

Fig. 1.—South Half of Dam at Eugenia Falls, as it Appeared on September 15th, 1914.

dumped into the hopper of a screening and washing plant, consisting of two revolving conical screens of $\frac{3}{8}$ -inch and 3-inch diameter holes respectively with automatic sand hopper of the Gilbert type. The product of this plant was hauled over the dam and gravel and sand bins on an inclined trestle by a small hoisting engine, and was either dumped directly into the bins or into storage piles immediately adjacent. By operating this plant day and night, the entire amount of sand and gravel required was furnished by about the last of October, and the derrick was then transferred to the storage piles for loading the bins, the difficulties due to operating a washing plant in freezing weather being thus avoided.

Steam power for operating the above plant, with the exception of the shovel and derrick, was furnished from two 40 and one 50-h.p. boilers of locomotive type, and the water for the sand and gravel washing was furnished by a 4-inch pulsometer assisted by a $2\frac{1}{2}$ -inch duplex boiler feed pump, another pulsometer also being used for unwatering the river section. For night work a small motor-generator driven by a steam engine furnished electric power for arc lights suspended from a cable attached to the cableway towers and spanning between them.

A small machine shop and carpenter shop were established immediately at the start of the work, the former being equipped with the usual blacksmith outfit, bolt machine, drill, pipe threader and cutter, and hand-lever shear for cutting reinforcing steel. The carpenter shop was equipped with band saw and air augers, driven by locomotive compressor of the Westinghouse type.

Fig. 1 shows the south half of the dam as it appeared on September 15th. At the left are seen the mixing plant and storage piles of gravel and sand. On the opposite side can be seen the screening and washing plant with derrick for loading. It will be noted that the mixing plant is approximately at the centre of the dam, thus cutting down the transportation of concrete by the cableway to a minimum.

With this general summary of the plant employed, it may be of interest to describe briefly its operation, and results obtained.

The shovel easily stripped ahead of the rock excavation and concrete work, and was afterwards employed in feeding the orange peel with gravel, thus saving the time and cost of moving this plant when the adjacent supply of gravel had been exhausted. It was also used for making the earth embankments at both ends of the dam.

The cut-off trench was carried on night and day, as it was much deeper than was anticipated, on account of the seamy nature of the rock, and the concrete plant was delayed somewhat in starting on this account. This trench had to be drilled and blasted with the greatest care to avoid disturbing the seamy rock as much as possible, and was the most difficult factor to contend with, with regard to both cost and time during the carrying out of the work. It was with great difficulty that rock excavation was kept from continually delaying the form and concrete work.

The form work was carried on in two shifts, one being of twelve hours, to take advantage of as much day-

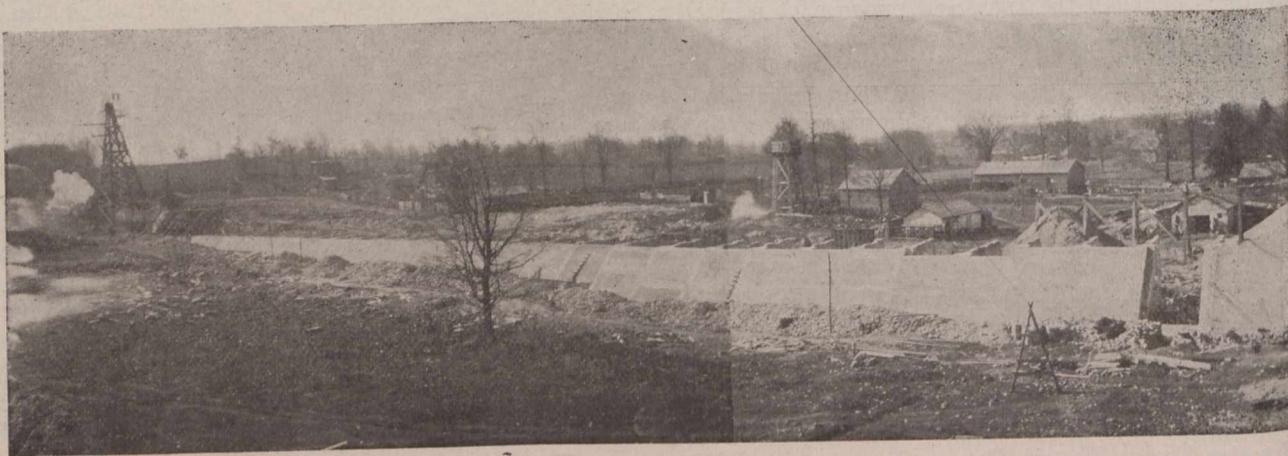


Fig. 2.—Dam and Cableway on October