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Part / .E

REPORT ON

VERY LOW FREQUENCY ELECTROMAGNETIC SURVEYS

ON THE

ORB GROUP OF MINERAL CLAIMS

SIMILKAMEEN MINING DIVISION
LATITUDE : 49° 15'
LONGITUDE : 120° 33'
N.T.S. 92H/2,7

OPERATOR : MR. T.PROSKIN
VANCOUVER, B.C.
OWNER : EMERALD STAR MINING EXPLORATIONS LTD.
VANCOUVER, B.C.
FIELDWORK: NOVEMBER 16 to 19, 1982

FEBRUARY 4, 1983
VANCOUVER, B.C.

MARK C. HANSEN
GEOLOGIST

Part E

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INTRODUCTION

This report has been prepared at the request of Mr. T. Proskin of Emerald Star Mining Explorations Ltd., to be submitted as an assessment report on the Orb group of mineral claims. It is a summary of geophysical work completed during November 16 to 19 inclusive, 1982. The author has not visited the property.

The claim group consists of seven claims named Orb 1 to Orb 7, with details as shown below in Table I. All claims are owned by Emerald Star Mining Explorations Ltd.

TABLE I

MINERAL CLAIM	RECORD NUMBER	NUMBER OF UNITS	ANNIVERSARY DATE
ORB 1	1356	18	Dec 22nd
ORB 2	1357	18	Dec 22nd
ORB 3	1358	5	Dec 22nd
ORB 4	1406	10	May 19th
ORB 5	1563	20	Sept 15tn
ORB 6	1564	12	Sept 15th
ORB 7	1565	12	Sept 15th

LOCATION

The claim group is located in the Similkameen Mining Division, to the east side of Highway 3, 30km by road south of Princeton, as shown in Fig. 1. The group covers Sunday Creek and environs, between Highway 3 and the Similkameen River, as shown in Fig. 2. The claims

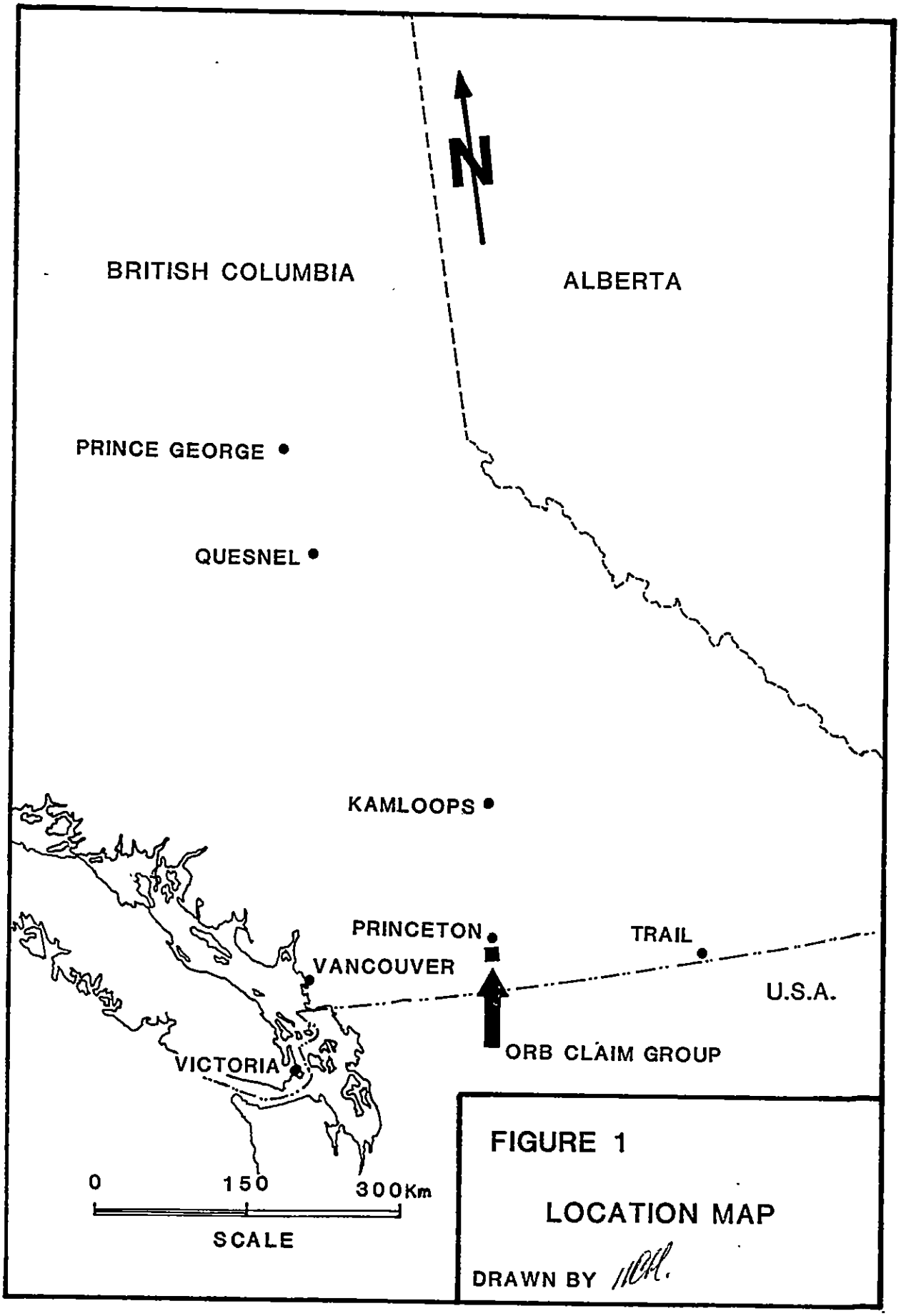
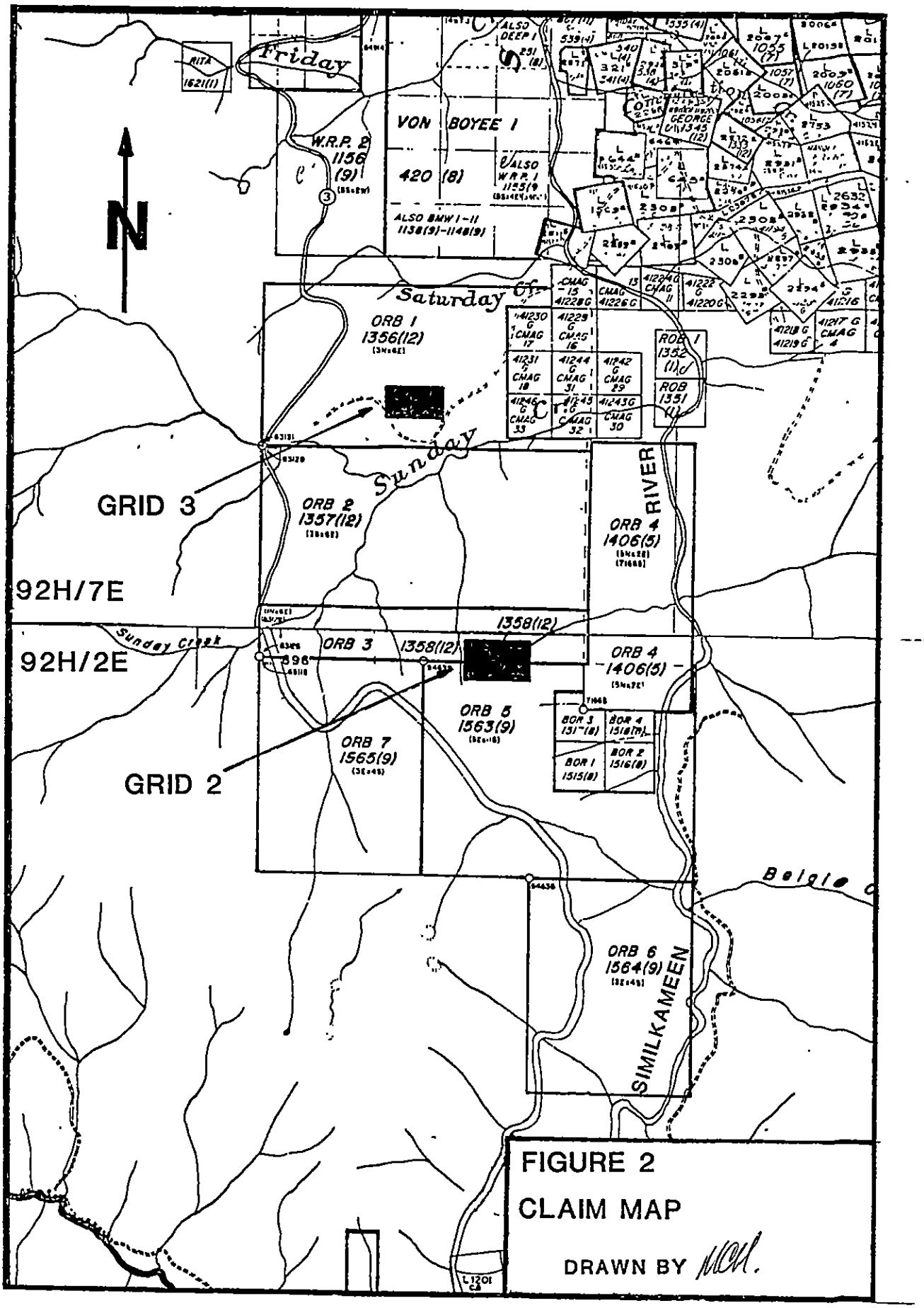


FIGURE 1

LOCATION MAP

DRAWN BY


Friday
VON BOYEE 1
420 (8)
ALSO W.R.P. 1
ALSO DEEP 1
W.R.P. 2
1156 (9)
ALSO BMW 1-11
1138(9)-1148(9)
N
Saturday
ORB 1
1356(12)
Sunday
ORB 2
1357(12)
ORB 4
1406(5)
RIVER
GRID 3
92H/7E
92H/2E
Sunday Creek
ORB 3
1358(12)
896
ORB 5
1563(9)
ORB 7
1565(9)
GRID 2
ROB 1
1352
ROB
1351
BOR 3
BOR 4
BOR 1
1515(8)
BOR 2
1516(8)
ORB 6
1564(9)
SIMILKAMEEN
FIGURE 2
CLAIM MAP
DRAWN BY

are centred about Latitude 49°15', Longitude 120°33'.

Access is good, with a major highway running through the western side of the claim group. A well-formed gravel road runs from the main highway down to the Similkameen River through central part of the claims. In addition several poorly formed tracks are present on the property. The topography ranges from 900m to 1,400m in elevation, with typical slopes in the region of 15°.

PREVIOUS WORK

The claim group covers a pyrite-chalcopyrite showing, according to Mr. T. Proskin this was the reason for the initial staking of the claims. Other than work undertaken by the present owner, no previous work is known of. Emerald Star Mining Explorations Ltd. has undertaken; soil geochemistry in the summer of 1981, percussion drilling (13 holes) in the summer of 1982, ground electromagnetometer and magnetometer surveys in the summer of 1981, and airborne VLF-EM and magnetometer surveys in the spring of 1982.

LOCAL GEOLOGY

The area the claim group covers consists of Nicola Group rocks overlain by the Princeton Group, the former being intruded in the northeast of the area by a stock which is part of the Copper Mountain Intrusion. The Princeton Group consists of Tertiary basaltic to andesitic flows overlain by sedimentary rocks (shale, sandstone, argillite, conglomerate etc.). The (upper Triassic to) Jurassic Nicola Group consists of a

sequence of predominantly basaltic volcanics interbedded with horizons of pyroclastic and sedimentary rocks. The Jurassic Copper Mountain Intrusion is quartz-free, being gabbroic to syenitic in composition.

The bornite -chalcopyrite mineralization of Copper Mountain, related to the stock, lies approximately 2km to the north. The open-pit copper mine of Newmont Mines Ltd. (0.41% Cu, 0.005oz Au/ton) lies approximately 10km to the north.

VLF ELECTROMAGNETOMETER SURVEY

The survey utilized a Geonics Ltd. EM16 very low frequency electromagnetic receiver. Station NSS, located at Annapolis, Maryland, transmitting at 21.4kHz was used as the transmitting station. The bearing from NSS to the claim group is approximately 280°.

A two man crew spent 4 days on the survey recording inphase dip angles and quadrature, this data is presented in Appendix I. Two grids were surveyed, these are described seperately below. The cut lines were established for the purposes of this geophysical survey and for a potential future geochemical soil sampling program.

GRID 2

This grid is located on the boundary between the Orb 3 and the Orb 5 claims, as shown in Fig. 2. A total of 33 lines, spaced 25m apart, oriented north-south, were surveyed for a total east-west distance of 800m. Each line contains 5 stations 50m apart. Control was established using 5 cut lines oriented east-west, each line being 880m long, for a

total cut distance of 4,400m.

GRID 3

This grid is located on the south central part of the Orb 1 claim. A total of 25 lines, spaced 25m apart, oriented north-south, were surveyed over a total east-west distance of 800m. Each line contains 5 stations 100m apart. Control was established using 5 cut lines oriented east-west, each line being 680m long for a total cut distance of 3,400m.

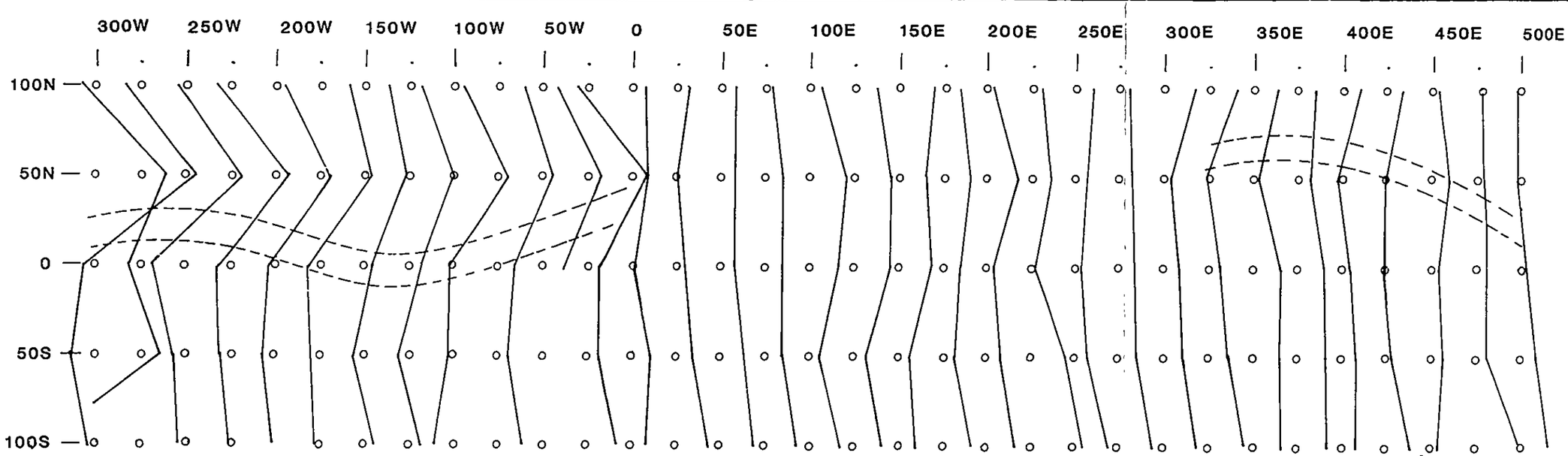
DISCUSSION OF RESULTS

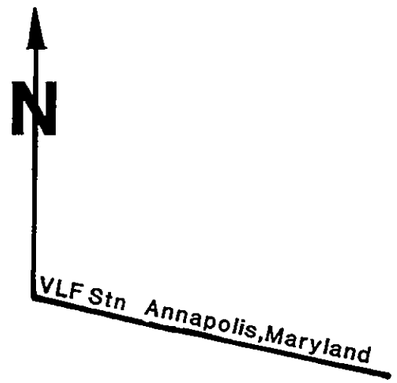
GRID 2

The inphase dip angle data are plotted as profiles in Fig. 3. Two conductive trends are apparent, however the one on the east side of the grid is rather weak and may merely represent geologic noise. The conductor on the west end of the grid is rather more clearly defined. The local strike in this area is not known, however if it parallels the regional trend (northwest) then the conductor is unlikely to be a conductive bedded horizon. Nor does there appear to be any drainage or topographic feature that might cause the conductive trend. The author cannot comment further than this, not having visited the claims in question, however the conductive trend may well be a reflection of local geologic structure.

GRID 3

The data for this survey are not plotted as there is no cross-over of the inphase dip angle data and the quadrature is relatively consistent.



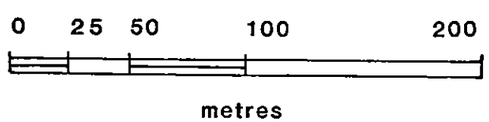


LEGEND

Inphase Dip Angle Profiles, Dip Angle %

Grid Station

CONDUCTOR



20%
0
-20%
Vertical Scale 1cm:20%

INSTRUMENT GEONICS EM16

EMERALD STAR MINING EXPL.LTD.

ORB CLAIM GROUP GRID 2

N.T.S. 92H/7E,2E

FIGURE 3

VLF-EM PROFILE

DRAWN BY

There are no conductors present within the area of the grid, changes in inphase dip angle to the east end of the grid may reflect topographic variation.

CONCLUSIONS AND RECOMMENDATIONS

This report describes and briefly discusses VLF-electromagnetic data from two surveys on the Orb claim group, data was supplied to the author by the owner, Emerald Star Mining Explorations Ltd. Two conductive trends were disclosed on one of the surveyed grids (grid 2), however only one appears to be of any significance, probably related to the geological structure of the area.

The fact that only 5 readings were taken on each line significantly reduces the value of the data. In addition it precludes the use of the filtering technique of Fraser (1969), i.e. sum of pairs and difference of alternative pairs, because application of the technique would result in only two values for each line. The spacing of 100m between stations on grid 3 is considerably wider than is generally recommended.

Surface examination and some soil geochemistry in the vicinity of the conductive trend on grid 2 should aid in defining its source.

Respectfully submitted,

Mark C. Hansen
Geologist

REFERENCES

GEONICS LTD. (1979) Operating Manual for the EM16 VLF-EM, including papers by Paterson and Ronka 1969, Telford, King and Becker 1977, and Fraser 1969. Geonics Ltd., Mississauga, Ontario.

MINERAL TITLES REFERENCE MAPS Maps 92H/2E & 92H/7E , dated September 30, 1982 and December 2, 1982 respectively. Department of Mines and Petroleum Resources, Victoria, B.C.

N.T.S. 92H/7 Princeton. Scale 1:50,000, Edition 2. Department of Energy, Mines And Resources, Ottawa.

PEZZOT, E.T. & WHITE, G.E. (1982) Geophysical Report on an Airborne VLF-EM & Magnetometer Survey ORB, ORB 1-5, ORB 7 Claims. Report prepared for Emerald Star Mining Explorations Ltd.

RICE, H.M.A. (1947) Map 888a, Princeton Geological Map. Scale 1:253,440. Department of Energy, Mines and Petroleum Resources, Ottawa.

WHITE, G.E. (1981) Geophysical Report on a Electromagnetometer & Magnetometer Survey. Prepared for Emerald Star Mining Explorations Ltd.

COST STATEMENT

FIELDWORK		COST
PERSONNEL	T.Proskin & B.Rifle,Nov 16 to 19, 1982 4 days @ $130/day each	$1,040
ACCOMODATION & FOOD	2 men for 4 days @ $80/day	$320
TRANSPORT	4 W.D. for 4 days @ $40/day	$160
INSTRUMENT RENTAL	EM16 for 4 days @ $35/day	$140
LINE CUTTING	Contract cutting of 7,800m of line	$5,000
	SUB-TOTAL	$6,660
REPORTING		
REPORT PREPARATION	M.Hansen, 2 days @ $200/day	$400
DRAFTING	Labour & materials	$85
BINDING, REPRODUCTION, TYPING		$50
	SUB-TOTAL	$535
	TOTAL	$7,195

STATEMENT OF QUALIFICATIONS

I, Mark C. Hansen, of 479 E 11th Ave., Vancouver, B.C., V5T 2C8, do hereby certify that:

I am a graduate of The University of Auckland, New Zealand, with a B.Sc. (1974), and an M.Sc. (1978), in geology.

I have practised within the geological profession since graduation in 1974, having been employed in New Zealand, Australia and North America.

I am currently a self-employed geologist.

This report is based upon data supplied to me and the references stated.

Mark C. Hansen
Geologist

APPENDIX I

Inphase dip angle (% dip) and % quadrature as recorded for surveys on grid 2 and grid 3, Orb claim group.

+22/-1 represents %dip/%quadrature.

GRID 3

	STATION				
LINE	200S	100S	0	100N	200N
300W	+22/-1	+23/-1	+25/0	+26/+1	+23/0
275W	+23/-1	+24/-2	+28/+1	+26/0	+25/+1
250W	+29/-2	+30/-3	+31/0	+27/+2	+23/+3
225W	+32/+2	+31/+2	+29/+2	+27/0	+20/0
200W	+25/+2	+27/-2	+32/+1	+26/+3	+22/-2
175W	+30/+2	+33/+1	+32/+4	+23/0	+25/0
150W	+34/+2	+33/+2	+29/0	+23/0	+24/+2
125W	+33/0	+31/-1	+31/+2	+22/+1	+26/+2
100W	+28/+2	+27/-1	+31/+2	+24/0	+25/+1
75W	+28/+5	+27/0	+30/0	+23/-2	+33/+3
50W	+22/+2	+31/+2	+27/0	+30/+1	+34/+5
25W	+16/+4	+33/+3	+28/0	+26/-2	+29/+3
0	+14/+2	+28/0	+30/0	+29/+1	+31/+1
25E	+15/+10	+27/+3	+27/0	+36/0	+27/0
50E	+19/+3	+23/-2	+42/-4	+35/-2	+27/+1
75E	+22/+4	+23/-5	+37/0	+33/+2	+28/-2
100E	+2/+2	+38/-4	+37/0	+39/+2	+23/-4
125E	+18/+1	+40/+6	+49/+5	+37/+3	+29/-1
150E	+22/+4	+41/+2	+48/+3	+33/+3	+26/-2
175E	+9/+10	+43/+5	+41/+4	+32/+5	+22/0
200E	+16/0	+45/+3	+39/+3	+28/+3	+21/-4
225E	+7/-4	+43/+3	+33/+2	+28/+1	+17/-1
250E	+7/-6	+47/+3	+31/+1	+27/-3	+18/-1
275E	+1/-8	+47/+3	+37/+4	+29/+1	+24/0
300E	+8/-1	+43/+5	+36/0	+32/+1	+26/+5

GRID 2

LINE	STATION 100S	50S	0	50N	100N
300W	-25/-11	+28/-11	+15/-1	+26/+1	-8/-3
275W	-26/-10	-32/-11	-23/-5	+25/0	-8/-2
250W	-2/-4	-8/-10	-15/-7	+25/+2	-6/0
225W	0/-5	-5/-6	-7/-6	+25/0	-6/+1
200W	-2/-5	-6/-2	-3/-3	+25/+3	+4/-1
175W	-2/-6	-4/-2	-6/-3	+23/0	+13/-2
150W	+2/-4	-5/-4	+3/-2	+20/0	+12/+3
125W	+5/+1	-6/0	+5/+4	+20/0	+6/+5
100W	-11/+4	-2/0	-3/-3	+25/+1	+2/+7
75W	+12/+4	+4/+3	+7/+1	+24/0	+12/+2
50W	/+3	/+2	/+6	+23/-2	/+8
25W	+13/+4	+3/+3	+3/+2	+26/-2	-4/+10
0	+4/+4	+7/+2	0/0	+3/0	+3/+6
25E	+15/+3	+7/0	+3/-2	0/+2	+3/+4
50E	+17/-2	+10/-5	+3/-4	+3/-4	+3/+2
75E	+17/+5	+7/-1	+6/-4	+9/-5	+1/-2
100E	+14/+20	+3/-1	+13/-6	+17/-1	+4/-2
125E	+12/+5	+3/+1	+18/-1	+18/+1	+10/-3
150E	+8/+3	+5/+4	+12/-3	+11/-5	+15/0
175E	+12/+4	+4/+5	+7/+4	+12/-1	+8/0
200E	+14/-5	+7/+7	+3/-4	+14/-1	+3/+1
225E	+24/-1	+18/-2	+2/-4	+8/+4	+6/+3
250E	+18/-2	+6/-4	+3/0	+5/+6	+8/+2
275E	+17/+3	+8/-3	+8/-2	+6/+4	+7/+1
300E	+16/-3	+8/-5	+8/-2	+2/0	+12/+2
325E	+16/-4		+4/+6	-2/-2	+12/+12
350E	+12/+1	+12/+5	+12/-1	+2/+2	+11/+4
375E	+14/+2	+12/+2	+12/+1	+3/+4	+7/0
400E	+7/0	+6/+4	+3/-2	-2/0	+7/0
425E	+10/+2	+2/+2	-1/-3	0/+2	+4/+9
450E	+2/+12	+5/+5	+2/-2	+6/+7	+4/+9
475E	+22/+9	+4/+7	+3/+4	+2/+7	+2/+12
500E	+11/+25	+7/+14	+1/+2	-1/+2	-1/+12