

GEOLOGICAL
ASSESSMENT REPORT

on the

MONASHEE CLAIM GROUP
YEOWARD MOUNTAIN AREA
VERNON MINING DIVISION

by

MURRAY S. MORRISON, B. Sc.

CLAIMS:

Monashee 1-4 (21 units)

LOCATION:

The Monashee Claim Group is situated at the headwaters of Yeoward Creek near the top of Yeoward Mountain, 45 km southeast of Lumby, B.C.

Lat. 50°09'; Long. 118°24';

N.T.S: Map 82-L-1W

OWNER:

M. S. Morrison

OPERATOR:

M. S. Morrison

DATE STARTED:

July 18, 1998

DATE COMPLETED:

July 22, 1998

Kelowna, B.C.

October 15, 1998

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SUMMARY

The Monashee Claim Group, comprised of 21 contiguous units, covers the headwaters of Yeoward Creek on the southern and southwestern slopes of Yeoward Mountain located within the Monashee Mountain Range 45 kilometres southeast of Lumby, British Columbia.

The mineral claims, owned by the writer, M. Morrison, of Kelowna, B.C. were staked to cover a portion of ground lying between the Nugget and DNA prospects which feature gold-bearing mesothermal quartz veins that cut metasedimentary rocks of the Permian Cache Creek Group. The St. Paul mine, which lies just 3 kilometres to the southwest of the Monashee Claim Group, also produced a small amount of silver, lead and zinc mineralization from quartz veins occurring within rocks of the Cache Creek Group.

This year, a preliminary geological mapping program was conducted on the Monashee 2 & 3, 2-post mineral claims situated near the top of Yeoward Mountain at the northeast corner of the Monashee Claim Group. The mapping was carried out to evaluate the mineral potential of the property and both epigenetic gold bearing quartz veins and syngenetic massive sulphide deposits were considered as exploration targets.

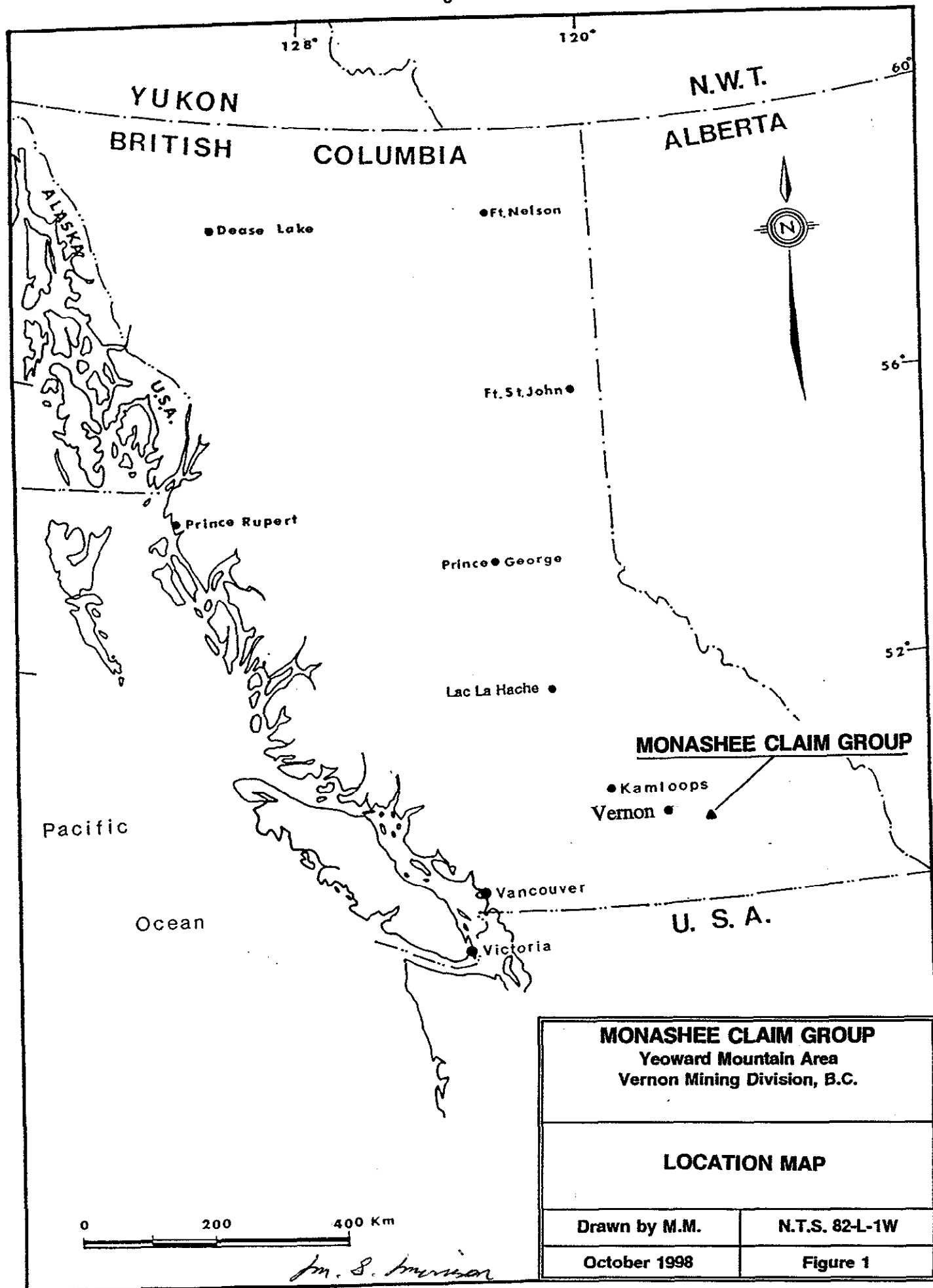
During this year's program the size, distribution and density of quartz veining was mapped, but the work, however, failed to locate the origin of several large peices of quartz on the property and also failed to identify the hydrothermal source of the veining.

Much of the quartz on the property is barren, but rusty vugs in some of the quartz are thought to represent voids left by weathered sulphides and it is recommended that further prospecting and mapping of the quartz veins be carried out to the south and west of this year's map area in an effort to locate sizeable gold bearing veins on the property.

SUMMARY (continued)

This year's study of the metasediments indicate that those underlying the map area were deposited as thin-bedded sediments in a quiet, shallow basin during the Permian. An andesitic tuff interbedded with the sediments is the only evidence of nearby volcanic activity.

Very little of the metasedimentary column was studied this season due to the very gentle dip of the sequence on the top of Yeoward Mountain, and it is therefore recommended that the metasediments be examined on the central portion of the property where the steeper slopes of the mountain will allow for a more complete study. The mapping should be most concerned with trying to identify rocks that are commonly associated with hot spring or volcanic vents with the understanding that these rocks may point in the direction of Permian massive sulphide deposits.



INTRODUCTION

This report, written for government assessment work requirements, discusses the results of a preliminary geological mapping program conducted over the Monashee 2 & 3 mineral claims by the writer during July, 1998.

The Monashee 2 & 3 mineral claims are located at the northeast corner of the Monashee Claim Group on Yeoward Mountain situated in the Monashee Mountain Range 45 km southeast of Lumby, B.C. The claim group is comprised of one, 4-post mineral claim and three contiguous 2-post mineral claims that were staked by the writer, M. Morrison of Kelowna, B.C. in July 1997.

The mineral claims were staked to cover a belt of Permian Cache Creek Group metasediments that underlie Yeoward Mountain and the headwaters of Yeoward Creek. The mineral claims were located to cover open ground lying between the Nugget mineral claim situated on the top of Yeoward Mountain and the DNA mineral claims which cover the lower southern slope of Yeoward Mountain. Gold bearing quartz veins have been explored on both the Nugget and DNA properties over a period of several years.

This year's preliminary geological mapping program was designed to evaluate the economic potential of the Monashee Claim Group with respect to gold bearing quartz veins or syngenetic massive sulphide deposits. The region selected for mapping has abundant rock exposure, and the geology is illustrated at a scale of 1: 2500 on Map M-98-1 which accompanies this report.

LOCATION and ACCESS

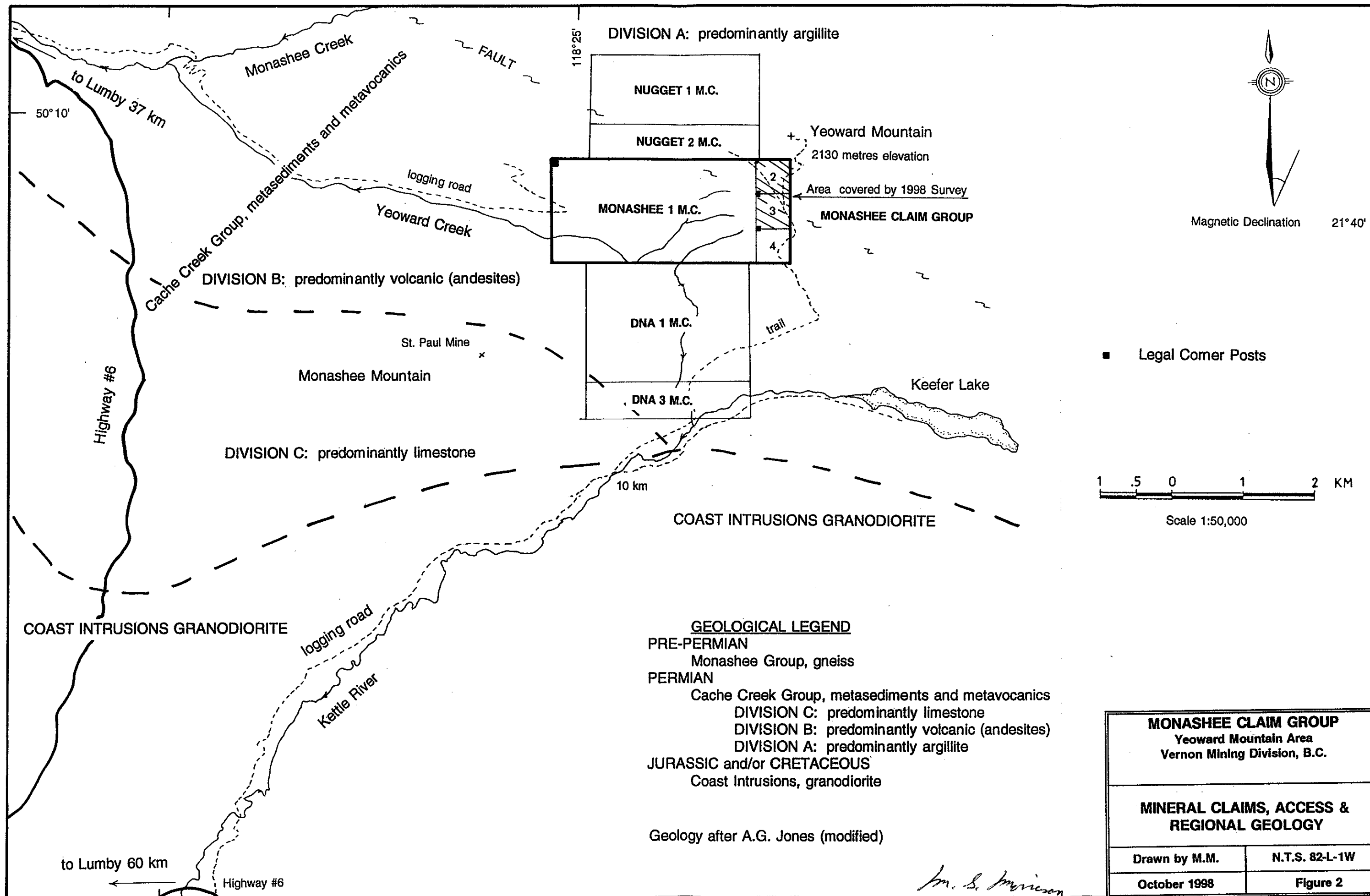
The Monashee Claim Group covers the headwaters of Yeoward Creek near the top of Yeoward Mountain 45 kilometres southeast of Lumby, B.C. in the Monashee Mountain Range (Lat. 50°09'; Long. 118°24', N.T.S. Map 82-L-1W).

LOCATION and ACCESS (continued)

The Yeoward Creek logging road gives access to the western side of the property as illustrated on Figure 2. The logging road leaves Highway 6, 36.5 kilometres southeast of Lumby and climbs from Monashee Creek to the property over a distance of 12 kilometres. The road is generally in good condition during summer months.

Access to the eastern side of the property is via the Keefer Lake Road which leaves Highway 6 sixty kilometres southeast of Lumby. This road is followed 10 km to a point where a bush road branches to follow the northwestern side of the Kettle River. The bush road is then followed 2 km to a creek. Beyond the creek the old road is narrow and badly washed and is suitable only for a dirt-bike or an all-terrain vehicle for the 6 km trip to the top of Yeoward Mountain and the Monashee property.

There are no roads or trails on the very steep central portion of the Monashee property.



PHYSICAL FEATURES AND CLIMATE

The Monashee Claim Group covers the upper southern and southwestern slopes of Yeoward Mountain at the headwaters of Yeoward Creek. Yeoward Mountain at 2130 metres elevation is situated near the southwestern corner of the Monashee Mountain Range just 4 km north of the headwaters of the Kettle River at Keefer Lake (elevation 1360 metres). The Fraser River - Columbia River divide, in part, crosses Yeoward Mountain. Yeoward Creek drains westward into the Fraser River System, while the Kettle River drains southerly into the Columbia River System.

A series of sharp peaked ridges called "The Pinnacles" lie 10 km to the northeast of Yeoward Mountain. These jagged peaks rise above 2140 metres to as high as 2570 metres and indicate that the depth of Continental Ice probably did not exceed 2140 metres in the region.

Yeoward Mountain at 2130 metres elevation, however, was glaciated. The north side of the Mountain falls away in several steep-sided cirques. Cirques also occur on the southwest and eastern flanks of the Mountain. The southern slope of the Mountain, by contrast, is very gentle for 3 km, before breaking away into the Kettle River Valley.

Elevations on the Monashee Claim Group range from 1680 m in the main valley of Yeoward Creek to 2030 m near the top of Yeoward Mountain. The western one-third of the property has moderate relief and is forested with a mix of mature balsam, spruce and pine, some of which has been recently clear-cut logged. The central portion of the property is also forested, but is very steep with 400 metres of relief over a distance of just 1 kilometre. The headwaters of Yeoward Creek originate with the cirques on this portion of the property. Above the cirques on the eastern one-third of the property, the mountain has a gentle southerly slope that is covered with alpine meadows and spotty groves of alpine balsam.

Rock outcroppings are numerous in the meadow area, and all of the mountain exhibits the effects of glaciation.

PHYSICAL FEATURES AND CLIMATE (continued)

The Monashee Mountain Range receives snow from October until early May and the snowpack on the top of Yeoward Mountain reaches 2 metres. Deep snowdrifts in the open alpine region linger until mid-July and feed several small streams on top of the mountain.

Temperatures on the mountain range from 10 to 25°C during summer, and probably drop as low as -30°C on occasional winter nights.

CLAIM STATUS

The Monashee Claim Group is comprised on the Monashee 1-4 mineral claims that were staked by the writer, M. Morrison of Kelowna, B.C., in July, 1997.

The mineral claims are all located in the Vernon Mining Division, and they are all recorded in the writer's name.

The Monashee 1 is a 4-post mineral claim comprised of 18 units. The Monashee 2-4 mineral claims which adjoin the Monashee 1 on the east are all 2-post mineral claims.

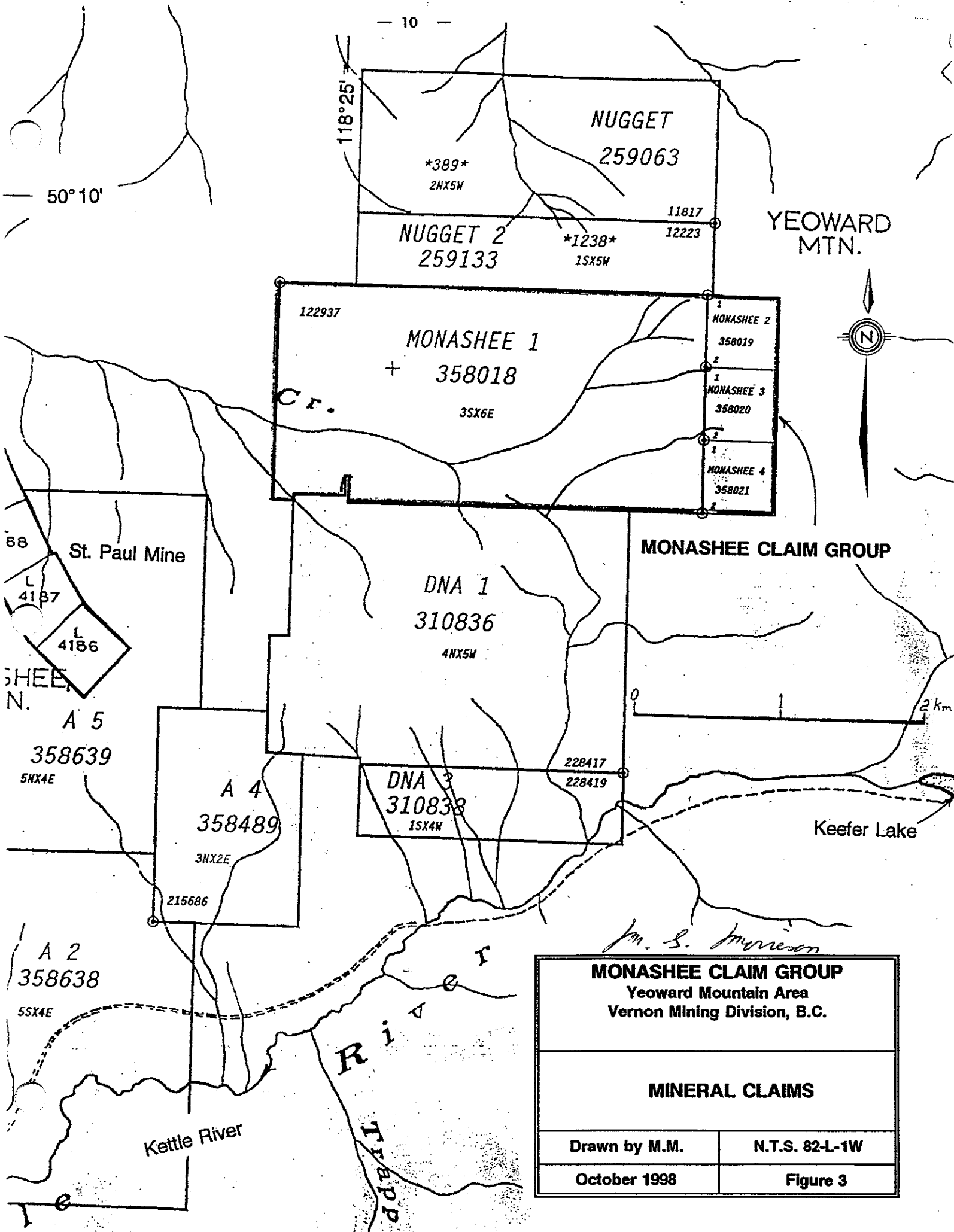
Specifics on the mineral claims are listed below:

<u>CLAIM NAME</u>	<u>UNITS</u>	<u>TENURE NUMBER</u>	<u>DATE OF RECORD</u>	<u>EXPIRY* DATE</u>
Monashee 1	18	358018	July 25, 1997	July 25, 1999
Monashee 2	1	358019	July 23, 1997	July 23, 2000
Monashee 3	1	358020	July 23, 1997	July 23, 2000
Monashee 4	1	358021	July 23, 1997	July 23, 2000

* Note: The Expiry Dates are based on the acceptance of this report for assessment work credits.

CLAIM STATUS (continued)

The Monashee mineral claims have not been surveyed, but it is possible that the Monashee 1 mineral claim could overlap the Nugget 2 mineral claim and the DNA 1 mineral claim by as much as 100 metres on the north and south boundaries, respectively.



Jm. S. Morrison

MONASHEE CLAIM GROUP Yeoward Mountain Area Vernon Mining Division, B.C.	
MINERAL CLAIMS	
Drawn by M.M.	N.T.S. 82-L-1W
October 1998	Figure 3

HISTORY & PREVIOUS WORK

There is no evidence that previous exploration work has been conducted on the Monashee Claim Group. The old roads that cross the top of Yeoward Mountain are believed to have been made for access to the Nugget property which lies immediately north of the Monashee property (see Regional Geology and Mineralization).

REGIONAL GEOLOGY & MINERALIZATION

The geology of the Yeoward Mountain area at a scale of 1" = 4 miles is illustrated on G.S.C. Map 1059A by H.M.A. Rice and A.G. Jones (1945-51). The map shows a belt of Carboniferous (?) and Permian Cache Creek Group metasediments and metavolcanics that is 30 km long by 20 km wide and centred over Yeoward Creek. The Cache Creek Group rocks are in fault contact with Pre-Permian Monashee Group gneiss to the north, east and west, and they have been intruded on the south by granitic rocks of the Jurassic and/or Cretaceous Coast Intrusions.

Three divisions of the Cache Creek Group are differentiated on Map 1059A: one that is predominantly comprised of argillite, another that is predominantly comprised of volcanic (andesite) rock, and a third that is comprised predominantly of limestone. These divisions have been traced on to Figure 2 of this report.

Several bedding directions are illustrated on Map 1059A and it can be assumed that the Cache Creek Group has undergone a good deal of deformation.

There are three mineral properties of note in the immediate vicinity of the Monashee Claim Group. They are the historic St. Paul Mine, situated 3 km to the southwest, the old Fox or Nugget property which lies immediately to the north, and the old Dona or DNA property which lies just to the south. Exploration has been sporadic on all three properties, but over the years quartz veins bearing precious metals and galena sphalerite, chalcopyrite, stibnite and

REGIONAL GEOLOGY & MINERALIZATION (continued)

arsenopyrite mineralization have been found. The quartz veins invade the metasediments of the Cache Creek Group on all properties and diorite sills or dykes are present and possibly significant at both the St. Paul and DNA properties.

Although some good precious metal assays have been obtained from grab samples, the mineralization has proven to be spotty on all properties so far.

A 2 metre quartz vein was discovered on the old Fox prospect, but it is poorly exposed.

A total of 19 tons of partially selected ore from the St. Paul Mine yielded 21 ounces of gold, 424 ounces of silver, 854 pounds of lead and 153 pounds of zinc (G.E.M. p.23, 1973).

All of the mineralization uncovered to date in the district appears to be closely associated with mesothermal quartz veins and the massive sulphide potential of the Cache Creek Group has been overlooked.

It is thought that the Monashee Claim Group has the potential to host both epigenetic and syngenetic mineralization.

Monashee and Yeoward Creeks have a history of minor placer gold production (Holland, 1980).

PROPERTY GEOLOGY

General Comment

The entire Monashee property is believed to be underlain by metasediments of the Permian Cache Creek Group, however, the description of geology in this report will be based on this year's mapping program on the Monashee 2 & 3 mineral claims.

The Location Line of the Monashee 2 & 3 mineral claims at 180° was used as a Baseline for this year's mapping program. Eleven flagged grid lines were then established at 100 metre intervals, and measured 500 metres east (090°) to the edge of the property as illustrated on Map M-98-1. Stations were marked every 25 metres along each line to facilitate the geological mapping. In all, 1 km of Baseline and 5.5 km of flagged grid line were established using a Silva Ranger compass and a Topolite belt chain. Nearby Initial and Final Claim posts were tied-in to the grid during the course of the program.

Lithology

The geology underlying the Monashee 2 & 3 mineral claims is comprised of thin-bedded metasediments of the Permian Cache Creek Group. The most predominant rock (unit 1, on Map M-98-1) is comprised of a mix of thin-bedded argillites, siltstones, greywackes and andesitic tuffs. Locally, where argillites are predominant, the rock is identified as unit 1a; where greywackes are predominant the rock is identified as 1g; and where andesitic tuffs are predominant, the rock is identified as 1t.

The rocks are metamorphosed to the greenschist facies, are highly indurated, and rarely break on bedding planes.

PROPERTY GEOLOGY (continued)**Lithology** (continued)**Argillites**

The argillites are black to brown and are generally very thin to thin-bedded.

Siltstones

The siltstones are thin-bedded with the argillites and are brown to tan.

Greywackes

The greywackes are fine to medium grained and grey. They appear to be made up of water-worked andesitic tuff material and form beds up to 30 cm thick.

Andesitic Tuffs

The andesitic tuffs are grey to light green and composed primarily of fine to medium grained white plagioclase and black augite. They form beds up to 60 cm thick.

Only a few tens of metres of the metasedimentary sequence are represented in the map area, because of the dip slope of the geology. However, there does appear to be more andesitic tuff near the top of the sequence, particularly on the top of Yeoward Mountain just a few hundred metres north of our map area. The greywacke, on the other hand, is most predominant on the southern edge of the map area.

Diorite Dyke or Sill

A diorite dyke or sill (unit 2a) intrudes the metasediments on L6N at 1+60W. The poorly exposed dyke is very similar in appearance to the andesite tuffs, but it contains up to 1% disseminated pyrite and is very limonitic on surface. The minerals of the dyke are metamorphosed to the same degree as the minerals of the metasediments (e.g. greenschist facies) and it is apparently of similar age.

PROPERTY GEOLOGY (continued)

Structural Geology

Much of the rock on Yeoward Mountain has been smoothed by glaciers, and it is difficult to obtain attitudes of the highly indurated metasediments. The rock rarely breaks on bedding planes, and only a few credible attitudes are shown on Map M-98-1. In general, the rocks strike northeast and dip gently to the southeast with the slope of the mountain.

One set of joints is strong. The most common strike direction ranges from 060 to 085 degrees, and dips are steeply to the northwest (80 to 85°).

The gently dipping metasediments near the top of Yeoward Mountain appear to represent the top of a broad fold. Only 2 km to the south (along the trail up the mountain) the same metasediments dip steeply to the south.

Local zones of deformation were seen at scattered locations across the property, but there is no evidence of large scale fracturing or faulting.

Alteration and Mineralization

There is little or no alteration of the metasediments on the property by hydrothermal solutions with the possible exception of the 1% disseminated pyrite associated with the diorite sill or dyke mentioned earlier. Although quartz veins are widespread across the property, there has been limited wall rock reaction adjacent the veins and all veins are believed to be mesothermal.

Quartz veins of 1 to 5 cm are common in the mapped area and equal ½ to 2% of the rock. Locally, the veins equal 5 to 10% of the rock (see Map M-98-1). Some float contains up to

PROPERTY GEOLOGY (continued)**Alteration and Mineralization** (continued)

25% stockwork quartz veins. Elsewhere, pieces of quartz float of 10 to 15 cm have been mapped at several locations, and two 1 metre boulders of quartz have been mapped at L13N, 0+30W and 13+70N, 5+00W on the Monashee 2 mineral claim.

The quartz veining is believed to be early in age, because in local areas where the rock is deformed the quartz veins are also deformed. The quartz fills joints within the metasediments at several locations.

The origin of the large pieces of float is unknown, but undoubtedly local. The stockwork quartz is also believed to be of local origin, because it occurs as clusters in several areas.

Most of the quartz is white and barren, but occasionally it contains rusty vugs that possibly represent the voids left by weathered sulphides. The quartz found in a small creek on L12N at 4+90W on the western side of the Monashee 2 mineral claim contains rusty vugs equalling about 5% of the rock.

The origin of the quartz veining is unknown. The quartz doesn't appear to be a metamorphic "sweat". It seems to be mesothermal and possibly originates from an intrusive lying somewhere below the metasediments. This year's mapping of the distribution and intensity of the quartz veining doesn't point to a source direction, and more work will be required in this regard.

The Pleistocene

Much of the top of Yeoward Mountain has been cleared of weathered rock by the last Continental Ice Sheet. The ice is believed to have moved slightly east of south (about 170°).

PROPERTY GEOLOGY (continued)**The Pleistocene** (continued)

Boulder and clay till up to 10 metres deep occurs on the western one-half of the property in the valley of Yeoward Creek.

DISCUSSION

It was considered (going into the project) that the Permian Cache Creek Group underlying the Monashee Claim Group had the potential to host either syngenetic or epigenetic economic mineralization. The layered metasediments which include volcanic material (tuff) could conceivably host massive sulphite deposits, and the ample evidence of quartz veining suggested that precious metals might also occur within the quartz as they do on the Nugget property immediately to the north, and at other nearby properties.

The Monashee 2 & 3 mineral claims were selected for this year's preliminary geological mapping program, because of the considerable rock exposure on both mineral claims. The mapping was conducted with the objective of finding evidence of either syngenetic or epigenetic mineralization.

The search for syngenetic mineralization was hampered by the fact that the metasediments are gently dipping southerly in the same direction as the mountain slope and as a consequence only a narrow sequence of the metasediments were examined. As mentioned previously, the metasediments are comprised of a mix of thin-bedded argillites, siltstones, greywackes and andesitic tuffs and there is no indication of nearby hot spring or volcanic activity in the rocks mapped.

There is ample evidence of mesothermal quartz veining in the area mapped, but some of the larger quartz (up to 1 metre) occurs as float and its origin is unknown. The quartz which is

DISCUSSION (continued)

believed to be early in age has intruded joints in the metasediments and in places is deformed with the metasediments.

The quartz is white and barren for the most part, but some quartz float in the small creek at L12N, 4+90W on the western edge of the Monashee 2 mineral claim contains 1 to 2 cm rusty vugs which possibly once contained sulphides.

Stockwork quartz veining was also mapped at several sites. Much of the stockwork quartz veining occurs in clusters of float and it is not apparent if sedimentary or tectonic controls were responsible at the time of the quartz emplacement. No large faults or fracture zones were recognized during the mapping program.

Although the diorite dyke or sill at 6+00N, 1+60W contains 1% disseminated pyrite, it appears to be small and of no economic significance.

The widespread occurrence of quartz veining is of interest and the origin of the veining is intriguing. The geological mapping should be expanded to the west and south in an effort to locate the source of the veining. In the course of this work, any sizeable quartz veins with rusty vugs should be assayed for gold.

The metasedimentary sequence should also be examined to the west where there is more topographic relief and a better opportunity to examine more of the column. These rocks should be studied for indications of nearby volcanic activity, in particular, agglomerates, flows and lahars would be of interest.

CONCLUSIONS AND RECOMMENDATIONS

This year's preliminary geological mapping program conducted on the Monashee 2 & 3 mineral claims reveals that early mesothermal quartz veining fills joints and fractures in the thin-bedded Permian Cache Creek Group metasediments which underlie the property. The quartz veining is widespread, but many of the veins are small (1 to 5 cm) and barren. Several pieces of large quartz float of 10 to 15 cm (and in two locations 1 metre) in size are scattered across the property. Much of this larger quartz is also barren, but at some sites the quartz contains rusty vugs that possibly represent voids left by weathered sulphides. Some stockwork quartz veining (25% quartz) also occurs at scattered locations across the property. The origin of the large pieces of quartz float was not found during the mapping program, nor were any geological controls recognized for the stockwork veining.

The metasedimentary package is a monotonous sequence of thin-bedded argillites, siltstones, greywackes and andesitic tuffs that appear to have been deposited into a shallow, quiet basin during the Permian. The metasediments have been folded into a broad anticline with an axis that probably crosses the top of Yeoward Mountain. The metasediments dip gently southerly with the slope of the mountain and as a consequence not much of the metasedimentary column was exposed on the Monashee 2 & 3 mineral claims.

It is recommended that geological mapping be carried out to the west where the steeper topography will allow for a better examination of the metasedimentary sequence (see Discussion). It is also recommended that mapping of the quartz veining be carried out to the west and south of this year's map area in an attempt to find the origins of the quartz veining. In the course of this work, any sizeable quartz veins with rusty vugs should be assayed for gold.

CONCLUSIONS AND RECOMMENDATIONS

Although only the northeast corner of the property has been mapped so far (i.e. 10% of the property) it would appear that the property has good potential for hosting precious metal bearing quartz veins, and at least some potential for hosting a syngenetic massive sulphide deposit.

October 15, 1998
Kelowna, B.C.


Murray Morrison, B.Sc.

REFERENCES

- Dona (DNA) Property: 1973 pp. 97-98; 1974 p. 87 G.E.M.
- Holland, S.S.
1980: Placer Gold Production of British Columbia
p.62 Bulletin #28
- Jones, A.G.
1960: Vernon Map Area, Memoir 296, G.S.C.
- Fox (NUGGET) Property: 1974 p. 87, G.E.M.
1978 p. E87 Exploration in British Columbia
1979 p. 96 Exploration in British Columbia
- McPhail, Monashee Property: 1914: pp. 359-360 Annual Report
1915 p. 252 Annual Report
1973 p. 99 G.E.M.
- St. Paul Mine: 1971, p. 431; 1972 p. 79; 1973 pp. 23 & 98; 1974 p.88;
1975 p. E50 G.E.M.
- G.S.C. = Geological Survey of Canada
- G.E.M. = The Geology, Exploration and Mining Series of Volumes published
by the Ministry of Energy, Mines and Petroleum Resources of British
Columbia.
- Annual Report = Annual Report published by the Minister of Mines in British
Columbia

APPENDIX A**STATEMENT OF QUALIFICATIONS**

I, Murray Morrison, of the City of Kelowna, in the Province of British Columbia, do hereby state that:

1. I graduated from the University of British Columbia in 1969 with a B.Sc. Degree in Geology.
2. I have been working in all phases of mining exploration in Canada for the past twenty-nine years.
3. During the past twenty-nine years, I have intermittently held responsible positions as a geologist with various mineral exploration companies in Canada.
4. I have conducted several geological, geochemical, and geophysical surveys on mineral properties in Southern British Columbia during the past twenty-nine years.
5. I conducted the Geological Mapping Program on the Monashee 2 & 3 mineral claims.
6. I own a 100% interest in the Monashee 1 - 4 mineral claims.

October 15, 1998
Kelowna, B.C.



Murray Morrison - B.Sc.

APPENDIX B**STATEMENT OF EXPENDITURES - ON THE MONASHEE CLAIM GROUP**

Statement of Expenditures in connection with a Geological Mapping Program carried out on the Monashee Claim Group, located 45 km southeast of Lumby, B.C. in the Vernon Mining Division (N.T.S. Map 82-L-1W) for the year 1998.

GEOLOGICAL MAPPING (50 hectares)


M. Morrison, geologist	4 days @ \$300.00/day	\$1,200.
Truck, 4 x 4 (including gasoline and insurance)	4 days @ \$75.00/day	300.
Meals and Lodging	4 days @ \$82.00/day	328.
Flagging and belt chain thread		<u>20.</u>
	Sub-total	\$1,848.

REPORT PREPARATION COSTS

M. Morrison, geologist	1½ days @ \$300.00/day	\$ 450.
Drafting		53.
Typing		86.
Copying Reports		<u>20.</u>
	Sub-total	\$ 609.
	<u>GRAND TOTAL</u>	<u>\$2,457.</u>

I hereby certify that the preceding statement is a true statement of monies expended in connection with the Geological Mapping Program carried out July 18-22, 1998.

October 15, 1998
Kelowna, B.C.


Murray Morrison, - Geologist

