Box 6

SUMMARY REPORT - NI CLAIMS

PN 100

NTS 92C/15E

S. Lear
Feb/86

#191-100-85

SUMMARY REPORT ON THE NITINAT CLAIM

VANCOUVER ISLAND, B.C.

NTS 92C/15E   Latitude 48° 52'   Longitude 124° 41'

PN 100

SHELLEY LEAR
February, 1986

REPORT #191-100-85

TABLE OF CONTENTS

FIGURES AND TABLES

1. SUMMARY

Field work in 1985 was concentrated in the northwest quadrant of the 1984 cut grid (fig. 4). Soil geochemistry in 1984 returned anomalous lead, silver and zinc values in this area.

An initial reconnaisance revealed extreme errors in chaining and slope correction of the established grid lines. Consequently, it was necessary to expend considerable time re-chaining the grid lines from the baseline. Intermediate grid lines at 25 metre intervals were established to help define the source of 1984 anomalies. Due to budget constraints, a total of seven days were spent on this project. The field crew consisted of two soil samplers/line cutters and one geologist.

Several small sphalerite lenses were discovered and sampled in an altered dacite volcanic. Values of up to 8.45% Zn and 7.31 oz/t Ag were returned.

Detailed soil sampling in 1985 duplicated and further delineated lead, zinc and silver anomalies from the 1984 programme.

2. INTRODUCTION

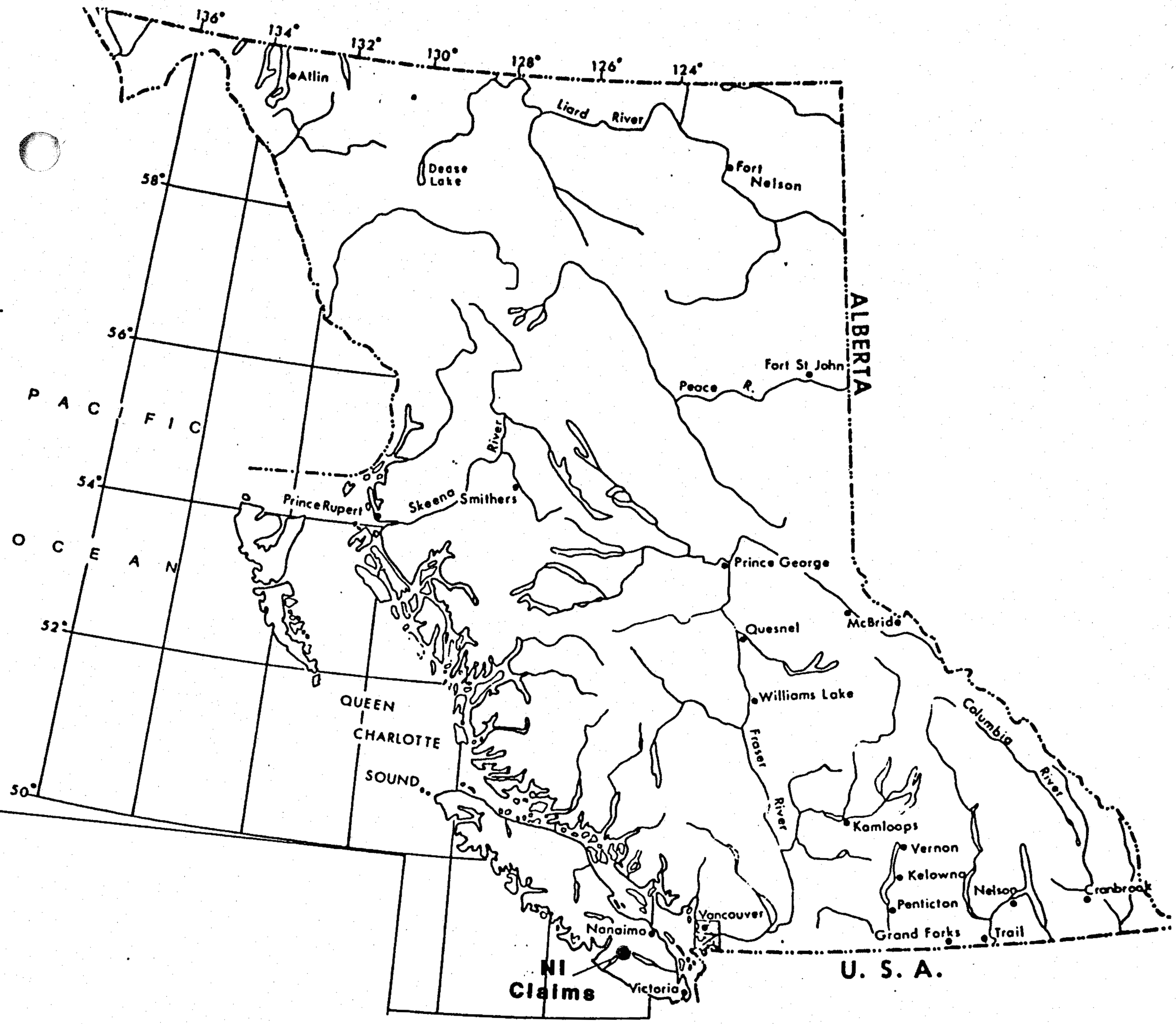
2.1 Location and Access

The NI property is located on the West Coast of Vancouver Island 6 km north of the northern end of Nitinat Lake. The claims are situated west and east of the Little Nitinat River. Access is by public road from Cowichan Lake to the east or from Port Alberni to the northwest. A few overgrown logging roads provide restricted access within the claim group.

2.2 Claim Status

The Nitinat property consists of three modified-grid located claims totalling approximately 33 units. The NI 1 claim has been slightly reduced due to partially overlapping pre-existing claims. Ron Bilquist and Les Allen orginally staked the NI 1 claim which is currently under option to Falconbridge. The NI 2 and NI 3 claims were recently staked by Falconbridge to cover open ground to the west and north of the 1985 target area.

Claim Name	Record No.	Claim size	Expiry Date
NI #1	2184	20 units	May 23, 1988
NI #2	-	12 units	to be recorded
NI #3	-	1 unit	"

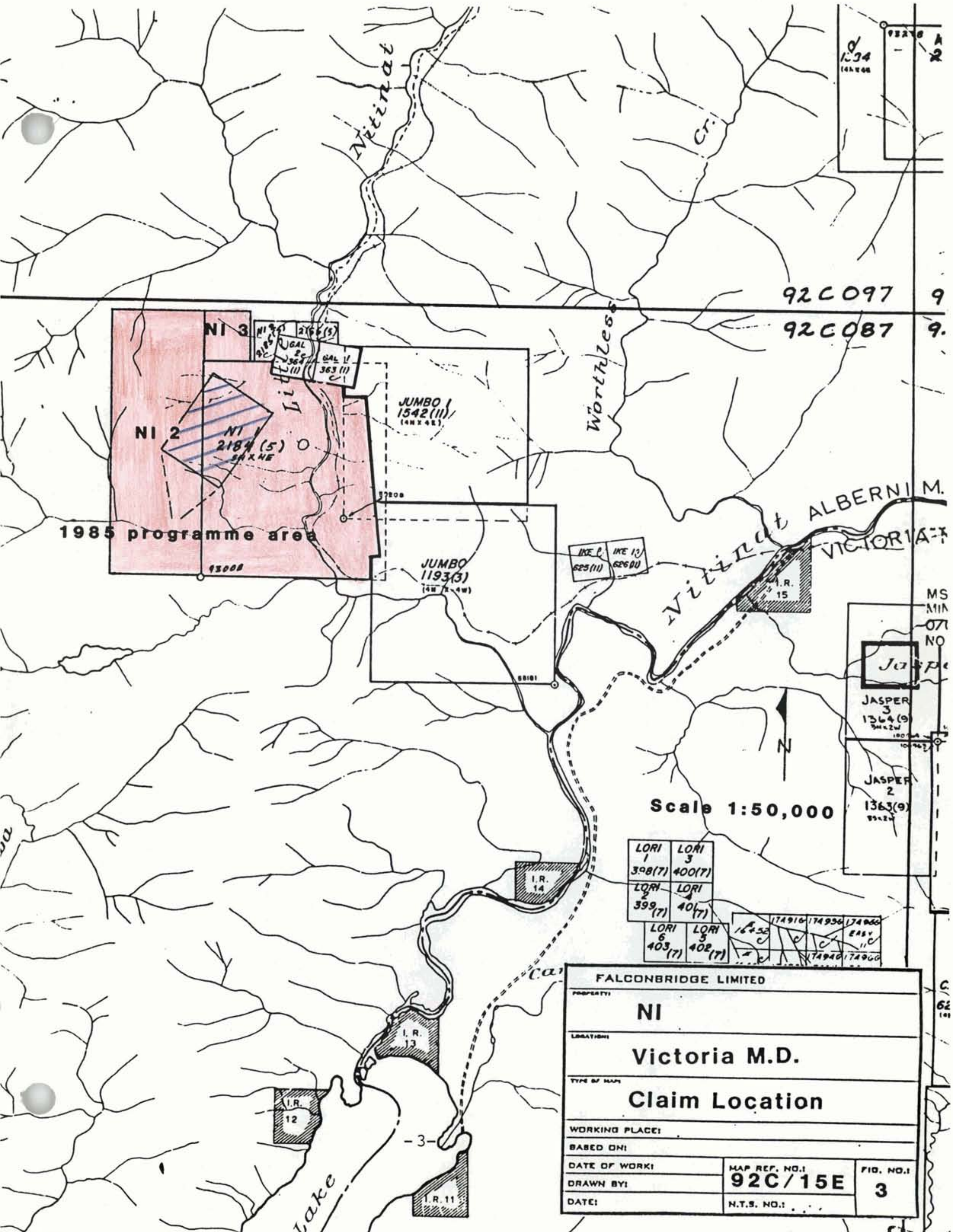


INDEX MAP

BRITISH COLUMBIA Fig. 1

150 0 150 300 450 Km.

SCALE 1: 7·500·000



FALCONBRIDGE LIMITED

PROPERTY: NI

LOCATION: Victoria M.D.

TYPE OF MAP: Claim Location

WORKING PLACE:

BASED ON:

DATE OF WORK:

DRAWN BY:

DATE:

MAP REF. NO.: 92C/15E

N.T.S. NO.:

FIG. NO.: 3

2.3 Previous Work

The NI claim area was previously staked at various times as Flora, Ni, Lax, Al, Summit and ABC claims. Belvedere Mines Ltd. conducted geochemical and geophysical surveys in 1967-68. Further geochemical surveys were carried out by Noranda Mines during 1972-73. Several zinc and silver anomalies were delineated with scattered copper values. Some diamond drilling was undertaken on the Summit claims in 1979-1980 by Summit Pass Mining Corp.

Falconbridge Limited optioned the current NI claim from Ron Bilquist and Les Allen in 1984. Subsequently, a 31.5 km cut grid was established using a contract line-cutting firm. Grid lines were spaced at 150 metre intervals over the entire claim area. Geological mapping, rock chip sampling, geochemical soil sampling and a VLF-EM 16 survey were conducted on the grid. Results are summarized in Falconbridge Ltd. report #156-100-84 by K. Hudson.

3. REGIONAL GEOLOGY

Table 1 and Figure 4 (Muller, 1981) summarize the regional stratigraphy of Vancouver Island.

The oldest rocks are the Paleozoic Sicker Group consisting of a lower volcanic and an upper sedimentary unit. The Sicker Group averages 4,400m in thickness; the lower 3000m consists of pillowed and agglomerate basalts, pyroclastics, argillite and chert. The upper 1400m of sediments includes some limestone. Folding and metamorphosis has produced chlorite-actinolite and chlorite-sericite schists. Structures are mainly overturned with isoclinal folds indicating two or more phases of tectonism (Muller, 1981).

The Vancouver Group of late to middle Triassic age dominates the island's lithologies and averages 6,100m in thickness (Muller, 1980). The group is composed of Karmutsen Formation volcanics, capped by Quatsino Formation limestones and Parson Bay Formation calcareous sediments.

The Karmutsen Formation consists of tholeiitic ocean floor pillow lavas, massive flows, breccias and tuffs with minor layers of limestone and other sediments in the upper 1,100m. In central Vancouver Island this formation reaches a thickness of 6000m while in the southwest region the estimated thickness is between 1000 and 2000 metres (Muller, 1976). Large scale northerly and westerly trending block faulting is common.

The Quatsino Formation overlies the Karmutsen and consists of mainly massive, fairly pure, flat lying limestone of upper Triassic Age.

The early Jurassic Bonanza Group (Muller, 1977) is described as having a varied and heterogeneous lithology. The lavas range in

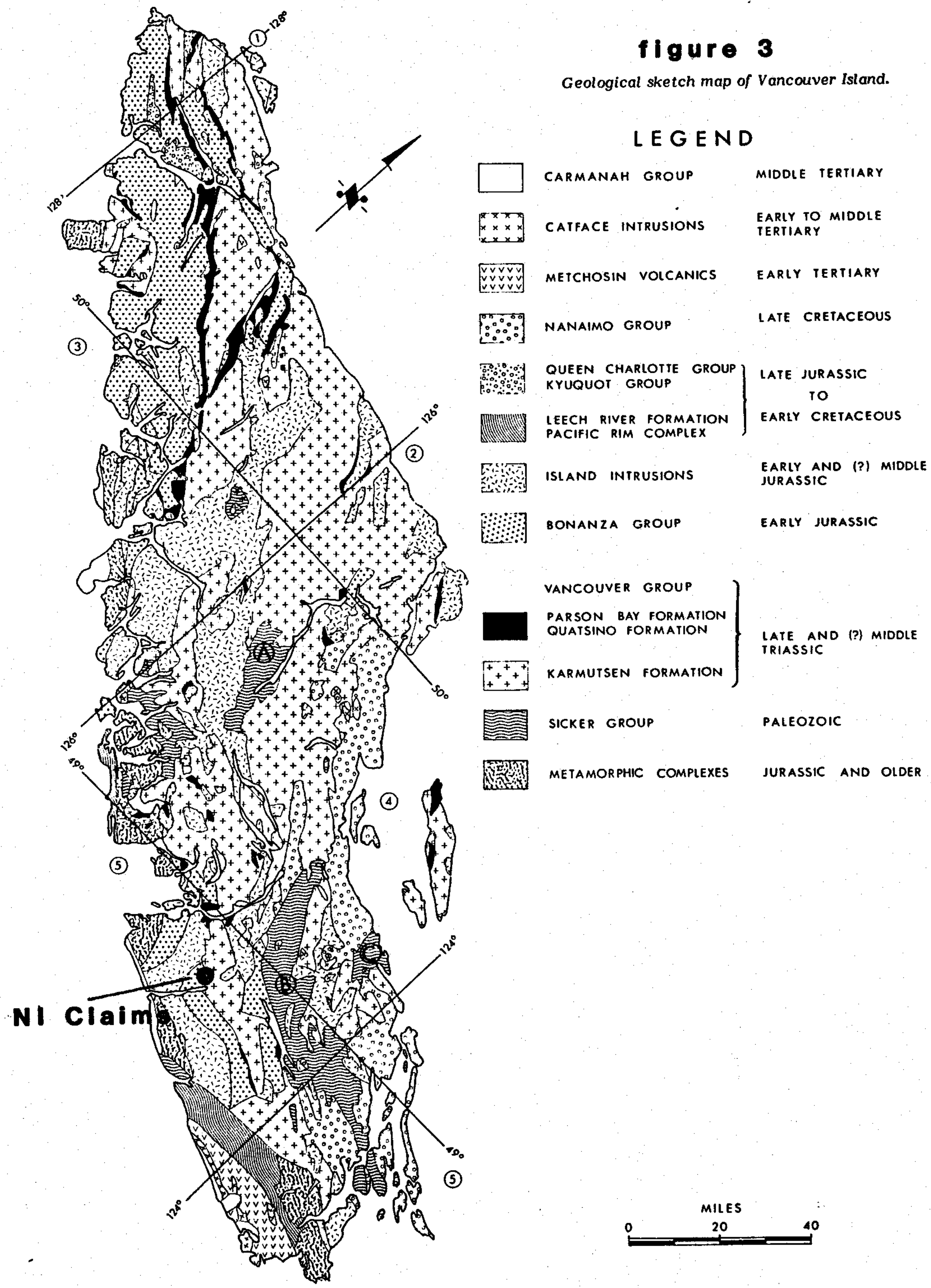


figure 3

Geological sketch map of Vancouver Island.

TABLE I: TABLE OF FORMATIONS OF VANCOUVER ISLAND

SEQUENTIAL LAYERED ROCKS

Era	Period		Stage	Group	Formation	Symbol	Ave. Thick. (m)	Lithology
CENOZOIC			EOCENE to OLIGOCENE		late Tert. volc's of Port McNeill	Tvs		
CENOZOIC			EOCENE to OLIGOCENE		SOOKE BAY	mpTSB		conglomerate, sandstone, shale
CENOZOIC			EOCENE to OLIGOCENE		CARMANAH	eoTC	1,200	sandstone, siltstone, coglomerate
CENOZOIC			EOCENE to OLIGOCENE		ESCALANTE	eTE	300	conglomerate, sandstone
CENOZOIC			early EOCENE		METCHOSIN	eTM	3,000	basaltic lava, pillow lava, breccia, tuff
MESOZOIC		LATE	MAESTRICHTIAN	NANAIMO	GABRIOLA	uKGA	350	sandstone, conglomerate
MESOZOIC		LATE	MAESTRICHTIAN	NANAIMO	SPRAY	uKS	200	shale, siltstone
MESOZOIC		LATE	CAMPANIAN	NANAIMO	GEOFFREY	uKG	150	conglomerate, sandstone
MESOZOIC		LATE	CAMPANIAN	NANAIMO	NORTHUMBERLAND	uKN	250	siltstone, shale, sandstone
MESOZOIC		LATE	CAMPANIAN	NANAIMO	DE COURCY	uKDC	350	conglomerate, sandstone
MESOZOIC		LATE	CAMPANIAN	NANAIMO	CEDAR DISTRICT	uKCD	300	shale, siltstone, sandstone
MESOZOIC		LATE	CAMPANIAN	NANAIMO	EXTENSION - PROTECTION	uKEP	300	conglomerate, sandstone, shale, coal
MESOZOIC		LATE	SANTONIAN	NANAIMO	HASLAM	uKH	200	shale, siltstone, sandstone
MESOZOIC		LATE	SANTONIAN	NANAIMO	COMOX	uKC	350	sandstone, conglomerate, shale, coal
MESOZOIC		EARLY	CENOMANIAN	QUEEN CHARLOTTE	Conglomerate Unit	lKoc	900	conglomerate, greywacke
MESOZOIC		EARLY	ALBIAN APTIAN ?	QUEEN CHARLOTTE	Siltstone Shale Unit	lKop	50	siltstone, shale
MESOZOIC		EARLY	VALANGINIAN BARREMIAN		LONGARM	lKL	250	greywacke, conglomerate, siltstone
MESOZOIC	JURASSIC	MID-LATE	TITHONIAN CALLOVIAN		Upper Jurassic Sediment Unit	uJs	500	siltstone, argillite, conglomerate
MESOZOIC	JURASSIC	EARLY	TOARCIAN ?	BONANZA	Volcanics	lJB	1,500	basaltic to rhyolitic lava, tuff, breccia, minor argillite, greywacke
MESOZOIC	JURASSIC	EARLY	PLIENSBACHIAN SINEMURIAN	BONANZA	HARBLEDOWN	lJH		argillite, greywacke, tuff
MESOZOIC	TRIASSIC	LATE	NORIAN	VANCOUVER	PARSON BAY	uTrPB	450	calcareous siltstone, greywacke, silty-limestone, minor conglomerate, breccia
MESOZOIC	TRIASSIC	LATE	KARNIAN	VANCOUVER	QUATSINO	uTrQ	400	limestone
MESOZOIC	TRIASSIC	LATE	KARNIAN	VANCOUVER	KARMUTSEN	muTrK	4,500	basalic lava, pillow lava, breccia, tuff
MESOZOIC	TRIASSIC	MID	LADINIAN		Sediment - Sill Unit	Tds	750	metasiltstone, diabase, limestone
PALEOZOIC	PENN. and ? PERM.			SICKER	BUTTLE LAKE	CPBL	300	limestone, chert
PALEOZOIC	PENN. and ? PERM.			SICKER	Sediments	CPss	600	metagreywacke, argillite, schist, marble
PALEOZOIC	PENN. and ? PERM.			SICKER	Volcanics	CPsv	2,000	basaltic to rhyolitic metavolcanic flows, tuff, agglomerate
PALEOZOIC	DEV. or EARLIER							

CRYSTALLINE ROCKS, COMPLEXES OF POORLY DEFINED AGE

Name	Symbol	Isotopic Age Pb/U	Isotopic Age K/Ar	Lithology
SOOKE INTRUSIONS - silicic	Tg		32–59	quartzdiorite, trondhjemite, agmatite, porphyry
SOOKE INTRUSIONS - basic	Tgb		31–49	gabbro, anorthosite, agmatite
METCHOSIN SCHIST, GNEISS	Tmn		47	chlorite schist, gneissic amphibolite
LEECH RIVER FM.	JKL		38–41	phyllite, mica schist, greywacke, argillite, chert
PACIFIC RIM COMPLEX	JKP			greywacke, argillite, chert, basic volcanics, limestone
ISLAND INTRUSIONS	Jg		141–181	granodiorite, quartzdiorite, granite, quartz monzonite
WESTCOAST COMPLEX silicic	PMns	264	163–192	quartz-feldspargneiss, metaquartzite, marble
WESTCOAST COMPLEX basic	PMnb			hornblende-plagioclase gneiss, quartz diorite, agmatite, amphibolite
diabase sills	PTrb			
metavolcanic rocks	PMmv			metavolcanic rocks, minor metasediments; limestone, marble
TYEE INTRUSIONS	Pg	>390		metagranodiorite, metaquartzdiorite, metaquartz porphyry
COLQUITZ GNEISS	Pns	>390		quartz feldspar gneiss
WARK DIORITE GNEISS	Pnb	>200	163–182	hornblende-plagioclase gneiss, quartz diorite, amphibolite

composition from basaltic andesites which are commonly amygdaloidal, to rhyodacites. Interbedded with these flows are maroon and green coloured tuffs, breccias and several intercalated marine sediments.

Island Intrusions form NW trending regions in the southwest part of Vancouver Island. These intrusions are mainly quartz diorite and granodiorite and post date the Bonanza volcanics.

4. PROPERTY GEOLOGY

The NI claims are underlain by mafic and intermediate volcanic flows and tuffs, limestone lenses and basalt dykes. Mapping by Muller (1976) indicates that the claims contain both Vancouver Group volcanics with limestone and Bonanza volcanics.

A brief field examination of the northwest grid quadrant revealed some discrepencies in the previous (1984) mapping. Revisions in lithologic nomenclature and outcrop location were made in the limited area investigated. A more complete mapping program is required, but time and budget constraints did not permit this in 1985.

4.1 Lithology

Two major rock types were identified during a 3 day mapping program in 1985.

The predominant rock is a medium to dark green dacite volcanic. Feldspar laths 0.5-1mm long comprise 15 - 20%. Limonite alteration and silicification are common. Manganese staining occurs frequently. A report by Vancouver Petrographics (Appendix 2, F.L. report #156-100-84) suggested that the Mn-oxides probably contain Pb and Zn, either as distinct minerals or absorbed within a Mn-oxide. Calcite is often present in veinlets and on fracture surfaces. Shear zones within the dacite host sphalerite, pyrite and minor galena.

The second rock type identified was a dark green-grey moderately to strongly magnetic andesite. Occasional very small feldspar phenocrysts were noted.

4.2 Mineralization

Nine rock samples were collected for analysis during the course of the brief mapping program. Results and sample locations are shown on figure 5.

Sphalerite was identified in five rock samples (6654, 6656, 6657, 6658, 6659). Samples 6656 and 6657 were taken across a limonitic two metre wide shear zone in highly altered dacite volcanics. These samples returned zinc values of 7.25% and 8.45%

with silver values of 7.31 and 3.08 oz/T respectively. A large, strong zinc soil geochemical anomaly surrounds this shear zone. A similar zinc soil anomaly exists just north of the shear zone in association with another sphalerite-bearing outcrop.

Rock sample #135 from 1984 had an I.C.P. determined silver content of 53.7 ppm. A new rock sample 10 metres south of 135 had a silver assay of 3.87 oz/T (#6651). Sample 135 was taken in a highly altered limonitic dacite. A nearby soil sample returned a value of 33 ppm.

Further work is needed to properly evaluate the extent and grade of the mineralization.

5. GEOCHEMISTRY

5.1 Introduction

New grid lines were established to produce a 25 metre line spacing. Soil samples of "B" horizon material were collected at 25 metre intervals along the new grid lines. Re-samples of 1984 soil samples were taken on the pre-existing grid lines. Samples were analyzed at CDN Labs in Delta for copper, lead, zinc, gold and silver. The minus 80 mesh fraction was analyzed using nitric acid digestion with atomic absorption finish for Ag, Cu, Zn, Pb, and fire assay with AA finish for Au. The correct location of 1984 sample sites was determined by re-chaining of grid lines.

5.2 Results

Copper and gold values were generally low. Copper had a maximum value of 200 ppm with most samples less than 50 ppm. Gold was usually less than 20 ppb with a maximum of 120 ppb.

The 1985 sampling program confirmed and further delineated anomalous Zn, Ag and Pb zones (figures 6, 7, 8). Good correlation is shown between these three elements. Soil anomalies are also coincident with observed mineralization. As good outcrop exposures are relatively sparse in most of the target area, detailed soil sampling has been shown to be a useful exploration tool.

Additional detailed soil sampling is needed in the vicinity of rock samples 6656, 6657 and 6658 to define the extent of mineralization.

6. CONCLUSIONS

The NI claims appear to be a good target for Zn-Ag-Pb mineralization. Zinc values up to 8.45% and silver values up to 7.31 oz/T were discovered in a previously unmapped sphalerite showing. Mineralization appears to be associated with small shear zones in altered dacite.

Due to budget constraints, insufficient field work was done in 1985 to properly evaluate these claims.

7. RECOMMENDATIONS

Further exploration work in the northeast grid quadrant is recommended.

The first phase should include additional detailed soil sampling combined with prospecting, mapping and rock sampling in the vicinity of the sphalerite showings. Subsequent trenching and/or drilling is contingent upon the results of phase one.

A VLF-EM 16 survey might be useful in tracing the shear zones and geological contacts. Other geophysical methods such as I.P. might be effective if enough pyrite is associated with the sphalerite.

As the area of interest lies near the western claim boundary, additional claim staking to the west and north was recommended and has recently been completed by a contract staking crew. The location of these claims is shown on figure 2.

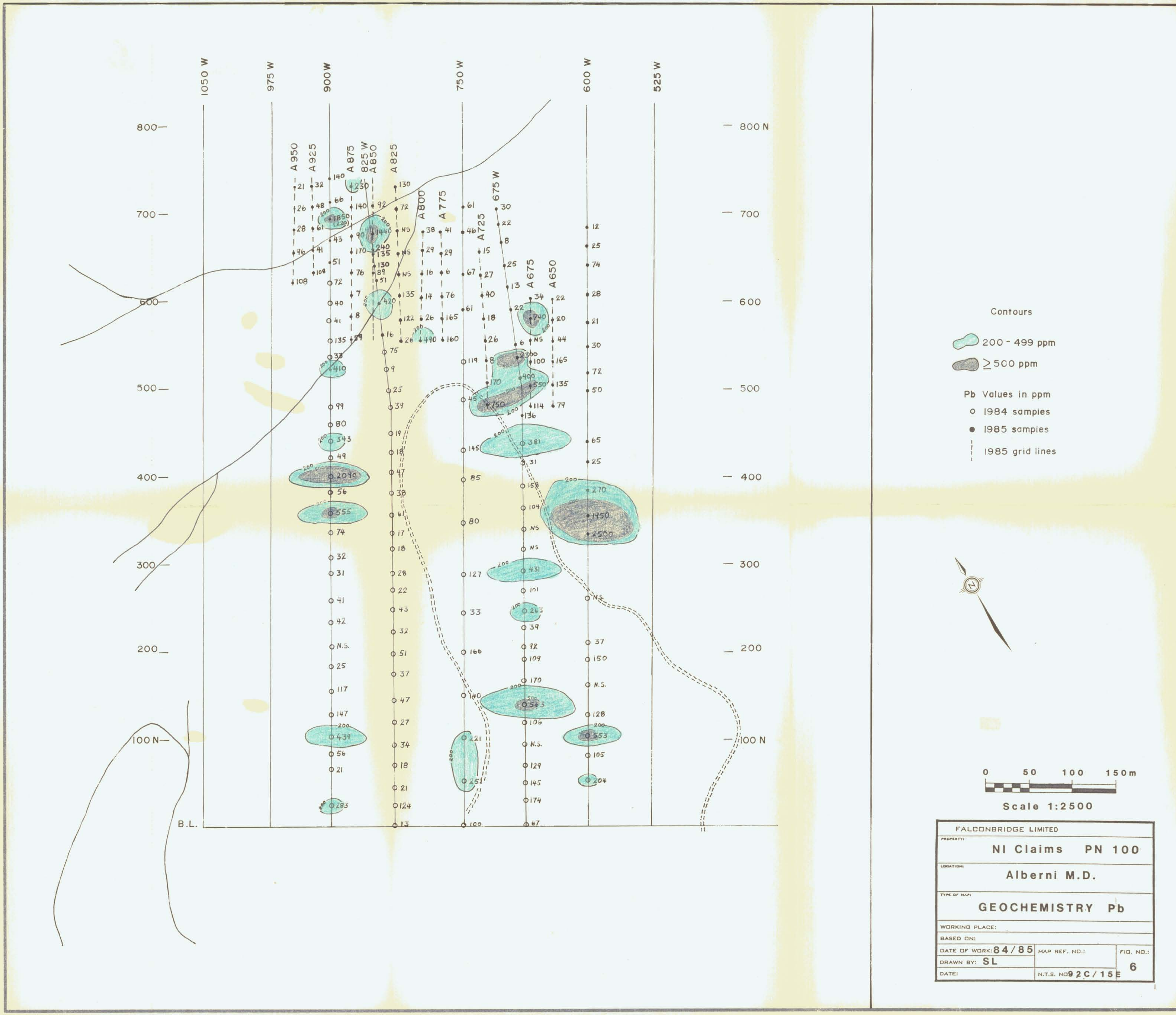
8. REFERENCES

Hudson, K. and Lear, S.R., 1985:
Summary Report #156-100-84, NI Claims 1984 Field Programme.

Muller, J.E., K.E. Northcote and D. Carlisle, 1974:
Geology and Mineral Deposits of Albert - Cape Scott Map Area, Vancouver Island, B.C. GSC Paper 74-8 pp 19-25.

Muller J.E., 1979: Geology of Vancouver Island; GSC Open File 463.

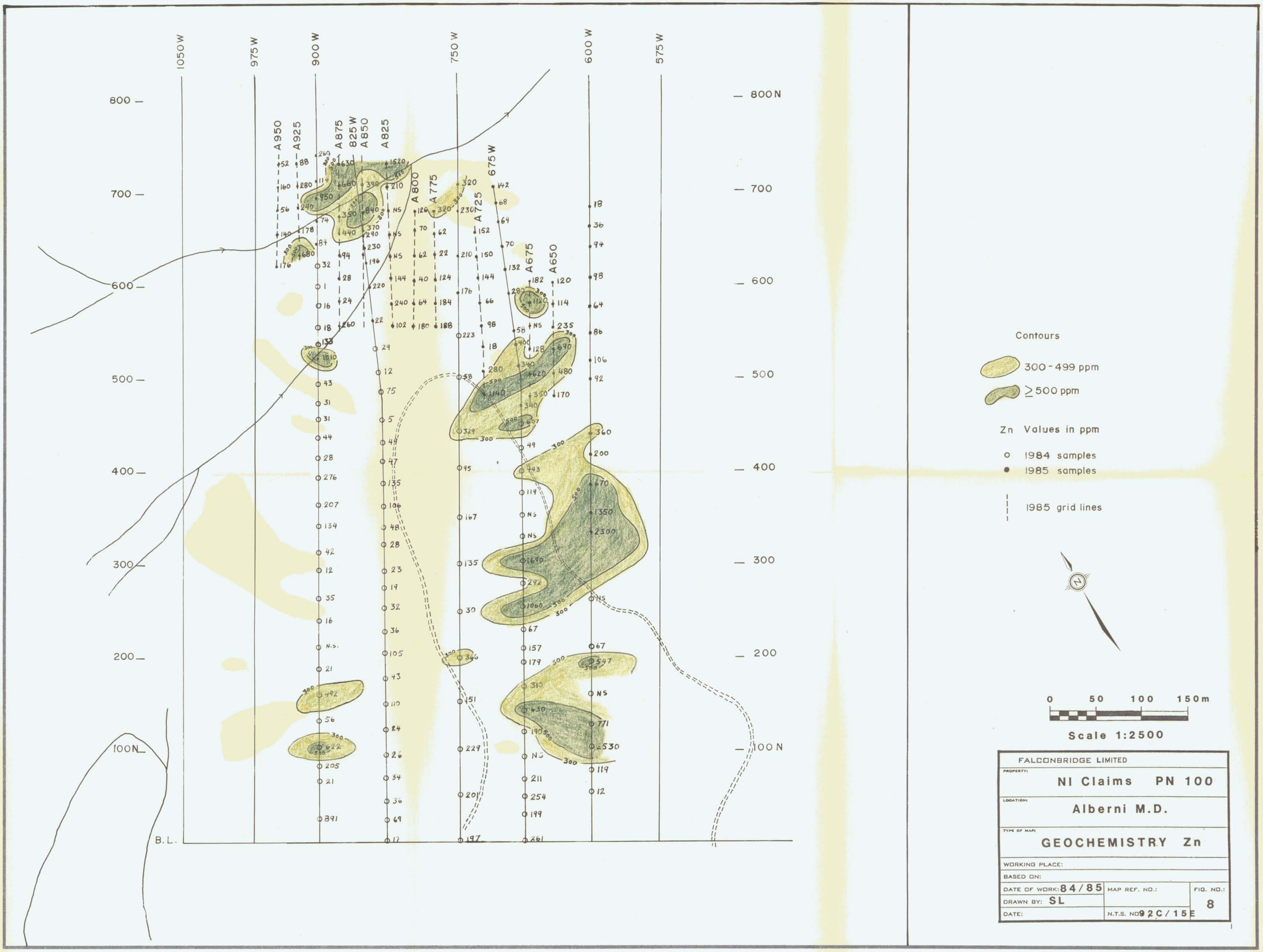
Muller, J.E., 1981: Insular and Pacific Belts; Field Guides to Geology and Mineral Deposits, Calgary 81, GAC, MAC, CGU, 1981, Edited by R.I. Thompson and D.G. Cook, pp 316-334.



1050 W
975 W
900 W
750 W
600 W
525 W
A 950
A 925
A 875
825 W
A 850
A 825
A 800
A 775
A 725
675 W
A 675
A 650
800—
700 —
600—
500—
400—
300—
200
100 N—
B.L.
800 N
700
600
500
400
300
200
100 N
Contours
200 - 499 ppm
≥ 500 ppm
Pb Values in ppm
1984 samples
1985 samples
1985 grid lines
0 50 100 150m
Scale 1:2500
FALCONBRIDGE LIMITED
PROPERTY:
NI Claims PN 100
LOCATION:
Alberni M.D.
TYPE OF MAP:
GEOCHEMISTRY Pb
WORKING PLACE:
BASED ON:
DATE OF WORK: 84/85
MAP REF. NO.:
FIG. NO.:
6
DRAWN BY: SL
DATE:
N.T.S. NO 92C/15E

FALCONBRIDGE LIMITED

PROPERTY: Ni Claims	
LOCATION: Port Alberni M.D.	
TYPE OF MAP: **LOCATION MAP 1985 PROGRAMME**	
WORKING PLACE:	
BASED ON:	
DATE OF WORK:	MAP REF. NO.:
DRAWN BY: Ines Tomecek	
DATE: October 1984	N.T.S. NO.: 92 C/15
FIG. NO.: 4	



FALCONBRIDGE LIMITED

PROPERTY: NI Claims PN 100

LOCATION: Alberni M.D.

TYPE OF MAP: GEOCHEMISTRY Zn

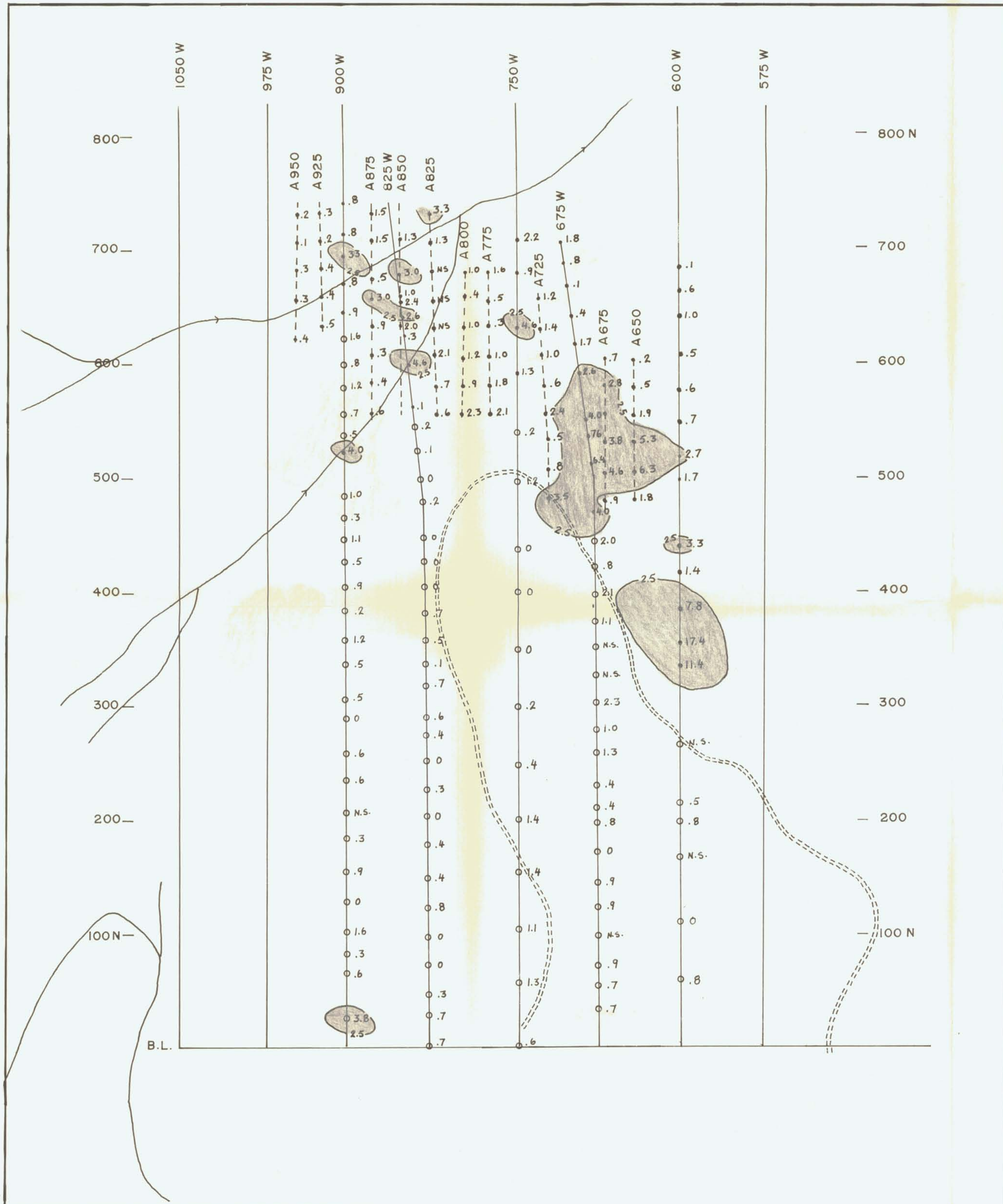
WORKING PLACE:

BASED ON:

DATE OF WORK: 84/85 | MAP REF. NO.: | FIG. NO.: 8

DRAWN BY: SL

DATE: | N.T.S. NO 92C/15E



Contours

≥2.5 ppm

Ag values in ppm

o 1984 samples

• 1985 samples

| 1985 grid lines

0 50 100 150m

Scale 1:2500

FALCONBRIDGE LIMITED

PROPERTY: NI Claims PN 100

LOCATION: Alberni M.D.

TYPE OF MAP: GEOCHEMISTRY Ag

WORKING PLACE:

BASED ON:

DATE OF WORK: 84/85 | MAP REF. NO.: | FIG. NO.: 7

DRAWN BY: SL

DATE: | N.T.S. NO. 92C/15E

1984 rock samples - I.C.P. Analysis

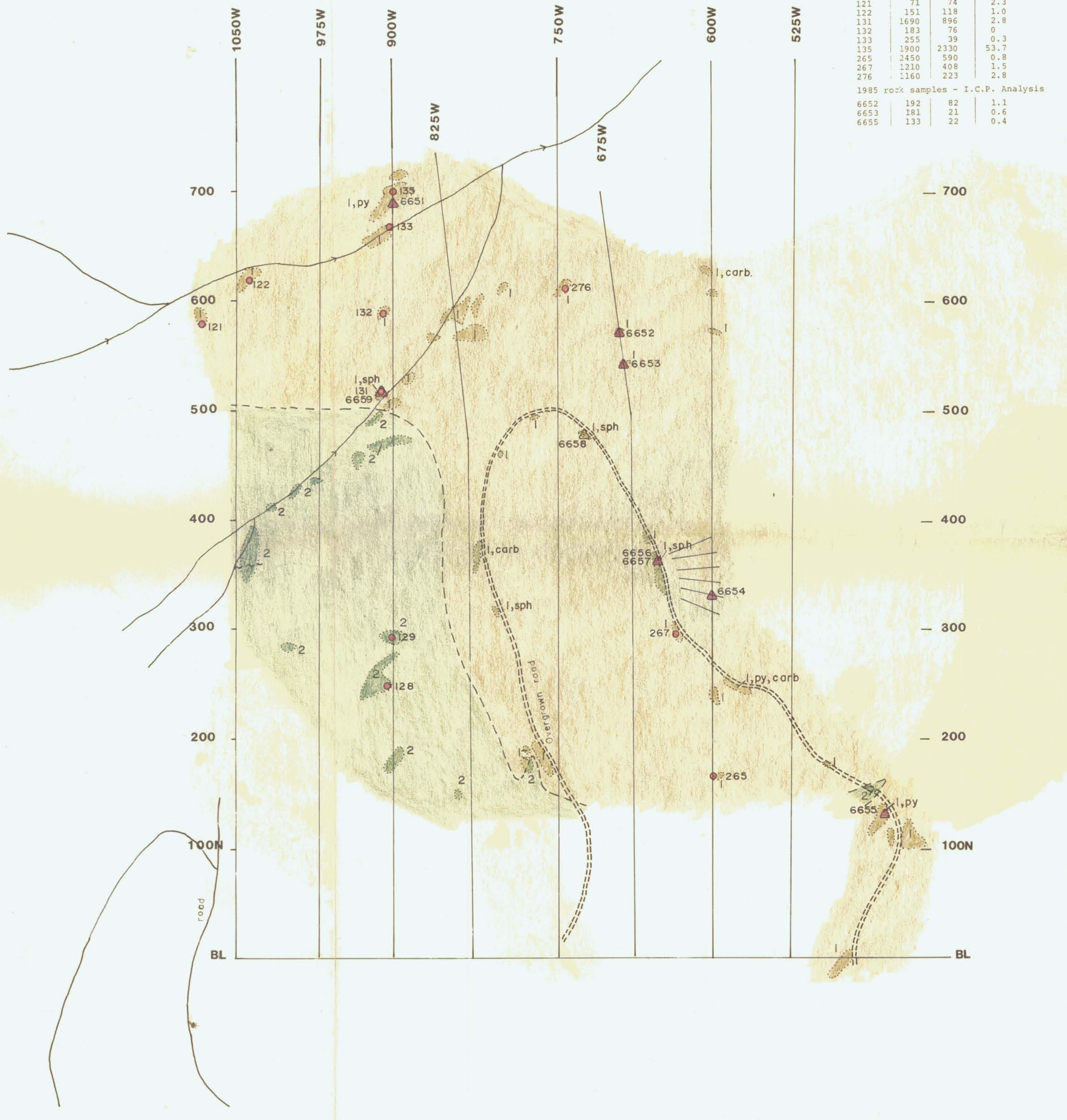
smpl #	Zn ppm	Pb ppm	Ag ppm
121	71	74	2.3
122	151	118	1.0
131	1690	896	2.8
132	183	76	0
133	255	39	0.3
135	1900	2330	53.7
265	2450	590	0.8
267	1210	408	1.5
276	1160	223	2.8

1985 rock samples - I.C.P. Analysis

smpl #	Zn ppm	Pb ppm	Ag ppm
6652	192	82	1.1
6653	181	21	0.6
6655	133	22	0.4

1985 rock samples - Assays

smpl #	Zn %	Pb %	Ag oz/T	Au oz/T	Description
6651	0.42	1.42	3.87	.001	Sil. Dacite. Py 10%
6654	0.62	0.05	0.14	.001	Grab smpl talus slope Tr. sphal.
6656	7.25	0.54	7.31	.007	Chip smpl. 2m wide alt. shear in dacite
6657	8.45	1.79	3.08	.035	0.6m x 1m pod of sphal.
6658	5.80	2.49	5.19	.001	5 cm wide shear. Sphal, MnO, magnetite
6659	0.95	0.16	0.21	.007	Dacite. Tr. sphal



LEGEND

- 1 Dacite Volcanics
- 2 Andesite Volcanics , magnetic
- carb carbonate alteration
- /|\ talus
- py pyrite
- sph sphalerite
- ● 1984 rock sample
- ▲ 1985 rock sample
- ¦ 1985 grid lines

0 50 100 150m

Scale 1:2500

FALCONBRIDGE LIMITED		
PROPERTY: NI Claims PN 100		
LOCATION: Victoria M.D.		
TYPE OF MAP: Geology		
WORKING PLACE:		
BASED ON: SL/KH		
DATE OF WORK: 84/85	MAP REF. NO.:	FIG. NO.: 5
DRAWN BY:		
DATE:	N.T.S. NO 92C/15E	