86-400-14871

GEOLOGICAL
ASSESSMENT REPORT

on the

BRITISH 1-5 MINERAL CLAIMS
KAMLOOPS LAKE AREA
KAMLOOPS MINING DIVISION

by

MURRAY MORRISON, B.Sc.

Claims:	British 1-5 (8 units)
Location:	The British property is situated immediately north of Duffy Creek, 25 km due west of Kamloops, B.C. Lat. 50°41'; Long. 120°41'; N.T.S. 92-I-10E.
Owner:	Vault Explorations Inc.
Operator:	Vault Explorations Inc.
Date Started:	April 29, 1986
Date Completed:	May 4, 1986

Kelowna, B.C. June 1, 1986

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ILLUSTRATIONS

SUMMARY

The British property situated 6 km south of Kamloops Lake, 25 km west of Kamloops, B.C., lies within the Savona Mercury Belt. The Mercury Belt has received the attention of several large exploration companies in recent years as a potential epithermal gold environment. Companies such as Placer Development, Newmont, Selco, Inco and Asarco have concentrated exploration efforts on mercury-bearing carbonate alteration zones within Upper Triassic Nicola Group rocks. It is believed that these alteration zones represent the upper levels of epithermal systems that may be gold and silver bearing at depth.

The British property covers several large, faulted, intensely carbonate altered zones of Nicola rocks lying just to the northwest of Duffy Creek. Zones of similar material occur on Newmont Exploration's Sprout property, and Goldstone Exploration's Brussels property to the north of the British property. Newmont has discovered gold, silver, lead and antimony mineralization associated with silica and pyrite near the centre of one such carbonate alteration zone 4.5 km to the northwest of the British property, while Goldstone has discovered gold, silver, and lead mineralization associated with pyrite within a carbonate alteration zone 5 km north of the British property.

It is believed that Late Cretaceous or Early Tertiary quartz porphyry intrusives, some of which occur on the British property, are responsible for the intense alteration zones.

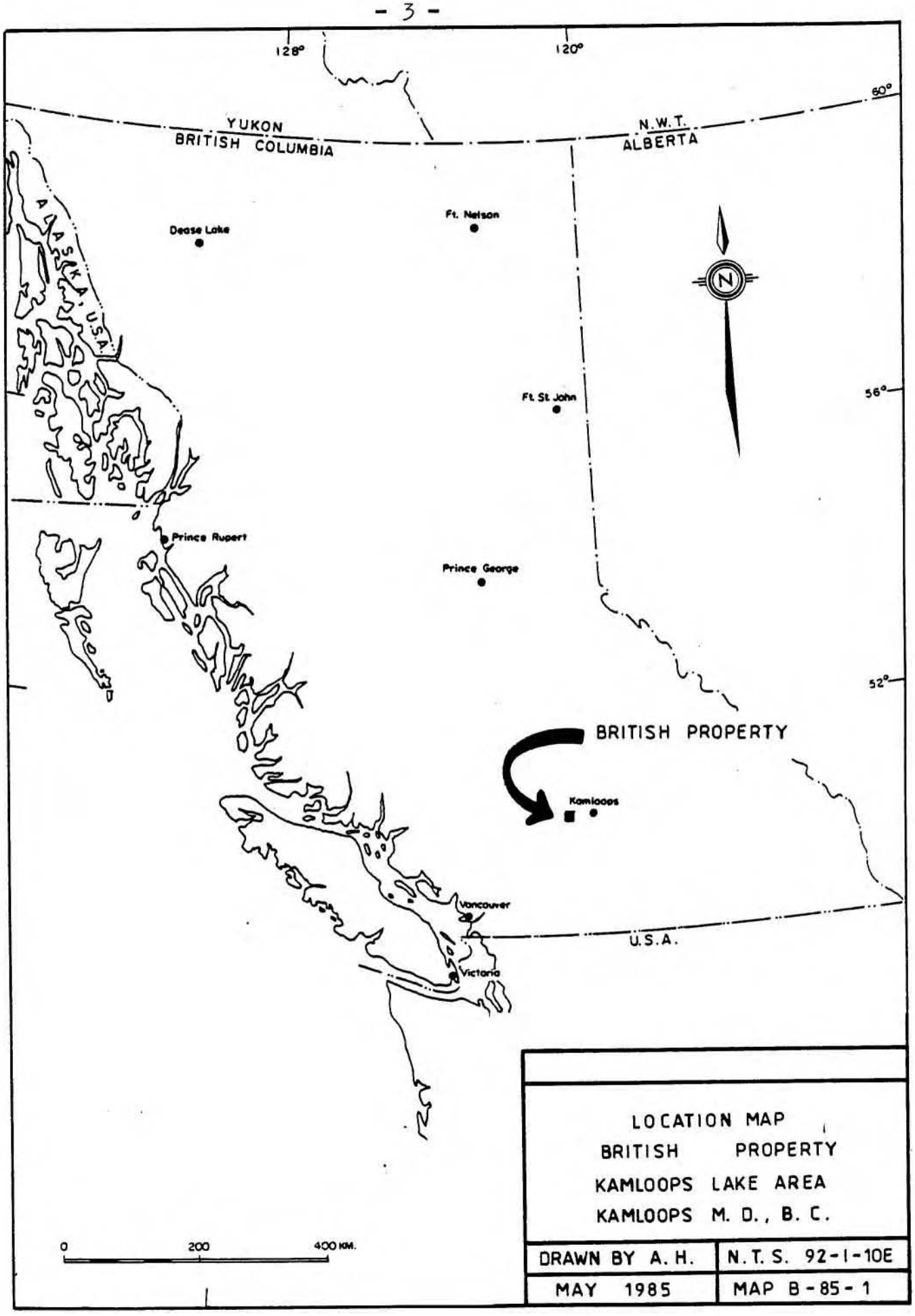
The British property was mapped this year (1986) as a follow-up to last year's prospecting. The carbonate alteration zones were better outlined, and additional lithogeochemical samples were collected this year. Anomalous arsenic values obtained from the quartz-eye porphyry dyke on the British 3 mineral claim in 1985 were confirmed this year, and a second carbonate alteration zone

Continued . . .

SUMMARY - Continued

with anomalous arsenic values was discovered on the British 2 mineral claim.

Percussion drilling of the dyke on the British 3 mineral claim and the new zone on the British 2 mineral claim is recommended in view of the correlation between arsenic values and gold and silver values on neighbouring properties to the north. The drill chip samples should be analyzed for arsenic, gold and silver.



LOCATION MAP
BRITISH PROPERTY
KAMLOOPS LAKE AREA
KAMLOOPS M. D., B. C.

DRAWN BY A. H.	N. T. S. 92-I-10E
MAY 1985	MAP B-85-1

INTRODUCTION

The British property, comprised of the British 1, 4-post mineral claim of 4 units, and the British 2-5, 2-post, mineral claims, is situated immediately northwest of Duffy Creek, 25 km due west of Kamloops, B. C. (Lat. 50°41'; Long. 120°41'; N.T.S. 92-I-10E). The claims were staked by the writer in 1984 to cover several zones of strongly carbonate altered Upper Triassic Nicola "volcanic" sedimentary rocks. It was considered at the time of staking that the carbonate alteration zones might represent the upper horizons of epithermal systems which may be gold-bearing at shallow depth.

During May 1985 prospecting and sampling was conducted over selected portions of the British property by the writer, and the work was reviewed in an assessment report filed with the Ministry of Mines. This year's work (1986) involved the geological mapping of the property at a scale of 1:2,500, and included further sampling of some of the major alteration zones on the property. A discussion of the results of the geological mapping and sampling is presented within this report, while Map M-86-1, accompanying this report, illustrates the geology mapped and shows sample sites and values. A description of each sample is also given in Appendix "A".

LOCATION AND ACCESS

Map B-85-2, on the following page, shows the location of the British property immediately northwest of Duffy Creek, or 25 km due west of Kamloops, B. C. (Lat. 50°41'; Long. 120°41'; N.T.S. 92-I-10E). Access to the property is via the gravel and dirt logging roads (illustrated on Map B-85-2), a total distance of 7 km from the Trans-Canada Highway.

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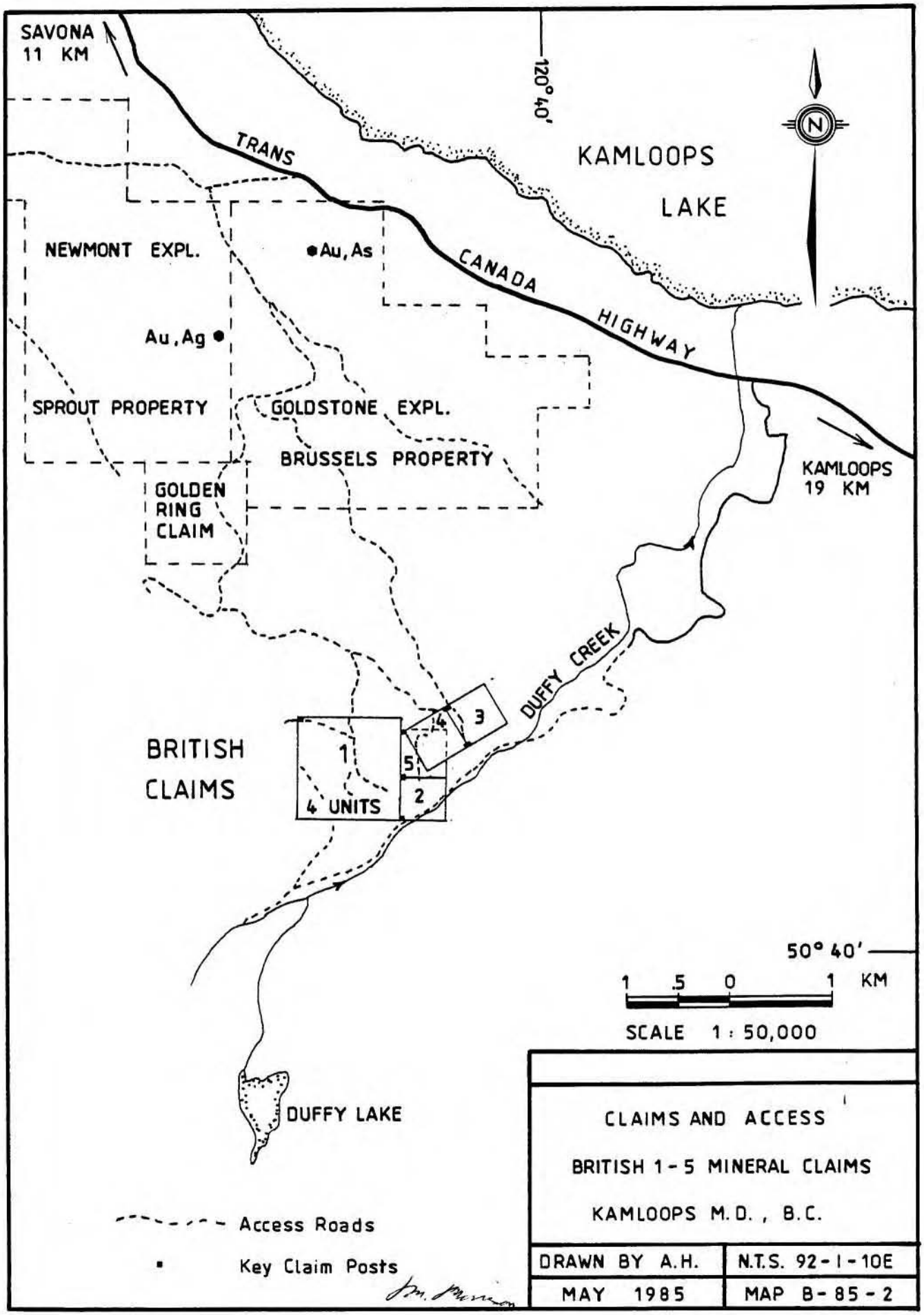
SAVONA
11 KM
120° 40'
TRANS
CANADA
HIGHWAY
KAMLOOPS
LAKE
N
NEWMONT EXPL.
Au, As
Au, Ag
SPROUT PROPERTY
GOLDSTONE EXPL.
BRUSSELS PROPERTY
GOLDEN
RING
CLAIM
KAMLOOPS
19 KM
DUFFY CREEK
BRITISH
CLAIMS
1
2
3
4
5
4 UNITS
50° 40'
1 .5 0 1 KM
SCALE 1 : 50,000
DUFFY LAKE
Access Roads
Key Claim Posts
CLAIMS AND ACCESS
BRITISH 1 - 5 MINERAL CLAIMS
KAMLOOPS M.D., B.C.
DRAWN BY A.H.
N.T.S. 92 - I - 10E
MAY 1985
MAP B - 85 - 2

LOCATION AND ACCESS - continued

Alternate access to the British property is via the Duffy Creek road, although this route has not been driven by the writer to date.

The dirt portions of the access roads can become very slippery and rutted during heavy rains, and an attempt should be made to confine the drilling of the property to the dry season.

PHYSICAL FEATURES AND CLIMATE

The British property with an average elevation of 1000 metres above sea level lies 6 km south of Kamloops Lake (350 m elv.). The property features moderate relief with local hummocks rising 30 to 60 metres above the surrounding countryside, and a larger ridge rising to an elevation of 1300 metres on the southwestern corner of the property. Rock exposures scattered across the property are often restricted to the low hummocks.

The Kamloops Lake region is semi-arid at lower elevations with precipitation equalling less than 30 cm per year. An increase in precipitation from the lake, upwards, into the hills is marked by successive changes in vegetation from sagebrush, to Ponderosa pine, to Douglas fir. The dominant forest species on the British property is Douglas fir which forms thick groves locally, and which has been selectively logged in recent years.

Small, man-made lakes provide drinking water for grazing cattle during summer months on the property.

Winter snow reaches depths of up to 70 cm and covers the property from November until April each season.

CLAIM STATUS

The British property is made up of the British 1, 4-post mineral claim, and the British 2-5, 2-post mineral claims, all staked by the writer, M. Morrison, in May 1984. An option agreement allowing for the exploration and development of the property by Vault Explorations Inc. of Kelowna, B. C. was signed by the writer on April 8, 1986. The agreement allows for a 100% transfer of interest in the British property to Vault Explorations Inc. subject to certain conditions. Particulars on the British claims are given below:

CLAIM NAME	UNITS	DATE OF RECORDING	RECORD NO.	MINING DIVISION	EXPIRY DATE *
British 1	4	May 10/84	5619	Kamloops	May 10/88
British 2	1	May 10/84	5620	"	May 10/88
British 3	1	May 10/84	5621	"	May 10/88
British 4	1	May 10/84	5622	"	May 10/88
British 5	1	May 10/84	5623	"	May 10/88

* The new Expiry Date is based on the acceptance of this report for Assessment Work Credits.

HISTORY

The British property, staked in 1984, is located within the Historic Savona Mercury Belt - a 12 km wide belt running 20 km north and south of the west end of Kamloops Lake. Cinnabar occurs within late dolomite veins, filling ankerite-replaced Nicola Group rocks at several points within the Belt. The cinnabar occurrences were first investigated in the 1890's, and again, more intensely, in the 1940's when considerable underground work was carried out on some of the richer prospects, such as those at Carabine Creek, Hardie Mountain, and Tunkwa Lake. During the early part of this decade several large exploration

continued . . .

HISTORY - continued

companies re-examined the old Mercury Belt as a potential epithermal gold belt. Companies involved in the area included Asarco, Inco, Newmont, Selco, Placer Development, and others.

The British 1-5 mineral claims cover ground formerly held by Placer Development (Brussels 6-9 mineral claims, 1981-84). Placer Development conducted limited soil geochemical surveys on their ground before allowing the claims to lapse in 1984. The British claims were subsequently staked by the writer in May 1984.

In 1985 prospecting and sampling was carried out on the British claims by the writer.

REGIONAL GEOLOGY

Map 886A, entitled "Nicola", by W.E. Cockfield of the Geological Survey of Canada, illustrates the 12 km wide belt of Upper Triassic Nicola Group rocks that extends for 20 km north and south of Savona, B. C., at the western end of Kamloops Lake. The map shows the locations of numerous old mercury prospects that occur within the Nicola Group rocks as well as others that occur within Late Cretaceous sedimentary and volcanic rocks.

The mercury showings at Carabine Creek are believed to be related to Tertiary Copper Creek Intrusions shown on the "Nicola" map. Copper Creek Intrusions have also been mapped near quartz veins bearing gold mineralization at Criss Creek near the north end of the Mercury Belt. It is, therefore, suspected that hydrothermal solutions emanating from high level intrusives related to the Tertiary Copper Creek Intrusions underlie many of the mercury bearing carbonate alteration zones within the Mercury Belt,

continued . . .

REGIONAL GEOLOGY - continued

and that these zones may represent the upper levels of potential epithermal gold-bearing systems.

It is believed that the Newmont showing (illustrated on Map B-85-2) represents a Tertiary epithermal gold-bearing system. The showing, located 4.5 km north of the British property, was discovered by Newmont Exploration geologists in 1982. It consists of a brecciated quartz-chalcedony vein that is mineralized with pyrite, galena, sphalerite, stibnite, and tetrahedrite. The vein carries good silver values and some gold. The vein is bordered by carbonate alteration similar to that seen throughout the district.

Another zone of anomalous gold (1775 ppb) and arsenic (400 ppm) mineralization has been discovered (1984) within carbonate altered Nicola Group rocks on the Goldstone Exploration Brussels property 5.0 km north of the British property.

Regionally, the British property lies 14 km west of the well-known Afton Copper (gold and silver) Mine, and only 7 km southwest of the old Copper King Mine (copper, gold, and silver). Late Triassic Cherry Creek Intrusives, thought by some geologists to be coeval with the Nicola Group volcanics, played a role in the mineralization at both copper mines. Although there is a large age difference between the intrusives of the Mercury Belt and the intrusives of the copper mines the gold and silver production at the mines does at least indicate that the Nicola Group rocks south of Kamloops Lake have an apparent high genetic (?) potential for carrying gold and silver values.

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REGIONAL GEOLOGY - continued

In the Savona district the geology has a distinct northwesterly trend, with probable major faults aligning with Deadman River, Sabiston Creek, Carabine Creek, and Durand Creek. Open File Map 980 of the Aschroft area by J.W.H. Monger et al. of the Geological Survey of Canada shows the Sabiston Creek fault to continue south of Kamloops Lake, and to extend as far south as the British property. Several northwest and northeast striking lineaments of lesser order of magnitude also cross the countryside. Such lineaments cross the Sprout claims of Newmont Exploration, and the Brussels claims of Goldstone Exploration to the north of the British property, as well as the British property itself. Early Tertiary(?) intrusives with related carbonate and siliceous alteration zones appear to align with some of these lesser order lineaments.

GEOLOGICAL MAPPING AND SAMPLING - 1986

A Silva Ranger Compass and Topolite Belt Chain were used to establish a flagged Baseline and grid lines across the British property. The Baseline of 1.1 km was measured out at 330 degrees, perpendicular to geology, while the flagged grid lines, totalling 8.2 km, were measured at right angles from the Baseline at a spacing of 200 metres. Stations were marked along the grid lines at 25 metre intervals to facilitate geological mapping. A total of 3 man days were required to lay out the grid.

Six days were spent geologically mapping the property at a scale of 1:2,500. The geology is illustrated on Map M-86-1 accompanying this report.

A total of 13 lithogeochemical samples were collected from alteration zones on the British 1-5 mineral claims.

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GEOLOGICAL MAPPING AND SAMPLING - 1986 - (Continued)

The samples, which are described in Appendix A, were made up of 2 cm rock chips collected from rock exposures or angular float. Each sample, weighing approximately 2½ kg, was analyzed for 30 elements by the ICP system of Acme Laboratories of Vancouver. In addition, gold in parts per billion, was analyzed by atomic absorption methods. The values of selected elements are listed next to each sample site on Map M-86-1, while the laboratory results for the rest of the 30 elements are listed in Appendix B along with laboratory procedures.

PROPERTY GEOLOGY AND MINERALIZATION

General

The British property is underlain by volcanic-derived sedimentary rocks of the Upper Triassic Nicola Group that have been intruded by quartz-eye porphyry dykes believed to be of Late Cretaceous or Early Tertiary Age.

In most cases the volcanic clasts of the Nicola Group sedimentary rocks are little weathered, and have been deposited quickly in poorly sorted massive conglomerate beds, although some interbedded sandstone and siltstone beds also occur. The clasts have undergone little transportation or mixing, and thick assemblages of predominantly basaltic, andesitic, or trachyandesitic beds occur. During this year's (1986) mapping to the north of the British property it was found convenient to identify and map the rocks according to the predominant clast content, without giving consideration to stratigraphy. Therefore, Unit 1 sediments are identified as those made up of trachyandesitic clasts predominantly; Unit 2 sediments as those made up of basaltic clasts predominantly; and Unit 4 sediments as those made up of andesitic clasts predominantly. Unit 3 rocks include a wide range of sediments that do not fit into the three volcanic-derived categories. Unit 3 sedimentary clasts are of mixed varieties, and they are often more

Continued . . .

PROPERTY GEOLOGY AND MINERALIZATION - Continued

General - Continued

rounded than the pure volcanic clasts. Unit 3 sediments also include limy conglomerates, limy sandstones, and limestones.

Although the regional stratigraphy has not been determined, it appears that the British property may cover the northeastern limb of a northwesterly striking syncline. Unit 1 and 2 rocks are not present on the British property and may lie to the southwest.

Unit 3 - Sedimentary Rocks of Mixed Clasts

Unit 3 sediments are believed to underlie the southwest corner of the British 1 mineral claim. The sediments are poorly exposed, but they occur as angular float over a large area. The rocks are made up of mixed clasts forming granular conglomerates with a fine sandy matrix equalling 50%. No attitudes were obtained for the Unit 3 sediments, but they are believed to overlie Unit 4 sediments conformably.

Unit 4 - Sedimentary Rocks of Predominantly Andesitic Clasts

Unit 4 sediments - rocks made up predominantly of andesitic clasts - underlie much of the British property. They range from boulder and cobble conglomerates to siltstones. The conglomerates are widespread underlying 80 per cent of the property, whereas greywackes, sandstones, and siltstones are largely restricted to an area covered by the northeast quarter of the British 1 mineral claim and the British 2 mineral claim.

Some of the sandstones and siltstones illustrated as Unit 3 rocks near the Baseline on Map M-86-1 may in fact be derived from andesites, although intense carbonate alteration renders the identification of original mineral constituents impossible.

Continued . . .

PROPERTY GEOLOGY AND MINERALIZATION - Continued

Unit 4 - Sedimentary Rocks of Predominantly Andesitic Clasts - Continued

The matrix of the boulder and cobble conglomerates varies from silt size to sand size. The conglomerates with a silty matrix are dense, whereas the sandy conglomerates are more friable, and permeable.

Unit 5 - Quartz-Eye Porphyry Intrusives

A large quartz-eye porphyry dyke intrudes Unit 4 conglomerates on the British 3 & 4 mineral claims. The segmented dyke may average 50 metres in width and measures at least 700 metres in length, extending northwest of the British property onto the Mustang 6 mineral claim.

The mineral composition of the dyke is difficult to determine due to strong alteration, but it may be equivalent to a rhyolite or syenite. The distinctive rounded quartz-eyes range from 2 to 10 mm in diameter and equal up to 5% of the rock locally, but more often equal 1%. Mafic minerals are scarce (or altered). The prevalent feldspar is orthoclase.

A second, smaller, felsic dyke of similar composition cuts Unit 4 rocks just to the north of the British property.

Structural Geology and Faulting

The poorly sorted, massive conglomerates underlying much of the British property yielded few bedding planes, and many of the attitudes obtained from sandstone and siltstone beds are suspect due to local faulting and drag-folding. In general the sediments appear to strike northwest (320 to 350 degrees) and dip steeply southwest (55 to 80 degrees), and may form the northeastern limb of a northwest striking syncline as mentioned earlier.

Continued . . .

PROPERTY GEOLOGY AND MINERALIZATION - Continued

Structural Geology and Faulting - Continued

Map MP-86-1 shows the trace of many faults and lineaments dissecting the British property. Many of the lineaments, first identified on air photographs, were later confirmed as faults during field mapping. Field evidence indicating faulting included the noting of local areas of intense fracturing with slickenside surfaces on fracture planes, as well as the mapping of offset segments of quartz-porphyry dykes.

The northwesterly-striking faults (310 to 330 degrees) are dominant on the British property and appear to be both early and late. They are also believed to have played a role in the development of the strong alteration zones on the property. Northeasterly-striking faults (05 to 15 degrees) are fewer in number and possibly less important with regard to alteration zones than the northwest faults. East-west faults (100 to 110 degrees and 75 degrees) are noteable in that they offset many of the northwest faults, and are clearly more recent. All of the faults on the property are believed to be of Tertiary Age.

Alteration and Mineralization

There are two major types of alteration that appear to have economic implications for the British property: carbonatization and kaolinization. Carbonate alteration of the andesitic-derived sediments is widespread across the property, while kaolinite alteration is restricted to the quartz-eye porphyry dyke on the British 3 mineral claim.

Carbonatization on the property involves the replacement of the original rock minerals by ankerite and dolomite. These minerals also fill late cross-cutting fractures. The degree of alteration has been noted on Map M-86-1 as weak, moderate, or intense. Weak carbonate alteration is represented by 1-10% replacement and 1-2% veining by ankerite and dolomite; moderate alteration is repre-

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PROPERTY GEOLOGY AND MINERALIZATION - Continued

Alteration and Mineralization - Continued

sented by 10-30% replacement and up to 5% veining; and intense alteration is represented by 30-90% replacement and up to 10% veining. Silica replacement occurs within some of the zones of intense carbonate alteration, and equals 10 to 50% locally. Late quartz or chalcedony veinlets equalling ½ to 2% also occur within many carbonate alteration zones as indicated on Map M-86-1. Trace amounts of pyrite or chalcopyrite occur as disseminated grains within the carbonate alteration zones, and there is a distinct increase in pyrite content with silicification. Some local silicified areas that were sampled this year contain up to 5% pyrite.

Limonite is a common weathered product of ankerite and is abundant at all alteration zones. Weak hematite staining is also widespread across the property and is usually associated with the deep weathering of the fault zones.

The kaolinization of the quartz-eye porphyry dyke is general, but best developed on the northeastern side of the dyke where there is evidence of late faulting. The dyke is altered to a rusty, chalky, fine grained rock. Locally, silica replacement equals up to 30%, and disseminated pyrite equals 2%.

British 3 Mineral Claim - Kaolinized Zone

The kaolinized quartz-eye porphyry dyke on the British 3&4 mineral claims, described above, represents the best exploration target on the British property at present in that it is the only alteration zone that has yielded substantial "indicator" element values. Arsenic values of 380, 292 & 241 ppm were obtained from three samples collected this year from the dyke and values of 88, 552, & 843 ppm were obtained from three samples collected in 1985. The pyritized, silicified portions of the dyke consistently

Continued . . .

PROPERTY GEOLOGY AND MINERALIZATION - Continued

British 3 Mineral Claim - Kaolinized Zone - Continued

assay for arsenic. The silica and pyrite have been introduced into the dyke late, suggesting that post-intrusive hydrothermal solutions have been introduced, possibly via the fault defining the northeast side of the dyke.

It is of interest to note that strongly carbonate altered sedimentary rocks overlie the quartz-eye porphyry dyke on the boundary of the British 3 & 4 mineral claims. There would seem to be a direct relationship between the intruding dyke and the carbonate alteration at this location.

British 2 Mineral Claim - Carbonate Alteration Zone

Steeply dipping sediments are strongly carbonate altered near the north central region of the British 2 mineral claim. Sandy conglomerate (sample site MP-04) and sandstone (sample site MP-05) within the zone are also moderately silicified and contain up to 5% pyrite. In addition, the sandy conglomerate is cut by 4% late cross-cutting quartz veinlets. Both samples collected contained anomalous arsenic values (43 and 108 ppm respectively).

The zone is of interest in that it occurs near the intercept of two major faults, and the receptive beds, namely, the sandy conglomerate and sandstone have attitudes sub-parallel to the faults.

British 1 Mineral Claim - Central Carbonate Alteration Zone

A moderate to intense carbonate alteration zone measuring 150 by 300 metres is centred on Baseline 30 West and grid 7+00 North. Ankerite up to 50%, and silica up to 10% (locally), replace thin bedded greywackes, sandstones and siltstones that dip steeply to the southwest. Late quartz veinlets equal ½ to 2% and range up to 2 cm in thickness within the zone.

Continued . . .

PROPERTY GEOLOGY AND MINERALIZATION - Continued

British 1 MC - Central Carbonate Alteration Zone - Continued

Although the alteration is strong, none of this year's analyses yielded significant values for precious metals or indicator elements in samples selected from this zone.

British 1 Mineral Claim - Southeast Carbonate Alteration Zone

A zone of intense carbonate alteration measuring 300 by 50 metres crosses from the southeast corner of the British 1 mineral claim on to the British 2 mineral claim. In several places the replacement of the sediments by ankerite is almost complete, and at one location silica replacement is near 100%. A conglomerate bed that is recognizable at the eastern end of the zone dips southerly. At this location the conglomerate is intensely altered, while an underlying bedded sandstone sequence is less altered, and a lower bedded siltstone sequence is even less altered. The conglomerate bed clearly displays preferential replacement by ankerite. Although the tenor of the alteration zone is good samples collected from the ankerite zones last year and the silica zone this year all yielded negligible results with respect to precious metals and indicator elements.

British 1 MC - West-Central Carbonate Alteration Zone

Moderate carbonate alteration occurs at many sites along a northwest striking fault running sub-parallel, and 100 metres west of Baseline 30W, on the British 1 mineral claim. Only one sample (MP-13) was collected from this zone. The sample yielded poor analyses for precious metals, although it was selected from a zone of silica enrichment.

DISCUSSION

During the past five years the writer has visited or prospected several carbonate alteration zones located between Kamloops Lake and Duffy Creek. Some zones are composed entirely of ankerite and are barren of ore minerals, while others, such as the Newmont showing (described under Regional Geology) are silica rich, and carry ore minerals (galena, sphalerite, stibnite and tetrahedrite) with associated silver and gold values. Although the alteration zones display a variety of types and intensities it is felt that they are all of a single age, and related to Late Cretaceous or Early Tertiary felsic intrusives. Faulting appears to have controlled the emplacement of the intrusions and the channelling of related hydrothermal solutions. These solutions are believed to have brought about the carbonate alteration and the silicification viewed at several localities as well as the epithermal silver and gold mineralization at the Newmont showing.

The difference between the silver and gold-bearing Newmont showing and some of the carbonate alteration zones on the British property may be one of vertical zoning, where the centre of the epithermal system has been exposed by erosion at the Newmont showing, while only the uppermost levels of the epithermal system have been exposed on the British property.

In theory, gold and silver mineralization precipitate from hydrothermal solutions at specific temperatures and pressures. Although the gold and silver "freeze" and become immobile at a certain horizon the hydrothermal solutions continue on, upward, carrying "indicator" elements such as arsenic, antimony and mercury into the overlying alteration zones that are composed of low temperature silica or carbonate. At some point during ascent the indicator elements also precipitate leaving only the low temperature hydrothermal solutions to carry on.

In the Kamloops Lake region there are several different horizons of the epithermal system that have been exposed by erosion and

Continued . . .

DISCUSSION - Continued

the following four distinct levels of a typical epithermal system can be recognized:

Level 1 is represented by expansive zones of strong carbonate alteration, generally forming erosionally resistant ridges. These zones may or may not contain indicator elements.

Level 2 is made up of a sub-cap of low temperature silica just 10 to 20 metres below the carbonate zone. This zone may or may not carry indicator elements depending on the amount of late cross-cutting quartz veining.

Level 3 is made up of a quartz vein stockwork of restricted lateral extent lying somewhere beneath the siliceous sub-cap. The stockwork, as represented by the Newmont showing, may contain ore minerals carrying silver and gold values.

Level 4 is made up of a high level porphyritic intrusive occurring 50 to 100 metres below Level 1.

Many of the carbonate alteration zones on the British property equate with Level 1 of the model, while the zone of silica, pyrite, and arsenic mineralization on the British 2 mineral claim equates with Level 2.

The quartz-eye porphyry dyke on the British 3 & 4 claims represents Level 4 of the model, but is an interesting exploration target in that post-dyke alteration and mineralization is in evidence. The presence of anomalous arsenic values is interesting as there is a known correlation between arsenic and gold values on the Brussels claims of Goldstone Exploration 5 km to the north.

Continued . . .

CONCLUSIONS AND RECOMMENDATIONS

Some of the carbonate alteration zones on the British property are very sizeable, and although surface values of "indicator" elements or precious metals are for the most part negligible these zones should be considered as exploration targets in view of the Kamloops Lake epithermal model described under the title Discussion.

At present the two most promising targets on the British property are the faulted, altered, northeastern side of the quartz-eye porphyry dyke on the British 3 mineral claim, and the carbonate altered sandy conglomerate and sandstone beds located on the British 2 mineral claim. Arsenic values in rock chip samples collected from both sites are anomalous.

Two percussion drill holes should be drilled into the quartz-eye porphyry dyke at minus 60 degrees from sites 100 metres apart (approximately opposite sample sites MP-02 & 03). The holes should be drilled to a depth of 100 metres.

A third percussion drill hole should be drilled at minus 60 degrees to a depth of 100 metres from grid 2+50N, 26+25W to test the down dip extension of the quartz-veined sandy conglomerate located at sample site MP-04.

Each 3 metre intercept from each drill hole should be analyzed for arsenic, gold and silver.

The drill program could be expanded to the other carbonate alteration zones on the British property if substantial gold or silver values are found in the first three holes.

The three proposed drill sites can be accessed with a minimal amount of bulldozer work from existing roads.

Continued . . .

CONCLUSIONS AND RECOMMENDATIONS - Continued

Drill water can be pumped or trucked from lakes or ponds located within 500 metres of the drill sites.

Kelowna, B.C.

June 1, 1986

M.S. Morrison, B.Sc.

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APPENDIX "A"
SAMPLE DESCRIPTIONS

(Please see Map M-86-1 for Sample Sites)

The following samples are all selected rock chip samples:

Sample No.	Description
MP-01	- angular talus near base of a ridge on the British 3 mineral claim. Slight to moderate kaolinite altered quartz-feldspar porphyry, 1% limonite, 2% pyrite disseminated.
MP-02	- outcrop on the British 3 mineral claim, as above, but only trace to ½% pyrite.
MP-03	- angular talus near the base of a ridge on the British 3 mineral claim. Slightly kaolinite altered and well silicified quartz-feldspar porphyry, 3% pyrite disseminated and as veinlets.
MP-04	- moderately carbonate altered sandy conglomerate, 4% quartz and 3% ankerite veinlets, 2% fine grained disseminated pyrite.
MP-05	- moderately carbonate altered sandstone, 3% quartz and 3% ankerite veinlets, 4% disseminated medium grained pyrite.
MP-07	- 50 to 90% carbonate, and 5% silica, replaced rock on the British 1 mineral claim.
MP-08	- 30 cm zone of moderately carbonate and silica altered sandy conglomerate, 1% late quartz veinlets, 5% disseminated pyrite.
MP-09	- 3 metre zone of 50 to 80% carbonate, and 5% silica replaced rock; trace of pyrite.
MP-10	- angular float of sandstone with 40% ankerite bands, and 5% late quartz bands to .5 cm thick.
MP-11	- angular float, 30% ankerite veining cutting conglomerate, 2 cm low temperature quartz vein.
MP-12	- angular float, 60% carbonate veins, and carbonate replacement of sandstone(?), 2% quartz veinlets.
MP-13	- well fractured conglomerate(?), 70% carbonate and 10% silica replacement, 2% smokey quartz veinlets, trace of pyrite.

ACME ANALYTICAL LABORATORIES LTD. 852 E.HASTINGS ST.VANCOUVER B.C. V6A 1R6 PHONE 253-3158 DATA LINE 251-1011

GEOCHEMICAL ICP ANALYSIS

.500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.
THIS LEACH IS PARTIAL FOR MN.FE.CA.P.CR.MG.BA.TI.B.AL.NA.K.W.SI.ZR.CE.SN.Y.NB AND TA. AU DETECTION LIMIT BY ICP IS 3 PPM.
- SAMPLE TYPE: ROCK CHIPS AU* ANALYSIS BY AA FROM 10 GRAM SAMPLE.

DATE RECEIVED: MAY 15 1986 DATE REPORT MAILED: May 16/86 ASSAYER. D. Toye ..DEAN TOYE. CERTIFIED B.C. ASSAYER.

VANLT EXPLORATION FILE # 86-0693 PAGE 1

SAMPLE#	Mo PPM	Cu PPM	Pb PPM	Zn PPM	Ag PPM	Ni PPM	Co PPM	Mn PPM	Fe %	As PPM	U PPM	Au PPM	Th PPM	Sr PPM	Cd PPM	Sb PPM	Bi PPM	V PPM	Ca %	P %	La PPM	Cr PPM	Mg %	Ba PPM	Ti %	B PPM	Al %	Na %	K %	W PPM	Au* PPB
MP-01	13	10	8	15	.1	7	4	133	1.61	380	5	ND	1	31	1	14	2	7	.05	.01	2	4	.01	474	.01	5	.38	.01	.02	1	4
MP-02	2	12	7	7	.1	5	2	55	1.45	292	5	ND	1	31	1	6	2	8	.04	.01	2	3	.01	367	.01	4	.40	.01	.02	1	2
MP-03	4	13	9	3	.1	7	3	22	1.01	241	5	ND	1	30	1	3	2	6	.04	.01	2	6	.01	38	.01	4	.46	.01	.03	1	3
MP-04	1	46	6	89	.1	9	20	1329	3.80	43	5	ND	2	99	1	415	2	131	7.21	.02	5	3	1.78	231	.01	6	.53	.01	.02	1	2
MP-05	3	108	6	53	.1	7	23	1109	4.06	108	5	ND	4	92	1	4	2	126	7.93	.07	6	1	1.76	122	.01	5	.56	.01	.03	1	1
MP-06	3	49	2	69	.2	68	18	908	3.63	19	7	ND	4	154	1	2	2	100	8.01	.11	12	98	2.91	474	.01	7	.47	.02	.04	1	1
MP-07	2	23	2	33	.1	4	6	458	1.85	17	7	ND	2	40	1	2	2	43	6.05	.01	2	5	2.23	286	.01	2	.28	.01	.01	1	3
MP-08	1	77	6	14	.1	15	18	270	4.82	77	5	ND	1	39	1	9	2	26	.61	.02	2	5	.12	15	.01	4	.48	.01	.06	1	1
MP-09	2	63	2	51	.1	13	11	691	2.51	18	10	ND	3	160	1	2	2	74	10.90	.01	2	8	3.26	91	.01	2	.15	.01	.01	1	1
MP-10	3	12	5	29	.1	8	10	2358	4.27	10	9	ND	4	86	1	2	2	56	13.96	.04	2	6	4.93	61	.01	2	.17	.01	.02	1	1
MP-11	2	102	5	34	.1	9	15	2269	3.75	12	9	ND	4	88	1	2	2	65	11.16	.02	3	13	3.60	387	.01	4	.17	.01	.02	1	1
MP-12	2	61	5	51	.1	9	13	2089	2.50	7	10	ND	4	132	1	2	2	61	12.62	.04	4	4	4.19	55	.01	5	.22	.01	.01	1	2
MP-13	2	130	4	56	.1	7	15	1461	2.93	22	8	ND	3	103	1	2	2	70	9.56	.03	4	4	2.83	327	.01	4	.27	.01	.01	1	1
STD C/AU-0.5	21	57	43	133	7.0	74	29	1189	3.95	40	20	8	34	49	18	15	21	59	.50	.11	40	59	.87	182	.08	37	1.73	.07	.11	12	520

APPENDIX "B"

APPENDIX "C"

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 sixteen years.

3. During the past sixteen years, I have intermittently held responsible positions as a geologist with various mineral exploration companies in Canada.

4. I have examined many mineral properties in Southern British Columbia during the past sixteen years.

5. I personally carried out the Geological Mapping and Sampling Program outlined in this report.

6. I am the Optionor of the property, and I retain a conditional interest in the property.

June 1, 1986
Kelowna, B.C.

Murray Morrison, B.Sc.

APPENDIX "D"

STATEMENT OF EXPENDITURES - ON THE BRITISH GROUP OF MINERAL CLAIMS.

Statement of Expenditures in connection with the Geological Mapping and Sampling Program carried out on the BRITISH 1-5 Mineral Claims, located in the Kamloops Lake region of British Columbia, (N.T.S. 92-I-10E) for the year 1986.

FIELDWORK - ESTABLISHING FLAGGED GRID LINES (9.3 km).

B. Callaghan, geologist	3 days @	$ 80.00/day	$ 240.
Meals and Lodging	3 days @	45.00/day	135.
Flagging, Belt Chain Thread, etc.	3 days @	15.00/day	45.
		Sub-total:	$ 420.

FIELDWORK - GEOLOGICAL MAPPING

M. Morrison, geologist	6 days @	$200.00/day	$ 1200.
Meals and Lodging	6 days @	45.00/day	270.
Truck (4x4, incl. gasoline)	6 days @	60.00/day	360.
		Sub-total:	$1,830.

ASSAYING COSTS

12 rock samples analyzed for 30 elements, plus gold		@ $ 13.38/sample	$ 161.
		Sub-total:	$ 161.

REPORT PREPARATION COSTS

Writing report	1 day	@ $200.00/day	$ 200.
Drafting			60.
Typing			40.
Copying			14.
		Sub-total:	$ 314.
		GRAND TOTAL:	$2,725.

I hereby certify that the preceding statement is a true statement of monies expended in connection with the Geological Mapping and Sampling Program carried out April 29th to May 4th, 1986.

June 1, 1986

Murray Morrison

Murray Morrison - Geologist


MUSTANG #6 M.C.
SEE MAP M-86-6
BRITISH #1 M.C.
BRITISH #2
BRITISH #3
BRITISH #4
BRITISH #5
SHALLOW OVERBURDEN
MORAINAL GRAVELS
OVERBURDEN
OLD CAT. TRENCH
DUFFY CREEK ROAD
DUFFY CREEK
LEGEND
EARLY TERTIARY ?, LATE CRETACEOUS ?
5 Quartz - eye porphyry intrusives, rhyolite
5a felsic dykes with less than 2% quartz eyes
5b highly altered felsic dykes
UPPER TRIASSIC-NICOLA GROUP
4 Sediments of andesitic clasts predominantly
3 Sediments of mixed clasts
2 Sediments of basaltic clasts predominantly
1 Sediments of trachyandesite clasts predominantly
Sub units : a boulder and cobble conglomerates
b pebble conglomerates
c granular conglomerates and greywackes
d sandstones
e siltstones
f limestones
g white rhyolite tuffs
CARBONATE ALTERATION
weak
moderate
intense
with late quartz veining
Outcrop
Ridge with scattered outcrop
Local angular float
Roads
Creeks
Mapped fault surfaces
Faults, air photo lineaments
Bedding, foliation, joints
Veins, shear zones
F Faulting, slickensides
Geological contacts : assumed, mapped
Old dump
Marshes
•MP-31 Sample site and number
1 Au ppb
.1 Ag ppm
3 Sb ppm
10 As ppm
ABBREVIATIONS
and Andesite
ank Ankerite
bx'd Brecciated
carb Carbonate alteration
chalce Chalcedony
fr'd Fractured
py Pyrite
qtz Quartz
sil Silicified
vn Vein
NOTE : Legal claim posts tied in to grid with belt chain and compass
GEOLOGICAL BRANCH ASSESSMENT REPORT
14,871
VAULT EXPLORATIONS INC.
MUSTANG PROPERTY
KAMLOOPS LAKE AREA , KAMLOOPS M.D., B.C.
GEOLOGY
BRITISH 1 - 5 MINERAL CLAIMS
GEOLOGY : M. M.
JUNE 1986
N.T.S. 92-I-10E
DRAWN BY : M. M.
SCALE 1:2500
MAP : M-86-1