

SELF-POTENTIAL SURVEY
OVER THE ELK GROUP,
INVERMERE AREA

GOLDEN MINING DIVISION,
BRITISH COLUMBIA

NTS 82K/9W
LAT/LONG 50 32' - 116 23'

FOR

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STETTLER, ALBERTA

BY

ISOGEOS EXPLORATION SERVICES LTD.
CALGARY, ALBERTA

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GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT

25,146

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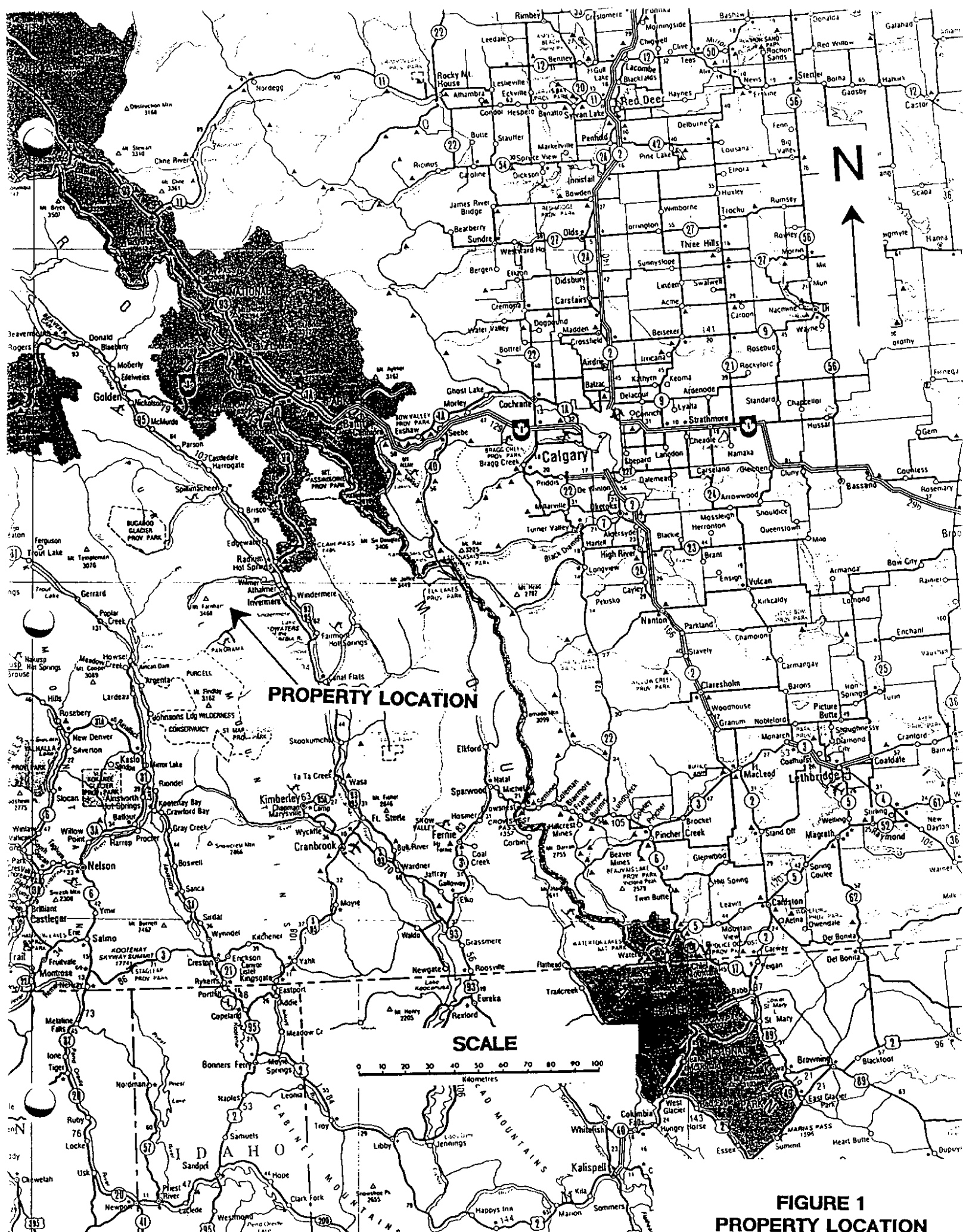
INTRODUCTION

The property covered by this report consists of a total group of 33 units covered by the Elk and Deer claims. These claims are located approximately 30 kilometers west of Radium, B.C., on the Horsethief Creek road, (Figures 1,2).

This report covers work in two areas, (1) - detail work on the northern part of the property near the Horsethief Creek, and (2) - extension of the previous years work in the southern part of the property where a number of anomalies had not been fully defined, described in an assessment report in 1996.

The self-potential method has located a number of anomalies some of which do not conform to that anticipated as most are expected to trend along the main regional trend. The method has also proved useful in mapping the geology in an area of very poor outcrop and does show that locally there are major cross-faults which complicate what would appear to be a simple geological map.

A total of 10.1 kilometers were surveyed with the detail station interval of 20 meters.



PROPERTY LOCATION

SCALE

0 10 20 30 40 50 60 70 80 90 100

Kilometres

**FIGURE 1
PROPERTY LOCATION**

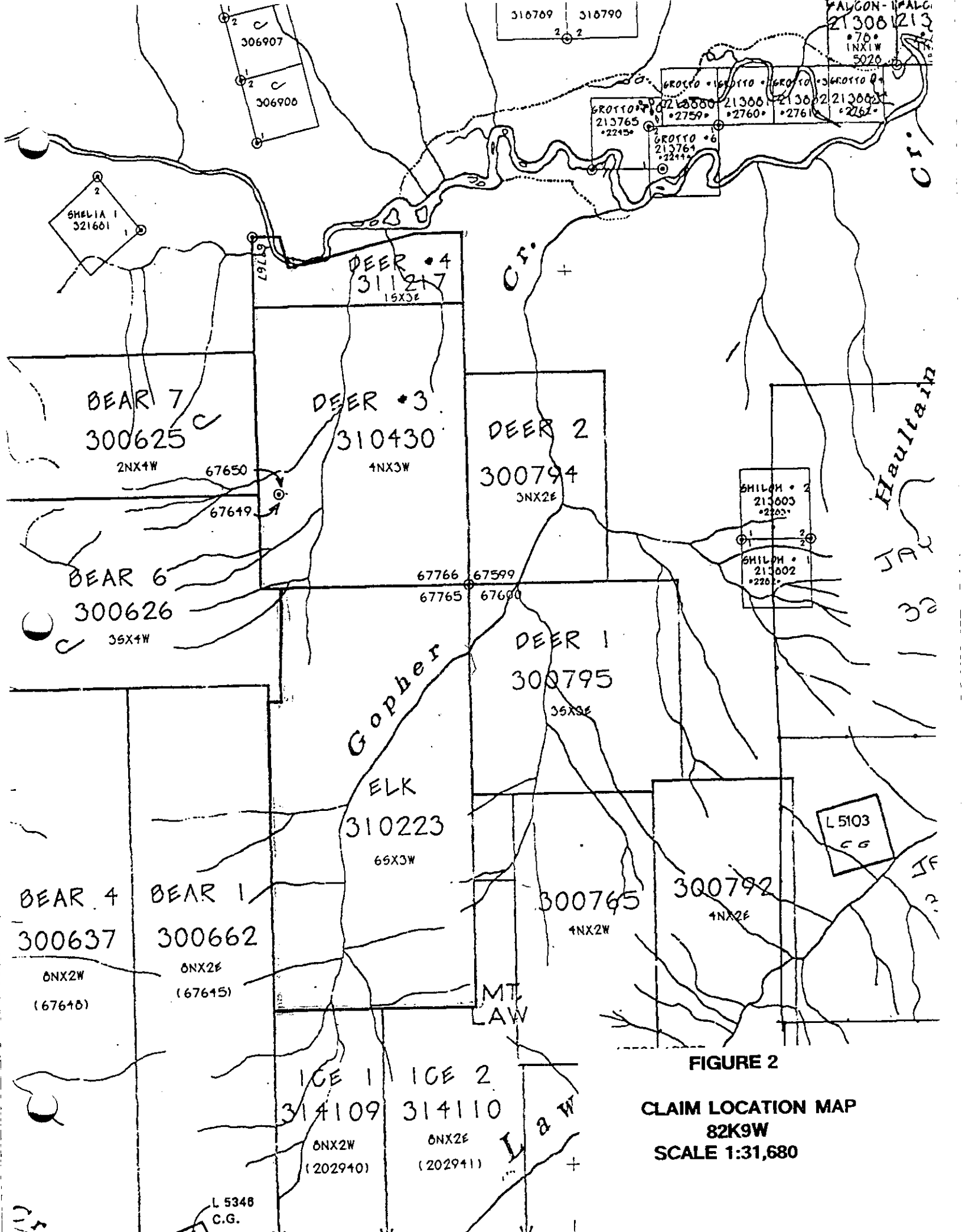


FIGURE 2
CLAIM LOCATION MAP
82K9W
SCALE 1:31,680

306907
306900

310709 | 310790
2 | 2

FALCON - PALC
21308 | 21308
• 70 •
• INXW
5020

SHELIA 1
321601

GROTTTO • 1 • 160110 • GROTTTO • 3 • GROTTTO 4 •
213765 • 213880 • 21308 • 21308 • 21308 •
• 2245 • • 2759 • • 2760 • • 2761 • • 2762 •
GROTTTO • 6 •
213764 •
• 2244 •

DEER • 4
311217
15X32

BEAR 7
300625
2NX4W

DEER • 3
310430
4NX3W

DEER 2
300794
3NX2E

SHILOH • 2
213003
• 2202 •

BEAR 6
300626
35X4W

67766 | 67599
67765 | 67690

SHILOH • 1
213002
• 2202 •

DEER 1
300795
35X3E

Gopher
ELK
310223
65X3W

L 5103
C G

BEAR 4
300637
0NX2W
(67648)

BEAR 1
300662
0NX2E
(67645)

300765
4NX2W

300792
4NX2E

MT. LAW

ICE 1 | ICE 2
314109 | 314110
0NX2W | 0NX2E
(202940) | (202941)

L 5348
C.G.

L & W

PROPERTY

The property consists of a total of 33 units registered to W. Pochylko , Stettler. Alberta and are listed as follows:

<u>Claim Name</u>	<u>Record No.</u>	<u>Tag No.</u>	<u>Units</u>	<u>Expiry</u>
Elk	310223	67765	18	Jun 5, 97
Deer #3	310430	67766	12	Jun 20, 97
Deer #4	311217	67767	3	July 18, 97

The claims are located in the Golden Mining Division, 50 32' Lat, 116 23' Long., and in NTS map sheet 82K/9W, (Figures 1.2).

ACCESS

The property is located approximately 30 kilometers directly west of Radium, B. C. The property can be reached from the Horsethief Creek road which is accessed from the town of Radium, just north of Invermere, and passes through the northern part of the property. Old logging roads from the Horsethief Creek road along Gopher Creek cross the central part of the property and connect to Taylor Creek. The majority of the roads cannot be traveled by vehicles due to extensive bush re-growth.

HISTORY

There are no known major mineral occurrences within the claim group.

GEOLOGY

The geology of the area was mapped by Pope (1990), and is shown in Figure 3.

The criteria that was established for many of the ore deposits in the area was to be located on major structures below and close to the Windermere unconformity. The mapping by Pope indicates that the unconformity is located in the northern part of the claim group and that at least one major structure crosses the unconformity. The fault as mapped by Pope is the same structure shown as the location of a number of old base metal prospects in the Mt Slade area. These are located approximately 3 kilometers south of the property limits.

The geophysical work carried out on the property to date has shown that the geology as mapped by Pope is a very simplified version, due in part to the poor outcrop in this part of the area. These results show that there are a number of cross-faults which complicate the geology.

**GEOLOGY
LEGEND**

P R O T E R O Z O I C	H A D R Y N I A N	H O R S E T H I E F C R E E K G R O U P	red arg.	Hh5	
			grst	Hh4	
			dot	Hh3	
			arg	Hh2	
			black lsst	Hh1	
			Toby Fm	conglom/ diamictite	Ht
	H E L I C I A N	M O U N T N E L S O N F M	U. dol.	Hmn7	
			U. qtzite	Hmn6	
			dot	Hmn5	
			purple dol/ arg.	Hmn4	
M. orange dot.			Hmn3		
L. dol.			Hmn2		
L. qtzite			Hmn1		
			Dutch Creek Fm	arg.	Hd
			Lower Gateway Fm	dol.	Hg2
				dol/sst.	Hg1
		Van Creek Fm	green qtzite	Hv	

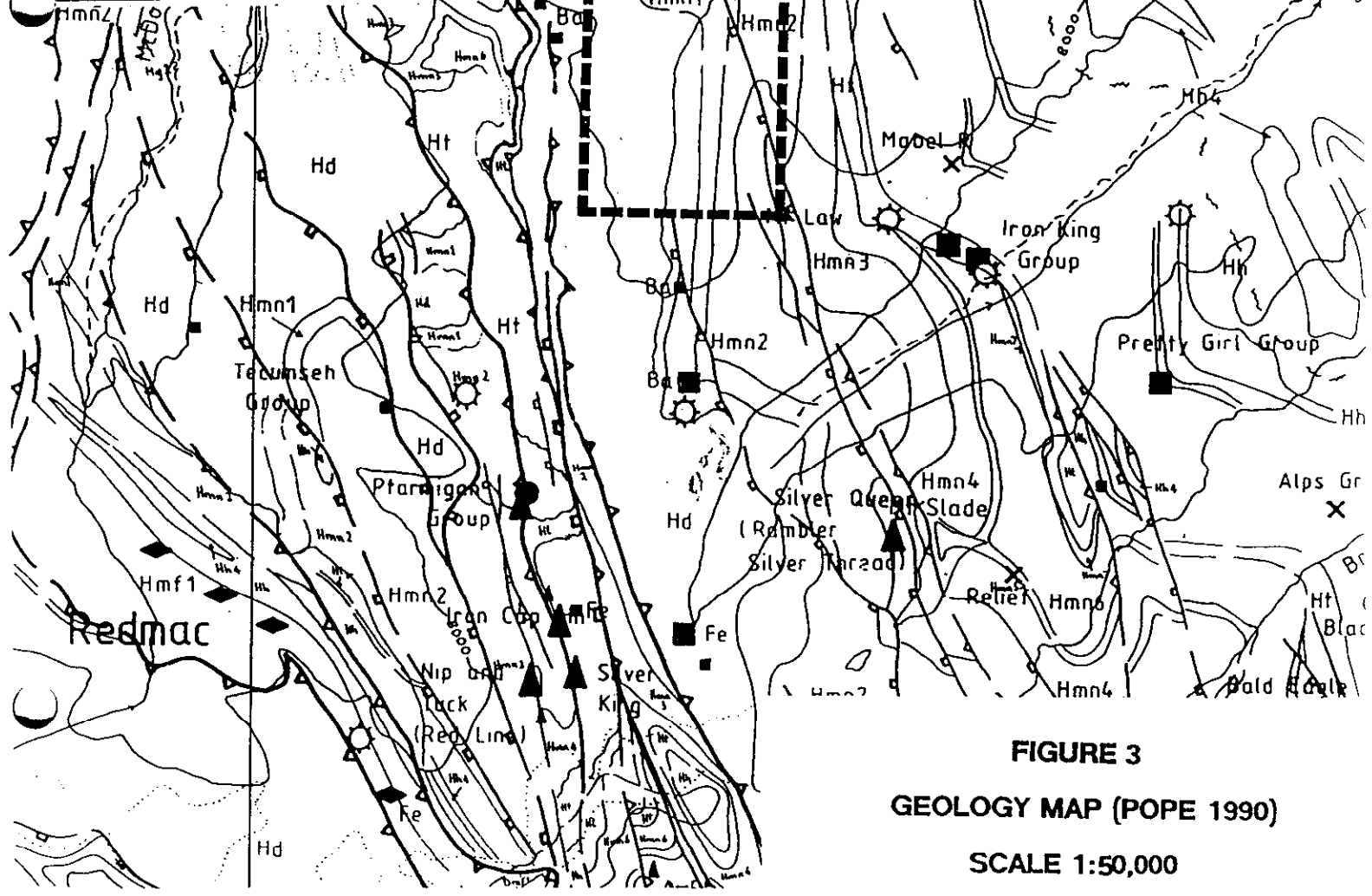


FIGURE 3
GEOLOGY MAP (POPE 1990)
SCALE 1:50,000

SELF-POTENTIAL SURVEY

(A) Specifications

The self-potential is conducted by measuring the natural voltage between the survey stations using non-polarising copper sulphate electrodes. The voltage is measured by a high input impedance voltmeter capable of measuring in millivolts. The station interval used for the majority of the work was 20 meters. A good summary of the theory and field application of the method has been provided by Burr, 1982.

The normal field procedure is to take the measurements in a series of closed loops so that a drift correction can be applied. The readings are taken in a leap-frog manner with the rear electrode moved past the forward electrode. This reduces the errors for any potential difference between the electrodes as well as establishes that one electrode is stable for adjacent measurements.

The survey was conducted by establishing a number of control stations with a long reel of wire, 600 meters, from which the various lines were surveyed.

(B) Results

The results are presented as two contour maps, Figures 4 and 5.

(1) North Grid (Figure 4)

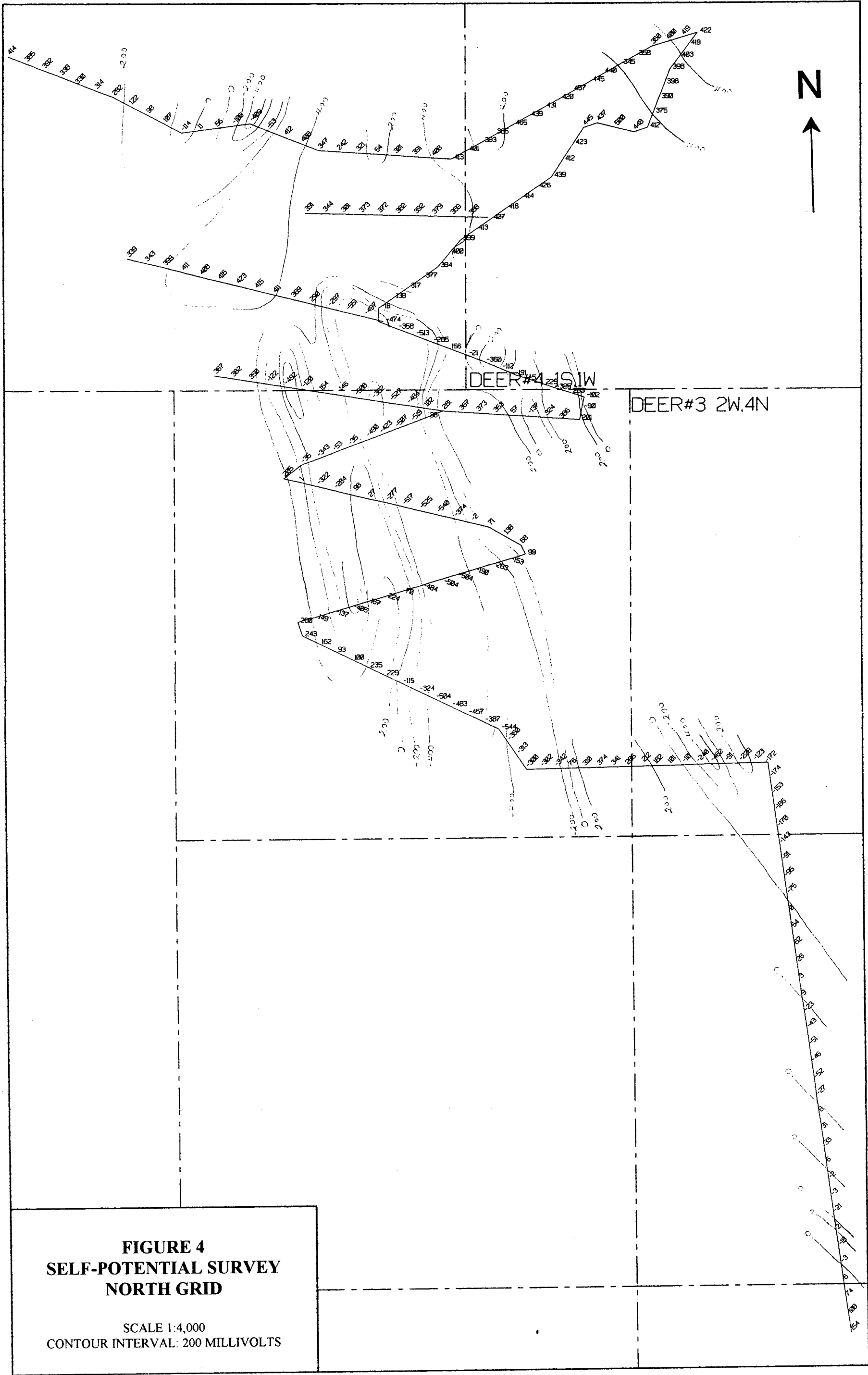
A very strong anomaly was located in this part of the area during previous work but the reason for the anomaly was not evident in a 30 meter high rock exposure along Horsethief Creek where a narrow gorge has been cut by the river. Part of the original survey was repeated and additional lines surveyed by using a long reel of wire to maintain accuracy in what are very steep self-potential gradients. The results show a number of parallel peaks with the main zone

producing in excess of 800 millivolts above local background and with very sharp lateral limits. The strike is close to that of the main regional structural direction of 350 degrees. The most important fact demonstrated by the results is the fact that what is a very strong deformation zone is abruptly terminated to the north. A major cross-fault must exist sufficient to displace the geology associated with the anomalous geophysical response from that visible in the gorge at Horsethief Creek, approximately 100 meters to the north. Any cross-faulting could be associated with the east-west trending Starbird Fault located north of Horsethief Creek.

(2) South Grid (Figure 5.)

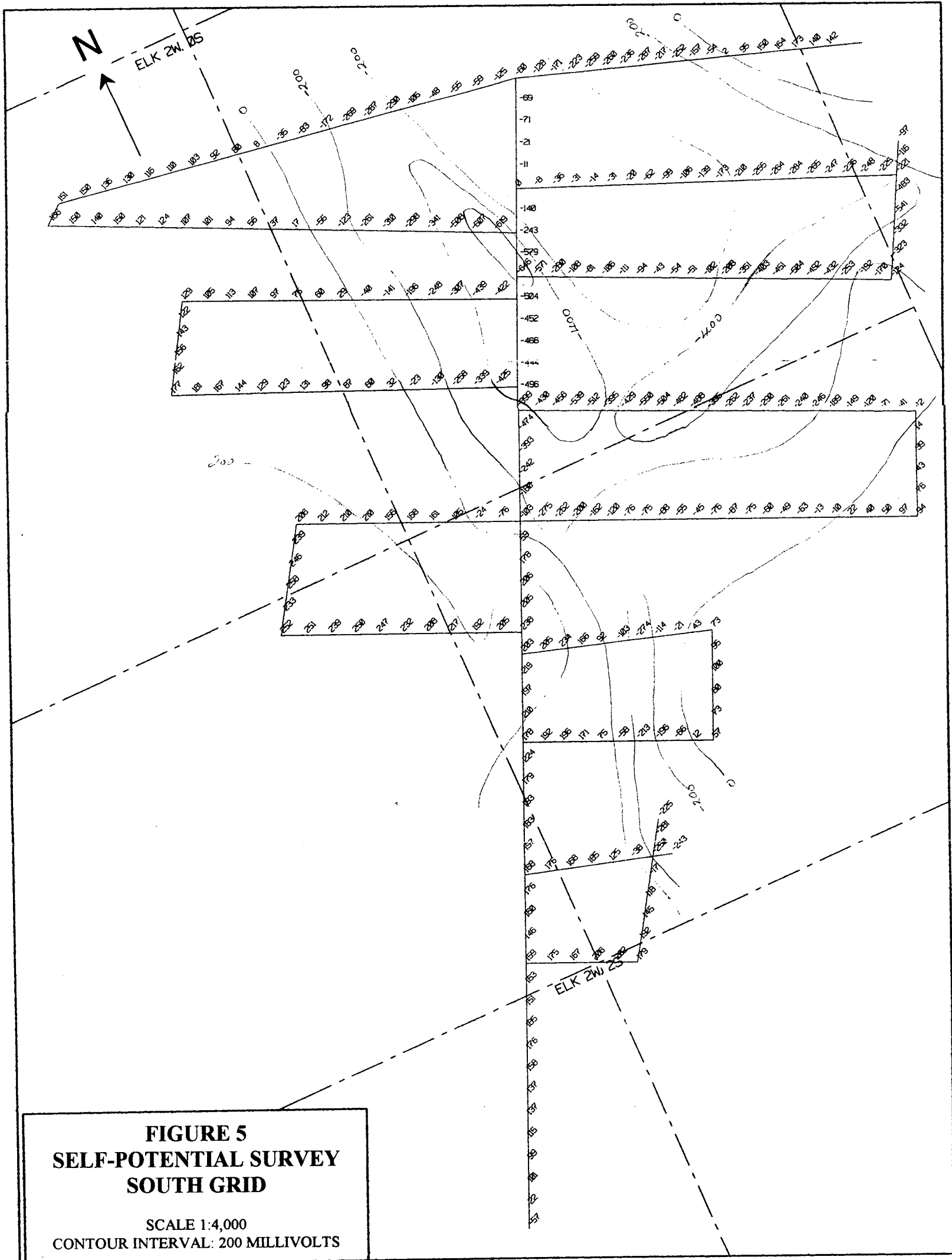
The continuation of the previous survey shows a number of strong anomalies, up to 500 millivolts above local background, which trend along the regional geologic strike but with some showing completely different trends. It is possible that some of the response is due to lithology but with the amplitudes obtained some form of additional alteration is probable. A strong response in an east-west direction in this part of the grid probable indicates a cross-structure and is certainly worthy of further consideration.

All the peak responses obtained on this part of the survey should be followed up in some manner in order to determine the source. Outcrop is limited over most of the area where anomalies have been obtained and no visible reason for the variation in response was visible during the survey.



**FIGURE 4
SELF-POTENTIAL SURVEY
NORTH GRID**

SCALE 1:4,000
CONTOUR INTERVAL: 200 MILLIVOLTS



**FIGURE 5
SELF-POTENTIAL SURVEY
SOUTH GRID**

SCALE 1:4,000
CONTOUR INTERVAL: 200 MILLIVOLTS

CONCLUSIONS AND RECOMMENDATIONS

The work has defined a number of anomalies, the source of which is unknown at this time. The geology in this part of the area is shown by the results to be more complex structurally than shown in the Pope map, not surprising due to the lack of outcrop over much of the area.

The very strong anomalous zone in the northern part of the property is terminated by a cross-fault before reaching outcrop at the Horsethief Creek. This zone is probably the northern limit of a major regional fault mapped by Pope as extending from Bruce Creek and Mt. Slade to the south. It is possible that additional displacements may occur in the northern part of the property.

The continuation of the southern grid has better defined the trends in this area and has also indicated anomalous zones not conforming to the regional trend.

The suggestion of cross structures does mean that these may possibly be mapped using a VLF system, provided their strike are compatible with the available transmitter stations. Mapping of the structure may be as important in trying to understand the relevance of the various geophysical anomalies. Survey line directions would have to be changed to optimise any VLF results.

Soil geochemistry may also be necessary to determine if base metals are associated with any of the various anomalies.

REFERENCES

Burr S.V., 1982, A Guide to Prospecting by the Self-Potential Method, Ontario Geological Survey, Miscellaneous Paper 99.

Pope A., 1990, The Geology and Mineral Deposits of the Toby-Horsethief Creek Map Area, Northern Purcell Mountains, Southeast British Columbia (82K), Geological Survey Branch, B.C., Open File 1990-26.

STATEMENT OF COSTS

Mobilisation/Demobilisation			\$750.00
T. Dundas	Geophysicist	5 days @ \$450	\$2,250.00
W. Pochylko	Assistant	5 days @ \$250	\$1,250.00
	Food & Exp	5 days @ \$50	\$250.00
	Sp rental	5 days @ \$25	\$125.00
	Vehicle	5 days @ \$50	\$250.00
	Report		\$1,350.00
			=====
			\$6,225.00

CERTIFICATE

I, Trevor R. B. Dundas do hereby certify that:

1. I am a practicing consultant geophysicist resident in Calgary, Alberta.
2. I have graduated with a B. Sc. Degree in Geology from Queen's University, Belfast in 1965 and an M. Sc. In Geophysics from Imperial College, London University in 1967.
3. I have been actively consulting as a geophysicist since 1968

Dated this

10th Day of *Aug* 19*67*

Trevor R. B. Dundas
Trevor R. B. Dundas