MAFEKING MINERALS 1980 PARTNERSHIP
JONY ONE, TWO & THREE CLAIMS
NTS 104K - 7W 81-288
58 Deg. 24 Min N. -9578
132 Deg. 48 Min W.
ATLIN MINING DIVISION

9578

[redacted]

GEOLOGICAL, DRILLING AND
GEOPHYSICAL REPORT

ON

JONY CLAIM GROUP

ATLIN DISTRICT . BRITISH COLUMBIA

104 K - 7W

58° 24N - 132° 48W

f o r

MAFEKING MINERALS LIMITED

F. DALIDOWITZ

E.M. ESTABROOKS

CALGARY

JANUARY, 1981

MAFEKING MINERALS 1980 PARTNERSHIP

INDEX

MAFEKING MINERALS 1980 PARTNERSHIP

MAPS AND ILLUSTRATIONS

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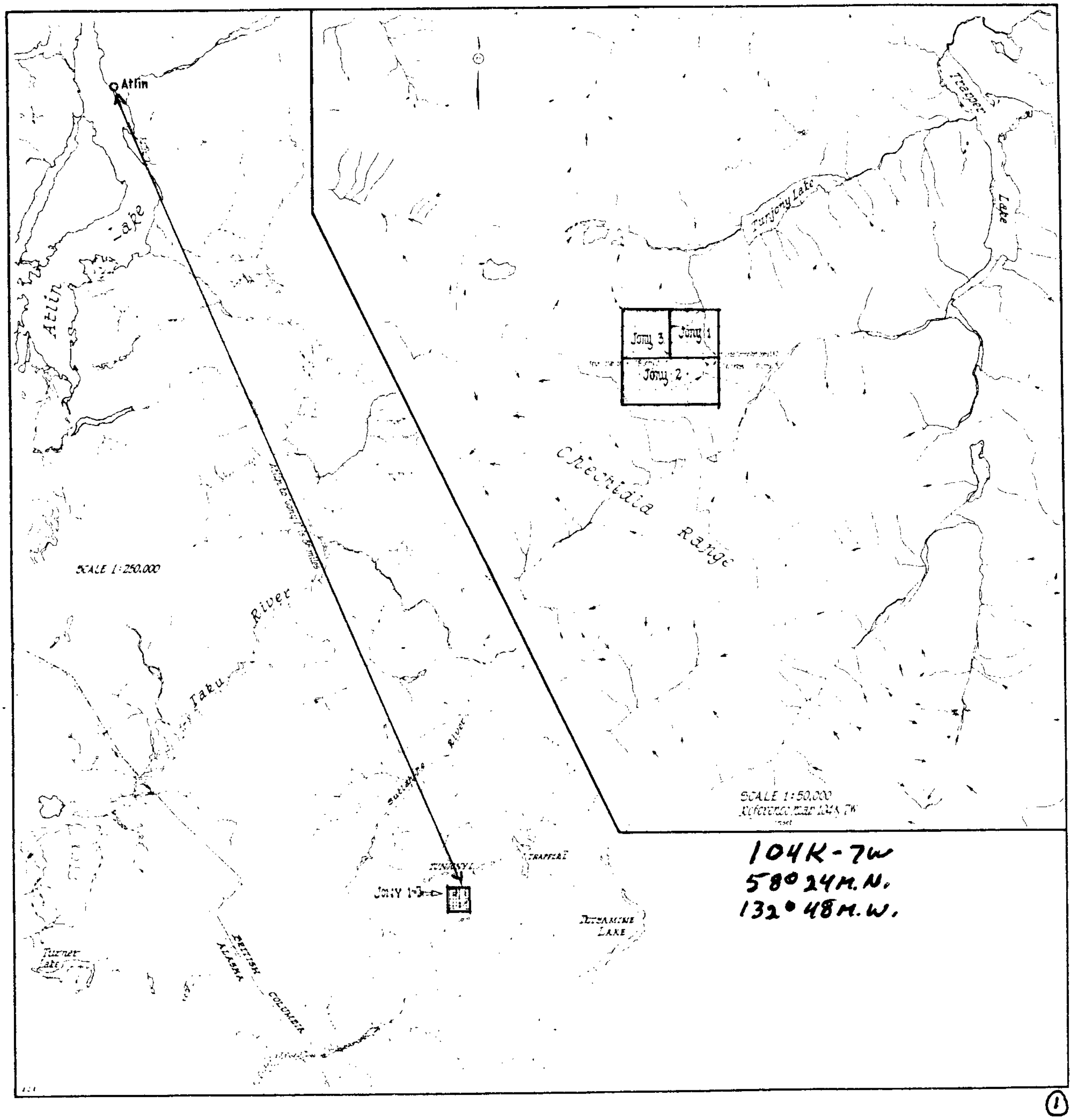


104K-7W
58° 24M.N.
132° 48M.W.

①

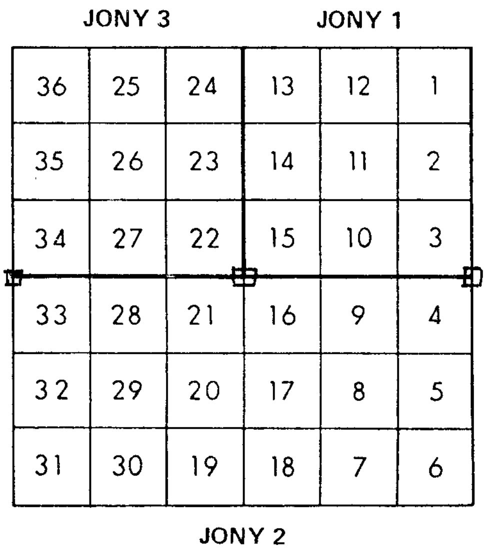
MAFEKING MINERALS LTD.
1980 PARTNERSHIP

JONY 1-2-3 CLAIMS

TUNJONY LAKE AREA

ATLIN MINING DIVISION

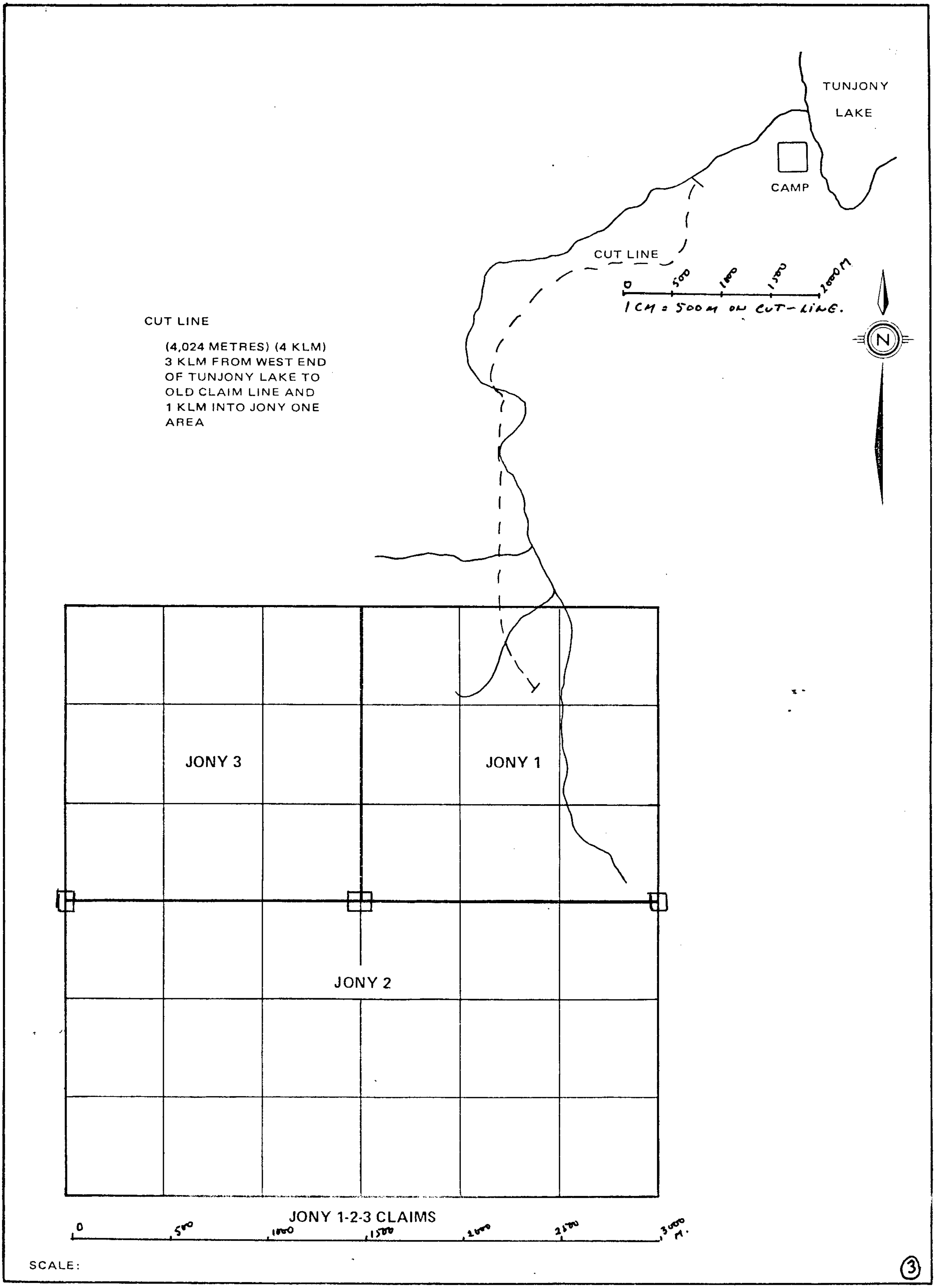
JONY 1-2-3 CLAIMS
INDEX OF UNIT NUMBERS



36	25	24	13	12	1
35	26	23	14	11	2
34	27	22	15	10	3
33	28	21	16	9	4
32	29	20	17	8	5
31	30	19	18	7	6

104K-7W
58°24 N-132°48W.

SCALE: 0 500 1000 1500 2000 2500 3000


TUNJONY
LAKE
CAMP
CUT LINE
0
500
1000
1500
2000 M
1 CM = 500 M ON CUT-LINE.
N
CUT LINE
(4,024 METRES) (4 KLM)
3 KLM FROM WEST END
OF TUNJONY LAKE TO
OLD CLAIM LINE AND
1 KLM INTO JONY ONE
AREA
JONY 3
JONY 1
JONY 2
JONY 1-2-3 CLAIMS
0
500
1000
1500
2000
2500
3000 M.
SCALE:
③

RECOMMENDATIONS

1) Hold the 36 units encompassed in the three claim blocks for 10 years by the submission of the following assessment work requirements. The cost for submitting same, would amount to $2,925.00 in recording fees.

Jony #1 - 9 units - 10 years - work valued at $14,400
Jony #3 - 9 units - 10 years - work valued at $15,300
Jony #2 - 18 units - 10 years - work valued at $28,800

2) Submit difference between actual cost of the completed exploration and the proposed assessment requirement for acceptance as, "Portable Assessment Credit".

3) Option the prospect to a third party who may have need of or who could utilize the, "Portable Assessment Credit", on other work commitments at a negotiated purchase price, of so much on the dollar.

4) Explore contact zones of Rhyolite dykes in granitic country rock striking southward from Jony #2 claim for silver, lead, zinc, copper and molybdenum occurrances.

5) Calculate final cost and distribute cost figures, a copy of geological report and assessment submissions for determination of partnership members income tax details for the 1980 tax year.

CONCLUSIONS

1) No economic deposit of mineralization, be it silver, lead, zinc, copper or cadmium were discovered during the course of exploration.

2) The principal vein in the area did not widen with length or depth.

3) The mineralization on the surface in the vein is apparently a local occurrance.

4) The shear zone that contained the vein in question, and the surface mineralization, was intersected at vertical depths of 13.7 and 30.5 metres respectively, no signifigant mineralization was encountered in either case.

5) The geophysical anomaly investigated by diamond drill hole J-1 appears to be a local occurrance of mineralization, with very little lateral and/or vertical substance.

6) The massive pyrite seen on Jony #2 and #3 claims in and associated with Rhyolite dykes carried little, to no gold values.

7) The disseminated pyrite, seen throughout various areas of monzonitic and granitic rocks, is not accompanied by signifigant gold values.

8) All visible mineralization is invariably associated with fractures, shear zones and/or contact zones, between Rhyolite dykes, monzonitic and/or granitic country rock.

9) The drill core contained scattered, disseminated pyrite mineralization occasionally visible via hand lense. Assay results on drill core were unfavourable, the only mineral shown was a trace of gold.

10) The drill core, essentially monzonitic and granitic rocks with occasional rhyolitic dyke intersections, displayed fractures and jointing. The fracture faces were occasionally coated with hematite staining. The complete core was studied under ultra-violet light for evidence of tungsten mineralization, of which there was none.

11) The glacial till and moraine was thoroughly prospected, occasional occurrances of chalcopyrite, sphalerite, galena, pyrite, calcite and hematite were observed, however, no mineralization was found in the bedrock source of the colluvium.

SUMMARY

Geological Evaluation	Cost =	$ 38,959.88	
Geophysical Surveys	Cost =	$ 21,062.31	
Diamond Drilling	Cost =	$ 76,604.22	T.K.
Post Field - Report Compilation	Cost =	$ 9,138.39	6123.39
Final Cost		$ 145,764.80	
		142,749.80	

(A) Geological Evaluation

a) Mapping

b) Prospecting

c) Personnel

1) E.M. Estabrooks, Professional Geologist
2) V. O Hara, Field Assistant
3) P.G. Estabrooks, Field Assistant
4) J.A. Estabrooks, Cook
5) S. Olsen, Cook
6) S.B. Estabrooks, Field Assistant

Field Personnel	Time		Cost per Day
E.M. Estabrooks	June 13 - Aug 25/80	inclusive	@ $300/day
V. O Hara	June 13: June 18 - Aug 3/80	"	@ $100/day
P. Estabrooks	June 13: June 18 - Aug 3/80	"	@ $100/day
J. Estabrooks	June 24 - Aug 3/80	"	@ $ 50/day
S. Olsen	Aug 2 - Aug 15/80	"	@ $ 80/day
S. Estabrooks	July 18 - July 22/80	"	@ $ 60/day

(B) Geophysical Surveys - MPH Consulting Limited

Toronto - Calgary

Horizontal loop electro magnetic and magnetic surveys

June 25 - July 8/80 - Cost = $ 21,062.31

(C) Diamond Drilling

by "Automated Diamond Drilling Ltd.", Yellowknife, N.W.T.

July 21 - Aug 10/80 - Cost = $ 76,604.22

(D) Post Field Report Preparation

Drafting $=
Typing $=
Reproduction $=
Distribution $=
} $6,123.39 /

Cost of Assessment submissions = $ 3,015.00 Recording fees
Cost of property acquisition = $ 5,460.47

INTRODUCTION

A) Location and Accessability

Jony 1, 2 and 3 mineral claims containing 9, 18 and 9 units respectively are located southwest of Tunjony Lake situate on claim map 104K-7W, approximately 138 kilometers by air, east southeast of Atlin, British Columbia.

Access to the claims area is by aircraft from Atlin, B.C.; Whitehorse, Yukon and/or; Juneau, Alaska, to Tunjony Lake, thence 3 klm. west and 1 klm. south via cut line.

B) Tunjony Lake trending generally east-west, is the largest lake in the immediate area, the topography covered by claims Jony 1 and 3 constitute the headwaters of the streams running northward and eastward into Tunjony Lake. They are all essentially glacier fed streams.

C) Trails

The only trails in the area are those cut for access into the claim group from Tunjony Lake, a distance of approximately 4 kilometres. This trail runs approximately 3 kilometres west from Tunjony Lake thence 1 kilometre south along an old claim line, until the glacial moraine, consisting of huge granitic boulders, is encountered at the north end of the valley.

D) History of Exploration

The area under investigation via geological exploration was located in 1968 by the author whilst conducting geochemical stream sediment sampling.

The complete valley was covered by a group of claims called LC-2 staked in 1968. Geological exploration, geophysics and minor trenching were conducted in 1969, resulting in the discovery of the vein containing copper, lead, zinc, silver and cadmium mineralization. Sufficient work was conducted to satisfy assessment requirements for four years. Sun Oil Ltd. were the owners of the LC-2 claims and no further work was conducted by Sun or their agents to the knowledge of the author.

E) Climate

The Taku district extends from the heart of the Coast Mountains, a wet belt, to the Stikine Plateau, a dry belt, so that all gradations of climate are found in it. Precipitation along the Alaskan coast, ranges from 75 to 150 inches yearly. The most favourable working month is usually August. July is an uncertain month usually with much cloudy, wet weather, as witnessed by the daily work Log.

F) Vegetation

The area west of Trapper and Tunjony Lakes is a veritable jungle in which large cottonwoods at lower elevations and evergreens rise above a tangle of devil's club, alders, willows, cranberry, huckleberry and other bushes.

The lower slopes where conditions are favourable are clothed with a mature mixture of spruce, hemlock and fir.

Timberline is rarely above an elevation of 3,000 feet, though in a few favoured places it extends to 4,500 feet.

The large glaciated valley which contains the eastern portion of the claims has no timber above 3,500 feet, while the remainder of the claims are also above timberline.

GEOLOGY

The claims area of 36 units encompassing approximately nine square kilometres is underlain by the following rock types:

1. Mesozoic, Lower of Middle Triassic rocks consisting of fine to medium grained, strongly foliated diorite, quartz diorite and minor granodiorite.

2. Cretaceous and Tertiary, a part of the Sloko group rocks, consisting of a white to buff coloured rhyolite, pyroclastic rocks and derived sediments.

3. Late Cretaceous and Tertiary Sloko group rocks, most notably medium to coarse grained pine biotite-hornblende quartz monzonite.

4. Late Tertiary and Pleistoncene basalt, are possibly intruded into the monzonites, along with Olivine basalt and related pyroclastic rocks.

5. Quaternary, Pleistoncene and Recent. Glacial outwash, alpine moraine and undifferentiated colluvium.

The Jony claim group contains 36 units, the eastern portion of the complete block, units 1, 2, 3, and 4 are underlain by fine to medium grained, strongly foliated quartz diorite, intruded in units 1 and 2 by buff rhyolite dykes, striking essentially north eastward and dipping generally eastward.

The quartz diorite is fractured with the fracture faces trending with the general north east strike. The fractures contain malachite staining.

Unit number four is underlain by a quartz diorite containing a younger quartz unit carrying disseminated pyrite.

Units five and six are underlain by colluvium and quartz diorite, intruded by buff coloured rhyolite dykes, striking north eastward.

The central map portion encompassing units 9, 10, 11, 14, 15, 16, 17, 20, 21, 22, 23, 27, and 28, consists of a quartz monzonite rock in a graben like structure, controlled by large north south trending faults.

The monzonite contains veins and pods of buff coloured rhyolite and dark bluish basic dykes, striking generally north east and east, with vertical dips.

A quartz carbonate vein in unit ten, is the principal source of mineralization on the property, the vein is approximately 80 metres long and strikes north 29 degrees east, dips 85 degrees west and plunges 55 degrees east. It is in the contact zone between a basic dyke and the monzonite country rock. Immediately to the west, of the veins western source, the monzonite envelopes a buff coloured rhyolite pod. The basic dyke, monzonite and rhyolite all contain disseminated pyrite.

Units 27 and 28 on the west side, appear to contain a major north south trending fault, the western twin to the fault in units 9, 10, 11, and 12. The down thrown sides of these major faults appear to be in units 9, 10, 11, and 12 on the east and in units 27 and 28 on the west, giving the down thrown area, the appearance of a graben.

Unit 18 on the south is comprised of a quartz diorite country rock intruded by buff coloured fhyolite and bluish basic dykes, the rhyolite, basic dykes and diorite are fractured, these fractures contain quartz veining striking generally north and east, with dips to the south, ranging from 68 to 80 degrees.

The quartz veins contain sulphide mineralization in the form of pyrite, galena, chalcopyrite and sphalerite.

Mineralization was found through out the colluvium produced by the various glaciers, however no mineralization was found in the dioritic and monzonitic bed rocks, source of the colluvium.

MINERALIZATION

Sulphide mineralization in the form of pyrite, chalcopyrite, galena, sphalerite and hematite was found occasionally throughout the essentially monzonitic country rock.

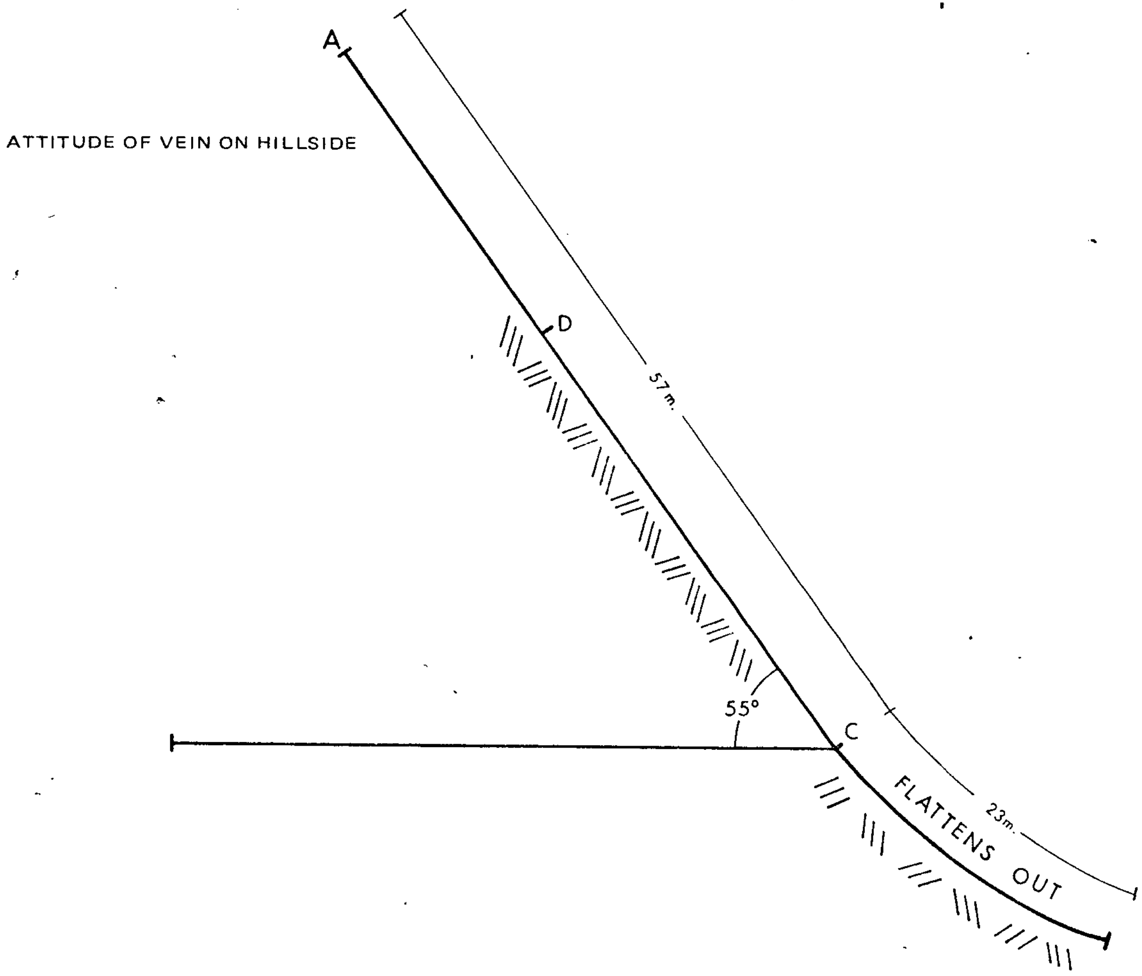
This mineralization was invariably associated with fractures, shear zones and faulting within the monzonite and granitic.

Contact zones, parallel to rhyolite and basic dykes cutting through the monzonitic and granitic country rock, usually carry disseminated and vein occurrances of pyrite, galena and hematite.

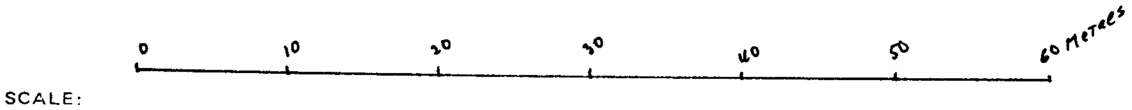
The most impressive occurrance of sulphide minerals occurred in the main vein area on Jony #1 claim, this occurrance was explored via sampling, geophysics and diamond drilling with negative results.

JONY - 1 CLAIM - UNITS 10 & 15:

ATTITUDE OF VEIN



STRIKE = N29E
DIP = 85W
PLUNGE = APPX. 55°EASTWARD
LENGTH = 80 METERS
WIDTH = VARYING FROM TWO INCHES TO 24 INCHES
IN CONSISTANT VARIATION THROUGHOUT
ITS LENGTH.



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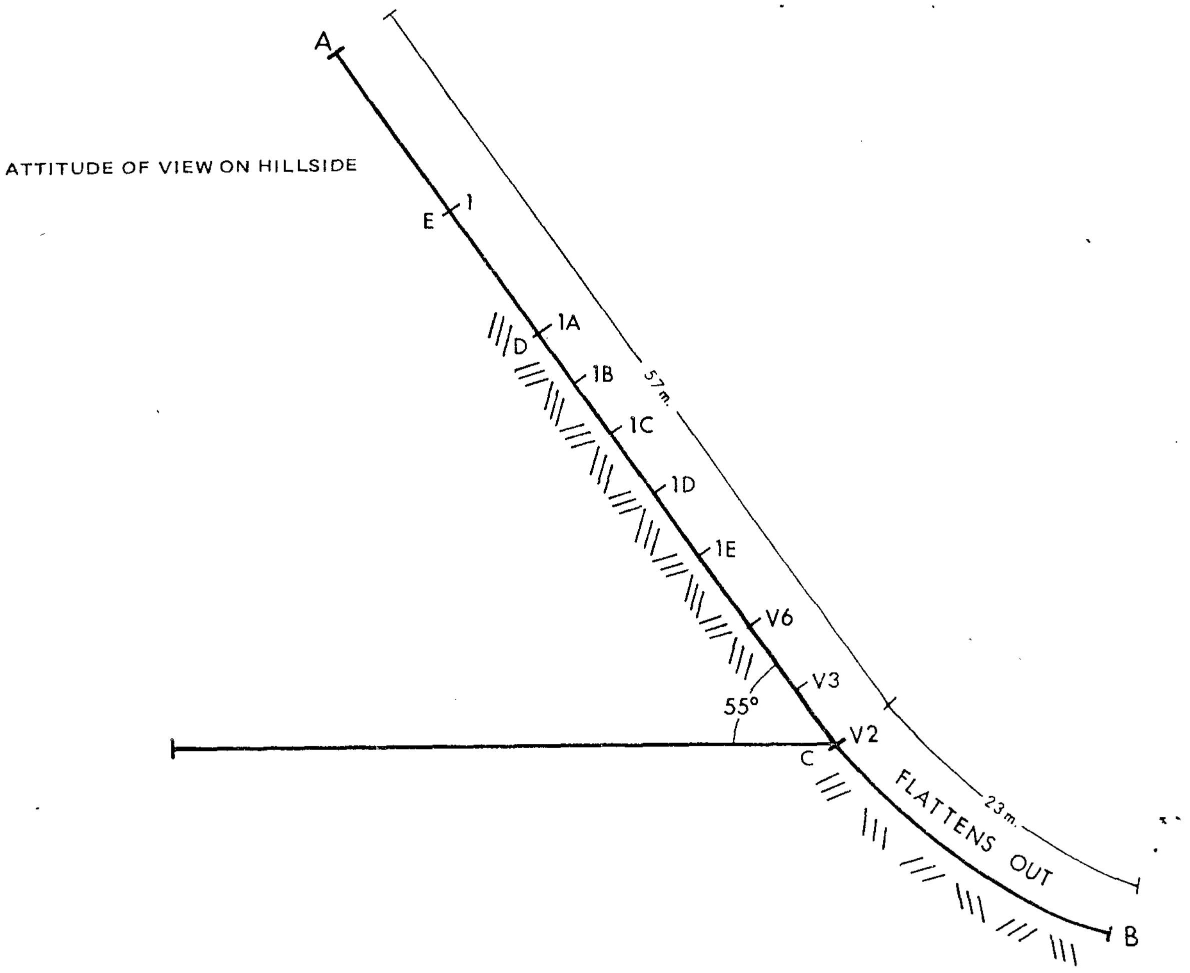
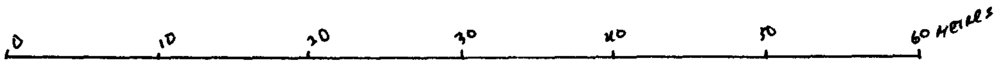
VEIN - JONY ONE CLAIM

SAMPLE LOCATIONS & NUMBERS

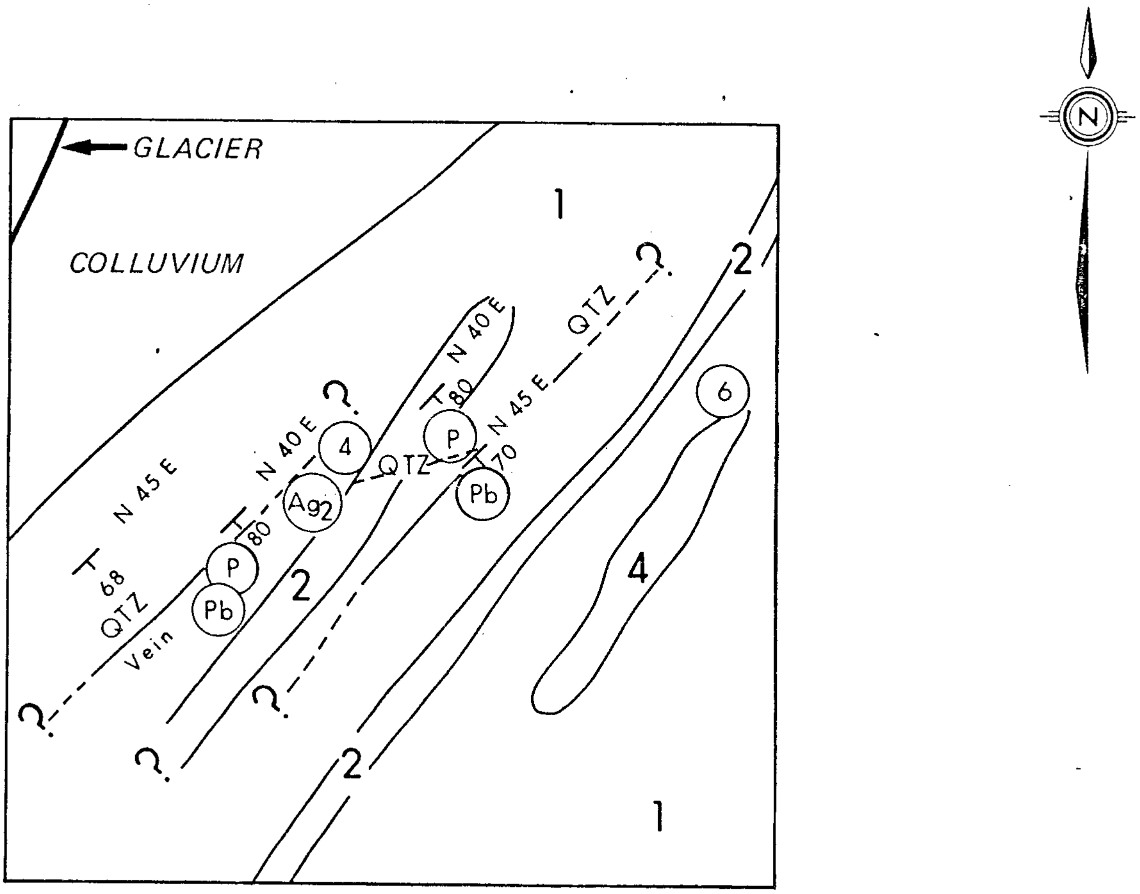


SAMPLE #1	Ag - 0.06	OZ./TON	Au - TRACE		
SAMPLE #1A	73.0	OZ./TON	Pb - 3-10%	Zn - 3.10%	
SAMPLE #1B	29.2	OZ./TON	Cu - 3.10%	Zn - 3.10%	
SAMPLE #1C	11.7	OZ./TON	Au - 0.010 OZ./TON	Cu - 3-10%	Zn 3-10%
SAMPLE #1D	2.7	OZ./TON	Au - 0.010 OZ./TON	Cu - 3-10%	
SAMPLE #1E	5.2	OZ./TON	Cu - 3-10%		
SAMPLE V2	7.8	OZ./TON	Zn - MAJOR		
SAMPLE V3	3.5	OZ./TON			
SAMPLE V6	3.8	OZ./TON			

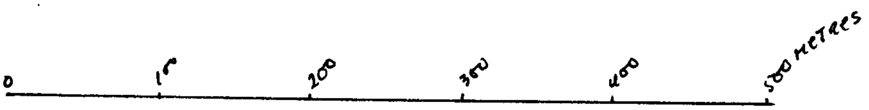


SCALE:

JONY 2 CLAIM - UNIT 18 OF REPORT
SAMPLE LOCATIONS ON SOUTH END OF PROPERTY



Pt	PYRITE	
Pb	GALENA	
QTZ	QUARTZ	
Ag2	COMBINED	J-3-1 J-3-2 J-3-3
④	J-3-4	
⑥	J-3-6	



SCALE:

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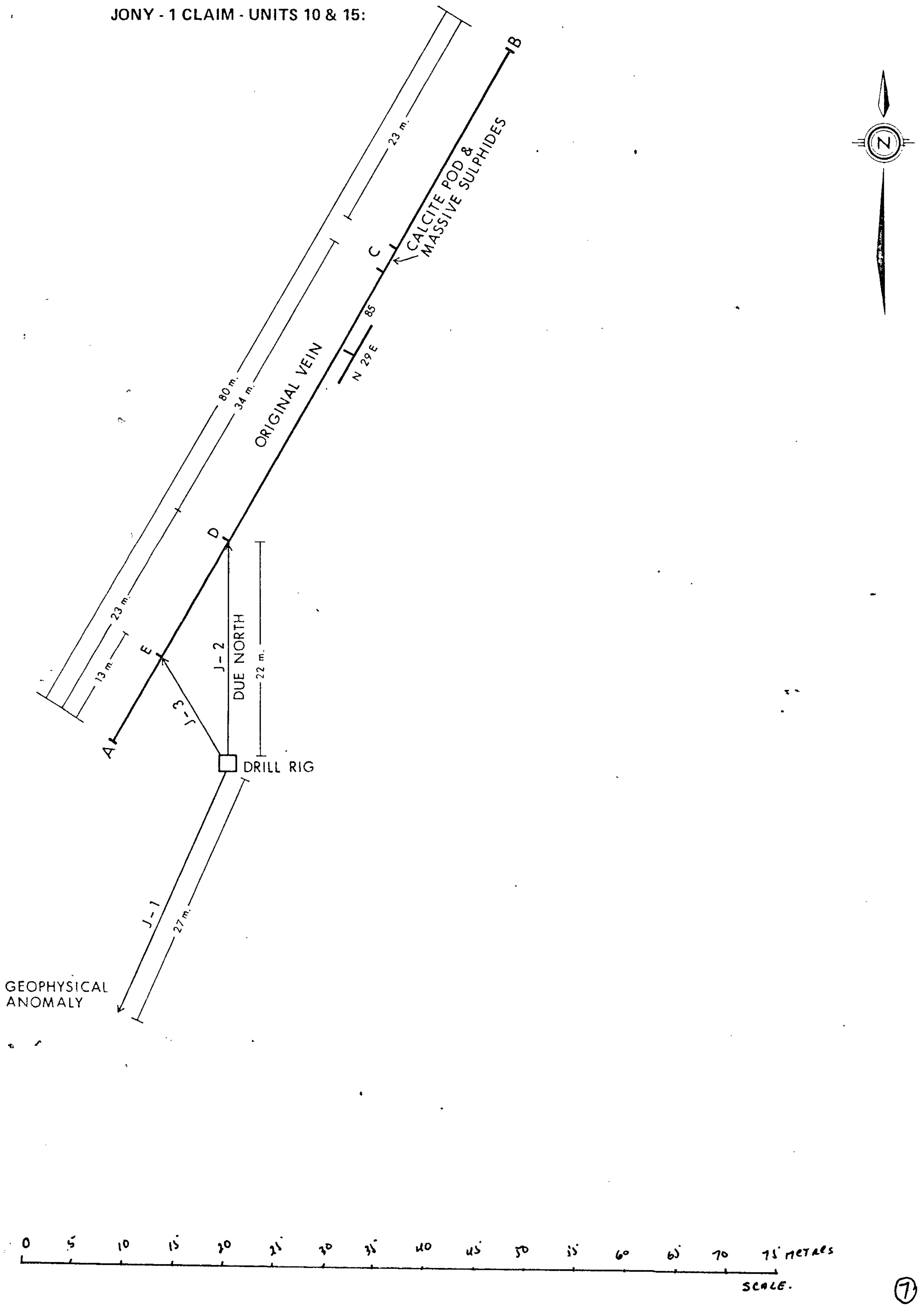
ASSAY RESULTS

	oz./ton		Percent		
Sample #	Silver	Gold	Copper	Lead	Zinc
1	0.06	0.002	Trace	Trace	Trace
1A	73.0	0.008	1%-3%	3%-10%	3%-10%
1B	29.2	0.002	3%-10%	1%-3%	3%-10%
1C	11.7	0.010	3%-10%	.3%-1%	3%-10%
1D	2.7	0.010	3%-10%	.01%-.03%	Trace
1E	5.2	0.002	3%-10%	.1%-.3%	Trace
J-1-1	-	Trace	Trace	-	-
J-3-1	3.14	Trace	-	-	-
J-3-2	3.34	Trace	-	-	-
J-3-3	0.40	Trace	-	-	-
J-3-4	-	Trace	-	-	-
J-3-5	-	.010	-	-	-
J-3-6	-	Trace	-	-	-
V2	7.80	Trace	-	-	Major
V3	3.54	Trace	-	Trace	Low
V6	3.82	Trace	-	-	Low

Assay results from Bondar-Clegg & Company Ltd. - Whitehorse, Yukon
Loring Laboratories - Calgary, Alberta

ORIGINAL ASSAY RESULTS ARE CONTAINED IN POCKET IN BACK OF REPORT.

JONY - 1 CLAIM - UNITS 10 & 15:



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GEOPHYSICAL REPORT

ON

JONY CLAIM GROUP

ATLIN DISTRICT BRITISH COLUMBIA

for

MAFEKING MINERALS LIMITED

Calgary, Alberta
September, 1980

F. Dalidowicz, P.Eng.

1. SUMMARY

During the period from June 25 to July 8, 1980, a programme of ground electromagnetic and magnetic surveying was carried out over a portion of the Jony Claim Group located in the Atlin District of Northern British Columbia.

The purpose of these investigations was to locate a possible subsurface extension of an exposed silver-copper vein.

As a result of these investigations, two good quality bedrock conductors were outlined; one of which correlated with the known mineralization and has a coincident magnetic low. The second conductor is off strike from the known trend of the vein and flanks a local magnetic high. The magnetics suggest the possibility of two different hosts for mineralization.

Both anomalies will be evaluated by drilling during the course of the summer exploration programme.

10. CONCLUSIONS

Two good quality bedrock conductors were outlined as a result of the ground geophysical investigations. Both are extremely good quality conductors that could be representative of massive sulphide sources.

One conductor is directly associated with the mineralized vein and correlates with a 200 gamma magnetic low.

The second conductor as best outlined on Line 0+00 at Station 0+37E flanks a positive magnetic anomaly.

The magnetics outlined a complex geological environment within which there are several linear mafic bodies and fault systems. Two of the interpreted faults may mark the boundary between a horst-graben block.

The HEM survey has successfully indicated the presence of two good bedrock conductors. Both should be evaluated by drilling during the course of the exploration season.

11. RECOMMENDATIONS

The two bedrock conductors outlined by the geophysics should be tested by diamond drilling. The conductor centred at Station 0+37E on Line 39+00S should be drill tested below the 25 metre depth estimate.

A second hole should be drilled to evaluate the vein below surface and to test the HEM anomaly centred at Station 0+00 on Line 12+00N.

Both conductors are interpreted to have near vertical dips. Exact positioning of the hole collars will have to be determined taking into account the immediate local terrain conditions.

Respectfully submitted,

REGISTERED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

FD:g

F. Dalidowicz, M.Sc.(A), P.Eng.

DIAMOND DRILLING

B Q Core = J-1 - Depth 67.3 metres
0 - 53.3 metres - essentially monzonitic rock
53.3 - 67.3 metres granitic rock
Mineralization, disseminated pyrite carrying trace to no gold values

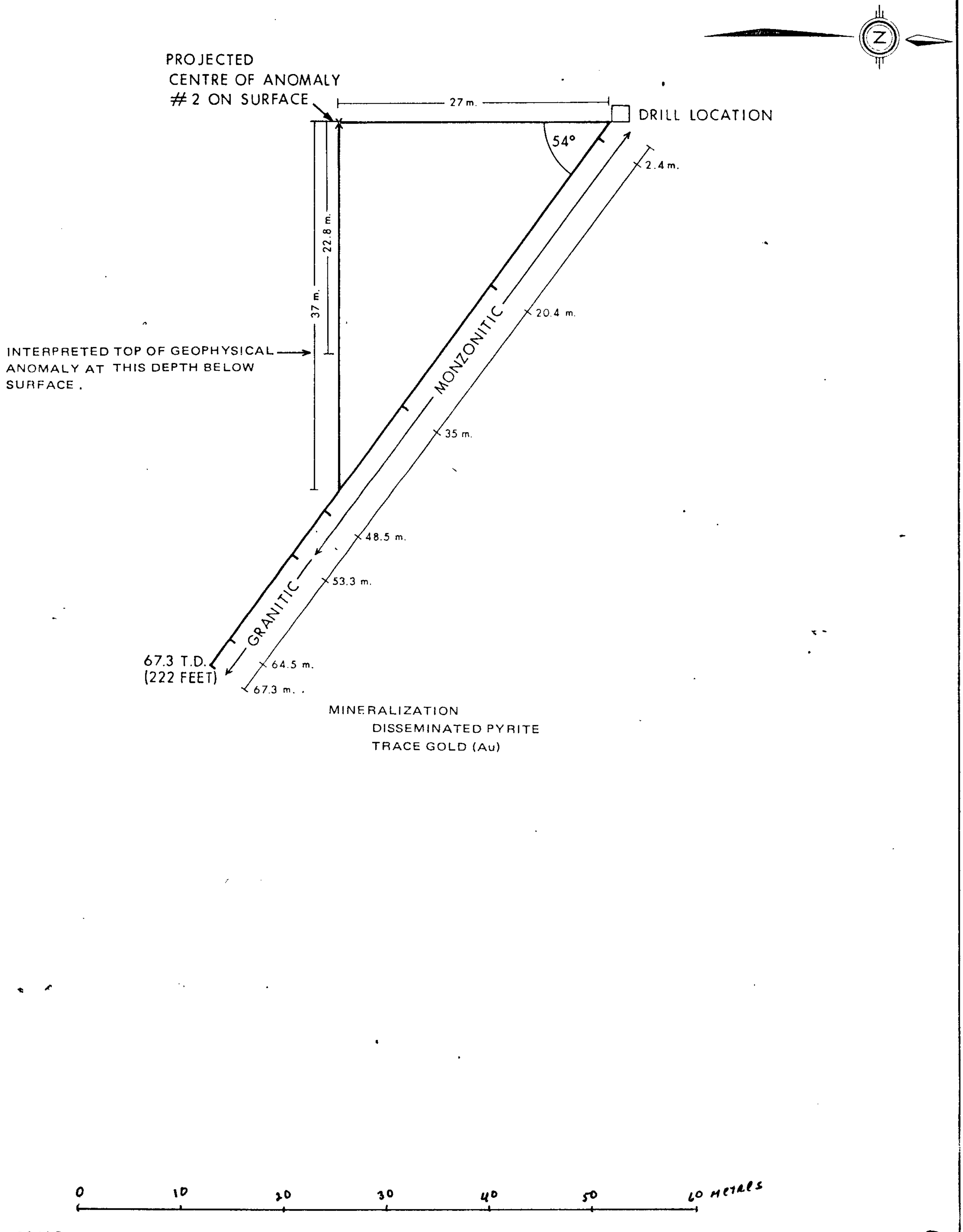
= J-2 - Depth 44.3 metres
0 - 44.3 metres essentially monzonitic rock
Mineralization - disseminated pyrite carrying trace to no gold values. Calcite mineralization and Hematite staining in shear zone.

= J-3 - Depth 27 metres
0 - 16 metres - essentially monzonite rock
16 - 17.3 metres - basic dyke
17.3 - 17.8 - monzonite
17.8 - 21.2 - rhyolite
21.1 - 27.0 - monzonite
Mineralization - Calcite mineralization and hematite staining in shear zone, dissiminated pyrite carrying trace to no gold values.

Diamond drilling was curtailed upon the completion of the third hole with negative results, in that, the mineralization seen on surface did not extend to the depths intersected by drill holes J-2 and J-3, the vertical depths in question being 28 and 13 metres respectively.

JONY - 1 CLAIM - UNITS 10 & 15:

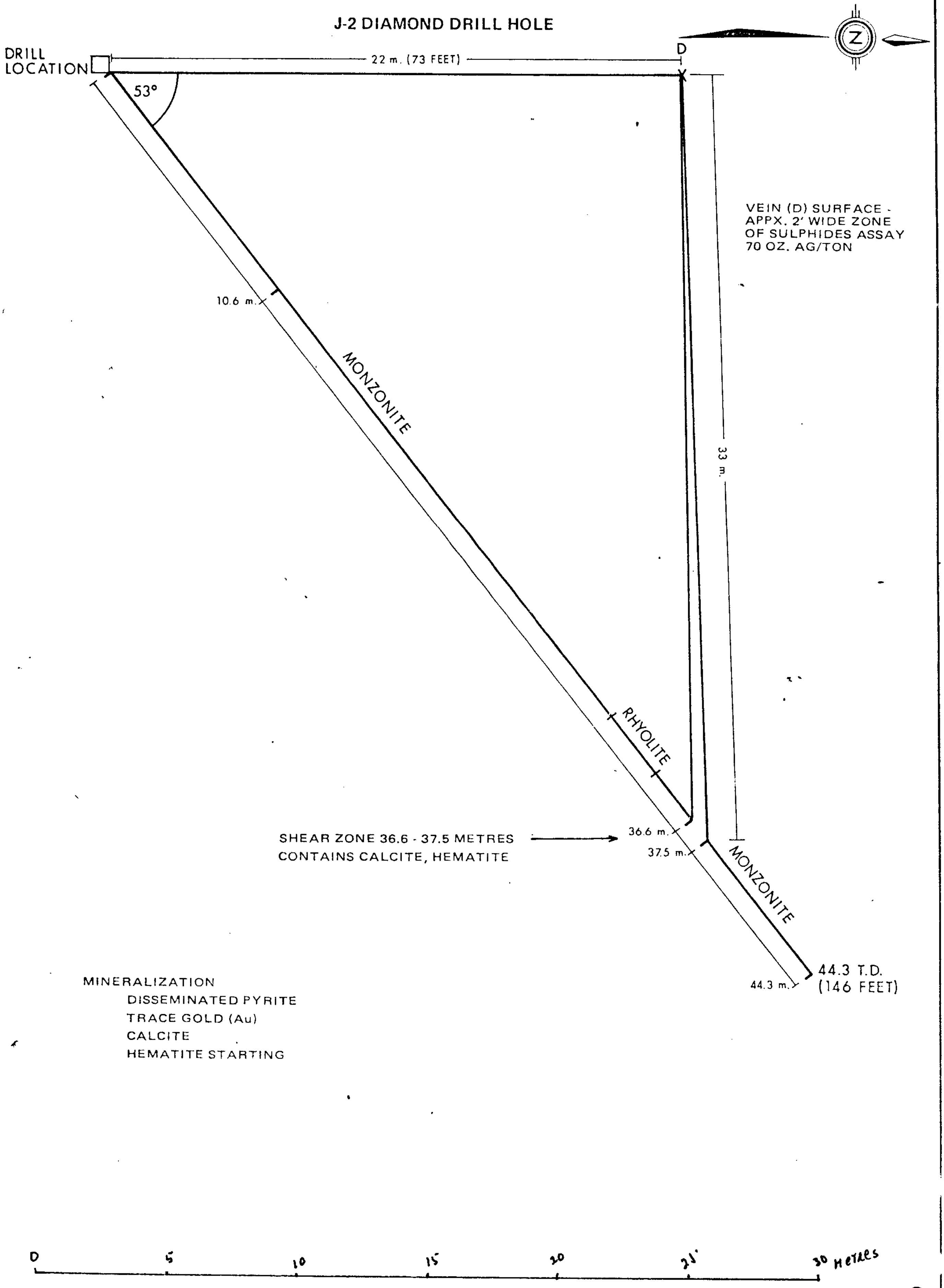
J-1 DIAMOND DRILL HOLE



MINERALIZATION
DISSEMINATED PYRITE
TRACE GOLD (Au)

JONY - 1 CLAIM - UNITS 10 & 15:

J-2 DIAMOND DRILL HOLE



SHEAR ZONE 36.6 - 37.5 METRES
CONTAINS CALCITE, HEMATITE

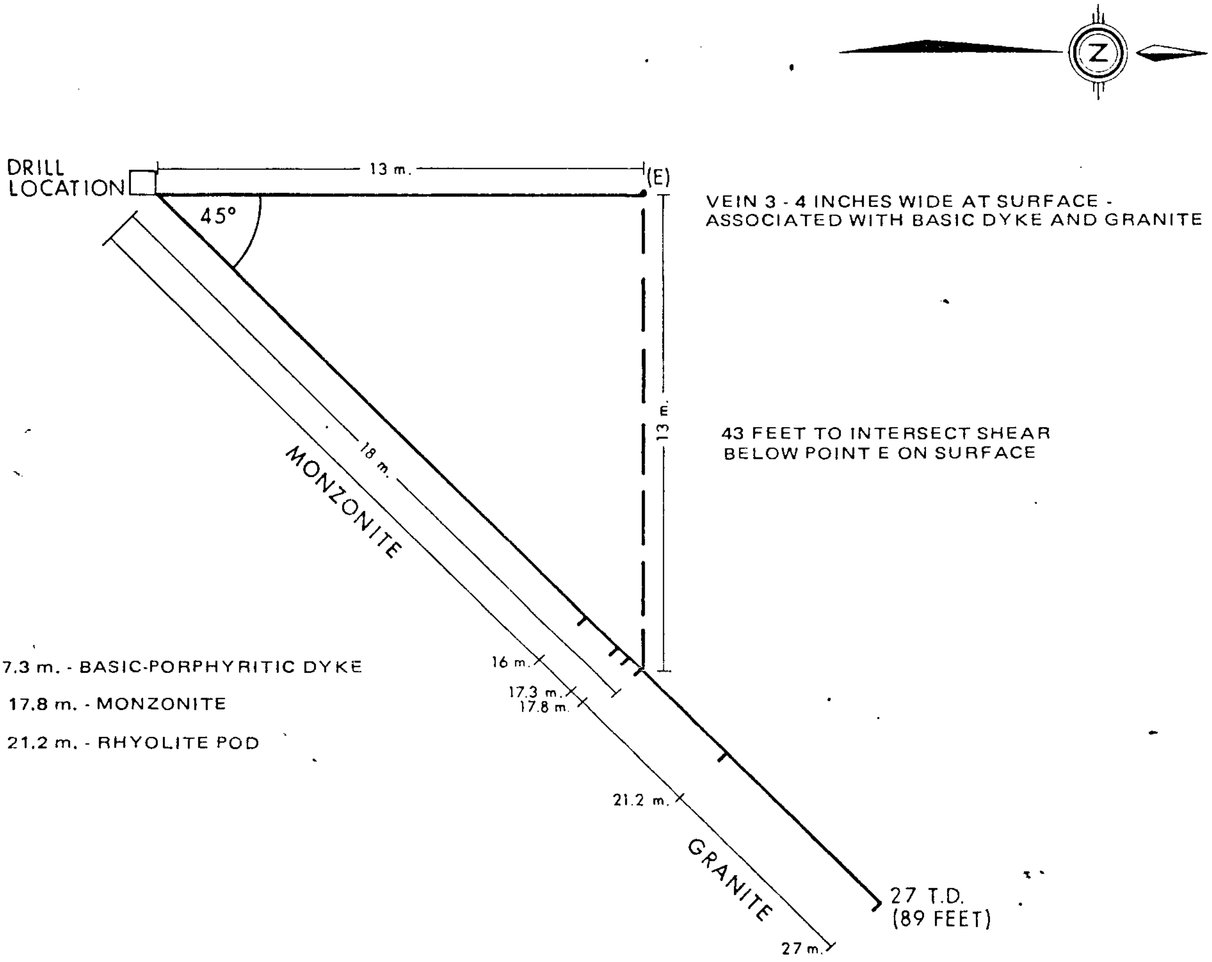
MINERALIZATION
  DISSEMINATED PYRITE
  TRACE GOLD (Au)
  CALCITE
  HEMATITE STARTING

SCALE:

⑨

JONY - 1 CLAIM - UNITS 10 & 15:

J-3 DIAMOND DRILL HOLE



VEIN 3 - 4 INCHES WIDE AT SURFACE - ASSOCIATED WITH BASIC DYKE AND GRANITE

43 FEET TO INTERSECT SHEAR BELOW POINT E ON SURFACE

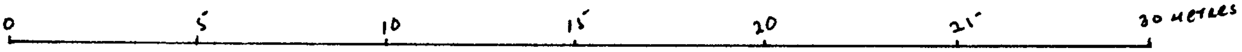
16 m. - 17.3 m. - BASIC-PORPHYRITIC DYKE

17.3 m. - 17.8 m. - MONZONITE

17.8 m. - 21.2 m. - RHYOLITE POD

NO SIGNIFICANT SULPHIDE MINERALIZATION ENCOUNTERED IN THE SHEAR. CORE CONTAINS OCCASSIONAL BLEBS OF PYRITE AND A SILVER-GREY COLOURED MINERAL. (GALENA) ASSAYED TRACE FOR GOLD (Au)

SCALE:



Drill Platform

Twelve six foot deep Cobra drill holes were drilled and blasted to construct a twelve foot by twenty foot drill platform into the side hill from whence three B Q diamond drill holes were completed.

The base of the platform was constructed of fifteen foot long, 6 x 6 inch planks. The platform was anchored by the use of one half inch, preformed wire rope and six foot eye bolts placed in the mountainside.

This anchorage gave the required stability and safety factors necessary for successful drilling.

DAILY WORK LOG - 1980 - EXPLORATION

June

13	Logistics - Camp Accumulation - Calgary
16	" " " "
17	" " " "
18	Travel - Truck - Crew - Partial Camp to Whitehorse
19	" " " " "
20	" " " " "
21	Move in - part camp - part crew
22	Move in - rest of camp - rest of crew - rain a.m.
23	Setting up camp (Rain a.m.)
24	" " - Line cutting - prospecting
25	Prospecting - Line cutting
26	" - Geophysical survey
27	Completed Line cutting: Packed Geophysical equipment to survey area - prospected.
28	Rain - camp work
29	Geophysics - prospect old trench area.
30	Geophysics - back pack radio to top of mountain, south end of claim Jony #1

July

1	Geophysics - prospecting
2	Rain - camp work
3	Prospecting - geophysics
4	" " - logistics arranging for aircraft for geophysical move out
5	Geophysics - prospecting
6	" "
7	Packed geophysical gear - samples and camp gear back to Tunjony Lake camp from claims area
8	Rain - camp work - new radio works
9	Propect - moved plugger - steel - tent - stove up to old trench area - measured distance for water for diamond drilling. Drilled and blasted four holes for drill platform
10	Drill and blasted eight holes for drill platform
11	Prospect - prepare drill platform
12	" - geological mapping
13	Rain - prospect p.m.
14	Prospect - geological mapping
15	Rain - camp work
16	Rain - "
17	Prospect - geological mapping
18	Prospecting
19	Rain - camp work
20	" " /logistics for diamond drill move in
21	" " /drill move - Whitehorse - Atlin, B.C.
22	" Prospecting/drill move - " - " "

23	" " " " - Atlin, B.C. - Tunjony Lake
24	Prospect/drill move completed - Atlin - Tunjony Lake
25	Geological mapping - organize drill gear for move by helicopter from Tunjony Lake to claim area
26	Helicopter move - camp and drill rig & equipment
27	Set up new camp - set up drill rig - drill six eye bolt holes for safety anchor or drill platform
28	Complete camp and drill set up
29	Diamond drilling - rain
30	Diamond drilling - geologicial mapping
31	" " " "

August

1	" " " "
2	" " " "
3	" " - rain - camp work
4	" " - geological mapping
5	" " " "
6	" " - report compilation
7	" " - logistics camp & drill move on 8th
8	Moved camp and drill back to Tunjony Lake
9	Set up camp - move drill gear to Atlin
10	" " " - move drill gear, Atlin to Whitehorse
11	Split core - drill gear move completed
12	Split core
13	Prospect and geological mapping
14	Rain a.m. - prepare for camp move out
15	Prospect - partial camp move
16	" " "
17	Complete camp move to Atlin, B.C.
18	Trucking camp gear - Atlin, Whitehorse (220 mile round trip)
19	Trucking camp gear - Atlin, Whitehorse
20	Packed camp gear for temporary storage - Whitehorse
21	Completed camp gear and field gear logistics
22	Travel - 3/4 ton full of gear to Calgary
23	" " " " " (Cassiar)
24	" " " " " (Smithers)
25	" " " " - arrive Calgary - 9 p.m.
26	Logistics - camp and field gear - Calgary

This completes the field portion of the exploration program

DISTRIBUTION OF EXPLORATION COSTS

COST CENTERS	EXPENSE		DAILY
Bema Industries	$ 1,445.84	73 days	19.8060
Geological	21,649.50	Geology	
Geophysical	10,836.15	Geophysics	
Diamond Drilling	43,477.94	Diamond Drilling	
Field Wages	14,187.57		194.3503
Subsistance	3,208.75		43.9555
Communications	115.88		1.5874
Equipment	7,530.32		103.1551
Supplies	331.39		4.5396
Fuel, Oil, Lubricants	3,785.71		51.8590
Office Supplies	698.92		9.5742
Insurance	1,150.00		15.7535
Travel Expense	4,508.79	Logistics	
Transportation Air	22,157.28		303.5244
Legal	397.07		5.4393
Admin-Overhead	1,500.00		20.5479
Camp Supplies & Expense	2,688.37		36.8269
Transportation (Truck)	896.44	Logistics	
Assays	409.20	Geology	
			-5.6939
Interest Income (Net)	- 415.66		805.2252
	$140,559.46		

DAY RATE OF 805.2252 x 73 Days =	58,781.44
Geology	21,649.50
Geophysics	10,836.15
Diamond Drilling	43,477.94
Logistics	4,508.79
Logistics	896.44
Geology	409.20
	$140,559.46

Field cost to date October 8th, 1980 equals $140,559.00

TIME DISTRIBUTION FROM DAILY WORK LOGS

A) LOGISTICS (All costs not directly chargeable to any one specific section). Will constitute a support cost and will be pro-rated between the three sections of Geology, Geophysics and Diamond Drilling) = 19 days

B) GEOLOGY = 27.5 "

C) GEOPHYSICS = 9 "

D) DIAMOND DRILLING 17.5 "

A) Logistics

19.0 Days x Day Rate $ 805.23 = $ 15,299.37
Travel Expense = 4,508.79
Transportation (Auto) = 896.44

Total = $ 20,704.60

B) Geology & Prospecting

27.5 Days x $805.23 Daily support rate = $22,143.83
Geology = 21,649.50
Assays = 409.20

Total = $ 44,202.53

C) Geophysics

9 Days x $805.23 Daily support·rate	=	$ 7,247.07
Geophysics		10,836.15
Total	=	$ 18,083.22

D) Diamond Drilling

17.5 Days x $805.23 Daily support rate	=	$14,091.53
Diamond Drilling	=	43,777.94
Total	=	$ 57,569.47

LOGISTICS	20,704.00
GEOLOGY	44,203.00
GEOPHYSICS	18,083.00
DIAMOND DRILLING	57,569.00
TOTAL	$ 140,559.00

Prorating of Logistics costs as follows

$44,202.00 + (37.14% of 20,704.00)	$7,690.47	=	$ 51,892.47
18,083,00 + (14.39% of 20,704.00)	$2,979.31	=	21,062.31
57,569.00 + (48.43% of 20,704.00)	10,035.22	=	67,604.22
Total			$140,559.00

Hence for assessment submission the following figures are appropriate.

A) Geology (includes)	=	$ 51,892.47
B) Geophysics	=	21,062.31
C) Diamond Drilling	=	76,604.22
Total		$140,559.00

(i)

DISTRIBUTION OF EXPLORATION TIME

June/8

DAYS.

	LOGISTICS	TRAVEL	MOVE-IN	GEOLOGY	GEOPHYSICS			
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13	1							
14								
15								
16	1							
17	1	1						
18		1						
19		1						
20		½	½					
21			1					
22				1				
23				1				
24				1				
25					1			
26					1			
27					1			
28					1			
29					1			
30								
31	3	3½	1½	3	5		TOTALS	
32								
33								
34								
35								
36								
37								
38								
39								
40								

②

JULY/80

DAYS

	Geophysics	Geology	Diamond Drilling	
1	½	½		
2	½	½		
3	½	½		
4	½	½		
5	½	½		
6	½	½		
7	½	½		
8	½	½		
9		½	½	
10			1	
11		½	½	
12		1		
13		1		
14		1		
15		1		
16		1		
17		1		
18		1		
19		1		
20			1	
21			1	
22		½	½	
23			1	
24		½	½	
25		½	½	
26			1	
27		½	½	
28			1	
29			1	
30		½	½	
31		½	½	
32	4	16	11	TOTAL

③

DAYS

AUGUST / 80

	3 Geology	4 Diamond Drilling	5 Drill Move-out	6 Camp Move-out	7 Logistics	8 Travel out	9	10
1	½	½						
2	½	½						
3	½	½						
4	½	½						
5	½	½						
6	½	½						
7	½	½						
8		1						
9		1						
10		1						
11	1							
12	1							
13	1							
14	1							
15	½		½					
16	½		½					
17			1					
18				1				
19				1				
20				1				
21					1			
22						1		
23						1		
24						1		
25						1		
26					1			
27								
28								
29								
30								
31								
32	8½	6½	2	3	2	4		TOTAL

35	LOGISTICS - TRAVEL - IN - OUT	19
36	GEOLOGY	27.5
37	GEOPHYSICS	9
38	DIAMOND DRILLING	17.5
39		73 TOTAL

EXPLORATION COSTS.

GOVERNMENT REGULATIONS

A "Notice of Work on a Mineral Property", was submitted by the author to the appropriate authorities on April 30, 1980.

On May 12, 1980, "Proposed Mineral Exploration Permit 17X-1-10 was issued to Mafeking Minerals Ltd., giving authority to Mafeking to implement her proposed exploration program on the Jony one, two and three claims.

A bond of $500 was requested by the department and posted by Mafeking Minerals Ltd. on behalf of the Mafeking Minerals Ltd., 1980 partnership on June 17, 1980.

The required, "Notice of Work on a Mineral Property", due upon completion of an exploration program was completed and submitted to the Minister of Energy, Mines and Petroleum Resources on August 24th, 1980.

Ownership of Jony One, Two and Three Mineral Claim

Mafeking Minerals Ltd., the owner of the claims in question assigned a 55 per cent interest in Jony one, two and three mineral claims for an exploration fund of 190,000 dollars generated by the partners of the, "Mafeking Minerals 1980 Partnership".

The exploration fund provided the capital to explore the claims via geological and geophysical surveys, plus diamond drilling.

As of the report date, the ownership of the Jony one, two and three mineral claims is as follows:

Mafeking Minerals Ltd. 1980 Partnership	55%
Mafeking Minerals Ltd.	40%
D. Poon	5%
TOTAL	100%

Mafeking Minerals Ltd. is in turn held by the following.

E.M. Estabrooks - President and Chief Geologist	50%
M. O'Hara - Secretary-Treasurer and Comptroller	45%
J.D. Salmon - Legal Adviser	5%
TOTAL	100%

Mafeking Minerals Limited
550-Sixth Avenue S.W. Calgary, Alberta
T2P 0S2 261-9810

Re: MAFEKING MINERALS (1980) PARTNERSHIP
LIST OF LIMITED PARTNERS

NAME AND ADDRESS

1. Fred T. Boyle
1012 Kildonan Place S.W.
Calgary, Alberta
T2V 4A9
Phone: 252-4751

2. Dieter Cosandier
4211 Villa Crescent N.W.
Calgary, Alberta
T2L 2K2
Phone: 288-4314

3. J. Everett Hodgson
39, 1901 Varsity Estates Dr. N.W.
Calgary, Alberta
T3B 4T7
Phone: 247-0611

4. Keefer Wholesale Florist Ltd. "N"
Norman Chin
310 Prior Street
Vancouver, B.C.
V6A 2E8
Phone: (604) 687-4421 Office

5. Keefer Wholesale Florist Ltd. "R"
Ronald Chin
310 Prior Street
Vancouver, B.C.
V6A 2E8
Phone: (604) 687-4421 Office

6. Henry Kwong
Holiday Cleaners (Haysboro) Ltd.
8415 Elbow Drive S.W.
Calgary, Alberta
Phone: 255-5432

MAFEKING MINERALS (1980) PARTNERSHIP-LIST OF LIMITED PARTNERS

NAME AND ADDRESS

7. George K.H. Lee
1304 Northcote Rd. N.W.
Calgary, Alberta
T2K 2K7
Phone: 282-2461

8. Leprechaun Agencies Ltd.
Murray Dea
2001, 500 - 4th Ave. S.W.
Calgary, Alberta
T2P 2V6
Phone: 281-4475

9. Charles Y. Nakamura
432 - 88th Avenue S.E.
Calgary, Alberta
T2H 1V1
Phone: 252-0724

10. Mori J. Ohara
4435 Vandergrift Cr. N.W.
Calgary, Alberta
T3A 0J1
Phone: 288-5709

11. David Poon
Moss Lawson & Co. Ltd.
200, 330 - 5th Ave. S.W.
Calgary, Alberta
Phone: 252-0480

12. Robert Poon
56 Thorncliffe Park Drive
Apt. 209
Toronto, Ontario
M4H 1K7
Phone: (416) 423-6996

Mafeking Minerals Limited
550-Sixth Avenue S.W. Calgary, Alberta
T2P 0S2 261-9810

MAFEKING MINERALS (1980) PARTNERSHIP-LIS

NAME AND ADDRESS

13. Sumio Setoguchi
2613 - 10th Ave. North
Lethbridge, Alberta
Phone: 328-5181

14. Albert Shimbashi
711 Rideau Rd. S.W.
Calgary, Alberta
T2S 0R9
Phone: 243-9583

15. Richard Wai-Ming Siu
187 Maidstone Way N.E.
Calgary, Alberta
T2A 3Z4
Phone: 273-3281

16. David Tak
9623 - 52nd Street
Edmonton, Alberta
T6B 2K7
Phone: 466-7474

17. Jack Wong
1175 Lake Placid Dr. S.E.
Calgary, Alberta
Phone: 278-5887

18. Georgina Lee
1304 Northcote Road N.W.
Calgary, Alberta
Phone: 278-5887

19. Yuk Har Wong
1175 Lake Placid Dr. S.E.
Calgary, Alberta
Phone: 278-5887

CERTIFICATE

I, E.M. Estabrooks, of the City of Calgary, in the Province of Alberta do certify that:

1) I hold a, "Bachelor of Science", degree, "Geology Major", from Brigham Young University, in Provo, Utah, U.S.A.

2) I am a member of the Association of Professional Engineers, Geologists and Geophysicists of the Province of Alberta, as a Professional Geologist, and have practiced my Geological profession since 1958.

3) I have based my conclusions and recommendations contained in this report on my experience and knowledge of exploration geology.

4) I am President and Chief Geologist for Mafeking Minerals Ltd. operating partner for the Mafeking Minerals Ltd. 1980 Partnership and as such, have a financial interest in the property, as outlined by the Mafeking ownership

E M Estabrooks

E. M. ESTABROOKS, BSC. P. Geol.

GEOPHYSICAL REPORT

ON

JONY CLAIM GROUP

ATLIN DISTRICT BRITISH COLUMBIA

104 K/7W

58° 24 N 132° 48 W

for

MAFEKING MINERALS LIMITED

Calgary, Alberta
September, 1980

F. Dalidowicz, P.Eng.

TABLE OF CONTENTS

1. SUMMARY

During the period from June 25 to July 8, 1980, a programme of ground electromagnetic and magnetic surveying was carried out over a portion of the Jony Claim Group located in the Atlin District of Northern British Columbia.

The purpose of these investigations was to locate a possible subsurface extension of an exposed silver-copper vein.

As a result of these investigations, two good quality bedrock conductors were outlined; one of which correlated with the known mineralization and has a coincident magnetic low. The second conductor is off strike from the known trend of the vein and flanks a local magnetic high. The magnetics suggest the possibility of two different hosts for mineralization.

Both anomalies will be evaluated by drilling during the course of the summer exploration programme.

2. INTRODUCTION

During the period of June 25 to July 8, 1980 M P H Consulting Limited completed a programme of horizontal loop electromagnetic and magnetic surveys over a portion of the Jony Claim Group in the Atlin District of northern British Columbia.

The purpose of the ground geophysical surveys was to investigate a possible subsurface extension along strike of a mineralized silver-copper vein. This vein had been previously exposed over a 37 meter length.

The field geophysical programme was carried out by M P H Consulting under the direct supervision of F. Dalidowicz, P.Eng. Overall direction was provided by E. M. Estabrooks, P.Geol., of Mafeking Minerals Ltd.

This report discusses the results of the geophysical surveys.

3. LOCATION AND ACCESS

Figure 1 shows the location of the Jony Claim Group and the outline of the geophysical grid.

The claim group is located within the Topographic Map Sheet M 10/7W (Atlin Mining Division) and is situated between Latitudes 58°00' to 58°26' and Longitudes 132°44' to 132°50'.

Access to the area is by fixed wing aircraft based either in Whitehorse, Yukon (270 km), Atlin, British Columbia (125 km) or Juneau, Alaska (90 km).

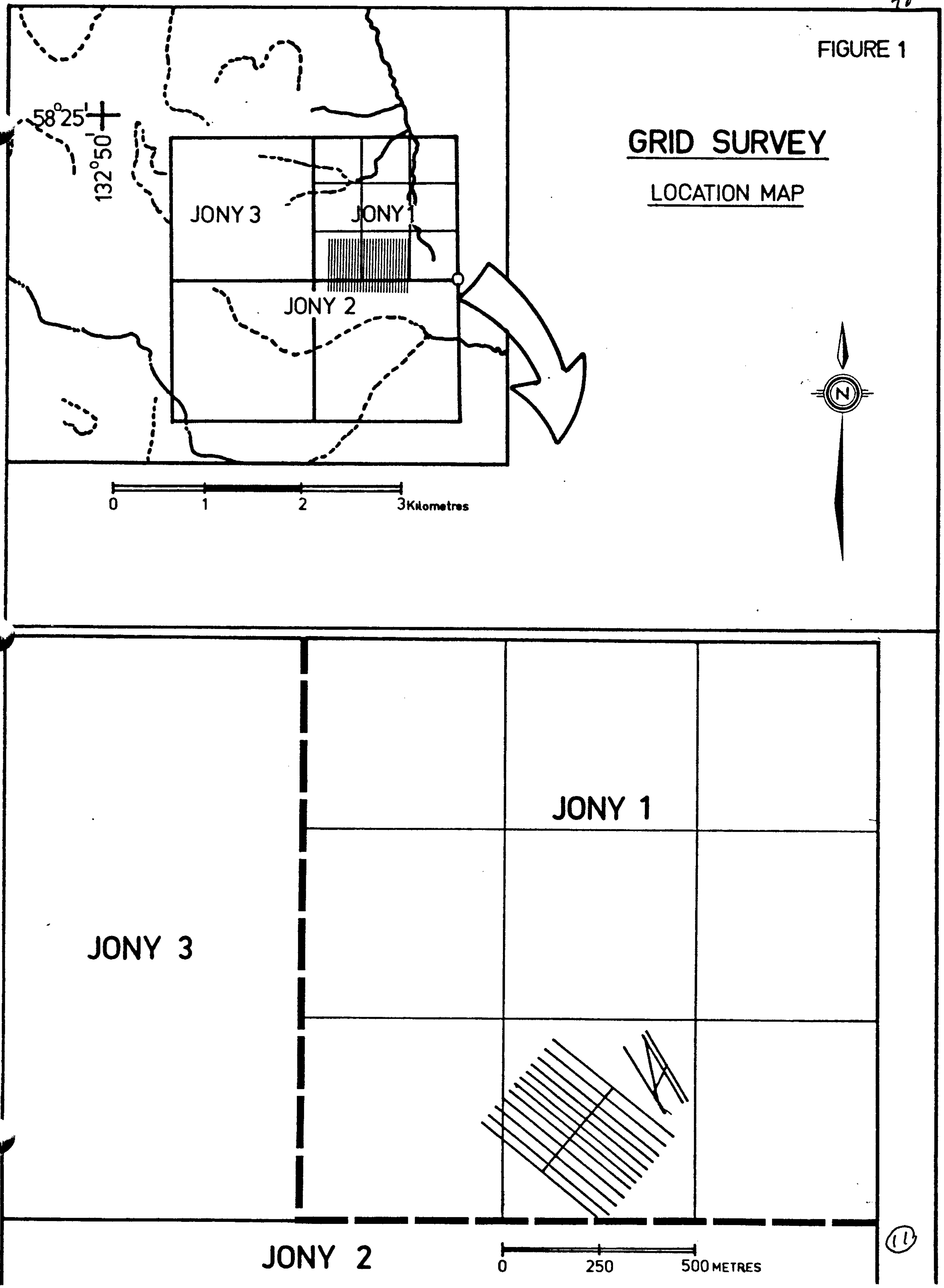
4. PERSONNEL

The survey was conducted by F. Dalidowicz, M.Sc., P.Eng. and R. Hyland, B.Sc., both of M P H Consulting Limited.

FIGURE 1

GRID SURVEY

LOCATION MAP



5. GRID SELECTION

Due to the rugged relief in the local area of investigation, and the poor accessibility to the mineralized vein, two base lines were established.

The mineralized vein strikes in a northeast-southwest direction, the main base line (Grid A) was positioned in the flatter southwest portion of this survey area and oriented at an azimuth of 40 degrees. Cross-lines of 400 metre lengths were established at 25 metre intervals. Stations were flagged at 25 metre intervals (see Figure 1). A total of 4.8 km of line was surveyed on Grid A.

In the steeper portion of the area where the mineralized vein is exposed, a second base line was established at an azimuth of 24 degrees (Grid B). Station 0+00 on Line 12+00N was positioned over the known mineralized vein. The position of the cross-lines is variable for this grid. They were established only were traversing was possible (see Figure I).

Stations along lines were established at 25 metre intervals.

A total of 700 metres of line was surveyed on Grid B.

6. INSTRUMENTATION

6.1 MaxMin II Horizontal Loop Electromagnetic System

A MaxMin II horizontal loop electromagnetic system was used to explore for the presence of subsurface conductors within this survey area.

This system makes use of a moving transmitter and receiver coils (at a fixed separation)aligned in a horizontal coplanor position and connected by a reference cable. The measurements made at the receiver coils are the inphase and quadrature components of the secondary field (expressed in percent of the primary field).

This system has five frequencies varying from 222 Hz to 3555 Hz and a complementary set of cable lengths from 25 to 250 metres. The specifications of the MaxMin II unit are given in Appendix I.

6.2 Magnetometer

A proton precession G-816 Geometrics portable magnetometer was used to record the variations in the earth's magnetic field. This system utilizes the precession of spinning protons of a hydrogen atom within a hydrocarbon fluid. These spinning magnetic dipoles (protons) are polarized by applying a magnetic field using a current within a coil of wire. When the current is discontinued, the protons precess about the earth's magnetic field and in turn generate a small current in the wire. This frequency of precession is proportional to the earth's total magnetic field.

The instrument is read in gammas which is the absolute value of the earth's total field for that station.

The specifications for the G-816 total field magnetometer are given in Appendix II.

7. SURVEY PROCEDURES

7.1 MaxMin II Horizontal Loop Electromagnetic Survey

Initially a 150 metre cable length was to be used for the reconnaissance phase of the survey for both Grids A and B. Due to the local rugged relief bound within Grid B, the crosslines established were of short length (under 200m) and hence to cover these crosslines a 50 metre cable was used.

For all survey stations, readings were taken at 25 metre intervals at frequencies of 1777 and 444 Hz.

7.2 Secant Chaining

Secant chaining was carried out on all survey lines as the topographic relief was severe enough to effect the inphase instrument readings. The purpose of secant chaining the lines is to take into account the variations of slopes and distances encountered between the transmitter and receiver coils.

Details of this technique and data reduction are given in Appendix III.

7.3 Magnetometer Survey

The magnetic data taken was corrected for diurnal variations in the earth's magnetic field. For control, a magnetic base station was set up on Grid A on Line 0+00, Station 0+00.

All magnetic data taken along the crosslines is tied into this main base station using a looping technique. For this type of correction drift is assumed to be linear with time.

8. PRESENTATION OF RESULTS

All field data is presented at a horizontal scale of 1:1250.

The inphase and quadrature components of the HEM data are plotted in profile form at a vertical scale of 1 cm = 10 percent. For each conductor interpreted, the location of the conductor axis, an estimate of the conductor width and where possible a corresponding interpreted depth (m) to the current axis, conductivity-thickness (mhos) and the dip of the conductor is given.

The magnetic data is presented as equal intensity contours superimposed upon a plot of corrected magnetic values observed at each station. The contour interval is variable and is dependent upon the local magnetic gradients.

Faults are interpreted where there are strong distortions and truncations of the magnetic trend.

There are three maps accompanying this report. All three maps are enclosed in a map pocket at the back.

9. INTERPRETATION OF RESULTS

9.1 General Comments

The classical phasor interpretation curves used for the HEM geophysical data are based on thin dyke modelling. The models used have an infinite length and depth extent relative to their width. Although these conditions can be met in the field, there are variations in the modelled parameters that can lead to errors in interpretations.

Phenomenon described in literature as 'thickness effect' and 'current gathering effects',results in a decrease in the inphase-quadrature ratio. When using these phasor diagrams, the interpreted conductivity-thickness product and the depth to the conductor axis can be significantly lower than the true estimate.

Errors in interpretation can also occur if the conductor has a very short strike length or has a finite depth extent. In these cases the conductor will appear deeper.

9.2 MaxMin II HEM Interpretation

No electromagnetic conductors were outlined on Grid A. There are 2 to 3 percent variations in the in-phase data on both frequencies. Although the cross-lines were secant chained, there still may be some influences to the readings from the topographic relief in the area.

In the Grid B area, two good quality bedrock conductors were outlined. On Line 12+00N a conductor is centred over Station 0+00 and is directly over the mineralized vein. (see Maps 1 and 2).

This is a good-quality bedrock conductor that has an interpreted conductivity-thickness product ranging from 150 to 600 mhos (1777 Hz and 444 Hz data base respectively). The interpreted depth to the top of the conductive axis is approximately 30 metres. This depth is obviously too deep in that the vein is observed to be on surface. The reason for this is most likely that the short strike length of the vein causes the conductor depth as interpreted from classical curves to be deeper than in reality.

The lower shoulder of the EM profile observed on both frequencies outlined on the southeast side of the EM anomaly trough is probably due to the influence of gossanous material found to the southeast of the mineralized vein.

The second conductor is best outlined on Line 0+00 at Station 0+37E. This EM anomaly also displays a good quality characteristic that is representative of a semi-massive to massive sulphide source. It is a wide (25 metre) body that is at least 25 metres from surface and appears to be dipping nearly vertically. This conductor appears to continue southward. On Line 39+00S there is a partial outline of a conductor centred at Station 87+00S. The survey line could not be extended eastward due to the local unstable snow conditions.

9.3 Magnetic Interpretation

The magnetic pattern as outlined on Grid's A and B (see Map No. 3) is characterized by steep magnetic gradients that are due to near-surface magnetic sources.

There are two orthoginal positive magnetic linears outlined within Grid A centred along the base line between Lines 0+00 and 0+25N. They reflect the presence of two basic dykes. Both have short strike lengths that may have been truncated or displaced by faults.

There are several fault systems interpreted as shown on the Magnetic Contour Map No. 3. The northwestern and southwestern portions of the Grid A are bounded by the presence of two orthoginal faults.that may mark the boundary between a horst-graben block. The down faulted block is outlined by the presence of gentler magnetic gradients within the northwest and southwest of Grid A as contrasted with the steeper magnetic gradients within the remainder of Grid A and B. A third fault is sub-parallel to Line 0+00 on Grid B.

There is some magnetic correlation with the two HEM conductors outlined within Grid B. The conductor centred over the mineralized vein is locally within a 200 gamma trough. On surface there is evidence of shearing along the strike of the vein. This shear is likely the cause of this localized magnetic expression.

The second HEM conductor (on Line 0+00, Station 0+37E) flanks a local magnetic positive anomaly. Here the conductive source may be within a mafic host rather than a shear system.

10. CONCLUSIONS

Two good quality bedrock conductors were outlined as a result of the ground geophysical investigations. Both are extremely good quality conductors that could be representative of massive sulphide sources.

One conductor is directly associated with the mineralized vein and correlates with a 200 gamma magnetic low.

The second conductor as best outlined on Line 0+00 at Station 0+37E flanks a positive magnetic anomaly.

The magnetics outlined a complex geological environment within which there are several linear mafic bodies and fault systems. Two of the interpreted faults may mark the boundary between a horst-graben block.

The HEM survey has successfully indicated the presence of two good bedrock conductors. Both should be evaluated by drilling during the course of the exploration season.

11. RECOMMENDATIONS

The two bedrock conductors outlined by the geophysics should be tested by diamond drilling. The conductor centred at Station 0+37E on Line 39+00S should be drill tested below the 25 metre depth estimate.

A second hole should be drilled to evaluate the vein below surface and to test the HEM anomaly centred at Station 0+00 on Line 12+00N.

Both conductors are interpreted to have near vertical dips. Exact positioning of the hole collars will have to be determined taking into account the immediate local terrain conditions.

Respectfully submitted,

F. Dalidowicz, M.Sc.(A), P.Eng.

REGISTERED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

FD:g

CERTIFICATE

I, F. Dalidowicz of Calgary, Alberta certify that

1) I hold a Bachelor of Applied Science degree from Queen's University in Kingston, Ontario and a Master of Science (Applied) degree in Mineral Exploration from McGill University in Montreal, Quebec.

2. I am a Member of the Association of Professional Engineers of the Province of Ontario and have practised my profession continuously since graduation.

3) I have based my conclusions and recommendations contained in this report on my experience and knowledge of interpretation and application of geophysical methods and on my previous experience in similar geological environments.

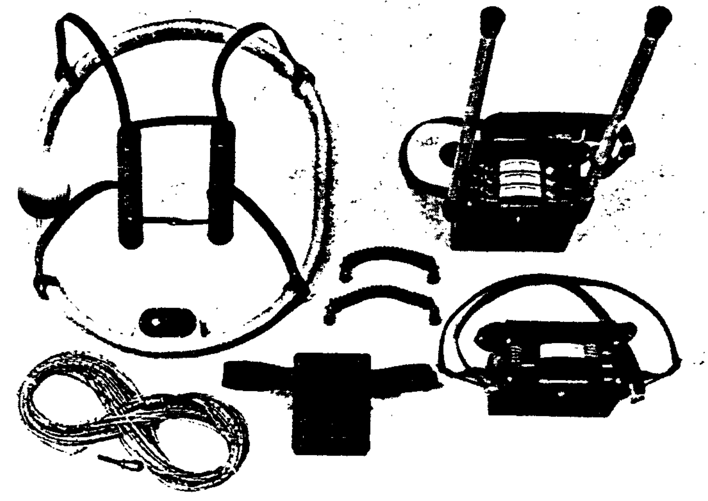
4) I hold no interest, directly or indirectly in this property, other than professional fees, nor do I expect to receive any interest in the property or in Mafeking Minerals Limited.

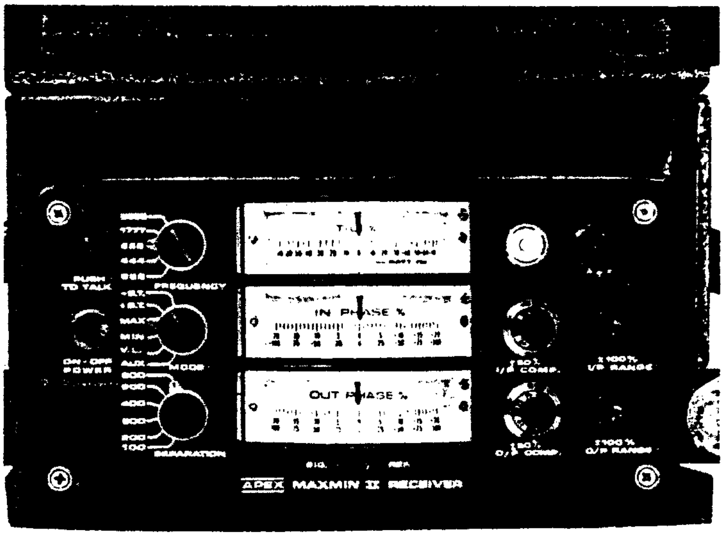
Calgary, Alberta
September, 1980

Frank Dalidowicz, P.Eng.

APPENDIX I

MAXMIN II HEM SPECIFICATIONS





SPECIFICATIONS :

Frequencies: 222, 444, 888, 1777 and 3555 Hz.

Modes of Operation:

MAX: Transmitter coil plane and receiver coil plane horizontal (Max-coupled; Horizontal-loop mode). Used with refer. cable.

MIN: Transmitter coil plane horizontal and receiver coil plane vertical (Min-coupled mode). Used with reference cable.

V.L. : Transmitter coil plane vertical and receiver coil plane horizontal (Vertical-loop mode). Used without reference cable, in parallel lines.

Coil Separations: 25, 50, 100, 150, 200 & 250 m (MMII) or 100, 200, 300, 400, 600 and 800 ft. (MMIIF). Coil separations in V.L. mode not restricted to fixed values.

Parameters Read:

- In-Phase and Quadrature components of the secondary field in MAX and MIN modes.
- Tilt-angle of the total field in V.L. mode.

Readouts:

- Automatic, direct readout on 90 mm (3.5") edgewise meters in MAX and MIN modes. No nulling or compensation necessary.
- Tilt angle and null in 90 mm edgewise meters in V.L. mode.

Scale Ranges:

In-Phase: ±20%, ±100% by push-button switch.
Quadrature: ±20%, ±100% by push-button switch.
Tilt: ±75% slope.
Null (V.L.): Sensitivity adjustable by separation switch.

NOW ALSO ±4%
QUADRATURE
FULL SCALE.

Readability: In-Phase and Quadrature: 0.25% to 0.5%; Tilt: 1%.

Repeatability: ±0.25% to ±1% normally, depending on conditions, frequencies and coil separation used.

Transmitter Output:

- 222 Hz : 220 Atm^2
- 444 Hz : 200 Atm^2
- 888 Hz : 120 Atm^2
- 1777 Hz : 60 Atm^2
- 3555 Hz : 30 Atm^2

Receiver Batteries: 9V trans. radio type batteries (4). Life: approx. 35 hrs. continuous duty (alkaline, 0.5 Ah), less in cold weather.

Transmitter Batteries: 12V 6 Ah Gel-type rechargeable battery. (Charger supplied).

Reference Cable: Light weight 2-conductor teflon cable for minimum friction. Unshielded. All reference cables optional at extra cost. Please specify.

Voice Link: Built-in intercom system for voice communication between receiver and transmitter operators in MAX and MIN modes, via reference cable.

Indicator Lights: Built-in signal and reference warning lights to indicate erroneous readings.

Temperature Range: -40°C to +60°C (-40°F to +140°F).

Receiver Weight: 6 kg (13 lbs.)

Transmitter Weight: 13 kg (29 lbs.)

Shipping Weight: Typically 60 kg (135 lbs.), depending on quantities of reference cable and batteries included. Shipped in two field/shipping 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: NOTE OUR NEW TELEX NUMBER:
06-966775 APEXPARA MKHM

APPENDIX II

GEOMETRICS MODEL G-816 TOTAL FIELD MAGNETOMETER

geoMetrics

Instrument Division

PORTABLE PROTON MAGNETOMETER
MODEL G-816

- ★ 1 gamma sensitivity and repeatability
- ★ Very small size and weight: less than 12 lbs complete with batteries and sensor
- ★ Over 10,000 readings per set of alkaline "D" cell (flashlight) batteries
- ★ Provision to attach sensor to carrying harness for use without staff
- ★ Pushbutton operation—numeric display directly in gammas
- ★ Total field measurements—independent of orientation—no calibration—no leveling

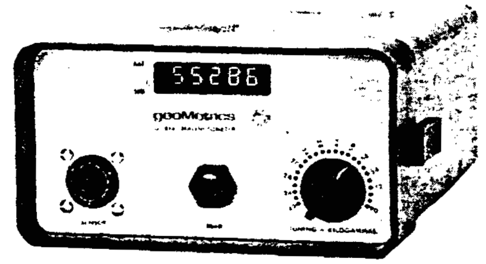
The Model G-816 is a complete portable magnetometer for all man-carry field applications. As an accurate yet simple to operate instrument, it features an outstanding combination of one gamma sensitivity and repeatability, compact size and weight, operation on standard universally available flashlight batteries, ruggedized packaging and very low price.

The G-816 magnetometer allows precise mapping of very small or large amplitude anomalies for ground geophysical surveys, or for detail follow-up to aeromagnetic reconnaissance surveys. It is a rugged, lightweight, and versatile instrument, equally well suited for field studies in geophysics, research programs or other magnetic mapping application where low cost, dependable operation and accurate measurements are required.

For marine, airborne or ground recording systems consider GeoMetrics Models G-801, G-803, and G-826A.

"Hands-free" Back Pack Sensor

Based upon the principle of nuclear precession (proton) the G-816 offers absolute drift-free measurements of the total field directly in gammas. (The proton precession method is the officially recognized standard for measurement of the earth's magnetic field.) Operation is worldwide with one gamma sensitivity and repeatability maintained throughout the range. There is no temperature drift, no set-up or leveling required, and no adjustment for orientation, field polarity, or arbitrary reference levels. Operation is very simple with no prior training required. Only 6 seconds are required to obtain a measurement which is always correct to one gamma, regardless of operator experience. Only the Proton Magnetometer offers such repeatability—an important consideration even for 10 gamma survey resolution.



Complete Field Portable System

The Model G-816 comes complete, ready for portable field operation and consists of:

1. Electronics console with internally mounted and easily replaced "D" cell battery pack.
2. Proton sensor and signal cable for attachment to carrying harness or staff.
3. Adjustable carrying harness.
4. 8 foot collapsible aluminum staff.
5. Instruction manual, complete set of spare batteries, applications manual, and rugged field suitcase.

Price and lease rates on the G-816 magnetometer are available upon request.

SPECIFICATIONS

Sensitivity:	±1 gamma throughout range
Range:	20,000 to 100,000 gammas (worldwide)
Tuning:	Multi-position switch with signal amplitude indicator light on display
Gradient Tolerance:	Exceeds 800 gammas/ft
Sampling Rate:	Manual push-button, one reading each 6 seconds
Output:	5 digit numeric display with readout directly in gammas
Power Requirements:	Twelve self-contained 1.5 volt "D" cell, universally available flashlight-type batteries. Charge state or replacement signified by flashing indicator light on display.

Battery Type	**Number of Readings**	
Alkaline	over	10,000
Premium Carbon Zinc	over	4,000
Standard Flashlight	over	1,500

NOTE: Battery life decreases with low temperature operation.

Temperature Range:	Console and sensor: −40° to +85°C Battery Pack: 0° to +50°C (limited use to −15°C; lower temperature battery belt operation—optional)
Accuracy (Total Field):	±1 gamma through 0° to +50°C temperature range
Sensor:	High signal, noise cancelling, interchangeably mounted on separate staff or attached to carrying harness
Size:	Console: 3.5 x 7 x 10.5 inches (9 x 18 x 27 cm) Sensor: 3.5 x 5 inches (9 x 13 cm) Staff: 1 inch diameter x 8 ft length (3 cm x 2.44 m)

Weight:

	Lbs.	Kgs.
Console (w/batteries):	5.5	2.5
Sensor & signal cable:	4	1.8
Aluminum staff:	2	0.9
Total:	11.5	5.2

All magnetometers and parts are covered by a one year warranty beginning with the date of receipt but not to exceed fifteen months from the shipping date.

geoMetrics, INC.
A SUBSIDIARY OF EG&G
395 JAVA DRIVE
SUNNYVALE, CA 94086 U.S.A.
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CABLE: "GEOMETRICS"
TELEX NO: 357-435

geoMetrics SERVICES (CANADA) LTD.
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DOWNSVIEW (TORONTO),
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TELEX NO: 06-22694

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APPENDIX III

SECANT CHAINING DATA REDUCTION

(MaxMin II EM System Operations Manual)

5. SECANT CHAINING AND SUBSEQUENT DATA REDUCTION

5.1. The secant method of chaining has been devised for acquiring clean in-phase data in choppy and mountainous terrain, i.e. in terrain where marks on a taut cable will no longer serve as a guide to an accurate coil spacing. Secant chaining is done with a Suunto PM5/SPC inclinometer, which has a "%grade" and a "Modified Secant" scale (secant x 100) -- hereafter called the "Secant" scale. The latter scale states the number of units along a slope per 100 units of horizontal distance. The "%grade" scale is visible simultaneously with the "Secant", and it states the number of units along the vertical per 100 units of horizontal distance. Other features of this inclinometer are that it is very small, single-hand-held, self-levelling, and oil-damped, with an optically magnified scale.

5.2. The Suunto inclinometer is not a precision instrument in the sense of a surveyor's level. The true "zero" position is usually within ¼% grade of "zero" on the scale, but each operator introduces his own bias to the instrument. This bias relates to superimposing the horizontal reading line, seen with one eye, onto an object seen with the other eye. Even with both eyes on the same horizontal plane, superimposition errors still occur. These errors vary from person to person.

It has been found that the cumulative error is generally in the positive direction at the rate of ½ to 1 unit per 100. In the light of this, any inclinometer operator using one of these inclinometers for the first time should make a reversed - position shot on his chaining partner over the distance of a station interval. With this, the inclinometer operator will know whether or not he should be aiming above or below the equi-height mark on his chaining partner.

5.3. The specific procedure in the secant method of chaining depends upon the desired end result. For an accurate MaxMin II survey, it is only necessary to secant chain along the traverse lines. If an accurate plan of the grid with topo contours is desired, then it is necessary to secant chain between the ends of the lines. No specifics will be given here on making topographic contour maps from chaining data, other than to say that the chaining must be done in closed loops and accumulated errors corrected back through the loops. Infact, the procedure is akin to that for a controlled magnetic or gravimetric survey, except that corrections are pro rated by distance rather than time.

5.4. The accuracy of the MaxMin in-phase results depend upon the accuracy of the chaining along the traverse lines; whereas, the accuracy of the grid plan depends also on the accuracy of the chaining between the ends of the lines. A random chaining error of a percent or two will have a perceptible effect on the MaxMin II in-phase results, whereas it will not on the grid picture. So, the chaining along the traverse lines must be quite accurate while the chaining between them can be less accurate. In fact, cut lines are not required for chaining between traverse lines. With a good compass course, it is easy to keep the chain reasonably straight. However, the inclinometer operator does require a line of sight to his helper on the chain.

5.5. A good compass course between the ends of the traverse lines will permit back-chaining without large misclosures at the other end of the line. In fact, misclosures of greater than one meter will not be due to deficiencies in the secant chaining method but to errors in the course followed between the lines. Nonetheless, misclosures at the end of a line -- or in the center, if the baseline is located there -- need not be a cause for subsequent mapping problems if shown in plan as they occur in the field. As far as accurate MaxMin II data is concerned, it is only necessary to know the horizontal-plane position and the elevation of each station along the traverse line.

5.6. A practical example of using the Suunto PM5/SPC inclinometer follows: The inclinometer operator sighting on his helper up a slope reads "105" on the "Secant" scale. This means that he should pay out 1.05 times the desired chaining interval. If this interval is 100 feet, he should simply pay out 105 feet of chain. He holds the "105" mark vertically above the bottom of the picket at which he is standing, while the helper puts in his picket vertically below the "0" mark on the chain. The picket should be driven well or there's little point to this type of chaining. While the helper is writing co-ordinate information on the picket, the inclinometer operator records in his notebook both the secant reading and the corresponding % grade reading (+32).

In this way there is no "dead" time and the chaining goes quickly. Recording each secant reading may appear redundant after it has been applied to the chain. However, a quick visual check of the two recorded readings in the book, against a reference "secant-%grade" table clipped into the book, will alert the operator to the inevitable reading error. An example of this type of table is shown below:

Secant:	%Grade:	Secant:	%Grade:
100	0	118	63
100½	10	119	64½
101	14	120	66½
102	20	122	69
103	24½	124	73
104	28½	126	77
105	32	128	80
106	35	130	83
107	38	132	86
108	41	134	89
109	43½	136	92
110	46	138	95
111	48½	140	98
112	50½	142	101
113	52½	144	104
114	55	146	107
115	57	148	109
116	59	150	112
117	61		

5.7. During the distance measurement, the chain is always held parallel to the slope, e.g. head-to-head, waist-to-waist, hip-to-hip, at a constant tension. On steep slopes, a piece of talus dropped from the mark on the chain will improve the precision of the measurement on the ground.

5.8. Where obstructions in the line impede a full 100ft measurement with the chain, then only a fraction of the secant value seen on the inclinometer scale should be given on the chain. Suppose for instance, that the operator at the "0" end of the chain can only get 3/4 of the way to his next position before passing out of sight, and at this time the secant scale reads "105"; then, the trailing operator should hold the chain at "105 x 0.75 = 78.8", making for an exact 75ft (horizontal) shot. The corresponding %grade value (i.e. +32) seen on the inclinometer scale is recorded directly into the book, as well as the horizontal distance of the shot. Then an additional 25ft horizontal must be chained from the 75 ft mark to reach the next station. If for this step the secant reading is "108" for instance, then the trailing operator should hold the chain at "108 x 0.25=27", making for an exact 25ft horizontal shot. The corresponding %grade value (-41) is recorded together with the distance in the note book.

5.9. If when backchaining to the base line, the final shot from picket 1+00 (N,S,E or W) to the base line picket is on a slope, then an inverse calculation is required to get the horizontal distance to the base line. For example, if the distance on the chain is 128.5ft, and the inclinometer shows secant and %grade values of 107 and -38 respectively, then the true horizontal distance is given by the expression 128.5/1.07 =120ft, and the elevation difference is given by the expression -38 x 1.2= -46ft. Of course, the foregoing calculations are only necessary when closing a chaining loop at the base line.

When chaining past the base line, it is best to continue the chaining from the "0" picket and not the base line picket, so that all stations are 100ft apart. Although the base line picket would not be used during EM coverage in a situation like this, it is a good practice to note its location on the way by. With this, the stations on the line can be accurately plotted with respect to the base line.

5.10. In the metric system, there are usually 25 meters horizontally between stations, which means that an extra calculation must be made on the inclinometer data. One way around this is to subdivide 25 meters of distance on the chain into 100 equal parts numbered 1 to 100. So, a 50 meter chain would be subdivided into 200 equal parts numbered 1 to 200. With this, the inclinometer is used directly, and the operator turns grey less rapidly.

5.11. The most efficient way to reduce the chaining notes is to calculate first the topographic elevations from the % grade values. To start with, a quick perusal should first be made through the notes for all chaining intervals of other than 100 feet before any other calculations are made. For instance, the +32 & -41 % grade figures of sub-section 5.8. would convert to +24 & -10 feet over the 75 feet and the 25 feet horizontal distances of the two shots. Of course, when the shots are a full 100 ft, the % grade figure is the vertical distance between stations in feet, and the %grade can be used without conversion.

5.12. It is an easy matter to derive the mean slope between the coils from the topo elevations. If a nominal coil spacing of 600ft is to be used, then the elevation difference between stations 600ft apart is divided by "6". For instance if the leading coil in the procession is at station 6+00N on a line while the trailing coil is at the base line station, and the elevation of station 6+00N is 54ft while that of the base line station is 100ft, then the mean slope between the coils is given by the expression (54-100)/6 = -8 % grade.

5.13. If due to a back chaining error, the distance between the base line and station 1+00 (N,S,E or W) is 120ft --- and the chaining has been continued to the other side of the base line from the base line picket rather than the "0" picket---then the distance between the coils will be 620ft when they are straddling the chain error . This distance will have to be taken into account when calculating the mean slope between coils, and also in correcting for the large-coil-spacing error. The calculation for the mean slope in the above becomes (54-100)/6.2=-7% grade.

5.14. The initial corrections to the in-phase reading, for the slope of -7% grade and the 620 ft horizontal distance between the coils, are +0.5 and +9.5%, respectively. These values are taken from the correction table on the following page.

5.15. An additional correction is required for the in-phase and out-of-phase readings, but it is only of consequence if an anomaly is present. This correction is in the form of a multiplication factor, which can be found in the table on the next page. The multiplication factors, for the slope of -7% grade and the 620 ft horizontal distance between the coils, are x 1.007 and x 1.103, respectively.

5.16 The widely varying in-phase readings, associated with a widely varying secant chained slope, will reflect in the out-of-phase reading, <u>if</u> there is appreciable phase mixing in the system. This of course can be corrected arithmetically. But, it's much less time consuming to open the receiver can and remove the problem as per subsection 2.4.3 , than to correct the phase mixing errors.

APEX PARAMETRICS LIMITED
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CORRECTION TABLES

Rough Terrain Table:

Mean % Grade Between Coils:	In-Phase (only) Correction for Coplanar Coils:	In-Phase & Out-of-Phase Correction:
±0	+0	
1	0	
2	0	
3	0	
4	0	
5	0.5	x 1.004
6	0.5	x 1.006
7	0.5	x 1.007
8	1	x 1.009
9	1	x 1.013
10	1.5	x 1.014
11	1.5	x 1.018
12	2	x 1.021
13	2.5	x 1.025
14	3	x 1.030
15	3.5	x 1.034
16	3.5	x 1.039
17	4	x 1.044
18	4.5	x 1.049
19	5	x 1.054
20	5.5	x 1.061
21	6	x 1.066
22	7	x 1.073
23	7.5	x 1.080
24	8	x 1.087
25	8.5	x 1.096
26	9	x 1.102
27	10	x 1.111
28	10.5	x 1.120
29	11	x 1.128
30	12	x 1.139
31	13	x 1.147
32	13.5	x 1.158
33	14.5	x 1.168
34	15	x 1.178
35	16	x 1.189
36	16.5	x 1.200
37	17.5	x 1.213
±38	+18.5	x 1.223
39	19	x 1.136
40	20	x 1.249
41	21	x 1.263
42	21.5	x 1.275
43	22.5	x 1.289
44	23.5	x 1.305
45	24	x 1.318
46	25	x 1.334
47	26	x 1.348
48	27	x 1.365
49	27.5	x 1.381
50	28.5	x 1.398
51	29.5	x 1.415
52	30	x 1.433
53	31	x 1.450
54	32	x 1.467
55	32.5	x 1.486
56	33.5	x 1.505
57	34.5	x 1.526
58	35.5	x 1.545
59	36	x 1.566
60	37	x 1.586
61	38	x 1.607
62	38.5	x 1.630
63	39.5	x 1.650
64	40	x 1.669
65	41	x 1.697
66	42	x 1.719
67	42.5	x 1.744
68	43.5	x 1.768
69	44.5	x 1.794
70	45	x 1.820
71	46	x 1.844
72	46.5	x 1.871
73	47.5	x 1.897
74	48	x 1.925
75	49	x 1.953

In-Phase Correction = $+\left[1 - \left\{\mathrm{Cos.tan}^{-1}\left(\frac{\%\mathrm{Grade}}{100}\right)\right\}^{3}\right] \times 100$ = always positive, no matter the slope sign.

In-Phase & Out-of-Phase Correction = $\times \left\{1/\mathrm{Cos}\ \left(\tan^{-1} \frac{\%\mathrm{Grade}}{100}\right)\right\}^{3}$

Short and Long Coil Spacing Table:

		In-Phase (only) Correction:	In-Phase & Out-of-Phase Correction:
Nominal Coil Spacing:	600-400-300-200		
Actual Coil Spacing:	580 290	-10.5	x 0.906
"	582-388-291-194	- 9.5	x 0.915
"	584 292	- 8.5	x 0.924
"	586 293	- 7.5	x 0.933
"	588-392-294-196	- 6	x 0.942
"	590 295	- 5	x 0.952
"	592 296	- 4	x 0.961
"	594-396-297-198	- 3	x 0.971
"	596 298	- 2	x 0.980
"	598 299	- 1	x 0.990
"	600-400-300-200	± 0	x 1.000
"	602 301	+ 1	x 1.010
"	604 302	+ 2	x 1.020
"	606-404-303-202	+ 3	x 1.030
"	608 304	+ 4	x 1.041
"	610 305	+ 5	x 1.051
"	612-408-306-204	+ 6	x 1.061
"	614 307	+ 6.5	x 1.072
"	616 308	+ 7.5	x 1.082
"	618-412-309-206	+ 8.5	x 1.093
"	620 310	+ 9.5	x 1.103

In-Phase Correction = $+\left[1-\left(\frac{\text{Nominal Coil Spacing}}{\text{Actual Coil Spacing}}\right)^{3}\right] \times 100$

In-Phase & Out-of-Phase Correction = $\times \left(\frac{\text{Actual Coil Spacing}}{\text{Nominal Coil Spacing}}\right)^{3}$

CERTIFICATE

I, W.H. TISDALL, *P.Eng.* of Calgary, Alberta, certify that:

(1) I am a graduate of the University of British Columbia and hold a Bachelor of Applied Science degree in Geological Engineering *(1951)*.

(2) I am a Registered Professional Engineer in the Province of British Columbia *(#2902)*.

(3) I have worked as an exploration geologist and project evaluation engineer for 30 years.

(4) I have worked with Mr. E. M. Estabrooks, *P.Geol.* both as a partner and as an employer in the period 1970 – 1976.

(5) In the summer of 1970 I prospected with Mr. Estabrooks in the valley and surrounding mountains of the area in which the Jony 1, 2 and 3 claims are located.

(6) From my personal knowledge of Mr. Estabrooks' field work, I am satisfied that the geology on and around the Jony 1, 2 and 3 claims is as reported by Mr. Estabrooks.

(7) I have no financial interest, directly or indirectly, nor do I expect to receive any interest, directly or indirectly in any of the properties or securities of Mafeking Minerals Ltd.

CALGARY, ALBERTA
11 January, 1982

W. H. Tisdall
W. H. Tisdall, *P.Eng.*

can test ltd.

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629 Beaverdam Road, N.E.
Calgary, Alberta
T2K 4W2

SEMI QUANTITATIVE SPECTROGRAPHIC ANALYSES CERTIFICATE

File No. 7470D-1

Date SEPT. 9/80

FILE #19795

We hereby Certify that the following are the results of semi quantitative spectrographic analyses made on ORE samples submitted.

		1	2	3	4	5
Aluminum	Al	8.	5.	3.	7.	
Antimony	Sb	ND	ND	ND	ND	
Arsenic	As	ND	ND	ND	ND	
Barium	Ba	0.1	TRACE	TRACE	0.03	
Beryllium	Be	ND	ND	ND	ND	
Bismuth	Bi	ND	ND	ND	ND	
Boron	B	ND	ND	ND	ND	
Cadmium	Cd	ND	TRACE	ND	ND	
Calcium	Ca	2.	1.	0.5	0.5	
Chromium	Cr	ND	ND	ND	ND	
Cobalt	Co	ND	ND	ND	ND	
Copper	Cu	0.005	*	*	*	
Gallium	Ga	ND	ND	ND	ND	
Gold	Au	TRACE	TRACE	TRACE	TRACE	
Iron	Fe	3.	MAJOR	MAJOR	MAJOR	
Lead	Pb	ND	*	TRACE	*	
Magnesium	Mg	1.	0.5	0.1	0.3	
Manganese	Mn	0.03	0.2	0.05	0.07	
Molybdenum	Mo	ND	ND	ND	ND	
Niobium	Nb	ND	ND	ND	ND	
Nickel	Ni	ND	ND	ND	ND	
Potassium	K	2.+	ND	ND	ND	
Silicon	Si	MATRIX	MATRIX	MATRIX	MATRIX	
Silver	Ag	TRACE	0.03	0.003	0.007	
Sodium	Na	2.+	ND	ND	ND	
Strontium	Sr	0.05	0.03	0.01	0.01	
Tantalum	Ta	ND	ND	ND	ND	
Thorium	Th	ND	ND	ND	ND	
Tin	Sn	ND	ND	ND	ND	
Titanium	Ti	0.5	0.01	0.005	0.1	
Tungsten	W	ND	ND	ND	ND	
Uranium	U	ND	ND	ND	ND	
Vanadium	V	0.001	0.005	ND	0.003	
Zinc	Zn	ND	MAJOR	NOTE	NOTE	

NOTE: SPECTRAL INTERFERENCE - POSSIBLE ZINC VALUES (LOW)

Sample Identification

Sample 1: J-1-1
Sample 2: V-2
Sample 3: V-3
Sample 4: V-6
Sample 5:

Percentages of the various elements expressed in these analyses may be considered accurate to within plus or minus 35 to 50% of the amount present.

Semi-quantitative spectrographic analytical results for gold and silver are normally not of a sufficient degree of precision to enable calculation of the true value of ores. Therefore, should exact values be required, it is recommended that these elements be assayed by the conventional Fire Assay Method. Quantitative and Fire Assays may be carried out on the retained pulp samples.

Silicon, aluminum, magnesium, calcium and iron are normal components of complex silicates.

MATRIX – Major constituent
MAJOR – Above normal spectrographic range
TRACE – Detected but minor amounts
N.D. – Not detected
* – Suggest assay (above 0.3%

All results expressed as Percent

Note: Pulps retained one week.

CAN TEST LTD.

Spectroscopist

Form No. 12 L

To: Mafe King Minerals Limited
2323 Uxbridge Drive N.W.
CALGARY, Alberta
T2N 3Z7
ATTN: P. ESTABROOKS

File No. 19795
Date August 5th, 1980
Samples Rock & Core

Certificate of ASSAY
LORING LABORATORIES LTD.

SAMPLE No.	OZ./TON GOLD	OZ./TON SILVER
"Core Sample"		
J - 1 - 1	Trace	-
"Rock Samples"		
J - 3 - 1	Trace	3.14
J - 3 - 2	Trace	3.34
J - 3 - 3	Trace	.40
J - 3 - 4	Trace	-
J - 3 - 5	.010	-
J - 3 - 6	Trace	-
V - 2	Trace	7.80
V - 3	Trace	3.54
V - 6	Trace	3.82

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.

Pulps Retained one month unless specific arrangements made in advance.

Licensed Assayer of British Columbia

BONDAR-CLEGG & COMPANY LTD.

136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO [illegible] Minerals
c/o [illegible] Industries
Whitehorse, Yukon

REPORT NO. [illegible]

DATE [illegible]

I hereby certify that the following are the results of analyses made by us upon the herein described rock samples

MARKED	oz/ton	oz/ton							
	Au	Ag							
1A	0.009	70.0							

NOTE:
Rejects retained two weeks
Pulps retained three months
unless otherwise arranged.

BONDAR-CLEGG & COMPANY LTD.

Steven Simpson

BONDAR-CLEGG & COMPANY LTD.

[illegible]
136 Industrial Road, Whse, Yukon Y1A 2V1

PHONE: [illegible]
667-6523

SEMI-QUANTITATIVE ANALYSIS

No: A40-60

Sample No. 1A

From: Mafeking Minerals

Method: XRF

Date: September 9 19 80

No. of Elements: 32

Analyst:

AJOR ELEMENTS (%)	<.003	.003-.01	.01-.03	.03-0.1	0.1-0.3	0.3-1.0	1.0-3.0	3.0-10.0	> 10.0	REMARKS
SiO_2									X	
Al_2O_3						X				
otal Fe (Fe_2O_3)							X			
MgO				X						
CaO					X					
Na_2O			X							
K_2O				X						
TiO_2		X								
RACE ELEMENTS (%)										
V		X								
Cr		X								
Mn				X						
Co		X								
Ni	X									
Cu							X			
Zn								X		
As				X						
Sr		X								
Y	X									
Zr	X									
Nb	X									
Mo	X									
Ag				X						
Sn	X									
Sb	X									
Ba		X								
La	X									
Ce	X									
W	X									
Pb								X		
Bi					X					
Th	X									
U	X									

BONDAR-CLEGG & COMPANY LTD.

136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO Hefekin Minerals
c/o TNK. Industries
Whitehorse, Yukon

REPORT NO. [illegible]

DATE September [illegible]

I hereby certify that the following are the results of analyses made by us upon the herein described Rock samples

MARKED	oz/ton	oz/ton							
	Au	Ag							
#1	L0.002	0.04							

L denotes less than

BONDAR-CLEGG & COMPANY LTD.

NOTE:
Rejects retained two weeks
Pulps retained three months

BONDAR-CLEGG & COMPANY LTD.

136 Industrial Road, Whitehorse, Yukon Y1A 2V1 phone: 667-6253

SEMI-QUANTITATIVE ANALYSIS

No: A40-46

Sample No. 1

From: Mafeking Minerals

Method: XRF

Date: September 9 1980

No. of Elements: 32

Analyst:

AJOR ELEMENTS (%)	<.003	.003-.01	.01-.03	.03-0.1	0.1-0.3	0.3-1.0	1.0-3.0	3.0-10.0	> 10.0	REMARK
SiO_2									X	
Al_2O_3							X			
otal Fe (Fe_2O_3)							X			
MgO				X						
CaO					X					
Na_2O						X				
K_2O					X					
TiO_2					X					
RACE ELEMENTS (%)										
V		X								
Cr		X								
Mn							X			
Co	X									
Ni	X									
Cu		X								
Zn					X					
As				X						
Sr	X									
Y	X									
Zr		X								
Nb	X									
Mo	X									
Ag	X									
Sn	X									
Sb	X									
Ba			X							
La	X									
Ce	X									
W	X									
Pb					X					
Bi	X									
Th	X									
U	X									

O-2

BONDAR-CLEGG & COMPANY LTD.

136 Industrial Road, Whitehorse, Yukon Y1A 2V1 phone: 667-6253

SEMI-QUANTITATIVE ANALYSIS

No: A40-46

Sample No. 1

From: Mafeking Minerals

Method: XRF

Date: September 9 1980

No. of Elements: 32

Analyst:

AJOR ELEMENTS (%)	<.003	.003-.01	.01-.03	.03-0.1	0.1-0.3	0.3-1.0	1.0-3.0	3.0-10.0	> 10.0	REMARKS
SiO_2									X	
Al_2O_3							X			
otal Fe (Fe_2O_3)							X			
MgO				X						
CaO					X					
Na_2O						X				
K_2O					X					
TiO_2					X					
RACE ELEMENTS (%)										
V		X								
Cr		X								
Mn							X			
Co	X									
Ni	X									
Cu		X								
Zn					X					
As				X						
Sr	X									
Y	X									
Zr		X								
Nb	X									
Mo	X									
Ag	X									
Sn	X									
Sb	X									
Ba			X							
La	X									
Ce	X									
W	X									
Pb					X					
Bi	X									
Th	X									
U	X									

BRANCH OFFICES

INDUSTRIAL RD.,
WHITEHORSE, Y.T.

1500 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.

BOX 487,
CAMPBELLTON, N

BONDAR-CLEGG & COMPANY LTD.

136 Industrial Road
Whitehorse, Yukon
Y1A 2V1

PHONE 667-6523 TELEX: 036-8-460

SEMI-QUANTITATIVE ANALYSIS

No: A-40-7

Sample No. 1E 3

From: Mafeking Minerals

Method: DC Arc Emission Spectrograph

Date: August 11 19 80

No. of Elements: 32

Analyst:

AJOR ELEMENTS (%)	<.003	.003-.01	.01-.03	.03-0.1	0.1-0.3	0.3-1.0	1.0-3.0	3.0-10.0	> 10.0	REMAR
SiO_2									X	
Al_2O_3							X			
otal Fe (Fe_2O_3)									X	
MgO						X				
CaO							X			
Na_2O						X				
K_2O	X									
TiO_2			X							
RACE ELEMENTS (%)										
V		X								
Cr			X							
Mn			X							
Co	X									
Ni	X									
Cu								X		
Zn					X					
As	X									
Sr		X								
Y	X									
Zr	X									
Nb	X									
Mo	X									
Ag		X								
Sn	X									
Sb	X									
Ba			X							
La	X									
~~Ce~~ Cd	X									
W	X									
Pb					X					
Bi		X								
~~Th~~ Sc	X									
U	X									

BRANCH OFFICES

INDUSTRIAL RD.,
WHITEHORSE, Y.T.

1500 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.

BOX 487,
CAMPBELLTON, N

BONDAR-CLEGG & COMPANY LTD.

136 Industrial Road
Whitehorse, Yukon
Y1A 2V1

PHONE 667-6523

TELEX: 036-8-460

SEMI-QUANTITATIVE ANALYSIS

No: A-40-7

Sample No. 1D

From: Mafeking Minerals

Method: DC Arc Emission Spectrograph

Date: August 11 1980

No. of Elements: 32

Analyst:

IAJOR ELEMENTS (%)	<.003	.003-.01	.01-.03	.03-0.1	0.1-0.3	0.3-1.0	1.0-3.0	3.0-10.0	> 10.0	REMAR
SiO_2									X	
Al_2O_3							X			
otal Fe (Fe_2O_3)								X		
MgO					X					
CaO				X						
Na_2O						X				
K_2O	X									
TiO_2			X							
RACE ELEMENTS (%)										
V		X								
Cr				X						
Mn				X						
Co	X									
Ni	X									
Cu								X		
Zn				X						
As	X									
Sr	X									
Y	X									
Zr	X									
Nb	X									
Mo	X									
Ag		X								
Sn	X									
Sb	X									
Ba			X							
La	X									
Cd	X									
W	X									
Pb			X							
Bi	X									
Sc	X									
U	X									

BRANCH OFFICES

INDUSTRIAL RD.,
WHITEHORSE, Y.T.

1500 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.

BOX 487,
CAMPBELLTON, N.B

BONDAR-CLEGG & COMPANY LTD.

136 Industrial Road
Whitehorse, Yukon
Y1A 2V1

PHONE 667-6523

TELEX: 036-8-460

SEMI-QUANTITATIVE ANALYSIS

No: A-40-7

Sample No. 1C

From: Mafeking Minerals

Method: DC Arc Emission Spectograph

Date: August 11 19 80

No. of Elements: 32

Analyst:

IAJOR ELEMENTS (%)	<.003	.003-.01	.01-.03	.03-0.1	0.1-0.3	0.3-1.0	1.0-3.0	3.0-10.0	> 10.0	REMARI
SiO_2									X	
Al_2O_3								X		
otal Fe (Fe_2O_3)									X	
MgO						X				
CaO						X				
Na_2O						X				
K_2O	X									
TiO_2				X						
RACE ELEMENTS (%)										
V		X								
Cr			X							
Mn				X						
Co	X									
Ni	X									
Cu								X		
Zn							X			
As	X									
Sr		X								
Y	X									
Zr	X									
Nb	X									
Mo	X									
Ag			X							
Sn	X									
Sb	X									
Ba			X							
La	X									
~~Ce~~ Cd			X							
W	X									
Pb						X				
Bi			X							
~~Th~~ Sc	X									
U	X									

BRANCH OFFICES

INDUSTRIAL RD.,
WHITEHORSE, Y.T.

1500 PEMBERTON AVE.,
NORTH VANCOUVER, B.C.

BOX 487,
CAMPBELLTON, N.B.

BCC

BONDAR-CLEGG & COMPANY LTD.

136 Industrial Road
Whitehorse, Yukon
Y1A 2V1

PHONE 667-6523

TELEX: 036-8-460

SEMI-QUANTITATIVE ANALYSIS

No: A-40-71

Sample No. 1B

From: Mafeking Minerals

Method: DC Arc Emission Spectrograph

Date: August 11 19 80

No. of Elements: 32

Analyst:

JOR ELEMENTS (%)	<.003	.003-.01	.01-.03	.03-0.1	0.1-0.3	0.3-1.0	1.0-3.0	3.0-10.0	> 10.0	REMARKS
SiO_2									X	
Al_2O_3								X		
al Fe (Fe_2O_3)									X	
MgO						X				
CaO						X				
Na_2O	X									
K_2O						X				
TiO_2				X						
ACE ELEMENTS (%)										
V		X								
Cr		X								
Mn					X					
Co		X								
Ni	X									
Cu								Ⓧ		
Zn								Ⓧ		
As	X									
Sr			X							
Y	X									
Zr			X							
Nb	X									
Mo	X									
Ag				X						
Sn	X									
Sb	X									
Ba				X						
La	X									
~~Ce~~ Cd				X						
W	X									
Pb							Ⓧ			
Bi				X						
~~Th~~ Sc	X									
U	X									

CT can test ltd.

1650 PANDORA STREET, VANCOUVER, B.C. V5L 1L6 • TELEPHONE 254-7278
Telex 04-507737

O:

Loring Laboratories Ltd.
629 Beaverdam Road, N.E.
Calgary, Alberta
T2K 4W2

SEMI QUANTITATIVE SPECTROGRAPHIC ANALYSES CERTIFICATE

File No. 7470D-1

Date SEPT. 9/80

FILE #19795

We hereby Certify that the following are the results of semi quantitative spectrographic analyses made on ORE samples submitted.

		1	2	3	4	5
luminum	Al	8.	5.	3.	7.	
ntimony	Sb	ND	ND	ND	ND	
rsenic	As	ND	ND	ND	ND	
arium	Ba	0.1	TRACE	TRACE	0.03	
eryllium	Be	ND	ND	ND	ND	
ismuth	Bi	ND	ND	ND	ND	
oron	B	ND	ND	ND	ND	
admium	Cd	ND	TRACE	ND	ND	
alcium	Ca	2.	1.	0.5	0.5	
hromium	Cr	ND	ND	ND	ND	
obalt	Co	ND	ND	ND	ND	
opper	Cu	0.005	*	*	*	
allium	Ga	ND	ND	ND	ND	
old	Au	TRACE	TRACE	TRACE	TRACE	
ron	Fe	3.	MAJOR	MAJOR	MAJOR	
ead	Pb	ND	*	TRACE	*	
agnesium	Mg	1.	0.5	0.1	0.3	
anganese	Mn	0.03	0.2	0.05	0.07	
olybdenum	Mo	ND	ND	ND	ND	
iobium	Nb	ND	ND	ND	ND	
ickel	Ni	ND	ND	ND	ND	
otassium	K	2.+	ND	ND	ND	
ilicon	Si	MATRIX	MATRIX	MATRIX	MATRIX	
ilver	Ag	TRACE	0.03	0.003	0.007	
odium	Na	2.+	ND	ND	ND	
trontium	Sr	0.05	0.03	0.01	0.01	
antalum	Ta	ND	ND	ND	ND	
horium	Th	ND	ND	ND	ND	
in	Sn	ND	ND	ND	ND	
itanium	Ti	0.5	0.01	0.005	0.1	
ungsten	W	ND	ND	ND	ND	
ranium	U	ND	ND	ND	ND	
anadium	V	0.001	0.005	ND	0.003	
inc	Zn	ND	MAJOR	NOTE	NOTE	

NOTE: SPECTRAL INTERFERENCE - POSSIBLE ZINC VALUES (LOW)

Sample Identification

Sample 1: J-1-1
Sample 2: V-2
Sample 3: V-3
Sample 4: V-6
Sample 5:

Percentages of the various elements expressed in these analyses may be considered accurate to within plus or minus 35 to 50% of the amount present.

Semi-quantitative spectrographic analytical results for gold and silver are normally not of a sufficient degree of precision to enable calculation of the true value of ores. Therefore, should exact values be required, it is recommended that these elements be assayed by the conventional Fire Assay Method. Quantitative and Fire Assays may be carried out on the retained pulp samples.

Silicon, aluminum, magnesium, calcium and iron are normal components of complex silicates.

MATRIX – Major constituent
MAJOR – Above normal spectrographic range
TRACE – Detected but minor amounts
N.D. – Not detected
* – Suggest assay (above 0.3%

All results expressed as Percent

Note: Pulps retained one week.

CAN TEST LTD.

Spectroscopist

orm No 12

To: Mafe King Minerals Limited
2323 Uxbridge Drive N.W.
CALGARY, Alberta
T2N 3Z7
ATTN: P. ESTABROOKS

File No. 19795
Date August 5th, 1980
Samples Rock & Core

Certificate of ASSAY
LORING LABORATORIES LTD.

SAMPLE No.	OZ./TON GOLD	OZ./TON SILVER
"Core Sample"		
J - 1 - 1	Trace	-
"Rock Samples"		
J - 3 - 1	Trace	3.14
J - 3 - 2	Trace	3.34
J - 3 - 3	Trace	.40
J - 3 - 4	Trace	-
J - 3 - 5	.010	-
J - 3 - 6	Trace	-
V - 2	Trace	7.80
V - 3	Trace	3.54
V - 6	Trace	3.82

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.

Pulps Retained one month unless specific arrangements made in advance.

C.L. McIsaac
Licensed Assayer of British Columbia

BONDAR-CLEGG & COMPANY LTD.

136 Industrial Road, Whitehorse, Yukon Y1A 2V1 phone: 667-6253

SEMI-QUANTITATIVE ANALYSIS

No: A40-46

Sample No. 1

From: Mafeking Minerals

Method: XRF

Date: September 9 1980

No. of Elements: 32

Analyst:

MAJOR ELEMENTS (%)	<.003	.003-.01	.01-.03	.03-0.1	0.1-0.3	0.3-1.0	1.0-3.0	3.0-10.0	> 10.0	REMARKS
SiO_2									X	
Al_2O_3							X			
Total Fe (Fe_2O_3)							X			
MgO				X						
CaO					X					
Na_2O						X				
K_2O					X					
TiO_2					X					
TRACE ELEMENTS (%)										
V		X								
Cr		X								
Mn							X			
Co	X									
Ni	X									
Cu		X								
Zn					X					
As				X						
Sr	X									
Y	X									
Zr		X								
Nb	X									
Mo	X									
Ag	X									
Sn	X									
Sb	X									
Ba			X							
La	X									
Ce	X									
W	X									
Pb					X					
Bi	X									
Th	X									
U	X									

BONDAR-CLEGG & COMPANY LTD.

136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
TELEX: 036-8-460

0-24

Certificate of Analysis

TO Mafeking Minerals
c/o BEMA Industries
Whitehorse, Yukon

REPORT NO. A-40-46

DATE September 9, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described rock samples

MARKED	oz/ton Au	oz/ton Ag							
#1	L0.002	0.06							

L denotes less than

W	Pb	Bi	Th	U

BONDAR-CLEGG & COMPANY LTD.

NOTE:
Rejects retained two weeks
Pulps retained three months

BONDAR-CLEGG & COMPANY LTD.

136B INDUSTRIAL RD, WHITEHORSE, YUKON Y1A 4X1

PHONE: (403) 667-6523
TELEX: 036-8-460

Certificate of Analysis

TO Mafeking Minerals
c/o BEMA Industries
Whitehorse, Yukon

REPORT NO. A-40-60

DATE September 9, 1980

I hereby certify that the following are the results of analyses made by us upon the herein described rock samples

MARKED	oz/ton	oz/ton							
	Au	Ag							
1A	0.008	73.0							

BONDAR-CLEGG & COMPANY LTD.

NOTE:
Rejects retained two weeks

BONDAR-CLEGG & COMPANY LTD.

136 Industrial Road, Whse, Yukon Y1A 2V1
PHONE: 667-6523

SEMI-QUANTITATIVE ANALYSIS

No: A40-60

Sample No. 1A

Method: XRF

No. of Elements: 32

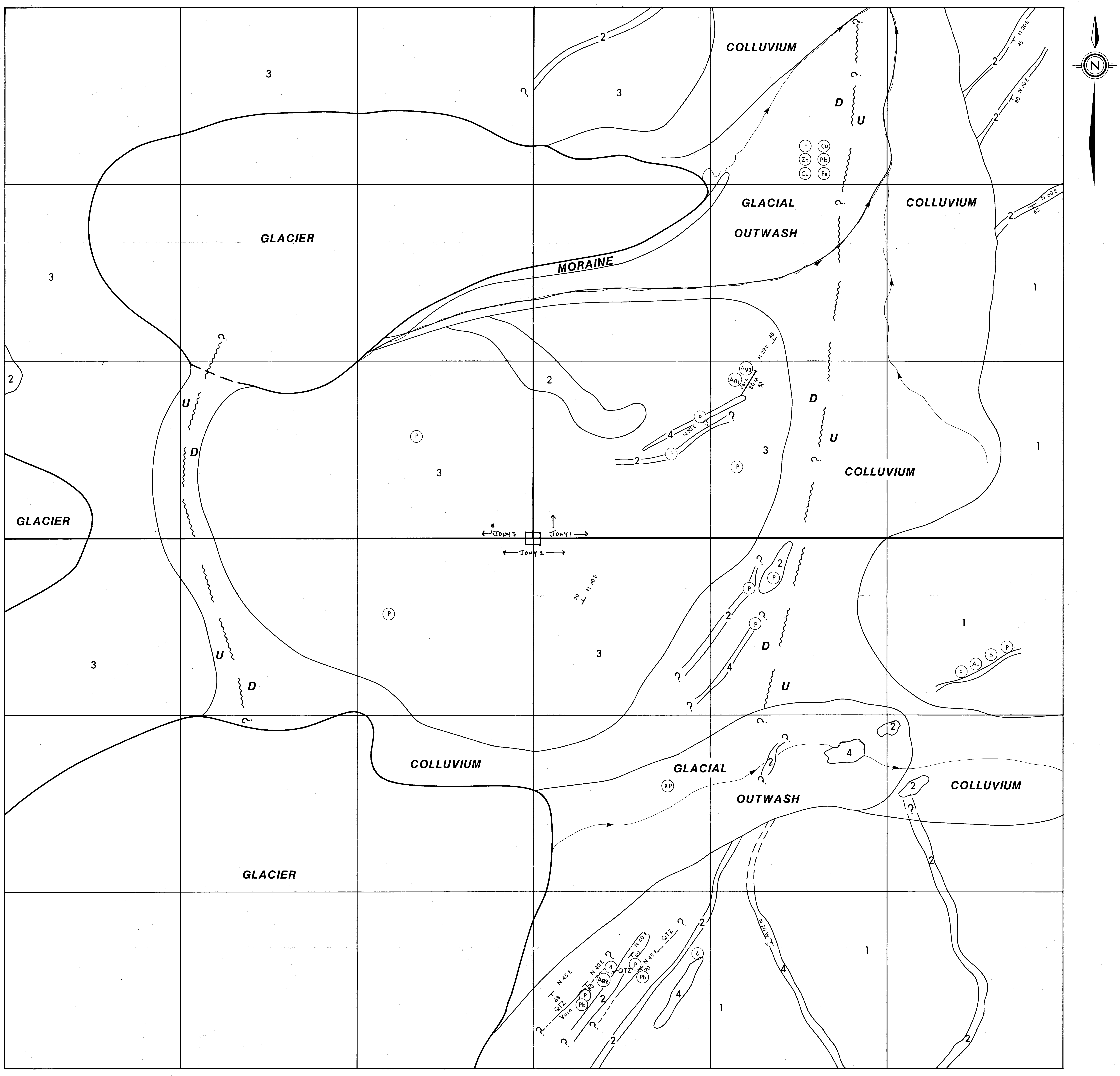
From: Mafeking Minerals

Date: September 9 19 80

Analyst:

AJOR ELEMENTS (%)	<.003	.003-.01	.01-.03	.03-0.1	0.1-0.3	0.3-1.0	1.0-3.0	3.0-10.0	> 10.0	REMARKS
SiO_2									X	
Al_2O_3						X				
otal Fe (Fe_2O_3)							X			
MgO				X						
CaO					X					
Na_2O			X							
K_2O				X						
TiO_2		X								
RACE ELEMENTS (%)										
V		X								
Cr		X								
Mn				X						
Co		X								
Ni	X									
Cu							X			
Zn								X		
As				X						
Sr		X								
Y	X									
Zr	X									
Nb	X									
Mo	X									
Ag				X						
Sn	X									
Sb	X									
Ba		X								
La	X									
Ce	X									
W	X									
Pb								X		
Bi					X					
Th	X									
U	X									

O-24



LEGEND

QUATERNARY

5 PLEISTOCENE AND RECENT
GLACIAL OUTWASH ALPINE MORAINE
UNDIFFERENTIATED COLLUVIUM

TERTIARY AND QUATERNARY

4 LATE TERTIARY AND PLEISTOCENE
BASALT/OLIVINE BASALT/RELATED PYROCLASTIC ROCKS

CRETACEOUS AND TERTIARY

3 LATE CRETACEOUS AND EARLY TERTIARY
"SLOKO GROUP"
MEDIUM TO COARSE GRAINED PINK BIOTITE–HORNEBLENDE QUARTZ MONZONITE

CRETACEOUS AND TERTIARY

2 WHITE TO BUFF RHYOLITE AND TRACHYTE FLOWS
PYROCLASTIC ROCKS AND DERIVED SEDIMENTS, UNCONFORMITY

LOWER TO MIDDLE TRIASSIC

1 FINE TO MEDIUM GRAINED, STRONGLY FOLIATED DIORITE QUARTZ DIORITE AND
MINOR GRANODIORITE

⚒ VEIN CONTAINED SAMPLES ASSAYED,

Ca	CALCITE
Fe	HEMATITE
Cu	NATIVE COPPER
Zn	SPHALERITE
Pb	GALENA
QTZ	QUARTZ
P	PYRITE
Ag	SILVER
Au	GOLD

SILVER Ag_1 0.06 OZ./TON
73.00 OZ./TON
29.20 OZ./TON
11.70 OZ./TON
2.70 OZ./TON
5.20 OZ./TON

QTZ VEINS ON JONY 2 CLAIM

SILVER Ag_2 3.14 OZ./TON
3.34 OZ./TON
0.40 OZ./TON

SILVER Ag_3

COMBINED SAMPLES V2
V3
V6

SAMPLE LOCATIONS

J3 - 1, J3 - 2, J3 - 3 } Ag_2
J3 - 4 ④
J3 - 5 ⑤
V_2, V_3, V_6 } Ag_3
J3 - 6 ⑥

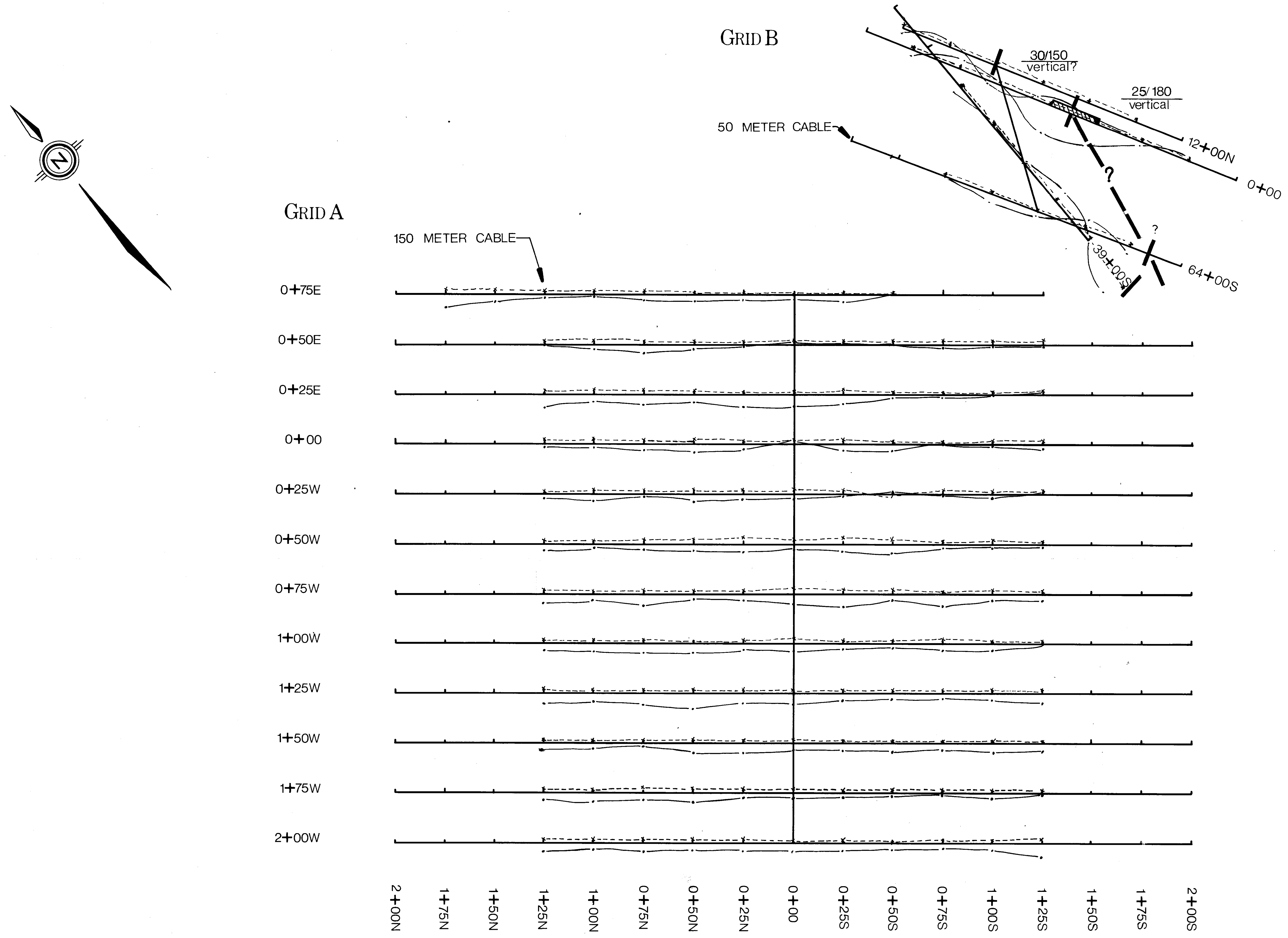
MAFEKING MINERALS LTD
1980 PARTNERSHIP

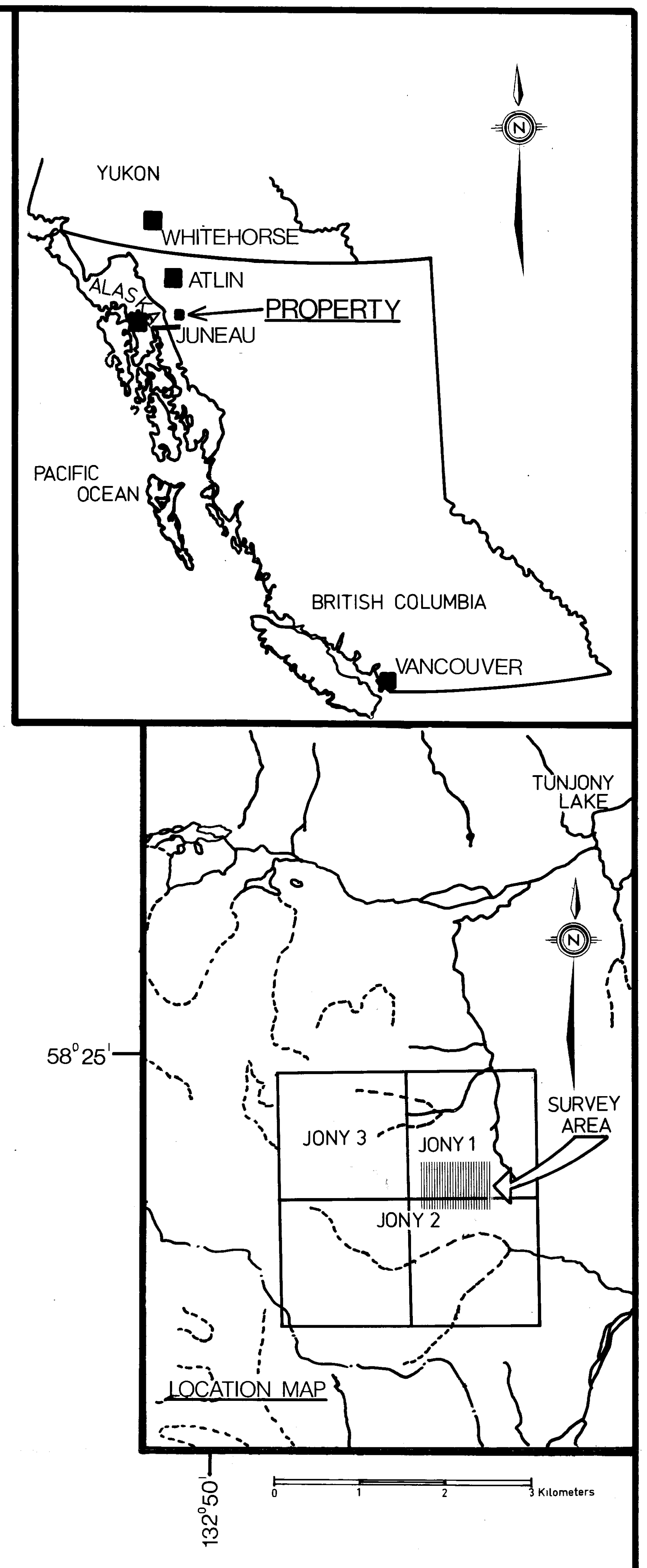
TULSEQUAH AREA
GEOLOGY MAP
JONY 1-2-3 CLAIMS

NTS: 104K – 7W
DATE: SEPTEMBER 1980
SCALE: 1:5,000 100 M

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9578

⑮





LEGEND

- ┼ Conductor axis(fair to strong quality)
- ? Conductor axis(poorer quality)
- ▨ Conductor width
- 4/30 / 78° east — Depth est. (m) Conductivity thickness (mhos) / Dip estimate
- -·-·- In Phase profile
- x---x---x Quadrature

INSTRUMENT Apex Parametrics Max Min II
150 and 50 meter cable

Profile Scale +20 0 −20

F. DALIDOWICZ

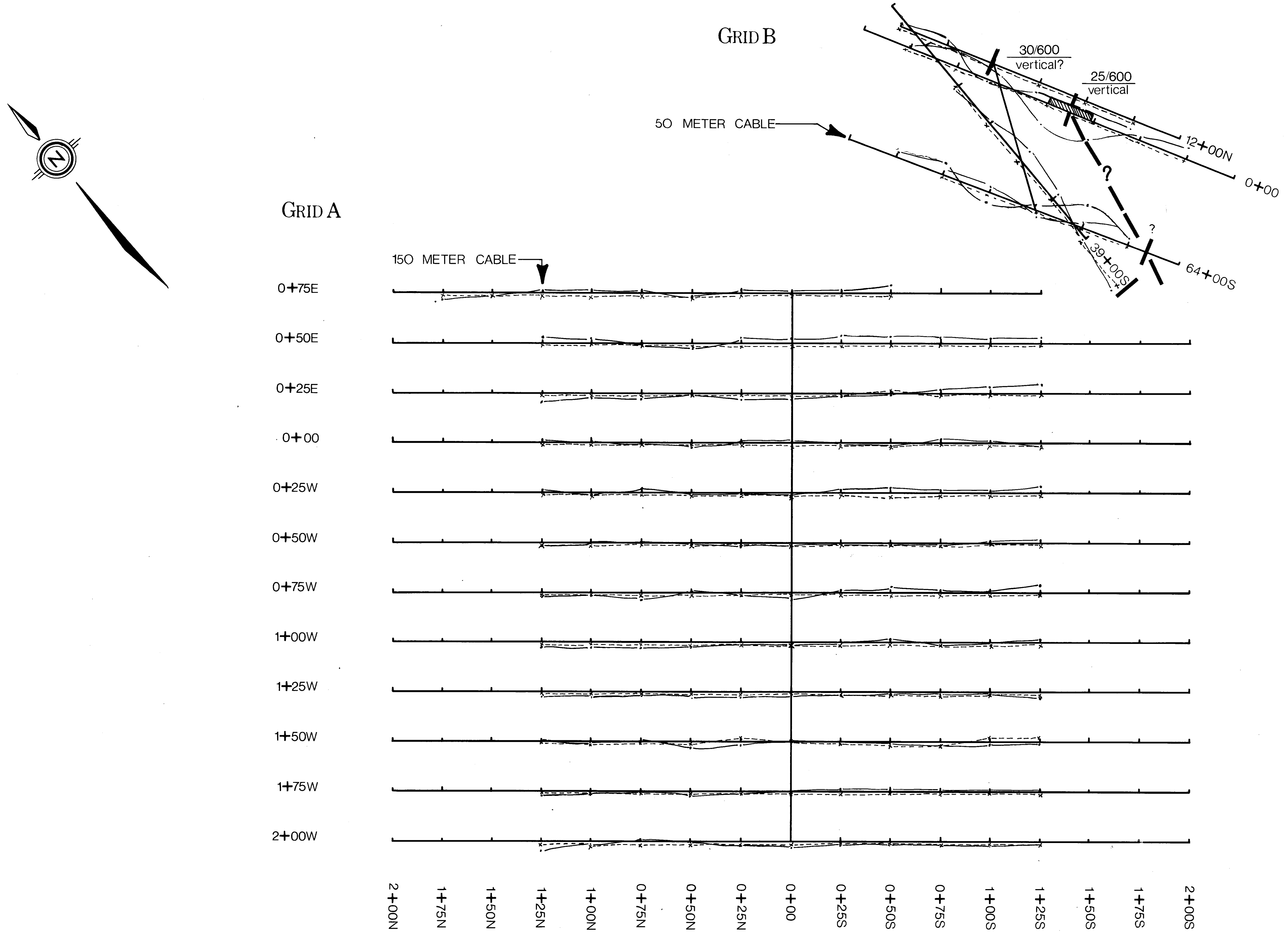
(12)

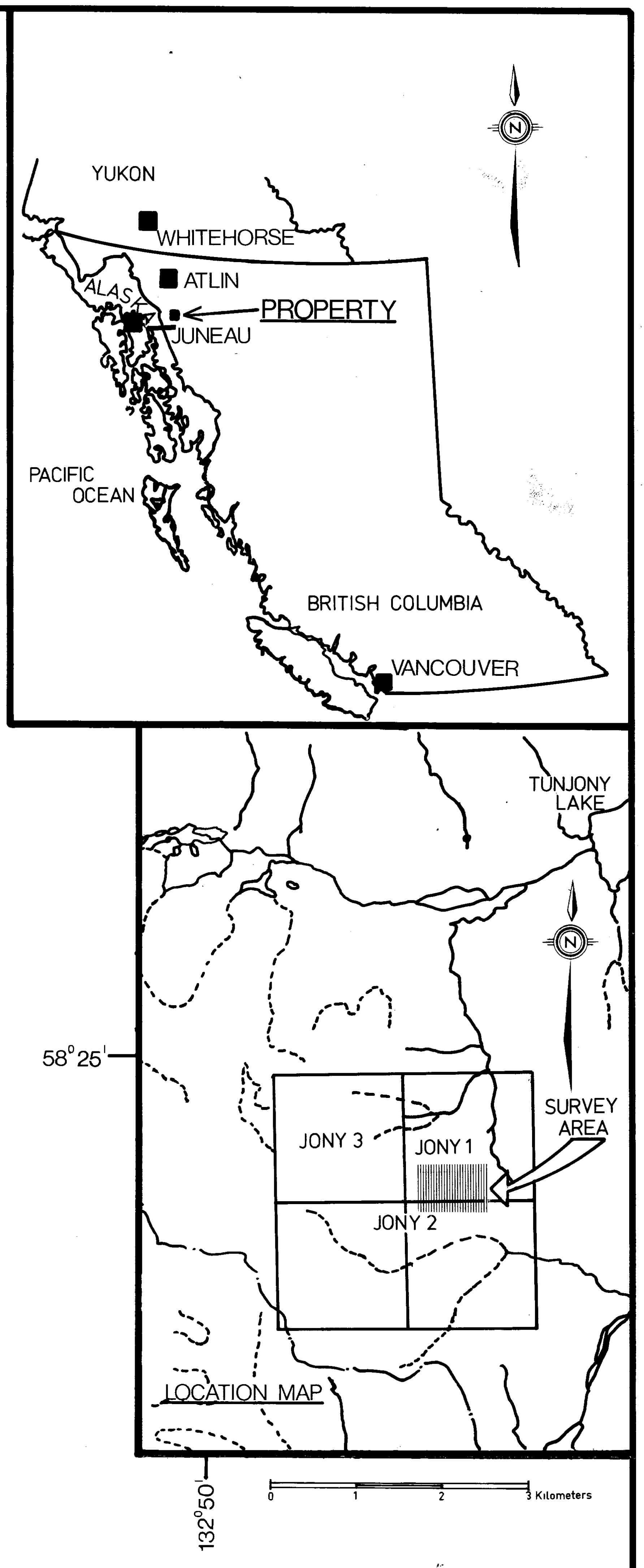
MAFEKING MINERALS LTD.

MAX MIN II PROFILE
1777 Hz
JONY CLAIM GROUP

Project No: C-502	**By:** F. Dalidowicz
Scale: 1:1250	**Drawn:** d.m.d.
Drawing No: 1	**Date:** August/80

MPH Consulting Limited





LEGEND

┼	Conductor axis(fair to strong quality)
?	Conductor axis (poorer quality)
▨	Conductor width
4/30 78° east	Depth est. (m) Conductivity thickness (mhos) Dip estimate
—·—·—	In Phase profile
x--x--x	Quadrature

ISNTRUMENT : Apex Parametrics Max Min II
150 and 50 meter cable

Profile Scale
+20
0
−20

MINERAL RESO...
9578
NO.

F. DALIDOWICZ

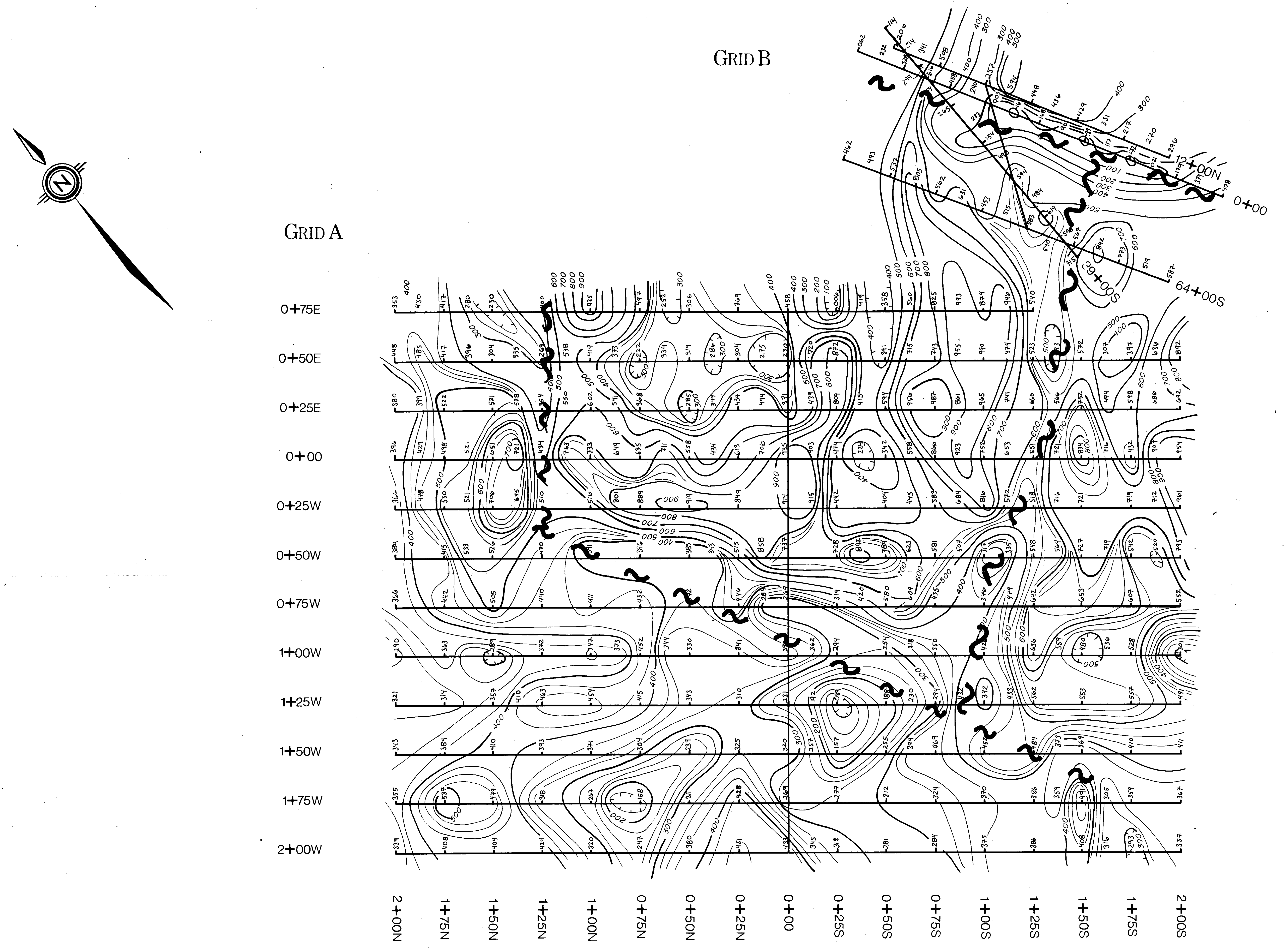
⑬

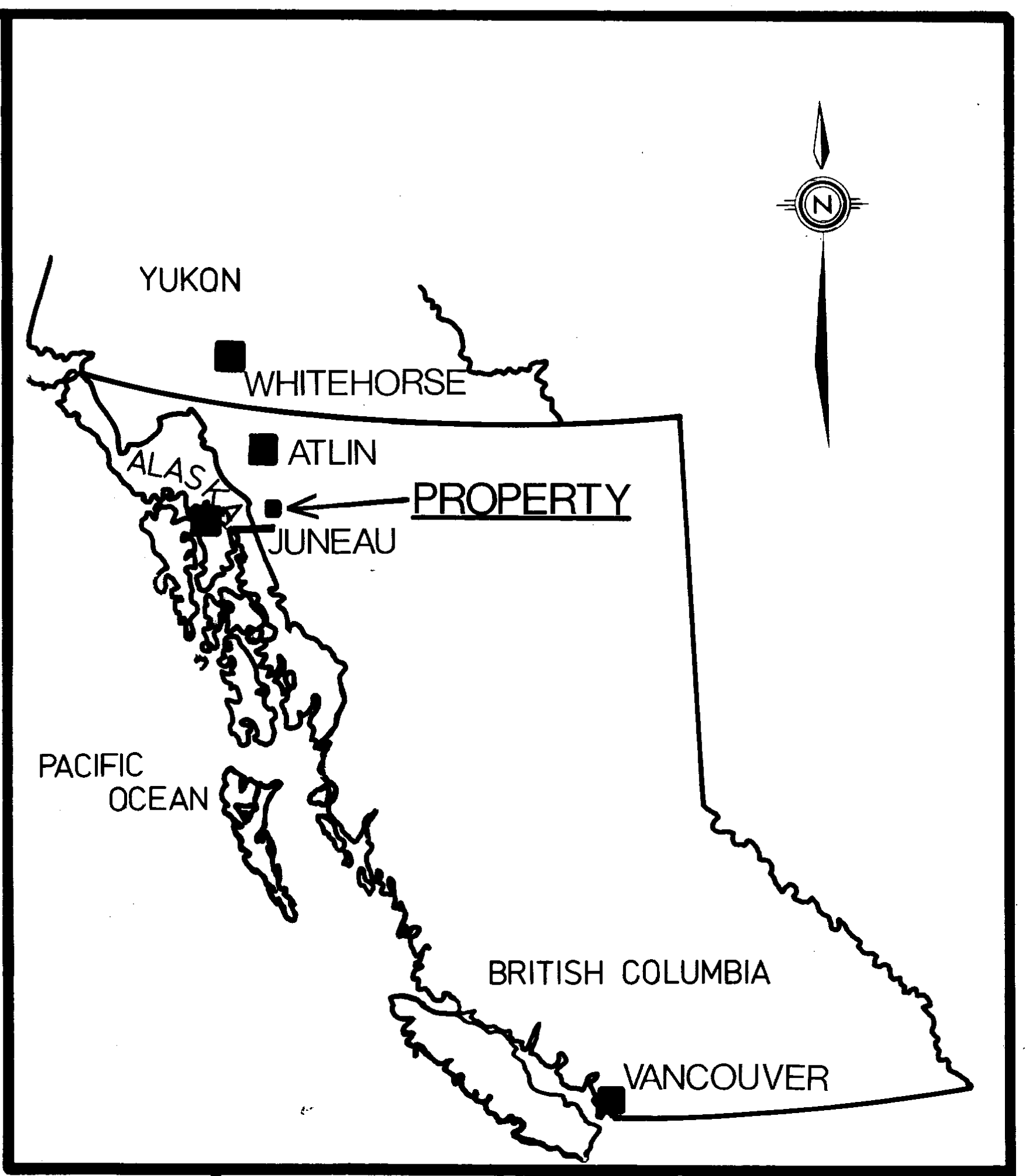
MAFEKING MINERALS LTD.

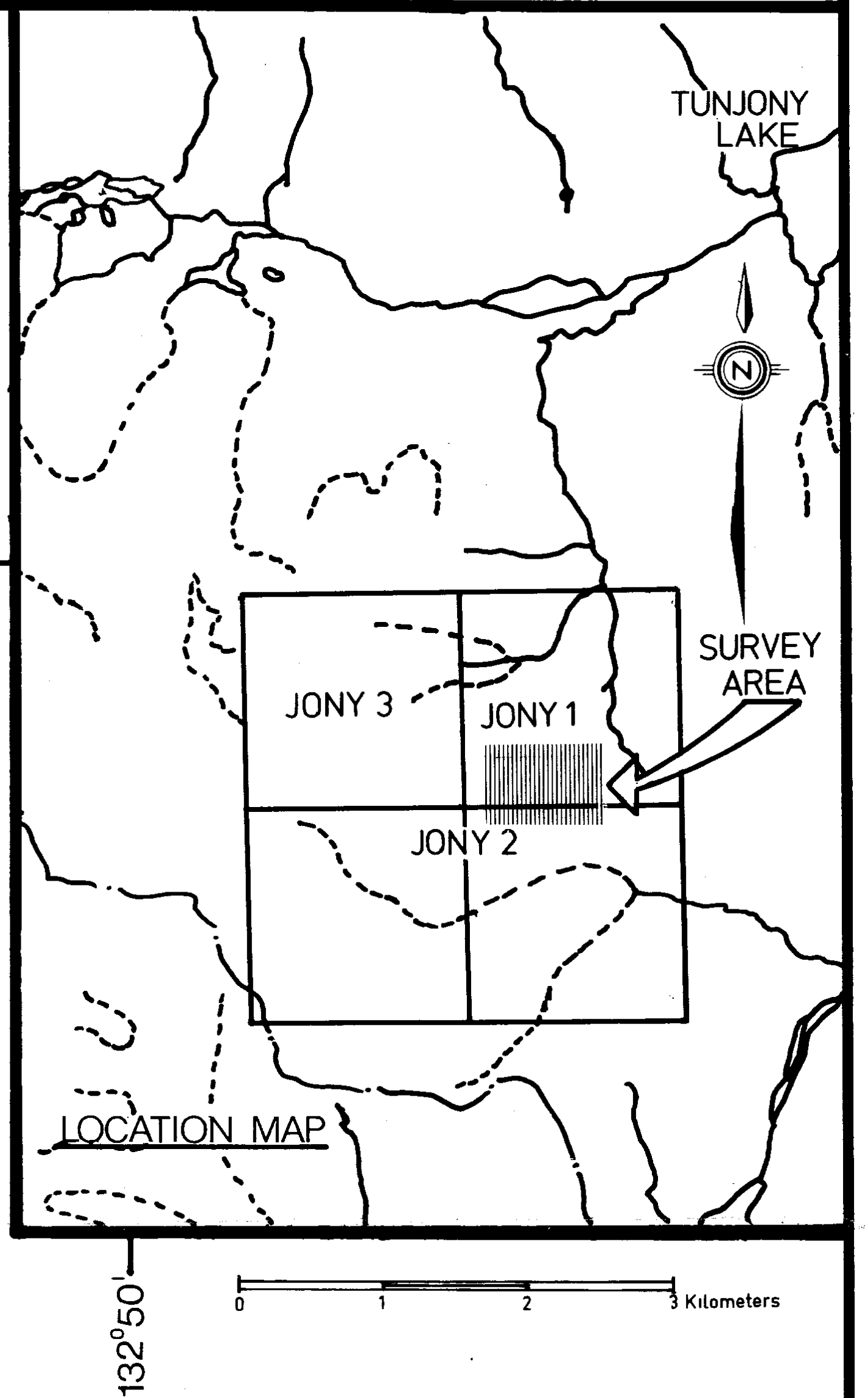
MAX MIN II PROFILES
444 Hz
JONY CLAIM GROUP

Project No: C-502	By: F. Dalidowicz
Scale: 1:1250	Drawn: d.m.d.
Drawing No: 2	Date: August/80

MPH Consulting Limited







LEGEND

60819	Magnetic values in gammas corrected
61000	Magnetic contours
	Contour intervals 100 and 25 gammas
	Mag low
∼	Interpreted faults

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9898

F. DALIDOWICZ

MAFEKING MINERALS LTD.

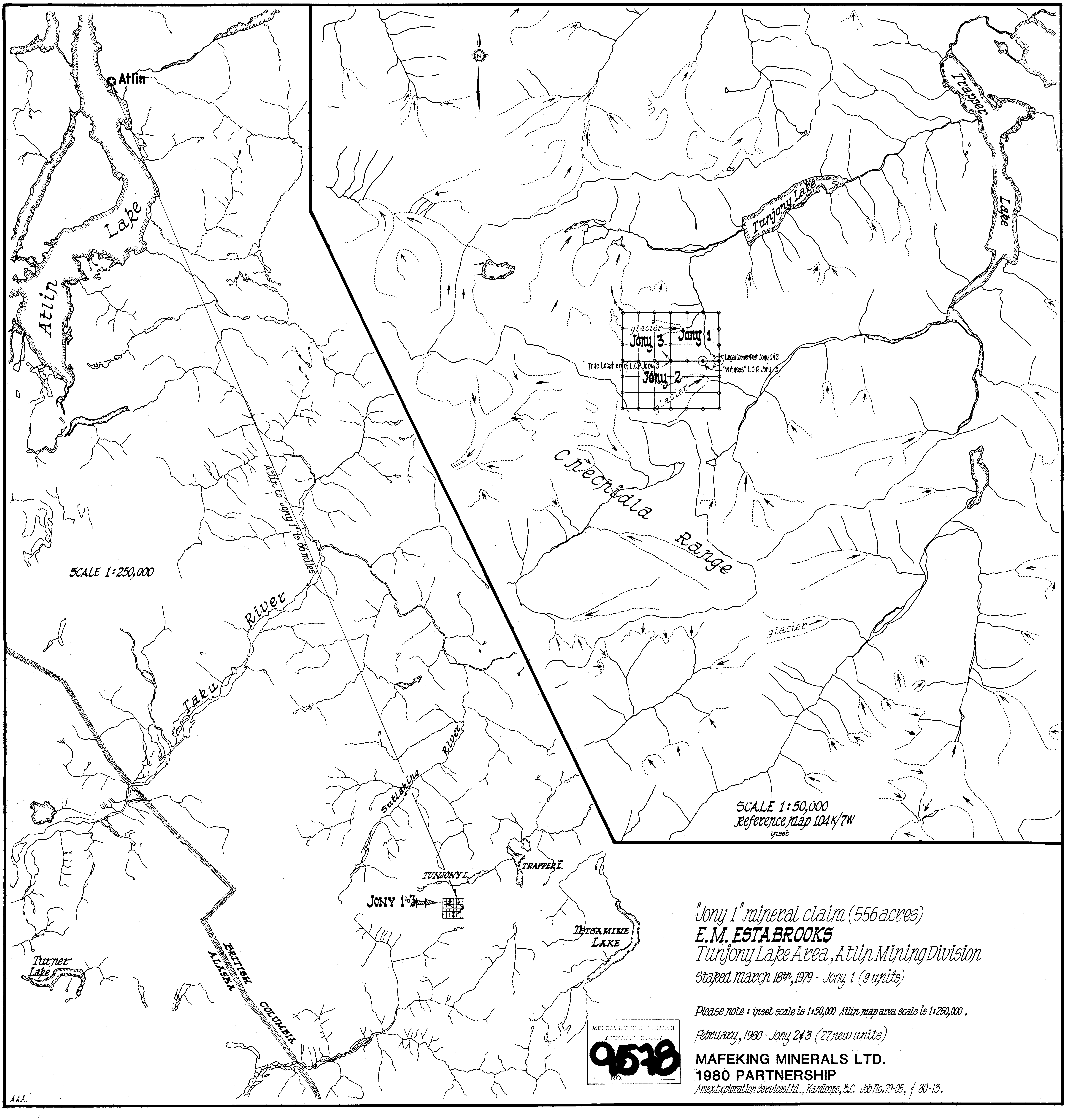
(14)

TOTAL FIELD
MAGNEOMETER SURVEY

JONY CLAIM GROUP

Project No: C-502	**By:** F. Dalidowicz
Scale: 1:1250	**Drawn:** d.m.d.
Drawing No: 3	**Date:** August/80

MPH Consulting Limited



"Jony 1" mineral claim (556 acres)

E.M. ESTABROOKS

Tunjony Lake Area, Atlin Mining Division

Staked March 18th, 1979 - Jony 1 (9 units)

Please note : inset scale is 1:50,000 Atlin map area scale is 1:250,000 .

February, 1980 - Jony 2 & 3 (27 new units)

MAFEKING MINERALS LTD.
1980 PARTNERSHIP

Amex Exploration Services Ltd., Kamloops, B.C. Job No. 79-05, & 80-13.