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THE HOBSON MINE

Confidential

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March 8, 1980

INDEX

FIGURES

1.0 SUMMARY

The Hobson Mine was profitably operated by open pit and underground methods until 1897. Operations were terminated due to high mining costs rather than loss of ore.

The values, free gold, are contained in a quartz pebble conglomerate. The structure is a paleo-river channel. As such the extent of the deposit may reach 10 km in length.

Recoverable grade, as indicated by 11,000 tons mined underground, is 0.07 oz Gold (Au). The attitude and light cementation of the conglomerate should result in very low milling and underground mining costs. Two detailed preliminary financial analyses indicate present values of $12.5 million and $21.5 million, as being a good range of reasonable expectations of profitability. A simple cash flow analysis indicates an extremely profitable potential, with a capital repayment period of less than one year and a return on investment of 125% after taxes.

2.0 SOURCES OF INFORMATION

Information and concepts contained in this report are based on B.C. Minister of Mines Annual Reports, primarily for the years 1897, 1902, 1931 and 1938.

3.0 HISTORY

Starting in the mid 1980's, the Horsefly area saw extensive exploration and placer mining. Major activity was centered on the Miocene property and Wards Horsefly Mine, both at Horsefly, British Columbia, and at a point 8 km to the north at Hobson's Horsefly Mine.

Development at Hobson's started in 1890 with an hydraulic operation. In 1897 mining went underground and milling commenced using stamps. By 1899 all work had terminated. Between 1930 and 1938 the property saw limited underground operations.

4.0 STRUCTURE

The area around Horsefly has been studied in detail by officers of the Department of Mines of British Columbia. The area attracted much attention due to large ore tonnage potential along the "White Channel", or Tertiary course of the Horsefly River. Extensive reports are contained in the annual reports for 1931 and 1938. This report is a condensation of those accounts.

In the 1931 report, D. Lay Postulated the existance of a Tertiary channel in a northerly course from the settlement of Horsefly along the western margin of the Horsefly River. Stretching for some 12 km, the channel is composed of "resistant, well worn, quartz pebbles", a typical residual gravel. (See Figure 1.) Channel width is estimated at 800 m. The 1938 report suggests that the channel was produced by "prolonged erosion of gold-bearing terrain in Eocene or earlier time".

These conclusions were based on a number of field observations and records from several shafts. The most significant localities were:

1. Wards Horsefly Mine, a placer operation at Horsefly;
2. The Miocene shaft at Horsefly;
3. Hobson's Horsefly Mine, 8 km north of Horsefly.

These operations had only penetrated the edge of the channel or that portion of the channel where inter-glacial water had caused re-sorting and re-concentrating of gold. In those days bed rock profile determinations and

therefore channel course could only be made by costly shaft development, whereas today, modern seismic methods will permit accurate and relatively low cost definition of the channel path.

5.0 MINING OPERATIONS

Mining operations were centered at the Miocene, Ward's Horsefly and Hobson's Horsefly Mines. All operations ceased between 1899 and 1902. The existence of these operations demonstrated gold values along 8 km of channel. Other occurrences conservatively suggest a doubling of this length.

The Hobson Mine is of particular interest. Initially the deposit was worked as a hydraulic pit as described in the 1897 Annual Report. At this location the Horsefly River cuts the Tertiary channel, exposing the auriferous gravels. Hydraulicing was abandoned in 1896, primarily because the gravels graded into a calcereous cemented conglomerate which would not break up under water pressure. An oblong pit was produced measuring 160 m by 300 m with a 30 m backwall. (See Figure 2.)

The entire gravel deposit from grass roots to bedrock is auriferous. However the best gold values were concentrated in a "blue gravel" 2 to 8 feet thick overlying a soft tuff floor. Gold was also found a short distance in the tuff floor. It is this zone that grades into the cemented auriferous conglomerate.

The area above the cemented auriferous conglomerate averaged 12.3 cents gold at $20.67 per ounce or $4.15 Canadian per cubic yard at $600.00 U.S. per ounce. The "blue gravel" tested as high as 0.27 ounces gold per ton.

After 1897 the deposit was mined underground in drifts with the gold being liberated in a 10-stamp mill rated at 135 tons per day. The 1902

Mines Report indicated the ground was "ideal for drifting". The Report states "Again, the upper limit of these richer layers is clearly marked throughout the deposit by a layer of finer sand and gravel, which serves as an indicator of the profitable zone. The bedrock is also very soft and can be easily mined with a pick, enabling the miner to undercut the face, as is done in coal mining, the gravel being sufficiently cemented to stand during such operation, and yet not so solid but that it can be broken down with hammer and gad.

Then again, the gravel above the workable zone is cemented quite tight, so firmly indeed, as to enable any ordinary drive to be made without any timbering, while in breasting or stopping from the drifts, comparatively few stulls or posts are required, and the boulders and large stones from the mining operations can be piled back, forming solid walls. The surface of the bedrock while undulating is extremely uniform and permits an extensive and thoroughly systematic laying out of tunnels and gangways. The workings are practically dry and any water made can be drained off."

Eleven thousand tons were mined with recoveries averaging $1.46 ($42.38 U.S. at $600 U.S. gold). Recovered grade was therefore 0.07 oz/ton. Drifting and working gangways totalled 5,400 feet. These workings should provide an excellent means of sampling if they can be made accessible.

There is no indication that the values declined with mining. In 1899 operations were terminated due to costs exceeding revenues.

6.0 ORE - POTENTIAL

Gold values may be extensive throughout the area. The existence of gold at two areas of the channel 5 miles apart (Wards and Hobson's) indicates that substantial tonnage may exist. The nature of gold value distribution in the conglomerate indicates consistency or homogeneity in the Hobson under

ground workings. These workings in effect opened up an unusually large area of the deposit.

Mining methods in the flat lying deposit should be the least costly of any underground type operation. The literature indicates that the rock stands well without support but is loose enough to be ripped. Drilling and blasting may not be required. A shearing or ripping longwall or room and pillar trackless method are suggested.

Open pit operations are also possible. If exploration drilling or bulk sampling confirm the gold values for the zone above the main pay, a stripping operation would be above break even. Ore zone mining would then be extremely profitable by open pit methods.

Milling will be straightforward. The operation should have characteristics of a gravel plant, rather than the conventional mill. Commutation is required to break the constituent grains apart rather than fracture them. Autogenous grinding is appropriate. Gold saving will most likely be by gravity/mercury methods.

The resulting operation should be low in capital cost with attendant low operating costs.

7.0 ESTIMATED CASH FLOW

Two detailed, and one simple estimated cash flow projections have been calculated in order to indicate the economic potential of the project. The cash flows reflect only an underground type operation. The parameters used are conservative and in actuality should only increase the economic benefits to the operating company. Tonnage and grade will require measurement, and a feasibility study is required to determine capital and operating costs.

7.1 DETAILED CASH FLOW ANALYSIS

	CASE 1	CASE 2
Inflation Rate (%) -	10.0	10.0
Discount Rate (%) -	13.0	13.0
Ore, total tons -	17,500 M	17,500 M
Waste, total tons -	3,500 M	-
Mining Cost ($/ton) -	22.00	20.00
Milling Cost -	4.00	5.00
Mill Head (oz - Au/ton) -	0.08	0.08
Recovery (oz - Au/ton) -	0.07	0.07
Royalty Payments (% at Gross) -	4.0	8.0
Present Worth -	12,500 M	21,500 M
Internal Rate of Return (%) -	56.0	97.0

M - 1,000's

7.2 CASE 3

SIMPLE CASH FLOW ANALYSIS

Total Production - tons/year	1,700,000
	$ M* (U.S.)/YEAR
Gross Revenue -	71,400
Total Operation Cost -	44,200
Operating Income -	27,200
Income Taxes @ 45% -	12,240
Net Income after taxes -	14,960

TOTAL INVESTMENT

Exploration Expenditure	2,000
Fixed Capital Cost -	8,000
Working Capital -	2,000
Total Capital Investment -	12,000
Return on Investment -	125%

NOTES

1. Capital cost allowance has not been included.
2. Interest on borrowed capital has not been deducted as an expense.
3. Depletion has not been accounted for.
4. Income taxes are lower than stated.
5. Operation based upon 5,000 tons per day milling rate.
6. Gross revenue based upon 0.07 ounces gold per ton.
7. Gold at U.S. $600.00/ounce.

8.0 MINERAL RIGHTS

The mineral rights are held by 8 two post claims, 12 units and 4 fractional claims. The principals are J.M. Ashton, P. Eng., and J.D. Graham, P. Eng.

The surface rights are held by P. Augustine, a rancher. The principals have a signed agreement with P. Augustine whereby for certain consideration he will cooperate with the exploration and development of the property.

OWNER'S STATEMENT

It is the opinion of the Owners that the Hobson Mine is a syngenetic deposit contained within a conglomerate and is not a placer deposit. Generally the distinction would be academic, however as the deposit is located in an area in which placer mining is not permitted, a mining plan that is not a placer type will be a requirement for its exploitation.

The Owners are awaiting a confirmation from the Chief Gold Commissioner that the deposit be designated a syngenetic conglomerate in order that it is exempted from the Placer Reserve. This aspect is also somewhat academic as it is basically the mining method that is of concern, not the type of deposit.

Because of the potential for significant new wealth to be generated from this deposit, it is improbable that its development would not be permitted. However, some effort and expense will be required to overcome these apparent problems.

Preliminary information would indicate that production could follow a satisfactory acceptable mining plan that would eliminate any risk of damaging the Horsefly River and its watershed.

In other words, obtaining a production permit for the Hobson Mine may require more effort than the norm because of the environment considerations; however considering the semi-proven status of the deposit as shown by the extensive

underground workings, the additional effort of overcoming these problems, if they do in fact exist, and they may prove not to exist, is more than compensated by the high probability of a very profitable operation, which is not the case when dollars are spent on a raw prospect. In other words, in terms of probabilities, this situation offers itself as a high priority target, as deposits of this potential are hard to find.

The fact that one of British Columbia's most distinguished and successful mining engineers, J. B. Hobson, recognized the deposit's potential 80 years ago still applies today. It is unfortunate for Hobson and fortunate for us that mining and minerals processing technology of that time was inadequate for this particular mining problem. The Hobson Mine therefore offers itself as a unique opportunity.

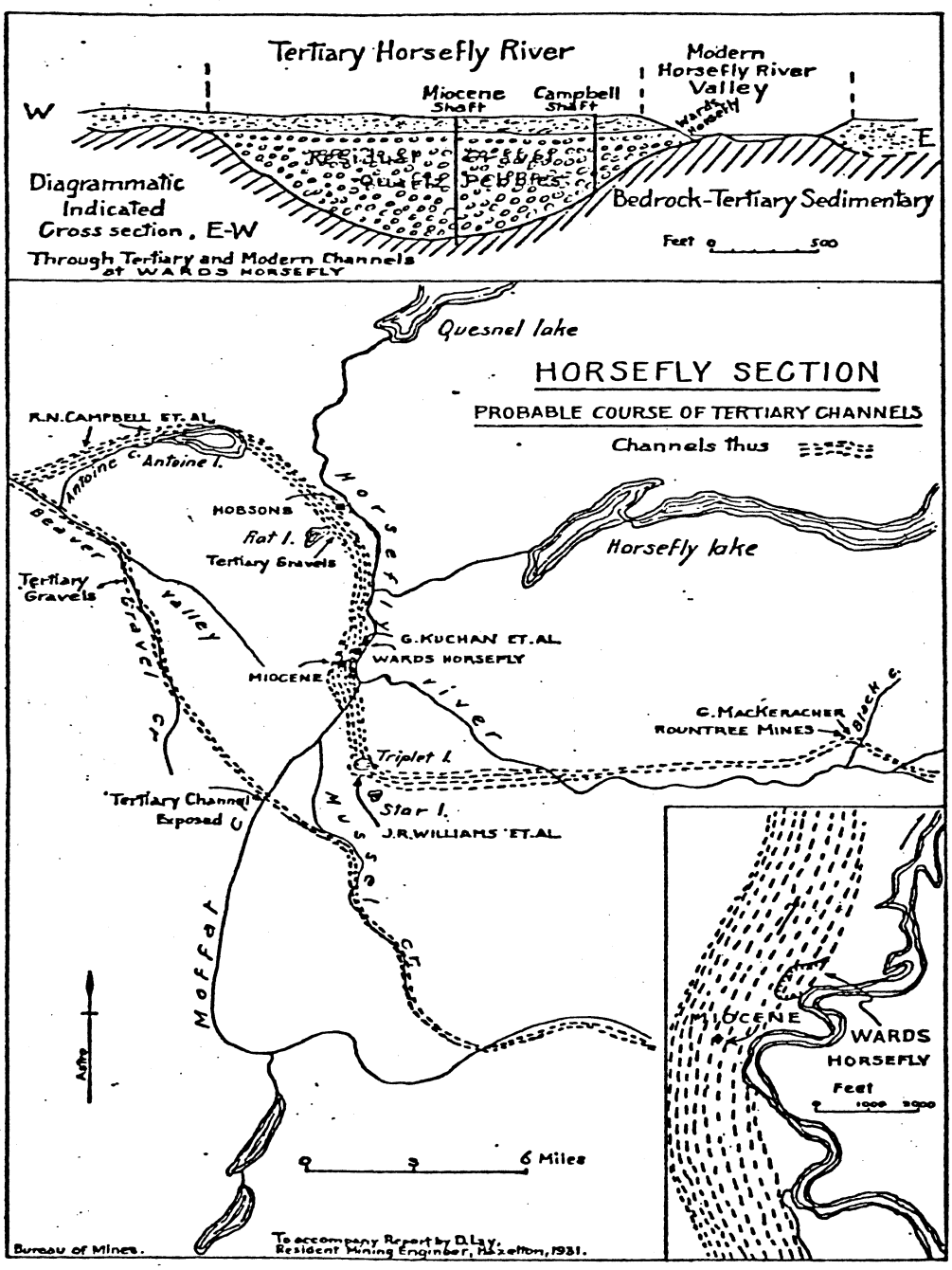
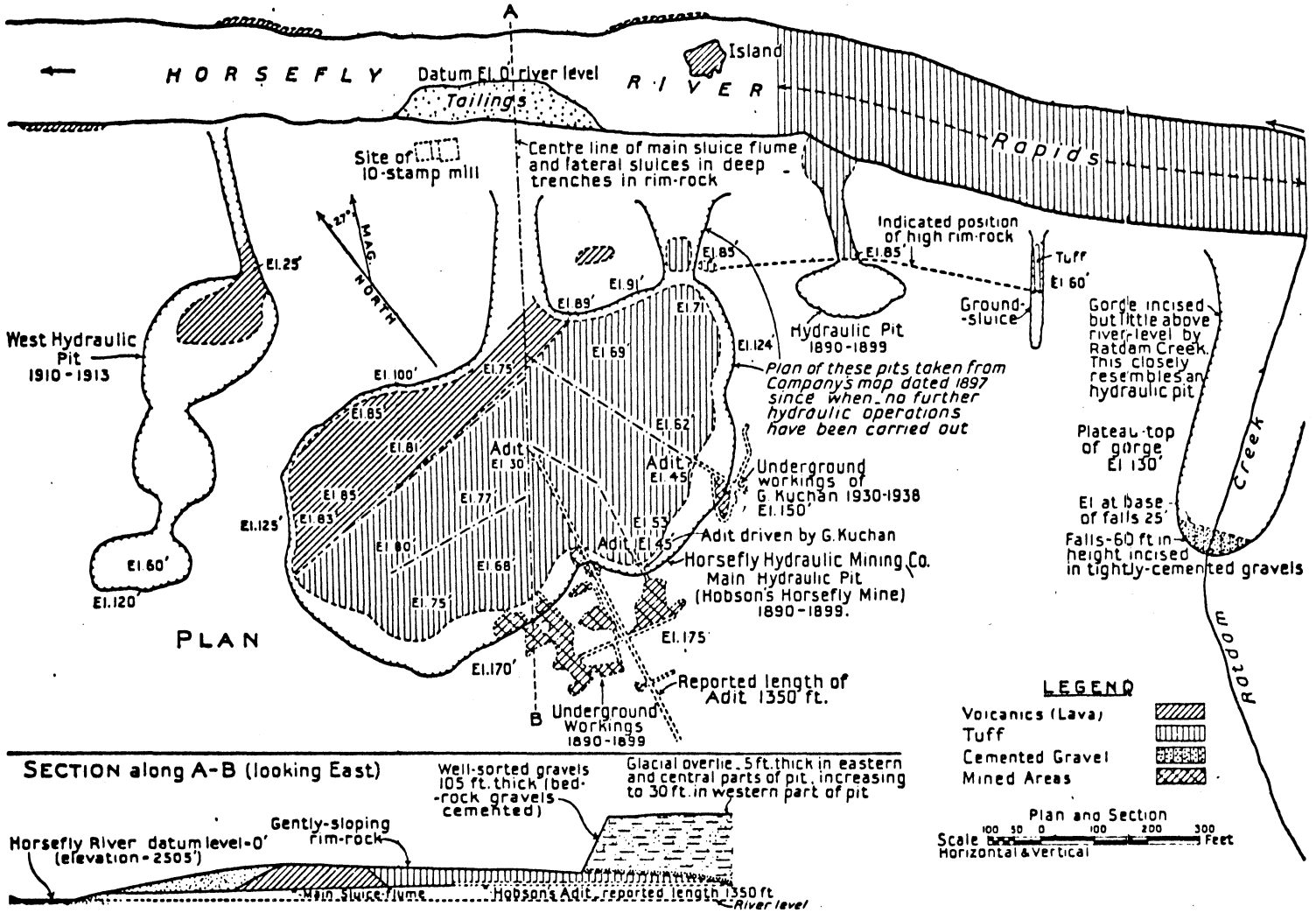
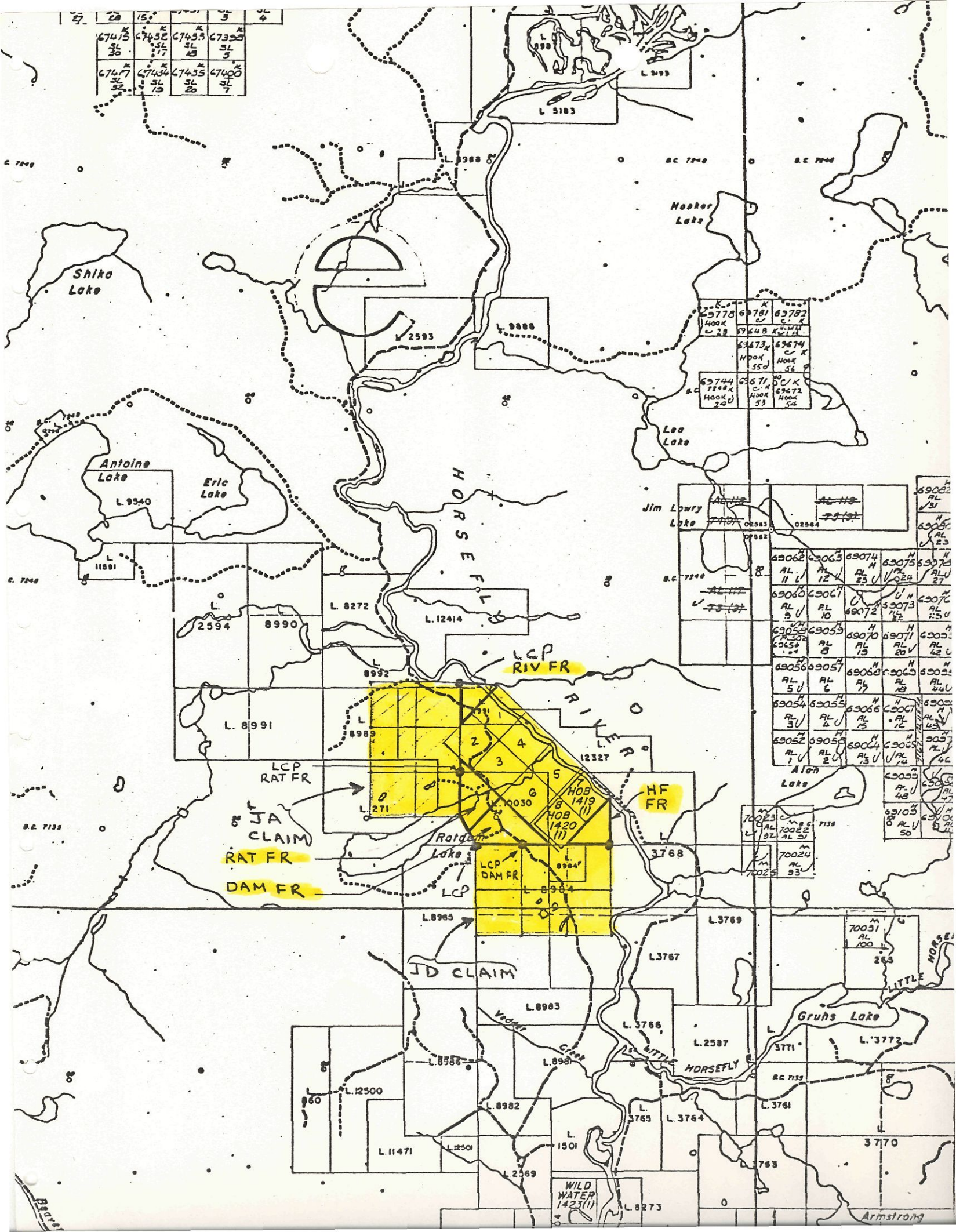

Tertiary Horsefly River
Modern Horsefly River Valley
Miocene Shaft
Campbell Shaft
W
E
Diagrammatic Indicated Cross section, E-W Through Tertiary and Modern Channels at WARDS HORSEFLY
Bedrock-Tertiary Sedimentary
Feet 0 500
Quesnel lake
HORSEFLY SECTION
PROBABLE COURSE OF TERTIARY CHANNELS
Channels thus
R.N.CAMPBELL ET.AL
Antoine C.
Antoine I.
HOBSONS
Flat I.
Tertiary Gravels
Horsefly lake
Beaver Valley Gravel Co
Tertiary Gravels
G.KUCHAN ET.AL
WARDS HORSEFLY
MIOCENE
Horsefly River
G.MACKERACHER
ROUNTREE MINES
Black C.
Triplet I.
Star I.
Tertiary Channel Exposed
J.R.WILLIAMS ET.AL
Moffat Creek
6 Miles
MIOCENE
WARDS HORSEFLY
Feet 1000 2000
Bureau of Mines.
To accompany Report by D.Lay, Resident Mining Engineer, Hazelton, 1931.

Figure 1



Hobson's Horsefly Mine (now owned by G. Kuchan).

Figure 2


Shiko Lake
Hooker Lake
Lee Lake
Antoine Lake
Eric Lake
L. 9540
Jim Lowry Lake
HORSEFLY RIVER
L. 8272
L. 12414
L. 8991
LCP RIV FR
LCP RAT FR
HF FR
HOB 1419 (1)
HOB 1420 (1)
JA CLAIM
RAT FR
DAM FR
Ratdam Lake
LCP DAM FR
JD CLAIM
Vedan Creek
LITTLE HORSEFLY
Gruhs Lake
Alan Lake
WILD WATER 1423 (1)
L. 3768
L. 3769
L. 3767
L. 3766
L. 2587
L. 3771
L. 3773
L. 3761
L. 3765
L. 3764
L. 3770
L. 12500
L. 11471
L. 2569
L. 8273
Armstrong