

## KAWISHIWI RIVER NEAR WINTON.

*Location.*—At the logging dam at the outlet of Garden lake in section 20, township 62 N., range 11 W., about 3 miles east of Winton, Minnesota.

*Records Available.*—June 21, 1905, to June 30, 1907 These records are furnished through the courtesy of the Minnesota Canal and Power Company, by whom they were compiled.

*Records from October 14, 1912, to December 31, 1914, were secured by the International Joint Commission co-operating with the United States Geological Survey.*

*Drainage Area.*—1,200 square miles.

*Gauge.*—Vertical staff, read at 8 a.m. and 5 p.m.; the mean is taken as the mean for the day.

*Method of Compiling Records.*—Obtained by recording the flow through the five sluiceways of the logging dam, which were closed by Taintor gates. The coefficient for each sluiceway was obtained by current-meter.

*Regulation.*—The flow at Garden lake outlet is almost wholly controlled by logging reservoirs, and the daily records do not represent the natural variation in run-off.

*References.*—Report of Water Resources investigations of Minnesota 1909-1912 by the State Drainage Commissions, and the Report to the International Joint Commission, by Arthur V. White and Adolph F. Meyer, Consulting Engineers, 1915.

Table 100.A.—Discharge Measurements of Kawishiwi River near Winton, Minn.

[Drainage Area, 1,200 square miles.]

Date.	Hydrographer.	Width.	Area of Section.	Mean Velocity.	Gauge Height.	Discharge.
		Feet.	Sq. ft.	Ft. per sec.	Feet.	Sec.-ft.
1912.						
Oct. 13	Soulé	77	417	1.96	2.31	818 <sup>1</sup>
" 11	"	75	260	0.42	0.72	109 <sup>2</sup>
" 14	"	120	520	3.40	3.69	1,770 <sup>3</sup>
" 15	"	150	674	4.27	4.98	2,880 <sup>4</sup>
1913.						
April 29	Soulé	102	515	3.30	3.63	1,700
" 30	"	72	229	0.45	0.62	81
Sept. 12	Peterson	76	274	0.60	0.49	163
" 13	"	77	404	2.00	2.32	810
1914.						
May 22	Soulé	150	609	3.48	4.21	2,120 <sup>5</sup>

<sup>1</sup> One 12-foot gate in Garden Lake dam open.

<sup>2</sup> Gates closed. Represents leakage.

<sup>3</sup> One 12-foot and one 16-foot gate open.

<sup>4</sup> One 12-foot, one 16 foot, and one 20-foot gate open.

<sup>5</sup> Gauge checked with level and found correct.