

0715-10 miner's in., which was not sufficient to warrant the opening of the mine for regular mining operations. The small quantity of water available was, however, used to face up the bank so as to afford Mr. Charles Hoffman, the expert for Mr. John Hays Hammond, an opportunity to test the gold value of the deposits of the upper bench from the floor of the excavation to the surface.

"When the canals were opened and sufficient water accumulated in the pooling reservoirs, the water was used at intervals of a few hours each to clear the cuts and sluices of the ice that accumulated therein during the winter months. This work commenced on April 20 and was completed on May 11. During the progress of the work, including 74 hours' washing, 8,275 miner's in. of water were used.

"Washing to remove the talus and to face up the bank commenced on May 12, and continued for a period of 354 hours, equal to 14 days and 18 hours washing. During the progress of the work 36,796 85-100 miner's in. of water were used to wash out 183,984 cu. yd. of top gravel and volcanic-mud capping, from which was recovered 1,268 7-10 oz. of gold valued at \$21,733.47—an average yield of 11 81-100 cents per cu. yd. The duty attained for the water used was about five cu. yd. per miner's in. per 24 hours.

"Summary of Season's Prospecting Work.—Total time occupied in washing top gravel, 354 hours or 14 days, 18 hours. Total quantity of water used washing gravel, 36,796 85-100 miner's in. Total quantity of top deposits washed, 183,984 cu. yd. Average duty of water per miner's in., washing gravel, 5 cu. yd. Average yield per cu. yd. washed, 11 81-100 cents. Average yield per 2,500 miner's in. of water used 24 hours, \$1,473.45. Gold product for season, 1,268 7-10 oz. Value of gold, \$21,733.47. Value of gold recovered since 1894, \$1,212,203.04. Total value of gold recovered from June 1, 1894, to June 22, 1905, \$1,233,936.51.

"Development Work.—At the close of the previous season—September 4, 1904—it was decided to continue work in the sluice tunnel, advance the sluice

good condition for continuous water delivery and economical maintenance, the expenditures for which (including that for leasehold rents, fire insurance and winter caretaking) is annexed hereto.

"Water Supply.—The precipitation for the season commencing at close of mining operations on September 4, 1904, and ending June 22, 1905, turned out the lowest recorded for the district since the phenomenally dry seasons of 1864 and 1887. Precipitation for season 1904, 24 39-100 in. Precipitation for season 1905 (rainfall, 7 4-100 in.; total for snowfall, 6 75-100 in.—total for season, 13 79-100 in. Season 1905 precipitation less than that of 1904 by 10 60-100 in. Quantity of water available and used during season 1904, 225,198 miner's in. Quantity of water available and used during season 1905, 45,052 miner's in. Season 1905 water supply less than that of season 1904 by 180,146 miner's in. The rain precipitation occurred in such light showers that only on three occasions, viz.: October 20, 1906, 60-100 in.; May 11, 1905, 68-100 in., and May 20, 1905, 75-100 in., did it prove sufficient to contribute any water to the reservoir lakes.

"The snowfall, which averaged 67 5-100 in. on the watershed, tributary to the reservoir lakes, went off too slowly under the influence of moderately warm days, accompanied by northerly winds and temperatures falling under freezing point at night—bad weather conditions for a water supply, and accounting for the unusually small percentage of the snow precipitation that was contributed to the reservoir lakes.

"Careful gaugings of the water supply flowing from Spanish Lake, from November 15, 1904, to date, indicate that the watershed tributary to that lake is capable, even with the light precipitation recorded for the past season, of affording ample water to keep the mine in continuous operation throughout the open season; and the company's water system should be extended with all possible haste to that source of abundant and permanent water supply.

"Product of Mine.—The following table shows the product of mine since completion of water supply system in 1898, compared with precipitation:

Year.	Precipitation in In.	Water used in Miner's In.	Time Run.	Cu. yd. Gravel Washed.	Product.
1899	28 65-100	353,056	144 days, 8 hours	1,952,535	\$ 92,678.93
1900	30 67-100	460,878	171 days, 13 hours	1,843,928	350,085.77
1901	20 30-100	258,250	104 days, 13 hours	2,420,288	142,273.41
1902	23 40-100	179,520	65 days, 15 hours	690,442	61,395.19
1903	17 48-100	127,083	53 days, 7 hours	373,000	44,943.70
1904	24 39-100	225,198	88 days, 16 hours	1,461,341	85,936.30
1905	13 79-100	45,052	14 days, 18 hours	183,984	21,733.47

cuts and sluices, re-lay and repair the hydraulic pipe lines, prepare ground and set guy bolts at intervals along the rims required for setting up derricks and hydraulic elevator, reconstruct the jetties at Polley's Lake reservoir, repair and replace rotten timbers in dams, flumes and trestles and other wooden structures on line of canals, clear out canals of gravel and shingle that accumulated therein since construction, and do all other work required to place the water system in

"Sluice Tunnel.—The 10 by 10 ft. sluice tunnel was advanced 679 ft., at a cost of \$16.34 per ft., making the total length of face 930 ft., and leaving 300 ft. of tunnel and 60 ft. of uprise to complete the new opening into the hydraulic excavation, the floor of which is now about 75 ft. above the bed-rock of the channel. During the months of May and June several dykes of extremely hard rock were encountered, which interfered with the progress of the work and