Beauharnois Sterilizing Plant.

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WATER POWERS IN THE PORCUPINE AREA.*

The value of water powers has increased greatly in recent years owing to the introduction of electricity and long distance transmission of electrical energy. To-day practically all water power developments may be classed as hydro-electric. Hence it is easy to see the great possibilities afforded by Ontario's hinterland, which abounds in water powers.

It is the intention in this article to refer only to those water powers within easy radius of the Porcupine gold area. The importance of such water powers in close proximity to a mining camp does not call for further comment.

Grassy Falls.

On the Grassy river at the boundary line between the townships of Price and Fripp there is a series of falls and rapids, somewhat in the shape of a horseshoe, with a total descent of 106 feet. A flume and pipe line cutting across the horseshoe would be one-half mile in length. At low water stages, without storage, the river will have a flow of about 100 cubic feet per second. This is equivalent to 1,000 horse power.

Waiwatin Falls.

This falls is situated on the Mattagami river in the northeast part of the township of Thorneloe. Like the water power on the Grassy river, this is a series of talls and rapids and of similar shape. For development purposes a



Part of Waiwatin Falls on Mattagami River.

flume and pipe line about 70 chains long will be required. The total fall under natural head is 116 feet, and the flow 400 cubic feet per second, at low stages, giving about 4,000 horse power. The drainage area at this point on the river is approximately 1,200 square miles.

*From Annual Report of Bureau of Mines, Ontario, for 1911.

Surveys and plans for this development have been completed, although no machinery is on the ground. The transmission line has been located on sand plains and jack pine ridges for almost the entire distance, with the object of constructing either a wagon road or electric railway. The dam required can be easily constructed. E. A. Wallberg has leased this water power and under the conditions must develop 4,000 horse power of electrical energy by September, 1912. The transmission line to the Hollinger mine is eleven and one-half miles in length.

Sandy Falls.

Sandy Falls is located on the Mattagami river in concessions IV. and V., Mountjoy. This water power consists of a series of three falls with intervening rapids and swift water. The upper part has been leased to the Porcupine Power Company, while the lower part is under lease to other parties. Under natural conditions the total descent is 44 feet.

Active development work by the Porcupine Power Company has been carried on during the past winter, and the company expects to supply electrical energy by early summer. Two electrical units of 1,500 horse power each are being installed. The transmission line from the power house to the Hollinger mine is six miles in length. The right-ofway, 132 feet in width, has been cleared of timber and a pole line erected.

At Sandy Falls the natural head has been increased by a dam which will eliminate all current from the river as far upstream as Timmins Landing, or the mouth of Mountjoy creek. This will allow the power plant to operate under an effective head of 34 feet. Although the available head here is much less than at Waiwatin the volume of water is greater. The drainage area of the Mattagami river at Sandy falls has been increased to about 2,500 square miles by the additional territory supplying tributary feeders, namely, Mountjoy creek and the Grassy and Redsucker rivers. Thus without storage, a flow variously estimated from 800 to 1,400 cubic feet per second will be obtained at low water stages. Lakes near the head waters of the Mattagami can be dammed, thereby retaining flood waters to increase the flow at low stage periods. Experience has shown that many of the rivers of northern Ontario have an average flood discharge of about twenty times the low water flow.

MANUFACTURING CONCRETE PILES.

The following costs of manufacturing concrete piles are taken from the Canal Record for August 9th, 1911.

Items.	Atlantic	Division	
April.	May.	June.	Total.
Quantities-lineal feet. 10,002	5,904	5,760	21,666
Cement \$0.1024	\$0.0828	\$0.0760	\$0.0900
Stone	.1176	.1145	.0971
Sand	.0255	.0080	.0173
Mixing	.1157	.0512	.0617
Placing0334	.0711	.0323	.0434
Reinforcements8584	.7276	.6346	.7734
Forms	.0344	.0786	.0729
Maintenance of equip-			
ment0053	.0054	.0114	.0069
Plant arbitrary1794	.1700	.1700	.1743
Division expense0114	.0170	.0210	.0155
-			
total cost STATT	SI 2071	ST 1076	ST 2525