

DEPARTMENT OF THE INTERIOR:

General Land Office:

Portland, Oregon, October 28, 1915.

"G"-368775-GWH.  
"G"-368775-WJS.  
Squaw Creek Irrigation Co.  
The Dalles, Oregon land district  
Engineering report  
F. D. 2248  
WBR:MP.

The Commissioner, : Through Lewis L. Sharp,  
: :  
General Land Office, : Chief of Field Division,  
: :  
Washington, D. C. : Portland, Oregon.

Sir:-

On February 19, 1913 the Register and Receiver of the local land office at The Dalles, Oregon requested a report as to the Squaw Creek Irrigation Company furnishing water to certain desert land entrymen in that land district.

Letter "G"-368775-GWH., October 9, 1914, requested information as to the time when report covering this company would be made, and under date of November 24, 1914 the Chief of Field Division advised you that investigation could not be made in 1914.

On June 17, 1915 letter "G"-368775-GWH. requested information as to the status of the investigation of this company and made reference to D. B. E. 22487, The Dalles, George W. Fuller. Replying to this letter on July 12, 1915, the Chief of Field Division advised you that the special agent investigating the irrigation companies was disposing of them in the order in which final certificates issued on entries under them and that in the absence

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of specific instructions to the contrary, the Squaw Creek Irrigation Company would be taken up in its proper order. Letter "G" 368775 WJS., dated August 4, 1915, called attention to D.L.E. 05330, The Dalles, Joseph W. Howard, Jr., on which final proof was made November 24, 1913, and directed that report be submitted at least six weeks prior to November 24, 1915.

The investigation of the Squaw Creek Irrigation Company has been pushed as rapidly as possible and this report is submitted at the earliest possible date. It is regretted that it has not been possible to have the report in your hands six weeks prior to November 24, 1915 but the preparation of reports covering irrigation companies supplying water to desert land entries on which final certificates issued at earlier dates has occupied so much time that it has not been practicable to submit this report sooner.

I visited the headgate of the Squaw Creek Irrigation Company on November 20, 1914. The winter had already begun and it was not possible to complete the investigation of the company at that time. The investigation was resumed on September 8, 1915 and the field work and examination of the records occupied me until September 30, 1915, except for four or five days when I was engaged at other necessary work. This report has been in preparation since October 1, 1915 and is now submitted in conformity with letter "P" LEE. 60977, February 28, 1911, circulars of August 13 and 15, 1912, circular of April 3, 1913, your letter of November 21, 1914, and circulars of March 12 and April 19, 1915.

The project of the Squaw Creek Irrigation Company is located in the western part of Crook County, Oregon, at the foot of the Cascade Mountains, on their eastern side. The intake of the company's

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*System*  
main canal is located about 4 miles above the town of Sisters, from which point it runs in a general northeasterly direction on the east side of Squaw Creek to T. 13 S., R. 12 E., a distance of about 16 miles. The territory covered by this canal is cut by several canyons running in a general northeasterly direction to Squaw Creek and the Deschutes River. In the bottoms of these canyons there are considerable areas of fertile land, and other arable lands are located on the flats above the canyons. There are numerous showings of lava rock and the entire area covered by the project is overlaid by rock of volcanic origin. The soil is of good quality and is very fertile when cultivated under irrigation. The annual precipitation amounts to only 10 inches and irrigation is essential to the production of profitable crops. Killing frosts occur as late as May 1st and early in September, marking the limits of the growing season.

*System*  
At the time I visited the headgate of the company's main canal in the fall of 1914, I found the intake to be located on the east side of Squaw Creek, just below the intakes of the Plainview and McCallister irrigation ditches.

The Squaw Creek Irrigation Company's ditch is about 30 ft. wide at the intake, according to George H. Brewster, who was formerly Water Master for Creek County and who is now connected with the Squaw Creek Irrigation Company as Superintendent. The cross-section of the ditch is not uniform, however, and the slope varies greatly. My observation of the ditch at the intake confirms Mr. Brewster's statement as to its width.

At the time of my visit to the intake a rough dam across Squaw Creek was diverting the entire flow to the ditch, except for a considerable amount of seepage under the dam. I did not visit the intake during my investigations in the fall of 1915 but Squaw Creek was dry at the town of Sisters and the ditch was probably diverting the entire flow.

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I did not follow the ditch throughout the 16 miles of its length but saw it at various points where it could be conveniently reached. Because of the irregularity of its cross-section and the variation in its fall, computation of its capacity is not practicable.

Mr. Brewster stated that the ditch was built to carry 225 second feet but that it will not actually carry more than 180 second feet at the diversion point according to his measurements, and that it is small in proportion all the way down. Low as the water was in 1915, Mr. Brewster states that the ditch would not carry all that was available at its lower end.

Mr. Brewster states that the ditch will carry a depth of 25 to 30 inches at its upper end and that it has a fall of 1.5 feet to the hundred for the first  $3\frac{1}{2}$  miles below the intake. The ditch decreases in width at its lower end, the narrowest part seen by me being from 8 to 10 feet in width. A large part of this ditch flows in a natural depression in the earth and has had very little work done on it. A large part of it flows through gravelly soil in which there is undoubtedly a considerable loss from seepage. My own observations confirm these statements of Mr. Brewster and he is quoted for the purpose of showing the agreement in his and my opinion as to the condition of the canal.

As to seepage losses, Mr. Brewster stated that as far as he had been able to determine, the losses are from 25 to 30 per cent. at the lower end of the ditch. From what I saw of it, I am inclined to the opinion that the losses must be greater than this and that they will certainly be as great as 50 per cent. when the losses in the laterals are included.

Mr. Brewster stated that some enlargement of the ditch was contemplated in order to enable the company to carry more water. As the adjudications to the company amount to only 183.99 second

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✓ feet for 9199 acres, and those to individuals entitled to delivery through the ditch to only 7.77 second feet for 432 acres, a total of 191.76 second feet for 9631 acres, it does not appear that any extensive enlargement of the upper part of the ditch is needed if it will now carry 190 second feet, which Mr. Brewster has determined by measurement. The need is rather for repairs which will reduce the seepage losses and conserve the water which the company is now able to divert.

A map accompanies this report, showing the location of the various ditches in the Squaw Creek irrigation district, ~~district~~ being used in the sense of locality rather than that of a district organized under the state law, there being no such organization. The locations shown for streams and ditches were taken from a map compiled by Mr. Brewster while he was County Water Master and are approximately correct. The map also shows the number of acres in each forty to which water has been adjudicated. Adjudication is almost uniformly on the basis of 1/50 of a second foot to the acre and deviation from that duty of water is very slight. The acreage indicated was taken by me from a consolidation of the various decrees applying to the waters of Squaw Creek, prepared in the office of the Secretary of the State Water Board. The map prepared by Mr. Brewster also showed the areas to which water was adjudicated, his information having been taken from the original decrees. There is some difference in the two maps for the reason that the decrees have been modified to a certain extent since Mr. Brewster made his map and some of the inchoate rights then existing have been perfected, but in the main the two maps agree. There are apparent errors in one or two instances probably due to errors in compiling the consolidation of the decrees, as for instance, the indicating of rights for 41 acres and 40.5 acres in several forties, and in the case of the ~~NE 1/4~~ Sec. 12, T. 15 S. ~~of one priority and 39 acres of another.~~

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Error is also indicated in that the following lands with adjudicated rights were checked as vacant by me on the records of the local land office at The Dalles:

- T. 14 S., R. 11 E. SW $\frac{1}{4}$  NE $\frac{1}{4}$  Section 1  
S $\frac{1}{2}$  NW $\frac{1}{4}$ ; NW $\frac{1}{4}$  SW $\frac{1}{4}$  Section 10  
NE $\frac{1}{4}$  SE $\frac{1}{4}$  Section 25.
- T. 15 S., R. 11 E. S $\frac{1}{2}$  NE $\frac{1}{4}$ ; W $\frac{1}{2}$  SE $\frac{1}{4}$  Section 18.
- T. 16 S., R. 11 E. NW $\frac{1}{4}$  SE $\frac{1}{4}$  Section 1.
- T. 13 S., R. 12 E. NE $\frac{1}{4}$  SE $\frac{1}{4}$  Section 19  
NW $\frac{1}{4}$  NE $\frac{1}{4}$  Section 30  
NW $\frac{1}{4}$  SW $\frac{1}{4}$  Section 31.
- T. 14 S., R. 12 E. SE $\frac{1}{4}$  SW $\frac{1}{4}$  Section 18.

This conflict may be due either to errors in the consolidation of the decrees or to errors in checking the local land office records which were far from clear in many cases. It would probably require a week to check the land shown on the map with absolute accuracy as to its status. It is believed that no errors were made in copying from the consolidation of the decrees as the work was carefully checked as it was done.

The foregoing is not to be taken as indicating that the map is inaccurate in general, for a check of it against Mr. Brewster's map shows both the maps and the consolidation of the decrees to be very correct. Known errors have been indicated and would be corrected if time permitted. They do not affect desert land entries. The map also shows the land involved in various priorities, the location of desert land entries and of canals and ditches.

The map shows that the main ditch of the Squaw Creek Irrigation Company divides into the Lower Bridge Water Users' Association lateral and the Black Butte Land & Livestock Company lateral near the southeast corner of Sec. 22, T. 14 S., R. 11 E. These laterals are in a sense carrying companies. The water carried through them

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is adjudicated to the Squaw Creek Irrigation Company, however, and that company patrols these laterals and apportions the water to the various users under the supervision of the Water Master.

The lateral of the Black Butte Land & Livestock Company is owned by that company and other users from it get their water under contract with that company, according to Mr. Brewster and Mr. E. T. Slayton, Secretary of the Squaw Creek Irrigation Company. I saw various entrymen getting their water through this lateral and where their priority admitted of their getting water at all, they complained of no difficulty. Their land showed evidence of having received an abundant supply of water.

I was on the lateral of the Black Butte Land & Livestock Company at various points and found it to be in good condition. It tapers from a width of about 10 feet at its head to its division into smaller laterals. I did not ascertain its fall.

The Lower Bridge Water Users' Association furnishes water to no desert land entrymen and no attention was paid to its lateral.

In general it appears that the Squaw Creek Irrigation Company can divert the water adjudicated to it but that the lower end of its canal is probably not of sufficient capacity to carry all the water required for users there. The canal will lose a considerable part of the water <sup>diverted</sup> ~~diverted~~ in seepage. The waste can in all probability be cut down by repair work on that part of the canal that lies in gravelly soil and by the use of cement lining where the losses are greatest. Land in this locality when cleared and cultivated under irrigation may have a value of from \$50.00 to \$75.00 per acre and at this valuation a limited amount of cement lining is justified.

The water of Squaw Creek, the source of supply, has been adjudicated. The consolidation of the various decrees governing the

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distribution of the water before referred to herein was re-arranged by me so that the adjudications to each priority were segregated, making it possible to compute the demand made by any priority on the available supply. The land covered by various priorities is shown on the accompanying map and that covered by the Squaw Creek Irrigation Company is also indicated thereon. In order to have an effective comparison between the available supply and the demand thereon, it has, of course, been necessary to consider the adjudications to all claimants. The tabulation in the following pages hereof will show the demand for each priority and the water supply available for its satisfaction. (The supplying of the adjudicated rights calls for 291.56 second feet of water for 14,541.5 acres of land.) The water supply is insufficient for all the adjudicated rights.

The Squaw Creek Irrigation Company has rights adjudicated as follows:

1893 priority	0.79	second feet for	39.5	acres
Nov. 11, 1895 pri.	115.64	" " "	5781.5	"
Apr. 1899 pri.	3.2	" " "	160.0	"
1904 priority	48.23	" " "	2411.5	"
Nov. 1904 pri.	16.13	" " "	806.5	"
Total	183.99	" " "	9199.0	"

Individual users, none of whom is a desert land entryman, have adjudications amounting to 7.77 second feet for 432 acres, the water to be conveyed through the Squaw Creek Irrigation Company's canals.

The decrees of adjudication, several in number, have all been confirmed by the courts and have become final. A small part of the adjudication applies to the waters of tributaries but these tributaries are above the point where diversions occur from the main stream and are also above the point where measurements of the water supply have been made.

In addition to the adjudicated claims, there have been permits of date subsequent to the adjudication for the use of the waters of

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✓ the main stream of Squaw Creek to the extent of 14.95 second feet. Other permits for the use of the water of the main stream stated in acre feet amount to 1700 acres. There is a pending application for the use of 1.5 second feet of a tributary, and other pending applications stated in acre feet for the use of the water of tributaries amount to 612 acre feet. These permits and applications have no value whatever until the adjudicated rights are satisfied, being of subsequent priority, which is to say that they are absolutely worthless. They are issued because the State Engineer cannot refuse to do so, and I understand they are usually stamped with the statement that it is believed there is no water available for use under them.

Mr. Brewster tells me that the Squaw Creek Irrigation Company has considered various plans for increasing the water supply, among which were the bringing of water from a lake on the west side of the Cascades, found to be impracticable, and the bringing of water from the head of the Metolius River. Mr. Brewster was of the opinion that it is not feasible to bring water from the Metolius. I have never been over the country between the head of the Metolius River and Squaw Creek and I am, therefore, not able to express an opinion as to the feasibility of this proposition. The land office plats show that swamps in the north part of T. 14 S., R. 9 E. discharge into both streams. For the present, however, Squaw Creek must be considered as the only source of supply for the territory under consideration.

✓ In the following pages the water supply required for the land covered by the adjudication and the supply available are computed and compared. The conclusion that land having a priority subsequent to 1895 will not be reclaimed is reached. A large part

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of the land with priority up to and including 1895 is now under irrigation and the land for which these priorities are indicated on the map may be considered as the area that will be irrigated, while the land within the indicated limits of the Squaw Creek Irrigation Company project may be considered as the area proposed to be irrigated by that company. I found no one who could indicate the areas now actually under irrigation and these areas are so scattered that it was not practicable to undertake their location in the field. There has been more or less irrigation on land of all priorities but as more of the land of early priority comes under cultivation, the water supply for the later priorities will diminish.

The following tabulations show the water required and that available. All water supply information is taken from Bulletin No. 4, State Engineer's office, Water Resources of the State of Oregon. The gauging station used for Squaw Creek is that of the U. S. Geological Survey and the data has been compiled in cooperation with the Survey.

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SUMMARY OF SQUAW CREEK ADJUDICATION TAKEN FROM CONSOLIDATION  
OF DECREES IN THE OFFICE OF THE SECRETARY OF THE STATE WATER  
BOARD

PRIORITY	AMOUNT OF ADJUDICATION		TOTAL TO YEAR INDICATED	
	Sec. Ft.	Per Acres	Sec. Ft.	Acres
1869	1.00	48	1.00	48
1870				
1871	.91	45.5	1.91	93.5
1872				
1873				
1874				
1875				
1876				
1877				
1878				
1879				
1880	6.58	340.5	8.49	434.0
1881	1.22	61	9.71	495.0
1882	.86	43	10.57	538.0
1883	1.40	70	11.97	608.0
1884	.69	34.3	12.66	642.3
1885	12.07	521.3	24.73	1163.6
1886	14.10	665.5	38.83	1829.1
1887	3.24	162.0	42.07	1991.1
1888				
1889	4.03	201.5	46.10	2192.6
1890				
1891				
1892				
1893	.79	39.5	46.89	2232.1
1894				
1895	116.44	5821.5	163.33	8053.6
1896				
1897	.60	30.5	163.93	8084.1
1898	12.0	second feet for power		
1899	3.20	160	167.13	8244.1
1900	3.63	181.5	170.76	8425.6
1901	21.52	1082.5	192.28	9508.1
1902	.63	79.9	192.91	9588
1903	20.13	1007	213.04	10595
1904	69.46 X	3473	282.50	14068
1905	2.45	145	284.95	14211
1906	3.10	155	288.05	14368
1907				
1908	3.51	175.5	291.56	14541.5
	291.56	14541.5		

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AVERAGE FLOW IN SECOND FEET OF SQUAW CREEK BASED ON MEAN MONTHLY DISCHARGES FOR YEARS 1909-10 TO 1912-13, INCLUSIVE AS SHOWN BY BULLETIN NO. 4, OFFICE OF THE STATE ENGINEER, WATER RESOURCES OF THE STATE OF OREGON.

	1909-10	1910-11	1911-12	1912-13	MEAN FOR FOUR YEARS
October	68.4	81.2	56.8	64.7	67.8
November	255	102	58.3	70.6	121.5
December	133	81.6	47.2	55.1	79.2
January	86.3	61.7	68.8	51.0	66.9
February	73	52.5	64.5	37.4	56.9
March	118	50.4	45.7	40.4	63.6
April	116	68.5	59.5	80.5	81.1
May	183	93.8	131	143	137.7
June	201	237	249	278	241.2
July	178	223	202	280	220.7
August	112	124	168	199	150.8
September	95	80.4	90.2	136	100.4
Mean	135	105	104	120	116
Mean-May to September	154	152	168	207	170

*from 1899  
163.93  
from 1904  
213.04*

There are measurements on Squaw Creek prior to the year 1909-10, but they are of doubtful accuracy and no use has been made of them. The above measurements are made above all diversions except one, which has been added.

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AVERAGE RUN-OFF IN ACRE FEET OF SQUAW CREEK BASED ON MEAN MONTHLY RUN-OFF FOR YEARS 1909-10 TO 1912-13, INCLUSIVE AS SHOWN BY BULLETIN NO. 4, OFFICE OF THE STATE ENGINEER, WATER RESOURCES OF THE STATE OF OREGON.

	1909-10	1910-11	1911-12	1912-13	MEAN FOR FOUR YEARS
October	4210	4990	3490	3080	4167
November	15200	6070	3470	4200	7235
December	8180	5020	2900	3390	4872
January	5310	3790	4230	3140	4117
February	4050	2920	3710	2080	3190
March	7260	3100	2810	2480	3912
April	6900	4080	3540	4790	4827
May	11300	5770	8060	8790	8480
June	12000	14100	14800	16500	14350
July	10900	13700	12400	17200	13550
August	6890	7620	10300	12200	9252
September	5650	4780	5370	8090	5972
<b>Total</b>	<b>97800</b>	<b>75900</b>	<b>75100</b>	<b>86800</b>	<b>83900</b>
<b>Total, May to Sept.</b>	<b>46740</b>	<b>45970</b>	<b>50930</b>	<b>62780</b>	<b>51600</b>
<b>Acre Feet per Acre for 14541 Acres, May to Sept.</b>	<b>3.2</b>	<b>3.2</b>	<b>3.5</b>	<b>4.3</b>	<b>3.5</b>

There are measurements on Squaw Creek prior to the year 1909-10, but they are of doubtful accuracy and no use has been made of them. The above measurements are above all diversions, except one, which has been added.

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ACRE FEET PER ACRE AVAILABLE FOR DIVERSION FROM SQUAW CREEK IN  
THE AVERAGE YEAR FOR VARIOUS PRIORITIES.

MONTH	MEAN RUN-OFF	PRIORITY TO AND INCLUDING					
		1895		1903		1904	
		Acres	A.F.	Acres	A.F.	Acres	A.F.
May	8480	8053	1.0	10595	0.8	14068	0.6
June	14350		1.8		1.4		1.0
July	13550		1.7		1.3		0.95
August	9252		1.1		0.9		0.66
Sept.	5972		0.7		0.6		0.4
			6.3		5.0		3.6

Letter "FS"-471458-ELU., November 28, 1914, requested that you be furnished copies of Bulletins Nos. 1 and 2 covering the co-operative work of the Reclamation Service and the State of Oregon as to the Deschutes River Projects, and these bulletins were sent you on January 4, 1915. On page 7 of Bulletin No. 1, the following duty of water in acre feet per acre was proposed, and was considered by the investigators to be sufficient for the reclamation of the land and to make sufficient allowance for losses through seepage and evaporation.

DUTY OF WATER PROPOSED

	May	June	July	August	September	Total
Diversion Duty	0.80	1.00	1.20	1.00	0.40	4.40
Delivery Duty	0.40	0.50	0.60	0.50	0.20	2.20

The amount of water available in each month for priorities including 1904 falls but little short of these figures, and it is possible that the supply might be sufficient for the reclamation of the 1904 priorities, or perhaps for all land cov-

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ered by the adjudication, if this duty of water were approximated and rotation were practiced. Climatic conditions are identical with those considered in the Bulletins and losses from the main canal of the Squaw Creek Irrigation Company are said by former County Water-master George Brewster to be only from 25% to 30%. It is not improbable that losses in the laterals will increase this to at least 50%, however. Mr. Brewster said the losses in other canals diverting from Squaw Creek were as a rule higher per mile than in the Squaw Creek Company's canal.

In considering the water supply for land irrigated from Squaw Creek we are confronted with facts rather than theories, however, the water supply having been determined and adjudicated. The conditions pertaining to the priorities just considered are as follows:-

Priority to and Including	Total Acres	Second Feet Adjudicated	Required Diversion S.F. per A.
1895	8053.6	163.33	0.023
1903	10595	213.04	0.020
1904	14068	282.50	0.020

The diversion provided for by the decrees of adjudication is almost uniformly 1/50 of a second foot per acre, there being little deviation from it. It is my understanding that the adjudication of 12 second feet for power with a priority of 1898 has no bearing on use for irrigation, the power use being above the diversions. The following tabulation shows how far the discharge of the creek in the average year will go toward satisfying the requirements of the above priorities under the duty of water allowed by the adjudication.

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SECOND FEET PER ACRE AVAILABLE FOR DIVERSION FROM SQUAW CREEK  
IN THE AVERAGE YEAR FOR VARIOUS PRIORITIES

MONTH	MEAN S.F. DISCHARGE	PRIORITY TO AND INCLUDING					
		1895 Acres	S.F.	1903 Acres	S.F.	1904 Acres	S.F.
May	137.7	8053	0.017	10595	0.013	14068	0.010
June	241.2		0.030		0.023		0.017
July	220.7		0.027		0.021		0.016
August	150.8		0.019		0.014		0.011
Sept.	100.4		0.012		0.009		0.007

This being the case there is a shortage for any of the priorities above in May, August and September, but the shortages for May and August if only the 1895 priority is included, are negligible, and it is probable that rotation will make the supply for <sup>that</sup> priority sufficient in every month, if it is conceded that there will be little demand for water in September.

If the 1903 priorities are included the shortages occur in the same months and are considerably greater and it is not probable that rotation will make the supply sufficient for the duty of water allowed by the adjudication.

If the 1904 priorities are included there is a shortage in every month with barely half the required supply in three months of the season.

The State Water Board has the power to enforce a system of rotation, and if such a system were inaugurated it is believed that the irrigation of the land having a priority of 1895 can be satisfactorily accomplished. The greatest shortage is in September at the end of the growing season and the demand for water is less then than during the summer months.

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While in the locality I was shown land to which a priority of 1895 was said to apply, which is rocky and unsuited to cultivation. The owners of this land will be obliged either to make showing that water cannot be beneficially used on the land and apply to the State Water Board for its transfer to other land, or to suffer a lapse of the right through non-use. If the transfer is allowed the situation will not be helped, but if the rights lapse the amount of land appearing with an 1895 priority will be decreased. I cannot state the acreage of which this condition is true, but the lands shown me would probably amount to at least 400 acres.

In practice the 1895 priorities under cultivation receive water, and had water delivered to them even in the present very short year. It is also true that lands with a priority as late as 1900 have received water in ordinary years and that some has been delivered to land under the 1904 priorities. All of the land under the earlier priorities has not yet been brought under cultivation and as the cultivated area increases the supply for the later priorities will diminish.

The possibilities for each month of the season may be more definitely expressed in the following manner. In the average year under the duty of water provided by the adjudication it is possible to irrigate land under the various priorities as follows:-

In May, all of the 1893 and approximately 80% of 1895.

In June, all of 1903 and approximately 40% of 1904.

In July, all of 1903 and approximately 10% of 1904.

In August, all of 1893 and approximately 85% of 1895.

In September, all of 1893 and approximately 45% of 1895.

In the foregoing no allowance has been made for what might be done by rotation, nor can such an allowance be put in figures without a more thorough study of local conditions than it has been possible for me to make. As long as the duty of water remains fixed at a diversion of 1/50 of a second foot per acre, the conclusion that water will not be available for priorities subsequent to 1895 must be drawn. With a reduction of the seepage losses and a modification of the duty of water to approximate that indicated on page ~~14~~ hereof, it might become possible to irrigate a large part, and perhaps all, of the lands of later priority. The consideration of this project and recommendations regarding it must be based <sup>on existing conditions</sup> rather than on plans for the future, to which no one is definitely committed at the present time.

The following desert land entries are known to be dependent on the project of the Squaw Creek Irrigation Company for their water supply:

D.L.E. 02447, The Dalles, George W. Fuller, involving NE $\frac{1}{4}$ , E $\frac{1}{2}$ NW $\frac{1}{4}$  Sec. 5, T. 14 S., R. 12 E. W.M., embracing 239.73 acres. This land secures its water supply through the Black Butte Land & Livestock Company's lateral and a lateral constructed by the entryman leading from it to his land. The land has an adjudicated right of 1895 priority for 17 acres in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ , 14 acres in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ , 1 acre in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ , 22.5 acres in the NW $\frac{1}{4}$ NE $\frac{1}{4}$ , 36.5 acres in the SW $\frac{1}{4}$ NE $\frac{1}{4}$  and 13 acres in the SE $\frac{1}{4}$ NE $\frac{1}{4}$  of said Section 5.

The entryman is now dead. On September 15, 1915 I interviewed Emma Fuller, his widow. She stated that they began fencing the place in March 1909, one year after making the entry, and that they got water on the land in October 1912. They had their first irrigated crop in 1913, though they had made some unsuccessful efforts to grow rye by dry farming before they got water to the land. They

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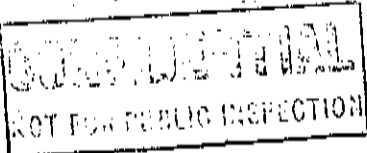
have had irrigated crops on the land each year since 1913 and now have 104 acres under irrigation. On the same date I visited the land in company with Mr. George Brewster and found that there are ditches constructed to the irrigable portions of each forty and that irrigable land is cultivated to alfalfa and other crops, with the exception of several acres in the NE $\frac{1}{4}$ NE $\frac{1}{4}$  of Section 5. We found the land to be fenced with a good and substantial barbed wire fence and we paced along the fence on the east edge of the entry in an effort to locate either the quarter corner or the section corner. We could not find any marked monuments but as the entry is fenced, there is an area of 15 or 20 acres in the NE $\frac{1}{4}$ NE $\frac{1}{4}$  of Section 5 that might be irrigated. Water appeared to have been run over some 10 or 15 acres of this forty but there was no evidence of any crop having been produced.

*check with agent*  
D.L.E. 05330, The Dalles, Joseph W. Howard Jr., involving NW $\frac{1}{4}$ NW $\frac{1}{4}$  Sec. 13, T. 14 S., R. 11 E. W.M., embracing 40 acres. This land is located under the lateral of the Black Butte Land & Live-stock Company and the SW $\frac{1}{4}$ NW $\frac{1}{4}$  of said Section 13 has an adjudicated right for 19.5 acres of the priority of 1904. The NW $\frac{1}{4}$ NW $\frac{1}{4}$  is not covered by either adjudication, permit or application therefor.

I visited this land on September 16, 1915 in company with the entryman who showed me the quarter corner on the west side of Section 13 as re-established by the County Surveyor. I found that there were ditches to convey water to the irrigable portion of the SW $\frac{1}{4}$ NW $\frac{1}{4}$  of Section 13 and that about 15 acres had been cultivated.

The entryman and Frank Chapman, one of his final proof witnesses, stated that four crops have been raised on this 15 acres.

The entryman was unable to get any water for this land in 1915 and has suffered from shortage of water in other years. The Black Butte Land & Livestock Company lateral crosses the NW $\frac{1}{4}$ NW $\frac{1}{4}$  of



Section 13 but this forty is too rocky to make its irrigation worth the cost of preparing the land. As before stated, there is no water right for the NW $\frac{1}{2}$ NW $\frac{1}{2}$  Section 13.

D.L.E. 06277, The Dalles, Albert Wurzweiller, involving SW $\frac{1}{2}$ NW $\frac{1}{2}$  and NW $\frac{1}{2}$ SW $\frac{1}{2}$  Sec. 6, T. 14 S., R. 12 E. W.M., embracing 80.12 acres. This land has an adjudicated water right of the priority of 1895 covering 10.5 acres in the SW $\frac{1}{2}$ NW $\frac{1}{2}$  and 16.5 acres in the NW $\frac{1}{2}$ SW $\frac{1}{2}$ .

On September 15, 1915 I examined this entry in the field in company with A. S. Holmes, one of the final proof witnesses, and George Brewster. I found ditches to all irrigable portions of the entry and that about 10 acres are now cultivated to clover on the south forty and 15 acres to grain on the north forty. Mr. Holmes stated that the land had been cultivated for four years and it bears evidence of having been cultivated for a considerable period. It is possible that an area slightly in excess of that covered by the adjudication might be irrigated, but the adjudication covers most of the irrigable land in the entry. Mr. Holmes stated that the entry had formerly been enclosed by a fence, traces of which I found, but at the present time the land is enclosed with other cultivated lands belonging to the Black Butte Land & Livestock Company, in which Mr. Wurzweiller is interested.

D.L.E. 06506, David P. Moffatt, The Dalles, involving N $\frac{1}{2}$ NE $\frac{1}{2}$ , NE $\frac{1}{2}$ NW $\frac{1}{2}$  and Lot 1, Sec. 30, T. 15 S., R. 11 E. W.M., embracing 158.10 acres. This land has an adjudicated water right of priority of 1895 covering 7 acres in the NE $\frac{1}{2}$ NE $\frac{1}{2}$ , 14.5 acres in the NW $\frac{1}{2}$ NE $\frac{1}{2}$ , 14 acres in the NW $\frac{1}{2}$ NW $\frac{1}{2}$  and 9.5 acres in the NE $\frac{1}{2}$ NW $\frac{1}{2}$ .

The entry was examined in the field on September 16, 1915, the northwest corner of Section 30 being shown me by the entryman.

Water is brought to the land through a lateral constructed by this entryman together with other users. I found 4 acres cultivated

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on the NW $\frac{1}{4}$ NW $\frac{1}{4}$  and 20 to 25 acres cultivated on the NE $\frac{1}{4}$ NE $\frac{1}{4}$ . This last cultivated area may extend a little on to the NW $\frac{1}{4}$ NE $\frac{1}{4}$  but not much. In the NE $\frac{1}{4}$ NW $\frac{1}{4}$  and NW $\frac{1}{4}$ NE $\frac{1}{4}$  there is a rocky knoll of perhaps 20 acres that is not irrigable. The remainder of the land is irrigable and ditches are so constructed that water might be conveyed to all the irrigable portions. Since the irrigable acreage amounts to approximately 138 acres while the adjudicated water right covers only 45 acres, this entry has an irrigable area of approximately 93 acres for which there is no water right.

The entryman states that he has lived on the land continuously for four years and claims to have about 30 acres of cultivation. He was residing on the land at the time of field examination. He has had crops for three years and has had water for the land in cultivation each year but suffered a little shortage in 1915 which was a year of exceptionally low water.

D.L.E. 08904, The Dalles, Max Wurzweiller, Assignee of Ralph L. Jordan, involving SW $\frac{1}{4}$ SE $\frac{1}{4}$  Sec. 30 and NW $\frac{1}{4}$ NE $\frac{1}{4}$  Sec. 31, T. 13 S., R. 12 E. W.M., embracing 80 acres. This land has an adjudicated water right of the priority of 1895 covering 14 acres in the SW $\frac{1}{4}$ SE $\frac{1}{4}$  of Sec. 30 and 7 acres in the NW $\frac{1}{4}$ NE $\frac{1}{4}$  of Sec. 31.

On September 15, 1915 I examined this land in the field in company with the assignee and A. S. Holmes and George Brewster. Mr. Holmes showed me rocks marking the southeast corner of the claim as established by the County Surveyor. I found that there are ditches to both forties covering their irrigable portions. These ditches lead from the lateral of the Black Butte Land & Livestock Company.

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The SW $\frac{1}{2}$ SE $\frac{1}{2}$  lies on a bench covered with juniper and loose, small rock. The NW $\frac{1}{2}$ NE $\frac{1}{2}$  is also somewhat broken by rock and the irrigable area of either forty will be determined by the extent to which rock can be profitably removed for the purpose of putting the land into cultivation. It is difficult to state a definite irrigable acreage under these circumstances but it is not probable that it would be possible to irrigate much more land than that for which a water right has been adjudicated even if water were available.

*Adm*  
D.L.E. 09423, The Dalles, Walter H. May, involving S $\frac{1}{2}$ NE $\frac{1}{2}$ , SW $\frac{1}{2}$ NW $\frac{1}{2}$  and Lot 2, Sec. 30, T. 15 S., R. 11 E. W.M. This land has an adjudicated water right of the priority of 1904 covering 33.5 acres in the SW $\frac{1}{2}$ NW $\frac{1}{2}$ , 35 acres in the SE $\frac{1}{2}$ NW $\frac{1}{2}$  and 13 acres in the SW $\frac{1}{2}$ NE $\frac{1}{2}$ .

In company with Mr. George H. Brewster, I examined this land in the field on September 16, 1915. The SE $\frac{1}{2}$ NE $\frac{1}{2}$  of this entry is crossed by an old ditch which formerly brought water from Snow Creek but which is now in disuse. There is no clearing or cultivation on this forty and there are no ditches connecting with the Squaw Creek Irrigation Company's ditch, though water might be had from the main ditch on the Moffatt claim, Serial 06506, The Dalles. The SW $\frac{1}{2}$ NE $\frac{1}{2}$  has a slashing covering 8 or 10 acres and some small ditches ~~leading from the Squaw Creek ditch~~ which have not carried water for a long time. In the S $\frac{1}{2}$ NW $\frac{1}{2}$  approximately 50 acres have been cultivated and appear to have received water at times. Mr. Brewster, who had charge of the distribution of the water in 1915, stated that some water had been delivered shortly before our examination but this delivery was possible only because other users had finished irrigating. Practically the entire area of this entry

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is irrigable but the adjudicated rights cover only 81.5 acres. The place is fenced with barbed wire and David P. Moffatt, the next neighbor, stated that the entryman had lived on the land in the winter for three years, while Mr. Brewster thought he had lived there four years. Mr. Brewster states that a good crop was raised on this land in 1913, there being plenty of water. There was less water and a poorer crop in 1914, and no crop and practically no water in 1915.

The entries described in the foregoing pages comprise all of those known to depend upon the Squaw Creek Irrigation Company or other companies obtaining their water from Squaw Creek on which no report has been submitted.

From their location it is assumed that the following entries must propose to obtain their water supply from Squaw Creek or its tributaries.

D.L.E. 06035, The Dalles, Martha A. Chapman, involving  $S\frac{1}{2}NW\frac{1}{4}$  and  $SW\frac{1}{4}NE\frac{1}{4}$  Sec. 9, T. 14 S., R. 12 E. W.M.

This entryman filed Application No. 2533 in the office of the State Engineer covering a proposed diversion from Squaw Creek. The application did not describe the land proposed to be irrigated and now stands cancelled of record.

D.L.E. 07322, The Dalles, Phillip S. Young, involving  $NW\frac{1}{4}SE\frac{1}{4}$  and Lots 1 and 2, Sec. 2, T. 16 S., R. 10 E. E.M., embracing 56.14 acres.

D.L.E. 08276, The Dalles, Leda A. South, involving  $NW\frac{1}{4}$  <sup>NW $\frac{1}{4}$</sup>  Sec. 12,  $S\frac{1}{2}SW\frac{1}{4}$  and  $NW\frac{1}{4}SW\frac{1}{4}$  Sec. 1, T. 13 S., R. 11 E. W.M., embracing 160 acres.

D.L.E. 011345, The Dalles, Florence Dietrich, Assignee of John C. Smith, involving  $N\frac{1}{2}NE\frac{1}{4}$  Sec. 24, T. 14 S., R. 11 E. W.M.

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D.L.E. 011713, The Dalles, George W. Brown, involving NW $\frac{1}{4}$ NE $\frac{1}{4}$  Sec. 27, T. 14 S., R. 11 E. W.M.

D.L.E. 091112, The Dalles, Robinson H. Bayley, involving E $\frac{1}{2}$ NW $\frac{1}{4}$  and W $\frac{1}{2}$ NE $\frac{1}{4}$  Sec. 34, T. 15 S., R. 11 E. W.M.

D.L.E. 012400, The Dalles, Harvey E. Vincent, involving SE $\frac{1}{2}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$  Sec. 21 and S $\frac{1}{2}$ NW $\frac{1}{4}$  Sec. 22, T. 14 S., R. 11 E. W.M.

D.L.E. 012466, Glenn S. Kearney, Assignee of Lorenzo J. Dawley, involving N $\frac{1}{2}$ SW $\frac{1}{4}$  Sec. 1, and N $\frac{1}{2}$ SE $\frac{1}{4}$  Sec. 2, T. 15 S., R. 11 E. W.M.

D.L.E. 012530, The Dalles, Edith A. Jaeger, involving NE $\frac{1}{2}$ SW $\frac{1}{4}$  Sec. 20, T. 14 S., R. 12 E. W.M.

D.L.E. 012557, The Dalles, Lytton V. Tennant, involving SE $\frac{1}{2}$ SE $\frac{1}{4}$  Sec. 33, T. 14 S., R. 12 E. W.M., and N $\frac{1}{2}$ NE $\frac{1}{4}$  and SW $\frac{1}{4}$ NE $\frac{1}{4}$  Sec. 4, T. 15 S., R. 12 E. W.M., embracing 159.05 acres.

D.L.E. 012566, The Dalles, Florence E. Woods, involving S $\frac{1}{2}$ SW $\frac{1}{4}$  Sec. 2, and N $\frac{1}{2}$ NW $\frac{1}{4}$  Sec. 11, T. 15 S., R. 11 E. W.M.

These last described entries have no adjudicated water rights and the records of the State Engineer's office show no applications or permits for the diversion of the waters of Squaw Creek for their irrigation.

The desert land entry of Mabel Rice, Serial 011234, The Dalles, involving E $\frac{1}{2}$ SW $\frac{1}{4}$  and W $\frac{1}{2}$ SE $\frac{1}{4}$  Sec. 29, T. 13 S., R. 12 E. W.M. was covered by Application No. 3952 for permit to divert the waters of Squaw Creek. This application was cancelled of record October 26, 1914.

The desert land entry of Perry A. South, Serial 08278, The Dalles, involving SW $\frac{1}{4}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ NW $\frac{1}{4}$  Sec. 12, and SE $\frac{1}{2}$ NE $\frac{1}{4}$  Sec. 11, T. 13 S., R. 11 E. W.M., is covered by Permit No. 1535, having a priority of August 13, 1912. This permit is for the use of the flood waters of Potter Canyon and all its tributaries, Graham Canyon and all its tributaries, and Squaw Flat Canyon and all its trib-

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utaries, including all springs and the flood waters of six specifically described sections of land. The permit limits the use to 1.9 second feet of these flood waters and the land to be irrigated is described as 12 acres in the SW $\frac{1}{2}$ NE $\frac{1}{2}$  and 24 acres in the S $\frac{1}{2}$ NW $\frac{1}{2}$  Sec. 12, and 30 acres in the SE $\frac{1}{2}$ NE $\frac{1}{2}$  Sec. 11. These canyons are tributary to Squaw Creek at a point so near its mouth that the flood waters may actually be available for the use of this entryman. The entryman now has an extension of time running until March 7, 1916 for the making of final proof. The entry should not be allowed to pass to patent without an examination to determine the sufficiency of the water supply.

The examination of entries in the field did not cover any of the entries except those specifically reported. The reason for this is that I had not checked up the land office records as to the entire Squaw Creek basin at the time I was making field examination and I was not aware of the existence of any entries except those examined at the time I was on the Squaw Creek project.

The foregoing report shows that the Squaw Creek Irrigation Company has a project which is constructed and in actual operation and that it has adjudicated water rights of various priorities. The water rights having priority of 1895 or earlier are good and water can be delivered to the lands possessing these rights. There will be a supply for lands of later priority in two months of the irrigation season, but in the average year the priorities subsequent to 1903 can receive no water at all. In view of the fact that the 1895 priorities are the latest that can receive a continuous supply throughout the irrigation season under the terms and conditions fixed by the decrees of adjudication, it is my opinion that lands under priorities subsequent to 1895 cannot be regarded as

having a water right sufficient to accomplish their reclamation.  
Lands of the priority of 1895, or earlier priority, have a water  
right sufficient for their reclamation.

Very respectfully,

*W. B. Burt*  
Special Agent G.L.O.

APPROVED:

*Louis E. Shary*  
Chief of Field Division.

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