

800383

Report
on the
SOUTH & BOV 1
Claims
Clinton Mining Division, B.C.
for
Boville Resources Ltd.
Vancouver, B.C.

February 25, 1980
Calgary, Alberta

W.G. Hainsworth, P. Eng.
Consulting Geologist

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In Pocket:

Magnetometer Survey Map
Copper Geochemistry Map

Summary

Boville Resources Ltd., of Vancouver, has acquired, by staking, a 16 unit block of ground in 2 contiguous claims in the Canim Lake area of the Clinton Mining Division of British Columbia. The claims are located close to a recently discovered copper showing. The Boville claims lie astride a contact between the northwest trending Nicola formation consisting, in this instance, of augite andesite with intercalated limestone beds and a Jurassic intrusive called the Takomkane Batholith.

The Boville Resources property has no known surface mineralization, but surveys have indicated anomalous conditions which might indicate structures associated with mineralization. These surveys were magnetic, electric-magnetic and geochemistry.

It is recommended that further surface surveys be conducted to substantiate findings in the early surveys and to fill in areas not covered in the original work. The recommendations are advanced in two stages, the first being operations carried out by company personnel, while the second, being an IP survey, would be contracted out. The cost estimates on the two stages are in the vicinity of \$64,000.

It is also recommended that the Company investigate the possibility of acquiring adjoining ground if such should be open.

Recommendations

The initial objective of Boville Resources on their staked ground in the Canim Lake area is to locate mineralized, or potentially mineralized, areas that will present suitable drill targets. The preliminary surveys were directed towards acquisition of data which would eventually establish high priority areas. To a point, this procedure has succeeded, but confirmation of some of the present information is required in the form of coinciding data.

In order to evaluate the material as it accumulates, the writer proposes a two stage program, the first stage of which can be begun almost immediately.

The initial recommendation is that additional lines be cut for follow-up surveys. These lines would be located:

- 1) 2 lines at 130 meter (425 feet) intervals between present South lines "E" and "F", extending for the full 5 claims distance = 4,880 meters (16,000 feet).
- 2) Extending lines
 - "E" = 975 meters (3,200 feet) to west
 - "F" = 1,100 meters (3,600 feet) to west
 - "5" = 485 meters (1,600 feet) to east
 - "5" = 200 meters (650 feet) to west
 - "6" = 485 meters (1,600 feet) to east
 - "6" = 1,650 meters (5,400 feet) to west
 - "4" = 200 meters (650 feet) to west
 - "3" = 200 meters (650 feet) to west
 - "2" = 250 meters (825 feet) to west
 - "1" = 150 meters (500 feet) to west
- 3) Below South Line "F" in the most southern of the BOV 1 units 4 lines (East-West) at 130 meter intervals for full width of claim unit = 2,000 meters (6,550 feet).

Total additional lines = 12,575 meters (41,250 feet)
= 12.6 kilometers (7.8 miles)

The follow-up surveys would be:

Magnetometer on additional lines and lines not previously run = 16,950 meters (55,600 feet).

EM 16 unit on lines not previously run = 28,250 meters (92,650 feet).

Soil Sampling on lines not previously sampled = 12,575 meters (41,250 feet).

Tree Analysis (Twig Sampling) on a small restricted grid. (Lines C, 1 & 2. Jack Pines only)

It is recommended that company personnel carry out all the above surveys plus locating the new and additional lines recommended.

Stage II

When the above stage has been completed and all the data assimilated, it is recommended that an I.P. survey be carried out over recommended areas. This would be the final survey prior to drilling and would tie all the previous surveys and pinpoint drill targets. In order for an I.P. survey to be conducted, the lines would require cleaning-up and widening necessitating a special line cutting crew.

It is expected that this I.P. survey in conjunction with all previous surveys could outline areas of major interest which would require diamond drilling in a Stage III approach. Recommendations and estimates for this stage would be best advanced on the completion of Stage II.

It is also recommended that the company investigate any open ground possibility in the immediate vicinity. If ground can be acquired, it would be a protection situation.

Cost Estimates

Stage I - Company Personnel (2)

Line Cutting - 7 days
Magnetometer Survey - 7 days
E.M. 16 Survey - 12 days
Soil and Twig Sampling - 12 days

Labour Total days = 38 @ \$225/day	=	\$ 8,550
Lodging =		1,500
Meals =		2,000
Rentals (E.M. Unit, 4-wheel drive truck) =		2,000
Assaying =		2,400
Drafting, consulting, travel =		<u>4,000</u>
		20,450
	15% Contingency	<u>3,050</u>
		\$23,500

Stage II - Contractor

I.P. Survey (\$1,000/day) =		30,000
Line Cutting =		<u>5,000</u>
		35,000
	15% Contingency	<u>5,000</u>
	Total	\$40,000
Total Stage I and Stage II =		\$63,500

Respectfully submitted,

February 25, 1980

W.G. Hainsworth, P. Eng.

Introduction

At the request of Mr. W. Inverarity, President of Boville Resources Ltd., the writer undertook an evaluation of the present merits of their property holdings in the Canim Lake area of Central British Columbia.

The holdings, consisting of 2 claims containing a total of 16 units, are located close to a recent new copper showing some 160 air kilometers north northwest of Kamloops, B.C.

The general area known for its base metal possibilities has had little recent exploration or development due to the depressed prices of metals, particularly copper. The recent increase in value of this metal has made the exploration for it all the more insistent and hence, the interest of Boville in the area.

Following acquisition of their present holdings in the area, Boville immediately organized several surveys of the geochemical and geophysical nature over the property. The results of these surveys are discussed in this report and recommendations advanced for successive operations.

Location and Access

The copper prospect of BOVILLE MINES LTD. lies in the Clinton Mining Division of British Columbia, some 50 kilometers (31 miles) to the northeast of 100 Mile House.

In terms of co-ordinates the claim units are centered at Longitudinal 120° 55' west and Latitude 51° 51' north and lie within NTS 92P/15.

To the east some 30 kilometers is the Wells Grey Provincial Park. A distance of 265 air kilometers (165 miles) to the northwest is Prince George, whereas Kamloops is 160 air kilometers (100 miles) to the south southeast.

Access to the property is by road. From 100 Mile House, a paved road heads east to Canim Lake then on to Eagle Creek. Approximately 2 kilometers (1.25 miles) north of Eagle Creek a recently completed bulldozed road leads north for 5 kilometers (3.1 miles) to the showings in the area and in its progress passes through the BOVILLE MINES LTD. claim units (South and BOV 1). The road, at the present, is passable only to a four-wheel drive vehicle.

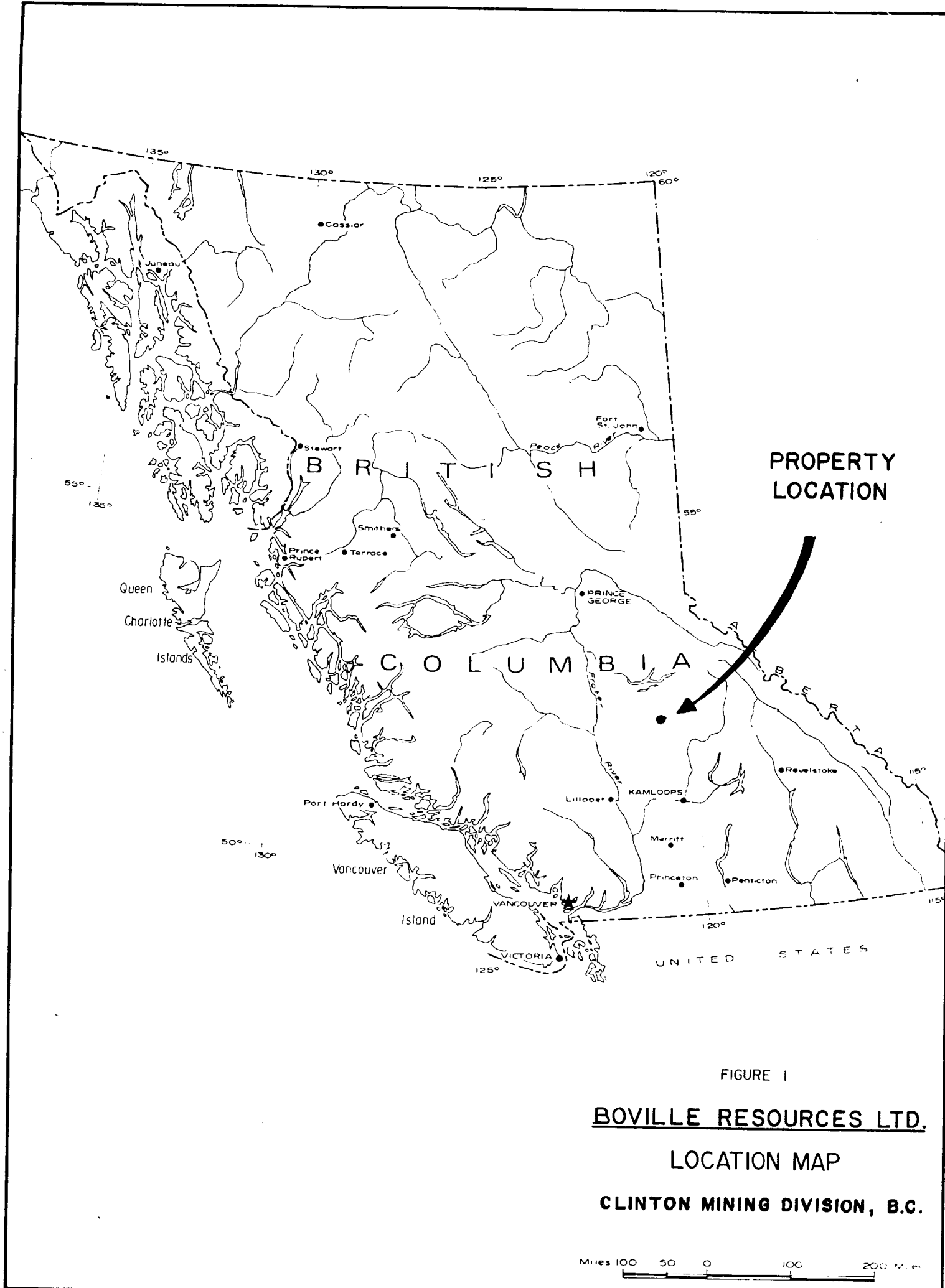


FIGURE 1

BOVILLE RESOURCES LTD.

LOCATION MAP

CLINTON MINING DIVISION, B.C.

Property

The BOVILLE MINES property consists of two located claims, as follows:

<u>Claim Name</u>	<u>Number of Units</u>	<u>Record Number</u>	<u>Assessment Due Date</u>
South	12	287	February 23
BOV 1	4	560	January 14

The claim units form a square, 4 units by 4 units, with the BOV 1 claim units lying along the east boundary of the South claim units.

Topography

The claim units lie within the Interior Plateau of British Columbia and within the subdivision known as the Fraser Plateau.

Characteristic of this subdivision, the claim units display a gently rolling uplands with occasional rounded hills.

From the 795 meter (2,610 feet) above sea level elevation at Canim Lake, the topography gently rises over a distance of 6½ kilometers (4 miles) to a peak of 1,070 meters (3,510 feet) A.S.L. slightly north of the property.

History

The general area within which the company's claims are located, has seen sporadic activity over the years. The main geological features of the Princeton-Merritt-Kamloops copper areas extend northward and through the Bonaparte-Canim Lakes area.

Located some 28 kilometers (17.5 miles) west of the Boville claim, on the other side of the Takomkane batholith, is a showing similar in geology and mineralogy to that showing which lies north of the Boville ground. A producing molybdenum mine, the Boss mountain mine of Noranda, lies 24 kilometers (15 miles) north of the Boville property, within the granodiorite-quartz diorite intrusive.

In 1978, a local area prospector reported a copper find two miles southwest of the lower end of Rogers Lake. He opened it up with a TD 20 bulldozer. The showing was examined and mapped by Teck geologists in the fall of 1978.

Past Work

The South Group of claim units was staked in February, 1979. It was known at that time that a copper showing existed some 500 meters (1,500 feet) north of the staked ground. In order to work the claims, a bulldozer road was put in by Boville Mines leading from the Eagle Creek Road north through the Boville ground and ending at the showing. The 5 kilometer (3.1 miles) road was surveyed by Mr. J.S. Carter, geologist, using an aneroid barometer. Mr. Carter also put iron pins in as specific marker points at various locations along the road.

In November 1979, nine taped lines bearing east-west, were run across the claim units allowing good coverage of the company's property. Over these lines, totalling 16.5 kilometers (10.3 miles), three surveys were run in November and December, 1979. The first program was a soil sampling survey contracted out to Amex Exploration Services Ltd. of Kamloops, B.C. Soil analysis was carried out by Kamloops Research and Assay Laboratory Ltd. of Kamloops, B.C. Simultaneous with the soil survey, the company ran its own magnetometer survey along the lines.

In December, 1979, Glen E. White Geophysical Consulting and Services Ltd. of Vancouver, was contracted to conduct several test lines utilizing a Max-Min 2 unit and a VLF-EM16 unit.

Regional Geology

The greater regional geology of the 100 Mile House area consists of rocks ranging from the Paleozoic era to Recent. The general area lies within the Quesnel Trough, a basin of early Mesozoic eugeosynclinal deposition situated between the broad uplifted area of the Omineca Geanticline in Columbia Mountains to the east and the Pinchi Geanticline to the west. Between the two geanticline and forming the Trough area is a great thickness of late Triassic and early Jurassic primarily volcanic clastic rocks intruded by large granitic batholiths. These are overlain in large areas by Tertiary plateau volcanics, but government mapping reports that these Mesozoic formations have not undergone as great a deformation effect as similar rocks in the enclosing geanticlines.

The entire area has been overridden by glacial advances. Ice movement in the particular area under investigation has been from the northeast to the southwest. Glacial drift, although extensive, is not deep generally being in the order of .3 to 1.5 meters (1 to 5 feet).

Local Geology

The sixteen claim units of BOVILLE RESOURCES LTD. lie astride or close to the Nicola Group - Takomkane Batholith contact.

The Nicola Group consists of augite andesite, grey limestones, tuffs and argillites of which only the first two have been identified in the general area. The Nicola forms a broad band some two miles wide extending north northeast from Hawkins Lake. Government mapping postulates an eastern and southern fault contact with later volcanics. The western contact is an intrusive contact with the large adjoining Takomkane Batholith.

Exposures on the claim units show a greenish-grey, fine-grained andesite with occasional augite phenocrysts. Mineralization, including pyrite, was absent in the specimen examined. In the southeastern portion of the claim units, one rock outcropping consisted of medium-grained dioritic exposures. This is attributed to recrystallization of the andesite brought on by the close proximity of the granodiorite intrusive.

Not far from the above diorite outcropping, a road exposure, apparently in place, contains granodiorite material. The intrusive is a medium-grained, light grey, hornblendic granodiorite with minor pyrite and little alteration. Whether this is an isolated occurrence or an exposure of the main pluton is unknown. Contacts of intrusives with Nicola rocks in other areas of the province have normally produced hybrid zones similar to the previously mentioned diorite type.

Government mapping of the area shows a concave embayment of the granodiorite batholith extending into the South group of claim units. However, based on the location of the units, it is possible that the geometry of the indenture is more that of a northwest-southeast striking contact zone.

Showings

The Boville ground has at the present time no known mineralized showings. The property was staked on the basis of geology and the knowledge of a copper showing having been located in the vicinity.

On October 31, 1979, the writer examined the Boville ground and included the copper showing known as the Robinson showing in his examination.

The Robinson showing is located on a high knob of a hill with some rocks being exposed on the hill slopes. These exposures have been further opened by bulldozer activity. The hill, at an elevation of 1,070 meters (3,500 feet) is composed mainly of augite andesite, locally fractured and sheared but for the main, relatively massive. The fractures are occasionally lightly lined with chalcocopyrite. A limestone bed lies along the east slope of the hill and is exposed in two limited showings. The bed, typical of limestone contained within the Nicola volcanics, is not very wide, 2.5 meters measured, and is associated with greenish copper oxidation (malachite) in one location lying along its eastern contact. The length of the bed could not be determined. Several other cuts and poorly dug dozer trenches reveal the andesite formation with variable amounts of copper mineralization. The mineralization is primarily chalcocopyrite as fracture linings with minor bornite being present in a disseminated form. No pyrite or other minerals were observed. Some gold and silver are presumably associated with the copper minerals.

The writer took three samples from this showing, the results of which are noted in Appendix "B", The Certificate of Analysis of Barringer Magenta Ltd. The three samples which came from three different trenches are described as:

- #4658 - Indiscriminate grab sampling. Coarse grained andesite with little visible copper mineral, but moderate copper staining. Copper - 0.06%; Gold - 0.004 oz./ton; Silver - 0.038 oz./ton.
- #4659 - Chip sample over 4.9 meters (16 feet) with light disseminated bornite and tight, narrow mineralized veinlets in andesite. Copper - 0.28%; Gold - 0.018 oz./ton; Silver - 0.096 oz./ton.
- #4660 - Well mineralized trench. Bornite plus calcite as lining in vertical fractures in andesite.
Selected chip samples.
Copper - 2.4%; Gold - 0.117 oz./ton; Silver - 0.102 oz./ton

From the above samples, it is evident that the precious metal contents increase with the copper grades, thus implying a direct mineralogical association.

In the southern units of the Boville property, the road exposes an in-place granodiorite formation. Examination showed a medium-grained, light red equigranular formation containing a high percentage of feldspar and quartz with less than 5% mafic minerals. No

copper or molybdenum minerals were observed, but there was sparse pyrite distributed through the outcrop. A character sample was taken from this granite.

#4661 - Copper - 0.09%; Gold - 0.003 oz./ton; Silver - 0.055 oz./ton.

Although the above four samples were additionally assayed for molybdenum, the results (1 to 2 parts per million) were very weak.

To the northeast of the road exposure, some 25 meters (80 feet), a small exposure discloses fine to medium-grained augite andesite with no visible mineralization.

A 40 element spectrographic analysis of both the limestone and granite showed no unusual concentrations of any of the analyzed elements.

Surveys

Magnetometer

During December, 1979, the company carried out its own magnetic survey over the taped lines. A Scintrex Model MP-2 Proton magnetometer utilizing a back pack was used.

Interpretation of the results shows no large swings, but fairly consistent rises and falls. The variation between the high and low readings was greater than 5,800 gammas and both occur in groupings of their contemporaries.

The claim units in the western portion of the block are underlain by low gamma intensity formations, presumably granodiorite. Small patches of localized highs could indicate concentrated areas of magnetite bearing acid intrusives, or fault structures. South line "E" does not extend far enough to the west to pick up the southern projection of the eastern contact of the granodiorite. South line "F" has no readings west of the road and similarly offers no suggestion as to the further progress of the intrusive.

Lying to the east of the low gamma group is an intermediate gamma reading area which is interpreted as being the lightly magnetic augite flow rocks of the Nicola formation. These readings are quite consistent, but are interrupted in the northeast corner of the block by an odd shaped grouping of low readings (granodiorite) which is almost confined to the eastern half of South line "2" east.

Lines "E" and "F" east of the road are noted for high readings. This band of high counts continues northwest and is picked up at the extreme end of South line "5" east. Whether this magnetic phenomena extends further north is unknown due to lack of readings on lines "3" and "4" east.

VLF-EM and MAX.MIN. II

Accompanying this report, as a supplement, is the geophysical report on the work done by VLF and Max.-Min. on several of the lines. The surveys were conducted by Glen E. White Geophysical Consulting and Services Ltd. of Vancouver.

The results obtained have little meaning due to the large intervals between the test lines. Correlation is very difficult. In the one instance where the two surveys were conducted on the same line, South line "1", their anomalous zones did not coincide. Conductive zones are suggested by anomalies on south lines "E" and "F".

The surveys, although intended in good faith to make more information available on the property, have added little.

Soil Sampling Survey

The survey was carried out by Amex Explorations Services Ltd. of Kamloops, B.C. Four-hundred and seventy-six (476) samples were collected, presumably from the "A" horizon. The glacial drift is not thick, but does manage to conceal most of the underlying formations, consequently, the reason for the survey.

The samples collected were forwarded to Kamloops Research and Assay Laboratory Ltd. where they were screened to -80 mesh, exposed to a hot acid extraction method, then analyzed by the Atomic Absorption method.

The writer put the results into a statistical analysis form with the following results (for copper only):

No. of samples = 476
Mean = 34.47 ppm. (x)
Standard Deviation = 49.47 ppm. (s)
Statistically possibly anomalous = $x + 1 s = 83.94$ ppm.
Statistically probably anomalous = $x + 2 s = 133.41$ ppm.

The latter figure, 133.41 ppm., is known as the Threshold Value, and is a figure given greater credence with respect to soil anomalies.

The Boville ground contains:

Possible anomalies = 22
Probable anomalies = 13

The anomalies do not indicate any large areas of soil mineralization. Most of the high readings are of the single spike variety with tenuous extensions across the lines. One anomaly of this nature extends from 19W on South line "5", is unreported on South line "4", but becomes recognizable on South line "3" at 3W, continues to 2W on South line "2" and reaches a high at 8E on South line "1" before apparently dying out. Another three line anomaly crosses South line "3" at 12E, South line "4" at 10E and South line "5" at 5E. It does not show in either South line "6" or South line "E", but might be interpreted as the extension at 11W to 13W on South line "F". Two probable anomalies show some continuity on 17E of South line "1" and 13E on South line "2".

On line "C" from 17W to 21W a group of variable results leave the north open while extending south in two arms to include the readings at 22W and 17W on South line "1" and at 25W on South line "2".

A group of three readings at 2W to 4W on South line "5" have no parallels on the adjoining lines.

The remaining soil anomalies, 15, are single spike counts with no evident continuity.

An interesting situation was brought to light during the surveys on the property as evidenced by the analysis sheet in Appendix "E". Twigs were gathered from two Jack Pine trees in the area of Bench Marker "E" along the road near the common boundary of the two claims. Analysis of the combined twigs produced exceptionally high copper results. The soil results in this particular area were weak. Resulting from these conflicting assays, the recommendations have been expanded to include a survey involving Jack Pine twig collection over several lines previously soil sampled.

Respectfully submitted,

February 25, 1980
Calgary, Alberta

W.G. Hainsworth, P. Eng.

Bibliographies

Memoir 363, G.S.C. - Geology of Bonaparte Lake Map Area, B.C.

- R.B. Campbell and
H.W. Tipper

B.C. Department of Mines - Various Annual Reports

Exploration Conducted by Boville Resources Ltd., Canim Lake Copper
Prospect - January 20, 1980

- J.S. Carter

Various Personal Communications with J.S. Carter

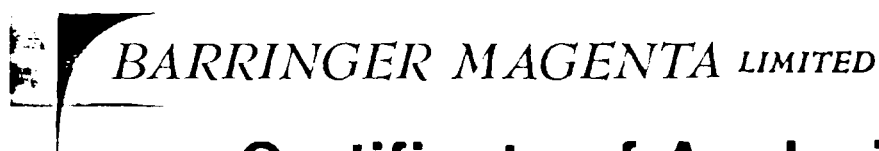
CERTIFICATE

I, W.G. Hainsworth, P. Eng., of Calgary, Alberta do hereby certify:

- (1) That I am a Consulting Geologist residing at 2310 Carleton Street, S.W., Calgary, Alberta.
- (2) That I am a graduate of the University of Western Ontario, London, Ontario, Bachelor of Science Degree, Honours Geology.
- (3) That I have practiced my profession for 29 years.
- (4) That I have been a continuous member of the Association of Professional Engineers of British Columbia since 1965 and have recently received my Professional Geologist certification with the Association of Professional Engineers, Geologists and Geophysicists of Alberta.
- (5) That I have no financial interest, direct or indirect, in Boville Resources Ltd., and do not expect to obtain any such interest.
- (6) That the information contained in this report is based on examination of all pertinent maps, reports and other data relevant to the property including examination of the subject claims on October 31, 1979.

W.G. Hainsworth, P. Eng. (B.C.)
P. Geol. (Alta.)

To accompany: Report on the
SOUTH & BOV 1 Claims,
Clinton Mining Division, B.C.
February 25, 1980



3750 - 19th STREET N.E.
SUITE 105
CALGARY, ALBERTA
CANADA T2E 6V2
PHONE: (403) 276-9701
TELEX 03-827584

Certificate of Analysis

Report No. 79-641C

W. Hainsworth
2310 Carleton St. S.W.
Calgary, Alberta
T2T 3K7

Date November 30th, 1979

I HEREBY CERTIFY that the following analyses were performed by us on the herein described Rock ^{sample} samples.

SAMPLE NUMBER	Ag oz/T	Mo ppm	Cu %	Au oz/T			
4658	.038	1	.06	.004			
4659	.096	2	.28	.018			
4660	.102	1	2.4	.117			
4661	.055	2	.09	.003			

Note: Rejects retained one month.
Pulps retained three months
unless previous arrangements
made in advance.

Barringer Magenta Ltd.
Signed [Signature]

TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE (416) 625-1544

TELEX 06-960215

CERTIFICATE OF ANALYSIS

Semiquantitative Spectrographic

SAMPLE(S) FROM John S. Carter,
4019 Dalarna Bay N. W.,
Calgary, Alberta.
T3A 1G8

REPORT No.
T - 1651

Inv. #12062

LIMESTONE CANIM LAKE
SAMPLE(S) OF ROCK BOVILLER RESOURCES LTD.

Sample	Sample	Sample	Sample
CANIM LAKE PROSPECT BASE "A" LIMESTONE	Sample 5827 BRL-LM- A	BASE "A" LIMESTONE	Sample 5827 BRL-LM- A
Aluminum	3%	Manganese	.05%
Antimony	-	Magnesium	2%
Arsenic	-	Molybdenum	-
Barium	<.01%	Neodymium	-
Beryllium	-	Nickel	-
Bismuth	-	Phosphorus	-
Boron	-	Silver	-
Calcium	H	Silicon	M (5%)
Cadmium	-	Sodium	.5%
Cerium	-	Strontium	.05%
Chromium	-	Tantalum	-
Cobalt	-	Thorium	-
Columbium	-	Tin	-
Copper	.001%	Titanium	.05%
Gallium	-	Tungsten	-
Germanium	-	Uranium	-
Iron (Fe)	.5%	Vanadium	-
Lanthanum	-	Yttrium	-
Lead	-	Zinc	-
Lithium	-	Zirconium	-
Extra Elements			
Caesium		Platinum	
Gold		Rhenium	
Hafnium		Rubidium	
Indium		Tellurium	
Palladium		Thallium	

Figures are approximate:

CODE H - High - 10 - 100% approx.
M - Medium - 1 - 10% approx.
L - Low - .1 - 1% approx.

- Not Detected - Elements looked for but not found
X Not Looked For
< Less Than

Samples, Pulps and Rejects discarded after two months

DATE November 28th, 1979.

SIGNED 

TECHNICAL SERVICE LABORATORIES

DIVISION OF BURGNER TECHNICAL ENTERPRISES LIMITED

1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2

TELEPHONE (416) 625-1544

TELEX 06-960215

CERTIFICATE OF ANALYSIS

Semiquantitative Spectrographic

SAMPLE(S) FROM M.r. John S. Carter,
4019 Delarna Bay N. W.
Calgary, Alberta.
T3A 1G8

REPORT No.

I - 1759

Inv. #12081

SAMPLE(S) OF ROCK BOYVILLE PROSPECTS LTD.
CADIM LAKE PROSPECT.

Sample	Sample	Sample	Sample	Sample	Sample	Sample
Granite BM-20	5829				5829	
Aluminum	10%			Manganese	.1%	
Antimony	-			Magnesium	5%	
Arsenic	-			Molybdenum	-	
Barium	.01%			Neodymium	-	
Beryllium	-			Nickel	.002%	
Bismuth	-			Phosphorus	-	
Boron	-			Silver	-	
Calcium	5%			Silicon	H	
Cadmium	-			Sodium	.5%	
Cerium	-			Strontium	.05%	
Chromium	.005%			Tantalum	-	
Cobalt	.001%			Thorium	-	
Columbium	-			Tin	-	
Copper	.005%			Titanium	.5%	
Gallium	-			Tungsten	-	
Germanium	-			Uranium	-	
Iron (Fe)	5%			Vanadium	.01%	
Lanthanum	-			Yttrium	-	
Lead	-			Zinc	-	
Lithium	-			Zirconium	<.01%	
Extra Elements						
Caesium				Platinum		
Gold				Rhenium		
Hafnium				Rubidium		
Indium				Tellurium		
Palladium				Thallium		

Figures are approximate:

CODE H - High - 10 - 100% approx.
M - Medium - 1 - 10% approx.
L - Low - .1 - 1% approx.

- Not Detected - Elements looked for but not found
X Not Looked For
< Less Than

Samples, Pulps and Rejects discarded after two months

DATE November 30th, 1979.SIGNED [Signature]

TSL FORM # 2

Gold (Au) oz/ton <0.001





JOHN CARTER

SAMPLE TYPE: Jack Pine Twigs

PAGE 1 of 1

LAB No.	CLIENT No.		Cu ppm		Ag ppm		Mo ppm												
1	BOV-BM-TP20		500		1		8												
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
0																			
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			

Appendix "E"

APPENDIX "A"
BOVALLIE RESOURCES LTD.
GEOPHYSICAL REPORT

On

ELECTROMAGNETOMETER SURVEYS

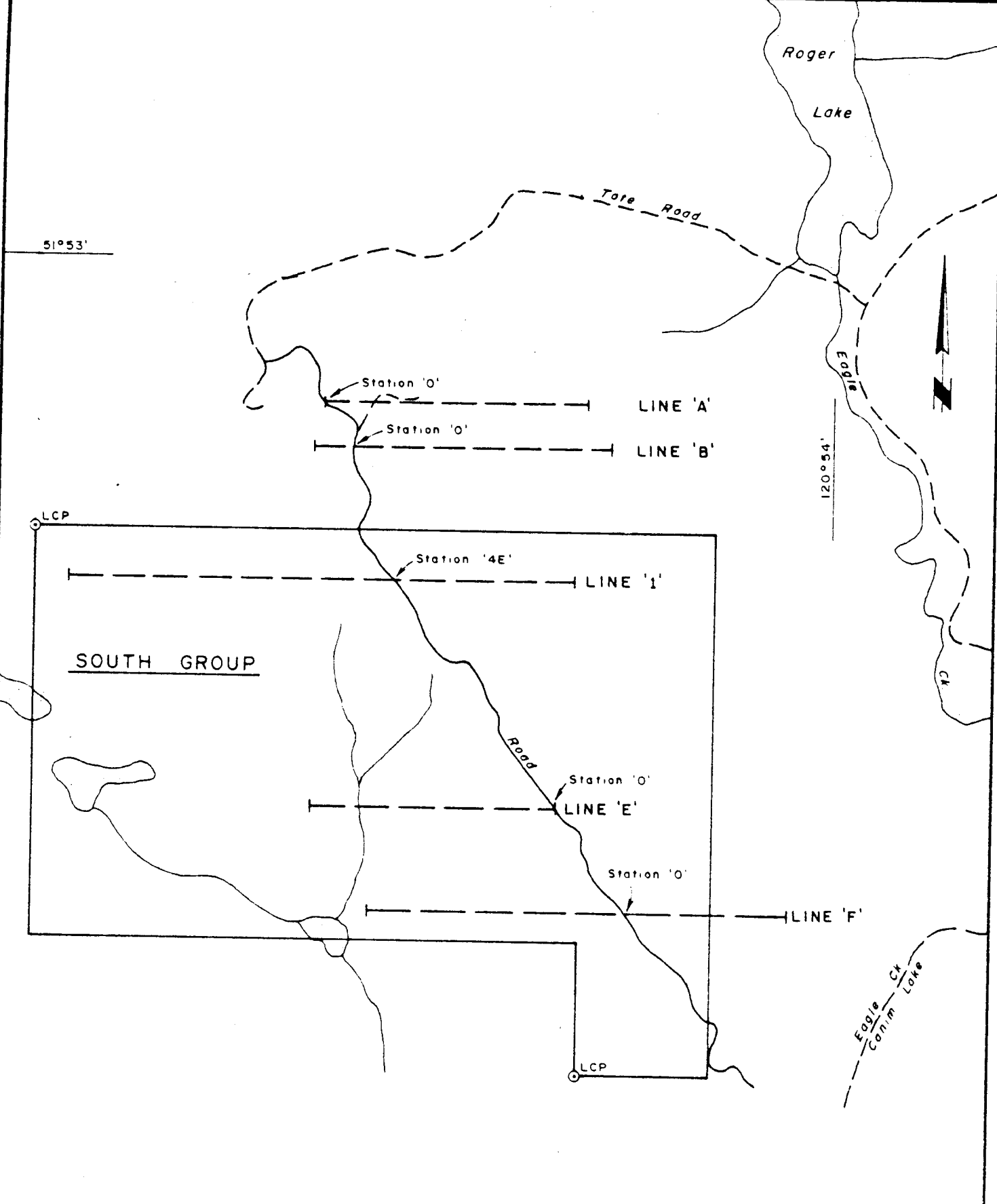
South group, Canim Lake area, Clinton
Mining Division, B. C.

Lat. $51^{\circ}52'N$ Long. $120^{\circ}55'W$ N.T.S. 92 P/15

AUTHOR: Glen E. White, P. Eng.

DATE OF WORK: December 18 - 22, 1979

DATE OF REPORT: February 7, 1980



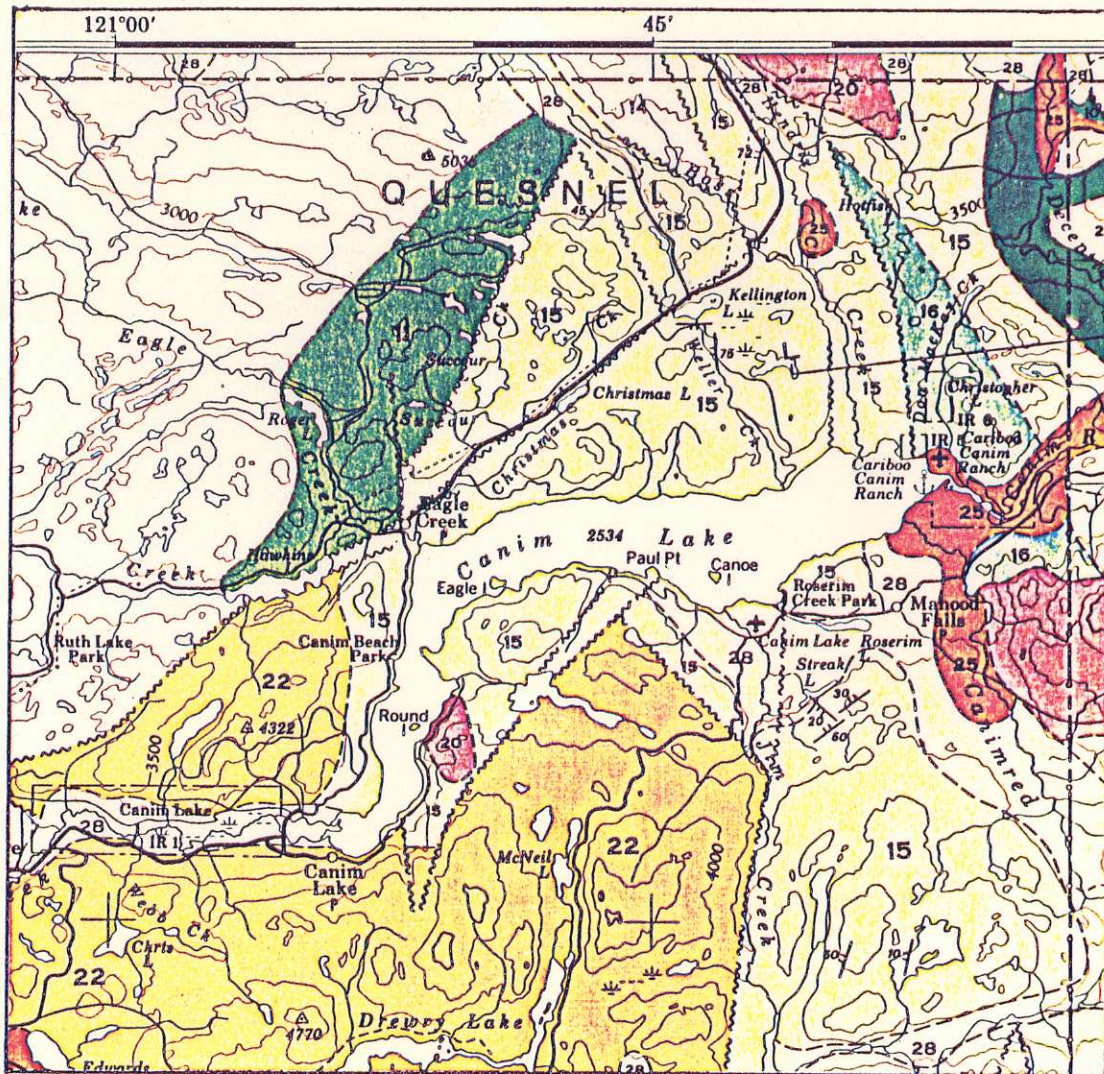
BOVILLE RESOURCES LTD.

— LINE LOCATIONS —
LOCATION & CLAIM MAP

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&
services ltd.

1cm = 200 Meters

Feb 1980
FIG 1

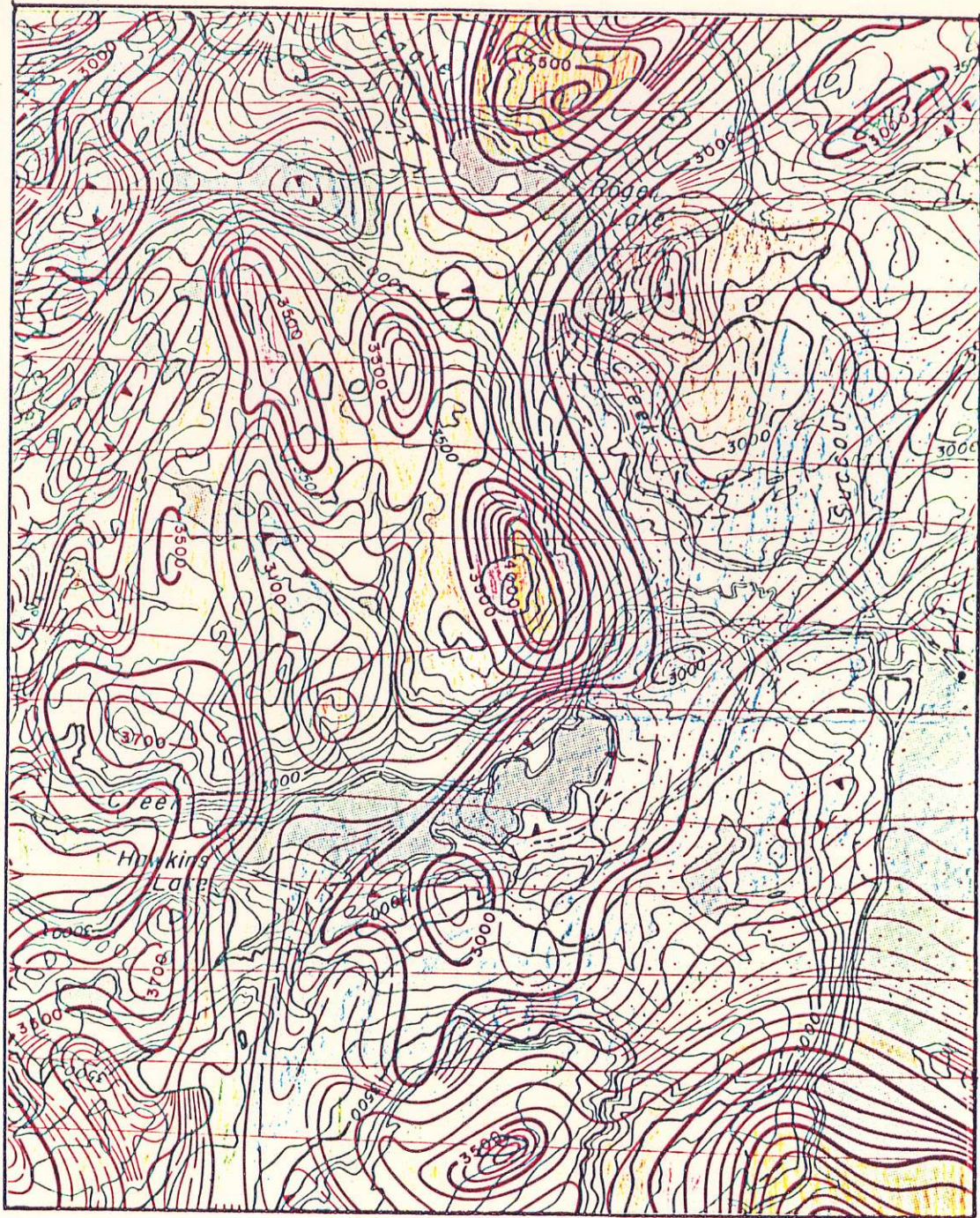


MAP 1278A
 GEOLOGY
BONAPARTE LAKE
 BRITISH COLUMBIA

Scale 1:250,000



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GEOPHYSICS PAPER 5231

CANIM LAKE

BRITISH COLUMBIA

SHEET 92 $\frac{P}{15}$

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Plate 2

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Location and Access.....	1
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Illustrations

Figure 1 - Claims and Line Location Map

Figure 2 - VLF-EM, Line A

Figure 3 - VLF-EM, Line B

Figure 4 - VLF-EM, Line 1

Figure 5 - Max-Min Profiles Lines 1, E and F

Plate 1 - General Geology

Plate 2 - Regional Airborne Magnetic Survey

INTRODUCTION

Glen E. White Geophysical Consulting & Services Ltd. was contracted by Boville Resources Ltd. to conduct a number of test lines utilizing a Max-Min 2 and VLF-EM 16 on their South claim group near Canim Lake. The survey lines were prepared by the client and the geophysical surveys completed during the period December 18 - 22, 1979.

PROPERTY

The property consists of the South group comprising 12 contiguous units as illustrated on Figure 1.

LOCATION AND ACCESS

The property is located between Roger and Hawkins Lakes near Canim Lake, B. C. Latitude $51^{\circ}52'N$, Longitude $120^{\circ}55'W$, N.T.S. 92 P/15, Clinton Mining Division, B. C.

The property is accessible by 30 miles of good road to Eagle Creek from 100 Mile House, B. C. Immediate access onto the claim group is by 4x4 vehicle for a distance of 3 miles.

GENERAL GEOLOGY

The regional geology of the area is shown on Map 1278A, Bonaparte Lake (Plate 1) and the regional airborne magnetic data on Map 5231G (Plate 2).

The geology map indicates the property to be within a belt of Nicola group rocks intruded to the west by a batholith of granitic composition. The airborne magnetometer data shows a strong local magnetic high in the southeast corner of the group.

GEOPHYSICAL SURVEYS

The test lines were conducted utilizing a Ronka EM-16 and a Max-Min 2 electromagnetometer system. The specifications for each are given in the enclosed Appendix.

DISCUSSION OF RESULTS

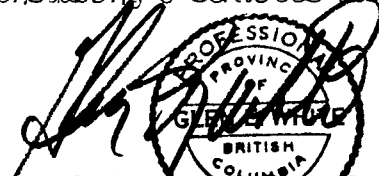

Figures 2, 3 and 4, illustrating the VLF-EM 16 data, show several weak conductor responses. These are at station 4E, 13E and 21E on line A. The conductor at station 21E may possibly be caused by two parallel conductive features. Line B shows a similar moderate response at 25E. Line 1 shows a very sharp, near surface variation at 9E and a classic vertical source crossover at 16E. The EM-16 is sensitive to small conductive variations; thus, these features can be due to structure and/or lithology. The low amplitude of the data, if it were due to sulphide mineralization, would indicate a narrow poorly conductive zone.

The Max-Min 2 data shows a number of variations in the inphase only which is likely due to topography and chainage errors. The EM-16 crossover on line 1 at 16E has no conventional EM counterpart. Weak Quadrature anomalies are shown at 3W, 11W and 19W. These could be due to overburden, and/or fault zones as well as very poorly conductive mineralization. Line E is the only line which shows weak inphase and Quadrature responses. This occurs at 22W. Line F has a slight quadrature anomaly at 5W.

CONCLUSION AND RECOMMENDATIONS

During the month of December, 1979, two types of electromagnetometer systems were tested over the Bouville Resources property in an orientation survey. The EM-16 which is the most sensitive instrument to conductivity changes, showed several moderate crossovers, possibly indicating structure and/or lithology. It is recommended that magnetometer and VLF-EM surveys be conducted to map lithology in conjunction with an induced polarization survey to detect any chargeable zones, possibly indicative of sulphide mineralization.

Respectfully submitted,
GLEN E. WHITE GEOPHYSICAL
CONSULTING & SERVICES LTD.



Glen E. White, P. Eng.
Consulting Geophysicist

A P P E N D I X

Instrument Specifications

ELECTROMAGNETOMETER

A. Instrument

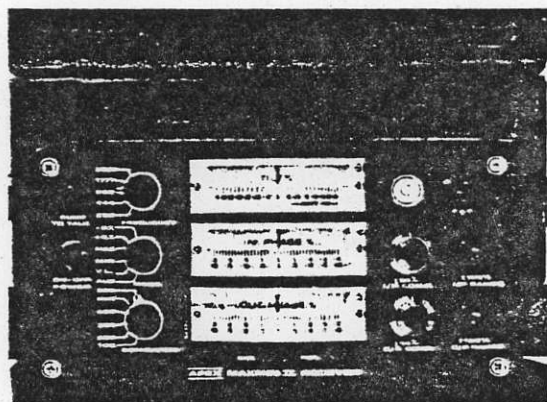
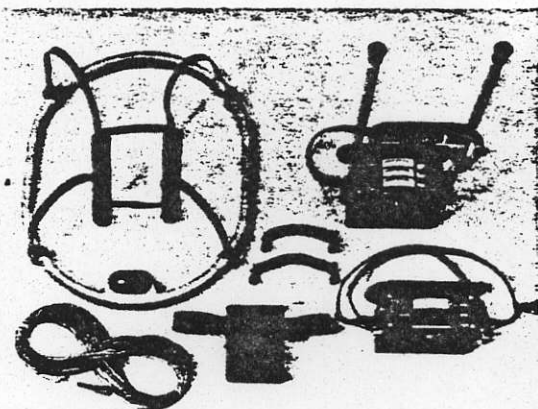
- (a) Type - Geonics VLF - EM
- (b) Make - Ronka EM 16

B. Specifications

- Measurement -
- (i) Utilizes primary fields generated by VLF marine communication stations measures the vertical field components in terms of horizontal field present.
 - (ii) Frequency range 15-25 KHZ
 - (iii) Range of measurement - in phase $\pm 150\%$
or $\pm 90^\circ$
- quadrature
 $\pm 40\%$
 - (iv) Method of reading - null detection by earphone, real and quadrature from mechanical dials.
 - (v) Accuracy - $\pm 1\%$ resolution

C. Survey Procedures

- Method
- (a) Select closest VLF station perpendicular to traverse lines.
 - (b) In-phase dial measures degree of tilt from vertical position.
 - (c) Quadrature dial calibrated in percent - null.
 - (d) Station plot - plot values read at station surveyed.
 - (e) Manually filter dip-angle data.



SPECIFICATIONS :

Frequencies:	222, 444, 888, 1777 and 3555 Hz.	Repeatability:	$\pm 0.25\%$ to $\pm 1\%$ normally, depending on conditions, frequencies and coil separation used.
Modes of Operation:	<p>MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with refer. cable.</p> <p>MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.</p> <p>V.L.: Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.</p>	Transmitter Output:	<ul style="list-style-type: none"> - 222 Hz : 220 Acm² - 444 Hz : 200 Acm² - 888 Hz : 120 Acm² - 1777 Hz : 80 Acm² - 3555 Hz : 30 Acm²
Coil Separations:	25, 50, 100, 150, 200 & 250m (MM) or 100, 200, 300, 400, 600 and 800 ft. (MMIF). Coil separations in V.L. mode not restricted to fixed values.	Receiver Batteries:	9V trans. radio type batteries (4). Life: approx. 35hrs. continuous duty (alkaline, 0.5 Ah), less in cold weather.
Parameters Read:	<ul style="list-style-type: none"> - In-Phase and Quadrature components of the secondary field in MAX and MIN modes. - Tilt-angle of the total field in V.L. mode. 	Transmitter Batteries:	12V 6Ah Gel-type rechargeable battery. (Charger supplied).
Readouts:	<ul style="list-style-type: none"> - Automatic, direct readout on 90mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary. - Tilt angle and null in 90mm edgewise meters in V.L. mode. 	Reference Cable:	Light weight 2-conductor teflon cable for minimum friction. Unshielded. All reference cables optional at extra cost. Please specify.
Scale Ranges:	<p>In-Phase: $\pm 20\%$, $\pm 100\%$ by push-button switch.</p> <p>Quadrature: $\pm 20\%$, $\pm 100\%$ by push-button switch.</p> <p>Tilt: $\pm 75\%$ slope.</p> <p>Null (V.L.): Sensitivity adjustable by separation switch.</p>	Voice Link:	Built-in intercom system for voice communication between receiver and transmitter operators in MAX and MIN modes, via reference cable.
Readability:	In-Phase and Quadrature: 0.25% to 0.5% ; Tilt: 1%.	Indicator Lights:	Built-in signal and reference warning lights to indicate erroneous readings.
		Temperature Range:	-40°C to $+60^{\circ}\text{C}$ (-40°F to $+140^{\circ}\text{F}$).
		Receiver Weight:	6kg (13 lbs.)
		Transmitter Weight:	13kg (29 lbs.)
		Shipping Weight:	Typically 80kg (175 lbs.), depending on quantities of reference cable and batteries included. Shipped in two field/shooting cases.

Specifications subject to change without notification.

APEX PARAMETRICS LIMITED

200 STEELCASE RD. E., MARKHAM, ONT., CANADA, L3R 1G2

Phone: (416) 495-1612

Cables: APEXPARA TORONTO

Telex: 05-966773 APEXPARA MKHM
NOTE OUR NEW TELEPHONE NUMBER:
05-966775 APEXPARA MKHM

Glen E. White

GEOPHYSICAL CONSULTING & SERVICES LTD.

STATEMENT OF QUALIFICATIONS

NAME: WHITE, Glen E., P. Eng.

PROFESSION: Geophysicist

EDUCATION: B.Sc. Geophysics - Geology
University of British Columbia

PROFESSIONAL ASSOCIATIONS: Registered Professional Engineer,
Province of British Columbia

Associate member of Society of Exploration Geophysicists.

Past President of B. C. Society of Mining Geophysicists.

EXPERIENCE: Pre-Graduate experience in Geology - Geochemistry - Geophysics with Anaconda American Brass.

Two years Mining Geophysicist with Sulmac Exploration Ltd. and Airborne Geophysics with Spartan Air Services Ltd.

One year Mining Geophysicist and Technical Sales Manager in the Pacific north-west for W. P. McGill and Associates.

Two years Mining Geophysicist and supervisor Airborne and Ground Geophysical Divisions with Geo-X Surveys Ltd.

Two years Chief Geophysicist Tri-Con Exploration Surveys Ltd.

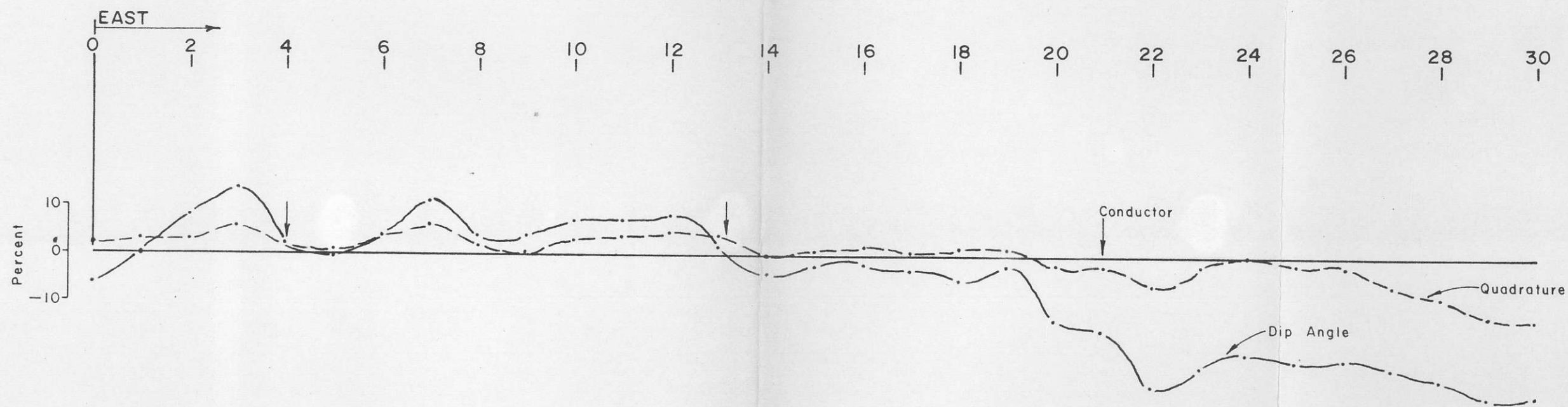
Nine years Consulting Geophysicist.

Active experience in all Geologic provinces of Canada.

COST BREAKDOWN

<u>Personnel</u>	<u>Dates</u>	<u>Wages</u>	<u>Total</u>
J. Miller.....	Dec. 18-22/79.....	\$175/day.....	\$875.00
G. Smedley.....	"....."	\$125/day.....	625.00
Instrument Lease, EM-16 and Max-Min 2.....			450.00
Vehicle.....			130.00
Drafting and Reports.....			550.00
Total.....			2630.00





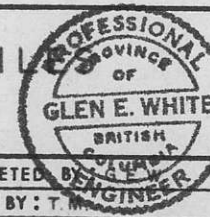
INSTRUMENT : RONKA EM-16



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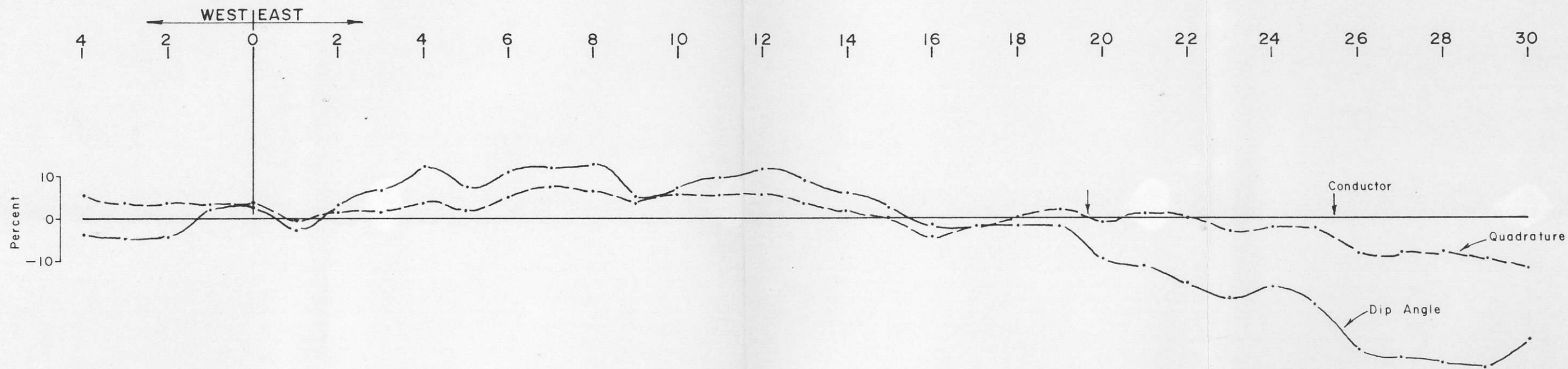
VLF-EM PROFILE
LINE 'A'



To Accompany Geophysical Report on
THE ROBINSON PROPERTY
Date -----
By GLEN E. WHITE - B.Sc. ----- GEOPHYSICIST

Glen E. White
geophysical consulting
services Ltd.

INTERPRETED BY:
DRAWN BY: T.M.
CHECKED BY:
DATE: FEB. 1980
FIG. No.: 2



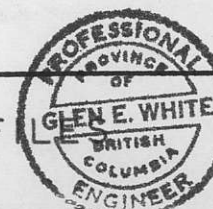
INSTRUMENT : RONKA EM-16



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BOVILLE RESOURCES LTD.

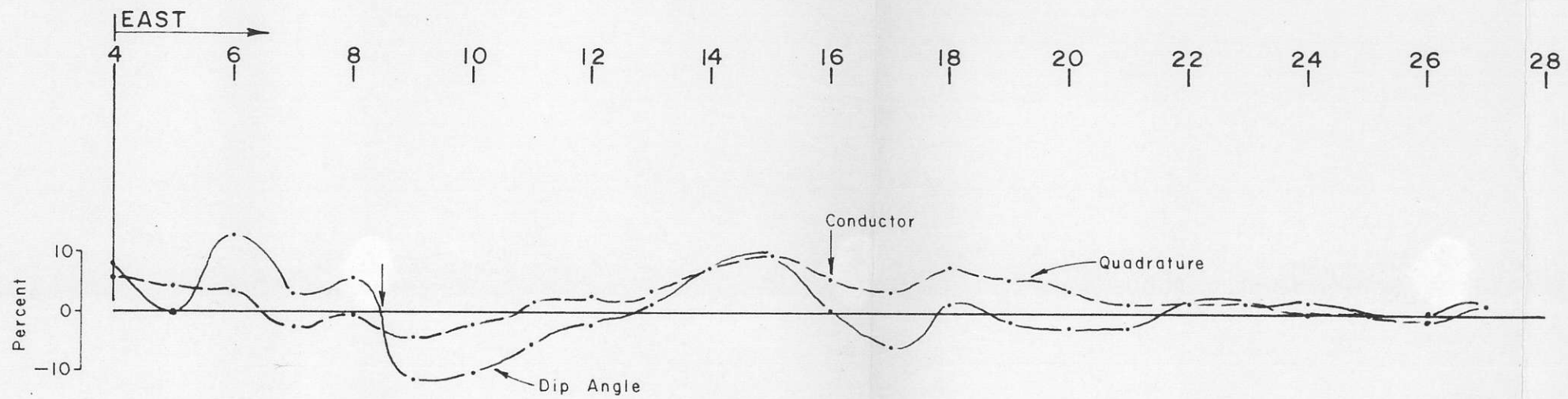
VLF-EM PROF
LINE 'B'



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INTERPRETED BY: G.E.W.
DRAWN BY: T.M.
CHECKED BY:
DATE: FEB. 1980
FIG.No.: 3

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Date -----
By GLEN E. WHITE - B.Sc. ----- GEOPHYSICIST



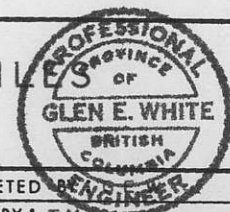
INSTRUMENT : RONKA EM-16



N.T.S., 92 P-15

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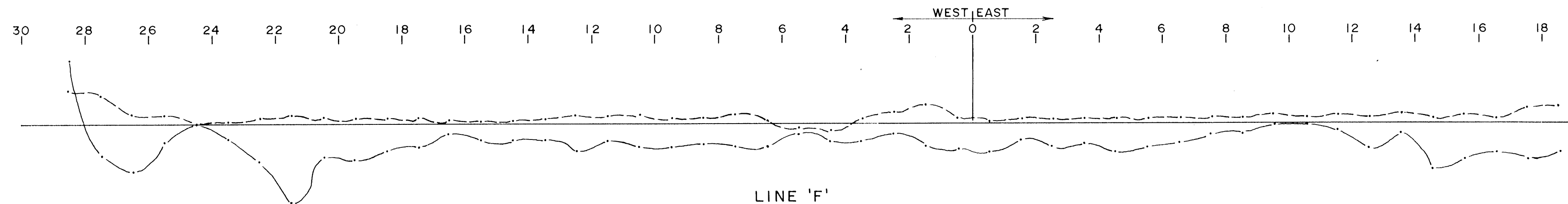
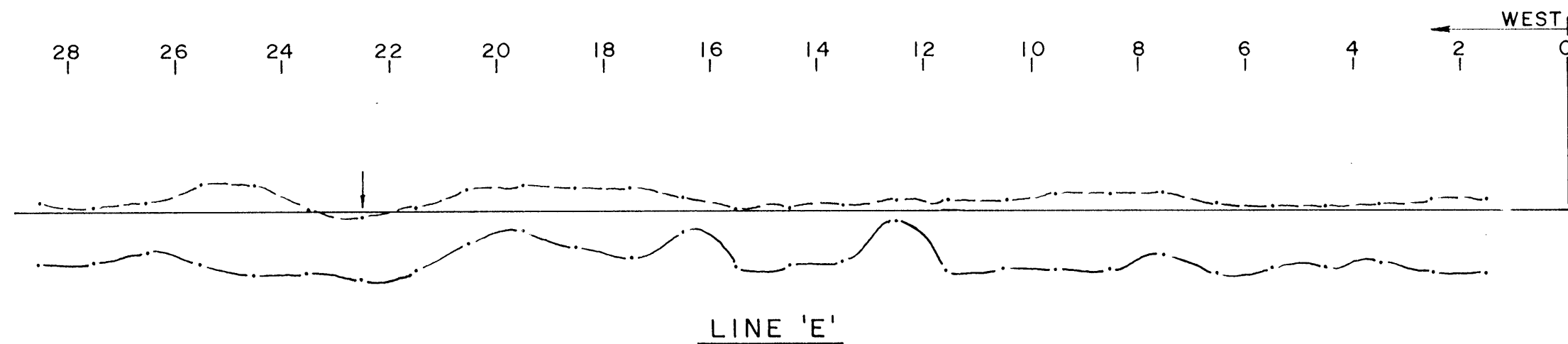
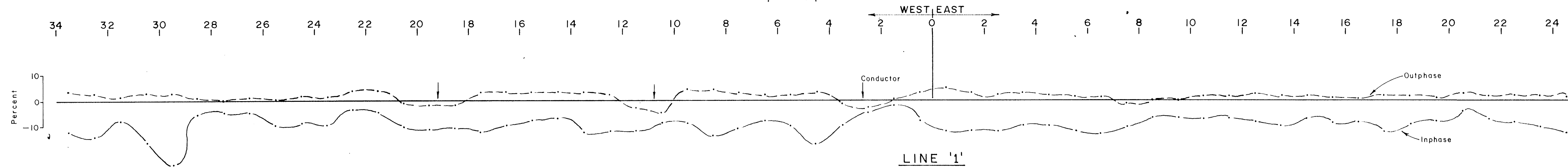
VLF-EM PROFILE
LINE '1'



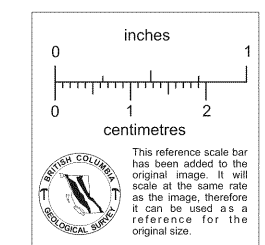
Glen E. White
geophysical consulting
B
services Ltd.

INTERPRETED BY:
DRAWN BY: T.M.
CHECKED BY:
DATE: FEB. 1980
FIG. No.: 4

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Date -----
By GLEN E. WHITE - B.Sc. ----- GEOPHYSICIST



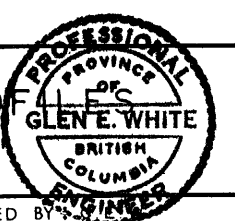
INSTRUMENT : APEX MAX. MIN. II
 1777 Hz
 COIL SEPARATION 100m



NTS 92 P-15

BOVILLE RESOURCES LTD.

MAX. MIN. II PROFILE
 LINES '1,E,F'



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 geophysical consulting
 services Ltd.

INTERPRETED BY:	
DRAWN BY:	T.M.
CHECKED BY:	
DATE:	FEB. 1980
FIG.No.:	5

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 By GLEN E. WHITE - B.Sc. ----- GEOPHYSICIST