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# **KALAHARI RESOURCES INC.**

# Exploration Proposal for the Maroon 1 to 6 Mineral Claims

Maroon Mountain-Wesach Mountain Area

Skeena and Omineca Mining Divisions British Columbia

NTS 103 I/15

Willard D. Tompson, P.Geo. March 17, 1997

# **CONTENTS**

<u>Subject</u>	Page
Summary of conclusions and recommendations	
Property and location	1
Claims	1
History	6
General geology	7
Geology of the prospects	. 7
Black Wolf prospect (MinFile 103I 030) Goat prospect (MinFile 103 I 135) Bear, Black Bear prospect (103 I 029) Gold Cap prospect (103 I 028) Guld prospect (103 I 181)	8 8 8 10 10
Controls of mineralization	10
Conclusions	11
Recommendations	12
References	14
Certificate	15

# **ILLUSTRATIONS**

<u>Figures</u>		Page
1.	Map of British Columbia showing location of Maroon Mountain area.	2
2.	Map showing location of Maroon 1 - 6 mineral claims.	3
3.	Topographic map showing Maroon Mountain, Wesach Mountain and geographic features of area.	4
4.	Claim map of Maroon 1 - 6 claims.	5
5.	Map showing location of the early prospects and important geological features.	9

## SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Gold-bearing quartz veins with promising values in precious metals and base metals, occur in Upper Jurassic Bowser Lake clastic sedimentary rocks at Maroon Mountain-Wesach Mountain, north of Terrace, British Columbia.

The locality is well known for its placer gold activity, which began in the 1870's and continued intermittently to recent times.

During the 1920's prospectors and miners explored a vein system which occurs in Bowser Lake argillites below a dense, resistant bed of pebble conglomerate. A small test shipment from one of the prospects averaged: Au, 50gpt; Ag, 155gpt; Pb, 4.8 percent and Zn, 8.2 percent.

The argillite beds underlying the pebble conglomerate may be locally or broadly mineralized and may have the potential for discovery of significant new prospects.

A three phase exploration program is proposed, utilizing geological mapping, geochemical rock and/or soil sampling and diamond drilling. The estimated cost of the program is \$319,420.

## Exploration Proposal for the Maroon 1-6 Mineral Claims Maroon Mountain-Wesach Mountain Area Skeena and Omineca Mining Divisions, British Columbia

#### PROPERTY AND LOCATION

The Maroon 1-6 mineral claims lie 35 kilometers north of Terrace, British Columbia (Figures 1 and 2) in mountainous terrain with physiography typical of Coast Range mountains. The topography is rugged (Figure 3) with elevations ranging from 700 meters at Hampson Creek at the eastern edge of mineral claim Maroon No. 5, to 2120 meters on the eastern ridge of Wesach Mountain in the western extremity of Maroon No. 3 mineral claim (Figure 4).

Bedrock exposures are abundant above treeline, which is at 1370 meters (Jamieson and Aussant, 1991), but below treeline heavy vegetation covers most of the rock.

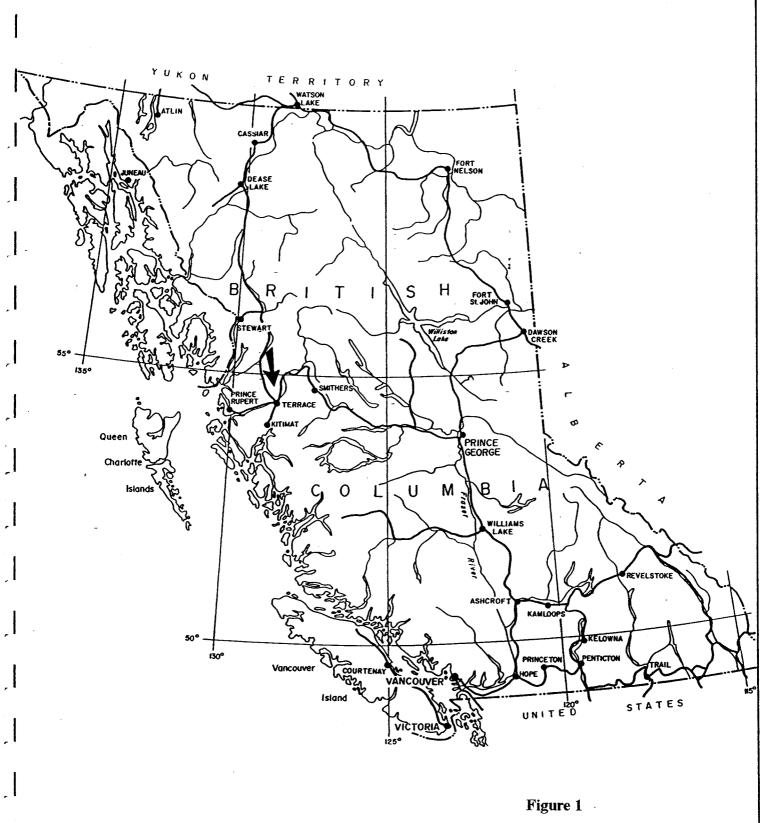
The area in which many of the known mineral exposures occur and in which trenches were dug and adits were driven by early prospectors and miners, is in present mineral claim, Maroon No. 1 at approximate elevations 1300 to 1440 meters (Figure 5).

Access to the claim area is by helicopter from Terrace, which requires less than one half hour for a return trip. Access from the Kitsumkalum Lake road is about 10 kilometers, which provides a short hauling distance for mobilizing field crews and camp and drill equipment. Logging roads on Wesach Creek provide access to within 5 kilometers of the claims.

#### <u>CLAIMS</u>

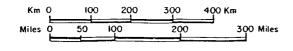
Six mineral claims cover the prospects and surrounding area and lie in both the Omineca and Skeena mining divisions. The registered owner of the claims is Richard T. Heard. Registration details of the claims are shown below.

Claim	Tenure		Date of
Name	Number	Units	Expiry
Maroon 1	336863	20	June 1, 1997
Maroon 2	336864	20	June 1, 1997
Maroon 3	336865	20	June 1, 1997
Maroon 4	336866	20	June 1, 1997
Maroon 5	336867	20	June 2, 1997
Maroon 6	336868	20	June 2, 1997



# Kalahari Resources Inc.

Map of British Columbia Showing Location of Maroon Mountain Area Omineca Mining Division, British Columbia







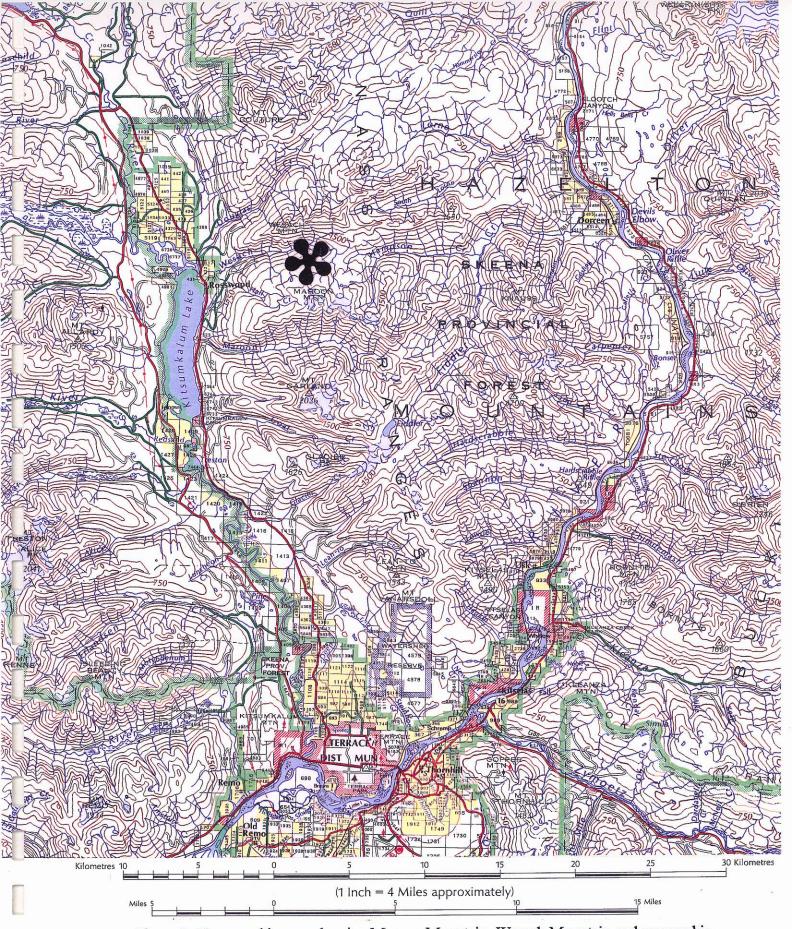


Figure 3.-Topographic map showing Maroon Mountain, Wesach Mountain and geographic features of area.

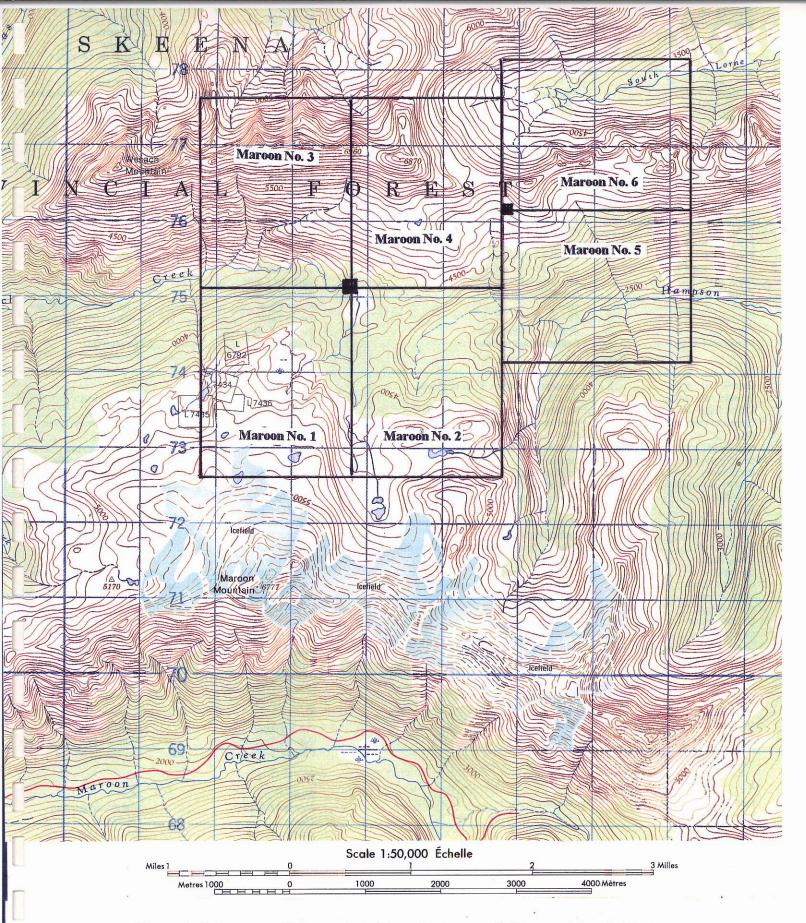


Figure 4.-Claim map of Maroon 1-6 claims, Omineca and Skeena mining divisions, British Columbia.

#### **HISTORY**

Earliest recorded prospecting in the Maroon Mountain-Wesach Mountain area was by placer miners. The B.C. Minister of Mines in 1924, p. A48 records that:

"On Douglas creek (sic), an old placer creek flowing in at the head of Kitsumgallum lake (sic), on which they were placer mining fifty years ago..."

which places activity in the area in the 1870's.

The area covered by the lode claims with which this report is concerned, was prospected prior to 1920. A prominent zone of mineralization which occurs over a length of nearly 2000 meters with narrow felsic dikes and sills, was prospected and had several adits and trenches dug during the period, 1920 to 1930. That work is reported in detail in the geological literature of the area and is listed with "References" in this report. Those prospects, listed here proceeding from south to the northeasterly, were known as the Black Wolf group (MinFile No. 030), Goat (MinFile No. 135), Bear claim and Black Bear (MinFile No. 029), Gold Cap (MinFile 028) and the Guld claim (MinFile 181). The Marmot (MinFile No. 116) and Motherlode (MinFile No. 031) are in the same general area, but are at great distances from the principal vein system.

Newmont Exploration of Canada Ltd. conducted geological mapping and rock, soil and silt geochemical sampling on the Hart molybdenite prospect which lies in the northeast corner of the present claim, Maroon No. 6. On the Hart prospect a hornblende porphyry stock intrudes Bowser Lake Group argillites and contains quartz veins with disseminated pyrite and molybdenite with minor amounts of chalcopyrite and galena (B.C. Min. Mines and Pet .Res., Expl. in B.C., p. 255).

Falconbridge Nickel Mines Ltd. conducted a limited water, silt and rock geochemical survey on the Bermaline (MinFile No. 026) prospect which lies about 2 kilometers north of the boundary of Maroon No. 3. A medium to coarse grained granodiorite sill intrudes Bowser Lake Group shale and greywacke and quartz veins in the intrusive rocks contain pyrite, sphalerite and galena (B.C. Min. Mines and Pet. Res., Expl. in B.C., p.399).

Skeena Resources Limited conducted geological and geochemical surveys (Jamieson and Aussant, 1991) on a group of claims called the Berma 1 to 9. The claims contained 196 units comprising an area of 4900 hectares (12,107 acres). Their principal area of interest was the zone of mineralization which was explored by the early prospectors and miners, e.g., the Black Wolf, Goat, Bear, Gold Cap and Guld prospects. They prepared a grid and conducted a VLF-EM survey, geochemical soil survey and re-sampled some of the old trenches. Additionally, they conducted an air photo geological interpretation of the Berma claims.

During May 27 to 30, 1996 the present claim owner, Richard T. Heard, P.Eng. and N.C. Carter, Ph.D., P.Eng. conducted a reconnaissance examination of the Maroon 1-6 claim area, but were severely hampered by deep snow conditions. They did, however manage to collect four stream sediment samples and 17 soil samples. Several of their samples contained anomalous values in arsenic, antimony, lead and/or zinc (Carter, 1996).

#### **GENERAL GEOLOGY**

The regional geology of the area of Terrace, Kitsumkalum Lake, Doreen and Maroon and Wesach Mountains has been recorded by Hanson (1923), Kindle (1937a and 1937b), Duffel and Souther (1964), Woodsworth, et.al.(1985) and by Carter and Grove (1972).

The Maroon 1-6 claims are underlain by argillites, greywacke, argillaceous siltstones and pebble conglomerates of the Upper Jurassic Bowser Lake Group. Remnants of Mid-Cretaceous Skeena Group sedimentary rocks are noted by Hanson (1923) and by Woodsworth, et. al. (1985). Kindle (1937a, p. 7) noted graphitic, carbonaceous seams of the Skeena Group rocks on the footwall of the Gold Cap vein.

The Bowser Lake Group rocks are intruded by small granitic stocks (Carter and Grove, 1972 and Duffel and Souther, 1964) which are Eocene in age. The sedimentary rocks at Maroon Mountain, Wesach Mountain, and areas near the headwaters of Douglas Creek and Lorne Creek are intruded by small granitic stocks.

#### **GEOLOGY OF THE PROSPECTS**

The principal zone of metallic mineralization which is known at this time occurs along a northeasterly-striking zone and was explored by trenching and underground workings from about 1920 to 1932. Gold-bearing polymetallic veins are hosted by argillites and greywacke of the Upper Jurassic Bowser Lake Group. The veins are mostly conformable with bedding in the sedimentary rocks and lie in the footwall of a prominent and resistant bed of pebble conglomerate which has a thickness of 35 to 70 meters (Figure 5). The beds and veins lie on the southern limb of a breached anticline whose axis strikes east-northeasterly and plunges moderately west-southwesterly. Hanson (1923, p. 42A) notes that the argillites which underlie the conglomerate, "carried all the gold quartz veins that had been staked in this part of the district and also quartz veins that had not been staked." Hanson (op. cit., p. 44A) also noted:

"... that on Douglas Creek the old placer workings extend practically up to the point where the horizon crossed the creek..."

and he suspected that the same may hold true for Lorne and Fiddler Creeks and he concluded:

"It seems highly probable that this horizon, or horizons near it, contain the gold-quartz veins from which the gold in the three placer creeks was derived. As the horizon crosses the placer creeks below timber-line, and further, as the structure of this area has not been previously described, it is fairly certain that the horizon has not been prospected to any extent."

-7-

- Willard D. Tompson, P. Geo. Consulting Geologist According to the records of work done since 1923, it has still not been prospected to any extent.

It is noted above that several prospects along the mineralized beds were explored with trenches and adits during the period, 1920 to 1932. Progressing from south, northeasterly they are (Figure 5): Black Wolf (MinFile 103I 030), Goat (MinFile 103I 135), Bear, Black Bear, Hawk (103I 029), Gold Cap (103I 028) and Guld and Alice (103I 181).

#### Black Wolf Prospect (1031 030)

The veins at Black Wolf are conformable with bedding in argillaceous sandstones and slates and strike northeasterly and dip 50 to 75 degrees southeast. They lie about 15 meters stratigraphically below the pebble conglomerate bed which is described above. Several adits were driven and several trenches were dug on the Black Wolf veins, which are mineralized with quartz, gold, galena, sphalerite, pyrite, pyrrhotite and minor chalcopyrite. The concordant veins are 10 to 25 centimeters wide and up to 120 meters long. A crosscutting vein is 30 centimeters wide and 60 meters long.

British Columbia Minister of Mines (1927) reported that a 30 centimeter sample assayed: Au, 36.3 gpt; Ag, 68.6 gpt; Pb, 1 percent and Zn, 5 percent.

In 1925, 300 sacks of ore were packed out from the Black Wolf workings and in 1928, 23 tonnes of ore were shipped which produced, 1151 grams of gold, 3577 grams of silver, 1103 kilograms of lead and 1905 kilograms of zinc.

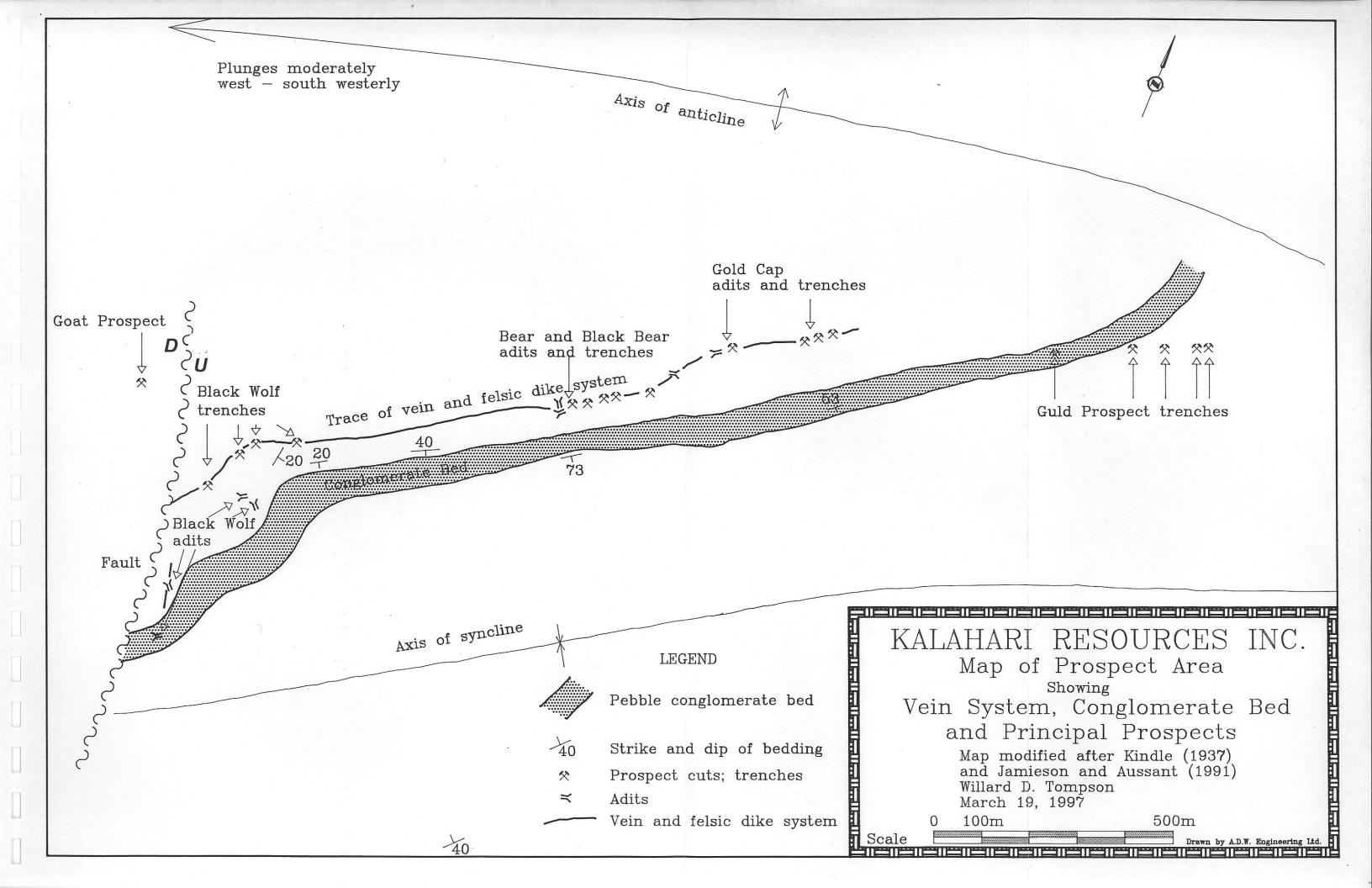
A narrow felsic (aplite) dike intrudes along the zone of mineralization and is locally concordant with the veins and in some places transects the veins.

#### Goat Prospect (103I 135)

The Goat prospect is adjacent to and north of the Black Wolf prospect. Only sketchy information is available for the Goat prospect and that is form the MinFile Master Report. The Goat vein is 5 to 15 centimeters wide and occurs in and is concordant with the host Bowser Lake Group argillites. A sample from the vein assayed, 49 percent lead and 686 grams per tonne silver.

### Bear, Black Bear Prospect (103I 029)

The Bear veins occur in Bowser Lake Group argillite and are conformable with bedding. The zone of mineralization lies 15 meters stratigraphically below the pebble conglomerate bed which is described above. The sedimentary rocks are folded and the Bear veins are on the south limb of a breached anticline which plunges moderately to the west-southwest. The beds near the prospect strike N.30E. and dip 50 to 70 degrees southeast (B.C. Min. Mines A.R., 1930). The principal vein is 0.1 to 1.2 meters wide and is about 300 meters long. A 40 centimeter sample assayed: Au, 17gpt; Ag, 69gpt; Pb, 1.2 percent and Zn, 6.0 percent.



Duffel and Souther (1964) report that a dump sample assayed: Au, 14.4gpt; Ag, 823gpt; Pb, 4.24 percent, Zn, 4.40 and Cu, 0.02 percent.

As on the Black Wolf prospect, a narrow (1.2 to 3.6 meter wide) felsic dike intrudes along the zone of mineralization and locally transects the veins.

#### Gold Cap Prospect (103I 028)

The Gold Cap prospects lie along the same mineralized structure as those noted above and occur along a bedding plane of soft, black carbonaceous shale with overlying impure sandstone (B.C. Min. Mines, A.R., 1930, p. 76). A quartz vein up to about 15 centimeters width was trenched about 600 meters northeasterly from the adits on the Bear prospect. A sample of the quartz vein assayed: Au, 2.05gpt and Ag, 18.51gpt. Additional veins are reported on the Gold Cap, but no assays are recorded.

#### Guld Prospect (103I 181)

The Guld prospects are about 2000 meters east-northeasterly from the Black Wolf prospects described above, which suggests that there exists a 2000 meter-long zone of mineralization. The Guld prospects, however are in beds which are stratigraphically above the pebble conglomerate bed and are described as about one meter of oxidized quartz stringers in slate. No assay information is available.

#### **CONTROLS OF MINERALIZATION**

The quartz-polymetallic veins occur mostly along bedding planes in argillite, greywacke and siltstones, 15 to 30 meters stratigraphically below a dense, resistant pebble conglomerate bed which is 30 to 70 meters thick (Hanson, 1923; Kindle, 1937a; Duffel and Souther, 1964 and Jamieson and Aussant, 1991). The conglomerate and the underlying and overlying beds are folded into a system of anticlines and synclines (Figure 5 and Hanson, 1923, P. 43A) whose axes plunge moderately west-southwesterly. Jamieson and Aussant (1991, map 3) show that the prospects with which this report is concerned, occur along the southern limb of a rather sharp anticlinal fold.

Mineralization appears to occur in open spaces which were produced by dilation in the argillite and sandstone beds as a result of folding. If this interpretation is correct, the folding events and introduction of hydrothermal fluids happened at about the same time. Both the folding of the sedimentary strata and the introduction of hydrothermal fluids into the sedimentary rocks may be related to the intrusion of granitic stocks at Maroon Mountain and Wesach Mountain.

Jamieson and Aussant (1991, p. 14) suggest that an east-west thrust fault immediately north of Wesach Creek may have been responsible for localizing the mineralization.

Willard D. Tompson, P. Geo. \_\_ Consulting Geologist In any event, open spaces were produced in the argillites and greywackes and hydrothermal fluids penetrated into the open spaces and produced the quartz-polymetallic veins.

The relative incompetence of shales, argillites, siltstones and greywackes is such that any individual vein may be of limited breadth, width and length. However, depending upon the intensity and duration of the structural and hydrothermal events which produced the veins, there may exist large areas of mineralized sedimentary rocks with many veins, lying in the footwall of the conglomerate bed.

#### **CONCLUSIONS**

Quartz veins with promising values in precious metals and base metals occur in argillites, shales, siltstones and greywackes of the Upper Jurassic Bowser Lake Group of clastic sedimentary rocks. A mineralized horizon lies 15 to 30 meters stratigraphically below a highly competent pebble conglomerate which is 35 to 70 meters thick.

During the 1920's prospectors and miners cut many trenches in the mineralized horizon and drove many adits and in 1928 shipped 23 tons of ore from the Black Wolf prospect which averaged: Au, 50gpt; Ag, 155gpt; Pb, 4.8 percent and Zn, 8.2 percent.

Most investigators believe that the mineralized horizon, which lies in the footwall of the pebble conglomerate is the source for the placer gold which has been recovered since the 1870's, from Douglas Creek, Lorne Creek and Fiddler Creek (Hanson, 1925 and Duffel and Souther, 1964, p. 71).

The pebble conglomerate and the underlying sedimentary beds occur over a large area of mostly alpine to sub-alpine terrain. These beds, which underlie much of mineral claims, Maroon 1-6, may be locally or broadly mineralized and may have the potential for discovery of significant new prospects.

The trace of the conglomerate bed should be mapped and prospected. The beds underlying the conglomerate are soft and recessive and outcrops may be few. Therefore, geochemical surveys should be employed to search for areas of mineralization below the conglomerate.

-11-

-12-

#### **RECOMMENDATIONS**

A three phase exploration program is proposed:

Phase 1. Geologically map the trace of the pebble conglomerate bed and define the fold axes and areas of drag folding and faulting which may provide permeability and access for hydrothermal fluids.

Conduct rock and/or soil geochemical surveys in the covered areas lying stratigraphically below the conglomerate bed and attempt to define additional mineralized zones.

These surveys will require 2 to 3 weeks. The estimated cost is as follows;

Wages and fees	\$30,000
Geological supplies	4,000
Geochemical supplies	2,000
Geochemical assays, ICP	9,000
Camp equipment, operation	15,000
Helicopter costs	20,000
Truck hauling	2,000
Communications	3,000
Sub total	\$85,000
Contingencies, 15 percent	12,750
Cost for Phase 1	\$97,750

Phase 2. A second phase of exploration will be directed toward drill targets identified by the geological and geochemical surveys. A small drill, such as the JT 600 recovering BQ core is suitable. Estimated cost is expected to be:

Drill contract, 1500 ft. @ \$17/ft.	\$25,500
Field costs	7,500
Fuel for drill	1,250
Management, geology	8,750
Assays, ICP	9,350
Camp const., operation	27,500
Helicopter costs	20,000
Truck hauling	1,000
Sub total	\$100,800
Contingencies	15,120
Total for Phase 2	\$115,920

Phase 3. The third phase of exploration will continue the diamond drill program,
subject to the results of the initial drilling. It is anticipated that some
geological mapping and some geochemical sampling will take place as
the drilling progresses, but separate funding for that is not identified here.
Cost of the third phase of exploration is expected to be as follows:

Diamond drill contract, 2000 feet	
@ \$17.00 per foot	\$34,000
Field costs @ \$5.00 per foot	10,000
Drill moves by helicopter	10,000
Fuel for drill	1,500
Fuel for camp	2,000
Helicopter service trips	3,000
Management, geology	8,750
Camp cook	5,000
Assays, 500 @ \$20.00	10,000
ICP, 100 @ \$7.00	700
Food	6,000
Phone, FAX	1,000
Sub Total	\$91,950
Contingencies, 15 percent	13,800
Total costs for Phase 3	\$105,750

Respectfully submitted

Jampan -

Willard D. Tompson, P.Geo.

-14-

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### CERTIFICATE

I, Willard D. Tompson, of Smithers, British Columbia, do hereby certify:

- 1. THAT I am a consulting geologist residing at 1380 Cronin Place, Smithers, British Columbia;
- 2. THAT I hold a Master of Science degree (Geology) from Montana State University, Bozeman, Montana;
- 3. THAT I am registered as a Professional Geoscientist by the Association of Professional Engineers and Geoscientists of British Columbia;
- 4. THAT I am a Fellow of the Geological Association of Canada;
- 5. THAT I have practiced my profession for more than 30 years;
- 6. THAT this report is based upon a thorough search of the published literature of the Maroon Mountain-Wesach Mountain area and that I have a general knowledge of the geology of the Terrace and Skeena River areas. However, severe winter conditions prevented an examination of the claim area at the time of this writing.
- 7. THAT I have no financial interest in the claims which are the subject of this report, nor any other claims in the Maroon Mountain-Wesach Mountain area nor any company concerned with mining prospects in that area. Nor do I expect to receive or acquire an interest in any company, property or claims in the area.

Dated at Smithers, British Columbia, this  $\frac{2}{2}/\frac{2}{2}$  day of March, 1997.

Willard D. Tompson, P.Geo.

#### -15-