

GEOLOGICAL
ASSESSMENT REPORT

LOG NO:	JUL 29 1992	RD.
ACTION:		
FILE NO:		

on the

BRUSSELS CLAIM GROUP
KAMLOOPS LAKE AREA
KAMLOOPS MINING DIVISION

by

MURRAY S. MORRISON, B.Sc.

Claims: Brussels 1-5, 10&11 (37 units).
Location: The Brussels Claim Group is situated
2 km south of Kamloops Lake, 25 km
due west of Kamloops, B.C.
Lat. 50°43'; Long. 120°41';
N.T.S. Map 92-I-10E
Owner: Murray S. Morrison
Operator: Murray S. Morrison
Date Started: March 29, 1992
Date Completed: April 29, 1992

Kelowna, B.C.

GEOLOGICAL BRANCH
ASSESSMENT REPORT

June 10, 1992

22,435

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SUMMARY

The Brussels Claim Group located 2 km south of Kamloops Lake, or 25 km due west of Kamloops hosts several carbonate/silica replacement zones within Upper Triassic Nicola Group volcanoclastic metasediments. The zones are believed to represent the upper (low temperature) horizons of strong Late Cretaceous (?), or Early Tertiary(?) epithermal systems that could contain precious metal values at depth.

The property, staked by the writer in March, 1981, has been optioned to Placer Development (1981-1984) and to Goldstone Exploration Ltd. (1984-1988), both of Vancouver. Placer Development conducted a widely-spaced soil geochemical survey over the property in 1981, and in 1984 allowed their option to lapse. Goldstone Exploration Ltd. drilled five reverse circulation drill holes into five widely separated targets and proved that at least two of the large replacement zones on the property extend to 80 metres in depth. However, the precious metal values obtained from intercepts of the replacement zones were insignificant and Goldstone Exploration allowed their option to lapse.

Geological mapping, at a scale of 1:2,500, during 1991 & 92 has outlined several carbonate/silica replacement zones on the Brussels property that show an alignment with northeast, northwest and east faults. The fault zones are believed to have served as conduits for the large volumes of hydrothermal solutions which brought about the carbonate and/or silica replacement of the metasediments.

A large quartz-eye porphyry plug mapped this year on the Brussels 2 mineral claim intrudes metasediments of the Upper Triassic Nicola Group and provides ample evidence of the intimate relationship between felsic intrusives and carbonate replacement zones on the property. The very volatile intru-

Continued . . .

SUMMARY - Continued

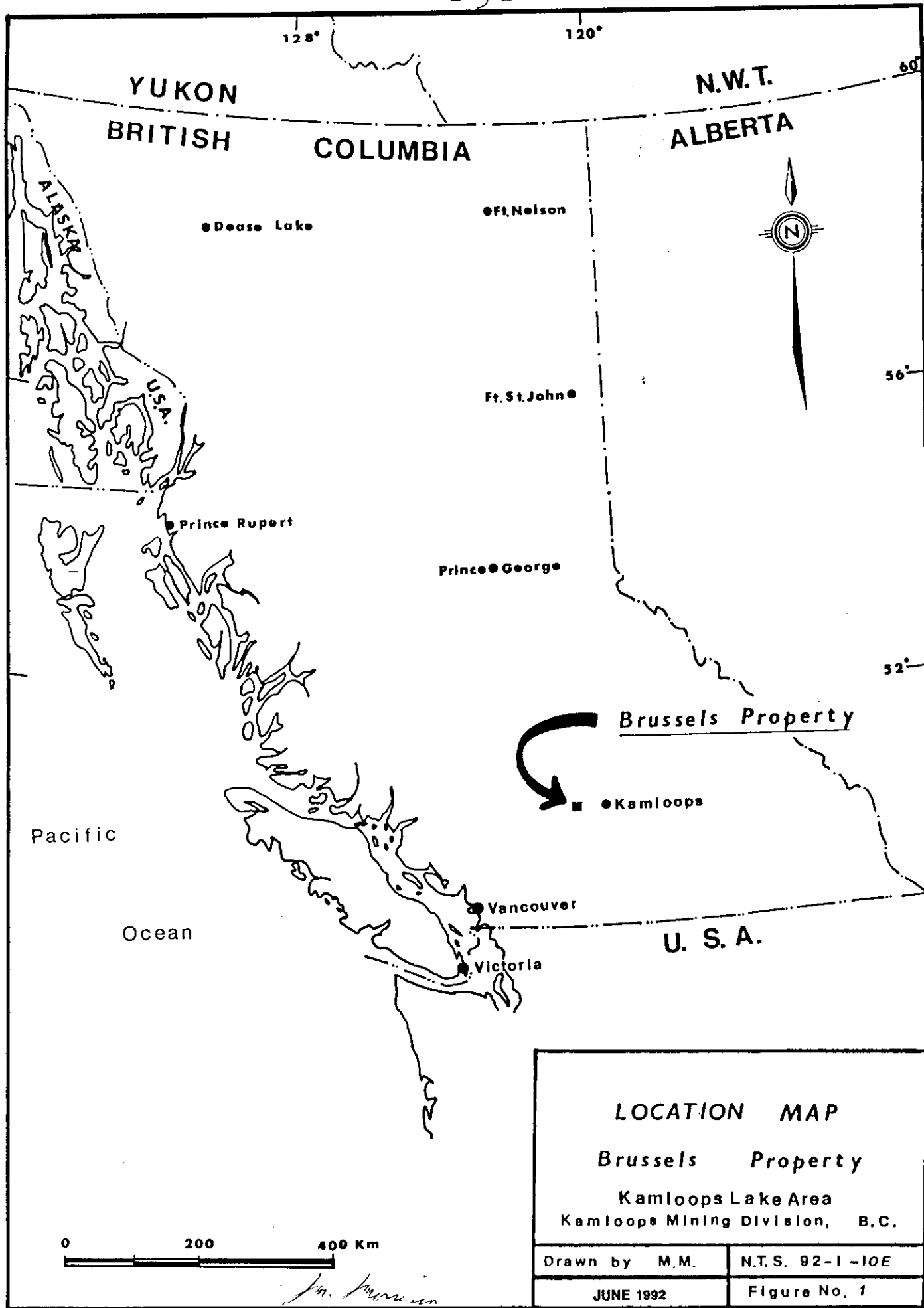
sive has itself been altered and a long period of hydrothermal activity is evident.

The Newmont Showing located just 10 metres west of the Brussels property is the only carbonate replacement zone that has yielded significant values to date (3.2 g/tonne gold and 65 g/tonne silver) and these values have been obtained from a vertical, one metre wide, brecciated and mended quartz/chalcedony-filled shear zone that cuts through the Newmont carbonate replacement zone.

The Newmont Showing, although small, provides confirmation that precious metal values can accompany the Savona area epithermal systems, and it is believed that some of the very large carbonate replacement zones on the Brussels property do represent very favorable exploration targets for precious metal exploration.

The RCDH 85-1 and grid 28+10S, 11+75W replacement zones on the Brussels property have been selected for a Phase I Reverse Circulation Drilling Program. A minimum of three inclined drill holes are recommended to test these zones for precious metal values at depth.

The drill testing of all other replacement zones on the Brussels property should await positive results from the Phase I Drilling Program.



INTRODUCTION

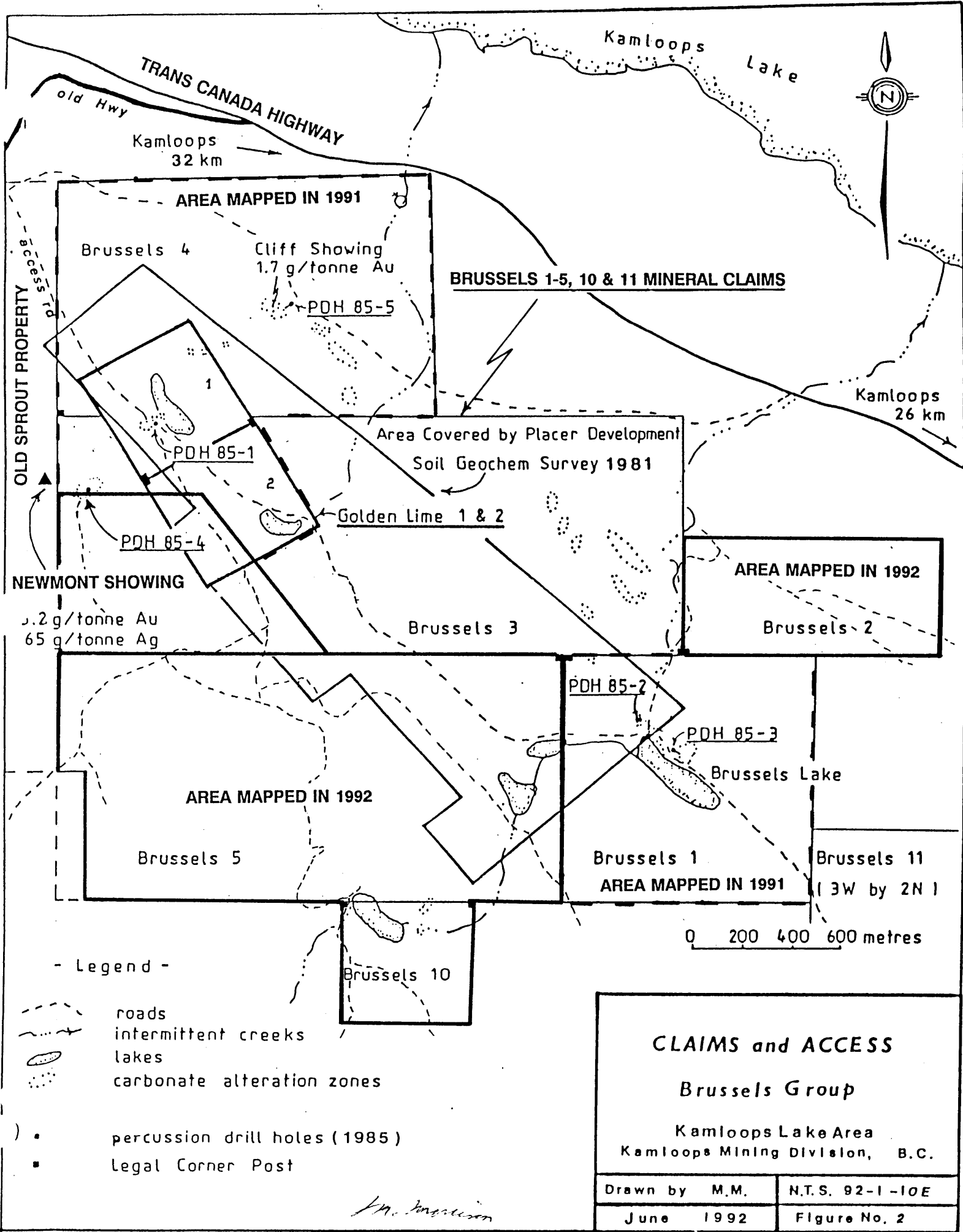
This report, written for government assessment work requirements, discusses the results of a geological mapping program conducted on the Brussels 2, 5&10 mineral claims and the south-west corner of the Brussels 3 mineral claim by the writer during March-April, 1992.

The Brussels Claim Group, owned by the writer, is comprised of 39 claim units covering 9.25 square kilometres of ground, 1 to 3 km south of Kamloops Lake, 25 km due west of Kamloops, B.C. The property was staked by the writer in 1981 to cover a system of highly faulted and carbonate replaced zones occurring within volcanoclastic metasediments of the Upper Triassic Nicola Group. The rusty replacement zones measure several metres in width and tens of metres in length, and during a 1985 drilling program were found to extend to at least 80 metres in depth (Morrison, 1986).

The 1985 drill program proved that some of the carbonate alteration zones overlie strong silica replacement zones which are believed to represent the upper (low temperature) horizons of large epithermal systems. The property was originally staked with the belief that some of the epithermal systems could host precious metals at depth.

This year's geological mapping, at a scale of 1:2,500, was a continuation of a program started last year on the Brussels 1&4 mineral claims (Morrison, 1991). The purpose of the mapping program was to determine: (a) the stratigraphy of the Nicola Group rocks, (b) important fault directions, and (c) the origin, size, and significance of the replacement zones.

The results of this year's mapping program are illustrated on Figures 4-10 accompanying this report.



TRANS CANADA HIGHWAY
old Hwy
Kamloops 32 km

Kamloops Lake



AREA MAPPED IN 1991

Brussels 4

Cliff Showing
1.7 g/tonne Au

PDH 85-5

BRUSSELS 1-5, 10 & 11 MINERAL CLAIMS

Kamloops 26 km

OLD SPROUT PROPERTY
access rd

Area Covered by Placer Development
Soil Geochem Survey 1981

PDH 85-1

Golden Lime 1 & 2

PDH 85-4

AREA MAPPED IN 1992

NEWMONT SHOWING

0.2 g/tonne Au
65 g/tonne Ag

Brussels 3

Brussels 2

AREA MAPPED IN 1992

Brussels 5

PDH 85-2

PDH 85-3

Brussels Lake

Brussels 1
AREA MAPPED IN 1991

Brussels 11
(3W by 2N)

0 200 400 600 metres

Brussels 10

- Legend -

- - - roads
- . - . - . intermittent creeks
- lakes
- carbonate alteration zones

- percussion drill holes (1985)
- Legal Corner Post

M. Ferguson

CLAIMS and ACCESS

Brussels Group

Kamloops Lake Area
Kamloops Mining Division, B.C.

Drawn by M.M.	N.T.S. 92-1-10E
June 1992	Figure No. 2

LOCATION AND ACCESS

The Brussels Claim Group lies 2 km south of Kamloops Lake, or 1 km south of the Trans-Canada Highway, 25 km due west of Kamloops, B.C. (Lat. 50°43'; Long. 120°41'; N.T.S. Map 92-I-10E). Access to the property is via a segment of old highway which leaves the Trans-Canada Highway at a point 32 km west of Kamloops, or 3 km southeast of the Savona Tourist Lookout. Dirt access roads traverse most of the Brussels mineral claims as illustrated on Figure 2.

PHYSICAL FEATURES AND CLIMATE

The Brussels Claim Group with an average elevation of 600 metres above sea level lies 1 to 3 km south of Kamloops Lake (350 m elv.). The property features low relief with rounded rocky ridges and shallow, gravel-filled, valleys. An exception to the rolling topography is a 150 metre bluff which crosses the entire eastern side of the property from northwest to southeast.

The Kamloops Lake region is semi-arid at lower elevations with precipitation equalling less than 30 cm per year, and usually falling in the form of spring rains. Vegetation on the Brussels property reflects an increase in precipitation with elevation. Sagebrush is dominant at lower elevations on the property, near the Trans-Canada Highway, while Ponderosa pine grow sparsely at intermediate elevations and Douglas fir more densely at higher elevations and on the north slopes where moisture is retained.

Winter snow rarely accumulates to more than 30 cm on the property and lasts only from late November until early March.

Several small lakes, deepened by the building of earthen dams, supply water for grazing cattle during summer months. The largest lake is Brussels Lake, located on the Brussels 1 mineral claim (see Figure 2).

CLAIM STATUS

The mineral claims making up the Brussels Claim Group were staked by the writer in April 1981. All of the mineral claims are 100% owned by the writer, Mr. M. Morrison, of Kelowna, B.C. Particulars on the mineral claims, located within the Kamloops Mining Division are given below:

<u>CLAIM NAME</u>	<u>UNITS</u>	<u>DATE OF RECORDING</u>	<u>TENURE NO.</u>	<u>EXPIRY * DATE</u>
Brussels 1	4	April 30/81	216992	April 30/93
Brussels 2	2	" "	216993	April 30/93
Brussels 3	10	" "	216994	April 30/93
Brussels 4	6	" "	216995	April 30/93
Brussels 5	8	" "	216996	April 30/93
Brussels 10	1	" "	216997	April 30/94
Brussels 11	6	" "	216998	April 30/93

37

*(New Expiry Date based on the acceptance of this report for Assessment Work Credits).

The Legal Corner Posts and Initial Posts of all of the above listed mineral claims were verified by a Government Claims Inspector in 1981.

It should be noted that the Golden Lime 1&2, two-post, mineral claims have been entirely overstaked by the Brussels 3&4 modified grid mineral claims. The Golden Lime 1&2 mineral claims are also owned by the writer and have a March 16/93 expiry date.

HISTORY

The Brussels Claim Group was staked by the writer in April, 1981 to cover several large rusty carbonate alteration zones found within Nicola Group rocks during routine prospecting. The claim group was transferred to Placer Development Ltd. soon after staking.

Continued . . .

HISTORY - Continued

During 1981 crews from Placer Development Ltd. conducted a widely spaced (25x100 to 250 metre) soil geochemical survey over the central portion of the property as illustrated on Figure 2. Elements typical of epithermal systems (mercury, antimony and arsenic) were found to occur in moderate concentrations on the Brussels 3&4 mineral claims, and gold was found on the Brussels 1&3 mineral claims, but no drilling was done by Placer Development Ltd. and the mineral claims were returned to the writer in April, 1984.

The property was next optioned to Goldstone Exploration Ltd. of Vancouver in May 1984, and during May 1985 Goldstone Exploration conducted a widely spaced reverse circulation percussion drill program across the Brussels property (see drill hole locations on Figure 2). Drill holes 85-1 and 85-4 encountered up to 80 metres of intensely carbonate and/or silica replaced Nicola metasediments but no significant precious metal values were encountered during the drill program and in 1988 Goldstone Exploration allowed their option to lapse.

In 1989 the writer conducted a ground magnetometer survey over the Golden Lime 1 & 2 mineral claims and western portions of the Brussels 3 & 5 mineral claims. A detailed geochemical soil survey (25 x 50 to 100 metre grid spacing) was also conducted over the western portion of the Brussels 3 mineral claim and northwestern corner of the Brussels 5 mineral claim. The soil samples were analyzed for 30 elements by ICP plus mercury. Gold at the parts per billion level was not tested.

In 1990, soil samples were collected from a 25 x 50 metre grid over the southwestern portion of the Brussels 3 mineral claim by the writer and analyzed for gold. Two small experimental biogeochemical surveys were also conducted over portions of the same grid. In one survey, the twigs of Douglas fir were collected; in the other, stems of sagebrush were sampled. The biogeochemical samples were ashed and tested for 30 elements by ICP, plus gold by Atomic Absorption (Morrison, 1990).

HISTORY - Continued

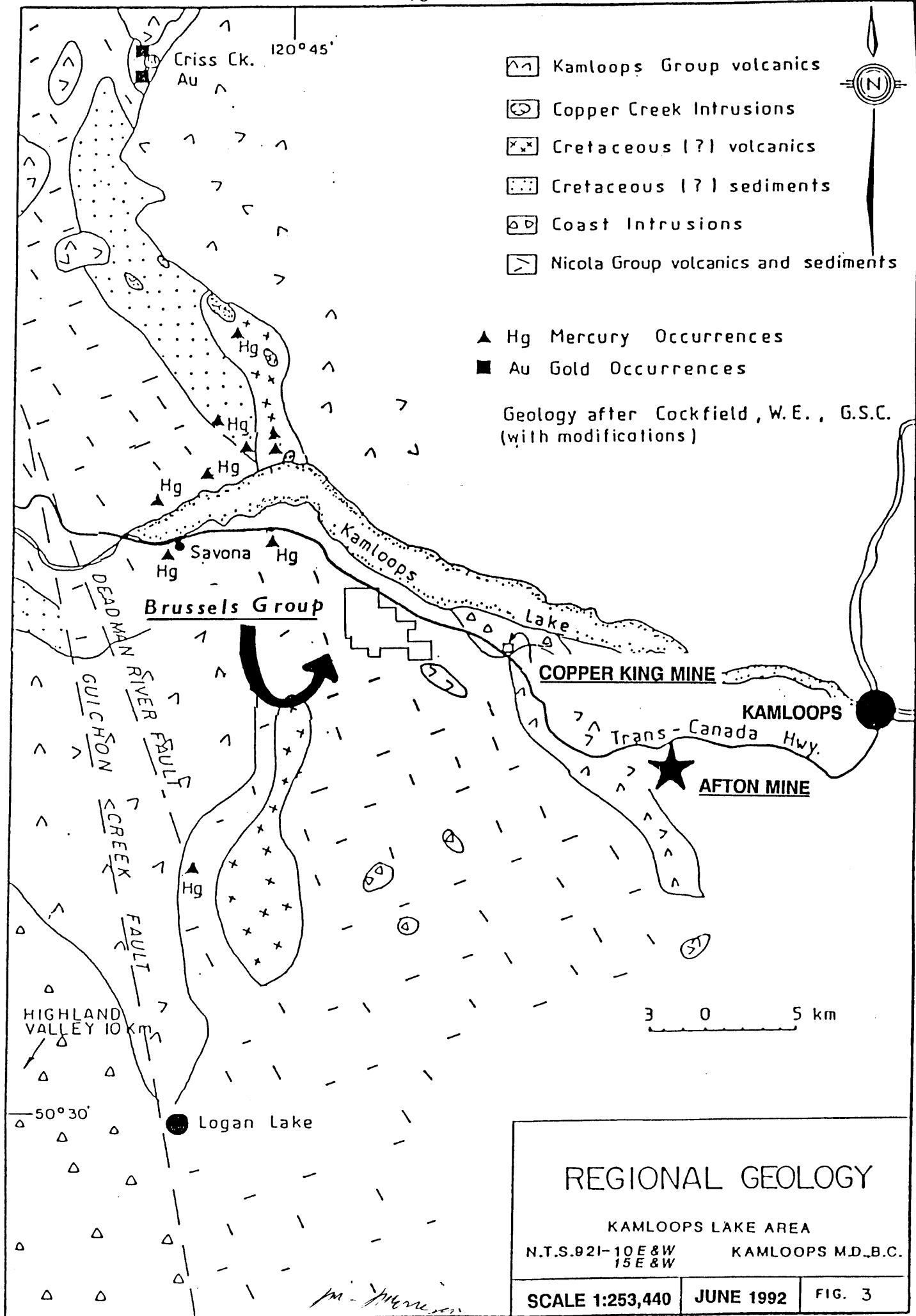
The Brussels 1&4 mineral claims and the northwest corner of the Brussels 3 mineral claim were mapped at a scale of 1:2500 in 1991 (Morrison, 1991).

REGIONAL GEOLOGY AND MINERALIZATION

The regional geology of the Savona area is outlined on Figure 3 accompanying this report. The Savona Mercury Belt shows up as a series of mercury prospects that occur within Upper Triassic Nicola Group or Cretaceous (?) metavolcanics and metasediments in close proximity to Copper Creek Intrusions. The mercury showings are often associated with replacement zones within faulted country rock. The mercury content at the Savona mercury prospects is generally much less than 0.1% and non-economic, but the mercury is an indicator of strong epithermal systems.

Precious metals and base metals have been found within chalcedony and quartz veins associated with the alteration zones which are believed to represent strong Late Cretaceous or Early Tertiary epithermal systems. Gold has been found at Criss Creek as illustrated on Figure 3.

In 1982 Newmont Exploration of Vancouver discovered a silicified zone carrying pyrite, galena, and stibnite, with values in gold and silver, associated with a carbonate alteration zone within Nicola Group rocks. The Newmont showing, illustrated on Figure 2, is located just 10 metres west of the west boundary of the Brussels 3 mineral claim. Another zone of anomalous gold (1755 ppb) and arsenic (400 ppm) mineralization occurs within carbonate altered Nicola Group rocks on a steep bluff on the Brussels 4 mineral claim (see Figure 2).



REGIONAL GEOLOGY

KAMLOOPS LAKE AREA

N.T.S. 92I-10E&W
15E&W

KAMLOOPS M.D. B.C.

SCALE 1:253,440

JUNE 1992

FIG. 3

GRID - 1992

Portions of last year's Baseline 10W were reflagged for this year's survey on the Brussels 2, 3, 5 & 10 mineral claims. The Baseline runs subparallel to the bedding of the Nicola Group metasediments at 120 degrees azimuth. Grid lines were measured perpendicular from the Baseline to the property boundaries at 100, 200 or 400 metre intervals.

The spacing of grid lines was dependent on the density of outcroppings on various portions of the property. For instance, the grid spacing on the Brussels 2 mineral claim where there is abundant rock exposure is 100 metres, while the grid spacing on much of the Brussels 5 mineral claim where glacial drift is widespread is 400 metres.

Grid stations were measured out and marked at every 25 metres along each line. Secondary Baselines were established on the Brussels 2 & 10 mineral claims to facilitate better control over mapping. The grid lines and stations are illustrated on Figures 4 - 10. In all, 14.7 kilometres of Baseline and grid line were established with a Topoline belt chain and Silva Ranger Compass.

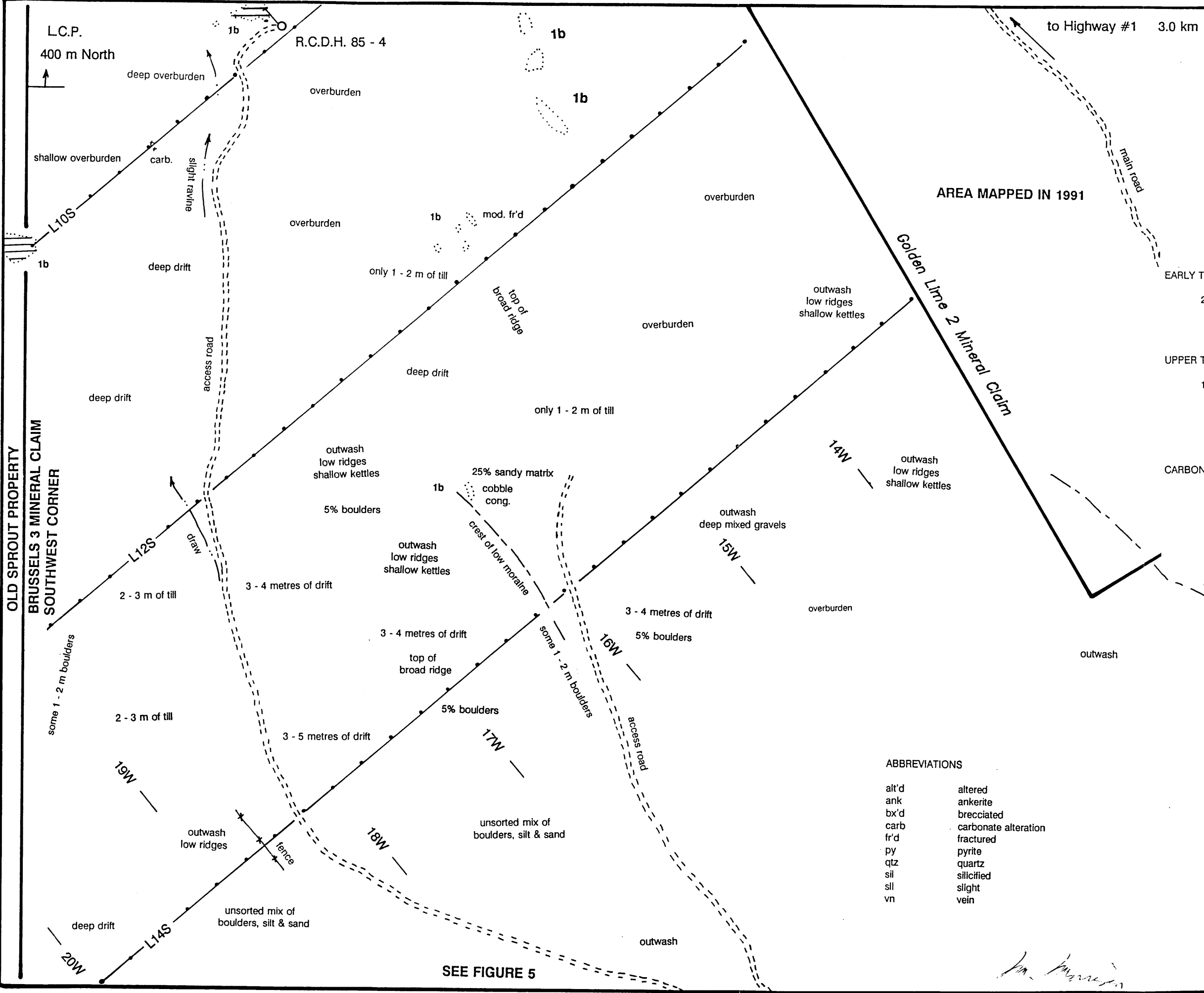
All Legal Corner Posts were tied-in to the grid.

PROPERTY GEOLOGY

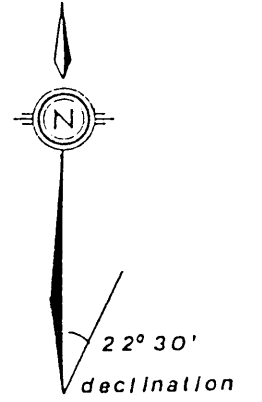
Summary

The Brussels Claim Group is underlain by Upper Triassic Nicola Group metasediments comprised of volcanoclastic conglomerates with minor sandstone and siltstone interbeds (see Figures 4 - 10). The metasediments (metamorphosed to the greenschist facies) appear to occur as a monoclinial sequence which crosses the property at an average 145 degrees. The metasediments generally dip steeply east or west.

Continued . . .



to Highway #1 3.0 km



LEGEND

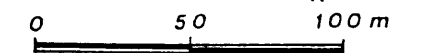
- EARLY TERTIARY ? or LATE CRETACEOUS ?
- 2 Felsic Intrusives
 - 2a greater than 2% quartz eyes
 - 2b highly altered
 - 2c rhyolite
- UPPER TRIASSIC - NICOLA GROUP
- 1 Volcanoclastic sediments (andesitic clasts predominantly)
 - 1a boulder conglomerate
 - 1b cobble conglomerate
 - 1c pebble conglomerate
 - 1d sandstone
 - 1e siltstone

CARBONATE ALTERATION

- ||||| weak
- |||| moderate
- ||||| strong

SYMBOLS

- outcrop
- × angular float, talus
- bedding, joints
- foliation, faulting
- veins, shear zones
- contacts



Scale 1:2,500

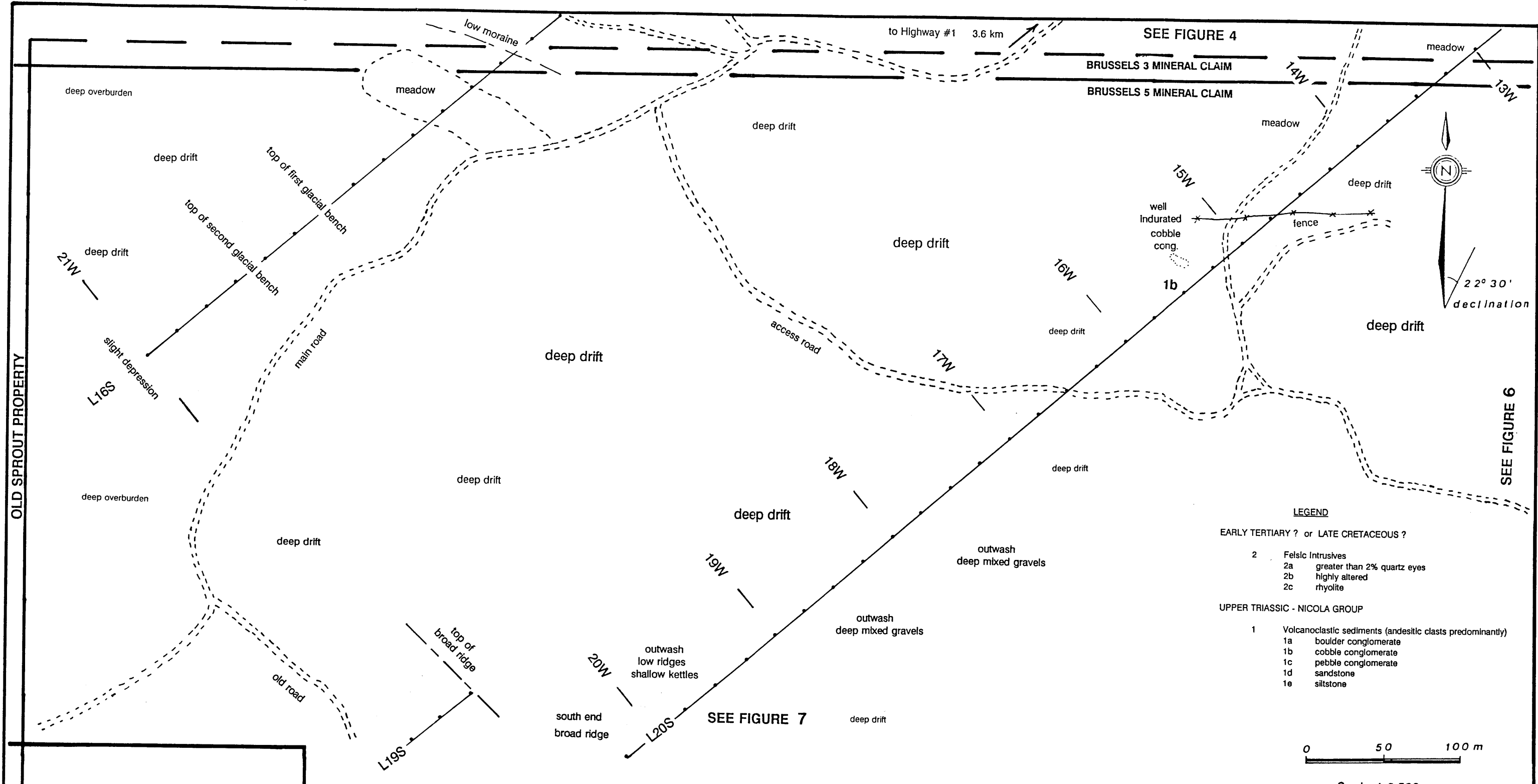
ABBREVIATIONS

- | | |
|-------|----------------------|
| alt'd | altered |
| ank | ankerite |
| bx'd | brecciated |
| carb | carbonate alteration |
| fr'd | fractured |
| py | pyrite |
| qtz | quartz |
| sil | silicified |
| sli | slight |
| vn | vein |

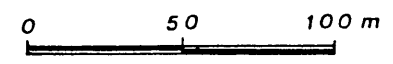
SEE FIGURE 5

M. Morrison

Brussels Property	
Geology	
BRUSSELS 3 MINERAL CLAIM	
SOUTHWEST CORNER	
KAMLOOPS LAKE AREA	
KAMLOOPS MINING DIVISION, B.C.	
GEOLOGY BY: M.M.	N.T.S. 92-1-10E
JUNE 1992	FIGURE NO. 4



- LEGEND**
- EARLY TERTIARY ? or LATE CRETACEOUS ?
- 2 Felsic Intrusives
 - 2a greater than 2% quartz eyes
 - 2b highly altered
 - 2c rhyolite
- UPPER TRIASSIC - NICOLA GROUP
- 1 Volcanoclastic sediments (andesitic clasts predominantly)
 - 1a boulder conglomerate
 - 1b cobble conglomerate
 - 1c pebble conglomerate
 - 1d sandstone
 - 1e siltstone



Scale 1:2,500

ABBREVIATIONS

alt'd	altered
ank	ankerite
bx'd	brecciated
carb	carbonate alteration
fr'd	fractured
py	pyrite
qtz	quartz
sil	silicified
sl	slight
vn	vein

CARBONATE ALTERATION

	weak
	moderate
	strong

SYMBOLS

	outcrop
	angular float, talus
	bedding, joints
	foliation, faulting
	veins, shear zones
	contacts

Brussels Property

Geology

BRUSSELS 5 MINERAL CLAIM

NORTHWEST CORNER

KAMLOOPS LAKE AREA

KAMLOOPS MINING DIVISION, B.C.

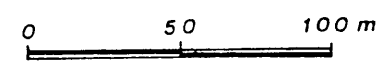
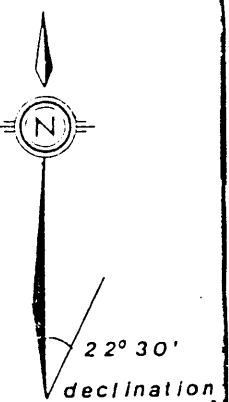
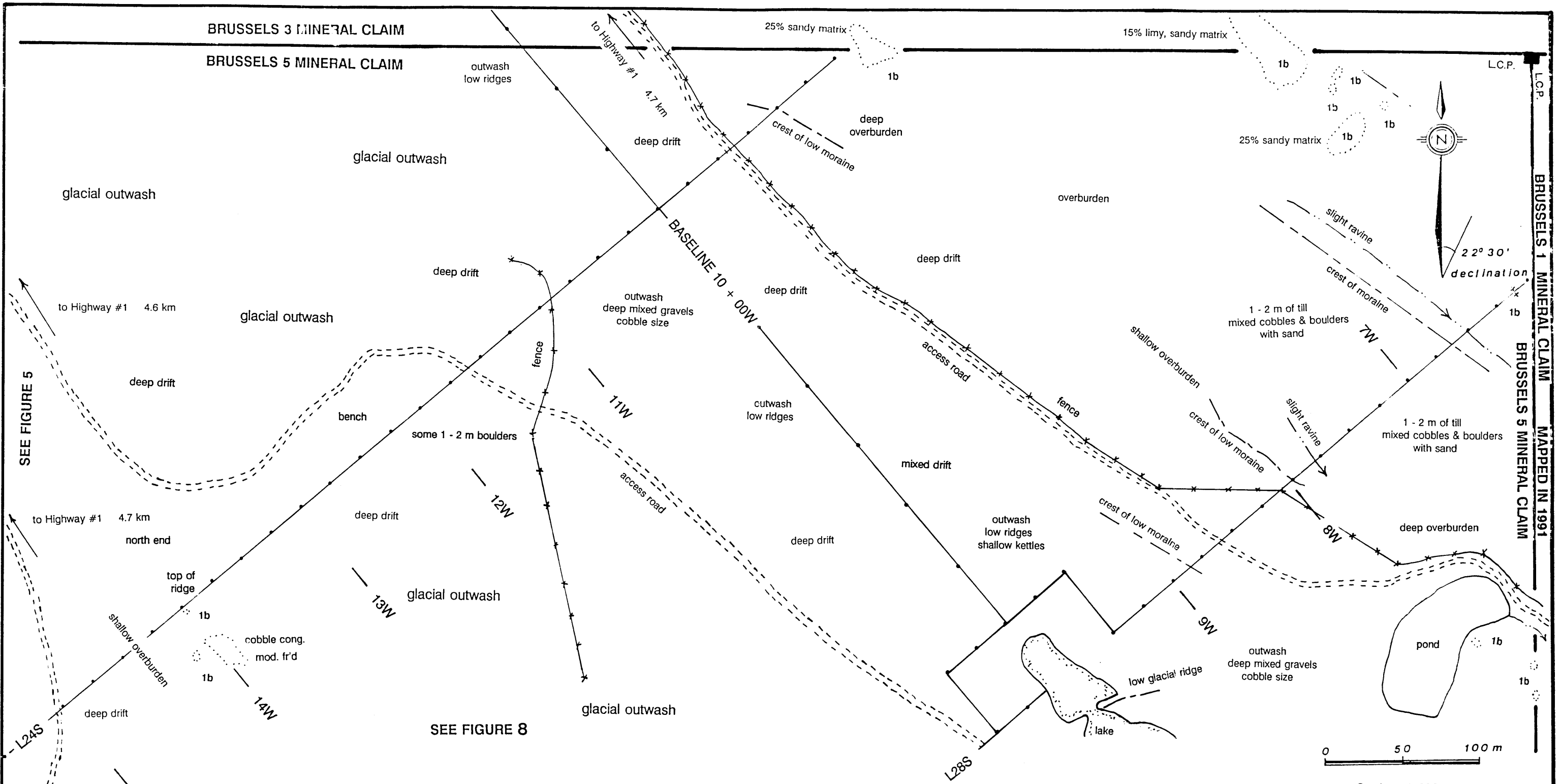
GEOLOGY BY: M.M.

N.T.S. 92-I-10E

JUNE 1992

FIGURE NO. 5

M. M. Morrison



Scale 1:2,500

SEE FIGURE 5

SEE FIGURE 8

ABBREVIATIONS

alt'd	altered
ank	ankerite
bx'd	brecciated
carb	carbonate alteration
fr'd	fractured
py	pyrite
qtz	quartz
sil	silicified
sil	slight
vn	vein

CARBONATE ALTERATION

	weak
	moderate
	strong

SYMBOLS

	outcrop
	angular float, talus
	bedding, joints
	foliation, faulting
	veins, shear zones
	contacts

LEGEND

EARLY TERTIARY ? or LATE CRETACEOUS ?

2	Felsic Intrusives
2a	greater than 2% quartz eyes
2b	highly altered
2c	rhyolite

UPPER TRIASSIC - NICOLA GROUP

1	Volcanoclastic sediments (andesitic clasts predominantly)
1a	boulder conglomerate
1b	cobble conglomerate
1c	pebble conglomerate
1d	sandstone
1e	siltstone

LEGAL CORNER POSTS TIED-IN WITH A COMPASS AND BELT CHAIN

Brussels Property	
Geology	
BRUSSELS 5 MINERAL CLAIM	
NORTHEAST CORNER	
KAMLOOPS LAKE AREA	
KAMLOOPS MINING DIVISION, B.C.	
GEOLOGY BY: M.M.	N.T.S. 92-I-10E
JUNE 1992	FIGURE NO. 6

NORTHEAST CORNER
GOLDEN RING MINERAL CLAIM

SEE FIGURE 5

LEGEND

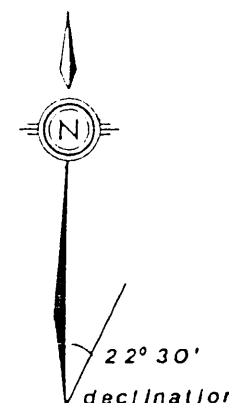
EARLY TERTIARY ? or LATE CRETACEOUS ?

- 2 Felsic Intrusives
 - 2a greater than 2% quartz eyes
 - 2b highly altered
 - 2c rhyolite

UPPER TRIASSIC - NICOLA GROUP

- 1 Volcanoclastic sediments (andesitic clasts predominantly)
 - 1a boulder conglomerate
 - 1b cobble conglomerate
 - 1c pebble conglomerate
 - 1d sandstone
 - 1e siltstone

BRUSSELS 5 MINERAL CLAIM
SOUTHWEST CORNER



SEE FIGURE 8

ABBREVIATIONS

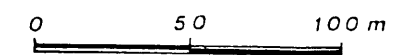
- | | |
|-------|----------------------|
| alt'd | altered |
| ank | ankerite |
| bx'd | brecciated |
| carb | carbonate alteration |
| fr'd | fractured |
| py | pyrite |
| qtz | quartz |
| sil | silicified |
| silt | slight |
| vn | vein |

CARBONATE ALTERATION

- |||| weak
- ||||| moderate
- |||||| strong

SYMBOLS

- outcrop
- △ angular float, talus
- bedding, joints
- ~ foliation, faulting
- veins, shear zones
- contacts



Scale 1:2,500

M. Morrison

Brussels Property

Geology

BRUSSELS 5 MINERAL CLAIM
SOUTHWEST CORNER
KAMLOOPS LAKE AREA

KAMLOOPS MINING DIVISION, B.C.

GEOLOGY BY: M.M.

N.T.S. 92-1-10E

JUNE 1992

FIGURE NO. 7

top of broad ridge

shallow overburden

shallow overburden

deep drift

deep drift

deep drift

deep overburden

deep drift

deep overburden

top of broad ridge
shallow overburden

outwash
low ridges
shallow kettles

outwash
low ridges
shallow kettles

deep drift

deep drift

unsorted mix of
boulders, silt & sand

unsorted mix of
boulders, silt & sand

deep drift

deep overburden

deep drift

deep drift

glacial bench

morainal ridge

morainal ridge

morainal ridge

kettle

morainal ridge

kettle

L19S

L20S

20W

19W

18W

17W

draw

old road

L24S

24W

23W

22W

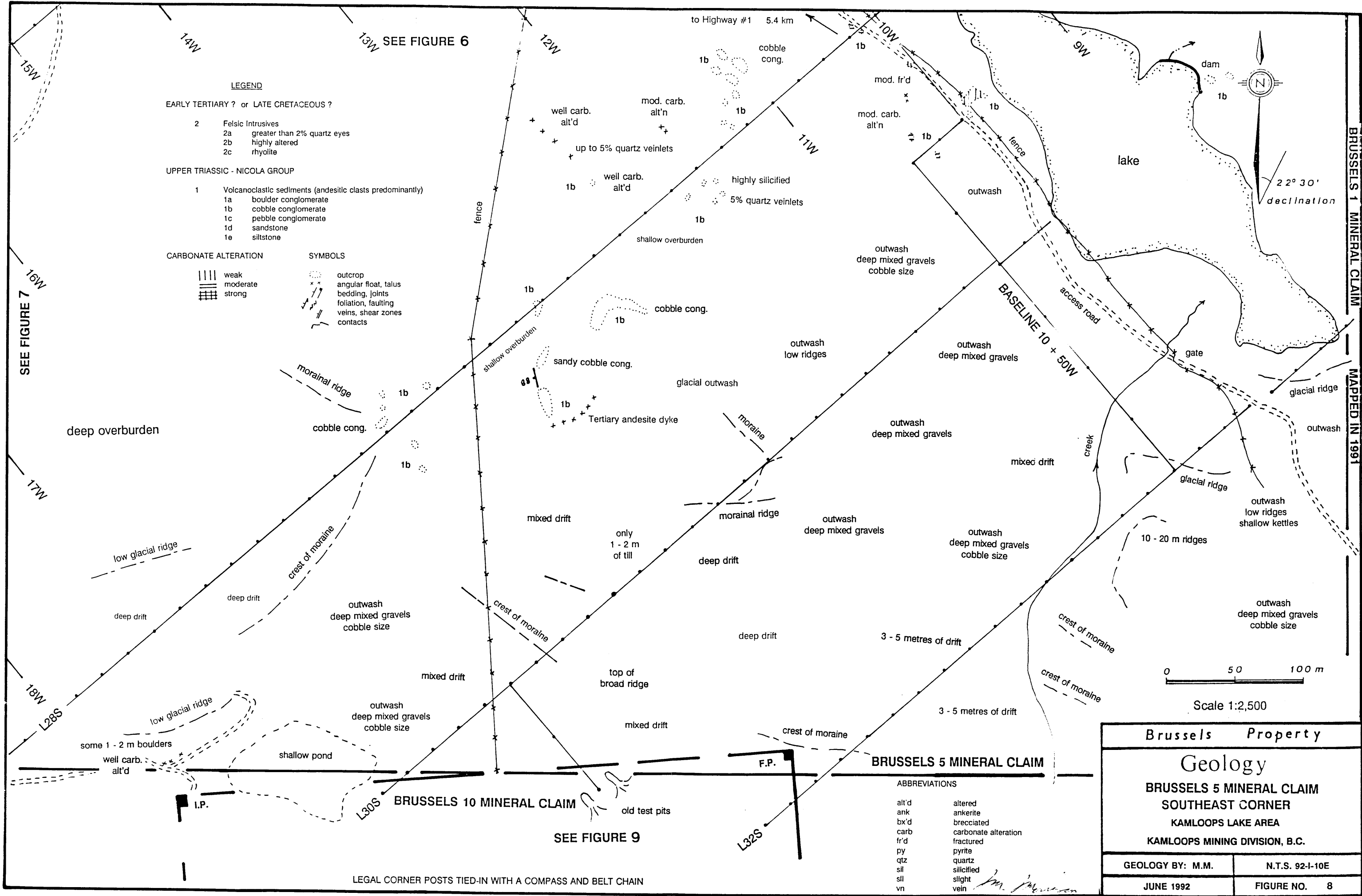
21W

10-20 m ridges

4.9 km

to Highway #1

access road



LEGEND

- EARLY TERTIARY ? or LATE CRETACEOUS ?
- 2 Felsic Intrusives
 - 2a greater than 2% quartz eyes
 - 2b highly altered
 - 2c rhyolite
- UPPER TRIASSIC - NICOLA GROUP
- 1 Volcanoclastic sediments (andesitic clasts predominantly)
 - 1a boulder conglomerate
 - 1b cobble conglomerate
 - 1c pebble conglomerate
 - 1d sandstone
 - 1e siltstone

- CARBONATE ALTERATION
- ||||| weak
 - ||||| moderate
 - ||||| strong

- SYMBOLS
- outcrop
 - △ angular float, talus
 - bedding, joints
 - ~ foliation, faulting
 - ∩ veins, shear zones
 - ∩ contacts

- ABBREVIATIONS
- | | |
|-------|----------------------|
| alt'd | altered |
| ank | ankerite |
| bx'd | brecciated |
| carb | carbonate alteration |
| fr'd | fractured |
| py | pyrite |
| qtz | quartz |
| sil | silicified |
| slt | slight |
| vn | vein |

Brussels Property

Geology

BRUSSELS 5 MINERAL CLAIM

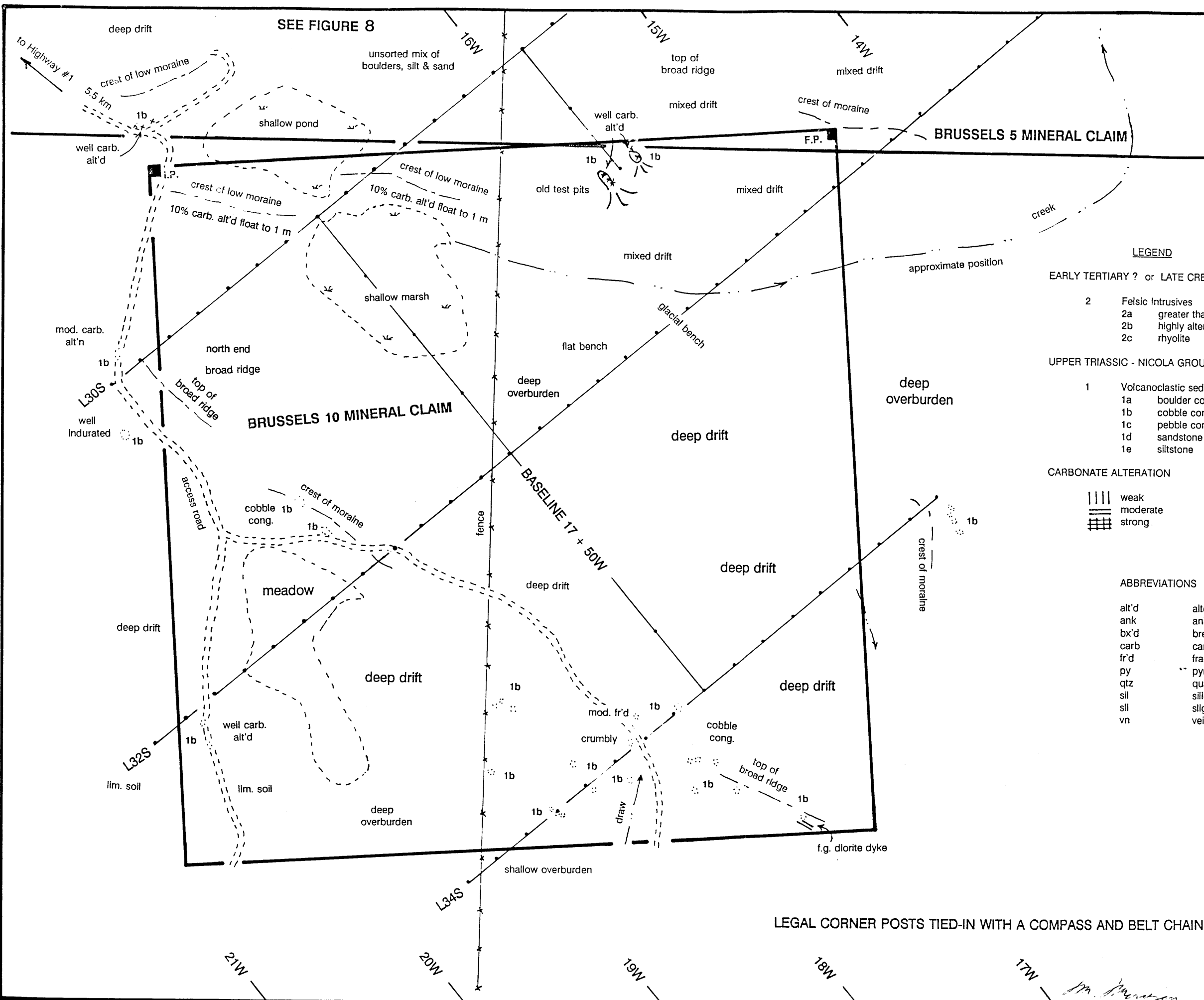
SOUTHEAST CORNER

KAMLOOPS LAKE AREA

KAMLOOPS MINING DIVISION, B.C.

GEOLOGY BY: M.M.	N.T.S. 92-1-10E
JUNE 1992	FIGURE NO. 8

LEGAL CORNER POSTS TIED-IN WITH A COMPASS AND BELT CHAIN



LEGEND

EARLY TERTIARY ? or LATE CRETACEOUS ?

- 2 Felsic Intrusives
 - 2a greater than 2% quartz eyes
 - 2b highly altered
 - 2c rhyolite

UPPER TRIASSIC - NICOLA GROUP

- 1 Volcanoclastic sediments (andesitic clasts predominantly)
 - 1a boulder conglomerate
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 - 1c pebble conglomerate
 - 1d sandstone
 - 1e siltstone

CARBONATE ALTERATION

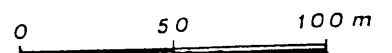
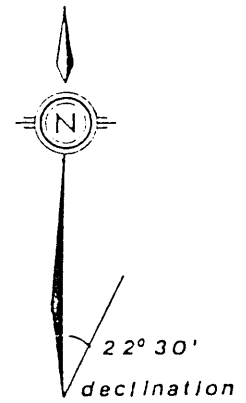
- ||| weak
- |||| moderate
- ||||| strong

SYMBOLS

- outcrop
- ⊗ angular float, talus
- ⊃ bedding, joints
- ⊃ foliation, faulting
- ⊃ veins, shear zones
- ⊃ contacts

ABBREVIATIONS

- alt'd altered
- ank ankerite
- bx'd brecciated
- carb carbonate alteration
- fr'd fractured
- py pyrite
- qtz quartz
- sil silicified
- sli slight
- vn vein



Scale 1:2,500

Brussels Property

Geology

BRUSSELS 10 MINERAL CLAIM

KAMLOOPS LAKE AREA
KAMLOOPS MINING DIVISION, B.C.

GEOLOGY BY: M.M.

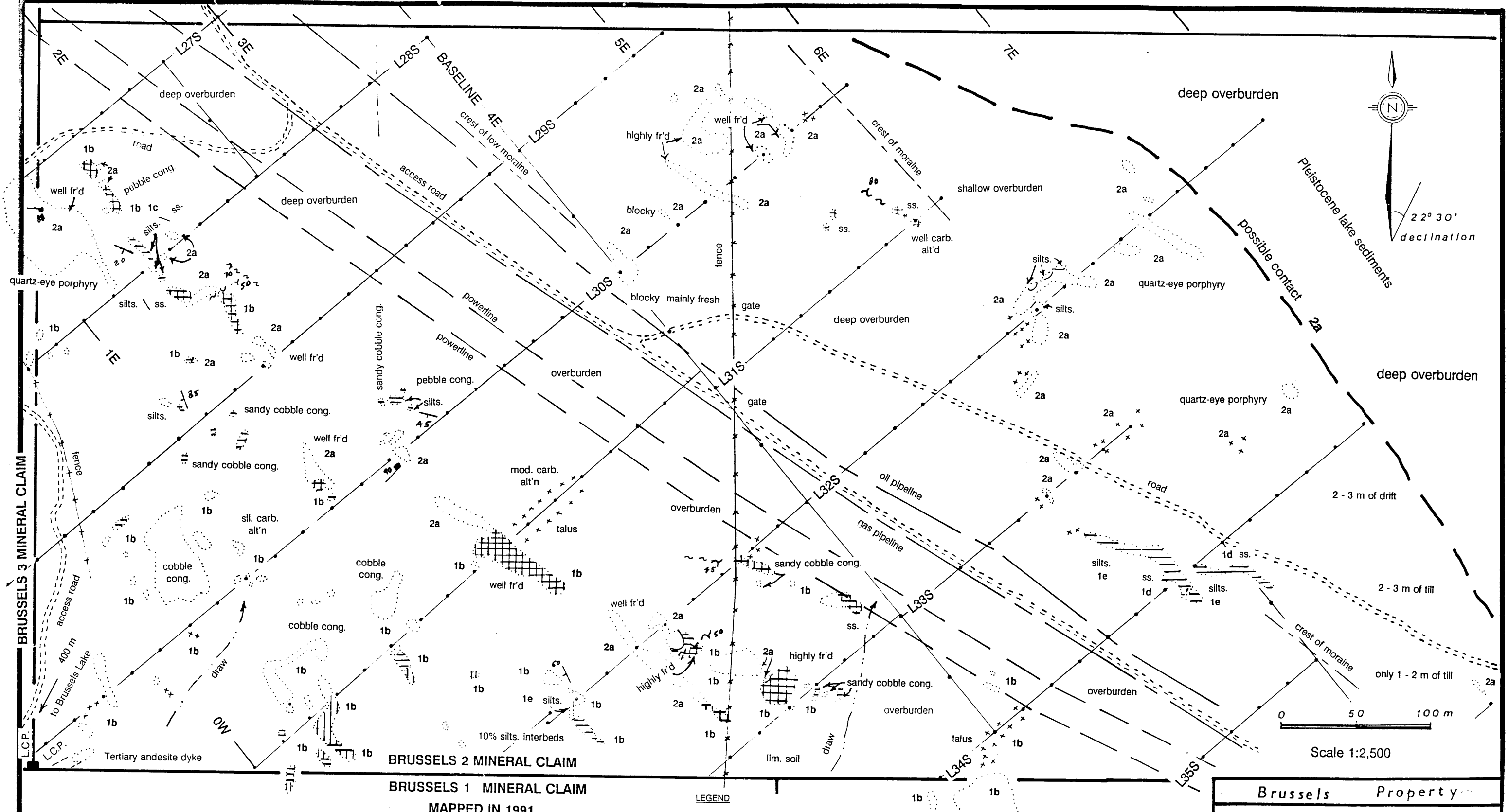
N.T.S. 92-1-10E

JUNE 1992

FIGURE NO. 9

LEGAL CORNER POSTS TIED-IN WITH A COMPASS AND BELT CHAIN

M. M. Morrison



ABBREVIATIONS

alt'd	altered
ank	ankerite
bx'd	brecciated
carb	carbonate alteration
fr'd	fractured
py	pyrite
qtz	quartz
sil	silicified
sl	slight
vn	vein

CARBONATE ALTERATION

	weak
	moderate
	strong

SYMBOLS

	outcrop
	angular float, talus
	bedding, joints
	foliation, faulting
	veins, shear zones
	contacts

LEGEND

EARLY TERTIARY ? or LATE CRETACEOUS ?	
2	Felsic Intrusives
2a	greater than 2% quartz eyes
2b	highly altered
2c	rhyolite
UPPER TRIASSIC - NICOLA GROUP	
1	Volcanoclastic sediments (andesitic clasts predominantly)
1a	boulder conglomerate
1b	cobble conglomerate
1c	pebble conglomerate
1d	sandstone
1e	siltstone

LEGAL CORNER POSTS TIED-IN WITH A COMPASS AND BELT CHAIN

Brussels Property

Geology

BRUSSELS 2 MINERAL CLAIM

KAMLOOPS LAKE AREA
KAMLOOPS MINING DIVISION, B.C.

GEOLOGY BY: M.M.	N.T.S. 92-I-10E
JUNE 1992	FIGURE NO. 10

PROPERTY GEOLOGY - Continued

Summary - Continued

Late Cretaceous(?) or Early Tertiary(?), discordant, felsic dykes and plugs, with or without quartz-eye phenocrysts, intrude the metasediments at several scattered locations across the Brussels Claim Group. Moderate to strong carbonate and/or silica replacement of the conglomerates and sandstones occurs adjacent the felsic intrusives. Both the country rocks and the felsic intrusives are often faulted and cut by 1 to 5% banded, ankerite, dolomite, chalcedony and quartz veins. The felsic intrusives are also often altered to pink carbonates, clay minerals and 10% pore space.

A light green, highly siliceous, amorphous rock (possibly rhyolite) occurs as late dykes or irregular zones within the most intensely faulted replacement zones.

It is expected that faulting has allowed for the intrusion of felsic dykes and plugs, and that these same fault zones have served as conduits for the hydrothermal solutions which are believed to have been responsible for the intense replacement of the metasediments at several locations across the Brussels Claim Group. Many of the intensely faulted replacement zones were described in the 1991 Assessment Report. Some of the zones mapped during this year's survey will be described under the title "Alteration and Mineralization" in this report.

Upper Triassic Nicola Group Metasediments (Unit 1)

Upper Triassic Nicola Group Metasediments, comprised of conglomerates predominantly, underlie the entire Brussels Claim Group (see Figures 4-10). They are made up of Nicola Group volcanic clasts of andesite and basalt. The most common clasts are dark green augite andesite and light grey plagioclase microphenocryst andesite. The subrounded to subangular clasts

Continued . . .

PROPERTY GEOLOGY - Continued

Upper Triassic Nicola Group Metasediments (Unit 1) - Continued

range from pebble, to cobble, to boulder size and are set in a matrix of 20 to 40% coarse sand.

The conglomerates are poorly sorted and massive in outcrop across much of the property. The conglomerates range from highly indurated to poorly indurated over short distances and the degree of induration appears to be, at least in part, proportional to the percentage of sandy matrix making up the conglomerates. The conglomerates with the least sandy matrix are the most indurated. Some conglomerates with a high percentage of limy sandy matrix break down easily with weathering and are crumbly in outcrop.

Minor interbeds of pebble conglomerate, sandstone and siltstone from $\frac{1}{2}$ to 2 metres thick occur locally within the massive conglomerates. The pebble conglomerates and sandstones are comprised of the same volcanoclastic material as the cobble and boulder conglomerates.

All of the metasediments are metamorphosed to the greenschist facies and chlorite and epidote are the dominant minerals of both the matrix particles and clasts.

Late Cretaceous(?), or Early Tertiary(?) Felsic Intrusions (Unit 2)

Late Cretaceous(?) or Early Tertiary(?) felsic dykes and plugs intrude faulted metasediments at several locations across the Brussels property. During the 1991 mapping program it was discovered that many of the narrow dykes (5 to 10 metres wide) have a general south to southeast strike. Many of the dykes were also found to be poorly exposed, or highly altered and difficult to distinguish from the rocks they intrude.

Continued . . .

PROPERTY GEOLOGY - Continued

Late Cretaceous(?), or Early Tertiary(?) Felsic Intrusions
(Unit 2) - Continued

During this year's mapping a very large lenticular plug of quartz-eye felsic intrusive was outlined on the Brussels 2 mineral claim (see Figure 10). The plug crosses the entire mineral claim from grid L27S for 900 metres to grid L36S, and ranges from 200 to 500 metres in width. All Nicola Group metasediments in contact with the intrusive are highly carbonate altered. The sandstones and siltstones from grid 34S, 5+50E to 32S, 6+00E are highly fractured and veined with carbonate and minor quartz. These Nicola Group rocks appear to be thin remnants of country rock that lie directly upon the felsic intrusive.

Like the felsic dykes mapped in 1991 the felsic intrusive on the Brussels 2 mineral claim is made up of fine to medium white crystals of orthoclase feldspar (80%), white or light green muscovite (15%) and 1 to 5% quartz-eye phenocrysts of 0.2 to 1 cm. Some dyke offshoots from the intrusive contain up to 20% feldspar phenocrysts to 1 cm.

The white to light green felsic intrusive is often altered to pink carbonates, white clays, 10% pore space, and 5% rounded quartz crystals.

The Brussels 2 mineral claim felsic intrusive is generally highly fractured, but for the most part the fractures are tight. Locally, however, up to 5% late ankerite, dolomite, chalcedony and quartz veinlets fill fractures within the intrusive.

PROPERTY GEOLOGY - Continued

Late Cretaceous(?), or Early Tertiary(?) Rhyolite(?) Dykes
(Unit 2c)

Dykes and irregular zones of a light green, highly siliceous, amorphous rock (possible rhyolite) cut carbonate replacement zones at several locations on the Brussels property. The rhyolite(?) intrusives appear to be later than the felsic intrusives although the two are often intimately associated and probably represent fractions from the same magma.

Pleistocene Deposits

Deep drift deposits and outwash gravels are widespread across the Brussels property and reach their greatest depths near the southern border of the Brussels 5 mineral claim where moraines are in excess of 15 metres in height and kettles are up to 10 metres deep.

Many of the rock exposures on the Brussels 5 mineral claim are restricted to roche moutonnée at the northwest ends of ridges that are otherwise covered by 1 to 2 metres of till.

The drift on the property is a mix of boulders, cobbles, sand and silt. The boulders, rarely over 1 metre in size, equal up to 5% of the drift.

The general trend of the moraines across the property is south-east, but varies from region to region. For example, the moraines on the southwest corner of the Brussels 3 mineral claim trend 130 to 140 degrees, while on the northeast corner of the Brussels 5 mineral claim, 1.5 km southeast, they trend 110 to 120 degrees, and on the Brussels 2 mineral claim, another 1.5 km east, they trend 130 to 140 degrees again.

Continued . . .

PROPERTY GEOLOGY - Continued

Pleistocene Deposits - Continued

Morainal ridges on the north half of the Brussels 10 mineral claim trend 50 to 75 to 100 degrees, as do those on the southern side of the Brussels 5 mineral claim which also trend northeast, east and southeast. Many of the moraines are high and curved in outline and are thought to represent terminal moraines comprised of material deposited from ice that has moved from the northwest.

Two hundred metres south of the series of terminal moraines, on the southern half of the Brussels 10 mineral claim, the morainal trend is a more normal 120 degrees.

The last ice movement in the region is believed to have been from northwest to southeast.

Structural Geology and Faulting

The structural geology of the Brussels property is not clear. The minor sandstone and siltstone interbeds within the massive conglomerates underlying the property are often disturbed by faulting and unreliable indicators of the overall attitude of the Nicola Group metasediments. Limited data suggests that the metasediments have an average strike of 145 degrees, and for the most part, dip either steeply northeast or southwest.

The metasediments appear to be a monoclinial sequence comprised primarily of poorly sorted conglomerates.

Three major fault zones: the Brussels Fault Zone, the Main Valley Fault Zone and the Bluff Fault Zone were identified during the 1991 mapping program (Morrison, 1991). It was discovered

Continued . . .

PROPERTY GEOLOGY - Continued

Structural Geology and Faulting - Continued

in 1991 that all three fault zones were intruded by felsic dykes and that the faults appear to have served as conduits for the hydrothermal solutions that are believed to have been responsible for the intense replacement of the meta-sediments across the property.

No new faults have been identified during this year's mapping program due in part to the sparse distribution of outcrop on the Brussels 5 & 10 mineral claims. The Main Valley Fault mapped in 1991 presumably parallels the 10W Baseline crossing the northeast corner of the Brussels 5 mineral claim, but there is a heavy cover of glacial drift in the area that conceals the bedrock geology.

Much of the felsic intrusive and surrounding country rock on the Brussels 2 mineral claim is faulted and highly fractured, but no single fault structure has been identified. The lenticular intrusive is semi-concordant with the Nicola Group meta-sediments.

Alteration and Mineralization

Several large zones of carbonate alteration and replacement of Nicola Group metasediments were mapped on the Brussels Claim Group in 1991 (Morrison, 1991). The carbonate alteration demonstrates a close spacial relationship with Late Cretaceous(?), or Early Tertiary(?) felsic dyking and is most probably genetically related. Felsic dykes have not been recognized at all alteration zones, but all of the felsic dykes that have been mapped have carbonate alteration haloes. The felsic dykes themselves are often highly altered to pink carbonates, clays

Continued . . .

PROPERTY GEOLOGY - Continued

Alteration and Mineralization - Continued

and pore space making them difficult to distinguish from altered metasediments. A prolonged period of post-intrusive hydrothermal activity is indicated.

The felsic dykes are often faulted and cut by banded ankerite, dolomite, quartz and chalcedony veinlets (up to 5%) like the metasediments they intrude.

The metasediments display all degrees of carbonate alteration from weak to intense. Weakly carbonate altered rocks are light pink and weather rusty, and they are cut by 1 to 2% banded carbonate and silica veinlets. The original rock texture is recognizable. Intense alteration zones are often cut by 5 to 10% banded ankerite, dolomite, chalcedony and quartz veinlets and the original constituents of the rock have been totally replaced by ankerite (up to 70%) and/or silica (sometimes up to 90%). The ankerite replacement zones are pink to white and weather rusty. The silica replacement zones are light green, to white, to grey and do not discolour with weathering. The original texture of the rock is barely discernible within the zones of total replacement.

The RCDH 85-1, RCDH 85-4, Bluff, and Brussels Lake replacement zones mapped in 1991 on the Brussels 1, 3 & 4 mineral claims, and described in the 1991 Assessment Report (Morrison, 1991), are the largest and most significant replacement zones on the property. Only three new indistinct zones of replacement were identified during this year's mapping on the Brussels 2, 5 & 10 mineral claims and these will be described in the paragraphs that follow.

PROPERTY GEOLOGY - Continued

Silicified Replacement Zone on the Brussels 5 Mineral Claim

A zone of highly silicified conglomerate occurs as scattered outcrop over an area of 20 by 30 metres at grid 28+10S, 11+75W on the Brussels 5 mineral claim.

The sandy cobble conglomerate, comprised predominantly of andesitic clasts, has been totally replaced by silica in some outcrop. Banded chalcedony and quartz veinlets equalling up to 5% of the rock fill open space around the silicified clasts.

The showing is poorly exposed, but significant in that it is usually the silicified component of the Brussels property replacement zones that contain precious metal values.

No samples have been collected from the showing for assays to date.

Carbonate Altered Float on the Brussels 5 & 10 Mineral Claims.

A large amount of carbonate altered float occurs as 15 to 100 cm sub-angular boulders within the drift over an area of 150 by 500 metres near the border of the Brussels 5 & 10 mineral claims. Some of the moraines near the claim border are comprised of up to 10% carbonate altered float. The percentage of carbonate altered float drops off 200 metres north and 150 metres south of the Brussels 5 mineral claim southern border suggesting that the source of the float is local.

Although the source of the float may be local, bedrock is well concealed by heavy drift on the Brussels 5 mineral claim.

The carbonate altered float in all cases is made up of sandy cobble conglomerate of andesitic composition. The carbonate replacement ranges from weak to intense, but is generally moderate.

PROPERTY GEOLOGY - Continued

Carbonate Replacement Zones on the Brussels 2 Mineral Claim.

A scattering of carbonate replaced metasediments occur on the Brussels 2 mineral claim. The carbonate replaced zones demonstrate a close relationship with the quartz-eye felsic intrusion that underlies one-half of the mineral claim (see Figure 10).

Most metasedimentary rocks fringing the intrusive on the southwest side are moderately to intensely replaced by carbonate for 5 to 20 metres from the intrusive contact. The siltstone and sandstone beds lying northeast of the 4E Baseline are all moderately replaced with carbonate, and appear to be remnants of Nicola Group metasediments that lie immediately on top of the felsic intrusive.

None of the replacement zones on the Brussels 2 mineral claim are of sufficient size to be considered as primary exploration targets for precious metals, but the zones do indicate a clear relationship between the intrusive and carbonate replacement of the surrounding rocks.

Carbonate and silica veinlets fill fractures within the felsic intrusive locally indicating a period of late emanations from the cooling magma.

DISCUSSION

The data from this year's mapping does not alter last year's observation that the Brussels property appears to be underlain by a monoclinial sequence of poorly sorted volcanoclastic conglomerates and minor sandstone and siltstone interbeds that strike at an average 145 degrees and dip steeply east, west or vertical.

Continued . . .

DISCUSSION - Continued

Many of the sandstone or siltstone interbeds mapped this year occur in areas of disruption where true attitudes are difficult to determine. The thin-bedded sediments on the Brussels 2 mineral claim have been particularly disturbed by the intrusion of the quartz-eye porphyry.

The quartz-eye porphyry on the Brussels 2 mineral claim has unequivocally demonstrated the close relationship between felsic intrusives and carbonate/silica replacement zones on the Brussels property (see foregoing section on Alteration and Mineralization).

The quartz-eye porphyry has all of the characteristics of a highly volatile hypabyssal intrusive. Locally, the intrusive itself is highly fractured and altered to carbonate, clay, pore space and quartz-eye phenocrysts. Later hydrothermal solutions have also deposited carbonate and silica (quartz and chalcedony) veinlets within fractured intrusive rock.

The key to finding a precious metal deposit on the Brussels property is to find an area with evidence of on-going tectonic activity that has "tapped" the latest hydrothermal solutions emanating from the hypabyssal felsic intrusives.

The chalcedony breccia zone at the Newmont Showing described in the 1991 report (Morrison, 1991) probably represents one such occurrence, while the large RCDH 85-1 and RCDH 85-4 carbonate replacement zones (also described in the 1991 report) possibly constitute two more zones where repetitive faulting and hydrothermal injections have occurred.

This year's discovery of the silicified replacement zone at grid 28+10S, 11+75W appears to represent the siliceous com-

Continued . . .

DISCUSSION - Continued

ponent of hydrothermal solutions that have emanated from a buried felsic intrusive and as such should be analyzed for precious metal values. The chalcedony veinlets at the showing are banded, indicating open-space epithermal conditions.

Some backhoe trenching should be carried out to expand the poorly exposed 28+10S, 11+75W zone, before drilling is considered.

The abundant subangular carbonate-replaced float found near the northern border of the Brussels 10 mineral claim indicates that a large concealed replacement zone may lie buried beneath drift in the immediate area. A ground magnetometer survey conducted over the region might prove useful to outline the zone if the overburden is not too deep.

The RCDH 85-1 replacement zone mapped in 1991 still constitutes the strongest, largest and most accessible replacement zone known on the property. The zone should be tested at depth with a Reverse Circulation Percussion Drill as was suggested in 1991 (Morrison, 1991). The newly discovered silicified zone at grid 28+10S, 11+75W on the Brussels 5 mineral claim is also easily accessible and it should be drill tested during the same drilling program following the aforementioned backhoe trenching program.

Further exploration on the property (eg. the RCDH 85-4 and Brussels Lake Replacement Zones) should await favorable precious metal results from the Phase I drilling program.

CONCLUSIONS AND RECOMMENDATIONS

The March-April, 1992 geological mapping of the Brussels 2, 5 & 10 mineral claims, at a scale of 1:2500, followed a similar mapping program conducted on the Brussels 1, 3 & 4 mineral

Continued . . .

CONCLUSIONS AND RECOMMENDATIONS - Continued

claims in 1991 (Morrison, 1991). Many of the geological findings of 1991 were further varified during this year's mapping program.

Much of the property is underlain with a monoclinial sequence (145/80NE to 80SW) of Upper Triassic Nicola Group metasediments comprised of unsorted conglomerates and minor interbeds of sandstone and siltstone. The Upper Triassic rocks have been subjected to northeast, northwest and east faulting which has allowed for the intrusion of Late Cretaceous(?) or Early Tertiary felsic dykes or plugs as well as later rhyolite(?) dykes. The faulting has also allowed for the introduction of the large volumes of hydrothermal solutions which have brought about extensive carbonate and/or silica replacement of the Nicola Group metasediment. Some late solutions have also altered the felsic intrusions.

Geological mapping on the Brussels 2 mineral claim this year clearly illustrates the close association of carbonate replacements zones with the felsic intrusion. The quartz-eye porphyry intrusion underlying one-half of the Brussels 2 mineral claim represents a very volatile hypabyssal igneous rock. It is believed that late hydrothermal solutions emanating from such a volatile intrusive could be charged with ions of precious metals.

The large carbonate/silica replacement zones on the Brussels 1, 3 & 4 mineral claims (eg. the RCDH 85-1, RCDH 85-4 and Brussels Lake replacement zones) are thought to represent the uppermost horizons of precious metal-bearing epithermal systems that could overlie volatile hypabyssal quartz-eye intrusions equivalent to that occurring on the Brussels 2 mineral claim.

Continued . . .

CONCLUSIONS AND RECOMMENDATIONS - Continued

The mineralized quartz and chalcedony veining at the Newmont Showing, lying just off of the property 10 metres west of the Brussels 3 mineral claim, is thought to represent the late precious metal-bearing volatile fractions of hydrothermal solutions that have emanated from a "Brussels 2 type" intrusion. The Newmont Showing consists of a one metre wide shear zone with brecciated and mended quartz and chalcedony that contains several sulphides and an average 3.2 g/tonne gold and 65g/tonne silver (Morrison, 1991).

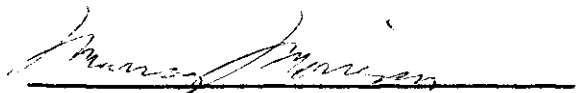
The RCDH 85-1 replacement zone at the border of the Brussels 3 & 4 mineral claims is considered to be the largest, most accessible, and best precious metal target on the Brussels property (Morrison, 1991). The silicified replacement zone discovered this year at grid 28+10S, 11+75W is also considered to be a good exploration target for precious metals (See Discussion).

A Phase I Reverse Circulation Drilling Program should be designed to test both the RCDH 85-1 replacement zone and the 28+10S, 11+75W replacement zone. Two silicified breccia zones at the northern edges of two separate outcrop making up the RCDH 85-1 replacement zone (see 1991 maps) should be tested with two inclined drill holes drilled from the north. At least one inclined drill hole should also be drilled into the 28+10S, 11+75W replacement zone.

All drill intercepts of replaced rock should be analyzed for 30 elements by ICP and for gold and silver by fire assay.

Drill testing of all other replacement zones on the Brussels property should await positive results from the Phase I Drilling Program.

June 10, 1992
Kelowna, B.C.


Murray Morrison - B.Sc.

REFERENCES

Boyce, R.A.

- 1982: Geochemical Report Brussels Group (Brussels, Golden Ring and Golden Lime), Kamloops Mining Division, Placer Development Limited. *

Cockfield, W.E.

- 1948: Geology and Mineral Deposits of Nicola Map-Area, British Columbia, Geological Survey of Canada, Memoir 249.
- 1947: Map 886A, Nicola, Kamloops and Yale Districts, British Columbia, Geological Survey of Canada.

Morrison, M.S.

- 1986: Percussion Drilling Assessment Report, Brussels Group of Mineral Claims, Kamloops Lake Area, Kamloops Mining Division, B.C. *
- 1989: Geophysical Assessment Report, Golden Lime 1&2 Mineral Claims, Kamloops Lake Area, Kamloops Mining Division. *
- 1989: Geophysical & Geochemical Assessment Report, Brussels Claim Group, Kamloops Lake Area, Kamloops Mining Division. *
- 1990: Geochemical Assessment Report, Brussels Claim Group, Kamloops Lake Area, Kamloops Mining Division. *
- 1991: Geological Assessment Report, Golden Lime 1&2 Mineral Claims, Kamloops Lake Area, Kamloops Mining Division. *
- 1991: Geological Assessment Report, Brussels Claim Group, Kamloops Lake Area, Kamloops Mining Division.*

Turner, J.A.

- 1984& Newmont Exploration of Canada Limited, geologist
1985 (personal communication).

Wilmot, A.D. and Morrison, M.S.

- 1984: Report on the Brussels Group of Mineral Claims of Goldstone Mines Ltd., Kamloops Lake Region, Kamloops Mining Division, B.C. (Filed with the first prospectus of Goldstone Exploration Ltd. at the Vancouver Stock Exchange).

* denotes Assessment Reports filed with the Ministry of Energy, Mines and Petroleum Resources of British Columbia.

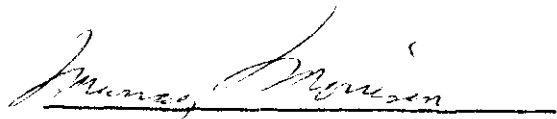
APPENDIX A

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-two years.
3. During the past twenty-two 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-two years.
5. I conducted the geological survey outlined in this report.
6. I own a 100% interest in the Brussels Claim Group.

June 10, 1992.
Kelowna, B.C.


Murray Morrison - B.Sc.

APPENDIX B

STATEMENT OF EXPENDITURES - ON THE BRUSSELS CLAIM GROUP.

Statement of Expenditures in connection with a Geological Mapping Program carried out on the Brussels Claim Group, located at Kamloops Lake, 25 km west of Kamloops, B.C. (N.T.S. Map 92-I-10E) for the year 1992.

GEOLOGICAL MAPPING PROGRAM (3 $\frac{1}{4}$ sq. km)


M. Morrison, geologist	18 days @ \$250.00/day	\$ 4500.
Truck, 4x4 (incl. gasoline and insurance)	18 days @ \$ 75.00/day	1350.
Meals and Lodging	18 days @ \$ 50.00/day	900.
Flagging and belt chain thread		40.
	sub-total	\$ 6790.

REPORT PREPARATION COSTS

M. Morrison, geologist	3 days @ \$250.00/day	\$ 750.
Drafting		53.
Typing		75.
Copying		25.
	sub-total	\$ 903.
	<u>GRAND TOTAL</u>	<u>\$ 7693.</u>

I hereby certify that the preceding statement is a true statement of monies expended in connection with the Geological Mapping Program carried out March 29 - April 29, 1992.

June 10, 1992


Murray Morrison - Geologist