hand R. E. Chatfield	East Gypsum creek and Brush creek	Brush creek feeder ditch, in part	10,000,000	Dec. 22, 1894	Mar. 20, 1895

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 38, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a Foley Ditch	George W. Gillespie	Blue creek	8.00		5.00	May 1, 1884	Apr. 17, 1895
Nichols Ditch	Abner J. Nichols	Cold Spring creek and waste from Curtis ditch, T. 7 S., R. 88 W	11.00		2.00	June 15, 1893	May 31, 1895
McCarthy Spring Ditch	Daniel McCarthy	Springs and seepage, Sec. 30, T 7 S., R 87 W	10.00		2.00	May 13, 1895	June 18, 1895
b Thomas No. 1 Ditch	J. L. Thomas	Thomas creek	26.60	.85	3.80	May 1, 1895	June 26, 1895
c O'Hanlon Ditches, Nos. 1, 2, 3, 4 and 5	Mrs. Winnifred T. O'Hanlon	Branch of Three-Mile creek and springs, T. 7 S., R. 89 W	10.00		5.00	June 10, 1888	Apr. 19, 1895
Paradise Ditch	Frederick Clavel Ferdinand Vevey	Woody creek	5.28	2.87	2.00	June 3, 1887	July 25, 1895
Frieler Ditch	Henry Frieler	Lucksinger creek	25.00		2.00	Aug. 16, 1895	Sept. 26, 1895

a Amount claimed for priority, 2 second-feet; capacity of ditch as given, 5 second-feet.

b "Work of reconstruction was commenced May 1, 1895. Plat shows an old ditch enlarged and extended, though this is not set forth in statement. It is a feeder to Thomas Reservoir, relative to which no particulars are given."

c Statement incomplete and confused. Plat shows five separate small ditches and a reservoir covering 8 acres.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 38, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
d Peebles Waste Water Ditch	Frank M. Peebles	Waste and excess, etc., of Crane and Peebles ditch	.....	.....	1.00	Sept. 1, 1893	Jan. 18, 1896
Hopkins Springs and Spring Ditch	Mary B. Hopkins	Hopkins Springs, Sec.27,T.6S.,R.88W	15.00	1.00	3.00	May 10, 1890	May 28, 1896
e Smith No. 2 Ditch, Knoblock enlargement	James B. Knoblock	Roaring Fork river	15.00	1.00	2 50	Apr. 1, 1896	July 13, 1896
Last Chance Ditch	James Stewart, H. Wymer	West fork of Smith's creek	23.20	.42	1.18	Aug. 10, 1896	Nov. 26, 1896

d No dimensions given. Small furrows are run by claimant to collect waste and seepage water to spread on his land.

e Appropriation claimed, due to this enlargement, 1 second-foot.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 38, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a Pat Rogers Reservoir	Patrick Rogers		Needham ditch	1,110,317	Oct. 22, 1894	Jan. 9, 1895
Thomas McNulty Reservoir	Thomas McNulty	Shippie run		1,383,404	June 8, 1895	June 27, 1895
b McLean Reservoir No. 1	Mary E. McLean	Tributary of Cattle creek			Oct. 14, 1886	July 29, 1895
b McLean Reservoir No 2	Mary E. McLean	Cattle creek			Sept. 10, 1893	July 29, 1895

a Statement filing says nothing as to the source of supply of Needham Ditch; it takes water from Cattle creek.

b Area of each reservoir as given, 10 acres.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 39, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Hotopp Ditch No. 1	T. H. Hotopp	Hall's gulch	5.28		2.93	Nov. 15, 1894	Dec. 14, 1894
Hotopp Ditch No. 2	T. H. Hotopp	Hall's gulch	5.28		2.93	Nov. 15, 1894	Dec. 14, 1894
Rineberger and Lake Ditch	Clinton Lake	Garfield creek	4.50		2.00	July 12, 1889	Jan. 2, 1895
a Morris Enlargement of the Creek and Newman Ditch	Hamilton R. Morris, Administrator of the estate of W. E. Morris, deceased	Roan creek	7.00		9.50	Nov. 15, 1884	Jan. 9, 1895
a Morris Enlargement of the Snow Ditch	Hamilton R. Morris, Administrator of the estate of W. E. Morris, deceased	Roan creek	7.00		5.00	Feb., 1887	Jan. 9, 1895
b Taylor Enlargement of the Oasis Ditch	Edward T. Taylor	Oasis creek	10.56		4.60	Nov. 12, 1894	Jan. 26, 1895
Stotts Ditch	Lewis E. Stotts, et al	Canon creek	10.56		1.60	Apr. 24, 1895	May 4, 1895
Cozza Spring Ditch	Antonio Cozza	Springs, T. 5 S., R. 91 W	10.00		2.00	Apr. 27, 1894	May 23, 1895
Caughman Ditch	Wm. H. H. Caughman	Kimball creek	13.30		2.00	Apr. 1, 1887	June 27, 1895
C. W. D. Ditch	Chas. W. Durand	Thompson creek	15.84		3.72	Oct. 10, 1895	Oct. 23, 1895
Natural Springs Ditch	George W. Saint	Springs, Sec. 7, T. 5 S., R. 91 W	14.00	1.50	2.60	Oct. 5, 1894	Dec. 6, 1895

Stoddard Ditch and Springs	Orren Stoddard	Springs, Sec. 12, T. 5 S., R. 92 W.	5.28	1.00	1.02	Mar. 9, 1895	Feb. 5, 1896
Last Ditch	L. T. Stewart, et al	Roan creek	5.28	.86	20.00	Feb. 28, 1896	May 26, 1896
c Ware & Hinds Ditch, second enlargement	John H. Nelson	Elk creek	4.80	5.00	23.50	Apr. 18, 1896	July 17, 1896
Feeder to Glen Bulah Reservoir No. 1	John N. Carr Geo. F. Newton	Clear creek	15.84		13.25	July 22, 1896	July 25, 1896
Newton Ditch, feeder to Reservoir No. 2	John N. Carr Geo. F. Newton	Clear creek			9.37	June 22, 1885	July 25, 1896

a Both ditch filings made in one confused statement. Appropriation dates are those of the original constructions; none given for the enlargements.

b Amount of water claimed, on account of enlargement, 1 second-foot.

c Amount of water claimed, on account of enlargement, 2 second-feet.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 39, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a Conwell Reservoir	Caleb H. Conwell	Con creek	Conwell ditch		Oct. 10, 1894	Jan. 9, 1895
Glen Bulah Reservoir No. 1	John N. Carr George F. Newton	Clear creek	Feeder ditch	715,000	Apr. 28, 1896	July 25, 1896
Glen Bulah Reservoir No. 2	John N. Carr George F. Newton	Clear creek	Newton ditch	2,489,900	May 1, 1896	July 25, 1896

a Neither capacity nor area given; statement only sets forth the dimensions of main and small dams.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 40, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Hartman Ditch	A. Hartman	Seepage and natural drainage, T. 51 N., R. 11 W.	5.28		4.00	Nov. 8, 1894	Dec. 7, 1894
Campbell Ditch	Kenneth Campbell	Rio Escalante			4.00		Dec. 8, 1894
a Worrall Enlargement of the Stevenson and Brown Lateral Ditch	Nathan C. Worrall	Rifle creek, via Rifle creek Cañon ditch	12.00		4.00	Apr. 28, 1890	Jan. 9, 1895
Surface Creek Ditch	The Surface Creek Ditch and Reservoir Co	Ward creek; company's 17 reservoirs, etc	26.40		127.00	Aug. 11, 1886	Jan. 21, 1895
b Blake Ditch No 1, amended filing	Lewis R. Blake	Dirty George creek			7.80	Apr. 5, 1887	Jan. 30, 1895
c The Epsom Spring Ditch and Pipe Line	W. F. Irving	Epsom spring, T. 14 S., R. 93 W.			2.00	Sept. 26, 1894	Feb 15, 1895
Yellow Butte Ditch	W. F. Irving	Big Gulch creek	7.92		7.00	Feb. 9, 1895	Feb. 15, 1895
d Gove Waste Water Ditch	Newton M. Hustand	Waste, seepage, etc., T. 15 S., R. 92 W.					Feb. 27, 1895

a Appropriation claimed, due to this enlargement, 1.5 second-feet

b Amended filing distinguishes this from Blake Ditch; 2 second-feet is claimed from Dirty George Creek.

c Ditch 730 feet long, other dimensions not supplied; pipe line 730 feet long, diameter of pipe 4 inches

d No dimensions supplied; this is a lateral of the Needle Rock Ditch.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 40, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Continued.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
e Gelweck's Waste Water Ditch	Newton M. Hustand	Waste, seepage, etc., T. 15 S., R 92 W.					Feb. 27, 1895
f Tucker Ditch	T. S. Gunn	Reservoir gulch, seepage, etc., T. 15 S., R. 95 W.	16.00		4.00	Feb. 26, 1895	Feb. 27, 1895
f Tucker Ditch No. 1	T. S. Gunn	Reservoir gulch, seepage, etc., T. 15 S., R. 95 W.	16.00		4.00	Feb. 26, 1895	Feb. 27, 1895
High Line Reservoir Ditch	Wesley Ault, et al	Indian creek	13.33	.20	9.00	Aug. 21, 1894	Feb. 23, 1895
South Mesa Reservoir Ditch	Wesley Ault, et al	Indian creek and High Line reservoir	13.33	.57	9.00	July 13, 1894	Feb. 23, 1895
g Cedar Mesa Ditch	Harry E. Hale	Surface creek	10.60		80.00	Sept. 15, 1894	Mar. 4, 1895
Gurney ditch	John B. Ratekin	Surface creek			4.00	Apr. 1, 1892	Mar. 8, 1895
Cold Water Ditch	William H. Giddings	Surface creek			3.00	May 20, 1891	Mar. 8, 1895
Cumming Ditch	Mary A. Cumming	Waste and seepage, T. 15 S., R. 69 W.	10.56		4.00	Mar. 6, 1895	Mar. 13, 1895
Joe Dandy Ditch	Henry H. Ingersoll	Waste and seepage, T. 15 S., R. 69 W.	5.28		3.00	Dec. 14, 1894	Apr. 6, 1895
Mesa Ditch	J. E. for W. F. Irving	Mesa reservoir	7.92		3.00	Sept. 24, 1894	Apr. 6, 1895

Pipe Line Ditch	Loren E. Wannamaker	Ringwood gulch, T. 51 N., R. 11 W	----	----	5.20	Sept. 3, 1894	Dec. 1, 1894
h Pipe Line Ditch (amended)	Loren E. Wannamaker	Snyder gulch, T. 51 N., R. 11 W	----	----	4.00	Feb 2, 1894	Apr. 20, 1895
Hill Top Ditch	J. W. Hurst, et al	Leroux creek	10.56	----	25.00	Apr. 9, 1895	May 4, 1895
i Deer Trail Ditch, Enlargement No. 1	S. A., B. F. and C. A. Wade	Hubbard creek	6.66	----	9.375	Nov. 18, 1891	May 9, 1895
j Paonia Ditch, Enlargement No. 2	A. J. Stephens, et al	North fork of Gunnison river	11.00	2.00	16.13	Apr. 1, 1895	May 15, 1895
The Meddock Ditch	Alonzo L. Meddock	Lake fork of Forked Tongue creek	25.00	5.50	6.00	May 11, 1895	May 24, 1895
The Ballard Ditch	Edwin M. Ballard	German creek and seepage, etc., T. 14 S., R 91 W	8.00	----	3.50	About 1887	May 29, 1895
The Monitor Ditch	Watson S. Coburn, et al	North fork of Gunnison river	----	----	11.00	Feb. 16, 1883	June 17, 1895
The Muddy Cañon Ditch	Thaddeus O Ong	Muddy creek and Waste gulch	6.40	1.50	3.00	June 8, 1895	June 17, 1895
The Delta County Canal	The Delta County Canal Co	Smith's fork of the Gunnison river	5.28	10.72	80 72	Mar. 28, 1895	June 25, 1895
The Hartland Ditch Extension	D. B. Fox Frank Buzzard	Hartland Ditch	5.28	1.55	20.00	Dec. 22, 1892	July 3, 1895
The First Enlargement of the Fluke Ditch	William Fluke Frank H. Bopp	Clear fork of Muddy creek	----	2 02	4 00	May 8, 1895	July 5, 1895

e No dimensions supplied.

f Plat shows two separate ditches, distinguished as in table.

g Capacity claimed, 80 second-feet; appropriation, 50 second-feet; statement mentions reservoirs though supplies no data.

h Amended filing is to cover a second branch of Pipe Line Ditch, above.

i Appropriation claimed due to this enlargement, 4.27 second-feet

j Appropriation claimed due to second enlargement, 3.13 second-feet

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 40, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Continued.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Harrington Ditch	John Harrington William Harrington	Seepage, waste, etc., T. 14 S., R. 95 W.	16.00	.....	3.00	June, 1893	Aug. 13, 1895
Conine Ditch No. 1	William F. Conine, et al.	Minnesota creek	.....	.....	4.00	Spring, 1885	Aug. 21, 1895
Conine Ditch No. 2	William F. Conine	Dry creek	.....	.....	3.00	Spring, 1885	Aug. 21, 1895
Sunny Side Ditch	Edwin Keller Roswell H. Bancroft	Waste water in Orch. gulch, Nos. 1 and 2, Sec. 4, T. 1 S., R. 2 E	5.28	.51	5.28	July 10, 1895	Aug. 23, 1895
Hixson Ditch No. 1	John Hixson	Willbank gulch via Neighbors' ditch	.....	.....	3.00	Sept. 4, 1895	Sept. 9, 1895
Hixson Ditch No. 2	John Hixson	Hixson gulch	.....	.....	3.00	Sept. 4, 1895	Sept. 9, 1895
Feeder Ditch to J. C. Hiester Reservior No. 1	J. C. Hiester	Leroux creek	53.00	.....	30.00	.....	Sept. 28, 1895
The McMurray Ditch	W. T. McMurray	Seepage, waste, etc., Sec. 1, T. 14 S., R. 95 W	8.00	.60	5.00	Aug. 28, 1895	Oct. 3, 1895
& The Zanola and Pelazini Ditch	Cesare Zanola, et al	Surface creek	.....	.10	10.00	Aug. 28, 1895	Oct. 4, 1895
The Caswell Ditch	William M. Caswell Maria E. Caswell	Seepage, waste etc., Secs. 19, 21, T. 14 S., R. 93 W.	5.28	3.10	12.00	Sept. 27, 1895	Oct. 4, 1895

The Durkee Ditch	A. R. Durkee W. P. Durkee	Currant creek and seepage, T. 13, 14, S., R. 94 W.	8.00	6.00	8.00	July 18, 1895	Oct. 10, 1895
Reynolds and Robertson Reservoir Feeder Ditch	W. S. Reynolds, et al	Headwater of Northeast Leroux creek	133.00		15.00	Oct. 4, 1895	Nov. 8, 1895
The Intercept Ditch	Charles Billstrom	Seepage, waste, etc., Sec. 11, T. 15 S., R. 95 W.	10.00		1.00	1895	Dec. 6, 1895
The Delta County Canal (amended)	The Delta County Canal Co	Smith's fork of Gunnison river	5.28	13.44	133.00	Mar. 28, 1895	Dec. 30, 1895
The Roberts Ditch	Artemus L. Roberts John M. Roberts	Roatcap gulch	12.00	1.00	6.50	Feb. 24, 1896	Feb. 27, 1896
John D. Head Ditch	John D. Head	McDonald creek, seepage of	13.30	1.70	1.00	Mar. 27, 1896	Apr. 6, 1896
John D. Head Ditch	John D. Head	Cottonwood creek	13.30	1.70	1.00	June 20, 1886	Apr. 6, 1896
John D. Head Ditch	John D. Head	Seepage, "Spurlin Mesa"	13.30	1.70	1.00	Mar. 27, 1896	Apr 6, 1896
l The Caldwell & Middleton Ditch	Andrew Caldwell Frank Middleton	Seepage, waste, etc., Secs. 19, 30, T. 13 S., R 94 W.	80.00	1.125	4.00	May 7, 1896	May 16, 1896
The Cartwright Ditch	John W. Cartwright	Picket gulch, seepage, etc., Sec. 30, T. 13 S., R. 94 W.	16.00	.75	2.00	May 6, 1896	May 20, 1896
m The Second Enlargement of the Fluke Ditch	Robert E. Boyd	Clear fork of Muddy creek		2.02	5.00	May 15, 1896	May 28, 1896
n Childs Ditch No. 1, first enlargement	John A. Curtis, et al	Youngs' creek, or east branch of Tongue creek		1.43	37.00	Apr. 17, 1895	June 8, 1896

k The grade is given as "a fall of .0015."

l For the most part a natural gulch is utilized as the ditch.

m Appropriation claimed, due to this enlargement, 1 second-foot.

n Appropriation claimed, due to this enlargement, 10 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 40, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Continued.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Dusty Ditch	Charles E. Scales	Seepage, etc., Sec. 31, T. 13 S., R. 94 W	------	------	3.00	May 22, 1896	June 12, 1896
o The Miller and Crater Ditches, a and b	R. O. Wilmot, et al	Waste, seepage, etc., from Miller Res., Sec. 31, T. 11 S., R. 92 W	------	------	4.00	May 18, 1896	June 15, 1896
p The Miller and Crater Ditches, c and d	R. O. Wilmot, et al	Waste, seepage, etc., from Crater Res., Sec. 5, T. 12 S., R. 92 W	------	------	4.00	May 18, 1896	June 15, 1896
q Dogfish Ditches, a, b and c	Isaac Hollister, et al	Waste, seepage, etc., from Dogfish Res., T. 12 S., R. 92 W	------	------	4.00	May 18, 1896	June 15, 1896
Ewing Ditch	Arthur G. Ewing	Alfalfa run	20.00	------	2.00	Mar. 1, 1892	June 18, 1896
r Forrest Ditch, enlargement No. 1	Richard Forrest	Surface creek, seepage, etc	------	------	18.00	1890	June 18, 1896
Line Ditch	Jonathan Weir	Waste, seepage, etc., Sec. 6, T. 14 S., R. 94 W	------	------	3.00	----------	June 19, 1896
Hillside Ditch	Arthur G. Ewing Martin Ewing	Alfalfa run, waste, seepage, etc	20.00	.75	1.00	Mar. 10, 1893	June 22, 1896
Stell Ditch	James W. Stell, et al	Alfalfa run, waste, seepage, etc	20.00	.75	4.00	Mar. 10, 1892	July 2, 1896

s Estes Ditch (amended statement)	Harrison Wood George Webb	Jay creek	6.66	.16	------	May 21, 1885	July 10, 1896
t Hurry Ditch	Newton H. Castle	Waste, seepage, etc., from lateral of Buttes ditch, Sec. 13, T. 14 S., R. 95 W.	------	------	4.00	------	July 10, 1896
Mountain Ditch	Henry Teachout Frank Teachout	Little Camp creek	------	.66	6.00	May 18, 1896	July 20, 1896
Eli Ditch	William A. Wamack	Waste, seepage and natural waters, Secs. 30, 31, T. 13 S., R. 94 W	12.00	3.00	4.00	1891	July 23, 1896
Pumpkin Swag Ditch	William A. Wamack	Waste, seepage and natural waters, Secs. 25, 19, T. 13 S., R. 94, 95 W	16.00	3.00	8.00	May 10, 1896	July 23, 1896
Humper Ditch	Geo. Fogg Fred Burritt	Waste, seepage and natural waters in gulch, Sec 26, T. 13 S., R. 95 W	------	------	4.00	------	July 27, 1896
States Ditch	James R. Lamar	Waste, seepage and spring water, Sec. 6, T. 14 S., R. 94 W.	14.00	------	1.00	1891	July 30, 1896
States Ditch, enlargement	James R. Lamar	Waste, seepage and spring water, Sec. 6, T. 14 S., R. 94 W.	14.00	------	Total 2.50	June 2, 1896	July 30, 1896
Steinmetz Ditch	Clifford P. Steinmetz	Waste, seepage and natural waters into Bone gulch, Sec. 23, T. 14 S., R. 92 W	13.33	------	3.00	Apr. 15, 1896	July 30, 1896

o Ditches "a" and "b" come together forming one ditch; no data supplied of Miller Reservoir.

p Ditches "c" and "d" come together forming one ditch; no data supplied of Crater Reservoir.

q Statement obscure; no data supplied of Dogfish Reservoir.

r Appropriation claimed, due to this enlargement, 6 second-feet.

s Capacity claimed, 160 inches.

t Capacity given, 2 second-feet; appropriation claimed, 4 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 40, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Dike Ditch	Edward L. Howard	Waste water from unnamed gulch, Sec. 6, T. 14 S., R. 94 W.	7.00		2.00	Mar., 1895	July 30, 1896
Rist Ditch	E. C. Rist	Seepage, waste, etc., Secs 25, 26, T. 14 S., R. 95 W	8.00	1.00	2.00		Aug. 3, 1896
Bowness Ditch	John Bowness Caesar Zanola	Seepage, etc., Secs. 31, 32, T. 13 S., R. 94 W.; also in Cedar run	54.00	.34	3.00	1884, old; July 10, 1896	Aug. 12, 1896
Roeber Ditch No. 3	Theodore Roeber	Angevine gulch seepage, etc., Sec. 13, T. 14 S, R. 91 W.	40.00	4.00	3.80	Apr. 15, 1896	Aug. 15, 1896
Stull Ditch	David Stull, et al	Leroux creek	6.00	7.25	9.00	June 10, 1892	Sept. 4, 1896
Stull Ditch, first enlargement	Percy and E. M. Houts	Leroux creek	6.66	7.25	Total, 13.00	July 28, 1896	Sept. 4, 1896
Poverty Flat Waste Water Ditch	Margerey E. Head	Waste water, Secs. 3, 10, T. 15 S., R. 92 W.			1.50	Apr. 1, 1888	Sept. 5, 1896
DeGroot Ditch	W. T. McMurray	Natural waste, seepage water in gulch near Cor. T. 13-14 S., R. 94, 95 W		1.25	4.00	Spring, 1888	Oct. 23, 1896

First Enlargement of Sheppard and Wilmot Ditch	Leonidas L. Tittle	North fork of Gunnison river	7.00	2.00	15.00	Mar. 25, 1896	Nov. 11, 1896
Wm. and James L. Patterson Feeder	Wm. Patterson James L. Patterson	West fork of Leroux creek	27.00	-----	7.00	Oct. 2, 1896	Nov. 13, 1896
Wm. and James L. Patterson Feeder, Reservoir No. 4	Wm. Patterson James L. Patterson	West fork of Leroux creek	27.00	------	5.00	Oct. 2, 1896	Nov. 13, 1896
Caswell Ditch	Wm. Caswell Martin E. Caswell	Gulches in 19, 20 and 21 T. 14 S., R. 93 W.	5.28	2.00	12.00	Nov. 1, 1895	Nov. 25, 1896

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 40, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Dog Fish Lake Reservoir	Swart and McGinty, et al	Drainage, etc., T. 12 S., R. 92 W		76,970,520	Aug. 24, 1894	Dec. 3, 1894
Priest and Ellington Reservoir	Henry Priest Chanley Ellington	Holy Terror creek		10,334,400	Sept. 24, 1894	Jan. 9, 1895
Basin Reservoir	T. E. Lamb J. B. Hart	Surface creek	Alfalfa ditch	152,024,400	Oct. 10, 1894	Jan. 10, 1895
Reservoir No. 1, Kiser Slough	The Surface Creek Ditch and Reservoir Co	Kiser creek		4,251,456	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 2, Donnelly Slough	The Surface Creek Ditch and Reservoir Co	Kiser creek		2,888,028	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 3, Kennicott Park	The Surface Creek Ditch and Reservoir Co	Kiser creek		5,022,468	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 4, Upper Eggleston Lake	The Surface Creek Ditch and Reservoir Co	Kiser creek		14,740,704	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 5, Eggleston Lake	The Surface Creek Ditch and Reservoir Co	Kiser creek		88,862,400	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 6, Barren Lake	The Surface Creek Ditch and Reservoir Co	Kiser creek		34,604,064	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 7, Fattening Pond	The Surface Creek Ditch and Reservoir Co	Kiser creek		435,600	Aug. 11, 1886	Jan. 21, 1895

Reservoir No. 8, Alexander Lake	The Surface Creek Ditch and Reservoir Co	Ward Creek		8,415,792	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 9, Hotel Lakes	The Surface Creek Ditch and Reservoir Co	Ward Creek		12,893,760	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 10, Arch Slough	The Surface Creek Ditch and Reservoir Co	Ward Creek		4,251,456	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 11, Upper Hotel Lake	The Surface Creek Ditch and Reservoir Co	Ward Creek		7,514,100	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 12, Deep Ward Lake	The Surface Creek Ditch and Reservoir Co	Ward Creek		40,615,344	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 13, Deep Slough	The Surface Creek Ditch and Reservoir Co	Ward Creek		6,464,304	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 14, Sheep Lake	The Surface Creek Ditch and Reservoir Co	Ward Creek		6,708,240	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 15, Island Lake	The Surface Creek Ditch and Reservoir Co	Ward Creek		22,598,928	Aug. 11, 1886	Jan. 21, 1895
Reservoir No. 16, Beaver Dam Lake	The Surface Creek Ditch and Reservoir Co	Ward Creek		1,306,800	Aug. 11, 1886	Jan 21, 1895
Reservoir No. 17, Rimrock Lake	The Surface Creek Ditch and Reservoir Co	Ward Creek		3,201,660	Aug. 11, 1886	Jan. 21, 1895
South Mesa Reservoir	Wesley Ault, et al	Indian Creek	High Line reservoir ditch	5,500,000	Aug. 11, 1894	Jan. 23, 1895
High Line Reservoir	Wesley Ault, et al	Indian Creek	South Mesa reservoir ditch	6,500,000	July 13, 1894	Jan. 23, 1895
a Joe Dandy Reservoir	Henry H. Ingersoll	Seepage, etc., T 15 S., R. 96 W			Dec. 14, 1894	Apr. 6, 1895
Yellow Butte Reservoir No. 1	W. F. Irving	Storm, waste, etc., T. 14 S., R. 93 W		270,000	Oct. 1, 1894	Apr. 6, 1895
Yellow Butte Reservoir No. 2	W. F. Irving	Storm, waste etc., T. 14 S., R. 93 W		72,600	Oct. 1, 1894	Apr. 6, 1895
Aspen Reservoir	W. F. Irving	Storm, waste, etc., T. 12 S., R. 93 W		2,448,000	July 8, 1894	Apr. 6, 1895

a No particulars supplied, save relative to construction of weir or dam.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 40, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Continued.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Dowdy Reservoir	W. F. Irving Perry J. Jones	Storm, waste, etc., T. 12 S., R. 93 W.		4,863,500	July 7, 1894	Apr. 6, 1895
Mesa Reservoir	W. F. Irving	Storm, waste, etc., T. 14 S., R 93 W.		1,973,400	Sept. 24, 1894	Apr. 6, 1895
Hill Top Reservoir	J. W. Hurst, et al	Storm, drainage, T. 12 S., R. 92 W.		4,375,000	Aug. 11, 1894	Apr. 6, 1895
J. C. Gunn Reservoir	John C. Gunn	Gunn's gulch and Alkali creek		816,750	Apr., 1889	May 23, 1895
The Bailey Reservoir	A. C. Bailey, et al	Leroux creek		5,018,000	June 15, 1895	Sept. 14, 1895
b The Stell Reservoir	James W. Stell	Drainage, Sec. 33, T. 11 S., R. 94 W.		2,178,000	July 23, 1895	Sept. 19, 1895
The Island Reservoir	Robert B. Hickman Albert G. Robinson	Surface creek drainage, Sec. 25, T. 11 S., R. 94 W.		3,920,400	July 23, 1895	Sept. 19, 1895
Spring Park Reservoir	John J. Wetterick, et al	Drainage, Sec. 26, T. 11 S., R. 94 W.		653,400	July 22, 1895	Sept. 19, 1895
J. C. Hiester Reservoir No. 1	J. C. Hiester	Leroux creek	J. C. Hiester reservoir feeder ditch	20,000,000	Sept. 7, 1895	Sept. 28, 1895
The Cedar Mesa Reservoir	John W. Gallant, et al	Drainage, Sec 36, T. 11 S, R. 94 W.		5,793,480	July 15, 1895	Oct. 4, 1895
The Lilypad Reservoir	Reeder M. Light Andrew Caldwell	Nat'l drainage, Sec. 4, T. 12 S., R 94 W.		3,136,320	July 18, 1895	Oct. 10, 1895

Greenback Grave Reservoir	Daniel S. Baldwin	Natural drainage, Sec. 5, T. 12 S., R. 93 W		5,227,200	June 13, 1895	Oct. 23, 1895
Reynolds and Robertson Reservoir No. 1	W. S. Reynolds, et al	Drainage and flood, headwater, N. E. Leroux creek	Reynolds and Robertson Reservoir Feeder ditch	4,356,000	Oct. 4, 1895	Nov. 8, 1895
The Muskrat Reservoir	Andrew Caldwell Benjamin F. Middleton	Kiser creek		2,744,280	May 16, 1896	June 15, 1896
Bullfinch Reservoir No. 1	Frederick W. Butt	Kiser creek drainage Secs. 28, 29, 32, T. 11 S., R. 94 W		2,744,280	June 3, 1896	June 27, 1896
Bullfinch Reservoir No. 2	Frederick W. Butt	Kiser creek drainage Sec. 32, T. 11 S., R. 94 W		2,831,400	June 3, 1896	June 27, 1896
Teachout Reservoir No. 1	Henry Teachout Frank Teachout	Natural drainage		784,080	July 15, 1896	July 20, 1896
Teachout Reservoir No. 2	Henry Teachout Frank Teachout	Meldrum creek		435,600	July 15, 1896	July 20, 1896
Teachout Reservoir No. 3	Henry Teachout Frank Teachout			130,680	July 15, 1896	July 20, 1896
Teachout Reservoir No. 4	Henry Teachout Frank Teachout			871,200	July 15, 1896	July 20, 1896
Litttle Giant Reservoir	John B. Helland	Headwaters of Kiser creek, drainage of Sec. 32, 33 T. 11 S., R. 94 W		2,744,280	May 24, 1896	Aug. 24, 1896
Sackett Reservoir	William Wallace Sackett	Headwaters of Surface creek, natural drainage Sec. 32, T. 11 S., R. 94 W		8,634,880	Sept. 1, 1894	Aug. 26, 1896
Lovely Park Reservoir	Clinton J. Hamilton Alonzo Hamilton	Headwaters of Surface creek, natural drainage, Sec. 2, T. 12 S., R. 94 W., Sec. 35, T. 11 S., R. 94 W.		744,876	Aug. 1, 1896	Sept. 3, 1896

b This is a natural lake, or pond, the capacity of which is augmented by a dam.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO 40, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Wm. and James L. Patterson Reservoir No. 1	Wm. Patterson James L. Patterson	Leroux creek	Feeder	4,356,000	Oct. 2, 1896	Nov. 13, 1896
Wm. and James L. Patterson Reservoir No. 2	Wm. Patterson James L. Patterson	Leroux creek	Feeder	5,069,000	Oct. 2, 1896	Nov. 13, 1896
Wm. and James L. Patterson Reservoir No. 3	Wm. Patterson James L. Patterson	Leroux creek	Feeder	5,875,200	Oct. 2, 1896	Nov. 13, 1896
Wm. and James L. Patterson Reservoir No. 4	Wm. Patterson James L. Patterson	West Leroux creek	Feeder	2,611,200	Oct. 2, 1896	Nov. 13, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 41, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a Montrose and Delta County Ditch	The Montrose and Delta County Water Co	Gunnison river	------	-----	1,100.00	Nov. 14, 1894	Jan. 14, 1895
Brown Ditch	Stephen M. Brown	Cimarron river	------	.21	3.00	May 10, 1893	Jan. 14, 1895
Joe Dandy Ditch	Henry H. Ingersoll	Seepage, etc., T. 15 S., R. 96 W	5.28	------	3.00	Dec. 14, 1894	Jan. 28, 1895
The E. F. Krebs Ditch	E. F. Krebs	Horse Fly creek, waste, etc., S. 35, T. 48 N., R. 9 W	8.00	.375	2.00	Mar. 1, 1892	Apr. 12, 1895
The Prospect Ditch	George Conklin, et al	Seepage, etc., T. 51 N., R. 11 W.; W. Lateral Montrose ditch	6.00	3.86	81.00	Jan. 10, 1895	Apr. 13, 1895
Huffington Ditch	Sylvester Huffington	Uncompahgre river	------	.25	5.00	Spring, 1884	Apr. 24, 1895
b Haskill Spring and Seepage Ditches	A. C. Haskill, et al	Springs, seepage, etc., T. 45 N., R. 9 W	------	------	4.00	Nov., 1891	May 9, 1895
Salida Ditch	D. P. Cook A. C. Ridgway	Seepage, etc., T. 50, 51 N., R. 11 W.; Ironstone Extension ditch	10.56	2.94	25.00	Mar. 13, 1895	May 13, 1895

a Plat shows a tunnel from headgate through ridge.

b Plat shows two separate ditches that probably unite and form one; capacity claimed for each, 2 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 41, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Apricot Ditch	Henry Fadely	Seepage, etc., S. 26, T. 15 S., R. 96 W.	8.00	.31	2.00	Feb. 21, 1896	Mar. 5, 1896
Blackstock Ditch	Joseph Blackstock	Seepage, etc., Sec. 36, T. 15 S., R. 96 W.	6.66	.75	2.00	Jan. 15, 1896	Mar. 5, 1896
Cade Ditch	Martin Cade	Springs, seepage, etc., Secs. 27, 28, T. 15 S., R. 95 W	4.50	.....	4.00	June 15, 1893	May 8, 1896
Dry Creek Extension of Garnet Ditch	The Garnet Ditch Co	Dry creek, seepage, etc., Secs. 20, 21, 27, 28, T. 51 N., R. 10 W.	12.00	3.00	25.00	Mar. 25, 1896	June 24, 1896
Independant Ditch	J. S. Maupin	Bixby gulch	6.50	.63	2.00	Apr. 25, 1896	July 25, 1896
Pumpkin Ridge Ditch No. 1	Cadwalader Ellis	Waste water from ranches, Secs. 15, 22, T. 51 N., R. 10 W., N. M. P. M.	7.00	.21	* 2.00	Mch. 27, 1896	July 30, 1896
Pumpkin Ridge Ditch No. 2	Cadwalader Ellis	Waste water from ranches, Secs. 15, 22, T. 51 N., R. 10 W., N. M. P. M.	7.00	.23	* 2.00	Mch. 27, 1896	July 30, 1896
Pumpkin Ridge Ditch No. 3	Cadwalader Ellis	Waste water from ranches, Secs. 15, 22, T. 51 N., R. 10 W., N. M. P. M.	7.00	.28	* 2.00	Mch. 27, 1896	July 30, 1896

Pumpkin Ridge Ditch No. 4	Cadwalader Ellis	Waste water from ranches, Secs. 15, 22, T. 51 N., R. 10 W., N. M. P. M.	7.00	.50	* 2.00	Mch. 27, 1896	July 30, 1896
Gessert Ditch	Geo. P. Gessert	Seepage and waste water from ranches above Sec. 22, T. 15 N., R. 96 W.	7.00	.....	4.00	May 1, 1896	July 30, 1896

* Capacity claimed in second-feet, 4.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 41, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a Joe Dandy Reservoir	Henry H. Ingersoll	Waste, seepage, etc., T. 15 S., R. 96 W.			Dec. 14, 1894	Jan. 28, 1895
Trout Lake Reservoir	J. F. Wilson, et al	Spring creek		20,250,000	Feb. 27, 1896	Mar. 11, 1896

a Only a description of the construction of dam is given.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 42, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a Jacob's Ladder Ditch	John W. Clark	Jacob's Ladder creek	10.00	1.25	12.00	Nov. 18, 1894	Dec. 5, 1894
a Jacob's Ladder Ditch	John W. Clark	Gordon gulch	10.00	1.00	12.00	Nov. 18, 1894	Dec. 5, 1894
R. M. G. Ditch	E. S. Rice, et al	Big creek	15.00	3.50	7.81	Nov. 1, 1894	Dec. 21, 1894
b Collier Ditch, first enlargement	Peter S Bustad	Lennox creek	58.00	2.00	5.64	Jan. 29, 1895	Feb. 8, 1895
c Blackman, Dunlap and Clark Ditch, third enlargement	Joseph L. Kimmel	Plateau creek	13.33	------	11.04	May 18, 1893	Feb. 21, 1895
Superior Ditch	John S. Griffith, et al	Buzzard creek, springs, etc., T. 9 S., R. 94 W	6.00	3.00	12.00	Dec. 17, 1894	Feb 23, 1895
Horn Ditch	Amos A. Horn	Horn gulch	6.00	------	2 64	Apr. 4, 1895	Apr. 6, 1895
d James Roney Enlargement Ditch	James Roney	Plateau river, via Hard Scrabble ditch	13.00	1.50	6.75	Nov. 18, 1894	Apr. 10, 1895
Virginia Mesa Power Ditch	William McDowell	Grand river	2.00	------	2.50	Jan. 18, 1895	Apr. 13, 1895

a Statement and plat show three separate ditches of same name, irrigating different parcels of land; two taking water from Gordon Gulch.

b Appropriation claimed, due to this enlargement, 2.64 second-feet.

c Appropriation claimed, due to this enlargement, 1.04 second-feet.

d Appropriation claimed, due to this enlargement, .75 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 42, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Continued.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Shropshire Watershed Ditch	C. E. Shropshire	Springs, seepage, etc., T. 2 S., R. 1 E., Ute P. M	2.64	1.00	.75	Apr. 8, 1895	Apr. 15, 1895
Goldsby Watershed Ditch	J. Goldsby	Springs, seepage, etc., T. 2 S., R. 1 E., Ute P. M	5.00	.113	.40	Apr. 12, 1895	Apr. 19, 1895
Ravensbeque Ditch	W. A. E. de Beque	Grand river	8.00	2.00	12.00	Oct. 13, 1894	Apr. 25, 1895
C. D. Lude Ditch	Christian D. Lude	Big creek	25.00	1.75	5.00	Dec. 10, 1890	May 1, 1895
e Jacob's Ladder Ditch	Annie M. Anderson	Jacob's Ladder creek	5.28	.....	2.64	May 1, 1895	May 16, 1895
Coppock Ditch	Charles Coppock	Plateau creek	6.66	.....	1.32	Oct. 8, 1894	May 16, 1895
Pension Ditch	John F. Smith	Clear Water or Big creek, seepage, etc, T. 9 S., R. 95 W	13.30	.....	3.00	Apr. 1, 1889	June 7, 1895
f King Ditch, first enlargement and extension	Lewis S. Ball George Wood	Mesa creek	13.30	.....	18.20	June 19, 1895	July 11, 1895
Elkhorn Ditch	J. M. Barkley	Springs, Sec. 33, T. 51 N., R. 14 W	16.00	.54	3.00	1883	July 11, 1895
John W. Musser Ditch	John W. Musser	Escalante creek	26.40	1.25	9.00	1889	July 31, 1895
The Ball Ditch	Lewis S. Ball	Brush creek	26.60	.03	2.64	Aug. 6, 1895	Aug. 9, 1895
The Smith and Struthers Ditch	Smith and Struthers Ditch Co	Plateau creek	3.71	.....	36.00	Aug. 22, 1893	Aug. 12, 1895

g The Smith and Struthers Ditch, first enlargement	Smith and Struthers Ditch Co	Grand river	1.00	------	815.00	Aug. 8, 1895	Aug. 12, 1895
Des Rosier's Ditch	Louis Des Rosier	Des Rosier's gulch, Nos. 1 and 2	10.00	------	2.60	Aug. 21, 1895	Aug. 27, 1895
Campbell Ditch	Kenneth Campbell	Escalante creek	------	------	4.00	June 18, 1892	Sept. 3, 1895
h Gilt Edge Ditch	Nelson R. Rice, et al	Big creek, via the C. D. Lude ditch enlarged, Little creek and Anderson creek	------	------	10.45	May 8, 1895	Oct. 4. 1895
Granite Rock Ditch	N. J. Mistler	Escalante creek, branch	6.66	.85	4.50	Dec. 25, 1893	Oct. 31, 1895
The Last Resort Ditch	George A. Bird	Whitewater creek	8.00	.55	14.00	Nov. 22, 1895	Nov. 25, 1895
The Jorgen Gunderson Ditch	Jorgen Gunderson	Buzzard creek	13.30	------	--------	Oct. 15, 1894	Dec. 7, 1895
i Campbell Enlargement Ditch	Cumming Campbell	Escalante creek	------	1.24	8.00	Dec. 16, 1895	Dec. 13, 1895
Lateral Extension of the Reservoir Ditch	Joseph E. Ong William McDowell	Reservoir ditch	25.00	.62	2.80	Sept. 7, 1895	Dec. 18, 1895
Mistler Ditch	W. J. Mistler	Escalante creek	6.66	1.60	6.00	Nov. 1, 1895	Dec. 21, 1895
Kiggins Ditch	Albert L. Kiggins	Salt creek	13.30	1.30	2.60	June 1, 1890	Jan. 2, 1896
Lewis C. Williams Ditch	Lewis C. Williams	Salt creek	13.30	1.10	2.60	Oct. 15, 1895	Jan. 3, 1896
Bright Ditch	Henry D. Bright	Lemmex creek	13.30	.50	2.60	Oct. 14, 1895	Jan. 16, 1896
Mid-Line Ditch	Jeff Milner George Gruunderson	Lemmex creek	13.30		5.20	Oct. 18, 1895	Jan. 16, 1896
Kenney Waste Water Ditch	William Kenney	Silver Gage ditch, waste, etc., Sec. 9, T. 10 S., R. 95 W.	26.60	1.50	5.20	Mar. 4, 1896	Mar. 9, 1896

e This is an entirely different ditch from Jacob's Ladder Ditch, above.

f Appropriation claimed on account of this enlargement, 13 second-feet.

g Appropriation claimed, due to this enlargement, 779 second-feet.

h From Big Creek is claimed 6.55, Little Creek, 2.6, and Anderson Creek, 1.3 second-feet respectively.

i Original construction capacity 4 second feet; by this enlargement, 4 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 42, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Anderson Waste Water Ditch	Jessie Anderson	Waste water in two gulches, Sec. 7, T. 10 S., R. 94 W.	26.60	.....	2.60	Mar. 7, 1896	Mar. 11, 1896
Lulu Ditch (feeder for Lulu Reservoir No. 1)	E. G. Angell E. B. Angell	Indian creek	12.00	2.00	12.00	Feb. 27, 1896	Mar. 16, 1896
Cook's Little Kimble Ditch	William S. Cook	Little Kimble creek and seepage, etc., Sec. 14, T. 9 S., R. 95 W.	26.60	.....	4.00	Mar. 11, 1896	Mar. 25, 1896
j Kahnah Creek Extension Enlarged Ditch	William H. Coffman	Kahnah creek	6.00	6.00	26.00	Mar. 23, 1896	Mar. 28, 1896
Wilber Ditch	Frank B. Wilber	Escalante creek	6.60	1.25	2.00	Aug. 4, 1895	Apr. 1, 1896
k Fitzpatrick Enlargement Ditch	C. M. Danford	Grove creek, waste, springs, etc., Sec. 13, T. 10 S., R. 95 W.	.....	.....	1.24	May 12, 1896	June 4, 1896
l Hosford and Gromer enlargement of the Pioneer of Plateau Ditch	John Hosford David Gromer	Bull creek	.....	.....	12.02	Apr. 25, 1896	June 10, 1896
McDowell Ditch	William McDowell	Reservoir ditch	.....	.....	1.00	May 13, 1896	July 1, 1896
McCarty Waste Water Ditch	Betsy McCarty	Peninsular gulch	14.00	.25	1.00	May 12, 1896	July 29, 1896
Little Creek Ditch	Albert McRae	Little creek	27.00	.37	1.00	June 30, 1888	Aug. 31, 1896
O. E. L. Ditch	O. C. Gunderson	Buzzard creek	7.00	.....	2.64	July 31, 1896	Aug. 31, 1896

Fawsett Enlargement of Stuart Ditch	A. A. Fawsett	Bull creek	1.6	------	3.88	Aug. 1, 1896	Sept. 18, 1896
Wigleworth Ditch	William Wigleworth	Bull creek and waste water, Secs. 14, 23, T. 10 S , R. 96 W	100.00	.75	0.50	Sept. 2, 1896	Sept. 21, 1896
Harvey No. 2 Ditch	Isaac Harvey	Wallace and Spring gulches, waste, seepage and spring water, T. 10 S., R. 96 W	6.25	.45	1.44	Apr. 15, 1893	Sept. 26, 1896
Wolf Waste Water Ditch	John Wolf	Waste water, N. ½ of N. E. ¼, Sec. 18, T. 10 S., R. 96 W	3.00	.75	1.00	----------	Oct. 21, 1896
Keystone Ditch	Wm. D. Gibson	Waste water, Secs. 20, 21, 30, T. 93 S., R. 94 W	26.4	3.00	2.00	Oct. 24, 1896	Oct. 31, 1896

j Appropriation claimed, due to this enlargement, 10.9 second-feet.

k Appropriation claimed, due to this enlargement, .52 second-feet.

l Appropriation claimed, due to this enlargement, .5 second-feet.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 42, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a John Goldsby Reservoir	John Goldsby			3,658,457		Dec. 6, 1894
Ponsford Reservoir	William J. Ponsford	Indian creek	Ponsford ditch	8,712,000	Mar. 1, 1893	Jan. 4, 1895
Silver Lake Reservoir	Ellis S. Rice, et al	Silver spring, etc., T. 11 S., R. 94 W.		3,863,772	Aug. 13, 1894	Jan. 14, 1895
Grove Creek Reservoir No. 1	David Anderson, Sr., et al	Flood water, Grove creek, T. 11 S., R. 94 W.		5,893,668	Aug. 2, 1894	Feb. 20, 1895
Grove Creek Reservoir No. 2	David Anderson, Sr., et al	Flood water, Grove creek, T. 11 S., R. 94 W.		3,970,980	Aug. 2, 1894	Feb. 20, 1895
b Horn Reservoir	Amos A. Horn	Horn gulch		1,306,800	Apr. 3, 1895	Apr. 6, 1895
Coon Creek Reservoir No. 1	James M. Griffeth, et al	Coon creek		11,543,400	June 12, 1895	July 11, 1895
Coon Creek Reservoir No. 2	James M. Griffeth, et al	Coon creek		7,340,800	June 12, 1895	July 11 1895
Coon Creek Reservoir No. 3	James M. Griffeth, et al	Coon creek		6,534,000	June 12, 1895	July 11, 1895
Eureka Reservoir	Alfred K. Hampton	Bull creek and spr'gs		12,400,000	May 27, 1895	Sept. 3, 1895
Eureka Reservoir (amended plat)	Alfred K. Hampton	Bull creek and sp'gs, Secs. 28 and 29, T. 11 S., R. 95 W.		12,400,000	May 27, 1895	Aug. 27, 1895
Hawxhurst Reservoir	George, John W., Thos. B. and Elmeada Hawxhurst.	Hawxhurst creek		12,337,480	Oct. 1, 1894	Sept. 4, 1895

Bull Creek Reservoir No. 1	Bull Creek Reservoir Co	Bull creek and tributaries		1,927,456	June 13, 1895	Sept. 7, 1895
Bull Creek Reservoir No. 2	Bull Creek Reservoir Co	Bull creek and tributaries		3,409,740	June 13, 1895	Sept. 7, 1895
Bull Creek Reservoir No. 3	Bull Creek Reservoir Co	Bull creek and tributaries		6,502,200	June 13, 1895	Sept. 7, 1895
The Cottonwood Lakes Reservoir No. 1	The Cottonwood Lakes Reservoir Co	Springs, etc., tributary to Cottonwood creek		41,931,292	July 20, 1894	Dec. 7, 1895
The Cottonwood Lakes Reservoir No. 2	The Cottonwood Lakes Reservoir Co	Springs, etc., tributary to Cottonwood creek		12,296,988	July 20, 1894	Dec. 7, 1895
The Cottonwood Lakes Reservoir No. 3	The Cottonwood Lakes Reservoir Co	Springs, etc., tributary to Cottonwood creek		2,613,600	July 20, 1894	Dec. 7, 1895
The Cottonwood Lakes Reservoir No. 4	The Cottonwood Lakes Reservoir Co	Springs, etc., tributary to Cottonwood creek		16,204,320	July 20, 1894	Dec. 7, 1895
The Cottonwood Lakes Reservoir No. 5	The Cottonwood Lakes Reservoir Co	Springs, etc., tributary to Cottonwood creek		14,136,686	July 20, 1894	Dec. 7, 1895
c Battlement Mesa Reservoir No. 2	John Jones, et al	Flood water tributary to Hawxhurst creek		1,207,100	Oct. 21, 1895	Jan. 16, 1896
Battlement Mesa Reservoir No. 3	John Jones, et al	Flood water tributary to Hawxhurst creek		762,300	Oct 21, 1895	Jan. 16, 1896
Battlement Mesa Reservoir No. 4	John Jones, et al	Flood water tributary to Hawxhurst creek		348,480	Oct. 21, 1895	Jan. 16, 1896
Lulu Reservoir No. 1	E. G. Angell E. B. Angell	Deer creek and drainage	Lulu ditch	17,424,000	Jan. 6, 1896	Feb. 25, 1896

a Source of supply not given; probably natural drainage; Secs. 5, 8, T. 14 S., R. 101 W.

b Plat shows two outlet ditches of which no particulars are supplied.

c Battlement Mesa Reservoir No. 1 is in Water District No. 45.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 42, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Lulu Reservoir No. 2	E. G. Angell E. B. Angell	Deer creek and drainage		1,089.000	Jan. 6, 1896	Feb. 25, 1896
Bertholf and Englehart Reservoir	John M. Bertholf W. Milton Englehart	Tributaries of Big creek		28,400,300	Sept. 9, 1895	Mar. 11, 1896
Granger's Reservoir No. 1	Thomas E. Kitson, et al	Cottonwood creek		13.317,280	Oct. 25, 1895	May 11, 1896
Granger's Reservoir No. 2	Thomas E. Kitson, et al	Cottonwood creek		2,206,644	Oct. 25, 1895	May 11, 1896
Granger's Reservoir No. 3	Thomas E. Kitson, et al	Cottonwood creek		8,676,332	Oct. 25, 1895	May 11, 1896
Leone Reservoir	John W. Gribble, et al	Leone creek		130,680,000	July 31, 1893	May 11, 1896
McDowell Reservoir	William McDowell	Reservoir ditch	Lateral from reservoir ditch	1,215,324	May 13, 1896	July 1, 1896
Oldham Reservoir No. 1	William Oldham Elihu Oldham	Rapid creek		38,392,477	Sept. 7, 1896	Nov. 5, 1896
Oldham Reservoir No. 2	William Oldham Elihu Oldham	Cottonwood creek		5,668,462	Sept. 7, 1896	Nov. 5, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 43, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Middle Creek Ditch	J. G. Ellifritz Charles Kirk	Douglas creek	10.00	.....	6.00	May 14, 1894	Jan. 22, 1895
a Rangeley Ditch, first enlargement	Charles P. Hill	White river	2.50	.....	44.23	Apr. 13, 1895	July 5, 1895
Florence Ditch	Florence E. Nelson	Middle fork of Stewart's gulch and springs, S. 28, T. 3 S., R. 96 W	20.00	.....	1.80	June 3, 1888	July 26, 1895
Chase & Coltharp	James H. Coltharp, et al	White river	5.28	2.30	16.36	Oct. 7, 1892	Aug. 23, 1895
Popper Ditch	Charles Popper	Cottonwood creek	5.28	.37	6.80	July 1, 1885	Aug. 12, 1896
E. P. Grove Spring and Ditch	E. P. Grove	Grove springs, S. 12, T. 1 S., R. 94 W	10.56	.....	6.46	.....	Aug. 17, 1896

a Appropriation claimed, due to this enlargement, 21.39 second-feet.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 43, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Popper Reservoir	Charles Popper	Cottonwood creek	Popper ditch	101,787		Aug. 12, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 44, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Butler Irrigating Ditch	Egbert C. Butler Edward A. Butler	South fork of Williams Fork	10.00	.....	20.00	May 8, 1889	Dec 15, 1894
Chapman and Sweeney Irrigating Ditch	William Chapman, et al	Bear river	2.64	3.97	12.00	Apr. 15, 1895	June 17, 1895
Juniper Ditch	James W. Nutt	Yampa, or Bear river	1.50	1.07	4.00	Mar. 10, 1888	Aug. 19, 1895
a Juniper Ditch, first enlargement and extension	Abbott G. Fraker	Yampa, or Bear river	1.50	3.00	40.00	Jan. 2, 1889	Aug. 19, 1895
b Deal Enlargement of Davis Ditch	W. S. Deal	Williams Fork creek	4.00	1.50	6.00	May 1, 1892	Sept. 23, 1895
Farrell Irrigating Ditch	Sarah C. Farrell	Bear river	5.00	2.00	8.00	June 15, 1890	Dec. 26, 1895
Yellow Jacket No. 1 Ditch	H. R. Seilaff	Beaver creek	6.00	.....	4.25	Apr. 15, 1896	June 29, 1896
c Clark Irrigating Ditch	Frank O. Clark	Bear river	3.00	.....	9.00	Oct. 5, 1895	July 17, 1896
Freund Ditch No. 1	Jacques Freund	Hole-in-the-Wall c'k	5.28	.....	2.10	Sept. 15, 1896	Oct. 10, 1896
Freund Ditch No. 2	Jacques Freund	Spring creek	5.28	.....	2.10	Sept. 15, 1896	Oct. 10, 1896
Freund Ditch No. 3	Jacques Freund	Spring creek	10.56	.....	1.00	Sept. 15, 1896	Oct. 10, 1896

a Total capacity claimed for enlarged ditch, 44 second-feet.

b Appropriation claimed, due to this enlargement, 1 second-foot.

c Dimensions given show an impracticable construction for a ditch.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 44, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Freund Ditch No. 4	Jacques Freund	Spring creek	10.56		1.00	Sept. 15, 1896	Oct. 10, 1896
Freund Feeder No. 1	Jacques Freund	Spring creek	5.28		2.10	Sept. 15, 1896	Oct. 10, 1896

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 44, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Freund Reservoir	Jacques Freund	Hole-in-the-Wall creek		293,715	Sept. 15, 1896	Oct. 10, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 45, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Davison Ditch	William V. Hall	Taylor creek	10.00	.75	1.00	1887	Mar. 1, 1895
Sagers Waste Water Ditch	Estate of Geo. W. Sagers	Waste, water, etc., Sec. 20, T. 7, S., R. 92 W	15.00	------	1.50	Mar. 14, 1896	May 16, 1896
a Blue Bird Ditch Extension and Enlargement	Anna H. Bullock	Cache creek	22.00	1.25	5.50	Apr. 11, 1893	June 11, 1896
b Reynolds Enlargement and Extension of the Spring Branch and Divide Creek Irrigating Ditch	Louis L. Reynolds Arthur Reynolds	Divide creek and Spring branch	------	------	8.00	Sept. 5, 1896	Nov. 14, 1896

a Appropriation claimed, due to this enlargement, 1.25 second-feet.

b Appropriation by original construction and this enlargement is a total of 8 second-feet.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 45, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Battlement Mesa Reservoir No. 1	John Jones, et al	Wallace creek		2,937,450	Oct. 21, 1895	Jan. 16, 1896
Battlement Reservoir Co., Reservoir No. 1	Battlement Reservoir Co	Battlement creek and other unnamed creeks		4,038,012	Aug. 6, 1895	Aug. 20, 1896
Battlement Reservoir Co., Reservoir No. 2	Battlement Reservoir Co	Battlement creek and other unnamed creeks		2,522,124	Aug. 6, 1895	Aug. 20, 1896
Battlement Reservoir Co., Reservoir No. 3	Battlement Reservoir Co	Battlement creek and other unnamed creeks		17,801,665	Aug. 6, 1895	Aug. 20. 1896
Battlement Reservoir Co., Reservoir No. 4	Battlement Reservoir Co	Battlement creek and other unnamed creeks		3,381,563	Aug. 6, 1895	Aug. 20, 1896
Battlement Reservoir Co., Reservoir No. 5	Battlement Reservoir Co	Battlement creek and other unnamed creeks		1,409,166	Aug. 6, 1895	Aug. 20, 1890

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 46, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a Enlargement of the Roaring Ditch	Albert E. Butler	South Roaring fork	12.00	1 25	18.00	May 15, 1892	Nov. 4, 1895
b The Pleasant Valley Ditch, enlargement	J. T. Beach, et al	North fork of North Platte river	6.50	------	400.00	Jan. 1, 1896	Feb. 18, 1896
Davis Ditch	The North Park Cattle Co	North Platte river	6.50	.57	15.00	Sept. 20, 1892	June 24, 1896
Boon Ditch	The North Park Cattle Co	North Platte river	4.50	3.00	36.00	June 14, 1888	June 24, 1896

a Appropriation claimed, due to this enlargement, 12 second-feet.

b Capacity claimed, prior to this enlargement, 40 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 47, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
The Boyce Bros ' No. 1 Ditch	Frank and Horace Boyce	Illinois ditch	6.00	2.00	20.00	Oct. 16, 1894	Feb. 25, 1895
a The Enlargement of the Capron Ditch	Henry C. Williams	Pinkham creek	3.33	1.25	3.50	July 6, 1894	May 29, 1895
Sulphur Spring Ditch	Henry C. Williams	Springs, seepage, etc., T. 11 N., R. 79 W	6.66	.50	1.50		May 29, 1895
Williams Ditch	Henry C. Williams	T. P. Canton creek	8.40	.23	2.00	May 3, 1894	June 21, 1895
Allard Ditch	George Allard, et al	Pinkham creek	11.00	2.30	12.00	June 19, 1895	July 31, 1895
Independence Ditch	Charles Boettcher William Marr	Big creek	8.80	12.00	95 00	Nov. 10, 1895	Dec. 27, 1895
b Owl Creek Placer Co.'s Placer Claim	The Owl Creek Placer Co	Owl creek					Feb. 28, 1896
Sand Creek Ditch	North Park Cattle Co	Canadian river	6 00	3.20	27.00	June 1, 1888	June 24, 1896
c Oklahoma No. 2 Ditch	North Park Cattle Co	Illinois river	6.66	6.125		Oct. 18, 1894	June 24, 1896
d Enlargement and Extension of Capron Ditch	Joseph J. Hunter	Pinkham creek	8.00	2.50	24.00	June 1, 1890	July 14, 1896

a Appropriation claimed, due to this enlargement, 1.50 second-feet.

b All unappropriated water is claimed for placer mining purposes. There is no ditch.

c No claim is made for capacity of ditch.

d Increased capacity claimed, due to this enlargement, 15 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO 47, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Watson Ditch	Joseph J. Hunter	Pinkham creek	8.00	1.00	20.00	May 20, 1890	July 14, 1896
Spaulding Ditch	Joseph J. Hunter	Pinkham creek	6.00	1.00	5.00	Aug. 20, 1887	July 14, 1896
Durgin Ditch	Joseph J. Hunter	Pinkham creek	8.00	1.50	9.00	June 20, 1888	July 14, 1896
Bush Ditch No. 1	Elizabeth A. Bush	Seepage, etc., S. 31, 32, T. 9 N., R. 77 W.	6.00	.70	8.00	June 10, 1894	Oct. 29, 1896
Hilton and Carney Ditch	Simeon Alex. Hilton	West fork of Big creek	15.00	.87	12.00	Oct. 18, 1896	Nov. 24, 1896
Hilton Ditch No. 1	Simeon Alex. Hilton	West fork of Big creek	5.28	1.46	7.50	Oct. 18, 1896	Nov. 24, 1896
Hilton Ditch No. 2	Simeon Alex. Hilton	A fork of Big creek	20.00	1.89	20.00	Oct. 18, 1896	Nov. 24, 1896

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 47, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Big Creek Reservoir	William Marr	Big creek		300,564,000	Nov. 10, 1895	Feb. 14, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 48, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Link's Ditch	Mary E. Link	Big Laramie river	5.28	1.625	14.22	Dec. 19, 1894	Jan. 18, 1895
Forrester Ditch	C. C. Forrester	Brown creek	6.66	.75	7.00	May, 1893	May 11, 1896
Brown Ditch	C. C. Forrester	Nun creek	6.66	.75	10.00	May, 1890	May 11, 1896
The Comet Ditch	Victor G. H. Stuart	McIntyre creek	7.12	------	7.40	Dec. 7, 1892	Oct. 6, 1896
The Homestead Ditch	Victor G. H. Stuart Alex. Stuart	Branch of McIntyre creek	54.90	------	9.00	July 10, 1884	Oct. 6, 1896
The Hance Ditch	C. A. Martin	Grace creek	12.14	------	19.44	Mar. 31, 1881	Oct. 6, 1896
The Slough Creek Ditch	C. A. Martin	Slough creek	5.28	------	4.11	May 30, 1896	Oct. 6, 1896
The Martin Ditch No. 1	F. W. Sherwood	Laramie river	6.00	------	15.50	Apr. 20, 1883	Oct. 6, 1896
The Martin Ditch No. 2	F. W. Sherwood	Laramie river	5.28	------	14 50	Apr. 30, 1887	Oct. 6, 1896
The Lone Tree Ditch	F. W. Sherwood	Lone Tree creek	15.84	1.50	25.00	Oct. 24, 1894	Oct. 6, 1896
The Link Ditch No. 2	Wallis A. Link	Branch of Big Laramie river	5.00	.75	2.00	June 15, 1896	Oct. 6, 1896
The Grace Creek Ditch	L. E. Hance	Grace creek	8.97	------	3.07	Apr. 1, 1888	Oct. 6, 1896
The Grace Creek Ditch, enlarged	L. E. Hance	Grace creek	8.97	------	15.34	May 29, 1896	Oct. 6, 1896
Mansfield No. 2 Ditch	N. K. Boswell	Big Laramie river	27.72	------	19.84	June 1, 1880	Oct. 6, 1896

Mansfield Ditch	N. K. Boswell C. A. Martin	Big Laramie river	4.80		11.61	Apr. 20, 1882	Oct. 6, 1896
Mansfield Ditch, enlarged	N. K. Boswell C. A. Martin	Big Laramie river	4.80		13.86	Sept. 3, 1895	Oct. 6, 1896
The Bliler and Boswell Ditch	Warren Bliler N. K. Boswell	Big Laramie river	7.18		16.43	Apr. 1, 1882	Oct. 6, 1896
The Stuck Creek Ditch	Warren Bliler	Stuck creek	17.52		16.12	Apr. 1, 1881	Oct. 6, 1896
The Warren Ditch	Warren Bliler	Big Laramie river	17.60		6.67	Mar. 25, 1881	Oct. 6, 1896
The Ward Ditch No. 1	John L. Dagle James B. Arthur	Jimmy creek	8.97		4.25	June 15, 1883	Oct. 6, 1896
The Ward Ditch No. 2	John L. Dagle	Jimmy creek	53.48		9.48	July 1, 1883	Oct. 6, 1896
The French Woman Ditch	John L. Dagle	French Woman, fork of Jimmy creek	26.40		7.56	May 28, 1896	Oct. 6, 1896
The Trollope Creek Ditch	John L. Dagle	Trollope Creek	42.24		6.89	June 15, 1884	Oct. 6, 1896
The Trollope Creek Ditch, enlarged	John L. Dagle	Trollope creek	42.24		17.75	May 29, 1896	Oct. 6, 1896
The La Garde	Daniel Johnson, et al	La Garde creek	14.10		10.33	June 10, 1883	Oct. 6, 1896
The Jimmy Creek Ditch	Daniel Johnson, et al	Jimmy creek and Big Laramie river	13.20		5.52	May 1, 1891	Oct. 6, 1896
Hills Ditch	J. H. Smith J. E. Smith	Laramie river	6.17		11.00	July 1, 1880	Oct. 6, 1896
The Lamb Ditch	Clara N. Smith	McIntyre creek	5.00		3.88	June 1, 1890	Oct. 6, 1896
The Lamb Ditch, enlarged		McIntyre creek	5.00		12.60	Aug. 28, 1895	Oct. 6, 1896
The Smiths, Brown Ditch	J. H. Smith J. E. Smith	Big Laramie river	14.25		16.53	June 10, 1884	Oct. 6, 1896
Pache Ditch	August Pache	La Garde creek	57.55		18.14	May 25, 1893	Oct. 6, 1896
a The Yelton Ditch	J. H. Smith, et al	Big Laramie river	21.43		30.14	July 1, 1882	Oct. 6, 1896
The Yelton Ditch, enlarged	J. H. Smith, et al	Big Laramie river	9.08		30.24	Aug., 1895	Oct. 6, 1896

a Dimensions, grade and capacity, as given, are for the 320 feet in distance from the headgate to first lateral. After that, grade 9.08 feet per mile, capacity 12.38 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 49, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
The Austin Ditch	James Austin	South fork of the Republican river	2.64	1.66	14.78	Nov. 22, 1894	Feb. 20, 1895
The James E. Cook No. 2 Ditch	James E. Cook	South fork of the Republican river	2.64	3.03	24.12	Jan. 1, 1895	Mar. 19, 1895
Heddinga Ditch	John Heddinga	Lost Man's creek	2.64	.53	14.78	Feb. 23, 1895	May 17, 1895
a Sheppard Ditch No. 2	Samuel C. Shepard	Underflow, T. 5 S., R. 44 W.	2.64	.60	.....	Feb. 22, 1895	May 20, 1895
b Newberry Ditch, (amended)	J. C. Newberry	Spring creek and south fork of the Republican river	2.50	1.00	8.00	.....	Aug. 13, 1895
John G. Davis Ditch	John G. Davis	South fork of the Republican river	5.28	.93	12.10	July 6, 1895	Sept. 23, 1895
Pugh Ditch	John J. Pugh	Spring creek, underflow, etc., Secs. 34, 35, T. 6 S., R. 46 W.	5.28	1.20	12.10	Feb. 17, 1896	Apr. 1, 1896
L. Glass Davis Ditch	Leah Glass Davis	South fork of the Republican river	.....	.74	10.00	Apr. 20, 1896	July 20, 1896
Corliss No. 2 Ditch	Albert N. Corliss	South fork of the Republican river	2.64	.40	12.10	May 6, 1896	Aug. 7, 1896

a No capacity claimed for ditch.

b Amended filing notes, change in line of ditch, extension of same and claims priority on seepage water.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 50, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Missouri Ditch	Alpha Parsons	Troublesome creek	8.00	3.25	10.00	Nov. 13, 1895	Nov. 27, 1895
Parsons' Ditch	Alpha Parsons Henry M. Kurtz	Troublesome creek	8.00	.80	4.00	Nov. 17, 1895	Nov. 27, 1895
Sulphur Gulch Ditch	Effie E. Fitch	Sulphur Gulch creek	10.00	1.50	8.00	June 14, 1893	June 25, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 51, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a Ostrander Ditch	Daniel W. Ostrander	Frasier river	.....	.75	.....	Apr., 1885	Jan. 10, 1895
Home No. 1 Ditch	John Rohan	Corrall creek	8.00	.75	4.166	1882	Jan. 18, 1896
Home No. 2 Ditch	John Rohan	Williams fork	8.00	1.125	5.064	1886	Jan. 18, 1896
No. 1 Ditch	John Rohan Carrie Rohan	North fork of Bull Run creek	6.00	.74	2.72	1885	Jan. 18, 1896
No. 2 Ditch	John Rohan Carrie Rohan	Bull Run creek	6.00	.75	3.54	1885	Jan. 18, 1896
No. 3 Ditch	John Rohan Carrie Rohan	Bull Run creek	6.00	.55	2.72	1885	Jan. 18, 1896
No. 4 Ditch	John Rohan Carrie Rohan	South fork of Bull Run creek	6.00	.17	2.72	1885	Jan. 18, 1896
No. 5 Ditch	John Rohan Carrie Rohan	Bull Run creek	6.00	.32	1.965	1885	Jan. 18, 1896
Gregg Ditch	W. C. Gregg	South fork of Grand river	3.50	1.00	8.33	June 1, 1890	Mar. 10, 1896
b Rich Ditch	John L. Gardner M. F. Vulgamott	Crooked creek	3.00	2.00	.....	May 20, 1895	May 12, 1896
c Grand River Ditch System	Water Supply and Storage Co., per Alfred A. Edwards, President	Grand river, branch of	15.84	.....	550.74	.....	Sept. 4, 1896

Bennett Ditch Feeder	Water Supply and Storage Co., per Alfred A. Edwards, President	Grand river, branch of	------	------	10.00	Sept. 1, 1890	Sept. 4, 1896
Grand River North Ditch Feeder	Water Supply and Storage Co., per Alfred A. Edwards, President	Grand river, branch of	15.84	------	357.48	June 7, 1896	Sept. 4, 1896
Grand River South Ditch Feeder	Water Supply and Storage Co., per Alfred A. Edwards, President	Grand river, branch of	26.40	------	183.26	June 7, 1896	Sept. 4, 1896
Grand River Ditch	The National Land and Irrigation Co	Grand river, branch of	5.28	------	97.35	July 13, 1896	Oct. 8, 1896
Willow Ditch	William Arundale	Smith creek	4.00	1.30	2.46	June 1, 1892	Oct. 24, 1896
Farris South Side Ditch	W. P. Farris	Grand river	2.50	1.50	4.60	----------	Oct. 28, 1896
Grand River Ditch	J. P. Johnson	Grand river, branch of	5.28	------	97.35	Sept. 14, 1896	Nov. 26, 1890

a No capacity claimed for ditch.

b No capacity claimed for ditch.

c This filing embraces the appropriation of water, as given in next three filings which are feeders to it.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 52, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Outlet Ditch	Samuel Oxford	Surprise reservoir	16.00	4.00	8.00	Oct. 15, 1893	May 9, 1895
Stark Ditch	Francis M Stark	Rock creek	76.00	1.46	2.00	May 20, 1894	Sept. 5, 1895
Box Cañon Ditch	John L. Conger	Box Cañon creek	15.00	1.15	3.00	May 1, 1894	May 6, 1896
Castle Ditch	John L. Conger	Castle creek	15.00	.80	1 50	May 1, 1893	May 6, 1896

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO 52, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a Surprise Reservoir	Samuel Oxford	T. 2 S., R. 83 W		2,395,158	Oct. 15, 1893	May 9, 1895

a Statement fails to give source of supply; probably a natural pond, or lake, enlarged.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 53, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a Black Tail Ditch	Charles H. Mugrage	Black Tail creek	66.00	1.25	.....	May 1, 1893	Dec. 3, 1894
b Russell Ditch	William C. Russell	Red Dirt creek—south fork	16.00	.60	10.00	Nov. 20, 1888	Apr. 26, 1895
Little Mesa Ditch	William C. Russell	Red Dirt creek—north fork	16.00	.32	8.00	June 11, 1894	Apr. 26, 1895
c Outlet Ditch	Samuel Perkins	Sutton creek and Perkins reservoirs Nos. 1 and 2	.....	.....	.....	Nov. 2, 1894	June 26, 1895

a Capacity given, "about 200 cubic inches of water per second of time."

b For the most part the channel of creek is utilized for the main ditch.

c No capacity of ditch given.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 53, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Perkins Reservoir No. 1	Samuel Perkins	East fork Sutton creek		5,189 280	Nov. 2, 1894	June 26, 1895
Perkins Reservoir No. 2	Samuel Perkins	East fork Sutton creek		2,912 507	Nov. 2, 1894	June 26, 1895

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 54, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Willow Creek Extension Ditch	The Four-Mile Placer Mining Co	Willow Creek	.....	.....	60.70	Nov. 13, 1894	Jan. 7, 1895
a Reservoir Supply Ditch	The Four-Mile Placer Mining Co	Four-Mile creek	.....	.....	145.60	Nov. 12, 1894	Jan. 7, 1895
Routt County Canal	J. G. Rankin	Snake river	3.00	40.30	1375 00	Feb. 8, 1895	May 3, 1895
b Pionere Mining Ditch	William T. Morgan ..... Alfred M. McCargar	Snake river	5.00	35.00	80.00	Feb. 8, 1895	May 9, 1895
Gold Standard Ditch	George Welch, et al	Snake river	4.00	29.63	145.80	Mar. 22, 1895	May 21, 1895
Gold Standard Feeder Ditch	George Welch, et al	Slater's fork	4.00	6 63	119.50	Mar. 22, 1895	May 21, 1895
Woodbury Ditch	John W. Woodbury	Snake river	3.00	1.00	2.37	Sept. 1, 1895	Oct. 26, 1895
West Side Canal	The West Side Mining Association	Snake river	4.00	29.00	115.00	July 20, 1895	Dec. 18, 1895
Home Supply Ditch	Frank Potts ..... O. P. Beeler	Snake river	.....	.....	6.00	Apr. 12, 1896	May 18, 1896
c Gold Standard Ditch (amended)	Peter F. Welch	Snake river, part	4.22	18.25	126.20	Mar. 22, 1895	July 3, 1896
c Gold Standard Ditch	Peter F. Welch	Slater fork or creek, part	4.22	10.00	193.90	Mar. 22, 1895	July 3, 1896

c Gold Standard Ditch	Peter F. Welch	Battle creek, Wyoming, part	4.22	2.17	99.00	May 16, 1896	July 3, 1896
Gold Standard Ditch (main ditch)	Peter F. Welch		4.22	36.125	248.10	Mar. 22, 1895	July 3, 1896

a Plat shows a reservoir, of which no particulars are furnished.

b Appropriation claimed for mining, agriculture and other beneficial purposes.

c These are separate ditches, feeders of the main ditch.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 55, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Majors' Irrigating Ditch	Ben C. Majors	Snake river	3.00	2.00	30.00	Dec. 1, 1889	Sept. 9, 1895

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 57, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
The Kansas Placer Mining Ditch	George A. Johnson J. R. Butler	Little Bear creek	5.00	.....	15.00	Nov. 5, 1894	Jan. 14, 1895
Coal Bank Ditch	Darwin H. Smith	Dry creek	4.00	.....	2.00	June 18, 1895	June 27, 1895
Magden Ditch	Charles Magden	Dry creek	.....	.....	3.00	June 24, 1895	June 27, 1895
Coe and B. Ditch	C. E. Baker	Little Cottonwood creek	25.00	.....	9.00	July 8, 1895	July 31, 1895
Redbird Ditch	Joseph J. Kleckner	Trout creek	4.00	.64	3.94	July 17, 1895	Aug. 16, 1895
a Straight Line Irrigating Ditch	W. H. Rose	Fortification creek	5.00	.....	6.00	July 6, 1896	July 17, 1896

a Filing also includes, "Seepage water and undercurrent feeder to said ditch," Sec. 36, T. 7 N., R. 91 W.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 58, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a Homer Buttrick's Irrigating Ditch, first enlargement	Isaac Bijou	Watson's creek	.....	.44	8.00	Oct. 1, 1894	Dec. 13, 1894
Dome Creek Ditch	Francis M. Hall Phillip Sterner	Dome creek	40.00	.20	7.00	July 23, 1893	Jan. 2, 1895
F. M. Hall's Lower Ditch	Francis M. Hall	Egeria creek and Dome creek ditch	.....	1.00	20.00	May 19, 1891	Jan. 2, 1895
H. P. Williams Ditch No. 1	H. P. Williams	Middle branch of Deep creek	8.00	.....	3.00	May 1, 1895	July 17, 1895
H. P. Williams Ditch No. 2	H. P. Williams	Renfro creek	8.00	.....	3.00	May 1, 1895	July 17, 1895
The Lindsay and Carle Ditch	T. P. Lindsay W. W. Carle	Elgin creek	.....	.35	6.00	July 1, 1894	July 22, 1895
The Drown Ditch	Frank O. Drown	Salt creek	4.00	.....	5.00	June 12, 1895	July 30, 1895
Durham Ditch	Robert T. Smith	Salt creek, dry fork of	12.00	2.00	4.23	July 13, 1895	Aug. 16, 1895
Operators Ditch	M. J. Powers Elmer Hoag	South fork Hunt and Park creeks	16.00	3.50	18.00	June 29, 1895	Sept. 25, 1895
Sand Creek Ditch	Frederick Akhurst	Sand creek	6.66	3.50	5.00	Nov. 1, 1895	Jan. 11, 1896
b John A. Draper Ditch	John A. Draper	Spring creek	.....	.....	6.00	May 15, 1890	Apr. 10, 1896
Hayden Trail Ditch	Andrew Rowan Robert Helvey	Deep creek, south fork of	4.00	.....	10.00	May 29, 1896	June 24, 1896

Consolidated Mining Ditch	Homestead Placer Gold Mining Co	Trout creek	8.00	5.20	135.00	June 16, 1896	Aug. 10, 1896
Miller Ditch	Geo. W. Miller	Sawmill branch of Deep creek	8.00	------	3.00	July 7, 1896	Aug. 14, 1896
Big Mesa Ditch	E. D. Eaton, et al	Yampa river	6.00	2.34	36.00	Sept. 17, 1888	Sept. 3, 1896
J. H. Myers No. 1 Ditch	Eben Rich Myers' heirs	Oak creek	6.00	.25	2.50	Sept. 1, 1887	Sept. 12, 1896
J. H. Myers No. 2 Ditch	Eben Rich	Oak creek	6.00	.50	2.50	----------	Sept. 12, 1896
Oakdale Ditch	Eben Rich	Oak creek	6.00	1.50	5.00	Oct. 1, 1895	Sept. 15, 1896
J. H. Myers No. 2 Ditch	Eben Rich Myers' heirs	Oak creek	6.00	.50	2.00	May 1, 1888	Sept. 15, 1896
Keystone Ditch	Eben Rich	Cottonwood creek	16.00	1.12	5.00	July 16, 1896	Oct. 16, 1896

a Appropriation claimed, due to this enlargement, 4 second-feet.

b The grade "conforms to the natural slope of the ground to where it is used for irrigation."

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 59, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Schneider Ditch No. 1	Philipp Schneider	Baxter creek	50.00	.56	7.40	June, 1894	Oct. 2, 1895
Schneider Ditch No. 2	Philipp Schneider	Slate river	32.00	.45	11.80	June, 1895	Oct. 2, 1895
Rhamy Ditch	George W. Rhamy	Elk creek	13.00	3.00	4.00	May 1, 1892	Oct. 8, 1895
Cunningham Ditch	A. F. Cunningham	Big Mill creek	6.00	3.40	12.50	June 1, 1896	June 29, 1896
The Elk Creek Carpenter Ditch	O. W. Carpenter	Little Elk creek	6.00	1.00	5.60	July 21, 1896	Aug. 4, 1896
Soap Creek Ditch	H. S. Carpenter, et al	Sapinero creek	20.00	------	15.30	Aug. 1, 1893	Oct. 22, 1896
Lone Pine-Bessee and Lightly Ditch	Camilla Bessee Geo. Lightly	Waste water, Lone Pine and May Bohm ditches	17.42	2.32	12.26	Oct. 8, 1896	Oct. 28, 1896
The Sapinero Ditch	T. L. Carpenter L. M. Carpenter	Sapinero creek	40.00	------	19.70	May 15, 1888	Oct. 29, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 60, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Deer Lick Ditch	William H. Sockrider	Lost creek	12.80	2.00	3.73	June 20, 1894	Dec. 6, 1894
Nielson Ditch	Hans L. Nielson	Alder creek	12.80	2.75	4.65	Apr. 12. 1894	Dec. 6, 1894
Springer Ditch	Edward Springer	Summit creek	13.33	.48	4.09	Oct. 27, 1891	Dec. 6, 1894
a Gold Run Ditch and Feeder Ditch	Max Hippler Chas. H. Byfield	Alder creek and Lost creek	9.00	.92	13.33	May 1, 1889	Dec. 6, 1894
Summit Creek Ditch	J. Henry Adams	Summit creek	20.00	.14	1.91	May 25, 1891	Dec. 6, 1894
Mt. Wilson Mesa Ditch	N. T. Bowman, et al	Bear creek	15.84	.54	30.85	June 2, 1890	Dec. 6, 1894
Bennett Ditch	A. L. Bennett S. W. Bennett	East fork of Naturita creek	20.00	1.27	7.80	July 1, 1888	Dec. 6, 1894
Navajo Ditch	George D. Suthard A. T. Woods	Elk creek	12.80	1.57	15.00	Sept. 1, 1890	Dec. 10, 1894
The Naturita Cattle and Land Co. Ditch	The Naturita Canal and Reservoir Co	West Beaver creek	12.80	20.00	57.40	Apr. 15, 1884	Feb. 11, 1895
Curtis Stockdale No. 2 Ditch	L. L. Anderson Fred Anderson	Middle fork of Naturita creek	52.80	.36	4.58	May 5, 1892	Jan. 14, 1895
Curtis Stockdale No. 1 Ditch	L. L. Anderson Fred Anderson	Middle fork of Naturita creek	52.80	.37	6.70	May 1 1888	Jan. 14, 1895

a Gold Run Feeder Ditch, a separate ditch, a quarter of mile long, headgate on Alder creek.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 60, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Grove Ditch	L. L. Anderson Fred Anderson	Naturita creek	105.60	.156	7.50	Mar. 25, 1883	Jan. 14, 1895
Adsit Ditch	I. B. Porter	West fork of Naturita creek	52.80	.33	8.70	July 15, 1885	Jan. 14, 1895
W. H. Nelson Ditch	W. H. Nelson	East fork of Naturita creek	52.80	.62	4.58	Aug. 19, 1894	Jan. 28, 1895
Smuggler Ditch	Sadie C. Tozer	Maverick draw	-	.83	3.00	May 20, 1888	Mar. 13, 1895
b Disappointment Ditch, first enlargement	J. W. Westcott, et al	Disappointment creek	13.00	3.00	1150.00	Apr. 2, 1894	Mar. 18, 1895
Miller Springs and Adams Spring Ditch	J. A. Adams	Springs, Sec. 23, T. 46 W., R. 12 E.	52.00	.50	2.50	May, 1881	Aug. 12, 1895
The Colony High Line Ditch	The Colorado Co-operative Co	San Miguel river	5.28	15.25	166.00	Nov. 2, 1895	Dec. 16, 1895
Elk Creek No. 2 Ditch	J. C. Thomason George H. Ross	Elk creek and Spruce creek	8.00	1.08	1.64	May 1, 1895	Jan. 8, 1896
Patterson Ditch	C. F. Patterson	Anderson creek or Maverick draw	.83	------	1.50	Mar. 1, 1893	Feb. 13, 1896
Manley Ditch	Jesse T. Manley	Spring, Sec. 21, T 45 N., R. 13 W., N.M.P.M.	------	-	2.00	Feb. 24, 1896	Mar. 28, 1896

Truax and Williams Lateral	Charles Truax, et al	Lone Cone ditch and seepage, etc., Secs. 28, 21, 16, 17, T. 45 N., R. 13 W	10.00	4.20	8.00	Mar. 28, 1892	May 22, 1896
San Miguel and Paradox Canal	Benj. Robinson, et al	San Miguel river	5.28	45.00	495.00	Aug. 4, 1896	Aug. 18, 1896
Lost Cedar Ditch	Lucy E. Copp	Marverick draw	12.00	1.00	1.00	July 29, 1896	Aug. 26, 1896
Naturita Canal and Reservoir Co 's enlargement of Main Ditch and East Beaver Water Right	Naturita Canal and Reservoir Co	Beaver creek and branches	12.80		291.60	Sept., 1892	Oct 23, 1896
Bilk Creek Ditch	George H. Wade, et al	Bilk creek	10.56	5.00	20.00	Aug. 13, 1896	Nov. 4, 1896
Main Beaver Ditch	L. J. Gray, et al	Beaver creek	16.00	22.00	35 00	Aug. 16 1896	Nov 16, 1896
The Climax Ditch	J. H. Martin, et al	San Miguel river	16.00	1.00	6.00	Oct 15, 1896	Nov. 20, 1896
The Dixie Ditch	J. H Martin, et al	San Miguel river	16.00	1.00	6.00		Nov 20, 1896

b Increased capacity claimed, due to this enlargement, 950 second-feet. Dimensions of original and enlarged ditch are given the same.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 60, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Reservoir No. 1	The Naturita Canal and Reservoir Co	West Beaver creek	The Naturita Cattle and Land Co. ditch	871,200,000		Feb. 11, 1895
Naturita Canal and Reservoir Co.—						
Reservoir No. 1	The Naturita Canal and Reservoir Co	Beaver creek and ditches		1,119,492,000		Oct. 23, 1896
Reservoir No. 2	The Naturita Canal and Reservoir Co	Beaver creek and ditches		1,135,803,200		Oct. 23, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 61, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Gypsum Valley Ditch	L. L. Anderson Fred Anderson	Dolores river	4.00	1.52	4.20	Mar., 1889	June 25, 1895
Ray Ditch	Thomas Ray, et al	Deep creek in Utah, via West Paradox creek	8.00	1.64	20.63	May 14, 1894	Mar. 11, 1896

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 62, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Willow Creek Ditch	E. E. Shinn	Willow creek	10.00	2.29	17.76	Oct. 1, 1894	Dec. 19, 1894
Powderhorn Ditch	E. A. McGregor	Powderhorn creek	.....	.40	5.00	May 5, 1895	Mar. 11, 1896
McGregor Ditch	E. A. McGregor E. A. McGregor, Jr	Cebolla creek	6.66	.30	7.85	May 3, 1895	Mar. 11, 1896
Sammons Ditch	E. A. McGregor W. P. Sammons	Cebolla creek	.....	.46	7.50	June 10, 1890	Mar. 11, 1896
Bowers Ditch	E. J. Bowers	Cebolla creek	.....	.26	11.10	Jan. 31, 1883	Mar. 11, 1896
M. B. and A. Ditch	E. A. McGregor, et al	Cebolla creek	.....	1.50	7.88	June 30, 1882	Mar. 11, 1896
Sammons Ditch No. 2	Wm. P. Sammons	Cebolla creek	10.00	.65	36.00	1884	Apr. 9, 1896
Sammons Ditch No. 3	Wm. P. Sammons	Cebolla creek	10.00	.15	18.00	Feb. 3, 1896	Apr. 9, 1896
Holroyd Ditch	Samuel Holroyd	Elk creek	49.60	1.10	21.00	June 26, 1896	July 1, 1896
Thompson Ditch No. 2	John N. Thompson	Elk creek	50.00	1.10	16.00	May 1, 1894	Aug. 10, 1896
The Hyman Ditch	David M. Hyman	Cebolla creek	5.20	.....	13.00	June 25, 1896	Nov. 6, 1896

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 62, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
a Deer Horn Reservoir	H. R. Morris H. C. Rhine	Springs, etc., Sec. 25, T. 47 N., R. 3 W.		1,793,000	Oct. 6, 1895	June 13, 1896

a This storage water is for domestic, mining and milling purposes.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 63, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a The Booth Ditches	George M. Booth	West creek	6.50	------	2.50	July 13, 1895	Oct. 12, 1895
Burg No. 1 Ditch	Charles Burg	Fish creek	20.00	.50	2.50	Aug. 22, 1895	Nov. 8, 1895
Burg No. 3 Ditch	Charles Burg	Turner creek	20.00	.625	2.50	Sept. 4, 1895	Nov. 8, 1895

a There are two short ditches taken from either side of the creek; dimensions, same for each; capacity claimed, 1.25 second-feet for each.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 64, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Fuller Brothers Ditch	Henry R. Fuller Harland Fuller	South Platte river	3.00	3.00	24.00	Sept. 27, 1894	Dec. 6, 1894
Batten Ditch	William C. Batten	South Platte river	2.11	1.50	42.00	Sept. 30, 1894	Dec. 11, 1894
The North Reservation Ditch	A. J. Keigwin	South Platte river	2.64	3.00	44.00	Sept. 3, 1894	Dec 13, 1894
Carlson Ditch	S. H. Carlson	South Platte river	2.50	4.42	16.00	Dec. 1, 1894	Feb. 28, 1895
Powell Ditch	W. J. Powell	South Platte river	2.11	.61	84.00	Feb. 19, 1895	Mar. 6, 1895
Atwood Ditch	Henry Williams, et al	South Platte river	2.11	1.25	84.00	Mar. 18, 1895	Apr. 9, 1895
"J B" Ditch	Walter I. Brush	South Platte river	2.11	5.00	115.50	Mar. 11, 1895	Apr. 2, 1895
Morgan Ditch	D. B. Morgan	South Platte river	1.05	1 50	6.00	Nov. 10, 1894	May 8, 1895
a Batten Ditch, enlargement	William C. Batten	South Platte river.	2.11	1.50	50.00	Apr. 15, 1895	May 20, 1895
Little Annie Ditch	Frederick Meineke Johann Freiberg	South Platte river	3.00	------	40.00	Mar. 15, 1895	May 25, 1895
Peterson Canal	The Peterson Canal and Reservoir Co	South Platte river	2.11	19.67	164.00	Mar. 1, 1895	May 29, 1895
South Divide Canal	Ernest Weishaar	South Platte river	1.58	24.44	303.96	Mar. 25, 1895	June 24, 1895

a Increased capacity claimed, due to this enlargement, 8 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 64, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
b Ramsey Ditch, enlargement	J. W. Ramsey	South Platte river	2.11	5.00	48.00	Mar. 24, 1895	June 25, 1895
c Harmony Ditch	Charles D. McPhee John K. Mullen	South Platte river	2.11	6.00	252.00	Apr. 22, 1895	July 5, 1895
d Huston No. 2, Ditch and Feeder	G. C. Huston	South Platte river	1.58	12.00	219.00	July 19, 1895	July 26, 1895
Lone Tree Ditch	Sam B. Rice	South Platte river	1.58	8.50	82.00	July 24, 1895	July 30, 1895
Chambers Ditch	J. R. Chambers	South Platte river	1.58	7.00	129.00	May 4, 1895	Aug. 1, 1895
The Farmer's Ditch	W. I. Brush, et al	South Platte river	2.11	3.00	48.00	July 11, 1895	Sept. 17, 1895
Davis Bros. Ditch	Edward Davis, et al	South Platte river	2.00	5.00	80.00	Sept. 20, 1894	Oct. 8, 1895
South Platte Waste Water Ditch	A. G. Sherwin, et al	Waste water of the South Platte ditch	2.11	1.90	36.00	Sept. 4, 1895	Oct. 10, 1895
Cramer Ditch	J. M. Cramer	South Platte river	2.11	1.50	10.00	Oct. 8, 1895	Nov. 20, 1895
The Farmer's Ditch and Reservoir Co. Ditch	W. S. Jenkins, et al	South Platte river	1 58	8.00	82.00	Nov. 11, 1895	Nov. 25, 1895
Red Lion Supply Ditch	F. O. Bell	South Platte river	2.00	4.00	52.00	Oct. 31, 1895	Dec. 4. 1895
The Miller Ditch	Edward Miller	South Platte river	2.30	2.00	8.00	Oct. 18, 1895	Jan 15, 1896
e Lone Tree Ditch, first enlargement	Sam B. Rice	South Platte river	1.58	15.00	162.00	Oct. 11, 1895	Jan. 16, 1896
f Lillian Springs Ditch (amended and enlarged)	Sam B. Rice	South Platte river	1.58	8.00	132.00	Apr. 3, 1895	Jan. 16, 1896

Pawnee Pass Ditch	Charles Howe James T. Chapman	Pawnee creek	2.30	1.70	18.00	Feb. 27, 1896	Mar. 26, 1896
Irrigation, Drainage and Reservoir Ditch	F. J. Henderson I. T. Gillett	Springs, seepage, etc., S. 30, T. 8 N., R. 52 W	1.58	10.00	40.00	Apr. 7, 1896	Apr. 25, 1896
g Lone Tree Ditch (amended filing)	Sam B. Rice	South Platte river	1.58	15.00	162.00	Oct. 11, 1895	May 13, 1896
Smith and Upson Ditch (amended filing)	Edward C. Smith William G. Upson	Moore's creek and South Platte river	2.11	3.011	31.01	June 25, 1896	Sept. 21, 1896

b Increased capacity claimed, due to this enlargement, 22 second-feet.

c Statement includes a lateral, 15 feet wide, 6 miles long.

d Feeder is to secure seepage, underflow, etc., along river; Secs. 30, 29, 21, T. 9 N., R. 51 W.

e Increased capacity claimed, due to this enlargement, 80 second-feet.

f Increased capacity claimed, due to this enlargement, 108.1 second-feet.

g Amended filing records an enlargement; increased capacity claimed, due to this enlargement, 80 second-feet.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 65, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
The See Bar See Land and Cattle Co. and O'Donnell Ditch	The See Bar See Land and Cattle Co. Edmund O'Donnell	North fork of Republican river	5.28	1.50	26.80	June 1, 1887	Jan. 14, 1895
The Carroll and Gilmore Ditch	F. A. Carroll F. E. Gilmore	Workman creek or Jack creek	3.00	1.00	20.21	Oct. 27, 1894	Jan. 25, 1895
The Chief Creek Ditch	William L. Doling, et al	Chief creek	5.28	1.60	32.50	Nov. 14, 1894	Feb. 19, 1895
The Sisson Chief Creek Ditch	Nathaniel Sisson	Chief creek	5.28	3.80	50.00	Feb. 5, 1895	Mar. 22, 1895
Adolph Thieltre's Ditch	Adolph Thieltre	Devil's Cañon creek	2.64	.60	8.00	Mar. 24, 1895	May 13, 1895
a Mason's Extension of the Wray Ditch	Mrs. L. H. Mason	No. fork Republican river via Wray ditch	5.28	1.80	22.95	May 13, 1895	Aug. 8, 1895
Olive Creek Ditch	The See Bar See Land and Cattle Co.	Olive creek	5.28	1.00	23.00	Sept. 21, 1895	Sept. 30, 1895
b Jas. B. Lamar Ditch, enlargement	Jas. B. Lamar	Frenchman creek	11.00	.50	5.00	Aug. 4, 1895	Oct. 16, 1895
W. C. G. Ditch	W. C. Grigsby	Lawyer's draw	5.28	.28	8.00	Nov. 1, 1895	Nov. 19, 1895
Whitney L. Irwin Ditch	Whitney L. Irwin	Frenchman creek	10.00	3.00	30.00	Oct. 31, 1895	Jan. 29, 1896
Leonard Reservoir Outlet	Geo. W. Leonard, et al	Leonard reservoir	5.28	------	21.12	Mar. 26, 1894	Feb. 19, 1896
Dearmond Irrigation Ditch No. 1	Thomas E. Dearmond	Chief creek	6.63	1.75	3.00	May 28, 1896	Aug. 10, 1896

a Headgate is at end of Wray ditch.

b Increased capacity claimed, due to this enlargement, 3 second-feet.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 65, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
Campbell Reservoir No. 1	Mary J. Campbell	Springs, etc., Sec. 6, T. 1 N., R. 43 W		32,250	May 7, 1891	Nov. 26, 1895
Campbell Reservoir No. 2	Mary J. Campbell	Springs, etc., Sec. 6, T. 1 N., R. 43 W		117,000	May 7, 1891	Nov. 26, 1895
a Irwin Reservoirs	Whitney L. Irwin	Frenchman creek	Whitney L. Irwin ditch	545,000		Jan. 29, 1896
Leonard Reservoir	Geo. W. Leonard, et al	Black Wolf creek		4,600,000	Nov. 20, 1895	Feb. 19, 1896

a There are three proposed reservoirs, their combined capacities as given in table.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 67, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL.	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
a Amity canal, enlargement and extension	The Amity Land and Irrigation Co	Arkansas river, Big Sandy, Cottonwood, Buffalo and Horse creeks	1.58	81.00	950.00	Nov. 3, 1894	Jan. 30, 1895
b The Wm. S. Gatson Ditch	Wm. S. Gatson	Slough, Secs. 21, 22, T. 22 S., R. 49 W	1.71	1.70	6.00	Mar. 11, 1895	Mar. 20, 1895
Pleasant Valley Ditch and Reservoir System—							
c Ditch No. 1	D. L. Gilbert	Pleasant valley stream or basin	3.00	------	9.00	Mar. 2, 1895	May 25, 1895
c Ditch No. 2	D. L. Gilbert	Pleasant valley stream or basin	3.00	------	9.00	Mar. 2, 1895	May 25, 1895
c Ditch No. 3	D. L. Gilbert	Pleasant valley stream or basin	3.00	------	9.00	Mar. 2, 1895	May 25, 1895
Dostal Ditch	Joseph O. Dostal	Big Sandy creek	4.40	------	3.00	May 1, 1895	Aug. 2, 1895
d The Surface and Underflow Ditch	The Surface and Underflow Ditch Co	Arkansas river and seepage, etc., T. 22, 23 S., R. 41, 42, 43, 44 W	5.28	17.40	177.00	Oct. 1, 1894	Nov. 11, 1895
Graveyard Ditch	F. M. Brown	Graveyard creek	------	1.40	10.00	Oct. 13, 1895	Dec. 2, 1895
Ideal Ditch and Feeder	A. E. Bent	Markham arroya, seepage, etc., Sec. 20, 29, T. 22 S., R. 46 W	------	------	23.00	Mar. 28, 1892	Jan. 2, 1896

Strain Ditch	M. Strain	Kuhn arroya, springs, seepage, etc., Secs. 16, 21, 22, T. 22 S., R. 42 W.	3.00	2.46	15.00	Sept. 16, 1895	Feb. 20, 1896
Sapp Ditch	B. J. Sapp	Wild Horse creek, springs, seepage, etc., Secs. 16, 21, 22, T. 22 S, R. 42 W.	5.00	.67	12.00	Jan. 27, 1896	Feb. 27,
Sand Creek Ditch	W. N. Caler, Jr.	Big Sandy creek, seepage, etc., Secs. 8, 9, 16, 21, 22, T. 22 S., R. 45 W	2.64	3.00	32.00	Dec. 7, 1895	Mar. 2, 1896
Boggs Creek Ditch	W. N. Caler, Jr.	Boggs creek, seepage, etc., Secs. 26, 27, 28, T. 22 S., R. 44 W.	2.64	2.70	32.00	Dec. 4, 1895	Mar. 2, 1896
Bagdad Ditch	Frank Anderson	Big Sandy creek, underflow, seepage, etc., T. 10 S., R. 55 W.	5.28	3.70	160.00	Mar. 12, 1896	Mar. 19, 1896
Eau Clare Ditch	James W. Odle	Springs, seepage, etc., Secs. 9, 16, 15, T. 22 S., R. 49 W.	6.00	.....	6.00	Mar. 20, 1896	Mar. 26, 1896
Star Valley Ditch	S. H. Huffman	Springs, seepage, etc., Secs. 28, 29, 32, T. 21 S., R. 47 W.	5 28	3.00	10.00	Jan. 21, 1896	Mar. 27, 1896
McKibbon Short Line Ditch	Robert A. McKibbon	Pleasant valley springs, seepage, etc., Secs. 17, 20, 21, T. 22 S., R. 47 W.	5.28	1.35	10.00	Feb. 24, 1896	Apr. 8, 1896
The High Line Ditch and Reservoir System Ditch	D. L. Gilbert	Pleasant valley, seepage	3.00	.....	10.00	Jan., 1896	Apr. 8, 1896

a Capacity claimed prior to enlargement, 410 second-feet; dimensions and grade change at several points. Storm water claimed from Big Sandy, Cottonwood and Buffalo creeks, 100 second-feet from each, and 50 second-feet from Horse creek.

b Below the head the grade increases, due to the lay of land; total fall, 19.2 feet.

c These are outlets from Reservoirs Nos. 1, 2 and 3 respectively.

d Statement includes a feeder, length and dimensions not supplied, that collects "waste, seepage and spring waters."

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 67, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896—Concluded.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second-feet	Date of appropriation	Date of filing in office of State Engineer
Godley Ditch	W. M. Godley	Seepage, etc., Secs. 19, 20, T. 22 S., R. 45 W., in Hyde valley	4.22	1.20	10.00	Jan. 22, 1896	Apr. 14, 1896
West Water Ditch	Oscar E. Vincent	West Water creek	4.22	1.50	10.00	Feb. 5, 1896	Apr. 17, 1896
e The Pleasant Valley and Great Bend Ditch and Reservoir System—							
Ditch No. 1	Margaret S. Taylor	Seepage, etc., T. 21 S., R. 47, 48 W	1.50	------	4.00	Jan. 30, 1896	Apr. 30, 1896
Ditch No. 2	Margaret S. Taylor	Seepage, etc., T. 21 S., R. 47, 48 W	1.50	------	4.00	Jan. 30, 1896	Apr. 30, 1896
Ditch No. 3	Margaret S. Taylor	Seepage, etc., T. 21 S , R. 47, 48 W	1.50	------	4.00	Jan. 30, 1896	Apr. 30, 1896
Ditch No. 4	Margaret S. Taylor	Seepage, etc., T. 21 S., R. 47, 48 W.	1.50	------	4.00	Jan. 30, 1896	Apr. 30, 1896
f Blosser and Bowser Ditch	Green S. Blosser Rolan Bowser	Kuhu valley	------	4.54	5.00	Feb. 17, 1896	May 11, 1896
Brumfield Ditch	William I. Brumfield	Buffalo creek, waste, seepage, etc., T. 22 S., R. 43 W	5.00	2.25	6.00	Feb. 18, 1896	May 12, 1896

East Bison Ditch	W. N. Coler, Jr	Buffalo creek, sp'gs, seepage, etc., T. 22 S., R. 43, 44 W	5.28	1.80	20.00	Mar. 10, 1896	June 8, 1896
West Bison Ditch	W. N. Coler, Jr	Buffalo creek, sp'gs, seepage, etc., T. 22 S., R. 43, 44 W	5.28	2.60	20.00	Mar. 10, 1896	June 8, 1896
g Buffalo Creek Ditch	The Buffalo Creek Irrigation Co	Arkansas river and natural spring or seepage waters of	5.28	17.40	177.00	Oct. 1, 1894	Aug. 27, 1896
		Wild Horse creek	------	------	25.00	------	------
		Dead Man's gulch	------	------	25.00	------	------
		Buffalo creek	------	------	25.00	------	------
Gates Ditch	The Gates Live Stock Co	Big Sandy creek	3.00	1.50	5.00	[illegible]	Sept. 19, 1896
Cheyenne Creek Ditch	John Hess & Co	Cheyenne creek and seepage, etc., Sec. 32, T. 22 S., R. 41 W	2.00	------	4.00	Aug. 26, 1896	Nov. 11, 1896

e Statement mentions two reservoirs of which no particulars are supplied.

f Capacity claimed for ditch, 5 second-feet; appropriation claimed, due to same, 2.88 second-feet.

g Headgate and alignment of this ditch transferred to the headgate and alignment of the Surface and Underflow Ditch which has been purchased, and is hereafter to be known as the Buffalo Creek Ditch. The appropriations of both ditches are now claimed by the Buffalo Creek Ditch to be taken at its new headgate; 25 second-feet are also claimed from each of the following creeks which are crossed by the line of the canal, viz.: Wild Horse Creek, Dead Man's Gulch and Buffalo Creek.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 67, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
The Pleasant Valley Ditch and Reservoir System—						
Reservoir No. 1	D. L. Gilbert	Pleasant Val. stream or basin		36,000	Mar. 2, 1895	May 25, 1895
Reservoir No. 2	D. L. Gilbert	Pleasant Val. stream or basin		360,000	Mar. 2, 1895	May 25, 1895
Reservoir No. 3	D. L. Gilbert	Pleasant Val. stream or basin		600,000	Mar. 2, 1895	May 25, 1895
a McCauley and Pierce Reservoir	M. R. McCauley J. A. Pierce	Donlon draw, seepage, etc., T. 22, 23 S., R. 41, 42, 43, 44 W			May, 1893	Aug. 19, 1895
The High Line Ditch and Reservoir System—						
Reservoir No. 1	D. L. Gilbert	Pleasant Valley, seepage, etc., T. 21 S., R. 47, 48 W		3,659,040	Jan., 1896	Apr. 8, 1896
Reservoir No. 2	D. L. Gilbert	Pleasant Valley, seepage, etc., T. 21 S., R. 47, 48 W		1,306,800	Jan., 1896	Apr. 8, 1896

Godley Reservoir	W. M. Godley	Seepage, etc., Secs. 19, 20, T. 22 S., R. 45 W.		120,000	Jan. 22, 1896	Apr. 14, 1896
b West Water Reservoir	Oscar E. Vincent	West Water creek			Feb. 5, 1896	Apr. 17, 1896

a Capacity not given; area, 6.68 acres; depth not 9 feet at any point.

b Field notes give meanderings of boundary only; neither capacity nor area supplied.

TABLE

GIVING DITCH AND CANAL APPROPRIATIONS IN WATER DISTRICT NO. 68, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF DITCH OR CANAL	Name of Appropriator	Source of Appropriation	Grade, feet per mile	Length in miles	Capacity claimed in second feet	Date of appropriation	Date of filing in office of State Engineer
a Ouray City Water Works—Wehawkin Pipe Line	The City of Ouray	Wehawkin creek and a spring	280.00	2.69	3.816	1890	Aug. 9, 1895
b Ouray City Water Works—Oak Creek Pipe Line	The City of Ouray	Oak creek	58.00	.09	5.20	1881	Aug. 9, 1895

a Pipe line part of Ouray City water works system; diameter of pipe, 10 inches.

b Pipe line part of Ouray City water works system; diameter of pipe, 12 inches.

TABLE

GIVING RESERVOIR APPROPRIATIONS IN WATER DISTRICT NO. 68, RELATIVE TO WHICH STATEMENTS AND PLATS HAVE BEEN FILED IN THE OFFICE OF THE STATE ENGINEER, FROM DECEMBER 1, 1894, TO DECEMBER 1, 1896.

NAME OF RESERVOIR	Name of Appropriator	Source of Appropriation	Name of ditch conveying water thereto	Capacity claimed in cubic feet	Date of appropriation	Date of filing in office of State Engineer
New Reservoir	The City of Ouray	Wehawkin creek, and a spring via pipe line		98,135	1890	Aug. 9, 1895
Oak Creek Reservoir	The City of Ouray	Oak creek, via pipe line		34,425	1881	Aug. 9, 1895

CHAPTER V.

TABLES RELATIVE TO DECREES TO DITCHES AND RESERVOIRS.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 1, AS THEY HAVE BEEN MODIFIED SINCE THE STATEMENT PUBLISHED IN THE "FOURTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 1, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPORPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Oaks Ditch No. 1	Kiowa creek	Apr. 26, 1866	2.00	.....	.....	1
The Wendling Ditch	Killin's Spring run	Apr. 1, 1868	5.00	.....	2.00	2
The Oaks Ditch No. 2	Kiowa creek	May 1, 1868	3.00	.....	7.00	3
The Hoover Ditch	South Platte river	Apr. 20, 1869	15.00	.....	10.00	4
*The P. H. Parsons Ditch	South Platte river	Jan. 1, 1871	4.00	.....	25.00	5
*The Schultz Ditch	South Platte river	Apr. 1, 1871	7.00	.....	29.00	6
*The Dencl and Snyder Ditch	South Platte river	Apr. 2, 1871	13.00	.....	36.00	7
*The Johnson and Edwards Ditch	South Platte river	June 1, 1872	15.00	.....	49.00	8
*The Hardin Ditch	South Platte river	Jan. 1, 1873	8.00	.....	64.00	9
*The Brown and Pyott Ditch	South Platte river	June 1, 1874	8.00	.....	72.00	10
The Lone Tree Ditch and Lateral	Lone Tree creek	Sept. 5, 1874	No specified amount	.....	.....	11
The Tetsel Ditch	South Platte river	Nov. 15, 1874	17.00	.....	80.00	12

*These amounts decreed to be used between the 10th day of April and the 10th day of July in each year, upon meadow lands, irrigated prior to the construction of the ditches.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 1, AS THEY HAVE BEEN MODIFIED SINCE THE STATEMENT PUBLISHED IN THE "FOURTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 1, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Continued.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
*The Corona Ranch Ditch	South Platte river	June 1, 1875	21.00	----------	97.00	13
The Aux Ditch No. 1	Kiowa creek	Sept. 15, 1875	2.50	----------	118.00	14
The Illinois Ditch	South Platte river	June 1, 1876	27.00	----------	120.50	15
The John D. Cornell Ditch	Lone Tree creek	May 1, 1877	No specified amount		----------	16
The Deitrich Ditch No. 1	Kiowa creek	May 1, 1878	2.50	----------	147.50	17
The Deitrich Ditch No. 2	Kiowa creek	Sept. 10, 1879	1.50	----------	150.00	18
The Putnam Ditch	South Platte river	Apr. 1, 1880	10.00	----------	151.50	19
The Fred. Bachman Ditch No. 2	Kiowa creek	Mar. 20, 1881	5.50	----------	161.50	20
The Mimmack Ditch	Lone Tree ditch	Apr. 1, 1881	1.00	----------	167.00	21
The Weldon Valley Ditch	South Platte river	Oct. 26, 1881	165.00	----------	168.00	22
The I. D. Miller Ditch	Lone Tree creek	Feb. 1, 1882	1.00	----------	333.00	23
The Putnam Ditch, first enlargement	South Platte river	Apr. 26, 1882	30.00	40.00	334.00	24
The Beaver Ditch	Big Beaver creek	May 1, 1882	44.00	--------	364.00	25
The Mauldin Ditch	Running creek	May 12, 1882	1.50	----------	408.00	26

The Lone Tree Ditch	Lone Tree creek	May 15, 1882	1.50	----------	409.50	27
The Platte and Beaver Upper Ditch	South Platte river	June 20, 1882	50.00	----------	411.00	28
The Tetsel Ditch, first enlargement	South Platte river	July 1, 1882	20.00	37.00	461.00	29
The Fred. Bachman Ditch No. 3	Kiowa creek	July 3, 1882	1.00	----------	481.00	30
The Platte and Beaver Lower Ditch	South Platte river	Sept. 4, 1882	38.00	----------	482.00	31
The Fort Morgan Canal	South Platte river	Oct. 18, 1882	323.00	----------	520.00	32
The George A. Wood Ditch	Kiowa creek	Apr. 10, 1883	3.00	----------	843.00	33
The Hardin Ditch	South Platte river	Feb. 21, 1884	28.00	28.00	846.00	34
The Deuel and Snyder Ditch	South Platte river	Apr. 7, 1884	32.00	32.00	874.00	35
The Camfield Ditch	Crow creek	Dec. 20, 1884	20.00	----------	906.00	36
The Deitrich Ditch No. 3	Kiowa creek	Apr. 2, 1885	1.00	----------	926.00	37
The Ward Ditch	Owl creek	Apr. 25, 1885	2.00	----------	927.00	38
The Ehrler Ditch	Kiowa creek	Mar. 15, 1885	1.00	----------	929.00	39
The Camfield Ditch, first enlargement	Crow creek	Oct. 1, 1885	63.00	83.00	930.00	40
The Johnson and Edwards Ditch	South Platte river	Apr. 10, 1886	48.00	48.00	993.00	41
The McClellan Ditch	Lone Tree creek	July 13, 1886	3.00	----------	1,041.00	42
The Corona Ranch Ditch	South Platte river	Nov. 15, 1886	35.00	35.00	1,044.00	43
The River Side Ditch	South Platte river	Nov. 29, 1886	16.00	----------	1,079.00	44
The Elbert Ditch	Kiowa creek	Feb. 8, 1887	1.00	----------	1,095.00	45
The Aux Ditch No. 2	Kiowa creek	Feb. 12, 1887	1.00	----------	1,096.00	46
The A A. Smith Ditch	South Platte river	June 18, 1887	20.00	----------	1,097.00	47
The Farr Ditch	Owl creek	July 15, 1887	No specified amount	----------		48
The J B. Cook Ditch	Lone Tree creek	July 18, 1887	No specified amount	----------		49

*These amounts decree to be used between the 10th day of April and the 10th day of July in each year, upon meadow lands, irrigated prior to the construction of the ditches.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 1, AS THEY HAVE BEEN MODIFIED SINCE THE STATEMENT PUBLISHED IN THE "FOURTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 1, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Concluded.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Fahrion Ditch	Kiowa creek	Sept. 20, 1887	1.00	.....	1,117.00	50
The Page and Foster Ditch	West Bijou creek	Feb. 10, 1888	8.00	.....	1,118.00	51
The Bijou D. R. and Pipe Line	West Bijou creek	Feb. 27, 1888	30.00	.....	1,126.00	52
The Schultz Ditch	South Platte river	Apr. 1, 1888	21.00	21.00	1,156.00	53
The Mimmack Ditch, first enlargement	Lone Tree creek	Apr. 2, 1888	2.00	3.00	1,177.00	54
The D. C. Bailey Ditch	Kiowa creek	Apr. 3, 1888	5.50	.....	1,179.00	55
The Upper Platte and Beaver Ditch, by additional use	South Platte river	Apr. 15, 1888	164.00	214.00	1,184.50	56
The Lower Platte and Beaver Ditch, by additional use	South Platte river	Apr. 15, 1888	284.00	322.00	1,348.50	57
The Valley Ditch	Lone Tree creek	May 8, 1888	1.00	.....	1,632.50	58
The Wadlin and Lunt Ditch	Owl creek	Aug. 28, 1888	No specified amount		.....	59
The Fort Morgan Land and Reservoir Co. Ditch	South Platte river	Oct. 18, 1888	125.00	.....	1,633.50	60
The Brown and Pyott Ditch, enlargement	South Platte river	Nov. 1, 1888	31.00	31.00	1,758.50	61
The Wadlin Ditch No. 2	Crow creek	Dec. 1, 1888	135.00	.....	1,789.50	62
The Craven Ditch	West Bijou creek	Feb. 10, 1889	1.00	.....	1,924.50	63

The I. D. Miller W. and S. Ditch	Lone Tree creek	June 1, 1889	4.50		1,925.50	64
The Gill and Stevens Ditch	South Platte river	Sept. 3, 1889	23.00		1,930.00	65
The P. H. Parsons Ditch	South Platte river	Sept. 8, 1889	48.00	48.00	1,953.00	66
The Beuck Ditch	East Bijou creek	Sept. 15, 1889	22.00		2,001.00	67
The Kruse and Mauldin Ditch	Running creek	Sept. 17, 1889	1.50		2,023.00	68
The Comanche Ditch	Comanche creek	Dec. 2, 1889	4.00		2,024.50	69
The Sand Arroya Ditch	Sand Arroya creek	Dec. 12, 1889	No specified amount			70
The Marki Ditch	Kiowa creek	May 25, 1890	1.00		2,028.50	71
The Bijou Reservoir Ditch	Bijou creek	July 5, 1891	No specified amount			72
The Bramkamp Ditch and Reservoir	Deer Trail	Feb. 15, 1892	5.00		2,029.50	73
The Moore Ditch and Reservoir	Deer Trail	Nov. 6, 1893	No specified amount			74
Total					2,034.50	

TABLE

GIVING RESERVOIR DECREES IN WATER DISTRICT NO. 1, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 1, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF RESERVOIR	Source of Appropriation	Date of Appropriation	Amount in cubic feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The J. B. Cook Reservoir	Lone Tree creek	Dec. 1, 1888	8,000,000			1
The Bijou Reservoir	West Bijou creek	Apr. 27, 1889	10,000,000			2
The Beuck Reservoir	East Bijou creek	Sept. 15, 1889	3,267,000			3
The Bijou Reservoir No. 1	Bijou creek	July 5, 1891	No specified amount			4
The Bijou Reservoir No. 2	Bijou creek	July 5, 1891	No specified amount			4
The Bijou Reservoir No. 3	Bijou creek	July 5, 1891	No specified amount			4
The Bijou Reservoir No. 4	Bijou creek	July 5, 1891	No specified amount			4
The Bijou Reservoir No. 5	Bijou creek	July 5, 1891	No specified amount			4
The Bijou Reservoir No. 6	Bijou creek	July 5, 1891	No specified amount			4
The Drury Reservoir No. 1 and Ditches	Crow creek	Oct. 6, 1891	No specified amount			5
The Owl Creek Reservoir and Ditches	Owl creek	Oct. 14, 1891	28,000,000			6
The Wadlin Reservoir	Crow creek	Dec. 19, 1891	44,000,000			7
The Drury Reservoir No. 2 and Ditches	Crow creek	Feb. 3, 1892	No specified amount			8
The Bramkamp Reservoir	Deer Trail creek	Feb. 15, 1892	5,197,000			9

The Fort Morgan Land and Reservoir Co.'s Reservoir No. 1	South Platte river	Sept. 1, 1892	No specified amount			10
The Fort Morgan Land and Reservoir Co.'s Reservoir No. 2	South Platte river	Sept. 25, 1892	No specified amount			11
The Fort Morgan Land and Reservoir Co.'s Reservoir No. 3	South Platte river	Oct. 10, 1892	No specified amount			12
The Drury Reservoir and Ditches No. 3	Crow creek	May 13, 1893	No specified amount			13
The Moore Reservoir	Deer Trail creek	Nov. 6, 1893	No specified amount			14
The Mary Lawless Reservoir	West Bijou creek	Dec. 23, 1893	No specified amount			15

TABLE

GIVING RESERVOIR DECREES IN WATER DISTRICT NO. 4, AS THEY HAVE BEEN ESTABLISHED SINCE THE STATEMENT PUBLISHED IN THE "SIXTH BIENNIAL REPORT," PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 1, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF RESERVOIR	Source of Appropriation	Date of Appropriation	Amount in cubic feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Louden Reservoir Co.'s Reservoir	Big Thompson creek	Feb. 24, 1883	50,000,000	----------	----------	6

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 5, AS THEY HAVE BEEN ESTABLISHED SINCE THE STATEMENT PUBLISHED IN THE "FOURTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 1, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Bonus Lateral Ditch	Dry creek	Mar. 1, 1870	1.95	.....	1,027.71	55a
The Rice Ditch	Dry creek	Mar. 1, 1872	3.91	.....	2,127.32	66
The Upper Baldwin Ditch	Dry creek	Apr. 1, 1872	9.11	.....	2,265.01	67a
The Lower Baldwin Ditch	Dry creek	Apr. 1, 1873	4.56	.....	2,341.77	73
The John Rice Ditch	Dry creek	Apr. 1, 1884	7.81	.....	2,875 72	103
The Rice Ditch or Mill Ditch, first enlargement	Dry creek	May 1, 1884	1.30	5.21	2,883.53	104
Total	.....	.....	.....	.....	2,884.83	

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 6, AS THEY HAVE BEEN ESTABLISHED SINCE THE STATEMENT PUBLISHED IN THE "FOURTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 1, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district	Order of priority on stream
The Kerr Ditch No. 1	Coal creek	Apr. 15, 1861	7.68		240.04	9a	
The Kerr Ditch No. 2	Coal creek	Apr. 15, 1868	3.24		1,996.86	34a	
The Willis Ditch	Coal creek	May 5, 1870	9.00		2,266.41	40a	
The Maffet Ditch	Coal creek	Feb. 4, 1889	3.00		4,860.91	64	
Total					4,863.91		
The Marshall Ditch No. 1	Spring brook	May 8, 1893	* .78				1
The Marshall Ditch No. 2	Spring brook	May 8, 1893	1.50				2

*Decree gives appropriation for 30 statute inches.

TABLE

GIVING RESERVOIR DECREES IN WATER DISTRICT NO. 6, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 1, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF RESERVOIR	Source of Appropriation	Date of Appropriation	Amount in cubic-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district	Order of priority on stream
The Eggleston Reservoir No. 3	Coal creek	June 1, 1874	1,015,860			2	
The Eggleston Reservoir No. 4	Coal creek	Oct. 1, 1879	8,000,000			3	
The Marshall Reservoir No. 1	Spring Brook through Marshall ditch No. 2	May 8, 1893	191,600				1

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 14, AS THEY HAVE BEEN MODIFIED SINCE THE STATEMENT PUBLISHED IN THE "SIXTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Toof Ditch	Fountain creek	Feb. 20, 1860	4.00			1
The Warrant, Barnes and Baxter Ditch	Arkansas river	Apr., 1861	9.00		4.00	2
The Arkansas Valley Ditch		July 22, 1861	2.00		13.00	3
The Excelsior Ditch	Arkansas river	Dec., 1861	60.00		15.00	4
The Eder Ditch	Fountain creek	Jan. 1, 1862	5.00		75.00	5
The Whipple Ditch	Fountain creek	Mar. 15, 1862	1.10		80.00	6
The Greenview Ditch	Fountain creek	Spring, 1862	2.00		81.10	7
The W. M. Steele Ditch	Fountain creek	Mar. 1, 1863	1.00		83.10	8
The Lincoln Ditch	Fountain creek	Mar., 1863	.50		84.10	8½
The Arkansas Valley Ditch, second priority		1863	48.00	50.00	84.60	9
The C. L. Barnard Ditch	Fountain creek	Feb., 1864	.60		132.60	10
The Booth Ditch	Arkansas river	Apr. 1, 1864	8.00		133.20	11
The Arkansas Valley Ditch, third priority		1864	20.00	70.00	141.20	12
The H. R. Steele Ditch	Fountain creek	Feb. 1, 1865	2.00		161.20	13

The Cozzens Ditch	Fountain creek	Feb. 10, 1866	.40		163.20	14
The Wood Valley Ditch	Fountain creek	Mar. 1, 1866	8.00		163.60	15
The J. W. Cawlfield Ditch	Fountain creek	Mar. 15, 1866	.40		171.60	16
The Bannister Ditch	Fountain creek	Latter part, 1866	1.60		172.00	17
The Arkansas Ditch	Arkansas river	Jan. 8, 1867	2.50		173.60	18
The Benesch Ditch	Fountain creek	Feb. 12, 1867	1.20		176.10	19
The Enterprise Ditch	Arkansas river	Fall, 1867	14.00		177.30	20
The Sutherland Ditch	Fountain creek	Feb. 15, 1868	1.80		191.30	21
The Olin Ditch	Fountain creek	Dec. 15, 1868	1.30		193.10	22
The Cactus Ditch	Fountain creek	Jan. 9, 1869	1.00		194 40	23
The McNeil Ditch	Fountain creek	Feb., 1869	1.60		195.40	24
The Ballow Hill Ditch	Arkansas river	July 1, 1869	16.00		197.00	25
The Richie Ditch	Arkansas river	Spring, 1870	2.50		213.00	26
The Hamp-Bell Ditch	Arkansas river	Nov., 1870	2.50		215.50	27
The Barnum Ditch, also Lewis Barnum	Arkansas river	1870	3.40		218.00	28
The Brooks Ditch	Arkansas river	Jan., 1871	1.20		221.40	29
The Hobson Ditch	Arkansas river	Mar., 1871	1.60		222.60	30
The Booth Ditch, second priority	Arkansas river	1871	1.00	9.00	224.20	31
The West Pueblo Ditch	Arkansas river	April 1, 1872	1.20		225.20	32
The Fields Ditch	Arkansas river	Spring, 1872	4.60		226.40	33
The Morey Ditch	Arkansas river	April 1, 1874	1.00		231.00	34
The Haden Ditch	Arkansas river	Oct., 1878	.60		232.00	35
The Hamp-Bell Ditch, second priority	Arkansas river	1878	.70	3.20	232.60	36
The Cozzens Ditch, second priority	Fountain creek	1879	1.60	2.00	233.30	37

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 14, AS THEY HAVE BEEN MODIFIED SINCE THE STATEMENT PUBLISHED IN THE "SIXTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Concluded.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Cactus Ditch, second priority	Fountain creek	1879	.50	1.50	234.90	38
The T. J. Steele Ditch	Fountain creek	Feb. 1, 1880	.40		235.40	39
The Collier Ditch	Arkansas river	May 4, 1881	14.00		235.80	40
The I. N. Sater Ditch	Arkansas river	June 20, 1881	2.00		249.80	41
The Booth Ditch, third priority	Arkansas river	1881	2.00	11.00	251.80	42
The Greenview Ditch, enlargement	Fountain creek	Apr., 1882	.60		253.80	43
The Riverview Dairy Ditch	Arkansas river	Feb. 1, 1883	1.00		254.40	44
The Haden Ditch, second priority	Arkansas river	1883	.40	1.00	255.40	45
The Pueblo Water Company's Ditch	Arkansas river	Apr. 22, 1884	22.66		255.80	46
The Chilcott Ditch	Fountain creek	Mar. 10, 1885	.60		278.46	47
The Ballow Hill Ditch, enlargement	Arkansas river	June, 1885	30.00	46.00	279.06	48
The J. W. Cawlfield Ditch, second priority	Fountain creek	1885	.60		309.06	49
The Allen Ditch	Arkansas river	Mar. 11, 1886	2.00		309.66	50
The Hobson Ditch, enlargement	Arkansas river	Apr. 1, 1886	4.40	6.00	311.66	51

The Lincoln Ditch, second priority	Fountain creek	Jan. 1, 1887	1.50	2.00	316.06	52
The Oxford Farmers' Ditch	Arkansas river	Feb. 26, 1887	116.00		317.56	53
The McElroy Ditch	Fountain creek	Apr. 4, 1887	.80		433.56	54
The Bessemer Ditch	Arkansas river	May 1, 1887	364.00		434.36	55
The Hobson No. 2 Ditch	Fountain creek	June 10, 1887	6.00		798.36	56
The West Pueblo Ditch, enlargement and extension	Arkansas river	Dec. 17, 1887	15.00		804.36	57
The Booth Ditch, Mueller and Goldsmith enlargement and extension	Arkansas river	Mch. 30, 1888	2.10		819.36	58
The Hamp-Bell Ditch, third priority	Arkansas river	1888	1.60	4.80	821.46	59
The Rocky Ford High Line Ditch	Arkansas river	Jan. 6, 1890	418.00		823.06	60
The Allen Ditch, second priority	Arkansas river	1890	2.50	4.50	1,241.06	61
The Colorado Canal	Arkansas river	June 9, 1890	756.28		1,243.56	62
The Eder Ditch, second priority	Fountain creek	1892	5.00	10.00	1,999.84	63
The Arkansas Ditch, second priority	Arkansas river	1892	1.50	4.00	2,004.84	64
The Booth Ditch, Christian Fink enlargement and extension	Arkansas river	Mid. Apr. '93	3.20		2,006.34	65
The Greenview Ditch, enlargement, second priority	Fountain creek	1893	.20	.80	2,009.54	66
The Warrant Barnes and Baxter Ditch, second priority	Arkansas river	1894	7.00	16.00	2,009.74	67
Total					2,016.74	

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 15, AS THEY HAVE BEEN MODIFIED SINCE THE STATEMENT PUBLISHED IN THE "SIXTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Hicklin "A" Ditch	St. Charles river and tributaries	Spring, 1859	.60	----------	----------	1
The Hicklin "A" Ditch, Mrs. Hicklin first priority	St. Charles river and tributaries	Spring, 1859	.10	----------	.60	2
The Hicklin "B" Ditch	St. Charles river and tributaries	Spring, 1859	1.80	----------	.70	3
The Eureka Ditch	St. Charles river and tributaries	Irrigating season, 1861	.90	----------	2.50	4
The Suttles Ditch	St. Charles river and tributaries	Fall, 1861	2.00	----------	3 40	5
The Eagle Ditch	St. Charles river and tributaries	Winter, 1861-2	.70	----------	5.40	6
The McDowell Ditch	St. Charles river and tributaries	Feb. 28, 1862	1.50	----------	6.10	7
The Hicklin D Ditch	St. Charles river and tributaries	1862	.40	----------	7.60	8
The McDaniel No. 1 Ditch	St. Charles river and tributaries	1862	.15	----------	8.00	9
The McDaniel No. 2 Ditch	St. Charles river and tributaries	1862	.10	----------	8.15	10
The Fairhurst Ditch	St. Charles river and tributaries	June, 1863	1.20	----------	8.25	11
The Tucker Ditch	St. Charles river and tributaries	Apr. 1, 1864	.60	----------	9.45	12
The Fisher Ditch	St. Charles river and tributaries	May 1, 1864	.70	----------	10.05	13
The Patterson B. P. Ditch	St. Charles river and tributaries	1864	1.40	----------	10.75	14

The Greenhorn Cañon Ditch	St. Charles river and tributaries	Apr., 1865	1.80	----------	12.15	15
The Greenhorn Cañon Extension Ditch	St. Charles river and tributaries	Apr., 1865	1.00	----------	13.95	16
The Dotson No. 1 Ditch	St. Charles river and tributaries	May, 1865	3.00	----------	14.95	17
The Grayback Ditch	St. Charles river and tributaries	Spring, 1865	.50	----------	17.95	18
The Goss Ditch	St. Charles river and tributaries	1865	.20	----------	18.45	19
The Hickland Ditch	St. Charles river and tributaries	Mar. 5, 1866	1.40	----------	18.65	20
The Wagner Ditch	St. Charles river and tributaries	Mar., 1866	2.00	----------	20.05	21
The Rantschler Ditch	St. Charles river and tributaries	Apr. 1, 1866	.40	----------	22.05	22
The Hicklin "C" Ditch	St. Charles river and tributaries	Spring, 1866	.60	----------	22.45	23
The Dotson No. 1 Ditch, first enlargement	St. Charles river and tributaries	Spring, 1866	3.00	6.00	23.05	24
The Eagle Ditch, second priority	St. Charles river and tributaries	1866	1.00	1.70	26.05	25
The Greenhorn Highline Ditch	St. Charles river and tributaries	1866	1.00	----------	27.05	26
The Pioneer Ditch, on middle creek	St. Charles river and tributaries	June, 1866	1.50	----------	28.05	27
The Sease Ditch	St. Charles river and tributaries	June, 1866	1.60	----------	29.55	28
The Pollard Ditch	St. Charles river and tributaries	Dec. 15, 1866	4.00	----------	31.15	29
The Wagner Ditch, second priority	St. Charles river and tributaries	Winter, 1866	1.00	3.00	35.15	30
The Zoeller Ditch	St. Charles river and tributaries	Winter, 1866-7	1.60	----------	36.15	31
The Blunt No. 1 Ditch	St. Charles river and tributaries	Jan. 8, 1867	2.00	----------	37.75	32
The Blunt No. 2 Ditch	St. Charles river and tributaries	Jan. 8, 1867	2.00	----------	39.75	33
The Mexican Ditch	St. Charles river and tributaries	Feb. 20, 1867	4.00	----------	41.75	34
The Pablo Romero Ditch	St. Charles river and tributaries	Fall, 1867	.60	----------	45.75	35
The Chase Ditch	St. Charles river and tributaries	Dec., 1867	1.80	----------	46.35	36
The Edson Ditch	St. Charles river and tributaries	Winter, 1867-8	1.50	----------	48.15	37
The Jamison Ditch	St. Charles river and tributaries	Apr. 1, 1868	1.10	----------	49.65	38
The Lloyd Ditch	St. Charles river and tributaries	Apr. 1, 1868	.40	----------	50.75	39

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 15, AS THEY HAVE BEEN MODIFIED SINCE THE STATEMENT PUBLISHED IN THE "SIXTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Continued.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Marshall Ditch	St. Charles river and tributaries	Apr. 1, 1868	.30	----------	51.15	40
The Scroggs Ditch	St. Charles river and tributaries	Middle of April, 1868	.80	----------	51.45	41
The Finlay Ditch	St. Charles river and tributaries	1868	.80	----------	52.25	42
The Tucker Ditch, second priority	St. Charles river and tributaries	1868	.40	1.00	53.05	43
The Smith, Austin and Pierson Ditch	St. Charles river and tributaries	May, 1868	1.30	----------	53.45	44
The Dotson Ditch No. 1, second enlargement	St. Charles river and tributaries	Spring, 1868	8.00	14.00	54.75	45
The Scroggs Ditch, second priority	St. Charles river and tributaries	1869	.60	1.40	62.75	45½
The Anderson Ditch	St. Charles river and tributaries	Jan. 15, 1869	1.40	----------	63.35	46
The High Line Ditch	St. Charles river and tributaries	Mar. 1, 1869	1.00	----------	64.75	47
The Bruner Ditch	St. Charles river and tributaries	Spring, 1869	.80	----------	65.75	48
The Sease Ditch, second priority	St. Charles river and tributaries	1869	.50	2.10	66.55	49
The Lamb A. J. Ditch	St. Charles river and tributaries	1869	1.00	----------	67.05	50
The Bryson No. 1 Ditch	St. Charles river and tributaries	Jan. 2, 1870	2.80	----------	68.05	51
The Crawford-Smythe Ditch, enlargement and extension	St. Charles river and tributaries	Mar. 1, 1870	1.00	----------	70.85	52

The Graneros Cañon Ditch	St. Charles river and tributaries	May 1, 1870	1.30	----------	71.85	53
The Mechler Ditch	St. Charles river and tributaries	Apr. 18, 1870	1.25	----------	73.15	53¼
The Smythe Ditch	St. Charles river and tributaries	1870	1 00	----------	74.40	54
The Porcupine Ditch	St. Charles river and tributaries	Apr. 1, 1871	.20	----------	75.40	55
The Woodlawn Ditch	St. Charles river and tributaries	Apr. 1, 1871	1.70	----------	75.60	56
The Greenhorn Valley Ditch	St. Charles river and tributaries	Apr. 1, 1871	.90	----------	77.30	57
The Pioneer Ditch, ou Little Graueros Creek	St. Charles river and tributaries	Apr. 25, 1871	.15	----------	78.20	58
The Ashbaugh Ditch	St. Charles river and tributaries	Spring, 1871	.20	----------	78.35	59
The Jamison Ditch, second priority	St. Charles river and tributaries	1871	1.10	2.20	78.55	60
The Carter Ditch	St. Charles river and tributaries	May 16, 1871	.30	----------	79.65	61
The Dean Ditch	St. Charles river and tributaries	June 1, 1871	.30	----------	79.95	62
The Nichols "A" Ditch	St. Charles river and tributaries	June, 1871	.80	----------	80.25	63
The Blunt No. 3 Ditch	St. Charles river and tributaries	Fall, 1871	2.00	----------	81.05	64
The Stanley No. 1 Ditch	St. Charles river and tributaries	Mar., 1872	3.00	----------	83.05	65
The Stanley No. 2 Ditch	St. Charles river and tributaries	Spring, 1872	1.80	----------	86.05	66
The Pioneer Ditch Extension, on Middle Creek	St. Charles river and tributaries	Spring, 1872	.80	----------	87.85	67
The Pioneer Ditch, second priority on Middle Creek	St. Charles river and tributaries	1872	1.90	3.40	88.65	68
The Pablo Romero Ditch, second priority	St. Charles river and tributaries	1872	.20	.80	90.55	69
The Smith, Austin and Pierson Ditch, second priority	St. Charles river and tributaries	1872	1.30	2.60	90.75	70
The Nichols "C" Ditch	St. Charles river and tributaries	1872	.20	----------	92.05	71
The Mesa Ditch	St. Charles river and tributaries	May 15, 1872	.20	----------	92.25	72
The Nichols "B" Ditch	St. Charles river and tributaries	May, 1872	.25	----------	92.45	73
The Shurtz Ditch	St. Charles river and tributaries	June 10, 1872	1.60	----------	92.70	74
The Robinson Ditch	St. Charles river and tributaries	June, 1872	2.50	----------	94.30	75
The South Muddy Ditch	St. Charles river and tributaries	1872	.40	----------	96.80	76

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 15, AS THEY HAVE BEEN MODIFIED SINCE THE STATEMENT PUBLISHED IN THE "SIXTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Continued.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Dunbaugh Ditch	St. Charles river and tributaries	Oct. 15, 1872	1.00	----------	97.20	77
The Mills Ditch	St. Charles river and tributaries	1872	.50	----------	98.20	78
The Crawford-Smythe Ditch	St. Charles river and tributaries	Nov. 1, 1872	1.40	----------	98.70	79
The Monitor Ditch	St. Charles river and tributaries	Fall, 1872	.90	----------	100.10	80
The Zoeller Ditch, second priority	St. Charles river and tributaries	1873	.20	1.80	101.00	81
The Lloyd Ditch, second priority	St. Charles river and tributaries	1873	1.60	2.00	101.20	82
The Marshall Ditch, second priority	St. Charles river and tributaries	1873	.15	.45	102.80	83
The Scroggs Ditch, third priority	St. Charles river and tributaries	1873	.50	1.90	102.95	84
The High Line Ditch, second priority	St. Charles river and tributaries	1873	1.50	2.50	103.45	85
The Waldron Ditch	St. Charles river and tributaries	May 1, 1873	.60	----------	104.95	86
The McCarty Ditch	St. Charles river and tributaries	May, 1873	.10	----------	105.55	87
The Davis Ditch	St. Charles river and tributaries	June 1, 1873	.90	----------	105.65	88
The Standard Ditch	St. Charles river and tributaries	Last of June, 1873	1.90	----------	106.55	89
The Sease Ditch, third priority	St. Charles river and tributaries	Nov. 1, 1873	.30	2.40	108.45	90

The Smith, Jas. E., Ditch	St. Charles river and tributaries	Nov. 1, 1873	3.50	.....	108.75	91
The Dotson No. 2 Ditch	St. Charles river and tributaries	Mar. 1, 1874	.20	.....	112.25	92
The Yellow Bank Ditch	St. Charles river and tributaries	June 1, 1874	.25	.....	112.45	93
The Evergreen Ditch	St. Charles river and tributaries	June 15, 1874	2.20	.....	112.70	94
The Cold Spring Ditch	St. Charles river and tributaries	Summer, 1874	.20	.....	114.90	95
The Lamb, A. J., Ditch, second priority	St. Charles river and tributaries	Oct. 1, 1874	2.10	3.10	115.10	96
The Squirrel Creek Ditch	St. Charles river and tributaries	Oct. 1, 1874	1.20	.....	117.20	97
The McCausland Ditch	St. Charles river and tributaries	Dec., 1874	1.00	.....	118.40	98
The Hicklin "C" Ditch, second priority	St. Charles river and tributaries	1875	.60	1.20	119.40	99
The Pioneer Ditch, second priority on Little Graneros creek	St. Charles river and tributaries	1875	10	.25	120.00	100
The Ashbaugh Ditch, second priority	St. Charles river and tributaries	1875	.20	.40	120.10	101
The Shurtz Ditch, second priority	St. Charles river and tributaries	1875	.20	1.80	120.30	102
The Crawford-Smythe Ditch, second priority	St. Charles river and tributaries	1875	.70	2.10	120.50	103
The Middle Muddy Ditch	St. Charles river and tributaries	May, 1875	.60	.....	121.20	104
The Bryson No. 1 Ditch, second priority	St. Charles river and tributaries	1876	1.70	4.50	121.80	105
The Greenhorn Valley Ditch, second priority	St. Charles river and tributaries	1876	.25	1.15	123.50	106
The Dean Ditch, second priority	St. Charles river and tributaries	1876	.30	.60	123.75	107
The Mills Ditch, second priority	St. Charles river and tributaries	1876	.10	.60	124.05	108
The Sease Ditch, fourth priority	St. Charles river and tributaries	1876	.10	2.50	124.15	109
The Centennial Ditch	St. Charles river and tributaries	May 19, 1876	.80	.....	124 25	110
The Garrish, J. B., Ditch	St. Charles river and tributaries	June 1, 1876	.20	.....	125.05	111
The St. Charles Ditch	St. Charles river and tributaries	Aug., 1876	5.00	.....	125 25	112
The Hickland Ditch, second priority	St. Charles river and tributaries	1877	.80	2.20	130.25	113
The Marshall Ditch, third priority	St. Charles river and tributaries	1877	.55	1.00	131.05	114
The Pioneer Ditch, on Little Graneros, third priority	St. Charles river and tributaries	1877	.10	.35	131.60	115

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GIVING DITCH DECREES IN WATER DISTRICT NO. 15, AS THEY HAVE BEEN MODIFIED SINCE THE STATEMENT PUBLISHED IN THE "SIXTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Continued.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Goss Ditch, second priority	St. Charles river and tributaries	1877	.15	.35	131.70	116
The Standard Extension Ditch	St. Charles river and tributaries	May 15, 1877	.30	.....	131.85	117
The Domestic Ditch	St. Charles river and tributaries	May, 1877	.20	.....	132.15	118
The Rantschler Ditch, second priority	St. Charles river and tributaries	1878	1.60	2.00	132.35	119
The Scroggs Ditch, fourth priority	St. Charles river and tributaries	1878	.30	2.20	133.95	120
The Brannan-Crawford Ditch	St Charles river and tributaries	Mar., 1878	1.70	.....	134.25	121
The Greenhorn High Line Ditch, second priority	St. Charles river and tributaries	Mar. 1, 1879	3.60	4.60	135.95	122
The Grayback Ditch, second priority	St. Charles river and tributaries	1879	.30	.80	139.55	123
The Smith, Austin and Pierson Ditch, third priority	St. Charles river and tributaries	1879	.05	2.65	139.85	124
The High Line Ditch, third priority	St Charles river and tributaries	1879	2.00	4.50	139.90	125
The Monitor Ditch, second priority	St. Charles river and tributaries	1879	.25	1.15	141.90	126
The Standard Ditch, second priority	St. Charles river and tributaries	1879	.30	2.20	142.15	127
The Evergreen Ditch, second priority	St. Charles river and tributaries	1879	.10	2.30	142.45	128
The Mesa Extension Ditch	St. Charles river and tributaries	May 1. 1879	.10	.....	142.55	129

The Johnson Ditch	St. Charles river and tributaries	June 26, 1879	.25	----------	142.65	130
The McDaniel No. 3 Ditch	St. Charles river and tributaries	Nov., 1879	.10	----------	142.90	131
The Mesa Ditch, second priority	St. Charles river and tributaries	1880	.05	.25	143.00	132
The Robinson Ditch, second priority	St. Charles river and tributaries	1880	.50	3.00	143.05	133
The Centennial Ditch, second priority	St. Charles river and tributaries	1880	.80	1.60	143.55	134
The Garden Ditch	St. Charles river and tributaries	May 15, 1880	.60	----------	144.35	135
The Merrimac Ditch	St. Charles river and tributaries	May 16, 1880	.50	----------	144.95	136
The McDaniel No. 1 Ditch, second priority	St. Charles river and tributaries	1881	.10	.25	145.45	137
The Dotson No. 1 Ditch, second enlargement, second priority	St. Charles river and tributaries	1881	12.00	26.00	145.55	138
The Greenhorn Valley Ditch, third priority	St. Charles river and tributaries	1881	1.00	2.15	157.55	139
The Stanley No. 2 Ditch, second priority	St. Charles river and tributaries	1881	2.20	4.00	158.55	140
The Savage Ditch	St. Charles river and tributaries	Middle of April, 1881	.40	----------	160.75	141
The North Muddy Ditch	St. Charles river and tributaries	Apr., 1881	.25	----------	161.15	142
The Zoeller Ditch, third priority	St Charles river and tributaries	1882	.80	2.60	161.40	143
The Smith, Austin and Pierson Ditch, fourth priority	St. Charles river and tributaries	1882	.05	2.70	162.20	144
The Porcupine Ditch, second priority	St. Charles river and tributaries	1882	.10	.30	162.25	145
The Dean Ditch, third priority	St. Charles river and tributaries	1883	.10	.70	162.35	146
The Crawford-Smythe Ditch, third priority	St. Charles river and tributaries	1883	.60	2.70	162.45	147
The Mills Ditch, third priority	St. Charles river and tributaries	1883	.10	.70	163.05	148
The Standard Ditch, third priority	St. Charles river and tributaries	1883	.20	2.40	163.15	149
The Finlay Ditch, second priority	St. Charles river and tributaries	1883	.10	.90	163.35	150
The Bryson Ditch	St. Charles river and tributaries	Oct , 1883	8 00	----------	163.45	151
The Zoeller Ditch, fourth priority	St. Charles river and tributaries	1884	.80	3.40	171.45	152
The Lloyd Ditch, third priority	St. Charles river and tributaries	1884	.60	2.60	172.25	153

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NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Marshall Ditch, fourth priority	St. Charles river and tributaries	1884	.25	1.25	172.85	154
The Carter Ditch, second priority	St. Charles river and tributaries	1884	.50	.80	173.10	155
The Nichols "A" Ditch, second priority	St. Charles river and tributaries	1884	.30	1.10	173.60	156
The Standard Extension Ditch, second priority	St. Charles river and tributaries	1884	.10	.40	173.90	157
The Johnson Ditch, second priority	St. Charles river and tributaries	1884	.10	.35	174.00	158
The Brannan Ditch	St. Charles river and tributaries	Mar. 1, 1884	1.40	----------	174.10	159
The Graneros Ditch	St. Charles river and tributaries	Apr., 1884	1.00	----------	175.50	160
The Bonniemeade Extension Greenhorn Valley Ditch	St. Charles river and tributaries	Apr. 1, 1884	1.50	----------	176.50	161
The Smythe Ditch, second priority	St. Charles river and tributaries	Dec. 1, 1884	.30	1.30	178.00	162
The Graneros Cañon Ditch, second priority	St. Charles river and tributaries	1885	.60	1.90	178.30	163
The Shurtz Ditch, third priority	St. Charles river and tributaries	1885	.50	2.30	178.90	164
The Tucker Enlargement Ditch	St. Charles river and tributaries	Mar. 1, 1885	.60	----------	179.40	165
The Carr, W. T., Ditch	St. Charles river and tributaries	Apr. 25, 1885	.80	----------	180.00	166
The Brown Ditch	St. Charles river and tributaries	Spring, 1885	1.40	----------	180.80	167

The Greenhorn High Line Ditch, third priority	St. Charles river and tributaries		1885	4.10	8.70	182.20	168
The Hicklin "A" Ditch, Mrs. Hicklin's second priority	St. Charles river and tributaries		1886	.20	6.30	186.30	169
The Pollard Ditch, second priority	St. Charles river and tributaries		1886	2.00	6.00	186.50	170
The Marshall Ditch, fifth priority	St. Charles river and tributaries		1886	.60	1.85	188.50	171
The Smith, Austin and Pierson Ditch, fifth priority	St. Charles river and tributaries		1886	.15	2.85	189.10	172
The High Line Ditch, fourth priority	St. Charles river and tributaries		1886	.90	5.40	189.25	173
The Hicklin "C" Ditch, third priority	St. Charles river and tributaries		1886	.80	2.00	190.15	173½
The O'Brien-Harrison Ditch	St. Charles river and tributaries	Jan.,	1886	1.60	----------	190.95	174
The Stanley No. 3 Ditch	St. Charles river and tributaries	Mar.,	1886	1.00	----------	192.55	175
The Woodlawn Ditch, second priority	St. Charles river and tributaries		1887	1 00	2.70	193.55	176
The Savage Ditch, second priority	St. Charles river and tributaries		1887	.30	.70	194.55	177
The Bonniemeade Extension Greenhorn Valley Ditch, second priority	St. Charles river and tributaries		1887	.20	1.70	194.85	178
The Smith, Austin and Pierson Ditch, sixth priority	St. Charles river and tributaries		1888	.15	3.00	195.05	179
The Sease Ditch, fifth priority	St. Charles river and tributaries		1888	.30	2.80	195.20	180
The O'Brien and Harrison Ditch, second priority	St. Charles river and tributaries		1888	.70	2.30	195.50	181
The Snow Slide Ditch	St. Charles river and tributaries	July	6, 1888	6.00	----------	196.20	182
The Cold Spring Enlargement Ditch	St. Charles river and tributaries	Summer,	1888	.20	----------	202.20	183
The Eureka Ditch, second priority	St. Charles river and tributaries		1889	.30	1.20	202.40	184
The Pioneer Ditch on Middle Creek, third priority	St. Charles river and tributaries		1889	.90	4.30	202.70	185
The Zoeller Ditch, fifth priority	St. Charles river and tributaries		1889	.70	4.10	203.60	186
The Porcupine Ditch, third priority	St. Charles river and tributaries		1889	.10	.40	204.30	187
The Monitor Ditch, third priority	St. Charles river and tributaries		1889	.35	1.50	204.40	188
The Greenhorn High Line Ditch, fourth priority	St. Charles river and tributaries		1889	2.20	10.90	204.75	189
The Bonniemeade Extension Greenhorn Valley Ditch, third priority	St. Charles river and tributaries		1889	.30	2.00	206.95	190

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NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Garrish, J. B , Ditch, second priority	St. Charles river and tributaries	July 1, 1889	.10	.30	207.25	191
The Evergreen Ditch, third priority	St. Charles river and tributaries	1890	.10	2.40	207.35	192
The Cold Spring Enlargement Ditch, second priority	St. Charles river and tributaries	1890	.60	.80	207.45	193
The Patton Ditch	St. Charles river and tributaries	May 1, 1891	.15	----------	208.05	194
The Fairhurst Ditch, second priority	St. Charles river and tributaries	1892	.40	1.60	208.20	195
The Chase Ditch, second priority	St. Charles river and tributaries	1892	.20	2.00	208.60	196
The Waldron Ditch, second priority	St. Charles river and tributaries	1892	.30	.90	208.80	197
The Standard Ditch, fourth priority	St. Charles river and tributaries	1892	.20	2.60	209.10	198
The Lamb, A. J., Ditch, third priority	St. Charles river and tributaries	1892	.70	3.80	209.30	199
The Squirrel Creek, second priority	St. Charles river and tributaries	1892	.60	1.80	210.00	200
The Bryson Ditch, second priority	St. Charles river and tributaries	1892	.80	8.80	210.60	201
The Graneros Ditch, second priority	St. Charles river and tributaries	1892	.30	1.30	211.40	202
The Brown Ditch, second priority	St. Charles river and tributaries	1892	.50	1.90	211.70	203
Total	----------	----------	----------	----------	212.20	

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 16, AS THEY HAVE BEEN MODIFIED SINCE THE STATEMENT PUBLISHED IN THE "FIFTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority on stream
The Mulachile Irrigation and Mill Ditch	Huerfano river	June 6, 1880	12.00	----------	----------	* 1
The Sanchez Ditch	Cucharas river	Mar. 15, 1872	.60	----------	62.40	25
The Sanchez Ditch	Cucharas river	April 1, 1880	1.40	----------	110.20	54
The Sanchez Ditch	Cucharas river	May 20, 1886	2.00	4.00	146.00	65
The Denton and McAuliff Ditch	Cucharas river	June 20, 1873	2.00	----------	89.00	36
The Denton and McAuliff Ditch	Cucharas river	Mar. 30, 1881	.74	----------	111.60	55
The Denton and McAuliff Ditch	Cucharas river	Oct. 21, 1881	.26	3.00	116.74	58
The Lucero Ditch	Cucharas river	Sept. 20, 1875	1.00	----------	105.80	49
The Sandoval Ditch	Cucharas river	May 1, 1876	1.50	----------	106.80	50
The Highland Ditch	Cucharas river	June 1, 1876	.80	----------	108.30	51
The Carver Ditch	Cucharas river	May 15, 1877	.70	----------	109.10	52
The Staplin Ditch	Cucharas river	July 1, 1879	.40	----------	109.80	53
The Wayman alias Jim Gribble Ditch	Cucharas river	April 1, 1881	1.20	----------	112.34	56

*Decree for milling and manufacturing purposes.

TABLE

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The John George Ditch	Cucharas river	May 15, 1881	3.20	----------	113.54	57
The Dep Ditch	Cucharas river	May 12, 1882	.60	----------	117.00	59
The South Side Ditch	Cucharas river	June 10, 1882	.50	----------	117.60	60
The Gribble and Baker Ditch	Cucharas river	May 1, 1883	.26	----------	118.10	61
The Lake Miriam Ditch	Cucharas river	Mar. 1, 1884	20.00	----------	118.36	62
The Madrid No. 2 Ditch	Cucharas river	Mar. 10, 1884	7.40	----------	138.36	63
The Oakfield Ditch	Cucharas river	July 15, 1884	.24	----------	145.76	64
The Martin No. 1 Ditch	Cucharas river	Apr. 1, 1886	1.20	----------	148.00	66
The Duran Ditch	Cucharas river	Aug. 8, 1887	1.00	1.50	149.20	67
The Fairview Ditch	Cucharas river	Mar 10, 1887	.28	----------	150.20	68
The South Abeyta Highland Ditch	Cucharas river	Feb. 14, 1888	12.80	----------	150.48	69
The Butte Ditch	Cucharas river	June 15, 1888	3.00	----------	163.28	70
Total					166.28	

NOTE—Stevens' reservoir supplied through Duran ditch No. 17, priority No. 21, for .50 second-feet. Capacity 54,855,600 cubic feet. Date of appropriation, August 8, 1887. Reservoir priority No. 1.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 17, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second feet previously decreed in district	Order of priority in district
The Rocky Ford Ditch	Arkansas river	May 15, 1874	111.76			1
The Town Ditch of West Las Animas	Arkansas river	Mar. 7, 1884	38.00		111.76	2
The Arkansas River Land, Reservoir and Canal Co. Ditch	Arkansas river	Apr. 15, 1884	164.64		149.76	3
The Catlin Ditch	Arkansas river	Dec. 3, 1884	248.00		314.40	4
The Arkansas River Land, Reservoir and Canal Co. Ditch	Arkansas river	Mar. 1, 1887	597.16	761.80	562.40	5
The Catlin Ditch	Arkansas river	Nov. 14, 1887	97.00	345.00	1,159.56	6
The Riverside Ditch	Arkansas river	Mar. 13, 1888	80.00		1,256.56	7
The Horse Creek Ditch	Horse creek	Dec. 8, 1888	13.00		1,336.56	8
The Lake Canal	Arkansas river	Sept. 25 1889	155.00		1,349.56	9
The Jones Ditch	Arkansas river	Feb. 10, 1890	44.30		1,504.56	10
The Potter Irrigating Ditch	Arkansas river	Feb. 21, 1890	13.00		1,548.86	11
The Crooked Arroya Ditch	Crooked arroya	Feb. 27, 1890	2.40		1,561.86	12
The Otero Canal	Arkansas river	Mar. 3, 1890	123.00		1,564.26	13
The Rocky Ford Ditch	Arkansas river	May 6, 1890	96.54	208.30	1,687.26	14

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 17, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Concluded.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The A. J. Anderson Ditch	Crooked arroya	Jan. 3, 1891	6.81		1,783.80	15
The Prinster Ditch No. 1	Anderson arroya	May 1, 1891	3.75		1,790.61	16
The Tempas Creek Ditch	Tempas creek	May 10, 1891	51.84		1,794.36	17
The Lauckton Ditch	King arroya	Mar. 1, 1892	5.24		1,846.20	18
The Prinster Ditch No. 2	Anderson arroya	Mar. 11, 1892	3.21		1,851.44	19
The W. J. Barker Ditch	Arkansas river	May 13, 1893	15.00		1,854.65	20
The Lauckton Ditch, first enlargement	King arroya	June 1, 1893	9.76	15.00	1,869.65	21
The A. J. Anderson Ditch, first enlargement	Crooked arroya	Aug. 29, 1893	8.19	15.00	1,879.41	22
Total					1,887.60	

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 18, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Desedero Lovato Ditch	Apishapa creek and tributaries	April 30, 1867	1.95			1
The Julian Lucero Ditch	Apishapa creek and tributaries	June 24, 1867	2.13		1.95	2
The Duran Ditch	Apishapa creek and tributaries	July 1, 1867	1.67		4.08	3
The Jose Marie Vigil No. 2 Ditch	Apishapa creek and tributaries	Oct. 5, 1867	7.00		5.75	4
The Widderfield South Side Ditch	Apishapa creek and tributaries	April 1, 1868	3.44		12.75	5
The Felipe Vigil Ditch	Apishapa creek and tributaries	May 1, 1868	1.44		16.19	6
The North Side Vigil Ditch	Apishapa creek and tributaries	May 20, 1868	5.45		17.63	7
The Felix Cruz Ditch	Apishapa creek and tributaries	May 30, 1868	10.27		23.08	8
The South Side Vigil Ditch	Apishapa creek and tributaries	May 31, 1868	4.48		33.35	9
The Jose Marie Vigil No. 1 Ditch	Apishapa creek and tributaries	June 1, 1868	3.22		37.83	10
The Maurico Apodoca Ditch	Apishapa creek and tributaries	June 15, 1868	5.49		41.05	11
The Widderfield South Side Ditch	Apishapa creek and tributaries	July 31, 1868	7.60	11.04	46.54	12
The Pais Ditch	Apishapa creek and tributaries	April 10, 1869	9.69		54.14	13
The Jose M. Archuleta Ditch	Apishapa creek and tributaries	May 4, 1869	1.92		63.83	14

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 18, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Concluded.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Salisbury North Side Ditch	Apishapa creek and tributaries	May 31, 1869	16.80	----------	65.75	15
The Widderfield North Side Ditch	Apishapa creek and tributaries	June 1, 1869	8.64	----------	82.55	16
The Salisbury South Side Ditch	Apishapa creek and tributaries	Feb. 28, 1870	7.35	----------	91.19	17
The Salazar Irrigating Ditch	Apishapa creek and tributaries	Mar. 1, 1870	16.00	----------	98.54	18
The Martinez Ditch	Apishapa creek and tributaries	Apr. 3, 1870	2.48	----------	114.54	19
The Felipe Vasquez Ditch	Apishapa creek and tributaries	Dec. 31, 1870	4.38	----------	117.02	20
The Foster Ditch	Apishapa creek and tributaries	Dec. 31, 1871	14.70	----------	121.40	21
The Mill Ditch	Apishapa creek and tributaries	Apr. 30, 1872	14.12	----------	136.10	22
The Guadalupe Apodoca Ditch	Apishapa creek and tributaries	May 1, 1872	13.72	----------	150.22	23
The Boca Brothers Ditch	Apishapa creek and tributaries	July 31, 1872	2.00	----------	163.94	24
The Widderfield South Side Ditch, first enlargement	Apishapa creek and tributaries	May 18, 1883	6.44	17.48	165.94	25
The Widderfield North Side Ditch, first enlargement	Apishapa creek and tributaries	Feb. 15, 1886	13.67	22.31	172.38	26
The Widderfield South Side Ditch, second enlargement	Apishapa creek and tributaries	Mar. 15, 1886	11.48	28.96	186.05	27
The Salisbury North Side Ditch	Apishapa creek and tributaries	May 31, 1869	16.80	33.60	197.53	*28

The Salisbury South Side, first enlargement	Apishapa Creek and tributaries	Dec. 22, 1886	34.65	42.00	214.33	29
The Antonio Sais	Apishapa Creek and tributaries	Dec. 15, 1890	17.65		248.98	30
Total					266.63	

*Priority given in decree.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 19, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district	Order of priority on stream
The Gnonle Ditch	Purgatoire or Las Animas river	June 17, 1861	3.20	.....	.....	1	1
The Antonio Lopez Ditch	Purgatoire or Las Animas river	Nov. 1, 1861	1.68	.....	3.20	2	2
The Baca Ditch	Purgatoire or Las Animas river	Jan. 1, 1862	11.20	.....	4.88	3	3
The Leitensdorfer Ditch	Purgatoire or Las Animas river	Mar. 20, 1862	8.00	.....	16.08	4	4
The Chilili Ditch	Purgatoire or Las Animas river	Apr. 30, 1862	7.00	.....	24.08	5	5
The El Moro Ditch	Purgatoire or Las Animas river	Nov. 15, 1862	*10.95	.....	31.08	6	6
The Old Riley Dunton Ditch	Purgatoire or Las Animas river	Jan. 1, 1863	8.00	.....	42.03	7	7
The Hilorio Madril Ditch	Purgatoire or Las Animas river	Feb. 1, 1863	3.80	.....	50.03	8	8
The Reyes Montoya Ditch	Purgatoire or Las Animas river	Feb. 1, 1863	3.60	.....	.....	8	8
The Jesus Fernandez Ditch	Purgatoire or Las Animas river	Mar. 31, 1863	5.00	.....	57.43	9	9

The Chacon and Espanosa Ditch	Purgatoire or Las Animas river	June 30, 1863	1.40		62.43	10	10
The Martinez and Madina Ditch	Purgatoire or Las Animas river	Jan 1, 1864	1.00		63 83	11	11
The Eluterio Garcia Ditch	Purgatoire or Las Animas river	Mar. 31, 1864	1.50		64.83	12	12
The Salas North Ditch	Purgatoire or Las Animas river	Apr. 10, 1864	* 8.45		66 33	13	13
The Tijiras Ditch	Purgatoire or Las Animas river	May 10, 1864	9.00		74 78	15	14
The Antonio Lopez Ditch, first enlargement	Purgatoire or Las Animas river	May 31, 1864	1 68	3.36	83.78	16	15
The Davis and Martinez Ditch	Purgatoire or Las Animas river	Jan. 15, 1865	1.00		85.46	17	16
The Lewelling Ditch	Purgatoire or Las Animas river	June 1, 1865	4.00		86.46	18	17
The McCormick Ditch	Purgatoire or Las Animas river	Dec. 31, 1865	6.00		90.46	19	18
The Hoeline Ditch	Puagatoire or Las Animas river	Jan. 1, 1866	*36.89		96.46	20	19
The Burus and Duncan Ditch	Purgatoire or Las Animas river	Jan. 1, 1866	6.40			20	19
The Salas South Ditch	Purgatoire or Las Animas river	Feb. 1, 1866	8.80		139 75	21	20
The Varrus Ditch	Purgatoire or Las Animas river	Mar. 1, 1866	1.00		148 55	23	21
The Pheps Ditch	Purgatoire or Las Animas river	May 30, 1866	4.40		149 55	26	23
The Sizer Ditch	Purgatoire or Las Animas river	May 30, 1866	8.00			26	23
The Salas North Ditch, first enlargement	Purgatoire or Las Animas river	May 31, 1866	3.63	12.08	161.95	27	24

* Not to exceed.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 19, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Continued.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district	Order of priority on stream
The B. R. McGilliard Ditch	Purgatoire or Las Animas river	Jan. 1, 1867	4.00	.....	165.58	30	25
The Novrito Cordova Ditch	Purgatoire or Las Animas river	Mar. 1, 1867	.80	.....	169.58	31	26
The Rafael Cordova Ditch	Purgatoire or Las Animas river	Mar. 20, 1867	2.30	.....	170.38	32	27
The Veloshuez and Chacon Ditch	Purgatoire or Las Animas river	Apr. 10, 1867	4.00	.....	172.68	34	28
The Cheravog Ditch	Purgatoire or Las Animas river	May 31, 1867	3.78	.....	176.68	36	29
The Valasquez and Gallegos Ditch	Purgatoire or Las Animas river	Aug. 31, 1867	.60	.....	180.46	38	30
The Aramenta Ditch	Purgatoire or Las Animas river	Mar. 1, 1868	4.00	.....	181.06	39	31
The Samona Ditch	Purgatoire or Las Animas river	Jan. 10, 1870	2.40	.....	185.06	46	32
The Sanchez-Quintana Ditch	Purgatoire or Las Animas river	Mar. 1, 1870	.80	.....	187.46	49	33
The Sarcillo Ditch	Purgatoire or Las Animas river	Mar. 1, 1870	1.20	.....	.....	49	33

The Santistevan Ditch	Purgatoire or Las Animas river	Apr. 2, 1870	3.20	.....	189.46	52	34
The Las Animas Mill and C. Ditch	Purgatoire or Las Animas river	Nov. 5, 1870	.40	.....	192.66	53	35
The Quintanta Ditch	Purgatoire or Las Animas river	Mar. 31, 1871	.80	.....	193.06	54	36
The Turner Ditch	Purgatoire or Las Animas river	Nov. 10, 1872	1.80	.....	193.86	63	37
The Lutensdorfer Extension Ditch	Purgatoire or Las Animas river	Apr. 10, 1873	4.80	.....	195.66	65	38
The L. H. T. Ditch	Purgatoire or Las Animas river	May 20, 1873	.40	.....	200.46	67	39
The Casme De Aguerro Ditch	Purgatoire or Las Animas river	Apr. 10, 1875	1.20	.....	200.86	71	40
The Moestas Ditch	Purgatoire or Las Animas river	Nov. 1, 1875	*11.38	.....	202.06	72	41
The South Side Ditch	Purgatoire or Las Animas river	Feb. 17, 1876	*35.85	.....	213.44	73	42
The Moestas Ditch, first enlargement	Purgatoire or Las Animas river	Dec. 25, 1876	14.89	26.27	249.29	74	43
The South Side Ditch, first enlargement	Purgatoire or Las Animas river	Feb. 1, 1877	6.09	41.94	264.18	75	44
The Cordova Ditch	Purgatoire or Las Animas river	Mar. 11, 1877	6.00	.....	270.27	77	45
The Florida Ditch	Purgatoire or Las Animas river	Apr. 7, 1877	*22.00	.....	276.27	79	46
The Florida Ditch, first enlargement	Purgatoire or Las Animas river	Jan. 15, 1878	* 5.95	27.95	298.27	81	47
The Juan Felipe Lopez Ditch	Purgatoire or Las Animas river	June 2, 1880	.20	.....	304.22	84	48
The South Side Ditch, second enlargement	Purgatoire or Las Animas river	Mar. 10, 1882	11.49	53.43	304.42	87	49

* Not to exceed.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 19, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Continued.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district	Order of priority on stream
The Moestas Ditch, second enlargement	Purgatoire or Las Animas river	Dec. 15, 1882	1.73	28.00	315.91	88	50
The Lujan Ditch	Purgatoire or Las Animas river	Nov. 14, 1883	*14 38		317.64	89	51
The Sandoval Ditch	Purgatoire or Las Animas river	Nov. 23, 1883	*16.84		332.02	90	52
The Pulaski Ditch	Purgatoire or Las Animas river	Apr. 30, 1886	*38.85		348 86	93½	52½
The Chicosa Ditch	Purgatoire or Las Animas river	June 21, 1886	*43.00		387.71	94	53
The Lewelling and McCormick Ditch	Purgatoire or Las Animas river	Oct. 21, 1886	2 79		430.71	95	54
The Baca Extension Ditch	Purgatoire or Las Animas river	Mar. 12, 1887	*28.78	39.98	433.50	97	55
The Nine-Mile Ditch	Purgatoire or Las Animas river	May 10, 1887	*18.00		462.28	98	56
The Sandoval Ditch, first enlargement	Purgatoire or Las Animas river	Feb. 15, 1888	* 9.70	26.54	480.28	99	57
The South Side Ditch, third enlargement	Purgatoire or Las Animas river	Mar. 1, 1888	6.57	60.00	489.98	100	58

The Moestas Ditch, third enlargement	Purgatoire or Las Animas river	Mar. 1, 1888	1.73	28.00		100	58
The Chicosa Ditch, first enlargement	Purgatoire or Las Animas river	Mar. 13, 1889	37.00	80.00	498.28	103	59
Total					535.28		
The Dorn Ditch	South Fork	Apr. 1, 1866	2.40			25	1
The Valerio and Torres Ditch	South Fork	May 30, 1866	5.00		2.40	26	2
The Ramon Torres Ditch	South Fork	Nov. 1, 1866	7.00		7.40	28	3
The Leanoro, Duran and Martinez Ditch	South Fork	Nov. 1, 1866	* 6.60			28	3
The Hilario Ramon Martinez Ditch	South Fork	Mar. 1, 1868	1.60		21.00	29	4
The Mals Duran Ditch	South Fork	Mar. 30, 1870	5.00		22 60	50	5
The Juan Martinez Ditch	South Fork	Apr. 7, 1871	1.20		27.60	55	6
The Louis Torres Ditch	South Fork	Apr. 30, 1871	.30		28.80	57	7
The Garcia-Trujillo Ditch	South Fork	May 1, 1871	.80		29.10	58	8
The Juan Torres Ditch	South Fork	Mar. 1, 1872	1.60		29.90	59	9
The Antonio de Torres Ditch	South Fork	Apr. 30, 1872	.80		31.50	60	10
The Juan Martinez Duran Ditch	South Fork	June 30, 1872	* 3.00		32.30	62	11
The Weston Ditch	South Fork	Apr. 20, 1873	2.50		35.30	64	12
The Vallejo Ditch	South Fork	May 1, 1873	1.50		37.80	66	13
The Alexander, Torres and Vigil Ditch	South Fork	Feb. 28, 1874	1.60		39.30	68	14
The Duran Martinez Ditch	South Fork	Apr. 1, 1874	.80		40.90	69	15
The Trujillo Gallagos Ditch	South Fork	Apr. 30, 1877	1.20		41.70	80	16
The Louis Torres Extension Ditch	South Fork	May 31, 1885	4.00		42.90	93	17
Total					46.90		

*Not to exceed.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 19, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Continued.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district	Order of priority on stream
The Tayfoya and Vigil Ditch	North Fork	Nov. 1, 1866	1.60			28	1
The Ignacio Chacon Ditch	North Fork	Apr. 30, 1867	1.20		1.60	35	2
The Jose Leon Bialpando Ditch	North Fork	Apr. 1, 1868	1.00		2.80	40	3
The Jos. Lash Ditch	North Fork	Apr. 1, 1868	.60			40	3
The Peter Capet Ditch	North Fork	Feb. 1, 1870	1.00		4.40	47	4
The Dobores Bialpando Ditch	North Fork	Apr. 15, 1871	1.20		5.40	56	5
The Crescencio Ortiz Ditch	North Fork	Mar. 31, 1877	1.80		6.60	78	6
Total					8.40		
The Juan Vigil Ditch	Raton creek	May 1, 1864	3.00			14	1
The Barela No. 1 Ditch	Rio Sito creek	Mar. 1, 1868	* 3.56			39	1
The Barela No. 2 Ditch	Rio Sito creek	Mar. 1, 1868	* 1.50			39	1
Total					5.06		
The Francisco Chacon Ditch	Middle Fork	Nov. 1, 1866	1.00			28	1
The Dolores Duran Ditch	Middle Fork	April 30, 1872	2.00		1.00	35	2

The Prudencio Chacon Ditch	Middle Fork	Mar. 31, 1869	1.20		3.00	42	3
The Albino Vasques Ditch	Middle Fork	Nov. 1, 1866	.76		* 4.20	96	4
Total					4.96		
The Trinchera Ditch	Trinchera creek	Feb. 28, 1866	1,000 acres land			22	1
The O'Neal Ditch	San Yoidro creek	Dec. 31, 1866	5 00			29	1
The Skelly Ditch	San Yoidro creek	June 1, 1867	4.00		5.00	37	2
The Luis Maria Ditch	San Yoidro creek	Feb. 1, 1870	2.00		9.00	47	3
The Lucero Ditch	San Yoidro creek	Feb. 28, 1870	2.00		11.00	48	4
The Belardi Ditch	San Yoidro creek	Mar. 31, 1870	4.00		13.00	51	5
The Lucero Extension of the Belardi Ditch	San Yoidro creek		4.00			51	5
The Luis Maria Ditch	San Yoidro creek	May 31, 1872	* 4.60		21.00	61	6
The Schwatzell Ditch	San Yoidro creek	Oct. 31, 1879	4.00		25.60	83	7
The Valdez Ditch	San Yoidro creek	May 1, 1881	4.00		29.60	86	8
The San Yoidro Ditch	San Yoidro creek	May 1, 1885	4.90		33.60	91	9
The Jim McBride Ditch	San Yoidro creek	May 31, 1885	*10.00		38.50	93	10
The San Yoidro Extension Ditch	San Yoidro creek	May 31, 1888	2.40		48.50	102	11
Total					50.90		
The Tafoya Ditch	Trijole creek	May 31, 1867	14.00			36	1
The Maldanado Ditch	Trijole creek	June 1, 1867	* 6.00		14.00	37	2
The Miguel Gurule Ditch	Trijole creek	Mar. 31, 1879	8.00		20.00	83	3
Total					28.00		

*Not to exceed.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 19, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Concluded.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district	Order of priority on stream
The San Juan Vasques Ditch	San Francisco creek	Feb. 28, 1866	6.40			22	1
The Herrera Ditch	San Francisco creek	Mar. 1, 1867	* 2.67		6.40	31	2
The Hall Ditch	San Francisco creek	Apr. 1, 1867	* 1.60		9.07	33	3
The Archibald Upper San Francisco Ditch	San Francisco creek	Feb. 4, 1869	3.20		10.67	44	4
The Jesus Barela Ditch	San Francisco creek	May 10, 1869	2.60		13.87	45	5
The Wallis and Richmond Ditch	San Francisco creek	Mar. 1, 1870	1.66		16.44	49	6
The Moran Ditch	San Francisco creek	Mar. 4, 1877	6.00		18.10	76	7
The Jeannin's San Francisco Ditch	San Francisco creek	Apr. 15, 1888	6.40		24.10	101	8
Total					30.50		
The Garcia Cordova Ditch	Gray creek	Apr. 30, 1869	* 1.00			43	1
The Nicente Moya Ditch	Gray creek	Mar. 1, 1870	* 1.00		1.00	49	2
The Pioneer No. 1 Ditch	Gray creek	Feb. 10, 1881	* 1.87		2.00	85	3
The Pioneer No. 2 Ditch	Gray creek	May 15, 1885	.20		* 3.87	92	4

The Garcia Cordova Extension Ditch	Gray creek	May 21, 1889	* 1.00		4.07	104	5
Total					5.07		
The Chacon Ditch	Lorenzo Caum creek	May 1, 1869	1.20			44	1
The Feider "A" Ditch	San Jose creek	May 31, 1874	* 1.50			71	1

* Not to exceed.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 23, AS THEY HAVE BEEN MODIFIED SINCE THE STATEMENT PUBLISHED IN THE "FIFTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 1, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Randall and Nichols Ditch	Michigan creek	Oct. 14, 1874	10.00	.....	483.14	34
The Demick Ditch	Michigan creek	Apr. 12, 1875	8.00	.....	508.60	37
The Michigan Ditch	Michigan creek	June 30, 1875	2.00	.....	756.09	53
The Crozier and Taylor Ditch	Michigan creek	Oct. 1, 1876	12.35	.....	1,028.39	68
The Taylor Ditch	Michigan creek	July 18, 1878	18.78	.....	1,353.73	90
The Randall Ditch	Michigan creek	May 1, 1878	11.75	.....	1,372.51	*91
The Cincinnati Ditch	Michigan creek	June 20, 1879	9 42	.....	1,730.78	103
The Whitten Ditch	Michigan creek	Mar. 15, 1880	11.42	.....	1,823.20	110
The Sessions Ditch	Michigan creek	July 30, 1880	3.50	.....	2,049.18	127
The Gibson Ditch	Michigan creek	Sept. 15. 1880	2.46	.....	2,058.59	130
The Skelton Ditch	Michigan creek	Nov. 1, 1880	6.50	.....	2,061.05	131
The Demick Ditch, first enlargement	Michigan creek	Apr. 1, 1881	4.00	12.00	2,067.55	132
The Randall Ditch, first enlargement	Michigan creek	Apr. 1, 1881	11.75	23.50	2,071.55	*133
The Mesa Ditch	Michigan creek	Nov. 15, 1881	5.00	.....	2,483 27	149a

The Demick Ditch, second enlargement	Michigan creek	Mar. 1, 1882	4.00	16.00	2,488.27	150
The Lasell Ditch	Michigan creek	May 1, 1882	9.60		2,533.77	154
The Gibson Ditch, first enlargement	Michigan creek	July 25, 1882	2.00	4.46	2,942.35	175
The Malice Ditch	Four-Mile creek	Apr. 23, 1890	30.00		4,516.58	229
The Jasper Ditch	South Platte river	June 14, 1891	30.00		4,546.58	230
The Rogers Ditch	High creek	June 1, 1884	14.30		4,576.58	*231
The Henry Clark No. 1 Ditch	West creek	Apr. 5, 1880	3.00		4,590.88	*232
The Henry Clark No. 2 Ditch	West creek	May 10, 1880	3.00		4,593.88	*233
The Henry Clark No. 3 Ditch	Trail creek	May 20, 1882	2.66		4,596.88	*234
The Henry Clark No. 4 Ditch	Trail creek	June 4, 1882	2.66		4,599.54	*235
The Fremont Irrigating Ditch	Tarryall creek	July 1, 1889	20.00		4,602.20	*236
Total					4,622.20	

*Priority number as given in decree.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 28, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 5, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Biebel Ditch No. 1	Tomichi creek	Sept. 30, 1876	5.70	----------	----------	1
The Biebel Ditch No. 2	Tomichi creek	Sept. 30, 1876	3.26	8.96	----------	1
The Cabin Creek Ditch No. 2	Cabin creek	Dec. 31, 1877	.65	----------	8.96	2
The Kennedy Ditch No. 1	Razor creek	Mar. 15, 1878	1.95	----------	----------	3
The Kennedy Ditch No. 2	Razor creek	Mar. 15, 1878	1.30	3 25	9.61	3
The A. B. Coats Ditch	Razor creek	Apr. 15, 1878	2.34	----------	12.86	4
The Pioneer Ditch	Tomichi creek	May 31, 1878	9.36	----------	15.20	5
The Razor Creek Ditch	Razor creek	May 25, 1879	2.50	----------	24.56	6
The Monson and McDowell Ditch	Tomichi creek	May 31, 1879	2.99	----------	27.06	7
The Hirdman Ditch No. 1	Razor creek	May 31, 1879	2.34	----------	30.05	8
The Hirdman Ditch No. 2						
The Hirdman Ditch No. 3						
The Owen-Redden Ditch	Tomichi creek	Nov. 30, 1879	8.32	----------	32.39	9
The Hartman Ditch No. 1	Stubbs gulch	Dec. 31, 1879	1.95	----------	40.71	10
The Hartman Ditch No. 2						

The McCanne Ditch No. 1	Tomichi creek	Dec. 31, 1879	7.67		42.66	11
The McCanne Ditch No. 2						
The McCanne Ditch No. 3						
The Snyder Ditches Nos. 1 and 2	Razor creek	May 31, 1880	4.68		50.33	12
The Needle Creek Ditch	Needle creek	May 31, 1880	4.68		55.01	13
The S. Davidson & Co. Ditch	Tomichi creek	June 1, 1880	15.47		59.69	14
The D. A. McConnel Ditch	Tomichi creek	June 1, 1880	65		75.16	15
The Cox and McConnel Ditch	Tomichi creek	May 31, 1881	.97		75.81	16
The Goodrich Ditch	Tomichi creek	May 31, 1881	4.68		76.78	17
The Coats Brothers Ditch	Tomichi creek	May 31, 1881	1.17		81.46	18
The Gillett-Tomichi Irrigation Ditch	Tomichi creek	May 15, 1882	8.30		82.63	19
The Owens No. 1 Irrigation Ditch	Tomichi creek	Dec. 31, 1883	2.34		90.93	20
The Owens No. 2 Irrigation Ditch	Needle creek	May 31, 1885	.65		93.27	21
The Jennings-Elsen Irrigation Ditch	Tomichi creek	Dec. 31, 1885	3.09		93.92	22
The Hellmuth Ditches Nos. 1 and 2	Tie creek	Dec. 31, 1887	1.62		97.01	23
The Arch Irrigation Ditch	Tomichi creek	Dec. 31, 1887	14.35		98.63	24
Total					112.98	

NOTE—That the entire amount of water appropriated from the Tomichi creek and the following named tributaries thereof in said Water District No. 28, under the priorities above decreed, is hereby adjudicated and decreed respectively as follows:

Tomichi creek	5,662 acres of land,	3,538¾ statute inches.
Tie creek	100 acres of land,	62½ statute inches.
Needle creek	360 acres of land,	225 statute inches.
Razor creek	994 acres of land,	621¼ statute inches.
Cabin creek	40 acres of land,	25 statute inches.
Stubbs gulch	120 acres of land,	75 statute inches.
Making a total of	7,276 acres of land,	4,547½ statute inches.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO 37, AS THEY HAVE BEEN ESTABLISHED SINCE THE STATEMENT PUBLISHED IN THE "FIFTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 5, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Hawley and Reese Ditch	West Lake creek	Oct 5, 1889	.80		191.76	97
The Yoder Ditch	Elk creek	Apr. 12, 1890	3.20		192.56	98
The Mann Ditch	Booth creek	May 1, 1890	2.00		195.76	99
The Rees Creek Ditch	Rees creek	May 1, 1890	1.40		197.76	100
The Eagle Park Ditch	Long creek	May 13, 1890	1.00		199.16	101
The Booco Ditch	Alkali creek	May 30, 1890	1.80		200.16	102
The F. M. S. Ditch, first enlargement	Gypsum creek	May 30, 1890	1.50	3.24	201.96	103
The Peterson Ditch	Eagle river	Aug. 25, 1890	2.00		203.46	104
The Pando Ditch	Yoder creek	May 15, 1891	2.80		205.46	105
The Erickson Ditch	Eagle river	May 1, 1891	1.50		208.26	106
The Hosmer No. 2 Ditch	Eagle river	Aug. 28, 1891	1.60		209.76	107
The Eagle River Ditch	Eagle river	Sept. 1, 1891	4.00		211.36	108
The McBrayer Ditch, first enlargement	Gypsum creek	Dec. 1, 1891	.30	2.60	215.36	109
The McBrayer Ditch, second enlargement	Gypsum creek	Dec. 1, 1891	.90	3.50	215.66	110

The Burnison Ditch No. 2	Burnison creek	Jan. 14, 1892	.40		216.56	111
The Burnison Ditch	Burnison creek	Jan. 14, 1892	2.40	2.80	216.96	112
The Piney Creek	Piney creek	May 1, 1892	4.00		219.36	113
The Crawford Ditch, first enlargement	Lake creek	May 1, 1892	3.00		223.36	114
The Sarah M Ditch	Squaw creek	May 1, 1892	2.00		226.36	115
The Corcoran Ditch	Short creek	May 13, 1892	1.00		228.36	116
The Hosmer Ditch	Spring creek	Aug. 10, 1892	1.60		229.36	117
The Webb Ditch	Pitkin creek	Aug. 27, 1892	1.60		230.96	118
The Doggett and Parker Ditch	Gypsum creek	Sept. 27, 1892	.50		232.56	119
The Doggett and Parker Ditch	Gypsum creek	Sept. 27, 1892	1.30	1.80	233.06	120
The Puder Ditch	Nottingham creek	Sept. 27, 1892	1.40		234.36	120a
The Larzelere Ditch	Middle creek	Oct. 6, 1892	2.30		235 76	121
The Larzelere Ditch	Saw Mill creek	Oct. 10, 1892	1.16		238.06	122
The Scoville Ditch	Middle creek	Oct. 20, 1892	2.40		239.22	123
The Nottingham Ditch	Nottingham creek	Nov. 3, 1892	2.00		241.62	124
The Shiveley Ditch	Gore creek	Nov. 1, 1892	1.20		243.62	125
The Grundell Bros.' Ditch, second enlargement	Gypsum creek	Nov. 1, 1892	.80	1.60	244.82	126
The Dora B. Ditch, first enlargement	Squaw creek	Nov. 1, 1892	2.00		245.62	127
The Saw Mill Ditch	Saw Mill creek	Nov. 1, 1892	1.20		247.62	128
Total					248.82	

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 41, AS THEY HAVE BEEN ESTABLISHED SINCE THE STATEMENT PUBLISHED IN THE "FIFTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 5, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Ross Bros.' Ditch	Uncompahgre river	No date given	6.00			*68
The Ironstone Ditch	Uncompahgre river	No date given	37.50			69
The Val Verde Ditch	Uncompahgre river	No date given	5.00			70
The Uncompahgre (Loutsenhizer) Ditch	Uncompahgre river	No date given	20.60			71
The Uncompahgre Canal	Uncompahgre river	No date given	30.00			72
The Ben Davis Ditch	Uncompahgre river	No date given	3.25			73
The Garnett Ditch	Uncompahgre river	No date given	48.33			74
The Home Run Ditch	Uncompahgre river	No date given	21.88			75
The Selig Ditch	Uncompahgre river	No date given	12.00			76
The Geo. B. Jones and North Mesa Ditch	Uncompahgre river	No date given	5.50			77
The Woodgate and Callaway Ditch	Uncompahgre river	No date given	.34			78
The Chipeta (Montrose Co.) Ditch	Uncompahgre river	No date given	17.37			79
The Montrose City Ditch	Uncompahgre river	No date given	8.50			80
The Sunrise Ditch	Uncompahgre river	No date given	2.02			81

The Delta Chief Ditch	Uncompahgre river	No date given	21.50	----------	----------	82
The Silver Springs Ditch	Uncompahgre river	No date given	7.16	----------	----------	83
The Logan Ditch	Uncompahgre river	No date given	10.00	----------	----------	84
The East Side Ditch	Uncompahgre river	No date given	3.25	----------	----------	85
The Chipeta Beaudry Ditch	Uncompahgre river	No date given	4.41	----------	----------	86
The Reservation Ditch	Uncompahgre river	No date given	11.35	----------	----------	87
The Uncompahgre Canal and Cedar Creek Valley Ditch	Uncompahgre river	No date given	58.40	----------	----------	89

* "The Ross Bros.' Ditch" is also entitled to Priority No. 19 not to exceed 6 second feet.

"The Platte Ditch," original priority No. 68, is now entitled to Priority No. 50, not to exceed 2.08 second-feet.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 42, AS THEY HAVE BEEN ESTABLISHED SINCE THE STATEMENT PUBLISHED IN THE "FIFTH BIENNIAL REPORT" PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 5, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority on stream
The Tenderfoot Ditch	Tenderfoot creek		5.70			1
The Mesa Ditch	Tenderfoot creek	Feb. 23, 1885	2.00		5.70	2
The Tenderfoot Ditch, first enlargement	Tenderfoot creek	Sept. 5, 1885	2.00		7.70	3
The Waste Water Mesa Ditch	Tenderfoot creek	Apr. 15, 1886	2.00		9.70	4
Total					11.70	

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 43, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The Powell Park Ditch	White river	May 1, 1883	20.00	.....	.....	1
The Powell Park Ditch, first enlargement	White river	Feb. 14, 1887	20.00	40.00	113.90	56
The Meeker Ditch	White river	Nov. 20, 1883	20.00	.....	20.00	7
The Old Agency Ditch	White river	Apr. 20, 1884	8.50	.....	40.00	8
The Old Agency Ditch, first enlargement	White river	Apr. 10, 1885	5.00	.....	55.90	21
The Old Agency Ditch, second enlargement	White river	Mar. 1, 1887	2.50	16.00	133.90	57
The La Kamp Ditch	White river	Apr. 30, 1884	1.00	.....	48.50	10
The Niblock Ditch	White river	Mar. 8, 1885	2.40	.....	49 50	17
The Niblock Ditch, first enlargement	White river	Apr. 16, 1887	5.40	7.80	136.40	66
The South Side Highline Ditch	White river	Apr. 1, 1885	4.00	.....	51.90	18
The South Side Highline Ditch, first enlargement	White river	May 1, 1886	4.00	.....	108.90	38
The South Side Highline Ditch, second enlargement	White river	May 5, 1887	4 70	12 70	141 80	73
The Little Ditch	White river	Apr. 5, 1886	3.00	.....	60.90	33
The Highland Ditch	White river	May 1, 1886	45.00	.....	63.90	35

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 43, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Continued.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The Lowland Ditch	White river	Nov. 6, 1886	1.00		112.90	54
The Lowland Ditch, first enlargement	White river	Mar. 13, 1888	.60	1.60	173.30	88
The Oak Ridge Park Ditch	White river	Dec. 20, 1887	25.00		146.50	84
The Mammoth Ditch	White river	Jan. 1, 1888	1.80		171.50	85
The Nimerick Ditch	White river	Sept. 24, 1889	4.80		173.90	113
Total					178.70	
The Elk Creek Ditch	Elk creek	Aug. 5, 1881	1.60			2
The Elk Creek Ditch, first enlargement	Elk creek	Apr. 25, 1886	1.00	2.60	1.60	34
Total					2.60	
The Wright Ditch	Curtis creek	Apr. 1, 1883	1.00			3
The Wright Ditch, first enlargement	Curtis creek	Mar. 31, 1887	1.00	2.00	1.00	62
The Paysou Ditch	Curtis creek	June 1, 1885	2.40		2.00	25
Total					4.40	

The Morgan Ditch No. 1	Piceance creek	Apr. 15, 1883	1.00			3a
The Morgan Ditch No. 1, first enlargement	Piceance creek	Sept. 27, 1886	.40	1.40	22.60	51a
The P. and L. Ditch	Piceance creek	June 1, 1883	.50		1.00	5
The Home Ditch	Piceance creek	May 10, 1884	1.60		1.50	12
The Ryan Ditch	Piceance creek	June 1, 1884	2.50		3.10	13
The Metz Ditch	Piceance creek	Dec. 2, 1884	1.60		5.60	16a
The Metz Ditch, first enlargement	Piceance creek	July 15, 1888	.60	2.20	64.10	106
The J. M. Cole Ditch	Piceance creek	Dec. 3, 1884	1.50		7.20	16b
The J. M. Cole Ditch, first enlargement	Piceance creek	May 5, 1886	.50	2.00	17.20	39a
The Schutte Ditch	Piceance creek	Apr. 1, 1885	.80		8.70	19
The Metz and Reigan ditch	Piceance creek	May 26, 1885	3.40		9.50	24
The Sayer Ditch	Piceance creek	June 1, 1885	1.00		12.90	26a
The Pat Reigan Ditch	Piceance creek	June 15, 1885	.80		13.90	27a
The Cox Ditch	Piceance creek	May 1, 1886	2.50		14.70	37a
The Piceance Ditch	Piceance creek	July 12, 1886	2.00		17.70	45
The Larson Ditch	Piceance creek	Sept. 17, 1886	2.50		19.70	50
The Morgan No. 2 Ditch	Piceance creek	Sept. 27, 1886	.40		22.20	50b
The Emily Ditch	Piceance creek	Nov. 5, 1886	2.00		23.00	53
The Case and Storey Ditch	Piceance creek	Dec. 26, 1886	5.20		25.00	55
The B., M. and H. Ditch	Piceance creek	Mar. 10, 1887	5.40		30.20	58
The B., M. and H. Ditch, first enlargement	Piceance creek	Apr. 18, 1889	.50	5.90	66.30	112a
The Wallace Ditch	Piceance creek	Apr. 3, 1887	.70		35.60	63
The M., H. and M. Ditch	Piceance creek	Apr. 18, 1887	7 00		36.30	68
The Oldland Ditch	Piceance creek	Apr. 27, 1887	4.00		43.30	89
The Spaulding Ditch	Piceance creek	May 15, 1887	1.60		47.30	75

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 43, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Continued.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The B. and M. Ditch	Piceance creek	May 25, 1887	5.50	----------	48.90	77
The Burch No. 2 Ditch	Piceance creek	Oct. 10, 1887	1.50	----------	54.40	82
The White River City Ditch	Piceance creek	Oct. 20, 1887	5.00	----------	55.90	83
The Upper Ditch	Piceance creek	Apr. 15, 1888	.80	----------	60.90	91
The Rye Grass Ditch	Piceance creek	June 5, 1888	2.40	----------	61.70	104
The German Ditch	Piceance creek	Mar. 25, 1889	1.60	----------	64.70	109
Total				----------	66.80	
The Coal Creek No. 1 Ditch	Coal creek	May 14, 1883	4.00	----------	----------	4
The Coal Creek No. 1 Ditch, first enlargement	Coal creek	May 15, 1885	4.00	----------	7.00	23
The Coal Creek No. 1 Ditch, second enlargement	Coal creek	May 10, 1888	1.00	9.00	31.60	99
The Martin Ditch	Coal creek	June 7, 1883	3.00	----------	4.00	6
The Martin Ditch, first enlargement	Coal creek	Sept. 1, 1886	1.00	4.00	22.00	48
The Coal Creek Mesa Ditch	Coal creek	Sept. 20, 1885	10.00	----------	11.00	29
The Coal Creek Mesa Ditch, first enlargement	Coal creek	Mar. 1, 1888	7.70	17.70	23.90	87

The Coal Creek Valley Ditch	Coal creek	May 27, 1886	1.00		21.00	43
The Coal Creek Valley Ditch, first enlargement	Coal creek	Apr. 15, 1887	.90	1.90	23.00	65
Total					32.60	
The Willow Creek No. 1 Ditch	Willow creek	Sept. 29, 1884	4.80			14
The Willow Creek Ditch No. 2	Willow creek	Sept. 29, 1884	1.20		4.80	15
The Willow Creek No. 3 Ditch	Willow creek	Sept. 29, 1884	1.20		6.00	16
The Pile Ditch	Willow creek	Mar. 15, 1887	2.00		7.20	59
The Taylor Ditch	Willow creek	May 9, 1888	2.00		9.20	98
The Ebler Ditch	Willow creek	May 20, 1888	1.00		11.20	102
Total					12.20	
The Little Beaver Ditch	Little Beaver creek	Apr. 8, 1885	1.80			20
The Little Beaver Ditch, first enlargement	Little Beaver creek	May 20, 1887	1.40	3.20	1.80	76
Total					3.20	
The Hughes No. 1 Ditch	Thurman creek	May 5, 1885	1.00			22
The Hughes No. 1 Ditch, first enlargement	Thurman creek	May 1, 1888	1.00	2.00	8.10	95
The Hayes Ditch	Thurman creek	Mar. 20, 1886	1.60		1.00	31
The Hughes No. 2 Ditch	Thurman creek	May 5, 1886	.40		2.60	39
The Hughes No. 2 Ditch, first enlargement	Thurmau creek	May 2, 1888	.40	.80	10.70	97
The Hay Ditch	Thurman creek	Aug. 1, 1886	1.00		3.00	46
The Hay Ditch, first enlargement	Thurman creek	Apr. 1, 1888	.60	1.60	6.00	89
The Howard Ditch	Thurman creek	Sept. 2, 1886	2.00		4.00	49
The Reigan No. 1 Ditch	Thurman creek	May 1, 1888	1.50		6.60	94
The Reigan No 2 Ditch	Thurmau creek	May 2, 1888	1.60		9.10	96
Total					11.10	

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 43, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Continued.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The Leonard Ditch	Fourteen-Mile creek	May 15, 1885	1.60			22a
The McKee Ditch	Black Sulphur creek	May 10, 1884	1.50			12a
The D. D Taylor Ditch	Black Sulphur creek	Apr. 5, 1887	2.00		1.50	64
The Black Eagle Nos. 1 and 2 Ditch	Black Sulphur creek	Apr. 16, 1887	2.00		3.50	64c
The Schweizer Ditch	Black Sulphur creek	Sept. 30, 1888	2.60		5.50	105b
Total					8.10	
The Harp Ditch	Sulphur creek	June 4, 1885	2.00			26
The Wagner Ditch	Sulphur creek	June 1, 1886	2.00		2.00	44
Total					4.00	
The Lone Tree Ditch	Lone Tree creek	June 15, 1885	.08			27
The D-Bar Ditch	Ryan's gulch	Aug. 15, 1885	1.60			27c
The Miller Ditch	Ryan's gulch	Sept. 1, 1885	.05		1.60	28
The Miller Ditch, first enlargement	Ryan's gulch	Sept. 10, 1888	1.50	2.00	2.10	107
Total					3.60	

The Wilson Ditch	Yellow creek	May 1, 1886	1.00			36
The Wilson Ditch, first enlargement	Yellow creek	May 25, 1887	1.40	2.40	1.00	78
The Latham Ditch	Yellow creek	April 18, 1887	2.00		2.40	67
Total					4.40	
The Sawyer Ditch	Spring gulch	May 1, 1886	2.00			37
The Gilmor Ditch	Hunters' gulch	May 10, 1886	1.50			40
The Last Chance Ditch	Hunters' gulch	Apr. 13, 1887	1.40		1.50	64b
The Hunter Ditch	Hunters' gulch	May 15, 1888	1.00		2.90	101
Total					3.90	
The Nichols Ditch	East Flag creek	May 10, 1886	1.00			41
The B., A. and B. Ditch	Flag creek	May 16, 1886	1.50			42
The B., A. and B. Ditch, first enlargement	Flag creek	May 10, 1888	2.30	3.80	13.90	100
The Melvin Ditch	Flag creek	Aug. 22, 1886	.50		1.50	47
The Melvin Ditch, first enlargement	Flag creek	Apr. 30, 1888	1.50	2.00	9.80	92
The Rooney Ditch	Flag creek	Sept. 29, 1886	2.50		2.00	52
The Howey Ditch	Flag creek	Mar. 24, 1887	1.20		4.50	61
The Howey Ditch, first enlargement	Flag creek	Feb. 1, 1888	.80	2.00	9.00	86
The Beard and Watson Ditch	Flag creek	Apr. 30, 1887	1.00		5.70	70
The Griffith No. 1 Ditch	Flag creek	May 1, 1887	.30		6.70	71
The Yonck Ditch	Flag creek	May 5, 1887	2.00		7.00	72
The Barnhart Ditch	Flag creek	May 1, 1888	2.60		11.30	93
The Bawden Ditch	Flag creek	June 18, 1888	1.00		16.20	105
The Griffith No. 2 Ditch	Flag creek	Oct. 20, 1888	1.30		17.20	108
Total					18.50	

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 43, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Concluded.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The Peterson and Coon Ditch	Big Beaver creek	June 20, 1886	1.60			74a
The Big Beaver Ditch	Big Beaver creek	Apr. 5, 1887	2.00		1 60	64a
The Ellen B. Ditch	Big Beaver creek	June 15, 1888	.50		3.60	104a
The Coon Ditch	Big Beaver creek	June 25, 1888	.80		4.10	105a
The Peterson and Dunn Ditch	Big Beaver creek	Apr. 10, 1889	3.00		4.90	110
The Mary Dunn Ditch	Big Beaver creek	July 5, 1889	.80		7.90	111
Total					8.70	
The Home Supply Ditch	Nineteen-Mile creek	Sept. 19, 1886	1.00			51
The Thirteen-Mile Ditch	Thirteen-Mile creek	Oct. 20, 1886	.80			52a
The Burch No. 1 Ditch	Spring	Mar. 15, 1887	.60			60
The O. I. C. Ditch	Fawn creek	Apr. 27, 1887	1.20			69a
The No Name Ditch	Fawn creek	May 1, 1887	.40		1.20	71a
The Fawn Creek Ditch	Fawn creek	May 1, 1887	1.20		1.60	71b
Total					2.80	

The Decker Irrigating Ditch	East Douglas creek	May 6, 1887	2.80			72a
The Duck Creek Ditch	Duck creek	May 15, 1887	1.00			74
The Jessup No. 1 Ditch	Stewart's gulch	June 16, 1887	.60			79
The Blue Grass Ditch	Stewart's gulch	July 11, 1887	.60		.60	80
The Jessup No. 2 Ditch	Stewart's gulch	Apr. 14, 1888	.40		1.20	90
The Florence Ditch	Stewart's gulch	June 3, 1888	1.80		1.60	103
Total					3.40	
The Sayer Spring Ditch	Spring	Sept. 1, 1887	.80			81
The Hutchinson Spring Ditch	Spring	July 18, 1889	.50			112

TABLE

GIVING RESERVOIR DECREES IN WATER DISTRICT NO. 43, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF RESERVOIR	Source of Appropriation	Date of Appropriation	Amount in cubic feet decreed to each priority	Order of priority in district
The Procter Reservoir	Curtis creek	April 1, 1886	290,400	1
The Larson Reservoir	Tributary of Piceance creek	July 20, 1888	2,700,000	2

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 44, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The Taylor Ditch	Good Springs creek	May 1, 1879	1.66	----------	----------	1
The John H. Collom Irrigating Ditch	Good Springs creek	Mar. 20, 1883	3.33	----------	1.66	6
The Arthur Collom Ditch	Good Springs creek	May 10, 1885	1.00	----------	4.99	13
The Good Springs Ditch No. 1	Good Springs creek	May 20, 1885	.50	----------	5.99	14
The Good Springs Ditch No. 2	Good Springs creek	May 20, 1885	1.00	----------	6.49	15
The A. Q. Ditch	Good Springs creek	Apr. 6, 1886	4.17	----------	7.49	17
The Spring Creek Ditch No. 1	Good Springs creek	June 30, 1887	.42	----------	11.66	22
The Spring Creek Ditch No. 2	Good Springs creek	June 30, 1887	.58	----------	12.08	23
Total			----------	----------	12.66	
The Mountain Meadow Ditch	Wilson creek	May 20, 1881	5.00	----------	----------	2
The Hullet and Torrence Ditch	Wilson creek	Mar 1, 1885	5.00	----------	5.00	10
The Chas. Collom Ditch	Wilson creek	May 10, 1887	1.66	----------	10.00	20
Total			----------	----------	11.66	
The Morgan Ditch	Morgan creek	June 1, 1881	5.00	----------	----------	3

The Collom Ditch	Morgan creek	June 9, 1882	6.66		5.00	4
Total					11.66	
The Milk Creek No. 1 Ditch	Milk creek	Mar. 10, 1883	2.66			5
The Wilson Ditch	Milk creek	Nov. 1, 1885	5.00		2.66	16
The J. A. Martin Ditch	Milk creek	May 1, 1886	3.33		7.66	19
The D. D. and E. Ditch	Milk creek	Mar. 8, 1888	8.40		10.99	27
Total					19.39	
The J. P. Moran Ditch	Williams Fork	June 1, 1883	2.00			7
The 8 F. No. 1 Ditch	Williams Fork	May 1, 1885	1.33		2.00	12
The Ratcliff Ditch	Williams Fork	April 30, 1888	1.42		3.33	28
The Jarvis Ditch	Williams Fork	April 15, 1889	1.00		4.75	31
The Highland Ditch	Williams Fork	April 28, 1889	3.84		5.75	32
The 8 F. No. 2 Ditch	Williams Fork	April 30, 1889	.67		9.59	33
The Dunston Ditch	Williams Fork	May 15, 1889	1.33		10.26	34
Total					11.59	
The Harper Ditch No. 1	Waddell creek	June 1, 1883	2.83			8
The Highland (axial)	Mogeropets creek	July 1, 1884	8.00			9
The Deer Creek and Mogeropets Ditch	Mogeropets creek	May 12, 1887	4.17		8.00	21
Total					12.17	
The Collom and Wilson Ditch	Cement creek	Mar. 2, 1885	4.33			11
The Lilly Park No. 1 Ditch	Yampa or Bear river	April 10, 1886	36.67			18
The Yampa Valley Stock Breeding Co.'s Ditch	Yampa or Bear river	Oct. 22, 1887	12.50		36.67	26

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 44, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Concluded.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The Yampa Valley Stock Breeding Co.'s Ditch, first enlargement	Yampa or Bear river	Oct. 23, 1889	4.20	16.70	49.17	35
Total					53.37	
The Hayden Gulch Ditch	Hayden gulch	June 1, 1886	.50			19½
The Sand Creek Ditch	Sand creek	July 10, 1887	.50			24
The Harper Ditch No. 2	Birch creek	Aug. 11, 1887	.50			25
The Deer Creek Ditch	Deer creek	May 20, 1888	1.00			29
The J. M. Kellog Ditch No. 2	Deer creek	Mar. 30, 1892	1.00		1.00	36
Total					2.00	
The Rye Grass Ditch	Rye Grass gulch	May 23, 1888	.25			30

TABLE

GIVING RESERVOIR DECREES IN WATER DISTRICT NO. 44, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF RESERVOIR	Source of Appropriation	Date of Appropriation	Amount in acre-feet claimed for each reservoir	Total amount in second-feet previously decreed in district	Order of priority in district
The Emerson Reservoir	Springs located in Sec. 29, T. 8 N., R. 93 W.	Aug. 10, 1883	12.20		1
The Hulett Reservoir	Springs in Slide gulch	June 1, 1887	800.00		2
The Lay Reservoir	Lay creek	May 1, 1888	30.00		3

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 48, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 1, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Mansfield No. 2 Ditch	Big Laramie river	June 1, 1880	19.84	.....	.....	1
The Hills Ditch	Big Laramie river	July 1, 1880	11.00	.....	19.84	2
The Warren Ditch	Big Laramie river	Mar. 25, 1881	6.67	.....	30.84	3
The Hance Ditch	Grace creek	Mar. 31, 1881	19.44	.....	37.51	4
The Stuck Creek Ditch	Stuck creek	Apr. 1, 1881	16.12	.....	56.95	5
The Jim Creek Ditch	Jimmy creek	July 10, 1881	9.00	.....	73.07	6
The Bliler and Boswell Ditch	Big Laramie river	Apr. 1, 1882	16.43	.....	82.07	7
The Mansfield Ditch	Big Laramie river	Apr. 20, 1882	11.61	.....	98.50	8
The Yelton Ditch	Big Laramie river	July 1, 1882	30.14	.....	110.11	9
The Martin Ditch No. 1	Big Laramie river	Apr. 20, 1883	15.50	.....	140.25	10
The La Garde Ditch	La Garde creek	June 10, 1883	10.33	.....	155.75	11
The Ward Ditch No. 1	Jimmy creek	June 15, 1883	4.25	.....	166.08	12
The Ward Ditch No. 2	Jimmy creek	July 1, 1883	9.48	.....	170.33	13
The Jimmy Creek Ditch	Jimmy creek	June 1, 1884	5.52	.....	179.81	14
The Smith's Brown Ditch	Big Larimie river	June 10, 1884	16.53	.....	185.33	15

The Trollope Creek Ditch	Trollope creek	June 15, 1884	6.89	----------	201.86	16
The Homestead Ditch	McIntyre creek	July 10, 1884	9.00	----------	208.75	17
The Martin Ditch No. 2	Big Larimie river	Apr. 30, 1887	14.50	----------	217.75	18
The Grace Creek Ditch	Grace creek	Apr. 1, 1888	3.07	----------	232.25	19
The Brown Ditch	Nun creek	May 31, 1890	10.00	----------	235.32	20
The Lamb Ditch	McIntyre creek	June 1, 1890	3.88	----------	245.32	21
The Jimmy Creek Ditch	Extension to Big Larimie river	May 1, 1891	No additional appropriation			22
The Larimie River Ditch	Big Larimie river	Aug. 7, 1891	400.00	----------	249.20	23
The Comet Ditch	McIntyre creek	Dec. 7, 1892	7.40	----------	649.20	24
The Forrester Ditch	Brown creek	May 15, 1893	7.00	----------	656.60	25
The Pache Ditch	La Garde creek	May 25, 1893	18.14	----------	663.60	26
The Link Ditch No. 1	Big Larimie river	June 1, 1894	14.22	----------	681.74	27
The Lone Tree Ditch	Lone Tree creek	Oct. 24, 1894	25.00	----------	695.96	28
The French Woman Ditch	French Woman creek	May 28, 1896	7.56	Conditionally	720.96	29
The Trollope Creek Ditch, enlargement	Trollope creek	May 29, 1896	10.86	17.75	728.52	30
The Slough Creek Ditch	Slough creek	May 30, 1896	4.11	----------	739.38	31
The Link Ditch No. 2	Big Larimie river	June 15, 1896	2.00	----------	743.49	32
Total	----------	----------	----------	----------	745.49	

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 54, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The Salisbury Ditch	Battle creek	May 1, 1884	.83			1
The Wilson Ditch	Battle creek	June 25, 1885	1.25		.83	5
Total					2.08	
The Slater Fork Ditch	Slater Fork creek	June 1, 1885	6.00			2
The Morgan Slater Ditch	Slater Fork creek	June 1, 1885	2.50		6.00	3
The McCorgar Ditch	Slater Fork creek	Oct. 12, 1888	1.00		8.50	10
The Single Ditch	Slater Fork creek	Apr. 4, 1889	1.66		9.50	12
The Mary E. Huffman Ditch No. 1	Slater Fork creek	Oct. 22, 1892	1.33		11.16	15
The Mary E. Huffman Ditch No. 2	Slater Fork creek	Oct. 22, 1892	.67		12 49	16
The Mary E. Huffman Ditch No. 3	Slater Fork creek	Oct. 22, 1892	.33		13.16	17
Total					13.49	
The Morgan and Beelar Ditch	Little Snake river	June 15, 1885	5.48			4
The Blair Ditch	Little Snake river	April 16, 1886	5.83		5.48	7
The Beeler Ditch	Little Snake river	June 10, 1886	2.50		11.31	8

The Robedoux Ditch	Little Snake river	Apr. 1, 1888	2.33		13.81	9
The Clark, Butler and Westfall Ditch	Little Snake river	Nov. 20, 1888	3.17		16.14	11
The Majors Ditch	Little Snake river	May 1, 1890	3.33		19.31	13
The Kilgour Ditch	Little Snake river	Apr. 12, 1891	.92		22.64	14
Total					23.56	
The Davidson Ditch	Four-Mile creek	Oct. 18, 1885	2.33			6
The Independent Ditch	Willow creek	Nov. 18, 1893	2.17			18

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 56, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The Thomas Doudle Ditch	Beaver creek	Apr. 15, 1880	1.66	.....	.....	1
The Beaver Ditch	Beaver creek	Apr. 1, 1893	2.00	.....	1.66	4
Total	.....	.....	.....	.....	3.66	
The Prestopetz	South fork of Vermillion creek	Apr. 1, 1882	3.33	.....	.....	2
The Yarnall Ditch No. 1	South fork of Vermillion creek	Sept. 15, 1886	1.25	.....	3.33	3a
The Yarnall Ditch No. 2	South fork of Vermillion creek	Apr. 20, 1886	1.00	.....	4.58	3b
The Rouff Ditch No. 1	South fork of Vermillion creek	July 15, 1887	.83	.....	5.58	3c
The Rouff Ditch No. 2	South fork of Vermillion creek	Aug. 15, 1892	.50	.....	6.41	5
The Sparks Ditch	South fork of Vermillion creek	Apr. 10, 1893	.33	.....	6.91	6
Total	.....	.....	.....	.....	7.24	
The Malt Springs Ditch	Malt Spring creek	May 1, 1883	.25	.....	.....	3d

TABLE

GIVING RESERVOIR DECREES IN WATER DISTRICT NO. 56, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF RESERVOIR	Source of Appropriation	Date of Appropriation	Amount in acre-feet decreed to each priority	Total amount in second-feet previously decreed in district	Order of priority in district
The Bassett Reservoir	Springs located in Sec. 2, T. 9 N., R. 102 W	May 25, 1883	32.71	----------	1

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 57, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The Bear River Ditch	Yampa or Bear river	Oct. 20, 1881	11.30	----------	----------	1
The Walker Ditch	Yampa or Bear river	May 1, 1882	8.75	----------	11.30	2
The Walker Ditch, first enlargement	Yampa or Bear river	Oct. 1, 1888	8.75	15.00	114.94	32
The Brock Ditch	Yampa or Bear river	May 30, 1883	4.50	----------	20.05	3
The Brock Ditch, first enlargement	Yampa or Bear river	Oct. 18, 1888	1.50	6.00	123.69	33
The Shelton Ditch	Yampa or Bear river	Apr. 15, 1883	7.50	----------	24.55	4
The Shelton Ditch, first enlargement	Yampa or Bear river	Oct. 30, 1888	22.50	30.00	126.97	35
The Williams Ditch	Yampa or Bear river	Oct. 8, 1884	3.55	----------	32.05	10
The Williams Ditch, first enlargement	Yampa or Bear river	Oct. 1, 1888	1.78	4.33	125.19	34
The Deep Cut Ditch	Yampa or Bear river	Dec. 1, 1884	28.58	----------	35.60	11
The R. E. Clark Ditch	Yampa or Bear river	June 6, 1887	1.77	----------	64.18	16
The R. E. Clark Ditch, first enlargement	Yampa or Bear river	May 1, 1889	.89	2.66	152.29	41
The Yampa Ditch	Yampa or Bear river	June 6, 1887	6.50	----------	65.95	17
The Craig Ditch	Yampa or Bear river	Nov. 7, 1887	23.33	----------	72.45	19
The Giberalter Ditch	Yampa or Bear river	Mar. 8, 1888	19.16	----------	95.78	20

The Dennis Blewett Ditch	Yampa or Bear river	Nov. 12, 1888	5.83		149.47	36
The Marshall and Roberts Ditch	Yampa or Bear river	Nov. 20, 1888	4.33		155.30	37
The Island Home Ditch	Yampa or Bear river	April 15, 1889	2.66		159.63	40
Total					163.18	
The Sage Creek Ditch	Sage creek	July 30, 1883	1.70			5
The Magor Ditch	Sage creek	Sept. 1, 1888	3 33		1.70	31
Total					5.03	
The Brotherton Ditch	Fortification creek	Aug. 20, 1883	21.30			6
The Fortification Creek Ditch	Fortification creek	May 13, 1884	7.00		21.30	8
The Straight Line Ditch	Fortification creek	May 18, 1886	2.33		28.30	14
The Wisconsin Ditch	Fortification creek	May 19, 1888	17.00		30.63	28
The Craig Irrigating Ditch	Fortification creek	Mar. 31, 1890	14.00		47.63	45
Total					61.63	
The Tow Creek Ditch No. 1	Tow creek	Nov. 17, 1883	1.70			7
The Tow Creek Ditch No. 2	Tow creek	June 11, 1890	2.00		1.70	48
Total					3.70	
The Hay Gulch Ditch	Hay gulch	June 25, 1884	3.30			9
The Nowel Ditch	Elk Head creek	May 14, 1885	10.00			12
The Smith Ditch	Elk Head creek	Dec. 6, 1886	5.46		10.00	15
The Smith Ditch, first enlargement	Elk Head creek	Mar. 16, 1888	2.20	7.66	15.46	21
The McKinley Ditch No. 1	Elk Head creek	May 1, 1890	8.33		17.66	46
The McKinley Ditch No. 2	Elk Head creek	May 1, 1890	11.66		25.99	47
Total					37.65	

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 57, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Concluded.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The Cheney Ditch	Cheney creek	May 15, 1886	17.00	.....	.....	13
The Little Bear Ditch	Little Bear river	Oct. 10, 1887	11.50	.....	.....	18
The Middle Creek Ditch	Middle creek	Apr. 5, 1888	1.16	.....	.....	22
The Rawlinson Ditch	Fish creek	Apr. 15, 1888	1.50	.....	.....	23
The Boetler Ditch	Fish creek	May 5, 1888	1.66	.....	1.50	25
The Koll Ditch	Fish creek	May 10, 1888	2.16	.....	3.16	26
The J. J. L. Ditch	Fish creek	Aug. 30, 1888	8.00	.....	5.32	30
The South Side Ditch	Fish creek	Apr. 1, 1889	5.00	.....	13.32	39
The Highland Ditch	Fish creek	Sept. 13, 1889	13.33	.....	18.32	44
The Williams Park Ditch	Fish creek	Apr. 12, 1891	6.66	.....	31.65	49
Total	.....	.....	.....	.....	38.31	
The Trout Creek Ditch No. 2	Trout creek	May 1, 1888	1.66	.....	.....	24
The William H. Jones Ditch	Trout creek	May 12, 1888	1.66	.....	1.66	27
The Jones and Kleekner Ditch	Trout creek	July 20, 1888	2.00	.....	3.32	29

The Trout Creek Ditch No. 3	Trout creek	Mar. 14, 1889	7.66		5.32	38
The Trout Creek Ditch No. 1	Trout creek	May 20, 1889	1.00		12.98	42
The Crowell Ditch	Trout creek	Aug. 15, 1889	2.66		13.98	43
The Omo Ditch	Trout creek		1.83		16.64	43a
Total					18.47	

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 58, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The Mill No. 1 (Egeria) Ditch	Yampa or Bear river	May 25, 1883	4.20			1
The Pennsylvania Ditch	Yampa or Bear river	June 6, 1883	5.30		4.20	2
The Bird Ditch	Yampa or Bear river	June 28, 1883	8.30		9.50	4
The Nickell Ditch	Yampa or Bear river	July 20, 1883	5.30		17.80	5
The Stafford Ditch	Yampa or Bear river	June 14, 1884	3.33		23.10	10
The Fix Ditch	Yampa or Bear river	June 16, 1884	8.33		26.43	11
The Speckled Trout Ditch	Yampa or Bear river	June 1, 1885	.70		34.76	13
The Old Cabin Ditch	Yampa or Bear river	June 2, 1885	2 00		35.46	14
The Woolery Ditch	Yampa or Bear river	June 14, 1885	10.00		37.46	15
The Mandall Ditch	Yampa or Bear river	Oct. 20, 1885	3.16		47.46	18
The Mandall Ditch, first enlargement	Yampa or Bear river	Apr. 7, 1888	18.96		71.58	43
The Mandall Ditch, second enlargement	Yampa or Bear river	Apr. 5, 1891	3.16	25.28	171.10	93
The Hoag and Laughlin Ditch	Yampa or Bear river	June 16, 1886	1.50		50.62	25
The Buckingham and Mandall Ditch	Yampa or Bear river	Oct. 20, 1886	13.80		52.12	27
The Brooks Ditch	Yampa or Bear river	May 15, 1887	2.66		65.92	31

The Whipple Ditch	Yampa or Bear river	May 16, 1887	2.00		68.58	32
The Whipple Ditch, first enlargement	Yampa or Bear river	Oct. 15, 1891	2.00	4.00	174.26	99
The Ira J. Van Camp Ditch	Yampa or Bear river	Oct. 13, 1887	1.00		70.58	40
The Egeria Ditch	Yampa or Bear river	May 1, 1888	8.40		90.54	46
The Hernage and Kolbe	Yampa or Bear river	May 2, 1888	4.00		98.94	48
The Island Ditch	Yampa or Bear river	Sept. 18, 1888	3.00		102.94	57
The Yellow Jacket Ditch	Yampa or Bear river	Oct. 22, 1888	2.00		105.94	60
The Suttle Ditch	Yampa or Bear river	Oct. 29, 1888	21.70		107.94	61
The Oakton Ditch	Yampa or Bear river	Mar. 27, 1889	6.00		129.64	63
The South Side Ditch	Yampa or Bear river	Apr. 6, 1889	4.70		135.64	64
The Acton Ditch	Yampa or Bear river	May 7, 1889	3.00		140.34	68
The Union Ditch	Yampa or Bear river	Nov. 14, 1889	7.00		143.34	77
The Baxter Ditch	Yampa or Bear river	Nov. 18, 1889	10.80		150.34	78
The Duquett Ditch	Yampa or Bear river	Apr. 22, 1890	6.00		161.14	80
The Charles and Arthur Leighton Ditch	Yampa or Bear river	June 15, 1890	1.66		167.14	88
The F. D. Hutchinson Ditch	Yampa or Bear river	July 15, 1890	1.00		168.80	91
The Mill No. 2 Ditch	Yampa or Bear river	July 15, 1890	1.30		169.80	92
Total					176.26	
The Keller Ditch	Elk river	Oct. 1, 1885	2.66			17
The Price Ditch	Elk river	May 2, 1896	3.75		2.66	19
The Ekhart Ditch	Elk river	May 15, 1886	4.70		6.41	21
The Ekhart Ditch, first enlargement	Elk river	Sept. 15, 1889	1.30	6.00	53.56	56
The Campbell Ditch	Elk river	Oct. 20, 1886	4.60		11.11	28
The Hoover and Jaques Ditch	Elk river	July 1, 1887	3.75		15.71	34

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 58, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.—Continued.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The Franz Ditch	Elk river	July 1, 1887	6.00	.....	19.46	35
The Franz Ditch, first enlargement	Elk river	July 6, 1890	4.00	10.00	61.56	79
The Elk Valley Ditch Co.'s Ditch	Elk river	Oct. 12, 1887	11.00	.....	25.46	39
The Morin Ditch	Elk river	Apr. 24, 1888	5.00	.....	36.46	45
The Graham and Bennett Ditch	Elk river	May 1, 1888	5.30	.....	41.46	47
The Clark and Burke Ditch	Elk river	May 3, 1888	4.00	.....	46.76	49
The Wheeler Brothers Ditch	Elk river	Sept. 5, 1888	2.80	.....	50.76	52
The James Wheeler Ditch	Elk river	Feb. 1, 1889	1.50	.....	54.86	62
The Larson Ditch	Elk river	May 1, 1889	5.20	.....	56.36	67
The Trull and Morin Ditch	Elk river	May 1, 1890	3.70	.....	65.56	82
The Felix Borghi Ditch	Elk river	May 15, 1890	1.00	.....	69.26	84
Total	.....	.....	.....	.....	70.26	
The Gibbs and Phillips Ditch	Chimney creek	June 2, 1884	2.50	.....	.83	9
The Daizy Ditch	*Phillips creek	May 1, 1884	.83	.....	.....	6

The Finger Rock Ditch	*Phillips creek	May 8, 1889	1.25		7.66	69
The Gibbs Ditch	*Brinker creek	May 20, 1889	.60		8.91	72
The Brinker Creek Ditch	*Brinker creek	May 3, 1891	1.00		9.51	95
The Beaver Ditch	*Beaver creek	May 15, 1886	3.33		3.33	22
The South Side Ditch	*Spring creek	Apr. 18, 1887	1.00		6.66	29
Total					10.51	
The Watson Creek Ditch	Watson creek	June 14, 1883	.75			3
The Laramore Ditch	Watson creek	Apr. 30. 1885	1.45		.75	12
The Laramore Ditch, first enlargement	Watson creek	Apr. 20, 1888	1.05	2.50	7.45	44
The Hardscrabble Ditch	Watson creek	June 17, 1885	50		2 20	16
The Fergurson Ditch	Watson creek	May 10, 1886	3.00		2.70	20
The Woody Ditch	Watson creek	Aug. 1, 1886	1.75		5.70	26
The Powell No. 1 Ditch	Watson creek	May 12, 1889	.34		8 50	70
The Powell No. 2 Ditch	Watson creek	May 12, 1889	.34		8.84	71
Total					9.18	
The C. W. Ditch	Raspberry creek	Apr. 23. 1890	2.50			81
The Chipman Ditch	McKinnis creek	June 1, 1891	1.00			96
The Harvey Ditch	Harvey creek	June 20, 1891	1.00			97
The Oak Creek Ditch	Oak creek	July 25, 1887	6.00			37
The Lyon Ditch	Oak creek	Oct. 31, 1887	1.00		6.00	41
The Cook Brothers' Ditch	Oak creek	May 27, 1892	3.80		7.00	101
The J. Hart Ditch	Oak creek	May 27, 1892	1.00		10.80	102
The Brumbach Ditch	Oak creek	Aug. 9, 1892	2.00		11.80	103
Total					13.80	

* Branches of Chimney creek.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 58, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Concluded.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed on stream	Order of priority in district
The Lower Hunt Creek Ditch	Hunt creek	May 20, 1884	1.66	----------	----------	7
The Barr Ditch	Hunt creek	May 1, 1887	.71	----------	1.66	30
The Barr Ditch, first enlargement	Hunt creek	May 14, 1892	.29	1.00	19.37	100
The Simon Ditch	Hunt creek	June 1, 1888	10.00	----------	2.37	51
The North Hunt Ditch	Hunt creek	Apr 13, 1889	5.30	----------	12.37	66
The Max Hoff Ditch	Hunt creek	May 3, 1890	1.00	----------	17.67	83
The Aunas Ditch	Hunt creek	May 2, 1891	.70	----------	18.67	94
Total			----------	----------	19.66	
The Morrison Creek Ditch	Little Morrison creek	Oct. 21, 1888	5.30	----------	----------	59
The Wheeler Ditch	Lake creek	Sept. 24, 1888	1.30	----------	----------	38
The Grouse Creek Ditch	Grouse creek	May 25, 1888	5.00	----------	----------	50
The Martin Ditch	Yellow Jacket creek	May 25, 1890	2.66	----------	----------	85
The Deer Creek Ditch	Deer creek	Oct. 31, 1889	1.66	----------	----------	76
The Middle Creek Ditch	Middle creek	May 25, 1886	.83	----------	----------	23
The Willow Springs Ditch	Willow Springs creek	June 18, 1890	.50	----------	----------	89

The Walton Creek Ditch	Walton creek	July 20, 1887	15.00			36
The Walton Creek, Baxter and Summer's Ditch, first enlargement	Walton creek	May 1, 1895	2.00	17.00	29.00	105
The Enterprise Ditch	Walton creek	Oct. 8, 1887	14.00		15.00	38
The Windsor Ditch	Walton creek	July 1, 1892	3.00		31.00	106
Total					34.00	
The Hoyle and Knight Ditch	Fish creek	Aug. 9, 1889	8.30			75
The Hangs Ditch	Fish creek	June 1, 1890	1.30			86
The Milk Creek Ditch	Milk creek	June 18, 1889	2.66			73
The Soda Creek Ditch	Soda creek	June 10, 1887	8.00			33
The Crawford Ditch	Soda creek	Apr. 1, 1888	1.33		8.00	42
The Metcalf No. 1 Ditch	Soda creek	Sept. 6, 1888	1.66		9.33	53
The Borland Ditch	Soda creek	Sept. 6, 1888	1.80		10.99	54
The Metcalf No. 2 Ditch	Soda creek	Sept. 8, 1888	8.50		12.79	55
Total					21.29	
The Farnsworth Ditch	Farnsworth creek	June 14, 1886	2.66			24
The Trull Ditch	Trull creek	May 27, 1884	1.66			8
The Salt Creek Ditch	Salt creek	June 2, 1890	2.66			87
The Coleman Ditch	Deep creek	Apr. 10, 1889	2.50			65
The High Line Beaver Ditch	Storm King creek	June 22, 1891	11.60			98
The Spring Creek Ditch	Spring creek	June 28, 1889	2.00			74
The J. H. Steese Ditch	Cow creek	Sept. 30, 1892	5.00			104

TABLE

GIVING RESERVOIR DECREES IN WATER DISTRICT NO. 58, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 6, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF RESERVOIR	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in acre-feet decreed to each reservoir	Total amount in acre-feet previously decreed in district	Order of priority in district
The Milk Creek Reservoir	Milk creek	June 18, 1887 or June 18, 1889	.60	17.60	----------	1

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 64, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 1, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The South Platte Ditch Co.'s Ditch	South Platte river	May 1, 1872	50.00	----------	----------	1
The Sterling Irrigating Co.'s Ditch	South Platte river	July 15, 1873	175.00	----------	50.00	2
The Pawnee Ditch	South Platte river	Sept. 17, 1873	67.00	----------	225.00	3
The Schneider Ditch Co.'s Ditch	South Platte river	July 15, 1875	37.50	----------	292.00	4
The Schneider Ditch Co.'s Ditch, first enlargement	South Platte river	Oct. 20, 1880	75.00	112.50	329.50	5
The Henderson and Smith Ditch	South Platte river	Nov. 13, 1880	12.50	----------	404.50	6
The Pawnee Ditch, first enlargement	South Platte river	June 22, 1882	150.00	217.00	417.00	7
The Low Line Ditch	South Platte river	Oct. 14, 1882	37.90	----------	567.00	8
The Iliff and Platte Valley Ditch	South Platte river	Oct. 1, 1883	150.00	----------	604.90	9
The Sterling No. 2 Ditch	South Platte river	June 7, 1884	50.00	----------	754.90	10
The Springdale Ditch	South Platte river	July 19, 1886	62.50	----------	804 90	11
The Red Lyon Ditch	Spring creek	Feb. 2, 1891	3.50	----------	867.40	13
The Bravo Ditch	South Platte river	Feb. 21, 1893	40.00	----------	870.90	14
The Powell and Dillon Ditch	South Platte river	Dec. 12, 1893	45.00	----------	910.90	15

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 64, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 1, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Concluded.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Red Lyon Ditch	Spring creek	Aug. 22, 1894	2.00	5.50	955.90	16
The Harmony Ditch	South Platte river	April 28, 1895	252.00	----------	957.90	17
The Lone Tree Ditch	South Platte river	July 19, 1895	82.00	----------	1,209.90	18
Total	----------	----------	----------	----------	1,291.90	

NOTE.—The Iliff and Platte Valley Reservoir—source of supply the South Platte river, through the Iliff and Platte Valley Ditch; date of appropriation, November 15, 1888; capacity 12,458,643 cubic feet; decreed priority No 12 in the district.

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 67, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The Keesee Ditch	Arkansas river	Mar. 13, 1871	9.00			1
The Abe Patterson Ditch	Arkansas river	May 31, 1873	6.30		9.00	2
The Lamar Canal	Arkansas river	Nov. 30, 1875	15.75		15.30	3
The Keesee Ditch	Arkansas river	Dec. 31, 1883	4.50	13.50	31.05	4
The Buffalo Creek Ditch	Arkansas river	Jan. 29, 1885	67.50		35 55	5
The Colorado and Kansas Canal	Arkansas river	April 1, 1886	27 77		103.05	6
The Amity Canal	Arkansas river	Feb. 21, 1887	283.50		130.82	7
The Hyde Ditch	Arkansas river	May 10, 1887	23 44		414.32	8
The Lamar Canal	Arkansas river	Dec. 3, 1887	87.84	103.59	437.76	9
The Bed-Rock Ditch	Arkansas river	Mar. 10, 1889	32 77		525.60	10
The X. Y. Irrigating Co.'s Ditch	Arkansas river	July 22, 1889	69.00		558 37	11
The Lamar Canal	Arkansas river	Sept. 11, 1889	11.70	115 29	627 37	12
The Lamar Canal	Arkansas river	July 16, 1890	184.27	299 56	639 07	13
The Bed-Rock Ditch	Arkansas river	Aug. 12, 1890	26.77	59 54	823 34	14
The Manvil Canal	Arkansas river	Oct. 14, 1890	54.00		850 11	15

TABLE

GIVING DITCH DECREES IN WATER DISTRICT NO. 67, PREPARED BY THE SUPERINTENDENT OF IRRIGATION OF WATER DIVISION NO. 2, FROM THE CERTIFIED COPY OF THE DECREES GOVERNING APPROPRIATIONS IN THIS DISTRICT, FURNISHED HIM BY THE CLERK OF THE DISTRICT COURT ISSUING SUCH DECREES—Concluded.

NAME OF DITCH OR CANAL	Source of Appropriation	Date of Appropriation	Amount in second-feet decreed to each priority	Total amount in second-feet decreed to each ditch or canal	Total amount in second-feet previously decreed in district	Order of priority in district
The M. R. McCauley Irrigating Ditch	Seepage	Aug. 15, 1891	110.144	.....	904.11	16
The Graham Ditch	Arkansas river	Aug. 25, 1891	61.00	.....	1,014.25	17
The Ditch of J. A. Pierce	Arkansas river	Sept. 6, 1891	2.25	.....	1,075.25	18
Total	.....	.....	.....	.....	1,077.50	

NOTE.—Butte Reservoir—The Lamar Ditch, priority No. 1; capacity 30 cubic feet per second of time, of date March 30, 1892; storage capacity, 8,333,400 cubic feet, as amended July 1, 1895.

CHAPTER VI.

SEEPAGE MEASUREMENTS.

RETURN OR SEEPAGE WATER OF THE SOUTH PLATTE RIVER.

The measurement of seepage or return waters on the South Platte river was continued during October and November, 1895 and 1896. The river was divided into two sections—the upper section, or the river from the cañon to the mouth of the Cache la Poudre river has been carried on by this department, while the lower section, or the river from the mouth of the Cache la Poudre river to the state line has been carried on with the coöperation of the engineering department of the agricultural college.

The measurements on the lower section were begun about October 20 of each year. A light camping outfit was taken on this section and found to be much more convenient than depending upon the adjoining country for stopping places. The measurements on the upper section were begun about November 6 of each year, and on this section the water commissioners were depended upon to take the party through their respective districts.

1895.

In 1895 the water was found to be very high for that season of the year, and the increase in the seepage was very marked, presumably due to the abundance of water used on the land in irrigation and the greater rainfall during the early summer. The upper section showed one loss above the Fulton ditch of nineteen cubic feet, which is very hard to account for. The lower section showed several losses, the first above the Hardin ditch, of thirty-five cubic feet; the second above Fort Morgan, of one and five-tenths cubic feet, where in 1894 a loss of fifty-one cubic feet was found. These losses are presumably not entirely lost to the stream, but that a portion of the water is carried in the sands

of the river bed and is not available for measurement, except at certain points where rocky ridges cross the channel and bring the water to the surface. The third loss is above Crook, of forty-eight cubic feet, and the fourth above the state line of forty-seven and five-tenths cubic feet. These latter two losses may be partly accounted for in that there is no irrigation of importance to make good the natural loss from the broad and sandy channel.

Many of the gulches which have heretofore been considered natural tributaries are here considered as seepage, and are only recorded as a matter of record. None of these gulches thus considered have any running water above the ditches, and were formerly dry until the water from irrigation began to return.

1896.

In 1896 the seepage shows a falling off from that of 1894 and 1895, due to the scarcity of water for irrigation and the lighter rainfall. The gain due to seepage compares very nearly with that of 1893. No losses were found in those sections where the previous losses had occurred. The measurements were stopped at Crook by a heavy snow storm.

TABLE OF MEASUREMENTS OF SEEPAGE WATER

IN THE SOUTH PLATTE RIVER, COLORADO, OCTOBER 21 TO NOVEMBER 14, 1895.

Names of Streams and Ditches where Measurements were taken	Amount of water in river	Amount of water diverted from river by canals	Amount of inflow from natural tributaries	Amount of water in river at points measured + that diverted by canals and − the inflow from natural tributaries	Increase in volume of river between points measured	Decrease in volume of river between points measured	Increase in volume of river from the gaging station, at Cañon, to point where last measured	Increase in volume per mile between points measured	Remarks
	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	
South Platte River	237.48								At the cañon, Nov. 7
Union Water Co.'s Pipe Line		28.94							November 7
City Ditch		1.30							November 7
South Platte River	227.45			257.69	20.21		20.21	6 M.=3.37	Below city ditch, November 7.
Plum Creek			11.11						November 8
Marcy Gulch			(1.00)						November 8
Clarke Gulch			(2.02)						November 8
Lee Gulch			(2.75)						November 8
South Platte River	293.79			312.92	55.23		75.44	6 M.=9.20	At Littleton, Nov. 8
Gulch			(.97)						November 8
Big Dry Creek			(4.70)						November 8
Little Dry Creek			(10.60)						November 8
Bear Creek			23.51						November 8

TABLE OF MEASUREMENTS OF SEEPAGE WATER

IN THE SOUTH PLATTE RIVER, COLORADO, OCTOBER 21 TO NOVEMBER 14, 1895—Continued.

Names of Streams and Ditches where Measurements were taken	Amount of water in river	Amount of water diverted from river by canals	Amount of inflow from natural tributaries	Amount of water in river at points measured + that diverted by canals and — the inflow from natural tributaries	Increase in volume of river between points measured	Decrease in volume of river between points measured	Increase in volume of river from the gaging station, at Canon, to point where last measured	Increase in volume per mile between points measured	Remarks
	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	
Union Water Co.'s Pumping Plant	.....	4.64	.....	.....	.....	.....	.....	.....	November 8
South Platte River	430.44	.....	.....	430.72	117.80	.....	193.24	10 M.=11.78	At Fifteenth street, Denver, Nov. 9.
South Platte River	412.78	.....	.....	413.04	.....	.....	.....	.....	At Fifteenth street, Denver, Nov. 11.
Burlington Ditch	.....	59.66	.....	.....	.....	.....	.....	.....	November 11
Heller Ditch	.....	.90	.....	.....	.....	.....	.....	.....	November 11
Clear Creek	.....	.....	53.68	.....	.....	.....	.....	.....	November 11
South Platte River	386.71	.....	.....	393.85	.....	19.19	174.05	11 M.= Loss 1.74	Above Fulton ditch, November 11.
Fulton Ditch	.....	24.22	.....	.....	.....	.....	.....	.....	November 11
Brantner Ditch	.....	15.70	.....	.....	.....	.....	.....	.....	November 11
Brighton Ditch	.....	6.45	.....	.....	.....	.....	.....	.....	November 11
South Platte River	373.42	.....	.....	426.93	33.08	.....	207.13	7 M.=4.93	At Brighton, Nov. 12

Dry Creek			(12.72)						November 12
Lupton Bottom Ditch		1.45							November 12
Platteville Ditch		4.27							November 12
Fulton Ditch			5.75						Wasting back to river, Nov. 12.
South Platte River	443.08			496.56	69.63		276.76	9 M.=7.74	At head of Evans ditch No. 2, Nov. 12
Beeman Ditch		2.57							November 12
Side Hill Ditch		5.12							November 12
Meadow Island Ditch		.72							November 12
Farmers' Independent Ditch		19.65							November 13
South Platte River	479.83			561.37	64.81		341.57	7 M.=9.26	At Platteville, November 13.
St. Vrain Creek			82.23						November 13
South Platte River	582.77			582.08	20.71		362.28	9 M.=2.30	At head of Union ditch, Nov. 13.
Big Thompson Creek			41.27						November 13
South Platte River	647.61			605.65	23.57		385.85	7½ M.=3.14	At Evans, Nov. 14
Latham Ditch		36.80							November 14
A Small Ditch		1.91							November 14
South Platte River	666.10			662.85	57.20		443.05	6 M.=9.53	Just above mouth of Cache la Poudre river, Nov 14
Cache la Poudre River			123.02						October 21
South Platte River	826.55			700.28					Just below mouth of Cache la Poudre river, October 21.
Lone Tree Creek			5.24						October 21
Hoover Ditch		6.07							October 22

TABLE OF MEASUREMENTS OF SEEPAGE WATER

IN THE SOUTH PLATTE RIVER, COLORADO, OCTOBER 21 TO NOVEMBER 14, 1895—Continued.

Names of Streams and Ditches where Measurements were taken	Amount of water in river	Amount of water diverted from river by canals	Amount of inflow from natural tributaries	Amount of water in river at points measured + that diverted by canals and — the inflow from natural tributaries	Increase in volume of river between points measured	Decrease in volume of river between points measured	Increase in volume of river from the gaging station, at Cañon, to point where last measured	Increase in volume per mile between points measured	Remarks
	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	
South Platte River	939.95			814.51	114.53		557.58	3½ M. = 32.72	Below Hoover ditch, October 22.
Hoover Ditch			4.47						Wasting back to river, October 22.
Sterling Seepage Ditch			(3.86)						October 22
South Platte River	909.15			779.24		35.27	522.31	4½ M. = Loss 7.84	Above Hardin ditch, October 22.
Hardin Ditch		6.74							October 22
Corona Ditch		10.00							October 23
South Platte River	935.36			822.19	42.95		565.26	12¼ M. = 3.51	Above Putnam ditch, October 23
Putnam Ditch		14.38							October 23
Weldon Valley Ditch		86.85							October 23
South Platte River	940.73			928.79	106.60		671.86	8¼ M. = 12.92	At Orchard, Oct. 24
Weldon Valley Seepage Ditch			(4.10)						October 24

Fort Morgan Canal		208.28							October 24
South Platte River	778.37			974.71	45.92		717.78	9 M.=5.10	At Shaffer's ford, October 24.
South Platte River	861.85			1,058.19	83.14		800.92	5¾ M.=14.46	Above Bijou creek, October 25.
Bijou Creek			(4.84)						October 25
Platte and Beaver Canal		100.39							October 26
Deuel and Snyder Ditch		14.70							October 26
South Platte River	745.21			1,056.64		1.55	799.37	4¼ M.= Loss .36	At Fort Morgan, October 26.
Pyott Ditch		15.58							October 26
Platte and Beaver Supply Ditch		55.72							October 26
Smith Ditch		2.88							October 26
South Platte River	685.85			1,071.46	14.82		814.19	11 M.=1.35	At Snyder, Oct. 26
South Platte River	751.23			1,136.84	65.38		879.57	5 M.=13.10	Below Big Beaver creek, October 27
Tetsel Ditch		.90							October 27
Johnson and Edwards Ditch		18.06							October 27
South Platte Ditch		4.80							October 27
Pawnee Ditch		115.72							October 28
South Platte River	691.63			1,216.72	79.88		959.45	13 M.=6.14	At Merino, Oct. 28
Schneider Ditch		14.60							October 28
Springdale Ditch		38.59							October 28
Sterling Ditch No. 1		10.63							October 28
Smith and Henderson Ditch		2.97							October 29
South Platte River	671.64			1,263.52	46.80		1,006.25	13¾ M.=3.40	At Sterling, Oct. 29

TABLE OF MEASUREMENTS OF SEEPAGE WATER

IN THE SOUTH PLATTE RIVER, COLORADO, OCTOBER 21 TO NOVEMBER 14, 1895—Concluded.

Names of Streams and Ditches where Measurements were taken	Amount of water in river	Amount of water diverted from river by canals	Amount of inflow from natural tributaries	Amount of water in river at points measured + that diverted by canals and − the inflow from natural tributaries	Increase in volume of river between points measured	Decrease in volume of river between points measured	Increase in volume of river from the gaging station, at Cañon, to point where last measured	Increase in volume per mile between points measured	Remarks
	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	
South Platte River	688.63			1,280.51	16.99		1,023.24	9¾ M = 1.74	Two miles above Iliff, October 29.
Powell and Dillon Ditch		3.04							October 30
McPhee and Mullen Ditch		10.42							October 30
South Platte River	626.12			1,231.46		48.05	975.19	19 M.= Loss 2.53	At Crook, Oct. 30
Henry Fuller Ditch		3.07							November 1
South Side Reservoir Co.'s Ditch		2.37							November 1
Tom Little Ditch		2.19							November 1
South Platte River	633.23			1,246.20	14.74		989.93	24M.=.61	At Pole creek, Nov. 1
South Platte River	585.60			1,198.57		47.63	942.30	9½ M.= Loss 5.01	At state line, Oct. 31

NOTE—Quantities enclosed in parenthesis are noted as a matter of record only.

TABLE OF MEASUREMENTS OF SEEPAGE WATER

IN THE SOUTH PLATTE RIVER, COLORADO, OCTOBER 20 TO NOVEMBER 13, 1896.

Names of Streams and Ditches where Measurements were taken	Amount of water in river	Amount of water diverted from river by canals	Amount of inflow from natural tributaries	Amount of water in river at points measured + that diverted by canals and — the inflow from natural tributaries	Increase in volume of river between points measured	Decrease in volume of river between points measured	Increase in volume of river from the gaging station, at Cañon, to point where last measured	Increase in volume per mile between points measured	Remarks
	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	
South Platte River	153.44								At Cañon, Nov. 6
Union Water Co.'s Pipe Line		27.43							November 6
Highline Canal		107.44							November 6
Last Chance Ditch		5.60							November 6
South Platte River	23.79			164.26	10.82		10.82	6M.=1.80	Below City ditch, November 6.
Nevada Ditch		.40							November 7
Plum Creek			5.76						November 7
Lee Gulch			(1.56)						November 7
South Platte River	43.27			178.38	14.12		24.94	6M.=2.35	At Littleton, Nov. 7
Big Dry Creek			(5.14)						November 7
Bear Creek			8.23						November 7
Little Dry Creek			(5.55)						November 7

TABLE OF MEASUREMENTS OF SEEPAGE WATER

IN THE SOUTH PLATTE RIVER, COLORADO, OCTOBER 20 TO NOVEMBER 13, 1896—Continued.

Names of Streams and Ditches where Measurements were taken	Amount of water in river	Amount of water diverted from river by canals	Amount of inflow from natural tributaries	Amount of water in river at points measured + that diverted by canals and — the inflow from natural tributaries	Increase in volume of river between points measured	Decrease in volume of river between points measured	Increase in volume of river from the gaging station, at Canon, to point where last measured	Increase in volume per mile between points measured	Remarks
	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	
South Platte River	85.45			212.33	33.95		58.89	10 M.=3.39	At Fifteenth street, Denver, Nov. 7.
South Platte River	100.05			226.93					At Fifteenth street, Denver, Nov. 9.
Farmer's and Gardner's Ditch		2.03							November 9
Burlington Ditch		46.72							November 9
Clear Creek			65.90						November 9
Fulton Ditch		27.37							November 10
South Platte River	105.55			242.65	15.72		74.61	11 M.=1.43	At Fulton Ditch, November 10.
Brantner Ditch		16.74							November 10
Brighton Ditch		7.65							November 10
South Platte River	132.73			294.22	51.59		126.18	7M.=7.37	At Brighton, November 10.
Dry Creek			(3.19)						November 11

Lupton Bottom Ditch		1.85							November 11
Platteville Ditch		7.93							November 11
Fulton Ditch			3.48						Wasting back to river, Nov. 11.
Evans Ditch No. 2		2.44							November 11
South Platte River	169.05			339.28	45.06		171.24	9 M.=5.01	At Evans ditch No. 2, November 11.
Beeman Ditch		15.67							November 11
Side Hill Ditch		4.57							November 11
Bucker's Ditch		15.52							November 11
Farmer's Independent Ditch		7.99							November 12
South Platte River	173.11			387.09	47.81		219.05	7 M.=6.83	At Platteville, November 11.
St. Vrain creek			51.53						November 12
Western Drainage Co.'s Ditch		2.83							November 12
Frederick Brothers' Ditch		.25							November 12
South Platte River	231.29			396.82	9 73		228.78	9 M.=1.08	At Union ditch, November 12
Big Thompson Creek			35.27						November 12
Latham Seepage Ditch		(17.60)							November 12
South Platte River	294.42			424.68	27.86		256.64	7½ M.=3.71	At Evans, Nov. 12
Latham Ditch		39.76							November 12
Cache la Poudre River			85.03						At mouth, Nov. 13
South Platte River	359.93			444.92	20.24		276.88	6 M.=3.37	Below mouth of Cache la Poudre river, Nov. 13.
Cache la Poudre River			(82.67)						At mouth, Oct. 20

TABLE OF MEASUREMENTS OF SEEPAGE WATER

IN THE SOUTH PLATTE RIVER, COLORADO, OCTOBER 20 TO NOVEMBER 13, 1896—Continued.

Names of Streams and Ditches where Measurements were taken	Amount of water in river	Amount of water diverted from river by canals	Amount of inflow from natural tributaries	Amount of water in river at points measured + that diverted by canals and − the inflow from natural tributaries	Increase in volume of river between points measured	Decrease in volume of river between points measured	Increase in volume of river from the gaging station, at Cañon, to point where last measured	Increase in volume per mile between points measured	Remarks
	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	
South Platte River	238.66			323.65					Below mouth of Cache la Poudre river, October 20.
Lone Tree Creek			(2.18)						October 20
South Platte River	273.67			356.48	32.83		309.71	3½ M.=9.28	Above Hooverditch, October 20.
Hoover Ditch		1.17							October 20
Sterling Seepage Ditch			(2.05)						October 21
South Platte River	288.12			372.10	15.62		325.33	4½ M.=3.47	Above Hardin ditch, October 12.
Hardin Ditch			13.41						October 21
South Platte River	294.01			391.40	19.30		344.63	12¼ M.=1.57	Above Putnam ditch, October 21
Putnam Ditch		20.09							October 21
Weldon Valley Ditch		34.51							October 22
South Platte River	239.97			391.76	.36		344.99	8¼ M.=.04	At Orchard, Oct. 22

Weldon Valley Seepage Ditch			(.85)						October 22
Fort Morgan Canal		192.70							October 23
South Platte River	77.46			422.15	30.39		375.38	9 M.=3.38	At Shaffer's ford, October 22.
South Platte River	94.93			439.62	17.47		392.85	5¾ M.=3.04	Above Bijou creek, October 23.
Bijou Creek			(4.69)						October 23
Platte and Beaver Canal		84.33							October 24
Deuel and Snyder Ditch		2.16							October 24
South Platte River	40.83			472.01	32.39		425.24	4¼ M.=7.62	At Fort Morgan, October 24.
Pyott Ditch		12.35							October 24
Platte and Beaver Supply Ditch		52.21							October 24
Smith Ditch		7.88							October 24
South Platte River	21.18			524.80	52.79		478.03	11 M.=4.80	At Snyder, Oct. 24
Big Beaver Creek		(.41)							October 25
South Platte River	42.56			546.18	21.38		499.41	5 M.=4.28	Below mouth of Big Beaver creek, October 25.
Johnson and Edwards Ditch		32.03							October 25
South Platte Ditch		25.03							October 25
Davis Brothers Ditch		1.17							October 26
Pawnee Ditch		15.94							October 26
South Platte River	13.22			591.01	44.83		544.24	13 M.=3.45	At Merino, Oct. 26
Schneider Ditch		3.16							October 26
Springdale Ditch		9.95							October 26
Smith and Henderson Ditch		2.38							October 26

TABLE OF MEASUREMENTS OF SEEPAGE WATER

IN THE SOUTH PLATTE RIVER, COLORADO, OCTOBER 20 TO NOVEMBER 13, 1896—Concluded.

Names of Streams and Ditches where Measurements were taken	Amount of water in river	Amount of water diverted from river by canals	Amount of inflow from natural tributaries	Amount of water in river at points measured + that diverted by canals and – the inflow from natural tributaries	Increase in volume of river between points measured	Decrease in volume of river between points measured	Increase in volume of river from the gaging station, at Canon, to point where last measured	Increase in volume per mile between points measured	Remarks
	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	
South Platte River	30.33	.....	.....	623.61	32.60	.....	576.84	13¾ M.=2.37	At Sterling, Oct. 26
Low Line Ditch	.....	11.41	.....	.....	.....	.....	.....	.....	October 27
Smith and Benson Ditch	.....	1.04	.....	.....	.....	.....	.....	.....	October 27
Iliff Ditch	.....	1.91	.....	.....	.....	.....	.....	.....	October 27
South Platte River	37.33	.....	.....	644.97	21.36	.....	598.20	9¾ M.=2.19	Two miles above Iliff, October 27.
Brush Ditch	.....	6.09	.....	.....	.....	.....	.....	.....	October 27
Ramsey Ditch	.....	1.57	.....	.....	.....	.....	.....	.....	October 27
Chambers' Ditch	.....	18.30	.....	.....	.....	.....	.....	.....	October 28
McPhee and Mullen Ditch	.....	11.48	.....	.....	.....	.....	.....	.....	October 28
South Platte River	30.97	.....	.....	676.05	31.08	.....	629.28	19 M.=1.64	At Crook, Oct. 28

NOTE—Quantities enclosed in parenthesis are noted as a matter of record only.

COMPARATIVE TABLE

SHOWING THE INCREASE IN VOLUME OF THE SOUTH PLATTE RIVER, FROM THE CAÑON TO POINTS MEASURED, DUE TO THE RETURN OF WASTE OR SEEPAGE WATER.

Places where Measurements were Taken	October 1889	October 1890	October 1891	March 1892	October 1893	October 1894	October and November 1895	October and November 1896
River below head of City Ditch	.....	.....	27.57	25.32	18.41	49.23	20.21	10.18
River at Littleton	49.91	11.73	80.18	69.95	41.91	74.82	75.44	24.94
River at Denver	50.91	55.61	96.38	129.56	83.18	193.74	193.24	58.89
River at Fulton Ditch	.....	94 41	138.85	141.51	127.03	228.06	174.05	74 61
River at Brighton	77.07	98.91	175.19	116.17	152.91	278.04	207.13	126.18
River at Evans No. 2 Ditch	.....	.....	.....	.....	208.74	314.72	276.76	171.24
River at Elwood and Wheeler Ditch	119.10	172.35	218.69	136.33	.....	.....	.....	.....
River at Platteville	133.38	.....	226.93	180.54	218.82	343.05	341.57	219.05
River above St. Vrain Creek	.....	155.80	233.32	.....	.....	.....	.....	.....
River at Union Ditch	.....	.....	.....	.....	252.81	398.70	362.28	228.78
River at Latham Ditch	197.00	176.91	299.21	192.86	279.93	450.51	385.85	256.64
River at Cache la Poudre River	.....	215.20	326.13	216.17	318.20	474.86	443.05	276.88
River at Hoover Ditch	277.10	351.66	392.66	285.25	.....	549.75	557.58	309.71
River at Hardin Ditch	.....	.....	.....	.....	387.23	498.70	522.31	325.33
River at Putnam Ditch	.....	333.60	418.80	330.61	365.78	549.12	565.26	344.63
River at Orchard	.....	.....	.....	.....	.....	.....	671.86	384.99
River at Fort Morgan Canal	305.92	360.58	434.05	360.09	414.33	.....	.....	.....

COMPARATIVE TABLE

SHOWING THE INCREASE IN VOLUME OF THE SOUTH PLATTE RIVER, FROM THE CAÑON TO POINTS MEASURED, DUE TO THE RETURN OF WASTE OR SEEPAGE WATER—Concluded.

Places where Measurements were Taken	October 1889	October 1890	October 1891	March 1892	October 1893	October 1894	October and November 1895	October and November 1896
River at Shaffer's Ford	.....	.....	.....	.....	.....	617.43	717.78	375.38
River above Bijou Creek	.....	.....	.....	.....	.....	676.88	800.92	392.85
River at Platte and Beaver Canal	307.03	367.09	472.14	431.74	464.64	631.45	.....	.....
River at Fort Morgan	.....	.....	.....	.....	.....	.....	799.37	425.24
River at Snyder	.....	384.18	470.60	.....	479.67	707.64	814.19	478.03
River below Big Beaver Creek	.....	.....	.....	.....	.....	714.90	879.57	499.41
River at Merino	385.58	405.71	550.33	.....	514.39	766.31	959.45	544.24
River at Sterling	418.33	435.16	583.69	.....	548.15	.....	1,006.25	576.84
River two miles above Iliff	422.77	449.21	611.76	.....	572.99	.....	1,023.24	598.20
River two miles above Crook	.....	.....	598.69	.....	.....	810.11	.....	.....
River at Crook	.....	.....	.....	.....	.....	.....	975.19	629.28
River at Pole Creek	.....	.....	.....	.....	.....	.....	989.93	.....
River at State Line	.....	.....	602.00	.....	.....	775.94	942.30	.....

RETURN OR SEEPAGE WATER OF THE CACHE LA POUDRE RIVER.

The seepage measurements of the Cache la Poudre river for 1895 and 1896 were kindly furnished this department by Prof. L. G. Carpenter, of the agricultural college.

In 1895, the Cache la Poudre river shows a heavy gain in seepage over the previous years, due to the greater abundance of water used in irrigation.

In 1896, the measurement is given for the lower part of the river. "The upper part of the river, as the water was being changed between different ditches for night and day runs, the apparent gain or loss was affected thereby, until after the Cache la Poudre No. 2 canal is taken from the river. Below that place the measurements are not affected by the shifting of the water above. The measurements for the lower part of the river alone are given therefor. For this stretch, the gain in 1896 is very nearly the same as for several of the previous years, notwithstanding that the amount of water which has been used is less."*

The comparative table which is here given differs from that given by Prof. Carpenter in bulletin No. 33, in that the comparison is the total gain from the cañon to point where last measured, instead of comparing section by section.

* Letter of Prof. L. G. Carpenter.

TABLE OF MEASUREMENTS OF SEEPAGE WATER

IN THE CACHE LA POUDRE RIVER, COLORADO, OCTOBER 9 TO 15, 1895.

Names of Streams and Ditches where Measurements were taken	Amount of water in river	Amount of water diverted from river by canals	Amount of inflow from natural tributaries	Amount of water in river at points measured + that diverted by canals and − the inflow from natural tributaries	Increase in volume of river between points measured	Decrease in volume of river between points measured	Increase in volume of river from the gaging station, at Cañon, to point where last measured	Increase in volume per mile between points measured	Remarks
	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	
Cache la Poudre River	66.47								At Gaging Station at Cañon, Oct. 9.
Cañon Canal		.10							October 9
Pleasant Valley and Lake Canal		21.23							October 9
Cañon Canal			.13						Wastage from, Oct. 9
Larimer County Canal		0.00							October 9
Jackson Ditch		0.00							October 9
Cache la Poudre River	63.53			84.73	18.26		18.26	5.5 M.=3.32	Above New Mercer ditch, October 9.
New Mercer Ditch		0.00							October 9
Little Cache la Poudre Ditch		6.67							October 9
Taylor and Gill Ditch		4.55							October 9
Larimer County No. 2 Canal		.50							October 9
Fort Collins Water Works		.75							Estimated, Oct. 9

Taylor and Gill Ditch			4.56						Wastage from, Oct. 9
Arthur Ditch		2.88							October 9
Cache la Poudre River	54.10			80.09	1.36		19.62	1.75 M.—.78	Above Larimer and Weld canal, Oct. 9
Cache la Poudre River	.55			32.54					Below Larimer and Weld canal, Oct. 10
Pioneer Ditch		.28							October 10
Seepage Ditch			(.50)						October 10
Ames Ditch		.21							October 10
Lake Canal		3.06							October 10
Coy Ditch		.01							October 10
No. 2 Reservoir Supply Canal		.18							October 10
Cache la Poudre River	26.44			62.17	29.63		49.25	4.4 M.—6.73	Below No. 2 Reservoir Supply canal, October 10.
Dry Creek			(1.71)						October 10
Ames Slough			(.96)						October 10
Emigh Drain			(3.68)						October 10
Cooper Slough			(.53)						October 10
Box Elder Creek			(3.76)						October 10
Spring Creek			(6.12)						October 10
Box Elder Ditch		0.00							October 10
Seepage Ditch			(.63)						From Spring creek, October 10.
Side Hill Ditch			(2.53)						From Spring creek, October 10.
Ditch			(1.15)						From Cooper slough, Oct. 10.

TABLE OF MEASUREMENTS OF SEEPAGE WATER

IN THE CACHE LA POUDRE RIVER, COLORADO, OCTOBER 9 TO 15, 1895—Concluded.

Names of Streams and Ditches where Measurements were taken	Amount of water in river	Amount of water diverted from river by canals	Amount of inflow from natural tributaries	Amount of water in river at points measured + that diverted by canals and − the inflow from natural tributaries	Increase in volume of river between points measured	Decrease in volume of river between points measured	Increase in volume of river from the gaging station, at Cañon, to point where last measured	Increase in volume per mile between points measured	Remarks
	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	
Cache la Poudre River	32.53			68.26	6.09		55.34	4.2 M.=1.45	At Strauss bridge, October 10.
Cache la Poudre River	26.24			61.97					At Strauss bridge, October 14.
Cache la Poudre No. 2 Canal		.02							October 14
Cache la Poudre River	33.73			69.48	7.51		62.85	2.4 M.=3.13	Below Cache la Poudre No. 2 canal, October 14.
Fossil Creek			(7.63)						October 14
Whitney Ditch		5.72							October 14
Eaton Canal		8.09							October 14
Cache la Poudre River	26.91			76.47	6.99		69.84	3 M.=2.33	Below Eaton canal, October 14.
Seepage Ditch			(1.34)						October 14
Jones Ditch		1.39							October 14
Greeley No. 3 Ditch		13.10							October 15

Cache la Poudre River	19.77			83.82	7.35		77.19	9 M.—.82	Below Greeley No. 3 ditch, October 14
Greeley No. 3 Ditch		.61							October 15
Cache la Poudre River	32.26			83.21					Below Greeley No. 3 ditch, October 15
Waste Water			(2.42)						Wastage into, Oct. 15
Boyd and Freeman Ditch		2.77							October 15
Cache la Poudre River	62 73			117.06	33.85		111.04	3 M.—11.28	At pump-house, October 15.
Mill Power Canal		(4.05)	(5.40)						October 15
Ogilvy Ditch		0.00							October 15
Cache la Poudre River	70.47			124.80	7.74		118.78	2.5 M.—3.10	Below Ogilvy dam, October 15.
Camp Ditch		0.00							October 15
Cache la Poudre River	116.84			171.17	46.37		165.15	3.25 M.—5.05	Above mouth, October 15.

NOTE—Quantities enclosed in parentheses are noted as a matter of record only.

TABLE OF MEASUREMENTS OF SEEPAGE WATER

IN THE CACHE LA POUDRE RIVER, COLORADO, NOVEMBER 13 TO 15, 1896.

Names of Streams and Ditches where Measurements were taken	Amount of water in river	Amount of water diverted from river by canals	Amount of inflow from natural tributaries	Amount of water in river at points measured + that diverted by canals and – the inflow from natural tributaries	Increase in volume of river between points measured	Decrease in volume of river between points measured	Increase in volume of river from Cache la Poudre No. 2 Canal, to point where last measured	Increase in volume per mile between points measured	Remarks
	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	Second-feet	
Cache la Poudre River	9.70								Below Cache la Poudre No. 2 Canal, November 13.
Seepage		1.71							Intercepted, Nov. 13
Fossil Creek			(3.76)						November 13
Whitney Ditch		1.77							November 13
Eaton Canal		.02							November 13
Cache la Poudre River	18.33			21.83	12.13		12.13	3 M. =4.04	Below Eaton canal, November 13.
Jones Ditch		.84							November 14
Greeley No. 3 Ditch		23.13							November 14
Greeley No. 3 Ditch		(17.31)							Below wasteway, November 15.
Cache la Poudre River	.13			27.60	5.77		17.90	9 M. =.64	Below Greeley No. 3 ditch, Nov. 15.

Seepage		(.93)							Intercepted from Big Thompson, November 14.
Greeley No. 3 Ditch			8.67						Wastage from, November 14.
Boyd and Freeman Ditch		1.18							November 14
Seepage			(.46)						West of pump-house, November 14.
Cache la Poudre River	24.26			44.24	16.64		34.54	3 M.=5.55	At pump-house, November 14.
Mill Power Canal		1.26	1.13						November 14
Greeley Drain Sewer			(2.01)						November 15
Ogilvy Ditch		.26							November 14
Cache la Poudre River	49.39			69.76	25.52		60.06	2.5 M.=10.21	Below Ogilvy dam, November 14.
Camp Ditch		0.00							November 14
Waste Water			6.84						November 14
Cache la Poudre river	78.21			91.74	21.98		82.04	3.25 M.=6.76	Above mouth, November 14.

NOTE—Quantities enclosed in parentheses are noted as a matter of record only.

COMPARATIVE TABLE

SHOWING THE INCREASE IN VOLUME OF THE CACHE LA POUDRE RIVER, FROM THE CAÑON TO POINTS MEASURED, DUE TO THE RETURN OF WASTE OR SEEPAGE WATER.

Places where Measurements were Taken	October 1885	October 1889	October 1890	October 1891	March 1892	October 1892	November 1893	March 1894	August 1894	October 1895	November 1896 *a*
River at Larimer and Weld Canal	11.86	11.27	25.79	18.26	----------	15.37	31.25	1.57	.77	19.62	----------
River at No. 2 Reservoir Supply Ditch	----------	----------	----------	----------	----------	----------	----------	5.02	----------	49.25	----------
River at Strauss Bridge	----------	----------	----------	----------	----------	24.88	----------	----------	15.03	55.34	----------
River at Cache la Poudre No. 2 Canal	37.36	48.06	39.45	26.97	----------	27.40	43.19	32.22	18.15	62.85	----------
River at Eaton Canal	----------	----------	----------	----------	57.31	33.37	38.38	25.59	30.01	69.84	----------
River at Greeley No. 3 Canal	----------	----------	----------	----------	----------	----------	----------	----------	42.69	77.19	----------
River at Pump-house	----------	----------	56.70	21.85	86.35	55.18	57.59	51.85	63.83	111.04	----------
River at Ogilvy Dam	86.90	92.56	77.57	----------	96.11	72.49	81.18	61.90	----------	118.78	----------
River above mouth	----------	98.97	100.79	79.53	----------	101.65	98.68	82.32	118.16	165.15	----------

a The measurements of 1896 can not be compared with the other years in this table, because the measurements were taken up, at the head of Cache la Poudre No. 2 Canal.

CHAPTER VII.

GAGING OF STREAMS AND RATING OF DITCHES.

GAGING OF STREAMS.

In the spring of 1895, this office arranged with Mr. F. H. Newell, in charge of the "Division of Hydrography of the United States Geological Survey," for coöperation in the measurements of the most important of the Colorado streams. The facilities possessed by the United States geological survey have been shared by this office, and these measurements pushed forward in the most economic manner possible. Besides the stations previously established by the United States geological survey on the Arkansas, the Grand and the Rio Grande rivers, the old stations on the South Platte river and its tributaries, that had been abandoned by my predecessor in office, were reopened, and new ones established in the western and southwestern portions of the state.

Through the courtesies of The Denver & Rio Grande Railroad Company, The Rio Grande Southern Railroad Company, The Colorado Midland Railroad Company, and The Union Pacific, Denver & Gulf Railroad Company in furnishing the employés of this office with transportation while engaged in gaging these streams, and the financial assistance rendered by the United States geological survey, we have been enabled to maintain many stations that otherwise would have been abandoned on account of the insufficiency of the fund available for such purposes.

The following pages give the results of the operations of this office, in this hydrographic work, for the calendar years 1895-1896.

For general information and in answer to numerous inquiries, the drainage areas of the various streams in Colorado are here given as they have been measured by Mr. F. H. Newell, hydrographer, United States geological survey, and published in bulletin No. 140.

These measurements were made by means of a planimeter from the land office map of Colorado. While the catchment areas at the head waters are easily outlined, the dividing lines between the drainage basins of the streams on the plains are not so readily defined, and it is difficult to determine in which direction the water flows.

For this reason it is possible for estimates of different authorities to differ widely.

DRAINAGE AREA MEASUREMENTS.

	Sq. Miles.
Animas river at Durango	812
Arkansas river at Granite	425
Arkansas river at Salida (above south fork)	1,160
Arkansas river at Cañon City	3,060
Arkansas river at Swallows	4,300
Arkansas river at Pueblo	4,600
Arkansas river at La Junta	12,200
Arkansas river at railroad bridge above Holly	23,500
Arkansas river at Colorado-Kansas state line	24,600
Bear creek at Morrison	170
Big Thompson creek near Loveland	305
Boulder creek, South, near Marshall	125
Boulder creek, North, at Boulder	179
Cache la Poudre river above Fort Collins	1,060
Cache la Poudre river at mouth	2,465
Clear creek near Granite	72
Cottonwood creek, south fork, near Buena Vista	28
Cottonwood creek, middle fork, near Buena Vista	37
Dolores river at Dolores	562
Fountain creek at mouth	1,011
Grand River, at Glenwood Springs	5,838
Grand river at Grand Junction, above mouth of the Gunnison river	8,644
Grand river at Grand Junction, below mouth of the Gunnison river	16,579
Grand river in Colorado	22,294
Gunnison river at Grand Junction	7,935
Laramie river in Colorado	343
North Platte river in Colorado (a)	2,025
Piedra river at Arboles	650
Purgatoire or Las Animas river at mouth	7,333
Republican river in Colorado	7,926
Rio Grande at Del Norte	1,400
Rio Grande in Colorado	7,527
San Juan river at Arboles	1,394
San Miguel river at Fall Creek station	327
Smoky Hill river in Colorado	1,533
South Platte river at Deansbury	2,600
South Platte river at Denver, below mouth of Cherry creek	3,840
South Platte river at Greeley, above mouth of Cache la Poudre river	7,110
South Platte river below Greeley, including Cache la Poudre river	9,575
South Platte river at Orchard	12,260
South Platte river in Colorado (a)	20,205
St. Vrain creek near Lyons	209
Twin Lake creek below Twin Lakes	102
Uncompahgre river at Fort Crawford	497
White river at White River City	1,773

SOUTH PLATTE BASIN. (b)

Box Elder creek at mouth	627
Crow creek at mouth	1,443
Lone Tree creek at mouth	536
Lost creek at mouth	390
Kiowa creek at mouth	470
Bijou creek at mouth	1,425
Pawnee creek at mouth	600
Cedar creek at mouth	514
Lodge Pole creek at mouth	2,500

(a) Thirteenth Annual Report U. S. G. Survey, part III., page 33.
(b) Prof. L. G. Carpenter, bulletin No. 33, page 55.

DITCHES RATED IN 1895.

WATER DIVISION NO. 1.

Name of Ditch	Date	Hydrographer	District
Brighton Ditch	May 21	P. J. Preston	No. 2
Brantner Ditch	May 21	P. J. Preston	No. 2
Barnes Ditch	May 28	L. R. Hope	No. 4
Community Ditch	May 14	P. J. Preston	No. 6
Home Supply Ditch	July 5	P. J. Preston	No. 4
Handy Ditch	July 8	P. J. Preston	No. 4
Farmers' Independent Ditch	May 22	P. J. Preston	No. 2
Larimer County Ditch	June 12	L. G. Carpenter	No. 3
Larimer County Ditch	June 19	P. J. Preston	No. 3
Larimer and Weld Canal	July 10	P. J. Preston	No. 3
Lupton Bottom Ditch	May 22	P. J. Preston	No. 2
Meadow Island Ditch	May 22	P. J. Preston	No. 2
Platteville Ditch	May 22	P. J. Preston	No. 2
Supply Ditch	June and July	P. J. Preston	No. 5
South Boulder and Coal Creek Ditch	July 18	P. J. Preston	No. 6

WATER DIVISION NO. 2.

Name of Ditch	Date	Hydrographer	District
Amity Canal	June 1 and 23	P. J. Preston	No. 67
Catlin Ditch	May 29	P. J. Preston	No. 16
Colorado Springs City Ditch	June 21	P. J. Preston	No. 10
High Line Canal	June 5	P. J. Preston	No. 14
La Junta and Lamar Canal	August 3	P. J. Preston	No. 17
Oxford Farmers' Ditch	June 30	P. J. Preston	No. 14
X. Y. Ditch	June 3	P. J. Preston	No. 67

DITCHES RATED IN 1896.

WATER DIVISION NO. 1.

Name of Ditch	Date	Hydrographer	District
Arapahoe or Golden Canal Co.'s Canal	June 12	P. J. Preston	No. 7
Barnes Ditch	June 5	P. J. Preston	No. 4
Big Thompson Ditch	May 21	P. J. Preston	No. 4
Farmer's Ditch	June 3	P. J. Preston	No. 4
Fulton Ditch	July 23	P. J. Preston	No. 2
Highland Ditch	June 8	P. J. Preston	No. 5
Larimer County Ditch	May 23	L. G. Carpenter	No. 3
Larimer County Ditch	June 20	P. J. Preston	No 3
Loveland and Greeley Canal	June 4	P. J. Preston	No. 4
Lower Boulder Ditch	July 2	P. J. Preston	No. 6
Oligarchy Ditch	June 9	P. J. Preston	No. 5
Platteville Ditch	June 2	P. J. Preston	No. 2
Rocky Mountain Ditch	June 18	P. J. Preston	No. 7
Rough and Ready Ditch	June 9	P. J. Preston	No. 5
Supply Ditch	June 8	P. J. Preston	No. 5
Union Ditch	June 17	P. J. Preston	No. 9
Warrior Ditch	June 17	P. J. Preston	No. 9

WATER DIVISION NO. 2.

Name of Ditch	Date	Hydrographer	District
Alvord Ditch	June 25	P. J. Preston	No. 10
Lincoln Ditch	July 13	P. J. Preston	No. 10
Owen and Hall Ditch	July 14	P. J. Preston	No 10

LIST OF MISCELLANEOUS DISCHARGE MEASUREMENTS

OF VARIOUS STREAMS IN COLORADO.

Name of Stream	Date	Hydrographer	Area of Section	Mean Velocity	Discharge	Remarks
	1895					
Boemer Creek	June 19	P. J. Preston	.66	1.74	a 1.15	Above Colorado Springs reservoir No. 2
Middle Beaver Creek	June 19	P. J. Preston	1.84	1.92	a 3.53	Above Colorado Springs reservoir No. 2
Middle Beaver Creek	June 19	P. J. Preston	2.66	3.03	a 8.05	At intake of Beaver creek pipe line
Ruxton Creek	June 20	P. J. Preston	----------	----------	a 2.73	Above Lake Moraine
Ruxton Creek	June 20	P. J. Preston	2.87	1.82	a 5.22	Above intake of Ruxton creek pipe line
North Cheyenne Creek	June 20	P. J. Preston	1.27	6.21	a 7.80	At intake of Jones park pipe line
Ruxton Creek	June 21	P. J. Preston	6.20	1.75	a 10 86	Above intake of Manitou pipe line
Bear Creek	June 22	P. J. Preston	2.73	1.19	a 3.24	Above intake of Bear creek pipe line
East Fork of West Beaver Creek	July 26	P. J. Preston	2.39	1.74	a 4 10	Above Colorado Springs reservoir No. 8
East Fork of West Beaver Creek	July 26	P. J. Preston	7.16	1.43	a 10.24	Above falls
Middle Beaver Creek	July 27	P. J. Preston	2.18	1.42	a 3.09	Above Colorado Springs reservoir No. 2
Middle Beaver Creek	July 27	P. J. Preston	3.75	3.10	a 11.61	At intake of Beaver creek pipe line
Big Thompson Creek	July 6	P. J. Preston	70.73	2.61	183.90	Below Greeley and Loveland canal
Grand River	Oct. 22	D. R. Crosby	----------	----------	2,767.00	Upper ferry, near Palisade
	1896					
Bear Creek	June 23	P. J. Preston	2.07	1.67	a 3.45	Above intake of Bear creek pipe line
Ruxton Creek	June 23	P. J. Preston	1.56	1.39	a 2.16	Above intake of Manitou pipe line
Ruxton Creek	June 24	P. J. Preston	2.56	1.30	a 3.33	Above Ruxton creek pipe line

a Measurements made with reference to Colorado Springs water supply.

LIST OF MISCELLANEOUS DISCHARGE MEASUREMENTS

OF VARIOUS STREAMS IN COLORADO—Concluded.

Name of Stream	Date	Hydrographer	Area of Section	Mean Volicity	Discharge	Remarks
East Fork of West Beaver Creek	July 15	P. J. Preston			*a* 1 48	Above Colorado Springs reservoir No. 8
East Fork of West Beaver Creek	July 15	P. J. Preston	3.31	1 22	*a* 4.04	Above intake of Victor pipe line
Big Thompson Creek	May 20	P. J. Preston	.45	.91	*b* .41	Below dam of Hillsboro ditch
Big Thompson Creek	May 20	P. J. Preston	.63	.43	*b* .27	Below dam of Big Thompson ditch
Conejos River	June 24	F. T. Anderson	33.00	2.04	67 30	Nine miles above the town of Conejos

a Measurements made with reference to Colorado Springs water supply.

b Measurements made with reference to seepage between the two ditches.

NOTE—Miscellaneous measurements of the South Platte and Cache la Poudre rivers will be found in the Seepage Tables for 1895 and 1896.

TABLE GIVING LOCATION OF GAGING STATIONS.

Animas river, at Durango.
Arkansas river, at Granite.
Arkansas river, at Salida.
Arkansas river, at Cañon City.
Arkansas river, at Pueblo.
Arkansas river, at La Junta.
Bear creek, at Morrison.
Big Thompson creek, at Home Supply dam.
Boulder creek, South, near Marshall.
Boulder creek, at Boulder.
Dolores river, at Dolores.
Grand river, at Grand Junction.
Gunnison river, at Grand Junction.
Piedra river, at Arboles.
Purgatoire river, at Trinidad.
Rio Grande, at Del Norte.
Rio Grande, at Alamosa.
San Juan river, at Arboles.
San Miguel river, at Fall creek.
South Platte river, at Deansbury.
South Platte river, at Denver.
South Platte river, at Orchard.
St. Vrain creek, near Lyons.
Uncompahgre river, at Fort Crawford.
White river, at White River City.

DEANSBURY STATION NO. 1, ON SOUTH PLATTE RIVER.

This station is located about 1,000 feet southwest of Deansbury, a station on the Denver, Leadville & Gunnison railroad, twenty-seven miles from Denver. It was established on November 15, 1895, by the kindness of private parties, who have paid all the expense of maintaining the station. The discharge measurements are made from a foot bridge crossing the stream. The gage rod is vertical, fastened to $3'' \times 6''$ plank, and marked to 0.05 of a foot.

An automatic register is also used.

The banks are both high and not liable to overflow.

The bed of the stream consists of gravel and small boulders, and has not changed perceptibly.

Measurements are made at this point during the winter months, since the channel being narrow, and current swift, the river is less liable to freeze than at station No. 2.

LIST OF DISCHARGE MEASUREMENTS

MADE ON SOUTH PLATTE RIVER, AT DEANSBURY, COLO., STATION NO. 1.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
1	Nov. 30	L. R. Hope	21	4.00	49	4.03	197
2	Dec. 1	L. R. Hope	21	3.20	37	2.78	102
3	Dec. 7	L. R. Hope	21	3.60	44	3 59	160
4	Dec. 8	L. R. Hope	21	3.65	45	3.71	166
5	Dec. 14	L. R. Hope	21	3.80	47	3.88	183
6	Dec. 20	L. R Hope	21	3.35	38	3.51	135
	1896						
7	Jan. 12	L. R. Hope	20	3.05	34	2.77	94
8	Jan. 18	L. R. Hope	20	3.05	33	2.86	94
9	Jan. 27	L. R. Hope	20	2.90	31	2.86	90
10	Feb. 4	L. R. Hope	20	3.18	35	3.29	116
11	Feb. 11	L. R. Hope	20	3.10	33	3.02	101
12	Feb. 19	L. R. Hope	20	2.97	32	2.84	91
13	Feb. 23	L. R. Hope	20	3.42	40	3.58	144
14	Mar. 18	L. R. Hope	20	3.07	32	3.01	97
15	Mar. 20	L. R. Hope	20	3.75	47	3.89	184
16	Mar. 30	L. R. Hope	20	5.15	68	5.51	372
17	Apr. 2	L. R. Hope	20	4.30	57	4.58	259
18	Apr. 13	L. R. Hope	20	4.85	64	5.15	329

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE SOUTH PLATTE RIVER, AT DEANSBURY, COLO., (STATION NO. 1), FOR 1895-96. DRAINAGE AREA, 2,600 SQUARE MILES. OBSERVER, WILSON MULLEN; POSTOFFICE ADDRESS, SYMES, COLO.

DAY	DISCHARGE						DAY
	November	December	January	February	March	April	
1		164	90	92	125	270	1
2		151	90	92	106	251	2
3		119	92	106	100	230	3
4		96	92	106	145	197	4
5		151	92	100	112	197	5
6		224	92	100	119	311	6
7		190	132	100	125	364	7
8		176	125	106	100	411	8
9		138	119	106	125	453	9
10		176	138	112	119	397	10
11		190	100	112	132	397	11
12		176	96	112	125	425	12
13		170	92	106	138	364	13
14		183	90	112	132	411	14
15	217	151	88	112	106	489	15
16	237	170	88	119	138	554	16
17	244	119	90	119	145	518	17
18	244	151	92	112	106	445	18

19	311	100	92	119	145	397	19
20	297	132	96	125	170	404	20
21	270	190	96	132	190	404	21
22	270	164	100	132	197	438	22
23	190	145	92	125	210	474	23
24	237	132	92	119	251	489	24
25	190	96	90	132	318	*a* 604	25
26	203	92	92	138	460		26
27	237	92	90	138	561		27
28	264	132	92	138	511		28
29	224	125	92	119	467		29
30	217	112	92		390		30
31		96	92		358		31
Total	3,852	4,503	3,006	3,341	6,426	9,894	
Mean	241	145	97	115	207	396	
Maximum	311	224	138	138	561	604	
Minimum	190	92	88	92	100	197	

a Moved to Station No. 2.

DEANSBURY STATION NO. 2, ON SOUTH PLATTE RIVER.

This station is located about 300 feet above station No. 1, and is used during the summer months, being a more desirable point for high water measurements than station No. 1, owing to the greater width of channel and lower velocity of the water.

It was established on April 26, 1896.

Measurements are made from a foot bridge. The gage consists of a $2'' \times 4''$ timber, inclined, securely wired to rocks and marked to vertical 0.10 of a foot, the space between the marks being 0.141 of a foot.

The mean daily readings of the automatic register have been reported since June 1, 1896.

The railroad embankment forms the right bank, while the left is low and liable to overflow at high water. The bed of the stream is rocky and not liable to change.

LIST OF DISCHARGE MEASUREMENTS

MADE ON SOUTH PLATTE RIVER, AT DEANSBURY, COLO., STATION NO. 2.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1896						
1	May 3	L. R. Hope	20	2.70	138	4.03	557
2	May 26	L. R. Hope	20	2.55	128	3.80	485
3	June 9	L. R. Hope	20	1.90	100	3.25	314
4	June 14	L. R. Hope	20	1.44	83	2.82	235
5	July 6	L. R. Hope	20	.90	67	2.07	138
6	July 24	L. R. Hope	20	1.66	98	2.95	289
7	Aug. 14	L. R. Hope	20	.73	60	2.11	125
8	Aug. 25	L. R. Hope	20	1.30	82	2.52	205
9	Sept. 28	L. R. Hope	20	1.50	91	2.63	239
10	Oct. 10	L. R. Hope	20	1.42	92	2.55	233
11	Oct. 20	L. R. Hope	20	1.23	85	2.29	193
12	Oct. 31	L. R. Hope	20	1.33	88	2.41	212
13	Nov. 10	L. R. Hope	20	1.27	87	2.31	201

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE SOUTH PLATTE RIVER, AT DEANSBURY, COLO., (STATION NO. 2), FOR 1896. DRAINAGE AREA, 2,600 SQUARE MILES. OBSERVER, L. R. HOPE; POSTOFFICE ADDRESS, SYMES, COLO.

DAY	DISCHARGE									DAY
	April	May	June	July	August	September	October	November	December	
1	----------	554	601	161	221	291	230	213	132	1
2	----------	554	601	153	213	291	230	190	132	2
3	----------	531	577	146	205	272	221	190	118	3
4	----------	722	487	146	198	310	230	182	125	4
5	----------	650	414	154	190	281	221	168	*a*	5
6	----------	830	385	146	183	198	221	175	----------	6
7	----------	765	350	154	175	205	221	139	----------	7
8	----------	786	330	161	161	198	205	139	----------	8
9	----------	626	310	168	153	198	213	175	----------	9
10	----------	531	291	146	139	246	221	190	----------	10
11	----------	465	272	132	125	301	221	161	----------	11
12	----------	414	254	132	125	282	221	146	----------	12
13	----------	398	238	125	118	263	221	153	----------	13
14	----------	448	230	118	125	246	221	190	----------	14
15	----------	398	230	125	125	230	213	190	----------	15
16	----------	398	221	205	154	213	205	182	----------	16
17	----------	398	213	281	154	205	205	190	----------	17
18	----------	448	205	272	291	213	198	190	----------	18

19		430	198	310	282	246	213	182		19
20		385	198	350	272	272	213	182		20
21		361	198	371	205	291	198	182		21
22		350	205	350	221	282	205	168		22
23		371	198	310	272	263	221	168		23
24		430	190	254	221	246	213	190		24
25		448	183	361	205	246	221	175		25
26	876	430	175	430	190	238	230	146		26
27	960	448	175	414	175	238	230	132		27
28	983	465	168	361	168	238	221	132		28
29	786	465	168	291	175	246	221	132		29
30	700	508	168	254	190	238	205	132		30
31		554		246	221		205			31
Total	4,305	15,561	8,433	7,227	5,852	7,487	6,714	5,084	507	
Mean	861	502	281	233	189	250	217	169	127	
Maximum	983	830	601	430	291	310	230	213	132	
Minimum	700	350	168	118	118	198	198	132	118	

a Moved to Station No. 1.

DENVER STATION, ON THE SOUTH PLATTE RIVER.

A station was established May 7, 1895, at the 23d Street viaduct, but was abandoned on June 18 of the same year, as the location was unfavorable, and a sand bar had formed around the gage rod. Only one discharge measurement was made at this station.

The present station is at the Fifteenth Street bridge, and was established July 15, 1895.

The stream measurements are made from the lower side of the bridge, except at very low water.

The gage consists of two $6'' \times 2''$ planks spiked together, and fastened to posts driven into the river bank. It is inclined and graduated to vertical 0.10 of a foot, the space between marks being 0.156 of a foot. The river is confined between slag embankments, and the bed is sandy and shifting.

During the flood of August 22, 1896, in Cherry creek, the channel near the slope rod filled in with sand, and all the water now flows down the left side of the river. On August 26, 1896, a short vertical rod, reading same as the slope rod, was spiked to a pile near left abutment of the bridge. Stream measurements made since this date are not applicable to gage heights previous to August 22.

LIST OF DISCHARGE MEASUREMENTS

MADE ON SOUTH PLATTE RIVER, AT DENVER, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
a	May 7	P. J. Preston	21	----------	114	1.48	168
1	July 23	F. Cogswell	14	5.40	411	3.63	1,490
2	Aug. 7	P. J. Preston	14	4.60	263	3.33	876
3	Aug. 22	P. J. Preston	14	3.90	162	2.75	447
4	Nov. 9	P. J. Preston	21	4.30	168	2.56	*b* 430
5	Nov. 29	P. J. Preston	14	3.90	128	2.37	303
	1896						
6	Jan. 6	P. J. Preston	14	3.60	85	2.15	183
7	April 8	P. J. Preston	21	4.50	138	1.71	235
8	May 29	P. J. Preston	14	4.90	146	2.09	304
9	July 1	P. J. Preston	21	4.33	69	1.54	*c* 107
----	July 25	P. J. Preston	------	6.10	348	3.78	*d* 1,316
10	Aug. 5	P. J. Preston	14	4.35	76	1.65	125
11	Aug. 26	R. S. Sumner	21	4.80	57	1.46	*e* 83
12	Sept. 11	F. Cogswell	14	5.10	77	2.12	*e* 163
13	Oct. 30	P. J. Preston	21	4 70	58	1.59	*e* 93
14	Nov. 9	P. J. Preston	21	4.75	57	1.76	*e* 100

a Gaged at Twenty-third street viaduct. All other measurements made at Fifteenth street bridge station.

b Gaged by wading between Fifteenth and Sixteenth street bridges.

c Gaged by wading fifty feet above gage.

d Approximate. Surface velocity obtained by floats about 300 feet below gage. Mean velocity taken as 80 per cent. of surface velocity.

e New vertical gage near left bank.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE SOUTH PLATTE RIVER AT FIFTEENTH STREET BRIDGE, DENVER, COLO., FOR 1895. DRAINAGE AREA, 3,840 SQUARE MILES. OBSERVER, J. H. HODGSON; POSTOFFICE ADDRESS, DENVER, COLO.

DAY	DISCHARGE						DAY
	July	August	September	October	November	December	
1		1,805	1,092	506	760	262	1
2		1,945	1,215	326	760	227	2
3		1,595	760	642	760	194	3
4		1,355	701	701	760	149	4
5		1,251	870	468	870	149	5
6		1,008	436	468	760	244	6
7		870	326	1,092	642	326	7
8		815	282	918	594	227	8
9		1,008	244	594	594	282	9
10		870	262	918	545	350	10
11		760	244	1,008	545	244	11
12		642	194	918	468	194	12
13		545	194	870	404	227	13
14		594	227	760	350	194	14
15	642	468	210	642	303	262	15
16	506	468	227	545	163	194	16
17	350	468	210	468	404	262	17
18	350	404	194	701	506	282	18

19	404	377	227	701	468	227	19
20	262	404	227	701	377	178	20
21	404	350	194	545	350	163	21
22	1,490	303	350	701	262	135	22
23	1,355	326	404	701	227	168	23
24	1,456	377	468	545	244	122	24
25	1,423	350	404	815	244	149	25
26	1,175	303	262	760	227	210	26
27	870	244	701	760	227	163	27
28	760	227	506	701	282	149	28
29	701	545	594	706	303	163	29
30	918	1,175	545	642	262	149	30
31	1,456	1,175	----------	760	----------	135	31
Total	14,522	23,027	12,770	21,637	13,661	6,320	
Mean	854	743	426	698	455	204	
Maximum	1,490	1,945	1,215	1,092	870	350	
Minimum	262	227	194	468	163	108	

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE SOUTH PLATTE RIVER AT FIFTEENTH STREET BRIDGE, DENVER, COLO., FOR 1896. DRAINAGE AREA, 3,840 SQUARE MILES. OBSERVER, J. H. HODGSON; POSTOFFICE ADDRESS, DENVER, COLO.

DAY	DISCHARGE											DAY
	January	February	March	April	May	June	July	August	September	October	November	
1	170	174	202	239	408	347	203	120	162	126	83	1
2	172	172	198	244	372	364	187	108	180	144	91	2
3	174	216	212	262	330	321	64	187	171	144	83	3
4	172	192	205	250	330	313	*a* 64	158	135	75	91	4
5	172	183	202	244	347	305	*a* 64	108	117	59	83	5
6	170	192	198	239	330	297	*a* 64	120	117	51	91	6
7	168	189	198	256	313	297	*a* 64	108	126	67	83	7
8	165	186	212	250	321	297	64	97	108	59	91	8
9	163	183	220	268	305	275	86	86	117	51	91	9
10	177	192	212	250	268	262	97	108	153	35	108	10
11	186	229	212	239	275	244	64	97	153	27	99	11
12	189	212	212	244	239	250	42	108	162	43	117	12
13	192	202	216	262	229	256	42	86	153	51	126	13
14	183	195	205	297	262	202	108	97	144	162	117	14
15	183	186	212	289	256	234	97	53	153	144	108	15
16	180	195	220	321	313	145	145	42	144	117	91	16
17	186	202	212	330	256	97	132	108	144	108	83	17
18	192	205	202	305	289	53	219	120	153	126	91	18

19	177	209	212	313	282	64	42	158	171	135	91	19
20	183	205	216	297	275	64	108	158	144	162	99	20
21	198	198	209	289	256	64	145	*a* 158	135	162	108	21
22	189	198	220	305	234	64	158	*a* 158	144	171	108	22
23	183	202	244	321	234	75	145	*a* 108	126	180	108	23
24	186	205	250	313	234	86	145	*a* 108	108	162	126	24
25	186	202	268	330	305	158	758	*a* 108	144	153	126	25
26	192	209	289	355	289	172	401	108	153	144	126	26
27	183	205	275	435	282	158	335	117	162	126	*b*	27
28	186	202	268	426	289	145	255	117	162	144	*b*	28
29	195	205	275	444	305	203	302	108	135	126	*b*	29
30	202	----------	262	417	289	203	278	117	144	91	*b*	30
31	189	----------	250	----------	313	----------	203	144	----------	83	----------	31
Total	5,643	5,745	6,988	9,034	9,030	6,015	5,081	3,578	4,340	3,428	2,619	
Mean	182	198	225	301	291	200	164	115	145	111	101	
Maximum	202	229	289	444	408	364	758	187	180	180	126	
Minimum	163	172	198	239	229	53	42	42	108	27	83	

a Estimated; sand bar formed at gage rod.

b River frozen; ice .40 foot thick.

ORCHARD STATION, ON THE SOUTH PLATTE RIVER.

This station is located one-fourth mile southwest of Orchard, and was established November 20, 1895, by the kindness of G. H. West and D. A. Camfield, of Greeley.

The gage is inclined, consisting of two $2'' \times 4''$ planks spiked together and fastened to posts driven into the river bank. It is marked to vertical 0.10 of a foot, the space between the marks being 0.127 of a foot.

The left bank is high and the right low and liable to overflow, the bed of the stream being sandy and shifting.

Measurements are made by wading, but a sufficient number have not been obtained for the estimation of the daily discharge.

The primary object of this station is to obtain the winter flow of the Platte at this point. The station was reopened December 1, 1896.

On November 21, 1895, a station was established at Green City bridge, about six miles west of Orchard. The river at that point discharges through two channels, and for other reasons, the location is not a desirable one and the station has been abandoned.

LIST OF DISCHARGE MEASUREMENTS

MADE ON SOUTH PLATTE RIVER, AT ORCHARD, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
1	Nov. 20....	P. J. Preston.....	21	4.00	327	2.53	829
2	Dec. 27....	P. J. Preston.....	21	3.83	285	2.34	667
	1896						
3	Feb. 19....	H. A. Sumner....	21	3.90	287	2.33	669
4	Oct. 22....	P. J. Preston.....	21	3.20	121	1.99	*a* 240

a Made in connection with seepage measurements of the South Platte river, and about 150 feet above gage rod.

DAILY MEAN GAGE HEIGHT

OF THE SOUTH PLATTE RIVER, AT ORCHARD, COLO., FOR 1895-96. DRAINAGE AREA, 12,260 SQUARE MILES. OBSERVER, W. N BACHELDER; POSTOFFICE ADDRESS, ORCHARD, COLO.

DAY	GAGE HEIGHT						DAY
	November	December	January	February	March	April	
1	.....	4.15	3.85	4.15	3.70	3.70	1
2	.....	4.10	3.85	*a*	3.70	3.70	2
3	.....	4.10	3.90	.....	3.70	3.75	3
4	.....	4.10	3.95	.....	3.75	4.00	4
5	.....	4.10	4.00	.....	3.80	*b*	5
6	.....	4.10	4.00	.....	3.85	.....	6
7	.....	4.10	4.05	.....	3.90	.....	7
8	.....	4.05	4.10	.....	3.90	.....	8
9	.....	4.00	4.10	.....	3.90	.....	9
10	.....	4.00	4.00	.....	3.85	.....	10
11	.....	4.00	4.00	.....	3.80	.....	11
12	.....	4.00	3.95	.....	3.75	.....	12
13	.....	3.95	3.90	.....	3.70	.....	13
14	.....	3.95	3.80	.....	3.70	.....	14
15	.....	3.95	3.90	.....	3.70	.....	15
16	.....	3.95	3.95	3.90	3.70	.....	16
17	.....	3.95	4.00	3.85	3.70	.....	17
18	.....	3.90	4.00	3.85	3.75	.....	18

61	----	3.90	4.00	3.85	3.75	----	19
20	----	3.90	4.00	3.85	3.80	----	20
21	----	3.95	4.00	3.85	3.80	----	21
22	4.00	3.95	4.00	3.85	3.80	----	22
23	4.05	3.95	4.00	3.80	3.75	----	23
24	4.05	3.90	4.00	3.80	3.70	----	24
25	4.10	3.90	4.00	3.75	3.70	----	25
26	4.10	3.90	4.00	3.75	3.75	----	26
27	4.10	3.85	4.00	3.70	3.75	----	27
28	4.10	3.80	4.00	3.70	3.80	----	28
29	4.15	3.80	4.00	3.70	3.85	----	29
30	4.15	3.85	4.10	----	3.80	----	30
31	----	3.85	4.10	----	3.70	----	31

a No report; observer absent.

b Station closed.

ARKINS STATION, AT HOME SUPPLY DAM, ON BIG THOMPSON CREEK.

This station is located about nine miles west of Loveland, and about 600 feet below the "Home Supply Dam."

It was established May 9, 1895.

The gage is vertical, unpainted, but notched for each foot and 0.10 of a foot, and is fastened to the timbers of a bridge.

The right bank is high, but the left is low and liable to overflow at high water, and the bed of the stream is of gravel with some boulders.

Measurements are usually made from the upper side of the wagon bridge.

The headgates of the Home Supply ditch and Handy ditch are located above the dam. The amount of water they carry during the irrigation season has been reported by Mr. H. C. Havener, water commissioner of district No. 4, and is to be added to the river discharge to obtain the total run-off of the drainage basin.

LIST OF DISCHARGE MEASUREMENTS

MADE ON BIG THOMPSON CREEK, AT "HOME SUPPLY DAM," COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second	Discharge (second-feet)
	1895						
1	May 9	P. J. Preston	21	1.25	120	2.17	260
2	July 19	P. J. Preston	21	1.90	139	3.59	499
3	Oct. 1	P. J. Preston	21	.45	56	.75	42
	1896						
4	June 1	P. J. Preston	21	1.70	128	3.14	403
5	July 28	P. J. Preston	21	1.50	112	2.56	286
6	Oct. 15	P. J. Preston	21	.80	74	1.01	74

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE BIG THOMPSON CREEK, AT "HOME SUPPLY DAM," NEAR ARKINS, COLO., FOR 1895. DRAINAGE AREA, 305 SQUARE MILES. OBSERVER, E. CHASTEEN; POSTOFFICE ADDRESS, ARKINS, COLO.

DAY	DISCHARGE						DAY
	May	June	July	August	September	October	
1		362	522	696	217	32	1
2		823	500	633	189	20	2
3		823	400	588	203	43	3
4		676	480	522	203	118	4
5		633	440	460	174	132	5
6		633	400	400	174	132	6
7		565	380	420	160	132	7
8		610	344	380	146	105	8
9		565	344	440	132	105	9
10	261	588	440	362	132	92	10
11	217	633	460	293	132	80	11
12	246	543	778	203	160	80	12
13	261	654	610	327	160	105	13
14	276	610	565	246	160	105	14
15	327	676	565	203	132	105	15
16	310	696	565	174	118	105	16
17	293	654	610	189	105	105	17
18	246	500	543	189	132	105	18

19	261	380	480	261	132	92	19
20	327	344	480	293	189	80	20
21	362	440	522	232	203	92	21
22	344	380	543	203	189	80	22
23	344	500	440	293	174	68	23
24	344	543	362	246	174	43	24
25	310	500	293	217	174	43	25
26	362	522	310	203	118	68	26
27	362	610	310	203	55	43	27
28	420	543	293	293	32	32	28
29	344	500	362	276	68	32	29
30	400	588	500	232	32	32	30
31	380	----------	565	217	----------	55	31
Total	6,997	17,094	14,406	9,894	4,369	2,461	
Mean	318	570	465	319	146	79	
Maximum	420	823	778	696	217	132	
Minimum	217	344	293	174	32	20	
Home Supply Ditch and Handy Ditch, Total	2,044	10,833	6,649	3,225	1,183	1,096	

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE BIG THOMPSON CREEK, AT "HOME SUPPLY DAM," NEAR ARKINS, COLO., FOR 1896. DRAINAGE AREA, 305 SQUARE MILES. OBSERVER, E. CHASTEEN; POSTOFFICE ADDRESS, ARKINS, COLO.

DAY	DISCHARGE							DAY
	April	May	June	July	August	September	October	
1	*a*	5	228	180	180	195	138	1
2		25	370	195	152	125	112	2
3		74	483	195	138	125	112	3
4		86	483	180	125	125	99	4
5		99	370	180	112	125	99	5
6		125	403	180	99	86	86	6
7		152	286	166	62	74	99	7
8		138	311	311	62	125	74	8
9		180	266	180	62	112	99	9
10		195	311	166	50	99	86	10
11		228	370	195	62	125	99	11
12		166	266	180	62	112	86	12
13		152	311	152	62	86	86	13
14		112	370	166	62	99	86	14
15		99	311	180	38	99	99	15
16		86	311	403	74	74	86	16
17		86	311	311	50	125	74	17
18		86	286	195	62	112	62	18

19	----	99	211	266	86	112	50	19
20	----	112	228	228	112	125	38	20
21	----	125	246	211	286	138	27	21
22	----	152	228	180	443	125	27	22
23	----	211	246	228	370	125	38	23
24	----	403	211	403	311	138	38	24
25	----	443	195	266	266	125	27	25
26	----	443	195	311	228	138	20	26
27	----	443	180	266	195	125	20	27
28	74	370	180	246	166	138	20	28
29	27	483	195	246	125	125	20	29
30	10	911	180	211	152	125	20	30
31	----	483	----	195	211	----	20	31
Total	111	6,772	8,542	6,972	4,465	3,562	2,047	
Mean	37	218	285	225	144	119	66	
Maximum	74	911	483	403	443	195	138	
Minimum	----	5	180	152	38	74	20	
Home Supply Ditch and Handy Ditch, Total	----	1,546	2,344	1,068	882	1,257	928	

a No water passing gage rod April 1 to 27; filling "Home Supply reservoir."

LYONS STATION, ON ST. VRAIN CREEK.

This station is located one-half mile southeast of Lyons, below the intersection of the north and south forks of the St. Vrain, and was established May 11, 1895. The Supply ditch takes water out on the left side of the stream above the gage. The amount of water carried by this ditch is reported daily by the observer at the river station, when that station is open.

To obtain the total run-off of the drainage basin of the creek at this station, the amount of water in the ditch will have to be added to the discharge of the creek, as shown by the height of water on the gage.

This gage is an inclined $2'' \times 4''$ timber marked to vertical 0.10 of a foot, the space between the marks being 0.134 of a foot, and is fastened to posts driven into the ground. Both banks are low and liable to overflow, and the bed of the stream is composed of gravel.

Measurements are usually made by wading, but at high water can be made from a wagon bridge 400 feet below the gage. More satisfactory results would be obtained by establishing a station on the South fork, and one on the North fork in the town of Lyons.

LIST OF DISCHARGE MEASUREMENTS

MADE ON ST. VRAIN CREEK, AT LYONS, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
1	May 11	P. J. Preston	21	1.65	78	3.33	260
2	July 20	P. J. Preston	21	3.40	103	3.27	336
3	Oct. 2	P. J. Preston	21	2.10	24	2.78	65
	1896						
4	June 6	P. J. Preston	21	3.57	119	3.27	389
5	July 29	P. J. Preston	21	2.70	43	4.41	189
6	Sept. 22	R. S. Sumner	21	2.50	56	1.98	110
7	Oct. 14	P. J. Preston	21	2.22	36	1.49	53

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE ST. VRAIN CREEK, AT LYONS, COLO., FOR 1895. DRAINAGE AREA, 209 SQUARE MILES. OBSERVER, MISS BESSIE SITES; POSTOFFICE ADDRESS, LYONS, COLO.

DAY	DISCHARGE					DAY
	June	July	August	September	October	
1		508	488	125	88	1
2	*a*	555	488	122	80	2
3		680	420	113	83	3
4		653	351	108	96	4
5		532	336	104	157	5
6		467	342	100	180	6
7		388	284	100	176	7
8		366	253	96	180	8
9		342	242	91	186	9
10		306	246	83	186	10
11		336	219	83	190	11
12		372	212	75	190	12
13	*b* 838	397	180	75	186	13
14	1,027	397	157	72	186	14
15	891	351	152	83	197	15
16	1,040	312	143	83	197	16
17	918	298	139	80	197	17
18	848	321	225	75	208	18

19	734	278	219	83	208	19
20	708	259	212	91	208	20
21	448	601	190	83	208	21
22	437	653	186	96	219	22
23	430	456	180	96	219	23
24	475	327	176	96	219	24
25	786	298	170	104	230	25
26	708	292	157	104	230	26
27	637	321	152	96	230	27
28	691	321	176	104	230	28
29	578	342	161	91	230	29
30	601	306	152	83	230	30
31		680	134		230	31
Total	12,795	12,715	7,102	2,795	5,854	
Mean	711	410	229	93	189	
Maximum	1,040	680	488	125	230	
Minimum	430	259	134	72	80	
Supply Ditch, Total	2,359	1,828	426	117	235	

a Gage rod carried away by flood.

b New gage rod.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE ST. VRAIN CREEK, AT LYONS, COLO., FOR 1896. DRAINAGE AREA, 209 SQUARE MILES. OBSERVER, MISS BESSIE SITES; POSTOFFICE ADDRESS, LYONS, COLO.

DAY	DISCHARGE							DAY
	April	May	June	July	August	September	October	
1	5	146	373	209	116	195	90	1
2	7	163	362	222	116	146	67	2
3	8	103	373	222	116	163	90	3
4	8	131	406	209	116	131	90	4
5	8	131	340	209	116	146	90	5
6	9	209	395	209	116	131	67	6
7	18	247	329	209	116	131	67	7
8	47	295	329	209	90	67	67	8
9	27	306	417	180	90	78	67	9
10	27	283	417	180	67	103	67	10
11	37	283	417	209	67	222	67	11
12	47	209	351	163	67	209	57	12
13	27	163	340	163	47	131	57	13
14	37	116	340	163	47	103	67	14
15	67	116	340	222	47	103	67	15
16	67	116	340	283	57	78	67	16
17	37	116	329	271	90	90	57	17
18	27	116	329	247	529	103	57	18

19	9	103	283	209	283	116	47	19
20	78	116	306	195	180	116	47	20
21	131	116	295	163	209	131	67	21
22	131	131	295	180	373	103	8	22
23	146	222	283	247	340	373	6	23
24	131	283	247	417	247	146	7	24
25	146	340	318	295	195	103	6	25
26	180	351	222	271	180	103	5	26
27	247	340	209	222	146	90	47	27
28	235	384	209	180	131	90	47	28
29	103	450	222	146	116	90	47	29
30	163	573	195	146	163	90	67	30
31		450		116	195		47	31
Total	2,210	7,108	9,611	6,566	4,768	3,881	1,706	
Mean	74	229	320	212	154	129	55	
Maximum	247	573	417	417	529	373	90	
Minimum	5	103	195	116	47	67	5	
Supply Ditch, Total	646	936	1,275	437	410	302	294	

BOULDER STATION, ON BOULDER CREEK.

This station, located about one and one-half miles above the town of Boulder, was established on May 13, 1895. The gage rod consists of an inclined $2'' \times 6''$ timber, with a $1'' \times 6''$ scale fastened to it and spiked to stakes driven into the ground. It is marked to vertical 0.10 of a foot, the space between the marks being 0.207 of a foot. Both banks are high and rocky, and not liable to overflow. The bed of the creek is quite rocky.

Measurements are usually made by wading, but during high water can be made from a bridge forty feet above the gage.

LIST OF DISCHARGE MEASUREMENTS

MADE ON BOULDER CREEK, AT BOULDER, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
1	July 17	P. J. Preston	21	1.90	83	3.80	317
2	Oct. 3	P. J. Preston	21	.50	32	1.04	36
	1896						
3	July 2	P. J. Preston	21	1.30	51	2.71	139
4	July 30	P. J. Preston	21	1.10	46	2.40	110
5	Sept. 23	R. S. Sumner	21	.80	31	2.22	69
6	Oct. 16	P. J. Preston	21	.50	21	1.71	35

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE BOULDER CREEK, AT BOULDER, COLO., FOR 1895. DRAINAGE AREA, 179 SQUARE MILES. OBSERVER, MRS. CARRIE OSGOOD; POSTOFFICE ADDRESS, BOULDER, COLO.

DAY	DISCHARGE						DAY
	May	June	July	August	September	October	
1	.....	465	550	330	145	50	1
2	.....	622	522	345	136	50	2
3	.....	750	522	330	127	50	3
4	.....	562	492	302	118	114	4
5	.....	542	446	274	110	106	5
6	.....	491	410	248	106	81	6
7	.....	473	404	236	97	81	7
8	.....	491	375	229	93	73	8
9	.....	522	345	224	89	65	9
10	.....	542	400	219	81	58	10
11	.....	530	351	219	69	53	11
12	.....	530	345	184	65	50	12
13	.....	510	322	180	65	50	13
14	294	522	308	212	65	50	14
15	316	530	283	202	65	46	15
16	298	530	308	191	77	42	16
17	236	530	345	184	77	42	17
18	241	454	348	184	73	42	18

19	229	418	330	184	73	42	19
20	261	382	316	180	77	42	20
21	294	392	330	174	81	42	21
22	283	410	330	170	97	35	22
23	283	418	330	164	97	31	23
24	298	446	302	150	93	23	24
25	294	465	274	145	85	18	25
26	311	446	274	136	69	11	26
27	421	435	287	136	62	9	27
28	410	550	261	132	58	5	28
29	382	542	287	164	58	5	29
30	418	550	293	164	58	5	30
31	418		302	154		5	31
Total	5,687	15,050	10,992	6,346	2,566	1,376	
Mean	316	502	355	205	86	44	
Maximum	421	750	550	345	145	114	
Minimum	229	382	261	132	58	5	

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE BOULDER CREEK, AT BOULDER, COLO., FOR 1896. DRAINAGE AREA, 179 SQUARE MILES. OBSERVER, MRS. CARRIE OSGOOD; POSTOFFICE ADDRESS, BOULDER, COLO.

DAY	DISCHARGE							DAY
	April	May	June	July	August	September	October	
1	7	108	466	141	94	108	51	1
2	20	108	268	141	87	94	46	2
3	7	116	317	141	81	108	46	3
4	15	124	317	141	69	94	40	4
5	11	132	410	150	69	94	35	5
6	15	150	410	250	69	94	35	6
7	15	169	317	192	69	81	30	7
8	15	292	317	169	57	81	25	8
9	30	292	363	159	57	75	30	9
10	35	250	363	150	51	81	30	10
11	35	250	410	141	51	81	35	11
12	35	159	317	124	51	69	46	12
13	35	141	268	116	46	57	46	13
14	46	124	268	124	46	57	40	14
15	46	108	317	141	46	51	35	15
16	69	108	268	180	51	46	35	16
17	69	87	250	169	57	46	30	17
18	69	108	218	159	124	63	30	18

19	46	94	204	150	218	81	30	19
20	63	94	192	132	141	69	25	20
21	69	108	192	124	124	69	25	21
22	94	116	192	141	150	63	25	22
23	108	169	180	150	141	69	30	23
24	124	232	169	169	116	69	30	24
25	141	317	180	169	94	63	25	25
26	169	363	159	159	81	69	30	26
27	268	466	159	159	81	69	30	27
28	292	589	159	141	81	63	30	28
29	250	656	141	141	94	57	25	29
30	204	809	141	124	108	57	25	30
31		589		101	124		20	31
Total	2,402	7,428	7,932	4,648	2,728	2,178	1,015	
Mean	80	240	264	150	88	73	33	
Maximum	292	809	466	250	218	108	51	
Minimum	7	87	141	101	46	46	20	

MARSHALL STATION, ON SOUTH BOULDER CREEK.

This station is located about three miles west of Marshall, and was established on May 14, 1895.

The gage consists of an inclined $2'' \times 6''$ timber, with a $1'' \times 6''$ scale nailed to it, and is fastened to a tree and to stakes driven into the ground. It is marked to vertical 0.10 of a foot, the distance between the marks being 0.22 of a foot.

Both banks are high and rocky, as is also the bed of the stream.

Measurements are usually made by wading near the gage, but a foot bridge twenty feet above can be used in high water. The "Community Ditch" and the "South Boulder and Coal Creek Ditch" both take out water above the gage, and this amount must be added to the discharge at the station to obtain total run-off of the drainage basin of the creek.

LIST OF DISCHARGE MEASUREMENTS

MADE ON SOUTH BOULDER CREEK, NEAR MARSHALL, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
1	May 14	P. J. Preston	21	2.00	53	3.09	164
2	July 18	P. J. Preston	21	2.00	61	3.19	195
3	Oct. 10	P. J. Preston	21	1.05	25	1.68	42
	1896						
4	July 3	P. J. Preston	21	1.50	38	2.34	88
5	Aug. 8	P. J. Preston	21	.96	19	1.45	27
6	Sept. 24	R. S. Sumner	21	1.00	22	1.43	31
7	Oct. 17	P. J. Preston	21	.90	18	1 36	24

DAILY MEAN DISCHARGE

IN SECOND FEET OF THE SOUTH BOULDER CREEK, THREE MILES WEST OF MARSHALL, COLO., FOR 1895. DRAINAGE AREA, 125 SQUARE MILES. OBSERVER, C. E BARBER; POSTOFFICE ADDRESS, BOULDER, COLO.

DAY	DISCHARGE						DAY
	May	June	July	August	September	October	
1		445	314	166	77	14	1
2		667	314	156	70	20	2
3		1,090	286	139	55	20	3
4		944	274	148	48	84	4
5		798	300	130	48	77	5
6		798	248	130	48	55	6
7		762	236	114	33	40	7
8		730	226	100	33	48	8
9		798	205	107	33	48	9
10		798	215	107	33	48	10
11		762	205	100	33	33	11
12		558	215	114	33	33	12
13		466	205	100	33	33	13
14		445	205	100	26	33	14
15	215	428	185	100	33	33	15
16	215	466	205	92	33	33	16
17	195	509	215	84	20	33	17
18	166	410	195	77	20	33	18

19	148	360	185	92	20	33	19
20	156	286	205	84	20	33	20
21	215	261	205	70	20	33	21
22	226	274	185	77	48	33	22
23	215	329	166	77	48	33	23
24	226	360	148	70	48	26	24
25	226	344	156	62	48	28	25
26	215	314	148	62	48	26	26
27	261	329	139	62	33	33	27
28	286	428	130	100	26	26	28
29	274	410	139	84	20	26	29
30	360	360	148	84	20	33	30
31	445	----------	166	84	----------	26	31
Total	4,044	15,929	6,368	3,072	1,108	1,107	
Mean	238	531	205	99	37	36	
Maximum	445	1,090	314	166	77	84	
Minimum	148	261	130	62	20	14	
South Boulder and Coal Creek Ditch and Community Ditch, Total	825	635	800	245	57	57	

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE SOUTH BOULDER CREEK, THREE MILES WEST OF MARSHALL, COLO., FOR 1896. DRAINAGE AREA, 125 SQUARE MILES. OBSERVER, C. E. BARBER; POSTOFFICE ADDRESS, LANGFORD, COLO.

DAY	DISCHARGE							DAY
	April	May	June	July	August	September	October	
1	18	155	358	97	46	41	27	1
2	36	97	233	97	36	41	27	2
3	24	113	233	97	36	41	21	3
4	27	155	358	89	36	41	18	4
5	24	122	260	89	36	41	18	5
6	24	167	288	82	36	41	18	6
7	36	181	196	82	36	36	21	7
8	36	214	181	82	36	36	31	8
9	36	233	288	75	27	36	31	9
10	36	233	260	75	27	41	31	10
11	46	288	323	75	27	41	31	11
12	46	181	260	69	27	41	31	12
13	52	143	233	69	27	41	27	13
14	69	132	214	69	27	41	27	14
15	69	122	214	63	27	36	24	15
16	69	132	196	105	27	36	24	16
17	82	132	181	89	27	41	24	17
18	46	122	181	89	31	46	24	18

19	52	113	181	89	75	46	24	19
20	52	122	167	75	167	36	21	20
21	75	113	167	63	82	36	18	21
22	97	122	155	63	52	31	18	22
23	105	155	155	63	63	31	24	23
24	132	196	143	63	46	31	24	24
25	122	196	132	63	41	31	24	25
26	143	358	122	63	41	31	24	26
27	167	400	113	63	41	31	24	27
28	167	443	113	63	41	31	18	28
29	143	493	113	57	41	31	18	29
30	143	603	105	57	41	31	18	30
31		543		52	41		18	31
Total	2,174	6,779	6 123	2,327	1,344	1,115	728	
Mean	72	219	204	75	43	37	23	
Maximum	167	603	358	105	167	46	31	
Minimum	18	97	105	52	27	31	18	
South Boulder and Coal Creek Ditch and Community Ditch, Total		422	480					

MORRISON STATION, ON BEAR CREEK.

This station was established May 19, 1895, in the upper part of Morrison. During the flood of July 24, 1896, the gage rod was washed out and a new rod was placed in the stream on August 4, 1896,about 150 feet above the railroad depot. This rod consists of two inclined planks $2'' \times 4'' \times 8'$ long, spiked to gether, and fastened to posts driven into the ground. It is divided into vertical tenths of a foot, the space between the marks being 0.127 of a foot.

Both banks are low and liable to overflow at high water.

Measurements are made by wading, but the bridge above the gage can be used at high water.

From level notes taken August 4, 1896, the following approximate estimate is made of the discharge of Bear Creek at this point during the flood of Friday, July 24, 1896:

Depth in main channel, 5.40 feet

Velocity of main channel, 19.80 feet per second.

Total area of cross-section, 465 square feet.

Total discharge, 8,600 second-feet.

High water mark of the flood, referred to the present gage rod, was at the 10.90-foot mark.

The cross-section was taken some 200 feet above the present gage.

LIST OF DISCHARGE MEASUREMENTS

MADE ON BEAR CREEK, AT MORRISON, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
1	May 18	P. J. Preston	21	.90	22	2.17	47
2	June 12	P. J. Preston	21	2.05	69	4.77	331
3	July 24	P. J. Preston	21	1.65	58	2.96	171
4	Oct. 9	P. J. Preston	21	1.05	30	2.15	64
	1896						
5	June 17	P. J. Preston	21	.75	23	1.41	32
6	Aug. 4	P. J. Preston	21	*a* 2.90	18	3.00	55
7	Sept. 19	R. S. Sumner	21	3.05	21	3.81	80
8	Oct. 31	P. J. Preston	21	2.55	11	1.44	16

a New gage rod.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE BEAR CREEK, AT MORRISON, COLO., FOR 1895. DRAINAGE AREA, 170 SQUARE MILES. OBSERVER, FRANK . EWERS; POSTOFFICE ADDRESS, MORRISON, COLO.

DAY	DISCHARGE						DAY
	May	June	July	August	September	October	
1		148	164	238	93	52	1
2		279	132	238	93	51	2
3		*a*	132	238	93	48	3
4			126	159	89	82	4
5			113	148	86	73	5
6			98	141	86		6
7			86	148	86		7
8			93	152	78		8
9			73	141	71		9
10			118	133	71		10
11			137	128	71		11
12			137	128	71		12
13		*b* 274	137	120	64		13
14		231	118	108	64		14
15		213	113	101	68		15
16		217	110	98	58		16
17		231	103	90	58		17
18		198	101	82	52		18

19	42	198	110	78	52		19
20	41	159	128	87	46		20
21	64	159	175	86	46		21
22	64	137	159	78	64		22
23	60	143	190	122	73		23
24	70	148	190	82	73		24
25	64	137	159	73	68		25
26	73	132	133	58	63		26
27	80	122	128	58	61		27
28	86	143	130	152	58		28
29	72	214	133	105	58		29
30	102	172	249	128	50		30
31	89		231	98			31
Total	907	3,654	4,206	3,796	2,064	306	
Mean	69	183	136	122	69	61	
Maximum	102	274	249	238	93	82	
Minimum	41	122	73	58	46	48	

a Gage rod carried away by high water.
b New gage rod.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE BEAR CREEK, AT MORRISON, COLO., FOR 1896. DRAINAGE AREA, 170 SQUARE MILES. OBSERVER, FRANK EWERS; POSTOFFICE ADDRESS, MORRISON, COLO.

DAY	DISCHARGE							DAY
	April	May	June	July	August	September	October	
1	----	46	58	23	----	57	44	1
2	----	46	52	23	----	44	38	2
3	----	58	46	34	----	57	38	3
4	----	58	40	23	----	57	38	4
5	----	58	34	28	----	50	38	5
6	23	71	40	23	*b* 57	44	38	6
7	34	71	40	34	71	44	38	7
8	34	58	34	34	71	44	38	8
9	23	46	34	34	71	44	32	9
10	28	46	28	23	57	71	32	10
11	23	46	28	11	57	64	32	11
12	34	46	23	11	50	57	32	12
13	34	34	23	9	44	50	32	13
14	46	34	23	9	44	44	32	14
15	58	40	23	11	44	38	32	15
16	46	34	28	34	38	38	32	16
17	52	46	28	52	44	38	32	17
18	23	46	28	58	44	44	32	18

19	28	46	28	58	44	71	32	19
20	34	46	23	58	50	71	32	20
21	52	46	23	46	57	57	32	21
22	58	46	23	46	71	57	32	22
23	71	52	23	58	71	44	32	23
24	71	71	23	46	57	44	44	24
25	78	64	34	*a*	44	44	44	25
26	86	58	52		44	44	38	26
27	86	46	34		44	57	38	27
28	86	52	34		44	50	44	28
29	71	58	28		38	44	32	29
30	52	58	23		57	44	32	30
31		58			71		26	31
Total	1,231	1,585	958	786	1,384	1,512	1,088	
Mean	49	51	32	33	53	50	35	
Maximum	86	71	58	58	71	71	44	
Minimum	23	34	23	9	38	38	26	

a Gage rod carried away by the flood.

b New gage rod.

TRINIDAD STATION, ON PURGATOIRE OR LAS ANIMAS RIVER.

This station is located at the Las Animas Street bridge in the city of Trinidad, and was established on May 1, 1896.

The gage consists of a vertical $2'' \times 6''$ plank, graduated to vertical 0.10 of a foot, and is fastened with iron bands to the down stream side of a bridge cylinder on the right side of the river. The banks are high and not liable to overflow; the bed is of gravel and small stones, and the water moves with fair velocity. During the flood of July 25, 1896, the channel was filled in with sand and gravel near the gage, materially changing the relation between the gage height and discharge.

Stream measurements are made from the lower side of the bridge during high water, and at low water by wading some 400 feet below the gage.

Sufficient discharge measurements have not been made to estimate the daily discharge.

LIST OF DISCHARGE MEASUREMENTS

MADE ON PURGATOIRE RIVER, AT TRINIDAD, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1896						
1	April 27	F. Cogswell	14	3.20	40	2.18	88
2	June 4	F. Cogswell	14	3.15	38	1.90	72
3	July 11	F. Cogswell	14	3.20	38	1.74	*a* 66
4	Sept. 14	F. Cogswell	14	*b* 3.50	24	1.25	*a* 30
5	Oct. 12	F. Cogswell	14	3.70	39	1.23	*a* 48
6	Nov. 16	Cyrus C. Babb, U. S. G. S.	63	3.60	22	1.09	24

a Gaged by wading 400 feet below bridge.

b Channel filled in during flood of July 25, 1896.

DAILY MEAN GAGE HEIGHT

OF THE PURGATOIRE OR LAS ANIMAS RIVER, AT TRINIDAD, COLO., FOR 1896. DRAINAGE AREA, —— SQUARE MILES. OBSERVER, J. N. TURNER; POSTOFFICE ADDRESS, TRINIDAD, COLO.

DAY	GAGE HEIGHT							DAY
	May	June	July	August	September	October	November	
1	3.15	3.90	3.45	3.65	3.60	3.60	3.70	1
2	3.15	3.30	3.30	3.80	3.60	3.60	3.70	2
3	3.10	3.15	3.20	3.70	3.80	3.55	3.70	3
4	3.15	3.12	3.25	3.55	3.60	3.60	3.60	4
5	3.10	3.10	3.25	3.60	3.65	3.60	3.60	5
6	3.20	3.10	3.20	3.70	3.55	3.60	3.60	6
7	3.10	3.10	3.05	3 55	3.40	3.70	3.70	7
8	3.15	3.10	2.75	3.50	3.40	3.60	3.70	8
9	3.15	3.10	2.80	3.40	3.45	3.70	3.70	9
10	3.15	3.00	*a*	3.40	3.45	3.70	3.70	10
11	3.10	3.00	3.35	3.30	3.40	3.70	3.70	11
12	3.15	2.85	3.10	3.30	3.35	3.70	3.65	12
13	3.20	2.75	2.95	3.60	3.30	3.70	3.60	13
14	3.30	2.55	2.80	3.25	3.30	3.75	3.60	14
15	3.15	*a*	2.80	3.30	3.30	3.80	3.60	15
16	3.20	*a*	3.80	3.30	3.30	3.80	3.60	16
17	3.20	*a*	3.40	3.25	*c* 5.20	3.70	3.60	17
18	3.15	*a*	3.45	4.65	3.80	3.70	3.60	18

19	3.15	2.80	3.50	3.40	3.85	3.70	3.60	19
20	3.15	2.80	3 40	3.50	3.80	3.70	3.60	20
21	3.05	*a*	3.60	3.70	3.75	3.70	3.60	21
22	3.00	*a*	3.30	3.60	4.20	3.70	3.60	22
23	3.00	*a*	3.30	3.75	4.00	3.70	3.60	23
24	3.10	*a*	*b* 4.80	3.65	3.90	3.75	3.60	24
25	3.10	*a*	5.45	3.50	3.70	3.75	3.60	25
26	3.05	2.85	4.15	3.50	3.65	3.80	3.60	26
27	3.15	3.00	3.90	3.45	3.70	3.70	3.60	27
28	3.10	3.15	3 80	3.40	3.70	3.80	3.60	28
29	3.15	3.25	3.80	3.40	3.70	3.80	3.60	29
30	3.20	3.35	3.70	3.40	3.65	3.90	3.60	30
31	3.25		3.70	5.05		3.80		31

a River dry.

b Gage height was 6.40 for 36 hours.

c Gage height was 8.20 at 8 o'clock P. M.

LA JUNTA STATION, ON ARKANSAS RIVER.

This station is located near the city pumping station, and was established by the United States geological survey on September 27, 1893.

The gage is an inclined $6'' \times 3''$ timber bolted to a cottonwood tree, and to a cross-tie loaded with rock, marked to vertical 0.10 of a foot. The space between marks being 0.138 of a foot.

At low stages of the river the relation of gage height to discharge is constantly changing, owing to the silting and scouring of the channel, and would require more frequent gagings than the limited fund at the disposal of this office would permit. For this reason it was deemed best not to continue the discharge measurements and observations of gage heights during 1896.

Sufficient discharge measurements have not been obtained to construct a rating table.

LIST OF DISCHARGE MEASUREMENTS

MADE ON ARKANSAS RIVER, AT LA JUNTA, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
	Feb. 6	U. S. G. Survey		1.95		1.90	182
	May 19	U. S. G. Survey		1.90		2.22	*a* 658
	Dec. 2	U. S. G. Survey		1.50		1.61	455

a Bottom scoured out during high water.

DAILY MEAN GAGE HEIGHT

OF THE ARKANSAS RIVER, AT LA JUNTA, COLO., FOR 1895. DRAINAGE AREA, 1,220 SQUARE MILES. OBSERVER, J. N. LANE; POST-OFFICE ADDRESS, LA JUNTA, COLO.

DAY	GAGE HEIGHT												DAY
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	1.20	1.50	1.30	.30	.30	3.80	3.40	3 90	1.80	1.20	1.45	2.50	1
2	1.30	1.40	1.20	.30	.30	2.45	2.95	3.70	1.40	1.20	1.50	2.65	2
3	1.30	1.70	.50	.30	.30	2.50	2.50	3.50	1.30	1.20	1.55	2.20	3
4	1.30	1.60	.45	.30	.30	2.60	2.30	3.90	1.20	1.20	1.50	2.00	4
5	1.30	1.70	.45	.30	.30	2.80	2.10	3.40	1.00	1.15	1.50	2.40	5
6	1.50	1.95	.50	.30	.30	2.30	1.70	2.80	.90	1.20	1.60	2.50	6
7	1.50	1.60	.45	.30	.30	1.90	1.50	2.90	.80	1.20	1.60	2.25	7
8	1.95	1.70	.45	.30	.30	1.80	1.00	3.40	.80	1.20	1.55	2.30	8
9	1.80	1.95	.50	.25	.30	1.95	.75	2.40	.65	1.80	1.55	2.10	9
10	1.75	1.60	.45	.20	.30	2.15	1.45	2.50	.40	1.45	1.55	2.20	10
11	1.60	1.60	.40	.20	.30	4.10	1.30	3.60	.30	1.30	1.55	2.15	11
12	1.40	1.65	.35	.20	.45	3.45	3.90	2.65	.30	1.90	1.55	2.15	12
13	1.30	1.60	.35	.20	.70	4.30	4.70	2.20	.30	1.30	1.55	2.20	13
14	1.30	1.60	.40	.30	.70	3.30	4.00	2.20	.30	1.45	1.40	1.70	14
15	1.40	1.55	.25	.30	.70	2.90	2.80	1.85	.90	1.15	1.45	1.70	15
16	1.40	1.50	.25	.30	1.60	3.10	2.60	1.65	.90	1.10	1.45	1.65	16
17	1.50	1.80	1.45	.30	2 00	2.95	2.55	1.60	.80	1.10	1.40	1.70	17
18	1.50	1.80	1.35	.25	2.10	2.50	2.30	1.70	.80	1.00	1.40	1.70	18

19	1.50	1.75	1.20	.25	2.00	2.00	2.30	1.65	.80	1.35	1.40	1.70	19
20	1.50	1.90	1.00	.30	2.60	1.80	1.70	1.45	.80	1.35	1.45	2.00	20
21	1.40	1.90	.95	.25	1.10	1.55	2.00	1.30	.80	1.35	1.45	2.50	21
22	1.50	2 50	.80	.45	1.80	1.40	3.80	1.25	.95	1.35	1.45	2.50	22
23	1.40	1.85	.35	.65	1.70	1.15	*a* 9.15	1.15	.90	1.65	1.45	2.45	23
24	1.30	2.10	.35	.60	1.90	1.00	6.10	1.00	.90	1.60	1.50	2.50	24
25	1.45	2.15	.35	.60	1.80	.75	3.80	1.00	.85	1.65	2.00	2.50	25
26	1.45	2.30	.35	.50	2.40	.70	3.20	1.00	.80	1.60	2.30	2.55	26
27	2.00	2.00	.35	.40	1.60	.65	2.60	1.00	.80	1.55	2.50	2.55	27
28	1.90	1.50	.30	.50	.95	1.20	2.30	1.40	.80	1.55	2.50	2.45	28
29	1.60	--------	.30	.50	.70	*a* 3.00	1.90	1.20	1.25	1.50	2.35	2.20	29
30	1.80	--------	.30	.40	1.90	4.00	2.30	1.40	1.20	1.50	2.35	2.40	30
31	1.70	--------	.30	--------	2.80	--------	3.05	1.60	--------	1.35	--------	2.45	31

a Heavy rains.

PUEBLO STATION, ON ARKANSAS RIVER.

This station was established by the United States geological survey in September, 1894. There are two gage rods. The one at Santa Fe avenue bridge consists of a vertical $6'' \times 6''$ timber and a $1'' \times 6''$ scale, bolted to the abutment of the D. & R. G. R. R. bridge on left hand side of river, marked to 0.10 of a foot. There is also a short vertical rod for extreme low water, spiked to a pile about twenty feet out in the stream, reading same as the main gage. The rod at Victoria avenue bridge consists of inclined $4'' \times 4''$ timbers fastened to posts set in right bank of stream, marked to vertical 0.10 of a foot, the space between the marks being 0.242 of a foot. This rod was placed in June, 1895, for the purpose of noting the change in the slope of the water surface.

Stream measurements are made from the lower side of the Main street bridge. The river is confined by the city levees and the bed is sandy, and constantly changing, filling in at low water and scouring out during high water. Considerable trouble has been experienced in getting the velocity at the bottom of the river, owing to the clogging of the meter by the moving sand.

LIST OF DISCHARGE MEASUREMENTS

MADE ON ARKANSAS RIVER, AT PUEBLO, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1894						
a	April 24	P. J. Preston	------	*a*	----------	1.95	322
1	Sept. 19	A. P. Davis, U. S. G. Survey	21	.35	----------	2.50	378
2	Oct. 13	A. P. Davis, U. S. G. Survey	22	.39	----------	2.36	370

a Measurement made at Main street bridge.

LIST OF DISCHARGE MEASUREMENTS

MADE ON ARKANSAS RIVER, AT PUEBLO, COLO.

No.	Date	Hydrographer	Meter number	Gage height, (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
3	Feb. 6	A. P. Davis, U. S. G. Survey	24	.40		2.75	411
4	May 20	A. P. Davis, U. S. G. Survey	28	1.65		4.78	1,435
5	June 3	A. P. Davis, U. S. G. Survey	55	*b*		5.30	2,261
6	June 4	A. P. Davis, U. S. G. Survey	55	*c*		3.18	1,973
7	June 4	A. P. Davis, U. S. G. Survey	55	*d*		5.46	2,022
8	June 11	A. P. Davis, U. S. G Survey	55	2.80	401	6.89	2,758
9	Sept. 5	F. Cogswell	14	.70	170	3.35	570

b Measurement made at Swallows.
c Measurement made at Bridge No. 5, section 4.
d Measurement made at Bridge 155 B.

MADE ON ARKANSAS RIVER, AT PUEBLO, COLO.

No.	Date	Hydrographer	Meter number	Slope gage height (feet)	Vert. gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1896							
10	Mar. 22	F. Cogswell	14	3.65	.50	173	2.70	470
11	Apr. 28	F Cogswell	14	4.80	1.30	249	4.09	1,016
12	May 27	F. Cogswell	14	5.05	2.00	340	4.65	1,682
13	June 5	F. Cogswell	14	5.00	1.65	298	4.71	1,403
14	July 10	F. Cogswell	14	3.35	.30	135	2.48	335
15	July 30	F. Cogswell	14	3.80	.50	187	2.73	510
16	Aug. 18	F. Cogswell	14	3.05	.00	118	1.72	203
17	Aug. 19	F. Cogswell	14	4.05	.85	195	2.74	534
a	Aug. 19	F. Cogswell		13.70	10.00	1,500	11.00	*a* 16,500
18	Sept. 16	F Cogswell	14	3.40	.30	121	2.43	294
19	Oct. 30	F. Cogswell	14	3.55	.35	128	2.50	320
20	Nov. 13	Cyrus C. Babb, U. S. G. S.	63		.31	121	2.46	298

a Approximate estimate of flood at 12 M night of August 18, 1896, a maximum surface velocity of 15 feet per second was obtained by means of floats.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE ARKANSAS RIVER, AT PUEBLO, COLO., FOR 1895. DRAINAGE AREA, 4,600 SQUARE MILES. OBSERVER, R. L. HOLDEN; POSTOFFICE ADDRESS, PUEBLO, COLO.

DAY	DISCHARGE												DAY
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	412	472	412	354	1,506	2,159	2,490	3,112	850	412	504	504	1
2	472	442	354	301	1,172	2,159	2,159	3,044	888	442	536	472	2
3	740	442	354	301	1,004	1,910	2,159	3,112	705	412	472	472	3
4	705	504	354	301	964	1,910	1,972	2,628	670	568	472	442	4
5	705	536	354	301	776	1,732	1,790	1,790	601	635	472	412	5
6	568	442	354	354	776	1,618	1,455	1,618	536	705	504	472	6
7	472	536	354	327	812	1,675	1,310	1,562	472	670	504	536	7
8	412	472	327	301	601	1,790	1,126	1,357	472	670	504	536	8
9	383	442	327	301	776	1,848	1,044	1,218	472	670	568	504	9
10	383	472	354	354	1,455	3,564	1,455	1,172	442	601	504	504	10
11	442	383	354	354	1,910	3,112	2,421	1,218	383	635	472	472	11
12	442	412	354	327	1,790	2,628	2 974	1,126	442	601	504	536	12
13	472	327	383	442	1,732	2,628	2,766	964	472	601	536	504	13
14	504	383	412	442	1,848	2,904	2,352	888	472	536	536	536	14
15	504	354	383	635	2,034	2,697	1,972	888	442	536	536	472	15
16	442	354	383	536	2,096	2,697	1,675	964	472	536	536	412	16
17	472	354	354	472	2,096	2,559	1,506	1,004	472	536	568	412	17
18	472	504	354	472	1,618	2,421	1,506	964	412	536	601	412	18

19	472	536	354	812	1,455	2,159	1,357	812	412	536	601	412	19
20	412	472	354	1,264	1,404	1,910	1,218	776	412	536	601	412	20
21	472	472	354	1,357	1,732	1,910	1,172	776	383	536	568	442	21
22	412	536	301	1,455	1,910	1,675	1,126	705	412	536	536	536	22
23	442	536	301	1,172	2,034	1,455	2,421	705	412	536	536	568	23
24	442	601	354	1,004	2,096	1,455	2,096	740	412	568	504	504	24
25	383	601	301	1,172	2,096	1,455	1,972	776	412	568	472	442	25
26	354	670	301	1,218	1,790	1,455	1,790	740	472	536	536	536	26
27	354	601	327	1,357	1,618	1,455	1,404	635	504	472	536	472	27
28	354	472	354	1,404	1,506	2,974	1,218	568	472	472	568	412	28
29	327	----	412	1,455	1,618	2,974	1,085	1,732	442	472	568	327	29
30	383	----	412	1,790	1,675	1,675	2,904	1,044	412	472	536	327	30
31	442	----	412	----	2,490	----	*a* 5,000	888	----	536	----	327	31
Total	14,251	13,328	11,058	22,335	48,390	64,563	58,895	39,526	14,832	17,078	15,891	14,327	
Mean	460	476	357	744	1,561	2,152	1,900	1,275	494	551	530	462	
Maximum	740	670	412	1,790	2,490	3,564	5,000	3,112	888	705	601	568	
Minimum	327	327	301	301	601	1,455	1,044	568	383	412	472	327	

a Estimated.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE ARKANSAS RIVER AT PUEBLO, COLO., FOR 1896. DRAINAGE AREA, 4,600 SQUARE MILES. OBSERVER, R. L. HOLDEN, POSTOFFICE ADDRESS, PUEBLO, COLO.

DAY	DISCHARGE											DAY
	January	February	March	April	May	June	July	August	September	October	November	
1	383	536	412	354	635	2,096	412	354	420	321	303	1
2	412	536	412	354	568	1,675	412	301	340	303	303	2
3	383	536	412	354	472	1,455	354	251	321	303	303	3
4	383	536	412	354	705	1,455	412	251	340	268	303	4
5	601	536	412	354	1,004	1,357	354	251	268	268	303	5
6	536	536	412	354	1,126	1,310	354	251	251	268	303	6
7	536	536	412	354	1,264	1,310	327	251	219	268	303	7
8	536	536	383	412	1,562	1,172	568	251	251	268	285	8
9	536	536	354	354	1,506	1,004	442	227	235	268	285	9
10	536	536	354	354	1,218	1,085	354	203	235	303	303	10
11	536	536	354	354	1,126	1,004	383	203	285	303	340	11
12	536	536	301	412	1,172	850	354	203	321	303	340	12
13	536	472	301	412	1,172	776	327	203	321	303	303	13
14	536	472	412	412	1,044	705	301	203	303	303	303	14
15	536	536	354	412	812	740	301	203	268	321	303	15
16	536	536	412	412	740	776	301	203	268	303	321	16
17	536	472	383	412	740	776	1,044	1,126	251	303	321	17
18	536	412	412	412	705	740	1,085	*b* 3,438	251	303	303	18

19	536	354	412	383	670	670	888	608	359	303	303	19
20	536	354	412	383	635	670	888	510	378	268	303	20
21	536	354	383	327	635	472	635	340	340	268	303	21
22	536	354	412	276	705	670	601	1,314	441	268	303	22
23	536	354	412	301	850	601	536	633	340	285	378	23
24	536	354	412	354	1,044	536	*a* 2,835	486	285	303	359	24
25	536	354	412	536	1,404	536	1,790	399	285	303	340	25
26	536	354	412	670	1,506	536	670	340	303	303	340	26
27	536	354	472	1,172	1,506	536	601	340	378	303	486	27
28	536	354	472	1,126	1,562	442	670	303	340	268	321	28
29	536	354	412	1,004	1,790	472	536	285	340	340	235	29
30	536	----------	383	740	1,790	412	472	285	340	303	235	30
31	536	----------	354	----------	2,352	----------	412	939	----------	303	----------	31
Total	16,098	13,226	12,264	14,108	34,020	26,839	19,619	15,155	9.277	9.098	9,434	
Mean	519	456	396	470	1,097	895	633	489	309	293	314	
Maximum	601	536	472	1,172	2,352	2,096	2,835	3,438	441	340	486	
Minimum	383	354	301	276	472	412	301	203	219	268	235	

a River raised 7 feet from 5 to 6 P. M.

b River raised 10 feet from 7 P. M. to midnight.

CAÑON CITY STATION, ON ARKANSAS RIVER.

This station is located at the Hot Springs hotel, one and one-half miles west of town, was established by the United States geological survey in April, 1889. During the flood of August 30, 1896, the original gage rods were washed out and a new one has since been placed on left bank of river just below the foot bridge, consisting of an inclined $4'' \times 4'' \times 16'$ timber bolted to a small juniper tree and to posts set in the ground. It is marked to vertical 0.10 of a foot, the space between the marks being 0.223 of a foot. A vertical rod is also fastened to the juniper tree for extreme high water. Both banks are high and not liable to overflow. The current is swift and the cross-section is subject to notable changes, at extreme high and low water stages.

Stream measurements are made from the lower side of the suspension foot bridge leading to the hotel.

LIST OF DISCHARGE MEASUREMENTS

MADE ON ARKANSAS RIVER, AT CAÑON CITY, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
29	May 31	A. P. Davis	55	4.35	343	7.10	2,434
30	June 13	A. P. Davis F. Cogswell	55	4.50	356	6.73	2,397
31	Oct. 4	A. P. Davis, U. S. G. Survey	55	2.70	157	3.70	585
	1896						
32	July 31	F. Cogswell	14	2.40	129	3.21	414
33	Aug. 30	F. Cogswell	14	2.00	82	2.47	203
34	Sept. 16	F. Cogswell	14	2.05	98	2.56	251
35	Oct. 31	F. Cogswell	14	2.20	101	2.80	289
36	Nov. 14	Cyrus C. Babb, U. S. G. Survey	63	2.55	97	3.03	*a* 294

a Indicates filling in of bed of channel.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE ARKANSAS RIVER, AT CAÑON CITY, COLO., FOR 1895. DRAINAGE AREA, 3,060 SQUARE MILES. OBSERVER J. L. PRENTISS; POSTOFFICE ADDRESS, CAÑON CITY, COLO.

DAY	DISCHARGE												DAY
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	344	344	458	520	1,414	1,914	1,710	2,143	942	458	398	520	1
2	344	344	458	458	1,208	1,774	1,914	1,914	942	398	398	520	2
3	298	344	398	458	1,024	1,646	1,710	1,586	942	398	458	520	3
4	298	344	398	520	942	1,526	1,526	1,308	942	584	458	520	4
5	298	344	398	520	942	1,414	1,526	1,208	864	827	458	520	5
6	298	344	398	520	864	1,308	1,414	1,114	790	720	458	520	6
7	298	344	398	520	864	1,526	1,208	1,024	790	650	458	520	7
8	298	344	398	484	790	1,914	1,258	1,069	790	584	458	520	8
9	298	344	398	484	1,114	1,710	1,208	1,114	720	584	520	520	9
10	298	344	398	484	1,414	2,314	1,258	1,024	720	584	520	458	10
11	344	298	458	484	1,774	2,588	2,062	1,024	720	584	520	458	11
12	344	298	458	484	1,914	2,496	2,224	942	650	584	520	458	12
13	398	298	458	650	1,774	2,588	1,844	942	650	520	520	458	13
14	344	298	398	650	1,774	2,588	1,646	942	584	520	520	458	14
15	344	344	458	720	1,914	2,496	1,526	942	584	520	520	458	15
16	344	344	458	650	2,062	2,496	1,414	1,114	584	520	520	458	16
17	344	344	458	720	2,224	2,496	1,414	1,024	520	520	520	458	17
18	398	344	458	983	1,526	2,496	1,208	942	520	520	520	458	18

19	398	344	458	1,114	1,308	2,224	1,114	942	520	458	520	458	19
20	398	398	458	1,208	1,308	1,774	1,114	942	520	458	520	458	20
21	398	398	458	1,208	1,774	1,844	1,069	864	520	458	520	458	21
22	344	398	520	1.308	1,914	1,586	1,069	864	520	458	520	458	22
23	344	458	520	1,024	1,774	1,470	1,526	790	520	458	520	398	23
24	344	458	520	1,024	1,914	1,470	1,646	790	458	458	520	371	24
25	398	458	520	1,114	1,774	1,470	1,361	864	458	458	520	298	25
26	398	398	520	1,208	1,526	1,470	1,208	1,024	458	398	520	256	26
27	344	398	584	1,308	1,414	1,526	1,114	1,114	458	398	520	298	27
28	344	398	584	1,414	1,308	1,646	1,069	1,114	458	398	520	428	28
29	344	.....	584	1,526	1,308	1,586	1,024	1,161	458	398	520	344	29
30	344	.....	584	1,774	1,414	1,646	1,114	1,069	458	398	520	344	30
31	344	.....	584	.....	2,404	.....	1,308	1,024	.....	398	.....	398	31
Total	10,674	10,114	14,598	26,039	46,678	57,002	43 806	33,938	19,060	15.669	14,984	13,769	
Mean	344	361	471	868	1,506	1,900	1,413	1,095	635	505	499	444	
Maximum	398	458	584	1,774	2,404	2,588	2,224	2,143	942	827	520	520	
Minimum	298	298	398	458	790	1,308	1,024	790	458	398	398	256	

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE ARKANSAS RIVER, AT CAÑON CITY, COLO., FOR 1896. DRAINAGE AREA, 3,060 SQUARE MILES. OBSERVER, J. L. PRENTISS; POSTOFFICE ADDRESS, CAÑON CITY, COLO.

DAY	DISCHARGE											DAY
	January	February	March	April	May	June	July	August	September	October	November	
1	428	398	398	458	827	2,496	344	398	520	277	*d* 298	1
2	458	428	344	520	827	1,774	344	344	458	256	298	2
3	458	398	344	520	1,024	1,710	321	298	321	256	298	3
4	458	458	344	458	1,069	1,414	344	214	298	256	298	4
5	489	458	398	458	1,114	1,361	344	192	298	256	298	5
6	428	458	398	458	1,308	1,414	298	458	256	256	277	6
7	458	520	398	458	1,526	1,208	298	371	256	235	298	7
8	458	520	398	458	1,646	1,114	298	214	235	277	256	8
9	458	458	458	398	1,470	1,024	298	174	192	298	277	9
10	458	458	458	458	1,308	1,069	277	174	321	298	298	10
11	458	458	458	398	1,258	1,114	298	174	344	298	298	11
12	428	428	398	398	1,208	1,024	298	144	321	298	344	12
13	458	371	398	398	1,114	942	277	144	298	298	298	13
14	458	371	398	520	942	864	256	144	277	298	298	14
15	458	428	458	584	864	864	235	144	256	298	298	15
16	458	428	458	650	790	790	755	144	256	298	298	16
17	458	428	520	720	720	827	*a* 1,361	617	256	298	298	17
18	458	428	520	685	650	790	942	428	298	256	256	18

19	458	428	458	617	650	790	942	458	371	256	277	19
20	458	428	458	584	685	755	650	398	428	256	298	20
21	458	428	398	520	755	720	584	520	344	256	344	21
22	489	428	458	520	827	650	584	458	344	277	298	22
23	489	489	520	458	903	650	520	458	344	298	298	23
24	458	489	520	520	1,414	584	*b* 1,988	398	298	298	256	24
25	458	458	650	617	1,526	584	720	371	298	298	256	25
26	428	428	650	685	1,774	520	650	277	298	298	174	26
27	428	428	720	755	1,774	458	584	214	298	298	144	27
28	428	398	942	790	2,062	458	520	192	298	298	124	28
29	458	398	458	827	2,143	398	520	214	298	298	124	29
30	458	----------	458	864	2,588	398	428	*c* 2,876	298	344	124	30
31	428	----------	398	----------	2,778	----------	398	650	----------	344	----------	31
Total	14,081	12,694	14,634	16,754	39,544	28,764	16,676	12,260	9,379	8,826	8,001	
Mean	454	438	472	558	1,276	959	538	395	313	285	267	
Maximum	489	520	942	864	2,778	2,496	1,988	2,876	520	344	344	
Minimum	428	371	344	398	650	398	235	144	192	235	124	

a River raised 2.60 feet through the night.

b River raised 3.20 feet through the day.

c River raised 8 feet from 6 P. M. to 9 P. M.

d Approximate for month of November; channel filling in.

SALIDA STATION, ON ARKANSAS RIVER.

This station is located just back of the railroad yards, at a suspension foot bridge, and was established by the engineering department of the Denver & Rio Grande Railroad Company, on April 11, 1895.

The gage consists of a vertical $4'' \times 6''$ timber, with a $2'' \times 6''$ scale, bolted to the abutment of the bridge on the left hand side of the river, and is marked to 0.10 of a foot. On May 26, 1896, it was lowered one foot in elevation, as low water fell below the zero of the old gage, and this amount has been added to the original observations of river heights for 1895.

The banks are high and do not overflow; the current is swift; the bed of the stream consists of sand and gravel, but is not subject to any great changes, and is a most desirable station to be maintained. Stream measurements are made from the lower side of the foot bridge.

During the season of 1895, the railroad company reported the daily height of water on the gage, but no record of the daily readings for 1896 has been kept.

LIST OF DISCHARGE MEASUREMENTS

MADE ON ARKANSAS RIVER, AT SALIDA, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1896						
1	May 26	F. Cogswell	14	3.10	362	5.59	*a* 2,023
2	June 24	F. Cogswell	14	1.40	194	3.29	638
3	Sept. 29	F. Cogswell	14	1.00	151	2.33	352
4	Oct. 27	F. Cogswell	14	.80	136	2.33	317

a Approximate, meter out of order.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE ARKANSAS RIVER, AT SALIDA, COLO., FOR 1895. DRAINAGE AREA (ABOVE SOUTH FORK), 1,160 SQUARE MILES. OBSERVER, DENVER AND RIO GRANDE RAILROAD COMPANY; POSTOFFICE ADDRESS, SALIDA, COLO.

DAY	DISCHARGE							DAY
	April	May	June	July	August	September	October	
1	----------	1,368	1,453	1,582	1,285	819	402	1
2	----------	1,244	1,368	1,496	1,285	708	402	2
3	----------	1,122	1,368	1,496	1,082	782	402	3
4	----------	1,410	1,326	1,453	1,044	708	402	4
5	----------	968	1,244	1,368	968	708	402	5
6	----------	968	1,326	1,326	893	622	402	6
7	----------	968	1,368	1,203	856	622	402	7
8	----------	1,044	1,453	1,203	782	622	402	8
9	----------	1,539	1,496	1,044	782	578	402	9
10	----------	2,022	1,802	1,122	893	578	402	10
11	495	1,802	1,714	1,582	782	578	402	11
12	534	1,846	1,802	1,626	782	578	402	12
13	622	2,022	1,934	1,285	708	578	402	13
14	782	2,462	1,453	1,285	745	495	402	14
15	745	2,462	2,242	1,082	1,082	429	402	15
16	578	1,934	2,022	1,082	1,006	495	402	16
17	745	1,802	1,934	1,006	856	495	402	17
18	1,122	1,453	1,802	1,082	819	495	402	18

19	1,410	1,410	1,582	1,006	782	429	402	19
20	1,453	1,582	1,496	1,006	745	429	402	20
21	1,496	1,802	1,496	968	708	429	402	21
22	1,162	1,714	1,496	1,006	708	429	402	22
23	1,122	1,582	1,496	1,122	745	429	402	23
24	1,082	1,582	1,496	1,082	819	429	402	24
25	1,285	1,410	1,496	1,006	782	429	402	25
26	1,410	1,368	1,496	930	745	429	402	26
27	1,453	1,368	1,496	893	708	495		27
28	1,539	1,453	1,802	819	819	429		28
29	1,846	1,326	1,802	819	819	429		29
30	1,453	1,410	1,714	968	819	429		30
31		1,453		968	819			31
Total	22,334	47,896	47,975	35,916	26,668	16,104	10,452	
Mean	1,117	1,545	1,599	1,159	860	537	402	
Maximum	1,846	2,462	2,242	1,626	1,285	819	402	
Minimum	495	968	1,244	819	708	429	402	

GRANITE STATION, ON ARKANSAS RIVER.

This station was established on April 11, 1895, by the engineering department of the Denver & Rio Grande Railroad Company.

On September 26, 1895, Mr. A. P. Davis, of the United States geological survey, put in a new gage, as the water had fallen below zero of the old one.

This gage is a vertical $2'' \times 6''$ plank spiked to the upper end of the center pier of the wagon bridge, about 250 feet from the depot, and graduated to 0.10 of a foot.

The banks are low and liable to overflow; the bed is rocky, and the current swift.

This station being below the junction of the outlet of Twin Lakes with the Arkansas river, measurements of the discharge give the amount of the run-off from the headwaters of the Arkansas and from Twin Lakes.

During 1895, daily reports of the gage readings were made by the railroad company, but during 1896 no record has been kept, and no stream measurements made.

LIST OF DISCHARGE MEASUREMENTS

MADE ON ARKANSAS RIVER, AT GRANITE, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
1	July 3.....	A. P. Davis, U. S. G. Survey	55	.50	194	5.49	1,065
2	Sept. 26.....	A. P. Davis, U. S. G. Survey	.....	*a* 3.10	.....	2.55	2.15

a New gage rod, lowered in elevation, as surface of water was below zero of old rod.

DAILY MEAN GAGE HEIGHT

OF THE ARKANSAS RIVER, AT GRANITE, COLO., FOR 1895. DRAINAGE AREA, 425 SQUARE MILES. OBSERVER, DENVER AND RIO GRANDE RAILROAD COMPANY; POSTOFFICE ADDRESS, GRANITE, COLO.

DAY	GAGE HEIGHT							DAY
	April	May	June	July	August	September	October	
1	.....	.50	.50	.58	.00	—.25	2.90	1
2	.....	.42	.46	.50	.00	—.25	2.80	2
3	.....	.29	.42	.50	.00	—.25	3.00	3
4	.....	.25	.42	.45	.00	—.25	3.00	4
5	.....	.42	.29	.40	.00	—.25	3.00	5
6	.....	.00	.25	.38	—.10	—.30	3.00	6
7	.....	.08	.29	.35	—.13	—.35	3.00	7
8	.....	.16	.29	.25	—.15	—.35	3.00	8
9	.....	.46	.46	.25	.00	—.35	3.00	9
10	.....	.83	.50	.25	—.13	—.35	3.00	10
11	.50	.50	.58	.60	—.13	—.35	3.00	11
12	.58	.90	.58	.38	—.15	—.35	3.00	12
13	1.00	.67	.75	.25	—.15	—.35	3.00	13
14	.75	.83	.75	.25	—.15	—.35	3.00	14
15	.68	.91	.87	.15	—.15	—.35	3.00	15
16	.41	.87	.96	.15	—.10	—.35	3.00	16
17	.91	.62	.96	.18	—.15	—.35	3.00	17
18	1.33	.58	.83	.10	—.15	—.35	3.00	18

19	1.16	.54	.75	.10	—.15	—.35	3.00	19
20	1.50	.67	.58	.00	—.25	—.35	3.00	20
21	1.25	.75	.58	.00	—.25	—.35	3.00	21
22	1.42	.66	.54	.05	—.25	—.35	3.00	22
23	.50	.83	.50	.10	—.25	—.35	3.00	23
24	.50	.66	.58	.00	—.25	—.35	3.00	24
25	.91	.50	.58	.00	—.25	—.35		25
26	1.08	.50	.58	.00	—.25	*a* 3.10		26
27	1.16	.50	.58	—.10	—.25	3.10		27
28	1.25	.50	.58	—.10	—.25	3.05		28
29	1.25	.50	.58	—.05	—.25	3.00		29
30	.50	.50	.67	.00	—.25	3.00		30
31		.50	.54	.00	—.25			31

a New gage erected by Mr. A. P. Davis, U. S. G. Survey.

DEL NORTE STATION, ON THE RIO GRANDE.

This station is located about two miles above the town of Del Norte, and was established by the United States geological survey in September, 1889.

The gage consists of an inclined $2'' \times 6''$ plank, fastened to posts driven into the right hand bank of the river, and marked to vertical 0.10 of a foot, the space between marks being 0.22 of a foot.

While the banks are not high, the river has never been known to overflow. The current is swift; the bed is composed of small stones, and the cross-section does not change materially.

Discharge measurements are made at low stage of water by wading, and at high water from a box suspended from a five-eighths-inch wire cable fastened to a large cottonwood tree on the left bank, and to a sand anchor on the right bank. The river does not fluctuate rapidly and observations of the gage heights are only taken on alternate days.

LIST OF DISCHARGE MEASUREMENTS

MADE ON THE RIO GRANDE AT DEL NORTE, COLO.

No.	Date	Hydrographer	Meter number	Gage height feet	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
36	June 14	A. P. Davis F. Cogswell	55	4.00	480	5.88	2,818
37	Oct. 13	F. Cogswell	14	1.80	164	2.53	414
	1896						
38	June 22	F. Cogswell	14	1.90	183	2.68	492
39	July 27	F. Cogswell	14	1.70	154	2.50	385
40	Sept. 28	F. Cogswell	14	2.30	235	3.00	706
41	Oct. 26	F. Cogswell	14	1.80	166	2.68	445

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE RIO GRANDE, AT DEL NORTE, COLO., FOR 1895. DRAINAGE AREA, 1,400 SQUARE MILES. OBSERVER, J. S. REGAN; POSTOFFICE ADDRESS, DEL NORTE, COLO.

DAY	DISCHARGE												DAY
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	680	.....	.....	650	2,754	.....	.....	960	.....	.....	403	403	1
2	.....	894	960	.....	.....	2,032	960	.....	566	403	.....	.....	2
3	710	.....	.....	680	1,382	.....	.....	927	.....	.....	376	862	3
4	.....	927	894	.....	.....	1,782	927	.....	511	430	.....	.....	4
5	830	.....	.....	740	1,428	.....	.....	800	.....	.....	349	830	5
6	.....	894	862	.....	.....	2,904	830	.....	511	457	.....	.....	6
7	830	.....	.....	710	1,528	.....	.....	770	.....	.....	376	862	7
8	.....	894	830	.....	.....	3,429	862	.....	457	484	.....	.....	8
9	800	.....	.....	993	2,032	.....	.....	770	.....	.....	349	960	9
10	.....	894	710	.....	.....	3,504	1,061	.....	430	484	.....	.....	10
11	770	.....	.....	1,428	3,054	.....	.....	710	.....	.....	322	1,134	11
12	.....	927	594	.....	.....	3,804	1,252	.....	430	430	.....	.....	12
13	800	.....	.....	1,910	3,129	.....	.....	650	.....	.....	349	1,134	13
14	.....	927	538	.....	.....	3,054	1,212	.....	403	430	.....	.....	14
15	862	.....	.....	1,702	2,979	.....	.....	770	.....	.....	349	1,172	15
16	.....	927	566	.....	.....	2,591	1,096	.....	376	430	.....	.....	16
17	894	.....	.....	2,154	2,754	.....	.....	680	.....	.....	349	993	17
18	.....	993	511	.....	.....	2,291	894	.....	376	403	.....	.....	18

19	894			3,129	2,428			594			376	960	19
20		960	484			1,838	770		430	430			20
21	800			2,904	2,032			566			322	1,026	21
22		1,061	430			1,336	862		511	430			22
23	770			2,154	1,838			830			376	1,134	23
24		1,026	403			1,172	894		484	457			24
25	770			2,979	1,638			650			322	1,096	25
26		1,026	484			1,172	927		484	430			26
27	770			3,054	1,766			566			322	1,172	27
28		993	650			1,172	894		430	430			28
29	800			3,054	1,638			622			349	1,172	29
30			650			1,134	927		430	403			30
31	830				1,478			650				1,212	31
Total	12,810	13,343	9,566	28,241	33,858	33,135	14,368	11,515	6,829	6,531	5,289	16,122	
Mean	801	953	638	1,883	2,116	2,209	958	720	454	435	353	1,008	
Maximum	894	1,061	960	3 129	3,129	3,804	1,252	960	566	484	403	1,212	
Minimum	680	894	403	650	1,382	1,172	770	566	376	403	322	403	

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE RIO GRANDE, AT DEL NORTE, COLO., FOR 1896. DRAINAGE AREA, 1,400 SQUARE MILES. OBSERVER, J. S. REGAN; POSTOFFICE ADDRESS, DEL NORTE, COLO.

DAY	DISCHARGE											DAY
	January	February	March	April	May	June	July	August	September	October	November	
1	1,252	1,134	1,252	594	3,054	1,766	403	295	322	566	376	1
2												2
3	1,382	1,172	1,336	622	3,579	1,528	376	268	268	538	349	3
4												4
5	1,428	1,172	1,252	800	3,504	1,212	349	295	295	538	322	5
6												6
7	1,294	1,061	1,294	1,252	3,204	1,096	322	268	268	511	322	7
8												8
9	1,336	1,026	1,252	1,336	2,591	960	376	268	268	484	322	9
10												10
11	1,336	1,096	1,212	1,172	1,838	830	349	241	403	457	376	11
12												12
13	1,252	1,026	1,294	1,172	1,428	740	376	241	322	430	322	13
14												14
15	1,252	960	1,172	1,212	1,382	650	376	214	322	511	295	15
16												16
17	1,336	2,154	1,061	1,134	1,212	594	484	214	268	457	295	17
18												18

19	1,382	1,336	993	993	1,336	594	650	241	268	430	268	19
20												20
21	1,336	1,382	862	1,026	1,702	538	484	214	538	430	268	21
22												22
23	1,294	1,336	830	1,212	2,154	484	430	241	710	430	295	23
24												24
25	1,252	1,382	960	2,428	2,754	457	430	241	1,294	430	268	25
26												26
27	1,212	1,336	862	3,054	2,904	430	376	214	960	457	268	27
28												28
29	1,172	1,294	830	2,829	2,754	430	349	403	650	430	368	29
30				2,904							349	30
31	1,172		830		2,591		322	322		403		31
Total	20,688	18,867	17,292	23,740	37,987	12,309	6,452	4,180	7,156	7,502	4,963	
Mean	1,293	1,258	1,081	1,484	2,374	821	403	261	477	469	310	
Maximum	1,428	2,154	1,336	3,054	3,579	1,766	650	403	1,294	566	376	
Minimum	1,172	960	830	594	1,212	430	322	214	268	403	268	

ALAMOSA STATION, ON RIO GRANDE.

This station was originally located on the Denver & Rio Grande railroad bridge, just below the round house, and was established by the United States geological survey on September 28, 1894. In October, 1895, a new railroad bridge was built and the gage disturbed. On May 19, 1896, a new vertical rod, consisting of a $2'' \times 6''$ plank, graduated to 0.10 of a foot was spiked to second bent from east end of the wagon bridge, about one-fourth mile east of the depot.

The city levee forms the right bank, and the left is low. The current is sluggish and the bed sandy and shifting, requiring frequent gagings.

Discharge measurements at high water are made from the lower side of the wagon bridge, and at low water by wading. Sufficient measurements have not been made to construct a rating table.

On June 8, 1896, a dam was built across the river a short distance below the bridge, backing up the water on the rod to such an extent, that gage heights since that date are of no value, and the station was closed on August 8, 1896. None of the gage heights for 1896 are included in this report.

Measurements at this station are chiefly valuable as giving the amount of seepage and waste from ditches above, being situated below the headgates of nearly all of the large irrigating canals of the San Luis valley.

LIST OF DISCHARGE MEASUREMENTS

MADE ON THE RIO GRANDE AT ALAMOSA, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1894						
1	Sept. 28	A. P. Davis, U. S. G. Survey	------	----------	----------	----------	10
	1895						
2	June 16	A. P. Davis F. Cogswell	55	5.18	567	2.08	1,176
3	Oct. 14	F. Cogswell	14	*a* 2.90	77	1.19	92
	1896						
4	May 19	F. Cogswell	14	4.00	111	1.19	*b* 132
5	June 23	F. Cogswell	14	----------	18	1.12	*c* 32
6	July 26	F. Cogswell	14	----------	4	.74	*c* 3

a New railroad bridge; old gage disturbed; if new cap of third bent from east end bridge is at same elevation as old one, the gage rod would read 2.90.

b New gage rod placed on wagon bridge. Gaged 110 feet below new rod.

c Gaged near railroad bridge. Dam backs up water on the gage rod.

DAILY MEAN GAGE HEIGHT

OF THE RIO GRANDE, AT ALAMOSA, COLO., FOR 1895. DRAINAGE AREA, —— SQUARE MILES. OBSERVER, FRANK ROPER; POSTOFFICE ADDRESS, ALAMOSA, COLO.

DAY	GAGE HEIGHT												DAY
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	3.20	3.20	3.60	4.32	4 00	4.00	3.30	3.10	3.30	3.00	2.00	2.00	1
2	3.20	3.20	3 60	4.35	4.00	4.60	3.30	3.10	3.00	3 00	2 00	2.00	2
3	3.20	3.20	3.65	4.42	3.10	5.00	3.30	3.10	3 00	3 00	2.00	2.00	3
4	3.20	3.20	3.65	4.46	3.60	4.55	3.30	3.10	3.00	3.00	2 00	2.00	4
5	3 20	3.20	3.65	4.52	3 00	4.10	3.30	3.10	3.00	3.00	2 00	2.00	5
6	3.20	3.20	3.70	4,60	3.00	5.00	3.30	3.90	3.00	3.00	2.00	2.00	6
7	3.20	3.20	3.70	4.67	2,10	5.30	3.30	3.60	3.00	3 00	2 00	2.00	7
8	3 20	3.20	3.75	4.70	2.90	5.75	3.30	3.60	3.00	3.00	2 00	2.00	8
9	3.20	3.20	3.75	4.75	3.20	6.00	3.30	3.30	3.00	3.00	2 00	2.00	9
10	3.20	3 20	3 90	4.80	3.60	6.00	3.30	3.00	2.11	3.00	2.00	2 00	10
11	3.20	3.20	3 90	4.85	4.00	6.15	3.60	3.00	2 90	3.00	2.00	2 00	11
12	3.20	3.20	3.95	4.90	4.00	6.15	4.00	3.00	2 90	3.00	2.00	2 00	12
13	3.20	3 20	3.95	4.97	4.60	5.95	4 90	3 00	2 90	3.00	2.00	2.00	13
14	3.20	3.20	3.90	5.40	4.50	5.75	4.90	3.00	2.90	2.11	2.00	2.00	14
15	3.20	3.20	3.85	5 80	4.00	5.35	4.90	3.00	2.90	2.80	2.00	2.00	15
16	3 20	3 20	3.80	5.00	3.60	5.40	4.60	3.00	2.90	2.60	2.00	2.00	16
17	3.20	3.40	3 90	4.10	3 40	4.55	4 40	3 00	2 90	2.40	2.00	2.00	17
18	3.20	3.40	3.90	5.30	.60	4.70	4.40	3 00	2 90	2.20	2.00	2.00	18

19	3.20	3.40	3.95	5 80	3.60	4.20	4 00	3.00	2.90	2.00	2.00	2.00	19
20	3 20	3.40	3 95	6 60	3.60	3.50	3 10	3 00	3 00	2.00	2.00	2 00	20
21	3.20	3.45	3 95	6.60	3 20	3 90	3.10	3.00	3.00	2 00	2 00	2.00	21
22	3.20	3.45	4.00	6.00	3.20	3 60	3.10	3 00	3.00	2.00	2.00	2 00	22
23	3.20	3.50	4.00	5 60	3.40	3.30	4.00	3.00	3.00	2 00	2.00	2 00	23
24	3 20	3 50	4.00	4.90	3 80	3 00	4.60	3.00	3.00	2.00	2.00	2.00	24
25	3.20	3.50	4 05	4 60	3.60	3 00	4.30	3.00	3 00	2 00	2 00	2.00	25
26	3 20	3.55	4.05	5 00	3 60	2.11	4.00	3.00	3 00	2.00	2 00	2 00	26
27	3.20	3.55	4.10	5.15	3.60	2.90	4 00	3 00	3.00	2.00	2.00	2.00	27
28	3 20	3 60	4.15	5.00	3.60	2.11	4.00	3.00	3 00	2.00	2.00	2.00	28
29	3 20	-------	4.20	4.10	3.40	3.00	4.00	3.00	3.00	2.00	2.00	2.00	29
30	3 20	-------	4 20	4.10	3.60	3.00	4 00	3.00	3.00	2.00	2.00	2.00	30
31	3.20	-------	4.25	-------	3 45	-------	4.00	3 60	-------	2.00	-------	2 00	31

ARBOLES STATION, ON SAN JUAN RIVER.

This station is located at a foot bridge about 1,000 feet below the Denver & Rio Grande railroad depot and was established on June 19, 1895.

The gage consists of a vertical $2'' \times 6''$ plank, fastened to the crib pier in the middle of the river, and graduated to 0.10 of a foot. This gage being liable to be washed out during the spring floods, on October 11, 1895, a new one was bolted to the rocky bank on the right hand side of the river. It consists of two inclined $4'' \times 4''$ timbers with a $1'' \times 4''$ scale marked to vertical 0.10 of a foot, the space between marks being 0.131 of a foot.

The left bank is low and liable to overflow; the right, high and rocky; the current sluggish and the bed sandy and shifting.

Discharge measurements are made during high water at the foot bridge, and at low stage of the water about 1,300 feet below the gage, where the bed of the stream is composed of small stones and less liable to change, and the current swift.

LIST OF DISCHARGE MEASUREMENTS

MADE ON SAN JUAN RIVER, AT ARBOLES, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
1	June 21	A. P. Davis, F. Cogswell	55	7.30	444	3.50	1,556
2	Aug. 30	F. Cogswell	14	6.20	273	1.42	387
3	Oct. 11	F. Cogswell	14	5.80	251	.86	215
4	Nov. 25	F. Cogswell	14	5.90	260	.97	252
	1896						
5	May 16	F. Cogswell	14	6.65	330	2.33	768
6	June 21	F. Cogswell	14	5.90	288	.87	250
7	July 25	F. Cogswell	14	6.00	111	2.41	*a* 268
8	Sept. 26	F. Cogswell	14	6.15	133	2.42	*a* 322
9	Oct. 24	F. Cogswell	14	6.20	224	1.56	349

a Gaged by wading 1,300 feet below bridge.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE SAN JUAN RIVER, AT ARBOLES, COLO., FOR 1895. DRAINAGE AREA, 1,394 SQUARE MILES. OBSERVER, T. F. BURKE; POSTOFFICE ADDRESS, ARBOLES, COLO.

DAY	DISCHARGE							DAY
	June	July	August	September	October	November	December	
1		865	524	295	174	174	214	1
2		777	620	295	174	174	274	2
3		695	770	295	174	174	274	3
4		695	553	274	234	194	234	4
5		695	494	254	339	214	254	5
6		620	439	254	274	174	214	6
7		553	439	214	254	174	214	7
8		553	388	214	254	214		8
9		524	388	214	214	194		9
10		777	364	214	214	154		10
11		1,426	339	214	214	135		11
12		1 426	339	214	214	174		12
13		821	339	214	214	214		13
14		695	553	174	194	214		14
15		620	620	174	174	174		15
16		586	466	174	174	135		16
17		553	364	174	174	174		17
18		494	317	174	174	194		18

19	1,770	494	295	295	174	194		19
20	1,662	439	274	295	174	214		20
21	1,426	388	254	234	174	214		21
22	1,298	586	254	214	174	214		22
23	1,298	620	658	214	234	274		23
24	1,108	695	524	214	214	254		24
25	970	736	364	214	214	254		25
26	970	494	317	174	214	254		26
27	970	439	295	174	214	214		27
28	1,180	439	439	174	214	174		28
29	1,298	439	388	174	214	174		29
30	1,180	414	388	174	174	214		30
31		466	317		174			31
Total	15.130	20,024	13,090	6,585	6,399	5,702	1,678	
Mean	1,261	646	422	219	206	197	240	
Maximum	1,770	1,426	777	295	339	274	274	
Minimum	970	388	254	174	174	135	214	

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE SAN JUAN RIVER, AT ARBOLES, COLO., FOR 1896. DRAINAGE AREA, 1,394 SQUARE MILES. OBSERVER, T. F. BURKE; POSTOFFICE ADDRESS, ARBOLES, COLO.

DAY	DISCHARGE								DAY
	April	May	June	July	August	September	October	November	
1	----------	1,372	1,298	198	198	220	232	244	1
2	----------	1,446	1,158	198	187	198	232	244	2
3	----------	2,012	1,032	198	177	198	244	232	3
4	----------	2,250	914	198	177	287	244	220	4
5	----------	2,371	744	198	209	232	232	198	5
6	----------	2,615	689	232	209	198	220	177	6
7	----------	2,371	584	232	187	177	270	167	7
8	----------	1,798	584	198	177	177	244	157	8
9	----------	1,531	584	209	157	187	220	157	9
10	----------	1,707	484	209	157	444	257	187	10
11	----------	1,531	404	198	157	856	244	209	11
12	914	1,298	404	198	157	534	220	198	12
13	799	1,228	346	220	157	257	244	198	13
14	799	973	346	232	157	220	220	198	14
15	973	856	304	270	157	209	220	198	15
16	973	744	270	232	157	198	220	209	16
17	799	689	270	404	157	177	220	244	17
18	799	689	270	375	157	177	220	232	18

19	744	914	257	346	157	220	220	220	19
20	689	1,095	257	444	136	287	220	220	20
21	914	1,531	244	325	136	257	220	220	21
22	1,032	1,531	244	325	136	220	209	220	22
23	914	1,707	220	346	136	257	287	220	23
24	1,032	2,012	220	325	136	1,032	325	220	24
25	1,531	2,250	220	270	157	636	257	220	25
26	2,250	2,492	198	257	157	346	232	220	26
27	1,905	2,250	187	244	157	304	232	220	27
28	1,531	2,131	198	220	584	270	484	220	28
29	1,372	1,707	198	220	346	257	304	220	29
30	1 372	1,798	198	220	287	244	287	220	30
31		1,798		209	244		257		31
Total	21,342	50,697	13,326	7,950	5,860	9,276	7,737	6 309	
Mean	1,123	1,635	444	256	189	309	250	210	
Maximum	2,250	2,615	1,298	444	584	1,032	484	244	
Minimum	689	689	187	198	136	177	209	157	

ARBOLES STATION, ON PIEDRA RIVER.

This station is located at the railroad bridge across the Piedra, about one-half mile from the Denver & Rio Grande depot, and was established on June 19, 1895.

The Piedra empties into the San Juan a short distance below this point.

The gage consists of a vertical $2'' \times 6''$ plank fastened to a crib just below the bridge, near the left hand side of the river, and is graduated to 0.10 of a foot. This gage being liable to be washed out during high water in the spring, a new gage has been bolted to the stone abutment of the railroad bridge on the right hand side of the stream. It consists of a vertical $4'' \times 4''$ timber with a $2'' \times 6''$ scale, graduated to 0.10 of a foot. The banks are both high, the current is swift, the bed is composed of small stones and the cross-section does not change materially.

Discharge measurements are made from the upper side of the railroad bridge.

LIST OF DISCHARGE MEASUREMENTS

MADE ON PIEDRA RIVER, AT ARBOLES, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
1	June 21	A. P. Davis..... F. Cogswell.....	55	4.00	178	3.40	606
2	Aug. 30	F. Cogswell.....	14	3.20	121	1.94	*a* 235
3	Oct. 11	F. Cogswell.....	14	2.90	95	1.47	140
4	Nov. 25	F. Cogswell.....	14	2.80	87	1.31	115
	1896						
5	May 18	F. Cogswell.....	14	3.90	182	2.99	544
6	June 20	F. Cogswell.....	14	2.90	90	1.21	109
7	July 24	F. Cogswell.....	14	3.05	107	1.77	189
8	Sept. 27	F. Cogswell.....	14	3.70	161	2.51	405
9	Oct. 25	F. Cogswell.....	14	3.00	104	1.72	179

a Water very muddy; affecting meter.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE PIEDRA RIVER, AT ARBOLES, COLO., FOR 1895. DRAINAGE AREA, 650 SQUARE MILES. OBSERVER, T. F. BURKE; POSTOFFICE ADDRESS, ARBOLES, COLO.

DAY	DISCHARGE							DAY
	June	July	August	September	October	November	December	
1		385	267	156	87	87	114	1
2		342	342	141	87	87	128	2
3		342	303	156	87	87	128	3
4		342	267	141	128	114	114	4
5		342	233	114	185	87	114	5
6		303	200	114	141	60	114	6
7		267	185	114	141	114	114	7
8		250	170	100	141	100		8
9		233	200	87	141	87		9
10		267	200	87	141	74		10
11		511	170	87	141	60		11
12		670	170	114	141	74		12
13		570	170	87	128	60		13
14		570	303	87	114	114		14
15		483	267	87	114	87		15
16		385	250	87	114	74		16
17		385	200	87	114	87		17
18		322	170	87	114	74		18

19	602	267	170	74	114	74		19
20	570	233	156	185	114	87		20
21	539	216	156	185	114	100		21
22	483	303	156	141	114	114		22
23	432	408	170	141	141	156		23
24	408	408	170	141	141	141		24
25	385	322	156	114	156	114		25
26	342	322	141	114	141	100		26
27	303	285	156	114	114	87		27
28	303	267	185	114	114	100		28
29	483	233	156	100	114	87		29
30	432	233	185	87	114	114		30
31		250	185		114			31
Total	5,282	10,716	6,209	3,443	3,864	2,801	826	
Mean	440	346	200	115	125	93	118	
Maximum	602	670	342	185	185	156	128	
Minimum	303	216	141	74	87	60	114	

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE PIEDRA RIVER, AT ARBOLES, COLO., FOR 1896. DRAINAGE AREA, 650 SQUARE MILES. OBSERVER, T. F. BURKE; POSTOFFICE ADDRESS, ARBOLES, COLO.

DAY	DISCHARGE								DAY
	April	May	June	July	August	September	October	November	
1	.....	1,480	677	92	66	119	235	176	1
2	.....	1,660	501	92	66	92	220	176	2
3	.....	1,754	468	92	43	92	190	176	3
4	.....	1,855	416	66	43	105	205	161	4
5	.....	1,956	373	66	66	119	190	133	5
6	.....	2,066	335	66	66	92	176	119	6
7	.....	1,480	317	66	54	66	176	119	7
8	.....	1,236	299	92	43	66	176	105	8
9	.....	962	266	92	43	66	176	92	9
10	.....	1,028	266	92	43	190	176	133	10
11	.....	901	235	92	23	250	176	119	11
12	626	728	235	92	23	176	147	105	12
13	534	677	235	105	23	147	176	92	13
14	534	501	205	133	23	119	176	92	14
15	677	468	176	119	23	105	176	92	15
16	728	416	176	92	23	92	176	105	16
17	534	416	176	105	33	79	176	119	17
18	501	501	176	176	43	66	147	119	18

19	416	580	147	176	43	105	147	119	19
20	354	728	147	161	23	394	147	119	20
21	394	784	147	119	23	220	119	119	21
22	501	962	119	133	23	176	119	119	22
23	442	1,028	119	161	33	1,394	147	92	23
24	626	1,094	119	190	43	*a* 3,000	190	119	24
25	1,236	962	105	176	43	1,165	190	119	25
26	1,660	1,165	92	133	43	580	176	119	26
27	1,394	1,236	79	119	43	416	176	119	27
28	1,165	1,028	92	92	220	354	205	119	28
29	1,480	901	92	92	266	299	176	119	29
30	1,480	962	92	92	119	266	176	119	30
31		962		79	147		176		31
Total	15,282	32,477	6,882	3,453	1,816	10,410	5,414	3,634	
Mean	804	1,048	229	111	59	347	175	121	
Maximum	1,660	2,066	677	190	266	3,000	235	176	
Minimum	354	416	79	66	23	66	119	92	

a Estimated.

DURANGO STATION, ON ANIMAS RIVER.

This station is located at the wagon bridge, just above the Rio Grande Southern railroad bridge, and was established on June 20, 1895.

The gage consists of a vertical $2'' \times 6''$ plank bolted to the middle pier of the bridge, and is graduated to 0.10 of a foot.

The banks are high, the current sluggish, and the bed sandy. Lightner creek enters the river between the two bridges. There has been no material change in the cross-section of the stream since August 12, 1895, at which time a dam was formed just below the gage from the sand and gravel brought down by the flood resulting from a cloud-burst up Lightner creek. This dam reduced the velocity in the west half of the river and caused the water to back up on the gage about 0.30 of a foot.

Discharge measurements are made from the lower side of the wagon bridge, but at low stage of the water, the foot bridge near the smelter, 1,000 feet below the gage, would be the better place.

LIST OF DISCHARGE MEASUREMENTS

MADE ON ANIMAS RIVER, AT DURANGO, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
1	June 18	A. P. Davis F. Cogswell	55	6.50	535	3.55	1,893
2	Aug. 29	F. Cogswell	14	5.80	415	1.30	543
3	Oct. 10	F. Cogswell	14	5.40	326	1.00	328
4	Nov. 24	F. Cogswell	14	5.20	292	.89	260
	1896						
5	May 15	F. Cogswell	14	6.35	520	2.04	1,063
6	June 19	F. Cogswell	14	5.80	407	1.44	590
7	July 23	F. Cogswell	14	5.50	155	2.32	*a* 360
8	Sept. 25	F. Cogswell	14	7.40	756	3.39	2,566
9	Oct. 23	F. Cogswell	14	5.50	333	1.24	414

a Gaged from foot bridge at smelter, 1,000 feet below gage rod.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE ANIMAS RIVER, AT DURANGO, COLO., FOR 1895. DRAINAGE AREA, 812 SQUARE MILES. OBSERVER, GEORGE ROBERTSON; POSTOFFICE ADDRESS, DURANGO, COLO.

DAY	DISCHARGE							DAY
	June	July	August	September	October	November	December	
1	----	574	357	512	316	259	278	1
2	----	574	404	482	296	259	278	2
3	----	512	357	482	316	224	259	3
4	----	512	316	456	357	242	316	4
5	----	512	278	429	379	242	296	5
6	----	512	259	379	357	242	259	6
7	----	482	242	379	379	242	259	7
8	----	456	224	357	357	242	224	8
9	----	429	224	335	335	224	259	9
10	----	357	224	335	335	224	242	10
11	----	357	208	335.	335	224	259	11
12	----	482	208	316	296	242	242	12
13	----	404	750	296	296	242	224	13
14	----	357	990	296	296	242	242	14
15	----	357	990	296	296	224	208	15
16	----	357	836	296	296	224	208	16
17	----	379	674	296	296	224	*a* 208	17
18	----	335	640	278	296	224	----	18

19	----------	296	606	296	296	224	----------	19
20	836	296	574	512	296	224	----------	20
21	712	278	542	482	296	242	----------	21
22	640	278	542	429	296	242	----------	22
23	606	316	750	379	296	259	----------	23
24	574	316	674	379	316	278	----------	24
25	606	335	606	335	316	278	----------	25
26	574	316	542	316	296	278	----------	26
27	640	316	542	316	278	296	----------	27
28	640	278	574	296	296	278	----------	28
29	640	357	574	296	278	278	----------	29
30	640	357	574	296	259	259	----------	30
31	----------	335	542	----------	278	----------	----------	31
Total	7,108	12,022	15,823	10,887	9,531	7,382	4,261	
Mean	646	388	510	363	307	246	251	
Maximum	836	574	990	512	379	296	316	
Minimum	574	278	208	278	259	224	208	

a Last report; frozen.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE ANIMAS RIVER, AT DURANGO, COLO., FOR 1896. DRAINAGE AREA, 812 SQUARE MILES. OBSERVER, GEORGE ROBERTSON; POSTOFFICE ADDRESS, DURANGO, COLO.

DAY	DISCHARGE								DAY
	April	May	June	July	August	September	October	November	
1	.....	2,180	1,902	334	252	252	826	334	1
2	.....	2,812	1,610	334	252	235	740	334	2
3	.....	3,156	1,610	292	252	384	701	334	3
4	.....	3,274	1,610	292	235	218	662	292	4
5	.....	3,909	1,478	292	218	218	623	292	5
6	.....	4,042	1,360	292	218	218	584	272	6
7	.....	2,925	1,360	272	218	218	623	272	7
8	.....	2,380	1,251	272	218	218	508	252	8
9	.....	1,902	1,146	292	218	235	508	272	9
10	.....	1,984	1,094	292	218	334	475	272	10
11	.....	1,680	956	359	203	662	442	292	11
12	1,047	1,360	869	359	188	475	442	292	12
13	869	1,094	869	359	188	442	475	272	13
14	956	1,094	826	384	188	413	508	272	14
15	1,146	1,047	783	384	188	384	442	292	15
16	1,146	956	740	384	175	334	442	272	16
17	1,094	956	701	413	162	334	442	292	17
18	912	1,146	662	475	162	313	413	272	18

19	912	1,360	584	508	162	334	384	292	19
20	869	1,750	584	413	162	1,047	384	292	20
21	956	1,750	508	384	162	783	359	292	21
22	1,047	2,082	508	359	162	662	442	272	22
23	1,251	2,380	475	384	162	*a* 5,100	384	252	23
24	1,902	3,274	442	413	162	*a* 7,800	384	272	24
25	2,812	2,484	442	384	162	2,588	384	252	25
26	3 776	3,520	413	334	138	1,680	334	252	26
27	3,397	3,397	384	334	138	1,360	359	235	27
28	2,700	3,648	359	334	175	1,146	384	203	28
29	2,180	3,156	384	313	272	912	384	218	29
30	2,082	2,925	334	292	292	826	359	218	30
31		2,484		272	252		334		31
Total	31,054	72,107	26,244	10,805	6,154	30,125	14,731	8,232	
Mean	1,634	2,326	875	349	199	1,004	475	274	
Maximum	3,776	4,042	1,902	508	292	7,800	826	334	
Minimum	869	956	334	272	138	218	334	203	

a Estimated.

DOLORES STATION, ON DOLORES RIVER.

This station is located about one-half mile above the railroad depot and was established on June 23, 1895.

The gage consists of a vertical $2'' \times 6''$ plank, bolted to the abutment of a foot bridge, on the left hand side of the river, and is graduated to 0.10 of a foot.

The right bank is low; the left high; the water moves with good velocity and the bed of the stream is composed of small stones. In June, 1896, a loose rock dam was built just below the gage backing up the water from 0.20 to 0.30 of a foot. This dam, although only a temporary expedient to turn water into an irrigation ditch, from the nature of its construction is of a somewhat permanent character, and the present relation of discharge to gage height is not liable to change back to that of 1895. It has, therefore, been necessary to construct two rating tables for the discharge of 1896.

Discharge measurements are made from the lower side of the foot bridge, except at a low stage of water, when they are made by wading.

LIST OF DISCHARGE MEASUREMENTS

MADE ON DOLORES RIVER, AT DOLORES, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
1	June 22	A. P. Davis..... F. Cogswell	55	3.50	223	3.40	756
2	Aug. 28	F. Cogswell	14	2.70	81	2.00	163
3	Oct. 9	F. Cogswell	14	2.50	59	1.51	89
4	Nov. 20	F. Cogswell	14	2.40	51	1.45	75
	1896						
5	May 13	F. Cogswell	14	3.50	171	3.23	*a* 553
6	May 14	F. Cogswell	14	3.50	171	3.42	586
7	June 17	F. Cogswell	14	3.00	103	1.73	*b* 179
8	July 21	F. Cogswell	14	2.80	90	1.37	124
9	Aug. 24	F. Cogswell	14	2.60	31	1.37	*c* 42
10	Sept. 23	F. Cogswell	14	4.80	300	5.16	*d* 1,550
11	Sept. 24	F. Cogswell	14	4.15	247	4.24	1,047
12	Oct. 21	F. Cogswell	14	2.75	43	1.77	*c* 76

a This result of doubtful value, too strong a wind up-stream.

b Dam below rod backs up water about .20 for balance of the season of 1896.

c Gaged 200 feet above bridge.

d Rain stopped measurement, but result is a good approximation.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE DOLORES RIVER, AT DOLORES, COLO., FOR 1895. DRAINAGE AREA, 562 SQUARE MILES. OBSERVER, MRS. MARY D. SMITH; POSTOFFICE ADDRESS, DOLORES, COLO.

DAY	DISCHARGE							DAY
	June	July	August	September	October	November	December	
1		405	235	143	68	68	340	1
2		405	158	127	97	68	448	2
3		448	281	127	68	68	548	3
4		490	548	97	68	68	340	4
5		448	405	97	97	97	340	5
6		405	405	97	97	68	548	6
7		127	448	97	97	55	448	7
8		281	490	68	97	42	448	8
9		281	448	68	97	97	373	9
10		281	405	97	97	97	281	10
11		281	158	97	97	97	340	11
12		235	258	97	68	97	405	12
13		281	281	68	68	97	448	13
14		281	215	68	68	83	373	14
15		281	281	68	68	127	405	15
16		258	215	68	68	127	340	16
17		215	177	68	68	127	373	17
18		215	195	68	68	83	340	18

19	----	215	195	83	68	83	311	19
20	----	195	195	177	68	97	373	20
21	----	281	97	143	68	83	448	21
22	----	215	97	127	83	158	373	22
23	756	215	281	97	97	177	311	23
24	681	195	158	97	97	177	281	24
25	605	195	127	97	97	195	373	25
26	605	195	158	97	68	97	448	26
27	681	235	127	97	68	258	605	27
28	756	281	143	97	68	405	448	28
29	848	158	143	68	68	405	448	29
30	681	177	177	68	68	311	605	30
31	----	195	177	----	68	----	605	31
Total	5,613	8,370	7,678	2,868	2,442	4,012	12,767	
Mean	702	270	248	96	79	134	412	
Maximum	848	490	548	177	97	405	605	
Minimum	605	127	97	68	68	42	281	

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE DOLORES RIVER, AT DOLORES, COLO., FOR 1896. DRAINAGE AREA, 562 SQUARE MILES. OBSERVER, MRS. MARY D. SMITH; POSTOFFICE ADDRESS, DOLORES, COLO.

DAY	DISCHARGE									DAY
	March	April	May	June	July	August	September	October	November	
1	400	144	1,059	781	64	28	64	180	96	1
2	346	225	1,332	662	54	18	64	180	96	2
3	296	400	1,452	557	44	18	44	180	156	3
4	248	429	1,392	524	44	28	44	132	156	4
5	202	524	1,059	458	64	44	44	132	294	5
6	182	557	1,164	400	80	28	44	132	*a* 416	6
7	126	740	1,008	400	114	28	28	114	*a* 618	7
8	96	781	1,059	400	132	18	64	96	*a* 385	8
9	111	822	1,110	346	180	18	64	96	132	9
10	126	590	1,110	346	180	15	96	96	132	10
11	144	590	662	346	264	12	234	96	132	11
12	144	557	822	296	180	12	132	96	180	12
13	162	557	701	296	156	12	80	114	180	13
14	162	491	524	272	180	12	80	132	132	14
15	182	662	400	248	234	10	80	132	80	15
16	162	626	373	248	480	8	64	96	80	16
17	182	701	429	180	207	15	64	96	36	17
18	126	458	458	180	180	23	64	96	54	18

19	126	557	429	132	207	36	64	96	96	19
20	162	557	781	132	180	36	96	96	80	20
21	162	524	822	96	114	44	96	96	80	21
22	225	960	912	96	96	44	54	114	64	22
23	248	1,059	1,008	96	114	44	962	96	64	23
24	346	1,275	1,110	64	96	44	880	96	64	24
25	524	1,392	1,218	64	80	28	1,176	96	96	25
26	557	1,578	1,275	44	64	28	294	96	294	26
27	429	1,452	1,218	44	54	28	234	96	294	27
28	400	1,332	1,332	54	44	114	234	132	294	28
29	346	960	1,275	64	44	180	234	96	294	29
30	321	912	1,110	64	44	114	180	96	294	30
31	321	----------	912	----------	44	96	----------	96	----------	31
Total	7,564	22,412	29,516	7,890	4,018	1,183	5,858	3,498	5,369	
Mean	244	747	952	263	130	38	195	113	179	
Maximum	557	1,578	1,452	781	480	180	1,176	180	618	
Minimum	96	144	373	44	44	8	28	96	36	

a Ice in river backed up water on gage.

FALL CREEK STATION, ON SAN MIGUEL RIVER.

This station is located about 300 yards southwest of Fall Creek, a station on the Rio Grande Southern railroad, and was established on June 25, 1895.

The gage consists of a vertical $4'' \times 4''$ timber bolted to the wagon bridge abutment on the right hand side of the river, and is graduated to 0.10 of a foot.

The banks are not liable to overflow; the water flows swiftly; the bed of the stream is composed of small stones and does not change materially.

Fall creek empties into the San Miguel about 200 feet below the gage.

Stream measurements are made from the lower side of the bridge, except during very low water, when they are made by wading.

LIST OF DISCHARGE MEASUREMENTS

MADE ON SAN MIGUEL RIVER, AT FALL CREEK, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
1	June 24	A. P. Davis F. Cogswell	55	4.00	104	4.90	512
2	Aug. 27	F. Cogswell	14	3.20	66	3.08	205
3	Oct. 8	F. Cogswell	14	2.65	36	2.24	81
-----	Nov. 19	F. Cogswell	River	frozen, did	not gage.		
	1896						
4	May 12	F. Cogswell	14	3.75	97	3.70	360
5	June 16	F. Cogswell	14	3.45	78	3.72	290
6	July 20	F. Cogswell	14	3.15	62	2.82	175
7	Aug. 23	F. Cogswell	14	2.60	36	1.72	*a* 62
8	Sept. 22	E. Cogswell	14	2.75	41	2.07	*a* 85
9	Oct. 20	F. Cogswell	14	2.60	35	1.80	*a* 63

a Gaged 150 feet below bridge.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE SAN MIGUEL RIVER, AT FALL CREEK, COLO., FOR 1895. DRAINAGE AREA, 327 SQUARE MILES. OBSERVER, JOHN H. SCHOFIELD; POSTOFFICE ADDRESS, SEYMOUR, COLO.

DAY	DISCHARGE							DAY
	June	July	August	September	October	November	December	
1		458	312	168	80	61	6	1
2		550	312	145	80	61	7	2
3		512	279	145	80	42	11	3
4		434	279	112	80	42	7	4
5		485	248	101	80	42	8	5
6		485	248	101	80	23	11	6
7		485	219	101	80	23	13	7
8		435	248	80	80	11	11	8
9		388	219	80	61	9	7	9
10		388	193	60	61	7	7	10
11		366	168	101	61	7	7	11
12		279	145	80	61	9	7	12
13		279	168	101	61	11	8	13
14		312	295	80	61	9	7	14
15		312	279	80	61	9	7	15
16		312	248	80	61	11	6	16
17		312	279	80	61	23	6	17
18		312	248	80	61	23	6	18

19	----------	312	219	123	51	42	6	19
20	----------	279	193	145	42	61	6	20
21	----------	279	219	145	61	101	6	21
22	----------	279	219	123	80	134	6	22
23	----------	279	219	101	101	180	6	23
24	----------	279	193	101	80	168	6	24
25	550	248	193	80	61	156	6	25
26	587	248	193	80	61	61	6	26
27	550	219	205	80	42	10	6	27
28	550	219	219	80	42	8	6	28
29	587	279	193	80	42	7	6	29
30	512	279	193	80	42	6	6	30
31	----------	279	193	----------	42	----------	6	31
otal	3,336	10,582	7,038	2,993	1,997	1,357	220	
Mean	556	341	227	100	64	45	7	
Maximum	587	550	312	168	101	180	13	
Minimum	512	219	145	60	42	6	6	

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE SAN MIGUEL RIVER, AT FALL CREEK, COLO., FOR 1896. DRAINAGE AREA, 327 SQUARE MILES. OBSERVERS, MRS. DORA BRADLEY AND MISS STELLA KRABBE; POSTOFFICE ADDRESS, SAW PIT, COLO.

DAY	DISCHARGE								DAY
	April	May	June	July	August	September	October	November	
1		480	684	135	77	69	135	62	1
2		480	633	135	62	62	135	49	2
3		449	633	124	62	62	124	55	3
4		418	633	113	62	69	113	55	4
5		449	633	113	62	62	103	55	5
6		531	531	113	62	62	93	55	6
7		531	480	113	62	62	93	22	7
8		633	582	113	62	62	93	37	8
9		684	582	202	62	62	93	62	9
10		531	449	320	62	124	85	49	10
11		480	397	310	62	135	77	49	11
12	160	376	376	300	62	113	77	49	12
13	181	376	397	289	62	93	77	55	13
14	181	344	418	202	62	93	77	43	14
15	147	344	278	135	62	77	77	69	15
16	160	360	278	135	62	77	77	55	16
17	147	360	289	202	49	77	77	43	17
18	147	320	278	248	62	77	77	49	18

19	147	310	263	248	62	85	62	49	19
20	160	310	248	181	62	103	62	43	20
21	181	376	160	135	62	93	62	49	21
22	248	449	160	113	62	93	69	62	22
23	310	894	147	113	55	1,069	69	62	23
24	376	894	135	113	55	531	62	62	24
25	480	1,384	135	103	55	749	62	62	25
26	531	2,234	135	93	62	300	62	69	26
27	480	2,404	135	93	55	263	62	26	27
28	480	2,079	135	93	113	225	62	62	28
29	418	1,784	135	93	103	160	62	113	29
30	397	1,644	135	93	85	160	103	147	30
31	----------	974	----------	93	77	----------	49	----------	31
Total	5,331	23,882	10,474	4,866	2,026	5,269	2,531	1,719	
Mean	281	770	349	157	65	176	82	57	
Maximum	531	2,404	684	320	113	1,069	135	147	
Minimum	147	310	135	93	49	62	49	22	

FORT CRAWFORD STATION, ON UNCOMPAHGRE RIVER.

This station is located about one-half mile east of the depot, at a wagon bridge, and is about eight miles above Montrose, being above the head of the Uncompahgre ditch. It was established June 25, 1895.

The gage consists of an inclined $4'' \times 4''$ timber, bolted to the bridge bent on the right hand side of the stream, marked to vertical 0.10 of a foot, the space between marks being 0.16 of a foot.

Both banks are low and liable to overflow at high water, and the bed of the stream is composed of sand and gravel.

Stream measurements are made from the upper side of the bridge, except at very low stage of the water, when they are made by wading.

During the high water in the spring of 1896, the channel above the bridge was straightened out, and the bed of the river filled in near the gage, making a notable change in the cross-section of the river, the relation of gage height to discharge during 1896 being materially different from that of 1895.

LIST OF DISCHARGE MEASUREMENTS

MADE ON UNCOMPAHGRE RIVER, AT FORT CRAWFORD, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1895						
1	June 25	A. P. Davis F. Cogswell	55	4.60	123	6.80	834
2	Aug. 26	F. Cogswell	14	3.25	64	3.38	218
3	Oct. 7	F. Cogswell	14	2.60	43	2.05	89
4	Nov. 18	F. Cogswell	14	2.55	41	2.23	92
	1896						
5	May 11	F. Cogswell	14	4.30	120	4.75	568
6	June 15	F. Cogswell	14	4.10	117	4.78	560
7	July 18	F. Cogswell	14	3.50	74	2.76	204
8	Aug. 21	F. Cogswell	14	2.90	18	1.72	*a* 31
9	Sept. 21	F. Cogswell	14	3.25	57	2.14	122
10	Oct. 18	F. Cogswell	14	3.10	55	1.73	95

a Gaged 30 feet above bridge.

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE UNCOMPAHGRE RIVER, AT FORT CRAWFORD, COLO., FOR 1895. DRAINAGE AREA, 497 SQUARE MILES. OBSERVERS, R. N. GILL AND ARTHUR DOUGHERTY; POSTOFFICE ADDRESS, UNCOMPAHGRE, COLO.

DAY	DISCHARGE							DAY
	June	July	August	September	October	November	December	
1		835	415	167	90	72	81	1
2		835	331	167	81	72	99	2
3		665	274	167	72	72	90	3
4		703	260	147	72	72	90	4
5		740	211	127	81	90	99	5
6		703	188	127	99	55	90	6
7		633	178	108	81	72	90	7
8		601	167	108	72	72	90	8
9		522	178	108	72	72	72	9
10		547	167	108	72	72	90	10
11		665	167	108	72	72	90	11
12		547	167	90	64	72	90	12
13		547	200	90	55	90	99	13
14		497	740	90	55	72	90	14
15		497	703	90	55	72	90	15
16		476	435	90	55	90	90	16
17		454	331	72	55	90	81	17
18		415	287	72	55	90	90	18

19	----	415	260	72	55	90	72	19
20	----	379	235	167	55	99	90	20
21	----	346	211	118	55	90	118	21
22	----	315	235	137	72	90	64	22
23	----	301	497	137	90	99	72	23
24	----	287	274	137	81	90	72	24
25	835	260	248	127	72	90	127	25
26	1,025	248	211	127	72	90	188	26
27	1,025	223	211	118	72	90	274	27
28	1,535	223	223	108	72	90	147	28
29	1,175	200	211	108	72	81	211	29
30	895	248	211	108	72	81	167	30
31	----	235	178	----	72	----	260	31
Total	6,490	14,562	8,604	3,500	2,170	2,449	3,473	
Mean	1,082	470	277	117	70	82	112	
Maximum	1,535	835	740	167	99	99	274	
Minimum	835	200	167	72	55	55	64	

DAILY MEAN DISCHARGE

IN SECOND-FEET OF THE UNCOMPAHGRE RIVER, AT FORT CRAWFORD, COLO., FOR 1896. DRAINAGE AREA, 497 SQUARE MILES. OBSERVERS, MRS. F. HUMPHREY AND MISS F. M. JONES; POSTOFFICE ADDRESS, UNCOMPAHGRE, COLO.

DAY	DISCHARGE							DAY
	May	June	July	August	September	October	November	
1	426	1,920	174	62	88	158	93	1
2	426	1,460	115	24	88	174	93	2
3	372	568	115	12	115	158	93	3
4	492	780	115	12	88	143	67	4
5	568	662	115	37	88	115	67	5
6	780	615	115	37	88	115	67	6
7	920	615	115	37	62	115	62	7
8	780	850	207	37	62	129	93	8
9	662	780	158	24	88	115	93	9
10	662	662	115	10	88	115	88	10
11	850	492	115	10	207	115	67	11
12	459	530	158	10	158	115	62	12
13	459	492	158	10	115	115	67	13
14	399	530	190	10	115	115	67	14
15	242	426	207	10	115	115	93	15
16	207	348	143	10	115	88	93	16
17	348	348	158	10	88	88	110	17
18	348	372	158	10	101	88	115	18

19	348	303	158	10	115	88	115	19
20	662	324	190	12	115	88	101	20
21	780	303	158	10	129	88	101	21
22	2,055	282	143	24	174	88	115	22
23	2,340	207	115	75	372	88	115	23
24	2,655	303	62	75	426	75	93	24
25	1,920	303	75	62	262	62	93	25
26	2,055	242	75	88	242	62	88	26
27	3,375	207	62	62	207	88	88	27
28	2,053	242	62	88	190	88	62	28
29	1,680	207	62	101	174	88	62	29
30	920	190	62	88	174	88	62	30
31	1,080	----------	62	115	----------	115	----------	31
Total	31,325	15,563	3,917	1,182	4,449	3,282	2,585	
Mean	1,010	519	126	38	148	106	86	
Maximum	3,375	1,920	207	115	426	174	115	
Minimum	207	190	62	10	62	62	62	

GRAND JUNCTION STATION, ON GRAND RIVER.

This station is located at the wagon bridge across the Grand river near the pump house of the city water works, and was established by the United States geological survey on October 18, 1894. The river at this point discharges through two channels.

The original gage rod consists of a vertical $4'' \times 6''$ timber, with $1'' \times 6''$ scale, bolted to the bridge abutment on right hand side of the right channel, and is graduated to 0.10 of a foot. The discharge measurements made during 1894 and 1895, and gage heights for 1895, refer to this rod. It is now designated "Gage Rod No. 1," and the relation between gage height and discharge of the right channel only, is referred to it.

The banks of the right channel are both liable to overflow at very high water; the bed is of sand and the current very sluggish.

The dam of the city water works, just below this gage, went out in June, 1895, and has not been rebuilt. The cross-section of the channel has materially changed since that date, and the discharge measurements made in 1894 and 1895 are not applicable for 1896.

"GAGE ROD NO. 2."

This rod consists of a vertical $4'' \times 6''$ timber, with a $2'' \times 6''$ scale, bolted to the bridge pier on the right hand side of the left channel, about 580 feet from "Rod No. 1." It was placed in position on August 23, 1896, and is graduated to 0.10 of a foot.

The right hand bank of this channel is low and liable to overflow; the left is high and rocky; the bed is sandy; the water is deep and moves with considerable velocity. At high water it becomes necessary to guy the meter to a wire stretched across the channel, above the bridge, to prevent it from being swept down stream by the swift current.

All discharge measurements, in both channels, are made from the upper side of the bridge, but a sufficient number have not been obtained to construct a rating table.

LIST OF DISCHARGE MEASUREMENTS

MADE ON GRAND RIVER, AT GRAND JUNCTION, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1894						
-----	Oct. 18-----	A. P. Davis, U. S. G. Survey ------	22	2.10	----------	1.10	*a* 1,585
	1895						
-----	June 27-----	A. P. Davis, U. S. G. Survey ------	55	4.03	2,860	5.77	*a* 16,500
-----	Oct. 1-----	A. P. Davis, U. S. G. Survey ------	61	.82	1,090	2.04	*a* 2,059

a Total discharge of both channels.

LIST OF DISCHARGE MEASUREMENTS

MADE ON GRAND RIVER (RIGHT CHANNEL), AT GRAND JUNCTION, COLO.

No.	Date	Hydrographer	Meter number	No. 1 Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1896						
.....	Aug. 20.....	.....	Channel was dry.				
1	Aug. 21.....	F. Cogswell	.....	.10	.....	.....	*a* 15
2	Sept. 20.....	F. Cogswell	14	.90	214	1.07	229
3	Oct. 17.....	F. Cogswell	Floats	.60	192	.50	*b* 96
.....	Nov. 10.....	Cyrus C. Babb....	Reports channel frozen.				

a Estimated.

b Water too sluggish to turn meter.

LIST OF DISCHARGE MEASUREMENTS

MADE ON GRAND RIVER (LEFT CHANNEL), AT GRAND JUNCTION, COLO.

No.	Date	Hydrographer	Meter number	No. 2 Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1896						
1	Aug. 20.....	F. Cogswell	14	3.00	623	1.62	1,008
2	Sept. 20.....	F. Cogswell	14	3.90	726	2.02	*a* 1,465
3	Oct. 17.....	F. Cogswell	14	3.60	724	1.99	*b* 1,446
4	Nov. 10.....	Cyrus C. Babb....	63	3.35	680	2.20	1,497

a Mean velocity taken as 80 per cent. of surface velocity.

b Channel scoured out during late high water.

DAILY MEAN GAGE HEIGHT

OF THE GRAND RIVER, AT GRAND JUNCTION, COLO., FOR 1895. DRAINAGE AREA (ABOVE MOUTH OF GUNNISON RIVER), 8,644 SQUARE MILES. OBSERVER, B. W. VEDDER; POSTOFFICE ADDRESS, GRAND JUNCTION, COLO.

DAY	GAGE HEIGHT												DAY
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	2.10	2.40	3.00	3.10	5.10	4.10	4.20	2.10	1.80	*b* .90	.50	.30	1
2	2.15	2.40	3.00	3.05	4.95	4.20	4.05	2.30	1.70	.80	.50	.30	2
3	2.20	2.40	3.00	3.00	4.60	4.20	3.90	2.20	1.70	.80	.50	.30	3
4	2.20	2.40	2.95	3.00	4.35	4.30	3.65	2.10	1.70	.85	.50	.20	4
5	2.30	2.40	2.85	3.00	4.25	4.40	3.50	2.10	1.70	.90	.55	.20	5
6	2.30	2.40	2.80	3.00	4.15	4.40	3.40	2.00	1.70	.90	.60	.20	6
7	2.30	2.40	2.75	3.05	4.10	4.50	3.25	2.00	1.70	.90	.60	.20	7
8	2.30	2.40	2.90	3.20	4.20	4.60	3.10	2.00	1.70	.90	.60	.20	8
9	2.30	2.35	2.90	3.25	4.40	4.60	2.90	2.00	1.70	.80	.50	.20	9
10	2.40	2.30	2.90	3.35	4.75	4.70	2.80	2.00	1.60	.80	.50	.20	10
11	2.40	2.20	2.85	3.40	5.10	4.90	2.90	1.90	1.60	.80	.50	.20	11
12	2.40	2.15	2.85	3.65	5.25	5.10	3.05	1.90	1.60	.80	.50	.20	12
13	2.40	2.10	2.75	3.95	5.40	5.10	3.10	1.90	1.60	.80	.55	.20	13
14	2.40	2.10	2.65	4.05	5.55	5.20	2.95	1.90	1.50	.80	.60	.20	14
15	2.40	2.10	2.60	4.20	5.70	5.30	2.85	1.90	1.60	.75	.60	.20	15
16	2.40	2.10	2.30	4.30	5.50	5.40	2.65	1.90	1.60	.70	.60	.20	16
17	2.50	2.20	2.60	4.40	5.20	5.40	2.45	1.90	1.60	.70	.60	.20	17
18	2.60	2.30	2.70	4.50	4.80	5.30	2.40	1.90	1.60	.70	.50	.20	18

19	2.60	2.35	2.75	4.60	4.70	4.90	2.30	1.80	1.60	.70	.50	.10	19
20	2.60	2.40	2.90	4.25	4.60	4.55	2.30	1.95	1.60	.70	.60	.10	20
21	2.60	2.40	3.00	4.50	4.50	4.30	2.25	2.25	1.60	.70	.60	*c* .10	21
22	2.40	2.55	3.00	4.35	4.55	4.00	2.15	2.05	1.50	.70	.60	.....	22
23	2.40	2.70	3.00	4.20	4.60	4.00	2.10	1.90	1.50	.70	.70	.....	23
24	2.30	2.80	3.00	4.35	4.50	3.90	2.10	1.85	1.50	.60	.....	.....	24
25	2.30	3.00	3.00	4.50	4.40	3.85	2.00	1.85	1.50	.60	.....	.....	25
26	2.30	3.25	3.10	4.55	4.40	3.90	2.00	1.85	1.50	.60	.....	.....	26
27	2.30	3.25	3.15	4.80	4.50	3.95	2.00	1.85	1.50	.60	.....	.....	27
28	2.30	3.10	*a* 4.50	4.95	4.60	3.90	2.00	1.85	1.50	.60	.....	.....	28
29	2.30	.....	3.20	5.00	4.50	4.35	2.00	1.85	1.10	.60	.....	.....	29
30	2.30	.....	3.20	5.10	4.35	4.45	1.90	1.85	1.00	.60	.....	.....	30
31	2.40	.....	3.20	.....	4 20	.....	2.00	1.85	.....	.50	.....	.....	31

a March 28, the Grass Valley Reservoir broke.

b Gage lowered 1.50 feet by Mr. A. P. Davis, U. S. G. S., as water had fallen below zero of the gage. This amount has been added to the original observations from Jan. 1, to Sept. 30, 1895.

c Last report; frozen at gage.

DAILY MEAN GAGE HEIGHT

(Rod No. 1. Right Channel)

OF THE GRAND RIVER, AT GRAND JUNCTION, COLO., FOR 1896. DRAINAGE AREA (ABOVE MOUTH OF GUNNISON RIVER), 8,644 SQUARE MILES. OBSERVER, B. W. VEDDER; POSTOFFICE ADDRESS, GRAND JUNCTION, COLO.

DAY	GAGE HEIGHT								DAY
	April	May	June	July	August	September	October	November	
1		2.70	4.65	1.20	1.05	.35	1.00	.50	1
2		2.65	4.10	1.20	.95	.40	.90	.50	2
3		2.65	3.65	1.10	.85	.50	.85	.50	3
4		3.20	3.45	1.10	.85	.40	.85	.40	4
5		3.30	3.30	1.05	.70	.30	.80	.30	5
6		3.90	3.25	1.00	.70	.25	.80	.20	6
7		4.00	3.15	1.05	.65	.15	.80	.20	7
8		4.15	2.90	1.00	.55	.30	.70	.10	8
9		3.90	2.75	.90	.45	.50	.70	.00	9
10		3.80	3.30	.85	.40	1.50	.70	.20	10
11		3.70	3.05	.80	.25	1.10	.70	.30	11
12	1.10	3.55	2.95	.80	.15	1.20	.70	.30	12
13	1.20	3.20	2.80	.80	.05	1.15	.70	.30	13
14	1.10	2.90	2.45	.85	*a*	1.05	.70	.20	14
15	1.30	2.50	2.35	.90	*a*	.95	.65	.30	15
16	1.45	2.30	2.20	.85	*a*	.70	.60	.40	16
17	1.50	1.90	2.15	.85	*a*	.60	.60	.40	17

18	1.50	1.90	2.05	1.00	*a*	.60	.55	.25	18
19	1.20	1.85	2.00	1.25	*a*	.85	.50	.10	19
20	1.15	1.85	2.00	1.25	*a*	.80	.50	.25	20
21	1.10	1.90	1.85	1.10	.80	.75	.50	.40	21
22	1.10	1.90	1.80	1.00	.40	.80	.50	.40	22
23	1.60	2.35	1.75	.85	.45	3.50	.50	.40	23
24	1.90	3.25	1.65	.80	.55	2.25	.50	.40	24
25	2.50	3.70	1.55	1.00	.90	1.25	.50	.40	25
26	2.70	3.90	1.50	1.40	.75	1.15	.50	.40	26
27	3.30	4.05	1.50	1.45	.55	1.10	.40	.30	27
28	3.70	4.45	1.45	1.55	.35	1.00	.50	.00	28
29	3 15	4.30	1.30	1.55	.30	1.05	.50	.00	29
30	2.90	4.55	1.30	1.35	.30	1.00	.50	.00	30
31		4.40		1.15	.30		.50		31

a Channel dry.

DAILY MEAN GAGE HEIGHT

(Rod No. 2, Left Channel)

OF THE GRAND RIVER, AT GRAND JUNCTION, COLO., FOR 1896. DRAINAGE AREA (ABOVE MOUTH OF GUNNISON RIVER), 8,644 SQUARE MILES. OBSERVER, B. W. VEDDER; POSTOFFICE ADDRESS, GRAND JUNCTION, COLO.

DAY	GAGE HEIGHT				DAY
	August	September	October	November	
1		3.35	4.10	3.50	1
2		3.40	4.00	3.50	2
3		3.50	3.95	3.50	3
4		3.40	3.85	3.40	4
5		3.30	3.80	3.30	5
6		3.25	3.80	3.20	6
7		3.15	3.80	3.20	7
8		3.30	3.70	3.10	8
9		3.50	3.70	3.00	9
10		4.85	3.70	3.20	10
11		4.30	3.70	3.30	11
12		4.40	3.70	3.30	12
13		4.35	3.70	3.30	13
14		4.15	3.70	3.20	14
15		3.95	3.65	3.30	15
16		3.70	3.60	3.40	16
17		3.60	3.60	3.40	17

18		3.60	3.55	3.25	18
19		3.90	3.50	3.10	19
20		3.80	3.50	3.25	20
21		3.75	3.50	3.40	21
22		3.80	3.50	3.40	22
23	3.45	7.20	3.50	3 40	23
24	3.55	5.70	3.50	3.40	24
25	3.90	4.55	3.50	3.40	25
26	3.75	4.45	3.50	3.40	26
27	3.55	4.40	3.40	3.30	27
28	3.35	4.30	3.50	3.10	28
29	3.30	4.30	3.50	2.70	29
30	3.30	4.10	3.50	2.50	30
31	3.30		3.50		31

GRAND JUNCTION STATION, ON GUNNISON RIVER.

This station is located about one and one-half miles from the depot, at a highway bridge. It was originally established by the United States geological survey at the pump house of the Denver & Rio Grande railroad, one-half mile nearer town, but was changed to present location by Mr. A. P. Davis, of the United States geological survey, on July 3, 1895.

The gage consists of a vertical $2'' \times 6''$ timber, bolted to the bridge abutment on right hand side of the river, and is divided into 0.10 of a foot.

The left bank is high, and the right low and liable to overflow at high water; the current is sluggish, and at low water mud is deposited against the gage.

No stream measurements were made at this station, and no observations of river heights reported during 1896.

Sufficient discharge measurements have not been made to construct a rating table.

LIST OF DISCHARGE MEASUREMENTS

MADE ON GUNNISON RIVER, AT GRAND JUNCTION, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
	1894						
1	Oct. 17	A. P. Davis, U. S. G. Survey	22	1.25	----------	.80	748
	1895						
2	June 28	A. P. Davis, U. S. G. Survey	55	4.74	1,405	2.94	4,178
3	July 17	A. P. Davis, U. S. G. Survey	55	3.60	1,328	1.99	2,642
4	Oct. 1	A. P. Davis, U. S. G. Survey	61	1.95	996	.78	781

DAILY MEAN GAGE HEIGHT

OF THE GUNNISON RIVER, AT GRAND JUNCTION, COLO., FOR 1895. DRAINAGE AREA, 7,935 SQUARE MILES. OBSERVER, FRANK ADAIR; POSTOFFICE ADDRESS, GRAND JUNCTION, COLO.

DAY	GAGE HEIGHT												DAY
	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
1	1.60	1.70	1.80	3.20	6.00	5.25	5.30	3.05	1.90	1.60	1.80	1.90	1
2	1.60	1.70	1.80	3.00	5.70	5.35	5.05	3.00	1.90	1.60	1.80	1.90	2
3	1.60	1.70	1.80	2.10	5.45	5.35	4.85	3.00	1.90	1.60	1.80	1.10	3
4	1.60	1.70	1.80	2.90	5 10	5.50	4.55	2.90	1.80	1.60	1.80	1.10	4
5	1.60	1.70	1.80	3.20	5.00	5.45	4.25	2.90	1.80	1 80	1.80	1.10	5
6	1.60	1 70	1.80	2.90	4.80	5.50	4.15	3.00	1.80	1.80	1.80	1.10	6
7	1.60	1 70	1.80	2.65	4.50	5.70	3.85	2.80	1.80	1.80	1.80	1.10	7
8	1.60	1.70	1.80	3.20	4.50	6.05	3 85	2.90	1.60	1.80	1.80	1.80	8
9	1.60	1 70	1.80	3 25	6.15	6.25	3.75	2.70	1.60	1.80	1.80	1.80	9
10	1.60	1.70	1.60	3.60	6 65	6.35	3.95	2.80	1.60	1.70	1.10	1.80	10
11	1.60	1.70	1.60	3.75	7.20	6.60	3.95	2.20	1.50	1.70	1.11	1.80	11
12	1 60	1.70	1.60	4 20	7.00	6.80	4 15	2.20	1.50	1.80	1.11	1.80	12
13	1.70	1.70	1.60	4 65	6.90	6.80	4 25	2.20	1.50	1.80	2.10	1.80	13
14	1.70	1.70	1 60	5 05	7.00	6.70	4.50	2.30	1.50	1.80	2.10	1.80	14
15	1.70	1 70	1.60	5.60	7.20	6.65	3.80	2.30	1.60	1.80	2.10	1.80	15
16	1.70	1.70	1 60	5.15	7.20	6.70	3 65	2.10	1 60	1.80	1.60	1.80	16
17	1.70	1.70	1.60	4.70	7.05	6.60	3.55	2.00	1.60	1.80	1.10	1 80	17
18	1.70	1.70	1.60	5 40	6.65	6.35	3.50	2.10	1.60	1.80	1.90	1.80	18

19	1.70	1.70	1.60	5.90	6.10	5.70	3.35	2.80	1.60	1.80	1.80	1.80	19
20	1.70	1.70	1.60	6.85	6.00	5.25	3.05	2.80	1 70	1.70	1.80	1.80	20
21	1.70	1.70	1.60	7.05	6.05	5 20	2 90	2.85	1.70	1.70	1.60	*a* 1.80	21
22	1.70	1.70	1.60	6 90	6.30	5.00	2.85	3.00	1.60	1.70	1.60		22
23	1.70	1.70	1.60	6 70	6.00	5.00	2.75	3.20	1.60	1.70	1.60		23
24	1.70	1.90	1.85	6.55	6.00	4.95	2.65	2.80	1.60	1.70	1.60		24
25	1.70	1 90	1 50	6.70	5.50	5 05	2.65	2.20	1.60	1.70	1.60		25
26	1.70	1 90	1.50	6.90	5.25	5.10	2.60	2.10	1.60	1.70	1.60		26
27	1.70	1.90	2.20	6 90	5.05	5 10	2.60	2.00	1.60	1.80	1.60		27
28	1.70	1.90	2.60	6.45	5 40	5 00	2.60	2.00	1.60	1.80	1.60		28
29	1.70		2.90	7.05	4.60	5.05	2.55	1.10	1.60	1.80	1.60		29
30	1.70		3.00	6.95	5 25	5.55	2 50	1.10	1.60	1.80	1.60		30
31	1.70				5.25		2.75	1.90		1.80			31

a Last report; frozen.

WHITE RIVER STATION, ON WHITE RIVER.

This station is located about one-half mile northeast of White River City, and was established May 16, 1895.

The gage consists of a vertical timber, marked to 0.10 of a foot, driven into the ground and fastened to the root of a tree on the left side of the river. The banks are not liable to overflow. The bed of the stream is of gravel, the water deep, and velocity high.

Discharge measurements can be made from a cable bridge carrying an irrigating flume.

Owing to our limited fund, only one discharge measurement was made in 1895, and no attempt has been made to continue these measurements during 1896.

LIST OF DISCHARGE MEASUREMENTS

MADE ON WHITE RIVER, AT WHITE RIVER CITY, COLO.

No.	Date	Hydrographer	Meter number	Gage height (feet)	Area of section (square feet)	Mean velocity (feet per second)	Discharge (second-feet)
1	1895 May 16	H. A. Sumner	Scott	13.10	525	5.81	*a* 3,047

a Surface velocity obtained by means of current meter. Mean velocity taken as equal to 90 per cent. of surface velocity.

DAILY MEAN GAGE HEIGHT

OF THE WHITE RIVER, AT WHITE RIVER CITY, COLO., FOR 1895. DRAINAGE AREA, 1,773 SQUARE MILES. OBSERVER, ELMO G. FOREMAN; POSTOFFICE ADDRESS, WHITE RIVER CITY, COLO.

DAY	GAGE HEIGHT						DAY
	May	June	July	August	September	October	
1		11 97	11.40	10.47	10.25	10.10	1
2		11.80	11.30	10.46	10.20	10.10	2
3		11.98	11.20	10.37	10.20	10.27	3
4		11.90	11.10	10.37	10.20	10.40	4
5		11.83	11.00	10.32	10.20	10.27	5
6		11.79	10.90	10.30	10.12	10.15	6
7		11.85	10.80	10.28	10.10	10.10	7
8		11.98	10.70	10.40	10.15	10.10	8
9		12.05	10.70	10.40	10.15	10.10	9
10		12.35	10.80	10.37	10.12	10.10	10
11		12.33	10.95	10.27	10.10	10.10	11
12		12.39	11.05	10.25	10.10	10.10	12
13		12.58	11.12	10.25	10.10	10.10	13
14		12.55	11.35	10.35	10.10	10.10	14
15		12.67	11.10	10.37	10.10	10.15	15
16	13.10	12.70	10.87	10.30	10.10	10.10	16
17	13.02	12.60	10.77	10.25	10.10	10.10	17
18	12.80	12.20	10.75	10.25	10.10	10.10	18

19	12.77	11.90	10.70	10.25	10.15	10.10	19
20	12.92	11.72	10.65	10.30	10.12	10.10	20
21	12.82	11.62	10.70	10.27	10.45	10.15	21
22	12.70	11.53	10.67	10.65	10.25	10.20	22
23	12.55	11.43	10.62	10.40	10.22	10.20	23
24	12.30	11.48	10.57	10.35	10.20	10.18	24
25	12.36	11.50	10.50	10.30	10.17	10.15	25
26	12.37	11.47	10.44	10.20	10.15	10.15	26
27	12.45	11.38	10.40	10.20	10.15	10.15	27
28	12.72	11.52	10.42	10.30	10.15	10.00	28
29	12.58	11.95	10.50	10.30	10.12	10.00	29
30	12.20	11.62	10.47	10.30	10.10	10.00	30
31	12.21		10.44	10.25		10.00	31

DAILY MEAN GAGE HEIGHT

OF THE WHITE RIVER, AT WHITE RIVER CITY, COLO., FOR 1896. DRAINAGE AREA, 1,773 SQUARE MILES. OBSERVER, ELMO G. FOREMAN; POSTOFFICE ADDRESS, WHITE RIVER CITY, COLO.

DAY	GAGE HEIGHT				DAY
	May	June	July	August	
1	----	a 12.40	10.20	10.30	1
2	----	11.90	10.20	10.30	2
3	12.50	11.70	10.20	10.30	3
4	12.80	11.70	10.10	10.45	4
5	13.20	11.55	10.00	10.35	5
6	13.35	11.40	10.00	10.25	6
7	13.35	11.45	10.00	10.20	7
8	13.55	11.20	10.00	10.20	8
9	13.05	11.05	10.00	10.20	9
10	12.70	11.10	10.00	10.15	10
11	12.60	11.00	10.00	10.10	11
12	12.25	10.90	10.00	10.10	12
13	11.85	10.80	10.00	10.10	13
14	11.70	10.80	10.25	10.10	14
15	11.50	10.80	10.25	10.10	15
16	11.35	10.65	10.30	10.10	16
17	11.20	10.60	10.30	10.00	17
18	11.05	10.55	10.45	10 00	18

19	10.90	10.50	10.40	10.00	19
20	10.95	10.50	10.20	10.05	20
21	11.05	10.40	10.20	10.30	21
22	11.25	10.30	10.30	10.25	22
23	11.65	10.30	10.35	10.25	23
24	12.25	10.30	11.15	10.20	24
25	12.50	10.30	10.60	10.20	25
26	12.85	10.30	11.65	10.15	26
27	12.85	10.30	11.35	10.00	27
28	12.95	10.25	10.80	10.00	28
29	12.95	10.20	10.55	10.00	29
30	13.15	10.20	10.35	10.00	30
31	13.30		10.30	10.00	31

a Observer reports that river is lower than it has been for the past ten years.

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