

The full effective duty of the water cannot be attained until the working pits are enlarged to dimensions sufficient to accommodate a proper system of branch sluices, and more room is still required to permit the heavy hydraulic plant to be placed and handled with economy and safety to plant and men.

The greater portion of the expenditure in the mine included under the head of "Operating" has been applied to opening pit No. 2, with the object of so enlarging the working space that the above conditions may be speedily attained, and the continuous working of the mine, day and night, with rapid removal of auriferous gravel may be carried on with safety and despatch.

The duty of the water and the resulting gold product will increase with the further opening of the mine.

The estimated gross product for the season of 1896 is	\$300,000.00
The estimated cost of operating the mine for a period of 180 days during season 1896 is	87,000.00
(The estimated possible number of working days with water, 150)	
Leaving a net estimated profit for season of 1896, say	<u>\$213,000.00</u>

When the present working hydraulic pits at Dancing Bill gulch are sufficiently enlarged, and the lower or bed-rock bench of high grade gravel opened up for working, so as to accommodate the continuous use of the present water supply, and facilitate the rapid removal of the auriferous gravel, the product will be increased and the following result attained:—

2,000 miners' inches of water will remove in 24 hours, cubic yards of gravel	7,000
Value of gold per cubic yard	50 cents
Estimated daily gross product	\$ 3,500.00
Deduct daily cost of mining	500.00
Estimated daily net profit	\$ 3,000.00
Possible working days per season	180
Estimated annual net profit	<u>\$540,000.00</u>

This result can be doubled, when desired, by completing the construction of the ditch to Morehead creek, which will add two thousand miners inches to the company's water supply, which can be used in the operation of the working hydraulic pits at Black Jack gulch on the South Fork mine.

Water Supply—The water supply upon which the mining operations for the ensuing year must depend, will be derived from two sources, namely:—1st. The early rain and snow-water supply from tributary streams to the main ditch, which supply has been augmented over that of previous years by the construction of a relief ditch for fresher waters of Dancing Bill gulch, which are now diverted into our mine reservoir, placing such water under control for utilization at the mine, and by the additional tributary feeders cut by the nine miles of main ditch constructed last summer. 2nd. The two storage reservoir lakes, known as the Polleys lake and Boot Jack lake, situate at the head of main ditch.

The early supply is difficult to estimate with exactitude, so much depending upon the vicissitudes of a variable climate, where snow fall, rain and temperature materially influence the flow of the tributary streams, that figures made in advance can hardly be depended upon with certainty.

But it is hoped and expected that sufficient water will be obtained to carry on mining operations up to July 1st without drawing upon the reservoirs at the lakes. In seasons of ordinary precipitation this will certainly be the case. In extra dry seasons the reservoirs will probably have to be tapped before that time, and in wet seasons they will not be opened until later.

The reservoirs can be utilized to the following depths of water:— Polleys lake, 8 feet; Boot Jack lake, 5 feet. Their storage area is not known, but the use of the water this season has given data as follows:

The lakes delivered (measured at the mine) 2,000 miners' inches of water for a period of 46 days time, reducing their level 66 inches, or an equivalent of 1,148 inches reduction in depth per day, for such 2,000 inch supply.

The lakes can therefore be counted upon to furnish, without aid after July 1st, on the same basis as above, 108 days continuous water of 2,000 inches volume, or 72 days water of 3,000 inches volume.

In the first case certainly, ample water for balance of season, and in second instance probably sufficient to supply 3,000 inches for all available mining time during the balance of season.

Consolidation of ditch banks and siltage of ditch with ensuing years, will tend to increase above figures, and each and every summer shower of rain will add materially to available water.

The company is now assured of a water supply, that under most unfavorable circumstances can only compel a certain degree of economy in its use.

The Ditch System—The water is delivered and utilized through a system of ditches, 17½ miles in length.

The water of Polleys lake is controlled by a double screw gate, each three feet ten inches wide, in a deep cut tapping this lake 8 feet below the high water mark. The water discharged therefrom is conducted into the original channel of Six Mile creek, by a cut 8 feet deep and ½ mile long.

Boot Jack lake has its outlet closed by a crib dam, sheeted with split cedar and covered with earth 7 feet high, and having a double screw gate, each three feet six inches wide, discharging the water into the original creek, which channel it follows about 2½ miles, and finds its way into Six Mile creek, near the outlet of the Polleys lake cut.

One quarter of a mile below this confluence, Six Mile creek is closed by a crib dam, 7 feet high and 100 feet long, (sheeted with cedar and covered with earth) provided with a 19 foot gate, closed in time of use by 3 gates, one of which is manipulated by a screw.

This dam raises the water in Six Mile creek about 5 feet into the head of main ditch, where it enters ditch through another double screw gate, each 3½ feet wide.

The water then flows through 16 miles of ditch to South Fork reservoir.

The first 9 miles to Hazeltime creek is through ditch constructed the past summer, and is a ditch 13 ft. 7 in. x 3 ft. deep and on 5 ft. grade per mile, capable of carrying 3,000 miners' inches when banks slightly more consolidated. It is well built, on even grade and shows but little erosion, has no flumes, is supplied with 12 waste gates, and will be easily maintained at a nominal cost. It picks up the waters of numerous creeks of considerable volume during spring months and at time of summer rains.

The next 7 miles is through the old South Fork ditch, widened and repaired to a capacity equal to the newer ditch of the season. This section has the disadvantage of a broken grade, forced upon this company by the faults of the old South Forks Company's construction.

The weak points have been strengthened by walls of rock and by flumes, and erosion retarded in many places by rock and timber walls, but this portion of the ditch,

will, for some time to come, be saddled by more expenditure in maintenance than the upper section; by reason of its original faulty construction.

After the water passes into reservoir, it flows one mile to the sand-box at the head of hydraulic pipe through old ditch previously reported.

The ditch from Dancing Bill gulch, constructed this summer, takes up the water of that creek above the mine, carries it one mile around the hills, and drops it into South Fork reservoir. This not only permits the control and use of fresher water, but was absolutely necessary for the purpose of keeping the fresher out of the hydraulic pits, through which the original stream flowed in a deep and rugged gulch.

About ½ mile above South Fork reservoir the water of the main ditch is dropped vertically 53 feet. This drop should not have been made by the South Fork company, and it is only a question of time, the sooner the better, when a ditch will have to be extended at this higher level of the mine, a distance of 2½ miles as the ditch would run.

Condition of the Mine—The opening of two working hydraulic pits has been commenced.

Pit No. 1 includes the old excavation in the Choo Fan or Bullhorn ease, lying east of Dancing Bill gulch.

Pit No. 2 is being opened into the "Loo Qng Ching Tong" ground, lying west of Dancing Bill gulch.

The working floor of both pits lies from 50 feet to 80 feet above the bedrock or bottom channel.

Both pits have been operated by one 22 inch supply pipe and distributor. Two Giants have been used in pit No. 1, and one Giant in pit No. 2.

The main and branch sluices placed in pit No. 1 are 5 ft. wide, 3 ft. deep, and 526 feet in length. Those in pit No. 2 are 6 ft. wide, 3 feet deep and 364 feet in length.

In Dancing Bill gulch, immediately below the sluice outlet of pit No. 2, there is placed a section of 3 ft. x 8 ft. flume, 32 feet long.

At the lower end of gulch there is placed a line of sluices, 3 ft. x 6 ft. and 222 feet in length.

The gravel underlying the boulder clay in pit No. 1 is very free and yields readily to the force of the hydraulic streams, and contains a large percentage of boulders and heavy cobbles, but it is extremely rich.

The boulder clay is apparently decreasing in thickness, and is evidently a slide and local, instead of forming a continuous capping as at first supposed.

The gravel encountered in opening pit No. 2, was mainly slide material, but the stratified gravel is now exposed around the south and west sides of the excavation. The gravel has gradually improved as the workings advanced and better results may be expected from the next season's work in this pit. The pay gravel is overlaid by a stratum of sand and a deposit of low grade top gravel. No boulder clay has been encountered in these workings.

The rock, which is apparently the west rim of the channel, has been exposed on the west side of the excavation in pit No. 2.

The bottom bench of gravel underlying the workings in both pits, is of high grade. Two strata, exposed by a slide on west side of Dancing Bill gulch, give prospects varying from \$1 to \$3 per cubic yard.

No openings have been made to test bedrock.

The workings of the lower bench cannot be attempted until such time as the workings now in progress in the top bench have been carried up the channel about 300 feet from the face of the present workings in pit No. 1.

Pit No. 2 is now in condition to accommodate a separate hydraulic plant of 22 inch pipe. This must be provided so that each pit can be operated independently of the other, and the opportunity afforded for the continuous use of the company's water supply.

With the additional plant referred to, the mine will be in fairly good shape for the use of next season's water supply. The high grade of the deposits makes it appear reasonable to predict a most successful and profitable run for the season of 1896.

The estimates for the additional plant, &c., &c., necessary to facilitate the continuous and profitable operation of the mine during the season of 1896, amount to about \$10,000, and the estimated cost of extension of main ditch from drop above South Fork reservoir, around head of reservoir of Dancing Bill gulch, with repairs to dam at South Fork reservoir, will be about \$16,000.

The extension of this ditch will be required to facilitate the operation of the mine during the season of 1897, for the reason that the present ditch from South Fork reservoir will be too low for use in working top bench, and must be applied to the working of the lower bench of the bottom gravel, while the hydraulic plant applied to the working of the upper bench must be supplied with water from the main ditch extension, which will deliver the water at a point on Dancing Bill gulch, about 60 feet above point of delivery of the present lower ditch from South Fork reservoir.

(Sgd.) J. B. HOBSON

Manager.

CAPITAL ACCOUNT.

Receipts.

Paid up capital stock, 60,000 shares at \$5 each	\$300,000 00
Gold taken out in 1894	5,161 85
Balance carried to Profit and Loss Account	118,760 98

\$423,922 83

Expenditure.

Mine purchases and leases	\$180,704 10
Moorehead ditch survey	534 38
Ditches and equipment of mine	163,258 70
Dams, sluices, flumes, sand-boxes, etc.	11,324 33
Reservoirs	10,063 98
Mine labor, etc.	24,901 00
Buildings	5,182 73
Hydraulic plant	3,753 99
Melting and lighting plant	44 78
Saw mill	2,465 25
Roads and trails	3,688 50
Pasture lands	1,001 05
Horses and wagons	2,531 67
Transportation	2,485 96
Furniture	553 70
Operating	3,171 57
Management	2,500 00
Head office and general expenses to March, 1895	5,757 14

\$423,922 83.