

GEOCHEMICAL REPORT ON THE
HOPE GROUP OF CLAIMS
LIGHTNING PEAK - 49° 118° N.E.
BY J.P. WEEKS, P. ENG. FOR
BRALORNE PIONEER MINES LIMITED
CLAIMS OWNED BY
PAYCHECK MINING & DEVELOPMENT COMPANY
WORK DONE BETWEEN THE
23RD JULY AND 20TH SEPTEMBER, 1966.
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In Pocket - Figure 1 - Plan showing sample locations. #1

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Introduction

This report has been prepared for submission as assessment work and describes a geochemical survey carried out on the above claims during the period 23rd July to 2nd August, 1966. The map and report were prepared on the 19th and 20th September, 1966.

Location and Access

The property is situated on the northwestern flank of Lightning Peak some 20 miles east of the Township of Needles on the Lower Arrow Lake. Access is by a narrow dirt road for some 18.5 miles from the settlement of Inonoaklin Crossing on the Monashee Highway.

Topographically the claims are in an area of rolling plateau at an elevation of 6000' although the surrounding country is much more precipitous. The area is one of heavy winter precipitation and despite the elevation the claims are covered by a thick growth of conifers and underbrush.

Property

The first claim in the area was staked in 1897 and exploration has continued sporadically since that date. Recorded production commenced in 1917 at the Waterloo Mine and the following table is probably fairly complete:

<u>Period</u>	<u>Tons</u>	<u>Silver</u>	<u>Lead</u>	<u>Zinc</u>	
1917-1939	232	48,286 ozs.	25,884 lbs.	31,964 lbs.	
1949	3	20	2,609	376	
1953	500	1,674	13,956	25,440	*
1954	1,114	3,743	12,260	3,532	#
Total	<u>1,849</u>	<u>53,723</u>	<u>54,709</u>	<u>61,312</u>	

Property. (c'td.)

* Estimated contents of 8 tons of silver-lead concentrates and 20 tons of zinc concentrates.

Estimated recovery from published figures of gross contents.

Assuming that recovery averaged 90% for all the above metals, then the head grade during the different periods of operation was as follows:

<u>Period</u>	<u>Silver</u>	<u>Lead</u>	<u>Zinc</u>
1917-1939	228.9 ozs/ton	6.2%	7.6%
1949	7.4	47.9	6.9
1953	3.6	1.5	2.9
1954	3.7	0.7	0.2
Average	<u>32.0 ozs/ton</u>	<u>1.6%</u>	<u>1.8%</u>

From published reports it appears that during the earliest period production was from hand sorted ore, the 1949 production was resorted from the old dumps while the 1953 and part of the 1954 production was from unselective milling of these dumps which had been impoverished by earlier sorting.

Considerable quantities of this impoverished material remain on the dump and since it is probable that during the earlier period of operation that much of the base metal content was neither reported nor recovered, the average figure shown above may be a reasonably accurate estimate of the overall grade of the Waterloo vein. This is to some extent confirmed by what is reported to have been a representative 100 lb. sample taken in 1926 which assayed 25.0 ozs/ton in silver, 5.5% lead and 8.6% zinc.

Underground development consists of four adits, the lowest of which is reported to be 195' below surface at the face, together with some stoping that has been carried out between the levels.

The claim group consists of fifteen claims held by location together with the Crown Granted "Waterloo" claim.

Property. (c'td.)

Details of the claims on which assessment work is to be recorded are shown on the final page.

Regional Geology

The regional geology is shown on Map No. 6 - 1957, Kettle River (East Half) published by the Geological Survey of Canada and the results of a more detailed study of the Lightning Peak area by C.E. Cairnes were published in the G.S.C. Summary Report, Part A for 1930.

No purpose will be served by repeating this information here.

Property Geology

The claims are underlain by sediments and volcanics belonging to the Anarchist group of Permian age which form a roof pendant in later intrusives. These intrusives, part of the Nelson batholith of Mesozoic age, do not outcrop on the claims but may be seen a short distance from the north, west and south boundaries.

Generally the claims are covered by overburden of varying, but sometimes considerable, depth and outcrops are only plentiful in the immediate vicinity of the Waterloo Mine. At this point the wall rocks are of crystalline limestone but elsewhere on the claims outcrops of volcanic rocks may be observed.

The Waterloo lode, which strikes approximately east and west and dips steeply to the north is reported to average some four feet in width. It consists of a shear zone into which quartz and calcite together with metallic sulphides have been intruded and there is some evidence of replacement of the limestone wall rocks. Mineralization consists largely of sphalerite and galena but native silver, ruby/silver, argentite, stephanite and tetrahedrite occur in lesser quantities.

Work Program

As stated above most of the claims are covered by overburden which provided a formidable obstacle to earlier operators but it was hoped that geochemistry would be effective

Work Program. (c'td.)

in locating mineralization beneath this overburden. Initially lines 122 and 127, shown on the attached Plan, were run over the known position of the vein and anomalous results were obtained above it although extensions of the lines to the north and south did not give positive reactions.

Having proved the effectiveness of the method the work program was laid out with the following objectives:

- Line 100 - To locate any extension of the Waterloo vein to the west.
- Line 113) - To search for parallel mineralized zones
- " 234) to the north of the Waterloo vein.
- Line 130) - To locate any extension of the Waterloo
- " 135) vein to the east.
- " 141)
- " 146)
- Line 166) - To search for east-west striking mineral-
- " 180) ized structures to the east of the
- " 184) Waterloo vein.
- " 188)
- Base Line - To search for north-south striking structures in the same area.

The targets were assumed to be small and samples were taken at 20' intervals throughout the survey. Straightness of the lines were maintained by flagging and frequent checks by Brunton Compass. Mattock holes were dug and an ounce or two of soil from the "B" horizon was taken and placed in an envelope. All samples were taken to camp for analysis where they were first dried and screened through a plastic sieve. A measure of 1/2 teaspoon of screened soil was placed in a small pyrex test tube to which was added 1 m.l. of acetic acid sodium acetate solution (heavy metals), 1 m.l. of dithizone solution and 1 m.l. of toluene after which the test tube was stoppered and shaken. The sediment was allowed to settle and the samples observed for 30 minutes at the end of which time a pink colour was assumed to indicate the presence of heavy metals and a green colour was assumed to indicate their absence.

Work Program. (c'td.)

A total heavy metals testing kit obtained from Eldrico Geophysical Sales Ltd. was used throughout the survey.

Geochemical Survey

The results from the survey are plotted on Figure 1 attached on which sample sites which gave positive reactions are shown by an "X" and those which gave no reaction are shown by a small dot.

The positive reactions obtained on lines 122 and 127 are clearly associated with the Waterloo vein. The only other samples which, when tested, gave positive reactions were from line 188 but later work on line 184 did not confirm these results.

Statement of Qualifications

The field work was carried out by the following personnel in the employment of Bralorne Pioneer Mines Limited:-

- H. Urhahn - A third year geology student from the University of British Columbia who was employed on similar work during the summer of 1965 and also earlier in the present season.
- N. Andrade - A third year political science student from the University of British Columbia who was employed on similar work during the summer of 1965 and also earlier in the present season.
- B. Barnes - A second year undergraduate from the University of British Columbia who has been employed on geochemical work by this Company for the past eight months.

Statement of Qualifications. (c'td.)

- B. Woodcock - A first year science student from the University of British Columbia who was trained in the technique earlier in the year in the Kamloops area.

The entire program was carried out under my supervision.

Statement of Expenditures

a) <u>Sampling and Testing:</u>	
Geochemical Operators - Salaries	\$ 739
Fringe Benefits - 18.2% of \$739	134
Field Maintenance - 2 man months at \$150 per man month	300
b) <u>Supervision:</u>	
Salaries	\$ 91
Fringe Benefits - 18.2% of \$91	17
Field Maintenance - 2 man days at \$5.00 per man day	10
c) <u>Equipment:</u>	
Rental of four-wheel drive vehicle - Eleven days at \$185 per month plus \$0.15 per mile plus gas	\$ 37
Laboratory Supplies - 1200 tests at \$0.10 per test	120
d) <u>Preparation of Report:</u>	
Salaries	\$ 91
Fringe Benefits - 18.2% of \$91	17
	<hr/>
Total Expenditure	<u>\$1,556</u>

Assessment Work

One year's assessment work is to be applied to each of the following claims:-

<u>Name & No. of Claim</u>	<u>Record No.</u>
Hope No. 12	6884
" " 14	6886
" " 16	6888
" " 18	6890
Don " 21	6833 N
Hope " 24	6893 B
" " 26	6895
" " 28	6897
" " 29	6898
" " 31	6900
Don No. 32	6834 N
" " 33	6835
" " 34	6836
" " 35	6837
" " 36	6838

Respectfully submitted,

BRALORNE PIONEER MINES LIMITED

J.P.W.
J.P. Weeks, P. Eng.,
Chief Geologist.

JPW:md
Att.
September 21st, 1966.

Canada

Province of British Columbia

In the Matter of

Assessment work on the Hope Group of mineral claims.

On this: **SUB-MINING RECORDER**
RECEIVED
OCT 5 1966
M.R. #99552 \$ of 1285 Bracknell Place,
VANCOUVER, B.C.

J. James Peter Weeks
North Vancouver

in the Province of British Columbia.

Do Solemnly Declare that the following persons were employed on the field work:

H. Urhahn, Party Leader and Geo-chemical Operator	23 Jul. to 2 Aug., 1966.	11 Working days.	\$425/month	\$ 213
N. Andrade, Geo-chemical Operator	23 Jul. to 2 Aug., 1966.	11 Working days.	\$400/month	\$ 200
R. Barnes, Geo-chemical Operator	23 Jul. to 2 Aug., 1966.	11 Working days.	\$325/month	\$ 163
B. Woodcock, Geo-chemical Operator	23 Jul. to 2 Aug., 1966.	11 Working days.	\$325/month	\$ 163
J.P. Weeks, Chief Geologist	1 and 2 Aug., 1966.	2 Working days.	\$1000/month	\$ 91

Persons employed in the preparation of this report were:

J.P. Weeks, Chief Geologist	19 and 20 Sept., 1966.	2 Working days.	\$1000/month	\$ 91
------------------------------------	------------------------	-----------------	--------------	-------

Total Salaries	\$ 921
Fringe Benefits	168
Field Maintenance	310
Equipment	<u>157</u>
Total Expenditure	<u>\$1,556</u>

And I make this solemn Declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath, and by virtue of the Canada Evidence Act.

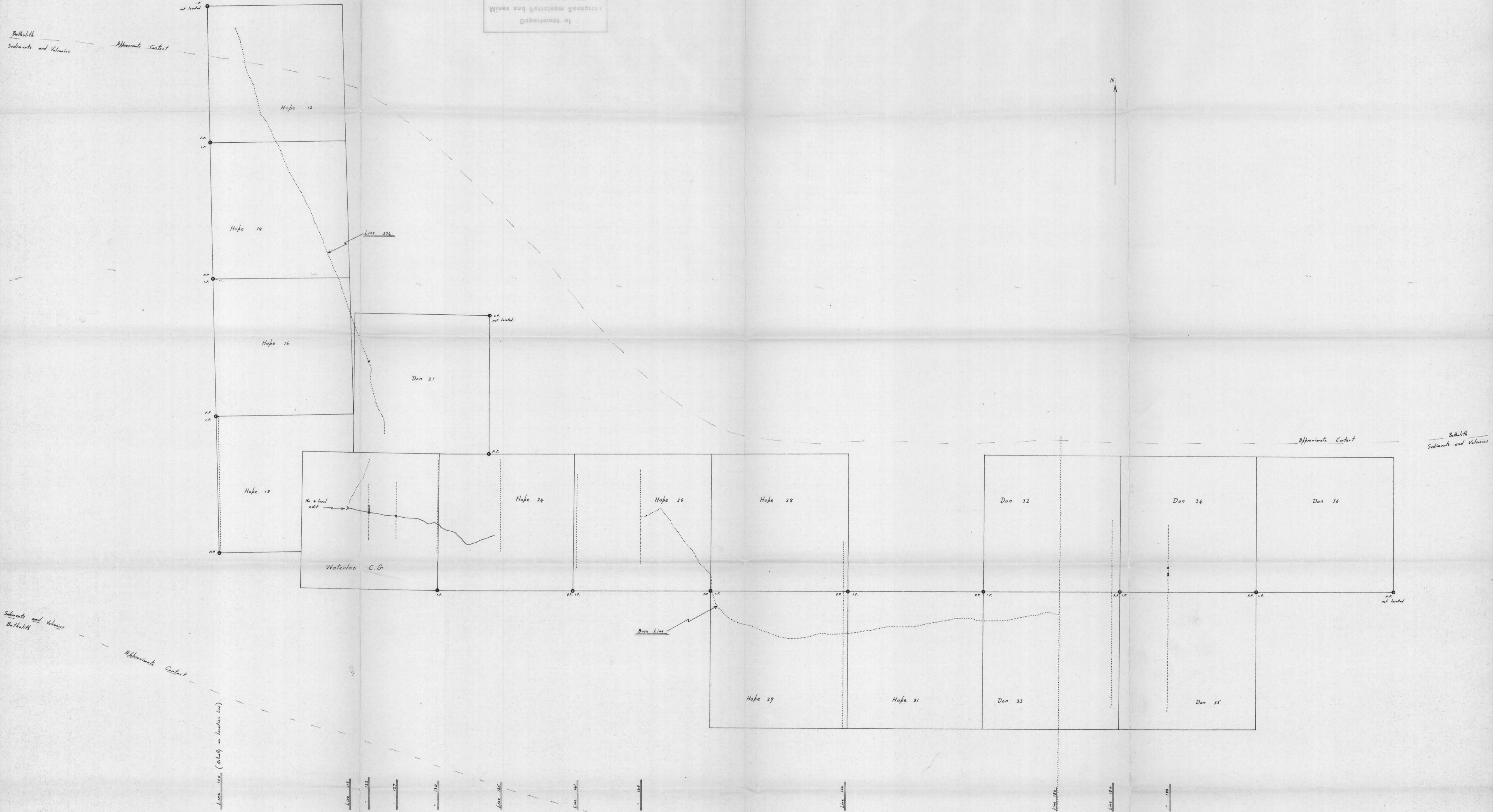
Declared before me
at *Vancouver*
in the Province of British Columbia.
this *5* day of
October A.D. 1966

J.P.W. - 6

Julie Turner
A Notary Public in and for the Province of British Columbia
A Commissioner for taking affidavits for British Columbia

Sub-mining Recorder

To Investigate
 the possibility of
 a connection between
 the Hope and
 Don groups



Batholith
 Sediments and Volcanics
 Approximate Contact

817

To accompany geochemical report
 by S.P. Weeks, P. Eng. on the Hope Group
 near Lightning Peak, Vernon Mining
 Division, dated 21st September, 1946

BRALORNE PIONEER MINES LTD.	
Figure 1	
Lightning Peak. Hope Group Plan Showing Location of Sample Sites	
Negative Samples Shown Thus:	
Positive	..
SCALE 1" = 400'	REF.
DRAWN BY J.P.W.	DATE 21 Sept. 1946 No.