BELMORAL MINES LTD. (N. P. L.)

FREEGOLD AREA PROJECT

115 - I - 3 and 6, Whitehorse M. D., Yukon

Report

by

P. H. Sevensma, Ph. D., P. Eng.

Peter H. Sevensma Consultants Ltd.

June 18, 1974

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I. INTRODUCTION

Five groups of claims have been assembled in the general Mount Freegold area west of Carmacks covering aeromagnetic highs along or near the contacts of syenites or, in one case, a granodiorite, intruding other formations.

It has been observed that a majority of the gold and silver occurrences in this district lie close to the contact of intrusives of this type and near or on aeromagnetic highs outlining parts of these contacts.

The locations of old placer leases and of known geochemical anomalies have also served as a further guide in selecting the five claim groups.

The writer has repeatedly examined in the field a number of showings in the subject area, but has not visited the specific five claim groups discussed in this report. Three of these groups directly adjoin showing areas that have been examined by the writer personally on several occasions, i. e., Revenue Copper, Happy Occurrence, Caribou Creek, Red Fox - Margaret - Augusta, Discovery Mines.

I I. PROPERTY, LOCATION, ACCESS

The five claim groups, totalling 132 claims, are as follows: (Figure 1.)

	Lat. N.	Long. W.	Record No.	Record Date
A. Car 1-40	62° 19'	137° 08'	Y78678	May 1, 1974
B. Car 41-56	62° 23'	137° 18'	to	
C. Car 57-72	62° 26'	137° 38'		
D. Car 73-88	62° 07'	137° 03'	Y78765	
E. MJK 1-44	62° 15'	137° 10'	Y78884-927	May 27, 197

Access to A, B and E is via the Freegold road extension, which can be driven by ordinary truck at least to Bow Creek. The present condition of the road into Big Creek is not known to the writer, but is said to be good over the hill to Revenue Copper.

C and D can be reached each by a five-mile trek respectively from the airstrip northwest of the mouth of Burgis Creek and from the Mount Nansen road.

Active exploration programs are at present being conducted in both the Mount Nansen and Mount Freegold areas, and trucks and bulldozers are being used in both districts, which should facilitate both access and work programs.

The supply centre is Carmacks, about 40 road miles from either Mount Nansen or Mount Freegold.

Timber and water are adequate in the area for all exploration or development purposes.

III. AREAL GEOLOGY

The district is part of the Dawson Range, which is characterized by a great variety of intrusives now believed to range in age from the Triassic to the Tertiary, intruding a core of old Yukon schists.

In the area of interest, the main intrusive is a coarse grained porphyritic syenite extending for a length of some 40 miles from Victoria Mountain to 6 or 8 miles WNW of Prospector Mountain. Of unknown age, it is now thought to be Triassic, whereas previously it was considered to be much younger.

Another unique characteristic of the area is a more or less U-shaped (see Figure 1) belt of Tertiary quartz-feldspar porphyries, forming dykes and masses of sometimes considerable extent.

The gold deposits in the area are associated with the porphyries, usually in the vicinity of the syenite, and form a NNE trending belt.

Further to the northwest, the syenite is no longer reported, but instead a more normal granodiorite predominates, also present on the flanks of the syenite in the area of interest.

Of importance is the fact that whereas previously the syenite was reported by H. S. Bostock to intrude the Mesozoic Mount Nansen Group, the latter is now reported to be of probable Eocene age and to overlie the previously eroded syenite (Tempelman-Kluit, 1974), now thought to be of Triassic age.

From an economic point of view, the association of the quartz-feldspar porphyries and the syenites is important, as the most important gold deposits occur where these two rock types are present. Veins high in silver and lower in gold seem to prefer the granodiorite.

Also of interest is the fact that there is a definite expression in the magnetic field of the presence of syenites, although not exclusively, as some other rock types also are magnetic and are reflected as such in the aeromagnetic maps.

Gold was discovered in placer as early as 1898-1899 in this district. Placer staking started in 1910, and the best production has been reported from Nansen Creek. Stoddart, Seymour and Big Creek did not reveal any significant production.

In this unglaciated terrain, lode gold discoveries resulted in about 1930 by tracing the placer gold to its probable source.

Although very old workings have been reported from some other creeks, Figure 1 shows the principal old placer activity in the area.

As well, in more recent years, as a result of discoveries further to the northwest in the Casino area, the area shown on Figure 1 has revealed a number of low-grade copper occurrences of the porphyry type within the porphyry belt, sometimes accompanied by molybdenite.

This porphyry belt is therefore of considerable economic interest, with three gold deposits of economic value outlined so far, Laforma, Mount Nansen and Brown McDade, and several very promising gold prospects now under active exploration, like Mount Freegold and the Vic Group.

The best regional combination of exploration guides is the following:

Placer gold - porphyries - aeromagnetic anomalies near or along syenite intrusives or granodiorite intrusives - geochemical silt or soil anomalies and, of course, showings.

IV. AEROMAGNETIC ANOMALIES

It should be stressed that the aeromagnetic maps published by the Geological Survey of Canada reflect the magnetic pattern at a mean elevation above ground of about 1000'. The pattern reflects therefore mostly the broad magnetic characteristics of the rocks underlying the surveyed area.

The positive anomalies may measure anywhere from a half-mile to five miles long and reflect the distribution of the mineral magnetite in the underlying formations to some considerable depth.

A concentrated occurrence of magnetite, like the fifty feet or so wide zones on Mount Freegold, known to extend for at least 3500' in length and known to carry gold, is the only case known so far in the area where a strong surface magnetic expression appears to be related to the aeromagnetic pattern.

Most positive aeromagnetic anomalies are expected to have a broader, deeper and more disseminated source not necessarily reflected in a sharp surface anomaly.

We therefore only recommend ground magnetic work in those areas where a long reconnaissance traverse can be easily run at about right angles to the aeromagnetic trend, and further follow-up only if a definite and sharp surface anomaly is found, which should be followed up by prospecting and bulldozer trenching at an early stage rather than by very extensive ground magnetics. The ground magnetics should be sufficiently extensive only to determine whether the source of the anomaly has economic implications.

V. DESCRIPTION OF INDIVIDUAL GROUPS

A. Car 1-40 Group

This group covers both a syenite outlier in the old Yukon Schists and an elongated magnetic high following the gold bearing belt from about the Emmons Hill showing to Seymour Creek, a length of about 5 miles. (See Figure 2.)

On Mount Freegold, gold is found within magnetite. Whether this is a magnetite skarn or perhaps an ancient metamorphic gold bearing black sand is not certain at this time; the writer has seen evidence that allows for both hypotheses. He favors the skarn-type origin at present as a working hypothesis.

All discoveries in the area have been made so far by visual prospecting; therefore, they have been located mostly on the ridges and on south slopes. North slope visual prospecting is more difficult due to permafrost and, in many places, underbrush in fairly heavy timber.

This is the case on Car 1-40, lying on the northerly exposure. Every effort should be made to cut a cat-trail on this property, to connect with the Bow Creek Road and to trench in the area of the magnetic high. Silt sampling and soil sampling, where possible, should be carried out along one or more contour lines.

As the magnetic contours approximate the contours of the hill, a crossline magnetometer reconnaissance should be run before trenching. The probability of locating the aeromag high on the ground is fair.

The property is underlain by Yukon schists, syenite and the presence of porphyry dykes is very likely. The writer considers it excellent prospecting ground.

B. Car 41-56

This group covers porphyries intruding granodiorite which intrudes the contact between Pelly gneiss and schist gneiss, the former a possible metamophosed ancient intrusive and the latter possibly of volcanic origin, as amphibolite is an important constituent.

These contacts are marked by a strong magnetic anomaly. (See Figure 2.)

The porphyry is the most attractive feature. The complete formation crosses Big Creek, where the Revenue porphyry pipe carries low-grade disseminated copper as well as gold which is still being recovered in placer on Revenue Creek today. The writer has examined the Revenue copper occurrence several times and believes that a study of its northern extension is fully justified.

The group covers mostly slopes with a southern exposure which lend themselves well to soil sampling along contour lines, which is strongly recommended. The same lines should be used for a magnetic reconnaissance and geological mapping of the underlying formations, with special emphasis on the porphyries.

The area underlain by the magnetic high is shared by the Car 41-56 and the adjoining Mag claims. The latter cover the intrusive contact with the schists, whereas the former cover the porphyries intruding granodiorite.

C. Car 57-72

This group, located in the centre of the main bend of Big Creek, covers the syenite contact with Yukon schists which is marked by a magnetic anomaly of interest.

A geochemical high was discovered on Big Creek in 1967 by Coranex of Vancouver. In 1969, Atlas optioned the Cash claims in this area, staked the Johnny claims and conducted a geological survey and silt sampling reconnaissance.

They discovered a "small" outcrop of massive hematite, thought to be a segregation inthe Yukon schists and two highly rusty areas overlain by high geochemical values.

One of these highs, on Big Creek, is covered by the present claims. This high reported as follows in ppm:

	Cu	Pb	Zn	Mo
	138	800	174	3
Regional background	20	15	60	2

This is slightly downstream from the magnetic anomaly and from the hematite outcrop.

Detailed soil sampling along contour lines on the slopes on either side of Big Creek is recommended, using an auger where permafrost is present.

A magnetic traverse along the same lines should pinpoint the aeromagnetic feature.

Any further follow-up depends upon the success of this sampling program.

An 800 ppm value for lead is considered an outstanding discovery in this terrain.

C. Car 57-72 (cont'd.)

The creek to the northwest is anomalous in lead and zinc for 2000', with samples of 58 and 55 ppm Pb and 410 and 260 ppm Zn, as well as 3 ppm Mo.

One sample taken in the drainage 3000' to the southeast showed 134 ppm Cu, 50 Pb, 104 Zn, 2 Mo.

The magnetic anomaly, of about 140 gammas, is quite sharp and lies in the centre of the claims. It lies along the Yukon Schists-Syenite contact and the attractive part is about 3000' long and parallel to the line between the two highest soil anomalies. (Fig. 3)

D. Car 73-88

This group covers a small pinpoint aeromagnetic anomaly about one mile southeast of the Victoria Mountain syenite intrusive. Mineralization is reported in the area but the writer has no factual information available on this "occurrence", which is not recorded previously anywhere.

Soil sampling of the slopes above the gravel line in the valley can be recommended, as well as normal visual prospecting. The situation occurs at a triple fork in Granite Creek, which follows a north-south contact between quartz-biotite plus graphitic micaceous thin-bedded quartztite of the Yukon Group and Eocene(?) Mount Nansen Group. This could be a faulted contact.

Prospecting and geological mapping should complete the initial investigation.

The magnetic anomaly lies on the south sloping hillside at elevation 4000'-4100' and soil sampling should be effective on this slope. A magnetic traverse may here be run along a N-S line to pinpoint the anomaly, with soil sampling along the same line, as well as along about the 4000' E-W contour line.

E. MJK 1-44

This group covers the mapped contact between the Seymour Creek syenite and a large area of granodiorite to the southwest. It surrounds the small Hope-Best Group on Caribou Creek, a remarkable occurrence of stringer quartz veins, some of which have proven to be very high grade in early milling. The veins occur in conglomerate and greywacke, possibly an inlayer of Laberge rocks along the syenite. There is still some mill feed in the small old mill present on the property, of which a sample taken by the writer assayed 2. 66 oz/t gold in 1/2" crushed quartz. In the field, most stringers are from 1/8" - 1/2" wide, but those sampled by the writer proved barren.

In conjunction with the gold panned in the next creek to the SE flowing into Seymour Creek and the clear-cut northwest trend, the area covered by the MJK claims warrants careful prospecting, which is difficult due to the fairly heavy timber and thick vegetation on a northeast slope that is in general quite steep.

It is believed best to start in the above-mentioned gold-bearing creek with a bulldozer trail and to cut it into a northwest direction, using silt and soil sampling techniques, as well as conventional mapping. Magnetic surveying is of less interest, as initial lines will tend to be parallel to the magnetic trend.

Careful prospecting and silt sampling of the main gold-bearing creek is important. This is how the Caribou Creek showing was found in 1937 by P. F. Guder, who located a very high grade boulder in the creek.

This group is judged to have the highest probability of success of the five groups discussed.

If a bulldozer is not readily available, cutting of a good line up the creek is recommended, as well as a good base-line in NW direction. Any occurrence of Laberge type conglomerates or greywackes merits very close attention.

VI. RATING OF PROPERTIES

At the present time we rate the quality of the properties as follows, from the highest to the lowest:

1. MJK 1-44. Geologically the most attractive, but physically not easy for exploration, which is one reason why this area has not received more attention until now. The bulldozer trail cut in 1970 up Caribou Creek has facilitated access to the area.

2. Car 1-40. Located in the main Seymour Creek-Freegold Mountain gold area, this property warrants detailed attention. The Bow Creek road is close to the southwest corner of the property and the low flattish ridge between Bow and Stoddart Creek provides an easy access by bulldozer to the NE corner of the property on Stoddart Creek, although it is a permafrost area.

3. Car 41-56. Covering the north extension of the same formations which enclose the Revenue Copper porphyry, the area has a potential for both copper and gold and the terrain is relatively easy to explore with its south exposure.

4. Car 57-72 and 5. Car 73-88 rate about equally. Both are a little more remote and although they have good geological control, they are outside that part of the belt that has proven most prolific so far. The high-lead soil over an oxidized area on Car 57-72 is very unusual and could prove of considerable interest; this property is therefore rated somewhat higher than Car 73-88, where the target is a small isolated aeromag high without as yet any supporting geochemical data.

VII. RECOMMENDED PROGRAM

An integrated program with a five-man crew is recommended, to start on the property with the highest rating, the MJK 1-44, and following thereafter the order of rating.

After completion of the work on each property, soil samples should be forwarded immediately for assay in Whitehorse in order to decide on a follow-up wherever required.

Soil samples should be analyzed for:

Cu, Pb, Zn, Mo, Au and Ag.

The use of As and Sb as pathfinders for gold has been considered but, at the same cost, a direct analysis for gold in ppb is preferable and has been found to be reliable elsewhere by the writer.

Linecutting should in most cases follow contour lines and should be sufficient for reconnaissance so that all stations can be found easily again.

Magnetics are only useful where a line can be run along a NE-SW traverse cutting the northwest trends at about right angles.

For mapping purposes, blow-ups of 1:50,000 maps to 1:24,000 (i. e. 1" = 2000') should be sufficient for initial reconnaissance, with more detailed sktches where required.

On north slopes, permafrost may hamper soil sampling as well as bulldozer work. If no bulldozer is available, additional crew should be used to increase linecutting. However, even a poor bulldozer trail is superior to linecutting and allows for better soil sampling, if necessary after a couple of weeks thawing.

A 4-wheel drive truck should be used for transportation.

Our time allowance of a total of seven weeks allows for

some delays and bad weather.

The crew should consist of a geologist and assistant, and three prospectors-soil samplers-line cutters.

C and D Groups may be best handled by a two-man crew put out by helicopter for five or six days, but this will depend upon circumstances and on nearby programs in progress.

We can summarize our program as follows:

Claim Group	A	B	C	D	E	Total
No. of Claims	40	16	16	16	44	132
Bulldozer	X	-	-	-	X	80 hours
Linecutting	?	X	X	X	?	10 line miles
Soil sampling	X	X	X	X	X	300 samples
Silt sampling	?	-	X	X	X	50 samples
Magnetics	X	X	X	X	-	4 line miles
Geological mapping	X	X	X	X	X	30x 2 man-days
Prospecting	X	X	X	X	X	30x 2 man-days
Property quality	2	3	4	5	1	
Time in weeks	2	1	1	1	2	7 weeks

Our cost estimate is as follows:

5 men for 7 weeks = 9 man months @ $1,200	$ 10,800.00
Bulldozer, 80 hours @ $50	4,000.00
Camp construction	2,000.00
Camp operation, 250 man days @ $12	3,000.00
Transportation, 4 wheel drive	2,000.00
350 soil samples @ $7	2,500.00
Mobilization, demobilization	1,500.00
Total	$ 25,800.00
Engineering, Supervision - 10%	2,600.00
Contingencies - 10%	2,800.00
	$ 31,200.00

VIII. SUMMARY AND RECOMMENDATIONS

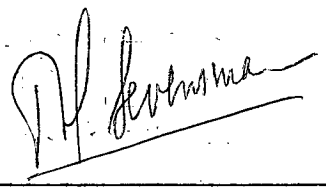
The Freegold area project of Belmoral Mines Ltd. consists of five claim groups, each of which has been staked on the basis of a combination of two or more favorable geological features, in an area of known gold-(silver) deposits of economic value and of significant occurrences of Copper Porphyry-type mineralization.

This technique of exploration increases the chances of success compared to work on one property only, but requires good timing and integration of the various parts of the field program.

Bulldozer work is strongly recommended on those properties that lie just off the main road, if a bulldozer is readily available. Geological reconnaissance mapping, prospecting, linecutting and substantial soil-sampling with minor reconnaissance ground-mag are recommended for the initial field appraisal.

It is estimated that a budget of $31,200.00 is required for this work.

Respectfully submitted



P. H. Sevensma, Ph. D., P. Eng.

PETER H. SEVENSMA CONSULTANTS LTD.

CERTIFICATE

I, Peter H. Sevensma, of 7052 Sierra Drive, Burnaby, B. C., DO HEREBY CERTIFY:

1. That I am a Consulting Geologist with business address as above.

2. That I am a graduate of the University of Geneva, Switzerland, where I graduated in 1937 and obtained my Ph. D. in Geological and Mineralogical Sciences in 1941.

3. That I am a Registered Professional Engineer, member of the Association of Professional Engineers of British Columbia and of the Association of Professional Engineers of Yukon Territory.

4. That I have practised my profession for the past 36 years.

5. That I have not personally examined the exact areas covered by the claim groups described in this report, but am well acquainted by personal examinations with a number of showings on immediately adjoining groups and elsewhere in this area.

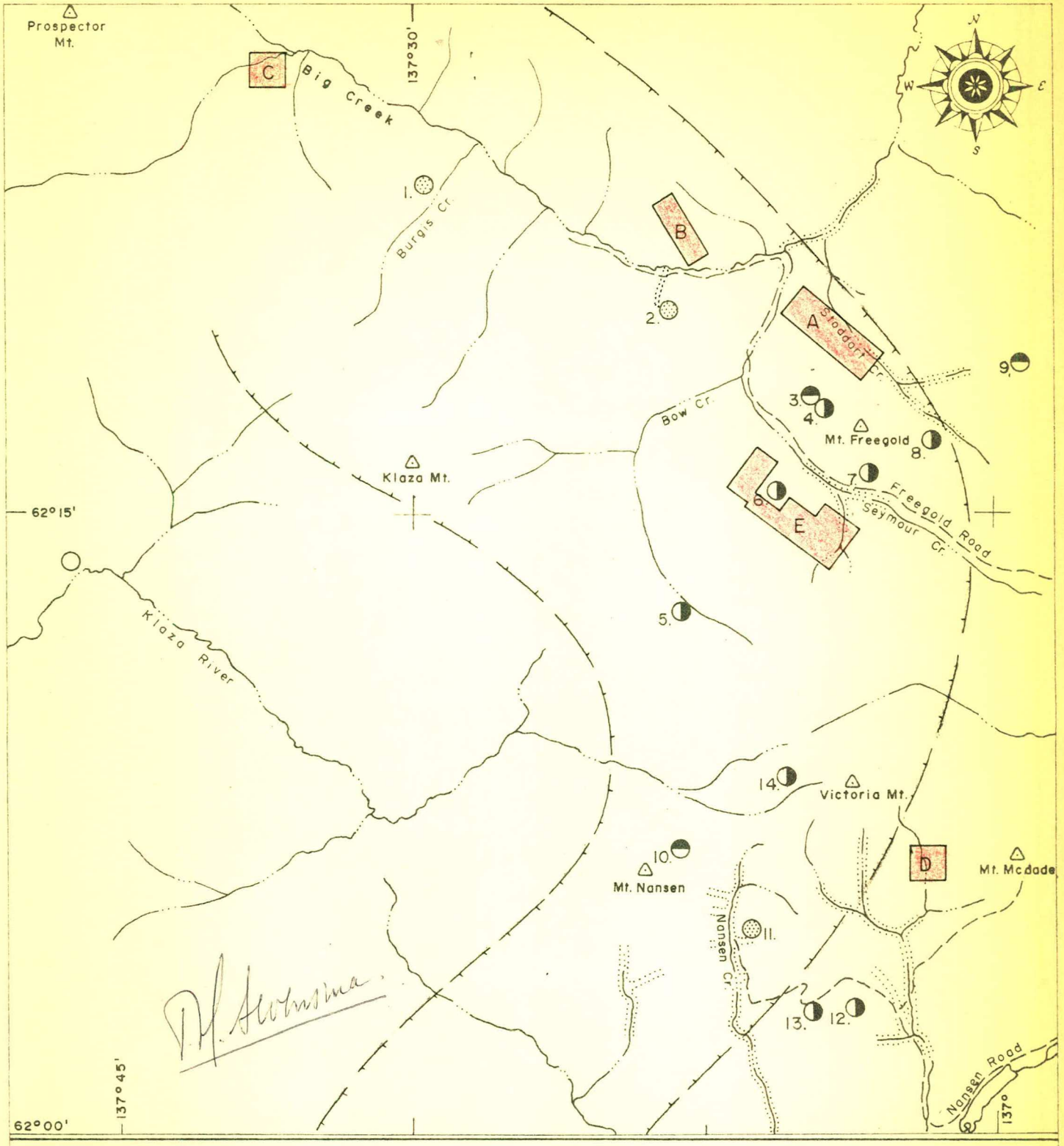
6. That I have no interest, directly or indirectly, in any of the properties or securities of Belmoral Mines Ltd. (N. P. L.) and do not expect to receive or acquire any.

P. H. Sevensma

P. H. Sevensma, Ph. D., P. Eng.

Burnaby, B. C.

June 18, 1974



MINERAL OCCURRENCES

1. Klazan
2. Revenue
3. Red Fox
4. Guder (Augusta)
5. Lil
6. Caribou
7. Laforma
8. Emmons
9. Tinta Hill
10. Esansee
11. Cyprus
12. Brown McDade
13. Mount Nansen
14. Vic

— LEGEND —

- Disseminated Copper
- Gold Veins
- Silver – Lead Veins
- Gold Placer
- Porphyry Belt

BELMORAL MINES LTD. (N.P.L.)

NANSEN FREEGOLD AREA, Properties

Whitehorse M.D., Y.T. 115 I-6

Peter H. Sevensma Consultants Ltd., Vancouver, B.C.

MAY 1974 | Scale: 0 miles 4 | Fig: 1

2 copies, 1 blackline

Car 41-56

Mag 1-16

BIG Creek

Revenue

Ram

BOW Creek

Bow

Classic

137° 00'

March

N

STODDART Creek

Car 1-40

Prism Resources Ltd.

Dynasty option

62° 15'

Gold

Freegold Road

Discovery M.L.

SEYMOUR Creek

Best

MJK 1-32

MJK 33-44

62° 15'

— LEGEND —

- Road, seasonal
- Creek
- Gold placer
- Magnetic Anomaly
- △ Mineral Occurrence

BELMORAL MINES LTD. (N.P.L.)

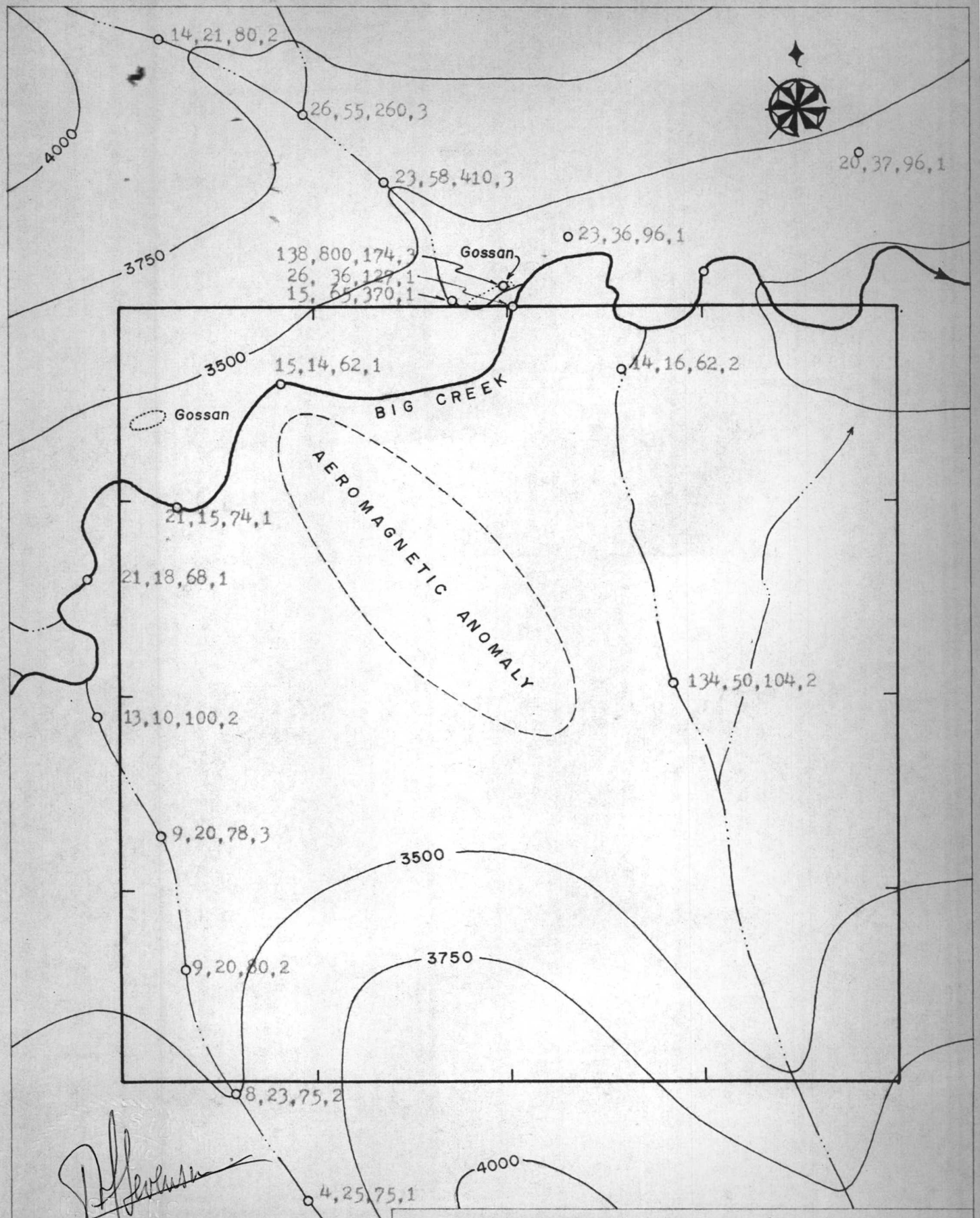
PROPERTY LOCATION

Whitehorse M.D., Y.T. 115 I-6

P. H. Sevensma Consultants Ltd. Vancouver, B.C.

Dwg. No. Fig: 2 JUNE 1974 Scale: 0 miles 1

BCIL 2604 P.H.S.



Silt & Soil values in p.p.m.
for: Cu, Pb. Zn. Mo.

BELMORAL MINES LTD. (N.P.L.)

CAR 57 - 72

Whitehorse M.D., Y.T. 115 I-5

Peter H. Sevensma Consultants Ltd., Vancouver, B.C.

June, 1974 | Scale: 0 1000' | Fig: 3