PLACER GOLD MINING ON THE HORSEFLY RIVER

Small-scale mining of placer gold deposits in the Horsefly River began in the 1860's, but large-scale development did not get under way until near the end of the century. Activity was centred in three locations - Hobson's Horsefly Mine, Ward's Horsefly Mine and the Miocene Shaft.

Hobson's Horsefly Mine

The Horsefly Hydraulic Mining Company owned and operated Hobson's Horsefly Mine, which was located on the western shore of the Horsefly River, about 5 miles south of Quesnel Lake. Auriferous gravel bars were first discovered here in 1890, and were worked on a small scale until 1892, at which time the property was taken over by J. B. Hobson of the Horsefly Hydraulic Mining Company.

The river bars are part of a broad gravel horizon which is exposed along the south bank of the river and extends far to the south, directly overlying the bedrock, and is itself overlain by 10 to 15 feet of ordinary boulder clay. The bedrock is Tertiary in age and consists mainly of soft shales, clays and sandstones which dip gradually south from the Horsefly River.

The gravel is composed of well-worn, barren, milky-white quartz with minor igneous, volcanic and sedimentary rock fragments. It has a yellowish colour near the top and is bluer at the base. The entire gravel horizon, as well as the upper few inches of the shaley bedrock is auriferous, but in the upper portions, the gold is very fine, and the best values were encountered in a stratum of 'blue gravel' near the base. The blue gravel horizon is 2 to 8 feet thick and is overlain by a marker horizon of barren fine sand and gravel.

For the first few years, the deposit was worked successfully as a hydraulic pit. The gravel broke very easily and by 1896 the pit was 800 feet wide, with a wall of gravel 100 to 150 feet high on the south side. However, as the operation continued to move south from the river, a barren band of lime cement, 2 to 10 feet thick, was encountered overlying the blue gravel.

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This posed an enormous difficulty because the gravel was so tightly cemented that even after breaking through with powder blasts, the chunks could not be further broken down by hydraulicking.

So, in 1897, experimental drift mining was commenced. A tunnel was dug south from the river bank, through the bedrock, with chutes raised up from it into the gravel. This gravel assayed about 0.15 oz/ton ($4.85/ton and $5.56/ton, at $35/oz), but the gold values were very spotty, so that portions would have to be selectively mined. The increased mining costs that this entailed proved to be too much, and all operations ceased in 1899.

Ward's Horsefly Mine

The gold-rich gravel bar, called Harper's Bar, which led to the development of both Ward's Horsefly and the Miocene shaft was discovered in the Horsefly River, 5 miles upstream of the Hobson Mine.

The gold occurred in yellow gravel in the Horsefly River, but shafts sunk in the vicinity encountered a dull bluish grey gravel lying on a steeply pitching rim-rock. Good values were nearly always obtained along and near this rim-rock, which was dipping at an angle of 30^{o} to 35^{o}. The original discovery point was on a ridge, from which the bedrock dips away to the east, south and west.

The gravel was composed of well-worn flattened quartz pebbles with minor slate, basalt and porphyry, very similar to the gravel found at the Hobson Mine. The bedrock also was very similar. Gold values were spotty throughout the gravel. The grains were uniformly fine, flat and well-worn.

Since the ground north and south of Harper's Bar is barren, it was believed that the Horsefly River was here cutting through an ancient east-west-running gravel channel. It was postulated that a modern river, occupying more or less the same path as the presentday Horsefly River, was flowing from the south. The blue gravel deposited by this river contained minor gold, but at the location marked by Harper's Bar, it cut through the ancient channel, which had a high rim-rock on the north side. This prevented a free flow of gold down the stream. Although gold was distributed throughout the blue gravel, then, the only place where it was concentrated sufficiently was where the river cut the ancient channel.

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This property was worked fairly successfully until 1913, by which time the rich streak had been exhausted, and work was abandoned.

Miocene Shaft

With the assumption that the ancient channel ran east-west, the Miocene Gravel Mining Company sunk 2 shafts to the west of Harper's Bar to explore the extent of the channel.

The first exploratory shaft, 1000 feet to the west, was sunk in 1897 and encountered steeply-dipping bedrock at 275 feet. Two years later, the second shaft was sunk 1000 feet to the southwest. After 100 feet of blue clay, a free, uniform quartz gravel was encountered which contained small amounts of very fine gold. Bedrock, identical to that at Ward's and Hobson was encountered at a depth of 500 feet, and was found to be dipping west at an angle of 15°. The gravel was quite different from that at the other two mines. It was much lighter in colour and was composed almost entirely of well-rounded white quartz pebbles but contained no slate or basalt.

In 1900, a drift was constructed west from the shaft with upraises into the gravel. However, the shaft and drift were flooded by water and gravel that same year and, apparently, not enough money was available to pump out the works. Although the exact gold content of the gravel is not known, it did seem to be a profitable operation and it is surprising that work was abandoned so easily. Some problems did arise between the company and pre-emptors of the land partly covering the property, which may well have been a factor in the work stoppage. The manager had, in fact, refused to proceed further with his work until the surface rights were defined. In any case, work was completely abandoned in 1900.

Although the Miocene shaft did encounter ancient fluvial gravel, which would seem to substantiate the early theory that the Horsefly River was cutting through an east-west river channel, a second theory, proposed by B. C. government geologists around 1930, better relates the three deposits. Most likely, the Horsefly River had changed it's path only very slightly since Tertiary times, and had always flowed in from the east and taken a sharp turn to the north around the vicinity of Harper's Bar, as it does today. The Tertiary Horsefly channel was about 600 feet deep and up to ½ mile wide, but is now buried. Minor gold was distributed throughout the channel, but it was only concentrated in two localities - where the modern river cuts the ancient channel at Ward's and Hobson's. These were the only two spots where cutting, and thus reconcentration of gold occurred, leading to the formation of placers.

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This theory accounts better for the difference between the gravel at Miocene and at Hobson and Ward. The Miocene shaft was sunk in the centre of the ancient channel where no intermingling of ancient and modern gravels had occurred, and therefore the Miocene gravels were almost pure white quartz, as compared to the blue basalt - and slate - containing gravels at the other two localities.

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REFERENCES

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